Managed 19” Rack-mount 18-Slot Card-based Media Converter Chassis

NMF-736+

User’s Manual

VOLKTEK
Optical Ethernet Experts

FCC WARNING
This equipment has been tested and found to comply with the limits for class A device, pursuant to part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. 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 the user's own expense.

CE
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.

Table of Contents

1 Introduction

Product Overview

The unit is a 19" rack-mount 18-slot card-based media converter chassis offering the user a managed and secure environment for multiple media conversion applications. It also allows the user to utilize existing and new media converters either in the rack or in stand-alone installation.

Flexibility - The Chassis supports up to 18 card based media converters covering the following conversion solutions:

100BASE-TX	↔	100BASE-FX
10/100BASE-TX	↔	100BASE-FX
100BASE-FX	↔	100BASE-FX (multi-mode/single mode)
1000BASE-TX	↔	1000BASE-FX

Reliability - The Chassis also supports two high quality hot-swappable power supplies. Either power unit can be removed during operation without interruption, offering total efficiency, maximum redundancy and minimum downtime. Each module is supplied power from a common shared power bus – however as an added precaution, each is individually

protected in the event of a problem on the bus or from the power supply. Each card-based converter can also be changed without powering down the chassis.

Functionality - The Chassis was carefully designed to offer a lifetime of operation. Incorporated into the chassis are three long-life cooling fans to ensure a cool, optimum operating environment. The Chassis also features an LED status panel to which each fan is connected and may be monitored. The panel indicates whether power is being properly supplied to each module and that the fans are functioning correctly.

Features

- Houses up to 18 card-based media converters
- Card-based media converters are 'Plug-n-Play'
- Supports two load sharing, hot-swappable power supply units
- Standard 19" rack-mount unit size
- Three high volume cooling fans ensure optimum operating environment
- Front panel LEDs for fan and unit power status
- Each slot has power isolation – ensures each slot is electrically isolated from the next
- Supports 10/100Base, Copper, Fiber,
- Single/Multi-mode, ST, SC, MT-RJ, VF-45, LC, WDM
- RS-232, RS-422/485, RS-232/422/485 connectors
- Designed for non-stop operation and minimal downtime

Specifications

Chassis Specs

Capacity:	Eighteen slots housing up to 18 card-based converters
Chassis:	Aluminium/Steel
Power:	Up to two power supplies, load sharing, hot-swappable
LEDs:	Fan status - 3 Red Power supply status - 2 Green
Cooling:	Three rear mounted fans
Dimensions:	357 x 440 x 88.6mm (L x W x H) (EIA2U)
Weight	7.4kg (with one power supply)
18 slots	9.1kg (loaded with 18 card-based converters + 1 management module,one power supply.)

Power Supply Specifications [AC]

AC Input: 90~260V AC @ 47~63Hz

DC Output: *Norm.* +12V, *Min.* +11.4V, Max +12.6V, 75Watts

Load: *Min.* O.3A, *Rated.* 7.5A, *Peak* 20A

Total Reg. +/- 1.0%, Rip. 120mV, Load 5.0%, Line 1%

Overload Protection: All outputs protected against short circuit conditions, automatic recovery

Over volts Protection: Output level exceeding + 13.8V causes shutdown – automatic recovery

Temp.: *Operation:* 0°C ~ 50°C,

Storage: -20°C ~ 70°C

EMI: FCC Part 15 Class A

Safety: UL / cUL / TUL Approved

Power Supply Specifications [DC 48V]

DC Input: -48V ±10%

DC Output: *Norm.* +12V, *Min*. +11.76V, *Max* +12.24V, 75Watts

Load: *Min*. OA, Full. 6.4A

Total Reg.: +/- 1.0%, Rip. 120mV, Load 5.0%, Line 1.0%

Overload Protection: All outputs protected against short circuit conditions, automatic recovery

Over volts Protection: Output level exceeding + 13.8V causes shutdown – automatic recovery

Temp.: *Operation:* 0°C ~ 50°C,
Storage: -20°C ~ 70°C

Fans Specifications

Speed: 4800 rpm +/- 400; Delivery 22.1ft 3 / min.

Noise Level: 34.3dB(A)(each fan)

Temp.: *Operation:* – 0°C ~ 50°C
Storage: – 20°C ~ 70°C

Bearing: Precise Ball Bearing

Safety: UL/cUL/TUV / CE Approved

Package Contents

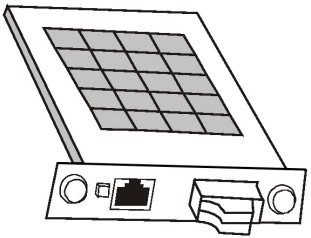
- One managed 18-slot card-based media converter chassis
- One power supply (AC or DC)
- One power supply cable
- 19" rack-mounting kit
- 18 slot faceplates (fitted)
- Four self-adhesive pads
- Spare screws
- Spare fuses
- User's Manual

2 Installation

This chapter will take a look at how to install converters into the Chassis and the different options available for placement of the Chassis within its operating environment.

First, it is important to unpack the chassis and ensure that all the components listed on page 1-8 are present. In some cases, the Chassis may come complete with certain converters already installed.

You can either install the converters first or setup the Chassis first, and then to install the converters. We recommend that you do the latter as it is more convenient.



View of Series 'slide-in' media converter with SC and RJ-45 connectors

Installing converters

The Series card-based converters may be installed into the Chassis in any available slot. There is no particular sequence to adhere to regarding this.

Please refer to Chapter 2 in the converter series User's Manual under the section titled "*Installation*" for directions on how to properly install a media converter.

Warning

Always ensure that the converter power socket is positioned at the base of the chassis.

Never force the converter into the chassis - check power socket position and alignment.

Installing the Chassis

The Chassis is made from a combination of steel and aluminum and is very sturdy in design. This allows the Chassis to be installed in the following ways:

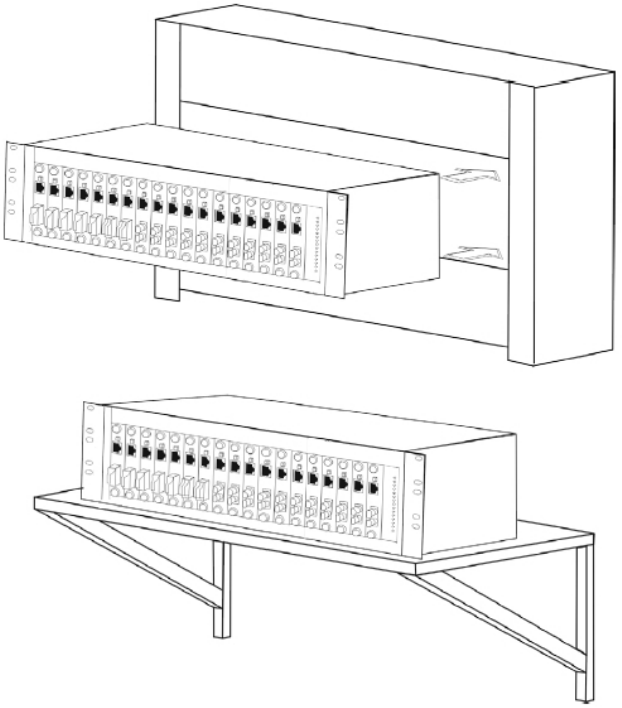
Rack-mount

The Chassis conforms to established EIA Standards and as such will fit into any 19” EIA designed rack.

Shelf Mount

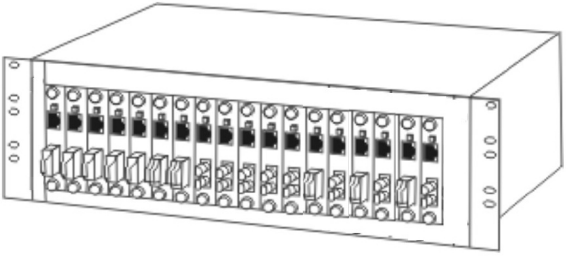
The Chassis can be mounted separately on a wall with the use of a shelf. This should be securely mounted on a suitable structure and must be able to hold at least 15kg. The shelf should also be big enough to accommodate the 2U form factor chassis whilst still offering space for adequate ventilation.

Shelf Mount Installation



Desktop

The Chassis can be situated on any suitable desktop. Simply attach the adhesive feet to the base of the Chassis and position where suitable, again, keep adequate space for ventilation.



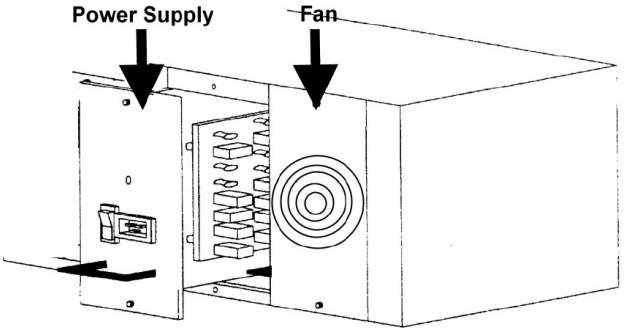
Desktop Installation

3 Power Supplies

The Chassis comes equipped with one redundant, hot–swappable power supply unit (shown below). The design of the power system is based around flexibility and maximum redundancy. For normal operation, one power supply is adequate to operate fully loaded (18 converter modules + 1 management module). However, for mission critical applications, installing an additional redundant power supply unit is highly recommended.

During 2-power operation, both power supplies will be switched on and will share the current “load” between them. In the event that one of the power supply units should fail, the remaining unit will take 100% of the load. This power swap will happen instantaneously and will have no adverse effect on the operation of the chassis.

Similarly, if a power supply is required to be removed for any reasons, such as servicing, it can be achieved without affecting normal operation of the chassis.



NOTE: Both a power supply and fan unit can be removed from the chassis by simply removing the securing screws and pulling the supply unit out

Warning

Always exercise CAUTION when removing fan or power supply units.

Always turn power supply unit OFF before removing.

Always disconnect the power cable from supply before removing unit.

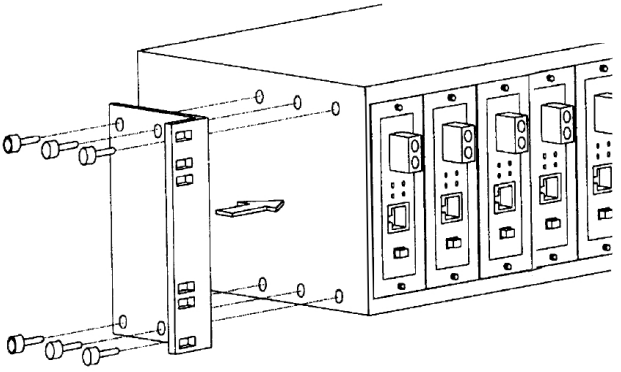
Do NOT touch power supply components after removal - they may hold residual electrical charges.

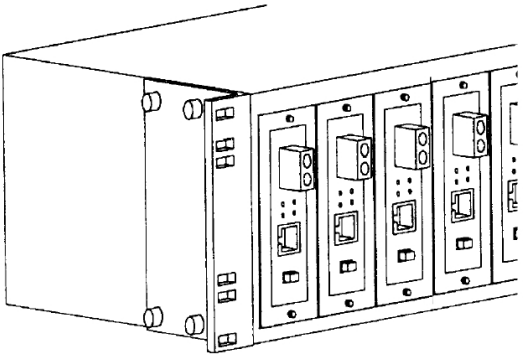
4 Rack Kit

The Chassis comes with an EIA standard 19" rack-mounting kit. This basically consists of two brackets and a set of bolts. The brackets are fitted to the Chassis via six bolts.

It is strongly recommended that you use all six bolts and use *only* the ones supplied with the chassis. This will ensure that no unnecessary stress is placed on either the Chassis or the brackets.

Each bracket has symmetrical EIA standard mounting holes so that a bracket can be affixed on either side of the Chassis.





5 LED Indicators

To allow a network administrator to establish the operational status of the Chassis, a simple LED display panel is installed. Its simplicity hides the fact that the Chassis employs a sophisticated power distribution system.

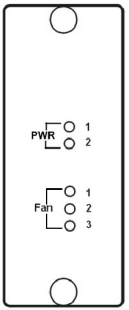
All converters are supplied from a single hot-swappable power supply. However, each slot has its own protection system that isolates each converter from any problems that might occur with either the power supplies or another faulty converter. This offers the best possible protection and virtually eliminates widespread downtime in the event of a problem with one of the installed media converters.

Power Supply LED's

If the associated power supply LED is GREEN, the unit is functioning normally.

Fan Indicator LED's

If the associated fan LED are GREEN, the fan is functioning normally.



6 Cooling

The Chassis holds a maximum of two power supply units and nineteen slide-in modules (including management interface module), thereby necessitating a method to remain a cool optimum operating temperature.

Equipped with three rear-mounted fans, the Chassis is able to draw cool air into the device. Each fan is connected to the status monitor panel located on the front of the chassis. Even with only one fan working, the Chassis is capable of performing within a normal operating temperature range.

For the purpose of cleaning and maintenance, the fan panel assembly can be removed for periodic inspection. Please clean fans with a dry cloth *only*.

NOTE: *For removal and installation of fans, please review Section 3: Power Supplies in this guide.*

VOLKTEK CORPORATION
4F, No. 192 Lian-Cheng Road
Chung-Ho, Taipei 235, Taiwan ROC
TEL: +886 (2) 8242-1000
FAX: +886 (2) 8242-3333
Tech Support: +886 800-286-286
ISO 9001 Certified