NEW

MSW-4424A
MSW-4424S

L2 Gigabit OAM Managed Fiber Access Switch

MSW-4424 layer 2 managed Gigabit Ethernet switches are positioned as a Carrier Ethernet access switch solution. They are equipped with 24 SFP based 100Base-FX/1000Base-X dual speed optical ports and 4 10GBase-X SFP+ or 1000Base-X SFP uplink ports. The MSW-4424 offers the best flexibility and scalability for operators and service providers to deploy their Metro Ethernet or FTTX networks. Aimed specifically at Metro Ethernet and FTTX deployment, the specifications of MSW-4424 fully meet the attributes of Carrier Ethernet proposed by the Metro Ethernet Forum. The switches comply with MEF 9 standard to support E-Line/E-LAN services and MEF 14 standard to enable the bandwidth profile configuration for delivering SLA (Service Level Agreement) with predictable end-to-end performance characteristics. MSW-4424A supports advanced service OAM management. MSW-4424S model supports timing synchronization features (Sync. E and IEEE1588v2) to enhance and migrate to a carrier grade network.

Common Key Features and Benefits

Front access and hot swappable design

All of the system modules are front accessible, the hot swappable power and FAN module are designed to keep high network availability without service interruption when components fail

Fully dual rate architecture of fiber link port

Dual speed fiber ports offer scalable physical connections for Metro Ethernet network operators

Fully Ethernet OAM enabled

Ethernet OAM features (IEEE 802.3ah/802.1ag/ITU-T Y.1731) help to rapidly detect and recover network faults and save OPEX for operators as well as increase customer satisfaction
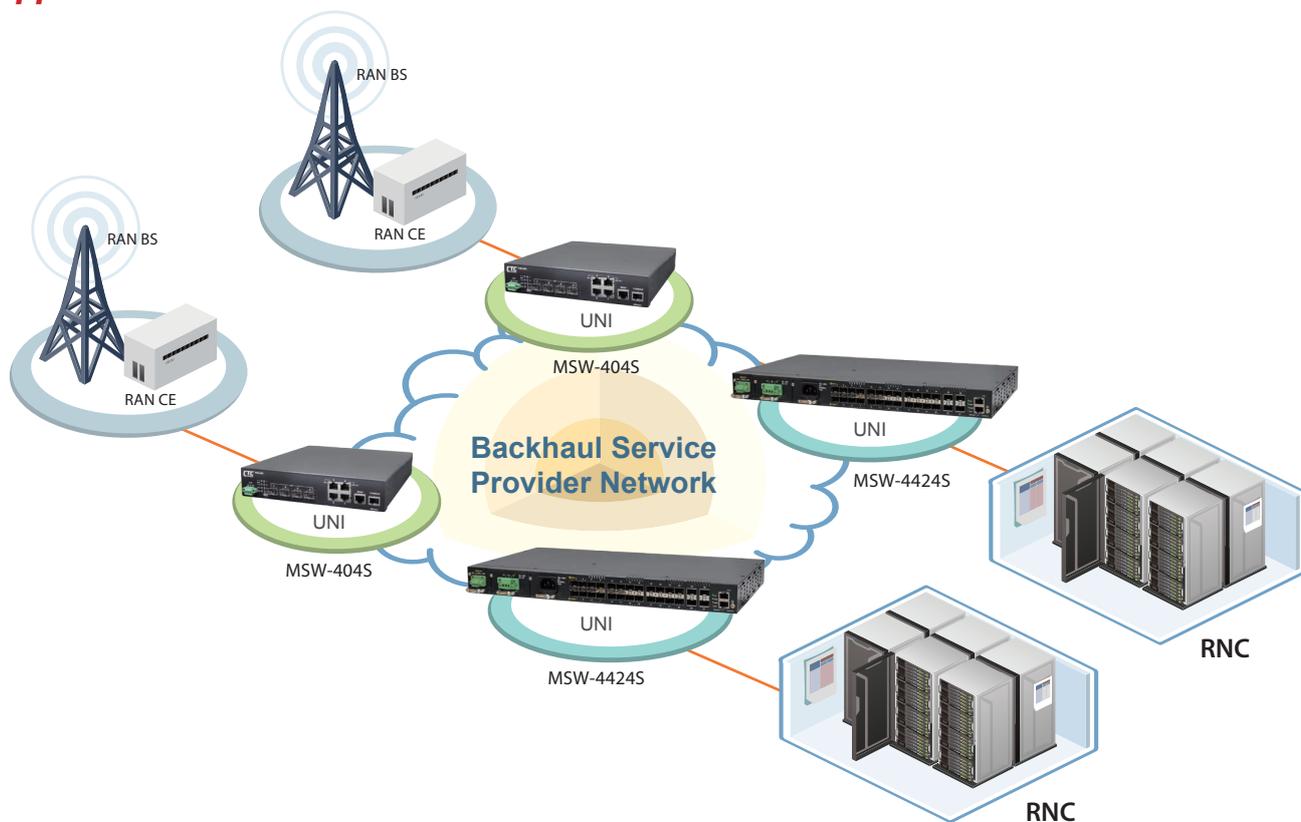
Support Sync. Ethernet

Advanced synchronization features for carrier Ethernet networks allow operators to deliver services with optimal stability and continuity in the end-to-end connectivity

Specifications

Interface	100/1000Mbps SFP slots *24 + 10Gbps SFP+ slots *4
Console Port	RJ-45 console port x 1
Filter & Forward Rate	10M (14880/14880pps); 100M (148800/148800pps)
	1000M (1488000/1488000pps)
Transmission Method	Store and Forward Switching
Standard	IEEE 802.3u, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3x
	IEEE 802.1p, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1D
	IEEE 802.1w, IEEE 802.1s, IEEE 802.1x, IEEE 802.3ad
	IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731
Packet Buffer	4M Bytes
Mac Table Size	8K
Max. Packet Size	10K Bytes
VLAN Feature	IEEE 802.1Q tagged VLAN, port based VLAN,
	MAC based VLAN, protocol based VLAN,
	private VLAN, IEEE 802.1ad Q-in-Q
QoS Feature	IEEE 802.1p 8 priority queues per port, CoS based on switch port; VLAN ID; DSCP; TCP/UDP port,
	IEEE 802.1p priority tag remarking, DSCP remarking, Port based ingress/egress rate limit
L2 switching Protection	STP, RSTP, MSTP, ITU-T G.8032 Ethernet ring protection
Trunking	IEEE 802.3ad LACP

Security	IEEE 802.1x port based access control
	MAC based access control authentication
	RADIUS authentication, limited MAC address learning
	IP/MAC binding, ACL rule based filtering, TACACS+
	IP source guard, DHCP snooping/relay option 82
	ARP inspection, IP source guard
IP Multicasting	IGMP throttling, IGMP filtering, IGMP fast leave
	IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2
Storm Control	Unicast/Broadcast/Multicast storm suppression
Management	Web/Telnet CLI/SNMP/console interface, Web/CLI
	authentication, SSH v2, HTTPs, port mirroring
	system syslog, IPv6 management, NTP, SNTP
SNMP agent	SNMP v1/v2c/v3
Software upgrade	TFTP / HTTP / HTTPs
Ethernet OAM	IEEE 802.3ah / IEEE 802.1ag / ITU-T Y.1731
Timing Options	Sync. Ethernet, IEEE 1588 V2
LED display	Power, System, Console, Link/Act, Speed
Power input	100V ~ 240VAC
	-60VDC (-48VDC Power)
	-9 ~ -32VDC (-24VDC Power)
Power Consumption	< 50W
Operating Temperature	0 ~ 50℃
Humidity	5% ~ 90% (non-condensing)
Dimensions	270.3 x 437.5 x 43.5 mm (D x W x H)
Certification	FCC, CE, RoHS compliant

Application

Mobile Backhaul Application

Ordering Information

Model Name	Description
MSW-4424A	24x100/1000Base-X (SFP) + 4 x 10GBase-X SFP+ L2 Gigabit OAM managed Fiber Access Switch
MSW-4424S	24x100/1000Base-X (SFP) + 4 x 10GBase-X SFP+ L2 Gigabit OAM managed Fiber Access Switch with Sync. E enabled

MSW − ☐☐☐☐☐
Example: MSW − 4424A

MSW-202 (Rev.14)

2-Port 10/100/1000Base-T + 2-Port 100/1000Base-X L2 OAM Managed Switch (EDD)

MSW-202 is a carrier class Ethernet Demarcation Device (EDD) with 2 x 10/100/1000Base-T Ethernet ports and 2 x 100/1000Base-X dual rate SFP fiber ports which enables EPL (Ethernet Private Line) & EVPL (Ethernet Virtual Private Line) services with advanced carrier Ethernet features per the Metro Ethernet Forum (MEF 9 and 14). By supporting link and service Ethernet OAM schemes, the MSW-202 also provides extensive fault detection and diagnostic capabilities to ensure that actual network use complies with pre-agreed service level agreements (SLAs).
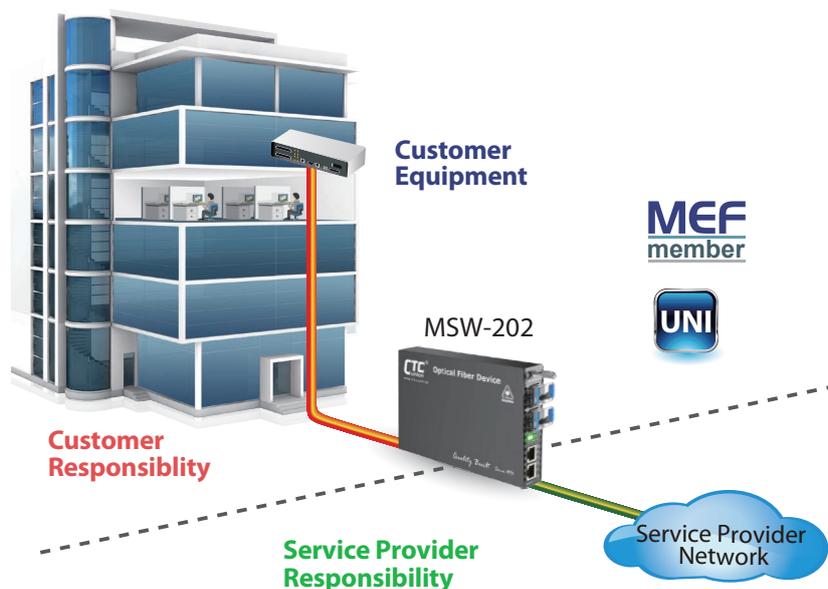
Features

- Complies with MEF CE1.0
- Supports 8K MAC
- Spanning Tree 802.1D, 802.1s, 802.1w
- Supports 802.1Q / 256 active VLANs
- Double VLAN Tagging (C-tag/S-tag) (IEEE 802.1ad) support for ISP application
- Various QoS capability (MAC/port/802.1p/Diffserv)
- Port-based rate limiting
- DHCP Snooping
- IGMP Snooping

- IPv6 support
- IEEE 802.3x and IEEE 802.1x support
- Jumbo frame for up to 9.6K
- Extensive Ethernet OAM support
- IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731
- SNMP v1/v2c/v3, Telnet, Web GUI
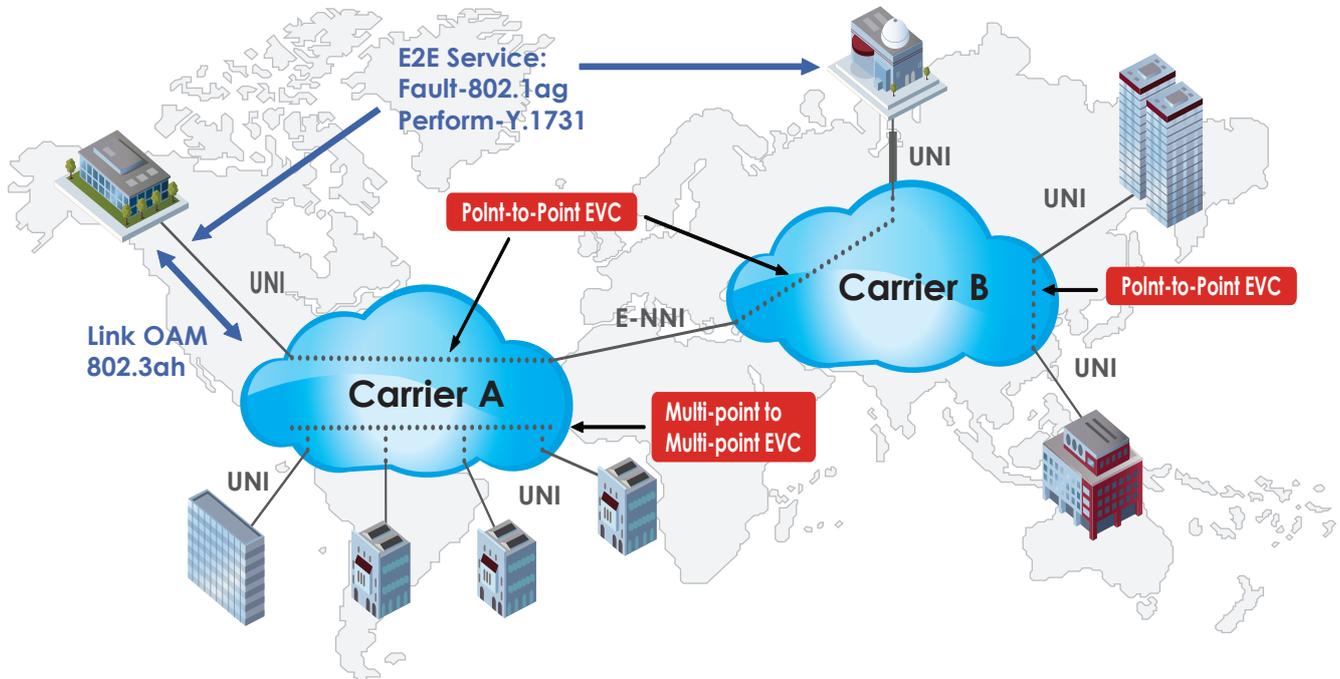- IEEE 1588 V2 aware

Specifications

Optical Interface	Dual-speed (100M and 1000M) 2 WAN ports SFP based	**Standard**	IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX,100Base-FX, IEEE 802.3z 1000Base-X, IEEE802.3ab 1000Base-T
	Fiber optic: SFP based Fast Ethernet (100BaseFX, 100BaseLX10, 100BaseBX10) Gigabit Ethernet (1000Base-SX, 1000BaseLX10, 1000BaseBX10)	**LEDs**	Power, FX-1 Link, FX-2 Link,Test, UTP-1 Link, UTP-1 100/1000, UTP-2 Link, UTP-2 100/1000
LAN Interface	2 LAN ports	**Temperature**	0 ~ 50℃ (Operating); -10 ~ 70℃ (Storage)
	Copper based : 10/100/1000Base-T RJ-45	**Humidity**	20 - 80% non-condensing (Operating); 10-90% (Storage)
	Supports manual 10, 100,1000Base-T, Full, Half duplex, or n-way (Auto-Negotiation) each channel	**Power Consumption**	< 12W

Application

Customer Equipment

MEF member

UNI

MSW-202

Customer Responsiblity

Service Provider Responsibility

Service Provider Network

Application

- Ethernet in the First Mile (EFM)
- Fiber to the Premise (FTTP), E-Line and E-LAN
- Enterprise markets

**E2E Service:
Fault-802.1ag
Perform-Y.1731**

Point-to-Point EVC

UNI

UNI

UNI

Carrier B

Point-to-Point EVC

UNI

E-NNI

UNI

**Link OAM
802.3ah**

Carrier A

**Multi-point to
Multi-point EVC**

UNI

UNI

First mile Ethernet fiber access

The EDD Series, at customer premises, allows operators to reach customers over fiber, while still selling a standard Ethernet copper connection. Being part of the operator's network allows the converter to act as a demarcation point between the operator and the customer.

Fully Ethernet OAM enabled

Ethernet OAM features (IEEE 802.3ah/802.1ag/ITU-T Y.1731) allow rapid detection and recovery of network faults and saves OPEX for operators as well as increasing customer satisfaction.

MEF CE2.0 standards compliant solution

MEF 9/14/21 compliant product guarantees compatibility with other MEF certified equipment and reduces the risk and cost for Metro Ethernet network deployment by operators.

Ordering Information

Model Name	Description
MSW-202	2-Port 10/100/1000Base-T + 2-Port 100/1000Base-X OAM Managed Switch

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

CTC UNION TECHNOLOGIES CO., LTD.   www.ctcu.com   *MSW-202*   **3-4**

NEW

MSW-404
MSW-404S

4x SFP Slots in Dual Rate 100/1000Base-X and 4 Ports 10/100/1000Base-T RJ45 OAM Managed Ethernet Switch (EDD)

The CTC Union's MSW-404 series is the new generation of carrier grade Ethernet demarcation device for business connection and mobile backhaul transportation service delivered by carriers. The MSW-404 series is equipped 4 SFP slots in dual rate 100/1000Base-X and 4 ports 10/100/1000Base-T RJ45 network interfaces. It is designed to enable E-Line, E-LAN, E-Tree and E-Access services which are CE (Carrier Ethernet) 2.0 compliant for Metro Ethernet network deployments.

The MSW-404 series device enables carriers and service providers to delivered SLA-based network service with extensive fault detection and diagnostic capabilities which are compliant with the latest Ethernet OAM standards such as IEEE 802.3ah, IEEE 802.1ag and ITU-T Y.1731. With optionally built-in RFC2544 feature sets, The MSW-404 series also enables the service providers to perform the SLA verification anytime to ensure the quantitative latency, jitter and throughput delivery performance indexes. The CE2.0 compliant functions support EVCs and hierarchical QoS traffic management to enable service providers managing bandwidth and enforce SLA guaranteed.

MEF 22.1 defines the standard how Metro Ethernet service is adopted into the traffic transportation in the mobile backhaul application. The mobile service is time sensitive and required accurately packet delivery over a clocking synchronized network to transmit packetized data from a mobile device among base stations without loss. The MSW-404 series supports Synchronized Ethernet to fulfill the IP converged services (data, voice, video) over synchronous Ethernet aware carrier Ethernet network.
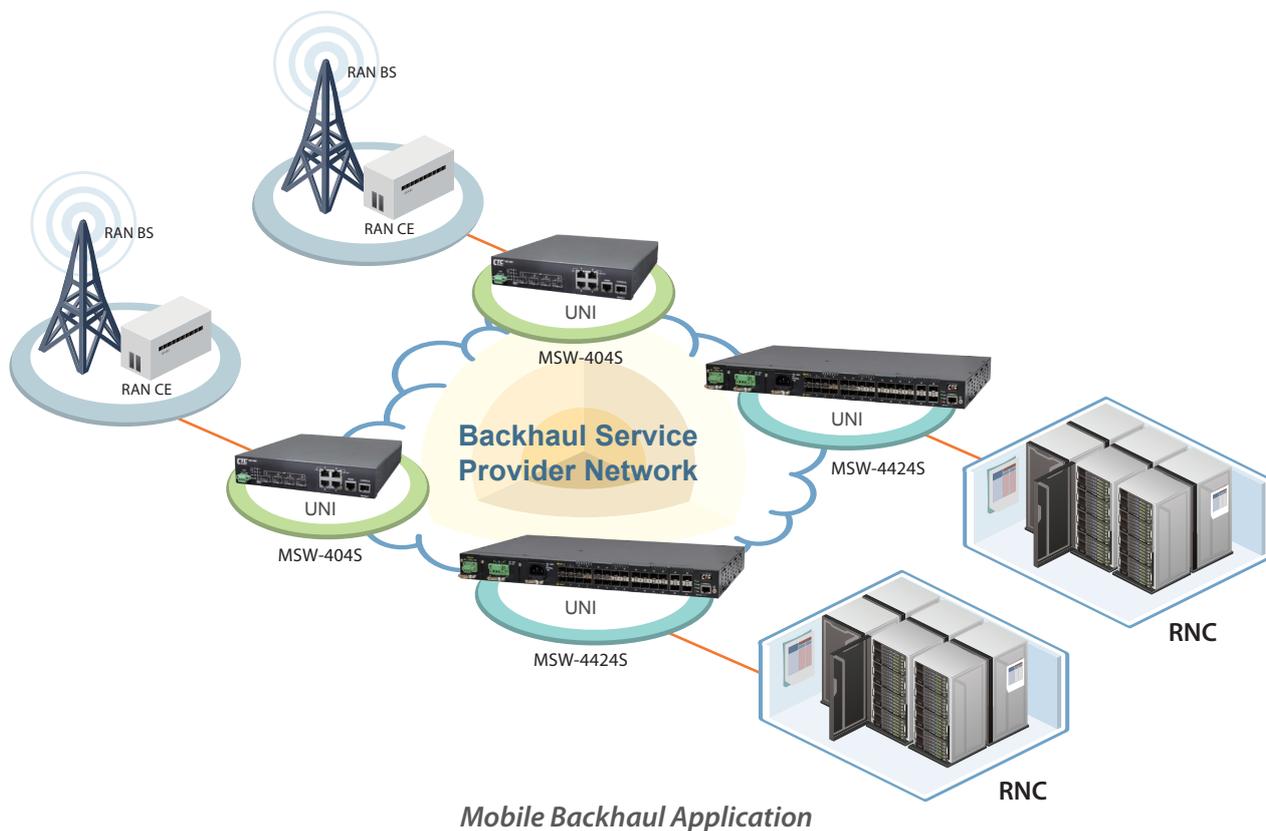
Features & Benefits

- The next generation of Ethernet demarcation device, at customer premise, fulfilling the large-scale carrier Ethernet deployment for intelligent business connection and mobile backhaul services complied to CE 2.0 standard.
- MEF 9/14/21 standards compliant product guarantees the fully interoperability with other MEF certified equipment and reduces the risks and cost of Carrier Ethernet network deployment for operators and service providers.
- Advanced clock synchronized features for carrier Ethernet network allows operators to deliver time sensitive services with optimal stability and continuity in the end-to-end connectivity.

Specifications

Interface	100/1000Mbps SFP slots * 4 + 10/100/1000Base-T RJ45 * 4
Console Port	DB-9 RS-232 console port * 1
Filter & Forward Rate	10M (14880/14880pps); 100M (148800/148800pps); 1000M (1488000/1488000pps)
Transmission Method	Store and Forward Switching
Standard	IEEE 802.3u, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1ad, IEEE 802.1D, IEEE 802.1w, IEEE 802.1s, IEEE 802.1x, IEEE 802.3ad
Packet Buffer	512K Bytes
MAC Table Size	8K
Max. Packet Size	9.6K Bytes
VLAN Feature	IEEE 802.1Q tagged VLAN, port based VLAN, MAC based VLAN, protocol based VLAN, private VLAN, IEEE 802.1ad Q-in-Q
QoS Feature	IEEE 802.1p 8 priority queues per port, CoS based on switch port; VLAN ID; DSCP; TCP/UDP port, IEEE 802.1p priority tag remarking, DSCP remarking, Port based ingress/egress rate limit
L2 switching protection	STP, RSTP, MSTP, ITU-T G.8031/G.8032 Ethernet ring protection

Trunking	IEEE 802.3ad LACP
Security	IEEE 802.1x port based access control, MAC based access control authentication, RADIUS authentication, limited MAC address learning, IP/MAC binding, ACL rule based filtering, TACACS+, IP source guard, DHCP snooping/relay option 82, ARP inspection, IP source guard
IP Multicasting	IGMP throttling, IGMP filtering, IGMP fast leave, IGMP snooping v1/v2/v3, MVR, MLD snooping v1/v2
Storm Control	Unicast/Broadcast/Multicast storm suppression
Management	Web/Telnet CLI/SNMP/console interface, Web/CLI authentication, SSH v2, HTTPs, port mirroring, system syslog, IPv6 management, NTP, SNTP
SNMP Agent	SNMP v1/v2c/v3
Software Upgrade	TFTP/HTTP/HTTPs
Ethernet OAM	IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, RFC2544
Timing Options	ITU-T G.8262 Synchronous Ethernet, IEEE 1588v2
LED Display	Power, System, Console, Link, Speed/Act
Power Input	100V ~ 240VAC, -36 ~ -60VDC
Power Consumption	< 20W
Operating Temperature	0 ~ 50°C
Humidity	5% ~ 90% (non-condensing)
Dimensions	250 x 218 x 44 mm (D x W x H)
Regulatory	FCC, CE, RoHS compliant

Application

Mobile Backhaul Application

- *Carrier Ethernet with multiple class of service*
- *Traffic Synchronization*
- *Precisely delivery of time-sensitive service*

Ordering Information

Model Name	Description
MSW-404	4 x SFP Slots in Dual Rate 100/1000Base-X and 4 Ports 10/100/1000Base-T RJ45 OAM Managed Ethernet Switch
MSW-404S	4 x SFP Slots in Dual Rate 100/1000Base-X and 4 Ports 10/100/1000Base-T RJ45 OAM Managed Ethernet Switch with Sync. E enabled

MSW **– 404** ☐

Example: MSW – 404S

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

NEW

GSW-3420FM

20 * 100/1000Base-X SFP slots + 4 * GbE combo ports (10/100/1000Base-T or 1000Base-X) L2 managed Ethernet Switch

GSW-3420FM is an SNMP manageable Gigabit Ethernet switch for FTTx deployment or Gigabit Ethernet fiber aggregation that equipped 20 dual rate 100/1000Base-X SFP ports and 4 Gigabit Ethernet combo (10/100/1000Base-T or 1000Base-X) ports. With advanced layer 2 and QoS features, this switch is targeted at multi-service operators (MSO) with a desire to deploy provisioned triple play services via active Ethernet FTTx network infrastructures. Fiber based network infrastructures offer the data rates required by triple play services such as high speed internet access, VoIP and HD IPTV. The GSW-3420FM Ethernet access switch provides VLAN, QoS and IGMP L2 feature sets as well as robust security management to facilitate service provider's build up of a manageable and secure FTTx access network.

Features

- 20 * SFP ports, support 100Base-FX or 1000Base-X
- 4* RJ45/SFP(100/1G) ports, auto-detect RJ45/SFP connection
- IPv6 management
- 8 priority queues are supported on each port for QoS application
- Port-based VLAN, 802.1Q VLAN, Voice VLAN and Q-in-Q(double tagging) function
- Protected Port and LoopBack Detection function
- IEEE 802.1x security function, and VLAN assignment, Guest VLAN functions
- Static Mac address access limit and Dynamic Mac address number on port
- IEEE802.1d & 802.1w & 802.1s

- IP Multicast with IGMP snooping / query / fast leave / filtering / group limited /MVR
- DHCP Client / DHCP Option 82 Relay / DHCP Snooping function
- ACL function for L2 ~ L4 packet control, Ingress/Egress rate control on port
- Broadcast/Multicast/Unicast storm control
- ARP inspection / IP source guard
- RMON 1,2,3,9
- SFP Transceiver DDMI function
- Remote port configuration setting and statistics monitoring
- Text configuration download and upload
- IEEE 802.3az power management / Green Ethernet

Application

Fiber Ethernet Network

Triple-play Service Provisioned

FIBER   E1
Cat5 / 6   RJ-11
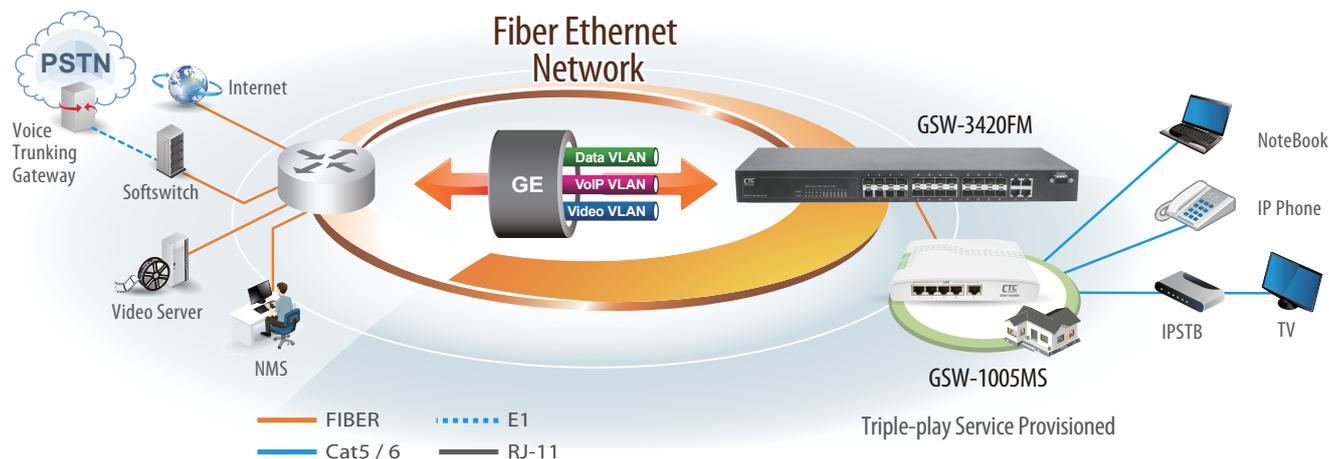
Specifications

System

100/1G SFP Port	20
UTP/SFP Combo Port	4
CPU	416MHz MIPS 24KEc CPU as the main processor which integrated on switch controller
Memory	Flash : SPI 16MB / RAM:DDRII 128MB
Packet buffer	2M Bytes
MAC Table size	16K
Max Packet Size	9600 Bytes
Switching capability	14880pps at 10Mbps, 148810pps at 100Mbps, 1488095pps at 1Gbps with 64bytes packets
Switch capacity	48Gbps
Forwarding Rate	35.7Mpps
FAN Design	Yes
Console port	D-Sub 9
19" Rack-Mount	Yes, with kits
SFP DDMI	Yes
Dimension	172 x 440 x 44 mm (D x W x H)
Environmental Temperature	Operating : 0 ~ 50℃ Storage : -25 ~ 70℃
Humidity	10% ~ 90% (non-condensing)
LED Display	Per Port : Link/Act (Green: Gigabit, Yellow:10/100M) Per Device : Power and System
Power Consumption	<30W Max.
Power Input	AC Power input (100V~240V)

LED	Status	Condition
Power	Lights(Green)	System is receiving power
System	Lights(Green)	System is ready
Link / Act	Lights	Link is ready
		1000Mbps : Green
		100Mbps : Amber
	Flashing	Data packets being received or sent

Software

Port Control	Port speed, duplex mode, and flow control Port Auto MDI/MDI-X Port frame size (jumbo frames), Maximum ingress frame size (10056 bytes) Port state (administrative status) Port status (link monitoring) Port statistics (MIB counters) Port VeriPHY (cable diagnostics)
L2 Switching	Auto MAC address learning/aging and MAC addresses (static) IEEE 802.1Q static VLAN(4096 entries Max.), Voice VLAN Port isolation, Private VLAN, static, MAC based VLAN protocal based VLAN IP subnet based VLAN IEEE 802.1D STP/802.1w RSTP/802.1s MSTP IEEE 802.3ad Link Aggregation, static and LACP BPDU guard and restricted role, Error Disable Recovery DHCP client, DHCP snooping, DHCP option 82 relay ARP inspection(256 entries Max.) Port mirroring
Layer 2 Multicast	IGMP snooping v1,v2, v3 snooping, (1024 groups) IGMP snooping Fast and Immediate leave IGMP throttling, filtering, and leave proxy MVR and MVR profile IPv6 MLD VI snooping
QoS	8 Priority Queues per Port Port Based priority Scheduler priority QoS Control List(256 entries Max.) Storm control for UC, MC, and BC Policing and shaping per port and per queue Ingress Policing Egress Shaping DiffServ (RFC 2474) remarking Tag remarking
Security	Port-based 802.1X, Single 802.1X, Multiple 802.1X MAC-based authentication, VLAN assignment, QoS assignment, Guest VLAN RADIUS accounting MAC address limit TACACS+ Web and CLI authentication and authorization Authorization ACLs for filtering, policing, and port copy IP source guard
Synchronization	NTPv4 Client
SFP DDMI	Yes
Management	HTTP server CLI console port Telnet Management access filtering SSHv2 and HTTPS IPv6 Management System Syslog Software upload through Web and TFTP SNMPv1/v2c/v3 Agent RMON Group 1, 2, 3, and 9 IEEE 802.1AB-2005 Link Layer Discovery, LLDP Text Configuration download or upload sFlow Daylight Saving

Ordering Information

Model Name	Description
GSW-3420FM-AC, AD	20 * 100/1000Base-X SFP slots + 4 * GbE combo ports L2 Switch with AC or AD (AC+DC) Power

Power Type

GSW – 3420FM – ☐☐

Example: GSW – 3420FM – AD

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

GSW-1005MS

5-Port 10/100/1000Base-T to 1-Port 100/1000Base-X Managed GbE Switch with Cable Tray Optional

GSW-1005MS is a managed Gigabit Ethernet CPE switch designed 5-Ports 10/100/1000Base-T RJ45 and 1 port 100/1000Base-X SFP based fiber optics. The traditional transmission distance of Gigabit Ethernet over RJ45 copper can be extended up to 100km over a fiber optics interface. GSW-1005MS has a optional cable tray that allows the installer to enclose the excessive fiber within the unit, thus providing protection for the sensitive fiber at subscriber side. LEDs provide visual monitoring of Ethernet connected devices such as Ethernet home gateways, wireless access points or PC/laptop via 10/100/1000Base-T twisted pair RJ45 ports on GSW-1005MS. When GSW-1005MS is deployed as a stand-alone solution, it incorporates an easy to use Web user interface for operation, administration and maintenance both locally and remotely. All of the enabled Layer 2 features and functions of GSW-1005MS can be configured and monitored via web, CLI and SNMP management interfaces. GSW- 1005MS is particularly suitable for deploying and provisioning active Ethernet FTTX service of multi-service operators (MSO).
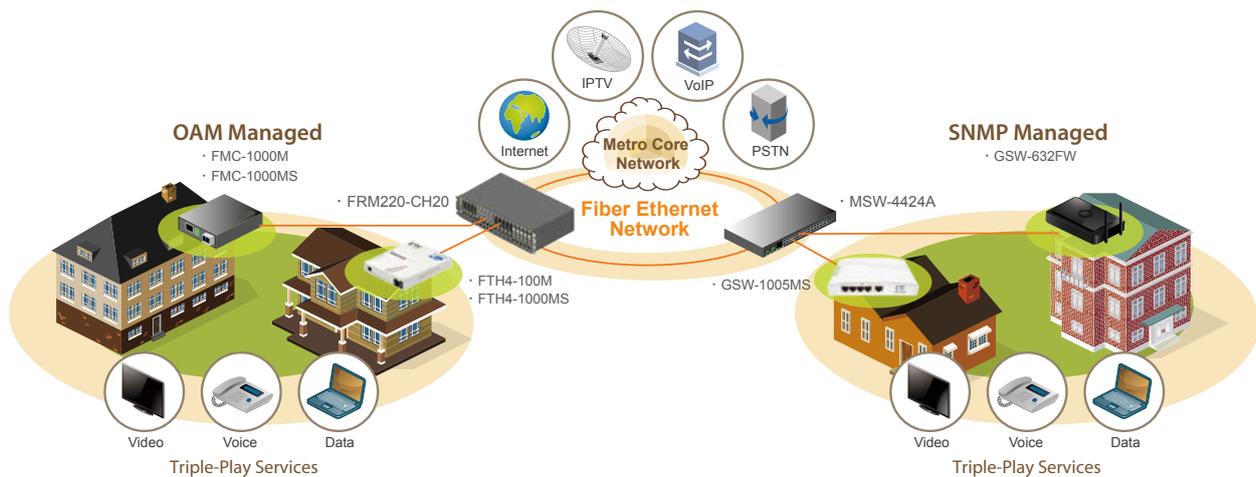
Features

- 5-Port 10/100/1000Base-T + 100/1000Base-X SFP uplink
- Supports 9.6K Bytes jumbo frame
- Supports IEEE 802.1Q tagged VLAN & Q-in-Q VLAN stacking
- Supports IEEE 802.1p priority queue
- Supports IGMP snooping v1/v2/v3
- Supports DHCP auto provisioning
- Fiber cable tray(optional)

Specifications

Interface	10/100/1000Base-T * 5 + 100/1000Base-X SFP uplink * 1
HW Capability	Non-blocking wire speed switching performance 9.6K bytes jumbo frame forwarding 8K MAC address table
VLAN Feature	IEEE 802.1Q tagged VLAN, IEEE 802.1ad Q-in-Q
QoS Feature	IEEE 802.1p 8 priority queues per port
Bandwidth Control	Per port based egress/ingress rate limit control
IP Multicasting	IGMP snooping v1/v2/v3
Storm Control	Unicast/Broadcast/Multicast storm suppression

Management	Web/Telnet/SNMP management interface DHCP auto provisioning TFTP/HTTP firmware upgrade
SNMP agent	SNMP v1/v2c/v3
Optical interface	SFP LC connector
Power input	AC Power Adapter
Operating temperature	0 ~ 50°C
Humidity	5% ~ 90% (non-condensing)
Dimensions	120 x 170 x 35 mm (D x W x H)
Regulatory	FCC, CE, RoHS compliant

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

QoS with Four Priority Queues

The QoS (Quality Of Service) function provides eight priority queues to support different classifications of traffic. High priority packet streams experience less delay inside the GSW-1005MS , which supports lower latency for certain delay-sensitive traffic. The GSW-1005MS can classify the packet as one of the eight priorities according to VIP port.

Remote Firmware Upgrade

The remote firmware upgrade feature enables the switch to be updated remotely via firmware upgrade including the products that were already installed in the field. This feature eliminates the need for the users to ship the product back to the supplier.

Bandwidth Control

The Bandwidth Control function allows users to set the bandwidth of GSW-1005MS switch for both ingress and egress rate and can be allocated a variety of rates up to full bandwidth capability of the devices (100Kbps ~ 1000Mbps).

Broadband Services

The GSW-1005MS product philosophy allows the end user to follow and benefit fully from the fast developments in Fiber to the home-networking solutions. The CPE is the interface between the digital broadband network and the user peripheral equipment, such as routers, wireless access points, servers, and printers. With generations of computers and home networking equipment coming and going the GSW-1005MS will be a constant and reliable factor for the delivery of broadband data services.

These services are not limited to today's broadband internet applications. In the next few years, end-users will also benefit from next generation health-care, security, communication and infotainment services. The GSW-1005MS CPE platform fully supports today's services and is ready for the next wave of new broadband services. Flexibility is key, since the CPE functionality must be matched to the requirements of those new services.

Quick Installation

The installation of the wall-mount unit of GSW-1005MS CPE is swift and straightforward. Because of its size and ideal dimensions, the GSW-1005MS CPE can be positioned easily at the user residence or home. The GSW-1005MS design allows easy access for mounting and does not need the small elements, making the installation process predictable and hassle-free. The wall-mount unit, including integrated fiber tray, not only makes fiber handling and termination easy and robust, but also eliminates the need for optical patch cords.

Step 1

First, install fiber cable on the cable tray base.
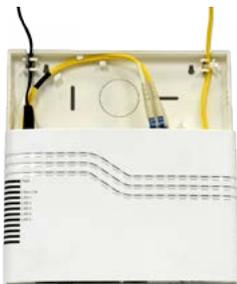
Single Fiber   Dual Fiber

Step 2

Then, put the dust cover on the cable tray base and fasten two items with a screw securely.

Step 3

Use two wall-mounting holes on GSW-1005MS to install GSW-1005MS on the cable tray base. Connect the fiber cable connector to the SFP transceiver and connect the power cable.

Step 4

Finally, install the upper cover.

Ordering Information

Model Name	Description
GSW-1005MS	5-Port 10/100/1000Base-T to 100/1000Base-X managed Gigabit Ethernet Switch (cable tray optional)

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

NEW

GSW-2008MS

8-Port 10/100/1000Base-T to 2-Port100/1000Base-X Managed GbE Switch with Cable Tray Optional

The CTC Union GSW-2008MS is a managed Gigabit Ethernet CPE switch positioned as a layer 2 managed switch solution for high speed connectivity with popular traffic priority and management capabilities for small and medium businesses. It features 8-port 10/100/1000Base-T RJ45 and 2-100/1000Base-X SFP based fiber optics. The GSW-2008MS is designed with a high-performance switching architecture and offers wire-speed transportation capability for bandwidth-intensive applications of enterprises. More and more corporations are adapting new IT technologies over the network such as voice over IP, video conference to improve productivity and save operation expenditure. The GSW-2008MS also supports features such as VLAN, QoS, IGMP for multicast applications and network management to fulfill SMB requirements. The GSW2008 delivers a cost effective Gigabit Ethernet solution to meet the converged applications for enterprise customer's networks.
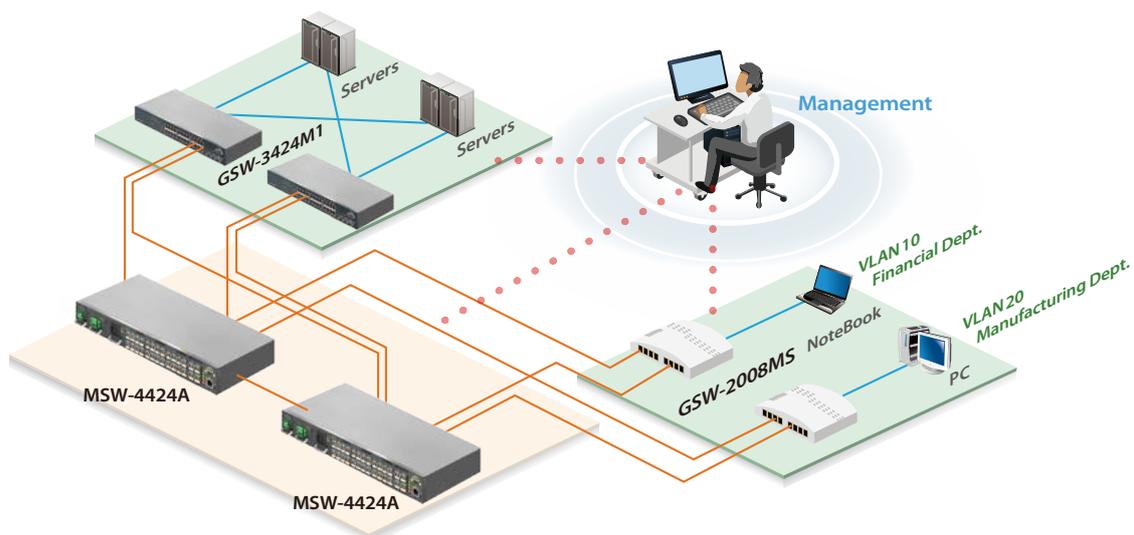
Features

- 8-port 10/100/1000Base-T RJ45 + 2 uplink 100/1000Base-X SFP slot
- Supports 9K Bytes jumbo frame
- Supports IEEE 802.1Q tagged VLAN & Q-in-Q VLAN stacking
- Supports IEEE 802.1p priority queue
- Supports IGMP snooping v1/v2/v3
- Fiber Cable Tray (optional)

Specifications

Interface	8x 10/100/1000Base-T + 2x 100/1000Base-X SFP
HW capability	Non-blocking wire speed switching performance
	9.6K bytes jumbo frame forwarding
	8K MAC address table
VLAN Feature	IEEE 802.1Q tagged VLAN, IEEE 802.1ad Q-in-Q
QoS Feature	IEEE 802.1p 8 priority queues per port
Bandwidth Control	Per port based egress/ingress rate limit control
IP Multicasting	IGMP snooping v1/v2/v3
Storm Control	Unicast/Broadcast/Multicast storm suppression

Management	Web/Telnet/SNMP management interface TFTP/HTTP firmware upgrade
SNMP agent	SNMP v1/v2c/v3
Optical interface	SFP LC connector
Power input	AC Power Adapter
Operating Temperature	0 ~ 50℃
Humidity	5% ~ 90% (non-condensing)
Dimensions	170 × 120 × 35mm (D x W x H)
Certification	FCC, CE, RoHS compliant

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

3-11 **GSW-2008MS** www.ctcu.com CTC UNION TECHNOLOGIES CO., LTD.

QoS with Four Priority Queues

The QoS (Quality Of Service) function provides eight priority queues to support different classifications of traffic. High priority packet streams experience less delay inside the GSW-2008MS , which supports lower latency for certain delay-sensitive traffic. The GSW-2008MS can classify the packet as one of the eight priorities according to VIP port.

Remote Firmware Upgrade

The remote firmware upgrade feature enables the switch to be updated remotely via firmware upgrade including the products that were already installed in the field. This feature eliminates the need for the users to ship the product back to the supplier.

Bandwidth Control

The Bandwidth Control function allows users to set the bandwidth of GSW-2008MS switch for both ingress and egress rate and can be allocated a variety of rates up to full bandwidth capability of the devices (100Kbps ~ 1000Mbps).

Broadband Services

The GSW-2008MS product philosophy allows the end user to follow and benefit fully from the fast developments in Fiber to the home-networking solutions. The CPE is the interface between the digital broadband network and the user peripheral equipment, such as routers, wireless access points, servers, and printers. With generations of computers and home networking equipment coming and going the GSW-2008MS will be a constant and reliable factor for the delivery of broadband data services.

These services are not limited to today's broadband internet applications. In the next few years, end-users will also benefit from next generation health-care, security, communication and infotainment services. The GSW-2008MS CPE platform fully supports today's services and is ready for the next wave of new broadband services. Flexibility is key, since the CPE functionality must be matched to the requirements of those new services.

Quick Installation

The installation of the wall-mount unit of GSW-2008MS CPE is swift and straightforward. Because of its size and ideal dimensions, the GSW-2008MS CPE can be positioned easily at the user residence or home. The GSW-2008MS design allows easy access for mounting and does not need the small elements, making the installation process predictable and hassle-free. The wall-mount unit, including integrated fiber tray, not only makes fiber handling and termination easy and robust, but also eliminates the need for optical patch cords.

Step 1
First, install fiber cable on the cable tray base.
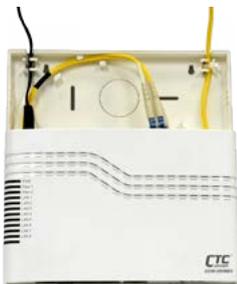
Single Fiber   Dual Fiber

Step 2
Then, put the dust cover on the cable tray base and fasten two items with a screw securely.

Step 3
Use two wall-mounting holes on GSW-2008MS to install GSW-2008MS on the cable tray base. Connect the fiber cable connector to the SFP transceiver and connect the power cable.

Step 4
Finally, install the upper cover.

Ordering Information

Model Name	Description
GSW-2008MS	8-port 10/100/1000 Base-T to 2-port100/1000 Base-X Managed GbE Switch (cable tray optional)

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

FTH4-1000MS

Web Smart GbE OAM/IP Managed Converter with Cable Tray

The FTH4-1000MS is an IEEE802.3ah OAM compliant copper to fiber Gigabit Ethernet solution designed to make conversion between 10/100/1000Base-T and 100/1000Base-X with SFP based fiber optics. The FTH4-1000MS has a built-in cable tray that allows the installer to enclose the excessive fiber within the converter. When deployed as a stand-alone solution, this media converter incorporates an easy to use Web user interface for operation, administration and maintenance, both locally and remotely. By offering IEEE802.3ah OAM compliance, this converter can be linked to any IEEE802.3ah compliant fiber switch and support loop back and dying gasp functions. All functions of this converter and the remotely connected converter can be configured and monitored via Web management, including bandwidth control, duplex, speed and VLAN configuration.
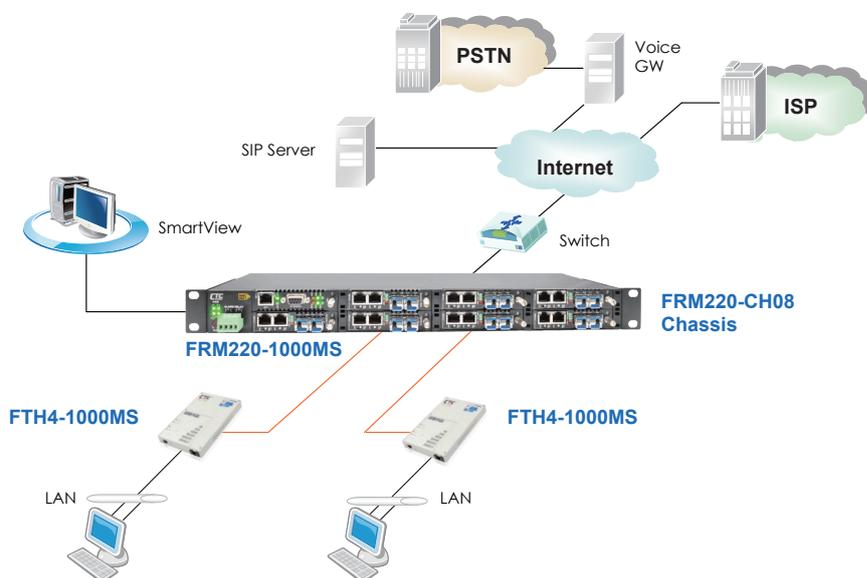
Features

- 10/100/1000Base-T to 100/1000Base-X
- Forwarding 9k bytes Jumbo Packet
- Built-in fiber cable tray
- Ingress/Egress Bandwidth control
- Supports 802.3ah OAM/IP In-band management
- Firmware upgrade via Web
- Dying gasp (remote power failure detection)
- Supports Link Fault Pass-Through (LFPT) Function

- Supports Auto Laser Shutdown (ALS) Function
- Allow IP settings via Web management
- Supports On-Line F/W upgrade (local) by the Web manager
- Supports 16 Tag VLAN Group/ Q-in-Q
- RMON counters
- Auto-Cross over for MDI/MDIX in TP port
- Auto-Negotiation or Manual mode in TP port
- Supports flow control Enable or Disable

Specifications

Optical Interface	Connector	SFP LC
	Data rate	100/1000Mbps
	Duplex mode	Full duplex
	Fiber	MM 50/125μm, 62.5/125μm
		SM 9/125μm
	Distance	MM 2km, SM 15/30/50/80/120km
		WDM 20/40/60/80km
	Wavelength	MM 1310nm, SM 1310,1550nm
		WDM 1310Tx/1550Rx (type A)
		1550Tx/1310Rx (type B)
Standards	IEEE802.3, IEEE802.3u IEEE802.3ab, IEEE802.3z, IEEE802.3x	
Indications	LED (Power, FX-Link, LAN Speed, LAN Link)	
Power Consumption	< 4W	

Dimensions	220 x 140 x 27mm (D x W x H)	
Weight	0.72kg	
Electrical Interface	Connector	RJ-45
	Data rate	10Mbps, 100Mbps, 1000Mbps
	Duplex mode	Half / Full duplex
	Cable	10Base-T Cat.3, 4, 5, UTP,
		100Base-TX Cat.5, 5e or higher
Power	Adapter	Output Voltage:12VDC
Temperature	0 ~ 60℃ (Operating), -10 ~ 70℃ (Storage)	
Humidity	10 ~ 90% non-condensing	
Certification	CE, FCC, RoHS compliant	
MTBF	65,000 hrs	

Application

PSTN
Voice GW
ISP
SIP Server
Internet
SmartView
Switch
FRM220-CH08 Chassis
FRM220-1000MS
FTH4-1000MS
FTH4-1000MS
LAN
LAN

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

QoS with Four Priority Queues

The QoS (Quality Of Service) function provides four priority queues to support different classifications of traffic. High priority packet streams experience less delay inside the FTH4-1000MS , which supports lower latency for certain delay-sensitive traffic. The FTH4-1000MS can classify the packet as one of the four priorities according to VIP port.

Dying Gasp

The Dying Gasp features enables FTH4-1000MS media converter to send out a SNMP trap to alert the SNMP manager in the event of remote power failure.

Remote Firmware Upgrade

The remote firmware upgrade feature enables the media converter to be updated remotely via firmware upgrade including the products that were already installed in the field. This feature eliminates the need for the users to ship the product back to the supplier.

Bandwidth Control

The Bandwidth Control function allows users to set the bandwidth of FTH4-1000MS media converter for both ingress and egress rate and can be allocated a variety of rates up to full bandwidth capability of the devices (64Kbps ~ 1000Mbps).

Broadband Services

The FTH4-1000MS product philosophy allows the end user to follow and benefit fully from the fast developments in Fiber to the home-networking solutions. The CPE is the interface between the digital broadband network and the user peripheral equipment, such as routers, wireless access points, servers, and printers. With generations of computers and home networking equipment coming and going the FTH4-1000MS will be a constant and reliable factor for the delivery of broadband data services.

These services are not limited to today's broadband internet applications. In the next few years, end-users will also benefit from next generation health-care, security, communication and infotainment services. The FTH4-1000MS CPE platform fully supports today's services and is ready for the next wave of new broadband services. Flexibility is key, since the CPE functionality must be matched to the requirements of those new services.

Quick Installation

The installation of the wall-mount unit of FTH4-1000MS CPE is swift and straightforward. Because of its size and ideal dimensions, the FTH4-1000MS CPE can be positioned easily at the user residence or home. The FTH4-1000MS design allows easy access for mounting and does not need the small elements, making the installation process predictable and hassle-free. The wall-mount unit, including integrated fiber tray, not only makes fiber handling and termination easy and robust, but also eliminates the need for optical patch cords.
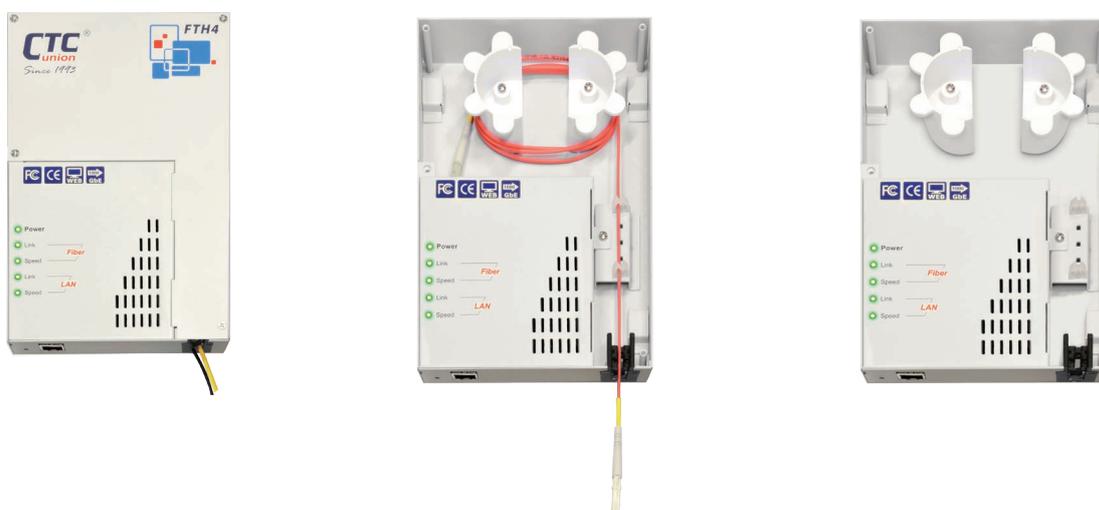
Ordering Information

Model Name	Description
FTH4-1000MS	10/100/1000Base-T to 100/1000Base-X Web Smart OAM/IP managed media converter w/ cable tray

FTH4-100M

Web Smart FE OAM/IP Managed Converter with Cable Tray

The FTH4-100M is an IEEE802.3ah OAM compliant copper to fiber Fast Ethernet solution designed to make conversion between 10/100Base-TX and 100Base-FX fiber optics. The FTH4-100M has a built-in cable tray that allows the installer to enclose the excessive fiber within the converter. When deployed as a stand-alone solution, this media converter incorporates an easy to use Web user interface for operation, administration and maintenance, both locally and remotely. By offering IEEE802.3ah OAM compliance, this converter can be linked to any IEEE802.3ah compliant fiber switch and support loop back and dying gasp functions. All functions of this converter and the remotely connected converter can be configured and monitored via Web management, including bandwidth control, duplex, speed and VLAN configuration.
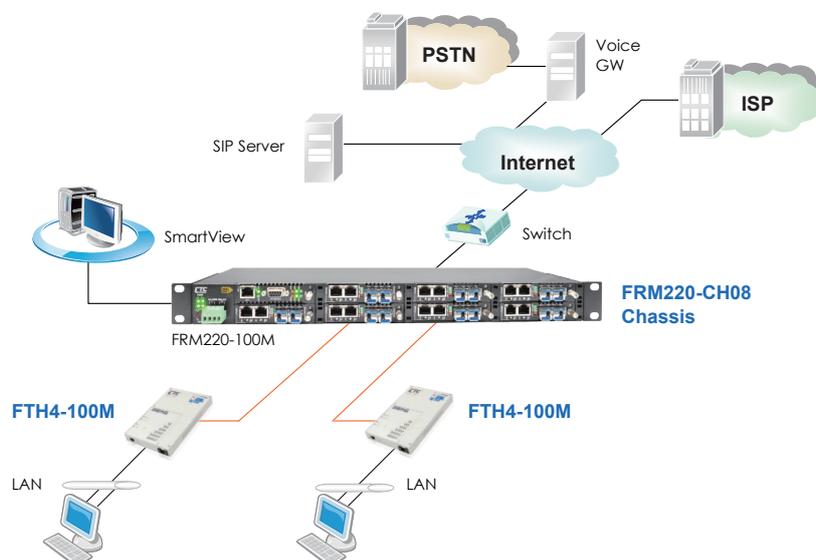
Features

- 10/100Base-TX to 100Base-FX Converter
- Forwarding 9k bytes Jumbo Packet
- Built-in fiber cable tray
- Ingress / Egress Bandwidth control
- Support IEEE802.3ah-OAM/IP in-band management
- Firmware upgrade via Web
- Dying gasp (remote power failure detection)
- Supports Link Fault Pass-Through (LFPT) Function

- Supports Auto Laser Shutdown (ALS) Function
- Allow IP settings via Web management
- Supports On-Line F/W upgrade (local) by the Web manager
- Supports 16 Tag VLAN Group/ Q-in-Q
- RMON counters
- Auto-Cross over for MDI/MDIX in TP port
- Auto-Negotiation or Manual mode in TP port
- Supports flow control Enable or Disable

Specifications

Optical Interface	Connector	1x9 (SC, ST, FC) (Option)
	Data rate	100Mbps
	Duplex mode	Full duplex
	Fiber	MM 50/125µm, 62.5/125µm
		SM 9/125µm
	Distance	MM 2km, SM 15/30/50/80/120km
		WDM 20/40/60/80km
	Wavelength	MM 1310nm, SM 1310,1550nm
		WDM 1310Tx/1550Rx (type A)
		1550Tx/1310Rx (type B)
Standards	IEEE802.3, IEEE802.3u, IEEE802.3ah, IEEE802.3x	
Indications	LED (Power, FX-Link, LAN Speed, LAN Link)	
Power Consumption	< 4W	

Dimensions	220 x 140 x 27mm (D x W x H)	
Weight	0.72kg	
Electrical Interface	Connector	RJ-45
	Data rate	10Mbps, 100Mbps
	Duplex mode	Half / Full duplex
	Cable	10Base-T Cat.3, 4, 5, UTP,
		100Base-TX Cat.5, 5e or higher
Power	Adapter	Output Voltage: 12VDC
Temperature	0 ~ 60°C (Operating), -10 ~ 70°C (Storage)	
Humidity	10 ~ 90% non-condensing	
Certification	CE, FCC, RoHS compliant	
MTBF	65,000 hrs	

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

CTC UNION TECHNOLOGIES CO., LTD.   www.ctcu.com   *FTH4-100M*   **3-14**

QoS with Four Priority Queues

The QoS (Quality Of Service) function provides four priority queues to support different classifications of traffic. High priority packet streams experience less delay inside the FTH4-100M , which supports lower latency for certain delay-sensitive traffic. The FTH4-100M can classify the packet as one of the four priorities according to VIP port.

Dying Gasp

The Dying Gasp features enables FTH4-100M media converter to send out a SNMP trap to alert the SNMP manager in the event of remote power failure.

Remote Firmware Upgrade

The remote firmware upgrade feature enables the media converter to be updated remotely via firmware upgrade including the products that were already installed in the field. This feature eliminates the need for the users to ship the product back to the supplier.

Bandwidth Control

The Bandwidth Control function allows users to set the bandwidth of FTH4-100M media converter for both ingress and egress rate and can be allocated a variety of rates up to full bandwidth capability of the devices (64Kbps ~ 100Mbps).

Broadband Services

The FTH4-100M product philosophy allows the end user to follow and benefit fully from the fast developments in Fiber to the home-networking solutions. The CPE is the interface between the digital broadband network and the user peripheral equipment, such as routers, wireless access points, servers, and printers. With generations of computers and home networking equipment coming and going the FTH4-100M will be a constant and reliable factor for the delivery of broadband data services.

These services are not limited to today's broadband internet applications. In the next few years, end-users will also benefit from next generation health-care, security, communication and infotainment services. The FTH4-100M CPE platform fully supports today's services and is ready for the next wave of new broadband services. Flexibility is key, since the CPE functionality must be matched to the requirements of those new services.

Quick Installation

The installation of the wall-mount unit of FTH4-100M CPE is swift and straightforward. Because of its size and ideal dimensions, the FTH4-100M CPE can be positioned easily at the user residence or home. The FTH4-100M design allows easy access for mounting and does not need the small elements, making the installation process predictable and hassle-free. The wall-mount unit, including integrated fiber tray not only makes fiber handling and termination easy and robust, but also eliminates the need for optical patch cords.
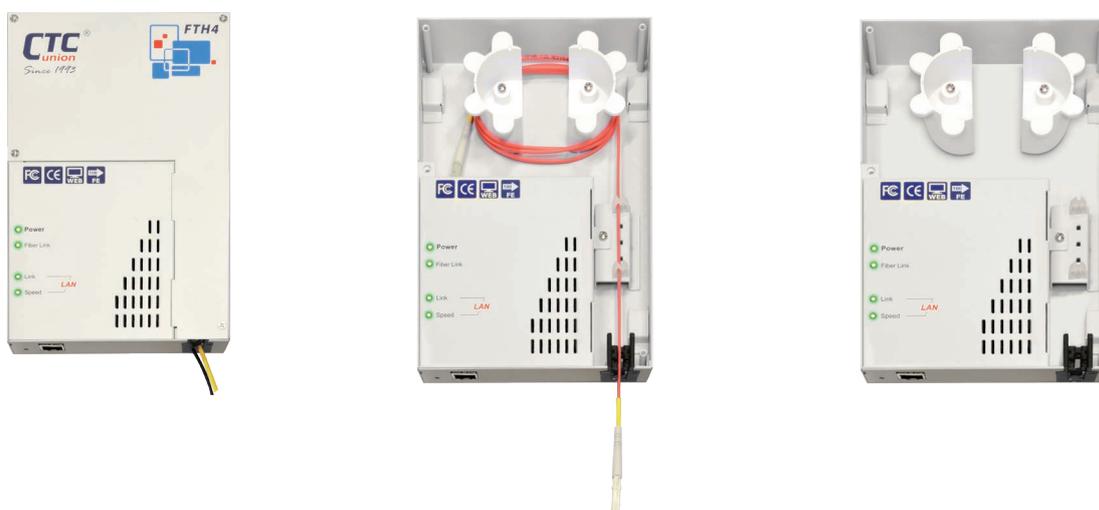
Ordering Information

Model Name	Description
FTH4-100M	10/100Base-TX to 100Base-FX Web Smart OAM/IP managed media converter w/ cable tray

NEW

GW-632FW

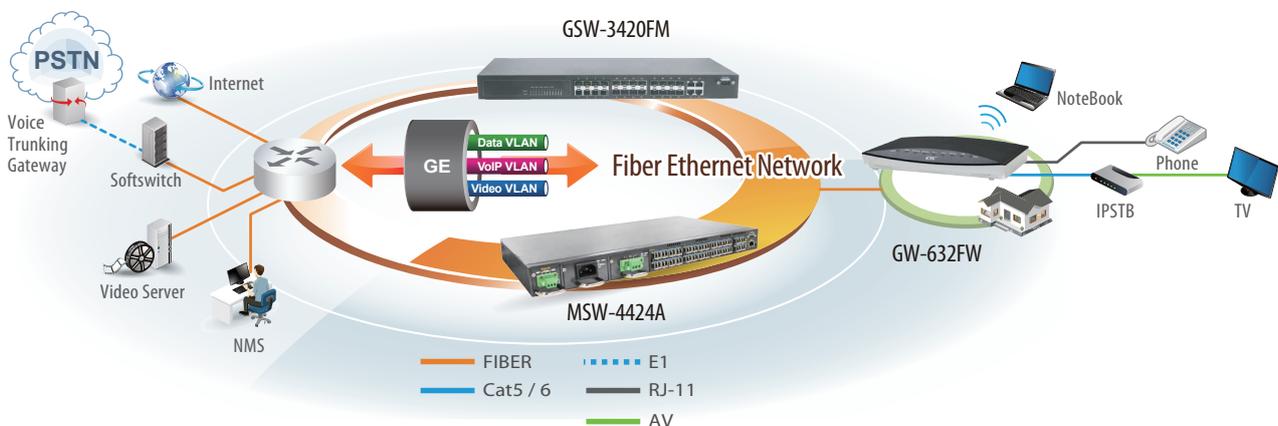## Gigabit Fiber IAD Residential Gateway

GW-632FW is a high performance Gigabit Ethernet residential gateway for Fiber-to-the-Home (FTTH) applications. It features both SFP based fiber and RJ-45 copper GbE WAN, four ports GbE LAN, two USB 2.0 host ports, WiFi 802.11 b/g/n and two VoIP FXS POTS ports. The integrated four port 10/100/1000M GbE switch features auto-crossover detection for easy connection with other Ethernet devices. The WAN port comes with RJ45 and SFP with autosensing for various types of optical transceiver modules.

The GW-632FW performs at near wire speed (1000Mbps) between WAN and LAN to provide good quality of service for high definition IPTV, VoIP and high speed Internet applications simultaneously. The two lines VoIP service over telephone uses SIP protocol to fulfill most toll quality telephony requirements for various countries. The built-in WiFi IEEE 802.11 b/g/n 2T2R provides excellent wireless performance to other client devices. The GW-632FW also supports IPv6 for future extending services. Network management may be via TR-069, Web or Telnet for advanced system provisioning and future upgrades. The two USB 2.0 host ports may be used for home cloud storage or print server applications. With these highly integrated features, the GW-632FW provides tremendous flexibility for the service provider with add on value customization to their subscribers.

Features

- Gigabit Ethernet interface with autosensing of RJ45 & SFP
- SFP port for expansion to optical connection by plug-in 100/1000M optical transceiver module
- Integrated high performance packet acceleration engine to provide near wire speed 1000Mbps WAN to LAN routing performance
- Integrated four-port Giga Ethernet switch with automatic speed sensing and crossover correction
- Supports four ports 10/100/1000 Mbps Ethernet for Internet Access or IPTV streaming video application
- IEEE 802.11-compliant WLAN supports up to 54 Mbps (11g) or 300Mbps (11n) physical link rate and air transmission is secured by WEP, WEP2, WPA, WPA2, TKIP, AES, 802.11i or 802.1x
- Supports Ethernet IEEE 802.1Q/p VLAN and priority queue, as well as IEEE 802.3x flow control
- Single fiber BiDi SC/APC receptacle.

- Supports various voice CODECs, echo cancellation, voice activity detection (VAD), comfort noise generation (CNG), caller ID, DTMF tone detection/generation and etc.
- Supports SIP signaling protocol and bonus services like call forwarding, call waiting, call transfer, call busy, call return, enquiry service, CLIP/CLIR and three way conference
- Two USB 2.0 host port may be used for application of home cloud storage and printer server
- Supports Networking protocols such as PPP, NAT, Routing, DHCP server / relay / client
- Configuration and management via CLI/Telnet, Web/HTTP, TR-064 or TR-069
- Software is upgradeable through HTTP or TFTP or TR-069One SFP Electrical Footprint interface complies MSA
- Supports Ethernet IEEE 802.1Q/p VLAN and priority, as well as IEEE 802.3x flow control

Application

GSW-3420FM

PSTN

Internet

Voice Trunking Gateway

Softswitch

Video Server

NMS

Data VLAN
VoIP VLAN
Video VLAN

GE

Fiber Ethernet Network

MSW-4424A

NoteBook

Phone

IPSTB   TV

GW-632FW

FIBER   E1
Cat5 / 6   RJ-11
                AV

Specifications

Hardware

WAN Interface	10/100/1000M Ethernet with RJ45 & SFP
Local Interface	Four ports 10/100/1000Base-T auto-sensing Ethernet switch with auto-MDIX support, in RJ-45 connector
	Two USB 2.0 host ports in type A connector, with up to 500mA / 5Vdc power supply each
	WiFi 802.11b/g/n (draft 2.0 compliance, 2T/2R @ 2.4GHz)
	Wireless LAN Access Point - Two Internal antennas: 1.5dBi - Link Rate : 300 Mbps max. - RF radiated power: maximum 100mW EIRP
LED Indicators	POWER – ON indicates RG (Residential Gateway) is correctly powered.
	WAN – GREEN ON indicate WAN port (RJ45 or SFP) is linked; GREEN blinking indicates data transmitting.
	Ethernet –GREEN ON indicates LAN port is linked; GREEN blinking ON indicates data transmitting.
	Wireless – ON indicates WLAN is active and blinking when there is traffic.
	TEL1 – ON indicates a VoIP call is undergoing, flashing while there is an incoming call.
	TEL2 – ON indicates a VoIP call is undergoing, flashing while there is an incoming call.
	Internet – ON indicates Internet connection is successfully established.
	USB – ON indicates an USB device is recognized and linked.
	WPS- blinking indicates the router is ready for WPS auto authentication.
Environment	Operation Temperature 0℃ ~ +45℃
	Operation Humidity 10% ~ 90% (non-condensing)
	Storage Temperature -20℃ ~ +70℃
	Storage Humidity 10% ~ 90% (non-condensing)
Power	AC Power Adapter: input 100~240 VAC 50/60 Hz; output 12 Vdc, 2 Amp
	Optional AC UPS: input 85~264 VAC / 47~70 Hz; output 12 Vdc, 2 Amp
	Power consumption < 21 W
Dimensions	160 x 255 x 42 mm (D x W x H)
Certificates	CE, FCC Part 15 Class B

Software

GbE WAN	Auto Detection between SFP and RJ-45.
WAN Connection	Static IP, or Dynamic IP by DHCP client PPPoE
	Bridge mode
	Supports of authentication of the IPoE connection via IEEE
	802.1x EAP encapsulation over LANs (EAPOL)
	Supports multiple WAN interfaces in mixed mode
Routing	Static route by gateway or interface
	Policy route by interface, source or destination IP address / subnet, protocol or port range
	Dynamic Routing with RIP v1 and v2
	IGMP proxy (v1/v2) for IP multicasting
NAT and Firewall	NAT / PAT with extensive ALG's (SIP, IRC, TFTP, H.323, SNMP and RTSP), pass-through for IPSec/L2TP/PPTP, as well as one DMZ zone
	Up to 512 translations with 16 static entries
	Virtual server supports up to 20 entries
	Firewall features MAC address filter, URL blocking, Internet cROUTERent filter, Access cROUTERrol list (ACL based on IP/Port address), schedule rule and virtual DMZ
	UPnP NAT traversal and VPN / IPSec pass-through
	Secondary IP address

QoS Features	Supports up to 8 priority queues per egress bridge port, with SP scheduling and configurable queue packet size
	Supports a downstream mapping table from 802.1p P-bits field to priority levels
	Supports a downstream mapping table from DSCP code points to priority levels
	VLAN tagged packets are mapped to priority queues according to P-bits mapping table
	Untagged IP packets are mapped to priority queues according to DSCP mapping table
	Configurable default priority level for untagged non-IP packets
Bridging	802.1Q VLAN tagging and un-tagging, 802.1p with 8 priority queues
	802.3x flow control
	Supports Unicast, Multicast and Broadcast traffic
	IGMP snooping v1/v2/v3
Wireless LAN	WEP/WPA/WAP2/WPA-PSK/WPA2-PSK supported
	Hidden SSID
	WEP: 64 or 128 bits key length
	WPA (Wi-Fi Protected Access) and WPA2 in Personal or Enterprise mode, mix of WPA and WPA2, or 802.1x sing EAP with RADIUS
	Up to four SSID's to support virtual AP
	Supports WPS (both PBC and PIN code) for easily setting up secure wireless network
	Supports WDS (Wireless Distribution System) for repeater application
	WMM (Wi-Fi Multimedia) to support QoS for media service
	Access cROUTERrol list based on MAC address
Voice Features	Supports voice CODECs like G.711, G.729A/B
	G.168 line echo cancellation with up to 32ms tail
	Adaptive jitter buffer, packet loss concealment (PLC), silence compression and Caller ID
	DTMF tone detection and generation; Fax / Modem detection and pass-through
VoIP Telephony Bonus Services	Supports SIP (RFC3261), SDP (RFC2327, RFC3264) as well as both TCP and UDP transport
	Supports User Agent Client (UAC) - User Agent Server (UAS) call, or proxy call routing
	Supports SIP and telephone URL addressing
	Supports in-band DTMF tone sending / receiving and out-band DTMF signaling with RTP, as per RFC2833
	Bonus services include: - Call Forwarding: Unconditional, No Response, On Busy - Call Waiting: Force Busy, Pickup and Release Old, Pickup and Put Old on Hold, Switch between two calls - Call Transfer, Call Back busy subscriber, Call Back last number called (call return) - Enquiry service - Three way conference
	Provisioning through TFTP client with configuration profile

System Management

Configuration and Network Management	UPnP Internet Gateway Device (IGD v1.0)
	Supports syslog with remote server
	Ping client for IP diagnostic
	Any port management with cROUTERrol list (MCL) based on IP address Support Configuration Backup and Restore
	Supports TR-069, TR-098 & TR-104
	TFTP (client), HTTP or TR-069 for firmware upgrade
	Local or remote configuration and management through Web,
	CLI, TR-064 or TR-069

Ordering Information

Model Name	Description
GW-632FW	Gigabit Fiber IAD Residential Gateway

GSW3424M1

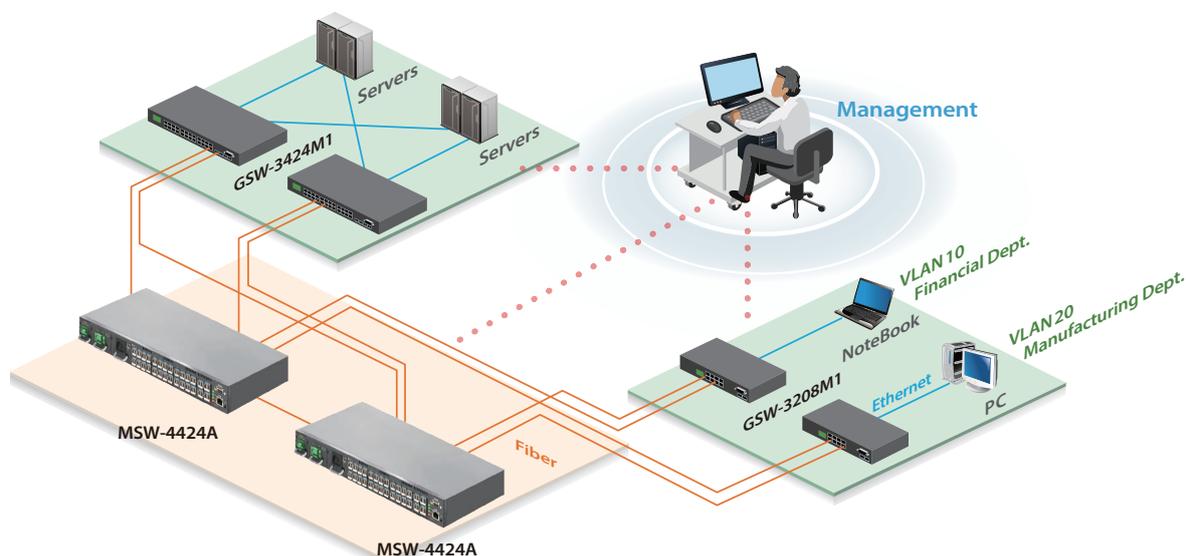## 24-Port 10/100/1000Base-T + 4-Port GbE(SFP) L2 Managed Switch

GSW-3424M1 is a cost-effect, high performance, managed L2 Ethernet with 20 x 10/100/1000Base-T ports and 4 x Gigabit Ethernet combo (10/100/1000Base-T or 1000Base-X) ports. This switch supports remote management by SNMP, HTTP and Telnet interfaces along with local management by console interface. GSW-3424M1 supports many L2 switch management functions, including 802.1Q VLAN, 802.1x Port Security, Rate Control, Port Configuration, Port Mirroring, Port Statistics, QoS functions, Spanning tree and more.

Features

- 24 * RJ45 ports, with 10/100/1000Mbps, Full/Half duplex auto-negotiation and Auto-MDIX functions
- 4* Dual Speed SFP sockets, shared with TX ports of Port 21~24 ;
- auto-detect TX/SFP connection
- CISCO-like command line interface, IPv6 management
- 8 priority queues are supported on each port for QoS application
- Port-based VLAN, 802.1Q VLAN, Voice VLAN and Q-in-Q (double tagging) function
- Protected Port and LoopBack Detection function
- IEEE 802.1x security function, and VLAN assignment, Guest VLAN functions
- Static Mac address access limit and Dynamic Mac address number on port

- IEEE802.1d & 802.1w & 802.1s (spanning tree)
- IP Multicast with IGMP snooping / query / fast leave / filtering / group limited /MVR
- DHCP Client / DHCP Option 82 Relay / DHCP Snooping function
- ACL function for L2 ~ L4 packet control, Ingress/Egress rate control on port
- Broadcast/Multicast/Unicast storm control
- ARP inspection / IP source guard, RMON 1,2,3,9
- SFP Transceiver DDMI function / Dual Speed SFP Ports (100/1000Mbps)
- Remote port configuration setting and statistics monitoring
- Text configuration download and upload
- IEEE 802.3az power management / FANless / Green Ethernet

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

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Specifications

System

10/100/1000 Base-T	24
100/1G SFP Slot	4 UTP/SFP Combo (Port 21~24)
Packet buffer	512KB
MAC Table size	8K
Max Packet size	9600 Bytes
Switching capability	14880pps at 10Mbps, 148810pps at 100Mbps, 1488095pps at 1Gbps with 64bytes packets.
Switch capacity	48Gbps
Forwarding Rate	35.7Mpps
FAN Design	FAN less
Console port	D-Sub 9
19" Rack-Mount	Yes, with kits
SFP DDMI	Yes
Dimensions	330 x 204 x 44 mm (W x D x H)
Environmental Temperature	Operating : 0 ~ 50℃ Storage : -40 ~ 70℃
Humidity	10% ~ 90% (non-condensing)
LED Display	Per Port : Link/Act (Green: Gigabit, Yellow:10/100M) Per Device : Power and System
Power Consumption	18 Watt Max.
Power Input	AC Power input (100V~240V)

LED

Power	Lights(Green)	System is receiving power
System	Lights(Green)	System is ready
Link / Act	Lights	Link is ready 1000Mbps : Green
	Flashing	10/100Mbps : Amber Data packets being received or sent

Software

Port Control	Port speed, duplex mode, and flow control Port frame size (jumbo frames), Maximum ingress frame size (9600 bytes) Port state (administrative status) Port status (link monitoring) Port statistics (MIB counters) Port VeriPHY (cable diagnostics), Power Control
L2 Switching	Auto MAC address learning/aging and MAC addresses (static) IEEE 802.1Q static VLAN, Voice VLAN, Port isolation, Port Based VLAN, IEEE 802.1ad Provider Bridge IEEE 802.1D STP/802.1w RSTP/802.1s MSTP IEEE 802.3ad Link Aggregation, static and LACP BPDU guard and restricted role, BPDU transparency DHCP client, DHCP snooping, DHCP option 82 relay ARP inspection, Port mirroring, IP MAC binding
Layer 2 Multicast	IGMP snooping v1,v2, v3 snooping, (1024 groups) IGMP snooping Fast and Immediate leave IGMP throttling, filtering, and leave proxy IGMP proxy mode and snooping mode selection MVR, IPv6 MLD snooping
QoS	8 Priority Queues per Port Port Based priority, Scheduler priority, QoS Control List Storm control for UC, MC, and BC Policing and shaping per port and per queue Ingress Policing : (100-1000000 when the "Unit" is "kbps" or "fps" and 1-3300 when the "Unit" is "Mbps" or "kfps") Egress Shaping : (100-1000000 when the "Unit" is "kbps", and 1-3300 when the "Unit" is "Mbps".) DiffServ (RF 2474) remarking, Tag remarking
Security	Port-based 802.1X, Single 802.1X, Multiple 802.1X MAC-based authentication, VLAN assignment, QoS assignment, Guest VLAN, RADIUS accounting, MAC address limit TACACS+, Web and CLI authentication and authorization Authorization (3 levels) ACLs for filtering(256 entries), policing, and port copy IP source guard
Synchronization	NTPv4 Client
Power Saving	ActiPHY, PerfectReach, Ethernet Energy Efficient power management(EEE)
SFP DDMI	Yes
Management	HTTP server, CLI console port, Telnet, Management access filtering, SSHv2 and HTTPS IPv6 Management, System Syslog Software download through Web, SNMPv1/v2c/v3 Agent RMON Group 1, 2, 3, and 9 IEEE 802.1AB-2005 Link Layer Discovery, LLDP Text Configuration download or upload, sFlow, Daylight Saving

Ordering Information

Model Name	Description
GSW-3424M1	24x 10/100/1000Base-T + 4x GbE(SFP) L2 Switch, AC power supply
GSW-3424M1-DC48	24x 10/100/1000Base-T + 4x GbE(SFP) L2 Switch, DC 48V power supply

GSW – 3424M1 – ☐☐☐☐

Example: GSW – 3424M1 – DC48

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

GSW3216M1

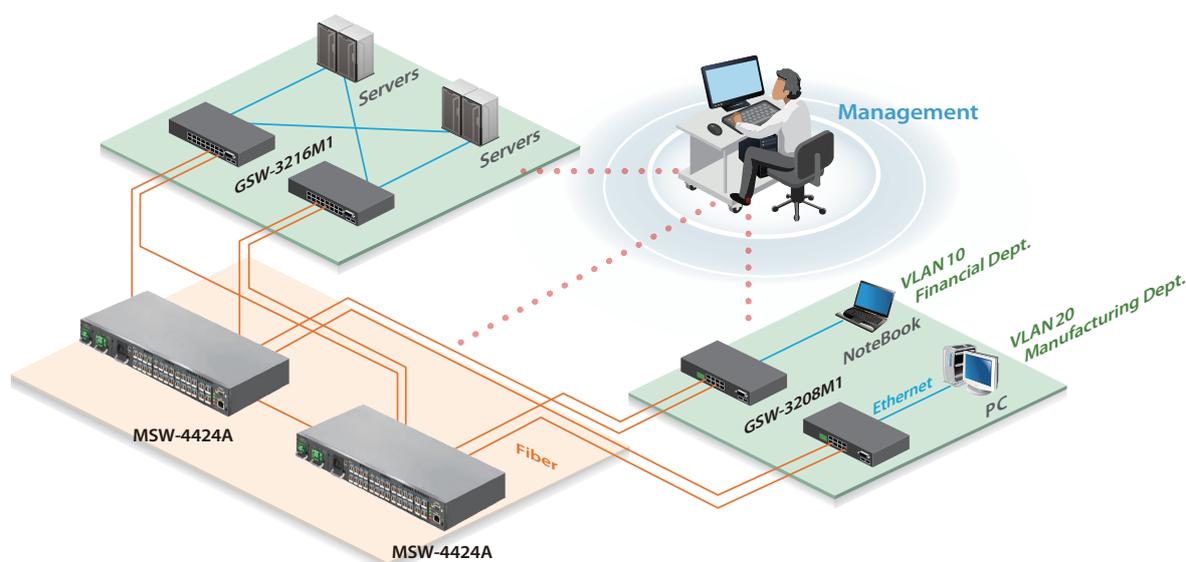### 16-Port 10/100/1000Base-T + 2-Port Gbe(SFP) L2 Managed Switch

GSW-3216M1 is a cost-effect, high performance, managed L2 Ethernet with 16 x 10/100/1000Base-T ports and 2 x Gigabit Ethernet 1000Base-X ports. This switch supports remote management by SNMP, HTTP and Telnet interfaces along with local management by console interface. GSW-3216M1 supports many L2 switch management functions, including 802.1Q VLAN, 802.1x Port Security, Rate Control, Port Configuration, Port Mirroring, Port Statistics, QoS functions, Spanning tree and more.

Features

- 16 * RJ45 ports, with 10/100/1000Mbps, Full/Half duplex auto-negotiation and Auto-MDIX functions
- 2* Dual Speed SFP sockets, port 17 and port 18
- CISCO-like command line interface, IPv6 management
- 8 priority queues are supported on each port for QoS application
- Port-based VLAN, 802.1Q VLAN, Voice VLAN and Q-in-Q (double tagging) function
- Protected Port and LoopBack Detection function
- IEEE 802.1x security function, and VLAN assignment, Guest VLAN functions
- Static Mac address access limit and Dynamic Mac address number on port
- IEEE802.1d & 802.1w & 802.1s (spanning tree)
- IP Multicast with IGMP snooping / query / fast leave / filtering / group limited /MVR
- DHCP Client / DHCP Option 82 Relay / DHCP Snooping function
- ACL function for L2 ~ L4 packet control, Ingress/Egress rate control on port

- Broadcast/Multicast/Unicast storm control
- ARP inspection / IP source guard, RMON 1,2,3,9
- SFP Transceiver DDMI function / Dual Speed SFP Ports (100/1000Mbps)
- Remote port configuration setting and statistics monitoring
- Text configuration download and upload
- IEEE 802.3az power management / FANless / Green Ethernet

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

CTC UNION TECHNOLOGIES CO., LTD.   www.ctcu.com   **GSW3216M1**   **3-20**

Specifications

System

10/100/1000 Base-T	16
100/1G SFP Slot	2
Packet buffer	512KB
MAC Table size	8K
Max Packet size	9600 Bytes
Switching capability	14880pps at 10Mbps 148810pps at 100Mbps 1488095pps at 1Gbps with 64bytes packets.
Switch capacity	36Gbps
Forwarding Rate	26.7Mpps
FAN Design	FAN less
Console port	D-Sub 9
19" Rack-Mount	Yes, with kits (optional)
SFP DDMI	Yes
Dimensions	117 x 250 x 37 mm(D x W x H)
Environmental Temperature	Operating : 0 ~ 50℃ Storage : -40 ~ 70℃
Humidity	10% ~ 90% (non-condensing)
LED Display	Per Port : Link/Act (Green: Gigabit, Yellow:10/100M) Per Device : Power and System
Power Consumption	14 Watt Max.
Power Input	AC Power input (100V~240V)

LED

Power	Lights(Green)	System is receiving power
System	Lights(Green)	System is ready
Link / Act	Lights	Link is ready 1000Mbps : Green 10/100Mbps : Amber
	Flashing	Data packets being received or sent

Software

Port Control	Port speed, duplex mode, and flow control Port frame size (jumbo frames), Maximum ingress frame size (9600 bytes) Port state (administrative status) Port status (link monitoring) Port statistics (MIB counters) Port VeriPHY (cable diagnostics), Power Control
L2 Switching	Auto MAC address learning/aging and MAC addresses (static) IEEE 802.1Q static VLAN, Voice VLAN, Port isolation, Port Based VLAN, IEEE 802.1ad Provider Bridge IEEE 802.1D STP/802.1w RSTP/802.1s MSTP IEEE 802.3ad Link Aggregation, static and LACP BPDU guard and restricted role, BPDU transparency DHCP client, DHCP snooping, DHCP option 82 relay ARP inspection, Port mirroring, IP MAC binding
Layer 2 Multicast	IGMP v2, v3 snooping, (1024 groups) IGMP throttling, filtering, and leave proxy MVR
QoS	8 Priority Queues per Port Port Based priority, Scheduler priority, QoS Control List Storm control for UC, MC, and BC Policing and shaping per port and per queue Ingress Policing : (100-1000000 when the "Unit" is "kbps" or "fps" and 1-3300 when the "Unit" is "Mbps" or "kfps") Egress Shaping : (100-1000000 when the "Unit" is "kbps", and 1-3300 when the "Unit" is "Mbps".) DiffServ (RF 2474) remarking, Tag remarking
Security	Port-based 802.1X, Single 802.1X, Multiple 802.1X MAC-based authentication, VLAN assignment, QoS assignment, Guest VLAN, RADIUS accounting, MAC address limit TACACS+, Web and CLI authentication and authorization Authorization (3 levels) ACLs for filtering(256 entries), policing, and port copy IP source guard
Synchronization	NTPv4 Client
Power Saving	ActiPHY, PerfectReach, Ethernet Energy Efficient power management(EEE)
SFP DDMI	Yes
Management	HTTP server, CLI console port, Telnet, Management access filtering, SSHv2 and HTTPS IPv6 Management, System Syslog Software download through Web, SNMPv1/v2c/v3 Agent RMON Group 1, 2, 3, and 9 IEEE 802.1AB-2005 Link Layer Discovery, LLDP Text Configuration download or upload, sFlow, Daylight Saving

Ordering Information

Model Name	Description
GSW-3216M1	16x 10/100/1000Base-T + 2x GbE(SFP) L2 Switch, AC power supply
GSW-3216M1-DC48	16x 10/100/1000Base-T + 2x GbE(SFP) L2 Switch, DC 48V power supply

GSW – 3216M1 – □□□□

Example: GSW – 3216M1 – DC48

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.
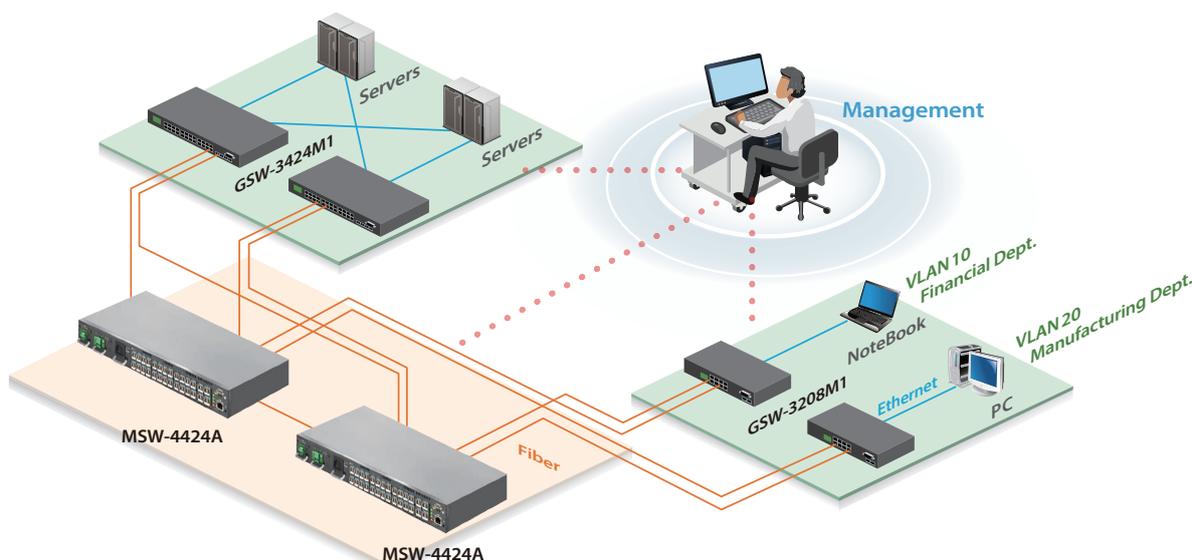
GSW3208M1

8-Port 10/100/1000Base-T + 2-Port GbE(SFP) L2 Managed Switch

GSW-3208M1 is a cost-effect, high performance, managed L2 Ethernet with 8 x 10/100/1000Base-T ports and 2 x Gigabit Ethernet 1000Base-X ports. This switch supports remote management by SNMP, HTTP and Telnet interfaces along with local management by console interface. GSW-3208M1 supports many L2 switch management functions, including 802.1Q VLAN, 802.1x Port Security, Rate Control, Port Configuration, Port Mirroring, Port Statistics, QoS functions, Spanning tree and more.

Features

- 8* RJ45 ports, with 10/100/1000Mbps, Full/Half duplex auto-negotiation and Auto-MDIX functions
- 2* Dual Speed SFP sockets, Port9 and Port10
- CISCO-like command line interface
- IPv6 management
- 8 priority queues are supported on each port for QoS application
- Port-based VLAN, 802.1Q VLAN, Voice VLAN and Q-in-Q (double tagging) function
- Protected port and LoopBack Detection function
- Q-in-Q(double tagging) function
- IEEE 802.1x security function, and VLAN assignment, Guest VLAN functions
- Static Mac address access limit and Dynamic Mac address number on port
- IEEE802.1d & 802.1w & 802.1s (spanning tree)
- IP Multicast with IGMP snooping / query / fast leave / filtering / group limited /MVR
- DHCP Client / DHCP Option 82 Relay / DHCP Snooping function

- ACL function for L2 ~ L4 packet control
- Ingress/Egress rate control on port
- Broadcast/Multicast/Unicast storm control
- ARP inspection / IP source guard
- RMON 1,2,3,9
- SFP Transceiver DDMI function / Dual Speed SFP Ports (100/1000Mbps)
- Remote port configuration setting and statistics monitoring
- Text configuration download and upload
- IEEE 802.3az power management / FANless / Green Ethernet

Application

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

CTC UNION TECHNOLOGIES CO., LTD.   www.ctcu.com   **GSW3208M1**   **3-22**

Specifications

System

10/100/1000 Base-T	8
100/1G SFP Slot	2
Packet buffer	512KB
MAC Table size	8K
Max Packet size	9600 Bytes
Switching capability	9600 Bytes 14880pps at 10Mbps, 148810pps at 100Mbps, 1488095pps at 1Gbps with 64bytes packets
Switch capacity	20Gbps
Forwarding Rate	14.8Mpps
FAN Design	FAN less
Console port	D-Sub 9
19" Rack-Mount	Yes, with kits (Optional)
SFP DDMI	Yes
Dimensions	117 x 250 x 37 mm(D x W x H)
Environmental Temperature	Operating : 0 ~ 50℃ Storage : -40 ~ 70℃
Humidity	10% ~ 90% (non-condensing)
LED Display	Per Port : Link/Act (Green: Gigabit, Yellow:10/100M) Per Device : Power and System
Power Consumption	8.5 Watt Max
Power Input	AC Power input (100V~240V)

LED

Power	Lights(Green)	System is receiving power
System	Lights(Green)	System is ready
Link / Act	Lights	Link is ready 1000Mbps : Green 10/100Mbps : Amber
	Flashing	10/100Mbps : Amber Data packets being received or sent

Software

Port Control	Port speed, duplex mode, and flow control Port frame size (jumbo frames), Maximum ingress frame size (9600 bytes), Port state (administrative status) Port status (link monitoring) Port statistics (MIB counters) Port VeriPHY (cable diagnostics), Power Control
L2 Switching	Auto MAC address learning/aging and MAC addresses (static) IEEE 802.1Q static VLAN, Voice VLAN, Port isolation, Port Based VLAN, IEEE 802.1ad Provider Bridge IEEE 802.1D STP/802.1w RSTP/802.1s MSTP IEEE 802.3ad Link Aggregation, static and LACP BPDU guard and restricted role, BPDU transparency DHCP client, DHCP snooping, DHCP option 82 relay ARP inspection, Port mirroring, IP MAC binding
Layer 2 Multicast	IGMP snooping v1,v2, v3 snooping, (1024 groups) IGMP snooping Fast and Immediate leave IGMP throttling, filtering, and leave proxy IGMP proxy mode and snooping mode selection MVR, IPv6 MLD snooping
QoS	8 Priority Queues per Port Port Based priority, Scheduler priority, QoS Control List Storm control for UC, MC, and BC Policing and shaping per port and per queue Ingress Policing : (100-1000000 when the "Unit" is "kbps" or "fps" and 1-3300 when the "Unit" is "Mbps" or "kfps") Egress Shaping : (100-1000000 when the "Unit" is "kbps", and 1-3300 when the "Unit" is "Mbps".) DiffServ (RF 2474) remarking, Tag remarking
Security	Port-based 802.1X, Single 802.1X, Multiple 802.1X MAC-based authentication, VLAN assignment, QoS assignment, Guest VLAN, RADIUS accounting, MAC address limit TACACS+, Web and CLI authentication and authorization Authorization (3 levels) ACLs for filtering(256 entries), policing, and port copy IP source guard
Synchronization	NTPv4 Client
Power Saving	ActiPHY, PerfectReach, Ethernet Energy Efficient power management(EEE)
SFP DDMI	Yes
Management	HTTP server, CLI console port, Telnet, Management access filtering, SSHv2 and HTTPS IPv6 Management, System Syslog Software download through Web, SNMPv1/v2c/v3 Agent RMON Group 1, 2, 3, and 9 IEEE 802.1AB-2005 Link Layer Discovery, LLDP Text Configuration download or upload, sFlow, Daylight Saving

Ordering Information

Model Name	Description
GSW-3208M1	8x 10/100/1000Base-T + 2x GbE(SFP) L2 Switch, AC power supply
GSW-3208M1-DC48	8x 10/100/1000Base-T + 2x GbE(SFP) L2 Switch, DC 48V power supply

GSW – 3208M1 – ☐☐☐☐

Example: GSW – 3208M1 – DC48

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

FSW-2104

4-Port 10/100Base-TX and 100Base-FX Switch

The FSW-2104 provides a low cost solution for non-managed Ethernet fiber switches. The FSW-2104 is a 4-port 10/100Base-TX plus 1-port 100Base-FX Fast Ethernet switch. It is designed for small workgroup applications that require a long distance connection to the backbone, such as between buildings, offices, or within a campus location. FSW2104 provide full-duplex capability on each auto-negotiating port, for enhanced performance. A wide range of transceiver selection provides fiber connection with SC, FC or ST type connectors in multimode or single mode and at distance from 2 to 120km as well as BiDi (single fiber) at distances of 20, 40, 60, or 80km.
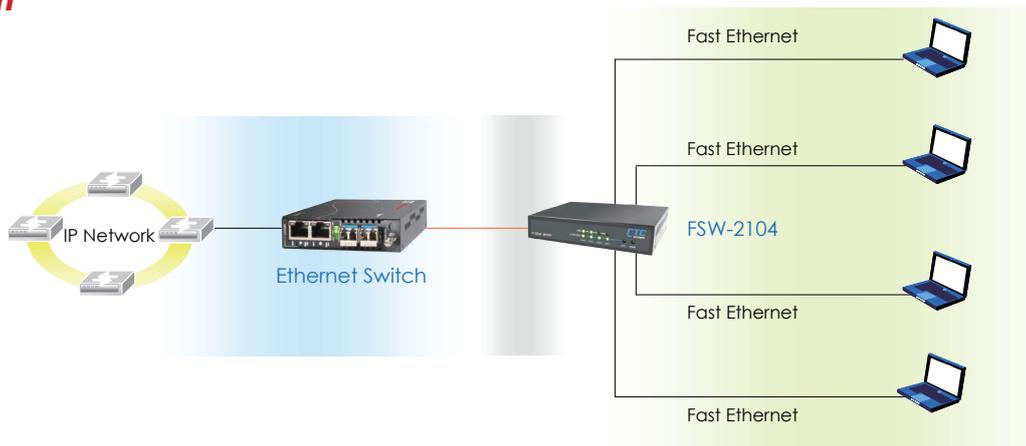
Features

- 4-Port 10/100Base-TX to 100Base-FX
- Auto-Negotiation
- Auto MDI / MDIX
- Forward 1552 bytes (Max.) packets

- Supports 1K MAC address
- 512k bits packet buffer memory
- Supports broadcast storm protection

Specifications

Optical Interface	Connector	1x9 (SC, ST)
	Data rate	100Mbps
	Duplex mode	Full duplex
	Fiber	MM 50/125µm, 62.5/125µm.
		SM 9/125µm
	Distance	MM 2km, SM 15/30/50/80/120km
		WDM 20/40/60/80km
	Wavelength	MM 1310nm, SM 1310,1550nm
		WDM 1310Tx/1550Rx (type A)
		1550Tx/1310Rx (type B)
Electrical Interface	Connector	RJ-45
	Data rate	10Mbps, 100Mbps
	Duplex mode	Half / Full duplex

Electrical Interface	Cable	10Base-T Cat.3, 4, 5, UTP
		100Base-TX Cat.5, 5e or higher
Standards	IEEE 802.3, IEEE 802.3u	
Indications	LED (FX Link, TX SPD, TX Link/Act)	
Power Input	Card : 5 VDC	
	Standalone : AC, DC options	
Power Consumption	< 4W	
Dimensions	138 × 77 × 28mm (D x W x H)	
Weight	450g	
Temperature	0 ~ 50℃ (Operating), 0 ~ 70℃ (Storage)	
Humidity	10 ~ 90% non-condensing	
Certification	CE, FCC, RoHS compliant	
MTBF	65,000 hrs	

Application

IP Network

Ethernet Switch

FSW-2104

Fast Ethernet
Fast Ethernet
Fast Ethernet
Fast Ethernet

Ordering Information

	Connector Type	Connectivity Distance
	FSW – 2104 – □□□□□	

Example: FSW – 2104 – SC002

Model Name	Description
FSW-2104	4-Port 10/100Base-TX to 100Base-FX Managed Switch

Connector Type	Connectivity Distance
SC	002: 2km 015: 15km 030: 30km 050: 50km 080: 80km 120:120km
	20A: WDM 20km A type 20B: WDM 20km B type 40A: WDM 40km A type 40B: WDM 40km B type
	60A: WDM 60km A type 60B: WDM 60km B type 80A: WDM 80km A type 80B: WDM 80km B type

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

IFC-1000PSE
IFC-1000PSE/A

Gigabit Ethernet PoE PSE Media Converter

The IFC-1000PSE/A is a copper to fiber Gigabit Ethernet solution designed to make conversion between 10/100/1000Base-T to 1000Base-SX/LX with SFP LC connector. The IFC-1000PSE complies with IEEE802.3af Power Over Ethernet standard with external AC power adapter or internal AC power build-in. This PoE media converter is a Power Sourcing Equipment (PSE) which combines data received over a TP link with 48VDC power, providing power to IEEE802.3af powered device (PD) over the existing CAT5 UTP cable. Other features include Link fault Pass-Through (LFPT), Store and Forward Switching, auto or forced mode setting for copper Ethernet as well as auto laser shutdown.

Features

- 10/100/1000Base-T to 1000Base-SX/LX SFP
- IEEE 802.3af Compliant PSE (power sourcing equipment)
- Auto-negotiation or forced mode
- Auto MDI/MDIX
- Store and Forward Switching Mechanism
- Supports 4K MAC address
- Supports 256K Byte Packet Buffer
- Forward 1632 bytes (max.) packets
- Supports Link fault Pass-Through (LFPT) function

Specifications

Optical Interface	Connector	SFP LC
	Data rate	1250Mbps
	Duplex mode	Full duplex
	Fiber	MM 50/125µm, 62.5/125µm. SM 9/125µm
	Distance	MM 550m, 2km, SM 15/30/50/80/120km
		WDM 20/40/60km
	Wavelength	MM 1310nm, SM 1310,1550nm
		WDM 1310Tx/1550Rx (type A)
		1550Tx/1310Rx (type B)
Electrical Interface	Connector	RJ-45
	Data rate	10Mbps, 100Mbps, 1000Mbps
	Duplex mode	Half / Full duplex
	Cable	10Base-T Cat 3, 4, 5, UTP
		100Base-TX Cat 5, 5e or higher
		1000Base-T Cat 5, 5e or higher

PSE Output Power	Class 0: 15.4w Class 1: 4w
	Class 2: 7w Class 3: 15.4w
Standards	IEEE 802.3, 802.3u, 802.3ab, 802.3z, 802.3af,802.3x
Indications	LED (Power, FX-Link, FX Duplex, TX-SPD, TX-Duplex, TX-Link)
Power Input	100 ~ 240VAC
Power Consumption	< 5W (w/o PSE Output Power)
Dimensions	201 x 135 x 35mm (D x W x H)
Weight	0.58kg
Temperature	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)
Humidity	10 ~ 90% non-condensing
Certification	CE, FCC, RoHS compliant
MTBF	75,000 hrs

Application
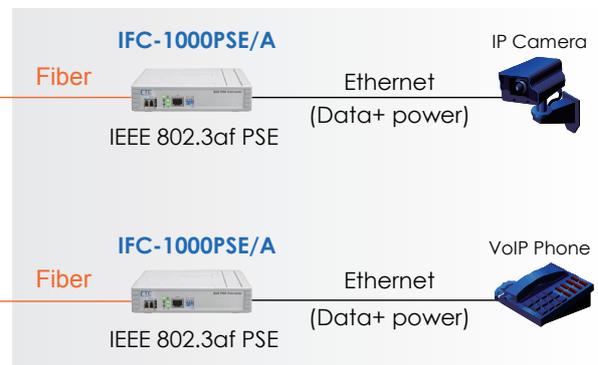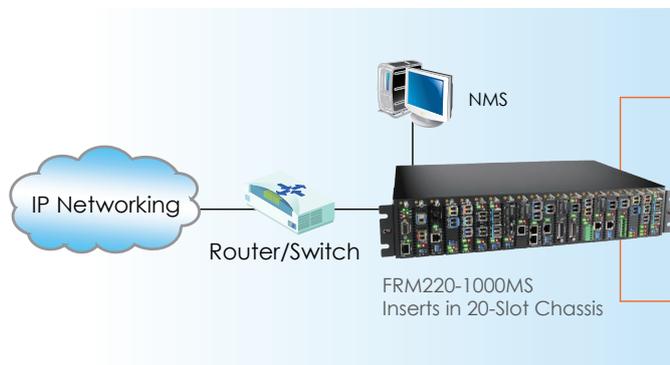
Ordering Information

Model Name	Description
IFC-1000PSE/A	GE PSE media converter with DC 48V in AC adapter
IFC-1000PSE-AC	GE PSE media converter with built-in AC power 100 ~240V

Interface / Power Type

IFC – □□□□□□ – □□
Example: IFC – 1000PSE– AC

IFC-100PD

**10/100Base-TX to 100Base-FX Power
over Ethernet PD Media Converter**

The IFC-100PD is Power over Ethernet 10/100Base-TX to 100Base-FX non-managed PD(Power Device) Fiber converter, which give you the options to choose from the most popular fiber cabling connectors, ST, SC, FC. Both multi-mode and single mode converter models are available as well as BiDi which allows bi-directional transmissions using only a single fiber cable. With Power over Ethernet (PoE) feature, IFC-100PD takes power supply over Ethernet cable from PoE Ethernet Switch and may work without external power adapter. When auto-negotiation is selected, these units will automatically tailor themselves to convert both half-duplex and full-duplex signals, according to IEEE802.3u standards. LED indicators signal the power status of the converter, UTP port speed, Link, and duplex status, FX port Link and duplex status. The stand-alone converter may also be concentrated into either the FMC-CH08 or FMC-CH17 non-managed chassis.
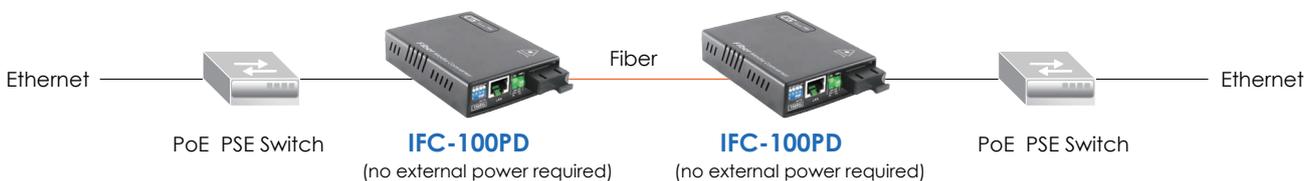
Features

- 10/100Base-TX to 100Base-FX Converter
- Auto-Negotiation or forced mode
- Auto MDI/MDIX
- Forward 1600 bytes (Max.) packets
- Supports Q in Q double tagged frame transparent
- Supports IEEE 802.1Q Tag VLAN pass thru

- Supports flow control (Pause)
- Supports Link Fault Pass-Through (LFPT)
- Forward 9K jumbo packets in converter mode
- Supports IEEE802.3af Power over Ethernet

Specifications

Optical Interface		
	Connector	1x9 (SC, ST, FC)
	Data rate	125Mbps
	Duplex mode	Full duplex
	Fiber	MM 50/125µm, 62.5/125µm
		SM 9/125µm
	Distance	MM 2km, SM 15/30/50/80/120km
		WDM 20/40/60/80km
	Wavelength	WDM 1310Tx/1550Rx (type A)
		1550Tx/1310Rx (type B)
		1550Tx/1310Rx (type B)
Electrical Interface		
	Connector	RJ-45
	Data rate	10Mbps, 100Mpbs
	Duplex mode	Half / Full duplex
	Cable	10Base-T Cat.3, 4, 5, UTP,
		100Base-TX Cat.5, 5e or higher
		1000Base-T Cat 5, 5e or higher
	PD Input Power	48VDC

Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3af
Indications	LED (Power, FX Link, TX SPD, TX Link, TX Duplex, FEF)
Power Input	FMC: DC 12V In
Power Consumption	< 4W
Dimensions	108 x 74 x 23mm (D x W x H)
Weight	120g
Temperature	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)
Humidity	10 ~ 90% non-condensing
Certification	CE, FCC, RoHS compliant
MTBF	65,000 hrs

Application

Ethernet — PoE PSE Switch — IFC-100PD (no external power required) — Fiber — IFC-100PD (no external power required) — PoE PSE Switch — Ethernet

Ordering Information

Model Name	Description
IFC–100PD	10/100Base-TX to 100Base-FX PoE PD media converter

Connector Type	Connectivity Distance
SC, ST, FC	002: 2km 015: 15km 030: 30km 050: 50km 080: 80km 120:120km
	20A: WDM 20km A type 20B: WDM 20km B type 40A: WDM 40km A type 40B: WDM 40km B type
	60A: WDM 60km A type 60B: WDM 60km B type 80A: WDM 80km A type 80B: WDM 80km B type

Connector Type   Connectivity Distance

IFC – 100PD – □□□□□

Example: IFC – 100PD – SC002

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

INJ-G30

Gigabit Ethernet, IEEE802.3af/at High Power PoE Injector

This device consists of 1 PoE Injector ports. That can solve the limitation of the power outlet location and offer the system designer a flexible solution to locate the network device everywhere. The compact size and wall mounting was specifically designed for easy installation. It can be installed where space is limited; moreover, it provides smooth network migration and easy upgrade to network capacity.
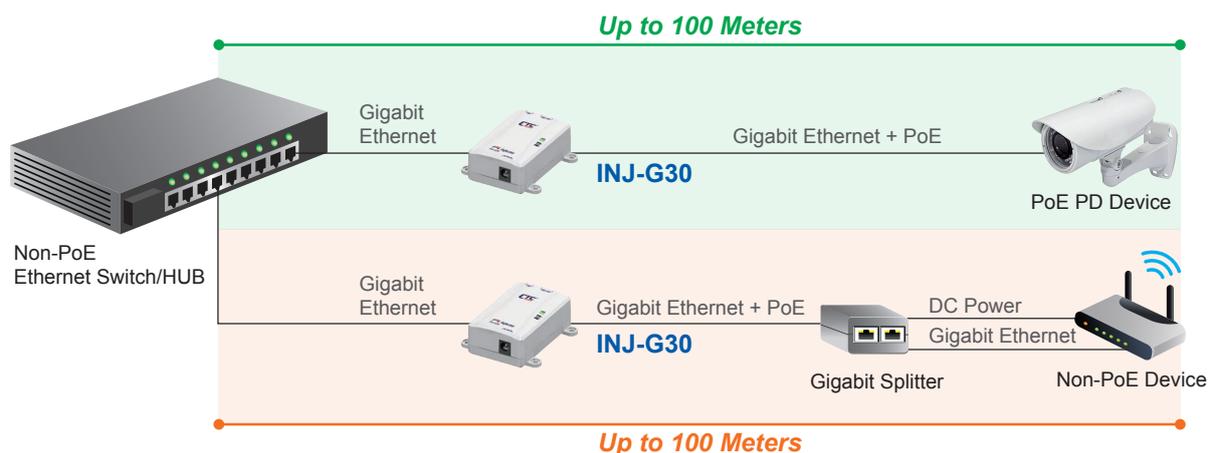
Features

- 1 Port PoE Injector, 48V 30W output
- Compliane IEEE802.3af/at
- Providing 1 10/100/1000Mbps pass through data rate
- Wall Mountable

- Compliane with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX and IEEE802.3ab 1000Base-T
- Safety & EMI Certificates: CE & FCC Class B Smart plug & play
- Compact Size

Specifications

Ethernet Standard	IEEE 802.3 10Base-T
	PoE standard
	Connector
Network Cable	IEEE 802.3af Power over Ethernet (PoE)
	IEEE 802.3at Power over Ethernet (PoE+)
Indications	1x RJ-45 for 10/100/1000Base-T data
	1x RJ-45 for 10/100/1000Base-T data and PoE Power output
Power Input	10Base-T Cat. 3, 4, 5e UTP/STP;
	100/1000Base-T Cat. 5 UTP/STP
Filtering/Forwarding Rate	10/100/1000Mbps pass through data rate
PoE Power output pin	RJ45 Pin 1,2(V+), Pin 3,6(V-)
LED	System Power

External Power Supply	DC48V 0.75A Output (maximum)
	AC 100V~240VAC Input
PoE Power output	48V, 30W (maximum)
Operating Temperature	0 ~ 45℃
Storage Temperature	-20 ~ 85℃
Humidity	10 ~90% RH (Non-condensing)
Dimension	80 x 68 x 24mm (D x W x H)
Weight	138g
Installation mounting	Wall mount
Certificates	CE & FCC Class B

Application

Up to 100 Meters

Gigabit Ethernet

Gigabit Ethernet + PoE

INJ-G30

PoE PD Device

Non-PoE Ethernet Switch/HUB

Gigabit Ethernet

Gigabit Ethernet + PoE

INJ-G30

DC Power

Gigabit Ethernet

Gigabit Splitter

Non-PoE Device

Up to 100 Meters

Ordering Information

Model Name	Description
INJ-G30	1 Port Gigabit Ethernet, IEEE802.3af/at high power PoE+ Injector