Omnitron Systems

iConverter®

100FF, OC3FF, OC12FF, 1000FF and xFF Standalone Fiber-to-Fiber Converter User Manual

OVERVIEW:

The *iConverter* standalone fiber-to-fiber media converters provide single-mode (SM) to multimode (MM), dual fiber to single-fiber, wavelength conversion and fiber extension. Fixed-fiber models are available for Ethernet, Fast Ethernet, Gigabit Ethernet and SONET/SDH applications. The Small Form Pluggable (SFP) model is protocol transparent and also supports Fibre Channel.

iConverter **100FF** Dual Fiber Modules					
Connector		**Fiber Type (Port 1 Port 2)**	**Distances (Port 1 Port 2)**	**Tx Wavelength (nm)**	**Rx Wavelength (nm)**
ST/ST	**SC/SC**				
8620-1-x	**8622-1-x**	**MM**	**5km**	**1310**	**1310**
		SM	**30km**	**1310**	**1310**
8620-2-x	**8622-2-x**	**MM**	**5km**	**1310**	**1310**
		SM	**60km**	**1310**	**1310**
-	**8622-3-x**	**MM**	**5km**	**1310**	**1310**
		SM	**120km**	**1550**	**1550**
ST/SC	**SC/SC**	*iConverter* **100FF** Single-Fiber Modules			
8630-1-x	**8634-1-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8631-1-x	**8635-1-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8630-2-x	**8634-2-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8631-2-x	**8635-2-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**
8632-1-x	**8636-1-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8633-1-x	**8637-1-x**	**SM**	**30 km**	**1310**	**1310**
		SM	**20 km**	**1550**	**1310**
8632-2-x	**8636-2-x**	**SM SF**	**30 km**	**1310**	**1310**
		SM	**40 km**	**1310**	**1550**
8633-2-x	**8637-2-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**

iConverter **1000FF** Dual Fiber Modules				
Connector SC/SC	**Fiber Type (Port 1 Port 2)**	**Distances (Port 1 Port 2)**	**Tx Wavelength (nm)**	**Rx Wavelength (nm)**
8642-0-x	**MM**	**220/550m**[1]	**850**	**850**
	MM	**220/550m**[1]	**850**	**850**
8642-1-x	**MM**	**220/550m**[1]	**850**	**850**
	SM	**12km**	**1310**	**1310**
8642-2-x	**MM**	**220/550m**[1]	**850**	**850**
	SM	**34km**	**1310**	**1310**
8642-3-x	**MM**	**220/550m**[1]	**850**	**850**
	SM	**80km**	**1550**	**1550**
8643-2-x	**SM**	**12km**	**1310**	**1310**
	SM	**34km**	**1310**	**1310**
8643-3-x	**SM**	**12km**	**1310**	**1310**
	SM	**80km**	**1550**	**1550**
ST/SC	*iConverter* **1000FF** Single-Fiber Modules			
8650-1-x	**MM**	**220/550m**[1]	**850**	**850**
	SM SF	**20 km**	**1310**	**1550**
8651-1-x	**MM**	**220/550m**[1]	**850**	**850**
	SM SF	**20 km**	**1550**	**1310**
8652-1-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8653-1-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1550**	**1310**
8650-2-x	**MM**	**220/550m**[1]	**850**	**850**
	SM SF	**40 km**	**1310**	**1550**
8651-2-x	**MM**	**220/550m**[1]	**850**	**850**
	SM SF	**40 km**	**1550**	**1310**
8652-2-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**40 km**	**1310**	**1550**
8653-2-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**40 km**	**1550**	**1310**

[1]62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

iConverter **OC3FF** Dual Fiber Modules					
Connector		**Fiber Type (Port 1 Port 2)**	**Distances (Port 1 Port 2)**	**Tx Wavelength (nm)**	**Rx Wavelength (nm)**
ST/ST	**SC/SC**				
8660-1-x	**8661-1-x**	**MM**	**5km**	**1310**	**1310**
		SM	**30km**	**1310**	**1310**
8660-2-x	**8661-2-x**	**MM**	**5km**	**1310**	**1310**
		SM	**60km**	**1310**	**1310**
	8661-3-x	**MM**	**5km**	**1310**	**1310**
		SM	**120km**	**1550**	**1550**
ST/SC	**SC/SC**	*iConverter* **OC3FF** Single-Fiber Modules			
8670-1-x	**8674-1-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8671-1-x	**8675-1-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8670-2-x	**8674-2-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8671-2-x	**8675-2-x**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**
8672-1-x	**8676-1-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8673-1-x	**8677-1-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8672-2-x	**8676-2-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8673-2-x	**8677-2-x**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**

iConverter **OC12FF** Dual Fiber Modules				
Connector SC/SC	**Fiber Type (Port 1 Port 2)**	**Distances (Port 1 Port 2)**	**Tx Wavelength (nm)**	**Rx Wavelength (nm)**
8681-1-x	**MM**	**220/550m**[1]	**1310**	**1310**
	SM	**12km**	**1310**	**1310**
8681-2-x	**MM**	**220/550m1**	**1310**	**1310**
	SM	**34km**	**1310**	**1310**
8681-3-x	**MM**	**220/550m**[1]	**1310**	**1310**
	SM	**80km**	**1550**	**1550**
SC/SC	*iConverter* **OC12FF** Single-Fiber Modules			
8690-1-x	**MM**	**220/550m**[1]	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8691-1-x	**MM**	**220/550m**[1]	**1310**	**1310**
	SM SF	**20 km**	**1550**	**1310**
8692-1-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8693-1-x	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1550**	**1310**

[1]62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

iConverter **xFF** Dual Fiber Modules				
Connector SFP	**Fiber Type (Port 1 Port 2)**	**Distances (Port 1 Port 2)**	**Tx Wavelength (nm)**	**Rx Wavelength (nm)**
8699-0-x	**-**	**-**	**-**	**-**
	-	**-**	**-**	**-**

Refer to the SFP data sheet for supported transceivers.

LINK MODES:

The *iConverter* standalone fiber-to-fiber media converters support two different linking modes.

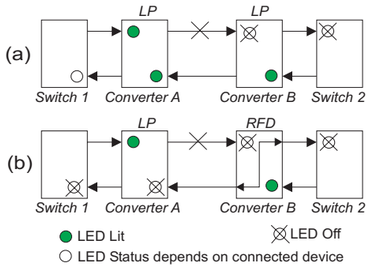

Fig. 1 Link Modes

In Link Propagate (LP) mode (sometimes referred to as Link Loss Carry Forward), a port transmits a Link signal only when receiving a Link on the other front-plane port, and a loss of a received Link at one port causes the other front-plane port to stop transmitting its link signal. For example, P1 transmits a Link only when receiving a Link at P2 [Fig 1(a)].

In Remote Fault Detection (RFD) mode, a port transmits a Link signal only when both itself and the other port are receiving Link signals. A loss of a received Link signal at a port is Looped-back and the port stops transmitting a Link signal. The same loss of Link is propagated to the other port which also stops transmitting the Link signal. For example, the loss of Link into P2 causes both P1 and P2 ports to stop transmission of the Link signal [Fig 1(b)].

Note: Connecting two adjacent converters which are both set to RFD is not permitted and will cause a "deadly embrace" lockup.

FRONT PANEL DIP-SWITCH SETTINGS:

Left / Down **Right / Up**

Link Segment = LS [■] LP = Link Propagate
Normal = Norm [■] RFD = Remote Fault Detection

Fig. 2 Front Panel Dip-Switches

Link Segment/Link Propagation "LS/LP" Dip-Switch: This DIP-Switch has no effect. The LS function of this DIP-Switch has been disabled to enhance compatibility with third-party fiber optic devices. *iConverter* fiber-to-fiber media converters normally operate in LP mode.

Remote Fault Detection Switch "RFD" Dip-Switch: When in the Remote Fault Detection "RFD" position, the Remote Fault Detection mode is enabled and LP mode is disabled. When in the Normal "Norm" position (factory setting), Remote Fault Detection is disabled and LP mode is enabled.

LED INDICATORS:

LED	Color	Description	
Pwr:	Yellow	On--Power on	
Lk/Rx (P1):	Green	On--Link	Off--No Link
Lk/Rx (P2):	Green	On--Link	Off--No Link

INSTALL STANDALONE MODULE AND CONNECT CABLES

1. For wall-mounting, attach the converter to a wall, backboard or other flat surface. For tabletop installations, place the unit on a flat surface. Attach the rubber feet to the bottom of the converter to prevent the unit from sliding. Make sure the unit is placed in a safe, dry and secure location.

   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.

To power the unit using a DC power source, prepare a power cable using a two conductor insulated wire (not supplied) with a 14 AWG gauge minimum. 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. When using an SFP model (8699-0), insert the SFP Fiber transceiver into the SFP receptacle on the module.
   Note: The release latch of the SFP Fiber transceiver must be in the closed position before insertion. The transceivers installed must have matching speeds to operate.
3. Attach an appropriate multimode or single-mode fiber cable to each fiber connector. The transmit cable (Tx) must attach to the receive side on the other device; the receive cable (Rx) must attach to the transmit.
4. When using single-fiber (SF) models, the Tx wavelength on one end must match the Rx wavelength on the other and the converters must be used in matched pairs (example: model 8670-1 must be matched with model 8671-1).

SPECIFICATIONS:

Model Type	100FF	1000FF	OC3FF	OC12FF	xFF
Protocols	100BASE-FX 100BASE-BX 100BASE-LX	1000BASE-SX 1000BASE-LX 1000BASE-ZX 1000BASE-BX	OC-3	OC-12	100BASE-X 1000BASE-X OC-3, OC-12 Fibre Channel
Maximum Data Rate	155 Mbps	1.25 Gbps	155 Mbps	1.25 Gbps	8.5 Gbps*
Fiber Connectors	SC, ST Single-Fiber SC	SC Single-Fiber SC	SC, ST Single-Fiber SC	SC Single-Fiber SC	SFP
Controls	Link Propagate, Remote Fault Detection				
LED Displays	Power, Fiber Optic Link (2)				
Dimensions	W: 0.85" x D: 4.5" x H: 2.8"				
Weight	8 oz.				
Compliance	UL, CE, FCC Class A, NEBS Level 3				
Power Requirement (typical)	5 - 32VDC, 0.3A @ 9VDC (1.0A max)				
Temperature	Standard: 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				

* Hardware revision xx/11 or greater is required to support speeds greater than 4.25Gbps.

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This product is warranted to the original purchaser against defects in material and workmanship for a period of two (2) years from the date of shipment. A LIFETIME warranty may be obtained by the original purchaser by registering this product within ninety (90) days from the date of shipment at www.omnitron-systems.com/support. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective with the same product or with a product with at least the same functionality.

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 defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

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Environmental Notices

The equipment covered by this manual must be disposed of in accordance with Directive 2002/96/EC of the European Parliament and of the council of 27 January 2003 on waste electrical and electronic equipment (WEEE). Such disposal must follow national legislation for IT and Telecommunication equipment in accordance with the WEEE directive: (a) Do not dispose waste equipment with unsorted municipal and household waste. (b) Collect equipment waste separately. (c) Return equipment using collection method agreed with Omnitron.

The equipment is marked with the WEEE symbol shown to indicate that it must be collected separately from other types of waste. In case of small items the symbol may be printed only on the packaging or in this manual. If you have questions regarding the correct disposal of equipment go to www.omniton-systems.com/support or e-mail to Omnitron at intlinfo@omnitron-systems.com.

Technical Support:

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