

PACSystems* RX3i

IC695ETM001

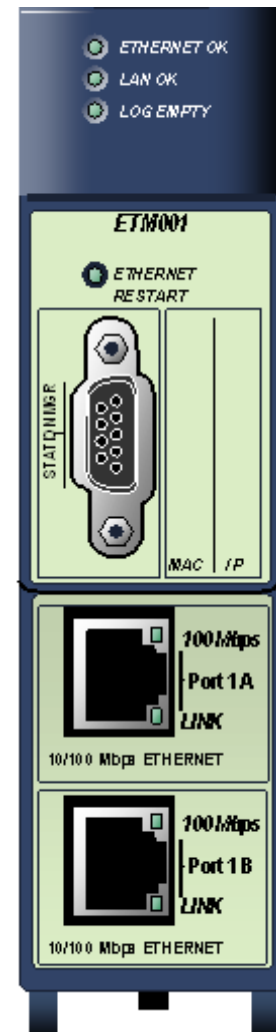
GFK-2332J
September 2011

Ethernet Interface Module

The Ethernet Interface Module, IC695ETM001, connects a PACSystems* RX3i controller to an Ethernet network. It enables the RX3i controller to communicate with other PACSystems equipment and with Series 90 and VersaMax controllers. The Ethernet Interface provides TCP/IP communications with other control systems, host computers running the Host Communications Toolkit or programmer software, and computers running the TCP/IP version of the programming software. These communications use the SRTP, Modbus TCP, and Ethernet Global Data (EGD) protocols over a four-layer TCP/IP (Internet) stack.

Features of the RX3i Ethernet Interface include:

- Full programming and configuration services. Firmware upgrades from the RX3i CPU using the WinLoader software utility, which is supplied with updates to the Ethernet Interface software.
- Periodic data exchange using Ethernet Global Data (EGD).
- EGD Commands to read and write controller and EGD exchange memory over the network.
- TCP/IP communication services using SRTP.
- Support for SRTP Channels, Modbus/TCP Server, and Modbus/TCP Client
- Built-in Station Manager for on-line supervisory access to the Ethernet Interface. Dedicated Station Manager port.
- Two auto-sensing 10Base T / 100Base TX RJ-45 shielded twisted-pair Ethernet ports for direct connection to either a 10BaseT or 100BaseTX IEEE 802.3 network without an external transceiver. There is only one interface to the network (only one Ethernet MAC address and only one IP address).
- Internal network switch with Auto negotiate, Sense, Speed, and crossover detection.
- Recessed Ethernet Restart pushbutton to manually restart the Ethernet firmware without power cycling the system.
- LEDs: Ethernet OK, LAN OK, Log Empty, individual port activity and speed LEDs.
- Configurable stand-alone Redundant IP addressing, which allows a single IP address to be assigned to corresponding Ethernet modules in two different controllers. The Redundant IP address is configured in addition to the normal unique IP address of each Ethernet module. Under application logic control, only the Ethernet module in the active unit can use the Redundant IP address.
- Time synchronization to SNTP Time Server on Ethernet network (when used with Release 5.00 or later CPU module).



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Specifications

Ethernet processor speed	200 MHz
Connectors	- Station Manager (RS-232) Port: 9-pin female D-connector - Two 10BaseT / 100BaseTX Ports: 8-pin female shielded RJ-45
LAN	IEEE 802.2 Logical Link Control Class I IEEE 802.3 CSMA/CD Medium Access Control 10/100 Mbps
Number of IP addresses	One
Number of Ethernet Port Connectors	Two, both are 10BaseT / 100BaseTX with auto-sensing RJ-45 connection.
Embedded Ethernet Switch	Yes – Allows daisy chaining of Ethernet nodes.
Serial Port	Station Manager Port: RS-232 DCE, 1200 - 115200 bps.

Refer to the PACSystems RX3i System Manual, GFK-2314, for product standards and general specifications.

For additional information about the Ethernet Interface Module, refer to the following publications:

- *TCP/IP Ethernet Communications for PACSystems*, GFK-2224
- *PACSystems TCP/IP Communications, Station Manager Manual*, GFK-2225

Release History

Catalog Number	Firmware Version	Date
IC695ETM001-EK	6.10	Sep. 2011
IC695ETM001-EJ	6.00	Sep. 2009
IC695ETM001-EH	5.51	Jan. 2009
IC695ETM001-DG	5.50	May 2008
IC695ETM001-DF	5.01	Dec. 2007
IC695ETM001-DE	5.00	Aug. 2007
IC695ETM001-CD	3.81	May 2006
IC695ETM001-CC	3.60	Nov. 2005
IC695ETM001-AB	3.00	Apr. 2005
IC695ETM001-AA	2.51 (initial release)	Aug 2004

Important Product Information for this Release

Firmware release 6.10 resolves several issues that caused the ETM001 to lose communication with remote devices. These failures were indicated by the Ethernet OK LED displaying the blink code 2-5. For details, see “Problems Resolved by Firmware Release 6.10” on page 4.

Updates

The IC695ETM001 is field upgradeable using the firmware upgrade utility. To upgrade an existing ETM001 to firmware version 6.10, you will need the upgrade kit 44A753032-G09, which can be downloaded from

Functional Compatibility

Subject	Description
Hot Swap requires CPU firmware 2.51	Do not remove or insert the IC695ETM001 while powered unless the CPU is running firmware release 2.51 or higher. This firmware is available in upgrade kit 44A7522290-G01.
SRTP and EGD Performance Differs from Series 90*-30	SRTP and EGD performance in the RX3i differs slightly from the Series 90-30. Each RX3i Ethernet Interface supports a greater number of SRTP connections and EGD exchanges. The RX3i currently has several SRTP and EGD operational restrictions compared to the Series 90-30. When migrating Series 90-30 Ethernet applications to the RX3i, please carefully read the <i>Ethernet Operational Notes</i> .
Series 90-30 LAN Interface Module (IC693CMM321) Not Supported by RX3i	The Series 90-30 LAN Interface Module (IC693CMM321) is not supported by the RX3i and should not be placed in an RX3i rack. (Series 90-30 CPUs with embedded LAN Interface, IC693CPU364 and IC693CPU374, like any Series 90-30 CPU, should not be placed in an RX3i rack.)
Modbus/TCP Support	Release 3.60 of the PACSystems Ethernet Interface adds Modbus/TCP Client Channels capability. It supports Modbus Conformance Class 0 function codes 3 and 16, Conformance Class 1 function codes 1, 2, 4, 5, 6, and 7, and Conformance Class 2 function codes 15, 22, 23, and 24. PACSystems Ethernet supports 32 client connections shared between all client protocols. For example, if 16 client connections are used for SRTP channels, there are 16 client connections available for Modbus/TCP channels. Any given channel can be assigned to only one protocol at a time.
Programmer Version Requirements	Proficy* Machine Edition Logic Developer 5.8 or later must be used to perform Run-mode Store of EGD exchanges. Proficy Machine Edition Logic Developer 5.7 or later must be used for Release 5.00 new features. Proficy Machine Edition Logic Developer 5.5 Service Pack 2 or later must be used for Release 4.00 new features. Proficy Machine Edition Logic Developer 5.0 Service Pack 3 or later must be used to program the RX3i CPU for Modbus/TCP Server operation.
CIMPLICITY* Plant Edition Version Requirements	CIMPLICITY Plant Edition 6.1 Service Pack 1a with Update 040204_s90tcp_6101 or Service Pack 2 or later must be used for Ethernet communications with PACSystems Ethernet Interfaces.