



HUB-5595

2Gb/s Reflective Memory Hub with DIN Rail Mount Enclosure

Features

- For use with GE Intelligent Platforms 5565 Reflective Memory network of products
- Provides eight ports using small form factor pluggable (SFP) transceivers
- Hub assemblies can be cascaded with a maximum of 256 nodes
- Automatically bypasses defective or disconnected nodes in a fiber-optic network
- Automatic bypass can be optionally controlled by the loss of signal or by the loss of sync pattern
- Each port regenerates the serial optical signal, eliminating link losses and reducing jitter
- 10BaseT Ethernet TCP/IP port for remote access and control
- RS232 port for local access and control
- DIN rail mount enclosure uses 21 to 32 VDC power supply
- Dark on Dark option turns off the port's transmitter if the receiver does not detect a signal (available for firmware versions 02.00 and later)

The HUB-5595 is a managed hub designed to operate with the GE Intelligent Platforms 5565 family of Reflective Memory real-time network products. The Reflective Memory hub can automatically bypass ports when it detects a loss of signal or the loss of valid synchronization patterns, allowing the other nodes in the network to remain operational.

Since the optical ports are implemented with small form factor pluggable (SFP) transceivers, only the required ports need to be populated. The hub's SFP transceivers can be a combination of either multimode (short distance) or single-mode (long distance) transceivers. This feature permits a cost saving in small networks as well as system optimization. For larger networks, several hub assemblies can be cascaded, permitting a managed hub array with up to 256 nodes. Each port regenerates the serial optical signal, eliminating the problems with insertion losses and cable attenuation. Signal regeneration also reduces jitter. The RS232 port gives you the ability to monitor and control your Reflective Memory network through a simple PC serial port. The Ethernet port feature allows you to monitor and control the hub from great distances through a local area network (LAN) or via a Web browser.

The HUB-5595 has a DIN rail mountable enclosure. It operates on DC power, from 21VDC to 32VDC, to permit use in many industrial environments.

The hub automatically bypasses ports when the absence of valid synchronization patterns is detected. Three LEDs, adjacent to each port, provide a visual indication of the port status. Additional status indications and modes of operation are available through either the serial port or the Ethernet port.

Status information includes the detection of installed transceivers, the detection of signal (light), the detection of valid synchronization patterns and the port operation speed (2 Gb/s). Control registers allow the channel bypass to be based on the absence of a single valid synchronization pattern or multiple synchronization patterns. A bypass can also be based simply on the loss of a signal (light). In addition, each port can be manually forced either active or bypassed regardless of the status indicators.

An additional control register permits the transmitter of any port to be manually disabled.

Front panel manual switches include a recessed momentary reset switch and a Gang Select switch. The Gang Select switch configures the hub ports as one loop of eight ports or two separate loops of four ports each.



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Specifications

Front Panel Connectors

- 8 SFP transceivers. The SFP receptacles not populated with transceivers contain EMI dust plugs. There is one RJ45 Ethernet connector and one 9-pin female D-subminiature RS232 connector.

Cabling

- Each installed SFP transceiver requires either one Duplex or two Simplex LC-type fiber-optic cables. The Simplex cables are best suited for cascading hubs. The Duplex cables can be used for all other interconnectivity.

MTBF

- Total fit x qty: 2,317,3641
- MTBF (hours): 431,524.76

DIN Rail Mount Assembly Dimensions

- 14.4 inches wide by 5.0 inches deep by 3.2 inches high.

DIN Rail Power Connector

- Power entry screw terminals and panel mount fuse.

DIN Rail Fuse

- 5 A, 125 VDC, 3AG/3AB, fast acting, UL Listed to UL Standard 248-14, IEC 60127-2 standard glass or equivalent (e.g., Littelfuse 314005)

DIN Rail Power Requirements

- 21 to 32 VDC
- 14.2 Watt typical (15 Watt maximum)

DIN Rail Environmental Requirements

- Temperature
 - Operating: 0° to +60° C
 - Storage: -40° to +85° C
- Relative Humidity
 - Operating: 20% to 80%, noncondensing
 - Storage: 20% to 80%, noncondensing

Designed for Regulatory Compliance

- European Union (CE Mark)
 - BS EN55024 (1998 w A1:01 & A2: 03)
 - BS EN55022 (Class A)
 - EN61000-4-2 (ESD)
 - EN61000-4-3 (Radiated Immunity)
 - EN61000-4-4 (EFT)
 - EN61000-4-5 (Surge)
 - EN61000-4-6 (Conducted RF)
- United States FCC Part 15, Subpart B, Section 109, Class A
- Canada ICES-003, Class A
- UL and cUL Class 1 Division 2, Hazardous Locations

Functional Characteristics

- Multimode Port Wavelength: 830 to 860nm
- Multimode Cable Length: 300 m (maximum)
- Single-mode (10km) Port Wavelength: 1,300 to 1,335nm
- Single-mode Cable Length: 10km (maximum)
- Dark on Dark: The Dark on Dark option turns off the board's transmitter if the receiver does not detect a signal.
- Ethernet Controller: 10BaseT interface is compliant with Transmission Control Protocol/Internet Protocol (TCP/IP) standards. Each hub assembly will have a unique MAC address. The hub assembly can operate on either a LAN or a wide area network (WAN).

The HUB-5595 includes a remote user interface available through a standard Ethernet connection. The remote interface is controlled by the use of standard HTML-based Web browsers. The user interface presents status data, such as "loss of signal" and "sync detect" information. Bypass mode, "Dark on Dark" and the ability to force each port on/off or automatic are supported. These settings are retained in NVRAM.

Ordering Information

HUB-5595-308

2Gb/s Reflective Memory Hub with DIN rail enclosure with 21 to 32VDC power input; no single mode pluggable transceivers, 8 multimode pluggable transceivers

HUB-5595-380

2Gb/s Reflective Memory Hub with DIN rail enclosure with 21 to 32VDC power input; eight single mode pluggable transceivers, no multimode pluggable transceivers

Simplex Cable Specifications

Fiber-optic cable – Multimode 62.5 micron core

CBL-000-F5 - A B C

ABC = Cable Lengths

| | |
|-----------------------|---------------------------|
| 001 = 1 ft (0.31 m) | 006 = 80 ft (24.40 m) |
| 002 = 5 ft (1.52 m) | 008 = 150 ft (45.72 m) |
| 003 = 10 ft (3.04 m) | 009 = 200 ft (60.98 m) |
| 004 = 25 ft (7.62 m) | 016 = 1,000 ft (304.30 m) |
| 005 = 50 ft (15.24 m) | |

Duplex Cable Specifications

Fiber-optic cable – Multimode 62.5 micron core

CBL-000-F6 - A B C

ABC = Cable Lengths

| | |
|--------------------|----------------------|
| 001 = 6 ft (2 m) | 007 = 164 ft (50 m) |
| 002 = 10 ft (3 m) | 008 = 230 ft (70 m) |
| 003 = 16 ft (5 m) | 011 = 426 ft (130 m) |
| 004 = 32 ft (10 m) | 012 = 492 ft (150 m) |
| 005 = 66 ft (20 m) | 013 = 557 ft (170 m) |
| 006 = 98 ft (30 m) | |

*Custom lengths available with minimum order quantities

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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