CXR Networks

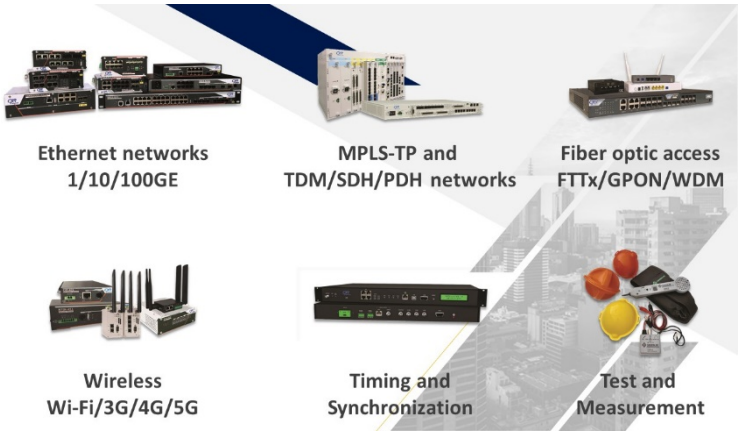
PRODUCT GUIDE NETWORKING & COMMUNICATION EQUIPMENT

www.cxr.com - Smart solutions for smart networks

CXR Networks

CXR is a global provider of mission-critical Networking and Communications products for Telecom Operators and Service Providers, Energy, National Defense and Emergency Services, Transportation and Smart Cities.
With 50 years of experience in telecom technologies, CXR offers a wide range of innovative solutions adapted to the needs of these industrial markets.

CXR invests in new technologies and introduces new solutions in this catalog



SENSE OF SERVICE

CXR supports its customers and partners with a complete range of services

- Training and consulting
- Installation
- Help Desk
- On-site expertise
- Specific R&D developments
- Maintenance

Test and Measurement Solutions

CXR is also a provider of test and measurement solutions for telecommunications and industrial networks.
Feel free to consult our **Test and Measurement catalog**

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Smart Solutions for Smart Networks

SOMMAIRE

SWCE-3232

SWCE-3232 is a Carrier grade 10 Gigabit Ethernet switch that complies with the Metro Ethernet Forum CE 2.0 standard. It provides 4x 10GE SFP+ slots, 4 multi-rate 2.5GE / GE / 100FX SFP slots, and 24x Gigabit Ethernet RJ45 ports with Layer 3 OSPF routing capabilities.

SWCE-3232 is a compact industrial product designed to meet the requirements CE 2.0 Access and Aggregation network requirements with 1GE, 2.5GE and 10GE bandwidth. It also suits other industry requirements such as Smart Cities, Public Transportation, or oil and gas, water and electricity Utility communication networks.

CARRIER ETHERNET CE2.0 10 GIGABIT

- 4x SFP+ 10GE
- 4x SFP multi-rate 2.5GE et GE
- 24 Ethernet ports 10/100/1000BaseT
- Carrier Ethernet CE 2.0
- Switch level 3 OSPF
- 4K EVC : E-LINE, E-TREE, E-LAN, 802.3ah, Y.1731
- RIP, OSPF v4 et v6
- RSTP, MSTP, G.8031, G.8032, 802.1Q VLAN, MVR, GVRP, LACP, IGMP, LLDP
- Filtrate L2-L4, ACL, 802.1X, Radius

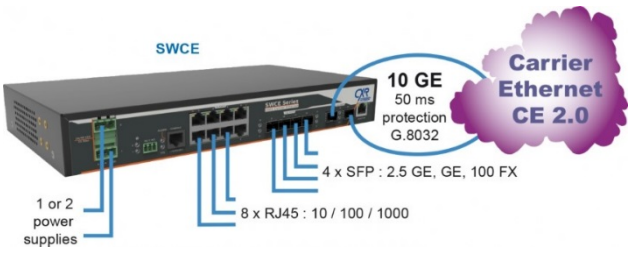
SWCE-3232-R-A	SWITCH CARRIER ETHERNET 4X10GE / 4X2.5GE / 24X GE WITH ONE POWER SUPPLY 230 VAC
SWCE-3232-R-D	SWITCH CARRIER ETHERNET 4X10GE / 4X2.5GE / 24X GE WITH ONE POWER SUPPLY 48 VDC
SWCE-3232-R-2D	SWITCH CARRIER ETHERNET 4X10GE / 4X2.5GE / 24X GE WITH 2X REDUNDANT POWER SUPPLY 48 VDC

SWCE-2114

SWCE-2114 is a Carrier grade 10 Gigabit Ethernet switch that complies with the Metro Ethernet Forum CE 2.0 standard. It provides 2x 10GE SFP+ slots, 4 multi-rate 2.5GE / GE / 100FX SFP slots, and 8 x Gigabit Ethernet RJ45 ports on of which may be used for management purposes.

SWCE-2114 is a compact industrial product designed to meet the requirements CE 2.0 Carrier Ethernet access network requirements with 1GE, 2.5GE and 10GE bandwidth. It also suits other industry requirements such as Smart Cities, Public Transportation, or oil and gas, water and electricity Utility communication networks.

EDD CARRIER ETHERNET 10 GIGABIT



- 2x SFP+ 10GE
- 4x SFP multi-rate 2.5GE & GE
- 8x Ethernet ports 10/100/1000BaseT
- Carrier Ethernet CE 2.0

SWCE-2114-R-A	SWITCH CARRIER ETHERNET 2X10GE / 4X2.5GE / 8X GE WITH ONE POWER SUPPLY 230 VA
SWCE-2114-R-D	SWITCH CARRIER ETHERNET 2X10GE / 4X2.5GE / 8X GE WITH ONE POWER SUPPLY 48 VDC
SWCE-2114-R-2D	SWITCH CARRIER ETHERNET 2X10GE / 4X2.5GE / 8X GE WITH TWO POWER SUPPLY 48 VDC

SWCE-2310

SWCE-2310 is a ruggedized Gigabit Ethernet switch that delivers 8x POE+ ports from 2x multi-rate 2.5GE / GE / 100FX SFP interfaces. It provides all Ethernet services for switching (VLAN, QoS, MSTP, IGMP, G.8032), activation and test (OAM, Y.1731), security (802.1X, Radius, firewall, ACL), management (SNMP, RMON), and even remote diagnostic of cable quality.

SWCE-2310 is a CE2.0 Carrier Ethernet Demarcation Device EDD that supports E-Line, E-LAN and E-Tree services for enterprise VPN and strict SLA services, and Carrier networks requirements with service activation and management.

EDD CARRIER ETHERNET POE+

- 2x SFP multi-rate 2.5GE et GE
- 8x Ethernet ports 10/100/1000BaseT with POE+ 30W
- Carrier Ethernet CE 2.0
- Wide temperature range -20 à +75°C
- 1x or 2x Redundant power supply 48 Vdc

SWCE-2310-P-D	SWITCH CARRIER ETHERNET, 2X SFP 2.5GE/GE, 8X GE POE+, POWER SUPPLY: 1 48 VDC CONVERTERS AND INPUTS
SWCE-2310-P-2D	SWITCH CARRIER ETHERNET, 2X SFP 2.5GE/GE, 8X GE POE+, POWER SUPPLY: 2X 48 VDC CONVERTERS AND INPUTS

SWCED-2112

CARRIER ETHERNET INDUSTRIAL 10GE

SWCED-2112 is a ruggedized 10 Gigabit Ethernet switch and EDD that provides 8x GbE ports, 2x 2.5GE SFP ports and 2x 10 Gigabit ports with IP v4/v6 Layer 3 switching and MEF CE 2.0 Carrier Ethernet capabilities. SWCED-2112 delivers a high level of security and availability to mission critical networks that require high immunity against extreme temperatures and electromagnetic disturbances. SWCED-2112 is a compact product with low power consumption and Green Ethernet features. It offers many unique features such as Ethernet cable diagnostics that drastically reduces OPEX

- 2x SFP+ 10GE
- 2x SFP multirate 2.5GE et GE
- 8x Ethernet ports 10/100/1000BaseT
- Carrier Ethernet CE 2.0, stack Ethernet, G.8032
- Extended temperature range -20 to +75°C

SWCED-2112-R-D	SWITCH CARRIER ETHERNET 2X10GE / 2X2.5GE / 8X GE WITH ONE POWER SUPPLY 24-48 VDC
SWCED-2112-R-2D	SWITCH CARRIER ETHERNET 2X10GE / 2X2.5GE / 8X GE WITH TWO POWER SUPPLY 24-48 VDC

SWCED-2316

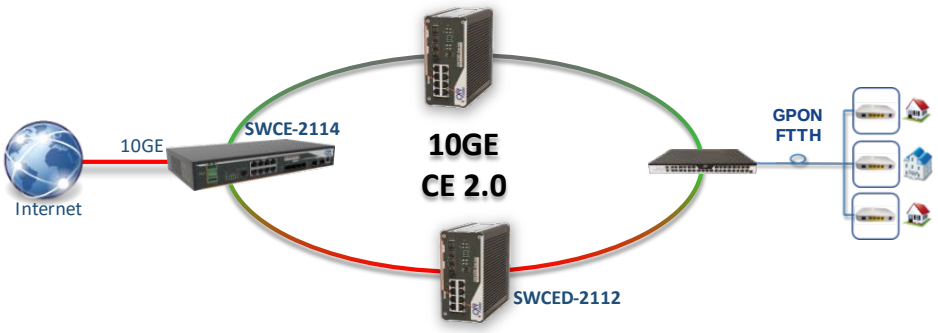
CARRIER ETHERNET INDUSTRIEL POE+

SWCED-2316 is a ruggedized Gigabit Carrier Ethernet switch and EDD in a DIN rail format that provides 4x multi-rate 2.5GE / GE / 100FX SFP slots, 8x Gigabit Ethernet RJ45 ports and 4x Gigabit POE+ ports. SWCED-2316 provides high connectivity to industry substation or cabinets including 4x POE+ ports for IP camera, IP phone and other POE feeding requirements. SWCED-2316 delivers a high level of security and availability to mission critical networks that require high immunity against extreme temperatures and electromagnetic disturbances.

- 4x SFP multi-rate 2.5GE & GE
- 8x Ethernet ports 10/100/1000BaseT
- 4x Ethernet ports 10/100/1000BT avec POE+ 30W
- Carrier Ethernet CE 2.0, stack Ethernet, G.8032
- Extended temperature range -20 to +75°C

SWCED-2316-R-D	SWITCH CARRIER ETHERNET 4X2.5GE E T12 8X GE WITH ONE POWER SYPPLY 24-48 VDC
SWCED-2316-P-D	SWITCH CARRIER ETHERNET 4X2.5GE, 8X GE ET 4X GE AVEC POE+, WITH ONE POWER SUPPLY 48 VDC

Carrier Ethernet technology is deployed in many networks that need to operate in a connected mode, to guarantee a controlled quality of service (or SLA), to ensure security and different levels of SLA for the multiple flows that transit on the network. The most common applications are: 4G/5G telephony access backhaul network, Internet access network, Telecom Service Provider networks for high-speed VPN, interconnection of operator networks, metropolitan networks of large cities. Carrier Ethernet distinguishes itself from other IP technologies by its lower overall cost, lower latency, native security features, lower complexity, and faster time to market.



Internet access network

SWM-5664

SWITCH DATA-CENTER 40/100GE

The SWM-5664 is a switch that offers 48x 10GE SFP+ interfaces, 2x 40GE uplink interfaces and 4x 100GE interfaces. It is dedicated to the needs of data centers in Top-Of-Rack Ethernet architecture, or 10GE flow aggregation and core switching and routing functions. The SWM-5664 is a switch router that supports Layer 3 protocols, OSPF/BGP routing in IP v4 and v6, and MPLS VPN. The SWM-5664 secures applications with hardware and software redundancy, VRRP, G.8032....

- 4x 40/100GE QSFP28 interfaces
- 2x 40GE QSFP+ interfaces
- 48x 10GE SFP+ interfaces
- RIP, OSPF, BGP, VRRP
- VPN, MPLS
- 1U/19'', 2x redundant power supply

SWM-5664-S-M2A	SWITCH ETHERNET L3, 4X QSFP28 100GE, 2X QSFP+ 40GE, 48X SFP+ 10GE, OSPF/BGP ET MPLS, 2X REDUNDANT POWER SUPPLY

SWM-3830

SWITCH LEVEL 3 X 10GE

The SWM-3830 is a high-performance Layer 3 switch that delivers 24x Gigabit Ethernet interfaces in SFP or RJ45 10/100/1000BT slots, and 6x SFP+ 10GE uplink interfaces. It provides enterprises and industrial networks with a wealth of Ethernet protocols, OSPF routing, MPLS VPN, and security with high switching and Ethernet aggregation capabilities. The SWM-3830 secures these critical networks with redundant power supplies and N2/N3 VRRP, G.8032 resiliency protocols.

- 6x 10GE SFP+ interfaces
- 24x SFP GE/FE or RJ45 10/100/1000BT interfaces
- RIP, OSPF, BGP, VRRP
- VPN MPLS, LDP
- 1U/19'', 2x redundant AC and/or DC power supplies

SWM-3830-R-MA	SWITCH ETHERNET LEVEL3, 6X SFP+ 10GE, 24X RJ45 10/100/1000BT, OSPF/BGP ET MPLS, 1X MODULAR POWER SUPPLY 230 VAC
SWM-3838-S-MA	SWITCH ETHERNET LEVEL 3, 6X SFP+ 10GE, 24X SFP FE/GE, 8X RJ45 GE, OSPF/BGP AND MPLS, 1X MODULAR POWER SUPPLY 230 VAC

SWM-3854

SWITCH LEVEL 3 10GE POE+

The SWM-3854 is a high-performance Layer 3 switch that delivers 48x Gigabit Ethernet SFP, RJ45 or POE+ interfaces, and 6x uplink 10GE SFP+ interfaces. It provides a high density of POE Ethernet ports for connecting video cameras, IP phones, Wi-Fi Access Points or any other Ethernet system that requires 15 or 30 W of power. The SWM-3856 includes IGMP and VLAN protocols, routing and Layer 3 security to ensure full performance of critical networks.

- 6x 10GE SFP+ interfaces
- 48x RJ45 10/100/1000BT avec POE+ interfaces
- Or 48x RJ45 10/100/1000BT avec POE+ interfaces
- Or 24x SFP GE/FE + 24x RJ45 interfaces
- RIP, OSPF, BGP, VRRP
- VPN, MPLS
- 1U/19'', 2x redundant power supplies
- Power supply modules with POE budget 380 or 760 W

SWM-3654-R-MA	SWITCH ETHERNET LEVEL 3, 6X SFP+ 10GE, 48X RJ45 10/100/1000BT, OSPF/BGP AND MPLS, 1X MODULAR POWER SUPPLY 230 VAC
SWM-3854-RS-MA	SWITCH ETHERNET LEVEL 3, 6X SFP+ 10GE, 24X SFP FE/GE, 24X RJ45 10/100/1000BT, OSPF/BGP AND MPLS, 1X MODULAR POWER SUPPLY 230 VAC
SWM-3854-P-M	SWITCH ETHERNET LEVEL 3, 6X SFP+ 10GE, 48X RJ45 10/100/1000BT AVEC POE+, OSPF/BGP ET MPLS, 1X MODULAR POWER SUPPLY 230 VAC
SWM3854P-AC500	POWER SUPPLY MODULE 230 VAC, 500 W
SWM3854P-AC1100	POWER SUPPLY MODULE 230 VAC, 1100 W

SWM-2800

LEVEL 3 SWITCH 10GE POE+

The SWM-2800 is a Layer 3 switch that delivers up to 48x Gigabit Ethernet SFP, RJ45 or POE+ interfaces, and 6x 10GE SFP+ uplink interfaces. More cost-effective than the SWM-3800 series, the SWM-2800 features a reduced 2K routing table and a fixed power supply that will satisfy the needs of many private networks.

- 4 or 6x 10GE SFP+ interfaces
- 24 or 48x Gigabit Ethernet RJ45 interfaces
- - Choice of interfaces RJ45, POE+ SFP, mixed RJ45/SFP
- RIP, OSPF, VRRP
- 1U/19'', 1x power supply 110-230 Vac

SWM-2828-R-A	Switch Ethernet level 3, 4x SFP+ 10GE, 24x RJ45 10/100/1000BT, power supply 230 Vac
SWM-2828-S-A	Switch Ethernet level 3, 4x SFP+ 10GE, 16x SFP FE/GE et 8x combo SFP+RJ451x power supply 230 Vac
SWM-2854-R-A	Switch Ethernet level 3, 6x SFP+ 10GE, 48x RJ45 10/100/1000BT, 1x power supply 230 Vac
SWM-2828-P-A	Switch Ethernet level 3, 4x SFP+ 10GE, 24x RJ45 POE+, 1x power supply 230 Vac, POE 370 W
SWM-2852-P-A	Switch Ethernet level 3, 4x SFP+ 10GE, 48x RJ45 POE+, 1x power supply 230 Vac, POE 740 W

SWMM-H-7628

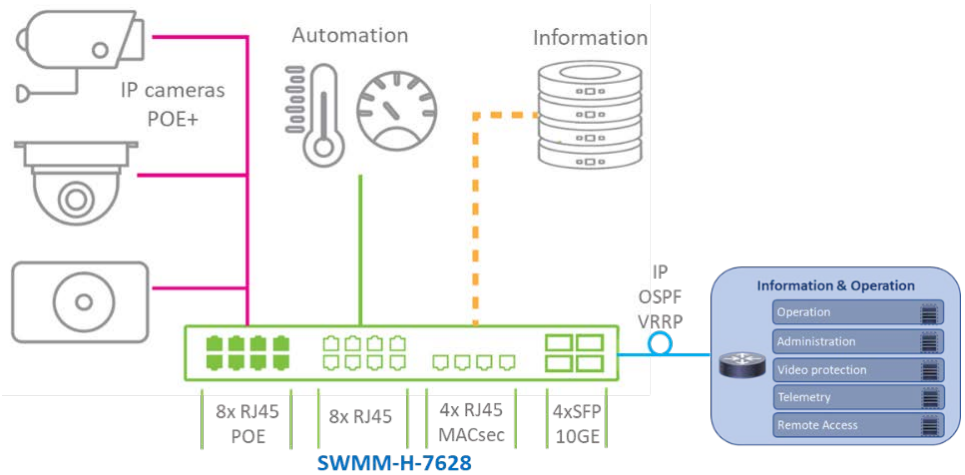
MODULAR SWITCH 10GE EN-50121-4

The SWMM-H-7628 is a ruggedized modular switch for industrial and transportation infrastructure environments. It is qualified to EN-50121-4 and EN-50155 standards. It features four GE or 10GE Uplink ports, and three drawers to accommodate 8x RJ45, SFP, POE or MACSec gigabit port modules. The 7528 is a Layer 2 switch with all Ethernet protocols. The 7628 is a Layer 3 switch that supports OSPF and VRRP protocols. The entire range supports advanced NTP and IEEE-1588 PTP synchronization features.

- 4x uplink 10GE SFP+ or GE interfaces
- 3x slots for 8x ports GE modules
- 2 power supply fixe 110-230 Vac or 48 Vdc
- 2x input power supply POE
- 7528 : IGMP, Radius, 802.1X, IP v4/v6, PTP 1588, ERPS G.8032
- 7628 : RIP, OSPF, VRRP
- 1U/19''
- 2x power supply fixes 110-230 Vac or 48 Vdc
- Temperature -40 à +75 °C
- EN-61000-6-2 et -4, EN-50121-4, EN-50155

SWMM-H-7628-10-2A	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, 2x power supply 110-230 Vac
SWMM-H-7628-10-2D	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, 2x power supply 48 Vdc
SWMM-H-7628-2A	Modular Switch Ethernet Level 3, 4x SFP GE, 2x power supply 110-230 Vac
SWMM-H-7628-2D	Modular Switch Ethernet Level 3, 4x SFP GE, 2x power supply 48 Vdc
SWMM-H-7528-10-2A	Modular Switch Ethernet Level 2, 4x SFP+ 10GE/GE, 2x power supply 110-230 Vac
SWMM-H-7528-10-2D	Modular Switch Ethernet Level 2, 4x SFP+ 10GE/GE, 2x power supply 48 Vdc
SWMM-H-7528-2A	Modular Switch Ethernet Level 2, 4x SFP GE, 2x power supply 110-230 Vac
SWMM-H-7528-2D	Modular Switch Ethernet Level 2, 4x SFP GE, 2x power supply 48 Vdc
SWMM7528-8R	Modular card 8x Gigabit Ethernet RJ45 interfaces
SWMM7528-8S	Modular card 8x SFP Gigabit et Fast Ethernet interfaces
SWMM7528-8P	Modular card 8x Gigabit Ethernet RJ45 with POE+ interfaces
SWMM7528-4R-MSEC	Modular card 4x Gigabit Ethernet RJ45 with encryption MACSec interfaces
SWMM7528-8S-MSEC	Modular card 4x SFP Gigabit and Fast Ethernet with encryption MACSec interfaces

The SWMM-H-7628 integrates into many industrial networks with its Layer 2 and Layer 3 capabilities, high-speed 10GE ports and rugged design for harsh environments. Its modularity accommodates any need with a mix of SFP, RJ45, POE optical interfaces. Advanced cybersecurity features ensure the best possible security for critical networks.



SWMM-H-9628

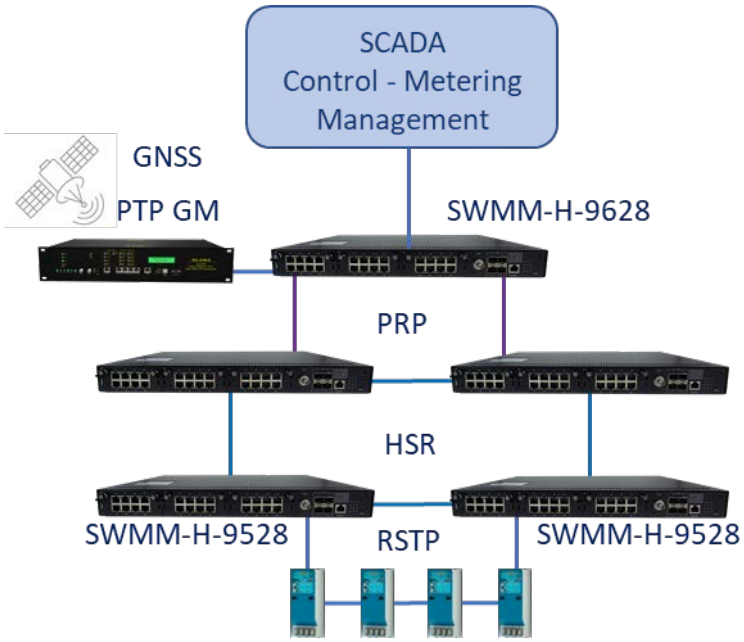
MODULAR SWITCH 10GE IEC-61850

The SWMM-H-9628 is a ruggedized modular switch for power transmission and distribution systems. It is qualified according to IEC/EN-61850-3 standard. It has four GE or 10GE Uplink ports, and three slots to receive 8x RJ45, SFP and HSR/PRP gigabit port modules. It supports specific features for IEC-61850 networks such as HSR/PRP data lossless resiliency and PTP 1588 synchronization in BC and TC mode with a high precision internal OCXO oscillator. The 9528 is a Layer 2 switch and the 9628 is a Layer 3 switch with OSPF and VRRP protocols.

- 4x uplink 10GE SFP+ or GE interfaces
- 3x slots for 8x ports GE modules
- 2 power supply fixes 110-230 Vac or 48 Vdc
- 9528 : IGMP, Radius, 802.1X, IP v4/v6, PTP 1588 BC and TC, ERPS G.8032
- 9628 : RIP, OSPF, VRRP
- IEC-62439-3 HSR and IEC-62439-4 PRP
- MODBUS TCP
- 1U/19''
- 2x power supply fixes 110-230 Vac or 48 Vdc
- Temperature -40 à +85 °C
- EN-61000-6-2 and -4, EC-61850-3

SWMM-H-9628-SB-2A	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, Hardware PTP-1588, 2x power supply 110-230 Vac
SWMM-H-9628-SB-2D	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, Hardware PTP-1588, 2x alimentations 48 Vdc
SWMM-H-9628-2A	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, 2x alimentations 110-230 Vac
SWMM-H-9628-2D	Modular Switch Ethernet level 3, 4x SFP+ 10GE/GE, 2x alimentations 48 Vdc
SWMM-H-9528-SB-2A	Modular Switch Ethernet level 2, 4x SFP+ 10GE/GE, Hardware PTP-1588, 2x alimentations 110-230 Vac
SWMM-H-9528-SB-2D	Modular Switch Ethernet level 2, 4x SFP+ 10GE/GE, Hardware PTP-1588, 2x alimentations 48 Vdc
SWMM-H-9528-2A	Modular Switch Ethernet level 2, 4x SFP+ 10GE/GE, 2x alimentations 110-230 Vac
SWMM-H-9528-2D	Modular Switch Ethernet level 2, 4x SFP+ 10GE/GE, 2x alimentations 48 Vdc
SWMM9528-8R-PTP	Modular card 8x Gigabit Ethernet interfaces with PTP 1588 and SyncE
SWMM9528-8S-PTP	Modular card 8x SFP Gigabit interfaces and Fast Ethernet with PTP 1588 and SyncE
SWMM9528-4R-HSRPRP	Modular card 4x Gigabit Ethernet interfaces with PTP 1588 et SyncE et Resilience HSR-PRP
SWMM9528-4S-HSRPRP	Modular card 4x SFP Gigabit interfaces and Fast Ethernet with PTP 1588 and SyncE and RESILIENCE HSR-PRP

The SWMM-H-9628 is dedicated to power distribution and transmission networks for which it has specifically adapted features such as HSR-PRP resilience, IEEE 1588 PTP synchronization with Power-Profile in Boundary-Clock and Transparent-Clock modes. Its modularity allows it to adapt to any configuration with great versatility thanks to a choice of RJ45, SFP and HSR-PRP modular cards.



SWDI

UNMANAGEABLE DIN SWITCH

The SWD-I-TX is a ruggedized, DIN-rail mountable, non-manageable Ethernet switch for industrial environments. The product line offers models from 5 to 16 Ethernet ports. These devices are optimized and economical. They fit into any industrial environment with a wide operating temperature range and industrial grade electromagnetic immunity.

- 5à 16x Ethernet 10/100BT interfaces
- Optical interface MM or SM 20km 100FX
- Operating temperature from -10 to +60°C
- Immunity CEM EN-61000-6-2
- DIN rail mounting, 12 to 48 Vdc power supply
- Options EN-50121-4 and IEC-61850 : ask CXR

SWD-I-5TX	SWITCH ETHERNET DIN, 5X RJ45 10/100BT
SWD-I-4TX-MM	SWITCH ETHERNET DIN, 4X RJ45 10/100BT, 1X 100FX MULTI-MODE 2 KM
SWD-I-4TX-SM20	SWITCH ETHERNET DIN, 4X RJ45 10/100BT, 1X 100FX SINGLE-MODE 20 KM
SWD-I-6TX-2FSF	SWITCH ETHERNET DIN, 6X RJ45 10/100BT, 2X SFP PORTS FOR 100FX MODULES
SWD-I-8TX	SWITCH ETHERNET DIN, 8X RJ45 10/100BT
SWD-I-16TX	SWITCH ETHERNET DIN, 16X RJ45 10/100BT

SWMD-I-8TX/8TPS-2GSF

MANAGEABLE SWITCH DIN

The SWMD-I-8TX-2GSF is a ruggedized 10x port Ethernet switch. It provides 8x Fast Ethernet ports with POE+ option from 2x optical Gigabit Ethernet Uplink interfaces. It embeds many Layers 2 Ethernet features including IGMP multicast management, VLANs, RTSP/MSTP resiliency and ACL filtering. POE devices can be remotely reset through port-by-port POE power control.

- 2x uplink SFP Gigabit 1000FX interfaces
- 8x 10/100BT interfaces
- POE+, 802.3af/at
- IGMP v3, VLAN, GVRP, QoS, MSTP, RSTP / Fast-Ring, LACP, ACL, 802.1x, LLDP, NTP
- DIN rail mounting, 12 to 48 Vdc power supply or 52 to 57 Vdc for POE
- Operating temperature from -20 to +65°C
- EN-50121-4 and IEC-61850 options: ask CXR

SWMD-I-8TX-2GSF	HARDENED DIN ETHERNET SWITCH, 8X 10/100BT, 2X SFP 1000FX, 12 TO 48 VDC POWER SUPPLY
SWMD-I-8TPS-2GX	HARDENED DIN ETHERNET SWITCH, 8X 10/100BT WITH POE+ 30 W, 2X 10/100/1000BT, 52 TO 57 VDC POWER SUPPLY

SWMDL-H-4GPS-2USF-B

SWITCH DIN 4X POE BOOSTER

The SWMDL-H-4GPS-2USF-B is a POE+ switch with a booster power supply that accepts 24 to 57 Vdc input voltage to simplify wiring and reduce hardware costs for industrial systems powered by 24 Vdc with battery backup. This switch is hardened in a DIN rail enclosure. It is particularly adapted to the connection of Wi-Fi access points or IP cameras for video protection thanks to its IGMP protocols. Its 2 SFP optical interfaces allow to realize any type of multipoint network and secured ring.

- 2x uplink SFP 100/1000FX interfaces
- 4x 10/100/1000BT interfaces with POE+ 30W 802.3at
- Operating temperature from -40 to +75°C
- IP v4/v6, IGMP v3, VLAN, QoS 8 queues, RSTP / Fast-Ring, LACP, ACL, 802.1x
- DIN rail mounting, 24 to 57 Vdc power supply

SWMDL-H-4GPS-2USF-B	SWITCH ETHERNET DIN RUGGEDIZE, 2X SFP, 4X 10/100/1000BT WITH POE+ 30 W, POWER BOOSTER 24 À 57 VDC

SWDL-H-2GPS-2USF-B

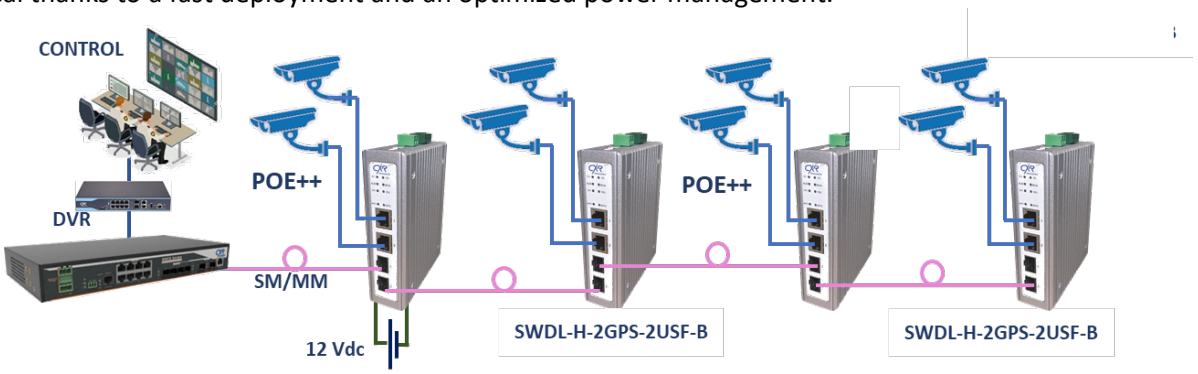
SWITCH DIN 2X POE BOOSTER

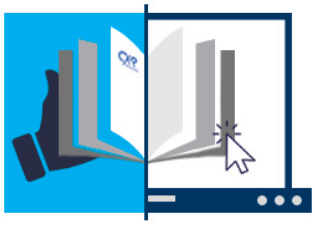
The SWDL-H-2GPS-2USF-B is a POE+ switch with a booster power supply that accepts input voltage from 12 to 57 VDC. This feature simplifies the wiring and reduces the hardware costs of 12 or 24 VDC industrial systems with battery backup when POE power is required for video cameras or other POE devices. This switch is hardened in a DIN rail enclosure. Its two SFP interfaces allow for 1+1 protection, port isolation or multidrop bus topologies.

- 2x uplink SFP 100/1000FX interfaces
- 2x 10/100/1000BT interfaces with POE+ 30W 802.3at or POE++ 60W
- Operating temperature from -40 to +75°C
- DIN rail mounting, 12 to 57 Vdc power supply

SWDL-H-2GPS-2USF-B	HARDENED DIN ETHERNET SWITCH, 2X SFP, 2X 10/100/1000BT WITH POE+ 30 W, POWER BOOSTER 12 À 57 VDC
SWDL-H-2GPSP-2USF-B	HARDENED DIN ETHERNET SWITCH, 2X SFP, 2X 10/100/1000BT WITH POE++ 60 W, POWER BOOSTER 12 À 57 VDC

The SWDL-H-2GPS is an elegant solution for the connection of IP cameras. It allows the realization of a multipoint architecture thanks to its two optical interfaces, possibly in single strand with a WDM module. Each station is powered by a 12 Vdc voltage with a simple battery backup, the switch itself raises the POE voltage to 57 Vdc with a power of 30 or 60W. This switch is automatic and unmanageable for a fast and secure start. The result of this solution is very economical thanks to a fast deployment and an optimized power management.





This catalog shows the most commonly used models.

Please consult CXR if you are looking for other options

FOC2

ETHERNET MEDIA CONVERTER

The FOC2 is a range of Ethernet media converters that includes Fast, Gigabit and 10Gigabit Ethernet products. The converter is offered with various integrated optics or SFP module options. The FOC2s can be used standalone or in a cluster in a 19" chassis with 18 slots, redundant power supplies and an SNMP management card. FOC2I's are manageable in the chassis and FOC2O's are remotely manageable, while FOC2's are not manageable but configured via dip switches.

- 2x Fast, Gigabit or 10 Gigabit Ethernet interfaces
- Compact size: 51x74x20 mm
- Supplied with 230 Vac power converter
- - Flow configuration, flow-control, by dipswitch
- FOC2 : non-manageable converter
- FOC2I : chassis managed converter
- FOC2O : remote managed converter in OAM
- Operating temperature from -10 to +50°C
- Option : wall mounting kit, DIN rail kit

FOC2-TGTX-USFP	No Manageable Media Converter, 10/100/1000BT to SFP dual rate 100FX and 1000FX
FOC2I-TGTX-USFP	Rack Manageable Media Converter SNMP, 10/100/1000BT to SFP dual rate 100FX and 1000FX
FOC2I-10GE-SFPP	Rack Manageable Media Converter SNMP, NBaseT (100M/GE/2.5GE/10GE) to SFP+ 10GE
FOC2I-SFPP-SFPP	Rack Manageable Media Converter SNMP, Two slots modules SFP+ dual rate GE and 10GE
FOC20-TGTX-USFP	Remote Manageable Media Converter, 10/100/1000BT to SFP dual rate 100FX and 1000FX
RACK-MEDIA2-18-xx	19'' 1.5U Chassis to Host and Power 18X No-Manageable FOC2 Converters. Different Power Supply options (-2A for 2X 230 Vac, -2D48 for 2X 48 Vdc)
RACK-MEDIA2-18SNMPxx	Chassis 19'' 1.5U to host and manage 18x converters FOC2I or FOCO. 2x slots power 48 Vdc or 110-230 Vac

OTHER CONVERTERS WITH INTEGRATED OPTICAL INTERFACE: PLEASE CONTACT CXR

FOCD-I

ETHERNET MEDIA CONVERTER

The FOCD-I is a range of ruggedized Ethernet media converters for industrial applications with a DIN rail mounting clip. The range includes both manageable and non-manageable converters, with POE option.

- 1x 10/100/1000BaseT interface
- small form factor: 35x93x105 mm
- Operating temperature de -20 à +60°C

FOCD-I-TGX-SFP	No Manageable Industrial Media Converter, 10/100/1000BT to SFP 1000FX
FOCMD-I-TGX-SFP	Manageable Industrial Media Converter, 10/100/1000BT to SFP 1000FX
FOCD-I-TGPS-SFP	No Manageable Industrial Media Converter, 10/100/1000BT with POE+ 30W to SFP 1000FX
FOCMD-I-TGPS-SFP	Eable Industrial Media Converter, 10/100/1000BT with POE+ 30W to SFP 1000FX

OTHER CONVERTERS WITH INTEGRATED OPTICAL INTERFACE OR HIGHER TEMPERATURE RANGE : PLEASE CONTACT CXR

CWDM-1U

The CWDM-1U is a passive CWDM multiplexer with 4 to 16 optical channels. This solution enables fiber to be used more efficiently, increase throughput, and seamlessly transmit multiple services up to 10 to 40 km depending on the throughput and performance of the end devices. The 20nm spaced channels support Gigabit, 10GE and 25GE flows.

PASSIVE MULTIPLEXER CWDM

- Number of channels: 4, 8, 10, 16
- Format 1U 19''
- Channel width: 0.8 nm
- Channel through-band: 0.11 nm
- Adjacent /non-adjacent isolation channel: >30/>40 dB
- Loss insertion 4/8/10/16 channels : <1.6/2.5/3/5.5dB
- Max power per channel: 500 mW
- Operating temperature from -30 to +70°C
- Dimensions: 480x210x44 mm

CWDM4-C13-C16-LC	CWDM MULTIPLEXER FROM 4 CHANNELS C13 TO C16 TO A MULTIPLEX, LC/UPC CONNECTORS
CWDM8-C11-C18-LC	8 CHANNELS CWDM MULTIPLEXER C11 TO C18 TO A MULTIPLEX, LC/UPC CONNECTORS
CWDM10-C09-C18-LC	10 CHANNELS CWDM MULTIPLEXER C09 TO C18 TO A MULTIPLEX, LC/UPC CONNECTORS
CWDM16-C1-C16-LC	16 CHANNELS CWDM MULTIPLEXER C11 TO C18 TO A MULTIPLEX, LC/UPC CONNECTORS

OTHER OPTIONS: PLEASE CONTACT CXR

DWDM-1U

The DWDM-1U is a passive DWDM multiplexer with 4 to 40 optical channels. This solution enables fiber optics to be used more efficiently, increase throughput, and seamlessly transmit multiple services up to several tens of kilometers, depending on the throughput and performance of the end devices. DWDM channels support data rates from Gigabit to 100 Gbps.

PASSIVE MULTIPLEXER DWDM

- Number of channels: 8, 16, 32, 40
- Format 1U 19''
- Channel width and bandwidth: 20nm et 7.5 nm
- Adjacent /non-adjacent isolation channel: >25/>40 dB
- Loss insertion 8/16/32/40 channel : <2.6/3.8/4.6/5dB
- Max power per channel: 500 mW
- Operating temperature from -10 à +80°C
- Dimensions : 480x210x44 mm

DWDM8-C21-C28-LC	8 CHANNELS CWDM MULTIPLEXER C21 TO C28 TO A MULTIPLEX, LC/UPC CONNECTORS
DWDM16-C21-C36-LC	16 CHANNELS CWDM MULTIPLEXER C21 TO C36 TO A MULTIPLEX, LC/UPC CONNECTORS
DWDM32-C21-C52-LC	32 CHANNELS CWDM MULTIPLEXER C21 TO C52 TO A MULTIPLEX, LC/UPC CONNECTORS
DWDM40-C21-C60-LC	40 CHANNELS CWDM MULTIPLEXER C21 TO C60 TO A MULTIPLEX, LC/UPC CONNECTORS

OTHER OPTIONS : PLEASE CONTACT CXR

MuxPonder-5000-1

The MuxPonder-5000-1 DCI/OTN is a 1U DCI WDM optoelectronic transmission chassis

Designed for Data Centre Interconnection (DCI), it offers high integration (optoelectronic integration), high bandwidth (25.6 Tbits/fibre), simple deployment (no complicated tuning), easy operation and maintenance (NETCONF/YANG) as well as security and reliability.

DWDM MULTIPLEXERS

- Chassis dimensions (H x W x D) 1U: 44 mm (H)×444 mm (W)×490 mm (D)
- Maximum capacity 1.6Tbit/sca
- Number of service card slots 4
- Nominal voltage range :
- 100 AC～130 V AC (50/60Hz)
- 200 V AC～240 V AC (50/60Hz)
- Maximum voltage range: 90 V AC～264 V AC (45Hz~65Hz)
- Typical power consumption Power consumption:
- < 550W (electrical layer at full power)
- Environment Operating temperature Short term: -5℃～+45℃; Long term: 0℃～40℃

MUXPONDER-5000-1	1U DCI CHASSIS (44 MM (H)×444 MM (W)×490 MM (D), 4 SERVICES SLOTS, 1 MAIN CONTROLLER, DUAL AC/HVDC/DC POWERS, 1+1 BACKUP AUTO SPEED FANS,1 CONSOLE AND 3 ETH MANAGEMENT PORTS, FULL POWER CONSUMPTION <550W, SUITABLE FOR 19'' CABINET 800MM OR DEEPER)

OTHER OPTIONS : PLEASE CONTACT CXR

MuxPonder-5000-2

DWDM MULTIPLEXERS

The MuxPonder-5000-2 DCI/OTN is a 2U DCI WDM optoelectronic transmission chassis

Designed for Data Centre Interconnection (DCI), it offers high integration (optoelectronic integration), high bandwidth (25.6 Tbits/fibre), simple deployment (no complicated tuning), easy operation and maintenance (NETCONF/YANG) as well as security and reliability.

- Chassis dimensions (H x W x D) 2U: 88 mm (H)×446 mm (W)×450 mm (D)
- Maximum capacity 3.2Tbit/s
- Number of service card slots 8
- Applicable cabinets 19" cabinet 600 mm deep or more
- Maximum voltage range: 90V AC～264V AC (45Hz~65Hz)
- Typical power consumption Power consumption: < 1100W (electrical layer at full load)
- Environment Operating temperature Short term: -5℃～+45℃; Long term: 0℃～40℃

MUXPONDER-5000-2	2U DCI CHASSIS (88 MM (H)×446 MM (W)×450 MM (D), 8 SERVICES SLOTS, 1 MAIN CONTROLLER, DUAL AC/HVDC/DC POWERS, 2+1 BACKUP AUTO SPEED FANS, 1 CONSOLE AND 3 ETH MANAGEMENT PORTS, FULL POWER CONSUMPTION <1100W, SUITABLE FOR 19" CABINET 600MM OR DEEPER）
MUXPONDER-5000-2-8	2U DCI CHASSIS (88 MM (H)×446 MM (W)×450 MM (D), 8 SERVICES SLOTS, 1 MAIN CONTROLLERS, DUAL AC/HVDC/DC POWERS, 2+1 BACKUP AUTO SPEED FANS, 1 CONSOLE AND 3 ETH MANAGEMENT PORTS, FULL POWER CONSUMPTION <1100W, SUITABLE FOR 19" CABINET 600MM OR DEEPER）
MUXPONDER-5000-2-2CPU	2U DCI CHASSIS (88 MM (H)×446 MM (W)×450 MM (D), 8 SERVICES SLOTS, 1+1 MAIN CONTROLLERS, DUAL AC/HVDC/DC POWERS, 2+1 BACKUP AUTO SPEED FANS, 1 CONSOLE AND 3 ETH MANAGEMENT PORTS, FULL POWER CONSUMPTION <1100W, SUITABLE FOR 19" CABINET 600MM OR DEEPER)

OTHER OPTIONS : PLEASE CONTACT CXR

DWDM OTN-CXR-6000-1

DWDM MULTIPLEXERS

Modèle ONT-CXR-6000 - Châssis rack WDM 1U

Châssis rack 1U, connectique face avant, avec 3 slots de cartes enfichables, 1 slot de carte de gestion de réseau ou de carte utilisateur, 1 slot de ventilateur et 2 slots d'alimentation.

Supporte tous les types de services WDM de 100 Mbit/s à 100 Gbit/s pour répondre aux exigences de l'accès multiservice.

- Product model : OTN-CXR-6000-1
- Equipment size : 1U: 44 mm (H)×442 mm (W)×220 mm (D)
- Service slots : 4 slots (with 1 slot for optional network management card)
- Mounting method: 19'' Standard cabinet installation
- Operating temperature range: -5℃～50℃(Typical)
- Storage temperature: -40℃～85℃
- Heat dissipation : Front 1 fan, single board slot, supporting hot swap
- Power supply mode : front 2 single board power supply slots, AC 110V/220V or DC -48 V single board power supply support optional, 1+1 hot-swap backup.
- Power consumption: 120 W (maximum consumption at full power)

OTN-CXR-6000-1	1U WDM CHASSIS（220 × 442 × 44MM, SUITABLE FOR 19"OR 23"CABINET, ETSI 300MM/600MM CABINETS, 4 SERVICE SLOTS, DUAL AC/DC POWERS, FULL POWER CONSUMPTION <120W）

OTHER OPTIONS : PLEASE CONTACT CXR

DWDM OTN-CXR-6000-2

Model ONT-CXR-6000 - 2U WDM rack chassis

2U rack-mount chassis, front panel connectivity, with 7 plug-in card slots, 1 network management card or user card slot, 1 fan slot and 2 power supply slots

Supports all types of WDM services from 100 Mbit/s to 100 Gbit/s to meet multi-service access requirements.

DWDM MULTIPLEXERS

- Product model : OTN-CXR-6000-2
- Equipment size: 2U: 88 mm (H)×442 mm (W)×220 mm (D)
- Service slots: 8 slots (with 1 slot for optional network management card)
- Mounting method: 19'' Standard cabinet installation
- Operating temperature range: -5℃～50℃(Typical)
- Storage temperature: -40℃～85℃
- Heat dissipation: Front 1 fan, single board slot, supporting hot swap
- Power supply mode: front 2 single board power supply slots, AC 110V/220V or DC -48 V single board power supply support optional, 1+1 hot-swap backup.
- Power consumption: 180 W (maximum consumption at full power)

OTN-CXR-6000-2	2U WDM CHASSIS（220 × 442 × 88 MM, SUITABLE FOR 19"OR 23"CABINET, ETSI 300MM/600MM CABINETS, 8 SERVICE SLOTS, DUAL AC/DC POWERS, FULL POWER CONSUMPTION <180W）

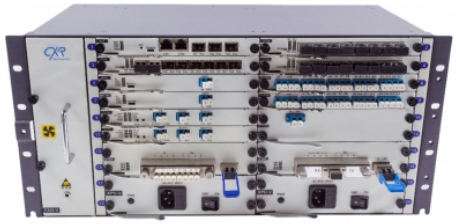
OTHER OPTIONS : PLEASE CONTACT CXR

DWDM OTN-CXR-6000-5

Model ONT-CXR-6000 - 5U WDM rack chassis

5U rack-mount chassis, front-facing connectors, with 15 plug-in card slots, 1 network management card or user card slot, 1 fan slot and 2 power supply slots. Supports all types of WDM services from 100 Mbit/s to 100 Gbit/s to meet multi-service access requirements.

DWDM MULTIPLEXERS



- Product model : OTN-CXR-6000-5
- Equipment size: 5U: 220 mm (H)×442 mm (W)×220 mm (D)
- Service slots: 16 slots (with 1 slot for optional network management card)
- Mounting method: 19'' Standard cabinet installation
- Operating temperature range: -5℃～50℃ (typical)
- Storage temperature: -40℃～85℃
- Heat dissipation: Front 1 fan, single board slot, supporting hot swap
- Power supply mode: front 2 single board power supply slots, AC 110V/220V or DC -48 V single board power supply support optional, 1+1 hot-swap backup.
- Power consumption: 450 W (maximum consumption at full power)

OTN-CXR-6000-5	5U WDM CHASSIS（220 × 442 × 220 MM, SUITABLE FOR 19"OR 23"CABINET, ETSI 300MM/600MM CABINETS, 16 SERVICE SLOTS, DUAL AC/DC POWERS, FULL POWER CONSUMPTION <450W）

OTHER OPTIONS : PLEASE CONTACT CXR

SpeederLAN-Bis-GE

The SpeederLan-Bis-GE provides Ethernet services over 4 or 8 copper pairs in EFM SHDSL.Bis mode with up to 15 Mbps Ethernet bandwidth per pair. It provides point-to-point connections for a total aggregation rate of 120 Mbps Ethernet, in bus or ring mode over 1 to 4 pairs and in star or mini-DSLAM IP mode over 8 pairs.

ETHERNET AGRÉGATION EFM

- 4 or 8x SHDSL.Bis interfaces
- Maximum Ethernet bandwidth: 60 or 120 Mbps
- 4 Ethernet 10/100/1000BaseT ports
- Topologies : PàP, RSTP bus or ring, star or mini-DSLAM IP

SPEEDERLAN-BIS-GE-4C	ETHERNET EXTENSION BY SHDSL.BIS AGGREGATION, 4X SHDSL.BIS PAIRS, 48VDC POWER INPUT
SPEEDERLAN-BIS-GE-8C	ETHERNET EXTENSION BY SHDSL.BIS AGGREGATION, 8X SHDSL.BIS PAIRS, 48VDC POWER INPUT

CopperWay-Bis-2TTX

The CopperWay-Bis-2TTX provides distribution of 2x Ethernet interfaces and one asynchronous serial interface over existing twisted pair cable in transportation or energy infrastructures. The two SHDSL.Bis interfaces allow for multipoint bus or ring topologies. Network resiliency is ensured by the RSTP protocol and an integrated bypass relay.

ETHERNET & RS232 DISTRIBUTION

- 2x SHDSL.BIS interfaces, Est / Ouest, 15Mbps per pair
- 2x ports Ethernet 10/100BaseT
- 1x asynchronous serial interface RS232/RS485
- 12-24 Vdc power supply

COPPERWAY-BIS-2TTX	ETHERNET AND RS232 DISTRIBUTION ON 2X COPPER PAIRS IN SHDSL.BIS 15 MBPS, 12-24 VDC POWER SUPPLY

CopperWay-Bis-GE

The CopperWay-Bis-GE provides distribution of 4x Ethernet and 4x asynchronous serial interfaces over a mixed infrastructure of twisted pair and fiber cables at 100 Mbps or Gigabit Ethernet. It provides a high density of communication interfaces of the stations of a copper and fiber optic cable network. The POE power supply ensures the connection of POE equipment such as IP cameras.

ETHERNET & RS232 HD DISTRIBUTION

- 2x interfaces with 1 or 2 SHDSL.BIS pairs, East / West,
- 15Mbps per pair or 30 Mbps per access
- 2x SFP 1000FX & 2x SFP 100FX
- 4x ports Ethernet 10/100BaseT with POE+
- 4x asynchronous serial interface RS232/RS485
- 12-24 Vdc power supply

COPPERWAY-BIS-GE-2W	ETHERNET DISTRIBUTION ON 2X 1 SHDSL.BIS PAIR, 4X SFP MODULES, 4X ETHERNET PORTS, 2X RS232/RS485 INTERFACES
COPPERWAY-BIS-GE-4W	ETHERNET DISTRIBUTION ON 2X 2 PAIR SHDSL.BIS, 4X SFP MODULES, 4X POE ETHERNET PORTS, 4X RS232/RS485 INTERFACES
FIBERWAY-GE	ETHERNET DISTRIBUTION ON 4X SFP MODULES, 4X POE ETHERNET PORTS, 4X RS232/RS485 INTERFACES

CopperWay-Bis-HV3

The CopperWay-Bis-HV3 provides Ethernet and RS232 interface distribution on 6 to 20 KVac power distribution substation pilot cables. Its design incorporates the galvanic isolation required for HV/LV substations, which improves safety and commissioning. The CopperWay-Bis-HV3 is a Level 2 bridge and a Level 3 router. It features advanced cybersecurity functions such as IPsec IKE v2 tunnels, periodic X.509 certificate exchange in SCEP, data and software authentication and security through Secure-Element and Secure-Boot.

ETHERNET IEC-61850 DISTRIBUTION

- 2x SHDSL.BIS interfaces, East / West, 15Mbps per pair
- Galvanic insulation for HV/LV substation 20KVac
- 2x SFP 1000FX & 100FX
- 6x ports Ethernet 10/100BaseT
- 1x asynchronous serial interface RS232
- VLAN, QoS, RSTP, 802.1X
- IPsec, IKE v2, GRE, X.509, SCEP, IP v4/v6
- 12-24 Vdc power supply
- IEC-61850-3

COPPERWAY-BIS-HV3	ETHERNET DISTRIBUTION ON 2X 1 SHDSL.BIS PAIR, 2X SFP MODULES, 6X ETHERNET PORTS, 1X RS232/RS485 INTERFACES

CopperWay-Bis-6TTX

The CopperWay-Bis-6TTX is a fiber optic and copper Add-and-Drop Ethernet Access Device that delivers high speed Ethernet services on existing copper pairs and fiber optic infrastructure.

Intelligent transport network: monitoring, Protection, Remote Control, Metering and Administration.

CopperWay-Bis-6TTX connects all the equipment over a communication infrastructure made of fiber optic cables to the data center. It delivers many Ethernet ports to connect all systems. It embeds very strong security features including IPsec, X509 authentication and a hardware secure element.

ETHERNET DISTRIBUTION

- 2x interfaces, East / West
- SHDSL.Bis: TC-PAM 16/32/64/128
- Throughput: Nx64kbps, 192 kbps to 15.4 Mbps
- EFM Encapsulation, 802.3ah
- Impedance 120 Ohms
- Hardware resiliency : by-pass relay
- Screw bloc
- Compliance: CE, EN-62368-1, EN-61000-6-2, EN-61000-6-4
- MTBF : 242,000 Hours

CWAY-BIS-6TTX-MC2	COPPERWAY-BIS-6TTX SECURE ROUTER
PROTEC-1DSL-RJ45	**LIGHTNING PROTECTION, 2X KITS FOR EACH COPPERWAY**
SFP-GSX-MM	GIGABIT SFP MODULE, MULTI-MODE 850 NM, 500M, LC CONNECTOR
SFP-GLX-SM20/40	**GE SFP MODULE, SINGLE-MODE 1310 NM, 20 OR 40 KM, LC CONNECTOR**
SFP-GLX-SM80	GE SFP MODULE, SINGLE-MODE 1550 NM, 80 KM, LC CONNECTOR
PS-DIN-12V-40/75/120W	**DIN POWER SUPPLY, 110-230 VAC TO 12 VDC, POWER 40, 75 OR 120 W**

CopperWay-Bis-4TTX

The CopperWay-Bis-4TTX is an access router delivering Ethernet and digital interfaces over a mixed network of pilot cables and fiber optics.

Intelligent transport network: monitoring, Protection, Remote Control, Metering and Administration.

The CopperWay-Bis-4TTX connects equipment with Ethernet interfaces at every point of a copper pair and/or fiber optic infrastructure. It provides all the Ethernet communication interfaces required by business applications. It provides a high level of hardware and software security for these critical applications.

ETHERNET DISTRIBUTION

- 2x interfaces,
- SHDSL.Bis: TC-PAM 16/32/64/128
- Data rate: Nx64kbps, 192 kbps at 15.4 Mbps
- EFM Encapsulation, 802.3ah
- Impedance 120 Ohms
- Hardware resiliency via by-pass relay
- Screw terminal connection
- Conformity: CE, EN-62368-1, EN-61000-6-2, EN-61000-6-4
- MTBF : 242,000 Hours

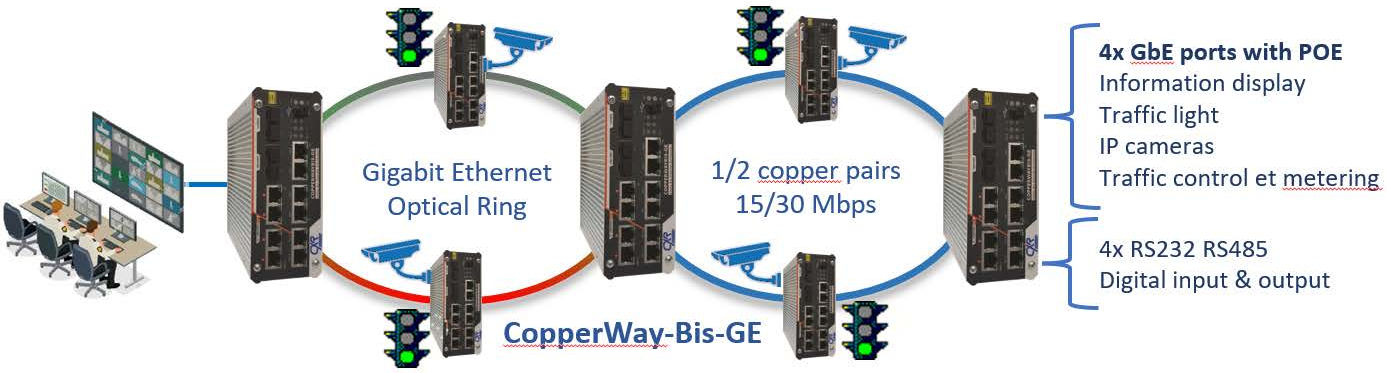
CWAY-BIS-6TTX-MC2	COPPERWAY-BIS-6TTX SECURE ROUTER
PROTEC-1DSL-RJ45	**LIGHTNING PROTECTION, 2X KITS FOR EACH COPPERWAY**
SFP-GSX-MM	GIGABIT SFP MODULE, MULTI-MODE 850 NM, 500M, LC CONNECTOR
SFP-GLX-SM20/40	**GE SFP MODULE, SINGLE-MODE 1310 NM, 20 OR 40 KM, LC CONNECTOR**
SFP-GLX-SM80	GE SFP MODULE, SINGLE-MODE 1550 NM, 80 KM, LC CONNECTOR
PS-DIN-12V-40/75/120W	**DIN POWER SUPPLY, 110-230 VAC TO 12 VDC, POWER 40, 75 OR 120 W**

Ethernet and RS232 distribution on Copper and Fiber Optic pairs

The CopperWay range allows the beneficial reuse of copper pair cables that exist in many infrastructures such as **Transport and traffic signal management networks**:

CopperWay provides several Mbps of Ethernet bandwidths to carry all the application flows of traffic light controllers, variable message signs, retractable bollard control, video cameras, etc.

Energy, water or electricity networks: CopperWay also distributes Ethernet and serial access along any infrastructure organized as a multipoint bus and equipped with existing cable.



PT-7860A

MULTIPLEXER PTN
MPLS-TP & PSEUDOWIRE

The PT-7860A is an MPLS-TP and CE2.0 PTN 10GE packet multiplexer that provides Ethernet communication, SDH/PDH TDM service emulation and Sync-e / PTP synchronization. The base system has 6x SFP+ 10GE, 4x SFP GE and 8 or 16x E1 2 Mbps interfaces. Two slots accommodate 8xGE, 32xE1 or STM-1/STM-4 Ethernet cards. The PT-7860A provides Ethernet VPN services over MPLS-TP and Carrier, and Pseudowire services for migration from SDH/PDH networks to PTN networks.

- MPLS-TP & Carrier Ethernet CE2.0
- Services Pseudowire, CESoP, SAToP, MSP 1+1
- 6x SFP+ 10GE, 4x SFP GE, 8 or 16x E1 G703/G704
- MPLS-TP, VPWS, VPLS, H-VPLS, MPLS OAM, LSP 1+1
- CE2.0, E-LINE, E-TREE, E-LAN, G.8031, CE OAM
- Synchronization Sync-e, PTP 1588
- 1x or 2x 48 Vdc modular power supplies
- Modular cards: 8x GE, 8xGE POE+, 32x E1, 2xSTM-1 or 1xSTM-4

PT7860A-16TE1	MULTIPLEXER PTN 7860 WITH 16X INTERFACES E1 G703/G704
OPTIONS	PLEASE CONSULT CXR

PT-7820

SWITCH CE2.0 ET MPLS-TP

The PT-7820 is a 10 Gigabit Ethernet switch with advanced Carrier Ethernet and MPLS-TP features for energy, transportation and telecom infrastructure networks. It features 8x 10Gigabit ports and 30 or 48 Gigabit Ethernet ports. The PT-7820 provides connected mode communications to access or aggregate Carrier Ethernet or MPLS-TP networks as well as IEEE 1588 PTP and SyncE synchronization. The PT-7820 provides Layer 3 protocols, OSPF and VRRP.

- Carrier Ethernet, MEF 8/9/14,
- MPLS-TP, VPLS, H-VPLS, G.8113.2
- 802.3ah, 802.1ag, Y.1731
- IEEE 1588 PTP, SyncE
- ERPS G.8032
- Chassis 1U/19''
- 1x or 2x 230 Vac and/or 48 Vdc modular power supply

PT-7820-48T	SWITCH 10GIGABIT CARRIER ETHERNET & MPLS-TP, 8X SFP+ 10GE & 48X GE PORTS
PT-7820-24S	SWITCH 10GIGABIT CARRIER ETHERNET & MPLS-TP, 8X SFP+ 10GE, 24X PORTS GE SFP ET 8X GE RJ45 PORTS
PT7820-SD48	POWER SUPPLY CARD 48 VDC FOR PT-7820
PT-7820-SA	POWER SUPPLY CARD 110-230 VAC FOR PT-7820
SYNCE, PTP 1588, POE	PLEASE CONSULT CXR FOR PT-7820 OPTIONS

HX-9400R-PTN

SDH AND PTN 10GE MULTIPLEXER

The HX-9400R is a modular SDH STM-1 to STM-16 multiplexer scalable to 10GE MPLS-TP with VPN services and Pseudowire encapsulation of SDH and PDH circuits. It is a high density TDM and Ethernet multiservice multiplexer with VC12/VC13/VC4 switching. The HX9400R supports resiliency of TDM cards and circuits in SNCP and MSP. The HX9400R simultaneously performs SDH and MPLS-TP communications to support any migration scenario from SDH networks to new Ethernet packet technologies.

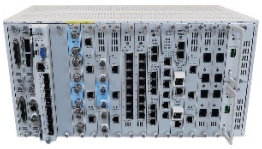
- SDH : STM1, STM-4, STM-16
- MPLS-TP, 3x SFP+ 10GE et 8x SFP GE
- SDH : 2x STM-16/4/1 par CPU, affluents 2x STM-16 or 4x STM-4 or 6x STM-1
- Capacity PDH : 504x E1 G.704
- 8x slots for Ethernet service cards, SDH, or 16/32/63x E1 G.704, or Pseudowire CESoP SAToP
- 1x or 2x power supply cards 230 Vac or 48 Vdc

HX9400R-PTN-CHPA	HX9400R MULTIPLEXER CHASSIS WITH SUPPORT FOR SDH AND PTN MPLS-TP / CE2.0 SERVICES, 8X SLOTS FOR MODULE CARDS
HX9400R-PTN-CC16	2X STM1/4/16 MULTIPLEXING AND MPLS-TP SWITCHING CPU CARD WITH 100GBPS CAPACITY
HX9400R-PTN-CC4	2X STM1/4 MULTIPLEXING AND MPLS-TP SWITCHING CPU CARD WITH 100GBPS CAPACITY
HX9400R-PTN10G	CARTE MPLS-TP ET CE2.0, 3X INTERFACES SFP+ 10GE ET 8X SFP GE
AUTRES CARTES MODULAIRES	PLEASE CONSULT CXR

QX-3440

PDH MULTISERVICE MULTIPLEXER

The QX-3440 is a high density modular PDH multiplexer. It offers 64x E1 and 1,984 G.704 IT patching capacity. The QX-3440 is a multi-service multiplexer that accommodates 16x E1, FXO/FXS/E&M voice and VoIP service cards, RS232/485 serial, X21/V35 synchronous, Ethernet, C37.94, I/O relay and Pseudowire CESoP and SAToP. The QX-3440 is a fully redundant architecture at the hardware level (power supply, CPU and E1 boards) and at the G.704 circuit level in MSP, UPSR or SNCP protection.



QX3440-CHPAa
CPU-CCPB

- Modular chassis: 2x CPU slots and 16x tributary slots
- 64x E1 and 1984 IT G.704 patch capacity
- 16x slots for E1, Ethernet, voice service cards FXO/FXS/E&M et VoIP, RS232/485, X21/V35, C37.94, relay I/O, Pseudowire CESoP SAToP
- 2x slots for 230 Vac or 48 Vdc power supply cards

QX3440-A-CHPAa	MUX QX3440 5U FOR CCPB , 2X CPU SLOTS, 2X POWER SUPPLIES, 12X LARGE AND 4X MINI SLOTS PDH CARDS
QX3440-C-CHPAa	MUX QX3440-C 3U FOR CCPB, 2X CPU SLOTS, 2X POWER SUPPLIES, 5X LARGE AND 4X MINI SLOTS PDH CARDS
CARTES MODULAIRES	PLEASE CONSULT CXR

HX-9500R-PTN

MULTIPLEXEUR SDH+PDH ET PTN 10GE

The HX-9500R is a modular hybrid SDH STM-1/STM-4 and PDH multiplexer with QX-3440 low speed interface cards of Ethernet, E1, voice (FXO/FXS/E&M), serial RS232, etc. It is an integrated solution for substations connected to an SDH broadband ring for connecting systems with traditional RS232, voice, etc. interfaces.

The HX-9500R also provides migration of these applications to packet networks with Pseudowire CESoP / SAToP cards, and with MPLS-TP to 10GE cards.

- 2x CPU SDH STM-4 or PTN MPLS-TP & STM-4
- 4x slots SDH or PTN : STM-1/4, Ethernet, 63x E1
- 6x slots PDH : E1, Ethernet, RS232, FXO/FXS, E&M, VoIP, C37.94, X21/V35, SHDSL, relay I/O
- MPLS-TP, 3x SFP+ 10GE & 8x SFP GE
- 2x slots for 230 Vac or 48 Vdc power cards

HX9500R-PTN	HX9500R MULTIPLEXER CHASSIS WITH SDH SERVICES SUPPORT, 8X SLOTS FOR SDH, ETHERNET AND NX E1 CARDS
HX9500R-PTN-CHPA	HX9500R MULTIPLEXER CHASSIS WITH SUPPORT FOR SDH AND PTN MPLS-TP / CE2.0 SERVICES, 8X SLOTS FOR MODULE CARDS
HX9500R-PTN-CC16	2X STM1/4/16 MULTIPLEXING AND MPLS-TP SWITCHING CPU CARD WITH 100GBPS CAPACITY
HX9500R-PTN-cc4	2X STM1/4 MULTIPLEXING AND MPLS-TP SWITCHING CPU CARD WITH 100GBPS CAPACITY
HX9500R-PTN10G	MPLS-TP AND CE2.0 CARDS, 3X SFP+ 10GE AND 8X SFP GE INTERFACES
OTHER MODULAR CARDS	PLEASE CONSULT CXR

Migration of SDH PDH Networks to 10 Gigabit Packet Transport Network MPLS-TP

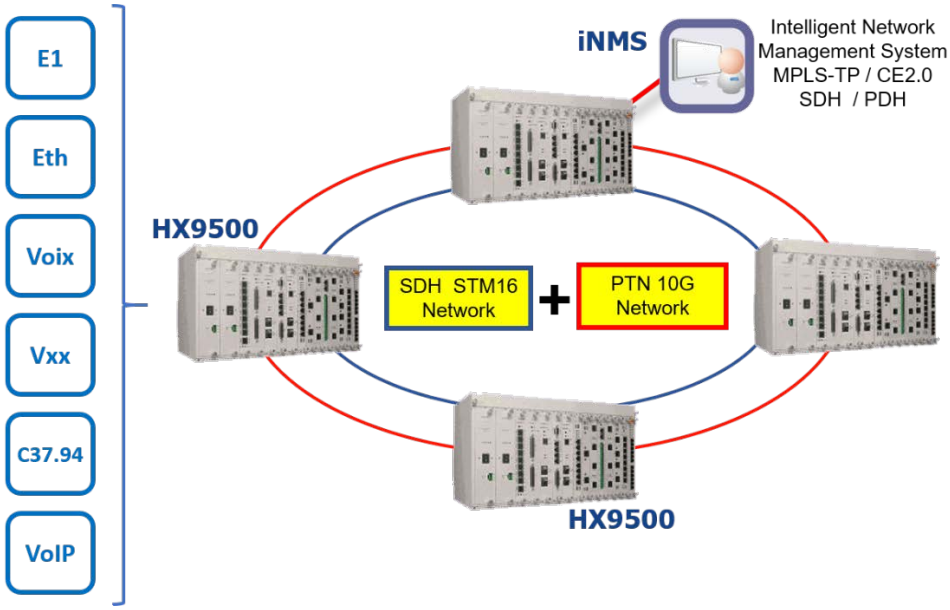
The HX-9500 and QX-3440 are particularly designed for critical infrastructure networks such as railways, power distribution and transmission networks, oil & gas networks.

These networks rely on SDH/PDH technologies for their robustness and reliability due to guaranteed bandwidth and very fast resiliency of the circuit protection mechanisms.

The migration of these networks is based on the MPLS-TP which allows to go up in flow, to create native IP services without limitation of bandwidth, while preserving mechanisms of resilience and control of the bandwidth.

The HX-9500 is distinguished by the integration in a single high-density chassis, of all the services necessary in a station of such a network:

- Multiple SDH network interfaces from STM-1 to STM-16
- Multiple Gigabit and 10 Gigabit MPLS-T network interfaces
- Native Ethernet IP services
- Service cards of all types: Ethernet, TDM voice and VoIP, serial data, C37.94, E1 G704 protection relays, etc.
- Redundant architecture for power supplies, processors, network interfaces
- Resiliency : 1+1 protection, MPLS LSP protection, G.8032



The **iNMS software platform** is a key component of MPLT-TP and SDH infrastructure networks. iNMS provides much more than just management functions for these networks:

- Automatic configuration and activation of end-to-end communication circuits
- Manage PDH, SDH, MPLS-TP, TDM-over-IP, Carrier Ethernet CE2.0 services
- Geographic mapping of the communication and synchronization network
- Alarm management by equipment, by circuit
- Equipment and circuit diagnostic, test and activation tools
- Performance measurement by circuit
- Resilience: database and server replication
- Report generation
- Support for 50 simultaneous administration sessions

CIP-2E1T1

The CIP-2T1 is a TDM over IP gateway that provides circuit emulation services for two G703/G704 E1 interfaces over an Ethernet - IP packet network. The encapsulation of the TDM flow allows many point-to-point or multipoint combinations over multiple circuits that are assigned different time slots of the E1 interfaces - up to 64 circuits. For added versatility, the CIP-2E1T1 features 2 RJ45 Ethernet interfaces and an SFP port as well as various 48 VDC or 5 VDC power supply options to an external 230 VAC converter.

GATEWAY TDM OVER IP 2X E1 G704

- 2x E1/T1, G.703, G.704, 75 / 120 Ohms interfaces
- 2x Ethernet ports 10/100BT
- 1x Ethernet optical port 100FX, SFP slots
- 48 Vdc power supply or 110-230 Vac converter
- Circuit emulation : CES RFC 5086, SAT RFC 4553, AAL1 RFC 5087
- Size 170x120x41 mm

CIP-2E1T1-RJ-V	TDM Over IP Gateway for 2X E1/T1 Interfaces on RJ45 sockets, External 230 VAC Converter
CIP-2E1T1-RJ-C	TDM Over IP Gateway for 2X E1/T1 Interfaces on RJ45 sockets, 48 VDC Power Supply
CIP-2E1T1-MC	TDM Over IP Gateway for 2X E1/T1 Interfaces on RJ45 sockets and BNC sockets, 48 VDC Supply

FO-4E1T1-GE

GATEWAY TDM OVER IP 4X E1 G704

The FO-4E1T1-GE is a TDM-over-IP gateway which provides circuit emulation services for 4 x E1 G703/G704 interfaces over an Ethernet - IP network. The Gigabit Ethernet ports enable a variety of topologies, including high-speed point-to-point links with 1+1 protection over fiber, or resilient daisy chain or ring. This industrial design product in a metal enclosure integrates easily with its power supply and 19" rack mounting options.

- 4x E1/T1, G.703, G.704, 75 / 120 Ohms interfaces
- 2x Ethernet ports 10/100/1000BT
- 2x optical ports 100FX/1000FX – SFP slots
- 48 Vdc power supply or 110-230 Vacc converter
- Circuit emulation : CES RFC 5086, SAT RFC 4553, AAL1 RFC 5087
- Size 218x124x44 mm

FO-4E1T1-GE-R-C	TDM Over IP Gateway for 4X E1/T1 Interfaces on RJ45 sockets, 48 VDC Power Supply
FO-4E1T1-GE-R-V	TDM Over IP Gateway for 2X E1/T1 Interfaces on RJ45 sockets, 48 VDC Power Supply and External 110-230 VAC Converter
FO-4E1T1-GE-B-V	TDM Over IP Gateway for 2X E1/T1 Interfaces on BNC sockets, 48 VDC Power Supply and External 110-230 VAC Converter

CIP-Serial

GATEWAY X21/V35/RS232 OVER IP

The CIP-Serial is a TDM over IP gateway that provides circuit emulation services for a 64 kbps to 4 Mbps synchronous serial interface. The interface can be operated with any type of synchronous protocol, including unstructured streams from video encoders or data encryptors. The electrical interface can be configured by a software parameter as X21, RS232, V35 or V36. An adapter cable with X21 or V35 connectors is available as an option.

- 1x synchronous multi-protocol serial interface RS232 / X21 / V35 on DB25 connector type RS530
- 2x Ethernet ports 10/100BT
- 1x optical SFP port 100FX
- 24-48 Vdc power supply or 110-230 Vac converter
- Circuit emulation: SAT RFC 4553, AAL1 RFC 5087
- Size 170x120x41 mm

CIP-SE11-C	TDM Over IP Gateway for 1X Synchronous Serial Interface, X21 cable, 48 VDC Power Supply
CIP-SE11-V	TDM Over IP Gateway for 1X Synchronous Serial Interface, X21 cable, External 230 VAC Converter
CIP-SE28-V	TDM Over IP Gateway for 1X Synchronous Serial Interface, RS232/V24/V28 cable, EXTERNAL 230 VAC Converter

OTHER INTERFACE OR POWER SUPPLY OPTIONS, PLEASE CONTACT CXR

CIP-ALL

GATEWAY E&M/FXO/FXS OVER IP

The CIP-ALL is a TDM over IP gateway that provides circuit emulation services for four voice interfaces of type FXS, FXO or E&M. The E&M interface allows to emulate a 2/4 wire dedicated link. The CIP-ALL is designed to connect several equipments in a remote station and for that it has 4 Ethernet RJ45 ports, one RS232 port in asynchronous conversion over IP and one E1 G704 port in TDM over IP mode for the access of a multiplexer or other G.704 system. The CIP-ALL provides 2 optical gigabit Ethernet interfaces for point-to-point or multipoint connections.

- 4 x voice interfaces in 300-3400 Hz band, FXO, FXS, E&M 2/4 wires, RJ11 connectors
- 1 x RS232 interface with asynchronous conversion to IP
- 1 x E1 G703/G704 interface, CES or SAT over Packet mode, RJ45 and BNC sockets: optional
- 4x Ethernet ports 10/100BT
- 2x 100FX / 1000FX optical ports for SFP modules48 Vdc power supply
- Circuit emulation: CES RFC 5086, SAT RFC 4553, AAL1 RFC 5087
- Size 220x140x44 mm

CIP-4EM-C1	TDM Over IP Gateway for 4X 2/4 Wire E&M Voice Interfaces, 1X RS232 Interface, 48 VDC Power Supply
CIP-4S-C1	TDM Over IP Gateway for 4X FXS Voice Interfaces, 1X RS232 Interface, 48 VDC Power Supply
CIP-4O-C1	TDM Over IP Gateway for 4X FXO Voice Interfaces, 1X RS232 Interface, 48 VDC Power Supply

OTHER INTERFACE OR POWER SUPPLY OPTIONS, PLEASE CONTACT CXR

CIP-6704

GATEWAY TDM OVER IP MODULAIRE

The CIP-6704 is a modular TDM over IP gateway that can be adapted to any need thanks to a wide range of TDM cards - RS232, X21, 4x FXO/FXS/E&M. The CIP-6704 has 2 standard E1/T1 G704 interfaces, 2 gigabit Ethernet ports and 2 optical ports for Gigabit Ethernet SFP modules. The CIP-6704 is powered by 1 or 2 redundant 48 Vdc modules. It receives a SyncE option for synchronization needs, for example 4G networks.

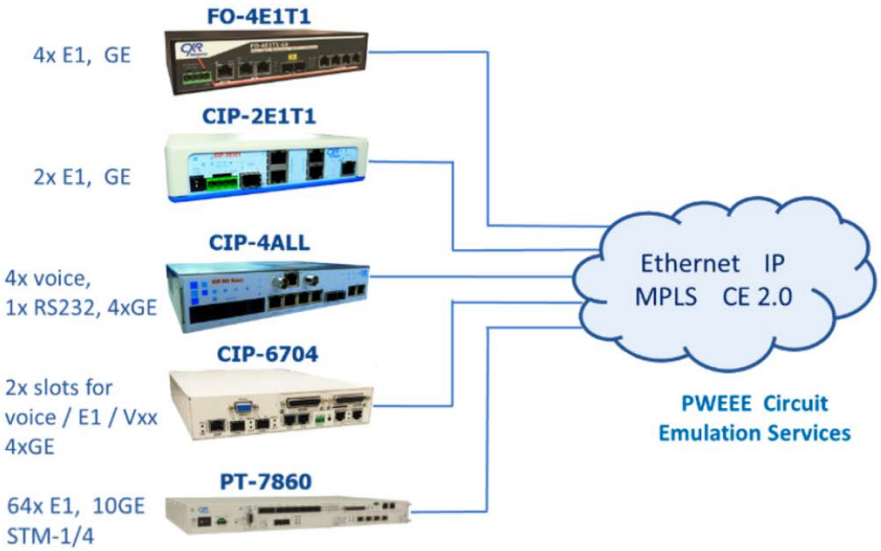
- 2x E1/T1 G703/G704 interfaces
- 2x Ethernet ports 10/100/1000BT
- 2x 100FX / 1000FX optical SFP ports
- 2x slot for modules RS232, X21, V35, 4xFXO, 4xFXS, 4xE&M
- 2x 48 Vdc power supply slots
- Circuit emulation: CES RFC 5086, SAT RFC 4553
- Size 213x290x41 mm

CIP-6704A	TDM OVER IP GATEWAY, 4X GIGABIT Ethernet Ports, 2X Modular Slots
CIP-6704A-SYNCE	TDM OVER IP GATEWAY with Synce, 4X GIGABIT Ethernet Ports, 2X Modular Slots

INTERFACE AND POWER SUPPLY OPTIONS, PLEASE CONTACT CXR

Migration of SDH-PDH Networks to Service Emulation on Packet Networks

The range of TDM over IP and MPLS-TP gateways and multiplexers enables the migration and maintenance of infrastructures initially based on TDM, PDH and SDH architectures.



GP-2500

The GP-2500 is a GPON OLT that delivers 8 or 16x GPON interfaces to connect to 2,048 Internet subscribers in Triple-Play Internet, voice and video services. The GP-2500 features 8 Ethernet Uplink interfaces, 4x Combo GE and 4x SFP+ 10GE. It embeds Layer 2 and Layer 3 protocols with full subscriber throughput and QoS control capabilities. The GP-2500 is a compact industrial grade device with 2x redundant power supply slots.

OLT GPON

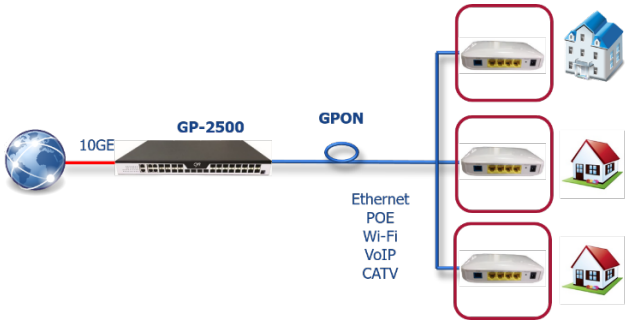
- 8x or 16x GPON, G.984, G.988 interfaces
- 4x 10 Gigabit Ethernet SFP+ interfaces
- 4x Gigabit Ethernet interfaces, RJ45 and SFP combo
- Protocols: VLAN, RSTP, LACP, QoS, SLA, Provider-Bridge, IGMP Snooping, RIP, OSPF, ACL
- SNMP, http, Ssh manageable
- 1U/19'' case
- 2x 48 Vdc and/or 110-230 Vac power supply slots

GP-2508	OLT GPON, 8X Interfaces GPON, 1X Module Alimentation 110-230 VAC
GP-2516	OLT GPON, 16X Interfaces GPON, 1X Module Alimentation 110-230 VAC
SFP-GP-OLT-SM20H	GPON CLASS C+ Optical SFP Module for a 20 KM budget
GP2500-AC	Power Supply Module 110-230 VAC
GP2500-DC	48 VDC Power Supply Module

GP250

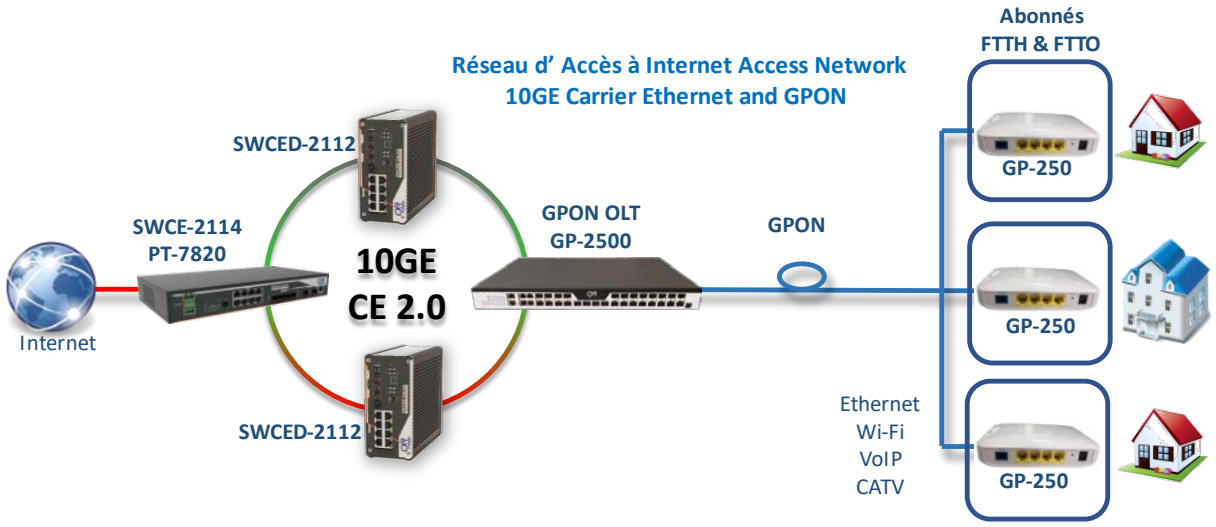
The ONU GPON range associated with the OLT GP-2500 provides all the necessary options for residential and professional subscribers of a high-speed Internet access network over optical fiber. These interfaces are Ethernet, POE, Wi-Fi, VoIP, TV. The GP250 family of products allows for quick installation at the subscriber's location. Their design and features allow ISPs to reduce their OPEX and CAPEX costs.

ONU GPON



GP251	ONT GPON, 1X GIGABIT Ethernet Interface, 230 VAC Power Converter
GP253	ONT Router GPON, 4X Interfaces GE, WI-FI 802.11AC, 2X Voip RJ11, Power Converter 12 VAC / 230 VAC
GP254	ONT Router GPON, 4X Interfaces GE, WI-FI 802.11BGN, 2X Voip RJ11, 1X CATV RF, Converter 12 VDC / 230 VAC
GP255	ONT Bridge GPON, 4X Interfaces GE with POE+ 30W 802.3AT, Converter 54 VDC / 230 VAC
GP256	ONT Router GPON, 4X Interfaces GE, WI-FI 802.11BGN, 2X VOIP RJ11, 1X USB HOST, Converter 12 VDC / 230 VAC

Internet Access Network OTN/MPLS-TP/CE2.0 and GPON FTTH-FTTO



DSM5616

DSLAM ADSL2+ VDSL2 SDSL

The DSM-5616 is an IP DSLAM and MSAN multiservice access node that provides high-speed Internet access from an Ethernet or GPON access network. The subscriber tributaries are Ethernet, ADSL2+, VDSL2 or SHDLS. Its high-density cards allow to connect up to 256 subscribers in ADSL2+.

- 2U/19'' chassis, 4x subscriber card slots
- 1x 230 Vac or 2x 48 Vdc power supply card
- 1x Uplink Gigabit Ethernet port, Combo SFP & RJ45
- 1x Uplink GPON G.984 port
- VLAN, Q-in-Q, QoS, PPPoA/PPPoE, IGMP v3, Firewall

DSM5616-AC	DSLAM DSM5616 CHASSIS WITH 110-230 VAC POWER SUPPLY, 4X SLOTS FOR ADSL/VDSL/ETHERNET CARDS
DSM5616-2DC	DSLAM DSM5616 CHASSIS WITH 2X 48 VDC POWER SUPPLIES, 4X SLOTS FOR ADSL/VDSL/ETHERNET CARDS
DSM5616-32ADSL2	32X CHANNEL ADSL2+ CARD WITH TELEPHONE SPLITTER
DSM5616-32VDSL2	32X VDSL2 CHANNEL CARD, PROFILES 17A/12B/8D/8C/8A, WITH TELEPHONE SPLITTER
DSM5616-16VDSL2-30A	16X VDSL2 CHANNEL CARD, PROFILES 30A/17A/12B/8D/8C/8A, WITH TELEPHONE SPLITTER
DSM5616-16SHDSL	16X SHDSL.BIS INTERFACE CARD, PTN OR ATM MODE, 2/3/4 PAIR BONDING

ADR-4TTX-WFN30

CPE ROUTER ADSL2+

The VDR-4TTX-WFN is a VDSL2 router with ADSL2+ fallback with 4 Ethernet interfaces and a Wi-Fi Access Point with 300 Mbps bandwidth and 4 SSIDs. It supports VDSL Profiles 30a to 8a to provide a maximum bandwidth of 100/100 Mbps. The VDR-4TTX-WFN is compatible with ATM and IP DSLAMs.

- ADSL, ADSL2 & ADSL2+ : 24 Mbps, G.992.1/2/3/4/5, G.994.1
- EFM, PPPoA, PPPoE, TR-069, IGMP v2, VLAN,
- 4x ports Ethernet 10/100BT
- 1x AP Wi-Fi 802.11bgn, 2T2R 300 Mbps
- 1x port VoIP FXS

ADR-4TTX-WFN30	ADSL2+ SUBSCRIBER ROUTER

RTDI-302

4G WI-FI ROUTER FOR INTEGRATION

The RTDI-302 is a very compact ruggedized 4G router that integrates ideally into any type of communication system. It can be mounted on a DIN rail, fixed on a wall. Its board is designed for easy integration into an electronic system. It provides 2 Ethernet 10/100BT LAN/WAN interfaces, one RS232 port, one digital input and output. Its Wi-Fi interface is 802.11bgn standard with a 300 Mbps throughput. It supports all secure communication protocols on 4G networks (IPSec IKEv2, OpenVPN) as well as routing protocols in IP v4 and v6.

- 4G interface, Cat.4, 150/50 Mbps
- 2 Ethernet 10/100BaseT LAN and WAN ports
- 1 RS232 port
- 1 Wi-Fi 802.11bgn 300 Mbps interface
- IP v4/v6, OpenVPN, IPSec, IKEv2, GRE, VRRP, OSPF, NAT, ACL, NTP,
- Dimensions: 91x74x28 mm

RTDI-302	4G 150/50MBPS ROUTER, 2X ETHERNET PORTS, 1X RS232 PORT, WI-FI BGN

RTDI-310

ROUTEUR 4G INDUSTRIEL

The RTDI-310 is a feature-rich, ruggedized 4G router to serve all the needs of applications communicating over 4G networks. It is DIN rail mounted in industrial installations. It provides Ethernet, RS232/RS485, digital inputs and outputs, GPS input for geolocation needs. Redundancy is provided at all levels including two SIM card readers. Its suite of IP v4 and v6 protocols is comprehensive with IPSec and OpenVPN, as well as automation functions for the control of communications and remote systems.

- 4G interface, Cat.4, 150/50 Mbps
- 2x SIM card slots
- GPS input
- 2 or 4x Ethernet 10/100BaseT LAN and WAN ports
- 1x RS232 port and 1x RS485 port
- IP v4/v6, OpenVPN, IPSec, IKEv2, GRE, VRRP, OSPF, NAT, ACL, NTP, MODBUS, Virtual COM port,
- Power supply 12-24 Vdc
- Dimensions: 60x110x106 mm

RTDI-312	4G 150/50MBPS ROUTER, 2X ETHERNET PORTS, 2X RS232 AND 1X RS485
RTDI-315	4G 150/50MBPS ROUTER, 4X ETHERNET PORTS, 2X RS232 AND 1X RS485, GPS INPUT

RTDI-350

INDUSTRIAL 5G ROUTER

The RTDI-350 is a next-generation ruggedized 5G router that takes advantage of the benefits of 5G networking including 10x faster throughput and 10x lower latency. It also supports MQTT mode for IoT applications. The RTDI-350 features a Gigabit Ethernet WAN port and 4x GE LAN ports, 2x RS232/RS485 ports, 1x digital input and 1x digital output, a GPS-Galileo input, 2x SIM card readers. Its IP v4 and v6 protocol suite is comprehensive with IPSec and OpenVPN, as well as automation functions for controlling remote communications and systems. The Wi-Fi interface supports high-speed 802.11ac.

- 5G NR and 4G Cat.18/16 interface, 4x SMA
- 2x SIM card slots
- GPS input - Galileo
- Wi-Fi 802.11ac, 2x SMA
- 1x WAN and 4x Gigabit Ethernet LAN
- 1x RS232 port and 1x RS485 port
- IP v4/v6, OpenVPN, IPSec, IKEv2, GRE, VRRP, OSPF, BGP, NAT, ACL, NTP, MODBUS
- Power supply 12-48 Vdc
- Dimensions: 139x131x38 mm

RTDI-350	5G ROUTER
RTDI-350-W	5G AND WI-FI 802.11AC ROUTER
RTDI-350-6	4G CAT.16/18 ROUTER
RTDI-350-6W	4G CAT/16/18 AND WI-FI 802.11AC ROUTER

RTDI-451

4G IEC-61850 ROUTER

The RTDI-451 is a ruggedized 4G router for substations in power distribution and transmission networks. It is IEC-61850-3 compliant and features reinforced substation isolations. It is equipped with advanced cyber security features to ensure the highest security for critical networks. It includes a Secure-Element to protect security data. Communications are secured in IPSec IKE v2 tunnels and X509 certificates can be renewed periodically by SCEP.

- 4G interface, Cat.4, 150/50 Mbps
- 4x Ethernet 10/100BaseT LAN and WAN ports
- 1x RS232, 1x USB H/D
- IP v4/v6, IPSec, IKEv2, GRE, NAT, ACL, NTP
- Power supply 12-24 Vdc
- Dimensions: 178x120x44 mm

RTDI-451 4G 150/50MBPS ROUTER REINFORCES INSULATION FOR IEC-61850-3, 4X ETHERNET PORTS

RTDI-365

ROUTER 4G WI-FI OUTDOOR

The RTDI-365 is a 4G router in IP-67 enclosure for outdoor installation. It incorporates a high gain 10dBi directional 4G antenna to ensure reliable communications even at a significant distance from the base station. It provides Ethernet and Wi-Fi communication interfaces making it a standalone Wi-Fi access point from the 4G network. The RTDI-465 is easily installed on a pole or wall mount. Its design is discreet to fit in any industrial or community environment.

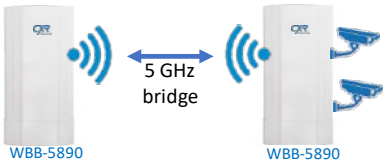
- 4G interface, Cat.4, 150/50 Mbps
- 1 Ethernet 10/100/1000BaseT LAN POE port
- 1 Wi-Fi 802.11bgn interface
- IP v4/v6, OpenVPN, IPSec, IKEv2, GRE, NAT, ACL, NTP
- Dimensions: 170x225x89 mm

RTDI-365 4G 150/50MBPS ROUTER FOR OUTDOOR INSTALLATION , 1X ETHERNET PORTS, WI-FI BGN

WBB-5890

PONT ETHERNET 5GHZ OUTDOOR

The WBB-5890 is a radio Ethernet bridge in the free 5GHz range that provides high-speed interconnection over 2 to 10 km. It provides Ethernet network extension for many applications such as building connections, video surveillance cameras, transportation systems, etc. The WBB-5890 is characterized by its elegant case, its simplicity of installation and the speed of commissioning.



- 5.1 to 5.8 GHz radio interface
- 2 x 10/100BaseT LAN POE Ethernet ports
- 18 dBi MIMO antenna
- 802.1X, AES128, VLAN, MAC and IP filtering
- Dimensions: 257x83x38 mm

WBB-5890 ETHERNET RADIO BRIDGE, 5GHZ RANGE, 2 TO 10 KM RANGE, OUTDOOR BOX

RTD-714

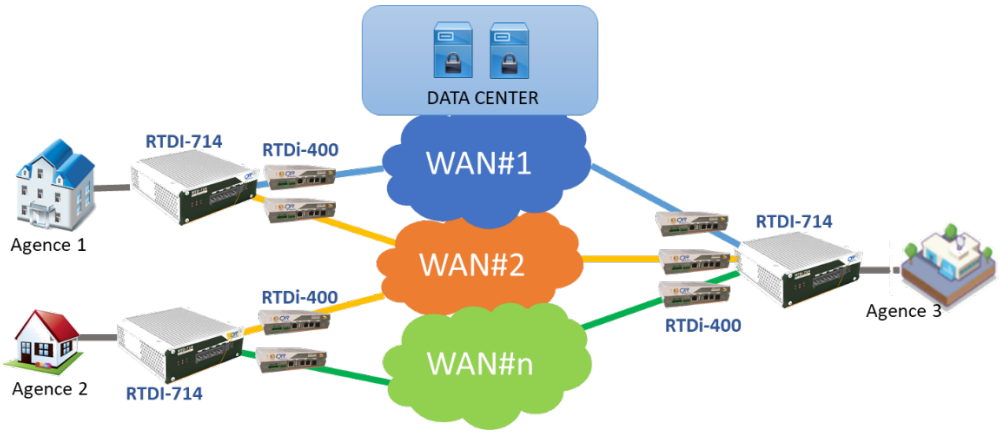
ROUTEUR SD-WAN

The RTD-714 is an SD-WAN router designed to improve the quality of Internet communications in disadvantaged locations through the aggregation of heterogeneous links, possibly from different carriers, which can be the case of franchise stores, regional offices, teleworkers, etc. connected in gray areas by medium quality ADSL links for example. The aggregation principles of the RTD-714 provide many benefits such as full utilization of all available bandwidth, stable communications and best user experience, end-to-end data security. The router is associated with a service hosted in a secure datacenter.

- SD-WAN Router
- 3x Gigabit Ethernet WAN ports
- 1x Gigabit Ethernet LAN port
- Dimensions: 130x80x44 mm

RTD-714	SD-WAN Router, Aggregation of 3 Telecom Links to one Gigabit Ethernet Port
RTD-714-2TO	Annual SD-WAN RTD-714 License for up to 3 Telecom Links and 2TB of Monthly Data

SD-WAN service for aggregating heterogeneous links



The RTD-714 SD-WAN router greatly improves the quality of service of Internet communications for private broadband fiber access sites. It ensures the aggregation of several available links such as ADSL and 4G even from different operators, to deliver a full speed and very stable quality communication to properly provide all data services, streaming, virtual meetings, etc.

VCL-2145

The VCL-2145 is a G.811 PRC reference clock for network synchronization and NTP and IEEE 1588 PTP time reference services. It provides SSU clock distribution function on E1 2Mbps, 1PPS, 10MHz interfaces. It has various options for internal OCXO or Rubidium oscillator, single or dual GPS input, and hardware PTP 1588 timing processing.

REFERENCE CLOCK PRC

- 1 or 2x GPS inputs, 15ns accuracy
- Inputs: GPS, 10MHz, 2 Mbps, 2 MHz
- Outputs: 1PPS, 10MHz, 8x 2Mbps, 8x 2 MHz
- Time reference: NTP, PTP IEEE 1588 Grand Master, NMEA, 6x IRIG-B
- OCXO or Rubidium oscillator, 6x10-11 precision
- Options : 1 or 2x power supply 230 Vac or 48 Vdc
- Dimensions : 480x225x 85 mm

VCL-2145-D	PRC AND SSU CLOCK, WITH NTP AND PTP GRAND-MASTER SERVICES, 2X GPS INPUTS
VCL-2145	PRC AND SSU CLOCK, WITH NTP SERVICE, 1X GPS INPUT
VCL-2145-LC	PRC AND SSU CLOCK, 1X GPS INPUT

VCL-2156

The VCL-2156 is a reference clock with a GPS receiver and an NTP and PTP-1588 Gran-Master server. In PRC - SSU clock, it provides 1PPS, 10MHz and 2Mbps/MHz outputs. The time reference provides NTP, PTP 1588 and IRIG-B outputs. The VCL-2156 is a high accuracy clock thanks to a GPS receiver and a high stability OXCO oscillator.

NTP AND PTP 1588 SERVER CLOCK

- 1 GPS input, 15ns accuracy
- 4x NTP v2/v3/v4, IP v4 and v6 outputs
- 1x PTP IEEE 1588 Grand-Master output to 128 Slaves
- 2x IRIG-B and 1x NMEA
- 1x 1PPS, 1x 10MHz, 1x 2.048 MHz
- OCXO oscillator, accuracy 0.5 ppb per day
- Options : 1 or 2x power supply 230 Vac or 48 Vdc
- Dimensions: 480x225x44 mm

VCL-2156-NTP-PTP	PRC CLOCK AND NTP TIME SERVER AND PTP GRAND-MASTER
VCL-2156-NTP	PRC CLOCK AND NTP TIME SERVER

POWER OPTIONS AND GPS ANTENNAS, PLEASE CONTACT CXR

VCL-3048

The VCL-3048 is a ruggedized NTP server for industrial applications. Its enclosure allows DIN rail mounting in a control cabinet, and it tolerates a wide operating temperature range of -20 to +65 °C. The NTP service is used in a wide range of applications to date events or synchronize streams.

SERVEUR NTP INDUSTRIEL

- 1x GPS input, 20ns accuracy
- 1x NTP v2/v3/v4, IP v4 and v6 output
- 3x IRIG-B outputs
- TCXO oscillator, accuracy 2.5ppm
- Power supply 24-48 Vdc
- Dimensions : 190x172x77 mm

VCL-3048-DIN-DC	INDUSTRIAL NTP AND IRIG-B SERVER WITH GPS INPUT

VCL-2709

VCL-2709, IEEE C37.94 to E1 Converter is a ruggedized, sub-station-hardened protocol converter that converts the IEEE C37.94 Interface to an E1 Interface to allow transmission of IEEE C37.94 over an E1 / SDH network.

VCL-2709 OVER E1 / SDH NETWORK

- Number of C37.94 interfaces : 1 (1Tx, 1 Rx)
- Internal: 48V DC (input range 18V DC to 60V DC)
- Connector: RJ45 (F) or BNC (F) depending of reference
- Optical: 820nm/850nm Multi-Mode

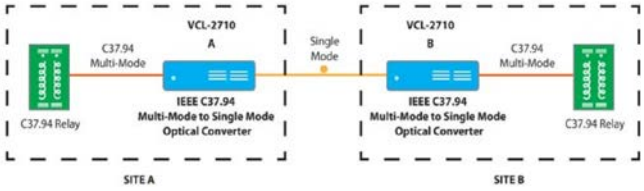
VCL-2709	THE VCL-2709 SUPPORTS POINT-TO-POINT APPLICATIONS
VCL-2709-DIN-ST-120-DC	IEEE C37.94 TO E1 CONVERTER DIN RAIL MOUNT VERSION, RJ45 120 OHMS, DC POWER SUPPLY

VCL-2710

The VCL-2710, IEEE C37.94 Multi-Mode to Single-Mode Optical Converter is a ruggedized, sub-station-hardened converter that converts IEEE C37.94 Multi-Mode signal to Optical Single-Mode Optical signal.

VCL-2710 SINGLE-MODE OPTICAL NETWORK

- IEEE C37.94 Interface: ST Connector
- Optical Interface: SFP Module
- DIN Rail
- 48V DC (18V to 60V DC)
- Optical Module Type: SFP
- Connector: LC



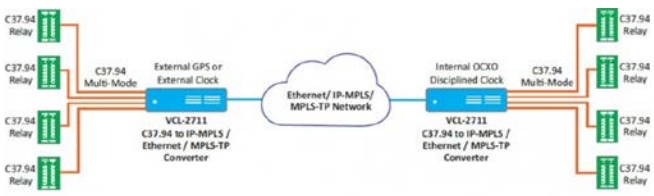
VCL-2710	THE VCL-2710 CAN BE USED ON A SINGLE-MODE OPTICAL NETWORK
VCL-2710-RAC	VCL-2710, IEEE C37.94 Multi-Mode to Single Mode Converter, Rack Mount Version

VCL-2711

The VCL-2711, IEEE C37.94 over Ethernet / MPLS-TP / IP-MPLS Transmission Equipment is a ruggedized, robust and sub-station-hardened transmission equipment which converts and transmits up to four IEEE C37.94 Interfaces over an Ethernet / MPLS-TP / IP-MPLS link with “SDH / SONET like” performance.

C37.94 OVER ETHERNET / MPLS-TP / IP-MPLS TRANSMISSION LINKS

- Multiple, integrated clock synchronization options
- Optical Connector, Tx/Rx: ST
- Optical Transmitter: LED
- Redundant 1+1, 48VDC



VCL-2711	94 RELAYS WHICH NEED TO BE INTER-CONNECTED TO REMOTE SUBSTATIONS INTER-CONNECTED OVER ETHERNET / MPLS-TP / IP-MPLS TRANSMISSION LINKS:
VCL-2711-RU	IEEE C37.94 OVER MPLS-TP / MPLS-IP / IP TRANSMISSION EQUIPMENT
VCL-2711-LU	IEEE C37.94 OVER MPLS-TP / MPLS-IP / IP TRANSMISSION EQUIPMENT WITH INTEGRATED GPS

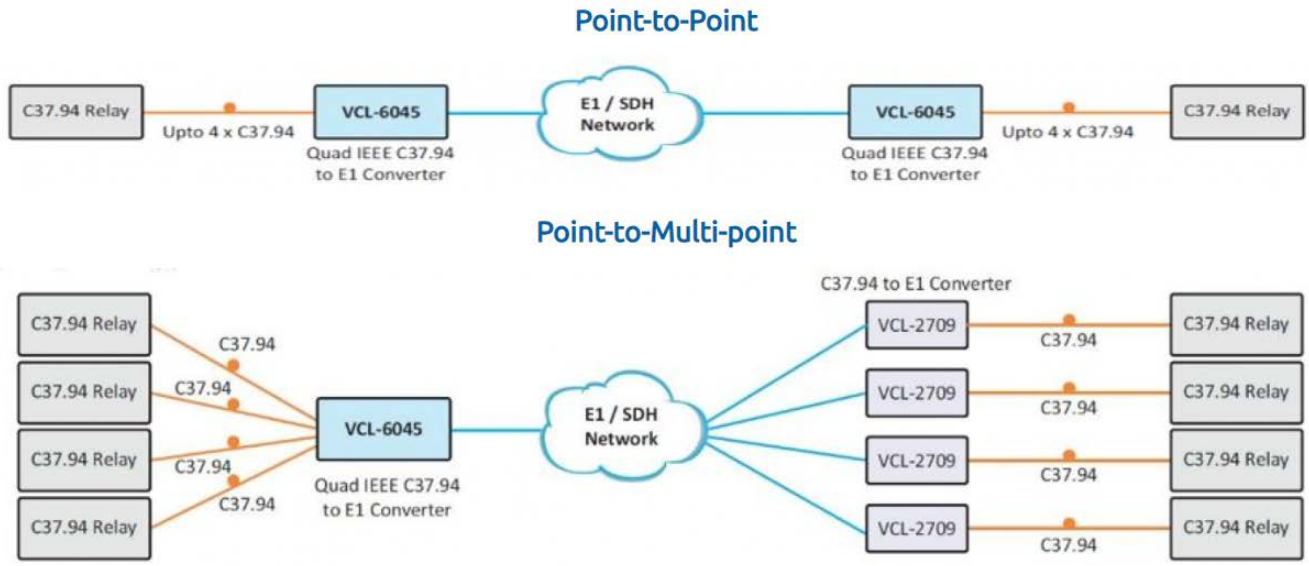
VCL-6045

The VCL-6045, Quad (4x) IEEE C37.94 to E1 Converter is a ruggedized and robust, sub-station-hardened protocol converter that converts up to 4 x IEEE C37.94 interfaces to 4 x E1 interfaces. VCL-6045 supports point-to-point and point-to-multipoint applications for Differential and Distance Teleprotection.

VCL-6045 POINT-TO-POINT MODE , OR POINT-MULTI-POINT WITH VCL-2709

- Number of C37.94 interfaces: 4 (1Tx, 1 Rx)
- Standards: IEEE C37.94 Optical connector: ST
- Number of ITU-T G.703 E1 (2.048 Mbit/s) interfaces: 1
- Conformity: G.703
- 48V DC
- 110V DC
- 220V DC
- IEC 610000-6-4 (Emission)
- Complies to IEEE and IEC standards

VCL-6045	VCL-6045 CAN BE USED IN POINT-TO-POINT MODE, OR POINT-MULTI-POINT WITH VCL-2709



AJ2885P

V21-V34 RTC-LS MODEM

The 2885P is a multimode V21 to V34 modem which ensures the transmission of asynchronous data over the telephone network or over specialized 2/4 wire links. It is available as a stand-alone box or as a card for a 19'' chassis.

- PSTN and LS 2/4 wire interface
- V21, V22, V22Bis, V23, V32, V32Bis, V34, V27, V29
- FAX V27/V29/V17 Groupe 3

AJ2885P-FPFV	MODEM IN STANDALONE BOX, RTC AND LS2/4 WIRE, V21-V34 DATA AND FAX MODES
AJ2885P-FPRF	ON-BOARD MODEM FOR AMS4 OR AMS16 CHASSIS, V21-V34 DATA AND FAX MODES

OTHER POWER OPTIONS AND V27/V29 ON LS, PLEASE CONTACT CXR

TS-224

CONVERTER V24 OVER IP - SSL

The TS-224 range ensures the conversion and transport of asynchronous communication flows in V24/RS232/RS485 interface on an Ethernet/IP network. The range offers different options of RS232 channels, SSL encryption, optical Ethernet interface.

- 1 to 4x channels V24/RS232/RS422/RS485 series
- 1x Ethernet port, 10/100BT

TS124-M-SSL	CONVERTER 1X RS232 TO 1X ETHERNET 10/100BT, SSL ENCRYPTION, PLASTIC CASE, 230 VAC ADAPTER
TS224-MV	CONVERTER 2X RS232/422/485 TO 1X ETHERNET 10/100BT, SSL ENCRYPTION, METAL CASE, 230 VAC ADAPTER
TS124-I	CONVERTER 1X RS232/422/485 TD/RD TO 1X 10/100BT, METAL CASE, 12-48 VDC INPUT
TS424-I	4X RS232/422/485 TD/RD CONVERTER ON 1X 10/100BT COMBO PORT AND SFP 100FX, 12-48 VDC INPUT

CIP-401

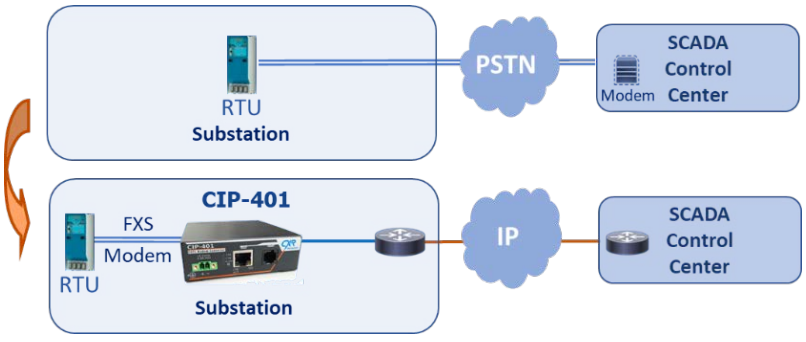
PSTN CONVERTER - MODEM OVER IP

The CIP-401 migrates modem communications over the public switched telephone network to the new Ethernet-IP networks. It emulates the PSTN signaling in incoming and outgoing calls, as well as the modem connection in all modes from V21 to V34. The communications can be secured in IPSec for the crossing of the IP network. This converter can be used to maintain many operational systems such as RTUs for electrical substations, alarm systems, payment systems, distribution systems, elevator or boiler room control and maintenance systems, etc.

- 1 FXS port for PSTN telephone network emulation
- 1 10/100BT Ethernet port
- Multimode Modem V21, V22, V22Bis, V32, V32Bis, V34
- Encapsulation layer of the asynchronous flow in IP, UDP/TCP packets
- Tunnel IPSec
- IP v4 / v6
- Power supply 12-24-48 Vdc
- Size 100x91x44 mm

CIP-401	PSTN-MODEM CONVERTER ON ETHERNET-IP, COMPACT METAL CASE WITH 12-24-48 VDC SUPPLY

The CIP-401 replaces the PSTN network to maintain existing systems designed to communicate via V21 to V34 modems. It addresses the problem of PSTN discontinuation for many systems: alarm, RTU, distribution automatons, sanitation, power network substations, security and defense, medical and pharmaceutical terminals, elevators, boiler rooms, etc



CIP-404

RTC TO IP MODEM CONVERTER

The CIP-404 is a PSTN modem converter hub that replaces the dial-up telephone network with an IP network while retaining the local modem equipment. The CIP-404 is available in a standard 19-inch 1U rack-mount version.

The CIP-404 is a very compact, low-power consumption device that integrates easily into any environment.

It comes with a dual IP v4 and v6 stack and a host of functions for cyber security of installations and communications.

- **1 - Four PSTN modem interfaces**
  - FXS PSTN interface, 600 Ohms, CTR-21
  - Incoming and outgoing call management
  - DTMF and pulse dialling

  V21, V23, V22, V22Bis, V32, V32Bis, V34 compliant asynchronous modem
- **2 - One 10/100BaseT Ethernet port on RJ45 socket**
- **3 - Communications over IP**

  Various asynchronous data encapsulation modes over IP: transparent, block, message, HNZ, break

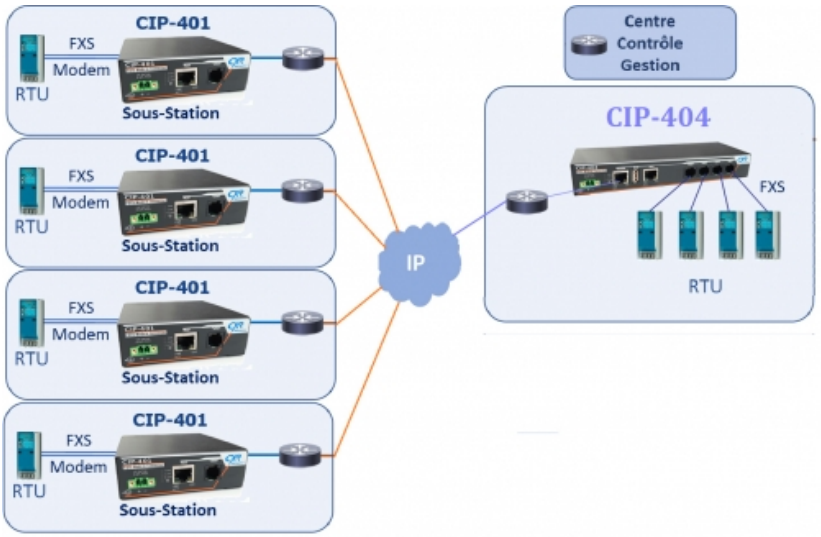
  Encapsulation on UDP or TCP, optional TLV layer

  Transparent mode or AES encryption, OpenVPN, IPSec
- **4 - General information**
  - Dimensions: 200x91x44 mm
  - Power input: 12-24 Vdc
  - Typical power consumption: 10 W

CIP-401	RTC MODEM TO IP CONVERTER
CIP-404	CONVERTER HUB FOR 4 RTC TO IP MODEMS
CIP-408	CONVERTER HUB FOR 8 RTC TO IP MODEMS

The dial-up telephone system is being discontinued by telecoms operators in many countries. In this context, CIP-404 emulates the public switched telephone network and the end-to-end modem communication to enable:

- Maintaining remote systems without any modification,
- Moving SCADA / control systems to new generation data centers and IP communications,
- Securing communication over the IP network through encryption protocols.



There have been so many systems based on modem and PSTN communications: alarm systems, electricity / water and other utility metering, electric substations, large heating systems, automatic distribution (food, drink, ATM, fuel, etc.), billing terminals, medical and pharmaceutical terminals, etc.

CIP-404 embeds:

Four FXS, dial-up network interface that emulates the PSTN network with incoming and outgoing calls,

A multimode modem processor that complies to the ITU-T V21 to V34 standards,

A packet processor that provides AES encryption and IPSec tunnels features.

CIP-404 is a compact product with very low power consumption that is easy to integrate in any environment.

CIP-408 is made by 2 CIP-404 who distribute up to 8 analogue modems across 1 Ethernet.

It benefits from a feature rich software with IP v4/v6 stack and many features to ensure best cybersecurity protection to communications and resources.

CIP-408

RTC TO IP MODEM CONVERTER

The CIP-408 is a PSTN modem converter hub that replaces the dial-up telephone network with an IP network, while retaining the local modem equipment.

The CIP-408 is available in a standard 19" 1U rack-mount version.

The CIP-408 is a very compact, low-power consumption device that integrates easily into any environment.

It comes with a dual IP v4 and v6 stack and a host of functions for cyber security of installations and communications.

- **1- Huit interfaces modems RTC**
  - Interface RTC FXS, 600 Ohms, CTR-21
  - Gestion des appels entrants et sortants
  - Numérotation DTMF et par impulsions
  - Modem asynchrone conforme V21, V23, V22, V22Bis, V32, V32Bis, V34
- **2- Un port Ethernet 10/100BaseT sur embase RJ45**
- **3- Communications sur IP**
  - Différents modes d'encapsulation de données asynchrones sur IP : transparent, bloc, message, HNZ, break
  - Encapsulation sur UDP ou TCP, couche optionnelle TLV
  - Mode transparent ou chiffrement AES, OpenVPN, IPSec
- **4- Généralités**
  - Dimensions : 200x91x44 mm
  - Entrée d'alimentation : 12-24 Vdc
  - Consommation électrique typique : 10 W

CIP-401	RTC MODEM TO IP CONVERTER
CIP-404	CONVERTER HUB FOR 4 RTC TO IP MODEMS
CIP-408	CONVERTER HUB FOR 8 RTC TO IP MODEMS

Securing communication over the IP network through encryption protocols.

A wide range of systems communicate via PSTN modems: alarm systems, energy meters and other telemetry systems, electricity transformer stations, boiler room control, vending machines, banking systems, medical or pharmaceutical terminals, etc.

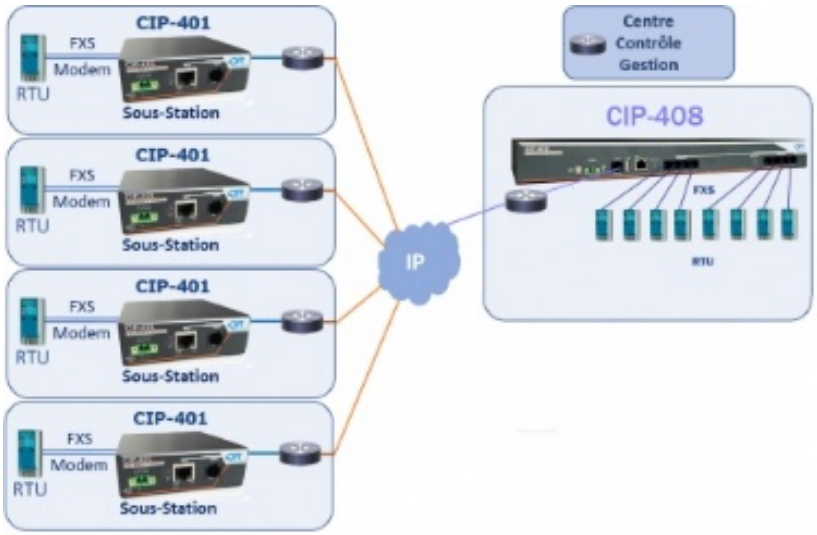
The CIP-408 integrates:

8 FXS-type PSTN interfaces for incoming and outgoing calls,

8 multimode modems compliant with V21 to V34 notices in asynchronous mode,

Ethernet IP communication processor for AES or IPSec tunnel data encryption.

The CIP-408 consists of 2 CIP-404s, enabling access from 8 analog interfaces to a single Ethernet interface.



It features a dual IP v4 and v6 stack, and numerous functions for cyber-security of installations and communications.

en.v23.1d

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