



# **CVT-3012SFP**

**10/100/1000BASE-T to 1000BASE-X (SFP slot)  
Standalone Media Converter**

**Network Management**

**User's Manual**

**Version: 1.3**

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# 1. INTRODUCTION

Thank you for choosing the 10/100/1000Base-T to 1000Base-X (SFP Slot) Managed Converter. The built-in management module allows users to configure this Managed Converter and monitor the operation status locally.

## 1.1 Front Panel & Rear Panel

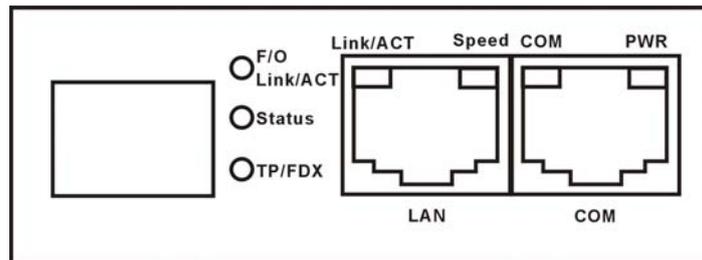


Figure 1: CVT-3012SFP Front Panel

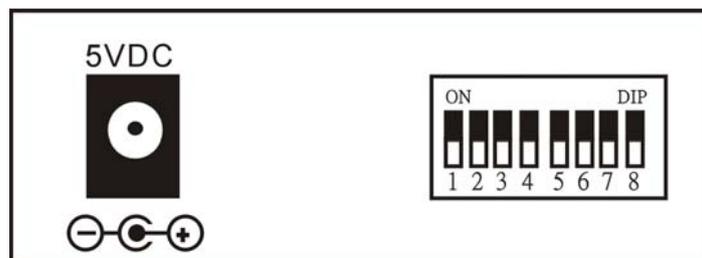


Figure 2: CVT-3012SFP Rear Panel

## 1.2 Management Preparations

Before you can manage your Managed Converter locally, you need to use the appropriate network cable to connect your converter. It is extremely important that your cable must have the correct pin arrangement and the proper cable types are used when connecting the Managed Converter to other switches, hubs, workstations, etc. The following sub-sections introduce you to the different port types used in this Managed Converter.

### 1000Base-X Combo SFP Port

The small form-factor pluggable (SFP) is a compact optical transceiver used in optical data communications applications. It interfaces a network device mother board (for a switch, router or similar device) to a fiber optic or unshielded twisted pair networking cable. It is a popular industry format supported by several fiber optic component vendors.

SFP transceivers are available with a variety of different transmitter and receiver types, allowing users to select the appropriate transceiver for each link to provide the required optical reach over the available optical fiber type. SFP transceivers are also

available with a “copper” cable interface, allowing a host device designed primarily for optical fiber communications to also communicate over unshielded twisted pair networking cable.

SFP slot for 3.3V mini GBIC module supports hot swappable SFP fiber transceiver. Before connect the other switches, workstation or Media Converter, make sure both side of the SFP transfer are with the same media type, for example: 1000Base-SX to 1000Base-SX, 1000Bas-LX to 1000Base-LX and check that the fiber-optic cable type matches the SFP transfer model. To connect to 1000Base-SX transceiver, use the multi-mode fiber cable- with one side must be male duplex LC connector type. To connect to 1000Base-LX transfer, use the single-mode fiber cable-with one side must be male duplex LC connector type.

### **10/100/1000Base-T RJ-45 Auto-MDI/MDIX Port**

1 x 10/100/1000Base-T RJ-45 Auto-MDI/MDIX ports are located at the front of the Managed Converter. These RJ-45 ports allow users to connect their traditional copper-based Ethernet/Fast Ethernet/Gigabit Ethernet devices to the network. All these ports support auto-negotiation and MDI/MDIX auto-crossover, i.e. either crossover or straight through CAT-5E UTP or STP cable may be used.

### **RJ-45 DB-9 Port**

The RJ-45 DB-9 port is located on the front panel of the Managed Converter. This RJ-45 DB-9 port is used for local, out-of-band management. This DB-9 port is DTE; therefore, a null modem is required to connect the Managed Converter and the PC. With a connection through RJ-45 DB-9 port, users can configure and check the Managed Converter even when the network is down.

## **1.3 Management Option – Local Console Management**

The Media Converter provides a console port for management and configuration. The console port is located on the front panel of the Managed Converter. You can connect RS-232 to RJ-45 cable from your PC to the Managed converter directly to access the Managed Converter. The Managed Converter has the standard built-in menu-driven interface to enable users to do the following:

- Configure the system
- Monitor the status
- Reset the system

## 1.4 LED Definitions

LED	Color	Function
PWR	Green	Lit when power is available.
TP/Link Act	Green	Lit when TP cable connection with the remote device is good. Blink when TP traffic is present.
	Orange	Blink when Fiber or Copper link is down in Link Alarm-enabled mode.
FO/Link Act	Green	Lit when Fiber cable connection with the remote device is good. Blink when F/O traffic is present.
	Orange	Blink when Fiber or Copper link is down in Link Alarm-enabled mode.
TP/FDX	Green	Lit when TP works in Full-Duplex. Not-Lit when TP works in Half-Duplex.
Speed	Green	No-Lit when TP works in 10M or is not linked. Lit when TP works in 100M.
	Orange	Lit when TP works in 1000M.
Status	Green	Lit when TP and F/O link is up.
	Orange	Lit when TP or F/O link is down.
COM	Green	Lit when Console port is connected.

## 2. CONSOLE PROGRAM

This chapter describes how to access to the Managed Converter and use its local Console program (out-of-band). The interface and options of the Console program are same as Telnet Management. The difference is the type of connection and the port that is used to manage the converter.

### 2.1 Local Console Management

Local Console Management can be accessed using the RJ-45 DB-9 port and requires a direct connection between the converter and a PC. This type of management is very useful especially when the network is down and the Managed Converter cannot be reached by other means.

Follow the steps below to begin a management session using Local Console Management:

1. Attach RJ-45 end of the serial cable to the RJ-45 DB-9 port located on the front panel of the Managed Converter.
2. Attach the RS-232 end to the serial port of a PC or workstation.
3. Run a terminal emulation program using the following settings:

- **Emulation**           VT-100/ANSI compatible
- **BPS**                 9600
- **Data bits**           8
- **Parity**              None
- **Stop bits**           1
- **Flow Control**       None
- **Enable**              Terminal keys

4. Press Enter to reach the Main menu.

## 2.2 Console Program Overview

Once you gain the access, the Main menu appears.

```
00: Port Status.
01: Current Configuration Status.
02: System Information.
03: SFP Port Status.
04: QinQ Configuration.
05: Load Default Factory Settings.
06: System Reset.
07: Firmware Upgrade(Xmodem)
08: Port Mirror Configuration.

KeyInLen = 0  KeyIn :  _
```

## 2.3 Navigating the Console Program Screen

Use this key...	To do this...
Enter the number key directly	To enter each menu
Press ESC	To exit the current screen

## 2.4 Port Status

**Port Status** allows users to monitor the real-time port operation status of the Managed Converter. Users may monitor the port link up status for maintenance or diagnostic purposes. Press “00” to enter **Port Status** from the Main menu.

```
Port   Link   Speed  Duplex
-----
Fiber  down   -----
Copper up     100M   full

<< PLEASE PRESS ENTER SHOW MENU... >>
_
```

**Port:** View-only field that shows the port media type (Fiber or Copper).

**Link:** View-only field that shows the current link status of the port (up or down).

**Speed:** View-only field that shows the current operation speed of the port (10M, 100M or 1000M).

**Duplex:** View-only field that shows the current Duplex mode of the port (could be Full or Half).

## 2.5 Current Configuration Status

In order to view the current configurations of the Managed Converter, press “01” to enter **Current Configuration Status** from the Main menu.

Port	AN	Speed	Duplex	FlowCtrl	AutoMDIX	LinkAlarm
FX	on	1000M	full	on		
TP	on	100M	full	on	on	off
Switch VLAN Mode-> QinQ DTAG Ether Type(0x9100)						
Port	ISP	ISP_Tag				
FX	En	0010				
TP	Dis					

KeyInLen = 0 KeyIn :

**Port:** View-only field that shows the port media type FX or TP.

**AN:** View-only field that shows the current Auto-negotiation status of the port.

**Speed:** View-only field that shows the current speed of the port.

**Duplex:** View-only field that shows the current Duplex mode of the port.

**FlowCtrl:** View-only field that shows whether Flow Control function is on or not.

**AutoMDIX:** View-only field that shows the current MDI/MDIX auto-crossover status of the port.

**LinkAlarm:** View-only field that shows whether the current Link Alarm mode is on or off.

**Switch VLAN Mode:** View-only field that shows the current **VLAN mode** of the Managed Converter.

**ISP:** View-only field that shows the current ISP port. “En” means Enable and denotes that the port is the ISP port. “Dis” means Disable and denotes that the port is not the ISP port.

**ISP\_Tag:** View-only field that shows the current ISP tag value.

## 2.6 System information

In order to view the Hardware and Firmware information of the Managed Converter, press “02” to enter **System information** from the Main menu.

```
===== HW Information =====  
Company: Connection Technology Systems  
Module Name: CVT-3012SFP  
SN: RDS_Smal0006518 Hw Ver: B01  
===== FW Information =====  
Ver : 1.04.00  
=====
```

KeyInLen = 0 KeyIn :

### HW Information:

**Company:** View-only field that show the manufacturer of this Converter.

**Module Name:** View-only field that shows the product model name.

**SN:** View-only field that shows the Serial number of this product.

**Hw Ver:** View-only field that shows the Main board version.

### FW Information:

**Ver:** View-only field that shows the current firmware version loaded in this Converter.

## 2.7 SFP Port Status

To view the SFP slot status of the Managed Converter, press “03” to enter **SFP Port Status** from the Main menu.

```
===== SFP Module Information =====
Identifier:SFP Connector:LC
Compliance I/F:ETH 1000BASE-LX
Encoding:(8B10B)
Distance: (10KM)
Vendor Name:CTS INC.
Vendor OUI:( 0 6 19 )
Vendor PN:SFP-31FC(SM-10)
Vendor SN:401908450000071
===== SFP Module Diagnostic Monitoring =====
Temperature (C): 29.6
Voltage (V): 3.272
TX Bias (mA): 19.802
TX Power (mw): 0.257
RX Power (mw): 0.0

<< PLEASE PRESS ENTER SHOW MENU... >>
```

## SFP Module Information:

**Identifier:** View-only field that shows whether the SFP slot has detected the SFP module or not.

**Connector:** View-only field that shows the SFP connector type.

**Compliance I/F:** View-only field that shows the Slide-in SFP module Interface.

**Encoding:** View-only field that shows the slide-in SFP module Encoding code.

**Vendor Name:** View-only field that shows the slide-in SFP module vendor name.

**Vendor OUI:** View-only field that shows the vendor OUI code of the slide-in SFP module.

**Vendor PN:** View-only field that shows the vendor Part Number of the slide-in SFP module.

**Vendor SN:** View-only field that shows the vendor Serial Number of the slide-in SFP module.

## SFP Module Diagnostic Monitoring:

**Temperature (C):** View-only field that shows the Slide-in SFP module's operation temperature.

**Voltage (V):** View-only field that shows the Slide-in SFP module's operation voltage.

**TX Bias (mA):** View-only field that shows the Slide-in SFP module's operation current.



## 2.8.1 QinQ Mode

Press "1" to enter **QinQ Mode** and set up Ether Type, ISP Tag and ISP Port.

```
==>Current VLAN is QinQ Mode
==>Please KeyIn New DTAG Ether Type(Hex) (Current:0x8100)?

KeyInLen = 0 KeyIn :
```

1. **Specify Ether Type:** Specify Ether Type such as 9100, 9200, 9300 or a user-defined Ether type value.

```
==>Current New DTAG Ether Type is 9100
==>Please KeyIn ISP Tag(Dec) (Current:0011)?

KeyInLen = 0 KeyIn :
```

2. **Specify ISP Tag (Dec):** Specify a value between 1 and 4095.

```
==>Current New ISP Tag is 0019
==>Please Select ISP Port (Current:TP)?
    (Please Key 1:FX or 0:TP or Esc Exit)

KeyInLen = 0 KeyIn :
```

3. **Select ISP Port:** Select TP or FX as an ISP port.

## 2.9 Load Default Factory Settings

Press “05” to enter **Load Default Factory Settings** from the Main menu, then the following screen appears.

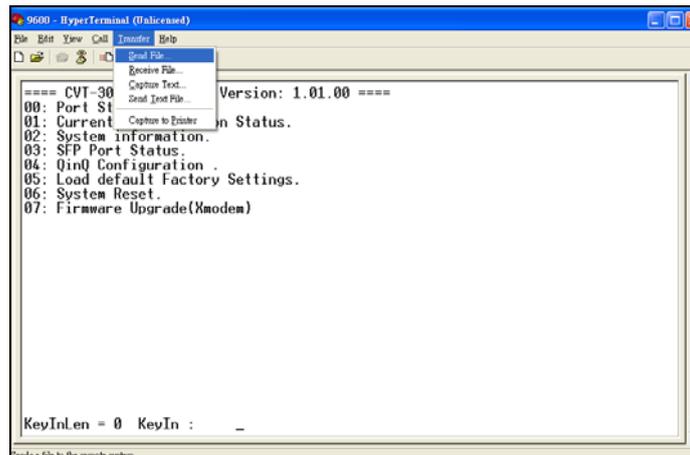
```
Do You Want Load Default Factory Setting?
(Please Key 0:No or 1:Yes or Esc Exit)

KeyInLen = 0 KeyIn : _
```

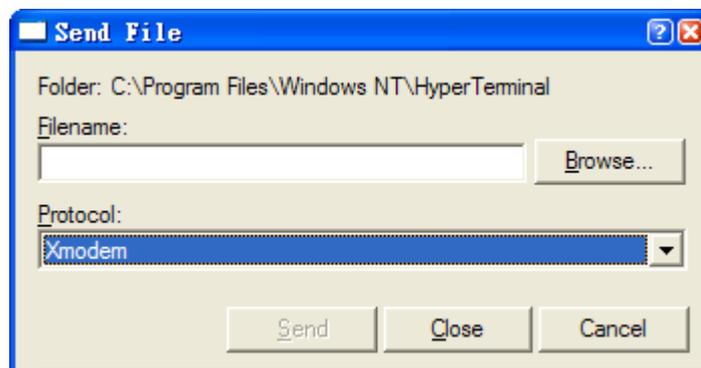
**Load Default Factory Settings:** Load Factory Settings will return the configurations of the Managed Converter back to the factory default settings.



Press “1” to process Firmware upgrade.



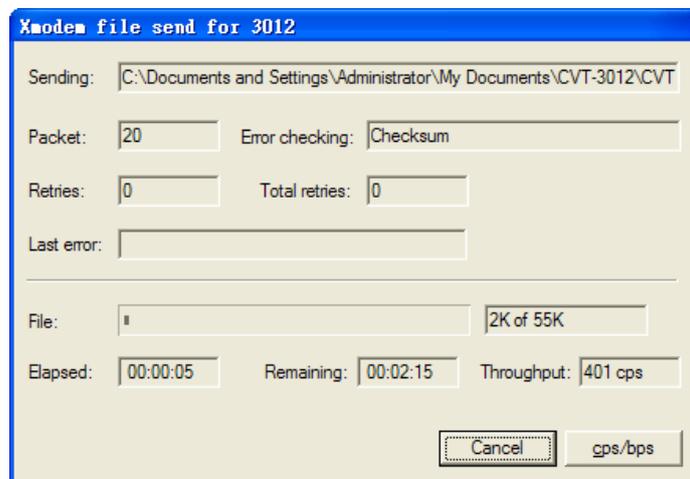
Select **Transfer** and then select **Send file** from the drop-down menu.



Enter the Filename and select the Protocol

**Filename:** Enter the specific path and filename.

**Protocol:** Select Xmodem Protocol.



Transmit the Firmware file to the Managed Converter. After the update is successful, the Managed Converter will be reset automatically.

## 2.12 Port Mirror Configuration

Press “08” to enter **Port Mirror Configuration** from the Main menu, then the following screen appears.

```
Port Mirror Configuration (Current setting:Source FX , Target TP)
Please Key 0: <Disable Mirror>
          1: <Source FX , Target TP>
          2: <Source TP , Target FX>
          Esc: Exit

KeyInLen = 0 KeyIn :
```

**0 <Disable Mirror>**: The port mirroring function is disabled by default. Enter “0” to disable port mirroring manually.

**1 <Source FX, Target TP>**: A copy of packets from TX port will be sent to TP port. Please refer to 2.12.1 Source FX, Target TP section.

**2 <Source TP, Target FX>**: A copy of packets from TP port will be sent to FX port. Please refer to 2.12.2 Source TP, Target FX.

**Esc**: Press Esc key to exit the current menu.

### 2.12.1 Source FX, Target TP

Select “1” to enter **Source FX Target TP** mode from the **Port Mirror Configuration** menu.

```
==>Current Mirror Port: Source is (FX)/ Target Port is (TP)
==>Port Mirror Setting:(S_Port:Source Port / T_Port:Target Port)
  0: <$_Port Ingress mirror to T_Port, T_Port can't forward to S_Port>
  1: <$_Port Ingress mirror to T_Port, T_Port forward to S_Port>
  2: <$_Port Ingress & Egress mirror to T_Port,T_Port forward to S_Port>
  Esc: Exit

KeyInLen = 0 KeyIn : _
```

**0:** Specify 0 to send a copy of ingress packets from FX port to Target TP port; however, packets from Target port will not be forwarded to Source Port.

**1:** Specify 1 to send a copy of ingress packets from FX port to Target TP port. Packets from Target port will also be forwarded to Source Port.

**2:** Specify 2 to send a copy of ingress and egress packets from FX port to Target TP port. Packets from Target port will also be forwarded to Source Port.

## 2.12.2 Source TP, Target FX

Select “2” to enter **Source TP Target FX** mode from the **Port Mirror Configuration** menu.

```
==>Current Mirror Port: Source is (TP)/ Target Port is (FX)
==>Port Mirror Setting:(S_Port:Source Port / T_Port:Target Port)
  0: <S_Port Ingress mirror to T_Port, T_Port can't forward to S_Port>
  1: <S_Port Ingress mirror to T_Port, T_Port forward to S_Port>
  2: <S_Port Ingress & Egress mirror to T_Port,T_Port forward to S_Port>
  Esc: Exit

KeyInLen = 0  KeyIn :
```

**0:** Specify 0 to send a copy of ingress packets from TP port to Target FX port; however, packets from Target port will not be forwarded to Source Port.

**1:** Specify 1 to send a copy of ingress packets from TP port to Target FX port. Packets from Target port will also be forwarded to Source Port.

**2:** Specify 2 to send a copy of both ingress and egress packets from TP port to Target FX port. Packets from Target port will also be forwarded to Source Port. Please note that when you select this option (bi-directional traffic flow), your device will cause a loop because of known unicast traffic. This situation will make your device fail to operate normally.

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