

FMUX01A / Plus

16 Ch E1/T1, 3x 10/100-T(X) Ethernet Fiber Multiplexer



The FMUX01A/Plus is a 1U, 19" rack mountable, PDH fiber optic multiplexer that transmits up to 16 channels plus a wire speed 100Base-TX Fast Ethernet channel over a single fiber optic link. The FMUX01A/Plus chassis is available in five different power configurations: single AC, single DC, dual AC, dual DC or AC+DC. The AC supplies operate from 90~260VAC while DC supplies operate from 36~72VDC or 20~60VDC. From the rear of the chassis, one to four hot swappable quad E1 or T1 line cards, serial data communications (V.35, X.21, RS-530) or FXO/FXS voice cards are supported. The standard FMUX01A/Plus configuration may be viewed or set via the front panel LCD/menu keys, serial VT-100 terminal connection, Telnet, web HTTP or SNMP.

Features

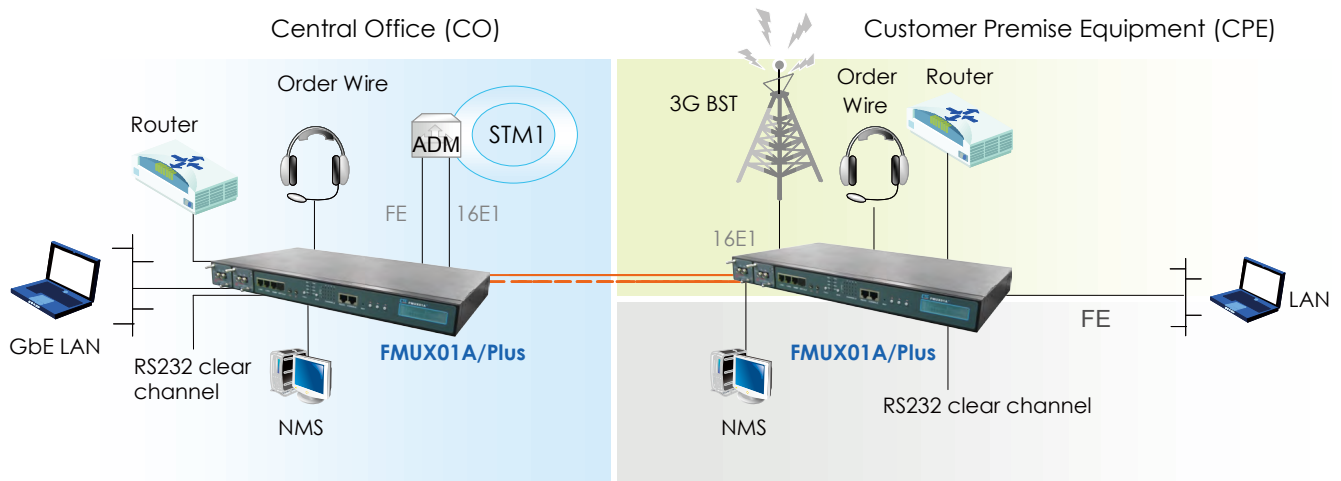
- ◆ 1U, 19 (23)" 4 slot chassis
- ◆ 16 E1 (2.048Mb/s) Multiplexer, 100Mbps Ethernet and RS-232 data (async)
- ◆ RS-232 port for system console
- ◆ One alarm output port, one Order Wire port
- ◆ SNMP management
- ◆ LCD plus menu keys for local configuration
- ◆ Port based VLAN, tag based VLAN & bandwidth control
- ◆ Telnet and web based remote configuration
- ◆ 2 plug-in I/O slots for optical interface cards

Specifications

Optical Interface	Connector	1x9 (SC, ST, FC)
	Data rate	155.52Mbps
	Bit Error Rate	Less than 10 ⁻¹¹
	Fiber	MM 62.2/125µm, 50/125µm. SM 9/125µm
	Distance	MM 2km. SM 15/30/50/80/120km, WDM 20/40/60/80km
Electrical Interface	Wavelength	1310, 1550nm
	Console, SNMP	RJ45
	Ethernet	3 x RJ45
	Alarm	RS232 (DB9F)

Standards	E1:ITU-T, T1:ITU-T, AT&T, ANSI, Ethernet: IEEE802.3x
Indication	PWR, Alarm, LBK, RD, LCK, RNG, ACO, Port, Channels
Power input	AC : 100 ~240V DC24 : 20 ~ 60V, DC48 : 36 ~ 72V
Power Consumption	< 40W
Dimensions	250 x 438 x 43mm (D x W x H)
Weight	3.58 kg
Temperature	0 ~ 50°C (Operating), 0 ~ 70°C (Storage)
Humidity	10 ~ 90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57350 hours

Application



Specifications - Modules



Fiber Optical Module I/F

Fiber Optical Module ()	
Ports	1 + 1 ports (two for redundancy)
Fiber Cable	9/ 125 um for single mode ; 50/ 125 or 62.5/ 125 for multi-mode
System Power Gain	> 25dB@1*10-10
Wavelength Range	1280 — 1550nm
Connector	SC, FC, ST

The switching time between is less than 50m sec



FXO/FXS I/F

FXO/FXS Module	
Standards	G.711 A-law (separate modules for FXO, FXS)
Voice channel transparent	T.38 and Group III Fax relay at 2.4 ~14.4kbps Fax application
Distance	2km
Bandwidth	64K voice channel
Connector	RJ11*4 (4 voice channel /per unit)
Internet application	Support modem pass-through



T1 RJ - 45 I/F

T1 Interface Module	
Standards	ITU-T G.703, G.704, AT&T TR-62411, ANSI T1.403
Ports	4 ports
Framing	Unframed (clear channel)
Data rate	1.544 Mbps ±50 ppm
Line code	B8ZS / AMI
Receive Level	Short haul - 15dB
Line impedance	100 ohms ±5%
Connector	RJ-45 for 100 ohms Wirewrap for 100 ohms



Datacom I/F

Datacom Interface Module	
Standards	ITU-T, E1A
Card Type	V.35/ RS-530 (Include X.21 and RS-449) / RS-232 I/F
Bit rate	n x 64K, n = 1 to 32 V.35 & RS-530 up to 2Mbps RS-232 up to 115.2Kbps (ASYNCR)
Line code	NRZ
Clock Mode	Transparent, Recovery External (From data port ETC) Internal (From oscillator)
Control Signal	CTS always On or follows RTS DSR constantly ON, except during test loops (RS-530 DSR always connect to DTR) DCD constantly ON, except during fiber signal loss
Test Loops	Local loop back, Remote loop back, V.54
Connector	Type Uses HD-68 pin D type Female with adapter cables



E1 BNC I/F



E1 Wire-Wrap I/F

E1 Module	
Standards	ITU-T G.703, G.704, G.706, G.732
Ports	4 ports
Framing	Unframed (clear channel)
Data rate	2.048 Mbps ± 50 ppm
Line code	HDB3/AMI
Receive Level	Short haul - 15dB
Line impedance	75 ohms ± 5% / 120 ohms ± 5%
Connector	RJ-45 for 120 ohms BNC for 75 ohms Wirewrap for 120 ohm

Ordering Information

Model Name	Type	Description
FMUX01A/Plus - AC	Chassis w/Power	Chassis with 110 ~ 240 VAC
FMUX01A/Plus - DC24	Chassis w/Power	Chassis with 24VDC
FMUX01A/Plus - DC48	Chassis w/Power	Chassis with 48VDC
FMUX01A/Plus - AD24	Chassis w/Power	Chassis with one AC and one DC power for Redundant 24VDC
FMUX01A/Plus - AD48	Chassis w/Power	Chassis with one AC and one DC power for Redundant 48VDC
FMUX01A/Plus - AA	Chassis w/Power	Chassis with two 100 ~240VAC power for Redundant
FMUX01A/Plus - DD24	Chassis w/Power	Chassis with two DC power for Redundant 24VDC
FMUX01A/Plus - DD48	Chassis w/Power	Chassis with two DC power for Redundant 48VDC
FMUX01A/Plus - E1/BNC	Card	4 x G.703 E1 BNC interface card
FMUX01A/Plus - E1/RJ45	Card	4 x G.703 E1 RJ-45 interface card
FMUX01A/Plus - T1/RJ45	Card	4 x G.703 T1 RJ-45 interface card
FMUX01A/Plus - T1/Wire	Card	4 x G.703 T1 Wire-Wrap interface card
FMUX01A/Plus - E1/Wire	Card	4 x G.703 E1 Wire-Wrap interface card
FMUX01A/Plus - V35	Card	V35 interface card with one HD68M to 4 x MB34F cable
FMUX01A/Plus - 530	Card	RS-530 interface card with one HD68M to 4 x DB25F cable
FMUX01A/Plus - 449	Card	RS-449 interface card with one HD68M to 4 x DB37F cable
FMUX01A/plus - X21	Card	X.21 interface card with one HD68M to 4 x DB15F cable
FMUX01A/Plus - 232/Async	Card	RS-232 Async card with one HD68M to 4 x DB9F cable
FMUX01A/Plus - FXO	Card	4 x FXO interface card
FMUX01A/plus - FXS	Card	4 x FXS interface card
FMUX01A/Plus - EXT/CLK	Card	External Clock interface card
FMUX01A/Plus - SC002	Card	SC, MM, 2Km, 1310nm, 11dB
FMUX01A/Plus - FC002	Card	FC, MM, 2Km, 1310nm, 11dB
FMUX01A/Plus - ST002	Card	ST, MM, 2Km, 1310nm, 11dB
FMUX01A/Plus - SC015	Card	SC, 15Km, 1310nm
FMUX01A/Plus - FC015	Card	SC, 15Km, 1310nm
FMUX01A/Plus - ST015	Card	ST, 15Km, 1310nm
FMUX01A/Plus - SC030	Card	SC, 30Km, 1310nm
FMUX01A/Plus - FC030	Card	FC, 30Km, 1310nm
FMUX01A/Plus - ST030	Card	ST, 30Km, 1310nm
FMUX01A/Plus - SC050	Card	SC, 50Km, 1310nm
FMUX01A/Plus - FC050	Card	FC, 50Km, 1310nm
FMUX01A/Plus - ST050	Card	ST, 50Km, 1310nm
FMUX01A/Plus - SC080	Card	SC, 80Km, 1550nm
FMUX01A/Plus - FC080	Card	FC, 80Km, 1550nm
FMUX01A/Plus - ST080	Card	ST, 80Km, 1550nm
FMUX01A/Plus - SC120	Card	SC, 120Km, 1550nm
FMUX01A/Plus - FC120	Card	FC, 120Km, 1550nm
FMUX01A/Plus - ST120	Card	ST, 120Km, 1550nm
FMUX01A/Plus - SC20A	Card	SC, 20km, Tx1310/Rx1550nm (A type)
FMUX01A/Plus - SC20B	Card	SC, 20km, Tx1550/Rx1310nm (B type)
FMUX01A/Plus - SC40A	Card	SC, 40km, Tx1310/Rx1550nm (A type)
FMUX01A/Plus - SC40B	Card	SC, 40km, Tx1550/Rx1310nm (B type)
FMUX01A/Plus - SC60A	Card	SC, 60km, Tx1310/Rx1550nm (A type)
FMUX01A/Plus - SC60B	Card	SC, 60km, Tx1550/Rx1310nm (B type)
FMUX01A/Plus - SC80A	Card	SC, 80km, Tx1310/Rx1550nm (A type)
FMUX01A/Plus - SC80B	Card	SC, 80km, Tx1550/Rx1310nm (B type)

Power Type
Card Type
Power Redundant Type
Connector Type
Distance Connectivity

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Example: FMUX01A/Plus - AC - AAAA - S - SC002

Power Module Type	Line Card I/F Type	Fiber Redundant Type	Connector Type	Distance Connectivity
AC, DC, AC2, DC2, AD	O : Empty A : Quad E1 BNC B : Quad E1 RJ-45 C : Quad T1 RJ-45 D : Quad V.35 E : Quad RS-232 F : Quad RS-530	G : Single port Fast Ethernet 10/100 H : Quad X.21 I : Quad RS-449 J : Wire-Wrap I/F for Quad E1/T1 K : Quad High-Speed V.35 L : Quad High-Speed RS-530	S: standard R: redundant	SC, ST, FC 002: 2km 20A: 20km 20B: 20km 030: 30km 40A: 40km 40B: 40km 050: 50km 60A: 60km 080: 80km 60B: 60km 120: 120km