Installation Guide

iMcV-PIM TP/FO

About iMcV-PIM

iMcV-PIM is an SNMP-manageable module that installs in the modular **iMediaChassis, iMediaCenter** and **iMcV** series chassis as well as the **MediaChassis** series.

iMcV-PIM: This Ethernet module provides a single conversion between 10Base-T twisted pair and 10Base-FL single-mode or multi-mode fiber. Each *iMcV-PIM* includes one RJ-45 connector and one pair of ST or SC fiber optic connectors.

QUICK START

THIS MANUAL CONTAINS CONFIGURATION, INSTALLATION AND USAGE INFORMATION FOR PRODUCTS: 50-14940 THROUGH 50-14949

Configuring iMcV-PIM

Configure *iMcV-PIM* for the following features (if desired):

- *Pulsing FiberAlert* (prior to installation)
- A crossover or pass-through connection for the twisted pair port

Instructions for configuring both managed (via an SNMP-compatible management application like *iView²*) and unmanaged modules follow.

MANAGED MODULES

To manage one or more *iMcV Modules*, an SNMP agent must be present in the chassis: *iMediaCenter* chassis have embedded management; *iMediaChassis* and *iMcV Series* chassis use an SNMP module. To configure managed modules, install the module first (see page 4 for instructions), then configure using the management software. Refer to the *iView² for MediaConverters* online help file for more information and assistance.

NOTE

Management software overrides any hardware settings (e.g., jumper, switch, etc.), so you MUST configure a module that will be managed via the software. Until a module installed in a managed chassis is configured via the software, the module (and its LEDs) may not work properly.

UNMANAGED MODULES

Before installing, configure *iMcV Modules* for desired features. The diagram on page 3 shows the switch location on *iMcV-PIM*.

INSTALLATION TIP!
When testing, IMC Networks recommends testing your module first in an **unmanaged** environment. To do this, disable management (i.e., turn management off or remove the management module from the chassis), follow the unmanaged configuration instructions, then install the unit, connect the cables and test the LEDs. When finished, re-activate management and configure the unit via the software.

LinkLoss and Pulsing FiberAlert

LinkLoss and *Pulsing FiberAlert* are advanced troubleshooting features from IMC Networks that can help you locate "silent failures" on your network.

ABOUT LINK INTEGRITY

During normal operation, link integrity pulses are transmitted by all point-to-point Ethernet devices. When an IMC Networks media converter receives valid link pulses, it knows that the device to which it is connected is up and sending pulses, and that the copper or fiber cable coming from that device is intact. The appropriate "LINK" LED is lit to indicate this. The IMC Networks media converter also sends out link pulses from its copper and fiber transmitters, but normally has no way of knowing whether the cable to the other device is intact and the link pulses are reaching the other end. The combination of *FiberAlert* and *LinkLoss* allows this information to be obtained, even when physical access to a remote device (and its link integrity LED) is not available.

WHAT IS FO LINKLOSS?

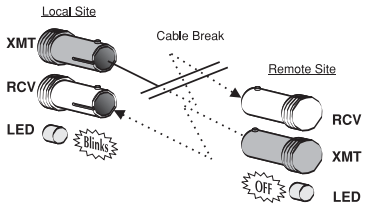
FO LinkLoss is a troubleshooting feature. When a fault occurs on the fiber segment (receive side) of a conversion, *FO LinkLoss* detects the fault and passes this information to the twisted pair segment. If a media converter is not receiving a fiber link, *FO LinkLoss* disables the transmitter on the media converter's twisted pair port. This results in a loss of link on the device connected to the twisted pair port.

WHAT IS TP LINKLOSS?

TP LinkLoss is another troubleshooting feature. When a fault occurs on the twisted pair segment of a conversion, *TP LinkLoss* detects the fault and passes this information to the fiber segment. If a media converter is not receiving a twisted pair link, *TP LinkLoss* disables the transmitter on the media converter's fiber port. This results in a loss of link on the device connected to the fiber port.

CONFIGURING LINKLOSS: *TP LinkLoss* and *FO LinkLoss* are always enabled on *iMcV-PIM TP/FO*.

WHAT IS PULSING FIBERALERT?



Product with Pulsing *FiberAlert* enabled — Remote Site stops transmitting Local Link LED blinks, indicating a break in the fiber loop

Pulsing FiberAlert minimizes the problems associated with the loss of one strand of fiber. If a strand is unavailable, the IMC Networks device at the receiver end notes the loss of link. The device will stop transmitting data and start sending link pulses. Until a valid link is received, the fiber link LED will be OFF on the device on the receiver side of the fiber strand with the fault while the fiber Link LED on the other unit will blink. *Pulsing FiberAlert* notifies a local site administrator of a fault, allowing quick determination of where a cable fault resides.

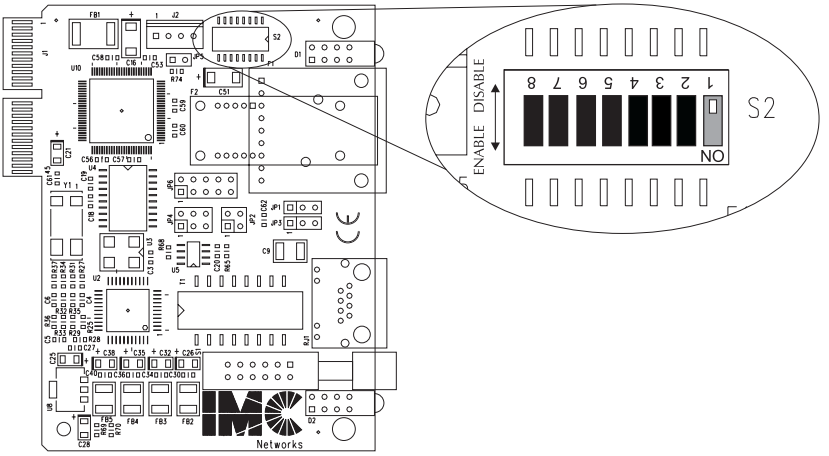
NOTE: *You can enable Pulsing FiberAlert on BOTH sides of a conversion.*

CONFIGURING PULSING FIBERALERT

Before installing, configure an unmanaged *iMcV-PIM* for *Pulsing FiberAlert* using the DIP Switch 1 located at position **S2** on the PCB. The following illustration shows the location of the DIP switch as well as its default settings. To enable *Pulsing FiberAlert*, move DIP Switch 1 to the ON position. After configuring the DIP switch, power down the unit and then power up again for the changes to take effect. To disable *Pulsing FiberAlert*, move DIP Switch 1 to the OFF position. The default setting for this feature is disabled.

All other switches (2-8) are factory-configured or reserved for future use; DO NOT change.

NOTE: For managed modules, configure Pulsing FiberAlert via iView².



If unsure of how to best implement these features in your configuration, please contact IMC Networks Technical Support at (800) 624-1070 (U.S. and Canada); +32-16-550880 (Europe).

Installing an iMcV Module

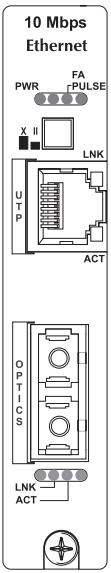
iMcV Modules install in any IMC Networks SNMP-manageable media converter chassis or in any *MediaChassis*. To install an *iMcV-PIM*, remove the blank bracket covering the slot where the module is to be installed by removing the screws on the outside edges of the bracket. Slide the *iMcV-PIM* into the chassis, via the cardguides, until the module is seated securely in the connector. Secure the module to the chassis by tightening the captive screw. Save any "blanks" removed during installation for future use should configuration requirements change.

Twisted Pair Crossover/Pass-Through Switch

The twisted pair port on *iMcV-PIM TP/FO* features a push-button switch, located next to the twisted pair connector, for selecting a crossover workstation connection or pass-through repeater/hub connection.

Select a pass-through connection by pressing the push-button IN. A crossover connection is selected when the push-button is OUT. If uncertain whether a crossover or pass-through connection is needed, set the push-button to the position that makes the TP LNK (link) LED glow.

LED Operation



Each *iMcV-PIM* features diagnostic LEDs. The illustration shows the location of the LEDs on *iMcV-PIM*.

The LED functions for *iMcV-PIM TP/FO* are as follows:

LINK	Glows green if link is established on the twisted pair port (located on RJ-45).
ACT	Glows amber when data is being passed on the twisted pair (located on RJ-45).
FA PULSE	Glows green when *Pulsing FiberAlert* is enabled.
PWR	Glows green when unit has power.
LINK	Glows green when link is established on the fiber port.
ACT	Glows green if data is being passed on the fiber port.

Installation Troubleshooting

- During installation, first test your fiber and twisted pair connections with all troubleshooting features disabled. Then enable these features, if desired, just before final installation. This will reduce the features' interference with testing.
- To test *iMcV-PIM TP/FO* by itself, you must have an appropriate fiber patch cable. First, connect *iMcV-PIM TP/FO* to the twisted pair device with a twisted pair cable and establish valid link. Next, loop a single strand of fiber from the transmit port to the receive port of your media converter. Finally, verify that you have both twisted pair and fiber link on your media converter.
- Make sure that you are using the appropriate twisted pair cable or have the crossover/pass-through button on the media converter set correctly.
- Interconnection between the Next Generation of *McBasic TP/FOs, iMcV-PIM TP/FOs* and *McPIM TP/FOs* and their Legacy counterparts is possible. Where possible, however, use Legacy with Legacy product, or Next Generation with Next Generation product.

General Information

IMC Networks Technical Support

TEL: (949) 465-3000; (800) 624-1070 (in the U.S. and Canada); +32-16-550880 (Europe)

FAX: (949) 465-3020

E-Mail: techsupport@imcnetworks.com

Web: www.imcnetworks.com

Specifications

Environmental

Operating Temperature: 32° to 122°F (0° to 50°); 5% to 90% (non-condensing), 0 – 10,000 ft. altitude

Storage Temperature: -13° to +158°F (-25° to +70°C); 5 to 90% (non-condensing)

Power Consumption (typical): 650 mA max.

Fiber Optic Specifications

For fiber optic specifications, please visit our Web site at:
http://www.imcnetworks.com/adocs/fcs.asp.

Fiber Optic Cleaning Guidelines

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1) Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2) IMC Networks installs dust caps to ensure factory-clean optical devices. Do not be remove these protective caps until the moment of connecting the fiber cable to the device. Assure that the fiber is properly terminated, polished and free of any dust or dirt, and that the location is as free from dust and dirt as possible.
3) Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4) Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
5) If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with isopropyl alcohol to remove particles of dirt.

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to your add-in modules. Always observe the following precautions when installing or handling an add-in module or any board assembly.

1) Do not remove unit from its protective packaging until you're ready to install it.
2) Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

3) Hold boards by the edges only; do not touch the electronic components or gold connectors.
4) After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the board over any surface.

Warranty

IMC Networks warrants to the original end-user purchaser that this product, EXCLUSIVE OF SOFTWARE, shall be free from defects in materials and workmanship under normal and proper use in accordance with IMC Networks' instructions and directions for a period of six (6) years after the original date of purchase. This warranty is subject to the limitations set forth below.

At its option, IMC Networks will repair or replace at no charge the product which proves to be defective within such warranty period. This limited warranty shall not apply if the IMC Networks product has been damaged by unreasonable use, accident, negligence, service or modification by anyone other than an authorized IMC Networks Service Technician or by any other causes unrelated to defective materials or workmanship. Any replaced or repaired products or parts carry a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

To receive in-warranty service, the defective product must be received at IMC Networks no later than the end of the warranty period. The product must be accompanied by proof of purchase, satisfactory to IMC Networks, denoting product serial number and purchase date, a written description

of the defect and a Return Merchandise Authorization (RMA) number issued by IMC Networks. No products will be accepted by IMC Networks which do not have an RMA number. For an RMA number, contact IMC Networks at PHONE: (800) 624-1070 (in the U.S and Canada) or (949) 465-3000 or FAX: (949) 465-3020. The end-user shall return the defective product to IMC Networks, freight, customs and handling charges prepaid. End-user agrees to accept all liability for loss of or damages to the returned product during shipment. IMC Networks shall repair or replace the returned product, at its option, and return the repaired or new product to the end-user, freight prepaid, via method to be determined by IMC Networks.

IMC Networks shall not be liable for any costs of procurement of substitute goods, loss of profits, or any incidental, consequential, and/or special damages of any kind resulting from a breach of any applicable express or implied warranty, breach of any obligation arising from breach of warranty, or otherwise with respect to the manufacture and sale of any IMC Networks product, whether or not IMC Networks has been advised of the possibility of such loss or damage.

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Federal Communications Commission Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Safety Certifications

UL/CUL: Listed to Safety of Information Technology Equipment, Including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (89/336/EEC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (73/23/EEC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact IMC Networks.

LISTED 9M80 ITE E156766

Class 1 Laser product, Luokan 1 Laserlaite, Laser Klasse 1, Appareil A'Laser de Classe 1

Questions or Comments about this manual? Contact documentation@imcnetworks.com

Visit www.mediaconverter.com for a complete overview of media conversion products available from IMC Networks.

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