Omnitron Systems

# *iConverter*® FF User Manual

## DESCRIPTION

This user manual covers the iConverter 100FF, OC3FF, OC12FF, 1000FF and xFF modules.

The iConverter fiber-to-fiber chassis plug-in 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.

See data sheet for available models.

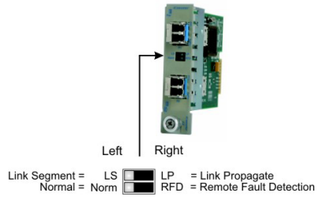
The FF modules can be used in an unmanaged or managed applications. To be managed, an Network Management Module (NMM2) or a module with integrated management must be installed in the same chassis.

For more information on management software and hardware options, see Comprehensive Network Management Solution product page.



## DIP-SWITCH SETTINGS

### Front Panel DIP-switches




### Link Segment/Link Propagation "LS/LP"

This DIP-Switch has no effect. The Link Segment (LS) function has been disabled to enhance compatibility with third-party fiber optic devices. iConverter fiber-to-fiber media converters operate in Link Propagate (LP) mode.

### Remote Fault Detection Switch "RFD"

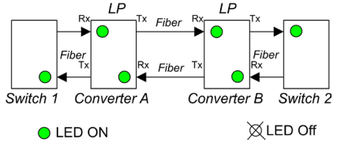
When in the Remote Fault Detection "RFD" position, the Remote Fault Detection mode is enabled and LP mode is disabled. When in the Normal "Norm" position (factory setting), Remote Fault Detection is disabled and LP mode is enabled.



### Link Modes

The iConverter fiber-to-fiber media converters support two different link modes.

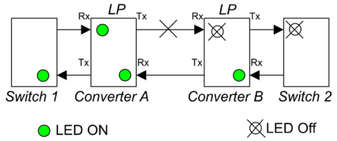
**Normal Operation**




### Link Propagate

The Link Propagate (LP) mode transmits a link signal only when a link signal is detected. Utilizing this configuration, a loss of a receive link signal will continue to propagate through to the next port in the network.

**Fiber Fault with Link Propagate**



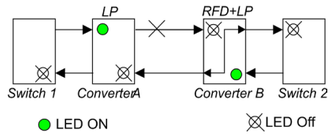



### Remote Fault Detection

The Remote Fault Detection + Link Propagate (RFD+LP) mode transmits a link signal only when a link signal is detected. When a loss of link is detected, this mode will loop back and propagate forward the fault condition.

**NOTE: Connecting two modules set to RFD is an illegal setting and will cause unpredictable conditions.**

**Fiber Fault with RFD+LP Link Mode**






## MOUNTING AND CABLE ATTACHMENT

The iConverter modules are hot-swappable and can be installed into any iConverter chassis.

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

1. Carefully slide the module into an open slot in the chassis. Align the module with the installation guides and ensure that the module is firmly seated against the backplane. Secure the module by fastening the front panel thumbscrew (push in and turn clockwise to tighten) to the chassis front. Verify the "Pwr" LED is ON (indicating the chassis is powered).

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 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.



## SOFTWARE CONTROLLED SETTINGS

DIP-Switch settings are available via software control when a FF module is installed in an iConverter chassis with a Management Module.

The settings can be controlled via Serial Console/Telnet Console, NetOutlook Management Software or other third-party SNMP-based clients:

- Link Modes
- SFP Digital Diagnostic Monitoring

For more information on using and configuring the Advanced Features, register for access to the NetOutlook Management Software user manual.

## LED INDICATORS

The FF modules do not generate data, it only passes the data it receives from the connected equipment. Both transceivers must be installed and connected in order for the module to pass data traffic. P1/P2 Lk/Rx LED indicates an optical connection has been established. It does not indicate the presence of data traffic. Check the attached equipment for confirmation of data traffic.

| LED | Color | Description |
|---|---|---|
| Pwr | Amber | OFF: Module is not powered<br>ON: Module has power |
| P1 "Lk/Rx" | Green | OFF: No fiber link<br>ON: Port is detecting link |
| P2 "Lk/Rx" | Green | OFF: No fiber link<br>ON: Port is detecting link |



## SPECIFICATIONS

| | | |
|---|---|---|
| **Standard** | Protocol Transparent up to 8.50Gbps<br>Ethernet (100BASE-X, 1000BASE-X)<br>SONET (OC-3, OC-12, OC-48),<br>SDH (STM-1, STM-4, STM-16)<br>Fibre Channel (1x, 2x, 4x, 8x),<br>CPRI line rates (up to 6.144Gbps) | |
| **Regulatory** | Safety:<br>EMI:<br>ACT: | UL, CE, NEBS Level 3, UKCA<br>FCC Class A<br>TAA, BAA, NDAA |
| **Environmental** | RoHS, WEEE, REACH | |
| **Frame Size** | Unlimited | |
| **Data Rate** | xFF: 1Mbps to 8.50Gbps (depending on SFP)<br>100FF: 1Mbps to 155Mbps<br>1000FF: 500Mbps to 1250Mbps<br>OC3FF: 1Mbps to 155Mbps<br>OC12FF: 622Mbps to 1250Mbps | |
| **Port Types** | Fiber: | ST, SC or SFP (depending on model) |
| **Cable Types** | Fiber: | Multimode: 50/125µm, 62.5/125µm<br>Single-mode: 9/125µm |
| **DC Power Requirements** | DC Input:<br>(Backplane) | 3.3VDC, 0.5A @ 3.3VDC |
| **Dimensions W x D x H** | 0.85" x 4.5" x 2.8" (21.6 mm x 114.3 mm x 71.1 mm) | |
| **Weight** | 8.0 oz. (226.8 grams) | |
| **Temperature** | Commercial:<br>Wide:<br>Extended:<br>Storage: | 0 to 50°C<br>-40 to 60°C<br>-40 to 75°C (xFF only)<br>-40 to 80°C |
| **Humidity** | 5 to 95% (non-condensing) | |
| **Altitude** | -100m to 4,000m | |
| **MTBF (hrs)** | 1,300,00 (xFF), 1,100,000 (all others) | |
| **Warranty** | Lifetime warranty with 24/7/365 free Technical Support | |



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### Warranty

This product is warranted to the original purchaser (Buyer) 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 at www.omnitron-systems.com/support within ninety (90) days from the date of shipment. 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 product malfunctions 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.

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

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.



### Environmental Notices

The equipment covered by this manual must be disposed of or recycled in accordance with the Waste Electrical and Electronic Equipment Directive (WEEE Directive) of the European Community directive 2012/19/EU on waste electrical and electronic equipment (WEEE) which, together with the RoHS Directive 2015/863/EU, for electrical and electronic equipment sold in the EU after July 2019. 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 the user 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.



### 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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