

Datasheet

Copper to Fiber



Overview

Copper to fiber conversion modules provide the ability to extend LAN segments to greater distances over fiber and operate in full duplex mode. The Fiber Driver™ family provides conversion solutions with greater distances and better manageability than any other product on the market. Copper to fiber conversion modules offer link distances from 0 to 100+ km.

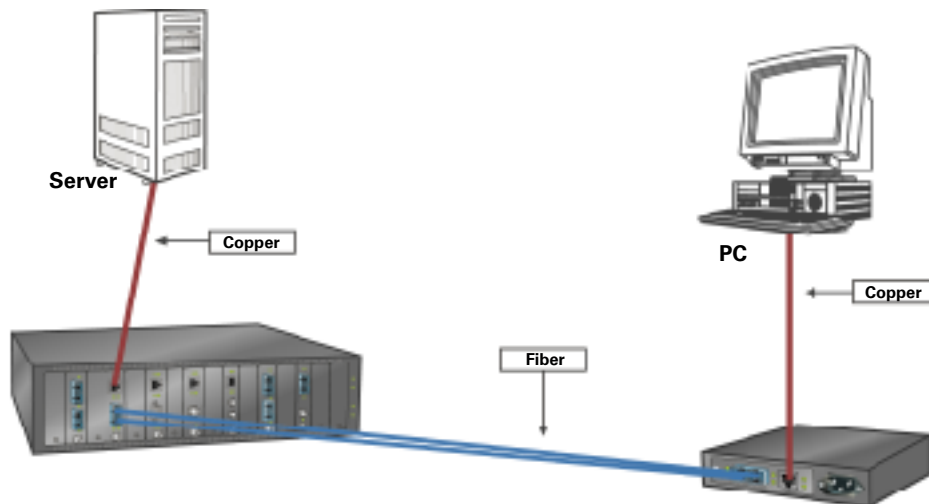
Found in no other line of converters, the MX modules break the distance barrier of Multimode links. Copper to fiber modules convert copper to Multimode or Singlemode fiber, and include modules for Ethernet, Fast Ethernet, OC3, DS3, DS3 to OC3 Synchronous Transport Mode, E3, and Gigabit Ethernet.

Additional Ethernet fiber solutions are provided by the Signal Repeater and Switch modules.

For additional information including pricing and availability, contact your MRV Communications sales representative today.

Features

- Converts copper to fiber
- Provides distances up to 100+ km on SM
- Extends link on MM up to 10 km
- Protocols supported: Ethernet, Fast Ethernet, OC3, DS3, DS3 to OC3, E3 and Gigabit Ethernet
- Hot swappable
- SNMP managed
- Compatible with all the appropriate protocol standards
- Fits in all Fiber Driver chassis



Ordering Info	Part Number	Function	Protocol	Connectors* Port/Link	Wavelength (nm)	Minimum Loss Budget (dB)	Range** Approx. (km)
	EM316DS3/M	DS3 Coax to DS3 MM	DS3	BNC/DSC	1310	N/A	0 - 2
	EM316DS3/MX	DS3 Coax to DS3 (Extended MM)	DS3	BNC/DSC	1310	N/A	2 - 8
	EM316DS3/S1	DS3 Coax to DS3 SM S1	DS3	BNC/DSC	1310	17	0 - 35
	EM316DS3/S2	DS3 Coax to DS3 SM S2	DS3	BNC/DSC	1310	24	25 - 45
	EM316DS3/S3	DS3 Coax to DS3 SM S3	DS3	BNC/DSC	1550	24	35 - 90
	EM316DS3/S4	DS3 Coax to DS3 SM S4	DS3	BNC/DSC	1550	29	40 - 110
	EM316E3/M	E3 Coax to E3 MM	E3	BNC/DSC	1310	N/A	0 - 2
	EM316E3/MX	E3 Coax to E3 (Extended MM)	E3	BNC/DSC	1310	N/A	2 - 8
	EM316E3/S1	E3 Coax to E3 SM S1	E3	BNC/DSC	1310	17	0 - 35
	EM316E3/S2	E3 Coax to E3 SM S2	E3	BNC/DSC	1310	22	25 - 45
	EM316E3/S3	E3 Coax to E3 SM S3	E3	BNC/DSC	1550	22	35 - 90
	EM316E3/S4	E3 Coax to E3 SM S4	E3	DS3 to OC3	1550	29	40 - 110
	EM316GC/M	1000Base-TX to Gigabit Ethernet MM	Gigabit Ethernet	RJ-45/DSC	850	DL	0 - 0.5
	EM316GC/MX	1000Base-TX to Gigabit Ethernet (Extended MM)	Gigabit Ethernet	RJ-45/DSC	1310	DL	0 - 6***
EM316GC/S1	1000Base-TX to Gigabit Ethernet SM S1	Gigabit Ethernet	RJ-45/DSC	1310	DL	0 - 10	
EM316GC/S2	1000Base-TX to Gigabit Ethernet SM S2	Gigabit Ethernet	RJ-45/DSC	1550	8	0 - 30	
EM316GC/S3	1000Base-TX to Gigabit Ethernet SM S3	Gigabit Ethernet	RJ-45/DSC	1550	15	30 - 60	
EM316GC/S4	1000Base-TX to Gigabit Ethernet SM S4	Gigabit Ethernet	RJ-45/DSC	1550	20	50 - 80	

LOW TEMPERATURE MODULES (LT)

Ordering Info	Part Number	Function	Protocol	Connectors* Port/Link	Wavelength (nm)	Minimum Loss Budget (dB)	Range** Approx. (km)
	EM316FLT/M	100Base-TX to 100Base-FX	Fast Ethernet	RJ-45/DSC	1310	N/A	0 - 2
	EM316FLT/MX	100Base-TX to 100Base-FX (Extended MM)	Fast Ethernet	RJ-45/DSC	1310	N/A	2 - 8
	EM316FLT/S1	100Base-TX to 100Base-FX SM S1	Fast Ethernet	RJ-45/DSC	1310	17	0 - 35
	EM316FLT/S2	100Base-TX to 100Base-FX SM S2	Fast Ethernet	RJ-45/DSC	1310	24	25 - 45
	EM316FLT/S3	100Base-TX to 100Base-FX SM S3	Fast Ethernet	RJ-45/DSC	1550	24	35 - 90
	EM316FLT/S4	100Base-TX to 100Base-FX SM S4	Fast Ethernet	RJ-45/DSC	1550	29	40 - 110

*Default connectors listed, other connectors are optional

**All specifications, distance claims and operational parameters are based on industry average fiber cable performance; 9µ Singlemode performance of 0.25 dB/km for 1550 nm and 0.5 dB/km for 1310 nm, and 62.5µ Multimode performance of 3 dB/km for 850 nm and 1.5 dB/km for 1300 nm. For non-standard fiber applications or additional information contact MRV Communications

***2 km guaranteed. Maximum range is dispersion limited, and depends upon grade and condition of fiber plant used.

DL = Dispersion Limited

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Physical Specifications: Copper to Fiber

Operating Temperature Range:	0°C to 50°C (32°F to 122°F)
Operating Temperature Range (LT):	-40°C to 60°C (-40°F to 140°F)
Storage Temperature:	-40°C to 95°C (-40°F to 203°F)
Storage Temperature (LT):	-45°C to 60°C (-49°F to 149°F)
Relative Humidity:	85% maximum, non-condensing
Physical Dimensions:	25 mm x 75 mm x 175 mm deep (1" x 3" x 7" deep)
Weight:	120 - 240 g (4.2 - 8.5 oz) depending on configuration
Emission Compliance:	FCC - PART 15, SUBPART B, 1999, CLASS A; CE MARK - EN 50081-1:1992; EN 50082:1997; EN 55024:1998; EN 55022:1998; AS/NZS 3548:1995

Part Number	Function	Protocol	Connectors* Port/Link	Wavelength (nm)	Minimum Loss Budget (dB)	Range**
						Approx. (km)
EM316E/M	10Base-TX to 10Base-FX MM	Ethernet	RJ-45/ST	820	N/A	0 - 4
EM316E/MX	10Base-TX to 10Base-FX (Extended MM)	Ethernet	RJ-45/ST	1310	N/A	4 - 10
EM316E/S1	10Base-TX to 10Base-FX SM S1	Ethernet	RJ-45/ST	1310	15	5 - 30
EM316E/S2	10Base-TX to 10Base-FX SM S2	Ethernet	RJ-45/ST	1310	25	25 - 50
EM316E/S3	10Base-TX to 10Base-FX SM S3	Ethernet	RJ-45/ST	1550	25	50 - 100
EM316E/S4	10Base-TX to 10Base-FX SM S4	Ethernet	RJ-45/ST	1550	31	50 - 125
EM316EDSC/M	10Base-TX to 10Base-FX MM	Ethernet	RJ-45/DSC	820	N/A	0 - 4
EM316EDSC/MX	10Base-TX to 10Base-FX (Extended MM)	Ethernet	RJ-45/DSC	1310	N/A	4 - 10
EM316EDSC/S1	10Base-TX to 10Base-FX SM S1	Ethernet	RJ-45/DSC	1310	17	0 - 35
EM316EDSC/S2	10Base-TX to 10Base-FX SM S2	Ethernet	RJ-45/DSC	1310	24	25 - 45
EM316EDSC/S3	10Base-TX to 10Base-FX SM S3	Ethernet	RJ-45/DSC	1550	24	35 - 90
EM316EDSC/S4	10Base-TX to 10Base-FX SM S4	Ethernet	RJ-45/DSC	1550	29	40 - 110
EM316F/M	100Base-TX to 100Base-FX	Fast Ethernet	RJ-45/DSC	1310	N/A	0 - 2
EM316F/MX	100Base-TX to 100Base-FX (Extended MM)	Fast Ethernet	RJ-45/DSC	1310	N/A	2 - 8
EM316F/S	100Base-TX to 100Base-FX SM	Fast Ethernet	RJ-45/DSC	1310	12	0 - 20
EM316F/S1	100Base-TX to 100Base-FX SM S1	Fast Ethernet	RJ-45/DSC	1310	17	0 - 35
EM316F/S2	100Base-TX to 100Base-FX SM S2	Fast Ethernet	RJ-45/DSC	1310	24	25 - 45
EM316F/S3	100Base-TX to 100Base-FX SM S3	Fast Ethernet	RJ-45/DSC	1550	24	35 - 90
EM316F/S4	100Base-TX to 100Base-FX SM S4	Fast Ethernet	RJ-45/DSC	1550	29	40 - 110
EM316-3SW/M	3 Port Switch, two 10/100TX and one 100Base FX MM	Ethernet/Fast Ethernet	RJ-45/DSC	1310	N/A	0 - 2
EM316-3SW/MX	3 Port Switch, two 10/100TX and one 100Base FX (Ext. MM)	Ethernet/Fast Ethernet	RJ-45/DSC	1310	N/A	2 - 8
EM316-3SW/S1	3 Port Switch, two 10/100Base TX and one 100Base FX SM S1	Ethernet/Fast Ethernet	RJ-45/DSC	1310	17	0 - 35
EM316-3SW/S2	3 Port Switch, two 10/100Base TX and one 100Base FX SM S2	Ethernet/Fast Ethernet	RJ-45/DSC	1310	24	25 - 45
EM316-3SW/S3	3 Port Switch, two 10/100Base TX and one 100Base FX SM S3	Ethernet/Fast Ethernet	RJ-45/DSC	1550	24	35 - 90
EM316-3SW/S4	3 Port Switch, two 10/100Base TX and one 100Base FX SM S4	Ethernet/Fast Ethernet	RJ-45/DSC	1550	29	40 - 110
EM316O3C/M	SONET OC3 Coax to OC3 MM	SONET OC3	BNC/DSC	1310	N/A	0 - 2
EM316O3C/MX	SONET OC3 Coax to OC3 (Extended MM)	SONET OC3	BNC/DSC	1310	N/A	2 - 8
EM316O3C/S1	SONET OC3 Coax to OC3 SM S1	SONET OC3	BNC/DSC	1310	17	0 - 35
EM316O3C/S2	SONET OC3 Coax to OC3 SM S2	SONET OC3	BNC/DSC	1310	24	25 - 45
EM316O3C/S3	SONET OC3 Coax to OC3 SM S3	SONET OC3	BNC/DSC	1550	24	35 - 90
EM316O3C/S4	SONET OC3 Coax to OC3 SM S4	SONET OC3	BNC/DSC	1550	29	40 - 110

*Default connectors listed, other connectors are optional

**All specifications, distance claims and operational parameters are based on industry average fiber cable performance; 9µ Singlemode performance of 0.25 dB/km for 1550 nm and 0.5 dB/km for 1310 nm, and 62.5µ Multimode performance of 3 dB/km for 850 nm and 1.5 dB/km for 1300 nm. For non-standard fiber applications or additional information contact MRV Communications