

Fiber Manageable Platform Solution for CO side - 3U Family

FRM301



FRM301



FIB1 Series
Stand Alone Model



FRM301 Series Line Card

FRM301 Line Card Types

- The FRM301 media converter rack is designed to accept all of the FIB1 series converters as line cards within the rack. Please refer to the FIB1 series catalog for specifications and features of the line cards.

General Specifications for FRM301 Family

Environment

- Temperature: 0-50°C (Operating) ; 0-70°C (Storage)
- Humidity: 20-80% non condensing (Operating);10-90% (Storage)
- Dimensions: 440mm x 280mm x 130.6mm (LxWxH)
- Weight: 17.3lbs (7.875kgs)
(include 1 AC power module & two brackets for rack-mounting)

Power Module Specification

- AC Power Module
Input: Universal 90 ~ 264 VAC ; Frequency: 47~ 63 Hz
Output: DC 12V, 8.5A
- DC Power Module
Input: -18~- 56 VDC ; Output: DC 12V, 8.5A

The FRM301 is a standard 3U, 19 inch rack mountable, Platform Media Converter that features 16 line card capacity. Currently supported line cards include Ethernet to fiber converters for 10/100 (auto), 100Base-TX, or 1000Base-TX over multimode fiber (up to 2KM), single mode fiber (up to 120KM) or utilizing WDM (up to 40KM). WDM (Wave Division Multiplexing) converts each input-output data stream into separate wavelengths of light and transmits/receives these channels through the same optical fiber. FRM301 line cards also support G.703 and various data communication interfaces over fiber.

The FRM301 supports optional redundant power and SNMP management. Another unique feature of the FRM301 is line cards which make use of a common PCB card which may either be placed in the rack (FRM301 Series line card) or used as a standalone converter (FIB1 Series). Manufacturing costs are reduced as well as the inventory of spares required by distributors, installers, and end users. Because NMS (Network Management System) offers the power of centralized management, network engineers will benefit from the advanced features of the FRM301's SNMP. The benefits include remote configuration and management of converter modules, status and performance monitoring, and link loss detection.

The NMS option includes an SNMP card (agent) and standard MIB-II file for importation into any network management software, thus allowing remote configuration and system monitoring. An additional proprietary SNMP manager with GUI (Graphical User Interface) is also available which provides standalone management under any Windows® NT/9X/ME/2K/XP computer.

Features for FRM301 Family

- 3U high, 19 (or 23) inch RACK with convertible standalone units, RACK accommodates up to 16 units.
- RACK with Dual power modules designed for redundant power application, AC and/or DC, cooling FANS included.
- Once the converter is installed, it is hot-swappable to avoid any other network downtime. Also, the power does not have to be off when inserting another converter.
- Supports an auto recovery function, the system can restore all functions back to normal working status when the power or the connection is resumed.
- 10/100Base auto negotiation capability.
- Emission Compliance: FCC part 15 class A, CE Mark
- MTBF: 38,000 hours minimum

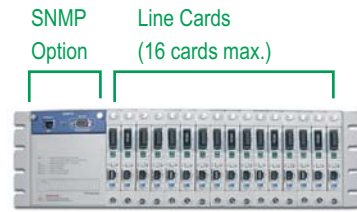
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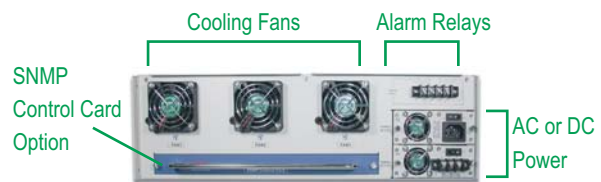
Transmission Units E1/T1 CSU/DSUs
Transmission Units xDSL
Fiber Media Converters
Network Testers
Interface Converters
Datacom Accessories

Features for NMS

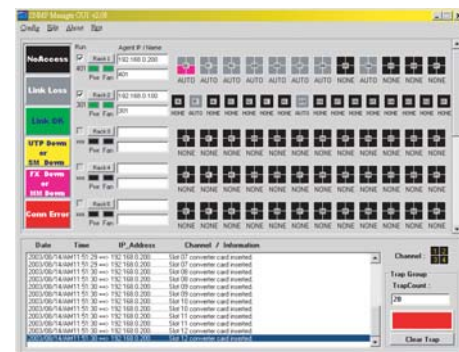
- The NMS provides three modes:
 - 1) Terminal mode: Configuration by local RS-232 serial craft port connected to terminal or PC. This mode supports maintenance, setting & alarm. Operation is based on the menu-driven list.
 - 2) MIB file SNMP: Configuration by RJ-45 10/100 Ethernet port complies with MIB-II standard. Supports the community string, community authority, trap IP and SNMP configuration.
 - 3) GUI SNMP Manager: Configuration by RJ-45 10/100 Ethernet port.
- Supports real time monitoring and polling report & trap alarm via a Windows® based application program.
- The system polling report and alarm message can be displayed through each type of the NMS mode in the connected PC terminal.
- Able to read and set or modify the configuration at the same time.
- The NMS enables the administrator to load the default setting configuration.
- The configuration menu for each FRM series includes: Ethernet speed, Ethernet duplex status, fiber duplex status and auto-negotiation via each type of NMS mode.
- Alarm display function includes: Link Status (Link OK/Link Down); Power Fail Alarm/Power Fan Detector; Cooling FAN Fail Alarm
- Support for Telnet to operate from remote site in terminal mode. TFTP function to upgrade firmware.
- Card configuration can be saved for recall later or for use on replacement line cards.
- The SNMP control card can store the system configuration and default settings for sudden power shutdown.



FRM301 Front Panel View



FRM301 Rear Panel View



GUI SNMP Manager Main Display

Ordering Information

FRM301-Chassis	Rack-Mount Chassis for both AC & DC type	
Power Cards		
FRM301-AC1	Single AC power plug-in module	FRM301-DC1
FRM301-AC2	Redundant AC power plug-in module	FRM301-DC2
Optional SNMP Card		
FRM301-SNMP	SNMP plug-in card, Terminal mode and MIBs file	
FRM301-GUI SNMP	Manager Windows® based GUI program	

FRM301-XXXX X / XX XXX X

<u>Ethernet Type</u>	<u>Fiber Type</u>	<u>Connector Type</u>	<u>Distance Connectivity</u>	<u>Advanced Features</u>
100:	S : Single Mode	ST: ST/PC	002: 2Km [multi-mode only] (Power Budget >13dB)	F:1)Link-Loss-Forwarding
10/10:	M: Multi-Mode	SC: SC/PC	015: 15Km (Power Budget >17dB)	2)Loop-Back test
	W: WDM	LC: LC Type	030: 30Km (Power Budget >26dB)	3)Remote monitor status
			050: 50Km (Power Budget >34dB)	4)Two Frame lengths
			120:120Km (Power Budget >39dB)	
			*20A:20Km [WDM only](Power Budget >17dB)	
			*20B:20Km [WDM only](Power Budget >26dB)	
			*40A:40Km [WDM only](Power Budget >17dB)	
			*40B:40Km [WDM only](Power Budget >26dB)	
			*020A must be coupled with 020B	
			*040A must be coupled with 040B	

Example:

FRM301-10/100M/SC002F	Multi-mode, SC Type Connector, 2 Km with Advanced Features
FRM301-10/100W/ST20AF	WDM, ST Type Connector, 20 Km with Advanced Features and must be coupled with FRM301-10/100W/ST20BF

*Special note for WDM : Because WDM utilizes different wave lengths on the same physical fiber cable, the WDM units must be matched in pairs (which we designate as A and B). Failure to match in pairs (A unit to B unit) will not allow any transmission on the fiber link as the transmit wavelength of one unit in the pair must match the receive wavelength of the other unit in the pair.