



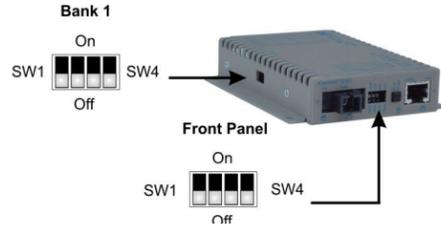
DESCRIPTION

The iConverter T1/E1 media converter provides standard T1 (1.544Mbps) or E1 (2.048Mbps) copper to fiber conversion and can be used to extend the demarcation point between service provider and networking equipment. T1/E1 media converters operate in pairs, extending distances over fiber, which improves noise immunity, quality of service, intrusion protection and network security.

The T1/E1 supports Small Form Pluggable (SFP) transceivers, enabling adaptability to different fiber types, distances and wavelengths, providing maximum flexibility across a variety of network architectures and topologies.

[See data sheet for available models.](#)

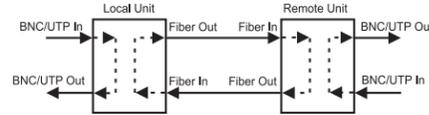
DIP-SWITCH SETTINGS



Front Panel DIP-switches

SW1 - Local Dual Loopback "Loop"

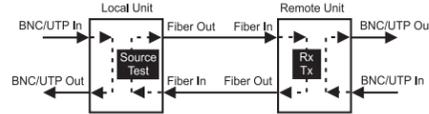
When this DIP-switch is set to the "Loop" On position, it sets the module to a dual loopback mode on both the fiber and copper connections. By returning the DIP-switch to the "Norm" Off position, the module resumes normal operation.



Dual Loopback Mode

SW2 - Fiber Optic Test "FOT"

This DIP-switch will allow the entire fiber segment to be tested at either of the modules without having to set DIP-switches on both modules. When this DIP-switch is set to "FOT" On position, the local module (the module with the DIP-switch in the "FOT" position) is switched into local loopback mode. In addition to the local loopback mode of operation, the fiber TX port is encoded to carry a remote loopback protocol. This remote loopback protocol sets the remote module at the other end of the fiber link to a remote loopback mode of operation and returns a signal to the local module. A slow blinking "Tst" LED on the local module and a fast blinking "Tst" LED on the remote module shows confirmation that the fiber segment is communicating properly between devices. By returning the DIP-switch to the "Norm" Off position, the module resumes normal operation.



Fiber Optic Test Mode

SW3 - Force 1s to Fiber "FO1"

When this DIP-switch is set to the "FO1" On position, an "all ones" pattern is inserted into the data stream being transmitted out of the fiber port on the module. Data being received on the twisted pair is disabled and data being received on the fiber is passed through to the twisted pair side. By returning the DIP-switch to the "Norm" Off position, the module resumes normal operation.

SW4 - Force 1s to UTP "Cu1"

When this DIP-switch is set to the "Cu1" On position, an "all ones" pattern is inserted into the data stream being transmitted out of the twisted pair port on the module. Data being received on the fiber will be disabled and data being received on the twisted pair is passed through to the fiber side. By returning the DIP-switch to the "Norm" Off position, the module resumes normal operation.

SW1 and SW2 - AMI/B8ZS/HDB3 Mode

B8ZS (T1) or HDB3 (E1) is the default line encoding mode of operation. To select AMI mode, enable both the Local Dual Loopback "Loop" and Fiber Optic Test "FOT" DIP-switches on the front of the module to the On position.

Push Button - Manual Crossover "= / X"

The Manual Crossover "= / X" button located on the front panel is used to eliminate the need for crossover and custom cables when connecting devices to the RJ-45/48 port. When the button is in the out "=" position, the port is configured for a straight-through cable. When the button is in the in "X" position, the port is configured for a crossover cable. The twisted pair connection requires two active pairs in a T1/E1 environment. The active pairs are pins 1 & 2 and pins 4 & 5. Only dedicated wire pairs should be used for the active pins.

Bank 1 DIP-Switches

T1/E1 Copper Line Configuration Settings

The T1/E1 copper line codes and line lengths are configured using board mounted DIP-switches. The default setting is all OFF.

SW5	SW6	SW7	SW8	Description
Off	Off	Off	Off	T1 DSX-1: 0' to 133' (default) T1 DS1: 0dB (default)
Off	Off	Off	On	T1 DSX-1: 133' to 266'
Off	Off	On	Off	T1 DSX-1: 266' to 399'
Off	Off	On	On	T1 DSX-1: 399' to 533'
Off	On	Off	Off	T1 DSX-1: 533' to 655'
Off	On	Off	On	T1 DS1: -7.5dB
Off	On	On	Off	T1 DS1: -15dB
Off	On	On	On	T1 DS1: -22.5dB
On	Off	Off	Off	E1 75 Ω Coax/BNC Standard
On	Off	Off	On	E1 120 Ω RJ-45/48 Standard
On	Off	On	Off	E1 75 Ω Coax/BNC Extended/LH
On	Off	On	On	E1 120 Ω RJ-45/48 Extended/LH

MOUNTING AND CABLE ATTACHMENT

Caution: Use proper ESD protection to reduce the risk of damage to your equipment.

1. The standalone module is available with integrated mounting brackets. Use the four mounting holes on the module to secure the module to the wall. The module can accommodate #6 screws (not included). A 19" Rack Mount Shelf (8260-0) is available to install four T1/E1 modules.

Installation of the module should be such that the air flow in the front, back, side and top vents of the switch are not compromised or restricted.

For AC models:

To power the unit using the AC/DC adapter, connect the AC/DC adapter to an AC outlet. Then connect the barrel plug at the end of the wire on the AC/DC adapter to the 2.5mm DC barrel connector (center-positive) on the unit. Confirm that the unit has powered up properly by checking the power status LED located on the front of the unit.

For DC Models:

To power the unit using a DC power source, prepare a power cable using a two conductor insulated wire (not supplied) with 12AWG to 20AWG thickness. Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cables to the unit by fastening the stripped ends to the DC power connector.

Connect the power wires to the DC power source. The Power LED should indicate the presence of power.

WARNING: Note the wire colors used in making the positive and negative connections. Use the same color assignment for the connection at the DC power source.

NOTE: If mounting with a safety ground attachment, use the safety ground screw at the rear of the unit.

2. Insert the SFP fiber transceivers into the SFP receptacles on the module.

NOTE: The release latch of the SFP transceiver must be in the closed (up) position before insertion.

3. Connect to the RJ-45/48 connector on the module via a Category 3 or better cable (Category 5 is recommended), and attach the other end to the network equipment (Active Pairs are Pins 1, 2 and 4, 5).

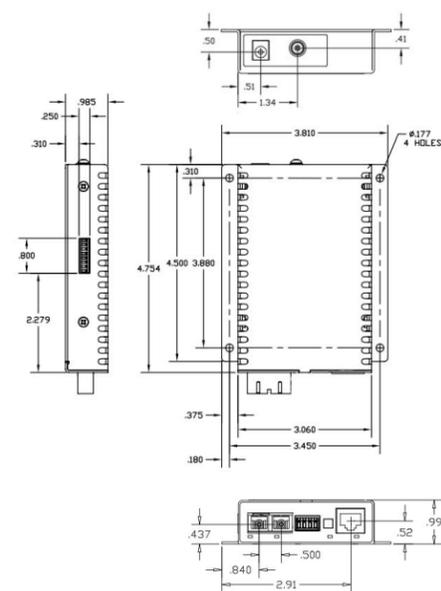
Use the 9140-3 RJ-48 to Coax Adapter cable (3 meters sold separately) to interface with types of equipment requiring a 75 Ohm coax connector.

4. Connect an appropriate multimode or single-mode fiber cables to the fiber ports of the installed module. It is important to ensure that the transmit (TX) is attached to the receive side of the device at the other end and the receive (RX) is attached to the transmit side. Single-fiber (SF) media converter models operate in pairs. The TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end.

LED INDICATORS

LED	Color	Description
Pwr	Amber	OFF: Module is not powered ON: Module has power
Fiber "F/O Lk"	Green	OFF: No signal detected ON: Signal detected Blinking: All ones signal received
Test "Tst"	Amber	OFF: Test mode disabled ON: Loop or All Ones Test Mode Slow Blinking: FOT received - Local Fast Blinking: FOT received - remote
RJ-45/48 "UTP Lk"	Green	OFF: No signal detected ON: Signal detected Blinking: All ones signal received

MECHANICAL



SPECIFICATIONS

UTP Cable for T1 and E1	
Gauge	22 to 24 AWG
Impedance	T1: 100 ohms +/- 10% E1: 120 ohms +/- 10% 2.6 dB / 100M @ 1MHz
Maximum Distance	T1: 6,000 ft E1: 8,000 ft

Standard	ANSI: T1.403, T1.102 AT&T: T62411 ITU: G.703, G.704, G.706, G.736, G.755, G.823 ETSI: ETS 300 166
Regulatory	Safety: UL, CE, NEBS Level 3, UKCA EMI: FCC Class A ACT: TAA, BAA, NDAA
Environmental	RoHS, WEEE, REACH
Data Rates	T1 1.544Mbps ISDN PRI: 1.544Mbps E1: 2.048Mbps
Port Types	Copper: RJ-48C (T1/E1) Fiber: ST, SC or SFP (depending on model)
Cable Types	Copper: Category 3 or better Balanced twisted pair copper T1: 100 Ohm cable termination, Fiber: Multimode: 50/125µm, 62.5/125µm Single-mode: 9/125µm
AC Power Requirements	AC Adapter: 100 - 240VAC/50 - 60Hz 0.05A @ 120VAC
DC Power Requirements	DC Input: (Terminal) 5 - 32VDC, 0.3A @ 9VDC 2-Pin Terminal (non-isolated) DC Input: (AC Adapter) 5 - 32VDC, 0.3A @ 9VDC 2.5mm Barrel Connector
Dimensions W x D x H	3.8" x 4.8" x 1.0" (96.5 mm x 121.9 mm x 25.4 mm)
Weight	1.0 lb. (453.6 grams) - without AC Adapter 1.5 lbs. (680.4 grams) - with AC Adapter
Temperature	Commercial: 0 to 50°C Wide: -40 to 60°C Storage: -40 to 80°C
Humidity	5 to 95% (non-condensing)
Altitude	-100m to 4,000m
MTBF (hrs)	590,000 - Module 250,000 - Module with US AC Adapter 100,000 - Module with Universal AC Adapter
Warranty	Lifetime warranty with 24/7/365 free Technical Support

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For warranty service, the product must be sent to an OmniTron designated facility, at Buyer's expense. OmniTron will pay the shipping charge to return the product to Buyer's designated US address using OmniTron's standard shipping method.

Limitation of Warranty

The foregoing warranty shall not apply to product malfunctions resulting from improper or inadequate use and/or maintenance of the equipment by Buyer,



Safety Warnings and Cautions

ATTENTION: Observe precautions for handling electrostatic discharge sensitive devices.

WARNING: Potential damage to equipment and personal injury.

WARNING: Risk of electrical shock.

Customer Support Information

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