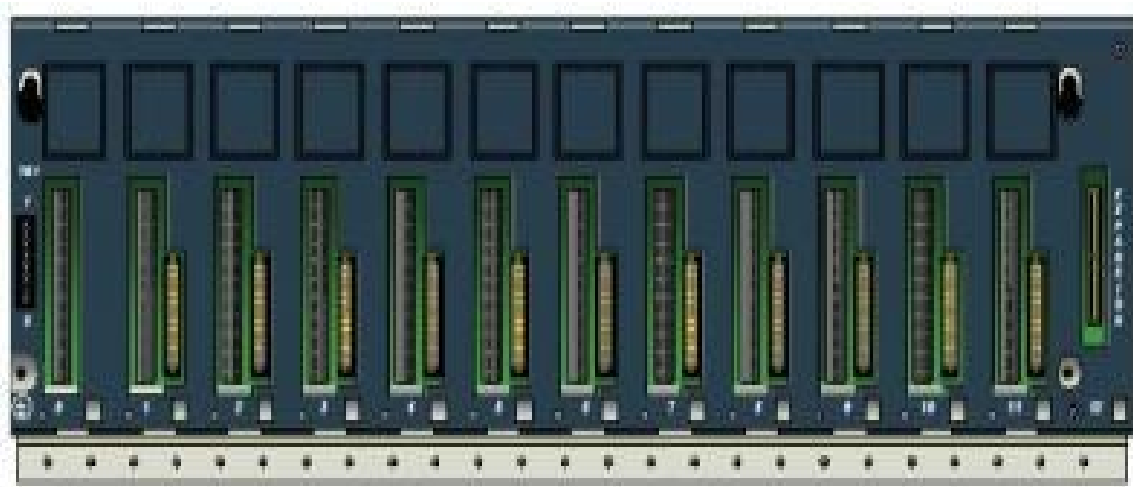# PACSystems™ RX3i

BACKPLANE

(IC695CHS012 & IC695CHS016)

Introduction

Dual-Bus Backplane

The PACSystems RX3i Universal Backplanes provide a dual-bus backplane that supports PCI-based (IC695) and serial (IC693 and IC694) I/O and option modules.

The 16-slot Universal Backplane (IC695CHS016), and the 12-slot Universal Backplane (IC695CHS012) include the following features:

- Terminal Strip on the left end for Isolated +24V input
- Backplane grounding point
- Integral grounding bar for connecting module/shield grounds
- Serial Expansion connector for connection to Serial Expansion and Remote Backplanes
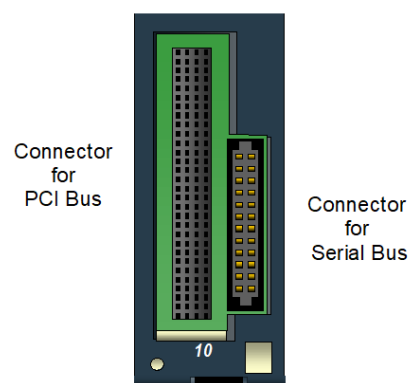- Slot numbers printed on the backplane that can be used as a reference for configuration.

Refer to the *PACSystems RX3i System Manual*, GFK-2314, for mounting and connection information, and for lists of supported modules.

PCI-Only Backplane

The PACSystems RX3i 12-slot and 16-slot Universal Backplanes are also available as PCI-exclusive variations (IC695CHS012PCIONLY and IC695CHS016PCIONLY). The PCI-exclusive version of this backplane supports only IC695 modules. Visually, customers can identify the difference between the two models by the absence of the Serial Bus connector, which is located next to the PCI Bus connector on the dual-purpose backplane (Figure 1).

Note: For system designs that require IC694 modules, The rightmost slot in all Universal Backplanes have a different connector than the other slots. It can only be used for an RX3i Serial Expansion Module, IC695LRE001. This slot is also supported on the PCI-exclusive variation.

Figure 1: Connectors on the Universal Backplane

Installation Location

This product is intended for use with the RX3i system. Its components are considered open equipment (having live electrical parts that may be accessible to users) and must be installed in an ultimate enclosure that is manufactured to provide safety. At a minimum, the enclosure shall provide a degree of protection against solid objects as small as 12mm (for example, fingers). This equates to a NEMA/UL Type 1 enclosure or an IEC60529 IP20 rating providing at least a pollution degree 2 environment. For details about installing RX3i rack systems, refer to *PACSystems RX3i System Manual*, GFK-2314.

For complete installation information, please refer to RX3i Installation and Maintenance Requirements document, GFK-2975.

Important Product Information

Release History

Catalog Revision	Date	Description
IC695CHS012-KC IC695CHS012CA-KC IC695CHS012LT-KC	Jan 2024	The product's labels have been updated to show compliance with IECEx and ECAS(UAE). Update to fab for producibility. No change to form, fit, nor function. For updated certifications, please refer to https://emerson-mas.my.site.com/communities/en_US/Article/Certifications-and-Agency-Approvals-Landing-Page.
IC695CHS012-JC IC695CHS016-JC	June 2023	Redesign of RX3i Backplanes to replace obsolete FPGA and spread spectrum clock chip.
IC695CHS012-HB IC695CHS012CA-HB IC695CHS012LT-HB IC695CHS012PCIONLY-HB IC695CHS016CA-HB IC695CHS016PCIONLY-HB	Mar 2022	The product's labels have been updated to show compliance with new certifications. For updated certifications, please refer to https://emerson-mas.my.site.com/communities/en_US/Article/Certifications-and-Agency-Approvals-Landing-Page.
IC695CHS012 / 016-GB IC695CHS012PCIONLY / 016PCIONLY-GB	Feb 2022	Manufacturing change. No change to form, fit, nor function.
IC695CHS012PCIONLY / 016PCIONLY-FA	Oct 2021	Updates to support CHS007 models with PCI-only capabilities.
IC695CHS012 / 016-FA	Sep 2018	Following Emerson's acquisition of this product, changes have been made to apply appropriate branding and registration of the product with required certification agencies. No changes to material, process, form, fit or functionality.
IC695CHS012 / 016-EA	Feb 2018	Added capacitors near the reset pin of several slots to eliminate noise spikes.
IC695CHS012 / 016-DA	Mar 2012	Mechanical enhancements for improved module-to-connector engagement with the backplane PCI connector.
IC695CHS012 / 016-CA	Apr 2009	Hardware changes for EU-RoHS compliance
IC695CHS012 / 016-BAMP	Feb 2009	Improved immunity against environmental noise
IC695CHS012 / 016-BA	Sep 2007	ATEX approval for Group 2, Category 3 applications.
IC695CHS012 / 016A	Aug 2004	Initial product release

Functional Compatibility

Subject	Description
Compatible head ends	• IC695CPE330 • IC695CPE302/305/310 • IC695PNS001-BXXX or later • IC695PNS101 Older CPUs have not been qualified and are not capable of updating BOC firmware with current version of the backplane.

New Features and Enhancements in this Release

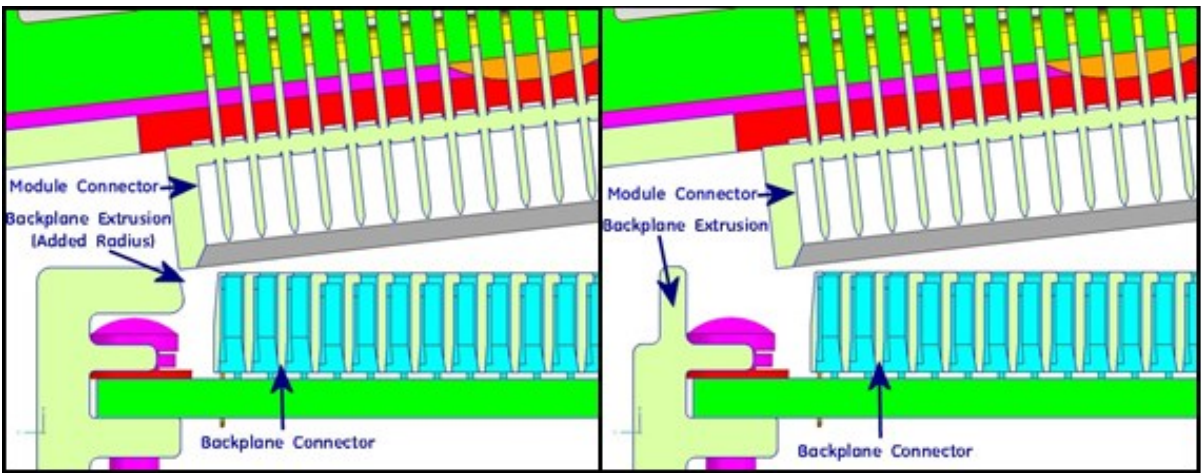This release adds IECEx and ECAS (UAE) certification to the product.

Operating Notes

Effective with IC695CHS007-BA, IC695CHS012-DA and IC695CHS016-DA, the product was enhanced with the following mechanical design changes:

1. Added an upper ledge with a radius to the backplane extrusion. For PCI-based (IC695) RX3i modules, this upper ledge helps align the module vertically as it is being inserted into the backplane. This reduces the likelihood of experiencing bent or recessed module backplane connector pins when inserting PCI-based modules into the backplane.

Note: To avoid damaging mating module pins, continue to exercise proper care and follow the installation instructions in the *PACSystems RX3i System Manual*, GFK-2314, when inserting modules into an RX3i universal backplane.

Figure 2: Backplane Connector

2. Backplane PWA and backplane connectors were moved 0.015 inch (3.81mm) closer to the front of the backplane. This increases the mechanical module-to-backplane engagement, providing for better connectivity.

Additional Information

For additional information, please refer to the manuals listed below. Manuals can be downloaded from the Support site: https://www.emerson.com/Industrial-Automation-Controls/support.

PACSystems RX3i System Manual	GFK-2314
PACSystems RX3i & RSTi-EP CPU Reference Manual	GFK-2222
PACSystems CPU Programmer's Reference Manual	GFK-2950
PACSystems RXi, RX3i, RX7i & RSTi-EP Controller Secure Deployment Guide	GFK-2830

General Contact Information

Home link: http://www.emerson.com/industrial-automation-controls

Knowledge Base: https://www.emerson.com/industrial-automation-controls/support

Technical Support

Americas
Phone: 1-888-565-4155
1-434-214-8532 (If toll-free option is unavailable)

Customer Care (Quotes/Orders/Returns): customercare.mas@emerson.com
Technical Support: support.mas@emerson.com

Europe
Phone: +800-4444-8001
+420-225-379-328 (If toll-free option is unavailable)
+39-0362-228-5555 (from Italy - if toll-free 800 option is unavailable or dialing from a mobile telephone)

Customer Care (Quotes/Orders/Returns): customercare.emea.mas@emerson.com
Technical Support: support.mas.emea@emerson.com

Asia
Phone: +86-400-842-8599
+65-3157-9591 (All other Countries)

Customer Care (Quotes/Orders/Returns): customercare.cn.mas@emerson.com
Technical Support: support.mas.apac@emerson.com

Any escalation request should be sent to: mas.sfdcescalation@emerson.com

Note: If the product is purchased through an Authorized Channel Partner, please contact the seller directly for any support.

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