



Technical Information

CCR-RIO • Rear I/O Transition Module

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About this Manual

This manual is a short form description of the technical aspects of the CCR-RIO, required for installation and system integration. It is intended for the very advanced user only.

Edition History

EKF Document	Ed.	Contents/ <i>Changes</i>	Author	Date
Text # 3331 ccr_tie.wpd	1	Technical Information CCR-RIO English Preliminary edition, to be completed later on	jj	7. Jan 04
	2	Changed illustrations P-232, P-GPIO, P-SA connectors	jj	17 March 2004
	3	Modified table CompactPCI connector J2	jj	23 March 2004
	4	Added CCR-RIO images	jj	14 September 2004

Related Documents

For a description of the CC9-SAMBA CPU card, which acts as a controller board with respect to the CCR-RIO transition module, please refer to the correspondent CPU user guide, available by download at http://www.ekf.de/c/ccpu/cc9/cc9_e.html.

CCR-RIO ordering information can be derived from http://www.ekf.de/c/ccpu/cc9/cc9_pie.pdf.

Nomenclature

Signal names used herein with an attached '#' designate active low lines.

Trade Marks

Some terms used herein are property of their respective owners, e.g.

Pentium, Celeron: ® Intel, *CompactPCI*: ® PICMG, Windows 2000, Windows XP: ® Microsoft

EKF does not claim this list to be complete.

Legal Disclaimer - Liability Exclusion

This manual has been edited as carefully as possible. We apologize for any potential mistake. Information provided herein is designated exclusively to the proficient user (system integrator, engineer). EKF can accept no responsibility for any damage caused by the use of this manual.

CCR-RIO Features

Feature Summary	
Form Factor	80x100mm ² , back panel width 4HP (20.3mm), optional rear panel width 8HP (40.6mm), height 3U
On-Board Connectors	IDE/ATA 40-pin header 2.54mm, IDE/ATA 44-pin header 2.00mm, serial port header 2x5-position 2.00mm (TTL level, suitable for EKF CU-series modules), serial port header 2x5-position 2.54mm (TTL level, suitable for MEN SA-series modules), serial port header 2x5-position 2.54mm (RS-232E level, suitable for attachment of a 9-pin IDC D-Sub connector via micro ribbon flat cable), GPIO port header 2x5 position 2.54mm, +5V power connector (floppy disk style)
Back Panel Connectors (4HP)	PS/2 keyboard/mouse (combined into a common Mini-DIN receptacle), USB3, USB4, VGA (HD D-Sub 15), Ethernet RJ45
Additional Back Panel Connectors (8HP)	PS/2 mouse Mini-DIN, serial COM port RS-232E 9-pos. D-Sub male
CPCI Connector	J2 metric connector 2.00mm 5x22

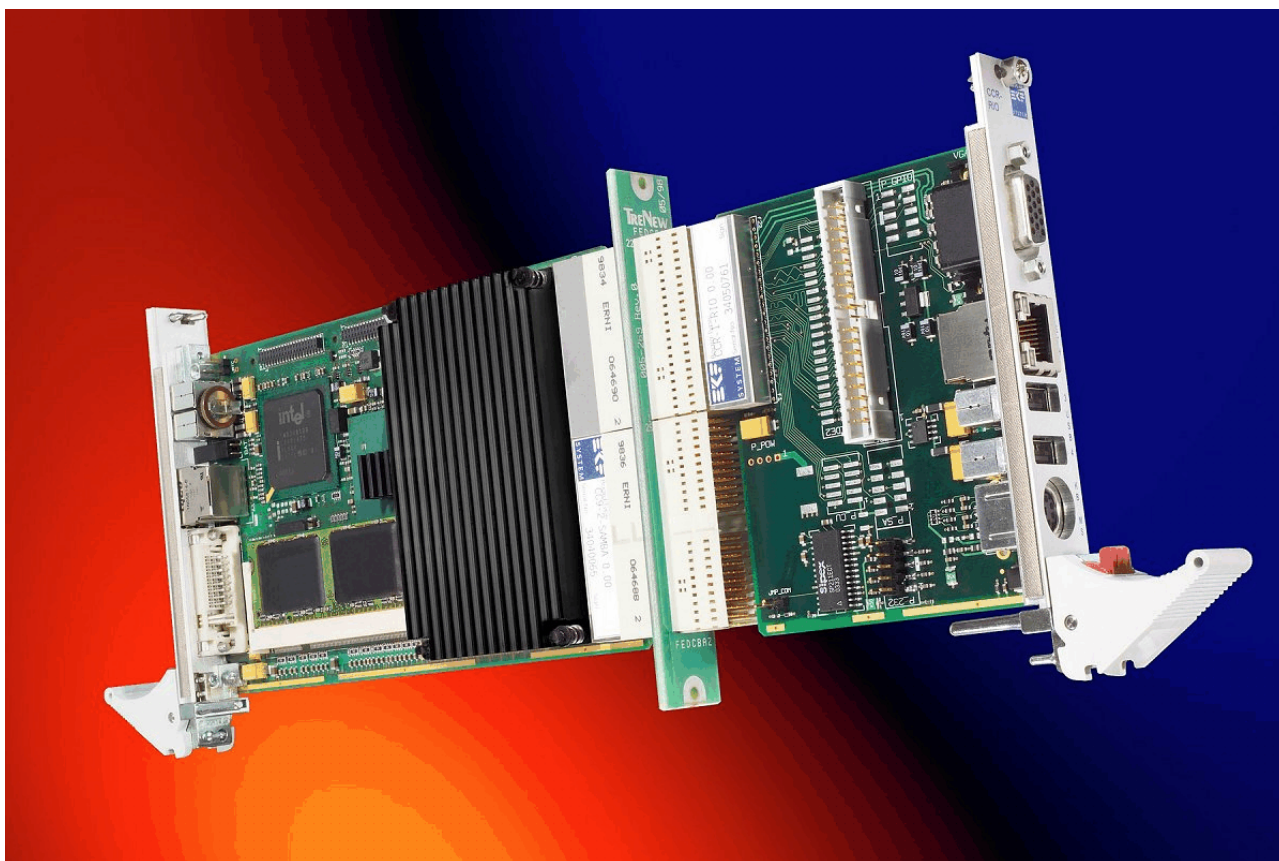


Short Description

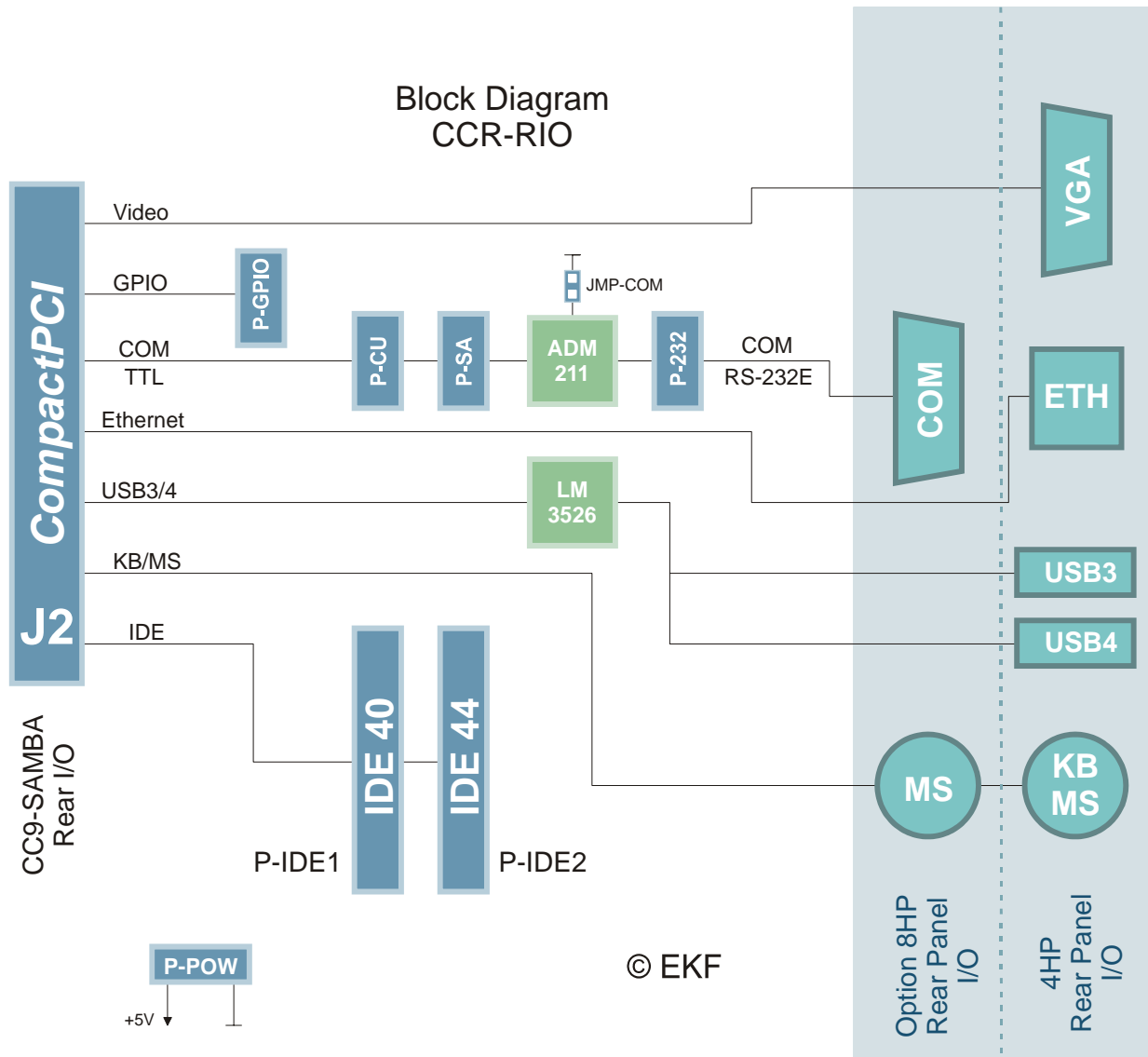
Available as a rear I/O expansion board to the CC9-SAMBA CPU card, the CCR-RIO is provided with several I/O port connectors, to be used either in addition to the CC9 front panel connectors or alternatively. Being mainly a passive rear I/O transition module, groups of signals from the CC9-SAMBA CPU board are passed across the CompactPCI J2/P2 connector to the CCR-RIO. While the IDE signals are available locally on the CCR for internal attachment of ATA devices, other connectors such as USB and keyboard are mounted into the back panel for external use.

Typically the CCR-RIO is equipped with a 4HP rear panel (20.3mm width). As an option, an 8HP panel is available with additional connectors.

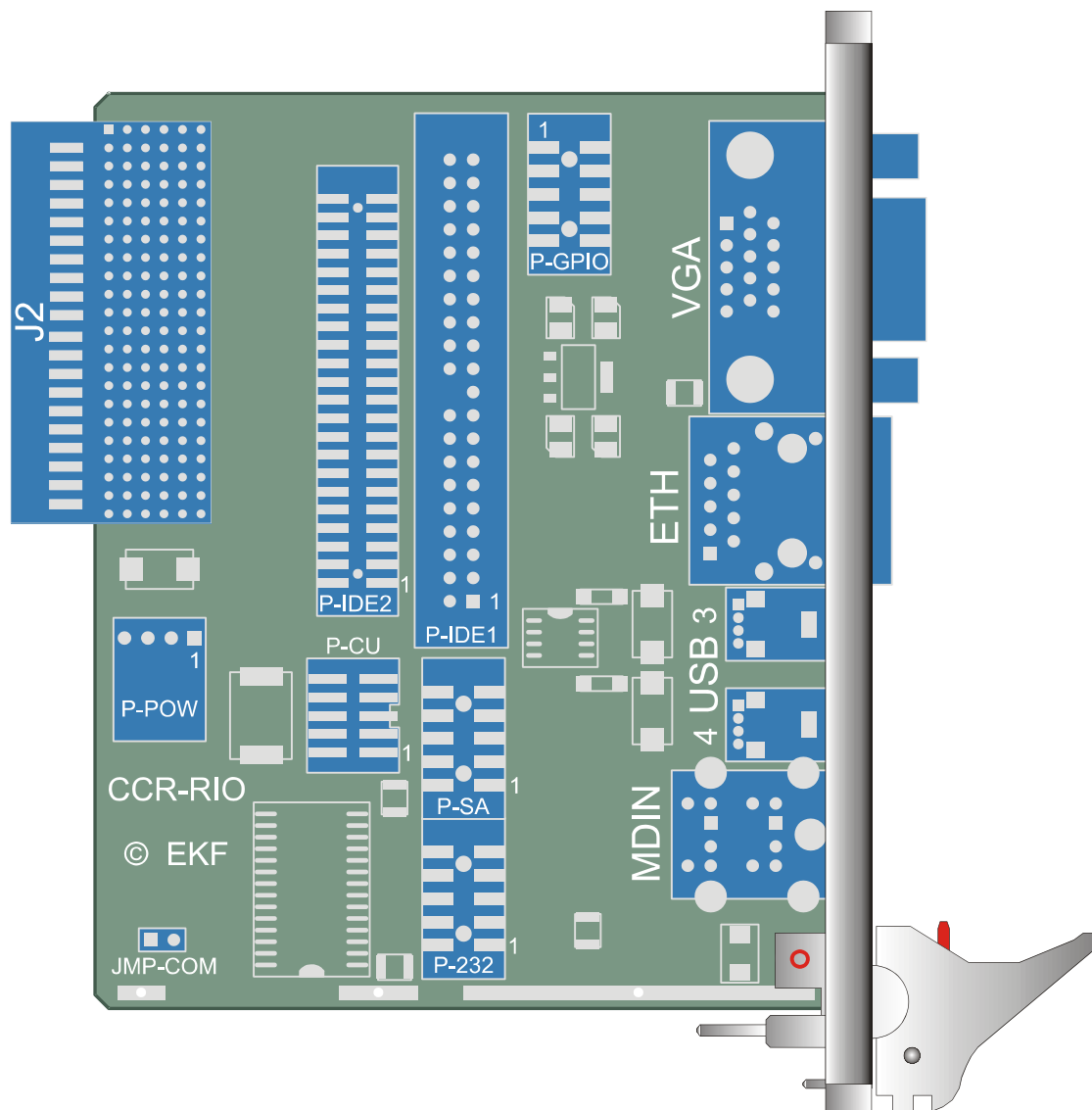
Utilization of the CCR-RIO transition module adds a level of I/O functionality, which is not available with the CC9-SAMBA CPU board alone. Further on, swapping the CPU card is simplified by means of rear I/O, which is important for efficient system maintenance (MTTR).



Block Diagram



Top View Component Assembly



On-Board Connectors

J2	CompactPCI receptacle, matches the CPCI backplane P2 connector
P-232	Serial interface pin header 2.54mm pitch (RS-232E level), suitable for attachment of an IDC style D-Sub connector via flat cable assembly
P-CU	Serial interface pin header 2.00mm pitch (TTL level), suitable for attachment of the CU7-RS485 and CU8-RS232 PHY interface modules via flat cable assembly
P-IDE1	IDE 40-pin header 2.54mm pitch, suitable for 3.5-inch hard disk drives and DVD drives
P-IDE2	IDE 44-pin header 2.00mm pitch, suitable for 2.5-inch hard disk drives
P-GPIO	GPIO pin header 2.54mm pitch, for custom specific use
P-SA	Serial interface pin header 2.54mm pitch (TTL level), suitable for attachment of MEN SA-series PHY interface modules via flat cable assembly

With the exception of J2, all on-board connectors are provided as an option. Be sure to discuss your actual needs with EKF when ordering the CCR-RIO.

Back Panel Connectors (4HP)

ETH	Gigabit Ethernet RJ-45 connector
KB/MS	PS/2 style (Mini-DIN) connector. In addition to its native signals the connector KB (keyboard) incorporates mouse clock and data signals on the remaining free pins in order to allow attachment of both, KB and MS (mouse) devices across an external splitter cable (available as accessory).
USB3, USB4	USB A-style connectors, USB 2.0/1.1 interface
VGA	Video graphics output, 15-pos. high density D-SUB female connector

Additional Back Panel Connectors (8HP Option)

COM	9-pin male D-Sub connector, RS-232E serial interface
MS	PS/2 style (Mini-DIN) connector, for attachment of a pointing device (mouse).

Installing and Replacing Components

Before You Begin

Warnings

The procedures in this chapter assume familiarity with the general terminology associated with industrial electronics and with safety practices and regulatory compliance required for using and modifying electronic equipment. source and from any telecommunication performing any of the procedures disconnect power, or telecommunication perform any procedures can result in Some parts of the system can continue to operate even though the power switch is in its off state.



Disconnect the system from its power links, networks or modems before described in this chapter. Failure to links before you open the system or personal injury or equipment damage.

Caution

Electrostatic discharge (ESD) can damage components. Perform the procedures described in this chapter only at an ESD workstation. If provide some ESD protection by wearing to a metal part of the system chassis or in its original ESD protected packaging. such a station is not available, you can an antistatic wrist strap and attaching it board front panel. Store the board only Retain the original packaging (antistatic bag and antistatic box) in case of returning the board to EKF for repair.



Installing the Board

Warning

This procedure should be done only by qualified technical personnel. Disconnect the system from its power source before doing the procedures described here. Failure to disconnect power, or telecommunication links before you open the system or perform any procedures can result in personal injury or equipment damage.

Typically you will perform the following steps:

- Switch off the system, remove the AC power cord
- Attach your antistatic wrist strap to a metallic part of the system
- Remove the board packaging, be sure to touch the board only at the front panel
- Identify the related CompactPCI slot (peripheral slot for I/O boards, system slot for CPU boards, with the system slot typically most right or most left to the backplane)
- Insert card carefully (be sure not to damage components mounted on the bottom side of the board by scratching neighbored front panels)
- A card with onboard connectors requires attachment of associated cabling now
- Lock the ejector lever, fix screws at the front panel (top/bottom)
- Retain original packaging in case of return




Removing the Board

Warning

This procedure should be done only by qualified technical personnel. Disconnect the system from its power source before doing the procedures described here. Failure to disconnect power, or telecommunication links before you open the system or perform any procedures can result in personal injury or equipment damage.

Typically you will perform the following steps:

- Switch off the system, remove the AC power cord
- Attach your antistatic wrist strap to a metallic part of the system 
- Identify the board, be sure to touch the board only at the front panel
- unfasten both front panel screws (top/bottom), unlock the ejector lever
- Remove any onboard cabling assembly
- Activate the ejector lever
- Remove the card carefully (be sure not to damage components mounted on the bottom side of the board by scratching neighboured front panels)
- Store board in the original packaging, do not touch any components, hold the board at the front panel only

Warning

Do not expose the card to fire. Battery cells and other components could explode and cause personal injury.



EMC Recommendations



In order to comply with the CE regulations for EMC, it is mandatory to observe the following rules:

- The chassis or rack including other boards in use must comply entirely with CE
- Close all board slots not in use with a blind front panel
- Front panels must be fastened by built-in screws
- Cover any unused front panel mounted connector with a shielding cap
- External communications cable assemblies must be shielded (shield connected only at one end of the cable)
- Use ferrite beads for cabling wherever appropriate
- Some connectors may require additional isolating parts (e.g. 10Base-2 BNC T-connector)

Reccomended Accessories

Blind CPCI Front Panels	EKF Elektronik	Widths currently available (1HP=5.08mm): with handle 4HP/8HP without handle 2HP/4HP/8HP/10HP/12HP
Ferrit Bead Filters	ARP Datacom, 63115 Dietzenbach	Ordering No. 102 820 (cable diameter 6.5mm) 102 821 (cable diameter 10.0mm) 102 822 (cable diameter 13.0mm)
Isolating Elements	ARP Datacom, 63115 Dietzenbach	Ordering No. 182 068 (Cheapernet T-connector)
Metal Shielding Caps	Conec-Polytronic, 59557 Lippstadt	Ordering No. CDFA 09 165 X 13129 X (DB9) CDSFA 15 165 X 12979 X (DB15) CDSFA 25 165 X 12989 X (DB25)

Technical Reference

Caution

Some of the connectors may provide operating voltage (e.g. 5V) to devices inside the system chassis, such as internal drives. Not all of these connectors are overcurrent protected. Do not use these connectors for powering devices external to the computer chassis. A fault in the load presented by the external devices could cause damage to the board, the interconnecting cable and the external devices themselves.

General Considerations

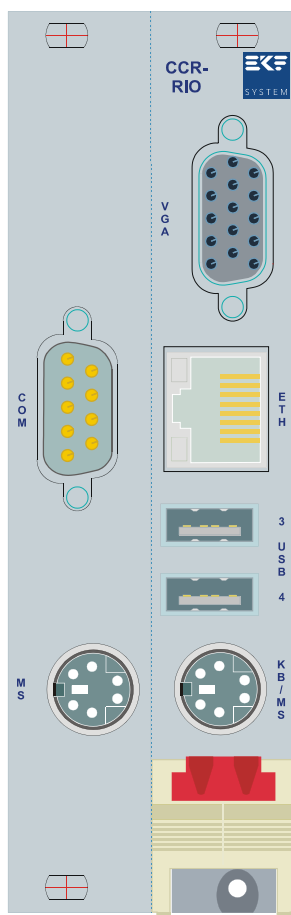
Utilization of the CCR-RIO rear I/O transition module is bound to several preconditions, which must be completely satisfied.

- ▶ The CC9 CPU card by default is suitable for a 64-bit CompactPCI backplane. However, the J2/P2 pin assignments of a 64-bit CPCI backplane differ substantially from a CompactPCI rear I/O backplane. Hence [usage of the rear I/O features is available only as stuffing options on the CC9 CPU board, which have to be ordered explicitly](#). Pull-up resistor networks on the CPCI address/data lines AD33-AD63 and associated control signals must be removed, and pass-through resistor networks for the required rear I/O signals have to be filled on the CC9. Neither can these modifications be made afterwards on a CC9 64-bit J2 CPU board by the user, nor by EKF, due to the technical effort needed and costs incurred.
- ▶ [The system in use must be equipped with a P2 CompactPCI rear I/O backplane](#). If the system is provided with a P2 CompactPCI 64-bit backplane instead, several of the CC9 rear I/O signals will collide with the 64-bit address/data lines on the backplane, with unpredictable results regarding the rear I/O signal integrity.

Please note, that EKF is not only a manufacturer of boards, but also has many years of experience as a system integrator. Please contact sales@ekf.de for a quote on the complete system, tailored to your individual needs.

Back Panel Connectors

The CCR-RIO is provided with a 3U/4HP rear panel, which contains the combined PS/2 style keyboard and mouse jack, two USB receptacles, the video connector, and the Ethernet RJ45 jack. In addition, with the optional available 8HP back panel another mini-DIN connector (mouse) and a serial COM port D-SUB connector are stuffed. Characteristic features and the pin assignments of each connector are described on the following pages.



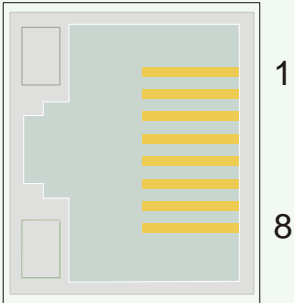
VGA Video

Alternatively, either the CC9-SAMBA front panel DVI-I connector (integrated digital & analog video interface) may be used for attachment of a flat panel display or classic monitor, or the CCR-RIO back panel VGA socket (high density D-Sub 15-position, analog signals only). Electronic switches are provided on the CC9-SAMBA to route the video signals to their required destination.

VGA Video Connector		
	1	red
	2	green
	3	blue
	4	nc
	5	GND
	6	GND
	7	GND
	8	GND
	9	+5V (PolySwitch 0.75A) DDC Power
	10	GND
	11	nc
	12	DDC Data
	13	Hsync
	14	Vsync
	15	DDC Clock

ETH Ethernet

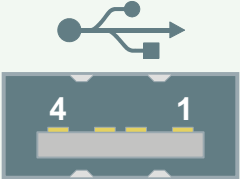
The CC9-SAMBA is equipped with a Gigabit Ethernet controller. An electronic switch allows usage of the Ethernet communications port either from the CC9 front panel, or via the CCR-RIO rear panel.

ETH (RJ45)		
	1	MDX0+
	2	MDX0-
	3	MDX1+
	4	MDX2+
	5	MDX2-
	6	MDX1-
	7	MDX3+
	8	MDX3-

The back panel RJ45 jack may provide internal LEDs. These LEDs are not wired and therefore do not signal any status at all.

USB2, USB3

The rear I/O USB ports on the CCR-RIO transition module are independent from the CC9-SAMBA CPU front panel USB interface, thus increasing the overall USB bandwidth available. The connectors can source up to 500mA into external devices and are protected by an electronic switch. The USB interfaces comply to the USB1.1 and USB2.0 specification.

USB2 & USB3		
	1	+5V/0.5A
	2	DATA-
	3	DATA+
	4	GND

Keyboard, Mouse

PS/2 KB/MS, MS (Option 8HP Rear Panel)			
		Mouse	Keyboard/Mouse
		DAT MS	DAT KB
			DAT MS
		GND	GND
		5V	5V
		CLK MS	CLK KB
			CLK MS

The CCR-RIO rear I/O transition module is available with a 4-HP rear panel (standard) or 8-HP back panel (option).

The 4-HP back panel is equipped with a single Mini-DIN connector, which provides both the keyboard and also the mouse signals. While a keyboard can be connected to the KB/MS socket directly, attachment of a keyboard and a mouse would require a suitable splitter cable. The splitter is available as notebook computer accessory either from EKF or computer stores. The most commonly available splitter cables are wired so, that the mouse and keyboard function with respect to the CCR-RIO are swapped against each other. When using this type of splitter adapters, the mouse has to be connected to the splitter end marked as keyboard, and the keyboard must be attached to the splitter end labelled with the mouse symbol. Please note, that there are also splitter cables available with the opposite wiring schema (the correct order from the CCR-RIOs point of view).

The 8-HP rear panel provides an additional PS/2 style connector for direct attachment of a mouse. No splitter adapter cable is required with the 8-HP back panel.

The 5V pins of both connectors (pin 4) are protected against short-circuit situations by a Polyswitch resettable fuse.

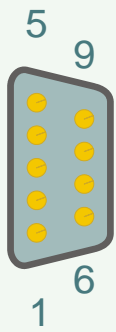
In order to get the PS/2 ports working, the CC9-SAMBA on-board SIO must be active. Enter the CC9 BIOS setup for checking the status.

Serial COM Port

There is no space left on a 4-HP back panel for an asynchronous serial interface connector. However, when the optional 8-HP rear panel is in use, a cutout is provided to accommodate a 9-pin D-Sub connector.

The CC9-SAMBA CPU board passes over its SIO (Super-I/O) serial interface to the CCR-RIO transition module as TTL level signals. For an RS-232E compatible serial port, the CCR-RIO is stuffed with an optional on-board RS-232 transceiver (ADM211E). A short flat cable assembly would be needed, matching the on-board connector P-RS232 (dual-row pin header 2x5, 2.54mm pitch), with the D-Sub connector attached to the opposite cable ending.

The modem signal RI (ring indicator) is not supported on the CCR transition module. As an option, the CCR could be stuffed with a ferrite bead which delivers +5V power to pin 9 of the D-SUB connector.

COM (Male D-Sub 9)				
			1	DCD
	DSR	6		
			2	RXD
	RTS	7		
			3	TXD
	CTS	8		
			4	DTR
	+5V/0.5A	9		
			5	GND

The on-board transceiver can be disabled by means of a jumper. Observe that the jumper JMP-COM is set in order to use the on-board RS-232E interface. However, there is the choice to attach an external transceiver, e.g. an optically isolated RS-485 module. If an external PHY is required, the on-board transceiver must be shut down by removing the jumper JMP-COM.

The optional dual-row pin headers P-CU and P-SA may be used for attachment of a suitable PHY module, either from the EKF CU-series or MEN SA-series, via flat cable assembly. The PHY module itself can be fixed at the D-Sub 8-HP back panel cutout.

On-Board Connectors

The CCR-RIO transition module may be equipped with several on-board connectors for system internal usage. Be sure to specify your individual needs when ordering the CCR board. The on-board connectors optionally available are

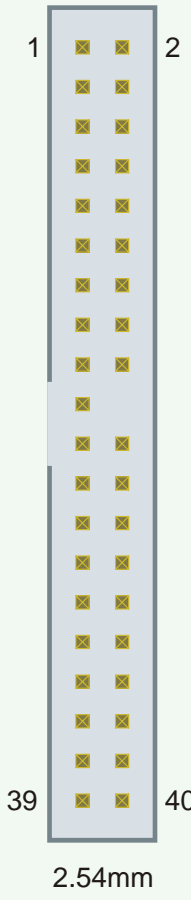
- ▶ IDE connector 2 x 20 positions
- ▶ IDE connector 2 x 22 positions
- ▶ Serial interface (TTL level) 2 x 5 positions suitable for CU-series PHY-modules
- ▶ Serial interface (TTL level) 2 x 5 positions suitable for SA-series PHY-modules
- ▶ Serial interface (EIA-232E level) 2 x 5 positions
- ▶ GPIO connector 2 x 5 positions
- ▶ External +5V power connector 1 x 4 positions, 2.50mm

IDE/ATA Connector P-IDE1

The Primary IDE interface optional on-board connector P-IDE1 is a dual-row 2 x 20 pin header (2.54mm pitch), suitable for attachment of up to two 3.5-inch hard disks and/or CD-ROM or DVD drives, configured as master and slave devices attached to a common flat ribbon cable (use special 80-pin cabling assembly for Ultra ATA/66 and Ultra ATA/100 operation).

Usage of P-IDE1 is an alternative to the connector P-IDE2. Routing of the IDE signals is extremely critical - no branches or open endings are allowed on an IDE bus. Therefore, either P-IDE1 or P-IDE2 may be in use, but never both connectors simultaneously.

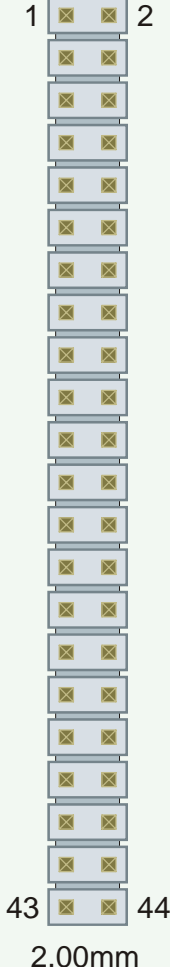
P-IDE1 (2.54mm Shrouded Header)				
	reset#	1	2	GND
	d07	3	4	d08
	d06	5	6	d09
	d05	7	8	d10
	d04	9	10	d11
	d03	11	12	d12
	d02	13	14	d13
	d01	15	16	d14
	d00	17	18	d15
	GND	19	20	KEY
	dmarq	21	22	GND
	iow#	23	24	GND
	ior#	25	26	GND
	iordy	27	28	GND
	dmack#	29	30	GND
	intrq	31	32	NC
	a1	33	34	66MHz
	a0	35	36	a2
	cs1#	37	38	cs3#
	act#	39	40	GND



IDE/ATA Connector P-IDE2

The optional on-board connector P-IDE2 is a dual row 2 x 22 pin header (2.00mm pitch), suitable for attachment of up to two 2.5-inch hard disk drives, configured as master and slave devices attached to a common flat ribbon cable. Both connectors P-IDE1 and P-IDE2 are assigned to the primary IDE interface of the CC9 CPU board. Because no branches or open endings are allowed on the IDE bus, either connector P-IDE1 or P-IDE2 may be in use, but never both connectors simultaneously.

The metric connector P-IDE2 matches the typical 2.5-inch hard disk drive connector. Suitable 1.00mm pitch flat ribbon cable assemblies are available from EKF. The maximum power consumption of the attached IDE device(s) should be less than ~6W (PolySwitch 1.25A).

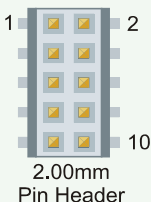
P-IDE2 (2.00mm Header)				
	reset#	1	2	GND
	d07	3	4	d08
	d06	5	6	d09
	d05	7	8	d10
	d04	9	10	d11
	d03	11	12	d12
	d02	13	14	d13
	d01	15	16	d14
	d00	17	18	d15
	GND	19	20	KEY
	dmarq	21	22	GND
	iow#	23	24	GND
	ior#	25	26	GND
	iordy	27	28	GND
	dmack#	29	30	GND
	intrq	31	32	NC
	a1	33	34	66MHz
	a0	35	36	a2
	cs1#	37	38	cs3#
	act#	39	40	GND
drvpwr	41	42	drvpwr	
GND	43	44	NC	

P-CU Serial Interface Connector

If the on-board RS-232E transceiver ADM211E is either not stuffed or disabled by removing the jumper JMP-COM, alternatively external PHY modules can be attached to the CCR-RIO by means of a flat ribbon cable. The signal RI (ring indicator) is not supported by the CCR-RIO.

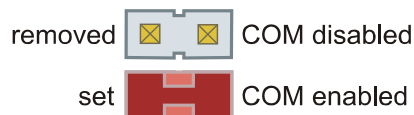
The rear I/O transition module is equipped with the header P-CU, suitable for the EKF CU7/CU8 series of PHY modules. The CU7-RS485 is an isolated fieldbus interface, available either for party-line configuration or full-duplex point-to-point.

Another header P-SA may be provided on the CCR-RIO which complies with the MEN SA-series of PHY modules. No more than one transceiver is allowed to be in use, either P-CU, P-SA or the on-board transceiver.

P-CU (2.00mm Pin Header 2 x 5)				
 <p>2.00mm Pin Header</p>	+5V/0.5A	1	2	DSR#
	NC	3	4	RXD
	TXD	5	6	DTR#
	RTS#	7	8	CTS#
	DCD#	9	10	GND

TTL Level Signals

JMP-COM



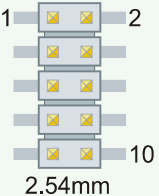
Remove JMP-COM to disable the on-board transceiver when using P-CU

P-SA Serial Interface Connector

If the on-board RS-232E transceiver ADM211E is either not stuffed or disabled by removing the jumper JMP-COM, alternatively external PHY modules can be attached to the CCR-RIO by means of a flat ribbon cable. The signal RI (ring indicator) is not supported by the CCR-RIO.

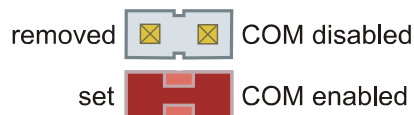
The rear I/O transition module may be equipped with the header P-SA, suitable for the MEN SA-series of PHY modules.

Another header P-CU may be provided on the CCR-RIO which complies with the EKF CU-series of PHY modules. No more than one transceiver is allowed to be in use, either P-CU, P-SA or the on-board transceiver.

P-SA (2.54mm Pin Header 2 x 5)				
	GND	1	2	+5V/0.5A
	TXD	3	4	RXD
	DTR#	5	6	RTS#
	DSR#	7	8	CTS#
	DCD#	9	10	NC

TTL Level Signals

JMP-COM



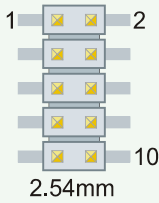
Remove JMP-COM to disable the on-board transceiver when using P-SA

P-232 Serial Interface Connector

The on-board RS-232E asynchronous serial transceiver ADM211E is wired to the dual row pin header P-232. When using a micro ribbon flat cable assembly, the signal order on P-232 matches the back panel D-Sub connector COM (8HP back panel only). The jumper JMP-COM must be stuffed if the ADM211E transceiver is in use.

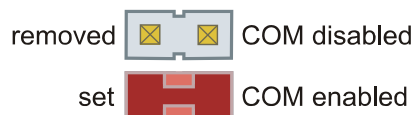
However, if an external PHY transceiver (CU- or SA-module) is attached to P-CU or P-SA, the on-board transceiver must not be active (remove jumper JMP-COM). No more than a single transceiver is allowed to be in use, either attached to P-CU, P-SA or the on-board transceiver.

As a stuffing option, P-232 may source +5V/0.5A (fused by PolySwitch) to an external device. By default, this pin is left unconnected. The signal RI (ring indicator) is not supported by the CCR-RIO.

P-232 (Dual-Row Pin-Header 2.54mm)				
	DCD	1	2	DSR
	RXD	3	4	RTS
	TXD	5	6	CTS
	DTR	7	8	+5V/0.5A
	GND	9	10	NC

EIA-232E Level Signals

JMP-COM

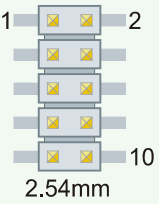


Set JMP-COM to enable the on-board transceiver when using P-232

GPIO Connector P-GPIO

The connector P-GPIO is provided as a CCR-RIO stuffing option on special request only, since the related pins on the CPCI J2 connector are normally used as signals to the VGA video connector. Only if rear I/O video is not required, the CCR-RIO board may be equipped with the connector P-GPIO. Please refer to the CC9-SAMBA user manual for a description of the rear I/O GPIO signals available.

Please note: In order to use the connector P-GPIO on the CCR-RIO, also a special stuffing option of the CC9-SAMBA is required (otherwise you will receive video signals on P-GPIO instead of the expected GPIO lines). Please discuss your needs with EKF before ordering!

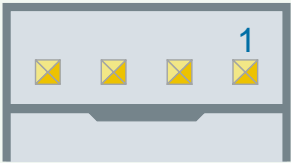
P-GPIO (2.54mm Header 2 x 5)				
	PXI Trig 0 *	1	2	PXI Trig 7 *
	PXI Trig 1	3	4	PXI Trig 6 *
	NC	5	6	NC
	NC	7	8	NC
	NC	9	10	GND

* Dual function signals - normally used for rear I/O video output

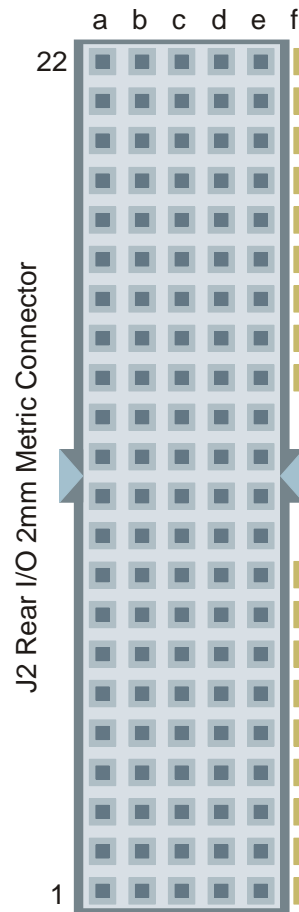
Power Connector P-POW

The CCR rear I/O transition module can be supplied with +5V across the J2 connector from the CC9 CPU board. +5V would be required for the CCR on-board RS-232E transceiver, and for IDE devices possibly attached to the 44-lead connector P-IDE2, which passes directly power to the drive(s). The maximum current from the CC9-SAMBA to the CCR-RIO across J2 is limited to 2.5A (PolySwitch fused).

With the optional connector P-POW, the systems power supply can be directly connected to the CCR transition module, up to a maximum of 2.5A @5V (PolySwitch fused). The connector is an AMP EI series 4-position header, being very popular since it is used also on 3.5-inch floppy disk drives.

P-POW		
 <p>AMP 171826-4</p>	1	+5V/2.5A
	2	GND
	3	GND
	4	NC

CompactPCI J2



Column f is used for shielding

#J2	A	B	C	D	E
22	GA4	GA3	GA2	GA1	GA0
21	CLK6	GND	<i>RSV</i> ETH_MX2-	<i>RSV</i> ETH_MX3-	<i>RSV</i> ETH_MX3+
20	CLK5	GND	<i>RSV</i> ETH_MX2+	GND GND	<i>RSV</i> ETH_MX0+
19	GND	GND	<i>RSV</i> ETH_MX1-	<i>RSV</i> ETH_MX1+	<i>RSV</i> ETH_MX0-
18	<i>BRSVP2A18</i> VGA_RED	<i>BRSVP2B18</i> VGA_GREEN	<i>BRSVP2C18</i> VGA_HSYNC	GND GND	<i>BRSVP2E18</i> PXI_TRIG6 VGA_VSYNC
17	<i>BRSVP2A17</i> VGA_BLUE	GND GND	PRST#	REQ6#	GNT6#
16	<i>BRSVP2A16</i> PXI_TRIG1	<i>BRSVP2B16</i> PXI_TRIG0 DDC_SCL	DEG#	GND	<i>BRSVP2E16</i> PXI_TRIG7 DDC_SDA
15	<i>BRSVP2A15</i> IDE_RST#	GND GND	FAL#	REQ5#	GNT5#
14	AD35 IDE_A2	AD34 IDE_IOW#	AD33 IDE_CS1#	GND GND	AD32 IDE_IOR#
13	AD38 IDE_A0	GND GND	V(I/O)	AD37 IDE_DACK#	AD36 IDE_CS3#
12	AD42 IDE_A1	AD41 IDE_D14	AD40 IDE_D15	GND IDE_CBLID#	AD39 IDE_D0
11	AD45 IDE_D3	GND IDE_IORDY	V(I/O)	AD44 IDE_D1	AD43 IDE_D12
10	AD49 IDE_D2	AD48 IDE_D13	AD47 IDE_D5	GND IDE_DRQ	AD46 IDE_D7
9	AD52 IDE_D6	GND IDE_INT	V(I/O) IDE_ACT#	AD51 IDE_D4	AD50 IDE_D8
8	AD56 IDE_D10	AD55 IDE_D9	AD54 IDE_D11	GND COM1_DSR#	AD53 COM1_TXD
7	AD59 COM1_DTR#	GND COM1_CTS#	V(I/O) COM1_RXD	AD58 COM1_RTS#	AD57 COM1_DCD#
6	AD63 USB_P3+	AD62 USB_P3-	AD61 USB_P4+	GND USB_OC34#	AD60 USB_P4-
5	C/BE5# +5V HOST (1.5A)	GND (64EN#) GND	V(I/O)	C/BE4# MS_DATA	PAR64 MS_CLK
4	V(I/O)	<i>BRSVP2B4</i> +5V HOST (1.5A)	C/BE7# KB_DATA	GND	C/BE6# KB_CLK
3	CLK4	GND	GNT3#	REQ4#	GNT4#
2	CLK2	CLK3	SYSEN#	GNT2#	REQ3#
1	CLK1	GND	REQ1#	GNT1#	REQ2#

Black = System Slot Rear I/O Backplane Signals *Gray/Italic* = System Slot 64-bit Backplane Signals Coloured = EKF Proprietary Rear I/O

Schematics

Complete circuit diagrams for this product are available for customers on request. Signing of a non-disclosure agreement would be needed. Please contact sales@ekf.de for details.

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