

A Powerful Optical Demarcation Device Combining Media Conversion with Carrier Grade Delivery of Transparent LAN Services.



Secure and Flexible Solution

- Available for a full range of cable types (copper, fiber), wavelengths and connectors (SC, ST and single/dual SFP)
- All management traffic remains isolated from the remote LAN
- Remote SNMP Management
- Allows replacement of expensive optical switches with inexpensive copper switches

Key Features

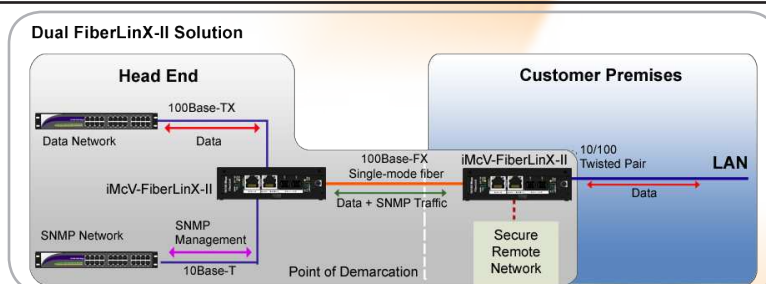
- OAM 802.3ag/ah (Operation, Administration & Management)
- ITU-T Y.1731 End-to-end service connectivity verification
- VLAN Tag Aware (802.1Q-compliant including Q-in-Q “extra-tagging” and selectable EtherType)
- Provides differential priority (802.1p compliant)
- Bi-directional bandwidth settings
- Features powerful LinkLoss, FiberAlert and loopback troubleshooting
- Transparency feature allows VLAN and non-VLAN traffic on same port

The iMcV-FiberLinX-II connects a host/remote Ethernet network over a fiber optic or twisted pair copper connection. It combines media conversion with an advanced feature set for network management and troubleshooting functions, including connectivity fault management and performance monitoring.

The iMcV-FiberLinX-II allows for remote configuration and alerts administrators to any potential problems on the data connection, providing vital information on link condition, and reporting data traffic statistics. Depending on the version, it can also function as a copper to fiber media converter, integrating inexpensively with low cost copper switches, or it can function as a remote management port. Optional single or dual SFP ports are also available for complete network flexibility.

With the iMcV-FiberLinX-II, administrators can observe the end-points and the fiber link between them as single management entities and not as separate elements. Host management traffic is not visible to the remote or customer network, nor is access to the customer network required, guaranteeing end-to-end data integrity.

Application Example - Dual iMcV-FiberLinX-II Solution



When used in pairs, an iMcV-FiberLinX-II configured as a Host resides at the head-end while another iMcV-FiberLinX-II, configured as a Remote, installs at the customer location, typically on the network edge where a customer network meets the service provider infrastructure. The iMcV-FiberLinX-II monitors the entire link, via SNMP, and ensures data integrity while remaining isolated and completely transparent to the customer LAN.



VLAN Functionality on the iMcV-FiberLinX-II

Service providers routinely use IEEE 802.1Q Virtual Local Area Network (VLAN) tagging to secure, separate and differentiate customer traffic. The iMcV-FiberLinX-II enables service providers to support multiple VLAN-based applications.

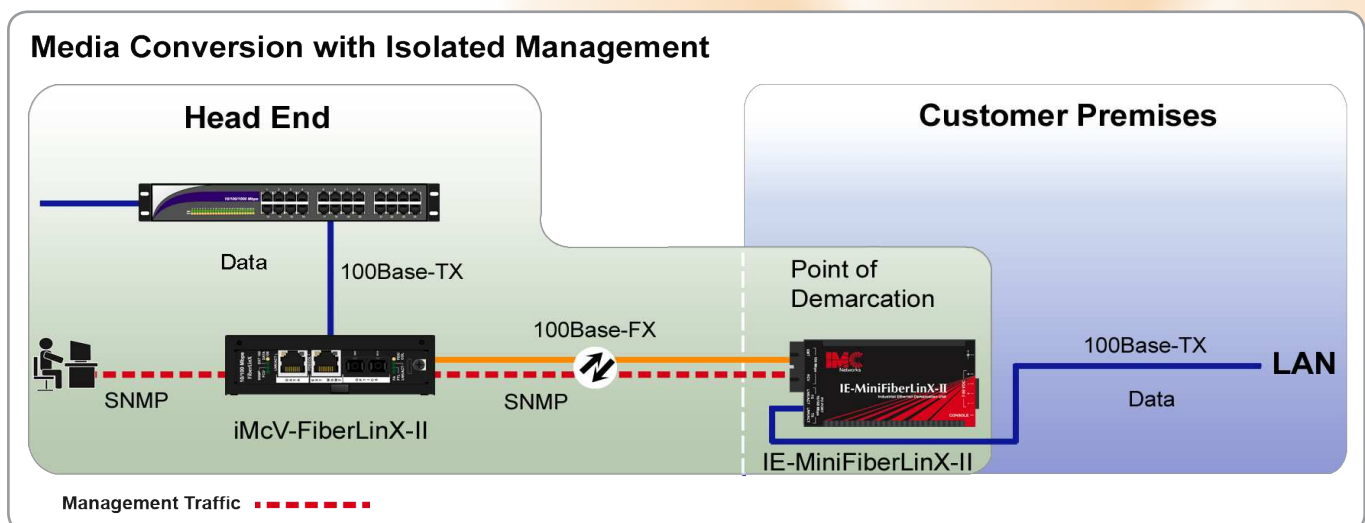
- IEEE 802.1Q VLAN compatible
- Valid VLAN IDs are 1 to 4,094
- Port-based VLAN tagging
- Transparency Mode passes all data and respects the VLAN tag or lack thereof, i.e. allows a mixture of VLAN Tagged and Untagged traffic
- Configure to support VLAN trunking; iMcV-FiberLinX-II can filter up to 32 VLAN IDs for data, plus an additional ID for SNMP (Transparency Mode disabled)
- IEEE 802.1p provides a 2-tier queue for differential prioritization of inbound and outbound traffic. For example, VoIP applications can be assigned a higher priority than data traffic

VLAN Tagging and Extra-Tagging

Support for IEEE 802.1Q Extra Tagging, also known as Q-in-Q, allows the iMcV-FiberLinX-II to more effectively route network VLAN traffic. Extra tagging simplifies management and configuration efforts for service providers who have customers using a range of VLAN IDs for different applications. Routing guidelines and other traffic rules can be programmed based on the extra tag, rather than being programmed for all of the potentially hundreds of individual VLAN IDs. Also, since a service provider's customers control their own internal VLAN settings, the extra tag is needed to make sure there is no overlap of VLAN IDs among customers, and to prevent traffic from different customers from becoming mixed. The extra tag is removed once the traffic is routed to its correct destination, a process that is transparent to customers.

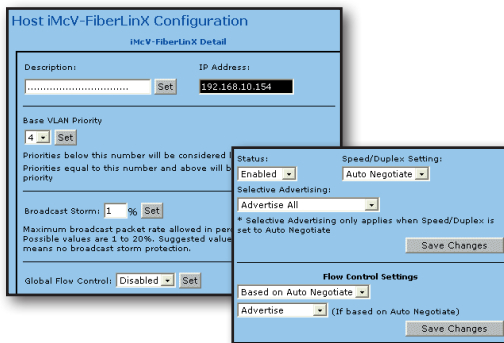
Application Example - Media Conversion with Isolated Management

The diagram below illustrates an iMcV-FiberLinX-II deployment with an IE-MiniFiberLinX-II acting as the CPE at the customer demarcation point. The devices are configured so that management data is isolated from customer data, and does not pass through to the customer LAN, while common media conversion functionality is performed without interruption.



SNMP Management Made Easy

The iMcV-FiberLinX-II features an SNMP management agent for monitoring the status and activity on copper and fiber ports at the remote end. Perform initial setup of the unit and modifications in the field via: iView² SNMP application, Telnet/TFTP, or local serial connection.



- Enable features and change configuration settings from central office
- Remote upgrades via Telnet/TFTP, serial port or iView²
- Monitor both units and the fiber in between
- Receive real-time monitoring and statistics
- Change bandwidth “on-the-fly” up to 100 Mbps in 32 kb increments
- Create a secure management domain to isolate management domain broadcasts from TX Data ports on both units
- User-definable unit/port descriptions and information

Full-Featured iMcV-FiberLinX-II

From a central location, network operators are able to receive real-time device and traffic statistics on the remote CPE or other devices connected to the remote management port, allocate bandwidth, turn services on or off, initiate loopback testing, change customer VLAN settings and adjust QoS policies assigned to different traffic types.

EtherType Control

The iMcV-FiberLinX-II allows for the ability of setting a different EtherType on the extra tag in order to uniquely identify extra-tagged traffic. The available EtherType codes are 8100, 9100, and 9200.

Dedicated Management Port

The EXT MGMT port on the iMcV-FiberLinX-II provides the ability to physically isolate the management domain from the data domain, allowing users to manage edge devices and beyond while protecting the management domain from unwanted access.

Troubleshooting Features

802.3ag/ah OAM, Y.1731, FiberAlert and LinkLoss assist in diagnosing potential problems on fiber networks. Additionally, RMON and IFSTAT statistics are available.

Last Gasp Trap

The Last Gasp Trap is an SNMP feature that allows the module to notify the network when the module has lost power.

Loopback Testing

Loops back all frames arriving on the fiber port (except for the device’s management traffic). When in Loopback mode, FiberLinX-II drops the link on the twisted pair port.

Supports the Unified Management Agent (UMA)

The Unified Management Agent (UMA) allows users to manage up to 40 FiberLinX-II modules installed in an IMC Networks iMediaChassis (and any connected remote modules) with a single IP address from a central location. Additionally, UMA allows users to centrally manage and administer software and firmware upgrades over multiple devices, saving time.

Flexibility

Offering unparalleled flexibility, the iMcV-FiberLinX-II supports multiple fiber types including multi-mode and single-mode as well as single-strand fiber which can effectively double the capacity of installed fiber.

Every iMcV-FiberLinX-II includes the following ports:

- One 10/100 twisted pair (RJ-45) data port
- One additional 10/100 twisted pair port (EXT MGMT) for management (can also function as a serial port), and

Available configurations include:

- One 100 Mbps Fiber data port, or
- One additional 10/100 twisted pair (RJ45) data port, or
- One SFP port (requires one SFP/155-ED Module), or
- Two SFP ports (requires two SFP/155-ED Modules)

The DATA port on the iMcV-iberLinX-II provides Auto Negotiation, automatic crossover detection, full or half duplex and Selective Advertising. Ports also feature Flow Control in Full Duplex Mode (FDX) and Back Pressure Flow Control.

Technical Specifications

General

- Preserves complete end-to-end fiber connection integrity
- Broadcast Storm Protection
- Supports Extra Tagging (Q-in-Q) and selectable EtherTypes
- Bi-directional bandwidth control
- Supports 802.3ag/ah OAM (Operation, Administration & Management)
- ITU-T Y.1731 End-to-end service
- Read/write IEEE 802.1Q VLAN-tags
- QoS: IEEE 802.1p-based packet prioritization (2 queues [high/low] with 8 levels of priority)
- Layer 2 packet switching, store and forward operation
- Forwarding rate: 14,881 pps for 10 Mbps; 148,810 pps for 100 Mbps;
- AutoCross for MDI/MDIX
- Features Auto Negotiation and Selective Advertising
- Supports Half and Full-Duplex operation
- MTU: Supports over-sized (Jumbo) packets up to 1916 bytes per packet

Security

- Password Control
- Multiple Access Levels: User Assigned Accounts & Access Levels

Management

- SNMP V1 and V2c compatible
- Includes GUI-based iView² software for remote management and upgrades
- Monitors far-end (remote) status without a physical presence or separate connection
- IEEE 802.3x Flow Control
- Includes DHCP and TFTP clients
- Supports Telnet
- Includes loopback test modes (MAC swap)
- Includes LinkLoss and FiberAlert
- Supports the Unified Management Agent (UMA)

Ethernet Types Supported

- IEEE 802.3i 10Base-T twisted pair
- IEEE 802.3u 100Base-TX twisted pair
- IEEE 802.3u 100Base-FX or SX fiber

Regulatory Approvals

- FCC Class A • UL/cUL • CE • CSA • CB

Connectors: RJ-45 and ST, SC and SFP

Shipping Weight: 4 oz.

Dimensions: Standard single-slot chassis module

Environmental

- Humidity: 5% - 95% (non-condensing)
- Operating Temperature: +32° to +122° F (0° to +50° C)
- Storage Temperature: 0° to +160° F (-20° to +70° C)

Power Consumption: 850mA at 3.3V

Ordering Information

For each product listed below in the Ordering Information section, the DISTANCE represents an approximate fiber distance based on industry-standard fiber specifications and worst-case (connector loss, aged fiber, splices, etc.) installations. Substantially longer distances can typically be achieved. Actual distances may vary for each installation. For complete power budgets and information on calculating specific distances, visit www.imcnetworks.com/Support/fpblookup.cfm or contact IMC Networks Fiber Consulting Services at 949-465-3000.

PART NUMBER	DESCRIPTION	DISTANCE
iMcV-FiberLinX-II TX/SFP and TX/TX		
856-14500	iMcV-FiberLinX-II, TX/SFP (requires one SFP/155-ED Module) ¹	Various
856-14501	iMcV-FiberLinX-II, TX/SFP (requires two SFP/155-ED Modules) ¹	Various
856-14010	iMcV-FiberLinX-II, TX/TX	100 m
iMcV-FiberLinX-II 10/100 Mbps		
856-14011	iMcV-FiberLinX-II, TX/FX-MM1300-ST	5 km
856-14012	iMcV-FiberLinX-II, TX/FX-MM1300-SC	5 km
856-14015	iMcV-FiberLinX-II, TX/FX-SM1310/PLUS-ST	40 km
856-14016	iMcV-FiberLinX-II, TX/FX-SM1310/PLUS-SC	40 km
856-14017	iMcV-FiberLinX-II, TX/FX-SM1310/LONG-ST	80 km
856-14018	iMcV-FiberLinX-II, TX/FX-SM1310/LONG-SC	80 km
856-14021	iMcV-FiberLinX-II, TX/FX-SM1550/LONG-SC	80 km
856-14022	iMcV-FiberLinX-II, TX/FX-SM1550/XLONG-SC	100 km
iMcV-FiberLinX-II Single-Strand Fiber Module *		
856-14039	iMcV-FiberLinX-II, TX/SSFx-MM1310-SC (1550 rcv)	2 km
856-14040	iMcV-FiberLinX-II, TX/SSFx-MM1550-SC (1310 rcv)	2 km
856-14043	iMcV-FiberLinX-II, TX/SSFx-SM1310-SC (1550 rcv)	20 km
856-14044	iMcV-FiberLinX-II, TX/SSFx-SM1550-SC (1310 rcv)	20 km
856-14045	iMcV-FiberLinX-II, TX/SSFx-SM1310/PLUS-SC (1550 rcv)	40 km
856-14046	iMcV-FiberLinX-II, TX/SSFx-SM1550/PLUS-SC (1310 rcv)	40 km
856-14047	iMcV-FiberLinX-II, TX/SSFx-SM1310/LONG-SC (1550 rcv)	60 km
856-14048	iMcV-FiberLinX-II, TX/SSFx-SM1550/LONG-SC (1310 rcv)	60 km

* These products have single-strand fiber technology. Deploy in pairs, or connect to another compatible single-strand fiber product.

For more information go to: www.imcnetworks.com/products/SSFx.cfm

¹ SFP modules are sold separately. For a complete list of available SFPs, go to: <http://www.imcnetworks.com/Products/product.cfm?family=32>



IMC Networks
Headquarters
 19772 Pauling
 Foothill Ranch, CA 92610
 TEL: 949-465-3000
 FAX: 949-465-3020
sales@imcnetworks.com

IMC Networks
Europe
 Herseltsesteenweg 268
 B-3200 Aarschot, Belgium
 TEL: +32-16-550880
 FAX: +32-16-550888
eurosales@imcnetworks.com

IMC Networks
Eastern US/Latin America
 28050 U.S. Hwy. 19 North, Suite 306
 Clearwater, FL 33761
 TEL: 727-797-0300
 FAX: 727-797-0331
latinsales@imcnetworks.com

IMC Networks
Fiber Consulting Services
 For information call:
 TEL: 949-465-3000
 1-800-624-1070 (US/CAN)
 +32-16-550880 (Europe)
fcs@imcnetworks.com

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