PACSystems* RX7i

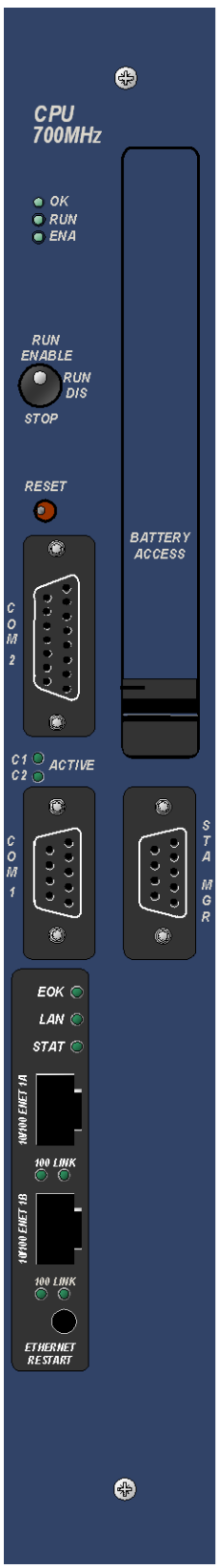
IC698CPE010/CPE020

Central Processing Unit

GFK-2244AG
February 2012

The RX7i CPUs are programmed and configured by the programming software to perform real time control of machines, processes, and material handling systems. The CPU communicates with I/O and smart option modules over a rack-mounted backplane using the VME64 Standard format. It communicates with the programmer and HMI devices via the embedded Ethernet ports or a serial port using SNP Slave protocol.

CPE010: 300MHz Celeron microprocessor
CPE020: 700MHz Pentium III microprocessor



Features

- Contains 10 Mbytes of battery-backed user memory and 10 Mbytes of non-volatile flash user memory.
- Provides access to bulk memory via reference table %W.
- Configurable data and program memory.
- Programming in Ladder Diagram, C, Structured Text, and Function Block Diagram.
- Supports auto-located Symbolic Variables that can use any amount of user memory.
- Reference table sizes include 32Kbits for discrete %I and %Q and up to 32K words each for analog %AI and %AQ.
- Supports Series 90-70 discrete and analog I/O, communications, and other modules. For a list of modules supported, refer to the *PACSystems RX7i Installation Manual,* GFK-2223.
- Supports all VME modules supported by Series 90-70.
- Supports RX7i data monitoring over the web. Allows a combined total of up to 16 web server and FTP connections.
- Supports up to 512 program blocks. Maximum size for a block is 128KB.
- Test Edit mode allows you to easily test modifications to a running program.
- Bit-in-word referencing.
- Battery-backed calendar clock.
- In-system upgradeable firmware.
- Three isolated serial ports: an RS-485 serial port, an RS-232 serial port, and an RS-232 Ethernet station manager serial port.
- The embedded Ethernet interface provides:
  - Data exchange using Ethernet Global Data (EGD)
  - TCP/IP communication services using SRTP
  - Support for SRTP Channels, Modbus/TCP Server, and Modbus/TCP Client
  - Full programming and configuration services
  - Comprehensive station management and diagnostic tools
  - Two full-duplex 10BaseT/100BaseT/TX (RJ-45 Connector) ports with an internal network switch providing auto-negotiated network speed, duplex mode, and crossover detection.
  - User-configurable 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

For environmental specifications and compliance to standards (for example, FCC or European Union Directives), refer to Appendix A of the *PACSystems RX7i Installation Manual,* GFK-2223.

Battery Memory retention	For details on battery operation, refer to the applicable battery module datasheet (page 25).
Program storage	Up to 10 Mbytes of battery-backed RAM 10 Mbytes of non-volatile flash user memory
Power requirements CPE010 CPE020	 +5 VDC: 3.2 Amps nominal +12 VDC: 0.042 Amps nominal -12 VDC: 0.008 Amps nominal +5 VDC: 4.5 Amps nominal +12 VDC: 0.042 Amps nominal -12 VDC: 0.008 Amps nominal
Operating temperature	CPE010: 0 to 50°C (32°F to 122°F) 0 to 60°C (32°F to 140°F) with fan tray CPE020: 0 to 60°C (32°F to 140°F) with fan tray, required
Floating point	Yes
Boolean execution speed, typical CPE010 CPE020	 0.33ms per 1000 Boolean contacts/coils 0.14ms per 1000 Boolean contacts/coils
Time of Day Clock accuracy	Maximum of 9 seconds per day
Elapsed Time Clock (internal timing) accuracy	0.01% maximum
Embedded communications	RS-232, RS-485, Ethernet interface
Ethernet Ports	Embedded auto-sensing 10/100 Mbps half/full duplex Ethernet interface
Serial protocols supported	Modbus RTU Slave, SNP, Serial I/O
VME Compatibility	System designed to support the VME64 standard ANSI/VITA 1
Program blocks	Up to 512 program blocks. Maximum size for a block is 128KB.
Memory	*%I and %Q:* 32Kbits for discrete *%AI and %AQ:* configurable up to 32Kwords *%W:* configurable up the maximum available user RAM Symbolic: configurable up to 10Mbytes
Ethernet Interface Specifications	
Web-based data monitoring	Up to 16 web server and FTP connections (combined)
Ethernet data rate	10Mb/sec and 100Mb/sec
Physical interface	10BaseT RJ45
WinLoader support	Yes
Number of EGD configuration-based pages	255
Time synchronization	SNTP
Selective consumption of EGD	Yes
Load EGD configuration from CPU to programmer	Yes
Remote Station Manager over UDP	Yes
Local Station Manager (RS-232)	Dedicated RS-232 port
Configurable Advanced User Parameters	Yes

Release History

Revision	Date	CPU Version	Ethernet Version
-JY	Feb. 12	6.75	6.12
-JX	Nov. 11	6.75	6.10
-JW	Jul. 11	6.71	6.10
-JV	Mar. 10	6.01	6.00
-JU	Sep. 09	6.00	6.00
-JT	Dec. 08	5.50	5.51
-JS	May 08	5.50	5.50
-JR	Dec. 07	5.00	5.01
-JQ	Oct. 07	5.00	5.00
-HQ	Aug. 07	5.00	5.00
-HP	Jul. 07	4.02	4.00
-GP	Dec. 06	4.02	4.00
-GN	Sep. 06	4.00	4.00
-GM	May 06	3.50	3.81
-FL	Nov. 05	3.50	3.60
-EK	Sep. 05	3.50	3.00

Revision	Date	CPU Version	Ethernet Version
-EJ	Jul. 05	3.11	3.00
-DH	Apr. 05	3.10	3.00
-DG	Apr. 05	3.00	3.00
-DF	Feb. 05	2.58	2.57
-DE	Nov. 04	2.57	2.57
-DE	Sep. 04	2.56	2.56
-CE	Sep. 04	2.56	2.56
-CD	Aug. 04	1.63	1.60
-CD	Jul. 04	1.62	1.60
-CD	Jun. 04	1.61	1.61
-CC	Nov. 04	1.60	1.60
-BC	Sep. 04	1.60	1.60
-BB	Jun. 04	1.50	1.50
-BA	Jun. 04	1.00	1.00
-AA	Jun. 03	1.00	1.00

Important Product Information for this Release

CPU firmware Release 6.75 adds support for the VME IO modules, VME-1182A-02001x, VME-3122A-40001x and VME-3125A-20001x. For details, see “New CPU Features and Enhancements in Release 6.75” on page 5.

For problems resolved, see “CPU Problems Resolved in Release 6.75” on page 5.

Ethernet firmware release 6.12 disables several unnecessary and non-published services in the firmware that otherwise could result in disruption of system operation and/or data corruption. GE Intelligent Platforms ***strongly recommend***s that you update to Ethernet firmware version 6.12 to protect your system from these issues.

GE Intelligent Platforms recommends disabling FTP server and/or Web server connections if not used. For details, see page 21.

Updates

The CPE010 and CPE020 can be field upgraded to CPU version 6.75 and Ethernet version 6.12 using the Winloader firmware upgrade utility and one of the following upgrade kits.

An IC698CPE010 can be field-upgraded to an IC698CPE010-xX using firmware upgrade kit 44A752252-G25.

An IC698CPE020 can be field-upgraded to an IC698CPE020-xX using firmware upgrade kit 44A752255-G25.

Firmware upgrade kits can be downloaded from http://www.ge-ip.com/support.

The hardware is not field upgradeable.

Subject	Description
SRTP connections remain open after IP address changed	The Ethernet Interface does not terminate all open SRTP connections before changing its IP address. Once the local IP address has changed, any existing open TCP connections are unable to normally terminate. This can leave SRTP connections open until their underlying TCP connections time out. If quicker recovery of the SRTP connection is needed, modify the "wkal_idle" Advanced User Parameter to reduce the TCP keep alive timer down to the desired maximum time for holding open the broken connection. Refer to *TCP/IP Ethernet Communications for PACSystems,* GFK-2224, for details.
CPU time used for produced EGD Timestamps	Changing the Ethernet interface time via the CHTIME command does not affect the timestamp value within EGD exchanges produced from this Ethernet interface. The EGD timestamp value reflects the current CPU time. In Series 90-70 products and the Series 90-30 CPU364, EGD timestamps are taken from the Ethernet interface and do reflect CHTIME modifications.
ENIU stale data during run mode store of EGD	In a large PPS system running 20 ENIUs, when a Run-mode Store is performed that deletes the EGD exchanges for 10 of the ENIUs, the other ENIUs will see the status on their exchanges indicate consumption timeouts during the RMS. At the completion of the RMS, the exchanges operate normally.
Internet Explorer 8 may require setting changes when using Web pages on RX7i	It may be required to disable the pop-up blocker when using Internet Explorer 8 with the Web pages supplied with the RX7i Ethernet firmware. To disable the pop-up blocker, in the Internet Explorer toolbar, select Tools->Pop-up Blocker->Turn Off Pop-up Blocker **Note:** If you have the Google toolbar installed, the Google pop-up blocker may also have to be disabled. It may also be required to disable configuration scripts when using Internet Explorer 8. In the Toolbar select Internet Options. In the Internet Options dialog box click the "Connections" tab, click the "LAN settings" button, and make sure the box beside "Automatically detect settings" has a check in it. If it does not, click the box next to "Automatically detect settings" to enable this setting.

Ordering Information

Description	Catalog Number
RX7i VME 300Mhz CPU	IC698CPE010
RX7i VME 700Mhz CPU	IC698CPE020
Smart Coin Cell Battery Pack	IC698ACC701
Auxiliary Smart Battery Module (optional)	IC695ACC302
Rechargeable Battery and Charger	IC690RBT001 IC690CRG001
Rack Fan Assembly, 120VAC Rack Fan Assembly, 240VAC Rack Fan Assembly, 24VDC	IC697ACC721 IC697ACC724 IC697ACC744
RX7i Power Supply, 85 to 264 VAC at 47 to 63 Hz Input, 100 watt output	IC698PSA100
RX7i Power Supply, 85 to 264 VAC at 47 to 63 Hz Input, 350 watt output	IC698PSA350
RX7i Power Supply: 24 VDC Input, 300 watt output	IC698PSD300
[Optional] RS-232 cable; also Station Manager cable for Ethernet interface	IC200CBL001

Note: For Conformal Coat option, please consult the factory for price and availability.