



## FMUX1001

Modularized 16E1/T1 + 4x GbE Managed Fiber Multiplexer

## FMUX101

Modularized 16E1/T1 + 4x FE Managed Fiber Multiplexer

The FMUX1001/FMUX101 is a 1U, 19" rack mountable, PDH fiber optic multiplexer that transmits up to 16 channels plus a 10/100/1000Base-T (FMUX1001) / 10/100Base-TX (FMUX101) Ethernet channel over a single fiber optic link. The FMUX1001/FMUX101 chassis supports redundant power and hot swappable design. The AC supplies operate from 100~240VAC while DC supplies operate from 18~60VDC. 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 FMUX1001 configuration may be viewed or set via the front panel LCD/menu keys, serial VT-100 terminal connection, Telnet, web HTTP or SNMP.

### Features

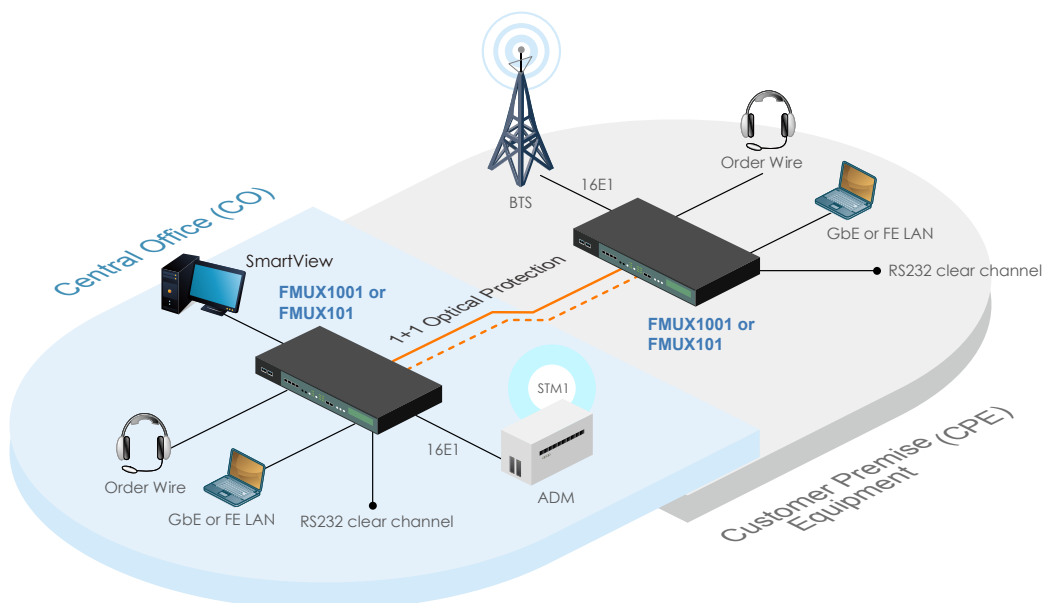
- 1U, 19 (23)" 4-slot chassis
- 16 E1 (2.048Mb/s) Multiplexer with 100/1000Mbps Ethernet and RS-232 data (async) Interface (FMUX1001)
- 16 E1 (2.048Mb/s) Multiplexer with 10/100Mbps Ethernet and RS-232 data (async) Interface (FMUX101)
- RS-232 port for system console
- One alarm output port, one Order Wire port
- 4x 10/100/1000Base-T Ethernet ports (FMUX1001)
- 4x 10/100Base-T Ethernet ports (FMUX101)
- 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 SFP slot for optical SFP module
- Forward 1024K byte packets on Ethernet port

### Specifications

<b>Optical Interface</b>	Connector	SFP - LC	<b>Standards</b>	E1:ITU-T, T1:ITU-T, AT&T, ANSI, Ethernet: IEEE 802.3x				
	Data rate	1.25G (FMUX1001), 155M (FMUX101)		<b>Indications</b>	PWR, Alarm, Phone, ACO, Port, Channels			
	Bit Error Rate	Less than 10 <sup>-11</sup>			<b>Power Input</b>	AC module IN : AC 90 ~ 264V, Out : DC 12V DC module IN : DC 18 ~ 72V, Out : DC 12V		
	Fiber	MM 62.2/125µm, 50/125µm SM 9/125µm				<b>Power Consumption</b>	< 25W	
	Distance	MM 2km. SM 15/30/50/80/120km WDM 20/40/60/80km					<b>Dimensions</b>	250 × 438 × 43mm (D × W × H)
	Wavelength	1310, 1550nm						<b>Weight</b>
<b>Electrical Interface</b>	Console, SNMP	RJ45	<b>Temperature</b>					
	Ethernet	4x RJ45		<b>Humidity</b>				
	Alarm	RJ45			<b>Certification</b>			
						<b>MTBF</b>		

### Application

#### Remote 3G BTS Connection Application



# FMUX1001 & FMUX101 Interface Module



**4x E1/T1 RJ45 I/F**

<b>Standards</b>	ITU-T G.703, G.704, AT&T TR-62411, ANSI T1.403
<b>Ports</b>	4 ports
<b>Framing</b>	Unframed (clear channel)
<b>E1</b>	Data rate: 2.048 Mbps ±50 ppm Line code: HDB3 / AMI Line impedance: 120 ohms ±5%, 75ohms ±5%
<b>T1</b>	Data rate: 1.544 Mbps ±50 ppm Line code: B8ZS / AMI Line impedance: 100 ohms ±5%
<b>Receive Level</b>	Short haul - 15dB
<b>Connector</b>	RJ-45



**4x E1 BNC I/F**

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

**Related Cables** (Please see order information for more details)



V35

RS530

RS449

X21

RS232



**4x Data Com I/F**

<b>Standards</b>	ITU-T, E1A
<b>Card Type</b>	V.35/ RS-530 (Include X.21 and RS-449)/ RS-232 I/F
<b>Bit rate</b>	n x 64K, n = 1 to 32 V.35 & RS-530 up to 2Mbps RS-232 up to 115.2Kbps (ASYNC)
<b>Line code</b>	NRZ
<b>Clock Mode</b>	Transparent, Recovery, External (From data port ETC) Internal (From oscillator)

<b>Control Signal</b>	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
<b>Test Loops</b>	Local loop back, Remote loop back, V.54
<b>Connector</b>	Type Uses HD-68 pin D type Female with adapter cables



**4x FXO I/F**

<b>Standards</b>	G.711 A-law (separate modules for FXO)
<b>Distance</b>	2km
<b>Bandwidth</b>	64K voice channel
<b>Connector</b>	RJ45 x 4 (4 voice channel /per unit)



**4x FXS I/F**

<b>Standards</b>	G.711 A-law (separate modules for FXS)
<b>Distance</b>	2km
<b>Bandwidth</b>	64K voice channel
<b>Connector</b>	RJ45 x 4 (4 voice channel /per unit)

## Ordering Information

Model Name	Description
FMUX1001-CH	1U 19" 4-Slot Rack Mount Chassis
FMUX101-CH	1U 19" 4-Slot Rack Mount Chassis
FMUX-AC	Chassis Power Module 90~264VAC
FMUX-DC	Chassis Power Module 18~72VDC
FMUX-4E1/T1-RJ45	4ch E1/T1 RJ45 interface card
FMUX-4E1/T1-Wire	4ch E1/T1 Wire Wrap interface card
FMUX-4E1/BNC	4ch G.703 E1 BNC interface card
FMUX-V35	V35 interface card with HD68M to 4 x MB34F cable (30cm)

FMUX-530	RS-530 interface card with HD68M to 4 x DB25F cable (30cm)
FMUX-449	RS-449 interface card with one HD68M to 4 x DB37F cable (30cm)
FMUX-X21	X.21 interface card with one HD68M to 4 x DB15F cable (30cm)
FMUX-232/Sync	RS-232 Sync card with one HD68M to 4 x DB9F cable (30cm)
FMUX-232/Async	RS-232 Async card with one HD68M to 4 x DB9F cable (30cm)
FMUX-4FXO	4 x FXO interface card
FMUX-4FXS	4 x FXS interface card
FMUX-Phone-2W	2 Wires order Wire (connect to analogue Telephone set)
FMUX-Phone-4W	4 Wires order Wire (connect to Ear-Mic set)
FMUX-EXT/CLK	External clock interface card

**Example:**

Chassis/Power/Line card Only

FMUX 1 0 0 1 - CH

1001 : GbE Fiber Multiplexer  
101 : FE Fiber Multiplexer

FMUX A C

Power Module

FMUX V 3 5

I/F Line Card

Whole Set

FMUX 1 0 0 1 - A C - 2 W - A B C D

1001 : GbE  
101 : FE

Power Type  
AC  
DC  
AA : AC + AC  
DD : DC + DC  
AD : AC + DC

Order Wire  
2W : 2 Wire Phone  
4W : 4 Wire Phone

Card Type

A : 4x E1 BNC  
B : 4x E1/T1 RJ45  
C : 4x E1/T1 Wire  
D : 4x V.35  
E : 4x RS-232/Async  
F : 4x RS-530  
G : 4x X.21  
H : 4x RS-449  
I : 4x FXO  
J : 4x FXS  
L : EXT/CLK  
M : 4x RS232/Sync