



2010-2011 **PRODUCT CATALOG**

• Transceiver • Fiber Optic Components • FTTx • Tool
• Switch • Router • Converter • Test Equipment
• Industrial Switch • Wireless Router and DTU • Video

TABLE OF CONTENTS



SPECTRUM

- 02 Transceiver
- 12 Fiber Optic Components
- 38 FTTX
- 51 Tool

PRODIGY SWITCH

- 57 Layer 2 Access Switch
- 73 Layer 3 Aggregation Switch
- 84 Core Switch
- 90 Carrier Core Switch

PRODIGY ROUTER

- 98 Broadband Router
- 99 Multi-Access Broadband Router
- 103 Modular Access Router
- 104 Modular Multi-Access Router
- 106 Aggregation Router
- 108 Central Access Router
- 110 Core Router
- 112 Core Aggregation Router
- 114 Modular Core Router

PRODIGY MSPP&CONVERTER

- 118 Rack ADM Mux
- 120 8 Slots ADM Mux
- 122 Compact Mod ADM Mux
- 124 Compact ADM Mux
- 126 63E1 Terminal Mux
- 127 Compact Terminal Mux
- 131 TDM Over IP
- 133 Ethernet To E1 Converter
- 138 Media Converter

TOUGHCOM INDUSTRIAL SWITCH

- 142 19 Inch Rack Mounted Managed Industrial Ethernet Switch
- 153 DIN-Rail Mountable Managed Ethernet Switch
- 163 Unmanaged Ethernet Switch
- 168 M12 Ethernet Switch

CLEARPATH WIRELESS ROUTER&DTU

- 174 DTU
- 175 2.5G Router
- 178 3G Router

ACCUTEST TEST EQUIPMENT

- 188 Variable Attenuator
- 189 Laser Source
- 193 Power Meter
- 197 Fault Locator
- 200 Optical Talk Set
- 202 Telecom Datatest Instrument
- 205 CATV Signal Level Meter

BIONIC VIDEO

- 208 Passive Video
- 225 Active Video



COMPANY PROFILE



Established in April 2006, Terrabit Networks is a value-add distributor specializing in network access and transmission solutions, particularly in wired (copper/fiber) and wireless transmission. Our team comprises of expertise from Service Providers industry with more than 10 years experiences. The primary focus is to provide best in class Information Communication Technology (ICT) products and solutions for our customers in the Service Providers' sector.

With headquarter based in Singapore, Terrabit Networks provides a one-stop solution for both customers and vendors. Customers with regional presence can leverage TBN regional coverage to provide service and support. Vendors can leverage TBN for extended sales force for regional market coverage, central stocking, as well as one contact point for all sales and marketing activities.

Our company offers complete end-to-end service for design, implementation and sales of IT infrastructure products. Our networking solutions cater various leading edge technologies, such as FTTx (RF overlay, PON), Active Ethernet (P2P), Fiber Optic Management, Metro C/DWDM, Access Network Transmission, Remote Fiber Test System (RFTS), clock synchronization, mobile network transmission and etc.

We established our "SPECTRUM" brand of products including Transceivers (SFP, GBIC, SFP+), Fiber Optic Patch cords, FTTx Accessories, Routers, Switches, Access Equipment and etc. TBN enjoys strategic alliances with many leading vendors as shown in our partners' data sheet. This enables us to act as a trusted advisor to our customers, ensuring the right solution is recommended to meet our customers' objectives.

In addition to distribution, we assist our customers with other professional services such as rental and calibration of test equipment, cabling, training, synchronization clock audit, supply chain management, and manpower outsourcing.

By providing a unique combination of innovation, technical expertise and a passion for customer service, we are confident that we can take your business to new levels.



SFP • SGMII • SFP+ • 02

GBIC • 06

XFP • 08

GPON • 09

X2 • 10

Ordering Information • 11

Adapter • 12

E-2000 • FC • LC • MTRJ • MU • SC • ST

Connector • 19

E-2000 • FC • LC • MTRJ • MU • SC • ST

Patchcord & Pigtail • 26

E-2000 • FC • LC • MTRJ • MU • SC • ST

Attenuator • 33

FC • LC • MU • SC • ST

Optical Distribution Frame • 38

Fiber Distribution Unit • 39

Fiber Terminal Box • 40

DSLAM Outdoor Cabinet • 41

DSLAM Indoor Cabinet • 42

Multi-media FTTH Box • 43

Fiber Socket • 44

Optical Distribution Box • 45

Optical Distribution Cabinet • 46

Planar Lightwave Circuit Splitter A • 47

Planar Lightwave Circuit Splitter B • 48

Planar Lightwave Circuit Splitter C • 49

Planar Lightwave Circuit Splitter D • 50

Cleaning Tools • 51

Optical Tool Kit • 52

02 Transceiver

12 Fiber Optic Components

38 FTTX

51 Tool

SPECTRUM TRANSCEIVER



Small Form Pluggable **SFP**
Serial Gigabit Media Independent Interface **SGMII**
Small Form Pluggable Plus **SFP+**

SFP FEATURES

- **Data Rates:** 155Mbps, 622Mbps, 1.25Gbps, 2.5Gbps, 4.25Gbps, Multi-rate (100Mbps to 2.67Gbps).
- **Copper (RJ45):** 10/100/1000Mbps (SGMII), 1000Mbps.
- **Wavelengths (λ):** 850nm, 1310nm, 1550nm, Bi-Di, CWDM, DWDM (100/ 200 GHz).
- **Connector type:** LC (Duplex/ Simplex), SC (Bi-Di) Various selectable distances, up to 160km.
- Hot-Pluggable module.
- Compatible to major equipment vendors.
- Optional Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472 (Internal/ External Calibration).
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.
- Support up to 18 CWDM wavelengths from 1270nm to 1610nm, with 20nm steps.
- **CWDM power budget:**
 - 155Mbps: Up to 34dB
 - 622Mbps: Up to 29dB
 - 1.25Gbps: Up to 32dB
 - 2.5Gbps: Up to 28dB

SGMII FEATURES

- **Data Rates:** 100/1000Mbps.
- **Wavelengths (λ):** 1300nm Multimode, 1310nm Singlemode.
- **Connector type:** LC (Duplex).
- **Distance:** Up to 10km.
- Hot-Pluggable module.
- Compatible to major equipment vendors Support Link Status Monitoring such as CRC, Packet Counter, Far End Fault (FEF) Indication.
- Optional Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472.
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.

SFP+ FEATURES

- **Data Rates:** 9.95 to 11.1Gbps.
- **Wavelengths (λ):** 850nm, 1310nm, CWDM.
- **Connector type:** LC (Duplex/ Simplex).
- Various selectable distance, up to 40km.
- Hot-Pluggable module.
- Compatible to major equipment vendors.
- Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472.
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.
- Support 10GE, 10Gbps FC, SONET OC-192, SDH STM-64, OTN OTU-2.

ORDERING INFORMATION

1. All SFP are available with built-in Digital Monitoring Function. If you require, please indicate the part number with '-D' (e.g. SP-SF-425-130-010-DO)
2. If you require temperate with -40~85°C, please indicate the part number as 'SI' instead of 'SP' (e.g SI-SF-425-130-010-OO)
3. If you require module to be compatible on specific equipment, please indicate the part 'C' (e.g. SP-SF-425-130-010-OC)

SFP

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-155-130-002-OO	155Mbps	1310nm	MM	2km	-15~-5dBm	<-30dBm	0~70°C, -40~85°C
SP-SF-155-130-020-OO	155Mbps	1310nm	SM	20km	-15~-8dBm	<-31dBm	0~70°C, -40~85°C
SP-SF-155-130-040-OO	155Mbps	1310nm	SM	40km	-14~-8dBm	<-34dBm	0~70°C, -40~85°C
SP-SF-155-130-060-OO	155Mbps	1310nm	SM	60km	-5~0dBm	<-34dBm	0~70°C, -40~85°C
SP-SF-155-150-080-OO	155Mbps	1550nm	SM	80km	-5~0dBm	<-31dBm	0~70°C, -40~85°C
SP-SF-155-150-100-OO	155Mbps	1550nm	SM	100km	-3~+2dBm	<-34dBm	0~70°C, -40~85°C
SP-SF-155-150-120-OO	155Mbps	1550nm	SM	120km	0~+5dBm	<-34dBm	0~70°C, -40~85°C
SP-SF-155-150-160-OO	155Mbps	1550nm	SM	160km	+2~+5dBm	<-35dBm	0~70°C, -40~85°C
SP-SF-622-130-001-OO	622Mbps	1310nm	MM	1km	-19~-5dBm	<-26dBm	0~70°C, -40~85°C
SP-SF-622-130-020-OO	622Mbps	1310nm	SM	20km	-14~-8dBm	<-28dBm	0~70°C, -40~85°C

For enquires, please email to sales@terrabitnet.com

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-622-130-040-OO	622Mbps	1310nm	SM	40km	-3~+2dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-622-150-080-OO	622Mbps	1550nm	SM	80km	-3~+2dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-622-150-120-OO	622Mbps	1550nm	SM	120km	0~+5dBm	<-34dBm	0~70°C,-40~85°C
SP-SF-622-150-160-OO	622Mbps	1550nm	SM	160km	+1~+5dBm	<-37dBm	0~70°C,-40~85°C
SP-SF-125-085-M55-OO	1.25Gbps	850nm	MM	550m	-9~-4dBm	<-17dBm	0~70°C,-40~85°C
SP-SF-125-130-010-OO	1.25Gbps	1310nm	SM	10km	-10~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-SF-125-130-020-OO	1.25Gbps	1310nm	SM	20km	-6~-1dBm	<-22dBm	0~70°C,-40~85°C
SP-SF-125-130-030-OO	1.25Gbps	1310nm	SM	30km	-5~0dBm	<-23dBm	0~70°C,-40~85°C
SP-SF-125-130-040-OO	1.25Gbps	1310nm	SM	40km	-2~+3dBm	<-24dBm	0~70°C,-40~85°C
SP-SF-125-150-060-OO	1.25Gbps	1550nm	SM	60km	-5~0dBm	<-24dBm	0~70°C,-40~85°C
SP-SF-125-150-080-OO	1.25Gbps	1550nm	SM	80km	0~+5dBm	<-24dBm	0~70°C,-40~85°C
SP-SF-125-150-120-OO	1.25Gbps	1550nm	SM	120km	0~+5dBm	<-32dBm	0~70°C,-40~85°C
SP-SF-125-150-160-OO	1.25Gbps	1550nm	SM	160km	+1~+5dBm	<-36dBm	0~70°C,-40~85°C
SP-SF-250-085-M30-OO	2.5Gbps	850nm	MM	300m	-9~-4dBm	<-15dBm	0~70°C,-40~85°C
SP-SF-250-130-002-OO	2.5Gbps	1310nm	SM	2km	-10~-3dBm	<-18dBm	0~70°C,-40~85°C
SP-SF-250-130-015-OO	2.5Gbps	1310nm	SM	15km	-5~0dBm	<-18dBm	0~70°C,-40~85°C
SP-SF-250-130-040-OO	2.5Gbps	1310nm	SM	40km	-2~+3dBm	<-27dBm	0~70°C,-40~85°C
SP-SF-250-150-040-OO	2.5Gbps	1550nm	SM	40km	-2~+3dBm	<-18dBm	0~70°C,-40~85°C
SP-SF-250-150-080-OO	2.5Gbps	1550nm	SM	80km	0~+5dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-250-150-100-OO	2.5Gbps	1550nm	SM	100km	0~+5dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-250-150-120-OO	2.5Gbps	1550nm	SM	120km	+1~+5dBm	<-30dBm	0~70°C,-40~85°C
SP-SF-425-085-M15-OO	4.25Gbps	850nm	MM	150m	-9~-3dBm	<-15dBm	0~70°C,-40~85°C
SP-SF-425-130-005-OO	4.25Gbps	1310nm	SM	5km	-8~-3dBm	<-18dBm	0~70°C,-40~85°C
SP-SF-425-130-010-OO	4.25Gbps	1310nm	SM	10km	-3~+2dBm	<-18dBm	0~70°C,-40~85°C

SFP BIDI

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-155-B35-002-OO	155Mbps	Tx1310nmFP/RX1550nm	MM	2km	-15~-5dBm	<-30dBm	0~70°C,-40~85°C
SP-SF-155-B53-002-OO	155Mbps	1550nmFP/1310nm	MM	2km	-15~-5dBm	<-30dBm	0~70°C,-40~85°C
SP-SF-155-B35-010-OO	155Mbps	1310nmFP/1550nm	SM	10km	-14~-8dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B53-010-OO	155Mbps	1550nmFP/1310nm	SM	10km	-14~-8dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B35-020-OO	155Mbps	1310nmFP/1550nm	SM	20km	-14~-8dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B53-020-OO	155Mbps	1550nmFP/1310nm	SM	20km	-14~-8dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B35-040-OO	155Mbps	1310nmFP/ 1550nm	SM	40km	-8~-3dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B53-040-OO	155Mbps	1550nmDFB/1310nm	SM	40km	-8~-3dBm	<-33dBm	0~70°C,-40~85°C
SP-SF-155-B35-060-OO	155Mbps	1310nmFP/1550nm	SM	60km	-5~0dBm	<-34dBm	0~70°C,-40~85°C
SP-SF-155-B53-060-OO	155Mbps	1550nmDFB/1310nm	SM	60km	-6~0dBm	<-34dBm	0~70°C,-40~85°C
SP-SF-155-B35-080-OO	155Mbps	1310nmFP/1550nm	SM	80km	-2~+3dBm	<-34dBm	0~70°C,-40~85°C
SP-SF-155-B53-080-OO	155Mbps	1550nmDFB/1310nm	SM	80km	-3~+2dBm	<-34dBm	0~70°C,-40~85°C
SP-SF-622-B35-001-OO	622Mbps	1310nmFP/1550nm	MM	1km	-14~-8dBm	<-26dBm	0~70°C,-40~85°C
SP-SF-622-B53-001-OO	622Mbps	1550nmFP/1310nm	MM	1km	-14~-8dBm	<-26dBm	0~70°C,-40~85°C
SP-SF-622-B35-020-OO	622Mbps	1310nmFP/1550nm	SM	20km	-14~-8dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-622-B53-020-OO	622Mbps	1550nmDFB/1310nm	SM	20km	-14~-8dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-622-B35-040-OO	622Mbps	1310nmFP/1550nm	SM	40km	-5~0dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-622-B53-040-OO	622Mbps	1550nmDFB/1310nm	SM	40km	-5~0dBm	<-28dBm	0~70°C,-40~85°C
SP-SF-125-B35-M50-OO	1.25Gbps	1310nmFP/1550nm	MM	500m	-10~-3dBm	<-17dBm	0~70°C,-40~85°C
SP-SF-125-B53-M50-OO	1.25Gbps	1550nmFP/1310nm	MM	500m	-10~-3dBm	<-17dBm	0~70°C,-40~85°C

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Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-125-B35-010-OO	1.25Gbps	1310nmFP/1550nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-125-B53-010-OO	1.25Gbps	1550nmFP/1310nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-125-B35-020-OO	1.25Gbps	1310nmFP/1550nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C, -40~85°C
SP-SF-125-B53-020-OO	1.25Gbps	1550nmFP/1310nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C, -40~85°C
SP-SF-125-B35-040-OO	1.25Gbps	1310nmFP/1550nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C, -40~85°C
SP-SF-125-B53-040-OO	1.25Gbps	1550nmFP/1310nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C, -40~85°C
SP-SF-125-B35-060-OO	1.25Gbps	1310nmFP/1550nm	SM	60km	0~+5dBm	<-26dBm	0~70°C, -40~85°C
SP-SF-125-B53-060-OO	1.25Gbps	1550nmFP/1310nm	SM	60km	-3~+2dBm	<-26dBm	0~70°C, -40~85°C

SP-SF-125-B34-010-OO	1.25Gbps	1310nmFP/1490nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-125-B43-010-OO	1.25Gbps	1490nmFP/1310nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-125-B34-020-OO	1.25Gbps	1310nmFP/1490nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C, -40~85°C
SP-SF-125-B43-020-OO	1.25Gbps	1490nmFP/1310nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C, -40~85°C
SP-SF-125-B34-040-OO	1.25Gbps	1310nmFP/1490nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C, -40~85°C
SP-SF-125-B43-040-OO	1.25Gbps	1490nmFP/1310nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C, -40~85°C
SP-SF-125-B34-060-OO	1.25Gbps	1310nmFP/1490nm	SM	60km	0~+5dBm	<-26dBm	0~70°C, -40~85°C
SP-SF-125-B43-060-OO	1.25Gbps	1490nmFP/1310nm	SM	60km	-3~+2dBm	<-26dBm	0~70°C, -40~85°C

SP-SF-250-B35-M30-OO	2.5Gbps	1310nmFP/1550nm	MM	300m	-9~-3dBm	<-15dBm	0~70°C, -40~85°C
SP-SF-250-B53-M30-OO	2.5Gbps	1550nmFP/1310nm	MM	300m	-9~-3dBm	<-15dBm	0~70°C, -40~85°C
SP-SF-250-B35-002-OO	2.5Gbps	1310nmFP/1550nm	SM	2km	-3~-9dBm	<-18dBm	0~70°C, -40~85°C
SP-SF-250-B53-002-OO	2.5Gbps	1550nmFP/1310nm	SM	2km	-3~-9dBm	<-18dBm	0~70°C, -40~85°C
SP-SF-250-B35-015-OO	2.5Gbps	1310nmFP/1550nm	SM	15km	0~-5dBm	<-18dBm	0~70°C, -40~85°C
SP-SF-250-B53-015-OO	2.5Gbps	1550nmFP/1310nm	SM	15km	0~-5dBm	<-18dBm	0~70°C, -40~85°C
SP-SF-250-B35-040-OO	2.5Gbps	1310nmFP/1550nm	SM	40km	0~+5dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-250-B53-040-OO	2.5Gbps	1550nmFP/1310nm	SM	40km	-2~+3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-250-B34-040-OO	2.5Gbps	1310nmFP/1490nm	SM	40km	-2~+3dBm	<-20dBm	0~70°C, -40~85°C
SP-SF-250-B43-040-OO	2.5Gbps	1490nmFP/1310nm	SM	40km	-2~+3dBm	<-20dBm	0~70°C, -40~85°C

SFP Multi-rate

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-M26-130-002-OO	155M~2.67Gbps	1310nm	SM	2km	-9~-3dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-130-015-OO	155M~2.67Gbps	1310nm	SM	15km	-5~0dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-150-040-OO	155M~2.67Gbps	1550nm	SM	40km	-3~+2dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-150-080-OO	155M~2.67Gbps	1550nm	SM	80km	-3~+2dBm	<-28dBm	0~70°C, -40~85°C
SP-SF-M26-130-040-OO	155M~2.67Gbps	1310nm	SM	40km	-3~+2dBm	<-27dBm	0~70°C, -40~85°C

SP-SF-M26-B35-002-OO	155M~2.67Gbps	1310nm/1550nm	SM	2km	-9~-3dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-B53-002-OO	155M~2.67Gbps	1550nm/1310nm	SM	2km	-9~-3dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-B35-015-OO	155M~2.67Gbps	1310nm/1550nm	SM	15km	-5~0dBm	<-17dBm	0~70°C, -40~85°C
SP-SF-M26-B53-015-OO	155M~2.67Gbps	1550nm/1310nm	SM	15km	-5~0dBm	<-17dBm	0~70°C, -40~85°C

SFP CWDM

Part Number	Data Rate	Wavelength	Media Type	Reach	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SF-155-Cyy-034-OO	155Mbps	1270~1610nm	SM	34 dB Power Budget at Least	0~+5dBm	<-34dBm	0~70°C
SP-SF-622-Cyy-029-OO	622Mbps	1270~1610nm	SM	29 dB Power Budget at Least	0~+5dBm	<-29dBm	0~70°C
SP-SF-125-Cyy-024-OO	1.25Gbps	1270~1610nm	SM	24 dB Power Budget at Least	0~+5dBm	<-24dBm	0~70°C
SP-SF-125-Cyy-032-OO	1.25Gbps	1270~1610nm	SM	32 dB Power Budget at Least	0~+5dBm	<-32dBm	0~70°C
SP-SF-250-Cyy-018-OO	2.5Gbps	1270~1610nm	SM	18 dB Power Budget at Least	0~+5dBm	<-18dBm	0~70°C
SP-SF-250-Cyy-028-OO	2.5Gbps	1270~1610nm	SM	28 dB Power Budget at Least	0~+5dBm	<-28dBm	0~70°C

*yy denotes wavelength range from 1270~1610nm.

27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm, 57=1570nm, 59=1590nm, 61=1610nm

For enquires, please email to sales@terrabitnet.com

SFP DWDM

Part Number	Data Rate	Wavelength	Media Type	Link Budget	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
Available upon request							

SGMII

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SG-100-130-002-OO	100Mbps	1310nm	MM	2km	-14~-20dBm	<-30dBm	0~70°C,-40~85°C
SP-SG-100-130-010-OO	100Mbps	1310nm	SM	10km	-8~-15dBm	<-30dBm	0~70°C,-40~85°C

SFP+

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-S+-10G-085-M30-DO	1.0625~10.3Gbps	850nm	MM	300m	-7.3~-1.5dBm	<-9.9dBm	0~70°C
SP-S+-10G-130-010-DO	1.0625~10.3Gbps	1310nm	SM	10km	-8~-0.5dBm	<-12.6dBm	0~70°C
SP-S+-10G-130-020-DO	1.0625~10.3Gbps	1310nm	SM	20km	-3~-1dBm	<-14dBm	0~70°C
SP-S+-10G-130-040-DO	1.0625~10.3Gbps	1310nm	SM	40km	1.5~5dBm	<-16dBm	0~70°C

SFP+ CWDM

Part Number	Data Rate	Wavelength	Media Type	Reach	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-S+-10G-Cyy-014-OO	8G/10G	1270~1610nm	SM	10db/14dB	-3~+1dBm	<-17dBm	0~70°C

*yy denotes wavelength range from 1270~1610nm.

27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm, 57=1570nm, 59=1590nm, 61=1610nm

SFP COPPER

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-SG-M10-COP-M10-OO	1000/100/10M	-	-	100m	-	-	0~70°C,-40~85°C
SP-SF-100-COP-M10-OO	1000M	-	-	100m	-	-	0~70°C,-40~85°C

SPECTRUM TRANSCEIVER



GBIC

Giga-Bit Interface Converter

FEATURES

- **Data Rate:** 1.25Gbps.
- **Wavelengths (λ):** 850nm, 1310nm, 1550nm, Bi-Di, CWDM.
- **Connector type:** SC (Duplex/ Simplex).
- Various selectable distance, up to 120km.
- Optional Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472.
- Hot-Pluggable module.
- Compatible to major equipment vendors.
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.

ORDERING INFORMATION

1. All SFP are available with built-in Digital Monitoring Function. If you require, please indicate the part number with '-D' (e.g. SP-GB-125-085-M55-DO)
2. If you require temperate with -40~85°C, please indicate the part number as 'SI' instead of 'SP' (e.g SI-GB-125-085-M55-DO)
3. If you require module to be compatible on specific equipment, please indicate the part 'C' (e.g. SP-GB-125-085-M55-OC)

GBIC

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-GB-125-130-010-OO	1.25Gbps	1310nmFP	SM	10km	-9~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-GB-125-130-020-OO	1.25Gbps	1310nmFP	SM	20km	-6~-1dBm	<-22dBm	0~70°C,-40~85°C
SP-GB-125-130-030-OO	1.25Gbps	1310nmFP	SM	30km	-5~0dBm	<-24dBm	0~70°C,-40~85°C
SP-GB-125-130-040-OO	1.25Gbps	1310nmDFB	SM	40km	-3~+2dBm	<-24dBm	0~70°C,-40~85°C
SP-GB-125-150-050-OO	1.25Gbps	1550DFB	SM	50km	-5~0dBm	<-24dBm	0~70°C,-40~85°C
SP-GB-125-150-080-OO	1.25Gbps	1550DFB	SM	80km	0~+5dBm	<-24dBm	0~70°C,-40~85°C
SP-GB-125-150-120-OO	1.25Gbps	1550DFB	SM	120km	0~+5dBm	<-32dBm	0~70°C,-40~85°C
SP-GB-125-085-M55-OO	1.25Gbps	850nmVCSEL	MM	550m	-10~-3dBm	<-18dBm	0~70°C,-40~85°C

GBIC BIDI

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-GB-125-B35-M50-OO	1.25Gbps	1310nm/1550nm	MM	500m	-10~-3dBm	<-17dBm	0~70°C,-40~85°C
SP-GB-125-B53-M50-OO	1.25Gbps	1550nm/1310nm	MM	500m	-10~-3dBm	<-17dBm	0~70°C,-40~85°C
SP-GB-125-B35-010-OO	1.25Gbps	1310nm/1550nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-GB-125-B53-010-OO	1.25Gbps	1550nmDFB/1310nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-GB-125-B35-020-OO	1.25Gbps	1310nm/1550nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C,-40~85°C
SP-GB-125-B53-020-OO	1.25Gbps	1550nmDFB/1310nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C,-40~85°C
SP-GB-125-B35-040-OO	1.25Gbps	1310nm/1550nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C,-40~85°C
SP-GB-125-B53-040-OO	1.25Gbps	1550nmDFB/1310nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C,-40~85°C
SP-GB-125-B34-010-OO	1.25Gbps	1310nm/1490nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-GB-125-B43-010-OO	1.25Gbps	1490nmDFB/1310nm	SM	10km	-9~-3dBm	<-20dBm	0~70°C,-40~85°C
SP-GB-125-B34-020-OO	1.25Gbps	1310nm/1490nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C,-40~85°C
SP-GB-125-B43-020-OO	1.25Gbps	1490nmDFB/1310nm	SM	20km	-8~-3dBm	<-22dBm	0~70°C,-40~85°C
SP-GB-125-B34-040-OO	1.25Gbps	1310nm/1490nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C,-40~85°C

For enquires, please email to sales@terrabitnet.com

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-GB-125-B43-040-OO	1.25Gbps	1490nmDFB/1310nm	SM	40km	-3~+2dBm	<-23dBm	0~70°C,-40~85°C

GBIC CWDM

Part Number	Data Rate	Wavelength	Media Type	Reach	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-GB-125-Cyy-024-OO	1.25Gbps	1270~1610nm	SM	24 dB Power Budget at Least	0~+5dBm	<-24dBm	
SP-GB-125-Cyy-032-OO	1.25Gbps	1270~1610nm	SM	32 dB Power Budget at Least	0~+5dBm	<-32dBm	

*yy denotes wavelength range from 1270~1610nm.

27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm, 57=1570nm, 59=1590nm, 61=1610nm

SPECTRUM TRANSCEIVER



XFP

10 Gigabit Small Form Factor Pluggable

FEATURES

- **Data Rate:** 9.95 to 11.1Gbps.
- **Wavelengths (λ):** 850nm, 1310nm, 1550nm, CWDM, DWDM (C-Band).
- **Connector type:** LC (Duplex).
- Various selectable distance, up to 80km.
- Compatible to major equipment vendors.
- Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472.
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.
- Hot-Pluggable module.
- Support 10GE at 10.709Gbps, 10GBase-LR/LW 10G Ethernet, SONET OC-192 at 9.953Gbps, 1200-SM-LL-L 10G Fiber Channel, 10GE over G.709 at 11.09Gbps.

ORDERING INFORMATION

1. All SFP are available with built-in Digital Monitoring Function. If you require, please indicate the part number with '-D' (e.g. SP-XF-10G-130-M22-DO)
2. If you require module to be compatible on specific equipment, please indicate the part 'C' (e.g. SP-XF-10G-130-M22-OC)

XFP

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-XF-10G-085-M30-OO	10G	850nm	LC	300m	-7.3~-1dBm	<-11dBm	0~70°C
SP-XF-10G-085-010-OO	10G	1310nm	LC	10km	-8.2~-0.5dBm	<-13dBm	0~70°C
SP-XF-10G-085-020-OO	10G	1310nm	LC	20km	-3~+1dBm	<-14dBm	0~70°C
SP-XF-10G-150-040-OO	10G	1550nm	LC	40km	-5~ +4.5dBm	<-16dBm	0~70°C
SP-XF-10G-130-M22-OO	10G	1310nm	LC	220m	-2dBm	<-14.4dBm	0~70°C

XFP CWDM

Part Number	Data Rate	Wavelength	Media Type	Link Budget	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-XF-10G-Cyy-040-OO	10G	1470~1610nm	LC	40km	<0dBm	-16dBm	0~70°C

*yy denotes wavelength range from 1270~1610nm.

27 = 1270nm, 29=1290nm, 31=1310nm, 33=1330nm, 35=1350nm, 37=1370nm, 39=1390nm, 41=1410nm, 43=1430nm, 45=1450nm, 47=1470nm, 49=1490nm, 51=1510nm, 53=1530nm, 55=1550nm, 57=1570nm, 59=1590nm, 61=1610nm

XFP DWDM

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-XF-10G-Cyy-040-OO							

SPECTRUM TRANSCEIVER

SPECTRUM



GPON

Gigabit Passive Optical Network for OLT/ ONU

FEATURES

- **Data Rate:** 1.25/ 2.5Gbps.
- **Wavelengths (λ):** 1490nm continuous mode, 1310nm burst mode receiver.
- **Connector type:** Up to 20km.
- Connector type: SC (Simplex).
- Optional Digital Diagnostic Monitoring (DDM) for optical monitoring capability compliant with SFF-8472.
- Compliant with IEEE802.3ah.
- Compatible to major equipment vendors.
- Eye-safety design to meet laser class 1 compliant with IEC60825-1.

ORDERING INFORMATION

1. All SFP are available with built-in Digital Monitoring Function. If you require, please indicate the part number with '-D' (e.g. SP-GP-M25-OLT-020-DO)
2. If you require module to be compatible on specific equipment, please indicate the part 'C' (e.g. SP-GP-D25-OLT-020-OC)

GPON

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-GP-125-ONU-020-OO	1.25G	1310nm/1490nm	ONU	20km	-1~+4dBm	-26.5dBm	0~70°C
SP-GP-M12-ONU-020-OO	1.25G/2.5G	1310nm/1490nm	ONU	20km	-1~+4dBm	-27dBm	0~70°C
SP-GP-125-OLT-020-OO	1.25G	1490nm/1310nm	OLT	20km	+2~+7dBm	-30dBm	0~70°C
SP-GP-M25-OLT-020-OO	2.5G/1.25G	1490nm/1310nm	OLT	20km	+1~+5dBm	-30dBm	0~70°C

SPECTRUM TRANSCEIVER



X2

10-Gigabit Ethernet Transceiver Modules

FEATURES

- **Data Rate:** 10Gbps.
- **Wavelengths (λ):** 850nm, 1310nm, 1550nm.
- **Connector type:** SC (Duplex).
- **Distance:** up to 40km.
- Hot-Pluggable module.
- Compatible to major equipment vendors.
- Digital Diagnostic Monitoring (DDM).
- Support of IEEE 802.3ae 10GBASE-LR, 10GBASE-SR at 10.3 125Gbps.

ORDERING INFORMATION

X2

Part Number	Data Rate	Wavelength	Media Type	Distance	Tx Power. (dBm)	Rx Sens. (dBm)	Temp.(°C)
SP-X2-10G-085-M30-DO	10Gbps	850nm	MM	300m	-3~1dBm	-11.1dBm	0~70°C
SP-X2-10G-130-010-DO	10Gbps	1310nm	SM	10km	-8.2~0.5dBm	-14.4dBm	0~70°C
SP-X2-10G-150-040-DO	10Gbps	1550nm	SM	40km	-1~2dBm	-11.7dBm	0~70°C

SPECTRUM TRANSCEIVER ORDERING INFORMATION

SPECTRUM by TERRABIT Transceiver Modules are manufactured with final inspection, testing and programming. Our Transceiver's can be customized to work in all major branded routers and switches.

SA-BB-CCC-DDD-EEE-FG

S	A	BB	CCC	DDD	EEE	F	G
Spectrum	Temperature	Product Categories	Data Rate	Wavelength	Distance ^①	DDM	Coding ^②
	P: 0~70°C	SG: SGMII	155: 155Mbps	085: 850nm	M30: 300m	D: With DDM	C: please specify type
	I: -40~+85°C	GB: GBIC	622: 622Mbps	130: 1310nm	M50: 500m	O: No DDM	of equipment
		S+: SFP+	125: 1.25Gbps	150: 1550nm	002: 2km		O: No coding
		SF: SFP	250: 2.5Gbps	For Bi-Directional	010: 10km		
		XF: XFP	267: 2.67Gbps	B35: T1310/R1550nm	020: 20km		
		XE: XEPAK	425: 4.25Gbps	B53: T1550/R1310nm	040: 40km		
		GP: GPON	103: 10.3Gbps	B43: T1490/R1310nm	060: 60km		
			10G: 10Gbps	B34: T1310/R1490nm	080: 80km		
			M26: Multi Rate	For CMDM	160: 160km		
			100Mbps~2.67Gbps	C27: 1270nm	For CWDM		
			D25: Dual Rate	C29: 1290nm	018: 18dB		
			2.5/1.25Gbps	C31: 1310nm	024: 24dB		
			D12: Dual Rate	C33: 1330nm	028: 28dB		
			100/1.25Gbps	C35: 1350nm	029: 29dB		
				C37: 1370nm	032: 32dB		
				C39: 1390nm	034: 34dB		
				C41: 1410nm			
				C43: 1430nm			
				C45: 1450nm			
				C47: 1470nm			
				C49: 1490nm			
				C51: 1510nm			
				C53: 1530nm			
				C55: 1550nm			
				C57: 1570nm			
				C59: 1590nm			
				C61: 1610nm			
				COP: Copper SFP			
				ONU: ONU GPON			
				OLT: OLT GPON			

Note

① For other distance not indicated, please contact your sale representative.

② We offer compatible modules for any manufacturers: Cisco, Alcatel-Lucent, Foundary, Juniper, Extreme Networks, HP, Transition and many others. Please indicate your compatibility preference when placing your order. P/N's are subject to change.

SPECTRUM FIBER OPTIC COMPONENTS



E-2000

Adapter

FEATURES

- Single mode, Multimode.
- NTT standard compatible.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M	APC
Insertion Loss	Type 0.4 dB, Max 1dB	Type 0.2 dB, Max 0.5dB	Type 0.15dB, Max 0.4dB
Return Loss	50dB, Min 40dB	30dB , Min 20dB	50dB, Min 40dB
Mating Durability(500 timer)	Additional Loss≤0.1dB,Return Loss Variability<5dB		
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB		
Operating Temperature	-40 ~ +85°C		
Storage Temperature	-40 ~ +85°C		

ORDERING INFORMATION

SPAD-AABB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	E2: E-2000 Port	E2: E-2000 Port	S: Simplex	SM: Single Mode
				MM: Multi Mode

SPECTRUM FIBER OPTIC COMPONENTS



FC

Adapter

FEATURES

- Single mode.
- NTT standard compatible.
- Patch panel mount applications.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M(Zroz)	M.M(P.B)
Insertion Loss	≤0.2dB	≤0.3dB
Return Loss	≥45dB	-
Mating Durability(500 timer)	Additional Loss≤0.1 dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	FC: FC Port	FC: FC Port	S: Simplex	SM: Single Mode AP: APC

SPECTRUM FIBER OPTIC COMPONENTS



LC Adapter

FEATURES

- Single mode and Multimode.
- NTT standard compatible.
- LC 8Port high density for patch panel mount applications.
- Meet JIS5974 and bellcore GR-326 standard
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M(Zroz)	M.M(P.B)
Insertion Loss	≤0.2dB	≤0.3dB
Return Loss	≥45dB	-
Mating Durability(500 timer)	Additional Loss≤0.1 dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	LC: LC Port	LC: LC Port	S: Simplex	SM: Single Mode
			D: Duplex	MM: Multi Mode
				AP: APC

SPECTRUM FIBER OPTIC COMPONENTS



MTRJ

Adapter

FEATURES

- Single mode and Multimode.
- NTT standard compatible.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	Type 0.4 dB, Max 1dB	Type 0.2 dB, Max 0.5dB
Return Loss	50dB, Min 40dB	30dB , Min 20dB
Mating Durability(500 timer)	Additional Loss≤0.1 dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	MT: MTRJ Port	MT: MTRJ Port	D: Duplex	SM: Single Mode MM: Multi Mode

SPECTRUM FIBER OPTIC COMPONENTS



MU Adapter

FEATURES

- Single mode.
- NTT standard compatible.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

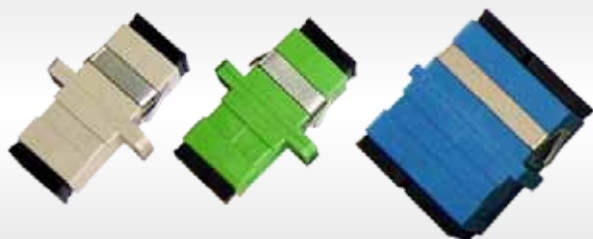
Model	S.M(Zroz)	M.M(P.B)
Insertion Loss	≤0.2dB	≤0.3dB
Return Loss	≥45dB	-
Mating Durability(500 timer)	Additional Loss≤0.1 dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	MU: MU Port	MU: MU Port	S: Simplex	SM: Single Mode

SPECTRUM FIBER OPTIC COMPONENTS



SC Adapter

FEATURES

- Single mode and Multimode.
- NTT standard compatible.
- SC2 8Port high density for patch panel mount applications.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M(Zroz)	M.M(P.B)
Insertion Loss	≤0.2dB	≤0.3dB
Return Loss	≥45dB	-
Mating Durability(500 timer)	Additional Loss≤0.1 dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	SC: SC Port	SC: SC Port	S: Simplex	SM: Single Mode
			D: Duplex	MM: Multi Mode
				AP: APC

SPECTRUM FIBER OPTIC COMPONENTS



ST Adapter

FEATURES

- Single mode and Multimode.
- NTT standard compatible.
- Meet JIS5974 and bellcore GR-326 standard.
- Compliant with IEC874-14 & IEC874-19.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

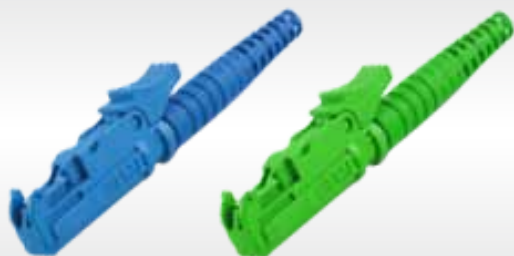
Model	S.M(Zroz)	M.M(P.B)
Insertion Loss	≤0.2dB	≤0.3dB
Return Loss	≥45dB	-
Mating Durability(500 timer)	Additional Loss≤0.1dB,Return Loss Variability<5dB	
Temperature Stability(-40 ~ 85°C)	Additional Loss≤0.2dB,Return Loss Variability<5dB	
Operating Temperature	-40 ~ +85°C	
Storage Temperature	-40 ~ +85°C	

ORDERING INFORMATION

SPAD-AA-BB-CDD

SPAD	AA-Port Type	BB-Port Type	C-Type	DD-Ferrule
Spectrum Adapter	ST: ST Port	ST: ST Port	S: Simplex	SM: Single Mode MM: Multi Mode

SPECTRUM FIBER OPTIC COMPONENTS



E-2000 Connector

FEATURES

- E-2000 Simplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M	APC
Insertion Loss	Type 0.2-0.4dB, Max 0.5-1dB		
Durability (1000 Mating)	0.2dB Max.		
Operating Temperature	-40 ~ +75°C		
Storage Temperature	-40 ~ +85°C		

Remark: Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	E2: E-2000 Connector	SM: Single Mode	S: Simplex
		MM: Multi Mode	D: Duplex
		AP: Apc	

SPECTRUM FIBER OPTIC COMPONENTS



FC Connector

FEATURES

- FC Simplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	≤ 0.3 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule Concentricity SM< 1 μ m; MM< 1.4 μ m

Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	FC: FC Connector	SM: Single Mode	S: Simplex
		MM: Multi Mode	
		AP: Apc	

SPECTRUM FIBER OPTIC COMPONENTS



LC Connector

FEATURES

- LC Simplex or Duplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	≤ 0.3 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule Concentricity SM< 1 μ m; MM< 1.4 μ m

Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	LC: LC Connector	SM: Single Mode	S: Simplex
		MM: Multi Mode	D: Duplex
		AP: Apc	

SPECTRUM FIBER OPTIC COMPONENTS



MTRJ

Connector

FEATURES

- MTRJ Duplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μm high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	Type 0.2-0.4dB, Max 0.5-1 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule inner diameter tolerance +1/-0μm

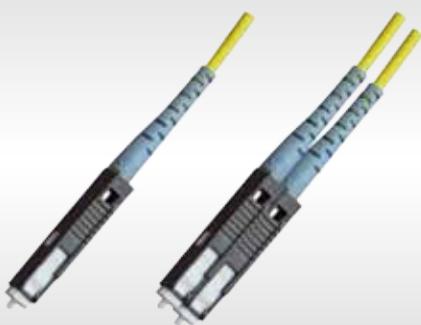
Ferrule outer diameter tolerance +/-0.5 μm

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	MT: MTRJ Connector	SM: Single Mode MM: Multi Mode	D: Duplex

SPECTRUM FIBER OPTIC COMPONENTS



MU

Connector

FEATURES

- MU Simplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard. compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	≤ 0.3 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule Concentricity SM< 1 μ m; MM< 1.4 μ m

Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	MU: MU Connector	SM: Single Mode MM: Multi Mode	S: Simplex

SPECTRUM FIBER OPTIC COMPONENTS



SC Connector

FEATURES

- SC Simplex or Duplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	≤ 0.3 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule Concentricity SM< 1 μ m; MM< 1.4 μ m

Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	SC: SC Connector	SM: Single Mode	S: Simplex
		MM: Multi Mode	D: Duplex
		AP: Apc	

SPECTRUM FIBER OPTIC COMPONENTS



ST Connector

FEATURES

- ST Simplex or Duplex.
- ANSI, IEC, TIA/EIA, NTT and JIS standard compatible.
- Precision mechanical dimensions.
- Zirconia ferrule PC or 8 degree APC diameter 125~128 μ m high concentricity.
- Single mode, Multimode and Angle PC.
- Multi-piece type or one-piece type is available.
- All parts compliant with ROHS.

TECHNICAL SPECIFICATIONS

Model	S.M	M.M
Insertion Loss	≤ 0.3 dB	
Durability (1000 Mating)	0.2dB Max.	
Operating Temperature	-40 ~ +75°C	
Storage Temperature	-40 ~ +85°C	

Remark: Ferrule Concentricity SM< 1 μ m; MM< 1.4 μ m

Ferrule inner diameter tolerance +1/-0 μ m

Ferrule outer diameter tolerance +/-0.5 μ m

ORDERING INFORMATION

SPC-AA-BB-C

SPC	AA-Connector Type	BB-Ferrule	C-Type
Spectrum Connector	ST: ST Connector	SM: Single Mode	S: Simplex
		MM: Multi Mode	D: Duplex
		AP: Apc	

SPECTRUM FIBER OPTIC COMPONENTS



E-2000

Patchcord & Pigtail

FEATURES

- Type E-2000 Fiber Optic Patchcord and Pigtail.
- Single mode, Multimode PC and Angle PC.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	E2: E-2000 Connector	U ₁ : UPC, Single Mode, Simplex	9SSM ₁ : 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U ₂ : UPC, Single Mode, Duplex	9DSM ₁ : 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U ₃ : UPC, Multi Mode, Simplex	5SMM ₁ : 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U ₄ : UPC, Multi Mode, Duplex	5DMM ₁ : 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
		A ₁ : APC, Simplex	6SMM ₁ : 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
		A ₂ : APC, Duplex	6DMM ₁ : 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM ₂ : 9/125μm, Simplex, Single Mode, LSZH	
			9DSM ₂ : 9/125μm, Duplex, Single Mode, LSZH	
			5SMM ₂ : 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM ₂ : 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM ₂ : 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM ₂ : 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM ₃ : 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM ₃ : 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM ₃ : 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM ₃ : 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM ₄ : 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM ₄ : 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM ₄ : 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM ₄ : 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

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SPECTRUM FIBER OPTIC COMPONENTS



FC

Patchcord & Pigtail

FEATURES

- Type FC Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode APC.
- Simplex or Duplex.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	FC: FC Connector	U ₁ : UPC, Single Mode, Simplex	9SSM ₁ : 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U ₂ : UPC, Single Mode, Duplex	9DSM ₁ : 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U ₃ : UPC, Multi Mode, Simplex	5SMM ₁ : 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U ₄ : UPC, Multi Mode, Duplex	5DMM ₁ : 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
		A ₁ : APC, Simplex	6SMM ₁ : 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
		A ₂ : APC, Duplex	6DMM ₁ : 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM ₂ : 9/125μm, Simplex, Single Mode, LSZH	
			9DSM ₂ : 9/125μm, Duplex, Single Mode, LSZH	
			5SMM ₂ : 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM ₂ : 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM ₂ : 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM ₂ : 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM ₃ : 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM ₃ : 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM ₃ : 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM ₃ : 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM ₄ : 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM ₄ : 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM ₄ : 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM ₄ : 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

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SPECTRUM FIBER OPTIC COMPONENTS



LC

Patchcord & Pigtail

FEATURES

- Type LC Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode APC.
- Simplex or Duplex.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	LC: LC Connector	U1: UPC, Single Mode, Simplex	9SSM1: 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U2: UPC, Single Mode, Duplex	9DSM1: 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U3: UPC, Multi Mode, Simplex	5SMM1: 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U4: UPC, Multi Mode, Duplex	5DMM1: 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
		A1: APC, Simplex	6SMM1: 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
		A2: APC, Duplex	6DMM1: 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM2: 9/125μm, Simplex, Single Mode, LSZH	
			9DSM2: 9/125μm, Duplex, Single Mode, LSZH	
			5SMM2: 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM2: 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM2: 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM2: 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM3: 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM3: 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM3: 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM3: 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM4: 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM4: 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM4: 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM4: 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

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SPECTRUM FIBER OPTIC COMPONENTS

SPECTRUM



MTRJ

Patchcord & Pigtail

FEATURES

- Type MTRJ Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC
Insertion Loss	SM	Type 0.4 dB, Max 1 dB	Type 0.4 dB, Max 1 dB	Type 0.4 dB, Max 1 dB
	MM	Type 0.2 dB, Max 0.5 dB	Type 0.2 dB, Max 0.5 dB	Type 0.2 dB, Max 0.5 dB
Return Loss	SM	50dB, Min 40dB	50dB, Min 40dB	50dB, Min 40dB
	MM	30dB, Min 20dB	30dB, Min 20dB	30dB, Min 20dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB		
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB		
Operating Temperature		-40 ~ +75°C		
Storage Temperature		-40 ~ +75°C		

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	MT: MTRJ Connector	U ₂ : UPC, Single Mode, Duplex	9SSM ₁ : 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U ₄ : UPC, Multi Mode, Duplex	9DSM ₁ : 9/125μm, Duplex, Single Mode, PVC	030: 30m
			5SMM ₁ : 50/125μm, Simplex, Multi Mode, PVC	300: 300m
			5DMM ₁ : 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
			6SMM ₁ : 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
			6DMM ₁ : 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM ₂ : 9/125μm, Simplex, Single Mode, LSZH	
			9DSM ₂ : 9/125μm, Duplex, Single Mode, LSZH	
			5SMM ₂ : 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM ₂ : 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM ₂ : 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM ₂ : 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM ₃ : 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM ₃ : 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM ₃ : 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM ₃ : 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM ₄ : 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM ₄ : 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM ₄ : 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM ₄ : 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

SPECTRUM FIBER OPTIC COMPONENTS



MU

Patchcord & Pigtail

FEATURES

- Type MU Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode.
- Simplex or Duplex.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	MU: MU Connector	U1: UPC, Single Mode, Simplex	9SSM1: 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U2: UPC, Single Mode, Duplex	9DSM1: 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U3: UPC, Multi Mode, Simplex	5SMM1: 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U4: UPC, Multi Mode, Duplex	5DMM1: 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
			6SMM1: 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
			6DMM1: 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM2: 9/125μm, Simplex, Single Mode, LSZH	
			9DSM2: 9/125μm, Duplex, Single Mode, LSZH	
			5SMM2: 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM2: 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM2: 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM2: 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM3: 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM3: 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM3: 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM3: 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM4: 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM4: 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM4: 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM4: 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

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SPECTRUM FIBER OPTIC COMPONENTS

SPECTRUM



SC

Patchcord & Pigtail

FEATURES

- Type SC Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode APC.
- Simplex or Duplex.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	SC: SC Connector	U ₁ : UPC, Single Mode, Simplex	9SSM ₁ : 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U ₂ : UPC, Single Mode, Duplex	9DSM ₁ : 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U ₃ : UPC, Multi Mode, Simplex	5SMM ₁ : 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U ₄ : UPC, Multi Mode, Duplex	5DMM ₁ : 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
		A ₁ : APC, Simplex	6SMM ₁ : 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
		A ₂ : APC, Duplex	6DMM ₁ : 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM ₂ : 9/125μm, Simplex, Single Mode, LSZH	
			9DSM ₂ : 9/125μm, Duplex, Single Mode, LSZH	
			5SMM ₂ : 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM ₂ : 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM ₂ : 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM ₂ : 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM ₃ : 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM ₃ : 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM ₃ : 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM ₃ : 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM ₄ : 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM ₄ : 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM ₄ : 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM ₄ : 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

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SPECTRUM FIBER OPTIC COMPONENTS



ST

Patchcord & Pigtail

FEATURES

- Type ST Fiber Optic Patchcord and Pigtail.
- Single mode and Multimode.
- Simplex or Duplex.
- Custom order length.
- Cable: PVC, LSZH, OM3, G-657A.
- All parts compliant with ROHS.
- IEC standard compatible.
- GR-326-CORE Compliant.

TECHNICAL SPECIFICATIONS

ITEM	Model	PC	SPC	UPC	APC
Insertion Loss	SM	≤0.25dB	≤0.20dB	≤0.20dB	≤0.15dB
	MM	≤0.30dB	≤0.20dB	≤0.20dB	≤0.30dB
Return Loss	SM	≥45dB	≥50dB	≥55dB	≥65dB
	MM	≥35dB	≥35dB	≥35dB	≥35dB
Repetition Test		Additional Loss≤0.1dB, Return Loss Variability<5dB			
Temperature Stability (-40 ~ 85°C)		Additional Loss≤0.2dB, Return Loss Variability<5dB			
Operating Temperature		-40 ~ +75°C			
Storage Temperature		-40 ~ +75°C			

ORDERING INFORMATION

SPPC-AAB-AAB-CCCC-DDD/SPPT-AAB-CCCC-DDD

SPPC/SPPT	AA-Connector Type	B-Contact Type	CCCC-Cable Type	DDD-Length*
Spectrum Patchcord	ST: ST Connector	U ₁ : UPC, Single Mode, Simplex	9SSM ₁ : 9/125μm, Simplex, Single Mode, PVC	003: 3m
Spectrum Pigtail		U ₂ : UPC, Single Mode, Duplex	9DSM ₁ : 9/125μm, Duplex, Single Mode, PVC	030: 30m
		U ₃ : UPC, Multi Mode, Simplex	5SMM ₁ : 50/125μm, Simplex, Multi Mode, PVC	300: 300m
		U ₄ : UPC, Multi Mode, Duplex	5DMM ₁ : 50/125μm, Duplex, Multi Mode, PVC	K03: 3000m
			6SMM ₁ : 62.5/125μm, Simplex, Multi Mode, PVC	(*As per Requirement)
			6DMM ₁ : 62.5/125μm, Duplex, Multi Mode, PVC	
			9SSM ₂ : 9/125μm, Simplex, Single Mode, LSZH	
			9DSM ₂ : 9/125μm, Duplex, Single Mode, LSZH	
			5SMM ₂ : 50/125μm, Simplex, Multi Mode, LSZH	
			5DMM ₂ : 50/125μm, Duplex, Multi Mode, LSZH	
			6SMM ₂ : 62.5/125μm, Simplex, Multi Mode, LSZH	
			6DMM ₂ : 62.5/125μm, Duplex, Multi Mode, LSZH	
			5SMM ₃ : 50/125μm, Simplex, Multi Mode, OM3, PVC	
			5DMM ₃ : 50/125μm, Duplex, Multi Mode, OM3, PVC	
			6SMM ₃ : 62.5/125μm, Simplex, Multi Mode, OM3, PVC	
			6DMM ₃ : 62.5/125μm, Duplex, Multi Mode, OM3, PVC	
			5SMM ₄ : 50/125μm, Simplex, Multi Mode, OM3, LSZH	
			5DMM ₄ : 50/125μm, Duplex, Multi Mode, OM3, LSZH	
			6SMM ₄ : 62.5/125μm, Simplex, Multi Mode, OM3, LSZH	
			6DMM ₄ : 62.5/125μm, Duplex, Multi Mode, OM3, LSZH	

For enquires, please email to sales@terrabitnet.com

SPECTRUM FIBER OPTIC COMPONENTS

SPECTRUM



FC Attenuator

FEATURES

- Male to Female Port.
- Female to Female Port.
- Meet JIS Standards.
- High Precise Size.
- Wavelength Independent.
- Plastic Casing/Metal Casing.

TECHNICAL SPECIFICATIONS

Item	Description
Operating Wavelength	1200nm, 1600nm or 1310nm, 1550nm
Attenuating	1db, 3db, 5db, 10db, 15db, 20db
Insertion Loss	≤0.2db
Return loss	≥50db (UPC), ≥55db (UPC), ≥65db (APC)
Anti Pulling Force	200-600G
Attenuation Accuracy	+/-0.5 (1-10), +/-1.0 (11-30)
Polarization Dependent Loss	≤0.2db
Maximum Optical Input Power	200nW
Operating Temperature	-40 to + 120°C

ORDERING INFORMATION

SPAT-AAB-CCDD-E

SPAT	AA-Port Type	B-Contact Type	CC-Type	DD-Attenuating Vaule	E-Casing Material
Spectrum Attenuator	FC: FC Port	U: UPC	MF: Male-Female Port	01: 1db	P: Plastic
		A: APC	FF: Female-Female Port	03: 3db	M: Metal
				05: 5db	
				10: 10db	
				15: 15db	
				20: 20db	

SPECTRUM FIBER OPTIC COMPONENTS



LC Attenuator

FEATURES

- Male to Female Port.
- Female to Female Port.
- Meet JIS Standards.
- High Precise Size.
- Wavelength Independent.
- Plastic Casing/Metal Casing.

TECHNICAL SPECIFICATIONS

Item	Description
Operating Wavelength	1200nm, 1600nm or 1310nm, 1550nm
Attenuating	1db, 3db, 5db, 10db, 15db, 20db
Insertion Loss	≤0.2db
Return loss	≥50db (UPC), ≥55db (UPC), ≥65db (APC)
Anti Pulling Force	200-600G
Attenuation Accuracy	+/-0.5 (1-10), +/-1.0 (11-30)
Polarization Dependent Loss	≤0.2db
Maximum Optical Input Power	200nW
Operating Temperature	-40 to + 120°C

ORDERING INFORMATION

SPAT-AAB-CCDD-E

SPAT	AA-Port Type	B-Contact Type	CC-Type	DD-Attenuating Vaule	E-Casing Material
Spectrum Attenuator	LC: LC Port	U: UPC	MF: Male-Female Port	01: 1db	P: Plastic
		A: APC	FF: Female-Female Port	03: 3db	M: Metal
				05: 5db	
				10: 10db	
				15: 15db	
				20: 20db	

SPECTRUM FIBER OPTIC COMPONENTS



MU

Attenuator

FEATURES

- Male to Female Port.
- Female to Female Port.
- Meet JIS Standards.
- High Precise Size.
- Wavelength Independent.
- Plastic Casing/Metal Casing.

TECHNICAL SPECIFICATIONS

Item	Description
Operating Wavelength	1200nm, 1600nm or 1310nm, 1550nm
Attenuating	1db, 3db, 5db, 10db, 15db, 20db
Insertion Loss	≤0.2db
Return loss	≥50db (UPC), ≥55db (UPC), ≥65db (APC)
Anti Pulling Force	200-600G
Attenuation Accuracy	+/-0.5 (1-10), +/-1.0 (11-30)
Polarization Dependent Loss	≤0.2db
Maximum Optical Input Power	200nW
Operating Temperature	-40 to + 120°C

ORDERING INFORMATION

SPAT-AAB-CCDD-E

SPAT	AA-Port Type	B-Contact Type	CC-Type	DD-Attenuating Vaule	E-Casing Material
Spectrum Attenuator	MU: MU Port	U: UPC	MF: Male-Female Port	01: 1db	P: Plastic
		A: APC	FF: Female-Female Port	03: 3db	M: Metal
				05: 5db	
				10: 10db	
				15: 15db	
				20: 20db	

SPECTRUM FIBER OPTIC COMPONENTS



SC

Attenuator

FEATURES

- Male to Female Port.
- Female to Female Port.
- Meet JIS Standards.
- High Precise Size.
- Wavelength Independent.
- Plastic Casing/Metal Casing.

TECHNICAL SPECIFICATIONS

Item	Description
Operating Wavelength	1200nm, 1600nm or 1310nm, 1550nm
Attenuating	1db, 3db, 5db, 10db, 15db, 20db
Insertion Loss	≤0.2db
Return loss	≥50db (UPC), ≥55db (UPC), ≥65db (APC)
Anti Pulling Force	200-600G
Attenuation Accuracy	+/-0.5 (1-10), +/-1.0 (11-30)
Polarization Dependent Loss	≤0.2db
Maximum Optical Input Power	200nW
Operating Temperature	-40 to + 120°C

ORDERING INFORMATION

SPAT-AAB-CCDD-E

SPAT	AA-Port Type	B-Contact Type	CC-Type	DD-Attenuating Vaule	E-Casing Material
Spectrum Attenuator	SC: SC Port	U: UPC	MF: Male-Female Port	01: 1db	P: Plastic
		A: APC	FF: Female-Female Port	03: 3db	M: Metal
				05: 5db	
				10: 10db	
				15: 15db	
				20: 20db	

SPECTRUM FIBER OPTIC COMPONENTS

SPECTRUM



ST Attenuator

FEATURES

- Male to Female Port.
- Female to Female Port.
- Meet JIS Standards.
- High Precise Size.
- Wavelength Independent.
- Plastic Casing/Metal Casing.

TECHNICAL SPECIFICATIONS

Item	Description
Operating Wavelength	1200nm, 1600nm or 1310nm, 1550nm
Attenuating	1db, 3db, 5db, 10db, 15db, 20db
Insertion Loss	≤0.2db
Return loss	≥50db (UPC), ≥55db (UPC), ≥65db (APC)
Anti Pulling Force	200-600G
Attenuation Accuracy	+/-0.5 (1-10), +/-1.0 (11-30)
Polarization Dependent Loss	≤0.2db
Maximum Optical Input Power	200nW
Operating Temperature	-40 to + 120°C

ORDERING INFORMATION

SPAT-AAB-CCDD-E

SPAT	AA-Port Type	B-Contact Type	CC-Type	DD-Attenuating Vaule	E-Casing Material
Spectrum Attenuator	ST: ST Port	U: UPC	MF: Male-Female Port	01: 1db	P: Plastic
		A: APC	FF: Female-Female Port	03: 3db	M: Metal
				05: 5db	
				10: 10db	
				15: 15db	
				20: 20db	

SPECTRUM FTTX



ODF Empty



ODF Loaded



Front Look

Optical Distribution Frame

FEATURES

- The frame is made of top quality steel and deformed aluminum alloy and treated with galvanizing, oxidation and electrostatic plastic spraying.
- Standard 19" installation, fully enclosed structure with the advantages of dust-proof, pleasing and neat appearance.
- Capacious space for fiber splice, patch and cable storage options. The frame can be installed against wall, side-by-side or back-to-back.

- 40 mm throughout entire frame and all modules for bend radius protection.
- Build-in storage spools for fiber jumper cables.
- Fully front accessible.
- Suitable for ribbon and non-ribbon optical fibers. Reliable holding, protection and earthing for optical cables.
- Different types of FDU(Fiber Distribution Unit) modules can be mounted into the ODF to manage fibers.

TECHNICAL SPECIFICATIONS

Standard configuration

ODF modules, Fiber management modules, Fiber sleeves, Saddle, Mark paper, Plastic protective tube for single/ribbon fiber, Insulating tape, Hose clamp, Earthing wire, Strength-core fixing panel, Fiber spooling pillar.

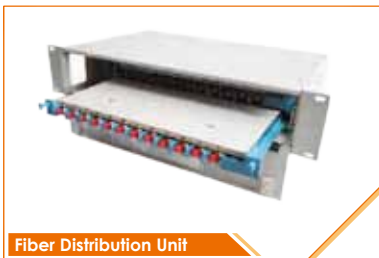
ORDERING INFORMATION

SP-ODF-A-B-C-D-E

A-FDU Module Type	B-Dimension	C-Port Capacity	D-Adapter Type	E-Pigtails
1: 19" fixed type	1: 2000 * 600 * 500mm	1: 576 ports	1: FC	1: With pigtails
2: 19" sliding type	2: 2000 * 600 * 300mm	2: 432 ports	2: SC/PC	2: Without pigtails
3: 19" rolling type	3: Others	3: 384 ports	3: SC/APC	
4: Empty		4: Others	4: Others	

Optional configuration

Adaptor, Patch cord, Pigtail.



Fiber Distribution Unit



Fiber Spooling Pillar



Adapters



FC Pigtail



SC Pigtail



0.25mm SC Pigtail

SPECTRUM FTTX

SPECTRUM



Combined splice&patch unit



Fiber Distribution Unit

FEATURES

- Modular design for 19" standard frame.
- Combined splice&patch units can be installed in the fiber management module.
- Flexible installation, convenient operation and maintenance compact size.

- Max capacity up to 96 ports.
- Optional slide-in&out design, easy for engineers to work on the frame.
- Optional rolling design, easy for engineers to manage fiber patching.

TECHNICAL SPECIFICATIONS

Standard configuration

Combined splice&patch unit, Installation screws, Fiber sleeves, Saddle, Mark paper, Plastic protective tube for single/ribbon fiber.

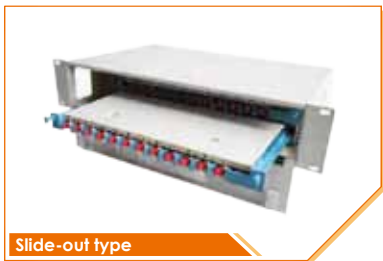
ORDERING INFORMATION

SP-ODF-A-B-C-D

A-FDU Type	B-Port Capacity	C-Adapter Type	D-Pigtails
1: 19" fixed type	1: 12 Ports	1: FC	1: With pigtails
2: 19" sliding type	2: 24 Ports	2: SC/PC	2: Without pigtails
3: 19" rolling type	3: 48 Ports	3: SC/APC	
	4: 96 Ports	4: Others	
	5: Others		

Optional configuration

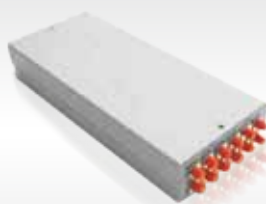
Adaptor, Patch cord, Pigtail.



SPECTRUM FTTX



Rack-mounted 19" design



Cassette design

Fiber Termination Box

FEATURES

- Rack-mounted 19" design or cassette design.
- Integrated with splice cassette and cable management tools.
- Manages small & large quantities of fiber with a high packing density.
- Easy to maintain and extend.
- Fiber bend radius control more than 40mm.
- Suitable for the splice of ribbon and bundle fibers.
- Capacity of up to 24 ports.
- Efficient cable management.
- Cassette nuts design to fix easily in the indoor cabinet.

TECHNICAL SPECIFICATIONS

ITEM	DESCRIPTION
Dimensions	(19") 465mm(W) * 280mm(D) * 1U(H)
Material	Mild Steel
Color	Powder coat black or computer grey
Maximum port capacity	48 port
Weight	2 Kg

Standard configuration

Splice cassette and cable management tools, Installation screws, Fiber sleeves, Plastic protective tube for single/ribbon fiber, hose clamp.

ORDERING INFORMATION

SP-ODF-A-B-C-D-E

A-Product Type	B-Port Capacity	C-Port Capacity	D-Adapter/Coupler Type	E-Splice Cassette
1: Rack-mounted 19" type	1: 06 ports	1: FC	1: FC	1: With splice cassette and cable management tools
2: Cassette type	2: 12 ports	2: SC/PC	2: SC/PC	2: Without splice cassette and cable management tools
	3: 24 ports	3: SC/APC	3: SC/APC	
		4: Others	4: Others	

Optional configuration

Adaptor, Patch cord, Pigtail.

SPECTRUM FTTX



DSLAM Outdoor Cabinet

FEATURES

- All aluminum frame chassis provides corrosion-free life.
- Single door design to efficiently achieve water-proof effect.
- Maximum heat dissipation by low influence of sun irradiation and offers maximum sealing effect.
- Built-in temperature sensor to well manage thermal equipments such like Heat exchanger, DC fans, Fan cooling unit...etc.
- Surge protector(thunder-protector) to well protect active equipments.

- Maximum protection against environment impact, vandalism, EMC and extreme thermal effects.
- Weld-free structure, solid design to reach IP55 protection level.
- Excellent sound isolation effect 19" rack mountable.
- Separated battery and MDF unit.
- Cabinet life more than 20 years.

TECHNICAL SPECIFICATIONS

Material and Finish

- Extruded aluminum profile chassis.

- Aluminum panels and doors.
- Coated with polyester powder paint.
- Protection against chemical materials, corrosion and effects of ultraviolet light.
- Doors are protected from external access through hidden hinges.
- Robust stainless steel locking system to prevent unauthorized access.

Standard configuration

Splicing tray, Fiber sleeves, Air switch, Power Strip, Surge protector, Insulating tape, Hose clamp.

ORDERING INFORMATION

SP-ADOC-A-B-C-D-E

A-Equipment Space	B-Voice Module Lines	C-Power Strip	D-Distribution Modules	E-Thermal Management Options
1: 5U	1: 600 loops	1: 3 sockets	1: Krone modules	1: Fan Cooling Unit
2: 3U	2: 300 loops	2: 6 sockets	2: RJ45 modules	2: Air Conditioner
3: Others	3: Others	3: Others	3: 110 modules	3: Heat Exchanger
			4: Others	

Optional configuration

Krone module, RJ45 module, 110 module, Patch cord, Fan cooling unit, Temperature sensor, Heater, Auto-reclosing leakage protector, Module/digital socket, ODF module, Air conditioner, Heat exchanger, Monitoring system, Lighting system, Door spacer, Test row, Security row, battery, Power switch.



Air-conditioner



Mounting Rail



Lighting System



Fiber Cable Hole Entries



Door Spacer

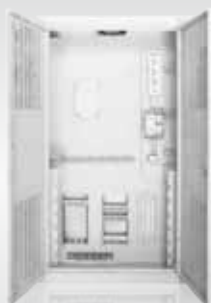


Krone Module

SPECTRUM FTTX



Front Look



Open Look

DSLAM Indoor Cabinet

FEATURES

- Single-door or double door design, convenient for installation & maintenance.
- Adopt Temperature-trigger fan system (triggering at 35 degrees), provide a steady temperature inside of the cabinet.
- Adopt 100L Krone module(optional 110 module) as MDF, convenient for cable forming and maintenance.
- Holes designed on the bottom panel of the cabinet, with dust-proof net, great performance on venting, dust-proofing and rain-proofing.

- Flexible configuration for clients' choices, simple operation and easy for maintenance.
- Capacious space for the installation of switches, network server, router, various optical active equipments, data distribution module, voice module and fiber splicing tray as per customers' requirements.
- Wall-mounted installation, convenient for maintenance.
- Fiber storage capacity up to 12 cores, and network panel 6-48 ports.
- Shutter design for cabinet window, in favour of the heat dispersing&venting of active equipment, auto-thunder protection.

- Using Spcc Cold Rolled Steel material, and surface treatment of deareasing, rustproof, phosphoric spraying, exquisite design with precise dimension and craftsmanship.

TECHNICAL SPECIFICATIONS

Standard configuration

Cabinet (Earthing Wire, lock, cable fastner and dust-proof cotton included),Power strip, Air switch, Splicing tray, distribution module bracket, Krone module, Accessories bag, wiring mounting bracket.

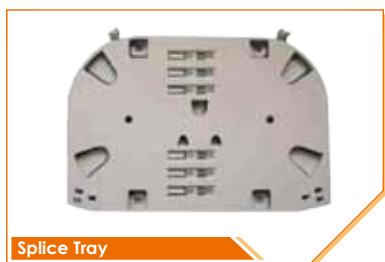
ORDERING INFORMATION

SP-ADIC-A-B-C-D-E

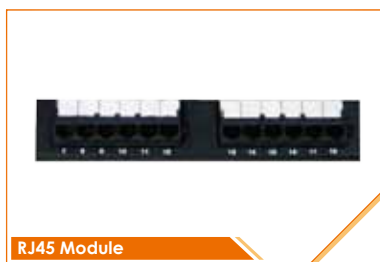
A-Door Type	B-Splice Tray	C-Power Strip	D-Power Sockets Standard	E-Distribution Module
1: Single door	1: 12 trays	1: 3 sockets	1: US standard	1: RJ45 module
2: Double door	2: 24 trays	2: 6 sockets	2: UK standard	2: Krone module
3: Others	3: Others	3: Others	3: EU standard	3: 110 module
			4: Others	4: Others

Optional configuration

Surge protector(lightning protector), Fan, Heater, Temperature Sensor, Over-circuit protector.



Splice Tray



RJ45 Module



Fan



Power Strip



Over-circuit Protector



Air Switch

SPECTRUM FTTX



Open Look

Multi-media FTTH Box

FEATURES

- Support most ONU installation.
- Fiber splicing area is independent.
- Well designed structure and stylish compute grey colour.

- Material: Mild steel Light-weight and space-saving dimension.
- Wall mounted and wall embeded installation method Voice&data module available.
- CCTV module available Data module available.

TECHNICAL SPECIFICATIONS

Standard configuration

Fiber sleeves, Saddle, insulating tape.

ORDERING INFORMATION

SP-FMB-A-B-C

A-Fiber Capacity	B-Adapter/coupler Type	C-Patch cord
1: 06 fiber	1: FC	1: With patch cord
2: 12 fiber	2: SC/PC	2: Without patch cord
3: 24 fiber	3: SC/APC	
4: Others	4: Others	

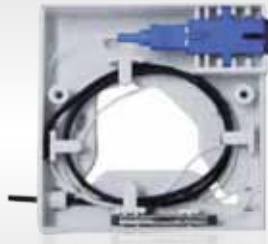
Optional configuration

Adaptor, Patch cord , Voice&data module, Data module, CATV module, Splicing tray or 86 socket, Fan cooling unit, Power strip, Air switch, ONU module.

SPECTRUM FTTX



Fusion Splicing Type



Field Fast Connection Type

Fiber Socket

FEATURES

- Standard 86 type panel which specifically suits family use in FTTH and FTTD.
- The adapter towards down which avoid the laser beams into the eyes directly.

- The clasp design for the cover greatly makes the installation easier. It matches up with other A86 electronic devices.
- Macro-diametered wrapping post in the box protects radically in a maximum way.
- Connection Method: Fusion splicing/field fast connection/L-type FA connector socket.

TECHNICAL SPECIFICATIONS

Physical Characteristics

Dimension: 86(L)*86(W)*27(D)mm

ORDERING INFORMATION

SP-FS-A-B-C

A-Connection Method	B-Adapter	C-Pigtail Diameter
1: Fusion splicing	1: SC/PC	1: 0.9mm
2: Field fast connection	2: SC/APC	2: 2.0mm
3: L-type FA connector socket	3: Others	3: 3.0mm

SPECTRUM FTTX



Front Look



Open Look

Optical Distribution Box

FEATURES

- Indoor fiber distribution box.
- Single door and dual door option Suitable for new and existing interconnect, crossconnect and co-location environments.
- Splicing and patching facility.
- Various adapters available.

- Modular structure expandable to 48 splices and patches.
- Solid steel construction.
- Deep black or Computer grey in colour.
- Electrostatic powder coating in surface treatment.
- Wall mountable.
- Splitter cassette available.
- Material: Mild steel.

TECHNICAL SPECIFICATIONS

Physical Characteristics

Dimensions: 440(W)*80(D)*400(H)mm

Material: Mild Steel

Weight: 5.2kg

Standard configuration

Splice cassette and cable management tools, Installation nuts, Fiber sleeves, Plastic protective tube for single/ribbon fiber, Hose clamp, Mark paper.

ORDERING INFORMATION

SP-DB-A-B-C-D

A-A-Port Capacity	B-Adapter/Coupler Type	C-Pigtail	D-Splice Cassette
1: 06 fiber	1: FC	1: FC	1: With splice cassette and cable management tools
2: 12 fiber	2: SC/PC	2: SC/PC	2: Without splice cassette and cable management tools
3: 24 fiber	3: SC/APC	3: SC/APC	
	4: Others	4: Others	

Optional configuration

Adaptor, Patch cord, Pigtail, Splitter cassette.



Splice Cassette



Adapters



Accessories Case

SPECTRUM FTTX



Front Look



Open Look

Optical Distribution Cabinet

FEATURES

- Modular design, easy installation and removal.
- Doors are protected from external access through hidden hinges.
- High resistivity against corrosion 19 inch mounting rails.
- Electrostatic epoxy powder painted surface treatment.
- Front lockable single door design to keep the cabinet safe, reliable and water-proof.
- Rust-proof material to ensure cabinets endure climate changes and adverse environment.
- Protection level reaches to IP65.
- Full front operation, easy access to cables, pigtails, patchcords, adapters and splices.
- Complete cable routing design with fiber bend radius over 40mm.
- Optimal management for patch cords with fiber storage units.
- Suitable for ribbon and non-ribbon optical fibers.
- Rack-mounted splitter module can be placed in the cabinet.

TECHNICAL SPECIFICATIONS

Standard configuration

Combined splice&patch unit, Fiber sleeves, Saddle, Mark paper, Plastic protective tube for single/ribbon fiber.

ORDERING INFORMATION

SP-ODC-A-B-C-D

A-Dimension	B-Port Capacity	C-Adapter Type	D-Pigtail
1: 1000*620*475mm	1: 288 ports	1: FC	1: With pigtails
2: 1000*620*330mm	2: 144 ports	2: SC/PC	2: Without pigtails
3: Others	3: 72 ports	3: SC/APC	
		4: Others	

Optional configuration

Adaptor, Patch cord, Pigtail.



Sliding-out Splice & Patch Cassette



Fiber Spooling Pillar



Fiber Fixed Ring



Inserted Sheath

SPECTRUM FTTX

SPECTRUM



Bare Fiber Type

Planar Lightwave Circuit Splitter (PLCS-A)

FEATURES

- Compact design.
- Low insertion loss and low PDL.
- High reliability.
- High channel counts.
- Wide wavelength range.
- Large operating temperature range.
- Customized packaging and configuration.
- Full Telcordia GR1209/1221 qualificationst.

TECHNICAL SPECIFICATIONS

PLCS(Without connector) optical parameters

Parameters		1x2	1x4	1x8	1x16	1x32	1x64	2x2	2x4	2x8	2x16	2x32	
1	Operating Wavelength(nm)	1260-1650											
2	Insertion Loss (dB)	Max(S/P)	4.0/3.8	7.4/7.2	10.7/10.5	13.7/13.5	16.9/16.5	21	3.9	7.4	10.6	14.2	17.4
3	Loss Uniformity (dB)	Max	0.4	0.6	0.8	1.2	1.7	2.5	0.6	1.2	1.5	1.8	2.0
4	Return Loss (dB)	Min(S/P)	50/55	50/55	50/55	50/55	50/55	50	50/55	50/55	50/55	50/55	50/55
5	PDL (dB)	Max	0.2	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.3	0.3	0.4
6	Directivity (dB)	Min	55	55	55	55	55	55	55	55	55	55	55
7	Pigtail Length(m)	1.2(±0.1) or customer specified											
8	Fiber Type	SMF -28e or customer specified											
9	Wavelength Dependent Loss(dB)		0.2	0.2	0.2	0.3	0.3	0.3	1	1	1	2	2
10	Temperature Stability(-40~85)(dB)		0.3	0.3	0.3	0.4	0.4	0.4	0.6	0.6	1	1	1
11	Operating Temperature(°C)	-40 ~ 85											
12	Storage Temperature(°C)	-40 ~ 85											
13	Packaging Size(L x W x H)(mm)		40x4x4	40x4x4	40x4x4	40x4x4	50x7x4	60x12x4	40x4x4	50x4x4	50x4x4	60x7x4	60x7x4

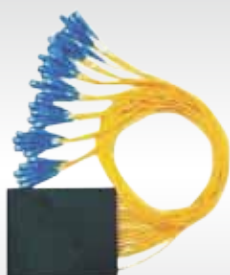
Note: All measurement were done at room temperature, and specifications exclude connectors.

ORDERING INFORMATION

SP-PLCSA-B-CC-DD-E-FF-G

B	CC	DD	E	FF	G
Input Fiber Type	Input Fiber length	Output Count	Output Fiber Type	Output Fiber Length	Connector Type
B=250um Bare Fiber	12=1.2m	04=4 channels	B=250um Bare Fiber	12=1.2m	0=None
L=900um Loose Tube	15=1.5m	08=8 channels	L=900um Loose Tube	15=1.5m	1=FC/UPC
T=900um Tight Buffer		16=16 channels	T=900um Tight Buffer		2=FC/APC
		32=32 channels			3=SC/UPC
					4=SC/APC
					5=LC
					X=Customized

SPECTRUM FTTX



Cassette Type

Planar Lightwave Circuit Splitter (PLCS-B)

FEATURES

- Compact design.
- Low insertion loss and low PDL.
- High reliability.
- High channel counts.
- Wide wavelength range.
- Large operating temperature range.
- Customized packaging and configuration.
- Full Telcordia GR1209/1221 qualificationst.

TECHNICAL SPECIFICATIONS

PLCS(Without connector) optical parameters

Parameters		1x2	1x4	1x8	1x16	1x32	1x64	2x4	2x8	2x16	2x32	2x64	
1	Operating Wavelength(nm)	1260-1650											
2	Insertion Loss (dB)	Max	4.0	7.7	11.5	14.5	18.2	22	8.0	11.5	14.7	17.6	21.5
3	Loss Uniformity (dB)	Max	0.4	0.8	1	1.4	1.9	2.5	1.2	1.2	1.8	2.0	2.5
4	Return Loss (dB)	APC Min(S/P)	50/55	50/55	50/55	550/55	50/55	50/55	55	55	55	55	55
		UPC Min(S/P)	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50
5	PDL (dB)	Max	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5
6	Directivity (dB)	Min	55	55	55	55	55	55	55	55	55	55	55
7	Pigtail Length(m)	1.0(±0.1) or customer specified											
8	Fiber Type	SMF -28e with 3mm cable or customer specified											
9	Operating Temperature(°C)	-20 ~ 65											
10	Storage Temperature(°C)	-40 ~ 85											
11	Housing Dimension(L x W x H)(mm)	100x70x9	100x70x9	100x70x9	120x80x18	140x114x18	140x114x18	100x70x9	100x70x9	120x80x18	140x114x18	140x114x18	

Note: All measurement were done at room temperature. and specifications exclude connectors.

ORDERING INFORMATION

SP-PLCSB-CCC-DD-EE-FF-GG

CCC	DD	EE	FF	GG
Input Output Count	Cassette Type	Fiber Cable Type	Connector Type	Fiber Length
104=1x4	PO= Type O, Plastic	09=0.9 mm	0=None	10=1.0 mm
108=1x8	PL=Type L, Plastic	20=2.0 mm	1=FC/UPC	15=1.5 mm
116=1x16	PS=Type S, Plastic	30=3.0 mm	2=FC/APC	XX=Customized
132=1x32	MO=Type O, Metal		3=SC/UPC	
204=2x4	ML=Type L, Metal		4=SC/APC	
	MS=Type S, Metal		5=LC	
			X=Customized	

SPECTRUM FTTX



Tray Type

Planar Lightwave Circuit Splitter (PLCS-C)

FEATURES

- Compact design.
- Low insertion loss and low PDL.
- High reliability.
- High channel counts.
- Wide wavelength range.
- Large operating temperature range.
- Customized packaging and configuration.
- Full Telcordia GR1209/1221 qualificationst.

TECHNICAL SPECIFICATIONS

PLCS(Without connector) optical parameters

Parameters			1x4	1x8	1x16	1x32	1x64	2x4	2x8	2x16	2x32	2x64
1	Operating Wavelength(nm)		1260-1650					1260-1650				
2	Insertion Loss (dB)	Max	7.7	11.5	14.5	18.2	22	8.0	11.5	14.7	17.6	21.5
3	Loss Uniformity (dB)	Max	0.8	1	1.4	1.9	1.9	1.2	1.2	1.8	2.0	2.5
4	Return Loss (dB)	APC Min(S/P)	50/55	50/55	550/55	50/55	50/55	55	55	55	55	55
		UPC Min(S/P)	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50
5	PDL (dB)	Max	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5
6	Directivity (dB)	Min	55	55	55	55	55	55	55	55	55	55
7	Temperature Stability(-40 ~ 85°C)(dB)		0.5	0.5	0.5	0.5	0.5					
8	Pigtail Length(m)							1.0(±0.1) or customer specified				
9	Fiber Type							SMF -28e with 3mm cable or customer specified				
10	Operating Temperature(°C)		-20 ~ 65					-20 ~ 65				
11	Storage Temperature(°C)		-40 ~ 85					-40 ~ 85				
12	Housing Dimension(L x W x H)(mm)							290x180x25(Other sizes can be tailored)				

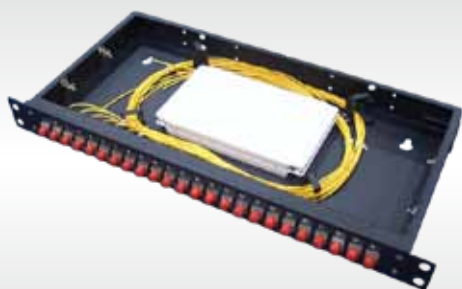
Note: All measurement were done at room temperature, and specifications exclude connectors.

ORDERING INFORMATION

SP-PLCSC-DDD-EE-F

DDD	EE	F
Input Output Count	Tray Type	Connector Type
104=1x4	PO= Tray, Plastic	0=None
108=1x8	MO=Tray, Metal	1=FC/UPC
116=1x16		2=FC/APC
132=1x32		3=SC/UPC
		4=SC/APC
		5=LC
		X=Customized

SPECTRUM FTTX



Rack Mounted Type

PLCS

Planar Lightwave Circuit Splitter (PLCS-D)

FEATURES

- Compact design.
- Low insertion loss and low PDL.
- High reliability.
- High channel counts.
- Wide wavelength range.
- Large operating temperature range.
- Customized packaging and configuration.
- Full Telcordia GR1209/1221 qualificationst.

TECHNICAL SPECIFICATIONS

PLCS(Without connector) optical parameters

Parameters		1x4	1x8	1x16	1x32	1x64	2x4	2x8	2x16	2x32	2x64
1 Operating Wavelength(nm)		1260-1650					1260-1650				
2 Insertion Loss (dB)	Max	7.7	11.5	14.5	18.2	22	8.0	11.5	14.7	17.6	21.5
3 Loss Uniformity (dB)	Max	0.8	1	1.4	1.9	1.9	1.2	1.2	1.8	2.0	2.5
4 Return Loss (dB)	APC Min(S/P)	50/55	50/55	550/55	50/55	50/55	55	55	55	55	55
	UPC Min(S/P)	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50	40/50
5 PDL (dB)	Max	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5
6 Directivity (dB)	Min	55	55	55	55	55	55	55	55	55	55
7 Temperature Stability(-40 ~ 85°C)(dB)		0.5	0.5	0.5	0.5	0.5					
8 Pigtail Length(m)							1.0(±0.1) or customer specified				
9 Fiber Type							SMF -28e with 3mm cable or customer specified				
10 Operating Temperature(°C)		-20 ~ 65					-20 ~ 65				
11 Storage Temperature(°C)		-40 ~ 85					-40 ~ 85				
12 Housing Dimension(L x W x H)(mm)							483x200x1U(45mm)				

Note: All measurement were done at room temperature. and specifications exclude connectors.

ORDERING INFORMATION

SP-PLCSD-EEE-F-G-HH

EEE	F	G	HH
Input Output Count	PLCS Type	Connector Type	Fiber Type
104=1x4	1=250um Bare Fiber	0=None	20=2.0mm G.652D Fiber
108=1x8	2=Module(default)	1=FC/UPC	30=3.0mm G.652D Fiber
116=1x16	3=Fan-out	2=FC/APC	09=0.9mm G.652D Fiber
132=1x32		3=SC/UPC	
		4=SC/APC	
		5=LC	
		X=Customized	

SPECTRUM CLEANING TOOLS

SPECTRUM



STANDARD ACCESSORIES

No.	Description	Qty
1	Microscope Adaptor for APC	1
2	Cleaning Cassette	1
3	Replacement Tape for Cleaning Cassette	2
4	Cleaning Stick 2.5mm	10
5	Cleaning Stick 1.25mm	10
6	Cleaning IPA Wipes	10
7	Fiber Microscope	1
8	Compressed Air	1
9	Carrying Case	1

TECHNICAL SPECIFICATIONS

Item	Description
Connectors cleaned	SC, SC2, FC, ST, DIN, D4 MU, LC, MT
Operating Temperature	10°C ~ 50°C
Humidity	20% ~ 80%
Preservation Temperature	4°C ~ 60°C

ORDERING INFORMATION

Model	Description
SP-FCT-01	Cleaning Cassette
SP-FCT-01-RT	Replacement Tape for Cleaning Cassette
SP-FCT-02-A	Cleaning Stick 2.5mm
SP-FCT-02-B	Cleaning Stick 1.25mm
SP-FCT-03	Cleaning IPA Wipes
SP-FCT-04	Fiber Microscope
SP-FCT-05	Compressed Air
SP-FCT-06	Carrying Case

For enquires, please email to sales@terrabitnet.com

SPECTRUM OPTICAL TOOL KIT



STANDARD ACCESSORIES

SP-OTK

No.	Description	Qty	No.	Description	Qty
1	Screwdriver bit for Adjusting Cutter	1	14	Medium-sized Adjustable Spanner	1
2	Small Hacksaw	1	15	Horizontal Stripper	1
3	Tape Line	1	16	Mini Socket Head Wrench Groups	1
4	Cotton Swab	1	17	Socket Head Wrench	1
5	Alcohol Dispenser	1	18	Cutter	1
6	Brush for Cleaning air ball	1	19	Straight Screwdriver	1
7	Needle Point Pliers	1	20	Straight Screwdriver	1
8	8 inch Pliers	1	21	Cross Screwdriver	1
9	Strengthened Core Cutter	1	22	Cross Screwdriver	1
10	Accurate Clamp	1	23	Marker	1
11	Clouser	1	24	Fiber Nipper	1
12	Pigtail Fiber Scissors	1	25	Tungsten Carbide Fiber Cutter	1
13	Loose Tube Stripper	1	26	Carrying Case	1

For enquires, please email to sales@terrabitnet.com

PD1-S21-0081-WS • 54	54 Web Smart Switch
PD1-S21-0161-WS • 55	
PD1-S21-2241-WS • 56	
PD1-S21-0081 • 57	57 Layer 2 Access Switch
PD1-S21-1161-E/EMI • 58	
PD1-S21-0261 • 59	
PD1-S21-1081-(POE) • 60	
PD1-S21-2241-E • 61	
PD1-S21-2261-G • 62	
PD1-S21-2281-(F/POE) • 63	
PD1-S21-4481 • 64	
PD1-S21-4481-C • 65	
PD1-S21-5081 • 66	
PD1-S21-5161 • 67	
PD1-S21-5241 • 68	
PD1-S21-5241-GX • 69	
PD1-S21-5281 • 70	
PD1-S21-5481-GX • 71	
PD1-S21-5521 • 72	
PD1-S31-4241-C • 73	73 Layer 3 Aggregation Switch
PD1-S31-4481 • 74	
PD1-S31-5121-GX • 75	
PD1-S31-5241-GX • 76	
PD1-S31-5241 • 77	
PD1-S31-5481 • 78	
PD1-S31-5241-E(GXE) • 79	
PD1-S31-5521-(POE/24) • 80	
PD1-S31-9281 • 81	
PD1-S31-9281-GX • 82	
PD1-S31-9481 • 83	
PD1-S61-8031 • 84	84 Core Switch
PD1-S61-8061 • 86	
PD1-S61-8101 • 88	
PD1-S81-5031 • 90	90 Carrier Core Switch
PD1-S81-5061 • 92	
PD1-S81-5101 • 94	

PRODIGY WEB SMART SWITCH



PD1-S21-0081-WS

WEB-Smart Ethernet Switch

FEATURES

Prominent performance

- ⦿ The uncongested large-volume design supports wire-speed forwarding. The bandwidth of the backplane is 3.2G respectively.

Convenient usage and maintenance

- ⦿ This series of switches can be managed in multiple modes such as WEB and snmp.
- ⦿ The straight-through cable and the intercrossed cable can be automatically identified.
- ⦿ Software upgrade can be conducted through the WEB page.
- ⦿ The configuration can be backed up or resumed through the WEB page.

Powerful flow/broadcast management

- ⦿ The broadcast storm can be automatically detected and limited, which effectively prevents the flooding of broadcast packets.
- ⦿ Anti-thunder design and high-voltage tolerance.
- ⦿ The flow control can be realized in full-duplex mode or half-duplex mode.
- ⦿ The detection of IGMP packets is supported.
- ⦿ The rate limitation in a step of 32K or 512K is supported on the Ethernet interface.

Flexible VLAN division

- ⦿ The two modes, 802.1Q VLAN and Port Vlan, are supported.

Port mirroring

- ⦿ The states of the interfaces of the switch can be online monitored through the mirroring interface so that network security can be monitored.
- ⦿ Multiple port mirroring policies, including one-to-one, one-to-multiple, multiple-to-one and multiple-to-multiple, are supported.

QoS

- ⦿ Supporting advanced buffer management and the 802.1p protocol.
- ⦿ Supporting priority policies such as FIFO, SP and WRR.
- ⦿ Identifying fields such as the ToS and DSCP fields.
- ⦿ Setting interface priority and multiple QoS priority ratios flexibly according to actual requirements.

Security & reliability

- ⦿ Supporting the SSTP and RSTP protocols.
- ⦿ Supporting MAC binding and security control on an interface.
- ⦿ Supporting L4 data filtration based on the UDP or TCP interface.
- ⦿ Supporting loopback detection of the port, which automatically detects and closes those ports when loopback occurs on these ports and automatically resumes communications when loopback disappears on these ports.

Mute design

- ⦿ Fan is not needed in case of the super-low voltage design, and unnecessary noise will therefore be prevented.

TECHNICAL SPECIFICATIONS

Interface

Port: 8 10/100M TX

Performance

Backplane bandwidth: 3.2 Gbps
Forwarding Rate: Full wire-speed filtering and forwarding
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Spanning tree protocol: SSTP, RSTP
Flow control: The backpressure is adopted in half-duplex mode, while 802.3x is adopted in full-duplex mode. The step of rate limitation is 32K or 512K.

Security control: MAC address binding L4 data filtration based on the UDP or TCP interface

Broadcast control: The broadcast storm is constrained. When the threshold value for controlling the broadcast storm is reached, the broadcast packets are stopped from being forwarded.

QoS: Supporting priority policies such as FIFO, SP and WRR. Supporting the queuing policy based on the DSCP, 802.1P and TCP/UDP interfaces.

Interface binding: Four interfaces can be bound in a group through dynamic LACP or static aggregation, and two groups can be supported simultaneously.

VLAN: Port-based VLAN 802.1Q VLAN, supporting 20 VLANs, 1-4094 random dividing

Broadcast function: IGMP snooping v1, v2

Network management: Remote management through WEB page, SNMPv1 management and SNMPv2 management

Power Requirements

Power: Up to 9W

Power characteristics: AC current: 110-260V(auto-adaptable), 47-63Hz, 1A/230V, or 60V broadcast & TV power

Physical Characteristics

Dimensions (LxWxH) (mm): 280x180x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-0081-WS	WEB Smart Ethernet Switch (8 ports 10/100M TX)

PRODIGY WEB SMART SWITCH



PD1-S21-0161-WS

WEB-Smart Ethernet Switch

FEATURES

Prominent performance

- ⦿ The uncongested large-volume design supports wire-speed forwarding. The bandwidth of the backplane is 6.4G respectively.

Convenient usage and maintenance

- ⦿ This series of switches can be managed in multiple modes such as WEB and snmp.
- ⦿ The straight-through cable and the intercrossed cable can be automatically identified.
- ⦿ Software upgrade can be conducted through the WEB page.
- ⦿ The configuration can be backed up or resumed through the WEB page.

Powerful flow/broadcast management

- ⦿ The broadcast storm can be automatically detected and limited, which effectively prevents the flooding of broadcast packets.
- ⦿ Anti-thunder design and high-voltage tolerance.
- ⦿ The flow control can be realized in full-duplex mode or half-duplex mode.
- ⦿ The detection of IGMP packets is supported.
- ⦿ The rate limitation in a step of 32K or 512K is supported on the Ethernet interface.

Flexible VLAN division

- ⦿ The two modes, 802.1Q VLAN and Port Vlan, are supported.

Port mirroring

- ⦿ The states of the interfaces of the switch can be online monitored through the mirroring interface so that network security can be monitored.
- ⦿ Multiple port mirroring policies, including one-to-one, one-to-multiple, multiple-to-one and multiple-to-multiple, are supported.

QoS

- ⦿ Supporting advanced buffer management and the 802.1p protocol.
- ⦿ Supporting priority policies such as FIFO, SP and WRR.
- ⦿ Identifying fields such as the ToS and DSCP fields.
- ⦿ Setting interface priority and multiple QoS priority ratios flexibly according to actual requirements.

Security & reliability

- ⦿ Supporting the SSTP and RSTP protocols.
- ⦿ Supporting MAC binding and security control on an interface.
- ⦿ Supporting L4 data filtration based on the UDP or TCP interface.
- ⦿ Supporting loopback detection of the port, which automatically detects and closes those ports when loopback occurs on these ports and automatically resumes communications when loopback disappears on these ports.

Mute design

- ⦿ Fan is not needed in case of the super-low voltage design, and unnecessary noise will therefore be prevented.

TECHNICAL SPECIFICATIONS

Interface

Port: 16 10/100M TX

Performance

Backplane bandwidth: 6.4 Gbps
Forwarding Rate: Full wire-speed filtering and forwarding
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Spanning tree protocol: SSTP, RSTP
Flow control: The backpressure is adopted in half-duplex mode, while 802.3x is adopted in full-duplex mode. The step of rate limitation is 32K or 512K.

Security control: MAC address binding L4 data filtration based on the UDP or TCP interface

Broadcast control: The broadcast storm is constrained. When the threshold value for controlling the broadcast storm is reached, the broadcast packets are stopped from being forwarded.

QoS: Supporting priority policies such as FIFO, SP and WRR. Supporting the queuing policy based on the DSCP, 802.1P and TCP/UDP interfaces.

Interface binding: Four interfaces can be bound in a group through dynamic LACP or static aggregation, and two groups can be supported simultaneously.

VLAN: Port-based VLAN 802.1Q VLAN, supporting 20 VLANs, 1-4094 random dividing

Broadcast function: IGMP snooping v1, v2

Network management: Remote management through WEB page, SNMPv1 management and SNMPv2 management

Power Requirements

Power: Up to 9W

Power characteristics: AC current: 110-260V(auto-adaptable), 47-63Hz, 1A/230V, or 60V broadcast & TV power

Physical Characteristics

Dimensions (LxWxH) (mm): 280x180x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-0161-WS	WEB Smart Ethernet Switch (16 ports 10/100M TX)

PRODIGY WEB SMART SWITCH



PD1-S21-2241-WS

WEB-Smart Ethernet Switch

FEATURES

Prominent performance

- ⦿ The uncongested large-volume design supports wire-speed forwarding. The bandwidth of the backplane is 12.8G respectively.

Convenient usage and maintenance

- ⦿ This series of switches can be managed in multiple modes such as WEB and snmp.
- ⦿ The straight-through cable and the intercrossed cable can be automatically identified.
- ⦿ Software upgrade can be conducted through the WEB page.
- ⦿ The configuration can be backed up or resumed through the WEB page.

Powerful flow/broadcast management

- ⦿ The broadcast storm can be automatically detected and limited, which effectively prevents the flooding of broadcast packets.
- ⦿ Anti-thunder design and high-voltage tolerance.
- ⦿ The flow control can be realized in full-duplex mode or half-duplex mode.
- ⦿ The detection of IGMP packets is supported.
- ⦿ The rate limitation in a step of 32K or 512K is supported on the Ethernet interface.

Flexible VLAN division

- ⦿ The two modes, 802.1Q VLAN and Port Vlan, are supported.

Port mirroring

- ⦿ The states of the interfaces of the switch can be online monitored through the mirroring interface so that network security can be monitored.
- ⦿ Multiple port mirroring policies, including one-to-one, one-to-multiple, multiple-to-one and multiple-to-multiple, are supported.

QoS

- ⦿ Supporting advanced buffer management and the 802.1p protocol.
- ⦿ Supporting priority policies such as FIFO, SP and WRR.
- ⦿ Identifying fields such as the ToS and DSCP fields.
- ⦿ Setting interface priority and multiple QoS priority ratios flexibly according to actual requirements.

Security & reliability

- ⦿ Supporting the SSTP and RSTP protocols.
- ⦿ Supporting MAC binding and security control on an interface.
- ⦿ Supporting L4 data filtration based on the UDP or TCP interface.
- ⦿ Supporting loopback detection of the port, which automatically detects and closes those ports when loopback occurs on these ports and automatically resumes communications when loopback disappears on these ports.

Mute design

- ⦿ Fan is not needed in case of the super-low voltage design, and unnecessary noise will therefore be prevented.

TECHNICAL SPECIFICATIONS

Interface

Port: 24 10/100M TX, 2 GSFP/TX Combo

Performance

Backplane bandwidth: 12.8 Gbps
Forwarding Rate: Full wire-speed filtering and forwarding
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Spanning tree protocol: SSTP, RSTP
Flow control: The backpressure is adopted in half-duplex mode, while 802.3x is adopted in full-duplex mode. The step of rate limitation is 32K or 512K.

Security control: MAC address binding L4 data filtration based on the UDP or TCP interface

Broadcast control: The broadcast storm is constrained. When the threshold value for controlling the broadcast storm is reached, the broadcast packets are stopped from being forwarded.

QoS: Supporting priority policies such as FIFO, SP and WRR. Supporting the queuing policy based on the DSCP, 802.1P and TCP/UDP interfaces.

Interface binding: Four interfaces can be bound in a group through dynamic LACP or static aggregation, and two groups can be supported simultaneously.

VLAN: Port-based VLAN 802.1Q VLAN, supporting 32 VLANs, 1-4094 random dividing

Broadcast function: IGMP snooping v1, v2

Network management: Remote management through WEB page, SNMPv1 management and SNMPv2 management

Power Requirements

Power: Up to 15W

Power characteristics: AC current: 110-260V(auto-adaptable), 47-63Hz, 1A/230V, or 60V broadcast & TV power

Physical Characteristics

Dimensions (LxWxH) (mm): 442x208x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-2241-WS	WEB Smart Ethernet Switch (24 ports 10/100M TX, 2 ports gigabit 10/100/1000M TX/SFP Combo)

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-0081

Network Manageable Ethernet Switch

FEATURES

Performance

- ⦿ All wire-speed forwarding, non-congestion design.
- ⦿ 3.2 Gbps switch fabric, dedicated ASIC for switching.

Security and reliability

- ⦿ Local security policy restricts illegal access.
- ⦿ IEEE 802.1x port-based user authentication.
- ⦿ Port trunking increases bandwidth and redundancy.

Easy maintenance

- ⦿ Automatic recognition for straight-through or cross-over cables.
- ⦿ Stackable through cluster technology. Central management with unified IP address saves IP addresses.
- ⦿ Management via CONSOLE port, SNMP, Web, Telnet, etc.
- ⦿ Software and BootRom upgrade through TFTP.

Traffic and broadcast control

- ⦿ Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- ⦿ Full- and half- duplex traffic control.
- ⦿ Ethernet port rate limiting with 64 K step size (1 M step size for rate over 1.8 M).
- ⦿ Advanced buffer management, 802.1p support. 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- ⦿ QoS support.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP, IEEE 802.1x port-based user authentication, RADIUS

Interface

Port & Slot: 8 * 10/100M TX
1 * Console Port

Performance

Switch Fabric: 3.2 Gbps
Forwarding Rate: All wire-speed forwarding and filtering
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Queueing Buffer: 4 MB
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag VLAN, GVRP dynamic VLAN configuration. Size: 4 K
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, port rate limiting: 64 K step size (1 M step size at rate over 1.8M)
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Port Trunking: Up to 8 groups with up to 4 ports per group, dynamic LACP aggregation
Clustering: Up to 256, manageable through single IP
QoS: 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
Network Management:

- SNMP
- RMON
- Telnet
- Command Line Interface (CLI)
- Support PRODIGY network management tools suite: Prodigy Director, and other general network management software

Software Upgrade: TFTP

Configuration Upload/download: TFTP

Power Requirements

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm): 340x200x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-0081	Network management Switch, 8 ports 10/100M TX

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-1161-E/EMI

Network Manageable Ethernet Switch

FEATURES

Performance

- All wire-speed forwarding, non-congestion design.
- 6.4 Gbps switch fabric, dedicated ASIC for switching.

Security and reliability

- Local security policy restricts illegal access.
- IEEE 802.1x port-based user authentication.
- Port trunking increases bandwidth and redundancy.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Software and BootRom upgrade through TFTP.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port rate limiting with 64 K step size (1 M step size for rate over 1.8 M).
- Advanced buffer management, 802.1p support. 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- QoS support.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP, IEEE 802.1x port-based user authentication, RADIUS

Interface

Port & Slot: 16 * 10/100M TX
1 * 100M SFP Slot
1 * Console Port

Performance

Switch Fabric: 6.4 Gbps

Forwarding Rate: All wire-speed forwarding and filtering

Switching Mode: Store-and-forward

MAC Address Table Size: 4 K

Queueing Buffer: 4 MB

LED Indicators: Power, system, link, activity, 10/100M

VLAN: Port-based VLAN, 802.1Q tag VLAN, GVRP dynamic VLAN configuration. Size: 4 K

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, port rate limiting: 64 K step size (1M step size at rate over 1.8M)

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 8 groups with up to 4 ports per group, dynamic LACP aggregation

Clustering: Up to 256, manageable through single IP

QoS: 4 dispatching queues per port, mapping the 8 priority queues in 802.1p

Network Management:

- SNMP
- RMON
- Telnet
- Command Line Interface (CLI)
- Support PRODIGY network management tools suite: Prodigy Director, and other general network management software
- Software Upgrade:** TFTP
- Configuration Upload/download:** TFTP

Power Requirements

Power input:

- **S2116E:** AC 100~240 V, 47 ~ 63 Hz
- **S2116E:** AC 60 V, 47 ~ 63 Hz

Physical Characteristics

Dimensions (LxWxH) (mm): 280x180x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-1161E	Network manageable Ethernet switch with 16 10/100M Fast Ethernet ports, 1 100M SFP slots, and 1 Console port.
PD1-S21-1161-EMI	Network manageable Ethernet switch with 16 10/100M Fast Ethernet ports, 1 100M SFP slots, and 1 Console port. 60V power supply.

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-0261

Network Manageable Ethernet Switch

FEATURES

Performance

- ⦿ All wire-speed forwarding, non-congestion design.
- ⦿ 9.6 Gbps switch fabric, dedicated ASIC for switching.

Security and reliability

- ⦿ Local security policy restricts illegal access.
- ⦿ IEEE 802.1x port-based user authentication.
- ⦿ Port trunking increases bandwidth and redundancy.

Easy maintenance

- ⦿ Automatic recognition for straight-through or cross-over cables.
- ⦿ Stackable through cluster technology. Central management with unified IP address saves IP addresses.
- ⦿ Management via CONSOLE port, SNMP, Web, Telnet, etc.
- ⦿ Software and BootRom upgrade through TFTP.

Traffic and broadcast control

- ⦿ Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- ⦿ Full- and half- duplex traffic control.
- ⦿ Ethernet port rate limiting with 64 K step size (1 M step size for rate over 1.8 M).
- ⦿ Advanced buffer management, 802.1p support. 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- ⦿ QoS support.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP, IEEE 802.1x port-based user authentication, RADIUS

Interface

Port & Slot: 24 * 10/100M TX
2 * 100M Slots
1 * Console Port

Performance

Switch Fabric: 9.6Gbps
Forwarding Rate: All wire-speed forwarding and filtering
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Queuing Buffer: 4 MB
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag VLAN, GVRP dynamic VLAN configuration. Size: 4 K
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, port rate limiting: 64 K step size (1M step size at rate over 1.8M)
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Port Trunking: Up to 8 groups with up to 4 ports per group, dynamic LACP aggregation
Clustering: Up to 256, manageable through single IP
QoS: 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
Network Management: SNMP, RMON, Telnet, Command Line Interface (CLI)
Support PRODIGY network management tools suite: Prodigy Director, and other general network management software
Software Upgrade: TFTP
Configuration Upload/download: TFTP

Power Requirements

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-0261	Network management Switch, 24 ports 10/100M TX +2 extendable 100M Module slots
PD1-LS1-1FE1-TX	1 port 10/100M TX module (used on PD1-S21-1161, PD1-S21-0261, PD1-S21-2241)
PD1-LS1-1FE1-FX(SM)	1 port 100Base-FX module, SM, SC, 15km, 1310nm (to be used on PD1-S21-1161, PD1-S21-0261, PD1-S21-2241)
PD1-LS1-1FE1-FX(MM)	1 port 100Base-FX module, MM, SC, 2km, 1310nm (to be used on PD1-S21-1161, PD1-S21-0261, PD1-S21-2241)
PD1-LS1-1FE1-SFP	1-port 1000-M SFP Module (need SFP module)

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-1081-(POE)

**Hi-performance, Network
Manageable Gigabit Ethernet Switch**

FEATURES

Performance

- 8Gbps switch fabric, non-congestion design, all wire-speed forwarding.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Port trunking adds to bandwidth and redundancy.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Software and BootRom upgrade through TFTP.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port rate limiting with 64 K step size (1 M step size for rate over 1.8 M).
- Advanced buffer management, 802.1p support. 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- QoS support.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP, link path backup
- IEEE 802.1w RSTP
- IEEE802.1s MSTP
- IEEE 802.1x port-based user authentication
- Remote authentication through RADIUS
- Port Security
- MAC filtering
- Port+MAC binding

Interface

- Port & Slot:** 8 * 10/100M TX
1 * GSFP/TX Combo
1 * Console Port

Performance

- Switch Fabric:** 8Gbps
Forwarding Rate: All wire-speed forwarding and filtering
Switching Mode: Store-and-forward
MAC Address Table Size: 4 K
Queuing Buffer: 32 MB
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag VLAN, GVRP, port isolation at per VLAN, QinQ
VLAN Number: 4K, partition at will
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, port rate limiting: 64 K step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Port Trunking: Up to 3 groups with up to 8 ports per group, dynamic LACP aggregation
Clustering: Up to 256, manageable through single IP

QoS: 4 dispatching queues per port, mapping the 8 priority queues in 802.1p

Network Management:

- SNMP
- RMON
- Telnet
- Com-mand Line Interface (CLI)
- Support PRODIGY network management tools suite: Prodigy Director, and other general network management software

Software Upgrade: TFTP

Configuration Upload/download: TFTP

Power Requirements

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm):

PD1-S21-1081: 230x147x44mm

PD1-S21-1081-POE: 340x200x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-1081	Network management Switch, 8 ports 10/100M TX +1 10/100/1000M TX/Gigabit SFP Combo port
PD1-S21-1081-POE	Network management switch, 8 ports 10/100M TX, 1 port 10/100/1000M TX/Gigabit SFP Combo, Support POE

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-2241-E

Hi-performance, Network Manageable Gigabit Ethernet Switch

FEATURES

Performance

- 24 Gbps switch fabric, non-congestion design, all wire-speed forwarding.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Port trunking adds to bandwidth and redundancy.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Software and BootRom upgrade through TFTP.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm; IGMP snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port rate limiting with 64 K step size (1 M step size for rate over 1.8 M).
- Advanced buffer management, 802.1p support. 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- QoS support.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP, link path backup
- IEEE 802.1w RSTP
- IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Remote authentication through RADIUS
- Port Security
- MAC filtering
- Port+MAC binding

Interface

- Port & Slot: 24 * 10/100M TX
- 2 * gigabit TX/SFP combo ports
- 1 * Console Port

Performance

- Switch Fabric:** 24Gbps
- Forwarding Rate:** All wire-speed forwarding and filtering
- Switching Mode:** Store-and-forward
- MAC Address Table Size:** 8 K
- Queuing Buffer:** 64 MB
- LED Indicators:** Power, system, link, activity, 10/100M
- VLAN:** Port-based VLAN, 802.1Q tag VLAN, GVRP, port isolation at per VLAN, QinQ
- VLAN Number:** 4K, partition at will
- Traffic Control:** Back pressure at half-duplex, 802.3x at full-duplex, port rate limiting: 64 K step size
- Storm Control:** Stop sending at threshold to restrict broadcast/multicast/unicast storms
- Multicast Control:** IGMP snooping
- Port Trunking:** Up to 3 groups with up to 8 ports per group, dynamic LACP or static aggregation
- Stacking:** Support hardware stack
- Clustering:** Up to 256, manageable through single IP
- QoS:** 4 dispatching queues per port, mapping the 8 priority queues in 802.1p

Network Management:

- SNMP
 - RMON
 - Telnet
 - Command Line Interface (CLI)
 - Support PRODIGY network management tools suite: Prodigy Director
 - other general network management software
- Software Upgrade:** TFTP
Configuration Upload/download: TFTP/FTP

Power Requirements

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-2241-E	Network manageable Ethernet switch with 24 10/100M Fast Ethernet ports, 2 gigabit TX/SFP combo ports, and 1 Console port.

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-2261-G/E

Hi-performance Gigabit Ethernet Switch

FEATURES

Performance

- 24 Gbps switch fabric, hardware routing, wire-speed L2 forwarding rate: 6.6 Mpps.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- IEEE 802.1x and other methods for user authentication.
- Powerful ACL supports L2-L7 data filtering.
- Support IPv6 ACL.
- Selective QinQ support.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port rate limiting with 64K step size.
- IP multicast and QoS support.
- Jumbo frame.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP, 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for IPv6 source/destination/TCP/UDP/protocol based ACL

- Hardware support time-based ACL
- Hardware support DHCP snooping
- Hardware support DAI, static/dynamic anti-ARP attack
- Support WEB interface authentication
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port & Slot: 24 * 10/100M TX
2 * GSFP/TX combo
1 * Console Port

Performance

Processor: RISC 200MHz
FLASH: 4 MB
Memory: 32 MB
Switch Fabric: 24Gbps
Forwarding Rate: All wire-speed forwarding and filtering
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Queuing Buffer: 64 MB
Jumbo frame: 2048
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag, VLAN, Private VLAN, GVRP dynamic VLAN configuration, selective QinQ
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports
Storm Control: Stop sending at threshold to restrict broadcast storms
Multicast Control: IGMP snooping
DHCP: DHCP snooping, DHCP option 82, IP source guard
Port Trunking: Up to 14 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification
Clustering: Up to 32, manageable through single IP
QoS:
• Head Of Line (HOL) blocking prevention mechanism
• 4 dispatching queues per port, mapping the 8 priority queues in 802.1p

- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH
- LLDP

Software Upgrade:

TFTP/FTP

Configuration Upload/download:

TFTP/FTP

Power Requirements

Power Consumption: 28 W (max.)
Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm
Weight(kg): 6.6kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-2261-G	Network management switch, 24 ports 10/100M TX, 2 ports Gigabit TX/SFP Combo
PD1-S21-2261-E	Network management switch, 24 ports 10/100M TX, 2 ports Gigabit TX/SFP Combo, combo port support 100M/1000M SFP

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-2281-(F/POE)

Hi-performance Gigabit Ethernet Switch

FEATURES

Performance

- 36 Gbps switch fabric, hardware routing, wire-speed L2 forwarding rate: 9.5 Mpps.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- IEEE 802.1x and other methods for user authentication.
- Powerful ACL supports L2-L7 data filtering.
- QinQ support. Double VLAN security.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port rate limiting with 1 M step size.
- QoS support.
- Jumbo frame.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP, 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL

- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port & Slot:

PD1-S21-2281

24 * 10/100M TX, 2 * 10/100/1000M TX
2 * GSFP/TX combo, 1 * Console Port

PD1-S21-2281-F

24 * 100M SFP slots, 2 * 10/100/1000M TX
2 * GSFP/TX combo, 1 * Console Port

PD1-S21-2281-POE

24 * 10/100M TX, 4 * GSFP/TX combo
1 * Console Port

Performance

Processor: MPC 50MHz

FLASH: 4 MB

Memory: 64 MB

Switch Fabric: 36 Gbps

Forwarding Rate: All wire-speed forwarding and filtering

Switching Mode: Store-and-forward

MAC Address Table Size: 8 K

Queuing Buffer: 64 MB

Jumbo frame: 2048

LED Indicators: Power, system, link, activity, 10/100M

VLAN: Port-based VLAN, 802.1Q tag, VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 6 groups with up to 8 ports per group, dynamic LACP or static aggregation

Clustering: Up to 256, manageable through single IP

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p

- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH
- LLDP

Software Upgrade: TFTP

Configuration Upload/download: TFTP

Power Requirements

Power Consumption: 28 W (max.)

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x225x44mm

Weight(kg): 6.6kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-2281	Network management Switch, 24 ports 10/100M TX + 2 ports 10/100/1000M TX +2 ports 10/100/1000M TX/Gigabit SFP combo
PD1-S21-2281-F	Enhanced Network management Switch, 24 ports 100M SFP + 2 ports 10/100/1000M TX +2 ports 10/100/1000M TX/Gigabit SFP combo
PD1-S21-2281-POE	Network management Switch, 24 ports 10/100M TX + 4 10/100/1000M TX/Gigabit SFP combo ports, support PoE

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-4481

Hi-performance Gigabit Ethernet Switch

FEATURES

Performance

- 36Gbps switch fabric, wire-speed forwarding rate: 13.1 Mpps.
- High port density. 48 Fast Ethernet ports, 4 Gigabit ports.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- IEEE 802.1x.
- Powerful ACL supports L2-L7 data filtering.
- Intelligent forwarding, complete defense against viruses like 'Code Red' or 'Blaster'.
- RPS power hot standby.
- QinQ support. Double VLAN security.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000.

Traffic and broadcast control

- Auto-detection and restraining of broadcast storm, IGMP snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port rate limiting with 64K step size.
- QoS support.
- Jumbo frame.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE802.1s MSTP, PVST
- IEEE 802.1x port-based user authentication

- QinQ double VLAN security
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Remote authentication through RADIUS
- User privilege classification and password protection
- DHCP-snooping, IP Source Guard, ARP inspection

Interface

Port & Slot: 48 * 10/100M TX
2 * 100/1000M Slots
(support up to 4 Gigabit Ports)
1 * Console Port

Performance

Processor: RISC 300MHz
FLASH: 8 MB
Memory: 128 MB (up to 512 MB)
Switch Fabric: 36 Gbps
Forwarding Rate: 13.1 Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 16 K
Queueing Buffer: 64 MB
Jumbo frame: 16383
802.1Q VLAN: 1 ~ 4094, partition at will
Stacking: Hardware stack upto 16 , software stack upto 32
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag,VLAN, Private VLAN, GVRP dynamic VLAN configuration
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size
Storm Control: Stop sending at threshold to restrict broadcast storms
Multicast Control: IGMP snooping
Port Trunking: Up to 8 groups with up to 32 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification
Clustering: Up to 256, manageable through single IP
QoS:
• Head Of Line (HOL) blocking prevention mechanism

- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS
- Ether-ring (Fast ring topology protection)

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH
- LLDP

Software Upgrade:

TFTP

Configuration Upload/download:

TFTP

Power Requirements

Power Consumption: 60 W (max.)
Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-4481	Network management Switch, 48 ports 10/100M TX + 2 extendable 10/100/1000M TX/Gigabit SFP Combo Module slots(up to 4 Gigbits ports), support rps redundant power supply
PD1-LS1-2GE1-TX/SFP	2-port 10/100/1000M TX/Gigabit SFP Combo Module (need SFP module)

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-4481-C

Hi-performance Gigabit Ethernet Switch

FEATURES

Performance

- 36Gbps switch fabric, wire-speed forwarding rate: 13.1 Mpps
- High port density. 48 Fast Ethernet ports, 2 Gigabit Ethernet ports, 2 Gigabit SFP slots
- 80-km transfer by Gigabit optical fiber, direct connection to WAN

Security and reliability

- IEEE 802.1x
- Powerful ACL supports L2-L7 data filtering
- Intelligent forwarding, complete defense against viruses like 'Code Red' or 'Blaster'
- QinQ support. Double VLAN security

Easy maintenance

- Automatic recognition for straight-through or cross-over cables
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses
- Management via CONSOLE port, SNMP, Web, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000

Traffic and broadcast control

- Auto-detection and restraining of broadcast/multicast/DLF storm, IGMP snooping, effectively restrict broadcast flooding
- Full- and half- duplex traffic control
- Ethernet port rate limiting with 64K step size
- Ethernet port rate limiting at 1M step size
- QoS support
- Jumbo frame

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE802.1s MSTP, PVST
- IEEE 802.1x port-based user authentication,

- QinQ double VLAN security.
- Port Security, static max.16 MAC addresses per port, dynamic max. 8K MAC address per port.
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Port-based user authentication by combinations and bandings of port, IP address, and MAC address.
- Remote authentication through RADIUS
- User privilege classification and password protection.

Interface

Port & Slot: 48 * 10/100M TX
2 * 10/100/1000M TX
2 * GSFP slots
1 * Console Port

Performance

Processor: MPC 50MHz
FLASH: 4 MB
Memory: 64 MB
Switch Fabric: 36 Gbps
Forwarding Rate: 13.1 Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
L2 multicast groups Table : 4 K
Queuing Buffer: 64 MB
Jumbo frame: 2 K
802.1Q VLAN: 1 ~ 4094, partition at will
Stacking: Hardware stack upto 16 , software stack upto 32
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 1M step size at 100M ports and 8M step size at 1000M ports
Storm Control: Broadcast, multicast, DLF
L2 Multicast: IGMP snooping
Port Trunking: Up to 6 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification
Clustering: Up to 256, manageable through single IP

QoS:

- Head Of Line (HOL) blocking prevention mechanism.
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p.
- WRR, WRR+SP(hybrid1), and FIFO queuing algorithms
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH
- LLDP

Software Upgrade:

TFTP/FTP

Configuration Upload/download:

TFTP/FTP

Power Requirements

Power Consumption: 40 W (max.)

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x385x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-4481-C	Network management Switch, 48 ports 10/100M TX + 2 10/100/1000M TX +2 Gigabit SFP Module slots,
	PD1-S21-4481 variant

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5081

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 24 Gbps switch fabric.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Flexibility

- Port1-4 are TX/SFP combo.

Security and reliability

- Support port mirroring.
- VLAN to isolate users for performance & security.
- QinQ supported.
- 802.1x supported.

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support SFP standard interface, protect your investment.
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication.

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm.
- Jumbo frame .

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1x port-based user authentication
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 6 10/100/1000M TX, 2 GSFP/TX Combo, 1 Console Port

Performance

Switch Fabric: 24 G

Forwarding Mode: Store-and-forward

MAC Address Table Size: 8 K

Jumbo frame: 9612

VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports

Multicast Control: IGMP snooping

Port Trunking: Up to 12 groups with up to 24 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Strict Priority
- Weighted Round Robin
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP

Software Upgrade: TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5081	Gigabit management switch, 6 ports 10/100/1000M TX + 2 ports 10/100/1000M TX/Gigabit SFP Combo

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5161

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 48 Gbps switch fabric.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Flexibility

- Port1-4 are TX/SFP combo.

Security and reliability

- Support port mirroring.
- VLAN to isolate users for performance & security.
- QinQ supported.
- 802.1x supported.

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support SFP standard interface, protect your investment.
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication.

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm.
- Jumbo frame .

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 12 10/100/1000M TX, 4 GSFP/TX Combo, 1 Console Port

Performance

Switch Fabric: 48 G

Forwarding Mode: Store-and-forward

MAC Address Table Size: 8 K

Jumbo frame: 9612

VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 12 groups with up to 24 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Strict Priority
- Weighted Round Robin
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP

Software Upgrade: TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5161	Gigabit management switch, 12 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5241

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 48 Gbps switch fabric.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Flexibility

- Port1-4 are TX/SFP combo.

Security and reliability

- Support port mirroring.
- VLAN to isolate users for performance & security.
- QinQ supported.
- 802.1x supported.

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support SFP standard interface, protect your investment.
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication.

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm.
- Jumbo frame .

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 20 10/100/1000M TX, 4 GSFP/TX Combo, 1 Console Port

Performance

Switch Fabric: 48 G

Forwarding Mode: Store-and-forward

MAC Address Table Size: 8 K

Jumbo frame: 9612

VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 12 groups with up to 24 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Strict Priority
- Weighted Round Robin
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP

Software Upgrade: TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5241	Gigabit management switch, 20 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5241-GX

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 64 Gbps switch fabric.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Flexibility

- Port1-4 are TX/SFP combo.

Security and reliability

- Support port mirroring.
- VLAN to isolate users for performance & security.
- QinQ supported.
- 802.1x supported.

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support SFP standard interface, protect your investment.
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication.

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm.
- Jumbo frame .

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 20 GSFP, 4 GSFP/TX Combo,
1 Console Port

Performance

Switch Fabric: 64 G

Forwarding Mode: Store-and-forward

MAC Address Table Size: 8 K

Jumbo frame: 12270

VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 12 groups with up to 24 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Strict Priority
- Weighted Round Robin
- 802.3ah: Discovery, Link Monitoring, Remote Failure Indication

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP

Software Upgrade: TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5241-GX	Gigabit management switch, 20 ports Gigabit SFP + 4 ports 10/100/1000M TX/Gigabit SFP Combo

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5281

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 72 Gbps switch fabric.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- QoS supports Layer2-4 traffic classification.
- Support port mirroring.
- VLAN to isolate users for performance & security.
- QinQ VPLS supported.
- 802.1x supported.

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 32G bandwidth, support up to 14 links.
- Effectively control multicast and broadcast storm.
- Jumbo frame.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 24 10/100/1000M TX
4 GSFP Slots
1 Console Port

Performance

Switch Fabric: 72 G
Forwarding Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 12270
VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration, QinQ
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
DHCP: DHCP snooping, DHCP option 82, IP source guard
Port Trunking: Up to 6 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH
- LLDP

Software Upgrade:

TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5281	Gigabit management switch, 24 ports 10/100/1000M TX + 4 ports Gigabit SFP

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5481-GX

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 128 Gbps switch fabric
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks

Flexibility

- Port45-48 is TX/SFP combo

Security and reliability

- QoS supports Layer2-4 traffic classification.
- Support port mirroring
- VLAN to isolate users for performance & security
- 802.1x supported

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP
- Support DHCP relay
- Support SFP standard interface, protect your investment

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm
- Jumbo frame

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP, 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

- Port: 44 gigabit SFP slots
- 4 SFP/TX Combo
- 1 Console Port

Performance

- **Switch Fabric:** 128 G
- **Forwarding Mode:** Store-and-forward
- **MAC Address Table Size:** 8 K
- **Jumbo frame:** 16383
- **VLAN:** Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration
- **Traffic Control:** Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports
- **Storm Control:** Stop sending at threshold to restrict broadcast/multicast/unicast storms
- **Multicast Control:** IGMP snooping
- **DHCP:** DHCP snooping, DHCP option 82, IP source guard
- **Port Trunking:** Up to 6 groups with up to 8 ports per group, dynamic LACP or static aggregation
- **Port Mirroring:** Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- DSCP
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH

Software Upgrade:

TFTP/FTP

Configuration Upload/download:

TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5481-GX	Gigabit management switch, 44 ports Gigabit SFP + 4 ports 10/100/1000M TX/Gigabit SFP Combo

PRODIGY LAYER 2 ACCESS SWITCH



PD1-S21-5521

Managed Gigabit Ethernet Switch

FEATURES

Excellent performance

- 192 Gbps switch fabric
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks

Security and reliability

- QoS supports Layer2-4 traffic classification
- Support port mirroring
- VLAN to isolate users for performance & security
- 802.1x supported

Easy maintenance

- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP
- Support DHCP relay
- Support SFP standard interface, protect your investment

Powerful traffic and broadcast management

- Port trunks technology can make a loading balancing links. Each link can reach 24G bandwidth, support up to 8 links.
- Effectively control multicast and broadcast storm
- Jumbo frame

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP
- IEEE 802.1w RSTP, 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port: 48 10/100/1000M TX
4 gigabit SFP slots
1 Console Port

Performance

Switch Fabric: 192 G
Forwarding Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 16383
VLAN: Port-based VLAN, 802.1Q tag VLAN, Private VLAN, GVRP dynamic VLAN configuration
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64K step size for 100-M ports, 8 M step size for Gigabit ports
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
DHCP: DHCP snooping, DHCP option 82, IP source guard
Port Trunking: Up to 6 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification

QoS:

- Head Of Line (HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- DSCP
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP
- SSH

Software Upgrade:

TFTP/FTP

Configuration Upload/download: TFTP/FTP

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S21-5521	Gigabit management switch, 48 ports 10/100/1000M TX + 4 ports Gigabit SFP

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-4241-C

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 36 Gbps switch fabric, hardware routing, wire-speed L3 forwarding rate: 9.6 Mpps.
- High port density. 24 100M ports and up to 4 Gigabit ports.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- IEEE 802.1x.
- Powerful ACL supports L2-L7 data filtering.
- Intelligent forwarding, complete defense against viruses like 'Code Red' or 'Blaster'.
- RPS power hot standby.
- QinQ double VLAN security.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000.

Traffic and broadcast control

- Auto-detection, restraining of broadcast storm and IGMP snooping effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port rate limiting with 64 K step size.
- IP multicast and QoS support.
- Jumbo frame.

Routing protocols

- Static routing.
- Support RIP v1/v2, OSPF v2, BEIGRP, BGP v4 and many other dynamic routing protocols.
- Support PIM-SM/DM.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE802.1s MSTP
- IEEE 802.1x port-based user authentication
- QinQ double VLAN Security
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Remote authentication through RADIUS
- User privilege classification and password protection
- IP Source Guard

Interface

Port & Slot: 24 10/100M TX, 4 GSFP/TX Combo, 1 Console Port

Performance

Processor: MPC 266MHz
FLASH: 8 MB
Memory: 128 MB (up to 512 MB)
Switch Fabric: 36Gbps
L3 Forwarding Rate: 9.6 Mpps, all wire-speed, with filtering
Switching Mode: Store-and-forward
MAC Address Table Size: 16 K
Queuing Buffer: 64 MB
Jumbo frame: 16383
Hardware Routing Table Size: 4 K
L2 multicast group: 1 K
L3 multicast group: 1 K
802.1Q VLAN: 1 ~ 4094, partition at will
LED Indicators: Power, system, link, activity, 10/100M
VLAN: Port-based VLAN, 802.1Q tag VLAN, VLAN Stacking (QinQ), Super VLAN, Private VLAN, GVRP dynamic VLAN configuration
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64 K step size
Storm Control: Broadcast/Multicast/Unicast
Multicast Control: IGMP snooping
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification and based on port
Clustering: Up to 256, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BEIGRP (compatible with Cisco EIGRP), BGP v4, Intelligent forwarding to defend against virus attacks and illegal access

Multicast: IGMP v1/v2/v3, PIM-SM/DM

Proxy: Proxy ARP, DNS Proxy

DHCP: DHCP Server/Client/Relay, DHCP option 82, IP Source Guard

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging, RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet, Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP, TFTP/FTP

Power Requirements

Power Consumption: 30 W (max.)

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x385x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-4241-C	Network management switch, 24 ports 10/100M TX, 4 ports Gigabit TX/SFP Combo

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-4481

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 36 Gbps switch fabric, hardware routing, wire-speed L3 forwarding rate: 13.1 Mpps.
- High port density. 48 100M Fast Ethernet ports and up to 4 Gigabit ports.
- 80-km transfer by Gigabit optical fiber, direct connection to WAN.

Security and reliability

- IEEE 802.1x and HTTP user authentication.
- Powerful ACL supports L2-L7 data filtering.
- Intelligent forwarding, complete defense against viruses like 'Code Red' or 'Blaster'.
- RPS power hot standby.
- QinQ double VLAN security.

Easy maintenance

- Automatic recognition for straight-through or cross-over cables.
- Stackable physically and through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, Telnet, etc.
- Support (Terrabit Networks) Prodigy Director, HP Open View, Cisco Works 2000.

Traffic and broadcast control

- Auto-detection, restraining of broadcast storm and IGMP snooping effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port rate limiting with 64 K step size.
- IP multicast and QoS support.
- Jumbo frame.

Routing protocols

- Static routing.
- Support RIP v1/v2, OSPF v2, BEIGRP, BGP v4 and many other dynamic routing protocols.
- Support PIM-SM/DM, DVMRP and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE802.1s MSTP
- IEEE 802.1x port-based user authentication
- QinQ double VLAN Security
- Port Security
- Hardware support for IP ACL, MAC ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- Remote authentication through RADIUS
- User privilege classification and password protection

Interface

Port & Slot: 48 10/100M TX, 2 100/1000M Slots, 1 Console Port

Performance

Processor: RISC 300 MHz

FLASH: 8 MB

Memory: 128 MB (up to 512 MB)

Switch Fabric: 36Gbps

L3 Forwarding Rate: 13.1 Mpps, all wire-speed, with filtering

Switching Mode: Store-and-forward

MAC Address Table Size: 16 K

Queuing Buffer: 64 MB

Jumbo frame: 16383

Routing Table Size: 30 K

802.1Q VLAN: 1 ~ 4094, partition at will

LED Indicators: Power, system, link, activity, 10/100M

VLAN: Port-based VLAN, 802.1Q tag VLAN, VLAN Stacking (QinQ), Super VLAN, Private VLAN, GVRP dynamic VLAN configuration

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 64 K step size

Broadcast Control: Stop sending at threshold to restrict broadcast storms

Multicast Control: IGMP snooping

Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification and based on port

Clustering: Up to 256, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BEIGRP (compatible with Cisco EIGRP), BGP v4, Intelligent forwarding to defend against virus attacks and illegal access

Multicast: IGMP v1/v2/v3, PIM-SM/DM

Redundant Routing: VRRP

Proxy: Proxy ARP, DNS Proxy

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet, Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 60 W (max.)

Power input: AC 100~240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-4481	Network management Switch, 48 ports 10/100MTX + 2 10/100/1000M TX/Gigabit SFP Combo Module Slots (up to 4 gigabit ports), support rps redundant power supply
PD1-LS1-2GE1-TX/SFP	2-port 10/100/1000M TX/Gigabit SFP Combo Module (need GSFP module)
PD1-LS1-2FE1-SFP	2-port 100M SFP Ethernet Module (need FSFP module)

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH

PRODIGY



PD1-S31-5121-GX

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 48 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 18 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing polices

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.
- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- Remote authentication through RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 8 GSFP Slots, 4 GSFP/TX Combo

Performance

Switch Fabric: 48G
Forwarding Rate: 18 Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 16383
Max. VLAN: 4 K
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification and based on port
Clustering: Up to 32, manageable through single IP
Unicast: Static, RIP v1/v2, OSPF v2, BGP v4
Multicast: IGMP v1/v2/v3, PIM-SM/DM
Redundant Routing: VRRP
DHCP: DHCP Server/Client/Relay
NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 30 W (max.)
Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm
Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5121-GX	Network management Router Switch, 8 gigabit SFP ports + 4 ports 10/100/1000M TX/Gigabit SFP Combo

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-5241-GX

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 64 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 36 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing policies

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.
- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- Remote authentication through RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 20 GSFP Slots, 4 GSFP/TX Combo

Performance

Switch Fabric: 64G
Forwarding Rate: 36 Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 16383
Max. VLAN: 4 K
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification and based on port
Clustering: Up to 32, manageable through single IP
Unicast: Static, RIP v1/v2, OSPF v2, BGP v4
Multicast: IGMP v1/v2/v3, PIM-SM/DM
Redundant Routing: VRRP
DHCP: DHCP Server/Client/Relay
NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 30 W (max.)
Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm
Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5241-GX	Network management Router Switch, 20 gigabit SFP ports + 4 ports 10/100/1000M TX/Gigabit SFP Combo, support rps redundant power supply

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-5241

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 64 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 36 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing polices

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.
- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- Remote authentication through RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 20 10/100/1000M TX, 4 GSFP/TX Combo

Performance

Switch Fabric: 64G

Forwarding Rate: 36 Mpps

Switching Mode: Store-and-forward

MAC Address Table Size: 8 K

Jumbo frame: 16383

Max. VLAN: 4 K

VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)

Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size

Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms

Multicast Control: IGMP snooping

Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM

Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification and based on port

Clustering: Up to 32, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BGP v4

Multicast: IGMP v1/v2/v3, PIM-SM/DM

Redundant Routing: VRRP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 30 W (max.)

Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5241	Network management Router Switch, 20 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo, support rps redundant power supply

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-5481

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 192 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 71 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing policies

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.
- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- Remote authentication through RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 44 10/100/1000M TX, 4 GSFP/TX Combo

Performance

Switch Fabric: 192G
Forwarding Rate: 71 Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 16383
Max. VLAN: 4 K
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification and based on port
Clustering: Up to 32, manageable through single IP
Unicast: Static, RIP v1/v2, OSPF v2, BGP v4
Multicast: IGMP v1/v2/v3, PIM-SM/DM
Redundant Routing: VRRP
DHCP: DHCP Server/Client/Relay
NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 30 W (max.)
Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x374x44.5mm
Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 0 ~ 50°C,
non-operating Temperature: -40 ~ 70°C
Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5481	Network management Router Switch, 44 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo, support rps redundant power supply

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-5241-E(GXE)

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 64 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 36 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootROM and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing policies

- Static routing, Support VRF

- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols
- Support PIM-SM, PIM-DM and many other multicast routing protocols

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

- Port: PD1-S31-5241-E**
20 10/100/1000M TX, 4 GSFP/TX Combo
- PD1-S31-5241-GXE**
20 GSFP Slots, 4 GSFP/TX Combo

Performance

- Switch Fabric:** 64G
- Forwarding Rate:** 36Mpps
- Switching Mode:** Store-and-forward
- MAC Address Table Size:** 32 K
- Jumbo frame:** 16383
- Max. VLAN:** 4 K
- Routing Table Size:** 20 K
- VLAN:** Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (Selective QinQ)
- Traffic Control:** Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
- Storm Control:** Stop sending at threshold to restrict broadcast/multicast/unicast storms
- Multicast Control:** IGMP snooping
- Multicast Protocol:** IGMP v1/v2/v3, PIM-SM, PIM-DM
- Port Trunking:** Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

Clustering: Up to 32, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BGP v4

Multicast: IGMP v1/v2/v3, PIM-SM/DM

Redundant Routing: VRRP

Proxy: Proxy ARP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging, RTS

Network Management:

- SNMP v1/v2, RMON(Group 1, 2, 3, 9), Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 30 W (max.)

Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 20 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5241-E	Network management Router Switch, 20 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo, support MCE, support rps redundant power supply
PD1-S31-5241-GXE	Network management Router Switch, 20 gigabit SFP ports + 4 ports 10/100/1000M TX/Gigabit SFP Combo, support MCE, support rps redundant power supply
PD1-S31-5241-GXE-2AC	Network management Router Switch, 20 gigabit SFP ports + 4 ports 10/100/1000M TX/Gigabit SFP Combo, 2 AC power supply, support MCE, support rps redundant power supply

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-5521-(POE/24)

Hi-performance Gigabit Ethernet Switch

FEATURES

Excellent performance

- 160 Gbps switch fabric.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 78 Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.
- Web portal authentication.
- Redundant power supply.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half-duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing policies

- Static routing
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 48 10/100/1000M TX, 4 Gigabit SFP slots

Performance

Switch Fabric: 160Gbps
Forwarding Rate: 78Mpps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Jumbo frame: 16383
Max. VLAN: 4 K
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation
Port Mirroring: Supported. Can be based on flow classification
Unicast: Static, RIP v1/v2, OSPF v2, BGP v4
Redundant Routing: VRRP

Proxy: Proxy ARP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- WRR, SP, and FIFO queuing algorithms
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging
- RTS

Network Management:

- SNMP v1/v2
- RMON(Group 1, 2, 3, 9)
- Telnet
- Command Line Interface(CLI)
- Web interface
- Support PRODIGY network management tools suite: Prodigy Director
- NTP, SSH, LLDP

Power Requirements

Power Consumption: 120 W (max.)

Power input: AC 100 ~ 240 V, 47 ~ 63 Hz, DC 44 ~ 53 V

Physical Characteristics

Dimensions (LxWxH) (mm): 440x280x44.5mm

Weight (kg): < 5 kg

Environmental Limits

Operating Temperature: 20 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-5521	Network management Router Switch, 48 ports 10/100/1000M TX + 4 ports Gigabit SFP, support rps redundant power supply
PD1-S31-5521-POE	Network management Router Switch, 48 ports 10/100/1000M TX + 4 ports Gigabit SFP, Support PoE, support rps redundant power supply
PD1-S31-5521-POE-24	Network Management Router Switch, 48 ports 10/100/1000M POE TX, 4 Gigabit SFP slots (not including SFP modules, RPS Connection Interface, External 1000W power supply included), only 24 ports support PoE

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-9281

Hi-performance 10Gigabit Ethernet Switch

FEATURES

Excellent performance

- 240 Gbps switch fabric, at least extend to 4*10GE XFP ports.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 131Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootROM and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.
- Redundant power supply.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing polices

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.

- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

- Port: 20 10/100/1000M TX, 4 GSFP/TX Combo, 2 10G slots (up to 4 10G XFP ports), 1 Console Port

Performance

- Processor: RISC 300MHz
- Flash: 8 MB
- Memory: 128 MB (up to 256MB)
- L3 Forwarding Rate: 96Mpps all wire-speed, with filtering
- Switch Fabric: 240G bps
- Switching Mode: Store-and-forward
- MAC Address Table Size: 8 K
- Queue Buffer: 64 MB
- Jumbo frame: 16383
- VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
- Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
- Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
- Multicast Control: IGMP snooping
- Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
- Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

Clustering: Up to 32, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BGP v4

Policy-based Routing: IP-based routing policies

Redundant Routing: VRRP

Proxy: Proxy ARP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- WRR, SP, and FIFO queuing algorithms
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging, RTS

Network Management:

- SNMP v1/v2, RMON(Group 1, 2, 3, 9), Telnet
- Command Line Interface(CLI), Web interface
- Support PRODIGY network management tools suite: Prodigy Director, NTP, SSH, LLDP

Power Requirements

Power Consumption: 60 W (max.)

Power Input: AC 100 ~ 240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-9281	Network management Router Switch, 20 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo + 2 extendable 10G module slots (up to 4 XFP ports), support rps redundant power supply
PD1-LS1-3921-8-1TE-XFP	1 port 10G XFP module base board
PD1-LS1-3921-8-2TE-XFP	2 port 10G XFP module base board

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-9281-GX

Hi-performance 10Gigabit Ethernet Switch

FEATURES

Excellent performance

- 240 Gbps switch fabric, at least extend to 4*10GE XFP ports.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 131Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootRom and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.
- Redundant power supply.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing polices

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.

- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 20 Gigabit SFP slots, 4 GSFP/TX Combo, 2 10G slots (up to 4 10G XFP ports), 1 Console Port

Performance

Processor: RISC 300MHz
Flash: 8 MB
Memory: 128 MB (up to 256MB)
L3 Forwarding Rate: 96Mpps all wire-speed, with filtering
Switch Fabric: 240G bps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Queue Buffer: 64 MB
Jumbo frame: 16383
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

Clustering: Up to 32, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BGP v4

Policy-based Routing: IP-based routing policies

Redundant Routing: VRRP

Proxy: Proxy ARP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- WRR, SP, and FIFO queuing algorithms
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging, RTS

Network Management:

- SNMP v1/v2, RMON(Group 1, 2, 3, 9), Telnet
- Command Line Interface(CLI), Web interface
- Support PRODIGY network management tools suite: Prodigy Director, NTP, SSH, LLDP

Power Requirements

Power Consumption: 60 W (max.)

Power Input: AC 100 ~ 240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-9281-GX	Network management Router Switch, 20 Gigabit SFP ports + 4 ports 10/100/1000M TX/Gigabit SFP Combo + 2 extendable 10G module slots (up to 4 XFP ports), support rps redundant power supply
PD1-LS1-3921-8-1TE-XFP	1 port 10G XFP module base board
PD1-LS1-3921-8-2TE-XFP	2 port 10G XFP module base board

For enquires, please email to sales@terrabitnet.com

PRODIGY LAYER 3 AGGREGATION SWITCH



PD1-S31-9481

Hi-performance 10Gigabit Ethernet Switch

FEATURES

Excellent performance

- 280 Gbps switch fabric, at least extend to 4*10GE XFP ports.
- Hardware routing, wire-speed L3 switching, packet forwarding rate: 131Mpps.
- Giga optical fiber supports up to 80 km long-distance transfer, direct connection to MAN backbone networks.

Security and reliability

- Quota system for connected hosts per port.
- IEEE 802.1x port-based user authentication.
- Ethernet port trunking provides more bandwidth and system redundancy.
- Powerful ACL supports L2-L4 data filtering.

Easy maintenance

- Supports device stacking through cluster technology. Central management with unified IP address saves IP addresses.
- Management via CONSOLE port, Web, SNMP, etc.
- BootROM and other software upgrade through TFTP.
- Support DHCP and relay, provide dynamic IP address assignment.
- Support SFP standard interface, protect your investment.
- Redundant power supply.

Powerful traffic and broadcast control

- Automatically detect and restrain broadcast storm, support IGMP datagram snooping, effectively restrict broadcast flooding.
- Full- and half- duplex traffic control.
- Ethernet port bit rate quota.
- Advanced buffer management supports 802.1p, with 4 dispatching queues per port mapping the 8 priority queues in 802.1p.
- IP multicast and QoS support.
- Jumbo frame.

Multiple routing polices

- Static routing.
- Support RIP v1/v2, OSPF v2, and many other dynamic routing protocols.

- Support PIM-SM, PIM-DM and many other multicast routing protocols.

TECHNICAL SPECIFICATIONS

Standard

- IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s MSTP
- IEEE 802.1x port-based user authentication
- Port Security
- Hardware support for IP ACL, MAC ACL, VLAN ACL
- Hardware support for port-based user authentication by combinations and bandings of port, IP address, and MAC address
- Web user authentication
- RADIUS
- User privilege classification and password protection
- DHCP snooping, DHCP option82, IP Source Guard

Interface

Port: 44 10/100/1000M TX, 4 GSFP/TX Combo, 2 10G slots (up to 4 10G XFP ports), 1 Console Port

Performance

Processor: RISC 300MHz
Flash: 8 MB
Memory: 128 MB (up to 256MB)
L3 Forwarding Rate: 131 Mpps all wire-speed, with filtering
Switch Fabric: 280G bps
Switching Mode: Store-and-forward
MAC Address Table Size: 8 K
Queue Buffer: 64 MB
Jumbo frame: 16383
VLAN: Port-based VLAN, 802.1Q tag VLAN, Super VLAN, Private VLAN, GVRP dynamic VLAN configuration, VLAN Stacking (QinQ)
Traffic Control: Back pressure at half-duplex, 802.3x at full-duplex, CAR support, 100M port: 1M step size; 1000M port: 8M step size
Storm Control: Stop sending at threshold to restrict broadcast/multicast/unicast storms
Multicast Control: IGMP snooping
Multicast Protocol: IGMP v1/v2/v3, PIM-SM, PIM-DM
Port Trunking: Up to 32 groups with up to 8 ports per group, dynamic LACP or static aggregation

Port Mirroring: Supported. Can be based on flow classification

Clustering: Up to 32, manageable through single IP

Unicast: Static, RIP v1/v2, OSPF v2, BGP v4

Policy-based Routing: IP-based routing policies

Redundant Routing: VRRP

Proxy: Proxy ARP

DHCP: DHCP Server/Client/Relay

NAT: Static or dynamic NAT

QoS:

- Head Of Line(HOL) blocking prevention mechanism
- 4 dispatching queues per port, mapping the 8 priority queues in 802.1p
- WRR, SP, and FIFO queuing algorithms
- Best Effort Service
- Differentiated Service
- Strict Priority
- Weighted Round Robin
- First Come First Serve
- TOS re-tagging, RTS

Network Management:

- SNMP v1/v2, RMON(Group 1, 2, 3, 9), Telnet
- Command Line Interface(CLI), Web interface
- Support PRODIGY network management tools suite: Prodigy Director, NTP, SSH, LLDP

Power Requirements

Power Consumption: 60 W (max.)

Power Input: AC 100 ~ 240 V, 47 ~ 63 Hz, 1A/230V, RPS power hot standby

Physical Characteristics

Dimensions (LxWxH) (mm): 442x316x44mm

Environmental Limits

Operating Temperature: 0 ~ 50°C,

non-operating Temperature: -40 ~ 70°C

Humidity: 0 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S31-9481	Network management Router Switch, 44 ports 10/100/1000M TX + 4 ports 10/100/1000M TX/Gigabit SFP Combo + 2 extendable 10G module slots (up to 4 XFP ports), support rps redundant power supply
PD1-LS1-3941-8-1TE-XFP	1 port 10G XFP module base board
PD1-LS1-3941-8-2TE-XFP	2 port 10G XFP module base board

For enquires, please email to sales@terrabitnet.com

PRODIGY CORE SWITCH



PD1-S61-8031

Large Network Backbone Switch

FEATURES

High-density-port Business Module

- Supply powerful high-density-port switching ability.
- Support 96-port 1000-M and 8-port 10000-M.

High switching fabric and Wire-speed Processing

- 768 Gbps switch fabric, supply congestion-less switching for all ports
- Powerful processing ability guarantees the reliable, stable and hi-speed IP network platform
- Hardware supports multi-layer wire-speed switching, and is capable to identify and process application flow above L4. All ports have data package filtration function, and can differentiate, manage and control the application flow.
- Hardware chip supports IPv6 and benefits smoothly network upgrade in future

Tight Security

- Support standard ACL, extended ACL and ACL based on time, making control policy flexible
- DAP (DOS defense) makes network more safe and avoids attacking from virtues, like ICMP, SYN, UDP, etc.
- Support 802.1x based on user, and supply more effective port-control ability. The function of MAC address restriction can limit the number of access host.

Powerful QoS Support

- Support 802.1p, WRR, RED, DiffServ and priority-based scheduling algorithms serve users with discrimination according to their priority level. L2/L3/L4 flow classification. Powerful QoS is the base of NGN.

High Reliability

- Redundant backup, support STP/RSTP/VRRP. Double redundant power modules work in hot standby mode to ensure business will be not interrupted.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D IEEE 802.3 IEEE 802.3u IEEE802.3ad IEEE 802.3x IEEE 802.3z IEEE802.1Q IEEE 802.1P IEEE 802.1w IEEE 802.1x

Interface

Slot: 1*MSU + 2*Access Modules

Performance

Backplane Capacity: 768G

Switch Fabric: SuperEngine I 96Gbps
SuperEngine II 192Gbps
SuperEngine III 384Gbps

Forwarding Rate: 119Mpps

Max No. of 10000M ports: 8

Max No. of 1000M ports: 96

Max No. of 100M ports: 96

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 128 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

Spanning Tree: 802.1D(STP), 802.1w(RSTP), 802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time range ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, Super VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB: Support

Standard Protocols: 802.3, 10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF: RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC 2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option

RIP: RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast: RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

Routing Protocols: RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols: RFC 1354 IP Forwarding MIB, RFC 1757 RMON Groups 1, 2, 3, 9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz, DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 700W

Physical Characteristics

Dimensions (LxWxH) (mm): 436x450x380mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S61-8031	Description
PD1-LS1-6801-3-Chassis	Terrabit Networks PD1-S61-8001 Modular Switch chassis,including 1 standard AC power supply (3 slots, including 1 MSU slot and 2 network module slots, dual AC/DC power supply)
PD1-LS1-6801-3-Chassis-DC	Terrabit Networks PD1-S61-8031 Modular Switch chassis,including 1 standard DC power supply (3 slots, including 1 MSU slot and 2 network module slots, dual AC/DC power supply)
PD1-LS1-68-PWR-AC-600	220V AC power supply for PD1-S61-8031
PD1-LS1-68-PWR-AC-DC	-48V DC power supply for PD1-S61-8031

Model-PD1-S61-8001 MSU	Description
PD1-LS1-68-MSU-I	Main Switching Unit - SuperEngine I for PD1-S61-8031/ PD1-S61-8061, 96G
PD1-LS1-68-MSU-II	Main Switching Unit - SuperEngine II, 192G
PD1-LS1-68-MSU-III	Main Switching Unit - SuperEngine III ,384G

Model-PD1-S61-8001 Business modules	Description
PD1-LS1-68-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-68-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-68-1TE-XFP	1-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-2TE-XFP	2-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-4TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-MFNP-12GE-TX/SFP	12-port 1000M SFP/TX Combo Multi-functional business board
PD1-LS1-68-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-68-48GE-TX-MPLS	Enhanced 48-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-68-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Moudule, support MPLS
PD1-LS1-68-48FE-TX	48-port 10/100M TX Module

PRODIGY CORE SWITCH



PD1-S61-8061

Large Network Backbone Switch

FEATURES

High-density-port Business Module

- Supply powerful high-density-port switching ability.
- Support 192-port 1000-M and 16-port 10000-M.

High switching fabric and Wire-speed Processing

- 1.8T Gbps switch fabric, supply congestion-less switching for all ports
- Powerful processing ability guarantees the reliable, stable and hi-speed IP network platform
- Hardware supports multi-layer wire-speed switching, and is capable to identify and process application flow above L4. All ports have data package filtration function, and can differentiate, manage and control the application flow.
- Hardware chip supports IPv6 and benefits smoothly network upgrade in future

Tight Security

- Support standard ACL, extended ACL and ACL based on time, making control policy flexible
- DAP (DOS defense) makes network more safe and avoids attacking from virtues, like ICMP, SYN, UDP, etc.
- Support 802.1x based on user, and supply more effective port-control ability. The function of MAC address restriction can limit the number of access host.

Powerful QoS Support

- Support 802.1p, WRR, RED, DiffServ and priority-based scheduling algorithms serve users with discrimination according to their priority level. L2/L3/L4 flow classification. Powerful QoS is the base of NGN.

High Reliability

- Redundant backup, support STP/RSTP/VRRP. Double redundant power modules work in hot standby mode to ensure business will be not interrupted.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D IEEE 802.3 IEEE 802.3u IEEE802.3ad IEEE 802.3x IEEE 802.3z IEEE802.1Q IEEE 802.1P IEEE 802.1w IEEE 802.1x

Interface

Slot: 2*MSU + 4*Access Modules

Performance

Backplane Capacity: 1.8T

Switch Fabric: SuperEngine I 192Gbps
SuperEngine II 192Gbps
SuperEngine III 384Gbps

Forwarding Rate: 238Mpps

Max No. of 10000M ports: 16

Max No. of 1000M ports: 192

Max No. of 100M ports: 192

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 128 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

Spanning Tree: 802.1D(STP), 802.1w(RSTP), 802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, Super VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB: Support

Standard Protocols: 802.3, 10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF: RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC 2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option

RIP: RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast: RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

Routing Protocols: RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols: RFC 1354 IP Forwarding MIB, RFC 1757 RMON Groups 1, 2, 3, 9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz, DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 1000W

Physical Characteristics

Dimensions (LxWxH) (mm): 436x450x680mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S61-8061	Description
PD1-LS1-6801-6-Chasis	Terrabit Networks PD1-S61-8061 Modular Switch chassis, including 1 standard AC power supply (6 slots, including 2 MSU slot and 4 network module slots, dual AC/DC power supply)
PD1-LS1-6801-6-Chasis-DC	Terrabit Networks PD1-S61-8061 Modular Switch chassis, including 1 standard DC power supply (6 slots, including 2 MSU slot and 4 network module slots, dual AC/DC power supply)
PD1-LS1-68-PWR-AC-600	220V AC power supply for PD1-S61-8061
PD1-LS1-68-PWR-AC-DC	-48V DC power supply for PD1-S61-8061

Model-PD1-S61-8001 MSU	Description
PD1-LS1-68-MSU-I	Main Switching Unit - SuperEngine I for PD1-S61-8031 / PD1-S61-8061, 96G
PD1-LS1-68-MSU-II	Main Switching Unit - SuperEngine II, 192G
PD1-LS1-68-MSU-III	Main Switching Unit - SuperEngine III, 384G

Model-PD1-S61-8001 Business modules	Description
PD1-LS1-68-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-68-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-68-1TE-XFP	1-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-2TE-XFP	2-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-4TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-MFNP-12GE-TX/SFP	12-port 1000M SFP/TX Combo Multi-functional business board
PD1-LS1-68-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module, support MPLS
PD1-LS1-68-48GE-TX-MPLS	Enhanced 48-port 1000M SFP/TX Combo Module, support MPLS
PD1-LS1-68-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Module, support MPLS
PD1-LS1-68-48FE-TX	48-port 10/100M TX Module

PRODIGY CORE SWITCH



PD1-S61-8101

Large Network Backbone Switch

FEATURES

High-density-port Business Module

- Supply powerful high-density-port switching ability.
- Support 384-port 1000-M and 32-port 10000-M.

High switching fabric and Wire-speed Processing

- 2.4T Gbps switch fabric, supply congestion-less switching for all ports
- Powerful processing ability guarantees the reliable, stable and hi-speed IP network platform
- Hardware supports multi-layer wire-speed switching, and is capable to identify and process application flow above L4. All ports have data package filtration function, and can differentiate, manage and control the application flow.
- Hardware chip supports IPv6 and benefits smoothly network upgrade in future

Tight Security

- Support standard ACL, extended ACL and ACL based on time, making control policy flexible
- DAP (DOS defense) makes network more safe and avoids attacking from virtues, like ICMP, SYN, UDP, etc.
- Support 802.1x based on user, and supply more effective port-control ability. The function of MAC address restriction can limit the number of access host.

Powerful QoS Support

- Support 802.1p, WRR, RED, DiffServ and priority-based scheduling algorithms serve users with discrimination according to their priority level. L2/L3/L4 flow classification. Powerful QoS is the base of NGN.

High Reliability

- Redundant backup, support STP/RSTP/VRRP. Double redundant power modules work in hot standby mode to ensure business will be not interrupted.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D IEEE 802.3 IEEE 802.3u IEEE802.3ad IEEE 802.3x IEEE 802.3z IEEE802.1Q IEEE 802.1P IEEE 802.1w IEEE 802.1x

Interface

Slot: 2*MSU + 8*Access Modules

Performance

Backplane Capacity: 2.4T

Switch Fabric: SuperEngine II 192Gbps
SuperEngine III 384Gbps

Forwarding Rate: 476Mpps

Max No. of 10000M ports: 32

Max No. of 1000M ports: 384

Max No. of 100M ports: 384

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 128 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

Spanning Tree: 802.1D(STP), 802.1w(RSTP),

802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, Super VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB: Support

Standard Protocols: 802.3, 10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF: RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC 2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option

RIP: RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast: RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

Routing Protocols: RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols: RFC 1354 IP Forwarding MIB, RFC 1757 RMON Groups 1, 2, 3, 9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz, DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 1000W

Physical Characteristics

Dimensions (LxWxH) (mm): 436x450x797mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S61-8101	Description
PD1-LS1-6811-0-Chasis	Terrabit Networks PD1-S61-8101 Modular Switch chassis,including 1 standard AC power supply (10 slots, including 2 MSU slots and 8 network module slots, dual AC/DC power supply)
PD1-LS1-6811-0-Chasis-DC	Terrabit Networks PD1-S61-8101 Modular Switch chassis,including 1 standard DC power supply (10 slots, including 2 MSU slots and 8 network module slots, dual AC/DC power supply)
PD1-LS1-68-PWR-AC-1000	220V AC power supply for PD1-S61-8101
PD1-LS1-68-PWR-AC-DC	-48V DC power supply for PD1-S61-8101

Model-PD1-S61-8001 MSU	Description
PD1-LS1-68-MSU-II	Main Switching Unit - SuperEngine II,192G
PD1-LS1-68-MSU-III	Main Switching Unit - SuperEngine III ,384G

Model-PD1-S61-8001 Business modules	Description
PD1-LS1-68-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-68-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-68-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-68-1TE-XFP	1-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-2TE-XFP	2-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-4TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-68-MFNP-12GE-TX/SFP	12-port 1000M SFP/TX Combo Multi-functional business board
PD1-LS1-68-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-68-48GE-TX-MPLS	Enhanced 48-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-68-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Moudule, support MPLS
PD1-LS1-68-48FE-TX	48-port 10/100M TX Module

PRODIGY CARRIER CORE SWITCH



PD1-S81-5031

Large-Capacity Core 10G Routing Switch

FEATURES

Telecom-level Reliability

- 1:1 redundant backup used in Key modules (like MSU, Power).
- Hitless Protection System (HPS) guarantees the reliability of PD1-S81-5031.
- And VRRP, STP, LACP, etc strength the reliability.

Advanced structure

- Modularized design and distributing mode
- Base on multi-processor distributed process system and Crossbar switching structure.

Powerful value-added business

- L2/L3/L4 wire-speed switching capability
- QoS, MPLS, NAT, broadband control, multicast
- Traffic classification and multicast based on hardware and rate limitation, advanced QoS

Large-capacity and hi-performance

- Congestion-less switching fabric up to 1.2Tpbs, routing forwarding rate up to 238Mpps
- Support 512k L3 routing, 512k L2 MAC and 4096 VLAN, 8k control policy

High port density and wire-speed routing and switching

- Rich interface types. 10GE, GE, FE, etc.

Tight Security

- Support ACL, IPsec, MPLS VPN
- Support different superior queues based on port and restriction of ex- and in- bandwidth based on flow, URPF, DDOS anti-attack, SSH2.0, 802.1x, VLAN and MAC, port NO., IP bonding.
- Anti-virus system

IPv6

- IPv4 and IPv6, tunnel based on handwork/automatic configuration and 6to4 tunnel
- Basic transition technique form IPv4 to IPv6.
- Static IPv6 routing, and dynamic routing protocols, BGP4/BGP4+, RIPv6, OSPFv3

MPLS VPN

- L2 MPLS VPN supports Martini(VPWS) and VPLS
- L3 MPLS VPN, with RFC2547bis, has high compatibility

Network management

- RFC 1213 SNMP, management based on Telnet (CLI command) or SNMP (graphical interfaces)
- Web management realized via Prodigy Director platform.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D, IEEE 802.3, IEEE 802.3u, IEEE802.3ad, IEEE802.3x, IEEE 802.3z, IEEE802.1Q, IEEE 802.1P, IEEE 802.1w, IEEE 802.1x

Interface

Slot: 1*MSU + 2*Access Modules

Performance

Backplane Capacity: 1.2T

Switch Fabric: UltraEngine I 96Gbps
UltraEngine II 192Gbps
UltraEngine III 384Gbps

Forwarding Rate: 238Mpps

Max No. of 10000M ports: 16

Max No. of 1000/100M ports: 96

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 512 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

IP Routing Table Size: 512K

Spanning Tree: 802.1D(STP), 802.1w(RSTP), 802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB: Support

Standard Protocols : 802.3, 10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF : RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option

RIP : RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast : RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

Routing Protocols : RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols : RFC1354 IP Forwarding MIB, RFC 1757 RMON Groups 1,2,3,9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz, DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 700W

Physical Characteristics

Dimensions (LxWxH) (mm): 436x450x380mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S81-5031	Description
PD1-LS1-8501-3-Chasis	Terrabit Networks PD1-S81-5031 Modular Switch chassis,including 1 standard AC power supply (3 slots, including 1 MSU slot and 2 network module slots, dual AC/DC power supply)
PD1-LS1-8501-3-Chasis-DC	Terrabit Networks PD1-S81-5031 Modular Switch chassis,including 1 standard DC power supply (3 slots, including 1 MSU slot and 2 network module slots, dual AC/DC power supply)
PD1-LS1-85-PWR-AC-600	220V AC power supply for PD1-S81-5031
PD1-LS1-85-PWR-DC	-48V DC power supply for PD1-S81-5031

Model-PD1-S81-5001 MSU	Description
PD1-LS1-85-MSU-I	Main Switching Unit - SuperEngine I for PD1-S81-5031/ PD1-S81-5061
PD1-LS1-85-MSU-II	Main Switching Unit-UltraEngine II for PD1-S81-5031/ PD1-S81-5061/ PD1-S81-5101
PD1-LS1-85-MSU-III	Main Switching Unit-UltraEngine III for PD1-S81-5031/ PD1-S81-5061/ PD1-S81-5101
PD1-LS1-85-MSU-IV	Main Switching Unit-UltraEngine IV for PD1-S81-5031/ PD1-S81-5061/ PD1-S81-5101

Model-PD1-S81-5001 Business modules	Description
PD1-LS1-85-48FE-TX	48-port 10/100M TX Module
PD1-LS1-85-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-85-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-85-1TE-XFP/PD1-LS1-85-2TE-XFP	1-port 10 Gigabit Ethernet Module (req.XFP)/2-port 10 Gigabit Ethernet Module (req.XFP)
PD1-LS1-85-4TE-XFP/PD1-LS1-85-8TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)/8-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-85-24FE-SFPE	Enhanced 24-port 100M SFP Module(Support MCE and QinQ)
PD1-LS1-85-12GE-TX/SFPE	Enhanced 12-port 1000M TX-SFP Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-SFPE	Enhanced 20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-TXE	Enhanced 20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-48GE-TXE	Enhanced 48-port 10/100/1000M TX Module,support MCE & QinQ
PD1-LS1-85-1TE-XFPE	Enhanced 1-port 10 Gigabit XFP Module ,support MCE & QinQ
PD1-LS1-85-2TE-XFPE	Enhanced 2-port 10 Gigabit XFP Module,support MCE & QinQ
PD1-LS1-85-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-85-48GE-TX-MPLS	48 ports Gigabit TX MPLS interface Module
PD1-LS1-85-48GE-TX-MPLS-E	Enhanced 48-port 10/100/1000M TX Module,support MPLS VPN, MCE & QinQ
PD1-LS1-85-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Module ,support MPLS
PD1-2G PCMCIA CARD	2G CF card and memory card adaptor

PRODIGY CARRIER CORE SWITCH



PD1-S81-5061

Large-Capacity Core 10G Routing Switch

FEATURES

Telecom-level Reliability

- 1:1 redundant backup used in Key modules (like MSU, Power).
- Hitless Protection System (HPS) guarantees the reliability of PD1-S81-5061.
- And VRRP, STP, LACP, etc strength the reliability.

Advanced structure

- Modularized design and distributing mode
- Base on multi-processor distributed process system and Crossbar switching structure.

Powerful value-added business

- L2/L3/L4 wire-speed switching capability
- QoS, MPLS, NAT, broadband control, multicast
- Traffic classification and multicast based on hardware and rate limitation, advanced QoS

Large-capacity and hi-performance

- Congestion-less switching fabric up to 3.2Tbps, routing forwarding rate up to 952Mpps
- Support 512k L3 routing, 512k L2 MAC and 4096 VLAN, 8k control policy

High port density and wire-speed routing and switching

- Rich interface types. 10GE, GE, FE, etc.

Tight Security

- Support ACL, IPsec, MPLS VPN
- Support different superior queues based on port and restriction of ex- and in- bandwidth based on flow, URPF, DDOS anti-attack, SSH2.0, 802.1x, VLAN and MAC, port NO., IP bonding.
- Anti-virus system

IPv6

- IPv4 and IPv6, tunnel based on handwork/ automatic configuration and 6to4 tunnel
- Basic transition technique form IPv4 to IPv6.
- Static IPv6 routing, and dynamic routing protocols, BGP4/BGP4+, RIPng, OSPFv3

MPLS VPN

- L2 MPLS VPN supports Martini(VPWS) and VPLS
- L3 MPLS VPN, with RFC2547bis, has high compatibility

Network management

- RFC 1213 SNMP, management based on Telnet (CLI command) or SNMP (graphical interfaces)
- Web management realized via Prodigy Director platform.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D, IEEE 802.3, IEEE 802.3u, IEEE802.3ad, IEEE802.3x, IEEE 802.3z, IEEE802.1Q, IEEE 802.1P, IEEE 802.1w, IEEE 802.1x

Interface

Slot: 2*MSU + 4*Access Modules

Performance

Backplane Capacity: 2.4T

Switch Fabric: UltraEngine I 96Gbps
UltraEngine II 192Gbps
UltraEngine III 384Gbps

Forwarding Rate: 476Mpps

Max No. of 1000M ports:32

Max No. of 1000/100M ports:192

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 512 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

IP Routing Table Size: 512K

Spanning Tree: 802.1D(STP), 802.1w(RSTP), 802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB : Support

Standard Protocols : 802.3, 10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF : RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5), RFC2328 OSPF v2, RFC 1680 OSPF v2 MIB, RFC 1997 Communities Attributes, RFC 2368 TCP MD5, RFC 2370 OSPF Opaque LSA Option

RIP : RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast : RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP, RFC 2236 IGMP v2, RFC 2362 PIM-SM, DVMRP v3-07, RFC 2336 IGMP v2

Routing Protocols : RFC 791 IP, RFC 792 ICMP, RFC 793 TCP, RFC 783 TFTP, RFC 826 ARP, RFC 768 UDP, RFC 894 IP over Ethernet, RFC 903 RARP, RFC 1027 Proxy ARP, RFC 684 TELNET, RFC 1591 DNS (client), RFC 1812 General Routing, RFC 1541 and 1542 DHCP, RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols : RFC1354 IP Forwarding MIB, RFC 1757 RMON Groups 1,2,3,9, RFC 2068 HTTP, RFC 2030 SNMP, RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz, DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 1000W

Physical Characteristics

Dimensions (LxWxH) (mm): 436x450x680mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S81-5061	Description
PD1-LS1-8501-6-Chasis	Terrabit Networks PD1-S81-5061 Modular Switch chassis,,including 1 standard AC power supply (6 slots, including 2 MSU slot and 4 network module slots, dual AC/DC power supply)
PD1-LS1-8501-6-Chasis-DC	Terrabit Networks PD1-S81-5061 Modular Switch chassis,,including 1 standard DC power supply (6 slots, including 2 MSU slot and 4 network module slots, dual AC/DC power supply)
PD1-LS1-85-PWR-AC-600	220V AC power supply for PD1-S81-5061
PD1-LS1-85-PWR-DC	-48V DC power supply for PD1-S81-5061

Model-PD1-S81-5001 MSU	Description
PD1-LS1-85-MSU-I	Main Switching Unit - SuperEngine I for PD1-S81-5031/ PD1-S81-5061
PD1-LS1-85-MSU-II	Main Switching Unit-UltraEngine II for PD1-S81-5031/ PD1-S81-5061/ PD1-S81-5101
PD1-LS1-85-MSU-III	Main Switching Unit-UltraEngine III for PD1-S81-5031/ PD1-S81-5061/ PD1-S81-5101

Model-PD1-S81-5001 Business modules	Description
PD1-LS1-85-48FE-TX	48-port 10/100M TX Module
PD1-LS1-85-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-85-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-85-1TE-XFP/PD1-LS1-85-2TE-XFP	1-port 10 Gigabit Ethernet Module (req.XFP)/2-port 10 Gigabit Ethernet Module (req.XFP)
PD1-LS1-85-4TE-XFP/PD1-LS1-85-8TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)/8-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-85-24FE-SFPE	Enhanced 24-port 100M SFP Module(Support MCE and QinQ)
PD1-LS1-85-12GE-TX/SFPE	Enhanced 12-port 1000M TX-SFP Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-SFPE	Enhanced 20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-TXE	Enhanced 20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-48GE-TXE	Enhanced 48-port 10/100/1000M TX Module,support MCE & QinQ
PD1-LS1-85-1TE-XFPE	Enhanced 1-port 10 Gigabit XFP Moudule ,support MCE & QinQ
PD1-LS1-85-2TE-XFPE	Enhanced 2-port 10 Gigabit XFP Moudule,support MCE & QinQ
PD1-LS1-85-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-85-48GE-TX-MPLS	48 ports Gigabit TX MPLS interface Module
PD1-LS1-85-48GE-TX-MPLS-E	Enhanced 48-port 10/100/1000M TX Module,support MPLS VPN, MCE & QinQ
PD1-LS1-85-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Moudule ,support MPLS
PD1-2G PCMCIA CARD	2G CF card and memory card adaptor

PRODIGY CARRIER CORE SWITCH



PD1-S81-5101

Large-Capacity Core 10G Routing Switch

FEATURES

Telecom-level Reliability

- 1:1 redundant backup used in Key modules (like MSU, Power).
- Hitless Protection System (HPS) guarantees the reliability of PD1-S81-5101.
- And VRRP, STP, LACP, etc strength the reliability.

Advanced structure

- Modularized design and distributing mode
- Base on multi-processor distributed process system and Crossbar switching structure.

Powerful value-added business

- L2/L3/L4 wire-speed switching capability
- QoS, MPLS, NAT, broadband control, multicast
- Traffic classification and multicast based on hardware and rate limitation, advanced QoS

Large-capacity and hi-performance

- Congestion-less switching fabric up to 3.2Tbps, routing forwarding rate up to 952Mpps
- Support 512k L3 routing, 512k L2 MAC and 4096 VLAN, 8k control policy

High port density and wire-speed routing and switching

- Rich interface types. 10GE, GE, FE, etc.

Tight Security

- Support ACL, IPsec, MPLS VPN
- Support different superior queues based on port and restriction of ex- and in- bandwidth based on flow, URPF, DDOS anti-attack, SSH2.0, 802.1x, VLAN and MAC, port NO., IP bonding.
- Anti-virus system

IPv6

- IPv4 and IPv6, tunnel based on handwork/automatic configuration and 6to4 tunnel
- Basic transition technique form IPv4 to IPv6.
- Static IPv6 routing, and dynamic routing protocols, BGP4/BGP4+, RIPng, OSPFv3

MPLS VPN

- L2 MPLS VPN supports Martini(VPWS) and VPLS
- L3 MPLS VPN, with RFC2547bis, has high compatibility

Network management

- RFC 1213 SNMP, management based on Telnet (CLI command) or SNMP (graphical interfaces)
- Web management realized via Prodigy Director platform.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.1D, IEEE 802.3, IEEE 802.3u, IEEE802.3ad, IEEE802.3x, IEEE 802.3z, IEEE802.1Q, IEEE 802.1P, IEEE 802.1w, IEEE 802.1x

Interface

Slot: 2*MSU + 8*Access Modules

Performance

Backplane Capacity: 3.2T

Switch Fabric: UltraEngine II 192Gbps
UltraEngine III 384Gbps
UltraEngine IV 768Gbps

Forwarding Rate: 952Mpps

Max No. of 10000M ports:64

Max No. of 1000/100M ports:384

CPU: RISC CPU(RISC 800MHz)

Flash: 16 MB

SDRAM: 512 MB(up to 1GB)

MAC Address Table Size: 512 K

VLAN table Size: 4 K

Jumbo frame: 16383

IP Routing Table Size: 512K

Spanning Tree: 802.1D(STP), 802.1w(RSTP), 802.1s(MSTP)

Routing Protocol: RIPv1/2, OSPF, BGP

MPLS: Support

IPv6: Support

Multicast Protocol: IGMP, DVMRP, PIM-SM, PIM-DM

QoS: 8 dispatching queues per port, support 802.1p, ToS, application port control, DifferServ, WRR, SP, SWRR, etc.

ACL: Standard and Extended ACL, support based IP, source/destination IP, L3 IP protocol no., TCP/UDP port, IP priority, ToS, time ranger ACL

MAC Control: Support port/MAC binding, MAC ACL

VLAN: Port-based VLAN, 802.1Q, support GVRP, PVLAN, VLAN Stacking(QinQ)

Flow Control: HOL blocking prevention, Half-duplex: Back Pressure, Full-duplex: IEEE 802.3x

ARP: Support

DHCP: Support Client, Relay, Server

Port Aggregation: Support 802.3ad, loading balance

Customer Access: Support 802.1x

AAA: Support RADIUS

Port Mirroring: Support

Broadcast Control: Support

Security: Support MSU redundancy, hot swapped, VRRP

Console Interface: CLI, WEB

Console Port: RS-232

Telnet: Support

SNMP: v1/v2/v3

SysLog: Support

RMON: 1, 2, 3, 9

MIB : Support

Standard Protocols : 802.3,10BaseT, 802.3u 100BaseTX, 100BaseFX, 802.3z 1000BaseSX, 802.3z 1000BaseLX, 802.3ab 1000BaseT, 802.3ae 10 Gigabit Ethernet, 802.3x Flow Control, 802.3ad Link Aggregation, 802.1p/q VLAN Tagging, 802.1d Bridging, 802.1w Rapid STP, 802.1x User authentication, 802.3 Ethernet Like MIB, Ethernet Interface MIB, SNMP v1, v2c and V3, SNMP MIB II

OSPF : RFC 2178 OSPF, RFC 1583 OSPF v2, RFC 1587 OSPF NSSA, RFC 1745 OSPF Interactions, RFC 1765 OSPF Database Overflow, RFC 1680 OSPF Traps, RFC 2154 OSPF w/Digital Signatures (Password, MD-5),RFC2328 OSPF v2,RFC 1680 OSPF v2 MIB,RFC 1997 Communities Attributes, RFC 2368 TCP MD5,RFC 2370 OSPF Opaque LSA Option

RIP : RFC 1058 RIP v1, RFC 1723 RIP v2, RFC 1812 RIP Requirements

IP Multicast : RFC 1122 DVMRP Host Requirements, RFC 1256 ICMP Router Discovery Protocol, RFC 1112 IGMP,RFC 2236 IGMP v2,RFC 2362 PIM-SM,DVMRP v3-07,RFC 2336 IGMP v2

Routing Protocols : RFC 791 IP,RFC 792 ICMP,RFC 793 TCP,RFC 783 TFTP,RFC 826 ARP,RFC 768 UDP,RFC 894 IP over Ethernet, RFC 903 RARP,RFC 1027 Proxy ARP,RFC 684 TELNET,RFC 1591 DNS (client),RFC 1812 General Routing, RFC 1541 and 1542 DHCP,RFC 2131 BOOTP/DHCP Helper, RFC 2338 VRRP

Other Protocols : RFC1354 IP Forwarding MIB,RFC 1757 RMON Groups 1,2,3,9,RFC 2068 HTTP,RFC 2030 SNMP,RFC 2138 RADIUS

Power Requirements

Power input: AC: 200-240VAC, 50/60 Hz , DC: -48V

Power Redundancy: 1+1 redundancy, support hot swapped

Power Consumption: 1000W

Physical Characteristics

Dimensions (LxWxH) (mm): 436×450×797mm

Environmental Limits

Temperature: 0 ~ 40°C,

Humidity: 10 ~ 90% (no condensing)

Warranty

1 year

OPTIONAL ACCESSORIES










For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model-PD1-S81-5101	Description
PD1-LS1-8511-0-Chasis	Terrabit Networks PD1-S81-5101 Modular Switch chassis,including 1 standard AC power supply (10 slots, including 2 MSU slots and 8 network module slots, dual AC/DC power supply)
PD1-LS1-8511-0-Chasis-DC	Terrabit Networks PD1-S81-5101 Modular Switch chassis,including 1 standard DC power supply (10 slots, including 2 MSU slots and 8 network module slots, dual AC/DC power supply)
PD1-LS1-85-PWR-AC-1000	220V AC power supply for PD1-S81-5101
PD1-LS1-85-PWR-DC	-48V DC power supply for PD1-S81-5101

Model-PD1-S81-5001 MSU	Description
PD1-LS1-85-MSU-II	Main Switching Unit-UltraEngine II for PD1-S81-5101
PD1-LS1-85-MSU-III	Main Switching Unit-UltraEngine III for PD1-S81-5101
PD1-LS1-85-MSU-IV	Main Switching Unit-UltraEngine IV for PD1-S81-5101

Model-PD1-S81-5001 Business modules	Description
PD1-LS1-85-48FE-TX	48-port 10/100M TX Module
PD1-LS1-85-24FESFP-2GE	24-port 100M SFP + 2-port 1000M SFP/TX Combo Module
PD1-LS1-85-12GE-TX/SFP	12-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-SFP	20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-24GE-TX	20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module
PD1-LS1-85-48GE-TX	48-port 10/100/1000M TX Module
PD1-LS1-85-1TE-XFP/PD1-LS1-85-2TE-XFP	1-port 10 Gigabit Ethernet Module (req.XFP)/2-port 10 Gigabit Ethernet Module (req.XFP)
PD1-LS1-85-4TE-XFP/PD1-LS1-85-8TE-XFP	4-port 10 Gigabit Ethernet Module (req. XFP)/8-port 10 Gigabit Ethernet Module (req. XFP)
PD1-LS1-85-24FE-SFPE	Enhanced 24-port 100M SFP Module(Support MCE and QinQ)
PD1-LS1-85-12GE-TX/SFPE	Enhanced 12-port 1000M TX-SFP Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-SFPE	Enhanced 20-port 1000M SFP + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-24GE-TXE	Enhanced 20-port 10/100/1000M TX + 4-port 1000M SFP/TX Combo Module,support MCE & QinQ
PD1-LS1-85-48GE-TXE	Enhanced 48-port 10/100/1000M TX Module,support MCE & QinQ
PD1-LS1-85-1TE-XFPE	Enhanced 1-port 10 Gigabit XFP Module ,support MCE & QinQ
PD1-LS1-85-2TE-XFPE	Enhanced 2-port 10 Gigabit XFP Module,support MCE & QinQ
PD1-LS1-85-12GE-TX/SFPE-MPLS	Enhanced 12-port 1000M SFP/TX Combo Module,support MPLS
PD1-LS1-85-48GE-TX-MPLS	48 ports Gigabit TX MPLS interface Module
PD1-LS1-85-48GE-TX-MPLS-E	Enhanced 48-port 10/100/1000M TX Module,support MPLS VPN, MCE & QinQ
PD1-LS1-85-1TE-XFP-MPLS	Enhanced 1-port 10 Gigabit XFP Module ,support MPLS
PD1-2G PCMCIA CARD	2G CF card and memory card adaptor

PD1-171-05 • PD1-261-05 • 98 PD1-361-05 • PD1-481-05	 98 <u>Broadband Router</u>
PD1-721-04 • 99 PD1-381-06 • 101	 99 <u>Multi-Access Broadband Router</u>
PD1-171-00 • 103	 103 <u>Modular Access Router</u>
PD1-261-00 • 104	 104 <u>Modular Multi-Access Router</u>
PD1-261-40 • PD1-261-41 • 106	 106 <u>Aggregation Router</u>
PD1-361-60 • 108	 108 <u>Central Access Router</u>
PD1-R41-8601-(RPS) • 110	 110 <u>Core Router</u>
PD1-R71-2081 • 112	 112 <u>Core Aggregation Router</u>
PD1-R71-6001 • 114	 114 <u>Modular Core Router</u>

PRODIGY BROADBAND ROUTER



PD1-171-05/PD1-261-05
PD1-361-05/PD1-481-05

Hi-Performance Broadband Router

FEATURES

High performance and reliable design

Advanced design, high quality and reliable performance in bad environments.

Access options

- Supporting all mainstream WAN access options.
- Supporting different carrier access options based on policy-routing and select connection by yourself.
- Supporting ADSL, optical fibre, cable, Ethernet, etc.

Loading balance

Supporting policy-routing based on destination IP, source IP, flow and routing weight, etc.

Management

- Supporting WEB, Series port, Telnet and SNMP.
- Port mirroring, monitoring data and other information.

ARP

- Auto-scan LAN, and add the corresponding relationship between IP and MAC address to static ARP.
- Static ARP in LAN and Dynamic learning ARP in WAN.

Firewall

- Efficient built-in firewall. Monitor all packets from Internet and filter illegal request to LAN server, hack's scan to LAN IP address and ports.
- Prevent DOS/DDOS attack.

Network management

Service control by IP address, protocol, port, MAC address, and/or time. E.g. online chat restriction during working time.

NAT

Restricting the number of NAT links per PC in LAN or the whole network.

Real time monitor

Monitoring flow and users in LAN, and detecting abnormal users or other situations.

Virtual server

Supporting private servers in LAN to protect the real server.

DMZ

Supporting DMZ area and protecting the server in this area.

Bandwidth control

Restricting different bandwidth according to different IP's.

VPN

- Supporting L2TP, IPSec, PPTP or their combinations, and providing a perfect solution for remote access and VPN in SMB's
- Supporting dynamic VPN.

TECHNICAL SPECIFICATIONS

Item	PD1-171-05	PD1-261-05	PD1-361-05	PD1-481-05
Processor	MARVELL 133MHz	IXP 266Mhz	IXP 533MHz	PPC 8541,833MHz
SDRAM	32 M	128M		256M
Flash	4M		16M	
Boot ROM			512K	
Packet Forwarding	55Kpps	120Kpps	220Kpps	800Kpps
Port		5*10/100MTX 1 * Console		2*10/100/1000M TX/SFP Combo 3*10/100/1000M TX 1 * Console, 1 * AUX
Dimensions (LxWxH)	340x200x44mm	445x200x44mm		445x275x44mm
Power Supply	AC: 100~240V, 47 ~ 63 Hz, 1A/230V. DC: -36 ~ -72 V, 1.5 A			
Power Consumption	10W	80W		120W
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C			
Humidity	Operating: 10 ~ 85%, non-operating: 5% ~ 95% (no condensing)			

ORDERING INFORMATION

Model	Description
PD1-171-05	Terrabit Networks PD1-171-05 fixed Broadband router(5 Ports 10/100M Fast Ethernet, 2 WAN 3 LAN by default, or reset to other combinations)
PD1-261-05	Terrabit Networks PD1-261-05 Enterprise Fixed Broadband Router(5 Ports 10/100M Fast Ethernet, 2 WAN 3 LAN by default, or reset to other combinations)
PD1-361-05	Terrabit Networks PD1-361-05 Enterprise Fixed Broadband Router(5 Ports 10/100M Fast Ethernet, 2 WAN 3 LAN by default, or reset to other combinations)
PD1-481-05	Terrabit Networks PD1-481-05 Enhanced Fixed Broadband Router(2 Ports 10/100/1000MBase-TX/SFP Combo, 3 ports 10/100/1000MBase-TX, 1 AUX)

PRODIGY MULTI-ACCESS BROADBAND ROUTER



PD1-721-04

Hi-Performance Broadband Router

FEATURES

Load and reliability

PRODIGY router can reliably work in harsh environment, such as high temperature, poor ventilation and grounding, for a long time because of its advanced design idea and hi-quality components.

High performance

NAT wire-speed forwarding guarantees the egress flow of large-sized campus network.

Multi-access

PRODIGY router supports the multiaccess, increases the bandwidth, improves the speed and lowers the cost.

Multi-carrier access and independent choice

PRODIGY router realizes different carrier's access based on policy routing. You can manually choose the access mode according to the path's state.

Load balance

PRODIGY router supports multiple strategy routes based on destination/source address, traffic and route weight, realizing the load balance.

Multiple access modes

PRODIGY router supports the ADSL/optical fiber/Ethernet/cable access mode.

Multiple management modes

PRODIGY router can be managed through WEB, serial interface, TELNET and SNMP.

Port mirroring

Port mirroring can be configured for PRODIGY router to monitor the network data.

ARP cheat prevention

PRODIGY router automatically scans the intranet, learns the IP/MAC map of the intranet and adds the learned map to the ARP table. The static ARP is adopted by the inside network interface of the router, while the dynamic Arp is adopted by the outside network interface of the router.

Integrated firewall

PD1-721-04 monitors all Internet packets, filters all illegal requests for LAN servers and prevents the hacker software from attacking LAN servers through scanning LAN IP addresses and ports. PD1-721-04 can also prevent the DoS or DDoS attack.

Supporting virtual servers

PRODIGY router supports the private server setup in the intranet, enables outside and inside cyber users to access the server through the public IP address and hides the real address of the server, guaranteeing the safety of the server at the ultimate level.

Supporting the DMZ area

PRODIGY router supports the DMZ function that the to-be-saved server is placed in an area and the area is then protected.

Bandwidth control

Different bandwidth distribution and management is provided according to the IP addresses of the transmission flow.

All-round VPN function

PD1-721-04 supports all current VPN protocols, encryption algorithms L2TP, IPSEC and PPTP, realizing remote office work and VPN office work.

PD1-721-04 also supports that the dynamic address is used to create the VPN channel.

Service management

PD1-721-04 can control users' services according to the IP addresses, protocols, ports, MAC addresses and time segment. For example, PD1-721-04 can forbid MSN and QQ during the office time or open only WEB and E-MAIL services.

NAT link limitation

PRODIGY router can limit the number of NAT links for each intranet PC and the number of network connections in the whole network. PRODIGY router can prevent BT from occupying lots of bandwidth.

Real-time monitor

PRODIGY router can manage LAN flows and users, promptly detect network abnormality and abnormal network users.

TECHNICAL SPECIFICATIONS

Item	PD1-721-04
Interface	4 Ethernet 10/100/1000M TX/GSFP interfaces 1 Ethernet 10/100M TX interface (debugging interface) 1 Console port
PPS	4Mpps
Processor	IXP 2400
Access mode	ADSL, optical fiber, Ethernet, cable
Multi-access	Up to 3 accesses
Load balance	Based on the source/destination address, route weight and traffic
NAT	Wire-speed NAT forwarding, Supporting static/dynamic NAT and dynamic PAT
Virtual server	Support
DHCP	Support
DDNS/DNS	Support
Port mirroring	Support
Firewall	Supporting the firewall function and realizing the virus prevention based on IP and port
Security	Supporting static/dynamic ARP and preventing ARP cheat and ARP flooding Enabling or disabling the ping command Preventing TCP SYN flooding, UDP Flooding and ICMP Flooding Binding MAC to IP
Website filtration	Support
Net surfing limitation	Limiting the permission of net surfing based on IP address, MAC address and time
VLAN	Supporting 802.1Q vlan
QoS	Realizing multiple QoS strategies based on FIFO, PQ, CQ and CBWFQ
VPN	Supporting multiple VPN protocols such as L2TP, PPTP and Ipsec
SNTP	Support
GUI/WEB management	Support
SNMP V1/V2/V3	Support
NAT network management software	Support
Dimension	440mm×374mm×44mm
Temperature/humidity	Working temperature: 0 ~ 40°C, Working humidity: 10 ~ 85%, no condensation Storage temperature: -20 ~ 65°C, Storage humidity: 5 ~ 95%, no condensation
Current	AC— voltage: 170 ~ 264V; frequency: 47 ~ 63Hz; Current: 1A/230V; DC— voltage: -36 ~ -72V; Current: 1.5A
Max. power	60w

ORDERING INFORMATION

Model	Description
PD1-721-04	Terrabit Networks PD1-721-04 Enhanced Fixed Broadband Router(4 Ports 10/100/1000MBase-TX/SFP Combo, 1 port 10/100MBase-TX Ethernet testing, 1 AUX)

PRODIGY MULTI-ACCESS BROADBAND ROUTER



PD1-381-06

Hi-Performance Broadband Security Router

FEATURES

High load and reliability

PRODIGY broadband security routers are composed of hi-quality components under advanced theory, laying a solid foundation for the routers to run reliably for a long time in unfriendly environment like high temperature, bad cooling and ventilation, insufficient grounding, etc.

Multi-line access

PRODIGY broadband routers can support multiline integrated access, increasing the bandwidth and the speed, and reducing the operation cost.

Multiple carriers and self-choice

PRODIGY broadband router realizes the access of different carriers based on policy routing. The router itself can select the Netcom line if the router accesses the Netcom website, and select the Telecom line if it accesses the Telecom website automatically. The user can select a kind of line to access the website according to actual requirements.

Load balance

PRODIGY broadband router supports routing policies based on the destination address, source address, flow and route weight, realizing perfect load balance.

Multiple access modes

PRODIGY broadband router supports multiple bandwidth access modes such as ADSL, optical fiber, Ethernet and cable.

Multiple management modes

PRODIGY broadband router supports multiple management modes (WEB, serial interface, Telnet, SNMP).

Supporting port mirroring

Port mirroring can be set to monitor the network data.

Preventing ARP cheat

The router scans the intranet automatically, learns the relationship between the intranet IP address and the MAC address and adds the IP-MAC relationship to the static ARP table. The inside interface of the router adopts the static ARP, while its outside interface adopts the dynamic ARP.

Integrating firewall

All packets from the Internet can be monitored, all illegal requests to the LAN server and the scanning of LAN IPs and interfaces by the hacker's software can be filtered to prevent outside vicious attack. The DoS/DDoS attack can be prevented.

Service management

Service management can be provided according to enterprise's requirement. The users' services can be controlled based on protocol.

Supporting the virtual server

PRODIGY broadband routers support that the private server in the intranet. The cyberbar users and the users out of the cyberbar can access the server through the IP address of the Internet. In this way, the real address of the server is hidden and the security of the server will be guaranteed at large.

Supporting DMZ area

PRODIGY broadband routers support the DMZ function. The server that requires to be protected is put in an area uniquely and this area will be protected.

Controlling bandwidth

Different bandwidth distribution and management are provided according to the IP addresses of the flows, while the performance is not affected.

Sound VPN function

At present, all VPN protocols and encryption algorithms are supported. At the same time, L2TP, IPSEC and PPTP are used independently or together, which is a complete solution to realize remote working and virtual private working. The VPN tunnel can be created through dynamic addresses.

Service management

Content, IP address, protocol, interface, MAC address and time segment. For example, the MSN and QQ services are limited during the working time, or only the WEB and E-MAIL services are opened.

Limiting the number of NAT connections

The router can limit the number of the NAT connections on each intranet computer, or the number of all connections in the network. You can conduct related configuration according to requirements, preventing BT from occupying the bandwidth.

Real-time monitoring

The follows and users in LAN can be managed, and therefore the network abnormality and abnormal users can be detected.

TECHNICAL SPECIFICATIONS

Item	PD1-381-06
WAN interfaces	Two 10/100/1000M TX interfaces (One DMZ interface can be selected)
LAN interfaces	Four 10/100/1000M TX interfaces (one mirroring interface can be selected)
Console interface	one
USB interface	one
PPS	350Kpps (NAT is enabled)
Processor	Multiple cores, 64-bit, 500Mhz (Cavium)
Access mode	ADSL, optical fiber, Ethernet, cable
Load balance	The load balance is based on the source address, the destination address, the route weight or the flow.
Two-line access	The router itself can select the Netcom line if the router accesses the Netcom website, and select the Telecom line if it accesses the Telecom website automatically. The line backup can be automatically switched.
NAT	The dynamic/static NAT and PAT are supported.
Virtual server	Support
DHCP	Support
DDNS/DNS	Support
Port mirroring	Support
Firewall	The firewall function is supported. Many viruses such as DDoS can be prevented based on IP and interface.
QoS bandwidth management	Reasonable bandwidth can be distributed according to different user groups, the minimum upload/download bandwidth being guaranteed and the maximum upload/download bandwidth being limited.
Security features	The static/dynamic ARP is supported. ARP cheat and ARP flooding can be prevented. The ping command can be run. TCP SYN flooding, UDP flooding and ICMP flooding can be prevented. The binding of MAC and IP is supported.
URL filtration	Support
QQ/MSN/BT prevention	The QQ/MSN/BT services can be prevented flexibly based on user group.
Surfing limitation	The network access right of the user can be controlled according to the IP address, MAC address and time.
VPN	VPN protocols such as L2TP, PPTP and IPSec are supported.
SNTP	Support
GUI/WEB management	Support
SNMP V1/V2/V3	Support
NAT NMS	Support
Temperature/Humidity	Working temperature: 0 ~ 85%; 10 ~ 85% no condensation Storage temperature: -20 ~ 65°C; 5 - 95% no condensation
Power characteristics	AC power: Voltage: 170-264V Frequency: 47-63Hz Current: 1A/230V DC power Voltage: -36 ~ -72V Current: 1.5A
Max. voltage	23w

ORDERING INFORMATION

Modules	Description
PD1-381-06	Double-Gigabit-WAN Enterprise Broadband Router (2 ports 10/100/1000M Ethernet WAN, 4 ports 10/100/1000M Ethernet LAN)

PRODIGY MODULAR ACCESS ROUTER



PD1-171-00

Cost-effective Access Router

FEATURES

Modular design (PD1-171-21/PD1-171-22)

Supports various network interface cards, ensuring flexible configuration and expansion.

Performance

Powerful CPU and advanced bus technology guarantee the high performance of network applications.

Transfer modules

Enables seamless integration of routers and transfer modules, lowering user's investment and network's down time.

Security

Firewall, VPN and other security measures secure the data transfer.

Routing protocols

Complies with various routing protocols, and supports redistributing the information about routing protocols.

Traffic control

Supports multiple queuing algorithms and guarantees advantaged bandwidth for key services.

Terminal access

Supports Telnet-like or dumb terminal applications at the aid of PRODIGY Route RAS software.

Management/Maintenance

Easy management/maintenance through rich management options.

Cost effectiveness

High performance/price ratio.

TECHNICAL SPECIFICATIONS

Item	PD1-171-10	PD1-171-21	PD1-171-22	PD1-171-23	PD1-171-24	PD1-171-25
Flash	8MB					
Boot ROM	512K					
SDRAM	64MB					
Port (RPU)	1*10M 1*10/100M 1*Syn/Asyn	1*10M 1*10/100M 1*Syn/Asyn	1*10/100M 1*Syn/Asyn	1*10/100M 1*Syn/Asyn 1*ISDN	2*10/100M 1*ISDN	2*10/100M 1*CE1
Slot	None	1 EIC	1 WIC	None	None	None
Data Link Layer	FR, X.25, LAPB, PPP, PPPoE (Server/Client), Multilink PPP, HDLC, SLIP, ISDN (PRI/BR1), XoT, X.25-TCP, 802.1Q, MPLS					
Network Layer	ARP, Proxy ARP, DNS, DNS Proxy, NAT, ICMP, IGMP, DHCP (Server/Client/Relay), IP Multicast, PIM-DM/SM					
Routing	Static, RIP, OSPF, BEIGRP, BGP-4, DDR, PBR, DVMRP					
Security	AAA Radius, TACACS+, Firewall, L2TP, PPTP, GRE, IPSec, IKE, MPLS VPN					
Reliability	Port Backup, HSRP, VRRP, E-backup(PRODIGY Proprietary), Ethernet remote line auto-detection(PRODIGY Proprietary)					
QoS	FIFO, PQ, CQ, CBWFQ, WFQ, RED, WRED, DSCP, IP Precedence, CAR					
Network Management	SNMP V1/2/3, RMON, PDP (compatible with Cisco CDP)					
Dimensions (LxWxH)	445x310x45mm					340x200x44mm
Power Supply	AC: 100 ~ 240V, 47 ~ 63 Hz, 1A/230V. DC: -36 ~ -72 V, 1.5 A					
Power Consumption	40W (max.)			30W (max.)		25W (max.)
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C					
Humidity	Operating: 10 ~ 85%, non-operating: 5% ~ 95% (no condensing)					

ORDERING INFORMATION

Modules	Description
PD1-171-10	Terrabit Networks PD1-171-10 Fixed Router(1 port 10/100M Fast Ethernet, 1 port 10M Ethernet, 1 Sync/Async serial port)
PD1-171-21	Terrabit Networks PD1-171-21 Modularized Router(1 port 10/100M Fast Ethernet, 1 port 10M Ethernet, 1 Sync/Async serial port, 1 EIC slot which can only be used with EIC-8ASY)
PD1-171-22/23/24/25	Terrabit Networks PD1-171-22/23/24/25 Modularized Router(1 port 10/100M Fast Ethernet, 1 Sync/Async serial port, 1 Interface card slot)
PD1-EIC-8ASY	8-port Async Serial Interface Card (for PD1-171-21/22 only)
PD1-WIC-1T	1-port serial sync and async interface card (for PD1-171-22 only)
PD1-WIC-1T-V11	1-port V11 WAN Interface Card (for PD1-171-22 only)
PD1-WIC-1UE1	1-port unchannelized E1 Interface card (for PD1-171-22 only)

PRODIGY MODULAR MULTI-ACCESS ROUTER



PD1-261-00

**Small/Medium Multi-service
Access Router**

TECHNICAL SPECIFICATIONS

Item	PD1-261-11	PD1-261-21	PD1-261-22	PD1-261-23	PD1-261-24	PD1-261-26
Flash	8MB					
SDRAM	64MB					
EPROM	512K					
Fixed Port	1*Console, 1*AUX, 2*10/100M, 2*Sync/Async	1*Console, 1*AUX, 2*10/100M, 2*Sync/Async	1*Console, 1*AUX, 2*10/100M, 1* CE1	1*Console, 1*AUX, 2*10/100M, 1* ISDN	1* Console 1* AUX 1* 10/100M Routing Port 2* Syn/Asyn 24*10/100M Switching Ports	1*Console, 1*AUX, 2*10/100M, 2* Syn/Asyn
Expansibility	1 Network Interface Card Slots (WIC)	2 Network Interface Card Slots (1 WIC, 1 EIC)	2 Network Interface Card Slots (1 WIC, 1 EIC)	2 Network Interface Card Slots (1 WIC, 1 EIC)	4 Network Interface Card Slots (1 WIC, 3 EIC)	4 Network Interface Card Slots (1 WIC, 3 EIC)
Data Link Layer	FR, X.25, LAPB, PPP, PPPoE (Server/Client), Multilink PPP, HDLC, SLIP, ISDN (PRI/BRI), Xot, X.25-TCP, 802.1Q, MPLS					
Network Layer	ARP, Proxy ARP, DNS, DNS Proxy, NAT, ICMP, IGMP, DHCP (Server/Client/Relay), IP Multicast, PIM-DM/SM					
Routing	Static, RIP, OSPF, BEIGRP, BGP-4, DDR, PBR, DVMRP					
Security	AAA Radius, TACACS+, Firewall, L2TP, PPTP, GRE, IPSec, IKE, MPLS VPN					
Reliability	Port Backup, HSRP, VRRP, E-backup(OCTOPUZ Proprietary), Ethernet remote line auto-detection(PRODIGY Proprietary)					
QoS	FIFO, PQ, CQ, CBWFQ, WFQ, RED, WRED, DSCP, IP Precedence, CAR					
Network Management	SNMP V1/2/3, RMON, PDP (compatible with Cisco CDP)					
Dimensions (LxWxH)	445x310x45mm					
Power Supply	AC: 100 ~ 240V, 47 ~ 63 Hz, 1A/230V. DC: -36 ~ -72 V, 1.5 A					
Power Consumption	40W (max.)					
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C					
Humidity	Operating: 10 ~ 85%, non-operating: 5% ~ 95% (no condensing)					

ORDERING INFORMATION

Modules	Description
PD1-261-11	Terrabit Networks PD1-261-11 Modularized Router(2 ports 10/100M Fast Ethernet, 2 Sync/Async serial ports, 1 WIC slot)
PD1-261-21	Terrabit Networks PD1-261-21 Modularized Router(2 10/100M Fast Ethernet port, 2 Sync/Async ports, 1 WIC slot, 1 EIC slot)
PD1-261-22	Terrabit Networks PD1-261-22 Modularized Router(2 ports 10/100M Fast Ethernet, 1 CE1 port, 1 WIC slots, 1 EIC slots) Support Hardware Encryption
PD1-261-23	Terrabit Networks PD1-261-23 Modularized Router(2 ports 10/100M fast Ethernet, 1 ISDN port, 1 WIC slot, 1 EIC slot)
PD1-261-24	Terrabit Networks PD1-261-24 Modularized Switching Router(1 port 10/100M Fast Ethernet , 2 serial ports, 1 WIC slot, 3 EIC slots, 24 ports 10/100MBase-TX switching)
PD1-261-26	Terrabit Networks PD1-261-26 Modularized Router(2 port 10/100M Fast Ethernet, 2 serial ports, 1 WIC slot, 3 EIC slots)
PD1-WIC-1CE1	1-port E1 & ISDN PRI (BNC/RJ-45) Interface card
PD1-WIC-1CT1	1-port T1 WAN interface card
PD1-WIC-1B-S/T	1-port ISDN BRI S/T interface card
PD1-WIC-1DTU	1-port ISDN BRI U/DTU interface card
PD1-WIC-1T	1-port serial sync and async interface card
PD1-WIC-2T	2-port serial sync and async interface card
PD1-WIC-1T-V11	1-port V11 WAN Interface Card
PD1-WIC-2T-V11	2-port V11 WAN Interface Card
PD1-WIC-1E1T	1-port 10BaseT and One Serial sync and async interface card
PD1-WIC-1ETH	1-port 10BaseT Ethernet Interface card
PD1-WIC-2ETH	2-port 10BaseT Ethernet Interface card
PD1-EIC-8ASY	8-port Async Serial Interface Card
PD1-WIC-1UE1	1-port unchannelized E1 Interface card

PRODIGY AGGREGATION ROUTER



PD1-261-40/PD1-261-41

SMB Aggregation Router

FEATURES

Modular design

Supports many network interface cards, providing flexible configuration and expansion.

Performance

Powerful CPU and advanced bus technology guarantee the high performance of network applications.

Transfer modules

Enables seamless integration of routers and transfer modules, lowering user's investment and network's down time.

Security

Firewall, VPN and other security measures secure the data transfer.

Routing protocols

Supports many routing protocols. Supports redistributing the routing-protocol information.

Traffic control

Supports multiple queuing algorithms and guarantees advantaged bandwidth for key services.

Terminal access

Supports Telnet-like or dumb terminal applications at the aid of PRODIGY Route RAS software.

Management/Maintenance

Easy management/maintenance through rich management options.

TECHNICAL SPECIFICATIONS

Item	PD1-261-40	PD1-261-41
Flash	8MB	
Boot ROM	512K	
SDRAM	64MB	
Port (RPU)	1*10/100M Fast Ethernet Port 1*AUX Port, 1*Console Port	2*10/100M Fast Ethernet Port 1*AUX Port, 1*Console Port
Slot	3 Network Module Slots	
Data Link Layer	FR, X.25, LAPB, PPP, PPPoE (Server/Client), Multilink PPP, HDLC, SLIP, ISDN (PRI/ BRI), XoT, X.25-TCP, 802.1Q, MPLS	
Network Layer	ARP, Proxy ARP, DNS, DNS Proxy, NAT, ICMP, IGMP, DHCP (Server/Client/Relay), IP Multicast, PIM-DM/SM	
Routing	Static, RIP, OSPF, BEIGRP, BGP-4, DDR, PBR, DVMRP	
Security	AAA Radius, TACACS+, Firewall, L2TP, PPTP, GRE, IPSec, IKE, MPLS VPN	
Reliability	Port Backup, HSRP, VRRP, E-backup(PRODIGY Proprietary), Ethernet remote line auto-detection(PRODIGY Proprietary)	
QoS	FIFO, PQ, CQ, CBWFQ, WFQ, RED, WRED, DSCP, IP Precedence, CAR	
Network Management	SNMP V1/2/3, RMON, PDP (compatible with Cisco CDP)	
Dimensions (LxWxH)	440x425x70mm	
Weight	11.1kg	
Power Supply	AC: 100 ~ 240V, 47 ~ 63 Hz, 2A/230V. DC: -36 ~ -72 V, 2.3 A	
Power Consumption	120W (max.)	
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C	
Humidity	Operating: 10 ~ 85%, non-operating: 5% ~ 95% (no condensing)	

ORDERING INFORMATION

Modules	Description
PD1-261-40	Terrabit Networks PD1-261-40 Modularized Router(1 port 10/100M Fast Ethernet, 3 Network Module slots)
PD1-261-41	Terrabit Networks PD1-261-41 Modularized Router(2 ports 10/100M Fast Ethernet, 3 Network Module slots)
PD1-NM1-4T	4-port Serial Network Module
PD1-NM1-8ASY	8-port High-density Async Network Module
PD1-NM1-16ASY	16-port High-density Async Network Module
PD1-EM1-1CE1	1-port Channelized E1/ISDN PRI Network Module
PD1-EM1-2CE1	2-port Channelized E1/ISDN PRI Network Module
PD1-EM1-4UE1	4-port unchannelized E1 Network Module
PD1-EM1-4CE1	4-port CE1 Network Module
PD1-EM1-8CE1	8-port CE1 Network Module
PD1-EM1-16CE1	16-port CE1 Network Module
PD1-EM1-4CT1	4-port CT1 Network Module
PD1-EM1-8CT1	8-port CT1 Network Module
PD1-EM1-16CT1	16-port CT1 Network Module
PD1-EM1-1CE3	1-port E3 Network Module
PD1-NM1-1E2T	1-port Ethernet and 2-port Serial Network Module
PD1-NM1-2T1B-S/T	2-port Serial and 1-port ISDN BRI S/T Network Module
PD1-NM1-1E1T1B-S/T	1-port Ethernet,1-port Serial and 1-port ISDN BRI Network Module
PD1-NM1-4B-S/T	4-port ISDN BRI Network Module
PD1-NM1-1FE-TX	1-port Fast Ethernet Network Module (10/100BaseTx)
PD1-NM1-1FE-TX (MM)	1-port Fast Ethernet Network module (100BaseFX Multi-mode)
PD1-NM1-1FE-FX (SM)	1-port Fast Ethernet Network module (100BaseFX Single-mode)
PD1-EM1-1GE-TX/SFP	1-port 10/100/1000MBase-TX/Gigabit SFP Combo

PRODIGY CENTRAL ACCESS ROUTER



PD1-361-60

Central Access Router for Large- and Medium-sized Enterprises

FEATURES

Modular design

Supports many network interface cards, ensuring flexible configuration and expansion.

Performance

Powerful CPU and advanced bus technology guarantee the performance of network applications.

Transfer modules

Enables seamless integration of routers and transfer modules, lowering user's investment and network's down time.

Security

Firewall, VPN and other security measures secure the data transfer.

Routing protocols

Supports various routing protocols and redistributes the information across routing protocols.

Traffic control

Supports multiple queuing algorithms and guarantees advantaged bandwidth for key services.

Terminal access

Supports Telnet-like or dumb terminal applications at the aid of PRODIGY Route RAS software.

Management/Maintenance

Easy management/maintenance through rich management options.

TECHNICAL SPECIFICATIONS

Item	PD1-361-60
Flash	8MB
Boot ROM	512K
SDRAM	64MB
Forwarding Rate	120Kpps
Port (RPU)	1 AUX Port, 1 Console Port
Slot	6 Network Module Slots
Data Link Layer	FR, X.25, LAPB, PPP, PPPoE (Server/Client), Multilink PPP, HDLC, SLIP, ISDN (PRI/BRI), XoT, X.25-TCP, 802.1Q, MPLS
Network Layer	ARP, Proxy ARP, DNS, DNS Proxy, NAT, ICMP, IGMP, DHCP (Server/Client/Relay), IP Multicast, PIM-DM/SM
Routing	Static, RIP, OSPF, BEIGRP, BGP-4, DDR, PBR, DVMRP
Security	AAA Radius, TACACS+, Firewall, L2TP, PPTP, GRE, IPsec, IKE, MPLS VPN
Reliability	Port Backup, HSRP, VRRP, E-backup(PRODIGY Proprietary), Ethernet remote line auto-detection(PRODIGY Proprietary)
QoS	FIFO, PQ, CQ, CBWFQ, WFQ, RED, WRED, DSCP, IP Precedence, CAR
Network Management	SNMP V1/2/3, RMON, PDP (compatible with Cisco CDP)
Dimensions (LxWxH)	445x410x88mm
Weight	12.2kg
Power Supply	AC: 100 ~ 240V, 47 ~ 63 Hz, 2A/230V. DC: -36 ~ -72 V, 2.3 A
Power Consumption	120W (max.)
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C
Humidity	Operating: 10 ~ 85%, non-operating: 5% ~ 95% (no condensing)

ORDERING INFORMATION

Modules	Description
PD1-361-60	Terrabit Networks PD1-361-60 Modularized Router(6 Network Module slots)
PD1-NM1-1FE-TX	1-port Fast Ethernet Network Module (10/100MBase-TX)
PD1-NM1-2FE-TX	2-port Fast Ethernet Network Module (slot 1 only), only for PD1-361-60
PD1-NM1-1FE-FX(MM)	1-port Fast Ethernet Network module (100MBase-FX, Multi-mode)
PD1-NM1-1FE-FX(SM)	1-port Fast Ethernet Network module (100MBase-FX, Single-mode)
PD1-NM1-4T	4-port Serial Network Module
PD1-NM1-8ASY	8-port High-density Async Network Module
PD1-NM1-16ASY	16-port High-density Async Network Module
PD1-EM1-1CE1	1-port Channelized E1/ISDN PRI Network Module
PD1-EM1-2CE1	2-port Channelized E1/ISDN PRI Network Module
PD1-EM1-4UE1	4-port unchannelized E1 Network Module
PD1-EM1-4CE1	4-port CE1 Network Module
PD1-EM1-8CE1	8-port CE1 Network Module
PD1-EM1-16CE1	16-port CE1 Network Module
PD1-EM1-4CT1	4-port CT1 Network Module
PD1-EM1-8CT1	8-port CT1 Network Module
PD1-EM1-16CT1	16-port CT1 Network Module
PD1-EM1-1CE3	1-port E3 Network Module
PD1-NM1-1E2T	1-port Ethernet and 2-port Serial Network Module
PD1-NM1-2T1B-S/T	2-port Serial and 1-port ISDN BRI S/T Network Module
PD1-NM1-1E1T1B-S/T	1-port Ethernet, 1-port Serial and 1-port ISDN BRI Network Module
PD1-NM1-4B-S/T	4-port ISDN BRI Network Module
PD1-361-60-RPS	Terrabit Networks PD1-361-60 Modularized Router(6 Network Module slots) with redundant power supply
PD1-EM1-1GE-TX/SFP	1-port 10/100/1000MBase-TX/Gigabit SFP Combo

PRODIGY CORE ROUTER



PD1-R41-8601-(RPS)

High-performance, Core Router

FEATURES

Architecture

Modularized design optimizes its flexibility, usability and extensibility.

High performance/price ratio

At a very competitive price, up to 800 Kpps processing power makes PRODIGY PD1-R41-8601-(RPS) the most powerful single-processor router platform.

Tight security

Supports PPTP, L2TP, IPSEC, GRE, and MPLS to deploy L2/L3 VPN's of various types, saving enterprises from expensive leased lines.

Rich connection options

155-M POS/CPOS, CE3 and other hi-speed interface modules, various high-port-density LAN/WAN connection options, greatly lowering cost per port, and supporting flexible deployment.

Consummate QoS mechanism

DiffServ, CAR, Traffic Shaping (GTS, FRTS), FIFO/PQ/CQ/CBWFQ and other queuing strategies, congestion prevention mechanisms (RED, WRED).

MPLS VPN

MPLS forwarding and MPLS L2/L3 VPN to implement transparent Ethernet internetworking.

Compatibility

Compatible with RFC and mainstream industry standards; interconnecting with different mainstream products at each layer of the network.

PDROS support

PRODIGY Router Operating System (PDROS) presents the configuration interface in a popular style, and with online help, it is easy to use. Its modularized design is centered by IP services, and can be trimmed or extended to fit applications. PDROS owns over 6,000 features.

TECHNICAL SPECIFICATIONS

Item	PD1-R41-8601	PD1-R41-8601-RPS
Flash	16MB (up to 32MB)	
EPROM	512K	
SDRAM	256MB (up to 512MB)	
NVRAM	8K (real time clock)	
Standard	2* 10/100/1000M Ethernet Ports (RJ45), 1* Console Port, 1* AUX Port	
Configuration	6* Network Module Slots, CPU with embedded hardware encrypt function, (RPS support for PD1-R41-8601-RPS)	
Forwarding Rate	800Kpps	
Dimensions (LxWxH)	445x425x88mm	
Power Supply	AC: 100 ~ 240V, 47 ~ 63 Hz, 2A/230V. DC: -36 ~ -72 V, 2.3 A	
Power Consumption	120W (max.)	
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C	
Humidity	Operating: 10 ~ 85%, non-operating: 5 ~ 95% (no condensing)	

ORDERING INFORMATION

Modules	Description(Slot1~Slot6)
PD1-R41-8601	Terrabit Networks PD1-R41-8601 Modularized Router(2 10/100/1000M ethernet ports, 6 network module slots)
PD1-R41-8601-RPS	Terrabit Networks PD1-R41-8601 Modularized Router(2 10/100/1000M ethernet ports, 6 network module slots)with redundant power supply
PD1-NM1-1FE-TX	1-port Fast Ethernet Network Module (10/100MBase-TX)
PD1-NM1-2FE-TX(only for Slot1, 2)	2-port Fast Ethernet Network Module (slot 1 only), only for 3660
PD1-NM1-1FE-FX(MM)	1-port Fast Ethernet Network module (100MBase-FX, Multi-mode)
PD1-NM1-1FE-FX(SM)	1-port Fast Ethernet Network module (100MBase-FX, Single-mode)
PD1-NM1-4T	4-port Serial Network Module
PD1-NM1-8ASY	8-port High-density Async Network Module
PD1-NM1-16ASY	16-port High-density Async Network Module
PD1-EM1-1CE1	1-port Channelized E1/ISDN PRI Network Module
PD1-EM1-2CE1	2-port Channelized E1/ISDN PRI Network Module
PD1-EM1-4UE1	4-port unchannelized E1 Network Module
PD1-EM1-4CE1	4-port CE1 Network Module
PD1-EM1-8CE1	8-port CE1 Network Module
PD1-EM1-16CE1	16-port CE1 Network Module
PD1-EM1-4CT1	4-port CT1 Network Module
PD1-EM1-8CT1	8-port CT1 Network Module
PD1-EM1-16CT1	16-port CT1 Network Module
PD1-EM1-1CE3	1-port E3 Network Module
PD1-NM1-1E2T	1-port Ethernet and 2-port Serial Network Module
PD1-NM1-2T1B-S/T	2-port Serial and 1-port ISDN BRI S/T Network Module
PD1-NM1-1E1T1B-S/T	1-port Ethernet, 1-port Serial and 1-port ISDN BRI Network Module
PD1-EM1-1POS-OC3/STM-1-SFP	1-port OC-3C/STM-1(155M)POS interface module (SFP)
PD1-EM1-1CPOS-OC3/STM-1-SFP	1-port OC-3C/STM-1(155M)Channelized POS interface module (SFP)
PD1-EM1-1GE-TX/SFP	1-port 10/100/1000MBase-TX/Gigabit SFP Combo

PRODIGY CORE AGGREGATION ROUTER



PD1-R71-2081

**High-performance, Core
Aggregation Router**

FEATURES

Architecture

Complete modular design in which MCU, chassis, power supply, and WAN interface are separated from each other, boosting usability, flexibility and extensibility.

High performance/price ratio

At a very competitive price, up to 800 Kpps processing power makes PD1-R71-2081-Chassis the most powerful single-processor router platform.

Tight security

Supports PPTP, L2TP, IPSEC, GRE, and MPLS to deploy L2/L3 VPN's of various types, saving enterprises from expensive leased lines.

Rich connection options

155-M POS/CPOS, CE3 and other hi-speed interface modules, various high-port-density LAN/WAN connection options, greatly lowering cost per port and supporting flexible deployment.

Consummate QoS mechanism

DiffServ, CAR, Traffic Shaping (GTS, FRTS), FIFO/PQ/CQ/CBWFQ and other queuing strategies, congestion prevention mechanisms (RED, WRED).

MPLS VPN

MPLS forwarding and MPLS L2/L3 VPN to implement transparent Ethernet internetworking.

Compatibility

Compatible with RFC and mainstream industry standards; interconnecting with different mainstream products at each layer of the network.

PDROS support

PRODIGY Router Operating System (PDROS) presents configuration interface in a popular style, and with online help, it is easy to use. Its modular design is centered by IP services, and can be trimmed or extended to fit applications. PDROS owns over 6,000 features.

TECHNICAL SPECIFICATIONS

Item	PD1-R71-2081
Packet Forwarding Rate	800 Kpps
Memory	256 M (up to 512M)
Flash	16 M (up to 32M)
Boot ROM	1024 K
NVRAM	512 K
Slot	8
Ports(RPU)	2 * 10/100/1000M Electrical/Optical Combo Ports 1 * 10/100M Electrical Ethernet Port, 1 * Console Port, 1 * AUX Port
Module	NM/EM network modules
Reliability	Double power supplies.
Chassis	Standard 19-inch chassis
Heat Dissipation	Air flow: right to left
Dimensions (LxWxH)	440x450x156 mm
Weight	10 kg
Power Supply	AC: 100 ~ 240 V, 47 ~ 63 Hz, 4A/230V; DC: -40 ~ -56 V, 6A
Power Consumption	200 W (max.)
Temperature	Operating: 0 ~ 40°C, non-operating: -20 ~ 65°C
Humidity	Operating: 10 ~ 85%, non-operating: 5 ~ 95% (no condensing)

ORDERING INFORMATION

Modules	Description
PD1-R71-2081-Chassis	Terrabit Networks PD1-R71-2081 Chassis (Including backplane,cooling fan and software, separate power supply and MCU required)
PD1-R71-2001-AC	Terrabit Networks PD1-R71-2001 220V AC power supply
PD1-R71-2001-DC	Terrabit Networks PD1-R71-2001 -48V DC power supply
PD1-R71-2001-MCU	Terrabit Networks PD1-R71-2001 Main Control Unit(Standard Config: 1 console, 1 AUX,2 10/100/1000MBase-TX/Gigabit SFP Combo Ports and 1 100M Ethernet port)
PD1-NM1-1FE-TX	1-port Fast Ethernet Network Module (10/100MBase-TX)
PD1-NM1-1FE-FX(MM)	1-port Fast Ethernet Network module (100MBase-FX, Multi-mode)
PD1-NM1-1FE-FX(SM)	1-port Fast Ethernet Network module (100MBase-FX, Single-mode)
PD1-NM1-4T	4-port Serial Network Module
PD1-NM1-8ASY	8-port High-density Async Network Module
PD1-NM1-16ASY	16-port High-density Async Network Module
PD1-EM1-1CE1	1-port Channelized E1/ISDN PRI Network Module
PD1-EM1-2CE1	2-port Channelized E1/ISDN PRI Network Module
PD1-EM1-4UE1	4-port unchannelized E1 Network Module
PD1-EM1-4CE1	4-port CE1 Network Module
PD1-EM1-8CE1	8-port CE1 Network Module
PD1-EM1-16CE1	16-port CE1 Network Module
PD1-EM1-4CT1	4-port CT1 Network Module
PD1-EM1-8CT1	8-port CT1 Network Module
PD1-EM1-16CT1	16-port CT1 Network Module
PD1-EM1-1CE3	1-port E3 Network Module
PD1-NM1-1E2T	1-port Ethernet and 2-port Serial Network Module
PD1-NM1-2T1B-S/T	2-port Serial and 1-port ISDN BRI S/T Network Module
PD1-NM1-1E1T1B-S/T	1-port Ethernet,1-port Serial and 1-port ISDN BRI Network Module
PD1-EM1-1POS-OC3/STM-1-SFP	1-port OC-3C/STM-1(155M)POS interface module (SFP)
PD1-EM1-1CPOS-OC3/STM-1-SFP	1-port OC-3C/STM-1(155M)Channelized POS interface module (SFP)
PD1-EM1-1GE-TX/SFP	1-port 10/100/1000MBase-TX/Gigabit SFP Combo

PRODIGY MODULAR CORE ROUTER



PD1-R71-6001

Large-Capacity Core Router

FEATURES

Hi-Performance & Hi-Expansibility

PD1-R71-6001 Core router sets up the new standard of hi-performance switching router and all ports can be wire-speed transmitted based on hardware ACL, L2 switch and L3 router. Its incomparable characteristic provides more convenient approach for high-end applications (from content to next-generation switches and MAN Ethernet) to serve the suppliers, cluster or grid computers. PD1-R71-6001 core routers can provide or improve these services based on its operating speed of 10,000 Mbit per second.

L2 switch and L3 router

PDROS operating system and BroadScale system frame coordinate with each other. PD1-R71-6001 provides powerful functions of L2 switch and L3 router, the expansibility and safety of connecting LAN, MAN and Internet. The characteristics of PD1-R71-6001 L2/L3 are following:

- Supporting BGP, OSPF and RIP.
- Each circuitry card has the re-distributed transmission list based on the routing policy.
- Hardware transmission list with up to 256k entries.
- MPLS.

Wire-speed performance

With its circuitry card and its NP/ASIC/TCAM keyboard, PD1-R71-6001 Core router can deal with data packets at the wire speed. PD1-R71-6001 also supports the wire-speed of each port and congestion-less transmission in case all high-level characteristics have been opened.

These characteristics are illustrated in the following:

- Filtering patulous ACL pocket and routing policy.
- Searching multi-area information pockets and classified Qos.
- Restricting the speed.
- WRED, WFQ, Avoiding congestion.

High reliability

The main control engine of PD1-R71-6001 supports 1+1 redundancy and provides operator-level reliability. All key components, including MSU, business module, electrical source and refrigeration system, have redundancy and hot swap. All EMS memory adopts the EEC-verified protection mechanism.

Powerful system operation platform

The processing module of PD1-R71-6001 router can support million router items. Each circuitry card supports 256k-transmission lists and several thousand ACL. Routers processing module support flux restriction and filtration function, these can help the administrator to have DAP and avoid the flooding of unnecessary information. PD1-R71-6001 also support 100Mbps control information switch route form router processing module to each circuitry card to avoid the bottleneck of the web speed caused by traditional low- performance 3 layers switch.

Advanced PDROS operation system

PDROS operating system is designed with high expansibility and high accessibility to LAN/MAN/WAN. As a current operating system, it can run on the hi-performance L2 switch and L3 router. The key functions of PDROS include the powerful router-control platform based on hardware and software, hi-fi flux control and stat, CLI and system diagnosis.

ORDERING INFORMATION

Modules	Description
PD1-R71-6031-Chassis	PD1-R71-6031 Core Router chassis (3 expansion slots (including one slot reserved for MSU panel), 1 AC power (max.2))
PD1-R71-6061-Chassis	PD1-R71-6061 Core Router chassis (6 expansion slots (including two slots reserved for MSU panels), 1 AC power (max.2))
PD1-R71-6101-Chassis	PD1-R71-6101 Core Router chassis (10 expansion slots (including two slots reserved for MSU panels), 1 AC power (max.2))
PD1-R71-6001-PWR-AC-600	Terrabit Networks PD1-R71-6031/PD1-R71-6061 AC Power(Input AC 100-240V, Max. Power 600W)
PD1-R71-6001-PWR-AC-1000	Terrabit Networks PD1-R71-6101 AC Power(Input AC 100-240V, Max. Power 1000W)
PD1-R71-6001-PWR-DC-1000	Terrabit Networks PD1-R71-6001 Series DC Power(Input DC -48V, Max. Power 1000W)
PD1-R71-6001-MSU-I	Terrabit Networks PD1-R71-6031/PD1-R71-6061 Main Switching Unit(Standard Config. 1 Console port, 1 AUX port, 1 gigabit SFP/TX Combo port)
PD1-R71-6001-MSU-II	Terrabit Networks PD1-R71-6061/PD1-R71-6101 Main Switching Unit(Standard Config. 1 Console port, 1 AUX port, 1 gigabit SFP/TX Combo port)
PD1-R71-6001-4GE-TX/SFP	4-port gigabit TX/SFP Combo Ethernet Module
PD1-R71-6001-12GE-TX/SFP	12-port gigabit TX/SFP Combo Ethernet Module
PD1-R71-6001-16CE1	16-port CE1 Module
PD1-R71-6001-32CE1	32-port CE1 Module
PD1-R71-6001-16CT1	16-port CT1 Module
PD1-R71-6001-32CT1	32-port CT1 Module
PD1-R71-6001-1OC3/STM-1-CPOS	1-port OC-3C/STM-1(155M)Channelized POS Interface Module
PD1-R71-6001-2OC3/STM-1-CPOS	2-port OC-3C/STM-1(155M)Channelized POS Interface Module
PD1-R71-6001-2OC3/STM-1-POS	2-port OC-3C/STM-1(155M)POS Interface Module

For enquires, please email to sales@terrabitnet.com

TECHNICAL SPECIFICATIONS

Item		PD1-R71-6031-Chassis	PD1-R71-6061-Chassis	PD1-R71-6101-Chassis
Port Types	Slot	1*MSU + 2*Access Modules	2*MSU + 4* Access Modules	2*MSU + 8* Access Modules
	Backplane Capacity	1.2T	1.8T	3.2T
	Switch Fabric	UltraEngine I 96Gbps	UltraEngine I 96Gbps	UltraEngine II 192Gbps
		UltraEngine II 192Gbps	UltraEngine II 192Gbps	UltraEngine III 384Gbps
		UltraEngine III 384Gbps	UltraEngine III 384Gbps	UltraEngine IV 768Gbps
	Forwarding Rate	238Mpps	476 Mpps	952 Mpps
Physics Specifications	Humidity	10 ~ 90% (no condensing)		
	Temperature	0 ~ 40°C		
	Power Redundancy	1+1 redundancy, support hot swapped		
	Dimensions (L×W×H)	436×450×380mm	436×450×680mm	436×450×797mm
	Power Consumption	700W	1000W	1000W
Physics Layer Standard	LAN	Supports 100BASE-T, 100BASE-FX, 1000BASE-T and 1000BASE-SX/LX.		
	WAN	Supports ITU-T V.35, V.24/V.28 (RS-232), RS422/RS449, G.703, G.704 and I.430 multifold port criterion.		
	MODEM	Supports ITU-T V.93, V.90, V.34bis, V.34, V.32bis, V.32, V.22bis and V.22 agreements.		
Internet-working	LAN Data Link Layer protocols	Ethernet-II, Ethernet-SNAP, IEEE 802.3, IEEE802.1D, IEEE802.1p, IEEE802.1Q, IEEE802.1x		
	WAN Data Link Layer protocols	Frame Relay, FR Switch, X.25, X25-TCP, XOT (X25 over TCP), LAPB, PPP, PPPoE, HDLC, SLIP, ISDN (PRI/BRI), LLC2, SDLC, DSLW-SSP		
	L2VPN, L3VPN	AtoM, VPLS, MP-BGP, VRF		
Network Protocols	IP service	ARP, acting ARP, Static domain name analysis, NAT, IP packet filtration, ICMP, IGMP, DHCP, DNS, IP Multicast, DM/SM-PIM, DVMRP		
	IP	Message condensation		
	Ipv6	IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, NAT-PT, IPv6 tunnel, 6PE, Ipv6 static router, RIPng, OSPFv3, BGP4+		
	IP router	Static router management, Dynamic router management, RIP(V1/V2), OSPF (V1/V2), BIRGP (compatible with Cisco EIGRP),		
		BGP-4, DDR		
Security		Policy router: Support based on the amount of pocket, original address and flux		
	AAA	Radius, CHAP, TACAS+		
	Fire wall	Based on original purpose, time period, and control list of visiting protocols.		
		Based on ACCESS-CLASS to filter NAT, Supports status-based intelligent filter technology.		
		Provides the attack-free protection to all kinds of web message, including Ping of death, tear-drop, jolt2 attacking protection, land-based, winnuke, ping sweep, arp attack, IP Spoofing.		
Others		Supports TCP/UDP/ICMP all kinds of scan criterion.		
	VPN	L2TP, GRE, IPSec, MPLS		
	Other safety functions	Dynamic ARP close, ISDN active recognize, asynchronous redial, Identifications of router protocols, certificate authority.		
	Backup center	Port Backup, E-backup (PRODIGY proprietary), HSRP, VRRP		
	IP QoS	FIFO, PQ, CQ, WFQ, CBWFQ, RED, WRED, RTS, RSVP		
Others	CLI	Local position or remote control through the port Telnet, rlogin, ZMODEM Telnet and downloading function		
		Order classification protection, Chinese hint, DEBUG, Tracerouter, ping, TFTP, Blog		
	SNMP	SNMP V1/2/3, RMON NMP, Through Prodigy Director, OPENVIEW, CiscoWorks to control and manage routers; CDP, CiscoWorks 2000		
	FAX over IP	H.323 protocol inn, Embedded Gatekeeper Client and Server, Providing value-added services, restraining mute and eliminating echo.		

PD2-H92-MOL2-MXE • 118	118 Rack ADM Mux
PD2-H92-MOL2-MFE • 120	120 8 Slots ADM Mux
PD2-H92-MOL2-MFIT • 122	122 Compact Mod ADM Mux
PD2-H92-MOL2-MA • 124	124 Compact ADM Mux
PD2-H92-MOL2-M63 • 126	126 63E1 Terminal Mux
PD2-H92-MOL2-MC • 127	127 Compact Terminal Mux
PD2-H92-MOL2-MV • 129	
PD2-H02-FL-ETHMUX • 131	131 TDM Over IP
PD2-H02-FLP2 • 133	133 Ethernet To E1 Converter
PD2-H02-FL-0135 • 136	
PD2-H02-FL-EoS01/EoS01F • 137	
PD2-H02-FL12-(101/200) • 138	138 Media Converter

PRODIGY RACK ADM MUX



PD2-H92-MOL2-MXE

SDH/MSP MULTIPLEXER

GENERAL DESCRIPTION

PD2-H92-MOL2-MXE is a carrier-class, cost-effective, compact (only 3U high), STM-1/STM-4 SDH/MSP platform that is designed for application in metro and access networks to facilitate the efficient transport of traditional TDM and emerging data traffic for service providers.

PD2-H92-MOL2-MXE is a chassis based compact SDH equipment, designed mainly as a gateway node between the core SDH network and a number of remote CPE boxes. It may also be used as a multi service SDH ADM node in a typical ring or mesh network. The 3U high 19" wide chassis of the PD2-H92-MOL2-MXE has 19 slots, with 2 slots for the 1+1 power cards, 1 slot for network management card, 2 slots for network interface unit(NIU) cards, and 14 slots for local interface unit(LIU) cards.

FEATURES

- Support 1+1 MSP, SNCP protection.
- Management channel can be DCC bytes or E1 (VC12).
- Support up to STM-16 rate.
- E1 BERT test is embedded.
- Ethernet service supporting GFP encapsulation, VC12 virtual concatenation (1~63 VC12) and LCAS
- Large cross - connect matrix capacity is 2016x2016 VC12s (112x112 VC4s) and powerful networking ability.
- Inter-working with popular SDH / MSP products of various vendors.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

TECHNICAL SPECIFICATIONS

Item		PD2-H92-MOL2-MXE	
SDH Interface	Max	STM-16	4 STM-16 optical interfaces
		STM-4	8 STM-4 optical interfaces
		STM-1	32 STM-1 optical interfaces
	Connector Spec		SC/PC or FC/PC or SFPs-1.1, L-1.1, L-1.2, S4.1, L4.1, L4.2, S16.1, L-16.1, L-16.2. Single fiber bi-directional interfaces optional
PHD Interface	E1 Spec		Comply with G.703, 2.048Mbps, HDB3
	Max E1		336E1 (14 PD2-H92-MOL2-MXE.EP01A cards support)
Ethernet	Interface		10/100Base-Tx or 100Base-Tx, Comply with IEEE 802.3
	Max FE Interface		56 FE ports (14 FE01 or FE02 cards support)
	Encapsulation		Comply with ITU-T G.7041 (VCAT, GFP, LCAS)
V.35	Max Interface		28 V.35 interfaces (framed or unframed) DCE/DTE
Cross-connect	High order 112x112 VC4s		
Capacity	Low order 2016x2016 VC12s		
Management	Interface		10/100 Base-T (can be cascaded)
EOW interface			Standard socket RJ11
Physical Dimension			3U: 440L*240W*136Hmm
Power	Supply		-48V DC or dualpower supply
	Consumption		≤100W
Environment	Temperature		0°C ~ 50°C
	Humidity		≤ 90%(non-condensing)
Weight			≤ 8 kg

ORDERING INFORMATION

Master Unit

PD2-H92-MOL2-MXE.BOX	3U rack, with 19 physical slots
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Power Supply Card	Description
PD2-H92-MOL2-MXE.PWR01	3U rack, with 19 physical slots
PD2-H92-MOL2-MXE.PWR02	power supply card, AC-220V, 1+1 backup
PD2-H92-MOL2-MXE.PWR02B	AC-110V power card, support configuration 1+2

Network management card	Description
PD2-H92-MOL2-MXE.NM01	Network management card, 10/100base-T port

Optional Card

Network Interface Unit	Description
PD2-H92-MOL2-MXE.OX01S	STM-1 uplink card, two STM-1 optical interfaces. SFP module optional; S1.1, L1.1, L1.2; Not including SFP modules
PD2-H92-MOL2-MXE.OX04	STM-4 uplink card, two STM-4 optical interfaces. SFP module optional; S4.1, L4.1, L4.2; Not including SFP modules
PD2-H92-MOL2-MXE.OX16	STM-16 uplink card, two STM-16 optical interfaces. SFP module optional; S16.1, L16.1, L16.2; Not including SFP modules

Local interface unit	Description
PD2-H92-MOL2-MXE.EX01	2-STM-1 uplink card, electrical interface
PD2-H92-MOL2-MXE.OS01S	STM-1 tributary card, two STM-1 optical interfaces, Not including SFP modules
PD2-H92-MOL2-MXE.OS02A	2-STM-1 tributary card, with 2-port FE
PD2-H92-MOL2-MXE.OS03	1-STM-1 tributary card, with 1-port FE
PD2-H92-MOL2-MXE.EP01	E1 card, 24-port E1, 75ohm, occupy 2 physical slots, Need config BH4.850.107 cable, occupied two slots
PD2-H92-MOL2-MXE.EP01A/T	E1 card, 24-port E1, 120ohm, DB60 connector
PD2-H92-MOL2-MXE.EP02	1-E3 card, 75ohm
PD2-H92-MOL2-MXE.EP03	E1 card, 12-port E1, 75ohm, Need config BH4.850.107 cable, occupied two slots
PD2-H92-MOL2-MXE.EP03A/T	E1 card, 12-port E1, 120ohm, DB60 connector
PD2-H92-MOL2-MXE.EP01/T	24-E1 card, 120ohm, occupied two slots
PD2-H92-MOL2-MXE.FE01	4-port FE electrical interface card, 4-channel EoS
PD2-H92-MOL2-MXE.FE02	4-port FE optical interface card, 4-channel EoS, Not including SFP modules
PD2-H92-MOL2-MXE.FE04	4-port FE electrical interface card, 4-channel EoE
PD2-H92-MOL2-MXE.FE05	4-port FE optical interface card, 4-channel EoE, Not including SFP modules
PD2-H92-MOL2-MXE.FE06	Ethernet aggregation card, EoS, 8: 2, two FE ports
PD2-H92-MOL2-MXE.FE07	Ethernet aggregation card, EoE, 8: 2, two FE ports
PD2-H92-MOL2-MXE.GX01	Ethernet aggregation card, EoS, 8:1, one GE electrical port
PD2-H92-MOL2-MXE.GX01A	EoS, optical or electrical GE aggregation rate 8:1, Not including SFP modules
PD2-H92-MOL2-MXE.GX02	Ethernet aggregation card, EoE, 8:1, one GE electrical port
PD2-H92-MOL2-MXE.GX02A	EoE, optical or electrical GE aggregation rate 8:1, Not including SFP modules
PD2-H92-MOL2-MXE.GX03	Ethernet aggregation card, EoS, 8:1, two GE port (electrical or optical, Not including SFP modules), VLAN, QinQ, GE port 1+1 protection
PD2-H92-MOL2-MXE.GX04	Ethernet aggregation card, EoE, 8:1, two GE port (electrical or optical, Not including SFP modules), VLAN, QinQ, GE port 1+2 protection
PD2-H92-MOL2-MXE.ED01	V35 card, 2-port V35, support frame/unframed, DCE/DTE. Not including SFP modules
PD2-H92-MOL2-MXE.DX02	64K cross connection card, capacity: 2048x2048
PD2-H92-MOL2-MXE.LA01	EOW card

PRODIGY 8 SLOTS ADM MUX



PD2-H92-MOL2-MFE

SDH/MSPP MULTIPLEXER

GENERAL DESCRIPTION

PD2-H92-MOL2-MFE is a carrier-class, cost effective, compact (only 1U high), STM-1/STM-4/STM-16 SDH/MSPP platform that is designed for application in metro and access networks to facilitate the efficient transport of traditional TDM and emerging data traffic for service providers.

PD2-H92-MOL2-MFE is a card based compact SDH equipment, designed mainly as a gateway node between the core SDH network and a number of remote CPE boxes. It may also be used as a multiservice SDH ADM node in a typical ring or mesh network. The 1U high 19" wide chassis of the PD2-H92-MOL2-MFE has 8 slots, with 2 slots for the DC(1+1)/AC power supply, 1 slot for network management card, 1 slots for STM-1/STM-4 / STM-16 uplink, and 4 slots left for services (STM-1, Ethernet, E1, E3/DS3, V.35 Etc.).

FEATURES

- Support up to STM-16 rate.
- Support 1+1 MSP, SNCP protection.
- Ethernet service supporting GFP encapsulation, VC12 virtual concatenation (1~63 VC12) and LCAS.
- Management channel can be DCC bytes or E1 (VC12).
- Inter-working with popular SDH/MSPP products of various vendors.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

TECHNICAL SPECIFICATIONS

Item			PD2-H92-MOL2-MFE
SDH Interface	Max	STM-16	2 STM-16 optical interfaces
		STM-4	4 STM-4 optical interfaces
		STM-1	10 STM-1 optical interfaces
	Connector		SC/PC or FC/PC or SFP
	Spec		S-1.1, L-1.1, L-1.2, S4.1, L4.1, L4.2, S16.1, L-16.1, L-16.2. Single fiber bi-directional interfaces optional
PHD Interface	Max E1		96E1
	Max E3/DS3		4 E3
Ethernet	Interface Speed		10/100Base-Tx or 100Base-Tx, Comply with IEEE 802.3
	Max FE Interface		16FE(4FE/card)
	Encapsulation		Comply with ITU-T G.7041 (VCAT, GFP, LCAS)
V.35	Max Interface		8V.35(2V.35/card)
Cross-connect			High order 70x70 VC4s
Capacity			Low order 2016x2016 VC12s
Management	Interface		10/100 Base-T (can be cascaded)
EOW interface			Standard socket RJ11
Physical Dimension			1U: 440L*280W*44Hmm
Power	Supply		-48V DC ~ 220V AC or dual power supply
	Consumption		≤ 40W
Environment	Temperature		0°C ~ 50°C
	Humidity		≤ 90%(non-condensing)
Weight			≤ 3.5 kg

ORDERING INFORMATION

Master Unit

PD2-H92-MOL2-MFE.BOX	1U rack, with 8 physical slots
PD2-H92-MOL2-MFE.FAN01	Cooling fan

Power Supply Card	Description
PD2-H92-MOL2-MXE.PWR01	power supply card, DC-48V, 1+1 backup
PD2-H92-MOL2-MFE.PWR02A	AC220V power card, support configuration 1+1
PD2-H92-MOL2-MFE.PWR02B	AC110V power card, support configuration 1+1

Network management card	Description
PD2-H92-MOL2-MFE.NM02	console card via RJ45 interface

Optional Card

Network Interface Unit	Description
PD2-H92-MOL2-MFE.OX01S	STM-1 uplink card, two STM-1 optical interfaces, Not including SFP modules S1.1, L1.1, L1.2 Type of SFP modules are available
PD2-H92-MOL2-MFE.OX04	STM-4 uplink card, two STM-4 optical interfaces. Not including SFP modules S4.1, L4.1, L4.2 Type of SFP modules are available

Local interface unit	Description
PD2-H92-MOL2-MFE.EX01	2-STM-1 electrical uplink card
PD2-H92-MOL2-MFE.OS01S/X	STM-1 tributary card, two STM-1 optical interfaces, Not including SFP modules
PD2-H92-MOL2-MFE.OS02A	2-STM-1 tributary card, with 2-port FE
PD2-H92-MOL2-MFE.OS03	1-STM-1 tributary card, with 1-port FE
PD2-H92-MOL2-MFE.EP01	24-port E1, 75/120ohm, occupy 2 physical slots
PD2-H92-MOL2-MFE.EP01A/T	E1 card, 24-port E1, 120ohm, Using 2 pcs DB60 connector
PD2-H92-MOL2-MFE.EP02	E3/DS3 card, 1-port E3, 75ohm
PD2-H92-MOL2-MFE.EP03	12-E1 card, 75ohm, need config BH4.850.107 cable, occupied two slots
PD2-H92-MOL2-MFE.EP03A/T	12-E1 card, 120ohm, using 1 pcs DB61 cable
PD2-H92-MOL2-MFE.FE01	4-port FE electrical interface card, 4-channel EoS
PD2-H92-MOL2-MFE.FE02	4-port FE optical interface card, 4-channel EoS, Not including SFP modules
PD2-H92-MOL2-MFE.FE04	4-port FE electrical interface card, 4-channel EoE
PD2-H92-MOL2-MFE.FE05	4-port FE optical interface card, 4-channel EoE, Not including SFP modules
PD2-H92-MOL2-MFE.FE06	Ethernet aggregation card, EoS, 8: 2, two FE ports
PD2-H92-MOL2-MFE.FE07	Ethernet aggregation card, EoE, 8: 2, two FE ports
PD2-H92-MOL2-MFE.GX01	Ethernet aggregation card, EoS, 8:1, one GE electrical port
PD2-H92-MOL2-MFE.GX01A	EoS, optical or electrical GE aggregation rate 8:1, Not including SFP modules
PD2-H92-MOL2-MFE.GX02	Ethernet aggregation card, EoE, 8:1, one GE electrical port
PD2-H92-MOL2-MFE.GX02A	EoE, optical or electrical GE aggregation rate 8:1, Not including SFP modules
PD2-H92-MOL2-MFE.ED01	V35 card, 2-port V35, support frame/unframed, DCE/DTE, Not including cable BH4.851.103 or BH4.851.104
PD2-H92-MOL2-MFE.DX02	64K cross connection card, capacity: 2048x2048
PD2-H92-MOL2-MFE.LA01	EOW card

PRODIGY COMPACT MOD ADM MUX



PD2-H92-MOL2-MFIT

SDH/MSPP MULTIPLEXER

GENERAL DESCRIPTION

As a key member of Terrabit Networks "MetroEdge-Express" SDH/MSPP Product family, PD2-H92-MOL2-MFIT is a carrier-class, cost effective, compact (only 1U high) SDH/MSPP platform that is designed for applications in metro and access networks to facilitate the efficient transport of traditional TDM and emerging data traffic for service providers.

PD2-H92-MOL2-MFIT is a modularized unit with 4 universal slots, supporting different interface cards, such as STM-1 fiber optic cards, E1 cards, Ethernet cards (EoS VCAT), and V.35 card. The main board cross-connect capacity is 504x504 VC-12s (8x8 VC-4s), allowing non-blocking adding/dropping services among different interfaces. It supports the hybrid transmission of SDH, PDH, Ethernet and Nx64K V.35 services within the same equipment. It also supports 2048x2048 64K (full 64E1) cross-connect capacity using FDXC64 card. With the large capacity cross-connect matrix, the PD2-H92-MOL2-MFIT can be configured as ADM, TM, and REG. It is suitable for multiple network topologies such as point-to-point, chain, ring, hub, and mesh networks.

FEATURES

- 4 General Slots, supporting a range of interface cards, including SDH, PDH, Ethernet and V.35 cards.
- Ethernet service supporting GFP encapsulation, VC12 virtual concatenation (1 ~ 63 VC12).
- Large cross-connect matrix capacity is 504x504 VC12s (8x8 VC4s) and powerful networking ability.
- LCD display for system configuration and alarm.
- Inter-working with popular SDH/ MSPP products of various vendors.
- Suitable for 3G access network transmission.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

TECHNICAL SPECIFICATIONS

Item		PD2-H92-MOL2-MFIT
SDH Interface	Max	8 STM-1 optical interfaces (Four F155-DO cards used)
	Connector	SC/PC , or SFP type
	Spec	S-1.1, L-1.1, L-1.2, Single fiber bi-directional interface can be optionally supported
PHD Interface	E1 Spec	Comply with G.703, 2.048Mbps, HDB3
	Max E1	24E1 (three F8XE1 cards support)
Ethernet	Interface	10/100Base-Tx, Comply with IEEE 802.3
	Max FE Interface	12 FE (three FFE404 cards support)
	Encapsulation	Comply with ITU-T G.7041 (GFP)
V.35	Max Interface	6 V.35 interfaces (n x 64K) DCE/DTE
Cross-connect	Low order VC12	504 x 504 VC12
Capacity		
Management	Interface	100 Base-T
EOW interface		Standard socket RJ11
LCD Display		Support
Physical Dimension		1U: 440L* 280W*44Hmm
Power	Supply	-48V DC or 220V AC or dual power supply +24VDC
	Consumption	≤ 15W
Environment	Temperature	0°C ~ 50°C
	Humidity	≤ 90%(non-condensing)
Weight		≤ 3.5 kg

ORDERING INFORMATION

Master Unit	Description
PD2-H92-MOL2-M-FIT/EJ	Multi-service SDH access equipment, with 4 physical slots, power 220V AC and -48V DC 19"
PD2-H92-MOL2-M-FITRP/8J	SDH mux with 4 physical slots, power dual -48V DC 20"

Optional Card	Description
PD2-H92-MOL2-MF.OLTS	Module with STM-1 optic interface,SFP connector, Not including SFP modules
PD2-H92-MOL2-MF.4×E1	4-port E1 card, 75ohm, CC4 connector
PD2-H92-MOL2-MF.8×E1	8-port E1 card, 75ohm. Need config 75ohm cable
PD2-H92-MOL2-MF.8×E1/T	8-E1 120ohm
PD2-H92-MOL2-MF.F2XV35	V35 card, 2-port unframed or n x 64k framed V35,Need config BH4.851.103 or BH4.851.104 cable
PD2-H92-MOL2-MF.FE201	2-port FE electrical interface card (EoS, 2FEs over a single virtual concatenation channel)
H9MO-LMF.FE201L	2-FE over 1VCG,support LCAS
PD2-H92-MOL2-MF.FE201E	2-port FE electrical interface card (EoS, 1 independent FE over nxE1 concatenation channel)
PD2-H92-MOL2-MF.FE404	4-port FE electrical interface card (EoS, 4FEs interface over 4 independent virtual concatenation channels)
PD2-H92-MOL2-MF.FE404E	4-port FE electrical interface card (EoS, 4 independent FE over nxE1 concatenation channels)
PD2-H92-MOL2-MF.FE404SE	4-FE EOE over fractional E1 channel
PD2-H92-MOL2-MF.FE2T63	2-FE, aggregation rate: 63:1, supporting trunking
PD2-H92-MOL2-MF.FDXC64	64K cross connection card, capacity: 2048x2048
PD2-H92-MOL2-MF.FX404	4-FX EoS, Not including SFP modules

PRODIGY COMPACT ADM MUX



PD2-H92-MOL2-MA

SDH/MSPP ACCESS DEVICE

GENERAL DESCRIPTION

PD2-H92-MOL2-MA is derived from the card-based PD2-H92-MOL2-MFIT to provide a more cost effective solution. It is of single board design with fixed numbers of interface ports. As an ADM MUX, it has two STM-1 fiber optical ports, and a set of service ports, according to the number of service ports, the PD2-H92-MOL2-MA will come in different models.

FEATURES

- ADM, suitable for ring and linear topologies.
- Supports MSP and SNCP protection switching.
- Flexible options for the STM-1 fiber optic interface, including single fiber duplex, as well as different power and wavelength choices.
- Multi-Service, including E1, FE, V.35. Standard based GFP/VC-12 VCAT EoS.
- Built-in BERT and loop-back capabilities.
- Framed and unframed V.35.
- Remote AC power failure alarm.
- Standard 19 inch 1RU box, compact, lightweight, low power consumption.
- Dual mode power supply, -48V DC or 100 ~ 240V AC field selectable.
- RoHS compliant.

TECHNICAL SPECIFICATIONS

Item	PD2-H92-MOL2-MA	Item	PD2-H92-MOL2-MA
STM-1 Fiber Port		Ethernet Port	
Bit rate	155520kbit/s \pm 4.6ppm	Interface	10Base-T/100Base-T, Half/Full duplex,
Line code:	Scrambled NRZ	mode:	auto-negotiation, HP auto-MDIX
Wavelength:	Default: 1310nm	Trunk port:	NxVC-12 N \leq 63, GFP
	Option/5: 1550nm	Number of ports:	4
Connector:	Default: SC Option/F: FC	Management Port	
Fiber spec.	S-1.1, L-1.1, L-1.2	Ethernet:	RJ45, 10Base-T,
	Single fiber bi-directional interface		MDI port
	can be optionally supported	Others:	DCC, E1 (VC-12)
E1 Port		Mechanical/Electrical	
Bit rate	2.048 Mbps \pm 50 ppm	Dimension:	440L*138W*44Hmm
Line code:	HDB3	Net weight:	2kg
Impedance:	Default: 75 Ω BH4.850.122 or BH4.850.106	Power (AC):	100 ~ 240 V, 50/60Hz
	cables is needed Option/T: 120 Ω	Power (DC):	-48 V (-58V ~ -38V)
Frame structure:	Non-framed	Consumption:	\leq 10W
Number of ports:	PD2-H92-MOL2-MA841: 8	Working temp:	0 ~ 50°C
	PD2-H92-MOL2-MA441: 4	Humidity:	0 ~ 95%RH (non-condensing)
V.35 Port		Ethernet socket:	RJ-45
Bit rate	Nx64kbits \pm 50 ppm, N \leq 31	V.35 socket:	DB25
Frame structure:	G.704 or unframed	E1 socket:	RJ48
Interface mode:	DCE or DTE	Timing	
Number of ports:	1	Internal, STM-1 Line, E1 tributary line	

ORDERING INFORMATION

Modules	Description
PD2-H92-MOL2-MA841/EJ	ADM & TM. Dual STM-1 optical interfaces, 8E1+4xFE+V35, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MA840/EJ	ADM & TM. Dual STM-1 optical interfaces, 8E1+4xFE, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MA441/EJ	ADM & TM. Dual STM-1 optical interfaces, 4E1+4xFE+V35, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MA440/EJ	ADM & TM. Dual STM-1 optical interfaces, 4E1+4xFE, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MA400/EJ	ADM & TM. Dual STM-1 optical interfaces, 4E1, power supply AC220V and DC-48V Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MAT800/EJ	Single STM-1, S1.1, 8E1, Two power model, Dual fiber 40km, 1310nm, AC power failure indication. TM. Single
PD2-H92-MOL2-MAT841/EJ	STM-1 optical interface, 8E1+4xFE+V35, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MAT840/EJ	TM. Single STM-1 optical interface, 8E1+4xFE, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MAT810F/EJ	TM. Single STM-1 optical interface, 8E1, power supply AC220V and DC-48V, Dual fiber 40km, 1310nm, AC power failure indication
PD2-H92-MOL2-MAC841/EJ	Dual STM-1, S1.1, ADM, 8E1+4xFE+V35, Two power model, BNC, 75ohm
PD2-H92-MOL2-MAC840/EJ	Dual STM-1, S1.1, ADM, 8E1+4xFE, Two power model, BNC, 75ohm
PD2-H92-MOL2-MAC441/EJ	Dual STM-1, S1.1, ADM, 4E1+4xFE+V35, Two power model, BNC, 75ohm
PD2-H92-MOL2-MAC440/EJ	Dual STM-1, S1.1, ADM, 4E1+4xFE, Two power model, BNC, 75ohm
PD2-H92-MOL2-MAC400/EJ	Dual STM-1, S1.1, ADM, 4E1, Two power model, BNC, 75ohm
PD2-H92-MOL2-MACT841/EJ	Single STM-1, S1.1, 8E1+4xFE+V35, Two power model, BNC, 75ohm
PD2-H92-MOL2-MACT840/EJ	Single STM-1, S1.1, 8E1+4xFE, Two power model, BNC, 75ohm
PD2-H92-MOL2-MACT800/EJ	Single STM-1, S1.1, 8E1, Two power mode, BNC, 75ohm

PRODIGY 63E1 TERMINAL MUX



PD2-H92-MOL2-M63

SDH/MSPP ACCESS DEVICE

GENERAL DESCRIPTION

PD2-H92-MOL2-M63 provides 63E1 TDM interfaces in only 1U standard 19" box. It is best suitable for point-to-point network or standard SDH TM node. Working together with other "MetroEdge-Express" family member as PD2-H92-MOL2-MFIT, it can support various network topologies such as point-to-point, chain, ring, hub, and mesh networks.

FEATURES

- 1U box SDH/MSPP with 1 or 2 STM-1 optical interfaces and 63E1 interface.
- Optical interface supports ALS (Auto Laser Shutdown) function.
- Inter-working with popular SDH/MSPP products of various vendors.
- Support TUG3-TUG2-TU12 tributary channel numbering and time slot numbering at ease.
- Support internal, STM-1 line clock, external and tributary clocking.
- LCD display for system configuration and alarm.
- Support remote power-off alarming function.
- SDH/MSPP core, PDH price.
- Support online upgrading.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

TECHNICAL SPECIFICATIONS

Item		PD2-H92-MOL2-M63
SDH Interface	Max	1~2 STM-1 optical interfaces(1+1 MSP supported)
	Connector	SC/PC
	Spec	S-1.1, L-1.1, L-1.2 Single fiber bi-directional interface can be optionally supported
PHD Interface	E1 Spec	Comply with G.703, 2.048Mbps, HDB3
	Max E1	63E1
Data	RS485	Asynchronous RS485 data
Management	Protocol	SNMP or Q3
	Interface	10Base-T and RS485
LCD Display		Supported
Physical Dimension		440L*230W*44Hmm
Power	Supply	-48V DC or 220V (110V) AC or dual power supply+24VDC
	Consumption	≤ 15W
Environment	Temperature	0°C ~ 50°C
	Humidity	≤ 90%(non-condensing)

ORDERING INFORMATION

Model	Description
PD2-H92-MOL2-M63RP/8D	63x63E1,two DC-48V, Fiber (1+1) protection, 75ohm
PD2-H92-MOL2-M63/8DP	63x63E1,DC-48V, (1+1) protection, 75ohm, Fiber (1+1) protection
PD2-H92-MOL2-M63RP/T8D	63x63E1, two DC-48V, Fiber (1+1) protection, 120ohm
PD2-H92-MOL2-M63/T8DP	63x63E1,two DC-48V, (1+1) protection, 120ohm, Fiber (1+1) protection
PD2-H92-MOL2-M63/EJ	Multi-service SDH access equipment, 63E1, 75ohm, power supply AC220V and DC-48V, BH4.850.123 or BH4.850.107 cables is needed
PD2-H92-MOL2-M63/EJP	63x63E1,Two power model, 75ohm, Fiber (1+1) protection , DC-48V and AC220V dual power supply , AC power failure indication
PD2-H92-MOL2-M63/EJT	Multi-service SDH access equipment, 63E1, 120ohm, power supply AC220V and DC-48V, AC power failure indication
PD2-H92-MOL2-M63/EJPT	Multi-service SDH access equipment, 63E1, 120ohm, power supply AC220V and DC-48V, dual optical interfaces support (1+1) protection , AC power failure indication.

PRODIGY COMPACT TERMINAL MUX



PD2-H92-MOL2-MC

SDH/MSPP ACCESS DEVICE

GENERAL DESCRIPTION

PD2-H92-MOL2-MC provides 16E1 TDM interfaces and 1 physical slot that can be inserted with 4E1/8E1/2Ethernet/4Ethernet/2V.35 service card in only 1U standard 19" box. PD2-H92-MOL2-MC is best suitable for point-to-point network or standard SDH TM node. Working together with other "MetroEdge-Express" family member such as PD2-H92-MOL2-MFIT, it can support various network topologies such as point-to-point, chain, ring, hub, and mesh networks.

FEATURES

- 1U box SDH/MSPP with 1 optical interface and 16E1 interfaces and one flexible card.
- One flexible physical slot can be inserted with various service card.
- Flexible cards support 4E1/8E1/2Ethernet/4Ethernet/2V.35 cards.
- Optical interface supports ALS (Auto Laser Shutdown) function.
- Inter-working with popular SDH/MSPP products of various vendors.
- SDH/MSPP core, PDH price.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

TECHNICAL SPECIFICATIONS

Item		PD2-H92-MOL2-MC
SDH Interface	Max	1 STM-1 optical interfaces
	Connector	SC/PC
	E1 Spec	S-1.1, L-1.1, L-1.2 Single fiber bi-directional interface can be optionally supported
PHD Interface	E1 Spec	Comply with G.703, 2.048Mbps, HDB3
	Max E1	16E1 + 8E1
Data	RS485	Asynchronous RS485 data
Management	Interface	10Base-T, MDI
EOW interface		Standard socket: 4P4C
Physical Dimension		440L*230W*44Hmm
Power	Supply	-48V DC or 220V (110V) AC or dual power supply+24VDC
	Consumption	≤ 15W
Environment	Temperature	0°C ~ 50°C
	Humidity	≤ 90%(non-condensing)

ORDERING INFORMATION

Master Unit	Description
PD2-H92-MOL2-MC/EJ	Multi-service SDH access equipment, 16E1, 75ohm, power supply AC220V and DC-48V, with one physical slot which could be configured one service card of PD2-H92-MOL2-MFIT, Dual Fiber 40km, 1310nm. AC power failure indication
PD2-H92-MOL2-MC/EJT	16E1, one slot, Can using LMFIT cards, Dual power model, 120ohm, Dual Fiber 40km, 1310nm. DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MC240/FEJ	8E1, one slot, Can using MFIT cards, Dual power model, 75ohm. DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MC240/TFEJ	8E1, one slot, Can using MFIT cards, Dual power model, 120ohm. DC-48V and AC220V dual power supply, AC power failure indication

Optional Card	Description
PD2-H92-MOL2-MF.4×E1	4-port E1 card, 75ohm, CC4 interface
PD2-H92-MOL2-MF.8×E1	8-port E1 card, need config 75ohm cable
PD2-H92-MOL2-MF.8×E1/T	8-port E1 card, 120ohm
PD2-H92-MOL2-MF.FE201	2-port FE electrical interface card (EoS, 2FEs over a single virtual concatenation channel)
PD2-H92-MOL2-MF.FE201L	2-FE over 1VCG, support LCAS
PD2-H92-MOL2-MF.FE404	4-port FE electrical interface card (EoS, 4FEs interface over 4 independent virtual concatenation channels)
PD2-H92-MOL2-MF.FX404	4-FX EOS, Not including SFP modules
PD2-H92-MOL2-MF.FE201E	2-port FE electrical interface card (EoS, 1 independent FE over nxE1 concatenation channel)
PD2-H92-MOL2-MF.FE404E	4-port FE electrical interface card (EoS, 4 independent FE over nxE1 concatenation channels)
PD2-H92-MOL2-MF.F2XV35	V35 card, 2-port unframed or nx64k framed V35

PRODIGY COMPACT TERMINAL MUX



PD2-H92-MOL2-MV

SDH/MSPP ACCESS DEVICE

GENERAL DESCRIPTION

PD2-H92-MOL2-MV series provides various service interfaces: E1s, V.35 ports and 100Base-T Ethernet port in only 1U standard 19" box. PD2-H92-MOL2-MV and PD2-H92-MOL2-MVSE are best suitable for point-to-point network or standard SDH TM node. Working together with other "Metro Edge Express" family member such as PD2-H92-MOL2-MFIT, it can support various network topologies such as point-to-point, chain, ring, hub, and mesh networks.

FEATURES

- 1U box SDH/MSPP with various E1s, V.35 ports and 100Base-T Ethernet port.
- Ethernet service supporting GFP encapsulation, VC12 virtual concatenation.
- Inter-working with popular SDH/MSPP products of various vendors.
- SDH/MSPP core, PDH price.
- Support remote site power-off indication.
- Easy commissioning and maintenance.
- High integration, compact design.
- High reliability, low CAPEX and OPEX.

TECHNICAL SPECIFICATIONS

Item		PD2-H92-MOL2-MV
SDH Interface	Max	1-2 STM-1 optical interfaces(1+1 MSP supported)
	Connector	SC/PC
	Spec	S-1.1, L-1.1, L-1.2 Single fiber bi-directional interface can be optionally supported
PHD Interface	E1 Spec	Comply with G.703, 2.048Mbps, HDB3 4E1 supported 75 Ω or 120 Ω
	V.35 port	Comply with ITU-T V.35/V.36, DCE or DTE, N x 64kbps (1 ≤ N ≤ 32) 2 x V.35 supported
	Ethernet port	10/100Base-Tx Comply with IEEE 802.3
Data	RS485	Asynchronous RS485 data
Management	Protocol	SNMP
	Interface	10Base-TA
EOW interface		Standard socket: 4P4C
Physical Dimension		1U: 440L*138W*44Hmm
Power	Supply	-48V DC or 220V (110V) AC or dual power supply+24VDC
	Consumption	≤ 10W
Environment	Temperature	0°C ~ 50°C
	Humidity	≤ 90%(non-condensing)

ORDERING INFORMATION

Model	Description
PD2-H92-MOL2-MV/TEJ	4E1+V35+2xFE, Dual power model, 120ohm ,DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MVSE/TEJ	3E1+V35+2xFE (Remote Site) or 4E1 (Local Site) Dual power model,120ohm. DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MV/TEJP	4E1+V35+2xFE, Dual power model, 120ohm, Fiber (1+1) protection ,DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MVSE/TEJP	3E1+V35+2xFE (Remote Site) or 4E1 (Local Site), Dual power model, 120ohm, Fiber (1+1) protection, DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MV/EJ	Multi-service SDH access equipment, 4E1+V35+2 x FE, power supply AC220V and DC-48V, Dual fiber 40km ,1310nm
PD2-H92-MOL2-MVE/FEJ	2E1+V35+2xFE(EoE1 ~ 16E1), Dual power model, 120ohm, DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MVE/TFEJP	2E1+V35+2xFE (EoE1 ~ 16E1), Dual power model, 120ohm, Fiber (1+1) protection, DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MVSE/EJ	Multi-service SDH access equipment, 3E1+V35+2xFE, (remote)or 4E1 (local), support Nx64bps V.35 port and M x 64kbps Ethernet port, N+M ≤ 31,75ohm, power supply AC220V and DC-48V, Dual fiber 40km ,1310nm
PD2-H92-MOL2-MV/EJP	Multi-service SDH access equipment, 4E1+V35+2xFE, power supply AC220V and DC-48V, 75ohm, dual optical interfaces support (1+1) protection, Dual fiber 40km ,1310nm
PD2-H92-MOL2-MVSE/EJP	Multi-service SDH access equipment, 3E1+V35+2xFE, (remote)or 4E1 (local), support N x 64bps V.35 port and M x 64kbps Ethernet port, N+M ≤ 31, 75ohm, power supply AC220V and DC-48V, dual optical interface supports (1+1) protection, Dual fiber 40km ,1310nm
PD2-H92-MOL2-MVE/FEJ	2E1+V35+2xFE (EoE1 ~ 16E1), Dual power model, 75ohm. DC-48V and AC220V dual power supply, AC power failure indication
PD2-H92-MOL2-MVE/FEJP	2E1+V35+2xFE (EoE1 ~ 16E1), Dual power model, 75ohm, Fiber (1+1) protection, DC-48V and AC220V dual power supply, AC power failure indication

PRODIGY TDM OVER IP



PD2-H02-FL-ETHMUX.V16



PD2-H02-FL-ETHMUX.V802



PD2-H02-FL-ETHMUX.V8



PD2-H02-FL-ETHMUX.V804



PD2-H02-FL-ETHMUX.V801

PD2-H02-FL-ETHMUX ETHMUX SERIES

GENERAL DESCRIPTION

As a cost effective solution for the traditional telecom services migrate to the IP packet networking technology, PD2-H02-FL-ETHMUX adopt the innovative TDM over IP technology, it transports the legacy E1 data through the existing Ethernet or IP network.

PD2-H02-FL-ETHMUX is the new generation of the TDM over IP equipment with IP circuit emulation that supports transportation of 1-16 E1s and two local Ethernet ports over Ethernet or IP network. The uplink ports and user data ports are IEEE 802.3 compliant, 10/100BaseT auto-sensed Ethernet port.

The state-of-the-art design provides the highest availability with the accurate timing signal and data bit stream reconstruction. Predefined system parameter profiles that according to different application requirement; ultimately simplify the installation process and saving the maintenance cost.

Telecom and Enterprise users can save a lot of access and equipment costs and generates new revenue by offering different types of service over existing Ethernet networks. It is also suitable for connecting to the wireless equipment to achieve fast deployment of E1 services. One particular application is to build E1 links with low cost Wireless LAN bridges, replacing much more costly microwave radios. Operators can use PD2-H02-FL-ETHMUX to provide legacy TDM services over wired or wireless packet network.

FEATURES

- User - friendly Web server supported for easy setup and maintenance.
- Support SNMP V1 and V2 network management.
- Point to point and point to multipoint supported.
- Uplink ports 1+1 backup supported.
- Stable E1 clock recovery, low jitter and wander.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

TECHNICAL SPECIFICATIONS

Item		PD2-H02-FL-ETHMUX
Interfaces	Uplink	Comply with IEEE 802.3 Speed and duplex auto-negotiation or forced
	E1/T1 Port	Comply with G.703 Impedance: E1-120 Ω/T1-100 Ω or 75 Ω
	User Data Port	Comply with IEEE 802.3 Speed and duplex auto-negotiation or forced
PHD Interface	User Data Port	Web Manager Supported, SNMP
Power	Supply	Pluggable dual power supply 2DC or 2AC or DC+AC -48V DC or 100 ~ 240V AC
		≤ 10W
	Consumption	≤ 10W
Environment	Temperature	0°C ~ 50°C
	Relative Humidity	≤ 90% (non-condensing)
Dimension	440L*231W*44Hmm (PD2-H02-FL-Ethmux V16/V8/V804)	
	185L*136.5W*35Hmm (PD2-H02-FL-Ethmux V802/801)	

- Low processing delay for E1 channels, high bandwidth usage efficiency.
- Resist to packet loss, with PCM frame synchronization protection.
- User definable encapsulation packet size for different application.
- Support Ethernet encapsulation and U DP/IP protocol encapsulation.

- Support VLAN settings for E1 service and in band VLAN management.
- Enough jitter buffer to resist packet delay variation (PDV).
- Local Ethernet port throughput limiting, assuring E1 QoS.
- Local and remote E1 LOS and AIS and packet loss indication for trouble-shooting and maintenance.
- Concatenation Supported.

ORDERING INFORMATION

Model	Description
PD2-H02-FL-ETHMUX.V16.SYS	E1 over Ethernet Multiplexer, with 2 slots for E1 cards and 2 slots for power supply. 5 electrical GE ports and 1 optical GE port (uplinks or user data ports). AC/DC power module available. Not including SFP modules
PD2-H02-FL-ETHMUX.V16.E1	8E1 cards, E1-120 Ω , one PD2-H02-FL-ETHMUX.V16.SYS box supports 2 pcs of PD2-H02-FL-ETHMUX.V16.E1
PD2-H02-FL-ETHMUX.V16.PWR01	DC-48V, 15W ,2 power card support 1+1 protection
PD2-H02-FL-ETHMUX.V16.PWR02	AC-220V, 15W, 2 power card support 1+1 protection
PD2-H02-FL-ETHMUX.V8	E1 over Ethernet Multiplexer, with 8-port E1 and 2-port 10/100Base-T interfaces for downlink, 1+1 Ethernet ports for uplink, E1-120 Ω , AC/DC power module available
PD2-H02-FL-ETHMUX.V8T	2 Uplink (1+1), 8E1s or 8T1 ports, 120ohm, 2 User Data Ports, need power module
PD2-H02-FL-ETHMUX.V804	E1 over Ethernet Multiplexer, with 4-port E1 and 2-port 10/100Base-T interfaces for downlink, 1+1 Ethernet ports for uplink, E1-120 Ω , AC/DC power module available
PD2-H02-FL-PWR-48	DC-48V, 15W
PD2-H02-FL-PWR-220	AC220V, 15W
PD2-H02-FL-ETHMUX.V802	E1 over Ethernet Multiplexer, with 2-port E1, 1+1 Ethernet ports for uplink, E1-75 Ω optional, AC220V power supply
PD2-H02-FL-ETHMUX.V802/8	E1 over Ethernet Multiplexer, with 2-port E1, 1+1 Ethernet ports for uplink, E1-75 Ω optional, DC-48V power supply
PD2-H02-FL-ETHMUX.V802/T	2 Uplink (1+1), 2E1s, AC220V, 120ohm
PD2-H02-FL-ETHMUX.V802/8T	2 Uplink (1+1), 2E1s, DC-48V, 120ohm
PD2-H02-FL-ETHMUX.V801/8	E1 over Ethernet Multiplexer, with 2-port E1, 1+1 Ethernet ports for uplink,E1-75 Ω , DC-48V power supply
PD2-H02-FL-ETHMUX.V801	E1 over Ethernet Multiplexer, with 1-port E1, 1+1 Ethernet ports for uplink, E1-75 Ω , AC220V power supply
PD2-H02-FL-ETHMUX.V801/T	2 Uplink (1+1), 2E1s, AC220V, 120ohm
PD2-H02-FL-ETHMUX.V801/8T	2 Uplink (1+1), 2E1s, DC-48V, 120ohm

PRODIGY ETHERNET TO E1 CONVERTER



Standalone 10/100Base-T
Ethernet/E1 Converter



Standalone 10/100Base-F
Ethernet/E1 Converter



Media Converter Chassis PD2-H02-FLP2

PD2-H02-FLP2

ETHERNET CONVERTER

GENERAL DESCRIPTION

Terrabit Networks developed a series cost-effective intelligent converters connecting Fast Ethernet LAN over single E1 channel or multiple (up to 16) E1 channels. Both electrical and optical Ethernet ports are available in the converter family. They enable service providers and ISPs to provide transparent Ethernet services without interfering with user traffic.

FEATURES

- Enable users to employ VLAN and other protocols requiring large frame sizes.
- Work in filter mode where it learns MAC addresses and filters local traffic, or in transparent mode where any received packet will be forward to the other interface.
- E1 impedances (750 Ω or 1200 Ω) is auto-adaptive.
- Support TUG3-TUG2-TU12 tributary channel numbering and time slot numbering at ease.
- Support standard encapsulation with ITU G.8040 and HDLC.
- Automatically restrain broadcast storm.
- Auto service recovery from part E1 channels failure.
- Support diagnostic tools for TDM and Ethernet networks, for fast isolation of network problems, saving time and costs.
- Management software is available, easy maintenance and operation.

TECHNICAL SPECIFICATIONS

ETHERNET CONVERTER		
E1 Interface	Comply with ITU-T G.703	
10/100Base-Tx interface	Comply with IEEE802.3, 10/100M auto-adaptive, half/full duplex auto-adaptive	
Power Supply	A	DC -48V (-32V ~ -72V)
	B	AC 220V (165V ~ 265V)
Power	PD2-H02-FLP2	$\leq 65W$ (full-load)
	Standalone Converters	$\leq 4W$
Dimension	PD2-H02-FLP2	440L*240W*136Hmm
	PD2-H02-FLH2-0B	220L*141W*46Hmm
	PD2-H02-FL-01100/F01100	
	PD2-H02-FL-S01100/SF01100	
	PD2-H02-FL-04100/F04100	
	PD2-H02-FL-S04100/SF04100	
	PD2-H02-FL-08100/F08100	
	PD2-H02-FL-16100/F16100	
	PD2-H02-FL-04100S/08100S/16100S	440L*138W*44Hmm
	PD2-H02-FL-S08100SN/S08100SF	
	PD2-H02-FL-S16100SN/S16100SF	

ORDERING INFORMATION

3U, Modular Media Converter	Description
PD2-H02-FLP2.V2.BOX	Converter chassis with 16 physical slots for aggregation, 3U, 19", SNMP
PD2-H02-FLP2.V2.PWR	DC-48V power supply card, support 1+1 backup
PD2-H02-FLP2.V2.PWR220	220VAC power supply card, support 1+1 backup
PD2-H02-FLP2.V2.SV	Network management card, Optional. Ethernet Port
1U, Modular Media Converter	Description
PD2-H02-FLH2-0B	Modular Media Converter, 1U, 1/2 19", 1 slot, SNMP, AC220V
PD2-H02-FLH2-0B/8	Modular Media Converter, 1U, 1/2 19", 1 slot, SNMP, DC-48V
Converter Card	Description
PD2-H02-FLP2.V2.SYS.01100	FE/E1 Converter Card, Modular Media Converter, 1U, 1/2 19", 1 slot, SNMP, AC220V
PD2-H02-FLP2.V2.SYS.F01100	FE/E1 Converter Card, Modular Media Converter, 1U, 1/2 19", 1 slot, SNMP, DC-48V

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PD2-H02-FLP2.V2.SYS.F01100/5	FE/E1 Converter Card, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.04100	FE/4E1 Converter Card, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F04100	FX/4E1 Converter Card, Ethernet Port SC, 1310nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F04100/5	FE/4E1 Converter Card, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.08100	FE/8E1 Converter Card, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F08100	FE/8E1 Converter Card, Ethernet Port SC, 1310nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F08100/5	FE/8E1 Converter Card, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F16100	FX/16E1 Converter Card, Ethernet Port SC, 1310nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.F16100/5	FX/16E1 Converter Card, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm
PD2-H02-FLP2.V2.SYS.0135	V.35/E1 Converter Card, 1xV.35 to 1xFE1, V.35 speed rate Nx64K. (Not including V.35 connecting wire)
PD2-H02-FLP2.V2.30	Single E1, 1310nm, 40km
PD2-H02-FLP2.V2.V35	Single V35, framed, 1310nm, 40km
PD2-H02-FLP2.V2.60	Dual E1, 75ohm, 1310nm, 40km. CC4
PD2-H02-FLP2.V2.60/T	Dual E1, 120ohm, 1310nm, 40km

10/100 Base Ethernet/E1 Converter	Description
PD2-H02-FL-01100	FE/E1 Converter, 220VAC, E1 75ohm or 120ohm
PD2-H02-FL-01100/8	FE/E1 Converter, -48VDC, E1 75ohm or 120ohm
PD2-H02-FL-F01100	FE/E1 Converter, 220VAC, Ethernet Port SC, 1310nm, 25km, E1 75ohm or 120ohm
PD2-H02-FL-F01100/8	FE/E1 Converter, -48VDC, Ethernet Port SC, 1310nm, 25km, E1 75ohm or 120ohm
PD2-H02-FL-F01100/5	FE/E1 Converter, 220VAC, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm
PD2-H02-FL-F01100/58	FE/E1 Converter, -48VDC, Ethernet Port SC, 1550nm, 25km, E1 75ohm or 120ohm

10/100 Base Ethernet/4E1 Converter	Description
PD2-H02-FL-04100	FE/4E1 Converter, 220VAC, E1 75ohm
PD2-H02-FL-04100/8	FE/4E1 Converter, -48VDC, E1 75ohm
PD2-H02-FL-04100/T	FE/4E1 Converter, 220VAC, E1 120ohm
PD2-H02-FL-04100/8T	FE/4E1 Converter, -48VDC, E1 120ohm
PD2-H02-FL-04100S	FE/4E1 Converter, 4xEthernet Port, 220VAC, E1 75ohm
PD2-H02-FL-04100S/8	FE/4E1 Converter, 4xEthernet Port, 48VDC, E1 75ohm
PD2-H02-FL-04100S/T	FE/4E1 Converter, 4xEthernet Port, 220VAC, E1 120ohm
PD2-H02-FL-04100S/8T	FE/4E1 Converter, 4xEthernet Port, 48VDC, E1 120ohm
PD2-H02-FL-F04100	FE/4E1 Converter, 220VAC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F04100/8	FE/4E1 Converter, 48VDC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F04100/5	FE/4E1 Converter, 220VAC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-F04100/58	FE/4E1 Converter, -48VDC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-F04100/T	FE/4E1 Converter, 220VAC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F04100/8T	FE/4E1 Converter, -48VDC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F04100/5T	FE/4E1 Converter, 220VAC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-F04100/58T	FE/4E1 Converter, -48VDC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-S04100SN	FE/4E1 Converter, 4xEthernet Port, Support G.8040, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S04100SN/8	FE/4E1 Converter, 4xEthernet Port, Support G.8040, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S04100SN/8D	FE/4E1 Converter, 4xEthernet Port, Support G.8040, DC-48V (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S04100SN/T	FE/4E1 Converter, 4xEthernet Port, Support G.8040, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S04100SN/8T	4xEthernet Port, Support G.8040, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S04100SN/8DT	4xEthernet Port, Support G.8040, DC-48V (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable

10/100Base Ethernet/8E1 Converter	Description
PD2-H02-FL-08100	8E1 Converter, 220VAC, E1 75ohm
PD2-H02-FL-08100/8	8E1 Converter, -48VDC, E1 75ohm
PD2-H02-FL-08100/T	8E1 Converter, 220VAC, E1 120ohm
PD2-H02-FL-08100/8T	8E1 Converter, -48VDC, E1 120ohm

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PD2-H02-FL-08100S	8E1 Converter, 4xEthernet Port, 220VAC, E1 75ohm
PD2-H02-FL-08100S/8	8E1 Converter, 4xEthernet Port, 48VDC, E1 75ohm
PD2-H02-FL-08100S/T	8E1 Converter, 4xEthernet Port, 220VAC, E1 120ohm
PD2-H02-FL-08100S/8T	8E1 Converter, 4xEthernet Port, 48VDC, E1 120ohm E1 75ohm
PD2-H02-FL-F08100	8E1 Converter, 220VAC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F08100/8	8E1 Converter, -48VDC, Ethernet Port SC, 1310nm, 25km, E1 75ohm
PD2-H02-FL-F08100/5	8E1 Converter, 220VAC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-F08100/58	8E1 Converter, -48VDC, Ethernet Port SC, 1550nm, 25km, E1 75ohm
PD2-H02-FL-F08100/T	8E1 Converter, 220VAC, Ethernet Port SC, 1310nm, 25km, E1 120ohm
PD2-H02-FL-F08100/8T	8E1 Converter, -48VDC, Ethernet Port SC, 1310nm, 25km, E1 120ohm
PD2-H02-FL-F08100/5T	8E1 Converter, 220VAC, Ethernet Port SC, 1550nm, 25km, E1 120ohm
PD2-H02-FL-F08100/58T	8E1 Converter, -48VDC, Ethernet Port SC, 1550nm, 25km, E1 120ohm
PD2-H02-FL-S08100SN	8E1 Converter, 4xEthernet Port, Support G.8040, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SN/8	8E1 Converter, 4xEthernet Port, Support G.8040, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SN/8D	8E1 Converter, 4xEthernet Port, Support G.8040, DC-48V (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SN/T	8E1 Converter, 4xEthernet Port, Support G.8040, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SN/8T	8E1 Converter, 4xEthernet Port, Support G.8040, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SN/8DT	8E1 Converter, 4xEthernet Port, Support G.8040, DC-48V (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S08100SF/M	8E1 Converter, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable
PD2-H02-FL-S08100SF/8M	8E1 Converter, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable
PD2-H02-FL-S08100SF/8DM	8E1 Converter, DC-48V (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable
PD2-H02-FL-S08100SF/MT	8E1 Converter, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable
PD2-H02-FL-S08100SF/8MT	8E1 Converter, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable
PD2-H02-FL-S08100SF/8DMT	8E1 Converter, DC-48V (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE+FX, 1 Data port. Manageable

10/100Base Ethernet/16E1 Converter	Description
PD2-H02-FL-16100	FE/16E1 Converter, 220VAC, E1 75ohm
PD2-H02-FL-16100/8	FE/16E1 Converter, -48VDC, E1 75ohm
PD2-H02-FL-16100/T	2FE/16E1 Converter, 20VAC, E1 120ohm
PD2-H02-FL-16100/8T	FE/16E1 Converter, -48VDC, E1 120ohm
PD2-H02-FL-S16100SN	FE/16E1 Converter, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SN/8	FE/16E1 Converter, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SN/8D	FE/16E1 Converter, DC-48V (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SN/T	FE/16E1 Converter, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SN/8T	FE/16E1 Converter, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SN/8DT	FE/16E1 Converter, DC-48V (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE, 1 Data port. Manageable
PD2-H02-FL-S16100SF/M	FE/16E1 Converter, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE+FX (SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8M	FE/16E1 Converter, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE+FX (SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8DM	FE/16E1 Converter, DC-48V (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE+FX(SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/MT	FE/16E1 Converter, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE+FX(SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8MT	FE/16E1 Converter, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE+FX(SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8DMT	FE/16E1 Converter, DC-48V, (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE+FX(SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF	FE/16E1 Converter, 220VAC, E1 75ohm, 19" Box, GFP, 2xFE+FX(1310nm, 40km, SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8	FE/16E1 Converter, DC-48V, E1 75ohm, 19" Box, GFP, 2xFE+FX(1310nm, 40km, SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8D	FE/16E1 Converter, DC-48V, (1+1) Protection, E1 75ohm, 19" Box, GFP, 2xFE+FX(1310nm, 40km, SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/T	FE/16E1 Converter, 220VAC, E1 120ohm, 19" Box, GFP, 2xFE+FX(1310nm, 40km, SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8T	FE/16E1 Converter, DC-48V, E1 120ohm, 19" Box, GFP, 2xFE+FX (1310nm, 40km, SC), 1 Data port. Manageable
PD2-H02-FL-S16100SF/8DT	FE/16E1 Converter, DC-48V, (1+1) Protection, E1 120ohm, 19" Box, GFP, 2xFE+FX (1310nm, 40km, SC), 1 Data port. Manageable

PRODIGY ETHERNET TO E1 CONVERTER



PD2-H02-FL-0135

V.35/E1 CONVERTER

GENERAL DESCRIPTION

PD2-H02-FL-0135 V.35/E1 converter transports V.35 data via E1 network. It's widely used for router interconnection and DDN accessing as well as remote LAN connection. It can provide best solution with simplicity, efficiency cost-effectiveness and high reliability for data communication platform.

FEATURES

- Excellent performance in jitter limit and transmission features of E1 port. Excel standard requirements.
- E1 channels comply with ITU-T G.703, with loop back test function.
- Several interface rates ($N \times 64K$, $1 \leq N \leq 32$) and modes (DTE and DCE) are supported.
- Several clock selections (DCE internal clock, DCE E1 line clock and DTE V.35 interface clock), the 16th time slot for signaling selectable. Support framed and unframed work mode.
- Fit for connections of data end equipment such as router with V.35 port through E1 channels, for the V35 service via E1 channels extension in DDN network.
- Alarm indications, equipment and line performance supervision are provided.
- Work with the module 0135 inserted in PD2-H02-FLP2 in local side, Network console software can be provided to fulfill remote control.

TECHNICAL SPECIFICATIONS

Item	PD2-H02-FL-0135
PD2-H02-FL-0135	Convert unframed or framed V.35 to E1 interface
E1 interface	Comply with ITU-T G.703
	Bit rate: 2048kbit/s \pm 50ppm
	Code: HDB3
	Input impedance: 75 Ω and 120 Ω
V.35 interface	Comply with ITU-T V.35/V.36
	Interface speed: Nx64kbit/s, $1 \leq N \leq 31$; unframed : 2048kbit/s
	Work mode: DCE, DTE optional
Power Supply	AC or DC optional DC - 48V (-38V ~ -72V) AC - 220V (100V ~ 260V)
Consumption	$\leq 3W$
Physical Dimension	185L*138W*35Hmm
Environment	Temperature: 0°C ~ 45°C
	Humidity: $\leq 90\%$ (non-condensing)

ORDERING INFORMATION

Item	Description
PD2-H02-FL-0135	V.35/E1 converter, 1xV.35 to 1xE1, Nx64K, network manageable, 220VAC
PD2-H02-FL-0135/8	V.35/E1 converter, 1xV.35 to 1xE1, Nx64K, network manageable, -48VDC

PRODIGY ETHERNET TO E1 CONVERTER



PD2-H02-FL-(EoS01/EoS01F)

ETHERNET OVER SDH(EOS)CONVERTER

GENERAL DESCRIPTION

PD2-H02-FL-EoS01/EoS01F is an Ethernet/ STM-1 converter which delivers Ethernet services over SDH STM-1 circuit. PD2-H02-FL-EoS01 provides one or two STM-1 SDH optical interfaces and two Ethernet electrical ports, PD2-H02-FL-EoS01 provides one or two STM-1 SDH optical interfaces, one Ethernet electrical port and one Ethernet optical port. It encapsulates Ethernet frame to SDH payload, providing fast and cost effective Ethernet access for carriers and service providers. The standard STM-1 enables connection with any SDH multiplexers from other vendors to access backbone network or get simple point-to-point application directly.

FEATURES

- Standard STM-1 optical port, support 1+1 protection, dual or single fiber transmission, different wavelengths and powers optional.
- Ethernet mapping adopts GFP / VC-12 virtual concatenated technology; Comply with MSTP standard.
- Q3 or SNMP(10Base-T) network management port.
- Standard 19" 1 unit box.
- 48V DC or 220V AC power supply.
- Software upgrade online supported.
- High reliability, low CAPEX and OPEX.

TECHNICAL SPECIFICATIONS

Item	PD2-H02-FL-EoS01	PD2-H02-FL-EoS01F
Products List	Connects 2FE over (1+1) STM-1 links	Connects 1FE+1FX over (1+1) STM-1 links
SDH Interface Max	1-2 STM-1 optical interfaces (1+1 protection supported)	
SDH Interface Connector	SC/PC	
SDH Interface Spec	S-1.1, L-1.1, L-1.2 Single fiber bi-directional interface can be optionally supported	
Electrical Ethernet port	10/100Base-Tx, RJ45 10/100M auto-adaptive, half/full duplex auto-adaptive	
Optical Ethernet port	10/100Base-Fx, SC 10/100M auto-adaptive, half/full duplex auto-adaptive	
Management Protocol	SNMP	
Management Interface	10Base-T	
Physical Dimension	1U: 440L*138 W*44Hmm	
Power Supply	-48V DC or 220V (110V) AC or dual power supply +24VDC	
Power Consumption	≤ 8W	
Environment Temperature	0°C ~ 45°C	
Environment Humidity	≤ 90%	

ORDERING INFORMATION

Item	Description
PD2-H02-FL-EoS01/FEJ	Ethernet/STM-1 converter, 2xFE ports, 1STM-1 port. AC+DC power supply
PD2-H02-FL-EoS01/FEJP	Ethernet/STM-1 converter, 2xFE ports, (1+1) STM-1 ports for protection. AC+DC power supply
PD2-H02-FL-EoS01F	2xFE+FX (SC), to STM-1, STM1:S1.1, AC220V
PD2-H02-FL-EoS01F/8	2xFE+FX (SC), to STM-1, STM1:S1.1, DC-48V
PD2-H02-FL-EoS01F/8D	2xFE+FX (SC), to STM-1, STM1:S1.1, two DC-48V

PRODIGY MEDIA CONVERTER



PD2-H02-FL12-101



PD2-H02-FL12-1000

PD2-H02-FL12-(101/1000)

ETHERNET EXTENDER

GENERAL DESCRIPTION

Interface PD2-H02-FL12-101 provides one electrical Ethernet port and one optical Ethernet port; It can be used in point to point topology which will greatly extend the Ethernet electrical signal transmission distance. The equipments also can work with aggregation device PD2-H02-FLP2 as a terminal device with 16 service directions.

FEATURES

- ⦿ Support one or two electrical Ethernet links over one optical line.
- ⦿ Wavelength power and transmission distance can be selected for the optical interfaces.
- ⦿ Comply with IEEE802.3.
- ⦿ Ethernet ports support 10/100M half/full duplex auto-adapted.
- ⦿ Support HP auto MDIX function, MDI/MDIX auto-adapted.
- ⦿ Low consumption with power supply 220V AC or -48V DC.
- ⦿ Compact design:
L×W×H:167mm×135mm×35mm.
- ⦿ High reliability with low CAPEX and OPEX.

TECHNICAL SPECIFICATIONS

Item	PD2-H02-FL12-101	PD2-H02-FL12-1000
Electrical Ethernet Port	10/100Base-Tx,RJ45, 10/100M autoadaptive, half/full duplex auto-adaptive	10/100/1000Base-Tx,RJ45, 10/100/1000M autoadaptive, half/full duplex auto-adaptive
Optical STM1 Port	100Base-Fx,SC	1000Base-Fx,SC
Power Supply	DC -48V (-36V ~ -72V) AC 220V (100V ~ 260V)	
Power Consumption	≤ 3W	
Physical Dimension	167L*135W*35Hmm	

ORDERING INFORMATION

Model	Description
PD2-H02-FL12-101	Single-FE media converter,220VAC,SC,1310nm,25km
PD2-H02-FL12-101/8	Single-FE media converter,-48VDC,SC,1310nm,25km
PD2-H02-FL12-101/5	Single-FE media converter,220VAC,SC,1550nm,25km
PD2-H02-FL12-101/58	Single-FE media converter,-48VDC,SC,1550nm,25km
PD2-H02-FL12-101-J/J	220VAC, SC, 1310nm, 25km,Remote power-down detection
PD2-H02-FL12-101-J/J5	220VAC, SC, 1550nm, 25km, Remote power-down detection
PD2-H02-FL12-1000	220VAC, SC, 1310nm, 25km
PD2-H02-FL12-1000/8	48VDC, SC, 1310nm, 25km
PD2-H02-FL12-1000/5	220VAC, SC, 1550nm, 25km
PD2-H02-FL12-1000/85	48VDC, SC, 1550nm, 25km
PD2-H02-FL12-1000/M	220VAC, SC, 850nm, 2km
PD2-H02-FL12-1000/8M	48VDC, SC, 850nm, 2km
PD2-H02-FL12-1000/S	220VAC, SC, Single Core, Tx 1310nm, 15km
PD2-H02-FL12-1000/S8	48VDC, SC, Single Core, Tx 1310nm, 15km
PD2-H02-FL12-1000/S5	220VAC, SC, Single Core, Tx 1550nm, 15km
PD2-H02-FL12-1000/S58	48VDC, SC, Single Core, Tx 1550nm, 15km
PD2-H02-FL12-1000/SL	220VAC, SC, Single Core, Tx 1310nm, 40km
PD2-H02-FL12-1000/SL8	48VDC, SC, Single Core, Tx 1310nm, 40km
PD2-H02-FL12-1000/SL5	220VAC, SC, Single Core, Tx 1550nm, 40km
PD2-H02-FL12-1000/SL58	48VDC, SC, Single Core, Tx 1550nm, 40km
PD2-H02-FL12-1000/SLB	220VAC, SC, Single Core, Tx 1310nm, 60km
PD2-H02-FL12-1000/SLB8	48VDC, SC, Single Core, Tx 1310nm, 60km
PD2-H02-FL12-1000/SLB5	220VAC, SC, Single Core, Tx 1550nm, 60km
PD2-H02-FL12-1000/SLB58	48VDC, SC, Single Core, Tx 1550nm, 60km

TC1-20A-24 • 142	142 19 Inch Rack Mounted Managed Industrial Ethernet Switch
TC1-30A-24 • 143	
TC1-30A-24PA • 145	
TC1-30A-24SA-M • 147	
TC1-30A-48 • 149	
TC1-62A-48/TC1-64A-48 • 151	153 DIN-Rail Mountable Managed Ethernet Switch
TC1-64A-24SA-M • 152	
TC1-30A-00 • 153	
TC1-30A-00BA-A • 154	
TC1-30A-05 • 155	
TC1-30A-16 • 156	163 Unmanaged Ethernet Switch
TC1-40A-00 • 158	
TC1-60A-00 • 160	
TC1-50B-00 • 161	
TC1-60B-00 • 162	
TC1-10B-05 • 163	168 M12 Ethernet Switch
TC1-10B-00 • 164	
TC1-10B-00BB • 165	
TC1-20B-00 • 166	
TC1-20B-00BB • 167	
TC1-10A-05R-M12 • 168	
TC1-30A-08-M12 • 169	
TC1-30A-16JA-CT39 • 170	
TC1-30A-24-M12 • 171	
TC1-80A-00 • 172	

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-20A-24

24 Port Managed Industrial Ethernet Switch

FEATURES

- It support up to 2 100Base-FX fiber ports.
- Support standard RSTP/STP(IEEE802.1w/d) redundant protocol.
- Flexible network topologies include tree, star and chain.
- Support IGMP, TRUNK, Port Mirroring, QoS, VLAN and ACL
- Support multiple management methods include CLI, TELNET, WEB, SNMP V1/V2 and OPC.
- Support centralized management software and network topology can generate automatically.
- Bind width setting function enables port band width limitation.
- Broadcast storm control and unicast attack detection.
- IP and MAC address confliction detection.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack-mounting (19" 1U) installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

100M fiber port: up to 2 × 100Base-FX (FC/SC/ST connector)

100M RJ45 port: up to 24 × 10/100Base-TX

CONSOLE interface: RS232, RJ45

Alarm ports: 3-core 3.81mm spacing terminals, 250VAC/220VDC Max; 2A Max; 60W Max

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 8.8G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(82-185VDC), redundant dual inputs
110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs

Input interface: 5.08mm phoenix contact

Power consumption: <15W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x44x245mm

(19x1.73x9.65 in) (Single power supply);

482.6x44x325.25mm(19x1.73x12.81 in)

(Dual redundant power supplies)

Weight: 4000g (8.818 pounds)

Installation: 19 inch 1U rack mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHz-150KHz), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-20A-24-2S-24T	2x100Base-FX,SM(FC/SC/ST);24x10/100Base-TX,RJ45
TC1-20A-24-1S-24T	1x100Base-FX,SM(FC/SC/ST);24x10/100Base-TX,RJ45
TC1-20A-24-24T	24x10/100Base-TX,RJ45
TC1-20A-24-2S-16T	2x100Base-FX,SM(FC/SC/ST);16x10/100Base-TX,RJ45
TC1-20A-24-1S-16T	1x100Base-FX,SM(FC/SC/ST);16x10/100Base-TX,RJ45
TC1-20A-24-16T	16x10/100Base-TX,RJ45
TC1-20A-24-1M-24T	1x100Base-FX,MM(FC/SC/ST);24x10/100Base-TX,RJ45
TC1-20A-24-2M-24T	2x100Base-FX,MM(FC/SC/ST);24x10/100Base-TX,RJ45
TC1-20A-24-2M-16T	2x100Base-FX,MM(FC/SC/ST);16x10/100Base-TX,RJ45
TC1-20A-24-1M-16T	1x100Base-FX,MM(FC/SC/ST);16x10/100Base-TX,RJ45
Power Supply: 24VDC, 48VDC, 110VDC, 110VAC/220VAC/220VDC, redundant dual inputs	

For enquires, please email to sales@terrabitnet.com

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-30A-24

24+4G Port Managed Industrial Ethernet Switch

FEATURES

- Support up to 8 100Base-FX ports and 2 1000Base SFP ports.
- Support DT-Ring protocol suite (recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundant protocol.
- Support ring, chain, star, and tangent ring network topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON (group 1,2,3,and 9).
- Broadcast storm control and unicast attack detection.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F)
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack-mounting (19' 1U) installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Gigabit port: Up to 4 x 10/100/1000Base-TX or 100/1000Base SFP ports.

Fiber port: Up to 8 100Base-FX ports with FC/SC/ST connectors.

Electrical ports: Up to 24 10/100Base-TX, 8 of which can be selected as fiber ports.

Console: RS232, RJ45

Alarm ports: 3-core 3.81mm spacing terminals, 250VAC/220VDC Max; 2A Max; 60W Max

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 8.8G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs, 48VDC(36-72VDC), redundant dual inputs 110VDC(82-185VDC), single input 110VAC/220VAC/220VDC(85-264VAC/120-370VDC), single input

Input interface: 3-core 3.81 space inserting interface for 24VDC/48VDC; 3-core 9.5mm space inserting interface for other power supply.

Power consumption: <20W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x44x245mm (19x1.73x9.65 in.)

Weight: 3000g (6.614 pounds)

Installation: Rack mounted 19 inch 1U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-24-2GX-nS-16	(n=0-8, and 2,4,6,8 are recommended) 2x1000Base SFP ports, nx100Base-FX SM, 16x100Base-TX
TC1-30A-24-2GX-nM-16	(n=0-8, and 2,4,6,8 are recommended) 2x1000Base SFP ports, nx100Base-FX MM, 16x100Base-TX
TC1-30A-24-16T	16x100 Base-TX
TC1-30A-24-24T	24x100 Base-TX
TC1-30A-24-2GX-24T	2x1000Base SFP ports, 24x100Base-TX
TC1-30A-24-4GX-24T	4x1000Base SFP ports, 24x100Base-TX
TC1-30A-24-2S-16T	2x100Base-FX SM, 16x100Base-TX
TC1-30A-24-2M-16T	2x100Base-FX MM, 16x100Base-TX
TC1-30A-24-4S-16T	4x100Base-FX SM, 16x100Base-TX
TC1-30A-24-4M-16T	4x100Base-FX MM, 16x100Base-TX
TC1-30A-24-6S-16T	6x100Base-FX SM, 16x100Base-TX
TC1-30A-24-6M-16T	6x100Base-FX MM, 16x100Base-TX
TC1-30A-24-8S-16T	8x100Base-FX SM, 16x100Base-TX
TC1-30A-24-8M-16T	8x100Base-FX MM, 16x100Base-TX

All models without Gigabit ports are also available.

Power Supply: 24VDC, 48VDC, redundant dual inputs, 110VDC, 110VAC/220VAC/220VDC, single input

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-30A-24PA

24+4G Port Managed Industrial Ethernet Switch

FEATURES

- ◎ KEMA approved IEC61850-3 & IEEE1613 compliant for substations, EN50121-4 compliant for rail transportation.
- ◎ Low time delay and zero packet loss features while working with full load in a long period of time, specially designed for digital substations.
- ◎ Support DT-Ring protocol suite (recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundant protocol.
- ◎ Support up to 24 100Base-FX and 4 1000Base SFP ports.
- ◎ Support ring, chain, star, and tangent ring protocol.
- ◎ Advanced ring topology protocol avoiding broadcast storm.
- ◎ Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- ◎ Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- ◎ Support centralized management software, network topology generated automatically.
- ◎ Safe MAC and port binding function, support static FDB.
- ◎ Bind width setting function enables port band width limitation.
- ◎ Improve network monitoring ability through RMON (group 1,2,3,and 9).
- ◎ Broadcast storm control and unicast attack detection.
- ◎ Real time temperature detecting and alarming, alarm value can be setted.
- ◎ IP and MAC address confliction detection.
- ◎ Precise real time clock.
- ◎ System operation log and uploading.
- ◎ EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- ◎ Abundant power supply options, able to provide redundant DC power supply.
- ◎ Support relay alarm output port alarming the lose of power.
- ◎ Unified management software for TOUGHCOM series: ToughComvision3.0.
- ◎ Working temperature: -40 ~ 85°C(-40 ~ 185°F)
- ◎ Ribbed Aluminum housing for heat dissipation, fanless design.
- ◎ Rack-mounting (19' 1U) installation.
- ◎ IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, IEEE802.1x, Store and forward switching mode

Interface

Gigabit port: Max 4 x 10/100/1000Base-TX or 100/1000Base SFP ports.

Fast Ethernet ports: 3 slots and each slot supports 8 x100Base fiber or copper ports.

Console: RS232, RJ45

Alarm ports: 3-core 3.81mm spacing terminals, 250VAC/220VDC Max; 2A Max; 60W Max

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 12.8G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(82-185VDC), redundant dual inputs
110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs

Input interface: 3-core 9.5mm space inserting interface

Power consumption: <35W

Physical Characteristics

Casing: Ribbed Aluminum housing fanless design

Protection Class: IP40 protection

Installation: Rack mounting 19 inch 1U

Dimensions(WxHxD): 482.6x44x420mm (19x1.73x16.53 in)

Weight: 5000g (11.023 pound)

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHZ-80MHz)

IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

KEMA, CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-24PA-4GX-4FM-20TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 4x100Base-FX,MM(FC/SC/ST); 20x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-8FM-16TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 8x100Base-FX,MM(FC/SC/ST); 16x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-12FM-12TX1	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 12x100Base-FX,MM(FC/SC/ST); 12x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-16FM-8TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 16x100Base-FX,MM(FC/SC/ST); 8x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-20FM-4TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 20x100Base-FX,MM(FC/SC/ST); 4x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-24FM	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 24x100Base-FX,MM(FC/SC/ST)
TC1-30A-24PA-4GX-24TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 24x10/100Base-TX, RJ45
TC1-30A-24PA-4FM-20TX	4x100Base-FX,MM(FC/SC/ST); 20x10/100Base-TX, RJ45
TC1-30A-24PA-8FM-16TX	8x100Base-FX,MM(FC/SC/ST); 16x10/100Base-TX, RJ45
TC1-30A-24PA-12FM-12TX	12x100Base-FX,MM(FC/SC/ST); 12x10/100Base-TX, RJ45
TC1-30A-24PA-16FM-8TX	16x100Base-FX,MM(FC/SC/ST); 8x10/100Base-TX, RJ45
TC1-30A-24PA-20FM-4TX	20x100Base-FX,MM(FC/SC/ST); 4x10/100Base-TX, RJ45
TC1-30A-24PA-24FM	24x100Base-FX,MM(FC/SC/ST)
TC1-30A-24PA-24TX	24x10/100Base-TX, RJ45
TC1-30A-24PA-8TX	8x10/100Base-TX, RJ45
TC1-30A-24PA-16TX	16x10/100Base-TX, RJ45
TC1-30A-24PA-4FS-20TX	4x100Base-FX,SM(FC/SC/ST); 20x10/100Base-TX, RJ45
TC1-30A-24PA-8FS-16TX	8x100Base-FX,SM(FC/SC/ST); 16x10/100Base-TX, RJ45
TC1-30A-24PA-12FS-12TX	12x100Base-FX,SM(FC/SC/ST); 12x10/100Base-TX, RJ45
TC1-30A-24PA-16FS-8TX	16x100Base-FX,SM(FC/SC/ST); 8x10/100Base-TX, RJ45
TC1-30A-24PA-20FS-4TX	20x100Base-FX,SM(FC/SC/ST); 4x10/100Base-TX, RJ45
TC1-30A-24PA-24FS	24x100Base-FX,SM(FC/SC/ST)
TC1-30A-24PA-4GX-4FS-20TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 4x100Base-FX,SM(FC/SC/ST); 20x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-12FS-12TX1	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 2x100Base-FX,SM(FC/SC/ST); 12x10/100Base-TX, RJ45
TC1-30A-24PA-4GX-16FS-8TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 16x100Base-FX,SM(FC/SC/ST); 8x10/100 Base-TX, RJ45
TC1-30A-24PA-4GX-20FS-4TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 20x100Base-FX,SM(FC/SC/ST); 4x10/100 Base-TX, RJ45
TC1-30A-24PA-4GX-24FS	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 24x100Base-FX,SM(FC/SC/ST)
TC1-30A-24PA-4GX-8FS-16TX	4x1000Base SFP ports (or 10/100/1000Base-TX, RJ45); 8x100Base-FX,SM(FC/SC/ST); 16x10/100Base-TX, RJ45

Different ports combinations can be customized.

Power Supply: 24VDC, 48VDC, 110VDC, 110VAC/220VAC/220VDC, redundant dual inputs

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-30A-24SA-M

24+4G Port Managed Industrial Ethernet Switch

FEATURES

- Support high-power PSE feeding output of DC48V and DC24V qualified with IEEE802.3af.
- Modular design, support up to 24 100Base-FX ports and 4 1000Base SFP ports.
- Support DT-Ring protocol suite (recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundant protocol.
- Support ring, chain, star, and tangent ring network topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group 1,2,3, and 9).
- Broadcast storm control and unicast attack detection.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack-mounting (19 inch 2U) installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, IEEE802.3af, Store and forward switching mode

Interface

Gigabit port: Up to 4 x 100/1000M SFP ports with 1000Base-SX/LX/LH/ZX module of LC connector, or 4 x 10/100/1000Base-TX with RJ45 connectors.

Fiber port: Up to 24 x 100Base-FX ports with FC/SC/ST connectors.

Electrical ports: Up to 24 10/100Base-TX

Console: RS232, RJ45

Power feeding ports: up to 24 10/100Base-TX adaptive Ethernet ports

PSE mode: 1,2,3,6; 4,5,7,8 optional

Max output power per each port: 29W

Max output power in the end of 100m cable of each port: 15.6W

Output voltage: 24VDC, 48VDC

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 12.8G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(82-185VDC), redundant dual inputs
110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs

Input interface: 5-core 9.5mm space inserting interface

Power consumption: <45W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x88x245mm
(19x3.46x9.65 in.)

Weight: 6000g (13.228 pounds)

Installation: Rack mounted 19 inch 2U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-24SA-M Host	4GX+24TX, up to 24x100Base-TX and 4x1000Base SFP ports, 4 expansion slots, independent feeding input
TC1-SMA-3-6FS	6 x 100Base-FX SM
TC1-SMA-3-5FS-1TX	5 x 100Base-FX SM or 1 x 10/100Base-TX
TC1-SMA-3-4FS-2TX	4 x 100Base-FX SM or 2 x 10/100Base-TX
TC1-SMA-3-3FS-3TX	3 x 100Base-FX SM or 3 x 10/100Base-TX
TC1-SMA-3-2FS-4TX	2 x 100Base-FX SM or 4 x 10/100Base-TX
TC1-SMA-3-1FS-5TX	1 x 100Base-FX SM or 5 x 10/100Base-TX
TC1-SMA-3-6TX	6 x 10/100Base-TX
TC1-SMA-3-6TX-PSE	6 x 10/100Base-TX with POE function
TC1-SMA-3-6FM	6 x 100Base-FX MM
TC1-SMA-3-5FM-1TX	5 x 100Base-FX MM or 1 x 10/100Base-TX
TC1-SMA-3-4FM-2TX	4 x 100Base-FX MM or 2 x 10/100Base-TX
TC1-SMA-3-3FM-3TX	3 x 100Base-FX MM or 3 x 10/100Base-TX
TC1-SMA-3-2FM-4TX	2 x 100Base-FX MM or 4 x 10/100Base-TX
TC1-SMA-3-1FM-5TX	1 x 100Base-FX MM or 5 x 10/100Base-TX
Power Supply: 24VDC, 48VDC, 110VDC, 110VAC/220VAC/220VDC, redundant dual inputs	

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-30A-48

48+4G Port Modular Managed Industrial Ethernet Switch

FEATURES

- Modular design, support up to 4 1000Base-FX SFP ports, 48 10/100Base-TX or 24 100Base-FX ports.
- DT-Ring protocol suite, recovery time<50ms, RSTP/STP(IEEE802.1w/d) redundancy protocol.
- Flexible network topologies: ring, chain, star and tangent ring.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Band width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group 1,2,3,and 9).
- Broadcast storm control and unicast attack detection.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack-mounting (19 inch 2U) installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Gigabit port: 4 1000Base SFP ports or 4 10/100/1000 Base-TX

100M fiber port: up to 24 100Base-FX (FC/SC/ST connector)

100M electrical port: up to 48 10/100Base-TX ports

CONSOLE interface: RS232, RJ45

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 17.6G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(82-185VDC), redundant dual inputs
110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs

Input interface: 3-core 3.81 space inserting interface for 24VDC/48VDC; 3-core 9.5mm space inserting interface for other power supply.

Power consumption: <45W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x88x245mm (19x3.46x9.65 in.)

Weight: 6000g (13.228 pounds)

Installation: Rack mounted 19 inch 2U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-48-4GX Chasis	Chassis with 4GX+24T 4 slots for other modules
TC1-SMA-3-6S	Module with 6 Single Mode 100Base-FX
TC1-SMA-3-TX-5FS	5 × 100Base-FX, SM, 1 × 10/100Base-TX
TC1-SMA-3-2TX-4FS	4 × 100Base-FX, SM, 2 × 10/100Base-TX
TC1-SMA-3-3TX-3FS	3 × 100Base-FX, SM, 3 × 10/100Base-TX
TC1-SMA-3-4TX-2FS	2 × 100Base-FX, SM, 4 × 10/100Base-TX
TC1-SMA-3-5TX-FS	1 × 100Base-FX, SM, 5 × 10/100Base-TX
TC1-SMA-3-6T	6 × 10/100Base-TX
TC1-SMA-3-6M	Module with 6 Multi Mode 100Base-FX
TC1-SMA-3-TX-5FM	5 × 100Base-FX, MM, 1 × 10/100Base-TX
TC1-SMA-3-2TX-4FM	4 × 100Base-FX, MM, 2 × 10/100Base-TX
TC1-SMA-3-3TX-3FM	3 × 100Base-FX, MM, 3 × 10/100Base-TX
TC1-SMA-3-4TX-2FM	2 × 100Base-FX, MM, 4 × 10/100Base-TX
TC1-SMA-3-5TX-FM	1 × 100Base-FX, MM, 5 × 10/100Base-TX
Power Supply: 24VDC, 48VDC, 110VDC, 110VAC/220VAC/220VDC, redundant dual inputs	

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-62A-48/TC1-64A-48

48+2G/4G Port Layer3 Managed Industrial Ethernet Switch

FEATURES

- Support up to 48 10/100Base-TX ports and 4 1000 Base SFP ports.
- Support DT-Ring protocol suite, recovery time<50ms. Support multiple protocols such as STP/RSTP/MSTP and VRRP.
- Support QoS, VLAN, SNMP MIB V1/V2/V3, RMON (1, 2, 4, 9).
- Support static routing protocol and dynamic routing protocols such as RIP v1/v2, OSPF v2 and BGP v4.
- Support various multicasting routing protocols such as PIM-SM, PIM-DM, DVMRP and so on.
- 36Gbps Backplane bandwidth, hardware-based routing, wire-speed layer-3 switching and forwarding rate is up to 23.1Mpps.
- Powerful ACL, hardware supports data filtering from L2-L7.
- Auto-detection and control broadcasting storm. Support IGMP V1/V2/V3 message detection, effectively preventing broadcast overflow.
- Support flow control in full/half duplex way, the rate control is of the step of 64K for Ethernet port.
- Support QinQ (Double Tagging VLAN).
- Operating temperature: -40 ~ 85°C (-40 ~ 185°F)
- Ribbed Aluminum housing for heat dissipation (patent), fanless.
- IP40 protection class.
- 19 inch 1U Rack-mounting.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.3ae, IEEE802.3ad, IEEE802.1p/q, IEEE802.1d, IEEE802.1w, IEEE802.1x, Store and forward switching mode

Interface

100M Port: 48 (TC1-62A-48/TC1-64A-48) x 10/100Base-TX, adaptive
Gigabit Port: 2(TC1-62A-48) or 4 (TC1-64A-48) x 1000Base SFP ports
CONSOLE interface: RS232, RJ45

Performance

Layer 3 forwarding rate: 23.1Mpps at line rate
Backplane switching capacity: 36G
Routing table: 30K
MAC address table: 16K
802.1Q VLAN: any division from 1 to 4094
Routing Management: static routing, RIP v1/v2, OSPF v2, BEIGRP, BGP v4, IP-based policy routing
Management: CLI, Telnet, SNMPv1/v2, ToughComvision

Power Requirements

Power input:
 24VDC (18-36VDC), redundant dual inputs
 48VDC(36-72VDC), redundant dual inputs
 110VDC(82-185VDC), redundant dual inputs
 110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs
Input interface: AC power plug
Power consumption: <60W

Physical Characteristics

Casing: IP40 protection
 Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 482.6x44x374mm (19x1.73x14.72 inch)
Weight: 4000g (8.818pound)
Installation: Rack mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)
Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge
IEC61000-4-3(RS): 10V/M (80-1000MHz)
IEC61000-4-4(EFT): power line±4KV, data line±2KV
IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV
IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)
IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s
IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM
IEC61000-4-10(Damped oscillatory): 30A/m
IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s
FCC CFR47 Part 15/EN55022: Class A&B
IEC61000-6-2(Industrial Standards),
IEC61850-3(Substations),
IEEE1613(Electric Power Substations),
EN50121-4(Railway Applications)

CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-62A-48	48x10/100Base-TX, 2 x slot for 1000M port, SFP
TC1-64A-48	48x10/100Base-TX, 4 x slot for 1000M port, SFP

Power Supply: 24VDC, 48VDC, 110VDC, 110VAC/220VAC/220VDC, redundant dual inputs

For enquires, please email to sales@terrabitnet.com

TOUGHCOM RACK MOUNTED ETHERNET SWITCH



TC1-64A-24SA-M

**24+4G Port Layer3 Modular
Managed Industrial Ethernet Switch**

FEATURES

- Up to 24x100M fiber ports, 4xGigabit fiber ports.
- Support DT-Ring Suite (recovery time<50ms) and STP/ RSTP/MSTP/ VRRP.
- Support Qos, Vlan, SNMP MIB V1/V2/V3 and RMON(Group 1,2,3 and 9)
- Support static routing protocol and dynamic routing protocols such as RIP v1/v2,OSPF v2 and BGP v4.
- Support multicast routing protocols such as PIM-SM,PIM-DM and DVMRP.
- Support network time protocols such as NTP and SNTP.
- 36Gbps backplane bandwidth, hardware routing, layer-three line-speed switching rate of 19.6Mpps.
- Powerful ACL, support data filtering from L2 to L7
- Broadcast storm auto-detection and control; support the detection. of IGMP V1/V2/V3 message to effectively prevent the spreading of broadcasting message.
- Support full/half duplex flow control with the speed limitation of 64K.
- Support QinQ to realize double VLAN security.
- Support DHCP, BOOTP and other address-attaining ways.
- Abundant power supply options, able to provide redundant power supply.
- Operating temperature: -40 ~ 85°C(-40 ~ 185°F)
- Ribbed Aluminium heat dissipation (patent), fanless design.
- Rack-mounting (19 Inch 1U).
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.3ae, IEEE802.3ad,

IEEE802.1p/q, IEEE802.1d, IEEE802.1w, IEEE802.1x, Store and forward switching mode

Interface

Gigabit Ports: 4x10/100/1000Base-T(X) or 4xGigabit SFP ports

Fast Ethernet: 3xSlots, each of which support 8 100Base-FX or 100Base-TX ports or 4 100Base-FX and 4 100Base-TX

CONSOLE interface: RS232,RJ45

Alarm ports: 3-core 3.81mm spacing terminals, 250VAC/220VDC Max; 2A Max; 60W Max

Performance

Backplane switching capacity: 36G

Layer 3 forwarding rate: 19.6Mpps at line rate

Routing address table: 30K

MAC address table: 16K

802.1Q VLAN: any division from 1 to 4094

Routing Management: static routing, RIP v1/v2, OSPF v2, BEIGRP, BGP v4, IP-based strategic routing

Management: CLI, Telnet, SNMPv1/v2, and Specvision 3.0

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(82-185VDC), redundant dual inputs
110VAC/220VAC/220VDC(85-264VAC/120-370VDC), redundant dual inputs

Input interface: 3-core 9.5mm space inserting interface

Power consumption: <40W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x44x420mm (19x1.73x16.53in.)

Weight: 5000g (11.02 pounds)

Installation: Rack mounted 19 inch 1U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ),10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-64A-24SA-M	3x10/100M expansion slots, 1x1000m expansion slot
TC1-SMA-6.2A-8TX	8x10/100Base-TX, RJ45 connector
TC1-SMA-6.2A-8S	8x100Base-FX,SM (FC/SC/ST connector)
TC1-SMA-6.2A-4S-4TX	4x100Base-FX, SM (FC/SC/ST connector), 4x10/100Base-TX, RJ45 connector
TC1-SMA-6.2A-4GX	4x1000M SFP ports
TC1-SMA-6.2A-4GT	4x10/100/1000Base-TX
TC1-SMA-6.2A-8M	8x100Base-FX,MM (FC/SC/ST connector)
TC1-SMA-6.2A-4M-4TX	4x100Base-FX, MM (FC/SC/ST connector), 4x10/100Base-TX, RJ45 connector
Power Supply: 24VDC,48VDC,110VDC,110VAC/220VAC/220VDC, redundant dual inputs	

For enquires, please email to sales@terrabitnet.com

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-30A-00

8+2G Port Gigabit Managed Industrial Ethernet Switch

FEATURES

- Up to 2 1000Base-FX/TX ports and 2 100Base-FX ports
- Support DT-Ring Suite (Recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundancy protocol.
- Flexible network topology supports ring, link, star and tangent ring topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Band width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9).
- Broadcast storm control.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- DIN-Rail and Wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Gigabit port: 2 Gigabit SFP ports support 1000Base-SX/LX/LH/ZX with LC connectors, or 2 10/100/1000Base-TX with RJ45 connectors

Fiber port: 2x100Base-FX (FC/SC/ST connectors)

Copper port: up to 8x10/100Base-TX, 2 of which can be changed to fiber ports.

Console: RS232, RJ45

Alarm ports: 2-core 3.81mm spacing terminals, 250VAC/350VDC Max; 120mA Max

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 5.6G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs

48VDC(36-72VDC), redundant dual inputs

110VDC(66-154VDC), single input

220VAC/DC(132-300VAC/176-400VDC), single input

Connection Terminal: 3 cores 3.81mm spacing terminals (24VDC, 48VDC); 3 cores 7.62mm spacing terminals (110VDC, 220VAC/DC)

Power consumption: <10W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 75x140x123 mm (2.95x5.51x4.84 in)

Weight: 1200g (2.646 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHZ-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

UL508, CE,FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-00-2GX-2S-6T	2x1000M port, 2x100Base-FX, SM, 6x10/100Base-TX
TC1-30A-00-2GX-2M-6T	2x1000M port, 2x100Base-FX, MM, 6x10/100Base-TX, RJ45
TC1-30A-00-2GX-8T	2 x 1000M port, 8 x 10/100Base-TX, RJ45
TC1-30A-00-2S-6T	2 x 100Base-FX, SM, 6 x 10/100Base-TX, RJ45
TC1-30A-00-2M-6T	2 x 100Base-FX, MM, 6 x 10/100Base-TX, RJ45
TC1-30A-00-8T	8 x 10/100Base-TX, RJ45

Power Supply: 24VDC, 48VDC, redundant dual inputs, 110VDC, 220VAC/DC, single input

For enquires, please email to sales@terrabitnet.com

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-30A-00BA-A

**6+3G Port Gigabit Managed
Industrial Ethernet Switch**

FEATURES

- ◉ Mine safety certification.
- ◉ Low power consumption, full load consumption less than 5.6W.
- ◉ Support DT-Ring Suite (Recovery time<50ms), RSTP/STP (IEEE802.1w/d) redundancy protocol.
- ◉ Flexible network topology supports ring, link, star and tangent ring topologies.
- ◉ Up to 3 1000Base-FX/TX ports or 3 100Base-FX ports.
- ◉ Advanced ring topology protocol avoiding broadcast storm.
- ◉ Support IGMP Snooping, port mirroring, QoS, VLAN.
- ◉ Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- ◉ Support centralized management software, network topology generated automatically.
- ◉ Safe MAC and port binding function, support static FDB.
- ◉ Bind width setting function enables port band width limitation.
- ◉ Broadcast storm control.
- ◉ EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- ◉ Dual 24VDC, 48VDC or 3.3VDC power supply with power alarming function.
- ◉ TOUGHCOM series management software: ToughComvision3.0.
- ◉ Working temperature: -40°C ~ 85°C.
- ◉ Ribbed Aluminum housing for heat dissipation, fanless design.
- ◉ IP40 protection.
- ◉ DIN-Rail mounting and wall mounting, embedded module.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3U, IEEE802.3X, IEEE802.3Z, IEEE802.1AB, IEEE802.1D, IEEE802.1W, IEEE802.1P, IEEE802.1Q, Store and forward switching mode

Interface

Gigabit port: 3 Gigabit SFP interface supports 1000Base-SX/LX/LH/ZX/LC or 10/100/1000Base-T(X), RJ45 connector modules.

Fiber port: 3 100Base-FX(FC/SC/ST connectors).

Copper port: up to 6 10/100Base-TX with RJ45 connectors.

Console: RS232, RJ45

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 7.2G

Power Requirements

Power Input: 3.3VDC, redundant dual inputs 24VDC (18-36VDC), redundant dual inputs 48VDC(36-72VDC), redundant dual inputs

Connection Terminal: 6 cores 5.08mm spacing terminals (3.3VDC), 3 cores 3.81mm spacing terminals (24VDC, 48VDC)

Power Consumption: <5.6W(1000Base-FX), <3.99W(100Base-FX)

Physical Characteristics

Casing: IP40 protection, Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 75x140x123 mm (2.95x5.51x4.84 in) (24VDC, 48VDC); 150x61.5x110mm (5.91x2.42x4.33 in)(3.3VDC)

Weight: 1200g (2.646 pound)

Installation: DIN-Rail or wall mounting, embedded modules

Environmental Limits

Operating Temperature: -40 to 85°C(-40 to 185°F)

Storage Temperature: -40 to 85°C(-40 to 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHZ-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, UL60950, ROHS, Mine Safety Certification

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-30A-00BA-A-3GX-6TX	3×1000Base SFP port, 6×10/100Base-TX RJ45, DIN Rail or Wall Mounting, 3.3VDC(150x61.5x110mm), 24VDC, 48VDC (75x140x123 mm)
TC1-30A-00BA-A-6TX	6×10/100Base-TX RJ45, DIN Rail or Wall Mounting, 3.3VDC(150x61.5x110mm), 24VDC, 48VDC (75x140x123 mm)
Power Supply: 3.3VDC, 24VDC, 48VDC, redundant dual inputs	

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-30A-05

5 Port Serial Server Function Integrated Programmable Industrial Ethernet Switch

FEATURES

- Serial server integrated embedded system, developed under Linux platform, support redevelopment potential and relative protocol exchanging such as the data exchanging from IEC61870-101 to IEC61870-104.
- 4xserial ports, 3x100Base-TX RJ45 ports (4x100Base-TX RJ45 ports while serial ports are not required), 2x100Base-FX ports.
- Flexible RS232 and RS485 combination, support plug and play and easy configuration in the software.
- Support necessary data port protecting circuit, meet the requirements of interference rejection with industrial level 4.
- Support DT-Ring Suite (Recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundancy protocol.
- Support IGMP Snooping, TRUNK, port mirroring, QoS, VLAN and ACL.
- Support multiple management methods such as CLI, TELNET, WEB, SNMP V1/V2 and OPC.
- Auto-network topology, able to realize centralized network management.
- Safe MAC and port binding function, support static FDB.
- Support management configuration of network bandwidth to properly limitation.
- RMON(Group 1,2,3 and 9) to improve network monitoring ability.
- Broadcast storm control.
- EMC industrial level 4, able to work in harsh environments such as strong electromagnetic interference.
- Abundant power supply options, able to provide dual redundant power supply.
- Relay alarm output port with power loss alarming function.

- Uniform network management software of TOUGHCOM series: ToughComvision3.0.
- Ribbed Aluminium heat dissipation (patent), fanless design.
- Operating temperature: -40 ~ 85°C (-40 ~ 185°F).
- DIN-rail or wall mounting.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.1q, IEEE802.1p, IEEE802.1d, IEEE802.1w, TCP Server, TCP Client, UDP, Store and forward switching mode

Interface

100M fiber ports: 2x100Base-FX (FC/SC/ST connector)

TP ports: 3x10/100Base-TX, RJ45 connector (4 x 10/100Base-TX ports while serial ports are not required)

Serial ports: up to 4xRS232/RS485

CONSOLE interface: RS232, RJ45

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 8.8G

Power Requirements

Power input:

12VDC(9V-18VDC), redundant dual inputs
24VDC(18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
Connection Terminal: 5 cores 5.08mm spacing terminal

Power consumption: <7W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 139x55.4x119.5 mm (5.47x2.18x4.70 in.)

Weight: 1000g (2.204 pounds)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHZ-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-30A-05-2S-3TX-4D	2x100Base-FX, SM; 3x10/100Base-TX, RJ45 connector; 4xRS232/RS485 serial ports
TC1-30A-05-5TX-4D	5x10/100Base-TX, RJ45connector; 4xRS232/RS485 serial ports
TC1-30A-05-2M-3TX-4D	2x100Base-FX, MM; 3x10/100Base-TX, RJ45 connector; 4xRS232/RS485 serial ports
TC1-30A-05-2S-3TX	2x100Base-FX, SM; 3x10/100Base-TX, RJ45 connector
TC1-30A-05-2M-3TX	2x100Base-FX, MM; 3x10/100Base-TX, RJ45 connector
TC1-30A-05-5TX	5x10/100Base-TX, RJ45 connector

Power Supply: 12VDC, 24VDC, 48VDC redundant dual inputs

For enquires, please email to sales@terrabitnet.com

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-30A-16

20 Port Managed Industrial Ethernet Switch

FEATURES

- Up to 4x100Base-FX and 16x100Base-TX.
- Support DT-Ring Suite (Recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundancy protocol. Support Max 100Mbps fiber ring network.
- Flexible network topology supports ring, link, star and tangent ring topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9).
- Broadcast storm control.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- DIN-Rail and Wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Fiber port: 2-4 100Base-FX S/M (SC connector)

Copper port: up to 16x10/100Base-TX

Console: RS232, RJ45

Alarm ports: 2-core 3.81mm spacing terminals, 250VAC/350VDC Max; 120mA Max

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 8.8G

Power Requirements

Power input:

24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(66-154VDC), single input
220VAC/DC(132-300VAC/176-400VDC), single input

Connection Terminal: 3 cores 3.81mm spacing terminals (24VDC, 48VDC); 3 cores 7.62mm spacing terminals (110VDC, 220VAC/DC)

Power consumption: <15W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 75x165x123 mm
(2.95x6.50x4.84 in)

Weight: 1400g (3.086 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 to 85°C(-40 to 185°F)

Storage Temperature: -40 to 85°C(-40 to 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-30A-16-4S-16T	4x 100Base-FX, SM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-3S-16T	3 x 100Base-FX, SM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-2S-16T	2 x 100Base-FX, SM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-1S-16T	1 x 100Base-FX, SM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-16T	16 x 10/100Base-TX,RJ45
TC1-30A-16-4S-8T	4 x 100Base-FX, SM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-3S-8T	3 x 100Base-FX, SM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-2S-8T	2 x 100Base-FX, SM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-1S-8T	1 x 100Base-FX, SM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-8T	8 x 10/100Base-TX,RJ45
TC1-30A-16-4M-16T	4x 100Base-FX, MM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-3M-16T	3 x 100Base-FX, MM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-2M-16T	2 x 100Base-FX, MM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-1M-16T	1 x 100Base-FX, MM, FC/SC/ST connectors, 16 x 10/100Base-TX,RJ45
TC1-30A-16-4M-8T	4 x 100Base-FX, MM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-3M-8T	3 x 100Base-FX, MM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-2M-8T	2 x 100Base-FX, MM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
TC1-30A-16-1M-8T	1 x 100Base-FX, MM, FC/SC/ST connectors, 8 x 10/100Base-TX,RJ45
Power Supply: 24VDC, 48VDC, redundant dual inputs, 110VDC, 220VAC/DC, single input; TC0-30A-16 can also support unmanaged version	

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-40A-00

**24+4G Port Modular Managed
Industrial Ethernet Switch**

FEATURES

- Modular design, up to 4 GE (SFP) ports, 24 100Base-TX/FX ports or 24 RS232/RS485 serial ports.
- Support up to 24 100Base-FX ports, 4 1000Base SFP ports.
- Support DT-Ring protocol suite, recovery time<50ms, and it also support RSTP/STP (IEEE802.1w/d) redundancy protocol.
- Support flexible network topologies such as ring, chain, star and tangent ring topology.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP, TRUNK, Port Mirroring, QoS, VLAN, ACL etc.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9).
- Broadcast storm control and unicast attack detection.
- Virtual serial port mapping to fulfill the transmission of serial data on Ethernet.
- Embedded serial server has unic IP and can be managed through Telnet, Web and Serial port.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C (-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Din Rail or wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Gigabit port: 2/4 1000Base SFP ports, support 1000 Base-SX/LX/LH/ZX with LC connector or 10/100/1000Base-TX with RJ45.

100M fiber port: up to 24 x 100Base-FX (FC/SC/ST)

100M RJ45 port: up to 24 x 10/100Base-TX

Serial port: up to 24 x RS232/RS485 serial ports with port rate of 38.4kbps

CONSOLE interface: RS232, RJ45

Alarm contact: Relay output for power supply

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 12.8G

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC(36-72VDC), dual redundant

Input interface: 3-core 3.81 space inserting interface

Power consumption: <24W (all ports are Ethernet ports), <36W (all ports are serial ports)

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 416x170x158mm (16.38x6.69 x 6.22in.)

Weight: 8000g (17.637pound)

Installation: DIN-Rail mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V (10KHz-150KHz), 10V (150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE,FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-SMA-4-Backboard	Backboard of TC1-40A-00 system, offering slots for 1 CPU module, 1 switching module, 1 Gigabit interface module, 1 power supply module and 6 service modules
TC1-SMA-4-SW1	switching module for TC1-40A-01, support up to 24 100M ports and 2 1000M SFP ports.
TC1-SMA-4-SW2	switching module for TC1-40A-02, support up to 24 100M ports and 4 1000M SFP ports.
TC1-SMA-4-CPU1	CPU module, managing TC1-SMA-4-SW1/TC1-SMA-4-SW2
TC1-SMA-4-POWER	power supply module, dual 24VDC or 48VDC
TC1-SMA-4-2GX	2 x 1000M Ethernet ports for SFP
TC1-SMA-4-4GX	4 x 1000M Ethernet ports for SFP (only in TC1-40A-02)
TC1-SMA-4-4TX	Interface module with 4 x 10/100-T/TX ports, RJ45
TC1-SMA-4-4FS	Interface module with 4 x 100FX ports, ST/SC, single mode
TC1-SMA-4-3TX-1FS	Interface module with 3x10/100-T/TX ports and 1x100FX port ,SC/ST, single mode
TC1-SMA-4-2TX-2FS	Interface module with 2x10/100-T/TX ports and 2x100FX ports ,SC/ST, singlemode
TC1-SMA-4-1TX-3FS	Interface module with 1x10/100-T/TX port and 3x100FX ports ,SC/ST, single mode
TC1-SMA-4-2RS232-2RS485	2 RS232 ports and 2 RS485 ports
TC1-SMA-4-4RS232	4 RS232 ports
TC1-SMA-4-4RS485	4 RS485 ports
TC1-SMA-4-4FM	Interface module with 4 x 100FX ports, ST/SC, multi mode
TC1-SMA-4-3TX-1FM	Interface module with 3x10/100-T/TX ports and 1x100FX port ,SC/ST, multi mode
TC1-SMA-4-2TX-2FM	Interface module with 2x10/100-T/TX ports and 2x100FX ports ,SC/ST, multi mode
TC1-SMA-4-1TX-3FM	Interface module with 1x10/100-T/TX port and 3x100FX ports ,SC/ST, multi mode

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-60A-00

24 + 4G Port Modular Layer 3 Managed Industrial Ethernet Switch

FEATURES

- Module design, up to 4 GE (SFP) ports and 24 100 Base TX/FX ports.
- DT-Ring, recovery time < 50ms.
- Support max 12 100Mbps fiber rings, 2 Gigabit fiber rings.
- Support IGMP, TRUNK, Port Mirroring, QoS, VLAN.
- Support SNTP (Simple Network Time Protocol), PTP (precision time protocol, IEEE1588).
- Support static routing, RIP v1/v2, OSPF v2, BEIGR, BGP v4.
- Support PIM-SM, PIM-DM, DVMRP etc.
- 36Gbps Backplane bandwidth, hardware-based routing, wirespeed layer-3 switching and forwarding rate is up to 19.6Mpps.
- Powerful ACL, hardware supports data filtering from L2-L7.
- Auto-detection and control broadcasting storm. Support IGMP. V1/V2/V3 message detection, effectively preventing broadcasting overflow.
- Hyper terminal (CLI), TELNET, WEB management software, SNMP-based network management.
- Support OPC supervision.
- Flexible combination of ring, star and tangent network topology.
- Able to monitor the flow, status of each port (RMON (statistics, history, alarm, event))
- EMC industrial level 4, complies with IEC61850 standard.
- Uniform network management software of ToughComvision 3.0.
- Wide operating temperature: -40 ~ 85°C (-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation (patent), fanless.
- IP40 protection class

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.3ae, IEEE802.3ad, IEEE802.1p/q, IEEE802.1d, IEEE802.1w, IEEE802.1x, Store and forward switching mode

Interface

Gigabit fiber port: 4 x 1000Base SFP ports
Gigabit RJ45 port: 4 x 10/100/1000Base-TX
100M fiber port: 24 x 100Base-FX (FC/SC/ST connector)
100M RJ45 port: up to 24 x 10/100Base-TX
CONSOLE interface: RS232, RJ45
Alarm contact: Relay output for power supply

Performance

MAC Address Table Size: 16K
Backplane switching capacity: 36G

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC (36-72VDC) dual redundant
Input interface: 3-core 3.81mm space inserting interface
Power consumption: <35W

Physical Characteristics

Casing: IP40 protection
 Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 267x200x193mm (10.51x7.87x7.60 in.)
Weight: 7000g (15.432 pound)
Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)
Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge
IEC61000-4-3(RS): 10V/M (80-1000MHz)
IEC61000-4-4(EFT): power line±4KV, data line±2KV
IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV
IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHZ-80MHz)
IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s
IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM
IEC61000-4-10(Damped oscillatory): 30A/m
IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s
FCC CFR47 Part 15/EN55022: Class A&B
IEC61000-6-2(Industrial Standards),
IEC61850-3(Substations),
IEEE1613(Electric Power Substations),
EN50121-4(Railway Applications)

CE,FCC, ROHS

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
TC1-SMA-Backboard	Backboard of TC1-60A-00 system, offering slots for 1 switching module, 1 Gigabit interface module, 1 power supply module and 3 service modules.
TC1-SMA-6-SW3	switching module for TC1-60A-00
TC1-SMA-POWER	power supply module, dual 24VDC or 48VDC
TC1-SMA-6-4GE-SFP/TX	4 x 1000M Ethernet ports for SFP
TC1-SMA-6.1A-8FE-TX	Interface module with 8 x 10/100-TX ports, RJ45
TC1-SMA-6.1A-8FE-SFP	8 x 100Base SFP ports
TC1-SMA-6.1A-4FE/4FE-SFP/TX	4 x 100Base SFP ports and 4 100Base-TX
TC1-SMA-6-CPU6	CPU module, managing TC1-SMA-6-SW3
Power Supply: 24VDC, 48VDC	

For enquires, please email to sales@terrabitnet.com

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-50B-00

8 Port Managed Industrial Ethernet Switch

FEATURES

- Support DT-Ring, recovery time <100ms, support STP ring protocol.
- Support QoS, VLAN, SNMP, MIB V1/V2/V3, IGMP, port mirroring, TRUNK, static MAC address binding.
- EMC industrial level 4, complies with IEC61850 standard.
- Dual power supply.
- Alarm relay output for power supply and portlink.
- Support CLI, TELNET, WEB, SNMP management functions.
- Broadcast storm control.
- Ribbed Aluminum housing for heat dissipation (fanless);
- Operation temperature: -40 ~ 85°C (-40 ~ 185°F).
- IP40 protection class.
- DIN-Rail and wall-mounting.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.1p, IEEE802.1q, IEEE802.1d,
Store and forward switching mode

Interface

8 10/100Base-TX ports with RJ45 connector.

Alarm ports: 2-core 3.81 space inserting interface, 250VAC/350VDC Max; 120mA Max

Power Requirements

Power input:

12VDC (9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC (36-72VDC), redundant dual inputs
110VDC (66-154VDC), redundant dual inputs
220VAC/DC (165-265VAC/120-370VDC), single input

Input interface: 3-core 3.81 space inserting interface

Power consumption: <6W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)

Weight: 1000g (2.205 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V (10KHZ-150KHZ), 10V (150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-50B-00	2 x 100Base-TX, RJ45, redundant, 6 x 10/100 Base-T/TX, RJ45 DIN-Rail, DC24V(DV18-36V), DC48V, AC220V power supply
Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input	

TOUGHCOM DIN-RAIL ETHERNET SWITCH



TC1-60B-00

8 Port Managed Industrial Ethernet Switch

FEATURES

- Support DT-Ring, recovery time <100ms, support STP ring protocol.
- Support QoS, VLAN, SNMP, MIB V1/V2/V3, IGMP, port mirroring, TRUNK, static MAC address binding.
- EMC industrial level 4, complies with IEC61850 standard.
- Dual power supply.
- Alarm relay output for power supply and portlink.
- Support CLI, TELNET, WEB, SNMP management functions.
- Broadcast storm control.
- Ribbed Aluminum housing for heat dissipation (fanless)
- Operation temperature: -40 ~ 85°C (-40 ~ 185°F).
- IP40 protection class.
- DIN-Rail and wall-mounting.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.1p, IEEE802.1q, IEEE802.1d,
Store and forward switching mode

Interface

2 100Base-FX, SM/MM, FC/SC/ST connector
6 10/100Base-TX ports with RJ45 connector.
Alarm ports: 2-core 3.81 space inserting interface, 250VAC/350VDC Max; 120mA Max

Power Requirements

Power input:
12VDC (9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC (36-72VDC), redundant dual inputs
110VDC (66-154VDC), redundant dual inputs
220VAC/DC (165-265VAC/120-370VDC), single input
Input interface: 3-core 3.81 space inserting interface
Power consumption: <6W

Physical Characteristics

Casing: IP40 protection
Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)
Weight: 1000g (2.205 pound)
Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)
Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)
Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge
IEC61000-4-3(RS): 10V/M (80-1000MHz)
IEC61000-4-4(EFT): power line±4KV, data line±2KV
IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV
IEC61000-4-6(CS): 3V (10KHz-150KHz), 10V (150KHz-80MHz)
IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s
IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM
IEC61000-4-10(Damped oscillatory): 30A/m
IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s
FCC CFR47 Part 15/EN55022: Class A&B
IEC61000-6-2(Industrial Standards),
IEC61850-3(Substations),
IEEE1613(Electric Power Substations),
EN50121-4(Railway Applications)

CE,FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-60B-00-2M	2 100Base-FX, MM, redundant; 6x10/100Base-T/TX, RJ45; DIN-Rail, DC24(DV18-36V), DC48V, AC220V power supply
TC1-60B-00-2S	2 100Base-FX, SM, redundant; 6x10/100Base-T/TX, RJ45; DIN-Rail, DC24(DV18-36V), DC48V, AC220V power supply
Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input	

TOUGHCOM UNMANAGED ETHERNET SWITCH



TC1-10B-05

5 Port Unmanaged Industrial Ethernet Switch

FEATURES

Reliable Industrial Ethernet Switching Technology

- 10/100Base-T(X) (RJ45), 100Base-FX(SC, FC or ST, connector, single mode / multimode).
- Broadcast storm protection.
- Supports IEEE802.3/802.3U/802.3X.
- Store and forward switching mode.
- 10/100Base-T/TX, full/half duplex, MDI/MDI-X adaptive.
- QoS(default high priority) service for the 5th port.
- Backplane switching capacity of 1G.
- Transmission delay less than 6us.
- TVS (Transient Voltage Suppressor) protection of 1KV for Ethernet ports.

Industrial Reliability

Power input:

- Wide range operating temperature: -40 ~ 85°C (-40 ~ 185°F).
- Power input of 24VDC and 220VAC.
- Reverse polarity connection protection for power supply.
- IP40 protection class with aluminum casing.
- DIN-Rail or Wall-mounting.
- EMC industrial level 4, complies with IEC61850 standard.

Customization

- Transmission distance: 60KM, 80KM, 120KM.
- OEM/ODM.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.1p,
Store and forward switching mode

Interface

RJ45 port 5x10/100Base-TX(TC1-10B-05)
RJ45 port 4x10/100Base-TX and Fiber port
1x100Base-FX
(TC1-10B-05-M/TC1-10B-05-S)

Performance

Industrial Design for Power Supply

The TC1-10B-05 series offers alternative power supply modules including DC24V, AC220V. It comes with electromagnetic protection technology and has been certificated as industrial level four. For the installation requirements, it provides protection against reverse polarity connection, over-current and overvoltage.

Broadcast Storm Protection

The TC1-10B-05 offers broadcast storm protection to ensure effective transmission of valid data and the discarding of invalid data.

QoS for Port

QoS(Default low priority) service is available in the 5th port of the TC1-10B-05 series. So the TC1-10B-05 series would be your optimal choice if your application contains very important communication devices.

Power Requirements

Power input:

24VDC (12-36VDC), single input
220VAC(100-240VAC), single input

Power consumption: <3.5W

Physical Characteristics

Casing: IP40 protection
Fanless design

Dimensions(WxHxD): 36.5x120x90 mm
(1.44x4.72x3.54 in)

Weight: 300g (0.66 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHz-150KHz), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field): 100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

DNV, CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-10B-05 24VDC	5 x 10/100Base-T/TX, RJ45, DIN-Rail, 24VDC power supply
TC1-10B-05 220VAC	5 x 10/100Base-T/TX, RJ45, DIN-Rail, 220VAC power supply
TC1-10B-05-M 24VDC	4 x 10/100Base-T/TX, 1 x 100 Base-FX, multi mode, SC, DIN-Rail, 24VDC power supply
TC1-10B-05-M 220VAC	4 x 10/100Base-T/TX, 1 x 100 Base-FX, multi mode, SC, DIN-Rail, 220VAC power supply
TC1-10B-05-S 24VDC	1 x 100Base-FX, single mode, 4 x 10 /100Base-T/TX, RJ45, DIN-Rail, 24VDC power supply
TC1-10B-05-S 220VAC	1 x 100Base-FX, single mode, 4 x 10 /100Base-T/TX, RJ45, DIN-Rail, 220VAC power supply

Power Supply: 24VDC, 220VAC, single input

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TOUGHCOM UNMANAGED ETHERNET SWITCH



TC1-10B-00

8 Port Unmanaged Industrial Ethernet Switch

FEATURES

- Support DT-Ring, recovery time<100ms.
- EMC industrial level 4 compliant with IEC61850.
- Redundant power input.
- Power supply and port alarm output.
- Single rib Aluminium fanless design.
- Operating Temperature: -40 ~ 85°C(-40 ~ 185°F).
- DIN Rail or wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x,
Store and forward switching mode

Interface

8 x 10/100Base-TX ports with RJ45 connector.

Alarm port: 2-core 3.81mm spacing terminals, 1A
30VDC, 0.5A 125VAC

Power Requirements

Power input:

12VDC(9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(70-140VDC), redundant dual inputs
220VAC/DC(110-265VAC/154-370VDC), single input

Input interface: 3-core 3.81 space inserting interface

Power consumption: <6W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)

Weight: 1000g (2.205 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C(-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV
air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV
DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-
80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV
CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont.
300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

UL, CE,FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-10B-00	2 x 10/100Base-TX with RJ45 connector, redundant; 6 x 10/100Base-T/TX, RJ45; DIN-Rail, DC24V(DC 18-36V), DC48V, AC/DC220V power supply
Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input	

TOUGHCOM UNMANAGED ETHERNET SWITCH



TC1-10B-00BB

8 Port Unmanaged Industrial Ethernet Switch

FEATURES

- EMC industrial level 4 compliant with IEC61850.
- Redundant power input.
- Power supply and port alarm output.
- Single rib Aluminium fanless design.
- Operating Temperature: -40 ~ 85°C (-40 ~ 185°F).
- DIN Rail or wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x,
Store and forward switching mode

Interface

8 x 10/100Base-TX ports with RJ45 connector.

Alarm port: 2-core 3.81mm spacing terminals, 1A 30VDC, 0.5A 125VAC

Power Requirements

Power input:

12VDC (9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC (36-72VDC), redundant dual inputs
110VDC (70-140VDC), redundant dual inputs
220VAC/DC (110-265VAC/154-370VDC), single input

Input interface: 3-core 3.81 space inserting interface

Power consumption: <6W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)

Weight: 1000g (2.205 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V (10KHz-150KHz), 10V (150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

UL, CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-10B-00BB	8 x 10/100Base-TX with RJ45 connector; DIN-Rail, DC24V(DC18-36V), DC48V, AC/DC220V power supply
Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input	

TOUGHCOM UNMANAGED ETHERNET SWITCH



TC1-20B-00

8 Port Unmanaged Industrial Ethernet Switch

FEATURES

- Support DT-Ring, recovery time<100ms.
- EMC industrial level 4 compliant with IEC61850.
- Redundant power input.
- Power supply and port alarm output.
- Single rib Aluminium fanless design.
- Operating Temperature: -40 ~ 85°C(-40 ~ 185°F).
- DIN Rail or wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x,
Store and forward switching mode

Interface

2 x 100Base-FX ports with FC/SC/ST connector
6 x 10/100Base-TX ports with RJ45 connector.
Alarm port: 2-core 3.81mm spacing terminals, 1A
30VDC, 0.5A 125VAC

Power Requirements

Power input:
12VDC(9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC(36-72VDC), redundant dual inputs
110VDC(70-140VDC), redundant dual inputs
220VAC/DC(110-265VAC/154-370VDC), single input
Input interface: 3-core 3.81 space inserting interface
Power consumption: <6W

Physical Characteristics

Casing: IP40 protection
Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)
Weight: 1000g (2.205 pound)
Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)
Storage Temperature: -40 ~ 85°C(-40 ~ 185°F)
Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV
air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV
IEC61000-4-5(Surge): power line ±4KV CM/±2KV
DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHz-150KHz), 10V(150KHz-
80MHz)

IEC61000-4-8(Power frequency magnetic field):
100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV
CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont.
300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

UL, CE,FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-20B-00-2M	2 x 100Base-FX, multimode, redundant, 6 x 10/100 Base-T/TX, RJ45 DIN-Rail, DC24V(DC18-36V), DC48V, AC/DC220V power supply
TC1-20B-00-2S	2 x 100Base-FX, singlemode, redundant, 6 x 10/100 Base-T/TX, RJ45 DIN-Rail, DC24V(DC18-36V), DC48V, AC/DC220V power supply

Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input

TOUGHCOM UNMANAGED ETHERNET SWITCH



TC1-20B-00BB

8 Port Unmanaged Industrial Ethernet Switch

FEATURES

- EMC industrial level 4 compliant with IEC61850.
- Redundant power input.
- Power supply and port alarm output.
- Single rib Aluminium fanless design.
- Operating Temperature: -40 ~ 85°C (-40 ~ 185°F).
- DIN Rail or wall mounting installation.
- IP40 protection class.

TECHNICAL SPECIFICATIONS

IEEE802.3, IEEE802.3u, IEEE802.3x,
Store and forward switching mode

Interface

2 x 100Base-FX ports with FC/SC/ST connector
6 x 10/100Base-TX ports with RJ45 connector.

Alarm port: 2-core 3.81mm spacing terminals, 1A
30VDC, 0.5A 125VAC

Power Requirements

Power input:

12VDC (9-18VDC), redundant dual inputs
24VDC (18-36VDC), redundant dual inputs
48VDC (36-72VDC), redundant dual inputs
110VDC (70-140VDC), redundant dual inputs
220VAC/DC (110-265VAC/154-370VDC), single input

Input interface: 3-core 3.81 space inserting interface

Power consumption: <6W

Physical Characteristics

Casing: IP40 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 55.4x139x119.5 mm
(2.18x5.47x4.70 in.)

Weight: 1000g (2.205 pound)

Installation: DIN-Rail or wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV
air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV
DM, data line±2KV

IEC61000-4-6(CS): 3V (10KHZ-150KHZ), 10V (150KHZ-
80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV
CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont.
300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

UL, CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-20B-00BB-M	1 x 100Base-FX, multimode, 6 x 10/100Base-TX with RJ45 connector; DIN-Rail, DC24V(DC1 8-36V), DC48V, AC/DC220V power supply
TC1-20B-00BB-S	1 x 100Base-FX, single-mode with FC/SC/ST connectors, 6 x 10/100Base-TX with RJ45 connector; DIN-Rail, DC24V(DC1 8-36V), DC48V, AC/DC220V power supply
TC1-20B-00BB-2M	2 x 100Base-FX, multimode 6 x 10/100 Base-T/TX, RJ45; DIN-Rail, DC24V(DC1 8-36V), DC48V, AC/DC220V power supply
TC1-20B-00BB-2S	2 x 100Base-FX, singlemode; 6 x 10/100 Base-T/TX, RJ45; DIN-Rail, DC24V(DC1 8-36V), DC48V, AC/DC220V power supply
Power Supply: 12VDC, 24VDC, 48VDC, 110VDC, redundant dual inputs, 220VAC/DC, single input	

TOUGHCOM M12 ETHERNET SWITCH



TC1-10A-05R-M12

**5 Port Unmanaged IP67
Industrial Ethernet Switch**

FEATURES

- Specially designed for moving vehicles, rail transportation, and tunnels etc, which circumstances have special requirements on anti vibration, corruption and humidity.
- Support 5 10/100Base-TX adaptive ports with M12 connectors, full/half duplex, MDI/MDI-X adaptive.
- Supports IEEE802.3/802.3u/802.3x and store and forward switching mode.
- Support chain and star network topology.
- Broadcast storm protection.
- M12 connectors offer reliable connection with vibration rejection.
- Flexible configuration of power input class.
- IP67 protection class with dustproof and water proof design and aluminium casing.
- Operating temperature: -40 ~ 85°C (-40 ~ 185°F).
- Wall mounting installation.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE802.3u, IEEE802.3x,
Store and forward switching mode

Interface

5x10/100Base-TX adaptive Ethernet ports with M12 connectors (D-coding 4-pin socket)

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC(36-72VDC), 110VDC(88-165VDC), 220VDC/AC

Input terminals: M12 (D-coding 4-pin socket)

Power consumption: <2.5W

Physical Characteristics

Casing: IP67 protection class

Fanless design

Dimensions(WxHxD): 62x56x120 mm
(2.44x2.20x4.72 in)

Weight: 500g (1.102 pound)

Installation: Wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

IEC61000-6-2(Industrial Standards),

IEC61850-3(Substations),

IEEE1613(Electric Power Substations),

EN50121-4(Railway Applications)

IEC61373 (Shock and Vibration)

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-10A-05R-M12-5TX	5 x 10/100Base-TX with M12 connectors
TC1-10A-05R-M12-5TX-B	5 x 10/100Base-TX with M12 connectors; Broadcast storm control
Power Supply: 24VDC, 48VDC, 110VDC, 220VAC/DC	

TOUGHCOM M12 ETHERNET SWITCH



TC1-30A-08-M12

8 Port Robust Managed Industrial Ethernet Switch

FEATURES

- 8 x 10/100Base-TX with M12 connectors.
- Support DT-Ring protocol suite (recovery time<50ms) and RSTP/STP(IEEE802.1w/d).
- Flexible network topology supports ring, link, star and tangent ring topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, TRUNK, port mirroring, QoS, VLAN and ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Band width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9).
- Broadcast storm control.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, dual redundant power supply with no switching break.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack mounted (19 Inch 1U).
- IP43 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3u, IEEE 802.3, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ab, IEEE 802.1d, IEEE 802.1w, IEEE 802.1p, IEEE 802.1q, Store and forward switching mode

Interface

8 x 10/100Base-TX, M12 connector, full/half duplex, auto-MDI/MDI-X

CONSOLE interface: RS232,M12

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 8.8G

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC(36-72VDC), 110VDC(88-165VDC), 220VDC/AC

Input terminals: M12

Power consumption: <15W

Physical Characteristics

Casing: IP43 protection class

Fanless design

Dimensions(WxHxD): 482.6x44x245 mm (19x1.73x9.65 in)

Weight: 3000g (6.614 pound)

Installation: Rack mounted, 19 inch, 1U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C(-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ),10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

ORDERING INFORMATION

Model	Description
TC1-30A-08-8TX-M12	8 x 10/100Base-TX with M12 connectors
Power supply: 24VDC, 48VDC, 110VDC, 220VAC/DC	

TOUGHCOM M12 ETHERNET SWITCH



TC1-30A-16JA-CT39

16+2G Port CT39 Robust Managed Industrial Ethernet Switch

FEATURES

- 16 x 10/100Base-TX with CT39 connectors.
- 2 x 10/100/1000Base-TX with CT39 connectors.
- Support DT-Ring protocol suite (recovery time<50ms) and RSTP/STP(IEEE802.1w/d).
- Flexible network topology supports ring, link, star and tangent ring topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, TRUNK, port mirroring, QoS, VLAN and ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9).
- Broadcast storm control.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, dual redundant power supply with no switching break.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- 3U Desktop Installation.
- IP43 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3u, IEEE 802.3, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ab, IEEE 802.1d, IEEE 802.1w, IEEE 802.1p, IEEE 802.1q, Store and forward switching mode

Interface

Up to 2 10/100/1000Base-TX ports with CT39 connector
Up to 16 10/100Base-TX ports with CT39 connector

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC(36-72VDC)

Input terminals: M12

Power consumption: <20W

Physical Characteristics

Casing: IP43 protection class

Fanless design

Dimensions(WxHxD): 400x132.5x240 mm
(15.75x5.22x9.45 in)

Weight: 6000g (13.228 pound)

Installation: 3U Desktop installation

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C(-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-30A-16JA-2GT-16TX	16 x 10/100Base-TX and 2 x 10/100/1000Base-Tx with CT39 connectors
Power supply: 24VDC, 48VDC	

TOUGHCOM M12 ETHERNET SWITCH



TC1-30A-24-M12

24+4G Port Robust Managed Industrial Ethernet Switch

FEATURES

- 24 10/100Base-TX with M12 connector.
- 4 1000Base-LX/LC with M15-LC connector, can be connected into two gigabit rings.
- Support DT-Ring protocol suite (recovery time<50ms), RSTP/STP(IEEE802.1w/d) redundant protocol.
- Support ring, chain, star, and tangent ring network topologies.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Safe MAC and port binding function, support static FDB.
- Bind width setting function enables port band width limitation.
- Improve network monitoring ability through RMON(group1,2,3,and 9)
- Broadcast storm control and unicast attack detection.
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, able to provide redundant DC power supply.
- Support relay alarm output port alarming the lose of power.
- Unified management software for TOUGHCOM series: ToughComvision3.0.
- Working temperature: -40 ~ 85°C(-40 ~ 185°F).
- Ribbed Aluminum housing for heat dissipation, fanless design.
- Rack-mounting (19 inch 3U) installation.
- IP43 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3, IEEE 802.3u, IEEE 802.3x, IEEE802.3z, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE802.1q, Store and forward switching mode

Interface

Gigabit port: Up to 4 x 1000Base-LX/LH with M15-LC connector

Electrical ports: Up to 24 10/100Base-TX with M12 connector

Console: RS232, RJ45

Performance

MAC Address Table Size: 8K

Backplane switching capacity: 12.8G

Power Requirements

Power input: 24VDC (18-36VDC), 48VDC(36-72VDC), 110VDC(82-185VDC), 220VAC/DC(85-264VAC/120-370VDC)

Input interface: M12

Power consumption: <20W

Physical Characteristics

Casing: IP43 protection

Ribbed Aluminum housing fanless design

Dimensions(WxHxD): 482.6x132.5x245mm (19x5.22x9.65 in.)

Weight: 6000g (13.228 pounds)

Installation: Rack mounted 19 inch 3U

Environmental Limits

Operating Temperature: -40 ~ 85°C(-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C(-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description	Power Supply
TC1-30A-24-24TX-M12	24 x 10/100Base-TX with M12	
TC1-30A-24-4G-24TX-M12	4 x 1000Base-LX/LH with M15-LC, 24 x 10/100Base-TX with M12	
Power supply: 24VDC, 48VDC, 110VDC, 220VAC/DC		

TOUGHCOM M12 ETHERNET SWITCH



TC1-80A-00

**24+4G Port IP67 Managed
Industrial Ethernet Switch**

FEATURES

- 24 10/100Base-TX ports with M12 connectors.
- 4 1000Base-LX/LC ports with M15-LC connectors can be connected into 2 gigabit rings topology.
- Support DT-Ring suite (recovery time<50ms)
- Support flexible network topologies such as Ring, Chain, Star and Tangent Ring.
- Advanced ring topology protocol avoiding broadcast storm.
- Support IGMP Snooping, port mirroring, QoS, VLAN, ACL.
- Support multiple management functions including CLI, TELNET, WEB, SNMP V1/V2 and OPC etc.
- Support centralized management software, network topology generated automatically.
- Improve network monitoring ability through RMON(group 1,2,3, and 9)
- EMC industrial level 4, specially designed for harsh electromagnetic interference environment.
- Abundant power supply options, military redundant power supply with no switching break.
- Uniform network management software of TOUGHCOM series: ToughComvision3.0.
- Operating temperature: -40 ~ 85°C (-40 ~ 185°F).
- Ribbed Aluminium heat dissipation (patent), fanless design.
- Wall mounting.
- IP67 protection class.

TECHNICAL SPECIFICATIONS

Standard

IEEE802.3z, IEEE802.3u, IEEE802.3, IEEE802.3x, IEEE802.1d, IEEE802.1w, IEEE802.1p, IEEE 802.1q, Store and forward switching mode

Interface

1000M fiber ports: 4x1000Base-LX, M15-LC connector

100M TP ports: 24x10/100Base-TX, M12 connector

CONSOLE interface: RS232C, M12

Power Requirements

Power input: 24VDC(18-36VDC), 48VDC(36-72VDC), 110VDC, 220VDC, 220VAC

Input interface: M12

Power consumption: <20W

Physical Characteristics

Casing: IP67 protection

Fanless design

Dimensions(WxHxD): 189x76x340 mm (7.44x2.99x13.39 in)

Weight: 4000g (8.818 pound)

Installation: Wall mounting

Environmental Limits

Operating Temperature: -40 ~ 85°C (-40 ~ 185°F)

Storage Temperature: -40 ~ 85°C (-40 ~ 185°F)

Humidity: 0 ~ 95% (no condensing)

Warranty

1 year

Approvals

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): power line±4KV, data line±2KV

IEC61000-4-5(Surge): power line ±4KV CM/±2KV DM, data line±2KV

IEC61000-4-6(CS): 3V(10KHZ-150KHZ), 10V(150KHz-80MHz)

IEC61000-4-8(Power frequency magnetic field):

100A/m cont. 1000A/m, 1s to 3s

IEC61000-4-12/18(Damped oscillatory wave): 2.5KV CM, 1KV DM

IEC61000-4-10(Damped oscillatory): 30A/m

IEC61000-4-16(Common mode conduct): 30V cont. 300V, 1s

FCC CFR47 Part 15/EN55022: Class A&B

CE, FCC, ROHS

ORDERING INFORMATION

Model	Description
TC1-80A-00-24TX-M12	24 10/100Base-TX with M12 connectors
TC1-80A-00-4G-24TX-M12	24 10/100Base-TX with M12 connectors, 4 1000Base-LX/LC with M15-LC connectors
Power supply: 24VDC, 48VDC, 110VDC, 220VAC/DC	

CP1-H71-7101 Series • 174	174 DTU
CP1-H71-9201 Series • 175	175 2.5G Router
CP1-H71-9211 I Series • 176	
CP1-H71-9301 Series • 177	
CP1-H71-9201 Series • 178	178 3G Router
CP1-H71-9211 Series • 179	
CP1-H71-9301 Series • 180	
CP1-H71-9301 GPS Series • 181	
CP1-H81-9211 Series • 182	
CP1-H81-9211S1 Series • 183	
CP1-H81-9211S1-C Series • 184	
CP1-H81-9501 • CP1-H81-9511 Series • 185	
CP1-H81-9581 • 186	

CLEARPATH DTU



CP1-H71-7101 Series

GPRS DTU, CDMA 1x DTU

FEATURES

- Optimized EMC design.
- Industrial pluggable terminal block.
- Industrial GPRS/CDMA 1x wireless module.
- Wide range voltage input.
- Reliable, flexible & easy to use.
- Supports APN & VPDN wireless private network.
- Supports short message service(SMS).
- Supports transparent data communications.
- Supports data service center with dynamic IP address.
- Supports LED status indication.

ADVANCED FEATURES

Multiple communications protocol

- Standard PPP, TCP/IP and UDP/IP protocol.
- Clearpath DDP™ protocol.
- Clearpath AT+ protocol.

Multiple operation model

- Always online:** automatically attaches GPRS/CDMA 1x when powered on automatically redials when off line & keep line alive.
- Offline when idle and triggered online by user data, ring or SMS.
- GPRS/CDMA 1x channel and SMS mutual backup.
- Online/offline control by commands via user equipment.
- Data loop test.

Multiple data service centers communications

- Supports up to 4 data service centers communications.
- Supports main/backup data service centers communications.

- Supports customized setting for each data service center.

Flexible and utilitarian data communications

- Supports TCP/IP, UDP/IP, DDP™, SMS and AT.
- Self-defines transparent or protocol communications.
- Self-defines customized data frame separator.
- Self-defines reconnecting interval.
- Self-defines heart-beat data frame.

Parameters configuration and remote management

- Built-in parameters configuration menu.
- Configuration tool based on PC.
- Remote parameters configuration via data service center.
- Remote parameters configuration by SMS.
- Parameters configuration via AT+ commands.

Full function data service center development kits

- Provides function development package.
- Provides complete sets of demo source code (VB, VC, C#, Delphi, VB.net).
- Provides data forwarding service center for data transparency forwarding.

TECHNICAL SPECIFICATIONS

Interface

Antenna: SMA-K (Female)

Standard SIM/R-UIM interface

Serial data interface:

- Type: RS-232/RS-485/RS-422/TTL
- Rate: 300 ~ 57600bps

Connector: 3.5mm pluggable terminal block (14 ~ 24AWG)

Four-pinouts of voice interface

Performance

GPRS:

- Support GSM/GPRS.
- 900/1800MHz dual-band optional or 900/1800/850/1900MHz quad-band optional.
- GPRS Class 10.
- Encode scheme: CS1-CS4.

CDMA:

- Support CDMA 1x.
- 800M single-band optional.
- Support IS 707 data service.
- Complied with IS-95A, IS-95B standard CDMA air interface.

SIM/R-UIM Card: 3V

Power Requirements

Voltage: 5 ~ 26VDC

Consumption:

- Standard product:
 - Communications: 140mA@+12VDC(GPRS)
 - 140mA@+12VDC(CDMA 1x)
 - Idle: 30mA@+12VDC(GPRS)
 - 125mA@+12VDC(CDMA 1x)
- Low-power product:
 - Communications: 130mA@+12VDC(GPRS)
 - Idle: 20mA@+12VDC(GPRS)

Physical Characteristics

Dimensions: 93L*54W*22Hmm

(not including antenna & installation parts)

Weight: 190g

Environmental Limits

Operating Temperature: -30 ~ 70°C

Storage Temperature: -40 ~ 85°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
GPRS	CP1-H71-7101-CGS-A
	Terrabit Networks Clearpath GPRS DTU, RS-232 DCE port, (used in Asia), 900/1800MHz, 5-26VDC
	CP1-H71-7101-CGS-B
	Terrabit Networks Clearpath GPRS DTU, RS-232 DCE port, (used outside Asia), 850/900/1800/1900MHz, 5-26VDC
	CP1-H71-7101-SGS-A
	Terrabit Networks Clearpath GPRS DTU, RS-485 port, (used in Asia), 900/1800MHz, 5-26VDC
CDMA 1x	CP1-H71-7101-SGS-B
	Terrabit Networks Clearpath GPRS DTU, RS-485 DCE port, (used outside Asia), 850/900/1800/1900MHz, 5-26VDC
	CP1-H71-7101-FGS-A
	Terrabit Networks Clearpath GPRS DTU, RS-422 port, (used in Asia), 900/1800MHz, 5-26VDC
	CP1-H71-7101-FGS-B
	Terrabit Networks Clearpath GPRS DTU, RS-422 DCE port, (used outside Asia), 850/900/1800/1900MHz, 5-26VDC
CDMA 1x	CP1-H71-7101-CCZ2
	Terrabit Networks Clearpath CDMA 1X DTU, RS-232 DCE port, 800MHz, 5-26VDC
	CP1-H71-7101-SCZ2
CDMA 1x	CP1-H71-7101-SCZ2
	Terrabit Networks Clearpath CDMA 1X DTU, RS-485 port, 800MHz, 5-26VDC
CDMA 1x	CP1-H71-7101-FCZ2
	Terrabit Networks Clearpath CDMA 1X DTU, RS-422DCE port, 800MHz, 5-26VDC

For enquires, please email to sales@terrabitnet.com

CLEARPATH 2.5G ROUTER



CP1-H71-9201 Series

Industry Class, 1 LAN

FEATURES

- Embedded PPP, TCP/IP stack.
- Embedded industrial wireless module.
- Optimized EMC design.
- Wide range power input.
- Reliable, flexible & easy to use.
- Supports APN and VPDN wireless private network.
- Supports DHCP server.
- Supports NAT & DMZ.
- Supports static route.
- Supports packet filter.
- Supports LED status monitor.
- Supports NTP.
- Supports SNMP.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports configuration file restoration & backup.

ADVANCED FEATURES

Multi-level link maintenance, automatic redialing after falling line

- PPP detection.
- Local & remote ICMP detection.
- Heart-beat detection.
- WAN interface traffic detection.
- Ethernet interface traffic detection.

On/off line control

- Automatic or manual dial.
- Timing on/off line control.

Flexible data communications

- Standard Ethernet and wide area network communications.
- RS-232 transparent communications.
- Supports Ethernet interface and RS-232 interface synchronous communications.

Configuration & remote management

- Supports local & remote control via WEB.
- Supports local & remote control via telnet.

Virtual online technology (VKL, only CDMA)

- Release wireless network channel while idle.
- Keep online logically when the wireless channel released.
- Be triggered online by data transmission without redialing & re-authentication.

TECHNICAL SPECIFICATIONS

Interface

Antenna: SMA-K (Female)

Standard SIM/R-UIM interface

Serial data interface:

- Type: RS-232

- Rate: 300 ~ 57600bps

Connector: DB9 interface

Ethernet interface: 1×10/100BaseT RJ45

Configuration interface: Web/Telnet/RS-232

Standard DC power interface

Performance

GPRS/EDGE:

- Supports GSM/GPRS/EDGE.
- GPRS: 900/1800MHz dual-band optional or 900/1800/850/1900MHz quad-band optional.
- EDGE: 850/900/1800/1900MHz quad-band.
- GPRS Class 10.
- Encode scheme: CS1-CS4.

CDMA:

- Support CDMA 1x.
- 800M single-band optional.
- Support IS 707 data service.
- Complied with IS-95A, IS-95B standard CDMA air interface.

SIM/R-UIM Card: 3V

Power Requirements

Voltage: 5V & 5 ~ 26VDC optional

Consumption:

- Communications: 350mA@+5VDC (GPRS/EDGE)
- 400mA@+5VDC (CDMA 1x)
- Idle: 210mA@+5VDC (GPRS/EDGE)
- 250mA@+5VDC (CDMA 1x)

Physical Characteristics

Dimensions: 98L*100W*23Hmm
(not including antenna & installation accessories)

Weight: 320g

Environmental Limits

Operating Temperature: -10 ~ 55°C

Storage Temperature: -20 ~ 70°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9201-RGS	Terrabit Networks Clearpath GPRS Router, (used in Asia), 900/1800MHz, 5VDC or 7.5~26VDC
CP1-H71-9201-RGM2	Terrabit Networks Clearpath GPRS Router, 850/900/1800/1900MHz, 5VDC or 7.5~26VDC
CP1-H71-9201-REM2	Terrabit Networks Clearpath EDGE Router, 850/1900/900/1800MHz, 5VDC or 7.5~26VDC
CP1-H71-9201-RCZ2	Terrabit Networks Clearpath CDMA 1X Router, 800MHz, 5VDC or 7.5~26VDC

CLEARPATH 2.5G ROUTER



CP1-H71-9211 I Series

Industry class, 1 LAN, PPTP, L2TP, IPSec

FEATURES

- Embedded PPP, TCP/IP stack.
- Embedded industrial wireless module.
- Optimized EMC design.
- Wide range power input.
- Reliable, flexible & easy to use.
- Supports APN & VPDN wireless private network.
- Supports DHCP server.
- Supports NAT & DMZ.
- Supports firewall.
- Supports static route.
- Supports packet filter.
- Supports LED status monitor.
- Supports NTP.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports configuration file restoration & backup.

ADVANCED FEATURES

Multi-level link maintenance, automatic redialing after falling line

- PPP detection.
- Local & remote ICMP detection.
- Heart-beat detection.
- Status report.

On/off line control

- Automatic or manual dial.
- Timing on/off line control.

Flexible data communications

- Standard Ethernet & wide area network communications.

- RS-232 transparent communications.
- Supports Ethernet interface & RS-232 interface synchronous communications.

Configuration & remote management

- Supports local & remote control via WEB.
- Supports local & remote control via telnet.

VPN

- PPTP client.
- L2TP client.
- IPSec (optional).

Wake up

- Offline while idle.
- Triggered online by user data, ring or SMS.

Virtual online technology (VKL, only CDMA)

- Release wireless network channel while idle.
- Keep online logically when the wireless channel released.
- Be triggered online by data transmission without redialing & re-authentication.

TECHNICAL SPECIFICATIONS

Interface

Antenna: SMA-K (Female)

Standard SIM/R-UIM interface

Serial data interface:

- Type: RS-232
- Rate: 300 ~ 57600bps

Connector: DB9 interface

Ethernet interface: 1×10/100BaseT RJ45

Configuration interface: Web/Telnet/RS-232

Standard DC power interface

Performance

GPRS/EDGE:

- Supports GSM/GPRS/EDGE.
- GPRS: 900/1800MHz dual-band optional or 900/1800/850/1900MHz quad-band optional.
- EDGE: 850/900/1800/1900MHz quad-band.
- GPRS Class 10.
- Encode scheme: CS1-CS4.

CDMA:

- Support CDMA 1x.
- 800M single-band optional.
- Support IS 707 data service.
- Complied with IS-95A, IS-95B standard CDMA air interface.

SIM/R-UIM Card: 3V

Power Requirements

Voltage: 5V & 5 ~ 26VDC optional

Consumption:

- Communications: 570mA@+5VDC(GPRS/EDGE)
- 720mA@+5VDC(CDMA 1x)
- Idle: 480mA@+5VDC(GPRS/EDGE)
- 630mA@+5VDC(CDMA 1x)

Physical Characteristics

Dimensions: 98L*100W*23Hmm

(not including antenna & installation accessories)

Weight: 320g

Environmental Limits

Operating Temperature: -10 ~ 55°C

Storage Temperature: -20 ~ 70°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9211-RGS-I	Terrabit Networks Clearpath GPRS VPN, (used in Asia), 900/1800MHz, 5VDC or 7.5~26VDC
CP1-H71-9211-RGM2-I	Terrabit Networks Clearpath GPRS VPN, 850/900/1800/1900MHz, 5VDC or 7.5~26VDC
CP1-H71-9211-REM2-I	Terrabit Networks Clearpath EDGE VPN Router, 900/1800/850/1900MHz, 5VDC or 7.5~26VDC
CP1-H71-9211-RCZ2-I	Terrabit Networks Clearpath CDMA 1X VPN Router, 800MHz, 5VDC or 7.5~26VDC

CLEARPATH 2.5G ROUTER



CP1-H71-9301 Series

Industry Class, 5 LAN

FEATURES

- Embedded PPP, TCP/IP stack.
- Embedded industrial wireless module.
- Optimized EMC design.
- Wide range power input.
- Reliable, flexible & easy to use.
- Supports APN & VPDN wireless private network.
- Supports DHCP server.
- Supports NAT & DMZ.
- Supports static route.
- Supports packet filter.
- Supports LED status monitor.
- Supports NTP.
- Supports SNMP.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports configuration file restoration & backup.

ADVANCED FEATURES

Multi-level link maintenance, automatic redialing after falling line

- PPP detection.
- Local & remote ICMP detection.
- Heart-beat detection.
- WAN interface traffic detection.
- Ethernet interface traffic detection.

On/off line control

- Automatic or manual dial.
- Timing on/off line control.

Flexible data communications

- Standard Ethernet & wide area network communications.
- RS-232 transparent communications.
- Supports Ethernet interface & RS-232 interface synchronous communications.

Configuration & remote management

- Supports local & remote control via WEB.
- Supports local & remote control via telnet.

Virtual online technology (VKL, only CDMA)

- Release wireless network channel while idle.
- Keep online logically when the wireless channel released.
- Be triggered online by data transmission without redialing & re-authentication.

Dual SIM/R-UIM cards mutual backup (CP1-H71-9321 only)

- Automatically switches to the other card when one is out of work.

TECHNICAL SPECIFICATIONS

Interface

Antenna: SMA-K (Female)
Standard SIM/R-UIM interface (two card interfaces for CP1-H71-9321)

Serial data interface:

- Type: RS-232
- Rate: 300 ~ 57600bps

Connector: DB9 interface

Ethernet interface: 5×10/100BaseT RJ45

Configuration interface: Web/Telnet/RS-232

Standard DC power interface

Performance

GPRS/EDGE:

- Supports GSM/GPRS/EDGE.
- EDGE: 900/1800MHz dual-band optional or 900/1800/850/1900MHz quad-band optional.
- GPRS Class 10.
- Encode scheme: CS1-CS4.

CDMA:

- Support CDMA 1x.
- 800M single-band optional.
- Support IS 707 data service.
- Complied with IS-95A, IS-95B standard CDMA air interface.

SIM/R-UIM Card: 3V

Power Requirements

Voltage: 5V & 5 ~ 26VDC optional

Consumption:

Communications: 500mA@+5VDC (GPRS/EDGE)
580mA@+5VDC (CDMA 1x)
Idle: 350mA@+5VDC (GPRS/EDGE)
420mA@+5VDC (CDMA 1x)

Physical Characteristics

Dimensions: 176L*105W*25Hmm

(not including antenna & installation accessories)

Weight: 540g

Environmental Limits

Operating Temperature: -20 ~ 60°C

Storage Temperature: -30 ~ 75°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9301-RGS	Terrabit Networks Clearpath, GPRS Router, 5xLAN port, (used in Asia), 900/1800MHz, 5VDC
CP1-H71-9301-REM2	Terrabit Networks Clearpath, EDGE Router, 5xLAN port, 850/1900/900/1800MHz, 5VDC
CP1-H71-9301-RCZ2	Terrabit Networks Clearpath, CDMA 1X Router, 5xLAN port, 800MHz, 5VDC

CLEARPATH 3G ROUTER



CP1-H71-9201 Series

Industry class, 1 LAN

FEATURES

- Wireless connections based on 3G.
- Ultra rugged, Built to last.
- 12 years experience of telecommunications.
- RS-232 transparent communications.
- Persistent network connectivity.
- Friendly installation.
- Embedded industrial wireless module.
- Supports APN & the VPDN wireless private network.
- Supports always online technology.
- Supports transparent RS-232 communications.
- Supports DHCP Server & IP address binding.
- Supports NAT & DMZ.
- Supports automatic timing operation.
- Supports idle model.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NTP.
- Supports data flow statistics.
- Supports LED status indication.
- Supports firmware update via Web.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

- 1× 10/100Mb LAN interface
- 1× SMA-K 3G antenna interface
- 1× Standard SIM/R-UIM interface
- 1× Standard DC power interface
- 1× RS-232 interface

Performance

Mobile network (optional):

- CDMA 2000 EVDO; compatible with CDMA 1x.
- WCDMA (HSDPA, HSUPA); compatible with GPRS & EDGE.
- TD-SCDMA; compatible with GPRS & EDGE.

Communications:

- LAN data transmission
- RS-232 data transmission

Security:

- IP packets filter
- MAC filter

Device management:

- Web browser (IE v5 or above)
- Telnet

LED indication:

- LAN
- NET
- System

Power Requirements

Power supply: 5 ~ 26VDC

Power consumption:

Communications: 240mA@+12VDC
Idle: 40mA@+12VDC

Physical Characteristics

Dimensions: 98L*100W*23Hmm
(not including antenna)

Weight: 320g

Environmental Limits

Operating Temperature: -20 ~ 60°C

Storage Temperature: -30 ~ 70°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9201-RVH-A	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, 1×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9201-RVH-B	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, 1×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9201-RHH-A	Terrabit Networks Clearpath WCDMA-HSDPA Router, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM:1900/1800/900/850MHz, 1×LAN port, 1XDB9 port, 5~26VDC
CP1-H71-9201-RHH-B	Terrabit Networks Clearpath WCDMA-HSUPA Router, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM:1900/1800/900/850MHz, 1×LAN port, 1XDB9 port, 5~26VDC

CLEARPATH 3G ROUTER



CP1-H71-9211 Series

Industry class, 1 LAN, PPTP, L2TP, IPSec

FEATURES

- ⊙ Wireless connections based on 3G.
- ⊙ Ultra rugged, Built to last.
- ⊙ Ultra security, VPN support.
- ⊙ RS-232 transparent communications.
- ⊙ Persistent network connectivity.
- ⊙ Friendly installation.
- ⊙ Embedded industrial wireless module.
- ⊙ Support VPN: PPTP, L2TP, IPSEC.
- ⊙ Supports APN & the VPDN wireless private network.
- ⊙ Supports always online technology.
- ⊙ Supports transparent RS-232 communications.
- ⊙ Supports DHCP Server & IP address binding.
- ⊙ Supports NAT & DMZ.
- ⊙ Supports automatic timing operation.
- ⊙ Supports idle model.
- ⊙ Supports DNS proxy & Dynamic DNS (DDNS).
- ⊙ Supports NTP.
- ⊙ Supports data flow statistics.
- ⊙ Supports LED status indication.
- ⊙ Supports firmware update via Web.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

1× 10/100Mb LAN interface
1× SMA-K 3G antenna interface
1× Standard SIM/R-UIM interface
1× Standard DC power interface
1× RS-232 interface

Performance

Mobile network (optional):

- CDMA 2000 EVDO; compatible with CDMA 1x.
- WCDMA (HSDPA, HSUPA); compatible with GPRS & EDGE.
- TD-SCDMA; compatible with GPRS & EDGE.

VPN:

- PPTP
- L2TP
- IPSEC

Communications:

- LAN data transmission
- RS-232 data transmission

Security:

- IP packets filter
- MAC filter

Device management:

- Web browser (IE v5 or above)
- Telnet

LED indication:

- LAN
- NET
- System

Power Requirements

Power supply: 5 ~ 26VDC

Power consumption:

Communications: 240mA@+12VDC
Idle: 40mA@+12VDC

Physical Characteristics

Dimensions: 98L*100W*23Hmm
(not including antenna)

Weight: 320g

Environmental Limits

Operating Temperature: -20 ~ 60°C

Storage Temperature: -30 ~ 70°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9211-RVH-A	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, 1×LAN port, 1×DB9 port, 5~26VDC, support VPN: PPTP, L2TP, IPsec, GRE
CP1-H71-9211-RVH-B	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, 1×LAN port, 1×DB9 port, 5~26VDC, support VPN: PPTP, L2TP, IPsec, GRE
CP1-H71-9211-RHH-A	Terrabit Networks Clearpath WCDMA-HSDPA Router, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 1×LAN port, 1×DB9 port, 5~26VDC, support VPN: PPTP, L2TP, IPsec, GRE
CP1-H71-9211-RHH-B	Terrabit Networks Clearpath WCDMA-HSUPA Router, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 1×LAN port, 1×DB9 port, 5~26VDC, support VPN: PPTP, L2TP, IPsec, GRE

CLEARPATH 3G ROUTER



CP1-H71-9301 Series

Industry class, 5 LAN port

FEATURES

- Wireless connections based on 3G.
- Ultra rugged, Built to last.
- 12 years experience of telecommunications.
- RS-232 transparent communications.
- Persistent network connectivity.
- Friendly installation.
- Supports APN & the VPDN wireless private network.
- Supports always online technology.
- Supports NAT & DMZ.
- Supports automatic timing operation.
- Supports idle model.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NTP.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports VLAN.
- Supports IPSEC, GRE, PPTP, L2TP.
- Supports DTU function.
- Supports LCP, ICMP check.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

5× 10/100Mb LAN interface
1× SMA-K 3G antenna interface
1× Standard SIM/R-UIM interface
1× Standard DC power interface
1× RS-232 interface

Performance

Mobile network (optional):

- CDMA 2000 EVDO; compatible with CDMA 1x.
- WCDMA (HSDPA, HSUPA); compatible with GPRS & EDGE.
- TD-SCDMA; compatible with GPRS & EDGE.

Communications:

- LAN data transmission
- RS-232 data transmission

Security:

- IP packets filter
- MAC filter

Device management:

- Web browser (IE v5 or above)

LED indication:

- RUN
- POWER
- LAN(LAN1-LAN5)
- NET
- RF

VPN:

- IPsec
- PPTP
- L2TP
- GRE

Power Requirements

Power supply: 5 ~ 26VDC

Power consumption:

Communications: 280mA@+12VDC
Idle: 80mA@+12VDC

Physical Characteristics

Dimensions: 176L*105W*25Hmm
(not including antenna)

Weight: 540g

Environmental Limits

Operating Temperature: -30 ~ 70°C

Storage Temperature: -40 ~ 85°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9301-RVH-A	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RVH-B	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RHH-A	Terrabit Networks Clearpath WCDMA-HSDPA Router, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RHH-B	Terrabit Networks Clearpath WCDMA-HSUPA Router, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 5×LAN port, 1×DB9 port, 5~26VDC

CLEARPATH 3G ROUTER



CP1-H71-9301 GPS Series

Industry class, 5 LAN port,
GPS

FEATURES

- Wireless connections based on 3G with GPS tracking function.
- Ultra rugged, Built to last.
- 12 years experience of telecommunications.
- RS-232 transparent communications.
- Persistent network connectivity.
- Friendly installation.
- Supports APN & the VPDN wireless private network.
- Supports always online technology.
- Supports NAT & DMZ.
- Supports automatic timing operation.
- Supports idle model.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NTP.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports VLAN.
- Supports IPSEC, GRE, PPTP, L2TP.
- Supports GPS tracking.
- Supports dual SIM backup(H7932 only).
- Supports LCP, ICMP check.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

5× 10/100Mb LAN interface
1× SMA-K 3G antenna interface
1× Standard SIM/R-UIM interface
1× Standard DC power interface

Performance

GPS Tracking Function:

- GPS Tracking Service, accurate to 6m.

Mobile network (optional):

- CDMA 2000 EVDO; compatible with CDMA 1x.
- WCDMA (HSDPA, HSUPA); compatible with GPRS & EDGE.
- TD-SCDMA; compatible with GPRS & EDGE.

Communications:

- LAN data transmission

Security:

- IP packets filter
- MAC filter

Device management:

- Web browser (IE v5 or above)

LED indication:

- RUN
- POWER
- LAN(LAN1-LAN5)
- NET
- RF

VPN:

- IPSec
- PPTP
- L2TP
- GRE

Power Requirements

Power supply: 5 ~ 26VDC

Power consumption:

Communications: 280mA@+12VDC
Idle: 80mA@+12VDC

Physical Characteristics

Dimensions: 176L*105W*25Hmm
(not including antenna)

Weight: 540g

Environmental Limits

Operating Temperature: -30 ~ 70°C

Storage Temperature: -40 ~ 85°C

Humidity: <95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H71-9301-RVH-GPS-A	Terrabit Networks Clearpath EDVO Router GPS ver, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RVH-GPS-B	Terrabit Networks Clearpath EDVO Router GPS ver, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RHH-GPS-A	Terrabit Networks Clearpath WCDMA-HSDPA Router GPS ver, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 5×LAN port, 1×DB9 port, 5~26VDC
CP1-H71-9301-RHH-GPS-B	Terrabit Networks Clearpath WCDMA-HSUPA Router GPS ver, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, 5×LAN port, 1×DB9 port, 5~26VDC

CLEARPATH 3G ROUTER



CP1-H81-9211 Series

WiFi optional, 1 WAN, 4 LAN,
PPTP, L2TP, IPSec, GRE

FEATURES

- Embedded industrial wireless module.
- Supports APN & VPDN wireless private network.
- Supports external USB modem (Supports WCDMA, CDMA 2000, TD-SCDMA, EDGE, GPRS & CDMA 1x modem).
- Supports online maintenance.
- WAN interface supports ADSL (PPPoE), static IP and DHCP client.
- Supports wired & mobile wireless links mutual backup.
- Supports DHCP Server.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NAT & DMZ.
- Supports dual cards mutual backup.
- Supports VPN.
- Supports NAT-T.
- Supports local & remote ICMP detection.
- Supports timing on/off line control.
- Supports dropping line when idle & waking up model.
- Supports NTP.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports configuration file restoration & backup.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

- 4×10/100Mb LAN interface
- 1×10/100Mb WAN interface
- 1× RS-232 console port
- 1× SMA-K 3G antenna interface
- 1× SMA-J Wi-Fi antenna interface
- 1× Standard SIM/R-UIM interface
- 1× USB 2.0
- 1× Standard DC power interface

Performance

CPU:

Intel Xscale IXP420 high-powered processor
SDRAM: 64MB

Supports mobile network:

- CDMA2000 EVDO
- WCDMA (HSDPA, HSUPA)
- TD-SCDMA
- EDGE/GPRS
- CDMA 1x

SIM/R-UIM card: 3V

Filter:

- Enhanced firewall
- IP packet filter

Route protocol: Static route

Device management:

- Web browser (IE v5 or above)
- CLI command operation (via telnet or serial port)

Wi-Fi characteristics:

- Standard: IEEE 802.11b/g
- Data transmission speed up to 54Mbps
- WEP and WPA encryption
- MAC address filter

LED indication:

- WAN
- LAN
- RF
- NET
- POWER

VPN:

- PPTP client
- L2TP client
- IPSec (optional)
- GRE

Power Requirements

Power supply: 7.5 ~ 30VDC

Power consumption:

Communications: 430mA@+12VDC
Idle: 260mA@+12VDC

Physical Characteristics

Dimensions: 212L*154W*30Hmm
(not including antenna)

Weight: 510g

Environmental Limits

Operating Temperature: -10 ~ 55°C

Storage Temperature: -20 ~ 70°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H81-9211-RHT	Terrabit Networks Clearpath HSDPA Router, USB port, 1×WAN port, 4xLAN port, 850/1900/2100MHz, 7.5-30VDC
CP1-H81-9211-RHT-W	Terrabit Networks Clearpath HSDPA Router, Support IEEE 802.11b/g, USB port, 1×WAN port, 4xLAN port, 850/1900/2100MHz, 7.5-30VDC, Support 802.11b/g

CLEARPATH 3G ROUTER

CLEARPATH



CP1-H81-9211S1 Series

WiFi, 1 WAN, 4 LAN, PPTP, L2TP, IPSec, GRE, RUIM/NON-RUIM

FEATURES

- Embedded industrial wireless module.
- Supports VLAN.
- Supports APN & VPDN wireless private network.
- Supports online maintenance.
- WAN interface supports ADSL (PPPoE), static IP & DHCP client.
- Supports DHCP Server.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NAT & DMZ.
- Supports VPN.
- Supports NAT-T.
- Supports wired & mobile wireless links mutual backup.
- Supports ICMP detection.
- Supports timing on/off line control.
- Supports dropping line when idle & waking up model.
- Supports NTP.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports configuration file restoration & backup.
- Metal or plastic case optional.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

4×10/100Mb LAN interface
 1×10/100Mb WAN interface
 1× RS-232 console port
 1× SMA-K 3G antenna interface
 1× SMA-k Wi-Fi antenna interface
 1× Standard SIM/R-UIM interface
 1× USB 2.0
 1× Standard DC power interface

Performance

Supports mobile network:

- CDMA2000 EVDO
- WCDMA (HSDPA, HSUPA)
- TD-SCDMA
- EDGE/GPRS
- CDMA 1x

SIM/R-UIM card:

- ROM-UIM(NON-RUIM) supported
- 3V

Filter:

- Enhanced firewall
- IP packet filter

Route protocol: Static route

Device management: Web browser (IE v5 or above)

Wi-Fi characteristics:

- Standard: IEEE 802.11b/g
- Data transmission speed up to 54Mbps
- WEP, WPA & WPA2 encryption
- MAC address filter

LED indication:

- SYSTEM
- WLAN
- WAN
- LAN
- RF
- NET
- SIGNAL

VPN:

- PPTP client
- L2TP client
- IPSec
- GRE

Power Requirements

Power supply: 5 ~ 26VDC

Power consumption:

Communications: 280mA@+12VDC
 Idle: 40mA@+12VDC

Physical Characteristics

Dimensions: 212L*154W*30Hmm
 (not including antenna)

Weight: 510g

Environmental Limits

Operating Temperature: -30 ~ 70°C

Storage Temperature: -40 ~ 85°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H81-921S1-RVH-A	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, support 802.11b/g, 1×WAN port, 4×LAN port, 5~26VDC, RUIM & NON-RUIM, VPN
CP1-H81-921S1-RVH-B	Terrabit Networks Clearpath EDVO Router, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, support 802.11b/g, 1×WAN port, 4×LAN port, 5~26VDC, RUIM & NON-RUIM, VPN
CP1-H81-921S1-RHH-A	Terrabit Networks Clearpath WCDMA-HSDPA Router, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, support 802.11b/g, 1×WAN, 4×LAN port, 5~26VDC, VPN
CP1-H81-921S1-RHH-B	Terrabit Networks Clearpath WCDMA-HSUPA Router, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, support 802.11b/g, 1×WAN, 4×LAN port, 5~26VDC, VPN

For enquires, please email to sales@terrabitnet.com

CLEARPATH 3G ROUTER



CP1-H81-9211S1-C Series

Embedded billing system, WiFi, 1 WAN, 4 LAN, RUIM/NON-RUIM

FEATURES

- 3G Router with embedded billing system.
- Built-in backup battery.
- up to 20 users access.
- Embedded industrial wireless module.
- Supports DNS proxy.
- Supports online maintenance.
- WAN interface supports ADSL (PPPoE), static IP and DHCP client.
- Supports DHCP Server.
- Supports NAT & DMZ.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports configuration file restoration & backup.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

1×10/100Mb LAN interface
1×10/100Mb WAN interface
1× RS-232 console port
1× SMA-K 3G antenna interface
1× SMA-k Wi-Fi antenna interface
1× Standard SIM interface
1× Standard DC power interface

Performance

Supports mobile network:

- HSDPA
- HSUPA
- UMTS

Easy to manage:

- Web browser control (IE v5 or above)
- Account control
- Exactly flow control

Wi-Fi characteristics:

- Standard: IEEE 802.11b/g
- Data transmission speed up to 54Mbps
- WEP, WPA & WPA2 encryption
- MAC address filter

LED indication:

- POWER
- Bat-C
- Bat-F
- WLAN
- WAN
- LAN
- NET

Physical Characteristics

Dimensions: 212L*154W*30Hmm
(not including antenna)

Weight: 510g

Environmental Limits

Operating Temperature: 0 ~ 55°C

Storage Temperature: -20 ~ 70°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H81-921S1-C-RVH-A	Terrabit Networks Clearpath EDVO Billing Router, support CDMA 2000 EVDO Rev.A, Frequency 800MHz, support 802.11b/g, 1×WAN port, 4×LAN port, 5~26VDC, RUIM & NON-RUIM, VPN
CP1-H81-921S1-C-RVH-B	Terrabit Networks Clearpath EDVO Billing Router, support CDMA 2000 EVDO Rev.A, Frequency 800/1900MHz, support 802.11b/g, 1×WAN port, 4×LAN port, 5~26VDC, RUIM & NON-RUIM, VPN
CP1-H81-921S1-C-RHH-A	Terrabit Networks Clearpath WCDMA-HSDPA Billing Router, Support WCDMA HSDPA, HSDPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, support 802.11b/g, 1×WAN, 4×LAN port, 5~26VDC, VPN
CP1-H81-921S1-C-RHH-B	Terrabit Networks Clearpath WCDMA-HSUPA Billing Router, Support WCDMA HSUPA, HSUPA/UMTS: 2100/1900/850MHz, EDGE/GPRS/GSM: 1900/1800/900/850MHz, support 802.11b/g, 1×WAN, 4×LAN port, 5~26VDC, VPN

CLEARPATH 3G ROUTER



CP1-H81-9501 CP1-H81-9511 Series

Support Wifi, 1WAN, 4 LAN

FEATURES

- Embedded industrial wireless module.
- Supports APN & VPDN wireless private network.
- Supports online maintenance.
- WAN interface supports ADSL (PPPoE), static IP & DHCP client.
- Supports DHCP Server.
- Supports DNS proxy & Dynamic DNS (DDNS).
- Supports NAT & DMZ.
- Supports VPN.
- Supports wired & mobile wireless links mutual backup.
- Supports SNMP.
- Supports NTP.
- Supports LED status indication.
- Supports firmware update via Web.
- Supports configuration file restoration & backup.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.3, IEEE 802.3u

Interface

2×10/100Mb LAN interface
1×10/100Mb WAN interface
1× SMA-K 3G antenna interface
1× SMA-k Wi-Fi antenna interface
1× Standard SIM/R-UIM interface
1× Standard DC power interface

Performance

CPU:

- Special high-powered processor
- SDRAM: 32MB

Supports mobile network:

- CDMA2000 EVDO
- WCDMA (HSDPA, HSUPA)
- TD-SCDMA
- EDGE/GPRS
- CDMA 1x

Filter:

- Enhanced firewall
- IP packet filter

Route protocol: Static route

Device management: Web browser (IE v5 or above)

Wi-Fi characteristics:

- Standard: IEEE 802.11b/g
- Data transmission speed up to 54Mbps
- WEP, WPA & WPA2 encryption
- MAC address filter

LED indication:

- SYSTEM
- WAN
- LAN
- Wi-Fi
- 3G

VPN:

- PPTP client
- L2TP client
- GRE

Power Requirements

Power supply: 12VDC

Power consumption:

Communications: 350mA@+12VDC
Idle: 180mA@+12VDC

Physical Characteristics

Dimensions: 160L*134W*34Hmm
(not including antenna)

Weight: 210g

Environmental Limits

Operating Temperature: 0 ~ 50°C

Storage Temperature: -20 ~ 65°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H81-9501-W	Terrabit Networks Clearpath 3G SOHO Router, support IEEE 802.11b/g, USB port, 1×WAN port, 2xLAN port, 12VDC
CP1-H81-9511-RVZ-W	Terrabit Networks Clearpath EVDO SOHO Router, support IEEE 802.11b/g, 1×WAN port, 2xLAN port, 800MHz, 12VDC
CP1-H81-9511-RHH-W	Terrabit Networks Clearpath HSDPA SOHO Router, support IEEE 802.11b/g, 1×WAN port, 2xLAN port, 2100/1900/850MHz, 12VDC
CP1-H81-9511-RHT-W-A	Terrabit Networks Clearpath HSDPA SOHO Router, support IEEE 802.11b/g, 1×WAN port, 2xLAN port, 2100MHz, 12VDC
CP1-H81-9511-RHT-W-B	Terrabit Networks Clearpath HSDPA SOHO Router, support IEEE 802.11b/g, 1×WAN port, 2xLAN port, 850/1900/2100MHz, 12VDC

CLEARPATH 3G ROUTER



CP1-H81-9581 Series

WiFi, 4 LAN, RUIM/NON-RUIM

FEATURES

- Support both NON-RUIM & RUIM.
- 12 years experience of industrial products, Ultra-high quality.
- 3G, Wi-Fi, LAN integrated, support multi-user surf on internet anywhere on your 3G network.
- Perfect product for personal use & SOHO, suits requests of ISP.
- 802.11b/g, LAN x 4.
- Web configuration, easy to use.

TECHNICAL SPECIFICATIONS

Standard

IEEE 802.11b/g, IEEE 802.3u

Interface

4×10/100Mb LAN interface
WLAN

Performance

Supports mobile network:

- HSPA/EVDO
- GPRS/EDGE/CDMA 1x

Operating System Support: Windows Vista, Vista 64, XP, XP x64, 2000 Mac OS X 10.4.11 or later.

Antenna:

- 3G antenna (external)
- Wi-Fi 2.4G (built-in)

Device management:

- Web Browser (IEv5 or above).
- Wi-Fi (support 64/128 bits WEP, WPA/WPA2).
- Encryption & authentication.
- Customized gateway IP, SSID, Manager account.
- Default password.

Advanced firewall:

- NAT
- DMZ
- IP filter
- MAC filter
- Domain filter

LED indication:

- POWER
- 3G Signal Status
- DATA
- Wi-Fi
- LAN (10/100Mbps)

Power Requirements

Power supply: 12/1.5ADC

Power consumption:

Communications: 265mA@+12VDC
Idle: 182mA@+12VDC

Physical Characteristics

Dimensions: 199L*140W*35Hmm
(not including antenna)

Environmental Limits

Operating Temperature: 0 ~ 50°C

Storage Temperature: -20 ~ 65°C

Humidity: 10% ~ 95% (no condensing)

ORDERING INFORMATION

Model	Description
CP1-H81-9581-RVH-W	Terrabit Networks Clearpath EVDO Router, support CDMA 2000 EVDO Rev.A, Frequency:800/1900MHz, Support 802.11b/g, 4×LAN port, 5~18VDC, RUIM&NON-RUIM
CP1-H81-9581-RHH-W	Terrabit Networks Clearpath HSDPA Router, support WCDMA HSDPA, HSDPA/UMTS:2100/1900/850MHz, EDGE/GPRS/GSM:1900/1800/900/850MHz., Support 802.11b/g, 4×LAN port, 5~18VDC.

AT1-FHA1-2S • 188 • AT1-FHA1-2S011 • AT1-FHA1-2S021 •	188 Variable Attenuator
AT1-FHS1-1D • 189 • AT1-FHS1-1D021 • AT1-FHS1-1D031 •	189 Laser Source
AT1-FHS1-2D • 190 • AT1-FHS1-2D021 • AT1-FHS1-2D031 •	
AT1-FHS1-2Q • 191 • AT1-FHS1-2Q011-F1 • AT1-FHS1-2Q021-F1 •	
AT1-FHS1-2T011 • 192	
AT1-FHP1-1 • 193 • AT1-FHP1-1A021 • AT1-FHP1-1B021 •	193 Power Meter
AT1-FHP1-2 • 194 • AT1-FHP1-2A021 • AT1-FHP1-2B021 • • AT1-FHP1-2A041 • AT1-FHP1-2B041 •	
AT1-FHM1-2 • 195 • AT1-FHM1-2A021 • AT1-FHM1-2B021 •	
AT1-FHP1-3P011 • 196 • FC/PC • SC/PC • ST/PC •	
AT1-VLS1 • 197 • AT1-VLS1-5A1 • AT1-VLS1-5B1 •	197 Fault Locator
AT1-FHV1-1A1 • 198	
AT1-FHR1-3A011 • 199	
AT1-OTS1-41 • 200	200 Optical Talk Set
AT1-OFI1-31 • 201	201 Optical Fiber Identifier
AT1-FHE1-11 • 202	202 Telecom Datatest Instrument
AT1-TLP1-3C1 • 203	
AT1-GD1-3001 • 205	205 CATV Signal Level Meter

ACCUTEST VARIABLE ATTENUATOR



AT1-FHA1-2S

Digital Optical Variable Attenuator

GENERAL DESCRIPTION

The AT1-FHA1 digital variable optical attenuator is a compact, portable instrument widely used in fiber link certification and routine maintenance as well as in lab environment.

FEATURES

- Low insertion loss, wide attenuation range.
- Reference function.
- Presetting values to save frequently used values.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHA1-2S011	AT1-FHA1-2S021
Attenuation Range ^①	0~80dB	0~60dB
Fiber Type	SMF 9/125μm	
Calibrated Wavelengths	1310nm/1550nm	
Linearity ^①	≤0.3dB	
Accuracy ^①	0.2dB @ 0-30dB	0.2dB @ 0-20dB
	1.0dB @ 30-60dB	0.5dB @ 20-50dB
	2.0dB @ 60-80dB	1.0dB @ 50-60dB
Insertion Loss	<3 dB	
Return Loss	>50dB(PC)	
Max Input Power	+24dBm	
Power Supply	1.2V Ni-MH Battery*2pcs	
Connector	Interchangeable FC/PC, ST/PC, SC/PC connectors. (FC/APC, SC/APC are available at time of ordering)	
Operating Temperature	-10°C ~ 50°C	
Storage Temperature	-20°C ~ 60°C	
Relative Humidity	0% ~ 95% (no condensing)	
Dimension	160L*76W*45Hmm	
Weight	360g (Battery included)	

NOTE^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connectors, Carrying Case, User Manual, Rechargeable Battery, Worldwide Compatible AC/DC Adaptor/Charger.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-FHP1-MU	MU Adapter	AT1-FHP1-U1.25	1.25mm Universal Adapter
AT1-FHP1-E2000	E2000 Adapter	AT1-FHP1-U2.5	2.5mm Universal Adapter
AT1-FHP1-LC	LC Adapter		

ACCUTEST LASER SOURCE



AT1-FHS1-1D

Optical Laser Source

GENERAL DESCRIPTION

The AT1-FHS1 series offer excellent stability and portability for accurate fiber optic testing. Single output port provides stable laser power at dual wavelength. The compact unit operates in either continuous wave (CW) mode or modulated mode. A low battery indicator reminds the user of replacing the battery.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHS1-1D021	AT1-FHS1-1D031
Output Wavelength	1310nm, 1550nm	850nm, 1300nm
Emitter Type	LD	
Connector	FC/PC	
Output Stability	Short Term(15 min.): <0.1dB, Long Term(5 Hours or above): <0.2dB	
Central Wavelength	1310+/-20nm & 1550+/-20nm	
Spectral Width	5nm	
Output Frequency (Hz)	270, 1k, 2k	
Output Power	-5dBm	
Auto Power-off	Yes	
Back-light	Yes	
Operating Temperature	-10 ~ +50°C	
Storage Temperature	-20 ~ +70°C	
Power Supply	2pcs*Li-ion Battery; 5V AC/DC Adaptor	
Dimension	115L*65W*30Hmm	
Net Weight	140g	

ORDERING INFORMATION

Standard Accessories

FC/PC (SC/PC, ST/PC Optional), Manual, Carrying Bag, Battery, AC/DC charger, Test report.

ACCUTEST LASER SOURCE



AT1-FHS1-2D

Laser Source

GENERAL DESCRIPTION

AT1-FHS1 series Laser source are advanced version of AT1-DLS1-3a, with more Function.

Auto-Wavelength Recognition

The AT1-FHS1-2DO21 units can transmit with a wavelength-identification digital encrypted protocol, enabling the AT1-FHP1 Power Meter to automatically use the proper calibration parameters. This feature reduces the need for communication between the two technicians and decreases the potential for error.

The AT1-FHS1 series offer excellent stability and portability for accurate fiber optic testing. Single output port provides stable laser power at dual wavelengths. The compact unit operates in either continuous wave (CW) mode or modulated mode. The output power is adjustable through up & down keystroke. Allow battery indicator reminds the user of recharging the battery.

FEATURES

- Easy-to-use, straight forward operation.
- Eye-catching handheld package.
- LCD backlight for easy operation in darker environments.
- $\pm 3\text{dB}$ Adjustable by the user.
- Rechargeable battery inside.
- 850 & 1300 available for multimode testing.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHS1-2DO21	AT1-FHS1-2DO31
Output Wavelength	1310nm, 1550nm	850nm, 1300nm
Emitter Type	LD	
Output Stability ^①	Short Term (15 min.): $< \pm 0.05\text{dB}$ @1310, 1550nm; $\pm 0.1\text{dB}$ @850 & 1300 Long Term (8 Hours): $< \pm 0.1\text{dB}$ @1310, 1550nm; $\pm 0.2\text{dB}$ @850 & 1300	
Central Wavelength	1310 $\pm 20\text{nm}$ & 1550 $\pm 20\text{nm}$	850 $\pm 10\text{nm}$ & 1300 $\pm 20\text{nm}$
Spectral Width	5nm	
Output Frequency (Hz)	270, 1k, 2k	
Output Power	-5dBm	
Adjustable Range	$\pm 3\text{dB}$, 0.1dB/step	
Auto Power-off	Yes	
Back Light	Yes	
Operating Temperature	-10 ~ +50°C	
Storage Temperature	-20 ~ +70°C	
Power Supply	2pcs*Ni-MH AA(2500mAh)	
Dimension	160L*76W*45Hmm	
Net Weight	270g	

Connector FC/PC, ST/PC, SC/PC interchangeable connectors

NOTE ^①: Valid at 1550nm, CW, 23 $\pm 3^\circ\text{C}$, Relative Humidity $\leq 70\%$, with an FC connector.

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connectors, Manual, Carrying Bag, Battery, Worldwide compatible AC/DC adapter, Test Report.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-FHS1-APC	FC/APC, SC/APC, ST/APC interchangeable Connectors	AT1-FAS1-FCSTA	FC/PC male -ST/APC female Adapter
AT1-FH1-PS	Aluminium Carrying Box	AT1-FAS1-FCFCA	FC/PC male -FC/APC female Adapter
AT1-FH1-RP	Rubber Protective Cover	AT1-FAS1-FCSCA	FC/PC male -SC/APC female Adapter

ACCUTEST LASER SOURCE



AT1-FHS1-2Q

Optical Laser Source

GENERAL DESCRIPTION

AT1-FHS1 series Laser source are advanced version of AT1-DLS1 series Laser Source, with more Function.

Auto-Wavelength Recognition

The AT1-FHS1-D021 can transmit with a wavelength-identification digital encrypted protocol, enabling the AT1-FHP1 Power Meter to automatically use the proper calibration parameters. This feature reduces the need for communication between the two technicians and decreases the potential for error.

The AT1-FHS1 series offer excellent stability and portability for accurate fiber optic testing. Single output port provides stable laser power at dual wavelengths. The compact unit operates in either continuous wave (CW) mode or modulated mode. The output power is adjustable through up & down keystroke. Allow battery indicator reminds the user of recharging the battery.

FEATURES

- Easy-to-use, straight forward operation.
- Eye-catching handheld package.
- LCD backlight for easy operation in darker environments.
- ± 3 dB Adjustable by the user.
- Rechargeable battery inside.
- 850 & 1300 available for multimode testing.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHS1-2Q011-F1	AT1-FHS1-2Q021-F1
Output Wavelength	850nm, 1300nm, 1310nm, 1550nm 1310nm, 1490nm, 1550nm, 1625nm	
Emitter Type	LD	
Output Stability ^①	Short Term (15 min.) $< \pm 0.05$ dB@1310, 1550nm; ± 0.1 dB@850&1300 Long Term (8 Hours) $< \pm 0.1$ dB@1310, 1550nm; ± 0.2 dB@850&1300	Short Term (15 min.) < 0.05 dB@1310, 1550nm; < 0.1 dB@1490, 1625nm Long Term (5 Hours or above) < 0.1 dB@1310, 1550nm; < 0.2 dB@1490, 1625nm
Central Wavelength	1310 ± 20 nm & 1550 ± 20 nm	850 ± 10 nm & 1300 ± 20 nm
Spectral Width	5nm	
Output Frequency (Hz)	270, 1k, 2k	
Output Power	-5dBm	
Auto Power-off	Yes	
Back-light	Yes	
Operating Temperature	-10 ~ +50°C	
Storage Temperature	-20 ~ +70°C	
Power Supply	2pcs*Ni-MH AA(2500mAh)	
Dimension	160L*76W*45Hmm	
Net Weight	270g	

Connector FC/PC, ST/PC, SC/PC interchangeable connectors

NOTE^①: Valid at 1550nm, CW, 23 ± 3 °C, Relative Humidity $\leq 70\%$, with an FC connector.

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connectors, Manual, Carrying Bag, Battery, Worldwide compatible AC/DC charger, Test Report.

ACCUTEST LASER SOURCE



AT1-FHS1-2T011

Laser Source

GENERAL DESCRIPTION

The AT1-FHS1-2T011 can transmit with a wavelength-identification digital encrypted protocol, enabling the AT1-FHP1-2 power meter to automatically shift to the proper calibration wavelength. This feature reduced the need of communication between the two users and decrease the potential for error.

The AT1-FHS1-2T011 offers 1310nm, 1490nm, 1550nm with excellent stability for accurate fiber testing, especially in FTTx. The compact instrument operates in either continuous wave(CW) mode or modulated mode. The output power is adjustable with 0.1 dB/step.

FEATURES

- ⊙ Easy-to-use, straight forward operation.
- ⊙ Eye-catching handheld package.
- ⊙ LCD backlight for easy operation in darker environments.
- ⊙ ±3dB Adjustable by the user.
- ⊙ Rechargeable battery inside.

TECHNICAL SPECIFICATIONS

Item/Model		AT1-FHS1-2T011	
Output Wavelength		1310nm/1490nm/1550nm	
Emitter Type		LD	
Output Stability	1310nm&1550nm	Short Term(15 min.): <0.05dB	
		Long Term(5 Hours or above): <0.1dB	
	1490nm	Short Term(15 min.): <0.1dB	
		Long Term(5 Hours or above): <0.2dB	
Central Wavelength		1310+/-20nm & 1490+/-20nm & 1550+/-20nm	
Spectral Width		5nm	
Output Frequency (Hz)		270, 1k, 2k	
Output Power		-5dBm	
Adjustable Range		±3dB, 0.1dB/step	
Auto Power-off		Yes	
Back Light		Yes	
Operating Temperature		-10 ~ +50°C	
Storage Temperature		-20 ~ +70°C	
Power Supply		2pcs*Ni-MH AA; 6V AC/DC Adaptor	
Dimension		160L*76W*45Hmm	
Net Weight		270g	

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connectors, Manual, Carrying Bag, Battery, AC/DC charger, Test Report.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-FHS1-APC	APC for FC/ST/SC Connectors	AT1-FAS1-FCMU	MU Adapter
AT1-FH1-PS	Aluminium Carrying Box	AT1-FAS1-FCLC	LC Adapter
		AT1-FAS1-FCSC	SC Adapter
		AT1-FAS1-FCST	ST Adapter
		AT1-FAS1-FCFCA	FC/PC male -FC/APC female Adapter
		AT1-FAS1-FCSCA	FC/PC male -SC/APC female Adapter
		AT1-FAS1-FCSTA	FC/PC male -ST/APC female Adapter

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ACCUTEST POWER METER



AT1-FHP1-1

Mini Power Meter

GENERAL DESCRIPTION

The AT1-FHP1 series of Power Meter are designed for use with an Optical Source for performing optical loss measurements on fiber optic cables. AT1-FHP1-1 series are designed for the low budget. It can meet the basic demand in real testing. With the smaller size and weight, it is easier to take in real testing.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHP1-1A021	AT1-FHP1-1B021
Calibrated Wavelength	850nm/1300nm/1310nm/1490nm/1550nm/1625nm	
Detector Type	InGaAs	
Connector	FC/PC SC/PC ST/PC Universal	
Accuracy ^①	±0.35dB±10nW	
Resolution	0.01dB	
Linearity	±5%	
Auto Power-off	yes	
Back Light	Yes	
Reference Value	Yes	
Measuring Range	-60 to +3dBm	-40 to +23dBm
USB Interface	N/A	
Data Storage	N/A	
Wavelength Recognize	N/A	
Tone Detection (Hz)	N/A	
Operating Temperature	-10 ~ +50°C	
Storage Temperature	-20 ~ +70°C	
Power Supply	2pcs*Li-ion Battery; 5V AC/DC Adaptor	
Dimension	115L*62W*30Hmm	
Net Weight	140g	

NOTE ^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ACCUTEST POWER METER



AT1-FHP1-2

Laser Power Meter

GENERAL DESCRIPTION

The AT1-FHP1 series of Power Meter are the advanced version of AT1-LPM1 series. It is more functional and intelligent. Under the situation of laboratory, LANs, WANs and CATV as well as longdistance optical network, the Power Meters, together with AccuTest's Stabilized Laser Sources, can be used to identify optical fiber, measure optical attenuation, verify continuity and evaluate fiber link transmission quality.

Auto-Wavelength Recognition

The AT1-FHS1-DO21 unit can transmit with a wavelength-identification digital encrypted protocol, enabling the AT1-FHP1 Power Meter to automatically use the proper calibration parameters. This feature reduces the need for communication between the two technicians and decreases the potential for error.

Referencing function

Signal encrypting can also give the receiving end information on the power to be used as a reference, which help ensure efficient referencing, even when the two units are far apart.

Computer supported

Memory capacity of 1000 data items; enables data transfer to a PC via USB connection. With the software, the data sheet can be saved as excel or txt, and print out directly.

FEATURES

- Referencing function.
- Memory capacity of 1000 data items, enables data transfer to a PC via USB connection.
- LCD backlight for easy operation in darker environments.
- More connectors are optional and interchangeable by the user.
- Two powering systems: Internal rechargeable batteries or AC adaptor.
- Wide dynamic range and high power measurement capability.
- High accuracy and Stabilized.
- Auto-off function: saves the power and low power consumption allows extended operation in the field.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHP1-2A021		AT1-FHP1-2A041	AT1-FHP1-2B021	AT1-FHP1-2B041
Calibrated Wavelength	850nm/1300nm/1310nm/1490nm/1550nm/1625nm				
Detector Type	InGaAs				
Accuracy ^①	±5%±1nW			±5%±10nW	
Resolution	0.01dB@-60 to +10dBm			0.01dB@-40 to +26dBm	
	0.1dB@-70 to -60dBm			0.1dB@-50 to -40dBm	
Linearity	±5%				
Auto Power-off	yes				
Back Light	Yes				
Reference Value	Yes				
Measuring Range	-70 to +10dBm			-50 to +26dBm	
USB Interface	N/A	Yes	N/A	Yes	
Data Storage	N/A	Yes	N/A	Yes	
Wavelength Recognize	N/A	Yes	N/A	Yes	
Tone Detection (Hz)	270, 1k, 2k				
Operating Temperature	-10 ~ +50℃				
Storage Temperature	-20 ~ +70℃				
Power Supply	2pcs*Ni-MH AA(2500mAh); 6V AC/DC Adaptor				
Dimension	160L*76W*45Hmm				
Net Weight	270g				

NOTE^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connector, Manual, Carrying Bag, Software (CD), USB cable, AC/DC adapter, Test Report.

Optional Accessories

Model	Description
AT1-FHP1-MU	MU Adapter
AT1-FHP1-E2000	E2000 Adapter
AT1-FHP1-LC	LC Adapter
AT1-FHP1-U2.5	2.5mm Universal Adapter
AT1-FHP1-U1.25	1.25mm Universal Adapter
AT1-FH1-PS	Aluminium Carrying Box

ACCUTEST POWER METER



AT1-FHM1-2

Optical Multimeter

GENERAL DESCRIPTION

The AT1-FHM1 series Multimeter combines a Power Meter and a 3-wavelength laser source, for optical fiber network installation and maintenance. With the large capacity of data storage, it's very convenient for field testing and transferring the test results to PC through USB interface.

FEATURES

- Auto wavelength recognition.
- Data storage up to 999 results.
- USB interface and PC associated software available.

TECHNICAL SPECIFICATIONS

Item/Model		AT1-FHM1-2A021	AT1-FHM1-2B021
Power Meter	Calibration wavelength	850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm	
	Connector	Interchangeable FC/SC/ST for PC/APC	
	Data storage	999 items	
	Ref. Value	yes	
	Display Units	dB / dBm / mW / μ W	
	Display precision	0.01dB	
	Accuracy	$\pm 5\% \pm 1\text{nW}$	
	Wavelength Recognition	1310nm/1490nm/1550nm (input power $\geq -40\text{dBm}$)	
	Tone Detection	270 Hz / 1KHz / 2KHz (input power $\geq -40\text{dBm}$)	
Laser Source	Measuring Range	-70 to +10dBm	-50 to +26dBm
	Connector	Interchangeable FC/SC/ST for PC/APC	
	Modulation frequencies	270 Hz / 1KHz / 2KHz	
	Output Power	-5dBm $\pm 0.5\text{dB}$	
	Stability Long-term (8hours)	$\pm 0.1\text{dB}$ @1310/1550nm; $\pm 0.2\text{dB}$ @1490nm	
	Stability Short-term (15min.)	$\pm 0.05\text{dB}$ @1310/1550nm; $\pm 0.1\text{dB}$ @1490nm	
General Specification	Wavelength Recognizing Code	Yes	
	Auto Power off	Yes	
	Power Supply	2pcs*NiHM 1.2V, 2000mAh; AC/DC Adaptor	
	PC interface	USB	
	Battery Life	> 100 Hours (laser off)	
	Storage Temperature	-20°C ~ 70°C	
	Operating Temperature	-10°C ~ 50°C	
	Relative Humidity	< 90% (no condensing)	
	Dimension	168L*76W*43Hmm	
	Weight	310g	

ORDERING INFORMATION

Standard Accessories

User Manual, Rechargeable Batteries, Carrying Soft Bag, Interchangeable FC/SC/ST connectors, AC /DC Power Adapter, PC software, USB Connecting Cable.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-FH1-PS	Aluminium Carrying Box	AT1-FHP1-MU	MU Adapter
		AT1-FHP1-E2000	E2000 Adapter
		AT1-FHP1-LC	LC Adapter
		AT1-FHP1-U1.25	1.25mm Universal Adapter
		AT1-FHP1-U2.5	2.5mm Universal Adapter

For enquires, please email to sales@terrabitnet.com

ACCUTEST POWER METER



AT1-FHP1-3P011

PON Power Meter

GENERAL DESCRIPTION

The industry's advanced PON-specific power meter, the AT1-FHP1-3P011 is the flagship of ACCUTEST line of test instruments specifically intended for FTTH and FTTB systems. The AT1-FHP1-3P011 is the ideal tool for FTTH/FTTB service activation and troubleshooting.

TESTING

Service Activation Testing

Optimizing network reliability requires that all PON signals be measured all the way through service activation to ensure they meet established standards. The AT1-FHP1-3P011 offers the features to address this need:

- ⦿ Pass-through connection for ONT signal measurement and simultaneous measurement of all PON signals.
- ⦿ Filtered detectors for individual measurement of each wavelength.
- ⦿ Upstream burst detection at 1310 nm.

Troubleshooting Testing

Throughout the maintenance phase, various transmission problems - fiber cuts, damaged/dirty connectors, macrobendings, optical transmitter failure, etc., may ultimately cause signal loss or degradation. Benefits of the AT1-FHP1-3P011 troubleshooting functionalities:

- ⦿ Quick, on-site test and measurement of PON signals, anywhere on the network.
- ⦿ Fault identification and isolation.

FEATURES

- ⦿ Hand-held and battery operated.
- ⦿ TFT LCD Display with high resolution.
- ⦿ Filtered measurements with distinct power display.
- ⦿ Simultaneous measurement and display power lever of 1310, 1490, 1550 nm WL.
- ⦿ Pass/Fail function available. Up to 10 user defined threshold.
- ⦿ Ability to upgrade software through USB interface.
- ⦿ 1000 sets Data Storage
- ⦿ Software to generate Testing Report

TECHNICAL SPECIFICATIONS

Item/Model	FC/PC	SC/PC	ST/PC
Measurement Range	1310nm	1490nm	1550nm
(Continuous Datastream)	-40dBm~+10dBm	-40dBm~+10dBm	-40dBm~+20dBm
Burst Measurement Range	-30dBm~+10dBm		
(1310nm bursted signal)			
Spectral Passband	1310nm	1490nm	1550nm
	1260nm~1310nm	1480nm~1550nm	1539nm~1565nm
Insertion Loss	1.5dB		
Accuracy	±0.5dB		
Linearity	±0.2dB		
Data Storage	1000sets		
Display	2.8inch TFT LCD		
Refresh Rate of Display	2.5Hz		
Threshold	10sets (configured via PC-based software)		
Auto Power-off	Yes		
Number of Ports	2 (1 for ONU, 1 for OLT&.Video)		
Operating Temperature	-10 ~ +50°C		
Relative Humidity	0%~95%, non-condensing		
Power Supply	1.2V*4pcs*Ni-MH AA; 12V AC/DC Adaptor		
Battery Life	>20 hours		
Dimension	190L*105W*55Hmm		
Net Weight	700g		

ORDERING INFORMATION

Standard Accessories

FC/PC, SC/PC, ST/PC interchangeable connectors, Manual, Carrying Bag, Software(CD), USB cable, AC/DC.

Optional Accessories/Adapters

Model	Description
AT1-FHP1-APC	FC/APC, SC/APC, ST/APC interchangeable connectors
AT1-FHP1-LC	LC Adapter
AT1-FAS1-FCMU	MU Adapter
AT1-FAS1-FCLC	LC Adapter
AT1-FAS1-FCSC	SC Adapter
AT1-FAS1-FCST	ST Adapter
AT1-FAS1-FCFCA	FC/PC male -FC/APC female Adapter
AT1-FAS1-FCSCA	FC/PC male -SC/APC female Adapter
AT1-FAS1-FCSTA	FC/PC male -ST/APC female Adapter

For enquires, please email to sales@terrabitnet.com

ACCUTEST FAULT LOCATOR



AT1-VLS1

Visible Fault Locator

FEATURES

AT1-VLS1-5

The AT1-VLS1-5 is a compact but powerful visible fault locator designed to troubleshoot on fiber optic cables. Light generated by these units will escape from sharp bends and breaks in jacketed or bare fibers, as well as poorly mated connectors. Thus they can identify faults in fiber optic jumper cables, distribution frames, patch panels, and splice trays. The AT1-VLS1-5 locates faults visually by creating a bright red glow at the exact location of the fault on Single Mode or multimode fibers. The AT1-VLS1-5 is powered by three 1.5V AAA batteries.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-VLS1-5A1	AT1-VLS1-5B1
Emitter Type	LD	
Operating Wavelength	650nm±10nm	
Output Power ^①	>1mW	>7mW
Modulated Frequency ^①	2Hz	
Fiber Type	Multi Mode Fiber	
Power Supply	1.5V AAA Battery*3pcs	
Operating Temperature ^①	-10 ~ +50°C	
Storage Temperature	-20 ~ +70°C	
Relative Humidity	<90% (no-condensing)	
Dimension	27D*150Lmm	
Net Weight	150g (including batteries)	

NOTE^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ORDERING INFORMATION

Standard Accessories

AT1-VLS1-5

FC/PC connector (other types optional), Carrying Case, Manual, Battery.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-GAD1-09	AC/DC Adapter	AT1-FAS1-FCE2000	E2000 Adapter
AT1-FAS1-FCLC	LC Adapter	AT1-FAS1-FCMU	MU Adaptor

ACCUTEST FAULT LOCATOR



AT1-FHV1-1A1

Adjustable Visual Fault Locator

GENERAL DESCRIPTION

The AT1-FHV1-1A1 is a compact but powerful Visual laser source, with an output power up to 8dBm. AT1-FHV1-1A1 could be used to locate sharp bends and breaks in Jacked or bare fiber within 10km. It could also be used to identify the connectors in patch panels and identify the fibers during splicing operation.

FEATURES

- 3 adjustable output power: 0, 3, 8 dBm.
- Back-light LCD display.
- Auto-power off.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHV1-1A1
Wavelength	650±10nm
Emitter Type	LD
Connector Type	FC/PC (interchangeable SC, ST)
Modulated Frequency	2Hz
Output Power	0, 3, 8dBm (adjustable)
Power Supply	AC/DC adaptor &. Li-ion Battery
Battery Life	20hrs. (continuous operation)
Operating Temperature	-10 ~ +50°C
Storage Temperature	-20 ~ +70°C
Humidity	0~95% (Non-condensing)
Weight	140g
Dimension	115L*65W*30Hmm

NOTE: Specifications subject to change without notice.

ORDERING INFORMATION

Standard Accessories

Rechargeable Li-ion battery, AC Adaptor, Carrying Bag, Test Report User's manual.

ACCUTEST FAULT LOCATOR



AT1-FHR1-3A011

Fiber Ranger

GENERAL DESCRIPTION

The AT1-FHR1-3A011 is a high performance optical fiber troubleshooter for locating fiber break and imperfections. It detects the break location in the optical fiber and displays the result on the LCD. This portable, easy to use fiber ranger is an ideal instrument for fiber cable construction and maintenance.

FEATURES

- Low Dead Zone of only 3 meters.
- Back-light LCD display.
- Rechargeable batteries support up to 15000 times measurements.
- Data transmission &. storage through mini USB.

TECHNICAL SPECIFICATIONS

Item/Model		AT1-FHR1-3A011
Fiber Type		9/125μm Single Mode
Wavelength		1550±20nm
Emitter Type		LD
Connector Type		FC/PC (interchangeable SC, ST)
Pulse Width		10ns/20ns/40ns/80ns/160ns/320ns/640ns/1280ns/40ns/ 2560ns/5120ns/12400ns/24800ns(auto-switch)
Max. Output Power		100mW
Max. Measurement	Reflection	130Km
Range	Non-Reflection	40Km
Distance Accuracy		+/- (0.8m+0.1%×Distance)
Data Storage		999 measurements
Event Dead Zone	Reflection	3m
	Non-Reflection	20m
Power Supply		AC/DC adaptor &. Rechargeable Batteries*4
Battery Life		15,000 times measurement
Operating Temperature		-10 ~ +50°C
Storage Temperature		-20 ~ +60°C
Humidity		0~85% (Non-condensing)
Communication Port		Mini USB
Weight		286g
Dimension		190L*105W*55Hmm

NOTE: Specifications subject to change without notice.

ORDERING INFORMATION

Standard Accessories

Rechargeable NiHM battery(4 pcs), AC Adaptor, PC software &. USB transmission cable, Carrying Bag, Warranty card, test report.

ACCUTEST OPTICAL TALK SET



AT1-OTS1

Optical Talk Set

FEATURES

AT1-OTS1-41

- Two pairs of AT1-OTS1-41 supports tri-party communication via clip-on coupler device.
- Hands-free (HF) speaker provides users with convenient operation.
- Maximum dynamic range 50dB@1550nm for long distance communication.

Main Features

- Energy-saving design, long-time operation.
- Can be used as a steady laser source.
- Articulate voice, low background noise.
- Judgmatical calling function.
- 32 steps volume control.
- Low-power alarm.
- Maximum dynamic range 50dB for long distance communication.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-OTS1-41
Wavelength	A:1310nm, B:1550nm (unit A works at 1310nm, unit B works at 1550nm)
Telecommunication system	Full duplex communication
Fiber Type	SM & MM (the dynamic range will shrink 20dB for MM fiber)
Spectral Width ^①	<15nm
Adaptor type	FC/PC
Dynamic Range ^①	50dB
Output Power	-3dBm
Power Supply	Replaceable build-in Ni-MH, Battery &. AC/DC adaptor
Operating Hours	40 hours (standard)
Tri-party communication	YES
Hands-free speaker	YES
Operating Temperature	-10 ~ +50°C
Storage Temperature	-20 ~ +70°C
Operating temperature	<90% (Non-condensing)
Dimension	220L*110W*45Hmm
Net Weight	550g (including battery)

NOTE^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ORDERING INFORMATION

Standard Accessories

Main units (unit A and unit B), FC/PC connector, Carrying Bag, Manual, Battery, Headset, AC/DC Adaptor, Test Report.

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-FOD1-5501	Clip-on Device	AT1-OTS1-31-SC	SC/PC Connector
AT1-OTS1-31-ST	ST/PC Connector		

ACCUTEST OPTICAL FIBER IDENTIFIER



AT1-OFI1-31

Optical Fiber Identifier

GENERAL DESCRIPTION

The AT1-OFI1-31 Optical Fiber Identifier is a low cost, portable instrument designed to detect optical signals without disrupting traffic. Based on non-destructive macrobending technology, the AT1-OFI1-31 doesn't disrupt traffic, damage or overstress the fiber, enabling efficient, accurate and reliable data acquisition. During maintenance, installations, rerouting or restorations, it's often necessary to isolate a specific fiber. By simply clamping the AT1-OFI1-31 onto a fiber, the AT1-OFI will indicate if there is a signal, a Modulated Signal, or traffic and show signal direction.

FEATURES

- Detect a variety of optical tones, 270Hz, 1kHz and 2kHz.
- Powered by 2 units of 1.5V AA alkaline batteries.
- RB0.25mm, RB0.9mm, RB3.0mm plungers available.

TECHNICAL SPECIFICATIONS

Item/Model		AT1-OFI1-31
Recognizable Wavelength Range		900 to 1650nm
Recognizable signal type		CW, 2kHz, 1kHz, 270Hz ±5%
Detector Type		InGaAs 2pcs
Clamp Type		H0.9/0.25 for bare fibers; H2.5 for jacketed fiber
Sensitivity	@ 1310nm	+11dB to-20 dBm (Continuous Wave); +11dB to-10 dBm (Modulated Signal)
	@ 1550nm	+11dB to-30 dBm (Continuous Wave); +11dB to-18 dBm (Modulated Signal)
LED Indicator		signal traffic; signal frequency(2kHz/1kHz/270Hz); signal intensity (5 grades) ; low battery
Operating temperature		-10 to +50(Cels)
Storage temperature		-20 to+70(Cels)
Power Supply		1.5V AA batteries*2pcs
Dimension		202L*62W*36Hmm
Weight		270g

NOTE ^①: Valid at 1550nm, CW, 23±3°C, Relative Humidity ≤70%, with an FC connector.

ORDERING INFORMATION

Standard Accessories

Carrying Bag, Manual, Battery, Two pieces of interchangeable adapter heads (clamps) for jacketed and coated fiber, Test Report.

ACCUTEST TELECOM DATATEST INSTRUMENT



AT1-FHE1-11

2M Tester

GENERAL DESCRIPTION

AT1-FHE1-11 is a hand-held equipment designed for 2M bit error rate test, applicable to telecommunication access networks, transmission networks and the start-up, check and maintenance of optical communication systems.

FEATURES

- ⊗ Hand-held structure, solid design, especially suitable for fieldwork.
- ⊗ LCD display with backlight, menu operation.
- ⊗ Powered by and integrated with smart fast charging circuit inside.
- ⊗ Data storage capacity up to 90 sets.
- ⊗ Test results and real-time clock could be maintained safely with a standby Ni-MH rechargeable battery.
- ⊗ LED alarm and status indicator.
- ⊗ Clock Source: internal, received.
- ⊗ 75 ohm and 120 ohm interfaces available.
- ⊗ Out of service test/in-service test.
- ⊗ Framed/unframed test.
- ⊗ 2Mb/s, N*64Kb/s BER test.
- ⊗ Timeslot voice monitoring.
- ⊗ Error insertion: Single &. Fixed rate.
- ⊗ Error bit test, time-slot test, signal analysis, protocol test.
- ⊗ Measurement results can be printed via external serial port printer.

TECHNICAL SPECIFICATIONS

Item/Model	AT1-FHE1-11
Bit Rate	2084Kb/s±50ppm
Interface	75ohm unbalanced, input impedance>2000ohm
Input Sensitivity	0 ~ - 43dB
Circuitry Code	HDB3
Frame Type	Framed/unframed
Frame Pattern	PCM30, PCM30CRC, PCM31, PCM31CRC
Test Pattern	Random pseudocode: 2 ¹⁵ -1, 2 ¹¹ -1, Fixed code: 1111,0000, 1010
Alarm Indicator	Signal Loss, AIS, Frame Loss, MF Remote Alarm, CRC Error, Patten Loss, Remote Alarm
Error Insertion	Single error insertion, Fixed rate error insertion: 10E-3,10E-6
Serial Interface	RS-232 &. USB
Rechargeable Batteries	6*1.2V AA Ni-MH rechargeable batteries, for 8-hour contineous test, Built-in smart fast charger, 4.5 charging hours
Power Supply	AC/DC adaptor, 6*1.2V Ni-MH rechargeable batteries
Dimensions	215L*100W*50Hmm
Weight	700g

ORDERING INFORMATION

Items	Quantity	Items	Quantity
AT1-FHE1-11 main unit	1 pc	AC/DC Adaptor	1 pc
75 Ω unbalance test cable	2 pcs	120 Ω balanced test cable	2 pcs
Ni-MH rechargeable battery	6 pcs	Carrying Bag	1 pc
Manual	1 pc	Test report &. Warranty Card	1 pc
Serial cable	1 pc	PC transmsion &.management software	1 pc

ACCUTEST TELECOM DATATEST INSTRUMENT



AT1-TLP1-3C1 2M Transmission Analyzer

GENERAL DESCRIPTION

The 2M Transmission Analyzer AT1-TLP1-3C1 is a multi-functional and full-featured digital transmission system test device, designed for the installation test, engineering check and acceptance, daily maintenance of digital networks, mainly performing channel test, alarm analysis, fault finding and signalling analysis. In addition, this instrument further provides various protocol converters with one-way and bi-directional bit error test function. These capabilities make it ideal for field use.

FEATURES

- ⊗ Handheld design and easy-to-use.
- ⊗ Full-featured measurements to 2M, Datacom.
- ⊗ High resolution backlit large LCD screen, with adjustable contrast.
- ⊗ Smart navigation mode and multi-languages displays.
- ⊗ Extensive error and alarm generation, detection and indication.
- ⊗ Histograms analysis of alarm and error events.
- ⊗ Up to 99 days continuance test performance.
- ⊗ Save/Recall of up to 7 user-defined setups and 70 sets of results.
- ⊗ Up to 6 hours operation from a single battery charge.
- ⊗ Built-in Li rechargeable battery and smart charger circuit.
- ⊗ Can be charged with automobile cigarette lighter battery adapter.
- ⊗ Upgradeable software via an integrated RS232C interface.
- ⊗ Test results uploaded, conserved and printed by PCManager software.

ORDERING INFORMATION

Standard Accessories

Items	Quantity	Items	Quantity
AT1-TLP1-3C1 2M Transmission Analyzer	1 pc	Simulation software	1 pc
75Ω BNC/L9 E1 test cable	2 pcs	Carrying case	1 pc
BNC/BNC cable	1 pc	User's manual	1 pc
RS232 serial upgrading cable	1 pc	Warranty card	1 pc
DATA converting line(36PIN to 44PIN)	1 pc	Certificate of conformity	1 pc
X.21 testing line	1 pc	V.35 testing line	1 pc
V.24 testing line	1 pc	V.11 testing line	1 pc
AC adapter	1 pc		

Optional Accessories/Adapters

Model	Description	Model	Description
AT1-TLP1-3C1-120	120 Ω testing line(2 pcs)	AT1-TLP1-3C1-64K	64K testing lines(1 pc)

TECHNICAL SPECIFICATIONS

Item/Model	AT1-TLP1-3C1	
2M	Internal Clock	2048kb/s \pm 10ppm
	Frequency Deviation	\pm 999ppm
	Line Interface	75 Ω (Unbalanced), 120 Ω (Balanced); High Input Impedance >2KW
	Line Code	HDB3, AMI
	Framing	Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC
	Receive Sensitivity	> -43dB
	Tx Clock Source	Internal, Interface and External 2MHz clock or signal
	Pulse Mask Measurement	Comply with G.703
	Jitter Measurement	Comply with O.172
	Frequency Measurement	Accuracy: \pm 1Hz
	Offset Measurement	Accuracy: \pm 1ppm, Range: -999ppm ~ +999ppm
	VF Injection	Frequency: 200Hz~3400Hz; Step: 10Hz, Level: -60dBm~ +3dBm
	VF Measurement	Frequency: 200Hz~3400Hz, Accuracy: \pm 1Hz
		Level range: -60.00dBm~+3.14dBm
		-60.00dBm ~-21.00dBm, accuracy: \pm 2.87dBm -20.00dBm ~+3.14dBm, accuracy: \pm 0.21dBm
	Delay Measurement	Accuracy: \pm 1 μ s
G.703 CO	Line Rate	64kb/s \pm 100ppm
	Line Interface	120 Ω , Balanced
	Line Code	AMI
Datacom	Line Interfaces	V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A
	Data Rate	ASYNC: 300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s SYNC: 300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s, N \times 64kb/s (N=1~32), 4M, 8Mkb/s
Test Patterns	PRBS	2 ²³ -1, 2 ²⁰ -1, 2 ¹⁵ -1, 2 ¹¹ -1, 2 ⁹ -1, 2 ⁸ -1
	Fixed Code	1111, 0000, 1010
	16-BIT	User Programmable Word
LED Alarm Indicators	Signal Loss, AIS, Frame Loss, MFrame Loss, Pattern Loss, Remote Alarm, Error, Clock Slip.	
Error Injection	Type: BIT, FAS, CRC4, CODE, E-BIT	
	Single, Fixed Rate : 10 ² , 10 ³ , 10 ⁴ , 10 ⁵ , 10 ⁶ , 10 ⁷	
Performance Analysis	ITU-T G.821, G.826 and M.2100	
Display	320x240 pixel backlit monochromatic LCD	
Serial Port	RS-232C	
Rechargeable Batteries	5x1.2V AA NiMH batteries, continuous working for 6 hours	
Recharge Time	Approx. 2 hours	
AC Power Adapter	Input: 100V~ 240V AC, 50/60Hz Output: 12V DC/1.5A	
Test Manager Pro	WIN98/ME/NT/2000/XP	
Dimensions	200L*160W*45Hmm	
Operating Temperature	0°C ~ 50°C	
Storage Temperature	-20°C ~ 70°C	
Humidity	5% ~ 95% non-condensing	

ACCUTEST CATV SIGNAL LEVEL METER



AT1-GD1-3001

CATV Signal Level Meter

GENERAL DESCRIPTION

The AT1-GD1-3001 is designed to provide features which are most widely used and favored by professionals in CATV industry at the least cost. It can be used to measure accurately the Analogue channels, Digital channels efficiently and effectively with high accuracy rate. Mainly it supports C/N, level, channel power measurement, voltmeter function, spectrum analysis and so on. Overall, its functions are easy to use and can be used in a wide range of applications.

FEATURES

- Accurate QAM testing: digital average power, MER, BER.
- Support multiple DVB mode: 16QAM, 32QAM, 64QAM, 128QAM, 256QAM.
- Single channel/Frequency simulated power levels testing.
- Video and audio signal power levels testing.
- V/A testing. Show the frequency of video and audio, field intensity and power level difference simultaneously.
- C/N testing. Slope testing.
- QAM View includes BER, MER and constellation.

TECHNICAL SPECIFICATIONS

Item/Model			AT1-GD1-3001	
Channel/Frequency index	Frequency Range	46MHz ~ 870MHz, 5MHz ~ 870MHz (Only for type with letter D)		
	Precision	50ppm(at 25°C+5°C)		
	Resolution	10KHz		
	Measurement	280KHz		
	Band Width			
	Frequency Step	50KHz, 100KHz, 500KHz		
Channel Type	Analog TV	TV		
	Digital TV	16/32/64/128/256QAM		
Analog Power Level Testing	Frequency/Channel	SIGL		
	Measuring Range	25dBuV ~ 120dBuV		
	Precision	±1.5dB		
	Resolution	0.1dB		
Digital Power Level Testing	Detection Method	Peak value detection		
	Input Impedance	75Ω		
	Measuring Range	25dBuV ~ 110dBuV		
	Precision	±1.5dB		
Voltage Testing	Resolution	0.1dB		
	Detection Method	Average value detection		
	Input Impedance	75Ω		
	Input Range	0 ~ 80V(AC/DC)		
Slope Testing	Precision	±2V		
	Resolution	0.1V		
	Number of Channels	5		
	Resolution	±0.1dB		
QAM Testing Function(Q Model)				
Item/Model			AT1-GD1-3001	
Digital Channel	Modulation Mode	Comply with DVB-C/ITU J83-A		
	QAM Mode	16/32/64/128/256QAM		
	Symbol Rate	1MS/S-7MS/S		
	Band Width	set by user		
	MER	22-39 dB		
	Precision	±2dB		
	BER	1E-4 ~ 1E-9		
Carrier-Noise ratio(C/N)	Signal Input Range	>70dBuV		
	Measuring Range	20dB ~ 50dB		
Spectrum Analysis	Precision	±2dBuV		
	Resolution	0.5dB		
	Frequency Range	5MHz ~ 870MHz		
	Resolution	100Hz		
	Precision	50ppm		
	Power Levels Range	25dBV ~ 120dBV		
	Power Levels	0.1dB		
	Resolution	±1.5dB		
	Dynamic Range	60dB		
	Input Impedance	75Ω		
	RBW	300KHz		
	Testing Band Width	6/12/62MHz, All range can		
General Specifications	Audio Output	Built-in Speaker		
	Battery	7.2V, Ni-MH battery		
	Operating Time	Average 6 ~ 8 Hours		
	Charging Time	Less than 5 Hours		
	Dimension	215L*100W*50Hmm		
	Net Weight	1.2kg		
	Working Temperature	-10 ~ 45 Celsius		

ORDERING INFORMATION

Model	Description	Model	Description
AT1-GD1-3001	46MHz ~ 870MHz	AT1-GD1-3001-Q	46MHz ~ 870MHz, with QAM Function
AT1-GD1-3001-D	5MHz ~ 870MHz	AT1-GD1-3001-DQ	5MHz ~ 870MHz, with QAM Function

For enquires, please email to sales@terrabitnet.com

BN1-P1011 • 208

208 Passive Video

BN1-P1011-II • 209

BN1-P1011-III • 210

BN1-P1011-IV • 211

BN1-P1011-V • 212

BN1-PV1011-(T/R) • 213

BN1-PVD1011 • 214

BN1-PV1011-RM12 • 215

BN1-P1041 • 216

BN1-P1041-II • 217

BN1-PV1041-SV36 • 218

BN1-P1081 • 219

BN1-PV1081-SV36 • 220

BN1-P1161 • 221

BN1-PV1161-SV24 • 222

BN1-PV1161-SV36 • 223

BN1-XP12011 • 224

BN1-AT1011 • 225

225 Active Video

BN1-AR1011 • 226

BN1-AR1011-U • 227

BN1-AR1041 • 228

BN1-AR1081 • 229

BN1-AR1081-U • 230

BN1-AR1161 • 231

VIDEO PASSIVE VIDEO



BN1-P1011

Single Channel

FEATURES

- No power required.
- Connected to camera directly.
- Transmission distance up to 300m working with passive transceivers (e.g. BN1-P1041).
- Transmission distance up to 600m working with active receivers (e.g. BN1-AR1011, BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1011
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance (up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	BNC-M; Impedance: 75Ω
UTP Cable Connector	Screw terminals; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV (common mode), 10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV (different mode), 10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	ABC Engineering Plastic
Unit Color	Black
Dimensions	37L*22W*21Hmm
Net Weight	16.8g
Casing	
Casing Volume	60L*40W*25Hmm
Gross Weight	36.2g (2 units in 1 Carton Box)

ORDERING INFORMATION

Model	Description
BN1-P1011	Terrabit Networks Bionic Video, Single Channel Passive Video Transceiver, Screw for Untwisted Pair Cable

VIDEO PASSIVE VIDEO



BN1-P1011-II

Single Channel

FEATURES

- No power required.
- With 15cm mini coax-pigtail, be connected to camera directly.
- Transmission distance up to 300m working with passive transceivers (e.g. BN1-P1041).
- Transmission distance up to 600m working with active receivers (e.g. BN1-AR1011, BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1011-II
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance (up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	BNC-M; Impedance: 75Ω
UTP Cable Connector	Screw terminals; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV (common mode), 10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV (different mode), 10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	ABC Engineering Plastic
Unit Color	Black
Dimensions	215L*28W*21Hmm with pig tail
Net Weight	28.8g
Casing	
Casing Volume	145L*120W*30Hmm
Gross Weight	80g (2 units in 1 case)

ORDERING INFORMATION

Model	Description
BN1-P1011-II	Terrabit Networks Bionic Video, Single Channel Passive Video Transceiver with 15cm cable, Push-terminal

VIDEO PASSIVE VIDEO



BN1-P1011-III

Single Channel

FEATURES

- No power required.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 300m working with passive transceivers (e.g. BN1-P1011-II, BN1-P1011-IV).
- Transmission distance up to 600m working with active receivers (e.g. BN1-AR1011, BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1011-IV
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz (0.5db type)
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	1* BNC-M; Impedance: 75Ω
UTP Cable Connector	Impedance: 100Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	ABC Engineering Plastic
Unit Color	Black
Length	16.5mm
Casing	
Casing Volume	48L*15W*15Hmm
Gross Weight	20g

ORDERING INFORMATION

Model	Description
BN1-P1011-III	Terrabit Networks Bionic Video, Waterproof Single Channel Passive Video Transceiver with 15cm cable

VIDEO PASSIVE VIDEO



BN1-P1011-IV

Single Channel

FEATURES

- No power required.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 300m working with passive transceivers (e.g. BN1-P1011, BN1-P1041).
- Transmission distance up to 600m working with active receivers (e.g. BN1-AR1011, BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1011-III
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	1* BNC-M; Impedance: 75Ω
UTP Cable Connector	Screwless Terminal block; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	ABC Engineering Plastic
Unit Color	Black
Dimensions	55L*19W*15Hmm
Net Weight	15.5g
Casing	
Casing Volume	93L*73W*25Hmm
Gross Weight	36.2g (2 units)

ORDERING INFORMATION

Model	Description
BN1-P1011-IV	Terrabit Networks Bionic Video, Single Channel Passive Video Transceiver, Push-terminal

VIDEO PASSIVE VIDEO



BN1-P1011-V

Single Channel

FEATURES

- No power required.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 300m working with passive transceivers (e.g. BN1-P1011-III, BN1-P1041).
- Transmission distance up to 600m working with active receivers (e.g. BN1-AR1011, BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1011-V
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	Impedance: 75Ω
UTP Cable Connector	Impedance: 100Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Length	28mm
Housing Material	ABC Engineering Plastic
Unit Color	Black
Casing	
Casing Volume	43L*15W*15Hmm
Gross Weight	15g

ORDERING INFORMATION

Model	Description
BN1-P1011-V	Terrabit Networks Bionic Video, Waterproof Single Passive Video Transceiver with 15cm cable on both sides

VIDEO PASSIVE VIDEO



BN1-PV1011-(T/R)

Single Channel

FEATURES

- Transmit a color Video signal up to 300M / 1000Ft, and a full motion monochrome (B&W) video signal up to 500M / 1600Ft.
- Transmit Power signal up to 250M / 750Ft. (Please see Voltage Drop List).
- BNC male with RJ45 Jack; male and female 12V or 24V DC or AC plug on one device.
- Wave Filter Design, Anti-Static Design, Confirm to IEC 61000-4-2:1995 Standard.
- Interference Rejection.
- ABS Outer Shell.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1011-(T/R)
Video Input / Output	BNC
Video Signal	1V p-p, 75Ω
Transmission Distance	Video: Color 300M / 1000Ft, B&W 500M / 1600Ft Power: 200M / 600Ft
Cable	UTP / Twisted Pair CAT5 (24AWG)
Data Wire	2 Wire Bare Lead
Lighting Protection	1KV (10/700us)
Power	No Power Required
Max Current	1.5A

Voltage Drop According to Cable Length (24AWG):

Transmission Distance	Transmission Voltage		
	(12V DC, 0.5A)	(12V DC, 1A)	(12V DC, 1.5A)
50M / 160Ft	13.5V	15.5V	17.0V
100M / 320Ft	15.5V	18.5V	22.0V
150M / 500Ft	17.0V	22.0V	27.0V
200M / 650Ft	18.5V	25.5V	32.0V
300M/1000Ft	22V	32V	42V

ORDERING INFORMATION

Model	Description
BN1-PV1011-(T/R)	Terrabit Networks Bionic Video, Single Channel Passive Video & Camera Transmitter & Receiver, BNC and male/female DC Plug

VIDEO PASSIVE VIDEO



BN1-PVD1011

Single Channel

FEATURES

- Transmit a color Video signal up to 300M / 1000Ft, and a full motion monochrome (B&W) video signal up to 500M / 1600Ft.
- Transmit Power signal up to 200M / 600Ft. (Please see Voltage Drop List).
- Transmit Data signal up to 300M / 1000Ft.
- BNC male with RJ45 Jack; male and female 12V or 24V DC or AC plug on one device.
- Video, camera power, data (RS422, 485) transmission over one standard CAT5 cable.
- Wave Filter Design, Anti-Static Design, Confirm to IEC 61000-4-2:1995 Standard.
- Interference Rejection.
- ABS Outer Shell.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PVD1011
Video Input / Output	BNC
Video Signal	1V p-p, 75Ω
Transmission Distance	Video: Color 300M / 1000Ft, B&W 500M / 1600Ft Power: 200M / 600Ft, Data: 300M / 1000Ft
Cable	UTP / Twisted Pair CAT5 (24AWG)
Data Wire	2 Wire Bare Lead
Lighting Protection	1KV (10/700us)
Power	No Power Required
Max Current	1.5A

Voltage Drop According to Cable Length (24AWG):

Transmission Distance	Transmission Voltage		
	(12V DC, 0.5A)	(12V DC, 1A)	(12V DC, 1.5A)
50M / 160Ft	13.5V	15.5V	17.0V
100M / 320Ft	15.5V	18.5V	22.0V
150M / 500Ft	17.0V	22.0V	27.0V
200M / 650Ft	18.5V	25.5V	32.0V

ORDERING INFORMATION

Model	Description
BN1-PVD1011	Terrabit Networks Bionic Video, Single Channel Passive Video, Power & Pan-tilted Zoom Transceiver

VIDEO PASSIVE VIDEO



BN1-PV1011-RM12

Single Channel

FEATURES

- Power supply output: 12V12W.
- Auto disconnect when failure happens and recoverable after failure resolved.
- Transmit color video signal and receive camera power up to 300M/1000FT(working with as BN1-PV1161-SV36).
- Provide stably 12V12W power supply for camera.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge&ESD protection.
- Super interference Rejection

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1011-RM12
Power Properties	
Output Power Supply	12V12W
Connector	Male 2.5mm DC jack
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	>60db
Connection Properties	
Video Input Connector	1*BNC-M; Impedance: 75Ω
UTP Cable Connectors	1* RJ-45; Impedance: 100Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955
Indicators	
Power/State LED	Yellow/Green
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	ABC Engineering Plastic
Unit Color	Black
Dimensions	220L*19W*15Hmm
Net Weight	46g
Casing	
Casing Volume	Carton, 125L*85W*30Hmm
Gross Weight	52g

ORDERING INFORMATION

Model	Description
BN1-PV1011-RM12	Terrabit Networks Bionic Video, Single Channel Passive Video Transmitter, Power Receiver & Converter

For enquires, please email to sales@terrabitnet.com

VIDEO PASSIVE VIDEO



BN1-P1041

4 Channel

FEATURES

- No power required.
- Transmission distance up to 300m working with passive transceivers (e.g.BN1-P1081).
- Transmission distance up to 600m working with active receivers (e.g.BN1-AR1011,BN1-AR1041).
- RJ-45 or green terminal block to be choosed from for UTP cable connection.
- Compatible with worldwide video formats including PAL, NTSC, SECAM.
- Built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1041
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	4 BNC-F; Impedance: 75Ω
UTP Cable Connector	1 RJ-45 or green terminal block; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	180L*85W*32Hmm
Net Weight	450g
Casing	
Casing Volume	225L*120W*70Hmm
Gross Weight	568.2g

ORDERING INFORMATION

Model	Description
BN1-P1041	Terrabit Networks Bionic Video, 4 Channel Passive Video Transceiver, Metal Housing

VIDEO PASSIVE VIDEO



BN1-P1041-II

4 Channel

FEATURES

- No power required.
- Compatible with worldwide video formats including PAL, NTSC, SECAM.
- Transmission distance up to 300m working with passive transceivers (e.g. UTP104P-II, UTP108P).
- Transmission distance up to 600m working with active receivers (e.g. UTP101AR, UTP104AR).
- Built-in surge & transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1041-II
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	4 BNC-F; Impedance: 75Ω
UTP Cable Connector	1 RJ-45 or green terminal block; Impedance: 100Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	104L*80W*27Hmm
Net Weight	160g
Casing	
Casing Volume	127L*110W*52Hmm
Gross Weight	209.4g

ORDERING INFORMATION

Model	Description
BN1-P1041-II	Terrabit Networks Bionic Video, 4 Channel Passive Video Transceiver, Aluminium Housing

VIDEO PASSIVE VIDEO



BN1-PV1041-SV36

4 Channel

FEATURES

- Power supply input: 100V-240V AC.
- Power supply output: 36V 150W.
- Receive color video signal and supply camera power from up to 300M/1000FT.
- Provide stably 12V1A power supply for remote camera(working with BN1-PV1011-RM12).
- Each of 8 modules replacable, easy for maintenance.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge&ESD protection.
- Super interference Rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1041-SV36
Power Properties	
Input Power Supply	100-240V AC(50-60Hz)
Output Power Supply	100W 36VDC
Connector	Standard AC Jack
Max Output Current	2.8Amp
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	>60db
Connection Properties	
Video Input Connector	4* BNC-F; Impedance: 75Ω
UTP Cable Connectors	4* RJ-45; Impedance: 100Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955
Indicators	
Power/State LED	Yellow/Green
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	280L*180W*66.8Hmm(1.5U)
Net Weight	2150g
Accessories	
Standard Power Cable	Length:1.2m
Casing	
Casing Volume	570L*270W*100Hmm
Gross Weight	3020g

ORDERING INFORMATION

Model

BN1-PV1041-SV36

Description

Terrabit Networks Bionic Video, 4 Channel Passive Video Receiver, 36VDC Camera Power Server Hub, 1.5U Rack, Metal Housing

VIDEO PASSIVE VIDEO



BN1-P1081

8 Channel

FEATURES

- No power required.
- Transmission distance up to 300m working with passive transceivers (e.g.BN1-P1081).
- Transmission distance up to 600m working with active receivers (e.g.BN1-AR1011, BN1-AR1041).
- RJ-45 or green terminal block to be choosed from for UTP cable connection.
- Compatible with worldwide video formats including PAL, NTSC, SECAM.
- Built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1081
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Attenuation	<1.5dB
Connection Properties	
Video Connector	8 BNC-F; Impedance: 75Ω
UTP Cable Connector	1 RJ-45 or green terminal block; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	180L*85W*44Hmm
Net Weight	565g
Casing	
Casing Volume	225L*120W*70Hmm
Gross Weight	706g

ORDERING INFORMATION

Model	Description
BN1-P1081	Terrabit Networks Bionic Video, 8 Channel Passive Video Transceiver, Metal Housing

VIDEO PASSIVE VIDEO



BN1-PV1081-SV36

8 Channel

FEATURES

- Power supply input: 100V-240V AC.
- Power supply output: 36V 150W.
- Receive color video signal and supply camera power from up to 300M/1000FT.
- Provide stably 12V1A power supply for remote camera(working with BN1-PV1011-RM12).
- Each of 8 modules replacable,easy for maintenance.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge&ESD protection.
- Super interference Rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1081-SV36
Power Properties	
Input Power Supply	100-240V AC(50-60Hz)
Output Power Supply	150W 36V DC
Connector	Standard AC Jack
Max Output Current	4.2Amp
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	>60db
Electric Fan Noise	40 ~ 60 dBA
ConnectionProperties	
Video Input Connector	8 * BNC-F; Impedance: 75Ω
UTP Cable Connectors	8 * RJ-45; Impedance: 100Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955
Video Output Protection	2KV(common mode),10/700us, IEC61000-4-5/1955
Indicators	
Power/State LED	Yellow/Green
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	280L*180W*66.8Hmm(1.5U)
Net Weight	2150g
Accessories	
Standard Power Cable	Length:1.2m
Casing	
Casing Volume	570L*270W*100Hmm
Gross Weight	3020g

ORDERING INFORMATION

Model

BN1-PV1081-SV36

Description

Terrabit Networks Bionic Video, 8 Channel Passive Video Receiver, 36VDC Camera Power Server Hub, 1.5U Rack, Metal Housing

VIDEO PASSIVE VIDEO



BN1-P1161

16 Channel

FEATURES

- No power required.
- Transmission distance up to 300m working with passive transceivers (e.g.BN1-P1041).
- Transmission distance up to 600m working with active receivers (e.g.BN1-AR1011,BN1-AR1161).
- RJ-45 or green terminal block to be choosed from for UTP cable connection.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge&transient protection.
- Super interference rejection.
- Standard 1U structure.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-P1161
Video Transmitting Properties	
Compatible with	All Baseband Signals as PAL, NTSC, SECAM
Transmitting Band	0-6MHz
Transmission Distance(up to)	300m (working with passive baluns)
Over UTP Cable	600m (working with active baluns)
Interference Rejection	>60dB
Connection Properties	
Video Connector	16 BNC-F; Impedance: 75Ω
UTP Cable Connector	4 RJ-45 jack or Green Terminal Block; Impedance: 50Ω
Video Input Protection (as transmitter)	2KV(common mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Video Output Protection (as transmitter)	2KV(different mode),10/700us IEC61000-4-5/1955(GB/T17626.5-1999)
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*100W*44.5Hmm(1U design)
Net Weight	1250g
Casing	
Casing Volume	530L*150W*90Hmm
Gross Weight	1583.6g

ORDERING INFORMATION

Model	Description
BN1-P1161	Terrabit Networks Bionic Video, 16 Channel Passive Video Transceiver, Metal Housing

VIDEO PASSIVE VIDEO



BN1-PV1161-SV24

16 Channel

FEATURES

- Power supply input: 100V-240V AC; output: 24V 120W.
- Power&video transmission up to 300M/1000FT.
- Using 3 pairs of UTP cabling to carry more current.
- Provide regulated 12V1A power supply for remote camera(working with BN1-PV1011-RM12).
- Over Current Recover IC for true isolation of each channel.
- Connector reverse polarity and short circuits protection design.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge&ESD protection.
- Super interference Rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1161-SV24
Power Properties	
Input Power Supply	100-240V AC(50-60Hz)
Output Power Supply	120W 24VDC
Connector	Standard AC Jack
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	>60db
Electric Fan Noise	40 ~ 60 dBA
ConnectionProperties	
Video Input Connector	16 * BNC-F; Impedance: 75Ω
UTP Cable Connectors	16 * RJ-45; Impedance: 100Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955
Video Output Protection	2KV(common mode),10/700us, IEC61000-4-5/1955
Indicators	
Power/State LED	Yellow/Green
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*187W*44.5Hmm(1U)
Net Weight	2050g
Accessories	
Standard Power Cable	Length:1.2m
Casing	
Casing Volume	570L*270W*100Hmm
Gross Weight	3020g

ORDERING INFORMATION

Model

BN1-PV1161-SV24

Description

Terrabit Networks Bionic Video, 16 Channel
Passive Video Receiver, 24VDC Camera Power
Server Hub, 1.5U Rack, Metal Housing

VIDEO PASSIVE VIDEO



BN1-PV1161-SV36

16 Channel

FEATURES

- Power supply input: 100V-240V AC; output: 36V 320W.
- Receive color video signal and supply camera power from up to 300M/1000FT.
- Provide stably 12V1A power supply for remote camera(working with BN1-PV1011-RM12).
- Each of 16 modules replacable, easy for maintenance.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Built-in surge & ESD protection.
- Super interference Rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-PV1161-SV24
Power Properties	
Input Power Supply	100-240V AC(50-60Hz)
Output Power Supply	320W 36V DC
Connector	Standard AC Jack
Max Output Current	8.8Amp
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	>60db
Electric Fan Noise	40 ~ 60 dBA
Connection Properties	
Video Input Connector	16 * BNC-F; Impedance: 75Ω
UTP Cable Connectors	16 * RJ-45; Impedance: 100Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955
Indicators	
Power/State LED	Yellow/Green
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*200W*67Hmm(1.5U)
Net Weight	2150g
Accessories	
Standard Power Cable	Length:1.2m
Casing	
Casing Volume	570L*270W*100Hmm
Gross Weight	3020g

ORDERING INFORMATION

Model
BN1-PV1161-SV36
Description
Terrabit Networks Bionic Video, 16 Channel Passive Video Receiver, 36VDC Camera Power Server Hub, 1.5U Rack, Metal Housing

VIDEO PASSIVE VIDEO



BN1-XP12011

CCTV VIDEO GROUND LOOP ISOLATOR

FEATURES

- Passive, no need for power supply.
- Eliminate image distortion caused by ground loops.
- Eliminate problems as image tearing, cross-talk, rolling and so on.
- Protect CCTV system from interference of electrical cable.
- Built-in 800V video isolator, eliminate interference effectively working with DVR.
- Built-in super surge protection circuit.
- Compact, simple for connection owning BNC.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-XP12011
Electricity Performance	
Insertion Loss	0.5dB
Frequency Response	0-3dB/0-10MHz
Input Impedance	75Ω
Output Impedance	75Ω
Isolation Voltage	800V (Min)
Isolation Resistance	100M Ω
Protection	
ESD	Contact Discharge: 6KV; Air Discharge: 8KV; standard: IEC61000-4-2
Surge protection	4KV 10/700us Standard: IEC61000-4-5
Environmental	
Operating Temperature	-22°C ~ 50°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 80°C
Physical Properties	
Housing Material	ABS Engineering Plastic
Unit Color	Black
Dimensions	The body: 55L*30W*22Hmm(1U design)
Length	550mm
Net Weight	77g

ORDERING INFORMATION

Model	Description
BN1-XP12011	Terrabit Networks Bionic Video, CCTV Video Ground Loop Isolator

VIDEO ACTIVE VIDEO



BN1-AT1011

Single Channel

FEATURES

- Power supplied: 12V DC.
- Transmission signal: 1 Vpp composite video.
- 5pin green terminal block: 2pin for UTP cable, 2pin for power supply, 1pin for grounding.
- Transmission distance up to 1200m working with active receivers (e.g.BN1-AR1041).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AT1011
Power Properties	
Power Connectors	Green Terminal Block
Adaptive Voltage Arrange	12V-40V DC or 9V-24V AC(50Hz)
Power Consumption	<1.5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Transmission Distance(up to)	1200m (working with active baluns)
Over UTP Cable	600m (working with passive baluns)
Interference Rejection	<75dB
Connection Properties	
Video Input Connector	BNC-F; Impedance: 75Ω
UTP Cable Connectors	Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Video Output Protection	2KV(different mode), 4KV(common mode), IEC61000-4-5/1955(GB/T 17626.5-1999)
Input Protection for Over Current	Protection for Over 100mA
Video Adjustments	
Adjusting Switches	4 Blue Switches
Adjusting Categories	For Active Balun, 0-600m, 150-750m, 300-900m, 450-1050m, 600-1200m
Indicators	
Power/Signal LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Silver White
Dimensions	110L*83W*22Hmm
Net Weight	190g
Casing	
Casing Volume	125L*85W*30Hmm
Gross Weight	2084g

ORDERING INFORMATION

Model
BN1-AT1011
Description
Terrabit Networks Bionic Video, Single Channel
Active Video Transmitter, 12DC, Screw Terminal, Metal Housing

VIDEO ACTIVE VIDEO



BN1-AR1011

Single Channel

FEATURES

- Power supplied :12V DC.
- Transmission signal: 1 Vpp composite video.
- 5pin green terminal block: 2pin for UTP cable, 2pin for power supply, 1pin for grounding.
- Transmission distance up to 600m working with passive transceivers (e.g.BN1-P1011).
- Transmission distance up to 1200m working with active receivers (e.g.BN1-AT1011).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AR1011
Power Properties	
Power Connectors	Green Terminal Block
Adaptive Voltage Arrange	12V-40V DC or 9V-24V AC(50Hz)
Power Consumption	<1.5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Transmission Distance(up to)	1200m (working with active baluns)
Over UTP Cable	600m (working with passive baluns)
Attenuation	<1.5 dB
Interference Rejection	<75dB
Connection Properties	
Video Input Connector	1*2 BNC-F; Impedance: 75Ω
UTP Cable Connectors	Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), IEC61000-4-5/1955
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955
Input Protection for Over Current	100mA Maximum
Video Adjustments	
Adjusting Switches	4 Blue Switches
Adjusting Categories	For Passive Balun: 0-50m, 50-250m, 250-400m, 400-500m, 500-700m For Active Balun: 0-600m, 150-750m, 300-900m, 450-1050m, 600-1200m
Indicators	
Power/Signal LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Silver White
Dimensions/Net Weight	110L*83W*22Hmm/190g
Casing	
Casing Volume/Gross Weight	125L*85W*30Hmm/202.4g

ORDERING INFORMATION

Model
BN1-AR1011
Description
Terrabit Networks Bionic Video, Single Channel
Active Video Receiver 12DC, Dual Output, Screw
Terminal, Metal Housing

For enquires, please email to sales@terrabitnet.com

VIDEO ACTIVE VIDEO



BN1-AR1011-U

Single Channel

FEATURES

- Power supplied :12V DC.
- Transmission signal: 1 Vpp composite video.
- 5pin green terminal block:2pin for UTP cable, 2pin for power supply, 1pin for grounding.
- Transmission distance up to 900m working with passive transceivers (e.g.BN1-P1011).
- Transmission distance up to 1500m working with active transmitter (e.g.BN1-AT1011).
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AT1011-U
Power Properties	
Power Connectors	Green Terminal Block
Adaptive Voltage Arrange	12V-40V DC or 9V-24V AC(50Hz)
Power Consumption	<1.5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	<75dB
ConnectionProperties	
Video Input Connector	2*BNC-F; Impedance: 75Ω
UTP Cable Connectors	Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), IEC61000-4-5/1955
Video Output Protection	2KV(common mode),10/700us, IEC61000-4-5/1955
Input Protection for Over Current	100mA Maximum
Video Adjustments	
Adjustment	Brightness and contrast
Adjusting Type	250 Degree Adjusting Nob
Indicators	
Power/Video LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Silver White
Dimensions	110L*83W*22Hmm
Net Weight	199g
Casing	
Casing Volume	125L*85W*30Hmm
Gross Weight	209.2g

ORDERING INFORMATION

Model
BN1-AR1011-U
Description
Terrabit Networks Bionic Video, Single Channel
Active Video Receiver 12DC, Dual Output, Screw
Terminal, Contrast & Brightness Fine Tuning, Metal
Housing

VIDEO ACTIVE VIDEO



BN1-AR1041

4 CHANNEL

FEATURES

- Power supplied :12V DC.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 1200m working with active transmitter (e.g.BN1-AT1011).
- Transmission distance up to 600m working with passive transceivers (e.g.BN1-P1041).
- 3pin green terminal block: 2pin for power supply, 1pin for grounding.
- Either RJ-45 or 8pin green terminal block to be choosed from for BIONIC connection.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection.
- Super interference rejection.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AR1041
Power Properties	
Power Connectors	Green Terminal Block
Adaptive Voltage Arrange	12V-40V DC or 9V-24V AC(50Hz)
Power Consumption	<5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Transmission Distance(up to)	1200m (working with active baluns)
Over UTP Cable	600m (working with passive baluns)
Attenuation	<1.5 dB
Interference Rejection	<75dB
ConnectionProperties	
Video Input Connector	4*2 BNC-F; Impedance: 75Ω
UTP Cable Connectors	RJ-45 or Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV (different mode), 4KV (common mode) , 10/700us IEC61000-4-5/1955(GB/T 17626.5-1999)
Video Output Protection	2KV(common mode),10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Input Protection for Over Current	Protection for Over 100mA
Video Adjustments	
Adjusting Switches	4 Blue Switches Per Channel
Adjusting Categories	For Passive Balun: 0-50m,50-250m,250-400m,400-500m,500-700m For Active Balun: 0-600m,150-750m,300-900m,450-1050m,600-1200m
Indicators	
Power/Signal LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	190L*95W*44Hmm
Casing	
Casing Volume/Gross Weight	122L*86W*30Hmm/746g

ORDERING INFORMATION

Model
BN1-AR1041
Description
Terrabit Networks Bionic Video, 4 Channel Active Video Receiver 12DC, Dual Output, Screw Terminal, Metal Housing

For enquires, please email to sales@terrabitnet.com

VIDEO ACTIVE VIDEO



BN1-AR1081

8 CHANNEL

FEATURES

- Power supplied :90-240V AC.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 1200m working with active transmitter (e.g.BN1-AT1011).
- Transmission distance up to 600m working with passive transceivers (e.g.BN1-P1081).
- RJ-45 jack or green terminal block to be choosed from for BIONIC connection.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection with grounding rod on front panel.
- Super interference rejection.
- Standard 1U structure.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AR1081
Power Properties	
Power Connectors	Standard AC Jack
Adaptive Voltage Arrange	90-240V AC(50-60Hz)
Power Consumption	<5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	<75dB
ConnectionProperties	
Video Output Connectors	8*2 BNC-F; Impedance: 75Ω
UTP Cable Connectors	2 RJ-45 or Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Input Protection for Over Current	Protection for Over 100mA Current
Video Adjustments	
Adjustment	4 Blue Adjusting Switches Per Channel
Adjusting Categories	For Passive Balun: 0-50m,50-250m,250-400m,400-500m,500-700m For Active Balun: 0-600m,150-750m,300-900m,450-1050m,600-1200m
Indicators	
Power/Video LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*205W*44.5Hmm
Net Weight	1520g
Casing	
Casing Volume	530L*150W*90Hmm
Gross Weight	1780g

ORDERING INFORMATION

Model
BN1-AR1081
Description
Terrabit Networks Bionic Video, 8 Channel Active Video Receiver 100-240AC, Dual Output, Screw Terminal, 1U Rack Moutable, Metal Housing

VIDEO ACTIVE VIDEO



BN1-AR1081-U

8 CHANNEL

FEATURES

- Power supplied: 90-240V AC.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 1500m working with active transmitter (e.g.BN1-AT1011).
- Transmission distance up to 900m working with passive transceivers (e.g.BN1-P1041).
- RJ-45 jack or green terminal block to be choosed from for BIONIC connection.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Brightness and sharpness knobs for fine-tuning.
- Higher standard built-in surge&transient protection with grounding rod on front panel.
- Super interference rejection.
- Standard 1U structure.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AR1081-U
Power Properties	
Power Connectors	Standard AC Jack
Adaptive Voltage Arrange	90-240V AC(50-60Hz)
Power Consumption	<5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	<75dB
ConnectionProperties	
Video Output Connectors	8*2 BNC-F; Impedance: 75Ω
UTP Cable Connectors	2 RJ-45 or Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Input Protection for Over Current	Protection for Over 100mA Current
Video Adjustments	
Adjustment	Brightness and sharpness
Adjusting Type	250 Degree Adjusting Nob
Indicators	
Power/Video LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*170W*44.5Hmm(1U)
Net Weight	2260g
Casing	
Casing Volume	570L*270W*100Hmm
Gross Weight	2768.4g

ORDERING INFORMATION

Model

BN1-AR1081-U

Description

Terrabit Networks Bionic Video, 8 Channel
Active Video Receiver 100- 240AC, Dual Output,
Screw Terminal, 1U Rack Moutable, Contrast &
Brightness Fine Tuning, Metal Housing

VIDEO ACTIVE VIDEO



BN1-AR1161

16 CHANNEL

FEATURES

- Power supplied: 90-240V AC.
- Transmission signal: 1 Vpp composite video.
- Transmission distance up to 1200m working with active transmitter (e.g.BN1-AT1011).
- Transmission distance up to 600m working with passive transceivers (e.g.BN1-P1081).
- RJ-45 jack or green terminal block to be choosed from for BIONIC connection.
- Compatible with worldwide formats including PAL, NTSC, SECAM.
- Higher standard built-in surge&transient protection with grounding rod on front panel.
- Super interference rejection.
- Standard 1U structure.

TECHNICAL SPECIFICATIONS

Item/Model	BN1-AR1161
Power Properties	
Power Connectors	Standard AC Jack
Adaptive Voltage Arrange	90-240V AC(50-60Hz)
Power Consumption	<5w
Video Transmitting Properties	
Compatible with	All Baseband Signals, including PAL, NTSC, SECAM
Signal Band	250MHz(-3db)
Balance Band	0-6MHz
Attenuation	<1.5 dB
Interference Rejection	<75dB
ConnectionProperties	
Video Output Connectors	16*2 BNC-F; Impedance: 75Ω
UTP Cable Connectors	2 RJ-45 or Green Terminal Block; Impedance: 50Ω
Protections	
Video Input Protection	2KV(different mode), 4KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Video Output Protection	2KV(common mode), 10/700us, IEC61000-4-5/1955(GB/T 17626.5-1999)
Input Protection for Over Current	Protection for Over 100mA Current
Video Adjustments	
Adjustment	4 Blue Adjusting Switches
Adjusting Categories	For Passive Balun: 0-50m, 50-250m, 250-400m, 400-500m, 500-700m For Active Balun: 0-600m, 150-750m, 300-900m, 450-1050m, 600-1200m
Indicators	
Power/Video LED	Red/Yellow
Environmental	
Operating Temperature	-20°C ~ 70°C
Humidity	0% ~ 95% (no condensing)
Storage Temperature	-40°C ~ 150°C
Physical Properties	
Housing Material	Metal
Unit Color	Black
Dimensions	430L*95W*44Hmm
Net Weight	1520g
Casing	
Casing Volume	530L*150W*90Hmm
Gross Weight	2200g

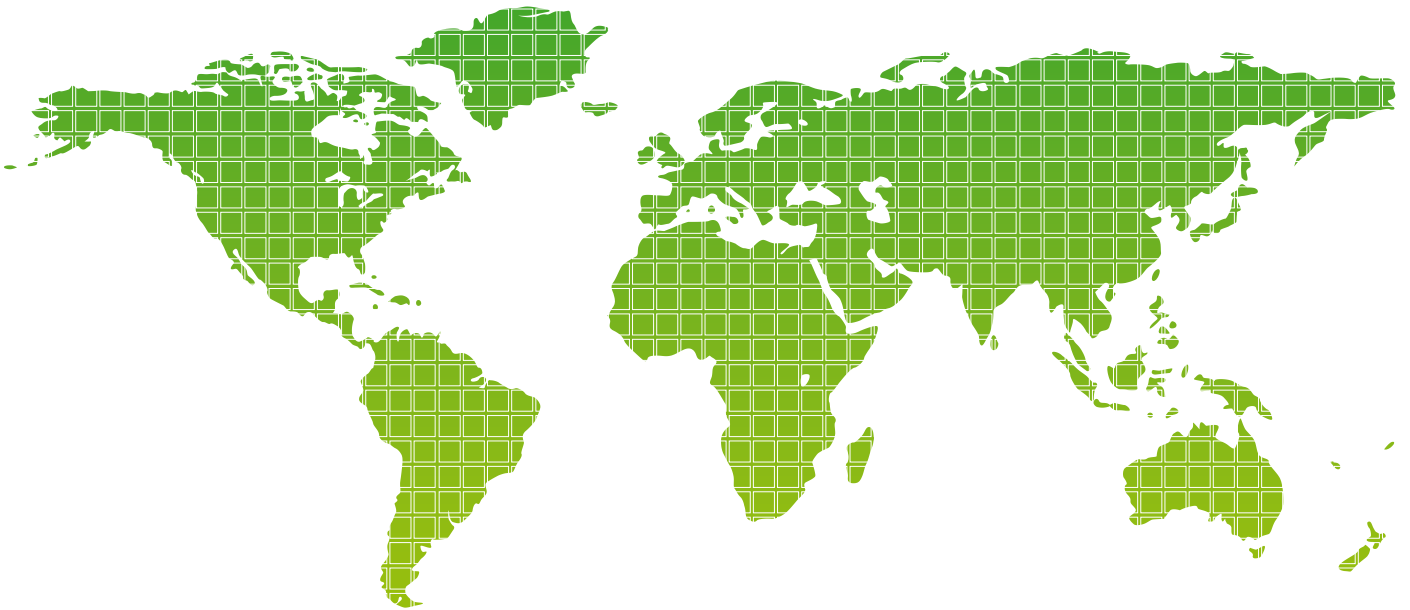
ORDERING INFORMATION

Model

BN1-AR1161

Description

Terrabit Networks Bionic Video, 16 Channel Active Video Receiver 100-240AC, Dual Output, Screw Terminal, 1U Rack Moutable, Metal Housing



HEADQUARTERS

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