HUBBELL
Power Systems

eXmux® 4500 Multi-Service & Access Transport (MSAT)

By RFL Electronics
Catalog # eXmux_4500_MSAT

The eXmux 4500 delivers a solution to an industry-wide dilemma, and addresses the various technology, knowledge and IT/OT convergence gaps. The RFL eXmux 4500 provides a one-box solution that converges two important traffic types onto one infrastructure, providing the benefit of connecting traditional voice, video, serial data over Ethernet/IP networks. The RFL eXmux® 4500 comes with an advanced Graphical User Interface (GUI) Network Management Software for Operations, Administration, Maintenance and Provisioning (OAM&P). The intuitive and user friendly VNMS is designed to allow the user to effortlessly manage their RFL eXmux® 4500 network, making configuration, port mapping, network monitoring and diagnostics simple and easy. The VNMS communicates using the latest SNMPv3 for authentication and encryption.

Features

- 10-Gig Carrier Ethernet Access and Transport Communications Platform
- Redundant controller & network multiple points of failure protection
- G.8032 Ethernet ring protection with sub 50ms switch-over time
- "Hitless Switching" functionality with zerodata- loss to protect mission-critical TDM data
- Low latency with < 3ms circuit propagation delay for real-time mission-critical applications
- TDM legacy interfaces including DACS functionality
- Encryption - Data and Management
- "Secure Lockdown" (Patented) – two-factor authentication for increased security
- "Zero Data Outage Upgrade" - when upgrading controller system software.

General

Alarms	Minor and Major alarm and form C contacts rip Function Disable Switch
Carrier Type	E-Line, E-LAN, E-Tree
Catalog Number	eXmux_4500_MSAT
Cooling	Convection cooling (No Fans)
Ethernet	[2] 10GigE SFP Ports, [2] GigE SFP Ports, [2] GigE RJ-45 Port
I/O Data	[2] T1/E1 Ports, GPS Input, IRIG-B input/output, 1PPS Input, IEEE 1588v2 PTP, Alarms Contacts [Minor & Major,Contact Status Inputs [2 Inputs]
Indicator	Inputs, Outputs, Power, and alarms
Interface Port	2 Port Sync. Interface,4 Port Async. RS-232/485 Interface,4 Port Serial Server RS-232/485 Interface, 4 Port C37.94MM Sync. Interface,4 Port C37.94SM Sync. Interface,4 Port G.703 Co-directional Sync. Interface,4 Port 4-Wire E&M Audio Interface,4 Port 2-Wire E&M Audio Interface,4 Port 2-Wire FXO Interface,4 Port 2-Wire FXS Interface,4 Port T1/E1 Interface*,4/8 Function Teleprotection Interface*,8 Input/Output Contact Status Interface*,6 Port RJ-45 10/100 BaseTx interface*,1 Port GigE SFP*
Mounting Type	- 19" Rack Mount (5RU) H: 8.75" (222mm) W: 19: (483mm) D: 11" (279mm) - 19" Rack Mount (3RU) H: 5.25"(144mm) W: 19"(483mm) D: 11"(279mm)
Number of Slots	1
Operating Temperature	- 30 °C to +65 °C/-22 °F to +149 °F
Power Supply	38-150 VDC/88-130 VAC, 200-300 VDC/200-275 VAC, 19-32

	VDC	Specifications	• SFP Options: RJ-45 10/100/1000 Base TX;1000 Base-FX [550m (0.34mi), 10km (6.2mi),30km (18.4mi), 60km (37.3mi), 80km (49.7mi),120km (74.5mi)];10000 Base-FX [400m (0.25mi), 10km (6.2mi),40k(24.9mi), 80km(49.7mi), 120km (74.5mi)]
Protocol	RS-422/RS-530, V.35, X.21,RS-232, V.24. RS-485, Raw socket mode, SSH, Telnet, DNP3-Serial to DNP3-IP		
Recording Capacity	1500 SOE records		• Interoperability: Interoperate with eXmux 3501 and TDM circuit interoperability with IMUX 2000 DS0 via T1/E1 interface
Security	Management – SNMP v3,Payload Data – MACsec AES 128/256-bit encryption,Management –Two-Factor Authentication – "Secure Lockdown*" (Patented)		• Loopback: Local and Remote
			• Framer type: Electrical T1 or E1
Software	The RFL eXmux® Visual Network Management Software has been designed to allow the end user to easily set-up and configure their network along with maintaining and troubleshooting their system. The software communicates using the latest SNMPv3 for authentication and encryption. The software features a graphical interface with user-friendly drop-down screens and intuitive navigation to conduct commissioning in hours instead of days. The VNMS allows management up to 1000 nodes and multiple networks. Show the user a graphical picture of the network from any node in the network.Allow the user communication with any RFL eXmux unit in the network.Allow the user access to any interface unit located on any RFL eXmux in the network. Allow the user access to any configuration information on any node in the network. Allow the user to change interface unit parameters in real time. Allow the user to setup Ethernet services . Allow the user to setup TDM services. Allow the user to setup traffic engineering. All the user to mange users' access. Allow the user to perform network maintenance and troubleshooting.		• Framer mode: Pass-thru or DS0 grooming
			• Coding: PCM
			• SOE synchronization: NTP/SNTP/IEEE 1588
		Terminal Type	Compression or Screw type
		User Interface	USB Port on Active Controller for Management IP address setup,MGMT Port on front unit for Visual NMS GUI,Management of multiple eXmux networks up to 1000 nodes

Conductor Related

Fiber Type	Singlemode or Multimode

Certifications And Compliance

Industry Standard(s)	• ANSI/IEC SWC, ESD, RFI compliant
	• IEEE1613, IEC61850-3 compliant
	• ANSI T1.102-1993
	• AT&T 62411 & 43801
	• ITU G.703, G.823 & G.704
	• ANSI C37.94
	• AT&T Publication 43801

Product Assets

Brochures - eXmux® 4500 Multi-Service & Access Transport (MSAT)
Specifications - EXMUX_4500_MSAT