

» User Guide «

CP-RIO3-04S

3U CompactPCI Rear Transition Module

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Environmental Protection Statement

This product has been manufactured to satisfy environmental protection requirements where possible. Many of the components used (structural parts, printed circuit boards, connectors, batteries, etc.) are capable of being recycled.

Final disposition of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.



Explanation of Symbols



Caution, Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60V) when touching products or parts of them. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.

Please refer also to the section “High Voltage Safety Instructions” on the following page.



Warning, ESD Sensitive Device!

This symbol and title inform that electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

Please read also the section “Special Handling and Unpacking Instructions” on the following page.



Warning!

This symbol and title emphasize points which, if not fully understood and taken into consideration by the reader, may endanger your health and/or result in damage to your material.



Note ...

This symbol and title emphasize aspects the reader should read through carefully for his or her own advantage.



For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions



Warning!

All operations on this device must be carried out by sufficiently skilled personnel only.



Caution, Electric Shock!

Before installing a not hot-swappable Kontron product into a system always ensure that your mains power is switched off. This applies also to the installation of piggybacks.

Serious electrical shock hazards can exist during all installation, repair and maintenance operations with this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing work.

Special Handling and Unpacking Instructions



ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the board is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the board.



General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the device, which are not explicitly approved by Kontron and described in this manual or received from Kontron's Technical Support as a special handling instruction, will void your warranty.

This device should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This applies also to the operational temperature range of the specific board version, which must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, please follow only the instructions supplied by the present manual.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the board, please re-pack it as nearly as possible in the manner in which it was delivered.

Special care is necessary when handling or unpacking the product. Please consult the special handling and unpacking instruction on the previous page of this manual.



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Kontron grants the original purchaser of Kontron's products a ***TWO YEAR LIMITED HARDWARE WARRANTY*** as described in the following. However, no other warranties that may be granted or implied by anyone on behalf of Kontron are valid unless the consumer has the express written consent of Kontron.

Kontron warrants their own products, excluding software, to be free from manufacturing and material defects for a period of 24 consecutive months from the date of purchase. This warranty is not transferable nor extendible to cover any other users or long-term storage of the product. It does not cover products which have been modified, altered or repaired by any other party than Kontron or their authorized agents. Furthermore, any product which has been, or is suspected of being damaged as a result of negligence, improper use, incorrect handling, servicing or maintenance, or which has been damaged as a result of excessive current/voltage or temperature, or which has had its serial number(s), any other markings or parts thereof altered, defaced or removed will also be excluded from this warranty.

If the customer's eligibility for warranty has not been voided, in the event of any claim, he may return the product at the earliest possible convenience to the original place of purchase, together with a copy of the original document of purchase, a full description of the application the product is used on and a description of the defect. Pack the product in such a way as to ensure safe transportation (see our safety instructions).

Kontron provides for repair or replacement of any part, assembly or sub-assembly at their own discretion, or to refund the original cost of purchase, if appropriate. In the event of repair, refunding or replacement of any part, the ownership of the removed or replaced parts reverts to Kontron, and the remaining part of the original guarantee, or any new guarantee to cover the repaired or replaced items, will be transferred to cover the new or repaired items. Any extensions to the original guarantee are considered gestures of goodwill, and will be defined in the "Repair Report" issued by Kontron with the repaired or replaced item.

Kontron will not accept liability for any further claims resulting directly or indirectly from any warranty claim, other than the above specified repair, replacement or refunding. In particular, all claims for damage to any system or process in which the product was employed, or any loss incurred as a result of the product not functioning at any given time, are excluded. The extent of Kontron liability to the customer shall not exceed the original purchase price of the item for which the claim exists.

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Chapter

1

Introduction



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1. Introduction

1.1 Board Overview

The CP-RIO3-04S 3U CompactPCI rear transition module has been designed for use with the CP305, CP307, and CP308 3U CompactPCI CPU boards from Kontron and provides comprehensive rear I/O functionality for peripherals. In order to use the CP-RIO3-04S, a 3U CompactPCI backplane with rear I/O support as well as a compatible and correctly configured CPU board are required. For further information concerning possible compatibility with other 3U Kontron CompactPCI boards, please contact Kontron.

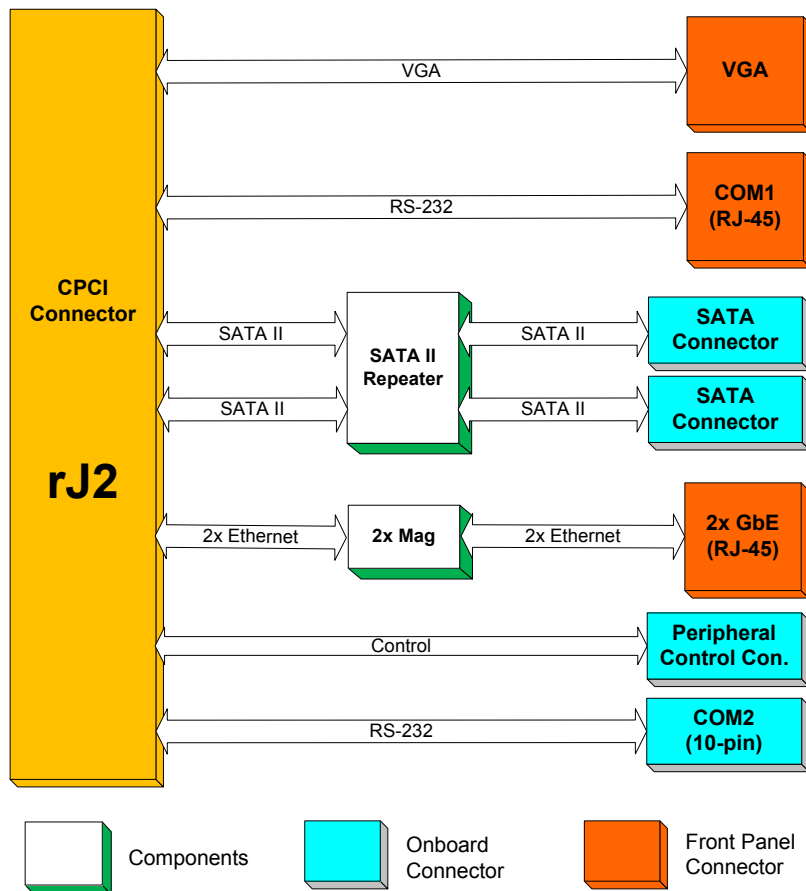
The CP-RIO3-04S comes with two Gigabit Ethernet ports and one VGA (CRT) port on the front panel, two COM ports (COM1 on the front panel and COM2 onboard), two onboard SATA ports for connection to external SATA devices, one onboard peripheral control port and one CompactPCI connector for connecting the CP-RIO3-04S to the backplane.

1.2 Board Diagrams

The following diagrams provide additional information concerning the boards' functionality and component layout.

1.2.1 Functional Block Diagram

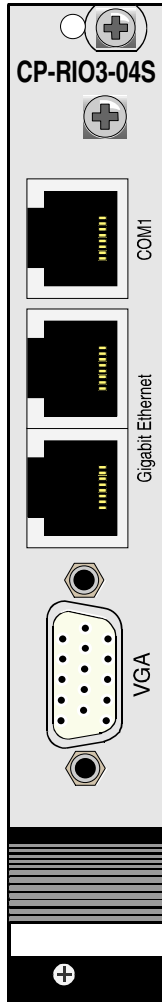
Figure 1-1: CP-RIO3-04S Functional Block Diagram





1.2.2 Front Panel

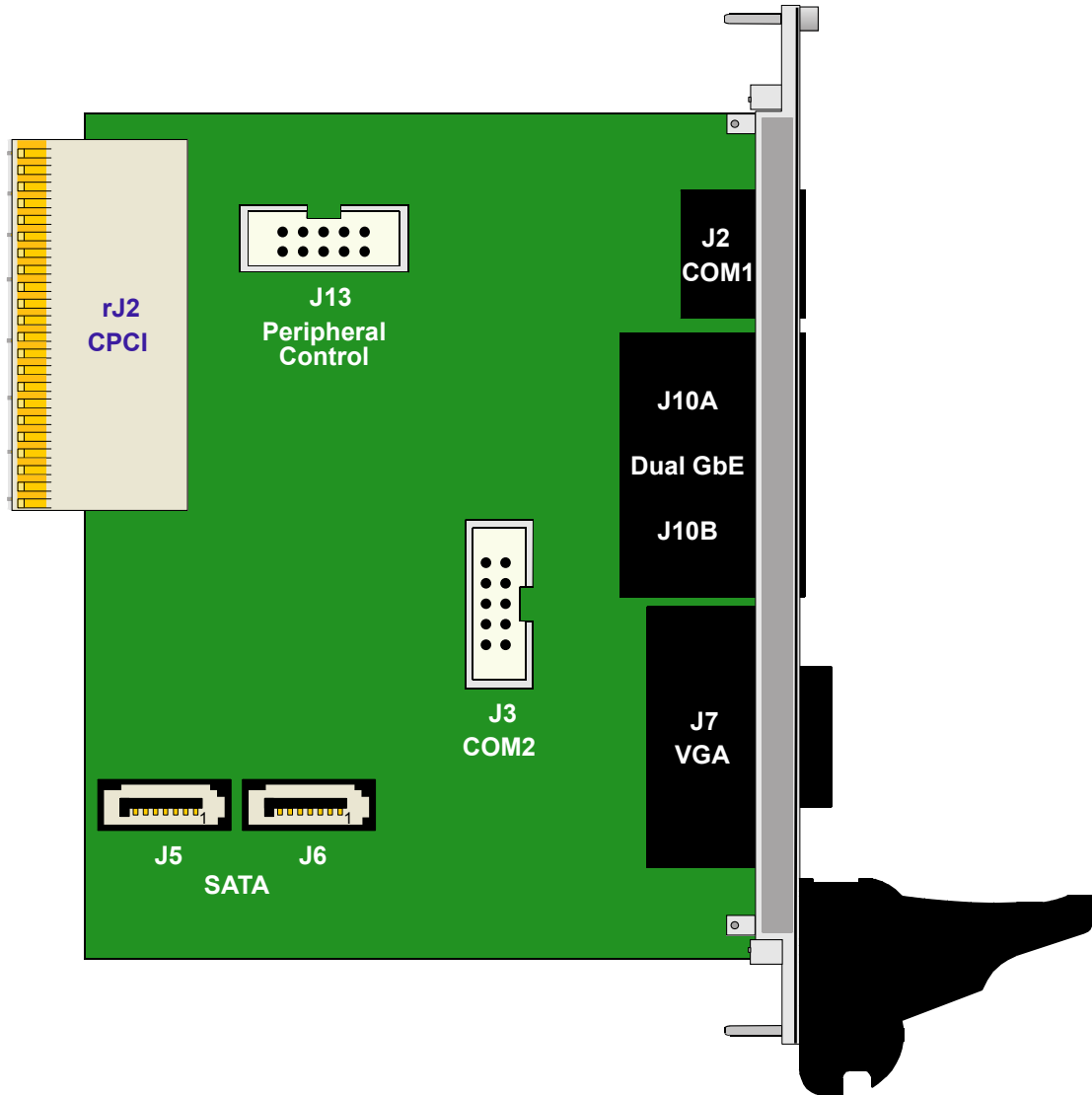
Figure 1-2: CP-RIO3-04S Front Panel






1.2.3 Board Layout

Figure 1-3: CP-RIO3-04S Board Layout – Top View



1.3 Technical Specification

Table 1-1: CP-RIO3-04S Main Specifications

CP-RIO3-04S		SPECIFICATIONS
Front Panel Interfaces	VGA	One VGA interface on a 15-pin, D-Sub connector, J7, for connecting a standard analog monitor
	Ethernet	Two Gigabit Ethernet interfaces implemented as a dual RJ-45 connector, J10A/B
	COM1	One serial RS-232 port (COM1) on an RJ-45 connector, J2
Onboard Interfaces	SATA	Two SATA II interfaces (with SATA II repeater) implemented as two onboard connectors, J5 and J6, for connecting external SATA devices via a SATA cable
	COM2	One onboard serial port (COM2) implemented as a 10-pin, 2.54 mm connector, J3
	Peripheral Control	One 10-pin peripheral control connector, J13, with the following features: <ul style="list-style-type: none"> Fan speed monitor input Fan speed control output Power supply sleep mode output Wake-up / sleep input
	CompactPCI	One CompactPCI connector, rJ2 for connecting the CP-RIO3-04S to the backplane
General	Temperature Range	Operational: 0°C to +60°C Standard Storage: -55°C to +85°C Without any additional components  <p>Note ... When additional components are installed, refer to their operational specifications as this will influence the modules' operational and storage temperature.</p>
	Mechanical	3U, 4HP, CompactPCI-compliant form factor
	Dimensions	100 mm x 80 mm
	Board Weight	120 g

1.4 Standards

The CP-RIO3-04S complies with the requirements of the following standards:

Table 1-2: Standards for the CP-RIO3-04S

TYPE	ASPECT	STANDARD	REMARKS / TEST PARAMETERS
CE	Emission	EN55022 EN61000-6-3	--
	Immission	EN55024 EN61000-6-2	--
	Electrical Safety	EN60950-1	--
Mechanical	Mechanical Dimensions	IEEE 1101.10	--
Environmental	Climatic Humidity	IEC60068-2-78	93% RH at 40°C, non-condensing (see note below)
	WEEE	Directive 2002/96/EC	Waste electrical and electronic equipment
	RoHS	Directive 2002/95/EC	Restriction of the use of certain hazardous substances in electrical and electronic equipment
	Vibration (Sinusoidal)	IEC60068-2-6	<ul style="list-style-type: none"> • 10-300 (Hz) frequency range • 5 (g) acceleration • 1 (oct/min) sweep rate • 10 cycles/axis • 3 axes
	Permanent Shock	IEC60068-2-29	<ul style="list-style-type: none"> • 15 (g) acceleration • 11 (ms) pulse duration • 500 shocks per direction • 6 directions • 1 (s) recovery time
	Single Shock	IEC60068-2-27	<ul style="list-style-type: none"> • 30 (g) acceleration • 9 (ms) pulse duration • 3 shocks per direction • 6 directions • 5 (s) recovery time



Note ...

Kontron performs comprehensive environmental testing of its products in accordance with applicable standards.

Customers desiring to perform further environmental testing of Kontron products must contact Kontron for assistance prior to performing any such testing. This is necessary, as it is possible that environmental testing can be destructive when not performed in accordance with the applicable specifications.

In particular, for example, boards **without conformal coating** must not be exposed to a change of temperature exceeding 1K/minute, averaged over a period of not more than five minutes. Otherwise, condensation may cause irreversible damage, especially when the board is powered up again.

Kontron does not accept any responsibility for damage to products resulting from destructive environmental testing.



1.5 Related Publications

The following publications contain information relating to the CP-RIO3-04S.

Table 1-3: Related Publications

PRODUCT	PUBLICATION
CompactPCI Systems and Boards	CompactPCI Specification 2.0, Rev. 3.0
	<i>Kontron</i> CompactPCI Backplane Manual, ID 24229
All Kontron products	Product Safety and Implementation Guide, ID 1021-9142



Chapter **2**

Functional Description



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2. Functional Description

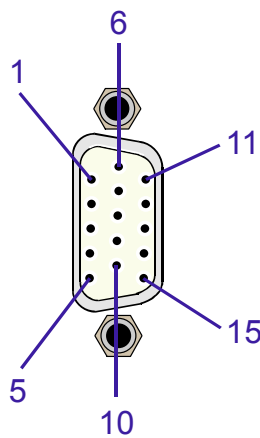
2.1 Board Interfaces

2.1.1 VGA Interface

The CP-RIO3-04S provides one 15-pin, D-Sub VGA connector, J7, on the front panel. This connector is used to connect an analog VGA (CRT) monitor to the CP-RIO3-04S.

The following figure illustrates the D-Sub VGA connector J7.

Figure 2-1: D-Sub VGA Connector J7



The following table indicates the pinout of the D-Sub VGA connector J7.

Table 2-1: D-Sub VGA Connector J7 Pinout

PIN	SIGNAL	FUNCTION	I/O
1	Red	Red video signal output	O
2	Green	Green video signal output	O
3	Blue	Blue video signal output	O
4	NC	Not connected	--
5 - 8	GND	Signal ground	--
9	VCC	Power +5V, 140 mA fuse protection	O
10	GND	Signal ground	--
11	NC	Not connected	--
12	SDA	I ² C data (EDID)	I/O
13	Hsync	Horizontal synchronization	TTL Out
14	Vsync	Vertical synchronization	TTL Out
15	SCL	I ² C clock (EDID)	I/O



2.1.2 Gigabit Ethernet Interfaces

The CP-RIO3-04S provides one dual Gigabit Ethernet connector J10A/B realized as two RJ-45 connectors. The interfaces provide automatic detection and switching between 10Base-T, 100Base-TX and 1000Base-T data transmission (Auto-Negotiation). Auto-wire switching for crossed cables is also supported (Auto MDI-X).

Figure 2-2: Gigabit Ethernet Connector J10A/B

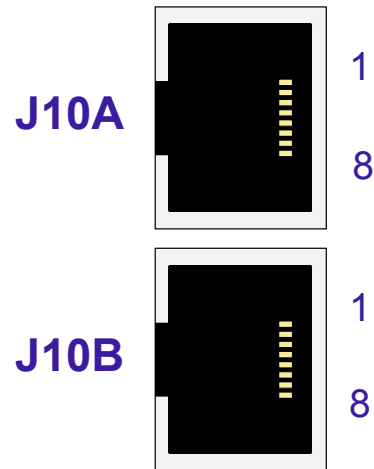


Table 2-2: Pinout of J10A/B Based on the Implementation

MDI / STANDARD ETHERNET CABLE						PIN	MDI-X / CROSSED ETHERNET CABLE					
10BASE-T		100BASE-TX		1000BASE-T			10BASE-T		100BASE-TX		1000BASE-T	
I/O	SIGNAL	I/O	SIGNAL	I/O	SIGNAL		I/O	SIGNAL	I/O	SIGNAL	I/O	SIGNAL
0	TX+	0	TX+	I/O	BI_DA+	1	I	RX+	I	RX+	I/O	BI_DB+
0	TX-	0	TX-	I/O	BI_DA-	2	I	RX-	I	RX-	I/O	BI_DB-
I	RX+	I	RX+	I/O	BI_DB+	3	O	TX+	O	TX+	I/O	BI_DA+
-	-	-	-	I/O	BI_DC+	4	-	-	-	-	I/O	BI_DD+
-	-	-	-	I/O	BI_DC-	5	-	-	-	-	I/O	BI_DD-
I	RX-	I	RX-	I/O	BI_DB-	6	O	TX-	O	TX-	I/O	BI_DA-
-	-	-	-	I/O	BI_DD+	7	-	-	-	-	I/O	BI_DC+
-	-	-	-	I/O	BI_DD-	8	-	-	-	-	I/O	BI_DC-



Note ...

The Ethernet transmission can operate effectively with structured cable that meets CAT5 cable or higher specifications.

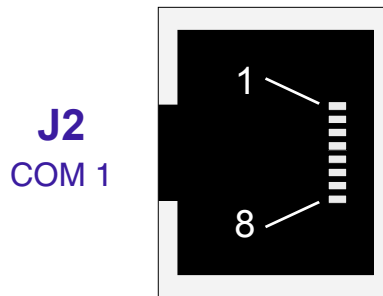


2.1.3 COM Interfaces

The CP-RIO3-04S provides two COM ports, COM1 and COM2, for connecting RS-232 devices. COM1 is available on the front panel and is implemented as an RJ-45 connector, J2. COM2 is available onboard and is implemented as a 10-pin connector, J3.

The following figure illustrates the RJ-45, serial port connector, J2 (COM1).

Figure 2-3: Serial Port Connector J2 (COM1)



The following table indicates the pinout of the RJ-45, serial port connector, J2 (COM1).

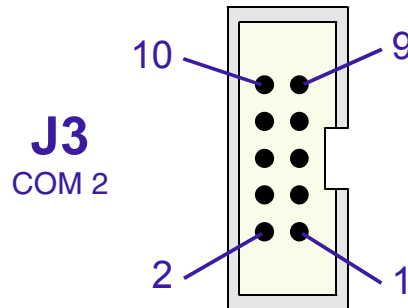
Table 2-3: Serial Port Connector J2 (COM1) Pinout

PIN	SIGNAL	DESCRIPTION	I/O
1	RTS	Request to send	O
2	DTR	Data terminal ready	O
3	TXD	Transmit data	O
4	GND	Signal ground	--
5	GND	Signal ground	--
6	RXD	Receive data	I
7	DSR	Data set ready	I
8	CTS	Clear to send	I



The following figure illustrates the onboard serial port connector J3 (COM2).

Figure 2-4: Serial Port Connector J3 (COM2)



The following table indicates the pinout of the onboard serial port connector J3 (COM2).

Table 2-4: Serial Port Connector J3 (COM2) Pinout

PIN	SIGNAL	DESCRIPTION	I/O
1	DCD	Data carrier detect	I
2	DSR	Data set ready	I
3	RXD	Receive data	I
4	RTS	Request to send	O
5	TXD	Transmit data	O
6	CTS	Clear to send	I
7	DTR	Data terminal ready	O
8	RI	Ring indicator	I
9	GND	Signal ground	--
10	NC	Not connected	--



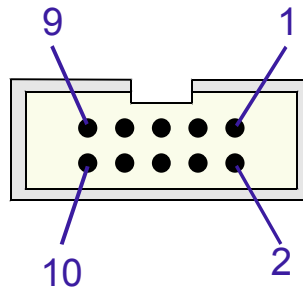


2.1.4 Peripheral Control Interface

A fan for system cooling and a power supply with power management can be connected to the CP-RIO3-04S via the peripheral control connector J13.

The following figure illustrates the peripheral control connector J13.

Figure 2-5: Peripheral Control Connector J13



The following table indicates the pinout of the peripheral control connector J13.

Table 2-5: Peripheral Connector J13 Pinout

PIN	SIGNAL	DESCRIPTION	I/O
1	GND	Signal ground	--
2	PWR_5VSTDBY	+5V standby power (optional)	I
3	FAN_SENSE	Fan speed monitor	I
4	VCC5V	Power +5V	O
5	PWM_OUT	Fan speed control via pulse with modulation signal	O
6	VCC3V3	Power +3.3V	O
7	PWR_SLPS3#	Power supply sleep mode	O
8	GND	Signal ground	--
9	PWR_BTN#	Wake-up / sleep input	I
10	GND	Signal ground	--



Note ...

Pin 5 is an open drain output and has no pull-up resistor on the CP-RIO3-04S. Therefore, an external pull-up resistor is required for fan control operations.



2.1.5 Serial ATA Interfaces

The CP-RIO3-04S provides two onboard SATA II interfaces implemented as two onboard SATA connectors, J5 and J6, used to connect standard SATA devices via a SATA cable. A SATA II repeater is provided on the CP-RIO3-04S to improve the signal performance.

The following figure and table provide pinout information for the SATA connectors J5 and J6.

Figure 2-6: SATA Con. J5 and J6

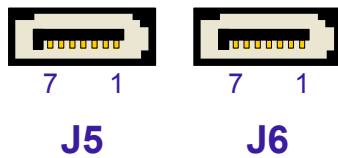


Table 2-6: SATA Connectors J5 and J6 Pinout

PIN	SIGNAL	DESCRIPTION	I/O
1	GND	Ground signal	--
2	SATA_TX+	Differential Transmit +	O
3	SATA_TX-	Differential Transmit -	O
4	GND	Ground signal	--
5	SATA_RX-	Differential Receive -	I
6	SATA_RX+	Differential Receive +	I
7	GND	Ground signal	--



Note ...

When using a Serial ATA cable, it is recommended to use a special right-angled Serial ATA cable due to possible space limitations within the system. For further information, please contact Kontron.



Note ...

To ensure secure connectivity, the SATA connector supports the use of SATA II cables (SATA cables with locking latch).

SATA II support for external SATA devices is a function of the backplane, the SATA device and cabling. In general, the more connectors and cabling involved, the less chance of achieving proper external SATA II device operation.





2.1.6 Rear I/O Interface on CompactPCI Connectors rJ2

The CP-RIO3-04S is equipped with one CompactPCI rear I/O connector rJ2.



Warning!

To support the rear I/O feature, a 3U CompactPCI backplane with rear I/O support as well as a compatible and correctly configured CPU board are required. Do not plug the CP-RIO3-04S in a backplane without rear I/O support.

Failure to comply with the above will result in damage to the CP-RIO3-04S.



Warning!

The CP-RIO3-04S may be used only with CPU boards that have a compatible rear I/O CompactPCI connector pinout, such as the CP305, CP307 and CP308 from Kontron.

Failure to comply with the above may result in damage to the CP-RIO3-04S or the CPU board.

Figure 2-7: Rear I/O CompactPCI Connectors rJ2

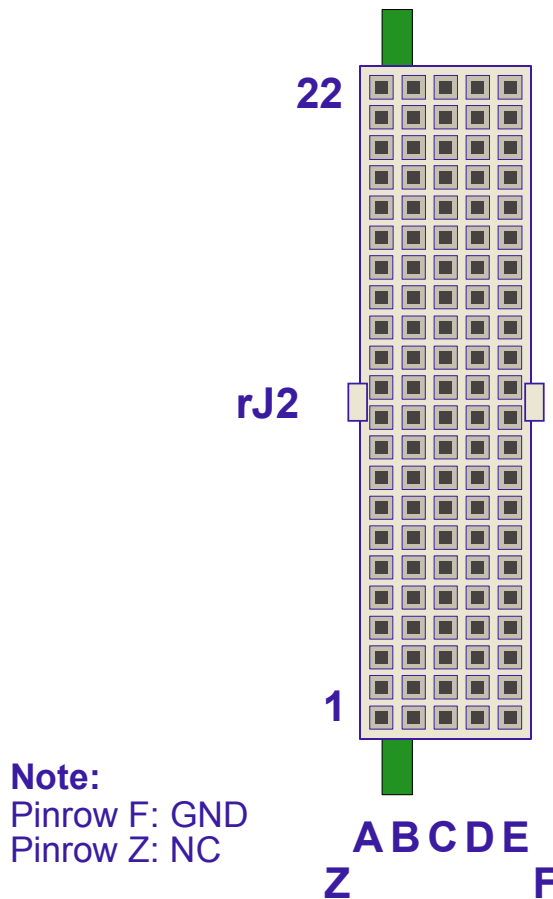


Table 2-7: Rear I/O CompactPCI Connector rJ2 Pinout

PIN	ROW Z	ROW A	ROW B	ROW C	ROW D	ROW E	ROW F
22	NC	NC	NC	NC	NC	NC	GND
21	NC	NC	GND	NC	NC	NC	GND
20	NC	NC	GND	NC	NC	NC	GND
19	NC	GND	GND	PWR_BTN# / out	PWR_SLPS3# / in	RIO_3.3V / in	GND
18	NC	1RXD / out	1DCD# / out	1DTR# / in	2CTS# / out	1CTS# / out	GND
17	NC	1TXD / in	2RXD / out	NC	NC	NC	GND
16	NC	1DSR# / out	1RTS# / in	NC	RSV	1RI# / out	GND
15	NC	PWR_5VSTDBY / out	FAN_SENSE / out	NC	NC	NC	GND
14	NC	IPA_DA+ / bi	IPA_DA- / bi	2RTS# / in	IPA_DC+ / bi	IPA_DC- / bi	GND
13	NC	IPA_DB+ / bi	IPA_DB- / bi	2RI# / out	IPA_DD+ / bi	IPA_DD- / bi	GND
12	NC	IPB_DA+ / bi	IPB_DA- / bi	RIO_1V9 / in	IPB_DC+ / bi	IPB_DC- / bi	GND
11	NC	IPB_DB+ / bi	IPB_DB- / bi	2DCD# / out	IPB_DD+ / bi	IPB_DD- / bi	GND
10	NC	GND	2TXD / in	VGA_RED / in	2DTR# / in	GND	GND
9	NC	SATA4TXP / in	GND	VGA_HSYNC / in	GND	SATA5TXP / in	GND
8	NC	SATA4TXN / in	GND	VGA_BLUE / in	GND	SATA5TXN / in	GND
7	NC	GND	2DSR# / out	VGA_I2C_DAT / bi	PWM_OUT / in	GND	GND
6	NC	SATA4RXP / out	GND	VGA_GREEN / in	GND	SATA5RXP / out	GND
5	NC	SATA4RXN / out	GND	VGA_VSYNC / in	GND	SATA5RXN / out	GND
4	NC	NC	RIO_5V / in	VGA_I2C_CLK / in	GPIO_CFG0 / out	GND	GND
3	NC	NC	GND	NC	NC	NC	GND
2	NC	NC	NC	NC	NC	NC	GND
1	NC	NC	NC	NC	NC	NC	GND



Warning!

The RIO_XXX signals are power supply **INPUTS** to supply the rear I/O module with power. These pins **MUST NOT** be connected to any other power source, either within the backplane itself or within a rear I/O module.

Failure to comply with the above will result in damage to your board.



Legend for Table 2-7:

SATAx	Serial ATA port
IPx	Gigabit Ethernet port
VGAx	VGA signals
COM1x	COM1 port
COM2x	COM2 port
PWRx	Power Management signals
5V/3.3V	Power
GPIO_CFG0	GPIO configuration (configured for COM2)





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Chapter **3**

Installation



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3. Installation

The CP-RIO3-04S has been designed for easy installation. However, the following standard precautions, installation procedures, and general information must be observed to ensure proper installation and to preclude damage to the CP-RIO3-04S, other system components, or injury to personnel.

3.1 Safety Requirements

The following safety precautions must be observed when installing or operating the CP-RIO3-04S. Kontron assumes no responsibility for any damage resulting from failure to comply with these requirements.



Caution!

Ensure that the system main power is removed prior to installing or removing the CP-RIO3-04S. Ensure that there are no other external voltages or signals being applied to the CP-RIO3-04S or other boards within the system. Failure to do so could endanger your life or health and may damage the CP-RIO3-04S or other system components including process-side signal conditioning equipment.



ESD Equipment!

The CP-RIO3-04S contains electrostatically sensitive devices. Please observe the necessary precautions to avoid damage to the CP-RIO3-04S:

- Discharge your clothing before touching the assembly. Tools must be discharged before use.
- Do not touch components, connector-pins or traces.
- If working at an anti-static workbench with professional discharging equipment, please do not omit to use it.



3.2 Initial Installation Procedures

The following procedures are applicable only for the initial installation of the CP-RIO3-04S in a system.

To perform an initial installation of both the CP-RIO3-04S in a system, proceed as follows:

1. Ensure that the safety requirements indicated in Chapter 3.1 are observed.



Warning!

Failure to comply with the instruction below may cause damage to the CP-RIO3-04S or result in improper system operation.

2. Ensure that the CP-RIO3-04S is compatible with the CPU board and the backplane prior to installation.
3. If appropriate, ensure that the onboard peripheral devices are properly installed prior to installation of the CP-RIO3-04S.
4. Ensure that no power is applied to the system before proceeding.



Warning!

Even though power may be removed from the system, the CP-RIO3-04S front panel cables may have power applied which comes from an external source.

In addition, these cables may be connected to devices that can be damaged by electrostatic discharging or short-circuiting of pins.

It is the responsibility of the system designer or integrator to ensure that appropriate measures are taken to preclude damage to the system or injury to personnel which may arise from the handling of these cables (connecting or disconnecting).

Kontron disclaims all liability for damages or injuries resulting from failure to comply with the above.



Warning!

When performing the next step, **DO NOT** push the CP-RIO3-04S into the backplane connector. Use the ejector handle to seat the CP-RIO3-04S into the backplane connector.

5. Carefully insert the CP-RIO3-04S into the slot designated by the application requirements for the CP-RIO3-04S until it makes contact with the backplane connector.
6. Using the ejector handle, engage the CP-RIO3-04S with the backplane. When the ejector handle is locked, the CP-RIO3-04S is engaged.
7. Fasten the front panel retaining screws.
8. Connect all external interfacing cables to the CP-RIO3-04S as required.
9. Ensure that the CP-RIO3-04S and all required interfacing cables are properly secured.

The CP-RIO3-04S is now ready for initial operation.



3.3 Standard Removal Procedures

To remove the CP-RIO3-04S proceed as follows:

1. Ensure that the safety requirements indicated in Chapter 3.1 are observed.



Warning!

Care must be taken when applying the procedures below to ensure that neither the CP-RIO3-04S nor system boards are physically damaged by the application of these procedures.

2. Ensure that no power is applied to the system before proceeding.



Warning!

Even though power may be removed from the system, the CP-RIO3-04S front panel cables may have power applied which comes from an external source.

In addition, these cables may be connected to devices that can be damaged by electrostatic discharging or short-circuiting of pins.

It is the responsibility of the system designer or integrator to ensure that appropriate measures are taken to preclude damage to the system or injury to personnel which may arise from the handling of these cables (connecting or disconnecting).

Kontron disclaims all liability for damages or injuries resulting from failure to comply with the above.

3. Disconnect any interfacing cables that may be connected to the CP-RIO3-04S.
4. Unscrew the front panel retaining screws.
5. Disengage the CP-RIO3-04S from the backplane by first unlocking the ejection handle and then by pressing the handle as required until the CP-RIO3-04S is disengaged.
6. After disengaging the CP-RIO3-04S from the backplane, pull it out of the slot.
7. Dispose of the CP-RIO3-04S as required.



3.4 Installation of External Serial ATA Devices

Up to two external SATA devices may be connected to the CP-RIO3-04S via the onboard SATA connectors J5 and J6 as well as the appropriate SATA cables.

Some symptoms of incorrectly installed SATA devices are:

- Device on a SATA channel does not spin up: check power cables and cabling. May also result from a bad power supply or SATA device.
The SATA connector on the CP-RIO3-04S provides only a data connection. The power for this device must be supplied by a separate connector. For further information, refer to the respective documentation of the device.
- SATA device fail message at boot-up: may be a bad cable or lack of power going to the drive.



Warning!

The incorrect connection of power or data cables may damage the SATA device and/or the CP-RIO3-04S.