DRAGON PTN with HiProvision

MPLS-TP Product Family with Network Provisioning System

This backbone device, configured using HiProvision provisioning software, offers a reliable, packet-based MPLS-TP technology to transport mission-critical data through large networks.

- Ensure **dedicated bandwidth** with low-cost, interoperable MPLS-TP technology.

- **Easily configure and manage complex networks** with intuitive provisioning software.

- **Fully redundant system** with multiple switching modules and power supply options.

- **Seamlessly integrate legacy systems** through variety of redundant interface card options.

Key Features

- MPLS-TP technology delivers dedicated bandwidth for different services and 50ms protection switching
- HiProvision software for easy configuration and management of large transmission networks
- Industrial HiVision integration for backbone and access network
- Variety of interface modules and port types to ensure flexibility and seamless integration of legacy systems
- Resilient against harsh conditions with operating temperatures varying from -30 °C to +65 °C
- Redundant central switching modules and power supplies guarantee high network availability

The Hirschmann DRAGON PTN managed by the HiProvision software offers a variety of interface options for flexible integration in your network.

Be certain.
Belden.

Your Benefits

Complete, Future-Proof Networking System

DRAGON PTN with HiProvision offers a fully integrated Ethernet-based backbone transmission system. Due to Ethernet's simplicity, interoperability, predictability and cost efficiency, these networks are becoming more popular than legacy technologies.

MPLS-TP provisioning is similar to SDH/SONET provisioning, but comes with a powerful network management system that makes it easier to provision and maintain the network. It guarantees bandwidth with the same deterministic behavior as SDH/SONET eliminating their disadvantages for packet based communication. Using MPLS-TP engineers can gradually migrate networks using limited resources. The new DRAGON PTN with HiProvision solution enables engineers to configure their networks effectively and be better prepared for future technology changes.

The cost efficient DRAGON PTN network node is offered in fully modular variants and can be configured as a completely redundant system through central switching modules and power supplies, which means administrators can ensure network availability in case of device or path failure.

With DRAGON PTN, customers get a complete, integrated solution for managing their networks from a single vendor, with MPLS-TP in the backbone layer and Layer 2 and 3 technologies, like MRP, in the access layer. With its fully modular design, DRAGON PTN with HiProvision is ready for use in extreme and harsh industrial environments.

Applications

DRAGON PTN with HiProvision is extremely valuable for scenarios where engineers need the ability to predict the behavior of data as it goes across the network. MPLS-TP technology in the new device family guarantees bandwidth and makes it easy for engineers to deploy services inside the network including redundant data transmission.

Markets

Due to the device's impressive deterministic capabilities, DRAGON PTN with HiProvision is best suited for transportation environments, including mass transit systems, railway and metro stations. The device is also ideal for other harsh, industrial environments that rely on mission-critical data transfer, including power transmission and distribution and oil and gas applications.

DRAGON PTN with HiProvision is a complete solution for managing large transmission networks and supports deterministic data transfer in harsh, industrial environments.

Technical Information

Product Description Basic Units

Type	DRAGON PTN2215	DRAGON PTN2210	DRAGON PTN2209	DRAGON PTN2206	DRAGON PTN1104
Order Number	942 228-005	942 228-004	942 228-003	942 228-002	942 228-001
Description	Full Gigabit MPLS-TP Switch with 40 Gigabit QSFP ports, Advanced Packet Transport features, redundant design with redundant CPU and power supply				
Port Type and Quantity	Up to 4 x 10 Gigabit Ethernet and 24 x 1 Gigabit Ethernet, modular design with various module configurations (PTN-4-E1T1-L, PTN-7-SERIAL, PTN-2-OLS, etc.), hot pluggable modules and power supply, future proof due 40 Gigabit Ethernet ports				
Number of Interface Slots	Total Slots: 2 x CPU + 2 x Power Supply + 15 x Interface Cards	Total Slots: 2 x CPU + 2 x Power Supply + 10 x Interface Cards	Total Slots: 2 x CPU + 2 x Power Supply + 9 x Interface Cards	Total Slots: 2 x CPU + 2 x Power Supply + 6 x Interface Cards	Total Slots: 1 x CPU + 1 x Power Supply + 4 x Interface Cards

Network Size

Line - / Star Topology	any
Scalability	From 10/100 Mbps to 40 Gbps aggregation of traffic; Scalability through MPLS-TP; Scalable switching capacity from 64 Gbps to 720 Gbps; Nodes with 4 interface positions up to 15 interface positions

Power Requirements

Operating Voltage	Built-in power supply - Internal and redundant, 175 W up to 1000 W rated power, PoE up to 480 W
Power Consumption (Watt / MTBF (years @25°C))	For details of the power consumption and MTBF values of each interface card please visit: www.doc.hirschmann.com

Mechanical Construction

Mounting	19" Control Cabinet or DIN-Rail				
Protection Class	IP20				
Dimensions (W x H x D)	482 mm x 488.95 mm x 285.8 mm	434 mm x 132.5 mm x 210 mm	434 mm x 132.5 mm x 210 mm	354 mm x 132.5 mm x 210 mm	214 mm x 132.5 mm x 210 mm

Software Features

MPLS-TP Service Types	Point to point service (VPWS); Multipoint (VPLS); Logical Ethernet Ring; Protection schemes (1:1, Hitless Switching, ERPS logical Rings)
Layer 2 Ethernet Aggregation	MSTP (multiple spanning tree); Multicast handling through IGMP; Virtual forwarding instances; VLAN handling; Broadcast and multicast storm control
Quality of Service (QoS)	Service priority scheduling independent from user traffic to ensure transport functionality of all traffic; End to end traffic engineering through HiProvision; 8 Priorities (6 user definable) Per flow statistics and port counters; 4k Flexible queues; Handling of priority queues Strict Priority Based
Network Security	Sticky MAC for easy locking of MAC address per service; MAC and IP based ACL; SNMPv3 encryption and authentication; Disable unsed ports Locked Node ID's; Logical separation of services; Centralized user authentication and central event logging; Audit trail
Network Management	Auto provisioned and auto setup DCN for management; Full SNMP v3 management (no CLI needed); Management port on each CSM module; 2 input contacts allowing forwarding of local alarms to the TXCare platform; 2 output contacts for local triggering of alarms; Removable memory allowing easy replacement of CSM in the field; Hardware supported HiProvision; Automatic protection switching via BFD; LSP ping and LSP trace via BFD; Performance monitoring based on Y.1731 Loss and Delay
Switching Performance	Sub 50ms protection switching in all network topologies (MPLS-TP); Non-blocking 64 Gbps; 95 Mpps (Layer 2 throughput); MTU up to 9k; 32k MAC addresses; 4k Layer 2 Multicast entries; 2k VFI; 4k MPLS entries; BFD hardware support
Management Software	HiProvision platform for user friendly and fast deployment of the network. Supported by the automatic setup of the DCN and OAM features for continuous monitoring. SNMP v2/v3
Diagnostics	Advanced monitoring capabilities based on MPLS-TP OAM enhancements

HiProvision – Management System Licences (ordered separately)

PTN HiProvision 4.0 Node License	HiPro-R4x-PTN2215	HiPro-R4x-PTN2210	HiPro-R4x-PTN2209	HiPro-R4x-PTN2206	HiPro-R4x-PTN1104
PTN HiProvision Order Number	942 253-005	942 253-001	942 253-002	942 253-003	942 253-004
PTN HiProvision Description	HiProvision Node License for DRAGON PTN2215 - SW Release 4.x	HiProvision Node License for DRAGON PTN2210 - SW Release 4.x	HiProvision Node License for DRAGON PTN2209 - SW Release 4.x	HiProvision Node License for DRAGON PTN2206 - SW Release 4.x	HiProvision Node License for DRAGON PTN1104 - SW Release 4.x

HiPro-HAC-Node	942 255-001	HiProvision Hirschmann Node License (one per node)
HiPro-GEN-Node	942 255-002	HiProvision Generic Node License (one per node)
HiPro-Redundancy	942 255-003	HiProvision Redundancy License (one per serial key)
HiPro-Large-Net	942 255-004	Large Network Monitor Function (one per serial key)
HiPro-Reporting	942 255-005	HiProvision Reporting Engine
HiPro-MACSec-1G	942 255-006	HiProvision MACSec license for 1G link (Available with R4.4, one license per link)
HiPro-MACSec-10G	942 255-007	HiProvision MACSec license for 10G link (Available with R4.2, one license per link)
HiPro-MACSec-40G	942 255-008	HiProvision MACSec license for 40G link (Available with R4.4, one license per link)
PTN-XG-L860	942 233-001	CSM Operating System License
PTN-XG-L862	942 233-002	CSM Operating System Redundancy License

Modules – Central Building Blocks (ordered separately)

PTN-NSM-A (Node Support Module)	942 229-001	Alarm contacts for local notification (2 output contacts) or alarm forwarding (2 input contacts) to HiProvision (NMS); Dual PoE power input for connecting an external power over Ethernet source
PTN-NSM-B (Node Support Module)	942 229-002	Alarm contacts for local notification (2 output contacts) or alarm forwarding (2 input contacts) to HiProvision (NMS)
PTN-CSM310-A (Central Switching Module)	942 230-001	CPU; 64 Gbps switching fabric; MPLS-TP compliant switching fabric; Synchronization via Sync-E; Y.1731 performance monitoring; Automatic Protection Switching based on BFD; ERPS ring protection for multipoint Ethernet services; Node configuration stored on swappable Micro SD
PTN-CSM540-A (Central Switching Module)	942 230-002	CPU; 720 Gbps switching fabric; MPLS-TP compliant switching fabric; Synchronization via Sync-E; Y.1731 performance monitoring; Automatic Protection Switching based on BFD; ERPS ring protection for multipoint Ethernet services; Node configuration stored on swappable Micro SD

Product Description Basic Units *(continued)*

Type		DRAGON PTN2215 / PTN2210 / PTN2209 / PTN2206 / PTN1104
Modules – Interface Building Blocks (ordered separately)		
PTN-4-GC-LW	942 236-001	4-Port Gigabit TX/Combo LAN/WAN Interface Module with POE support; 3 x 10/100/1000 TX Gigabit Ethernet ports;1 x Combo 10/100/1000 TX or 100/1000 Gigabit fiber port (SFP based); Sync-E; IEEE1588v2 transparent clocking; PoE according to 802.3at; Operation as WAN or LAN per port
PTN-4-GO-LW	942 236-002	4-Port Gigabit SFP LAN/WAN Interface Module; 4 x 100/1000 Gigabit fiber port (SFP based); Sync-E; IEEE1588v2 transparent clocking; Port mode is WAN or LAN
PTN-6-GE-L	942 236-003	6-Port Gigabit TX Switching Interface Module; 6 x 10/100/1000 TX Gigabit Ethernet ports; MSTP, ERPS compliant; IEEE1588v2 transparent clocking; LAG based on IP and MAC addresses; IGMP snooping; Port mode is LAN
PTN-1-10G-LW	942 236-004	1-Port 10 Gig XFP Interface Module; 1 x 10 Gig Ethernet port (XFP); Sync-E; IEEE1588v2 transparent clocking; MACSec ready; Port mode is WAN or LAN
PTN-9-L3A-L	942 236-005	1 G/10 G Routing Interface Module; 8 x 100/1000 Gigabit fiber port (SFP based); 1 x 10Gig Ethernet port (XFP); MSTP, ERPS compliant; IEEE1588v2 transparent clocking; LAG based on IP and MAC addresses; IGMP snooping; Static and dynamic Unicast/Multicast routing via VRF; Integrated FAN module; Port mode is LAN
PTN-9-L3EA-L	942 236-006	1 G/10 G Routing Interface Extension Module; 8 x 100/1000 Gigabit fiber port (SFP based); 1 x 10Gig Ethernet port (XFP); Port mode is LAN
PTN-4-DSL-LW	942 236-007	4-Port SHDSL Interface Module; 4 SHDSL ports; PAF (=PME aggregation function) or Bonding; Port mode is LAN
PTN-4-GCB-LW	942 236-008	4-Port Gigabit TX/Combo LAN/WAN Interface Module; 3 x 10/100/1000 TX Gigabit Ethernet ports; 1 x Combo 10/100/1000 TX or 100/1000 Gigabit fiber port (SFP based); Sync-E; IEEE1588v2 transparent clocking; Operation as WAN or LAN per port
PTN-2-C37.94-E1	942 236-009	2 x C37.94 compliant SFP ports (LC, MM); 2 x E1 RJ45 ports; E1 (2.048 Mbps) compliant with ANSI T1.102, OFTEL OTR001 and ITU-T recommendations G.703 and G.823; 64 kbps cross connect per card; Up to 16 independent circuit emulated streams; CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss with 1+1 protection); Support for hair pinning mode (C37.94 to E1) without circuit emulation on a single card; Testing: Loopback, BERT; LAN operation
PTN-2-C37.94-T1	942 236-010	2 x C37.94 compliant SFP ports (LC, MM); 2 x T1 RJ45 ports; T1 (1.544 Mbps) compliant with Bellcore 000499, ANSI; T1.102, T1.403 and T1.408, and ITU-T recommendations 64 kbps cross connect per card; Up to 16 independent circuit emulated streams; CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss with 1+1 protection); Testing: Loopback, BERT; LAN operation
PTN-4-E1-L	942 236-011	4 x E1; E1 (2.048 Mbps) compliant with ANSI T1.102, OFTEL OTR001 and ITU-T recommendations G.703 and G.823; 64 kbps cross connect per card; Up to 16 independent circuit emulated streams; packet formats: CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss with 1+1 protection); Testing: Loopback, BERT; LAN operation
PTN-4-T1-L	942 236-012	4 x T1 ports; T1 (1.544 Mbps) compliant with Bellcore 000499, ANSI (T1.102, T1.403 and T1.408, and ITU-T recommendations); 64 kbps cross connect per card; Up to 16 independent circuit emulated streams; packet formats: CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss with 1+1 protection); Testing: Loopback, BERT; LAN operation
PTN-16-E1-L	942 236-013	16 x E1 ports; E1 (2.048 Mbps) compliant with ANSI T1.102, OFTEL OTR001 and ITU-T recommendations G.703 and G.823; 64 kbps cross connect per card; Up to 64 independent circuit emulated streams; CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss switchover between active and backup connection); Testing: Loopback, BERT; LAN operation
PTN-16-T1-L	942 236-014	16 x T1 ports; T1 (1.544 Mbps) compliant with Bellcore 000499, ANSI (T1.102, T1.403 and T1.408, and ITU-T recommendations); 64 kbps cross connect per card; Up to 64 independent circuit emulated streams; CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss switchover between active and backup connection); Testing: Loopback, BERT; LAN operation
PTN-7-SERIAL	942 236-015	Up to 7 serial ports; Configurable per port: RS232/485 Async or X.21, V.35, RS232 Sync; Per port configurable: Serial to Ethernet / CES; Serial to Ethernet: (Async operation: RS232, RS422, RS485, Protocol agnostic, DCE / DTE configurable, Point to point and master slave bus structures (up to 2 masters and 156 slaves), Multi master operation for redundant control centers; Speeds: 1200, 2400, 4800, 9600, 19200, 38400, 76800, 115200 (different port settings possible within a single service), Databits: 6,7,8, Parity: None, Odd, Even, Mark, Space, Support for handshaking signaling (RTS, CTS,…), Fixed block, fixed timing, line terminating character, delimiter time); CES mode with mapping into time slots (Point to point structure, Protocol agnostic, DCE / DTE configurable, Async operation: RS232, RS422, RS485 - Speeds: 1200, 2400, 4800, 9600, 19200, 38400, 76800, 115200, Sync operation: RS232, RS422, X.21, V.35 - Speeds: nx64 kb (n=1..30), Support for handshaking signaling (RTS, CTS,…))
PTN-4-GCE-LW	942 236-016	4-GCE-LW (4 port GE card with PoE -IEEE1588 TC - MACSec ready)
PTN-4-GOE-LW	942 236-017	4-GOE-LW (4 port GE card-SFP based- IEEE1588 TC-MACSec ready)
PTN-4-GCBE-LW	942 236-018	4-GCBE-LW (4p GE without PoEIEEE1588 TC-MACSec ready)
PTN-4-4WEM-L	942 236-019	4 x 4 Wire interfaces; ITU-T G.712 compatible; -48V for E&M signaling (Type I, II, V); CESoPSN and SAToP circuit emulation packet formats; Hitless switching (zero packet loss switchover with 1+1 protection); LAN operation; Multidrop
PTN-4-CODIR	942 236-020	4 x Full duplex 4 wire interface; Clocking domain configurable per port; CESoP; Hitless switching (zero packet loss with 1+1 protection) – G.703, G.823 compliant; Testing: Loopback, BERT
PTN-8-FXS	942 236-021	8 ports FXS (G.712 compliant); Integrated battery and ringing generator; Converts analog FXS into SIP Client; Support for G.711 a/µ law encoding; Modem and fax compatible; Interworks with standards based SIP server; Server less operation up to 40 FXS ports; FXO interworking possible via external device
PTN-2-OLS (E1)	942 236-022	2 x ST multimode optical ports (TX Power: 50/125µm: -19dBm multimode fibre, 62,5/125µm: -16dBm multimode fibre, RX Sensitivity: -30 dBm); 2 x E1 RJ45 ports; E1 (2.048 Mbps) compliant with ANSI T1.102, OFTEL OTR001 and ITU-T recommendations G.703 and G.823; 64 kbps cross connect per card;
PTN-2-OLS (T1)	942 236-023	2 x ST multimode optical ports (TX Power: 50/125µm: -19dBm multimode fibre, 62,5/125µm: -16dBm multimode fibre, RX Sensitivity: -30 dBm); 2 x T1 RJ45 ports; T1 (1.544 Mbps) compliant with Bellcore 000499, ANSI T1.102, T1.403 and T1.408, and ITU-T recommendations; 64 kbps cross connect per card
PTN-9-L3A-L (PTN2215)	942 236-024	9-L3A-L PTN2215 (8 gigabit SFP ports and 1 10G XFP port router interface)
PTN-9-L3EA-L (PTN2215)	942 236-025	9-L3EA-L PTN2215 (Ext. 9-L3A-L 8 gigabit SFP ports and 1 x 10G XFP port)
PTN-4-10G-LW (PTN 2215)	942 236-026	4-10G-LW (4 port 10GE card – IEEE1588TC – MACSec ready)
PTN-1-40G-LW (PTN2215)	942 236-027	1-40G-LW (1 port 40GE card – IEEE1588TC – MACSec ready)
PTN-16-GE-L (PTN2215)	942 236-028	8-Port Gigabit TX + 8-Port Gigabit PoE Switching Interface Module
Power Supplies (ordered separately)		
PTN-ACP-A	942 234-001	PSU, DIN Rail, Input range: 90-264 V AC, Output Power: 175 W
PTN-DCP-A	942 234-002	PSU, DIN Rail, Input range: 18-60 V DC, Output Power: 175 W
PTN-DCP-B	942 234-003	PSU, DIN Rail, Input range: 88-300 V DC, Output Power: 175 W
PTN-ACP-B (PTN2215)	942 234-004	HV AC Power Supply Unit with 110-220 V AC input for DRAGON PTN2215
PTN-DCP-C (PTN2215)	942 234-005	LV DC Power Supply Unit with 18-60 V DC input for DRAGON PTN2215
PTN-DCP-D (PTN2215)	942 234-006	HV DC Power Supply Unit with 88-300 V DC input for DRAGON PTN2215
PTN-ACPoE-A	942 235-001	PoE PSU, DIN Rail, Input range: 100-240 V AC, Output Power: 480 W
PTN-DCPoE-A	942 235-002	PoE PSU, DIN Rail, Input range: 33.6-62.4 V DC, Output Power: 300 W
QS20.481	942 235-003	DIN Rail PoE Power Supply, 88-276 V AC / 88-187 V DC - 480 W

Product Description Basic Units *(continued)*

Type		DRAGON PTN2215 / PTN2210 / PTN2209 / PTN2206 / PTN1104
Spare Parts (ordered separately)		
PTN-BLANK-Module	942 237-001	Blank panel for interface slot
PTN-BLANK-PSU	942 237-002	Blank panel for PSU slot
PTN-BLANK-CSM	942 237-003	Blank panel for CSM slot
PTN-BLANKMODULE (PTN2215)	942 237-004	Blank panel for interface slot DRAGON PTN2215
PTN-BLANK-PSU (PTN2215)	942 237-005	Blank panel for PSU slot DRAGON PTN2215
PTN-BLANK-CSM (PTN2215)	942 237-006	Blank panel for CSM slot DRAGON PTN2215
Interface Adapter Kit (PTN2215)	942 237-007	Interface adapter kit (3HU interface to DRAGON PTN2215 slots)

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.doc.hirschmann.com

Common Technical Data

Type	Basic Units, Media Modules and Power Supplies
Ambient Conditions	
Operating Temperature	-30 ºC to 65 ºC (fanless)
Storage Temperature	-30 ºC to 75 ºC
Rel. Humidity (non-condensing)	95% (non-condensing), 25° (77°F) - 40°C (104°F)
Approvals	
Basic Standard	CE
Safety of Industrial Control Equipment	IEC-61850-3, IEEE 1613
Transportation	EN 50121-4

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.doc.hirschmann.com

Accessories

Type		DRAGON PTN2215 / PTN2210 / PTN2209 / PTN2206 / PTN1104
Mounting Kit (ordered separately)		
19" Mounting Kit PTN2206	942 256-001	19" mounting kit for PTN2206
19" Mounting Kit PTN1104	942 256-002	19" mounting kit for PTN1104
19" Mounting Kit for 2 x PTN1104	942 256-003	19" mounting kit for 2 x PTN1104
Heavy Duty DIN Rail Kit PTN2206	942 256-004	Heavy duty DIN Rail kit for PTN2206
Heavy Duty DIN Rail Kit PTN1104	942 256-005	Heavy duty DIN Rail kit for PTN1104
Power Cables (ordered separately)		
EU AC Power Cord	942 256-100	EU AC power cord with IEC lock - 2.5 m
UK AC Power Cord	942 256-101	UK AC power cord with IEC lock - 2.5 m
US AC Power Cord	942 256-102	US AC power cord with IEC lock - 2.5 m
PSU Cable for 18-60 VDC PSU	942 256-103	PSU cable for 18-60 V DC power supply
PSU Cable for 88-200 VDC PSU	942 256-104	PSU cable for 88-200 V DC power supply
PSU Cable for PoE	942 256-105	PSU cable for PoE to NSM
PSU cable for 36-60VDC PSU (PTN2215)	942 256-106	PSU cable for 36-60 V DC PSU (PTN2215)
PSU cable for 88-300VDC PSU (PTN2215)	942 256-107	PSU cable for 88-300 V DC PSU (PTN2215)
Drop Cables (ordered separately)		
T1 Drop Cable, RJ48C	942 256-200	T1 Drop cable, 3 m, 100 Ohm, RJ48C to open end for PTN-4T1-L (1 per port)
E1 Drop Cable, RJ48C	942 256-201	E1 Drop cable, 3 m, 120 Ohm, RJ48C to open end for PTN-4E1-L (1 per port)
Drop Cable, HPDB68	942 256-202	Drop cable, 1.5 m HPDB68 to open end for PTN-16T1-L / PTN-16E1-L (1 per card)
Drop Cable, HPDB68 to 16 RJ-45 Coupler	942 256-203	Drop cable, 2 m HPDB68 to 16 RJ-45 with coupler for PTN-16T1-L / PTN-16E1-L (1 per card)
Patch Panel 1HU Feedthrough 24 Ports	942 256-204	Patch panel 1HU feedthrough 24 ports
BNC Patch Panel with Drop Cable	942 256-205	BNC Patch Panel with Drop cable, 2 m HPDB68 to 16 port Coax (1 per card)
Cable Set for Connector 1-5	942 256-300	Cable set for connector 1-5 (open ended) for serial port 1-3
Cable Set for Connector 6-10	942 256-301	Cable set for connector 6-10 (open ended) for serial port 4-7
PTN-8-FXS Cables	942 256-400	PTN-8-FXS Cables & coupler connection kit for RJ11
Spare parts and accessories for the DRAGON PTN2215		
Spare fan	942 256-500	Spare Fan unit for DRAGON PTN2215 (PTN-FAN)
Dust filter	942 256-501	Dust filter kit for DRAGON PTN2215 (PTN-Dust filter kit)

For further technical information see page 6.

Technical Information

Accessories *(continued)*		
Type		**DRAGON PTN2215 / PTN2210 / PTN2209 / PTN2206 / PTN1104**
SFPs (ordered separately)		
PTN-SFP-CWDM-EX-1471	942 245-001	SFP CWDM - EX - 1471 nm
PTN-SFP-CWDM-EX-1491	942 245-002	SFP CWDM - EX - 1491 nm
PTN-SFP-CWDM-EX-1511	942 245-003	SFP CWDM - EX - 1511 nm
PTN-SFP-CWDM-EX-1531	942 245-004	SFP CWDM - EX - 1531 nm
PTN-SFP-CWDM-EX-1551	942 245-005	SFP CWDM - EX - 1551 nm
PTN-SFP-CWDM-EX-1571	942 245-006	SFP CWDM - EX - 1571 nm
PTN-SFP-CWDM-EX-1591	942 245-007	SFP CWDM - EX - 1591 nm
PTN-SFP-CWDM-EX-1611	942 245-008	SFP CWDM - EX - 1611 nm
PTN-SFP-CWDM-ZX-1471	942 245-009	SFP CWDM - ZX - 1471 nm
PTN-SFP-CWDM-ZX-1491	942 245-010	SFP CWDM - ZX - 1491 nm
PTN-SFP-CWDM-ZX-1511	942 245-011	SFP CWDM - ZX - 1511 nm
PTN-SFP-CWDM-ZX-1531	942 245-012	SFP CWDM - ZX - 1531 nm
PTN-SFP-CWDM-ZX-1551	942 245-013	SFP CWDM - ZX - 1551 nm
PTN-SFP-CWDM-ZX-1571	942 245-014	SFP CWDM - ZX - 1571 nm
PTN-SFP-CWDM-ZX-1591	942 245-015	SFP CWDM - ZX - 1591 nm
PTN-SFP-CWDM-ZX-1611	942 245-016	SFP CWDM - ZX - 1611 nm
PTN-SFP-SX-850	942 245-017	SFP 850 nm - SX (Multimode)
PTN-SFP-LX-1310	942 245-018	SFP 1310 nm - LX
PTN-SFP-EX-1310	942 245-019	SFP 1310 nm - EX
PTN-SFP-ZX-1550	942 245-020	SFP 1550 nm - ZX
PTN-SFP-OX-1550	942 245-021	SFP 1550 nm - OX
PTN-SFP-EZ-1550	942 245-022	SFP 1550 nm - EZ
PTN-SFP-BIDI-1310-20	942 245-023	SFP 1310 nm - BIDI - 20 km
PTN-SFP-BIDI-1550-20	942 245-024	SFP 1550 nm - BIDI - 20 km
PTN-SFP-BIDI-1490-80	942 245-025	SFP 1490 nm - BIDI - 80 km
PTN-SFP-BIDI-1550-80	942 245-026	SFP 1550 nm - BIDI - 80 km
PTN-RJ45-SFP	942 245-027	Electrical Gigabit Ethernet SFP module RJ45
SFP C37 (ordered separately)		
PTN-SFP-C37.94-850	942 245-028	SFP for C37.94 - 850 nm Multimode
PTN-SFP-C37.94-1310	942 245-029	SFP for C37.94 - 1310 nm Singlemode
Smart SFP (ordered separately)		
PTN-SMART-SFP-STM-1/OC-3	942 245-028	Smart SFP to transport STM-1/OC-3 transparent (S1 Optic)
PTN-SMART-SFP-STM-4/OC-12	942 245-029	Smart SFP to transport STM-4/OC-12 transparent (S1 Optic)
SFP DWDM (ordered separately)		
PPTN-SFP-DWDM-XR-xx (xx = Channel Number)	942 250-0xx	SFP DWDM - XR (Channel xx) (Channel 17-61)
XFP (ordered separately)		
PTN-XFP-SR-850	942 246-001	XFP 850 nm - SR (Multimode)
PTN-XFP-LR-1310	942 246-002	XFP 1310 nm - LR
PTN-XFP-ER-1550	942 246-003	XFP 1550 nm - ER
PTN-XFP-ZR-1550	942 246-004	XFP 1550 nm - ZR
PTN-XFP-XR-1550	942 246-005	XFP 1550 nm - XR
XFP DWDM (ordered separately)		
PTN-XFP-DWDM-ER-xx (xx = Channel Number)	942 247-0xx	XFP DWDM - ER (Channel xx) (Channel 19-60)
PTN-XFP-DWDM-ZR-xx (xx = Channel Number)	942 248-0xx	XFP DWDM - ZR (Channel xx) (Channel 17-61)
40 Gig QSFP (ordered separately)		
PTN-QSFP-BIDI	942 296-001	40G QSFP-BIDI 0.1 km
PTN-QSFP-LR4-lite	942 296-002	40G QSFP-LR4-lite 2 km
PTN-QSFP-LR4	942 296-003	40G QSFP-LR4 10 km
PTN-QSFP-ER4	942 296-004	40G QSFP-ER4 40 km

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.doc.hirschmann.com