MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

GE PACSYSTEMS RX3I

IC695CPE310-BHAE

CPE310 PROGRAMMABLE CONTROLLER

Used with the applicable PACSystems RX3i controllers configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: GE official manufacturer documentation

IMPORTANT PRODUCT INFORMATION
GFK-3248K
Mar 2025

PACSystems™ RX3i CPU IC695CPE302-Bxxx, IC695CPE305-Bxxx, and IC695CPE310-Bxxx

IC695CPE302-BHAE[1] [2]
IC695CPE305-BHAE[1] [2]
IC695CPE310-BHAE[1] [2]
Firmware Version 11.01

[1] *Includes conformal coat and low temperature module variants, if available.*

[2] *The last two characters of the catalog number suffix may not increment =with every firmware release beginning with IC695CPE302-BAAA, IC695CPE305-BAAA 10.60 and IC695CPE310-BAAA 10.70.*

Introduction

Important

This document is specific to CPE302-Bxxx, CPE305-Bxxx, CPE310-Bxxx, and later hardware platforms. For details about the CPE302-Axxx, CPE305-Axxx, and CPE310-Axxx, it is recommended to refer to the latest version of the document GFK-2714.

The PACSystems™ RX3i IC695CPE302-Bxxx / IC695CPE305-Bxxx / IC695CPE310-Bxxx can be used to perform real-time control of machines, processes, and material handling systems. The CPU communicates with the programmer or HMI/SCADA via the Ethernet ports or a serial port. It communicates with I/O and Intelligent Option modules over a dual PCI/Serial backplane. It can also communicate natively with remote I/Os over EGD Class1.

- Contains 2 MB of user memory and 2 MB of non-volatile flash user memory (CPE302-Bxxx).
- Contains 6 MB of user memory and 6 MB of non-volatile flash user memory (CPE305-Bxxx).
- Contains 13 MB of user memory and 13 MB of non-volatile flash user memory (CPE310-Bxxx).
- Supports battery-less retention of user memory when configured with an Energy Pack, IC695ACC400, to power the CPU long enough to write user memory to non-volatile storage (NVS) on system power loss.
- Supports programming in Ladder Diagrams, Structured Text, Function Block Diagram, and C.
- Supports up to 512 program blocks (The maximum size for a block is 128 KB).
- Supports auto-located Symbolic Variables that can use any amount of user memory.
- Equipped with reference table sizes to include 32 kbits for discrete %I and %Q and up to 32K words each for analog %AI and %AQ.
- Supports OPC UA communications with encrypted connections.
- Supports PME's GUI management interface for OPC UA configuration. integration (start, stop, restart, clear, and provisioning mode).
- Supports the PAC Security Center available for certificate trust management of clients and servers.
- Supports most Series 90-30 modules and expansion racks. For supported I/O, Communications, Motion, and Intelligent modules refer to the latest version of *PACSystems RX3i Hardware and Installation Manual*, GFK-2314.
- Supports the ability to set the IP address through the serial port.
- The embedded Ethernet interface provides two Gigabit Ethernet Ports.
- Supports up to 32 simultaneous SRTP Server connections, up to 16 simultaneous Modbus/TCP Server connections, and up to 16 simultaneous communications channels of either SRTP Channels or Modbus/TCP Client channels. For details, refer to the latest version of *PACSystems RX3i and RSTi-EP TCP/IP Ethernet Communications User Manual*, GFK-2224.
- Supports Ethernet Global Data, Class 1.
- Supports HART® Pass-Through.
- Time synchronization to SNTP Time Server on Ethernet network when used with a rack-based Ethernet module (IC695ETM001) version 5.0 or later.
- Enhanced ability to display the serial number and date code in PME's **Device Information Details**.
- Ability to transfer applications to and from USB 2.0 A type removable data storage devices, or **RDSD**s.

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Functional Compatibility

Compatibility Subject	Description	
Programmer Version Requirements	**Feature**	**Minimum Version of PME Required**
	Configuring MRP Ring Domain UUID on IC695PNC001-Bxxx	PAC Machine Edition 10.6 (or later).
	PROFINET Process Alarms	PAC Machine Edition 10.6 (or later).
	Run Mode Store (RMS) to User Flash and %S53, %S54, & %S55	PACSystems RX3i CPU firmware revision 10.91 (or later). PAC Machine Edition 10.2 (or later) to configure Run Mode Store (RMS) to User Flash and view the new S bits.
	IC695CMM002/CMM004 Serial Module Support in the IC695PNS001-Bxxx/PNS101 and IC695CEP001 PROFINET Scanners	PAC Machine Edition 10.00. (or later)
	Legacy Client/Server Protocol Memory Access	PAC Machine Edition 10.00. (or later)
	IC695PSD180 24VDC 80W Power Supply	PAC Machine Edition 10.00. (or later)
	OPC UA Server Logging	PAC Machine Edition 9.80 SIM 5. (or later)
	OPC UA Management and Security Provisioning	9.50 SIM 16
	CPE302 Configuration	9.50 SIM 7
	SNTP Client Configuration OPC UA Server Configuration	9.00 SIM 10 or 9.50 SIM 2
	Extended PROFINET® device Subslot Number range	8.60 SIM8
	Support for 255 PROFINET I/O Devices	8.50 SIM9 or 8.60 SIM1
	Embedded Ethernet EGD Configuration	8.50 SIM7
	IC695RMX228 Reflective Memory Module Configuration	8.50 SIM2
	IC695ECM850 IEC 61850 Communication Module Configuration	8.00 SIM7
	Enhanced Security Functionality and CPE 305 / CPE310 Configuration	8.00 SIM7
Remote Get HART® Device Information COMMREQ	The Remote Get HART Device Information COMMREQ is supported by these products: RX3i CPUs with version 8.95 or later IC695PNC001 RX3i PROFINET Controller version 2.26 or later IC695PNS001 RX3i PROFINET Scanner version 2.41 or later IC695PNS001 RX3i PROFINET Scanner GSDML-V2.3-GEIP-RX3iPNS-20160602.xml[3]	

[3] *IC695PNS001 RX3i PROFINET Scanner GSDML-V2.3-GEIP-RX3iPNS-20160602.xml is required to enable HART Pass Through Service Options settings in PME.*

Compatibility Subject	Description
Downgrading Firmware	Restrictions on downgrading firmware to previous versions apply after updating to R10.91. However, upgrading and downgrading will be unrestricted for subsequent revisions.
CPU Backward Compatibility	CPE302-Bxxx, CPE305-Bxxx, and CPE310-Bxxx are drop-in replacements for CPE302-Axxx, CPE305-Axxx, and CPE310-Axxx. Legacy CPU310 Projects are not supported by the CPE302 / CPE305 / CPE310. Note: CPE305-Bxxx includes 6MB of user memory compared with 5MB on the CPE305-Axxx. CPE310-Bxxx includes 13MB of user memory compared with 10MB on the CPE305-Axxx. Applications that are newly developed on the -Bxxx or migrated to the -Bxxx and later modified may not be downloaded to the -Axxx if they exceed its user memory limits.
C Toolkit Compatibility	C Toolkit version 7.00, 7.10, or 9.00 and higher The C Toolkit for PACSystems is distributed with PAC Machine Edition Logic Developer. Updates can be downloaded from the support links located at the end of this document. The Series 90 Toolkit (IC641SWP709/719) is not compatible with PACSystems.

PROFINET IO Compatibility

Feature	Minimum Version Required						
	IC695CPE302/305-Bxxx	IC695CPE310-Bxxx	IC695PNC001-Ax	IC695PNC001-Bxxx	IC695PNS001-Axxx	IC695PNS001-Bxxx & PNS101	IC695CEP001
Process Alarms	11.01	11.01	N/A	3.30	N/A	N/A	N/A
Configuring MRP Ring Domain UUID on IC695PNC001-Bxxx	11.01	11.01	N/A	3.30	N/A	N/A	N/A
PROFINET asynchronous RDO read and write COMMREQs	11.01	11.01	N/A	3.30	N/A	N/A	N/A
IC695CMM002/CMM004 Serial Module Support in the IC695PNS001-Bxxx/PNS101 and IC695CEP001	10.60	10.70	N/A	3.20	N/A	3.35	2.80
Applications using CPE302/305/310-Bxxx Version 10.60 (or later) with a PNC001 Bxxx must also upgrade the PNC to Version 3.16 (or later) for compatibility with the controller.	10.60	10.70	N/A	3.16	N/A	N/A	N/A
Remote Get HART Device Information COMMREQ	10.60	10.70	2.26	3.00	2.41	3.10	2.60
Extended PROFINET Subslot Numbers	10.60	10.70	2.25	3.00	N/A	N/A	N/A
Simplex (non-redundantly controlled) PROFINET IO	10.60	10.70	2.00	3.00	N/A	N/A	N/A

Compatibility Subject	Description
Backplanes, power supplies, and system modules	As listed in the PACSystems RX3i System Manual, GFK-2314. Power Sync and Measurement module, IC694PSM001.
RX3i Backplane Hardware Revision Compatibility	The following backplane hardware revisions MUST be used: IC695CHS007-AA (or later) IC695CHS012-CA (or later) IC695CHS016-CA (or later) IC695CHS012CA-CA (or later) IC695CHS016CA-CA (or later) -JC or later backplanes require R10.85 firmware or later.
Series 90-30 Main Rack Compatibility	Series 90-30 Main Racks cannot be used in a PACSystems RX3i system. Series 90-30 CPUs do not operate in PACSystems RX3i Racks.
Isolated 24Vdc power	In applications that use the IC69xALG220/221/222, consult the latest version of *PACSystems RX3i System Manual*, GFK-2314 for details on wiring the 24Vdc power.
COMMREQ to PBM300	In Release 3.0, the behavior of the COMMREQ fault output on a COMMREQ sent to the PROFIBUS master module IC695PBM300 was changed to be compatible with the Series 90-30 CPU366 PROFIBUS Master. Previously, the fault output was enabled when the module received a COMMREQ and it was busy. Now, the busy condition does not result in the fault output being enabled.
Recommended IC200ALG240 revision	When a VersaMax™ system Genius® Network Interface Unit (IC200GBI001) interoperates with a Genius Bus Controller located in a PACSystems PLC, and the VersaMax system contains an IC200ALG240 Analog Input Module, it is recommended to update the IC200ALG240 firmware to Revision 1.20 or later. Use firmware update kit 44A752313-G02, available in Article ID 000034948.
Configuration of IC694MDL754	Always configure 16 bits of module status when using this module. Configuring 0 bits of module status will result in invalid data in the module's ESCP status bits.
CIMPLICITY® OPC UA Client	The CPE302-Bxxx, CPE305-Bxxx and CPE310-Bxxx PACSystems OPC UA servers support up to five concurrent sessions with up to ten concurrent subscriptions each with up to 12,500 monitored items. The subscription limit is shared across all available sessions. When using CIMPLICITY OPC UA Client, ensure the total number of subscriptions does not exceed the maximum. CIMPLICITY OPC UA Client is configured to create one subscription for every 500 items by default. If, for example, a project contains 1000 monitored items, CIMPLICITY creates two subscriptions. The number of items per subscription may be modified from the Device Configuration Panel / OPC UA DA Configuration / Subscriptions / Max. Number of Monitored Items.
Ethernet Station Manager Modify Command Support	The CPE302/CPE305/CPE310[4] Ethernet Station Manager supports monitor commands only. Modify commands are not supported in firmware release 8.65 or later. Refer to the latest version of *TCP/IP Ethernet Communications for PACSystems Station Manager Manual GFK-2225* for additional information.
HART® Pass-Through	HART Pass-Through entails the usage of PC-based applications, RX3i Analog modules with HART functionality, and (optionally) supporting PROFINET products. HART Pass-Through operation is described in the *PACSystems HART Pass-Through User Manual*, GFK-2929.
Network and Memory Performance Monitor PACS Analyzer Requirements	PACSystems RX3i CPUs with firmware revision 10.05 or later support Network and Memory Performance Monitoring when used with PACS Analyzer version 4.3 or later.