

# 2024



## Telecom Ethernet Product Guide

L2+ 10G/2.5G Switch ▪ 10G NID ▪ PoE Series ▪ Protocol Gateway  
iAccess™ Platform Solutions ▪ Web SmartView™ EMS



IEC 62443-4-1  
ISO 9001  
ISO 14001



Since 1993  
[www.ctcu.com](http://www.ctcu.com)

About

Since 1993

# CTC Union



**CTC Union** Technologies, Established in 1993, CTC Union Technologies is a specialized network communication products manufacturer with ISO 9001 and ISO 14001 certifications, its own product R&D team and production plants. The software development system follows the security management standard **IEC62443** to enhance the security protection of our products that are used in many industries. In the spirit of continuous innovation and R&D, CTC Union Technologies provides a full range of high-quality, reliable, heavy-duty and heat-resistant products, including Industrial Ethernet, PoE, EN50155 and E-Mark

certified switches. With more than 30 years of experience in designing telecom products under its belt and driven by leading-edge technology and high-quality service, CTC Union Technologies has become a leading supplier of network access switching equipment and FTTx solutions worldwide.

## Brand Advantage

### • **Technology & Innovation**

With technologies based on Ethernet and Optical transmissions, CTC Union can effectively meet the requirements of voice and data carriers and enterprises, as well as industrial/telecom grade Ethernet users.

### • **High Product Quality & Compliant with Certified Organization**

CTC Union strictly control all product designs and improve our quality management system to guarantee the processes and requirements of our customers, material suppliers and production partners.

### • **Excellent Customer Server & Technical Support**

CTC Union's technical support is available worldwide with 24hr/7days availability, whether it be pre-sale, post-sale, or technical answered as quickly as possible. CTC's Technical Support and RMA team have elite industry knowledge to ensure all issues are professionally and thoroughly resolved.

### • **Budget-Friendly & Strong Competitiveness**

CTC Union is the best combination of good performance and Competitive pricing. We offer Ethernet transmission products for every price range. It is very priced competitive in the market.



## Environment Policy



The environment policy of CTC Union is the mission and belief that we adhere to for social responsibility and environmental protection. We look for environmental improvement opportunities across all phases of our product lifecycles and continuously monitor our compliance with local and international laws. CTC Union is committed to operating as an environmentally responsible company. We are continuously adopting and assessing business practices which promote sustainability, reduce waste, and preserve the environment. Periodically audit and review to ensure continuous improvement results of implementation of the environment policy, maintaining altogether the green global village.



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# SmartView™ WEB EMS

NEW

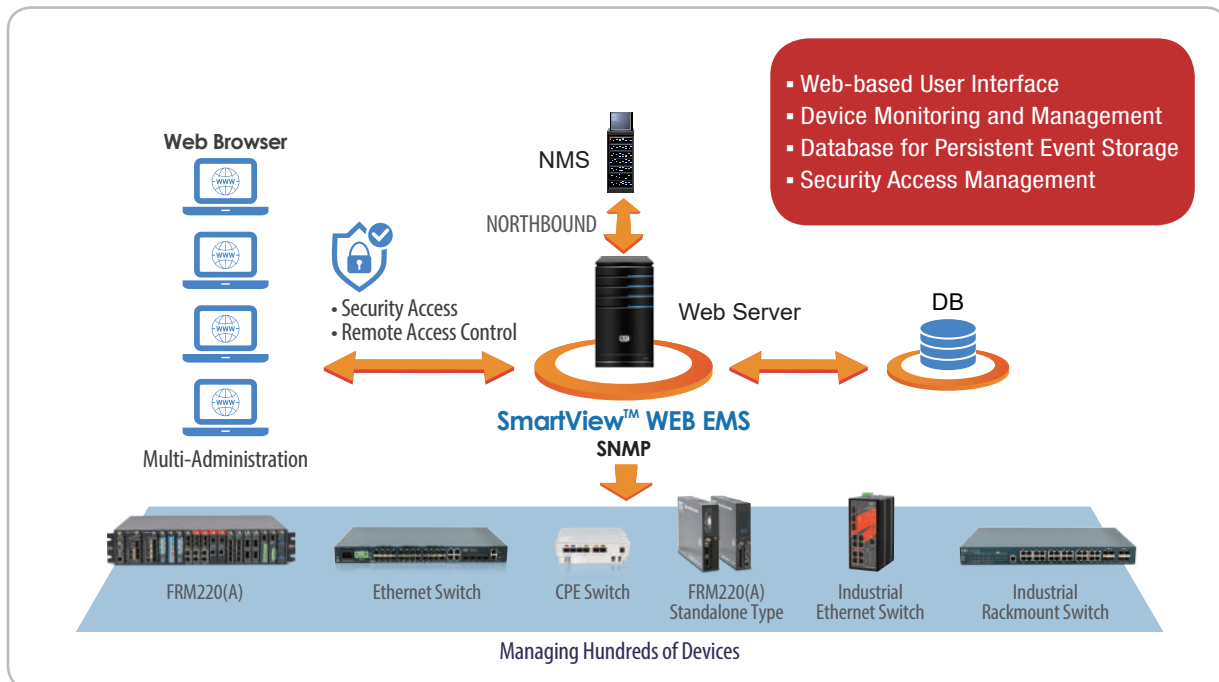


- Web-based User Interface
- Remote Access and Centralized Device Management
- Real-time visual representations & processing of alarms
- Long term event storage (up to 1 year)

## Functions

- Main Functions (FCAPS):  
Fault Management,  
Configuration Management,  
Accounting Management,  
Performance Management,  
Security Management
- Remote access control for efficient configuration
- Network element performance monitoring
- Alarm event and notification
- Auto discovery and device viewer
- Allow multiple concurrent operating users

## WEB EMS Topology



# L2+ Ethernet Switch

CTC Union's standalone layer 2 switch series of Gigabit Ethernet managed switches are positioned for market segments included SOHO/residential, SMB and Enterprise as well as ISP/Telecom operator customers. For any deployment scale, CTC Union's standalone fiber switches fulfill the simple installation requirements of Ethernet Technology based networks in a cost effective manner.

## Access Switch

CTC Union access switch series offer 10 ~ 32 fiber/UTP ports density option including 1Gbps or 2.5Gbps Ethernet downlink speed and 1G or 10Gbps speed for uplink ports. They are suitable for the intranet network deployment of enterprise or treated as MDU(Multiple Dwelling Unit) deployment to provision internet service by ISP. This switch family supports complete L2 feature sets such as VLAN, QoS, IGMP multicast as well as robust security management to facilitate service provider's build out of a secured and manageable Ethernet access network



Model	XGS-1208SE	XGS-1208M	GSW-4448CM	MSW-4428X	GSW-3424FM
MEF Standard Compliance				CE 2.0 E-Line/E-LAN/E-tree/E-Access	
Uplink Port	10GBase-X SFP+ slot × 12	10GBase-X SFP+ slot × 12	10GBase-X/1000Base-X SFP slot × 4	10GBase-X/1000Base-X SFP slot × 4	10GBase-X/1000Base-X SFP slot × 4
Service LAN Port	10/100/1000Base-T RJ45 × 8	10/100/1000Base-T RJ45 × 8	CSFP(48×GbE) with GbE combo port × 4	100/1000Base-X SFP slot × 24 + RJ45 GbE port × 4	100/1000Base-X SFP slot × 24 + RJ45 GbE port × 4
Console Port	USB type C × 1 (RS-232)	USB type C × 1 (RS-232)	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)
Management Port	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1
1 PPS Interface	SMA connector × 2	SMA connector × 2			
Power Module	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC DC power : 18 ~ 60VDC (-24V) 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC DC power : 36 ~ 60VDC (-48V)
Non-blocking Switch Fabric Capacity	256Gbps	256Gbps	178Gbps	136Gbps	136Gbps
Packet Buffer	32M bits	32M bits	32M bits	32M bits	32M bits
MAC Address Table Size	32K	32K	32K	32K	32K
Jumbo Frame Size	10K Bytes	10K Bytes	10K Bytes	10K Bytes	10K Bytes
ITU-T G.8262 SyncE	✓				
IEEE 1588v2 PTP	✓				
Dimension(D×W×H)	280 × 440 × 43.5 mm	280 × 440 × 43.5 mm	250 × 440 × 43.5 mm	250 × 440 × 43.5 mm	250 × 440 × 43.5 mm
Operating Temperature	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C	-10 ~ 60 °C	0 ~ 50 °C



Model	QSW-4416CM	GSW-4424CM	GSW-3424CM	GSW-4208CM	GSW-3208M2
Uplink Port	10GBase-X/1000Base-X SFP slot × 4	10GBase-X/1000Base-X SFP slot × 4	1000Base-X SFP slot × 4	10GBase-X/1000Base-X SFP slot × 2	100/1000Base-X SFP slot × 2
Service LAN Port	1G/2.5G RJ45 × 16	10/100/1000Base-T RJ45 × 24	10/100/1000Base-T RJ45 × 24	10/100/1000Base-T RJ45 × 8	10/100/1000Base-T RJ45 × 8
Console Port	USB type C × 1 (RS-232)	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)	DB9 RS-232 × 1	DB9 RS-232 × 1
Power Module	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 18 ~ 72VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 18 ~ 72VDC (-48V)
Non-blocking Switch Fabric Capacity	160Gbps	128Gbps	56Gbps	56Gbps	20Gbps
Packet Buffer	32M bits	32M bits	32M bits	8M bits	4M bits
MAC Address Table Size	32K	32K	32K	16K	8K
Jumbo Frame Size	10K Bytes	10K Bytes	10K Bytes	10K Bytes	9.6K Bytes
Dimension(D×W×H)	220 × 440 × 43.5 mm	220 × 440 × 43.5 mm	220 × 440 × 43.5 mm	190 × 215 × 44 mm	117 × 250 × 43.8 mm
Operating Temperature	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C

## NID & EDD

CTC Union carrier Ethernet switch family offers the product scope from EDD/NID deployed at the enterprise customer as well as the access end of metro network. They comply with CE 2.0 standard to support MEF defined E-Line/E-LAN/E-Tree/E-Access service types and enable the bandwidth profile configuration to deliver end-to-end high performance SLA-based business connection service. On the other hand, the advanced model can support timing synchronization features included SyncE and IEEE 1588v2 PTP to enhance and migrate a carrier Ethernet network for mobile backhaul network application.

NEW



NEW



Model	MSW-4204S	MSW-4204	MSW-404	MSW-202A
<b>MEF Standard Compliance</b>	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	CE 2.0 E-Line/E-LAN/E-Tree/E-Access	CE 2.0 E-Line/E-Access
<b>Uplink Port</b>	1000Base-X/10GBase-X SFP slot × 2	1000Base-X/10GBase-X SFP slot × 2	100/1000Base-X SFP slot × 4	100/1000Base-X SFP slot × 2
<b>Service LAN Port</b>	10/100/1000Base-T RJ45 × 4	10/100/1000Base-T RJ45 × 4	10/100/1000Base-T RJ45 × 4	10/100/1000Base-T RJ45 × 2
<b>Console Port</b>	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)	DB9 RS-232 × 1	RS-232 DB9 × 1
<b>Management Port</b>	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1		
<b>1 PPS Interface</b>	SMA Connector × 2			
<b>Power Module</b>	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 36 ~ 60VDC (-48V)	AC power : 100 ~ 240VAC or DC power : 18 ~ 72VDC (-48V)	AC power : 100 ~ 240VAC DC power : 18 ~ 72VDC (-48V)
<b>Non-blocking Switch Fabric Capacity</b>	48Gbps	48Gbps	16Gbps	8Gbps
<b>Packet Buffer</b>	8M bits	8M bits	8M bits	4M bits
<b>MAC Address Table Size</b>	16K	16K	8K	8K
<b>Jumbo Frame Size</b>	10K Bytes	10K Bytes	10K Bytes	9.6 Bytes
<b>ITU-T G.8262 SyncE</b>	✓			
<b>IEEE 1588v2 PTP</b>	✓			
<b>Dimension(D×W×H)</b>	190 × 215 × 44 mm	190 × 215 × 44 mm	167.4 × 219.4 × 44.5 mm	135 × 180 × 30 mm
<b>Operating Temperature</b>	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C

## CPE Switch

CTC Union's CPE switch family mainly focuses on the P2P active Ethernet technology based FTTX market with overall port density from 4 to 7 ports 1Gbps or 2.5Gbps UTP and 1Gbps or 10Gbps Fiber uplink. Their design concept is well considered from the basis of stylish and elegant appearance for the residential user as well as the advantage of easy installation for the FTTH service provider. The whole CPE switch family adopts evolutionary cable tray structural design to help the installer more easily and protectively manage the excess fiber within the unit. Also, the CPE switch supports completely L2 feature sets and highly preferred zero touch provision (ZTP) function which is suitable for the very large scale deployment to avoid truck rolls and save OPEX for FTTH service providers or operators.



Model	QSW-4204M	GSW-2020C7	GSW-2008MS	GSW-1005MS
<b>Uplink Port</b>	1000Base-X/10GBase-X SFP slot × 2	100/1000Base-X SFP slot × 1	100/1000Base-X SFP slot × 2	100/1000Base-X SFP slot × 1
<b>Service LAN Port</b>	1G/2.5G RJ45 × 4 + 1G RJ45 × 1	10/100/1000Base-T RJ45 × 7	10/100/1000Base-T RJ45 × 8	10/100/1000Base-T RJ45 × 5
<b>Power Module</b>	DC in : 12V ; 2A	DC in : 12V ; 1A	DC in : 12V ; 1A	DC in : 12V ; 1A
<b>Non-Blocking Switch Fabric Capacity</b>	62Gbps	16Gbps	20Gbps	12Gbps
<b>Packet Buffer</b>	8M bits	1.75M bits	4M bits	4M bits
<b>MAC Address Table Size</b>	16K	8K	8K	8K
<b>Jumbo Frame Size</b>	10240 Bytes	10240 Bytes	9.6K Bytes	9.6K Bytes
<b>Dimension(D×W×H)</b>	122 × 162 × 43.5 mm	122 × 162 × 32.2 mm	120 × 170 × 35 mm	120 × 170 × 35 mm
<b>Operating Temperature</b>	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C	0 ~ 50 °C

## PoE Switch

CTC Union's PoE switch series includes 8 ports and 24 ports density for small and medium network environment for deployment in office applications such as PoE powered IP telephony, WiFi access and IP surveillance. They support IEEE 802.3at/af PoE standard up to 30W per port and maximum 100m transmission distance. These PoE switch models support completely L2 management feature sets as well as advanced PoE management functions to boost your network with optimal performance, efficiency and PoE power consumption.



Model	GSW-4424MP	GSW-3424MP	GSW3208MP-1
Uplink Port	10GBase-X/1000Base-X SFP slot × 4	1000Base-X SFP slot × 4	1000Base-X SFP slot × 2
Service LAN Port	10/100/1000Base-T RJ45 × 24	10/100/1000Base-T RJ45 × 24	10/100/1000Base-T RJ45 × 8
Console Port	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)	RJ45 × 1 (RS-232)
Management Port	10/100/1000Base-T RJ45 × 1	10/100/1000Base-T RJ45 × 1	-
Power Module	AC power : 100 ~ 240VAC	AC power : 100 ~ 240VAC	AC power : 100 ~ 240VAC
Non-blocking Switch Fabric Capacity	128Gbps	56Gbps	20Gbps
Packet Buffer	32M bits	32M bits	4M bits
MAC Address Table Size	32K	32K	8K
Jumbo Frame Size	10K Bytes	10K Bytes	9.6K Bytes
IEEE 802.3af/802.3at PoE/PSE Compliance	✓	✓	✓
PoE Power Budget	450W	450W	180W
Dimension(D×W×H)	280 × 440 × 43.5 mm	280 × 440 × 43.5 mm	140 × 290 × 43.8 mm
Operating Temperature	0 ~ 50°C	0 ~ 50°C	0 ~ 50°C



# PoE Series (Injector/Splitter/Extender/Converter)

## PoE++ Injector

**INJ-G90**

Multigigabit Ethernet IEEE802.3bt  
PoE++ Injector(90W)

**NEW**



- Support 10M/100M/1G/2.5G/5G/10Gbps data rate pass through
- IEEE 802.3bt (90W) standard compliance
- PoE output voltage @53VDC minimum
- PoE short circuit protection to guard the remote PoE/PD device
- Compact size and wall mountable

## PoE Injector

**INJ-G30**

Gigabit Ethernet IEEE 802.3af/at  
PoE Injector (15/30/36W)



- Complies with IEEE 802.3af/at standards
- Provides 1 10/100/1000Mbps pass through data rate
- Wall Mountable
- Complies with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX and IEEE 802.3ab 1000Base-T
- CE & FCC Class B Certificates

## Industrial PoE Splitter

**INJ-SPL01**

GbE, IEEE802.3af/at PoE Splitter, output voltage 12/19/24VDC selectable



- Splits power and data from PoE Input
- Supports PoE IEEE802.3af/at A mode (1,2,3,6) or B mode(4,5,7,8)
- Selectable output voltage, 12/19/24VDC select by slide SW
- Supports output power upto 12VDC/1.4A, 19VDC/1.05A, or 24VDC/0.85A
- Compliant with 10/100/1000Base-T(X)
- IP30 rugged metal housing and fanless

## Gigabit PoE Extender

**EXT-G104P**

1 port PoE++/PD to 4 ports  
PoE+/PSE GbE PoE Extender

**NEW**



- Plug and Play installation
- No additionally AC/DC power supply required
- Extending the PoE signal for additional 100 meters
- IEEE 802.3bt (90W) and IEEE 802.3at (30W) standard compliance
- Wall mountable

## LAN Extender

**VDTU2-B130**

1-port VDSL2 Gigabit LAN Extender



- High speed Ethernet extension over UTP, CAT 5e/6/7.
- Supports ITU-T G.993.5 G. Vectoring and G.INP
- Selectable profile setting via Dip switch
- Supports VDSL2 profile 35b/30a/17a
- Long-reach Ethernet connection up to 3km

**LX100**

10/100 Base-TX LAN Extender



- 1x10/100Base-TX RJ45 LAN port + 1xRJ-45 WAN port
- Long distance data transmission up to 800m on 1/2 pair UTP cable
- Quick deployment and easy maintenance

## PoE Media Converter

**PMC-1000S**

10/100/1000Base-T to 100/1000Base-X SFP  
with PoE+ (30W) Media Converter



- Conversion between 10/100/1000Base-T and 100/1000Base-X
- Supports dual rate (100/1000) SFP for selectable Fast or Gigabit speed on fiber
- PoE output voltage up to 55VDC
- Supports IEEE 802.3at/af PoE, output 30Watts Power Budget
- Supports LFPT (Link Fault Pass Through)
- Supports DIP SW for setting LFPT, Switch or Converter mode, SFP speed

**PMC-100PD**

10/100Base-TX to 100Base-FX  
PoE PD Converter



- Conversion between 10/100Base-TX to 100Base-FX
- Supports LFPT (Link Fault Pass Through)
- Supports IEEE802.3af PoE PD (Power Device)
- Supports flow control (Pause)
- Supports PD input power 48VDC



# Serial Connectivity

## Serial Device Server

The Serial to Ethernet with/without Wi-Fi Converter, provides a bridging device to connect RS-232/RS-485 Serial Data communications to hardwired Ethernet networks or WiFi. It connects serial devices such as PLC, alarm sensors and PTZ camera control to IP networks. Applications include industrial/factory automation, public safety, and surveillance systems. The Serial converter is built for use in light industrial environments, featuring a compact wall-mount design.



NEW



Model	STE211W	STE211	STE400A-485	STE400A-232	STE800A-232
LAN	10/100TX	10/100TX	10/100TX	10/100TX	10/100TX
WiFi	WiFi 802.11b/g/n				
Serial Interface	1×RS-232, 1×RS-422/485	1×RS-232, 1×RS-422/485	RS-232/422/485	RS-232	RS-232
Serial Connector	1×DB9M + 1×Terminal block	1×DB9M + 1×Terminal block	4×DB9M	4×DB9M	8×DB9M
Protocols	ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, DNS, NTP	ARP, IP, ICMP, UDP, TCP, HTTP, DHCP, DNS, NTP	TCP, UDP, IP, ARP, ICMP, HTTP, DHCP	TCP, UDP, IP, ARP, ICMP, HTTP, DHCP	TCP, UDP, IP, ARP, ICMP, HTTP, DHCP
Communication Modes	TCP Server/TCP Client/UDP/Virtual Com	TCP Server/TCP Client/UDP/Virtual Com	TCP Server, TCP Client, Virtual Com Mode, UDP	TCP Server, TCP Client, Virtual Com Mode, UDP	TCP Server, TCP Client, Virtual Com Mode, UDP
Baud Rate	300 bps ~ 921.6 K bps Asynchronous	300 bps ~ 921.6 K bps Asynchronous	110 to 230.4Kbps Asynchronous	110 to 230.4Kbps Asynchronous	110 to 230.4Kbps Asynchronous
Management	WEB Pages	WEB Pages	WEB Pages	WEB Pages	WEB Pages

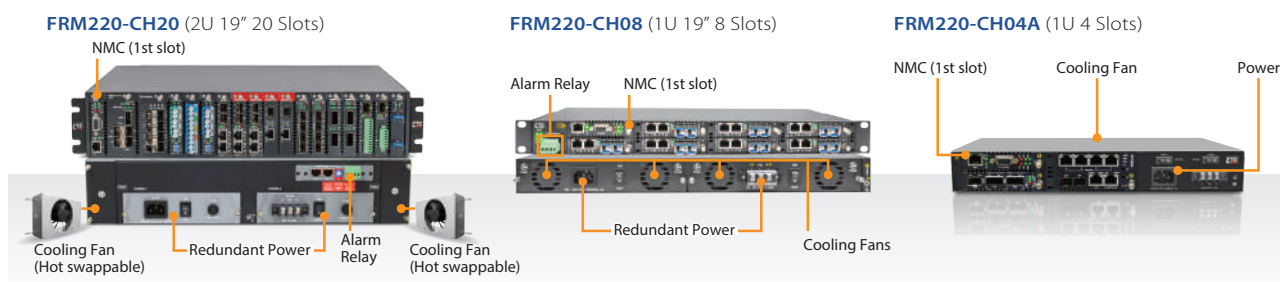
## Protocol Gateway

The MQTT/Modbus Wi-Fi / Ethernet / Serial Gateway, provides an easy to deploy device to send RS-232/RS-485 Serial Modbus RTU Data communications to TCP networks on hard-wired Ethernet or over wireless WiFi. The Gateway works with standard Modbus Slave devices, such as PLCs, IoT Sensors, Energy meters (AMRs), Solar Inverters, Wind Turbines, IO Modules, Flow Meters and more. The MQTT Gateway is built for use in light industrial environments and features a compact wall-mount design.



Model Name	GW211W-MQ	GW211W-MB
<b>Ethernet Interface</b>		
RJ45 10/100Base-TX	1	1
<b>WiFi Interface</b>		
IEEE802.11b/g/n WiFi	1	1
Antenna	1 SMA	1 SMA
<b>Serial Interface</b>		
Total Serial port	2	2
RS232	1	1
RS422/485	1	1
Baud rate	300~921.6 Kbps	300~921.6 Kbps
<b>Function</b>		
Gateway	Modbus RTU to MQTT	Modbus TCP to Modbus RTU
<b>Power</b>		
Power input	9~32VDC	9~32VDC
Connector	Power Jack & Terminal	Power Jack & Terminal
<b>Physical</b>		
Dimension (W x D x H)	110x90x26mm	110x90x26mm
Mount	Wall Mount	Wall Mount
<b>Operating Temperature</b>		
-20 ~ 70°C	✓	✓
<b>Certification</b>		
CE, FCC	✓	✓

# Multi-Service Platform – FRM220



## Main Features

### Module Cards for Deployment Scenarios

The FRM220-CH20, FRM220-CH08 and FRM220-CH04A have been designed as a Multi-service platform. This allows network administrators to deploy the chassis in a wide range of networks. Technologies supported by the chassis include Fast/Gigabit Ethernet, E1/T1, V35/X21/RS-530, Serial RS-485/RS-422, Voice FXO/FXS, Repeater, Fiber Multiplexer, E1 Inverse Multiplexer, CWDM Mux/DeMUX EDFA Booster and 10G/16G/40G 3R Transponder.

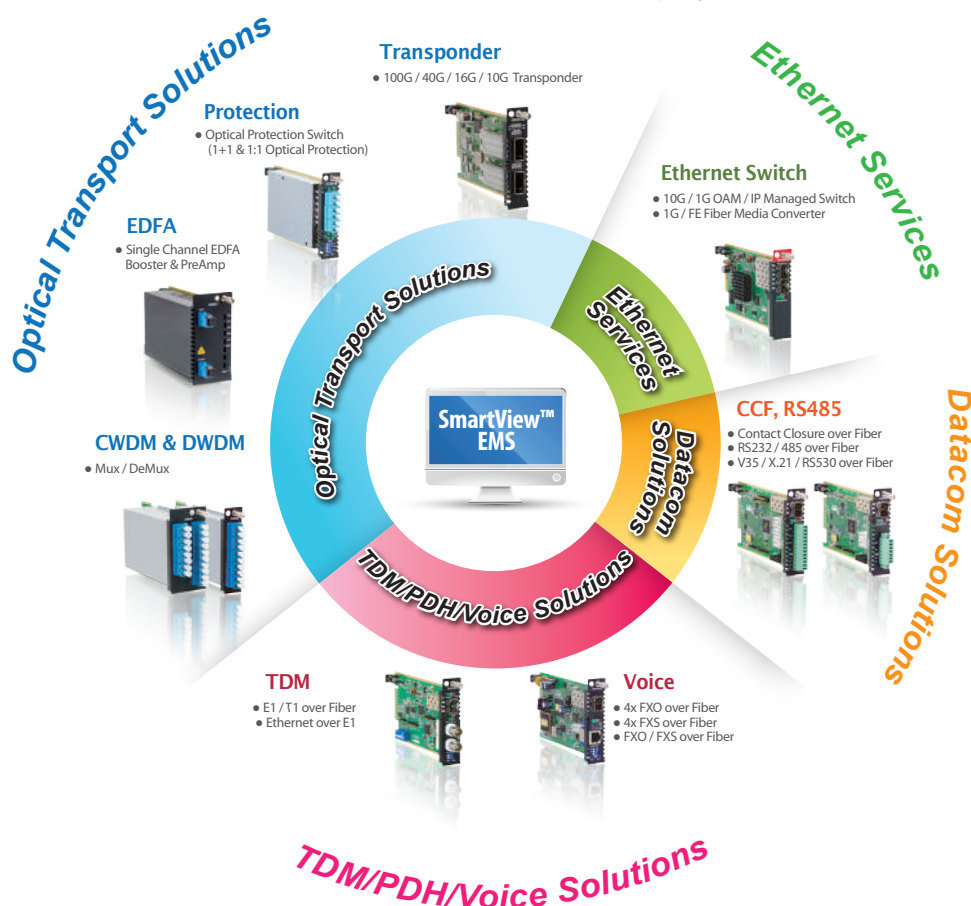
### Network Management

The FRM220-CH20, FRM220-CH08 and FRM220-CH04A require a NMC card which must be installed into the first slot of chassis. The NMC card allows a network administrator the ability to configure and monitor the status of the blades. Management can be achieved locally over RS232, or over the network by Telnet, Web or SNMP. If the blades support Ethernet in the First Mile (IEEE 802.3ah), then the management module can also be monitored the status of a remote CPE.

## iAccess™ Platform Solutions

iAccess™ Multi-Service Platform offers a full range of solutions for service providers and enterprises, including Optical Transport Solutions (transponders, muxponders, CWDM, DWDM), TDM/PDH/Voice Solutions (fiber converters and multiplexers), Ethernet Services (switches and converters) and Data Communication Solutions (Sync/Async serial over fiber). The iAccess is a fully modular product series that integrates a wide range of modules for any interface or protocol hosted in a selection of Chassis sizes for simple and flexible operations.

### iAccess Platform Solution Category



## FRM220 Slide-in Cards

### NMC

- NEW** ▪ FRM220-NMC-R5 Network Management Controller
- FRM220-NMC-R3 Network Management Controller

### Transponder

- FRM220-100GE-2Q 100GE QSFP28 to QSFP28 3R Transponder
- FRM220-40G-2Q 40G QSFP+ to QSFP+ 3R Transponder
- FRM220-40G-1Q4S 40G QSFP+ to 4x 10G SFP+ Transponder
- FRM220-16G-3R 16G 3R Multi-rate Transponder with Optical Line Protection
- FRM220-10G-3R 10G 3R Multi-rate Transponder with Optical Line Protection
- FRM220-4G-3R 4G 3R Multi-rate Transponder with Optical Line Protection
- FRM220-1000DS 1G 2R Multi-rate Transponder

### EDFA

- FRM220-OAP17 Single Channel EDFA Preamp 17dB
- FRM220-OAB15 Single Channel EDFA Booster 15dB
- FRM220-OAB21A Single Channel EDFA Booster 21dB

### Optical Protection Switch

- FRM220-OPS51 1:1 Single-mode Fiber Optical Protection Switch
- FRM220-OPS52 1+1 Single-mode Fiber Optical Protection Switch
- FRM220-OPS51M 1:1 Multi-mode Optical Protection Switch

### WDM Optical Multiplexer

- FRM220-DWMD DWDM Mux/DeMUX
- FRM220-CWMD CWDM Mux/DeMUX

### Ethernet Switch

- FRM220A-2000EAS/4F 4x100/1000Base-X SFP OAM/IP GbE Managed Switch
- FRM220A-2000EAS/2 2x100/1000Base-T + 2x100/1000Base-X SFP OAM/IP GbE Managed Switch
- FRM220A-2000EAS/1 100/1000Base-T + 100/1000Base-X SFP OAM/IP GbE Managed Switch
- FRM220-2000MS 100/1000Base-T to 100/1000Base-X SFP Web Smart In-Band OAM Managed GbE Switch

### 10G Media Converter

- NEW** ▪ FRM220-10GCM 10G In-Band Managed Media Converter, 100/1G/10GBase-T + 2 x 10GBase-R SFP+
- FRM220-10/100i In-Band Managed FE Media Converter, 100Base-TX to 100Base-FX
- FRM220-10/100 Non-managed FE Media Converter, 100Base-TX to 100Base-FX

### CCF (Contact Closure Fiber Converter)

- FRM220-CCF20 2ch Contact Closure Fiber Converter, In-Band Managed
- FRM220-CCF40 4ch Contact Closure Fiber Converter, In-Band Managed

### Voice over Fiber

- FRM220-FXO/FXS FXO/FXS over Fiber In-Band Managed Converter
- FRM220-FXO-4 4xFXO over Fiber In-Band Managed Converter
- FRM220-FXS-4 4xFXS over Fiber In-Band Managed Converter

## Standaone Chassis



Type	CH01 (Adapter Type)	CH01	CH01M	CH02M	CH02/NMC	CH02/SMT
Slot	1	1	1	2	2	2
Console			✓ DB 9	✓ DB 9		
NMC					✓	✓
Adapter (Power Jack 12VDC)	✓					
Power Build-in (18-72VDC / 100-240VAC)		✓	✓	✓	✓	✓
FAN				✓	✓	✓
Dimmension (D×W×H)mm	139×23.2×88	180×30×135		219×44.5×167.4		220×44.5×205

# Fiber Media Converter Rack

## 18 ports Gigabit Media Converter Rack

FMC-1800



### Features

- 1U 19" 18x 100/1000Base-T to 18x 100/1000Base-X SFP managed converter rack
- Auto MDI & MDIX/Auto-Negotiation in TP port
- Supports hot-swappable SFPs working at 100 Mbps and 1000Mbps
- Supports Web, Telnet, SNMP, Console Management
- Local configuration via USB port

## 10G Media Converter

XMC-10GC

NEW



### Features

- 10G/5G/2.5G/1G/100M Copper to 10GBASE-X SFP+ Unmanaged
- Supports auto-negotiation and 100Mbps and 1/2.5/5/10Gbps full duplex model
- 16K jumbo frame size support
- Wall-mount design
- Loopback Test
- Link Fault Pass Through
- Support USB console for set up and status checking.

## 17 ports Fiber Media Rack — FMC-CH17



The FMC-CH17 is a 2U high 19" 17 slots chassis and the FMC-CH08 is a 2U high 10" 8 slots chassis. The FMC chassis provides an economic solution in low density fiber converter installations where no management features are required. Each FMC converter is an independent Ethernet to fiber or Ethernet to copper media converter that may be used as a standalone converter or placed in the FMC-CH17 or FMC-CH08 chassis. With two power supplies, the FMC-CH17 chassis supports redundant power from any of two power options while FMC-CH08 supports single power options. The AC supplies operate from (100-240VAC) and DC supplies operate from 18-60VDC. The built in cooling fan ensures that the temperatures in the rack remain within the tolerated working range

### ► Slide in Module



**FMC-2000MS**

10/100/1000Base-T to 100/1000Base-X SFP  
Web Smart In-Band OAM Managed Switch



**FMC-1001S**

10/100/1000Base-T to 100/1000Base-X SFP  
Media Converter



**FMC-10/100**

10/100Base-TX to 100Base-FX Media Converter







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