

TFC-1600
Media Converter
Chassis System

User's Guide

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Warning

This is a product of VCCI Class A Compliance.

注意

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PREFACE

This manual describes how to install and use the 19” Media Converter Chassis System. The system introduced here is capable of housing up to sixteen media converters, each of which offers one channel media conversion solution.

Below is a list of the available media conversions:

100BASE-TX	?	100BASE-FX
10/100BASE-TX	?	100BASE-FX
100BASE-FX	?	100BASE-FX (multi-mode ? single-mode)
1000BASE-T	?	1000BASE-SX/LX
1000BASE-SX	?	1000BASE-LX (multi-mode ? single-mode)

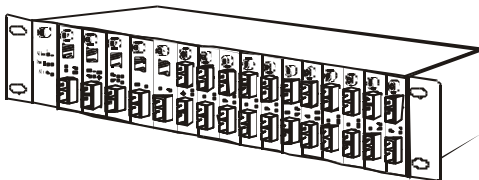
In this manual, you will find:

- ?? Introduction of the Chassis System
- ?? Product features
- ?? Illustrative LEDs functions
- ?? Installation instructions
- ?? Specifications
- ?? Ordering Information

Attention!

The chassis shown in the figures of this manual is fitted with redundant power supplies. The chassis comes with only one power supply. You can order the proprietary media converters and a second power supply separately.

19" Media Converter Chassis System



The chassis can be equipped with two power supplies and sixteen media converters.

Attention!

The chassis system ships with only one power supply. Proprietary media converters and a second power supply are not included!

PRODUCT FEATURES

This chapter describes the features of the Media Converter Chassis System.

Product Features

- ES* Plug-and-Play**
- ES* Houses up to Sixteen media converters**
- ES* Front panel LEDs for bay and fan power status**
- ES* Standard 19" rackmountable size, 2 Unit Height (2U)**
- ES* Non-stop operation & minimal downtime**
- ES* The following items are designed to be "hot swappable" to allow quick replacement with no downtime:**
 - Media converters**
 - Redundant Power supplies**
- ES* Cooling fan comes with power supply**
- ES* Power redundancy & power isolation**
- ES* One high quality internal power supply provided. Optional second power supply can be purchased for load-sharing**
- ES* Load sharing mechanism: If one power supply failed, the other power supply is capable of taking over immediately**
- ES* Media Converter Power Isolation; ensures the module bays are electrically isolated from each other**

UNPACKING AND INSTALLATION

This chapter provides unpacking and installation information for the Chassis. To avoid causing any damage to the Chassis, we recommend that you read this chapter carefully before starting installation.

Unpacking

When unpacking the product package, you shall find these items listed below.

- ES* 19" Media Converter Chassis System**
- ES* One power supply installed in the chassis**
- ES* One AC power cord**
- ES* User's Manual**
- ES* Accessories: rack-mount screws (8 pcs.), rack-mount ears (2 pcs.), rubber foot (4 pcs.)**

If any item is found missing or damaged, please contact your local reseller for replacement.

Installation

The site where you place the chassis system may greatly affect its performance. When installing, take the following into your consideration:

As with any electric device, you should place the equipment where it will not be subjected to high temperatures, high humidity, or electromagnetic interference. The site you selected should meet the following requirements:

- The ambient temperature should be between 32 and 104 degrees Fahrenheit (0 to 40 degrees Celsius).
- The relative humidity should be less than 90 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.
- Make sure that the equipment receives adequate ventilation at the rear. Do not block the fan exhaust holes on the rear of the chassis.
- The power outlet should be within 1.8 meters of the chassis.

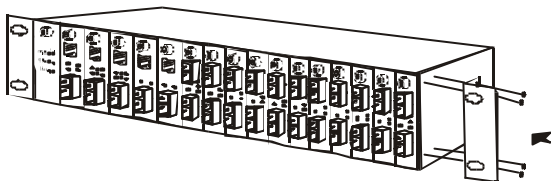
How to Install the System

We strongly suggest that you install the chassis first, as this is more convenient for you to install media converters into the chassis with ease. The accessories supplied in the product package include: rack-mount screws (8 pcs.) and rack-mount brackets (2 pcs.). This well-built chassis can be installed in the following ways:

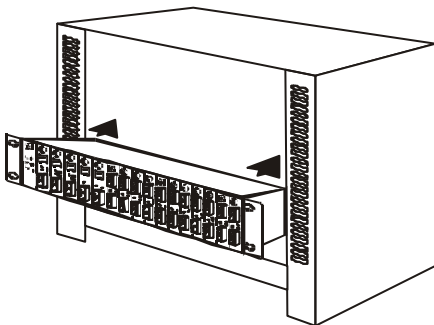
.Mounting to 19-inch standard rack

Use the rack-mount brackets and screws to install the chassis into any EIA 19" standard rack.

Step 1: Attach the brackets to both sides of the chassis. Apply four screws to each side and secure them.



Step 2: Carefully position the chassis into the rack. Align the brackets to the screw holes on the rack and use rack screws to secure the chassis on the rack.



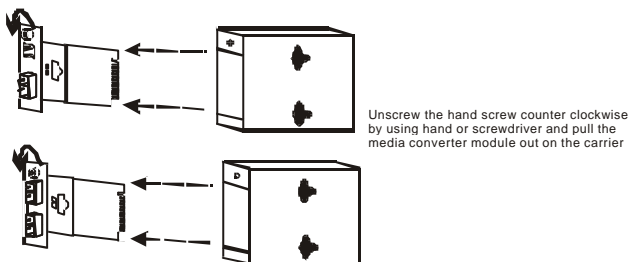
Step 3: Proceed to the “Connecting to Power” section.

.Installing Media Converter

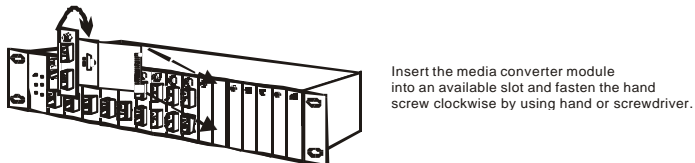
The chassis is equipped with sixteen media converter carriers, each of which is fitted into bays of the chassis.

Step 1: To install a media converter module onto the chassis, you have to unscrew the bay cover from the desired bay first.

Step 2 Unscrew the thumbscrew counter clockwise and pull the media converter out of the carrier as shown below.



Step 3: Carefully slide in the module and fasten the thumbscrew clockwise until it is fully and firmly fitted into the slot of the chassis.



.Connecting to Power (Power Supply)

The chassis ships with only one power supply. An optional second power supply is available. When the chassis is equipped with two power supplies, you can have the following advanced features.

?? Hot Swappable –

The design of the power system is based on an idea of providing maximum flexibility and redundancy. In this way, you may remove any one of the two power supplies without powering off the system.

?? Redundancy–

During operation, both power supplies share the current load. In case that one of them failed, the other will instantaneously take 100% of the load without any connection loss. Similarly, if one power supply is removed from the Chassis, the chassis will continue to function.

?? Protection System –

The power of each converter bay comes from the two shared power supplies. Each bay is isolated from the others under a certain protection mechanism, so that it is free from any problem that might occur to the power supplies or faulty converter bay. This is the best solution to protect your investment in media converters.

Attention!

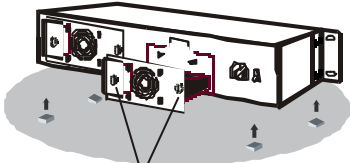
There is an optional solution for the backup power, - 48 volt DC to DC Power Supply.

The chassis system is equipped with one power supply and you can install one additional power supply for redundancy. For reliable operation, we suggest that you run the chassis system with two power supplies.

- Step 1: Connect the supplied AC power cord to the back of the chassis.
- Step 2: Attach the plug into a standard AC outlet with a voltage range from 100~240Vac.
- Step 3: Turn on the chassis system by flipping the switch beside the power cord receptacle to ON position. The Power LED on the front panel will come on.

.Installing and Removing the Power Supply

- ✎* To remove a power supply, loosen the two thumbscrews by turning them counter clockwise and then pull out the power supply from the chassis.
- ✎* To install a power supply to the chassis, align the power supply's bottom plate with the guides on the chassis, slide in the power supply to the chassis, and then tighten the thumbscrews by turning them clockwise.



Thumbscrews

Attention!

When mounting the Chassis on a sturdy flat surface,

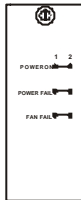
attached the rubber foot on the bottom of the Chassis (one at each corner) and then place the Chassis on the flat surface.

UNDERSTANDING LED INDICATORS

The front panel LEDs provide instant operating status and help monitor and troubleshoot the Chassis.

Front Panel

There are six LED indicators that provide you with instant feedback on the status of the power supply and the fan.



Power and Fan LED

1 , 2	Indicate which power supply (fan) is working (depends on which slot the power supply is installed).	
Power LED	On (Green)	Power supply online
	Off	No power supply (offline)
Power Fail LED	On (Amber)	Faulty power supply
	Off	Power supply works normally
Fan Fail LED	On (Amber)	Faulty Fan
	Off	Fan works normally

TECHNICAL SPECIFICATIONS

Chassis System	
Capacity	Sixteen bays for housing up to sixteen media converters
Material	Sheet Metal
Power	One hot-swappable power supply. *A second power supply (optional) for load-sharing/redundancy is also available.
Cooling	Two fans.
LED Indicators	2 LEDs for fan status 2 LEDs for power on/off status 2 LEDs for power supply's status
Dimensions	415 mm × 390mm × 89 mm (W × D × H) Standard 19" size, 2 Unit Height
Net Weight	7.0kg approx. (*with one power supply)

Fan

Rated Voltage	12VDC
Speed	3200 RPM +/- 250 RPM
Air Delivery	42.5 CFM
Noise Level	36.5dB(A)
Bearing System	Precise ball bearing system
Dimensions	80 × 80 × 25 mm

Power Supply

AC inputs:	100 to 240 VAC, universal power supply
Power Consumption:	150 watts. (max.)
Temperature	Operating: 0?~40? C, Storage: -10?~50? C
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Overload Protection	“Short Circuit” prevention with automatic recovery
Emissions:	FCC Class A, CE Mark Class A, VCCI Class A

ORDERING INFORMATION

Note: Please contact your dealer for product model name and availability.

1. 100Base-TX ~ 100Base-FX Media Converters

#	Port One			Port Two		
	Speed	Cable / Connector	Distance	Speed	Cable (/125 μ m) Connector	Distance
1-1	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50 μ m or 62.5 μ m) SC	2km
1-2	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50 μ m or 62.5 μ m) ST	2km
1-3	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50 μ m or 62.5 μ m) MT-RJ	2km
1-4	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50 μ m or 62.5 μ m) LC	2km
1-5	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9 μ m or 10 μ m) SC	15km
1-6	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9 μ m or 10 μ m) SC	30km
1-7	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9 μ m or 10 μ m) SC	40km
1-8	100TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9 μ m or 10 μ m) SC	60km

Note: MMF (multimode fiber); SMF (singlemode fiber).

2. 10/100Base-TX ~ 100Base-FX Media Converters

#	Port One			Port Two		
	Speed	Cable / Connector	Distance	Speed	Cable (/125μm) Connector	Distance
2-1	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50μm or 62.5μm) SC	2km
2-2	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50μm or 62.5μm) ST	2km
2-3	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50μm or 62.5μm) MT-RJ	2km
2-4	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	MMF (50μm or 62.5μm) LC	2km
2-5	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9μm or 10μm) SC	15km
2-6	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9μm or 10μm) SC	30km
2-7	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9μm or 10μm) SC	40km
2-8	10/100 TX	2-pairs Cat. 5 RJ-45	100m	100FX	SMF (9μm or 10μm) SC	60km

3. 1000Base-T ~ 1000Base-SX/LX Media Converters

#	Port One			Port Two		
	Speed	Cable / Connector	Distance	Speed	Cable (/125µm) Connector	Distance
3-1	1000T	4-pairs Cat. 5 RJ-45	100m	1000SX	MMF of 850nm (50µm) SC	550m
3-2	1000T	4-pairs Cat. 5 RJ-45	100m	1000SX	MMF of 850nm (62.5µm) SC	220m
3-3	1000T	4-pairs Cat. 5 RJ-45	100m	1000LX	SMF (9µm or 10µm) SC	10km
3-4	1000T	4-pairs Cat. 5 RJ-45	100m	1000LX	SMF (9µm or 10µm) SC	20km

4. 100Base-FX ~ 100Base-FX Media Converters

#	Port One			Port Two		
	Speed	Cable / Connector	Distance	Speed	Cable (/125µm) Connector	Distance
4-1	100FX	MMF (50µm or 62.5µm) SC	2km	100FX	SMF (9µm or 10µm) SC	15km
4-2	100FX	MMF (50µm or 62.5µm) SC	2km	100FX	SMF (9µm or 10µm) SC	40km
4-3	100FX	MMF (50µm or 62.5µm) SC	2km	100FX	SMF (9µm or 10µm) SC	30km
4-4	100FX	MMF (50µm or 62.5µm) SC	2km	100FX	SMF (9µm or 10µm) SC	60km

5. 1000Base-SX ~ 1000Base-LX Media Converters

1000Base-LX ~ 1000Base-LX Media Converter

#	Port One			Port Two		
	Speed	Cable / Connector	Distance	Speed	Cable (/125µm) Connector	Distance
5-1	1000SX	MMF of 850nm (50µm) SC	550m	1000LX	SMF (9µm or 10µm) SC	10km
	1000SX	MMF of 850nm (62.5µm) SC	220m	1000LX	SMF (9µm or 10µm) SC	10km
5-2	1000SX	MMF of 850nm (50µm) SC	550m	1000LX	SMF (9µm or 10µm) SC	20km
	1000SX	MMF of 850nm (62.5µm) SC	220m	1000LX	SMF (9µm or 10µm) SC	20km
5-3	1000LX	SMF (9µm or 10µm) SC	20km	1000LX	SMF (9µm or 10µm) SC	20km

6. Power Supply

	Power Type
6-1	150 Watt AC to DC Power Supply
6-2	-48 Volt DC to DC Power Supply

7. Management Module

7-1	Management module for the Chassis System (manage/monitor chassis status via console port or Ethernet port with SNMP software)
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