



iMcV-Switch

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. 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-Switch

The iMcV-Switch is a 5-port Ethernet module that allows the user to increase the port density and service area of Ethernet networks. The store and forward switch function allows the user to extend Ethernet service to locations a total of 100 meters from the Ethernet source. All RJ-45 ports Auto Negotiate 10/100BaseT, full/half duplex, and automatically configure for MDI or MDIX operation. Each port allows a maximum frame size of up to 1916 bytes, with support for Flow Control and priority queuing. Each SFP or fixed fiber port supports 100 Mbps FDX; the fiber is available in a variety of SM and MM types, including SSF.

Priority Queuing

The iMcV-Switch supports two levels of priority queuing at the egress of every port. All frames with high priority will egress the port ahead of low priority frames at a 10:1 ratio. Priority is determined, first, through VLAN Tag priority. If no VLAN Tag is available then the DiffServ (ToS) bits are used. The VLAN Tag priority is based on a 3 bit PRI word where the base priority is set to "4". Values of 4 or greater have high priority.

Flow Control

Flow Control is based on the outcome of the Auto Negotiate function. If Flow Control is enabled then a port will stop transmitting frames when a PAUSE frames is received. When the internal buffers become congested the unit will send PAUSE frames to all congested ports. Frames will be dropped if no internal buffer space is available at ingress.

Installing the iMcV-Switch

The iMcV-Switch is a media converter module that provides 5-port 10/100 Auto Negotiating Ethernet ports. The module can be installed in any iMediaChassis, MediaChassis or IE-MediaChassis series.

Managed Modules

In order to manage an iMcV-Switch, an SNMP agent must be present in the chassis. To manage the module, first install the module into the chassis. After installing IMC Network's free SNMP software, iView², port status per port can be monitored. There is no port configuration; the Graphical User Interface (GUI) provides LED status information only. SFP's with DDMI will not offer an SFP Table through iView².

Unmanaged Modules

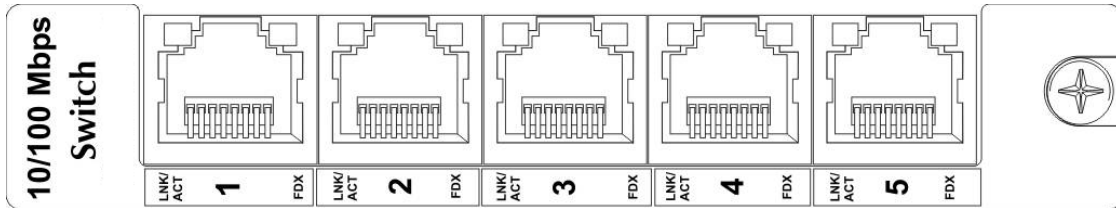
The iMcV-Switch is an unmanaged 5-port 10/100 module; there are no DIP Switch settings to configure. If installed in an unmanaged chassis, the LEDs will indicate the status of each port.

Port LEDs

The ports on the iMcV-Switch include diagnostic LEDs that indicate unique information about the port functionality and status.

iMcV-Switch TX/5

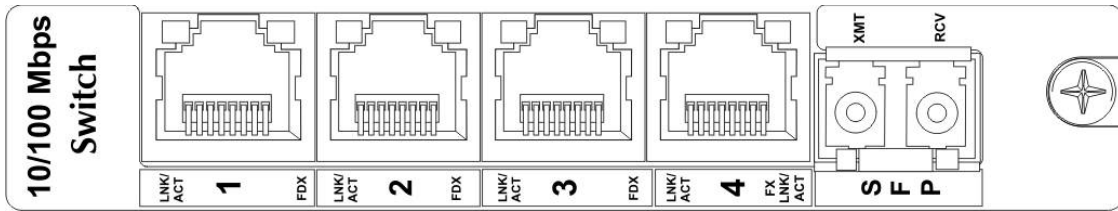
For all units with 5 copper ports, the two LEDs associated with each twisted pair port are defined as follows:



Port	LED Name	Color	Function
TX	LNK/ACT	OFF	No link signal detected on copper port
		GREEN	Copper port is receiving sync signal
		Flash GREEN	Activity is detected on the port
	FDX	OFF	Port is operating in half duplex
		GREEN	Port is operating in full duplex
		Flash GREEN	Flashes when port is set to HDX and collisions occur

iMcV-Switch TX/4 + SFP

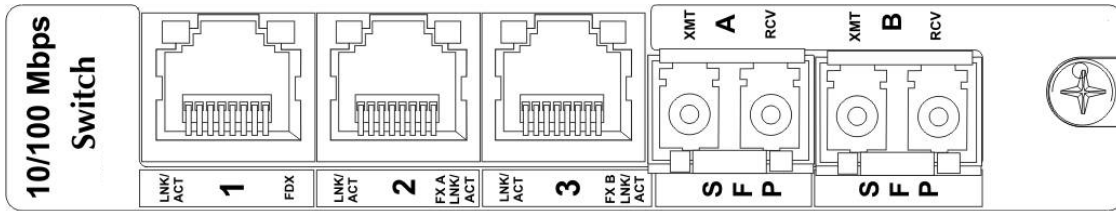
For all units with 4 copper ports, the two LEDs associated with each twisted pair port are defined as follows:



Port	LED Name	Color	Function
TX	LNK/ACT	OFF	No link signal detected on copper port
		GREEN	Copper port is receiving sync signal
		Flash GREEN	Activity is detected on the port
	FDX	OFF	Port is operating in half duplex
		GREEN	Port is operating in full duplex
		Flash GREEN	Flashes when port is set to HDX and collisions occur
FX	LNK/ACT	OFF	No SFP installed
		GREEN	Glowes green when Link is established
		Flash GREEN	Flashes GREEN w/Activity

iMcV-Switch TX/3 + 2SFP

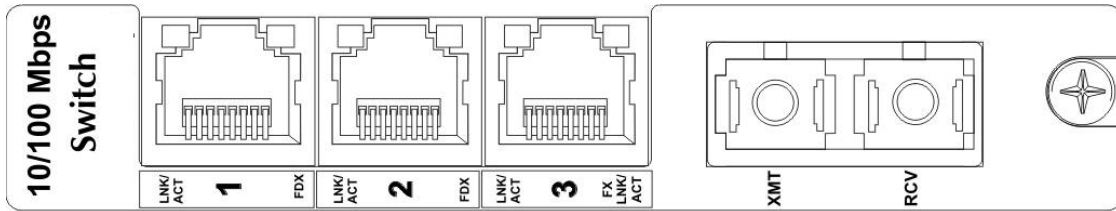
For all units with 3 copper ports, the two LEDs associated with each twisted pair port are defined as follows:



Port	LED Name	Color	Function
TX	LNK/ACT	OFF	No link signal detected on copper port
		GREEN	Copper port is receiving sync signal
		Flash GREEN	Activity is detected on the port
	FDX	OFF	Port is operating in half duplex
		GREEN	Port is operating in full duplex
		Flash GREEN	Flashes when port is set to HDX and collisions occur
FX SFP A	LNK/ACT	OFF	No SFP installed
		GREEN	Glow green when Link is established
		Flash GREEN	Flashes GREEN w/Activity
FX SFP B	LNK/ACT	OFF	No SFP installed
		GREEN	Glow green when Link is established
		Flash GREEN	Flashes GREEN w/Activity

iMcV-Switch-TX/3 + FX

For all units with 3 copper ports, the two LEDs associated with each twisted pair port are defined as follows:



Port	LED Name	Color	Function
TX	LNK/ACT	OFF	No link signal detected on copper port
		GREEN	Copper port is receiving sync signal
		Flash GREEN	Activity is detected on the port
	FDX	OFF	Port is operating in half duplex
		GREEN	Port is operating in full duplex
		Flash GREEN	Flashes when port is set to HDX and collisions occur
FX	LNK/ACT	OFF	No link
		GREEN	Link at 100 Mbps
		Flash GREEN	Activity is detected on the fiber port

Specifications

Industry Standards

IEEE 802.3x Ethernet Standards

IEEE 802.3u Auto Negotiation Standards

Ethernet Connections: 10/100 BaseT, Auto Negotiation, AutoCross, Flow Control, 1916 MTU, Full Line - Rate Forwarding

Power Consumption (typical)

TX/5	0.19A @ 5V
TX/4 + SFP	0.57A @ 5V
TX/3 + 2SFP	0.6 5A @ 5V
TX/3 + FX	0.444A @ 5 V

Operating Temperature

32° to 122° F (0° to 50° C)

Operating Power

2.5W

Storage Temperature

-31° to 158° F (-35° to 70° C)

Humidity

5 to 95% (non-condensing); 0 to 10,000 ft. altitude

Dimensions

4.19" x .78" x 2.75" (106.4 mm x 19.81mm x 69.85 mm)

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 any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; 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 modules or stand alone units 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.

IMC Networks Technical Support

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Web: www.imcnetworks.com

Certifications

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC).

CE

**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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