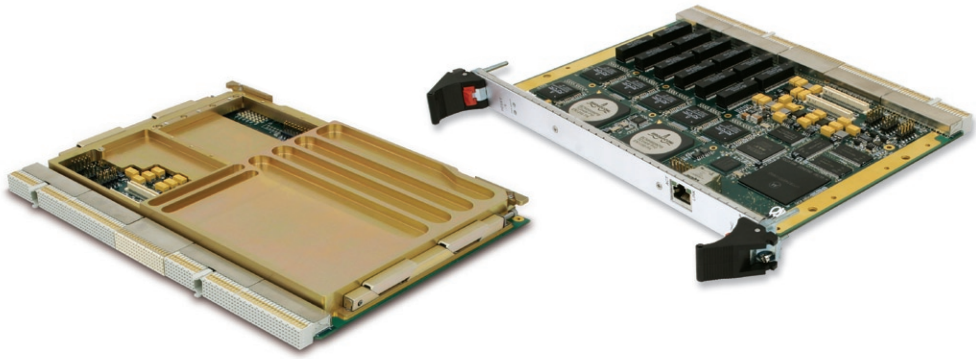
GE Fanuc
Embedded Systems



NETernity™ CP6-GESW24M3

6U CompactPCI 24-Port Layer-2 & Layer-3 Managed Gigabit Ethernet Switch

Features

- 24-port 10/100/1000BaseT Ethernet line speed switching
- Complete Layer-2 & Layer-3 (routing) management
- Functions either as a PICMG 2.16 fabric board or as a PICMG 2.16 node card
- PICMG 2.9 IPMI interface
- Hot swap design
- Management interface is through RS-232 (CLI, Telnet), off-band Ethernet (HTTP, SNMP), or in-band Ethernet (HTTP, SNMP)
- Extensive Built-In Test (BIT)
- Standard air cooled design, ruggedized air cooled and conduction cooled options
- Front panel out of band management interface through RJ-45
- Standalone board, no host CPU intervention required

NETernity™ CP6-GESW24M3 is a 24-port managed Layer-2 and Layer-3 Gigabit Ethernet switch offering cost-effective high-speed network connectivity for both military and commercial applications. This switch is PICMG 2.16 compliant and can function either as a fabric board or a node board. When used as a node board, two ports are used to connect the switch board to dual fabric; the remaining 22 ports are routed to rear panel I/O.

The switch's embedded processor performs all Layer-2 and Layer-3 management functions. It can be performed by the RS-232 serial interface using CLI or through the in-band or off-band (if present) Ethernet interface using Telnet, HTTP, or SNMP protocols.

This switch has an extensive Built-In Test (BIT) feature that provides three distinct types of BIT. A power on BIT is run immediately following a power on reset. While the switch operates, a background BIT that does not interfere with normal switch operation is active. A commanded BIT can be activated through one of the available management interfaces. Commanded BIT is more extensive than background BIT but does disrupt normal switch operation.

CP6-GESW24M3 in the standard configuration is air cooled and supports a commercial operating temperature range. Ruggedized air cooled and conduction cooled versions are also available.

GE FANUC

NETernity™ CP6-GESW24M3 6U CPCI 24-Port Managed Gigabit Ethernet Switch

Specifications

Layer-2 Protocols

- IEEE 802.3ac – VLAN Tagging
- IEEE 802.3ad – Link Aggregation & LACP support
- IEEE 802.1D – Spanning Tree
- IEEE 802.1w – Rapid Spanning Tree
- IEEE 802.1s – Multiple Spanning Tree
- GARP
- GMRP
- IEEE 802.1Q – Virtual VLANs
- GVRP
- IEEE 802.1v Port & Protocol based VLANs
- IEEE 802.1p – Priority
- IEEE 802.1X – Port Authentication
- IEEE 802.3x – Flow Control
- IGMP Snooping
- Port Mirroring
- Broadcast Storm Recovery
- Static MAC filtering
- RFC 768 – UDP
- RFC 783 – TFTP
- RFC 791 – IP
- RFC 792 – ICMP
- RFC 793 – TCP
- RFC 826 – ARP
- RFC 951 – BOOTP
- RFC 1312 – Message Digest Algorithm (MD5)
- RFC 1534 – Interoperation between BOOTP & DHCP
- RFC 2131 – DHCP Client
- RFC 2131 – DHCP Server
- RFC 2132 – DHCP Options & BOOTP Vendor Extensions
- RFC 2865 - RADIUS Client
- RFC 2866 – RADIUS Accounting
- RFC 2868 – RADIUS Attributes for Tunnel Protocol Support
- RFC 2869 – RADIUS Extensions
- RFC869bis – RADIUS support for EAP

Layer-3 Protocols

- RFC 826 – Ethernet ARP
- RFC 894 – Transmission of IP Datagrams over Ethernet Networks
- RFC 896 – Congestion Control in IP/TCP Networks
- RFC 1058 – RIP v1
- RFC 1256 – ICMP Router Discovery Messages
- RFC 1321 – Message Digest Algorithm (MD5)
- RFC 1519 – CIDR
- RFC 1583 – OSPF v2
- RFC 1723 – RIP v2
- RFC 1765 – OSPF Database Overflow
- RFC 1812 – Requirements for IP Version 4 Routers
- RFC 2328 – OSFP v2 w/Equal Cost Multipath support
- RFC 2338 – VRRP – Virtual Router Redundancy Protocol
- RFC 2453 – RIP v2
- RFC 3046 – DHCP/BootP Relay
- RFC 3101 – OSPF with NSSA support
- Route Redistribution across RIP, OSPF & BGP
- VLAN Routing

NETernity™ CP6-GESW24M3 6U CPCI 24-Port Managed Gigabit Ethernet Switch

Switch Management
- RFC 854 – Telnet
- RFC 855 – Telnet option
- SNMP v1, v2, v3
- SMI
- HTML
- Management interfaces: RS-232, off-band Ethernet, in-band Ethernet
- Management interface security: SSL, TLS, SSH
- Exhaustive MIB support

Form Factor
- PICMG 2.16 compliant
- 6U CompactPCI: air cooled, air cooled ruggedized or conduction cooled

Number of Ports: 24

Management Layers: Layer-2 & Layer -3

Built-In Test
- Power on, Background, Commanded

Front Panel I/O
- Optional 1 RJ-45 for out-of-band management

Rear Panel I/O
- 24; 22 if fabric connections are used

Dimensions
- Standard 6U CompactPCI

Weight: 2.0 lbs (N-Style)

Power Requirements
- 40 Watts max; requires +5 VDC @ 7 Amps, 3.3 VDC @ 1.3 Amps, and + 12 VDC @ 100 mA

Shock & Vibration
- Designed to withstand 18 GRMS as specified in MIL-STD-810F

Environmental
- CP6-GESW24M3 air cooled:
  - Operating Temperature: 0° to +55° C
  - VITA 47 class: AC1
- CP6-GESW24M3N (conduction cooled):
  - Operating Temperature: -40° to +85° C
  - VITA 47 class: CC1, CC2, CC3, CC4
- CP6-GESW24M3R (ruggedized air cooled):
  - Operating Temperature: -40° to +70° C
  - VITA 47 class: AC1, AC2, AC3
- Humidity: 5% to 95% non-condensing
- Storage Temp: -40° to +125° C

Note

To assure error-free operation using full-length cable as specified in IEEE 802.3, physical link traces for Ethernet and Gigabit Ethernet signals on all interconnects between the PMC and cable must be routed differentially with 100-ohm differential impedance.

Due to possible signal integrity issues that might be introduced on various models of backplanes, maximum cable lengths which can be supported cannot be guaranteed. This issue should be considered carefully in any design using differential signaling across the backplane.

NETernity™ CP6-GESW24M3 6U CPCI 24-Port Managed Gigabit Ethernet Switch

Ordering Information

CP6-GESW24M3
6U CompactPCI 24-port Layer-2 & Layer-3 managed Gigabit Ethernet switch

CP6-GESW24M3N
6U CompactPCI conduction cooled, conformal coated 24-port Layer-2 & Layer-3 managed Gigabit Ethernet switch

CP6-GESW24M3R
6U CompactPCI ruggedized, air cooled, conformal coated 24-port Layer-2 & Layer-3 managed Gigabit Ethernet switch

CP6-GESW-TM24
6U CompactPCI rear-panel transition module with 24 RJ-45 ports for CP6-GESW24M3x

About GE Fanuc Embedded Systems

GE Fanuc Embedded Systems is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Embedded Systems has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanucembedded.com.

GE Fanuc Embedded Systems Information Centers

Americas:
1 800 322 3616 or 1 256 880 0444

Asia Pacific:
86 10 6561 1561

Europe, Middle East and Africa:
+49 821 5034-0

Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:

www.gefanucembedded.com

05.07 GFA-823