iMcV-FT-S2MM

Operation Manual

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B 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 B 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 B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

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. IMC Networks warrants to the original end-user purchaser that all SFPs 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 one (1) year 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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Every reasonable effort has been made to ensure that IMC Networks product manuals and promotional materials accurately describe IMC Networks product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of IMC Networks products, IMC Networks cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

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About the iMcV-FT-S2MM

Designed for critical operations that must remain running, the iMcV-FT-S2MM is a fault tolerant, SNMP-manageable, IEEE 802.3 fiber mode converter. The iMcV-FT-S2MM modules are protocol-independent, supporting speeds from 622 Mbps ATM (OC12) to 1.25 Gbps, and provide a single conversion between single-mode and multi-mode fiber.

The iMcV-FT-S2MM requires one slot in an SNMP-manageable iMediaChassis, or unmanaged MediaChassis.

The iMcV-FT-S2MM is part of the IMC Networks series of iMcV modules. Refer to http://www.imcnetworks.com for operation guides for other iMcV modules.

Installing the iMcV-FT-S2MM

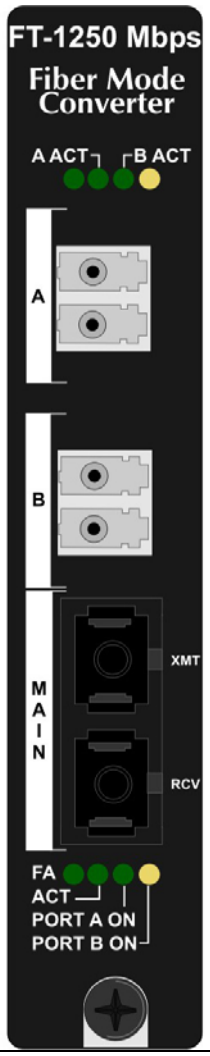
Install iMcV-FT-S2MM Modules in any IMC Networks SNMP-manageable media converter chassis.

To install an iMcV Module:

1. 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.
2. Slide the iMcV Module into the chassis, via the cardguides, until the module is seated securely in the connector.
3. Secure the module to the chassis by tightening the captive screws.
4. Save any "blanks" removed during installation for future use should configuration requirements change.

LED Operation

The iMcV-FT-S2MM features several diagnostic LEDs per port. The LED functions for iMcV-FT-S2MM are

LED	Definition	Module
A ACT	Glows green when data is detected on Port A.	
B ACT	Glows green when data is detected on Port B.	
FA	Glows green when FiberAlert is enabled on the port.	
ACT	Glows green when data is detected on the Main port.	
PORT A ON	Glows green when Port A is transmitting or receiving data.	
Port B ON	Glows green when Port B is transmitting or receiving data.	

Configuring the iMcV-FT-S2MM

The iMcV-FT-S2MM has user-configurable features, such as FiberAlert and Force Mode. Instructions for configuring both managed (via an SNMP-management application like iView²) and unmanaged modules follow.

Managed Modules

In order to manage an iMcV-FT-S2MM Module, the chassis must have an SNMP agent. iMediaChassis uses an SNMP-Management Module.

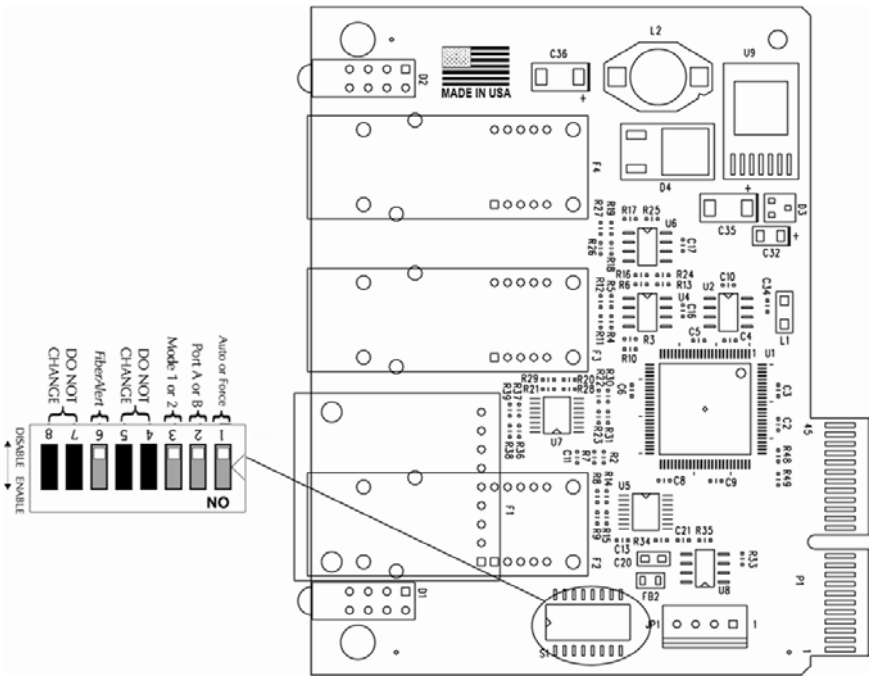
To configure a managed module, install the module first, and then configure the mode of operation, and any additional features, via the software.

If using iView² for iMediaConverters (provided free with all iMediaChassis series chassis and Management Modules) to manage a module, configure the mode of operation, and other features, in the Module Detail section of iView². Refer to the iView² online Help for more information.

NOTE
Management software overrides any hardware settings. Therefore, modules managed via the iView² must be configured 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 an unmanaged iMcV-FT-S2MM using the DIP switch located at position S1 on the PCB, as shown below. The illustration shows the DIP switch location as well as its default settings. Consult the matrix for the function of each switch.



Feature	Switch	Function	Default
Auto Switch Over and Force	S1	If you want to force the module to transmit data on a specific port only (module is no longer fault-tolerant), set S1 to ON. Default is Auto Switch-Over.	OFF
Port A or B	S2	To use Port A, set S2 to ON. To use Port B, set S2 to OFF, S1 must be ON.	OFF
Modes of Operation	S3	Configuration of this switch is determined by the end-devices in the conversion.	OFF
FiberAlert	S6	To enable FiberAlert, set to ON.	OFF
DIP switches S4, S5, S7 and S8 are factory configured—**DO NOT CHANGE**			

Auto Switch-Over

The iMcV-FT-S2MM provides a dual data path (primary, Port A and secondary, Port B) to the network for fault tolerance. During operation, the primary link segment is active (online) while the secondary link segment is non-active, preventing an illegal Ethernet loop.

When using Auto Switch-Over (default), iMcV-FT-S2MM will automatically place the secondary link segment online if the primary link segment fails and make the primary link segment non-active. This allows connected devices to continue to transmit and receive data. The failover time is 1 microsecond.

Once the primary link segment is re-established, that link segment will become active and the secondary link segment will become non-active. When active, the secondary port will have the same configurations made for the primary port.

Force Mode

The iMcV-FT-S2MM also includes the ability to force the use of a specific port.

Although Auto Switch-Over provides fault-tolerance, at times maintenance may need to be performed on a connected device. Use the force functionality to route traffic to a specific port.

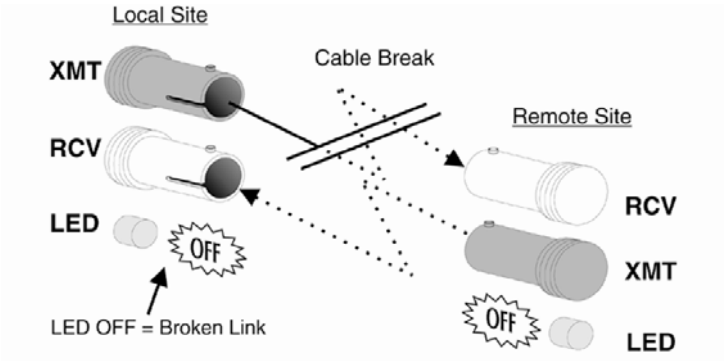
Auto Switch-Over should be enabled again after maintenance is complete.

1. To designate Port A, set DIP switch S1 and S2 to the **ON** position.
2. To designate Port B, set DIP switch S1 to the **ON** position and DIP switch S2 to the **OFF** position.

FiberAlert

The iMcV-FT-S2MM modules include FiberAlert, minimizing 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 then stop transmitting data and the link signal until a signal or link pulse is received. The result is that the link LED on both sides of the fiber connection will go out indicating a fault somewhere in the fiber loop. Using FiberAlert, a local site administrator is notified of a fault and can quickly determine where a cable fault is located.



IMC Networks product with *FiberAlert* enabled —
Remote Site stops transmitting
Local Link LED is OFF indicating a break in the fiber loop

NOTE
Enable FiberAlert on one side of the mode conversion only.

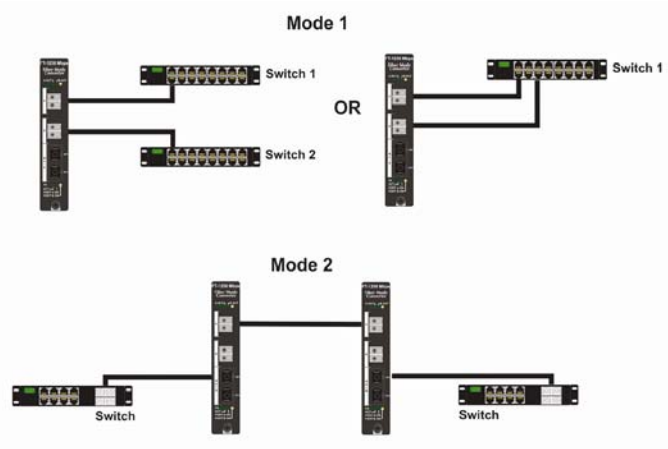
Modes of Operation

The iMcV-FT-S2MM features two "modes" of operation:

Use Mode 1 when connecting the redundant ports on the iMcV-FT-S2MM to two separate devices, or to two ports on the same device.

To enable Mode 1, set DIP switch S3 to the OFF position.

Use Mode 2 when connecting the redundant ports on the iMcV-FT-S2MM to the redundant ports on another iMcV-FT-S2MM. To enable Mode 2, set DIP switch S3 to the ON position.



IMC Networks Technical Support

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Specifications

Environmental

Operating Temperature
32° - 104° F (0° - 40° C)

Storage Temperature
20° - 160° F (-20° - 70° C)

Humidity
5 - 95% (non-condensing)

For fiber optic specifications, visit:

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. Dust caps are installed at IMC Networks to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
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. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol 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.
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.

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.

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.

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

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.

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