VMIACC-5594
Fiber-Optic Node Auto-Bypass Switch Hub Assembly

- Automatically bypasses attached nodes in a fiber-optic network
- Automatic bypass of an active node occurs when:
  - — Power is lost at attached node
  - — Optical signal is lost from node
  - — Fiber-optic cable breaks between VMIACC-5594's RX cable and the node's TX cable
  - — A series of corrupt data is received
- Automatically regenerates the optical signal, thereby eliminating insertion loss
- Designed for use with VMIC's high-speed, fiber-optic Reflective Memory product (VMIxxxx-5579 family)
- May be remotely operated by control signals on the front panel manual bypass connector
- Up to 64 switches per network (256 nodes maximum)
- Any number of nodes can be bypassed in succession (manually or automatically; mixed in any order)
- No processor overhead or involvement required in the operation unless desired
- Powered by an external power adapter
- 19-inch 1U rack mount enclosure

INTRODUCTION — The VMIACC-5594 is a 19-inch rack mountable enclosure containing circuitry designed to automatically bypass, without signal loss, up to five nodes in a fiber-optic Reflective Memory network. These nodes represent any member of the VMIxxxx-5579 Reflective Memory family. It is intended to permit all operational network memory to remain functional on the active network and to keep the overall network intact automatically, regardless of the loss of one or more attached Reflective Memory nodes, or its fiber-optic signal transmissions. Since each VMIACC-5594 regenerates its fiber-optic signal at each of the fiber-optic connections, there is no measurable signal degradation to the network allowing the operation of all 256 nodes allowed by the VMIxxxx-5579. Signal integrity from each of the connected Reflective Memory nodes is continuously monitored for loss of signal transmission capabilities. If any of the bypass conditions occur, then that particular node is automatically bypassed until the bypass condition(s) is remedied, at which time the subject node is automatically reconnected to the network.

OPERATING MODES — Each VMIACC-5594 will automatically control up to five Reflective Memory nodes consisting of the VMIxxxx-5579 Reflective Memory boards. Network signals are electronically transferred to and from each VMIACC-5594 using fiber-optic cable. Those fiber-optic nodes connected to the VMIACC-5594 automatically receive the network transmissions by way of their fiber-optic link with the VMIACC-5594. The fiber-optic connection will be maintained as long as fiber-optic signal integrity is maintained at each of the four nodes. This signal is evaluated by monitoring four separate conditions at each fiber-optic connection, any of which can terminate the fiber-optic network link to that particular node. These conditions are as follows:

- Power loss at the connected Reflective Memory node
- Loss of an optical signal across the fiber-optic cables

- Interruption of the fiber-optic link between the node's TX cable and the VMIACC-5594's RX cable
- A series of corrupt data received by the VMIACC-5594

Once these bypass conditions are remedied, the node is automatically reconnected to the fiber-optic network.

REFLECTIVE MEMORY PRODUCTS

VMICPCI-5579	270 Mbaud Reflective Memory Board for CompactPCI®
VMIPCI-5579	270 Mbaud Reflective Memory Board for PCI
VMIPMC-5579	270 Mbaud Reflective Memory on PMC

Ordering Options

March 16, 1999 800-805594-000 A		A	B	C	–	D	E	F
VMIACC-5594	–	0	0	0	–			

ABC = 000 (Options reserved for future use)

Cable Specifications

Fiber-Optic Cable - Multimode; 62.5 Micron core.
Transmitters operate at 1,300 nm at 270 Mbaud.
Mating connectors/cable.
Manual control: AMP 747908-2 (or equivalent) (rack mount option only).

Fiber-Optic Cable Assemblies		A	B	C	–	D	E	F
VMICBL-000-F4	–	0			–			

A = Fiber-Optic Connector Type
0 = Ceramic Ferrule SC Connector

BC = Cable Lengths

00 = Not Used	07 = 350 ft (106.7 m)
01 = 5 ft (1.5 m)	08 = 500 ft (152.4 m)
02 = 25 ft (7.6 m)	09 = 1,000 ft (304.8 m)
03 = 50 ft (15.2 m)	10 = 1,500 ft (457.3 m)
04 = 100 ft (30.4 m)	11 = 2,000 ft (609.7 m)
05 = 150 ft (45.7 m)	12 = 2,460 ft (750.0 m)
06 = 200 ft (60.9 m)	13 = 3,280 ft (1,000 m)

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
E-mail: info@vmic.com Web Address: www.vmic.com

FUNCTIONAL CHARACTERISTICS

Operating Wavelength: 1,280 to 1,380 nm

Operational Cable Length: 1 km, maximum

Insertion Loss: Effectively 0.0 dB insertion loss for each Reflective Memory board as the fiber-optic signal's working margin of 10 dB is regenerated each time by the VMIACC-5594

PHYSICAL/ENVIRONMENTAL

Dimensions: 16.7 inches L x 10 inches W x 1.5 inches H with 19 inch x 1.69 inch front panel

Front Panel Connectors: Five fiber-optic duplex SC ports, board reset push button, 15-pin female D-connector for manual bypass

Rear Panel: 5-pin DIN DC power-in plug, ON/OFF switch, 8 A input fuse

Temperature: 0 to +65 ˚C, operating
-40 to +85 ˚C, storage

Cooling: The enclosure is slotted for convection cooling

Relative Humidity: 20 to 80 percent, noncondensing

EXTERNAL POWER ADAPTER

AC Input: Universal input of 90 to 264 VAC

Approved to Universal Safety Standards, Including: UL, CSA, IEC 950, VDE, IEC 380, CE; EMI/RFI meets VDE/FCC Part 15/Level B; Overvoltage and overcurrent protection. The +5 V power cord is typically 4 to 5 feet long. A 6 feet, 7-inch AC power cable is supplied with the unit.

Power Requirement (AC): 40 W

Temperature: 0 to 40 ˚C, operating
-40 to +60 ˚C, storage

TRADEMARKS

The VMIC logo is a registered trademark of VMIC. CompactPCI is a registered trademark of PCI Industrial Computer Manufacturers' Group. Other registered trademarks are the property of their respective owners.

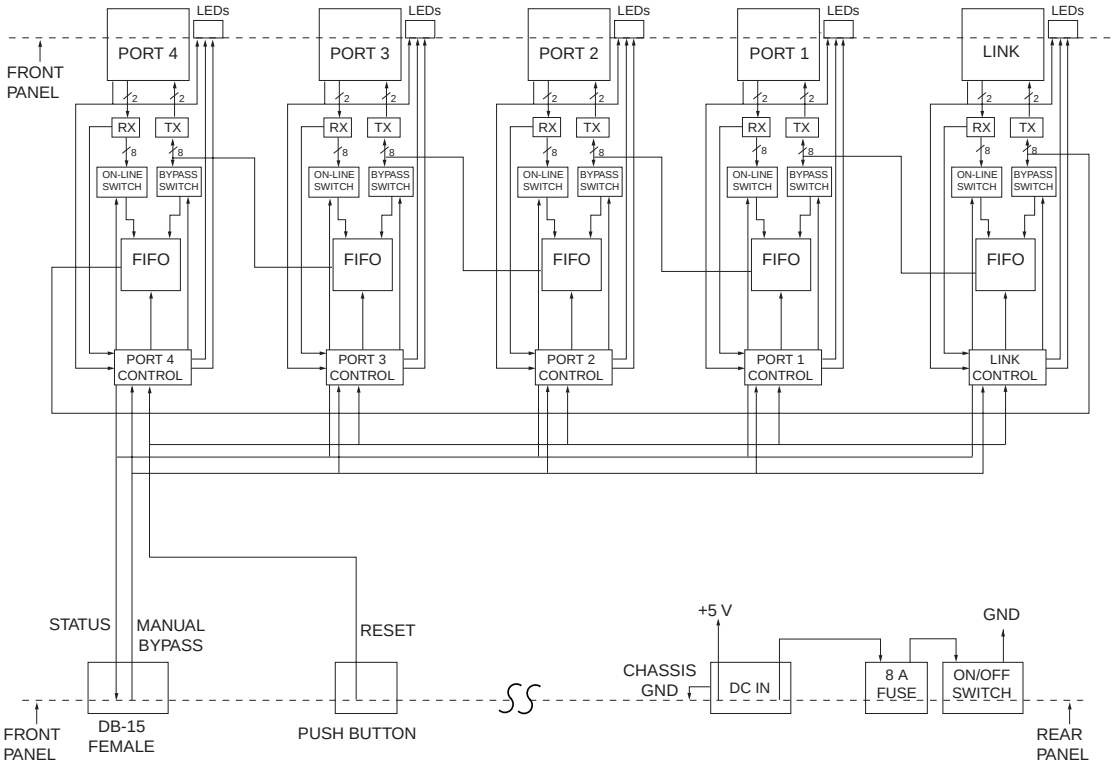

Figure 1. VMIACC-5594 Functional Block Diagram

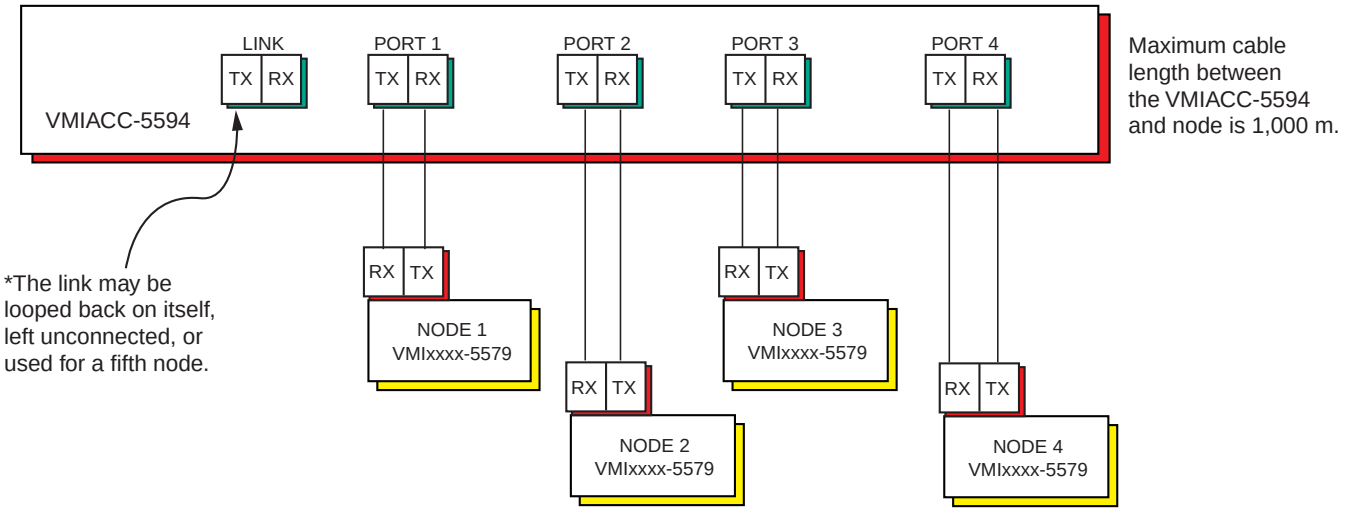

Figure 2. VMIACC-5594 Typical Operating Configuration Four Nodes or Less

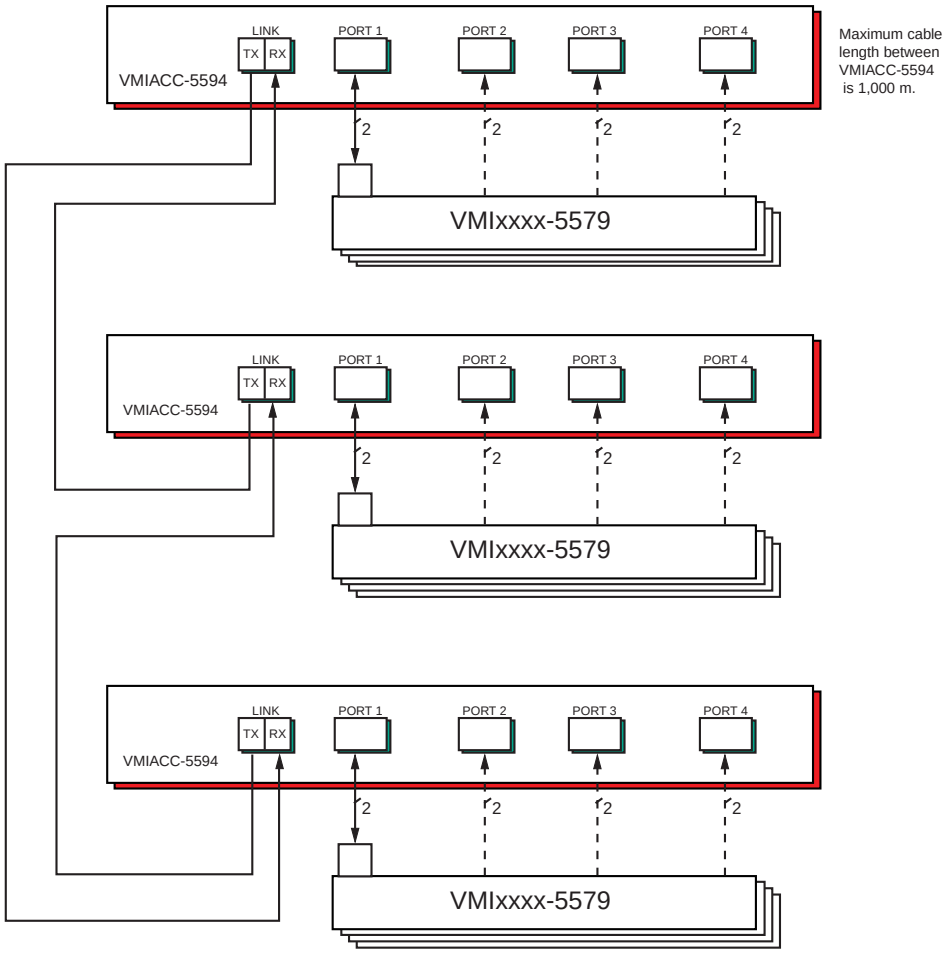

Figure 3. Typical Operating Configuration Using the Link Port to Create Larger Rings