MRV Communications, Inc.

FIBER ACCESS SOLUTIONS

Datasheet

Media Multiplexer 04 (MM04)

4 Ports E1/T1 Fiber Optic Multiplexer

MM04

MM04

The MM04 product line is a 4 ports E1 or T1 multiplexer/demultiplexer that transmits over a fiber optic link. The products are standalone (1U), 19" rack mountable (half size devices). The optical fiber interface is available in a number of standard fiber connections and has optional redundant optical connections. The chassis is available with universal AC power supply (100-240v) or DC power supply (36-60v) and and in option of redundant power supply.

MM04 devices support four (4) link interfaces and are available for E1 or T1 configurations with connections for RJ-48 (E1/T1 balanced). In long haul mode the interfaces possess usable receive sensitivity of 0 dB to -43 dB for E1 and 0 dB to -36 dB for T1 which allow the device to operate with 0.63 mm (22AWG) cables at distances up to 2.5 km (E1) and 6000 feet (T1).

Each E1/T1 port is designed to meet regulatory compliant solutions such as for circuit protection against surges and AC lightning, which is essential for long haul E1/T1 lines

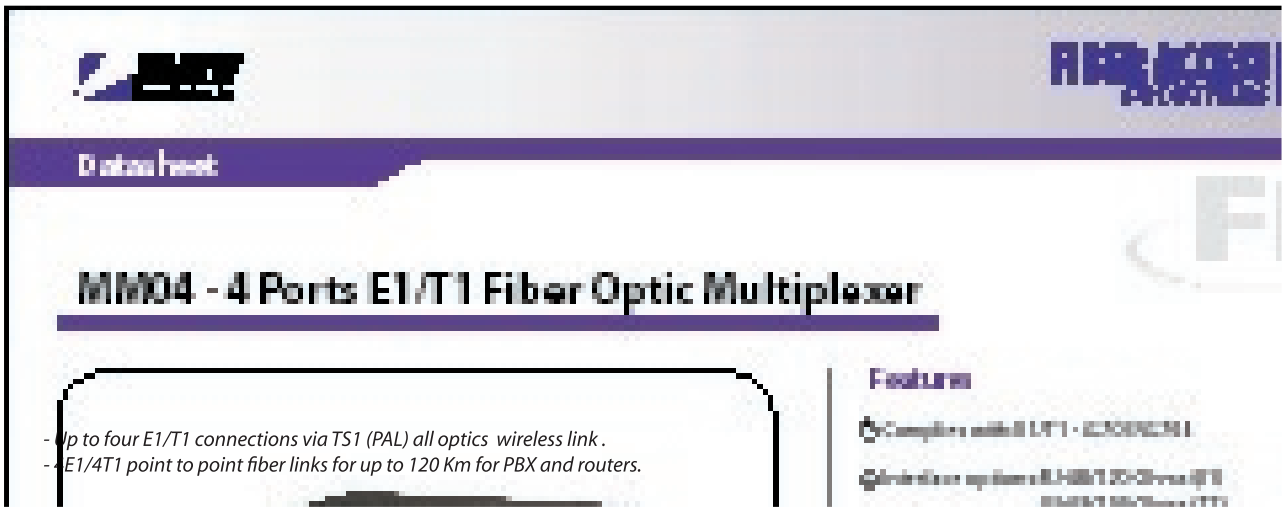
A robust frame-acquisition and frame holding algorithm minimizes frame slippage and resynchronization.

Features

- Complies with: E1/T1 - G.703/G.704
- Interface options: RJ-48/120 Ohms (E1)
  RJ-48/100 Ohms (T1)
- E1 long/short haul trunks; T1 long haul/limited short haul trunks support
- E1/T1 LEDs are true Receive Carrier Loss (RCL) indication as per G.775
- Completely transparent transmission and and reception
- Fast and easy installation, local indications of local and remote device state
- Small form factor – 1U height, 19" half size width, 30 cm depth
- Redundant power supply - Optional
- Redundant Fiber 1+1 Protection- Optional
- Up to 10 independent dry contact OptoMOS alarm relays - Optional

Applications

- Up to four E1/T1 lines over one
  - TereScope-25 optical wireless link.
  - TereScope-1 all optics wireless link.
- Four E1/T1 lines over point to point fiber link up to 120 km.



Media Multiplexer 04 (MM04) –Technical Specifications

	T1	E1
Cable	STP	STP
Bit rate	1.544Mbps ± 50ppm	2.048Mbps ± 50ppm
Line rate	B8ZS/AMI	HSB3/AMI
Max. Connection Length (Short Haul) 22AWG	633 ft	200 m
Max Connection Length (Long Haul) 22AWG	6000 ft	2500 m
Connector	RJ48	RJ48
Impedance	100 Ohm	120 Ohm
Permissible cable attenuation at receiver (short haul)	0 – 12 db	0 – 12 db
Permissible cable attenuation at receiver (long haul)	0 – 36 db	0 – 42 db
Galvanic Isolation	1500 V RHS	1500 V RHS
Alarm Relay Contacts	10 PhotoMOS Solid State telecomunications relay	
Type	1 SPST contacts connected to 20 pin terminal block	
Isolation	1500 VAC RMS	
Rating	350 V or 0.1A Max. (up to 0.5 W Max.)	
Power Supply	AC	DC
Voltage (Factory set)	100 – 240 VAC, 100 – 300 VDC	35 – 60 VDC
Power Consumption	12W – 20 W	12W – 20 W
Isolation	1500 V RMS	2000 V DC
Environmental Conditions		
Operating Temperature	0 to 45ºC	
Storage Temperature	–10 to 70 ºC	
Humidity	(Non–Condensing) 85%	
Physical Dimensions (W x D x H)	217 x 312 x 44.5 mm (8.54 x 12.28 x 1.75 inch)	
Standard Compliance	GR1089; FCC Part 68; UL1950; ITU K.20 and K.21; ANSI T1.403–19999; ANSI T1.408; AT&T; TR62411; ITU G.703, G.704, G.706, G.736, G.775, G.823, I.431, 0.151, 0.161; ETSI ETS 300 166; JTG.703; JTI.431; JJ–20.1; TBR13; CTR4.	

Ordering Info

Ordering Code	Description
E1 Multiplexers	
MM04E112/1M8SC	4xE1 Multiplexer, MM 850nm (2km)
MM04E112/1M3SC	4xE1 Multiplexer, MM 1310nm (10km)
MM04E112/1S1SC	4xE1 Multiplexer, SM 1310nm (30km)
MM04E112/1S2SC	4xE1 Multiplexer, SM 1310nm (10–50km)
MM04E112/1S3SC	4xE1 Multiplexer, SM 1550nm (25–100km)
MM04E112/1S4SC	4xE1 Multiplexer, SM 1550nm (40–120km)
MM04E112/113SC	4xE1 Multiplexer, single fiber SM 1310/1550nm (30km) – sold in pairs with MM04E112/115SC
MM04E112/115SC	4xE1 Multiplexer, single fiber SM 1550/1310nm (30km) – sold in pairs with MM04E112/115SC
MM04E112/123SC	4xE1 Multiplexer, single fiber SM 1310/1550nm (20–50km) – sold in pairs with MM04E112/115SC
MM04E112/125SC	4xE1 Multiplexer, single fiber SM 1550/1310nm (20–50km) – sold in pairs with MM04E112/113SC
MM04E112/APAL1	4xE1 Multiplexer, with interface for PAL/A – FSO passive link
MM04E112/BPAL1	4xE1 Multiplexer, with interface for PAL/B – FSO passive link
MM04E112/2M8SC	4xE1 Multiplexer, MM 850nm (2km) with redundant F/O
MM04E112/2M3SC	4xE1 Multiplexer, MM 1310nm (10km) with redundant F/O
MM04E112/2S1SC	4xE1 Multiplexer, SM 1310nm (30km) with redundant F/O
MM04E112/2S2SC	4xE1 Multiplexer, SM 1310nm (10–50km) with redundant F/O
MM04E112/2S3SC	4xE1 Multiplexer, SM 1550nm (25–100km) with redundant F/O
MM04E112/2S4SC	4xE1 Multiplexer, SM 1550nm (40–120km) with redundant F/O
MM04E112/213SC	4xE1 Multiplexer, single fiber SM 1310/1550nm (30km) with redundant F/O – sold in pairs with MM04E112/115SC
MM04E112/215SC	4xE1 Multiplexer, single fiber SM 1550/1310nm (30km) with redundant F/O – sold in pairs with MM04E112/113SC
MM04E112/223SC	4xE1 Multiplexer, single fiber SM 1310/1550nm (20–50km) with redundant F/O – sold in pairs with MM04E112/115SC
MM04E112/225SC	4xE1 Multiplexer, single fiber SM 1550/1310nm (20–50km) with redundant F/O – sold in pairs with MM04E112/113SC
Options	
MM04T1xx/xxxxx	T1 version for all the above mentioned products
MM04E12x/xxxxx	Dual P.S. version for all the above mentioned products
MM04E1x3/xxxxx	DC (35v – 60v) power supply version for all the above mentioned products
MM04T1xx/xxxST	ST connector version for all the above mentioned products
MM04T1xx/xxxFC	FC connector version for all the above mentioned products
MM04T1xx/xxxxD	For all the above mentioned products an option for 10 dry contacts

for more information: international@mrv.com **www.mrv.com**