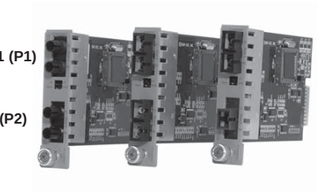
Omnitron Systems Technology, Inc.

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



OVERVIEW:

The *iConverter* FF modules are fiber-to-fiber media converters providing 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. Small Form Pluggable (SFP) model is protocol transparent and also supports Fibre Channel.

The *iConverter* FF media converters can be used in an unmanaged or managed fashion. When unmanaged, they can be installed in a chassis without a Network Management Module (NMM). To be managed, an NMM or a media converter with built-in management must be installed in the same chassis.

***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	**8622-1**	**MM**	**5km**	**1310**	**1310**
		SM	**30km**	**1310**	**1310**
8620-2	**8622-2**	**MM**	**5km**	**1310**	**1310**
		SM	**60km**	**1310**	**1310**
-	**8622-3**	**MM**	**5km**	**1310**	**1310**
		SM	**120km**	**1550**	**1550**
ST/SC	**SC/SC**	***iConverter* 100FF** Single-Fiber Modules			
8630-1	**8634-1**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8631-1	**8635-1**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8630-2	**8634-2**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8631-2	**8635-2**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**
8632-1	**8636-1**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8633-1	**8637-1**	**SM**	**30 km**	**1310**	**1310**
		SM	**20 km**	**1550**	**1310**
8632-2	**8636-2**	**SM SF**	**30 km**	**1310**	**1310**
		SM	**40 km**	**1310**	**1550**
8633-2	**8637-2**	**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	**MM**	**220/550m[1]**	**850**	**850**
	MM	**220/550m[1]**	**850**	**850**
8642-1	**MM**	**220/550m[1]**	**850**	**850**
	SM	**12km**	**1310**	**1310**
8642-2	**MM**	**220/550m[1]**	**850**	**850**
	SM	**34km**	**1310**	**1310**
8642-3	**MM**	**220/550m[1]**	**850**	**850**
	SM	**80km**	**1550**	**1550**
8643-2	**SM**	**12km**	**1310**	**1310**
	SM	**34km**	**1310**	**1310**
8643-3	**SM**	**12km**	**1310**	**1310**
	SM	**80km**	**1550**	**1550**
ST/SC	***iConverter* 1000FF** Single-Fiber Modules			
8650-1	**MM**	**220/550m[1]**	**850**	**850**
	SM SF	**20 km**	**1310**	**1550**
8651-1	**MM**	**220/550m[1]**	**850**	**850**
	SM SF	**20 km**	**1550**	**1310**
8652-1	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8653-1	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1550**	**1310**
8650-2	**MM**	**220/550m[1]**	**850**	**850**
	SM SF	**40 km**	**1310**	**1550**
8651-2	**MM**	**220/550m[1]**	**850**	**850**
	SM SF	**40 km**	**1550**	**1310**
8652-2	**SM**	**12 km**	**1310**	**1310**
	SM SF	**40 km**	**1310**	**1550**
8653-2	**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	**8661-1**	**MM**	**5km**	**1310**	**1310**
		SM	**30km**	**1310**	**1310**
8660-2	**8661-2**	**MM**	**5km**	**1310**	**1310**
		SM	**60km**	**1310**	**1310**
	8661-3	**MM**	**5km**	**1310**	**1310**
		SM	**120km**	**1550**	**1550**
ST/SC	**SC/SC**	***iConverter* OC3FF** Single-Fiber Modules			
8670-1	**8674-1**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8671-1	**8675-1**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8670-2	**8674-2**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8671-2	**8675-2**	**MM**	**5 km**	**1310**	**1310**
		SM SF	**40 km**	**1550**	**1310**
8672-1	**8676-1**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1310**	**1550**
8673-1	**8677-1**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**20 km**	**1550**	**1310**
8672-2	**8676-2**	**SM**	**30 km**	**1310**	**1310**
		SM SF	**40 km**	**1310**	**1550**
8673-2	**8677-2**	**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	**MM**	**220/550m[1]**	**1310**	**1310**
	SM	**12km**	**1310**	**1310**
8681-2	**MM**	**220/550m1**	**1310**	**1310**
	SM	**34km**	**1310**	**1310**
8681-3	**MM**	**220/550m[1]**	**1310**	**1310**
	SM	**80km**	**1550**	**1550**
SC/SC	***iConverter* OC12FF** Single-Fiber Modules			
8690-1	**MM**	**220/550m[1]**	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8691-1	**MM**	**220/550m[1]**	**1310**	**1310**
	SM SF	**20 km**	**1550**	**1310**
8692-1	**SM**	**12 km**	**1310**	**1310**
	SM SF	**20 km**	**1310**	**1550**
8693-1	**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	**-**	**-**	**-**	**-**
	-	**-**	**-**	**-**
Refer to the SFP data sheet for supported transceivers.				

LINK MODES:

In order to accommodate different user needs, the *iConverter* FF media converters support two different linking modes.

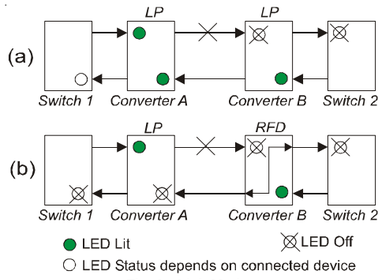


Fig. 1 Link Modes

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:

Fig. 2 Front Panel Dip-Switches

Link Segment/Link Propagation "LS/LP" Dip-Switch: This DIP-Switch has no affect. 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
Lk/Rx (P2):	Green	On--Link

MOUNTING AND CABLE ATTACHMENT:

iConverter modules are hot-swappable and can be installed into any chassis in the *iConverter* family.

1. Carefully slide the *iConverter* module into installation slot, aligning the module with the installation guides. NOTE: Ensure that the module is firmly seated against backplane.
2. Secure the module by securing panel fastener screw (attached to module) to chassis front.
3. 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.
4. 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.
5. 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).

FIBER-TO-FIBER 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-FX, 1000BASE-X, OC-3, OC-12 Fibre Channel
Maximum Data Rate	155Mbps	1.25Gbps	155Mbps	1.25Gbps	1.25Gbps
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)	0.5A @ 3.3VDC	0.5A @ 3.3VDC	0.5A @ 3.3VDC	0.5A @ 3.3VDC	0.5A @ 3.3VDC
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 4000m				
MTBF (hrs)	1,300,000				

Warning

The operating description in this Instruction Manual is for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

Warranty

This product is warranted to the original purchaser against defects in material and workmanship for a period of 2 YEARS from the date of shipment. A LIFETIME limited warranty may be obtained by the original purchaser by REGISTERING this product with Omnitron within 90 days from the date of shipment. To register, complete and mail or fax the enclosed Registration Card to the indicated address. You may also register your product on the internet at www.omnitron-systems.com/Register. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective.

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 (within the 48 contiguous states and the District of Columbia) 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 repairs of equipment 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.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

Exclusive Remedies

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

Technical Support:

For help with this product, contact our Technical Support:

Phone: (949) 250-6510
Fax: (949) 250-6514
Address: Omnitron Systems Technology, Inc.
140 Technology Dr., #500
Irvine, CA 92618 USA
E-mail: support@omnitron-systems.com
URL: www.omnitron-systems.com

Form: 040-08600-001L 3/08