



HES-3112-CL-DR SERIES

**10/100/1000BASE-T RJ45 and 100/1000BASE-X SFP Combo to
100/1000BASE-X ETHERNET MANAGED MEDIA CONVERTER**

User's Guide

Version 1.0

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FCC Warning

This equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC Rules. These limitations are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if the equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your local distributors or an experienced radio/TV technician for help.
- Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications to the equipment, which are not approved by the party responsible for compliance, could affect the user's authority to operate the equipment.

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1. INTRODUCTION

Thank you for choosing this Managed Media Converter. This Managed Media Converter supports conversions between 10/100/1000Base-T and 100/1000Base-X, and between multimode and single mode fiber.

1.1 The Managed Media Converter

With a dual personality LAN (10/100/1000Mbps RJ-45 + 100/1000Mbps SFP slot) on the front panel, this Managed Converter is able to handle both copper to fiber and fiber to fiber conversions. It also supports advanced features such as QoS, VLAN, rate limit, and etc.. Clear, at-a-glance LED indicators make it easier for users to control and manage network status. The built-in management module also allows users to configure, control and monitor the system via SNMP based management system.

Specification

Interface

- LAN Port: 10/100/1000BASE-T and 100/1000BASE-X Combo x 1
- WAN Port: 100/1000BASE-X x 1

Standards

- Comply with IEEE 802.3, 802.3u, 802.3ab, 802.3z, 802.1q, 802.1p standards

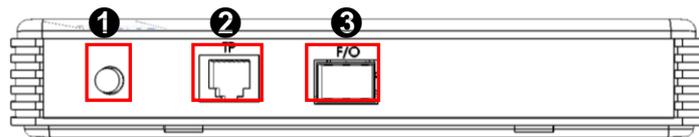
Features

- Switching:
 - Auto-Negotiation in TP ports
 - MDI/MDIX Auto-Crossover in TP ports
 - Full/Half Duplex Mode Operation
 - MAC Address Table: 2K
 - Store-and-Forward Switching Mechanism
 - 128 VLAN Groups
 - Tag VLAN
 - Q-in-Q VLAN
 - Bandwidth Control
 - QoS (802.1p and ToS Classification)
 - Priority Queues: 4 Queues

- Management:
 - Telnet/SSH/SNMP/Web interface
 - Storm Control
 - DHCP Client
 - DHCP Auto-Provisioning
 - Text Based Config
 - Configuration backup and restoration
 - SFF-8472 (digital diagnostic management interface for SFP)
 - Power Down Trap
 - Link Alarm
 - FTP/TFTP upgrade

1.2 Appearance

Front Panel



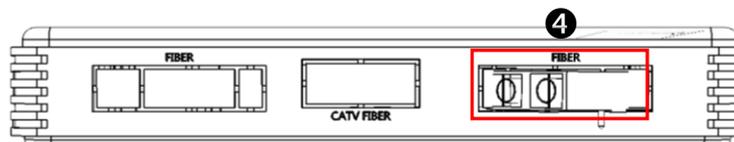
① Smart Lighting Control:

“STATUS”, “WAN F/O” and “LAN TO | F/O” LEDs will be turned off by pressing off the button. Only “POWER” LED indicator stays on.

② 10/100/1000Mbps TP LAN Port

③ 100/1000Mbps F/O LAN Port

Rear Panel



④ 100/1000Mbps F/O WAN Port

Left and Right Panel



Left Panel



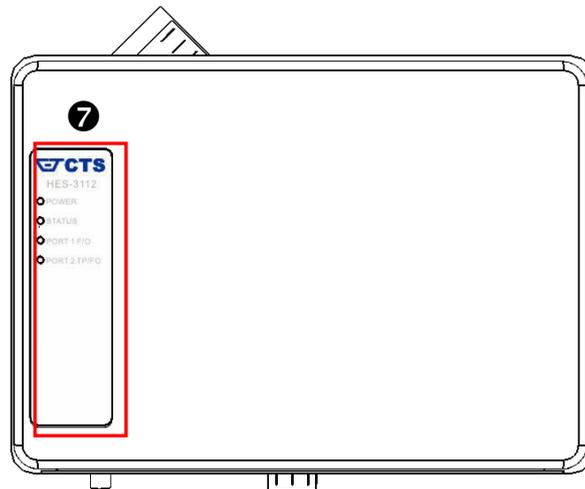
Right Panel

⑤ DC Power Jack

⑥ Reset Button

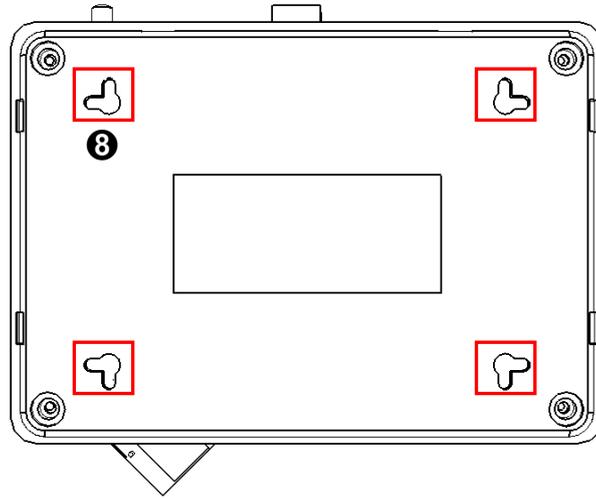
- Insert a pin or paper clip to press the Reset Button for 5 seconds to restart the system
- Insert a pin or paper clip to press the Reset Button for 10 seconds to reset the device back to factory defaults.

Top Panel



- ⑦ LED: For detail definitions, please refer to chapter [3.1 LED Definitions](#)

Bottom Panel



⑧ Wall Mounting Holes

The distances between two wall mounting holes are 12cm and 8cm.

2. INSTALLATION

To properly install the Managed Converter, please follow the procedures listed below. Procedures covered in this chapter are described below in separate sections.

- Installation Requirements
- Unpacking the Managed Converter
- Installing the Managed Converter
- Powering on the Managed Converter
- Connecting the Managed Converter to the Network

2.1 Installation Requirements

Basic requirements for installation are as follows:

- Environmental conditions
 - One power outlet
 - Proper ventilation
 - Proper isolation to electrical noise, radio, etc..
 - UTP cables should not run in the same duct with power and phone line cables
- Required SFP Transceivers or UTP cables

2.2 Unpacking the Managed Converter

Unpack the package carefully and check the package contents. The package should contain the following items:

- 1 Managed Converter
- 1 Documentation CD
- 1 Installation Guide
- 1 Power Adaptor

If any of the above items is found missing or damaged, please contact your local sales representative for support or replacement.

2.3 Installing the Managed Converter

CAUTION

To prevent any damage or failure of the Managed Converter, please **DO NOT** block the ventilation holes.

Use the following guidelines when choosing a place to install the converter:

- Firm and steady flat surface.
- The location of power outlet should not be far away from the device.
- Make sure that there is proper heat dissipation from and adequate ventilation around the Managed Converter. Please do not place heavy objects on the Managed Converter.
- Make sure water and moisture cannot enter the case.
- Keep the cabling away from electrical noise.

2.4 Powering on the Converter

The Managed Converter can be used with AC power adapter 100-240 VAC Input and 12VDC output. The input connector is located on the left panel of the Managed Converter. Before turning on the Managed Converter, please make sure that network cables and the power adaptor are securely connected.

Procedures:

1. Plug one end of the power adaptor into the power jack on the left panel.
2. Plug the other end of the power adaptor into the power outlet. After the power is on, the Power LED indicator should light in green.

Power Failure

In the event of power failure, unplug the power that is plugged into the converter at the left of the device. When power is resumed, plug the power back to the converter. Please note that the Managed Converter has no Power ON/OFF Button; therefore, the only way to power on or power off the converter is to connect or disconnect the power adaptor.

2.5 Connecting the Converter to the Network

Connect to Network

This Managed Converter has one dual personality LAN port (10/100/1000Base-T RJ-45 + 100/1000Base-X SFP) and a 100/1000Base-X F/O WAN port. Choose the medium which suits the deployment and insert the correct cable (TP cable or fiber cable) to the converter.

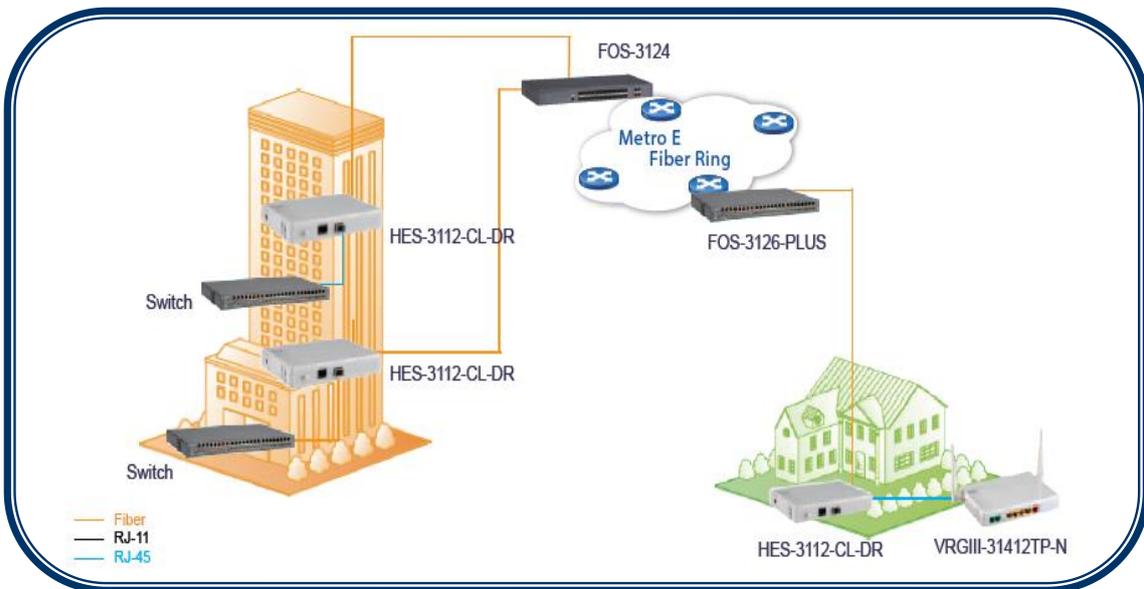


Figure 4. Example of segmenting network configuration

3. OPERATION

The Managed Converter is Plug & Play compliant. Real-time operational status can be monitored through a set of LED indicators located on the top panel. A built-in management module provides users with flexible interfaces to configure, control and monitor the complete system remotely.

3.1 LED Definitions

LED	Definition	Color	Operation
POWER	Power Status	Off	The device is powered off.
		Green	The device is powered on.
STATUS	System Status	Orange	The system is booting up.
		Green	The system is working normally.
		Orange Blinking	When the system is set back to default factory setting, the Status LED indicator will blink in orange for 3 times.
			When the system is restarted, the Status LED indicator will blink in orange once.
WAN F/O	WAN Port Status	OFF	The link is down.
		Green	The link is up and works at 100Mbps.
		Orange	The link is up and works at 1000Mbps.
		Blinking	The traffic is present.
LAN TP F/O	LAN Port Status	Off	The link is down.
		Green	The link is up and works at 10 or 100Mbps.
		Orange	The link is up and works at 1000Mbps.
		Blinking	The traffic is present.

4. MAINTENANCE

It is easy to use and maintain this Managed Converter. Please refer to the procedures as suggested below when you want to identify faults, perform hardware replacement and firmware upgrading.

4.1 Fault Identification

Identifying faults can greatly reduce the time required to find the problem and solution. Users may perform local or remote checks to find the problems.

Local Check

Users can perform local checks by observing LED indicators status.

- When the whole system fails to function,
 - Check “POWER” LED.
 - Check Power connection.
 - Check “STATUS” LED.
 - Reset power.

- When certain network link fails to function,
 - Locate the port of the converter
 - Check “WAN F/O” and “LAN TP | F/O” LEDs
 - Check cable connection between the port and the connected device
 - Reset power

Remote Check

Users may check the Managed Converter through SNMP manager remotely. For detailed procedures, please refer to the Network Management User's Manual.

4.2 Hardware Replacement Procedures

WARNING!

The Managed Converter contains no user-serviceable part. DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair it.

Failure to observe this warning will immediately void any warranty and could result in personal injury or death from electrical shock.

4.3 Firmware Upgrade

This Managed Converter may perform firmware upgrading when required. New firmware can be obtained from your sales representative. For detailed upgrading procedures, please refer to the Network Management User's Manual.