NETernity™ RM922RC
IPv6 Enabled, 6U VME 24-Port Fully Managed Layer-2/3+ Gigabit Ethernet Switch with Rear I/O and OpenWare™ Switch Management Environment

Features
- 6U VME form factor
- 24 port Gigabit Ethernet switch
- Rear I/O
- One 10/100BaseT Ethernet management port and one serial console port accessed from either front or rear I/O
- Hardware enabled IPv6 and IPv4 support
- Fully managed solution
- L-2 and L-3 switching at wire-speed
- L-3 protocol support including OSPF, RIP and VRRP
- OpenWare™ Switch Management Environment
- Allows up to 4096 VLANS
- RoHS compliant
- Onboard management processor
- Supports copper media

NETernity™ RM922RC is a Fully Managed Layer-2/3+ Ethernet embedded switch offering full IPv6 wire speed switching and routing, and full management capabilities with 24 rear I/O Gigabit Ethernet ports.

Designed to meet the needs of a wide range of challenging networking and switching applications, the 6U VME form factor RM922RC facilitates communications within a chassis as well as supporting the network outside the chassis. This switch is a single-slot solution that supports 24 GbE ports through rear I/O plus one 10/100BaseT Ethernet management port and one serial console port through either the front panel or rear panel. It is RoHS compliant. Conformal coating is optional.

RM922RC delivers full wire-speed Gigabit Ethernet switching that can be fully managed and easily deployed. Proven, high-performance architecture and a multi-layer switching fabric provide a rich feature set, broad functionality, scalability, and product life longevity. Based on a PowerPC® management processor and a leading high-performance switch fabric, the RM922RC has integrated Layer-2/3 switching capabilities as well as the ability to support higher Layer 4-7 functionality when required.

IPv6 brings improved security, reliability and flexibility, enhanced support for mobile computing devices, and larger address space for global reach and scalability to applications. In the near future, support for IPv6 will be required for Military and Defense customers, and because this switch also supports IPv4 it offers a path forward which protects existing investments.

Key Specifications
- IEEE 802.3-2005
- IEEE 802.3ad (Link aggregation)
- IEEE 802.1p (Prioritization)
- IEEE 802.1Q (VLAN tagging)
- IEEE 802.1D (Spanning Tree Protocol)
- RoHS 2002/95/EC compliant
**Switch Fabric and OpenWare Protocol Features**

- Supports both Layer-2 (L2) and Layer 3 (L3) packet switching. Packets are categorized by the MAC addresses for L2 switching and by IP addresses for L3 switching.
- QoS prioritization (IEEE 802.1P) permits classifying packet priorities which is beneficial in delay-sensitive applications.
- Packet filtering to prevent forwarding of certain packets; filtering capabilities are available in Layers 2 - 7.
- Link aggregation (IEEE 802.3ad) links a group of physical ports creating a single logical port to provide higher bandwidth and increase redundancy between switches. The fabric is capable of full wire speed switching, allowing a maximum aggregate throughput that is the sum of all aggregated ports.
- Virtual LANs (VLANs) (IEEE 802.1q) defines a forwarding (switching) domain; supports up to 4096 VLANs.
- Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1Q-2005) enables automatic and rapid determination of an optimal loop-free topology from an arbitrary network of enabled switches with duplicate and redundant connections; supports rapid reconfiguration in the event of a link or switch failure; backward compatible with RSTP and STP.
- Broadcast storm control screens excessive traffic and controls the rate limit for each port and prevents flooding in the network.
- Port mirroring eases debug and packet pattern study. This is a method to observe on one port traffic that is flowing on another port.

**L-3 IP Routing Protocols**

- OSPF (Open Shortest Path First), a flexible link state protocol, tests the state of links and transmits that information throughout the system to establish the shortest path to the destination. This protocol also load balances by distributing traffic equally among routes. Messages may also be routed based on the type of service so that critical messages can transverse the most reliable routes.
- RIP (Routing Information Protocol), an easy-to-implement, dynamic routing protocol, allows routers to exchange information for computing routes through networks. Routing tables are used to store destination and metric pairs.
- VRRP (Virtual Router Redundancy Protocol) eliminates single points of failure on a network. Using an election protocol to provide failover for forwarding packets, VRRP provides a higher availability default path.

**OpenWare Switch Management Environment**

OpenWare™ is available exclusively on selected NETernity fully-managed Layer-2/3 Ethernet switches. Comprehensive and powerful, this switch management environment provides integrated management services including configuration, monitoring, switching control, addressing, routing and all supported protocols. Configuration and monitoring functions are accessible from a serial console or via a network. Supported access methods include Telnet, SSH and SNMP.

**OpenWare features**

- IPv6 support for improved security, reliability and flexibility, enhanced support for mobile computing devices, and larger address space for global reach and scalability. IPv6 is also supported offering a path forward which protects existing investments.
- Easy deployment and management that results from the wide range of protocols supported. These protocols are defined by RFCs, and cover a range of operations: Switching, VLANs, Aggregation, Multicast, Filtering, Routing, QoS, and Management. NETernity switches with OpenWare offer broad functionality and support communications within the chassis as well as supporting the network outside of the chassis.
- MSTP, the latest version of the Spanning Tree protocol, support allowing use of the latest technology to create efficient, loop-free networks by combining multiple VLANs. In the event of link or switch failure, the network can be rapidly reconfigured minimizing down time. MSTP is backward compatible with RSTP and STP.
- Highly efficient bandwidth utilization. Multicast with IGMP Snooping Querier and MLD Snooping Querier ensures that frames are only forwarded on those ports having nodes that have joined the group.
- Linux® based software allows faster implementation and easy updates to firmware as part of standard releases or when customization is required. Customizations may be leveraged across all NETernity/OpenWare platforms. Standard Linux commands may be used as well as open source protocol and routing capabilities.
- A familiar Linux command line interface and remote Telnet user interface support allows users to select how they interact with the switch.
- Using a combination of open source protocol software and OpenWare allows us in certain instances to provide full software source to customers. Additionally, full control over the software environments permits customization for specific requirements such as customer-specific handling of failover conditions.

**Why choose GE Intelligent Platforms NETernity Ethernet Switches?**

GE Fanuc Intelligent Platforms has a wealth of expertise in Military, Commercial and Telecommunications markets. This makes us unique in the embedded computing industry – we understand application requirements and we know communication protocols.

Our line of NETernity Ethernet Switches is unmatched. Not only is our product selection extensive, but the switches themselves provide maximum flexibility, performance, and density.

NETernity Ethernet Switches are available in a variety of form factors, interfaces, levels of ruggedness, port configurations, media support, and types of management.

Fully Managed switches are Layer-2/3+ switches with control and monitoring capabilities via local or remote access. Managed switches are Layer-2 switches with control and monitoring capabilities via local or remote access. Unmanaged switches are Layer-2 switches with no operator interfacing and are designed for quick deployment in well defined applications.

Call GE Intelligent Platforms’ knowledgeable sales team for help in selecting the switch that best meets your applications requirements.
NETernity™ RM922RC Fully Managed Layer-2/3+ Gigabit Ethernet Switch

Specifications

**Physical Interface**
- All Gigabit Ethernet ports routed to rear
- 10/100BaseT management port and serial console port may be routed either through the front panel or rear I/O
- Gigabit Ethernet ports support 10BaseT, 100BaseTX and 1000BaseT
- Copper media
- RJ45 connectors

**IPv6**
- IPv6 addressing and specification (RFC 2460)
- Neighbor discovery for IPv6 (RFC 2461)
- Stateless address auto configuration (RFC 2462)
- ICMPv6 (RFC 2463)
- IPv6 over Ethernet (RFC 2464)

**Dimensions**
- 6U (4HP) single slot VME Eurocard form factor
- Height: 9.2 in. (233.4 mm)
- Depth: 6.3 in. (160 mm)
- Thickness: 0.8 in. (20.3 mm) single slot
- Weight: 1.47 lbs (0.67 Kg) 24-port version

**Power Requirements**
- Total: 46 watts max
- +3.3V @ 27 watts max
- +5V @ 19 watts max

**Environmental**
- Temperature
  - Operating: 0° to +60 °C
  - Storage: -40° to +85 °C
- Relative Humidity
  - Operating: 5% to 95%, noncondensing
  - Storage: 5% to 95%, noncondensing

**MTBF**
- 290,000 hours per FITS

**Regulatory Compliance testing planned:**
- European Union (CE Mark)
  - EN50024
  - EN50022 Radiated Emissions Class A
  - EN50022 Conducted Emissions Class A
  - EN61000-4-2 (ESD)
  - EN61000-4-3 (Radiated Immunity)
  - EN61000-4-4 (EFT)
  - EN61000-4-5 (Surge)
  - EN61000-4-6 (Conducted RF)
  - EN61000-4-8 (Power Frequency Magnetic Fields)
- United States
  - FCC Part15, Class A
  - IECES-003, Class A
- Safety:
  - UL60950-1
  - CSA C22.2, No. 60950-1-03
  - EN60950-1 (Low Voltage)

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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