EtherNodePlus Model OTEN-MC-01 Media Converter, 10/100/1000M, SFP

OPERATING MANUAL

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Typical Mating SFP Module

Typical AC Power Supply (Ships with Unit)

SAFETY

Safety Precautions

The optical emissions from the units are laser-based and may present eye hazards if improperly used. **NEVER USE ANY KIND OF OPTICAL INSTRUMENT TO VIEW THE OPTICAL OUTPUT OF THE UNIT.** Be careful when working with optical fibers. Fibers can cause painful injury if they penetrate the skin.

Laser Safety Procedure

ALWAYS read the product data sheet and the laser safety label before powering the product. Note the operation wavelength, optical output power and safety classifications.

If safety goggles or other eye protection are used, be certain that the protection is effective at the wavelength emitted by the device under test **BEFORE** applying power.

ALWAYS connect a fiber to the output of the device **BEFORE** power is applied. Power should never be applied without an attached fiber. If the device has a connector output, a connector should be attached that is connected to a fiber. This will ensure that all light is confined within the fiber waveguide, virtually eliminating all potential hazard.

NEVER look at the end of the fiber to see if light is coming out. **NEVER!** Most fiber optic laser wavelengths (1310nm and1550nm) are totally invisible to the unaided eye and will cause permanent damage. Shorter wavelengths lasers (e.g., 780nm) are visible and are very damaging. Always use instruments, such as an optical power meter, to verify light output.

NEVER, NEVER, NEVER look into the end of a fiber on a powered device with **ANY** sort of magnifying device. This includes microscopes, eye loupes and magnifying glasses. This **WILL** cause a permanent and irreversible burn on your retina. Always double check that power is disconnected before using such devices. If possible, completely disconnect the unit from any power source.

If you have questions about laser safety procedures, please call Olson Technology before powering your product.

INTRODUCTION

The OLSON TECHNOLOGY, INC. Model OTEN-MC-01 *EtherNodePlus* Media Converter, 10/100/1000Mb/s allows network operators to convert signals between an electrical Ethernet 10/100/1000Mb/s UTP interface and an optical interface. The traditional 10/100/1000Mb/s gigabit Ethernet can be extended to the distance of 80+km through a fiber optic link.

The OTEN-MC-01 incorporates the latest gigabit IC technology. Indicator LED's on the front panel allow the unit's status to be fully monitored, simplifying installation and maintaining network performance.

PANEL LAYOUT

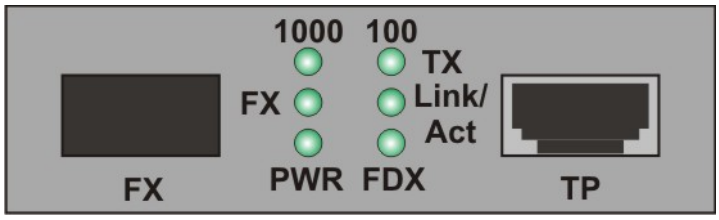

Figure 1 — Converter Front Panel

The table below describes the LED indicator functions.

Designation	Meaning
100	Lit when TP speed is 100Mb/s.
1000	Lit when TP speed is 1000Mb/s.
Link/Act	Lit when the TP connection is good. Blinks when collision signal is present.
FDX	Lit when TP full-duplex mode is active. OFF when TP half-duplex mode is active. Blinks when collision signal is present.
FX	Lit when TP connection is good. Blinks when TP is transmitting data.
PWR	Lit when the unit is receiving power.

ETHERNET SPECIFICATIONS

Parameter	Specification
Standards	IEE802.3z/AB, 10/100/1000Base-T and 1000Base-SX/LX/HX
Cables	UTP Category 5e or Category 6 (100m max. distance) 50/125µm Multimode Fiber (500m max. distance) 9/125µm Single-mode Fiber (80+km max. distance)
Connectors	UTP: RJ-45, 10/100/1000Mb/s Optical: SFP Module
Mac Add. Table	4K
Data Buffer	256K
Flow Control	Full-duplex IEEE802.3x Half-duplex Back Pressure

TYPICAL PERFORMANCE WITH DIFFERENT SFP MODULES

Fiber Type	Max. Distance	Wavelength	Tx Power	Sensitivity	Link Budget
50µm Multimode	550m	850nm	-11 to -6dBm	<-18dBm	7dBm
Single-mode	30km	1310nm	-8 to 0dBm	<-25dBm	17dBm
Single-mode	80km	1550nm, CWDM	-5 to 0dBm	-25dBm	20dBm

ELECTRICAL CHARACTERISTICS

	Min.	Typ.	Max.	Units
Converter Power Requirements (See Note 1)		5		Volts DC
		270		mA
Power Supply Voltage	100		240	Volts AC
	50		60	Hz
Note 1) Using Model OTOLS-1312-30 SFP module.				

ENVIRONMENTAL CHARACTERISTICS

	Min.	Typ.	Max.	Units
Operating Temperature Range	0		+50	°C
Storage Temperature Range	-20		+70	°C
Humidity, RH, non-condensing	5		90	%

PHYSICAL CHARACTERISTICS

	Min.	Typ.	Max.	Units
Weight		6.4		oz.
		180		g
Weight with 2 SFP Modules		6.9		oz.
		195		g
Dimensions		1.02 x 2.75 x 3.66		in.
		26 x 70 x 93		mm

INSTALLATION

1. Insert an SFP module into the SFP cage on the converter.
2. Attach a fiber cable from the SFP on the converter to the fiber network. The fiber connections must match: transmit socket to receive socket.
3. Attach a UTP cable from the TP network device to the RJ45 port on the converter.
4. Connect the power cord to the converter and check that the Power LED lights up. The TP Act and FX Act LEDs will light when all the cable connections are satisfactory.