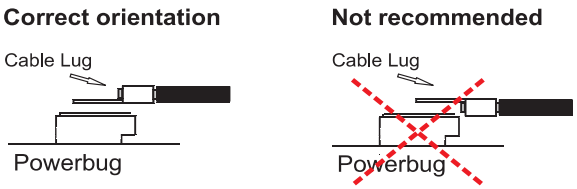
Assembly Instructions & General Information

Mounting: Attach the Backplane, using at least every second mounting hole at the top and the bottom, with M2.5 screws and washers. Conductive washers as well as isolating washers are possible. Spring washers recommended instead of flat washers.
Note: Do not tighten the screws.
Align the Backplane by inserting Boards in the outermost slots at the left and the right and tighten all screws.
Note: We recommend to use the Schroff mounting kit, see catalog or at www.schroff.biz.

Chassis GND: If noise reduction shall be achieved by connecting digital GND to Chassis GND, use conductive washers instead of isolating washers for the mounting screws. Spring washers are recommended instead of flat washers. If both grounds are isolated, creepage and clearance between screw and digital GND are in accordance with EN60950.

Power input: The Backplane provide power terminals with an M4 thread (power bugs) to connect power cables. M4 cable lugs should be used to connect the power cables to the power bugs. A maximum of 2 cable lugs are recommended per power bug. Please assemble the cable lugs with the flat side to the power bug to ensure the correct isolation distance between the not insulated part of the power cable and not insulated parts of the backplane.



CPCI Information

V(I/O): Check V(I/O) coding and V(I/O) power bridge. The default assembly is +5 V (blue key at connector P1 and power bridge between V(I/O) and +5 V). To set V(I/O) to 3,3 V, change the keys and set the power bridge between V(I/O) and 3,3 V. (Conversion kit, order# 21101-658, including 8 yellow keys and tool)

Geographical Addressing (GA): GA starts by default with number one at the left slot within the chassis. If more than one backplane shall be assembled, the geographical addresses can be changed by cutting or open copper links in between SMD pads. Apply zero Ohm resistors size 0603 to close. The position of the SMD pads is labelled "nGA[x]" where "n" stands for slot# , and "x" for address#, see backplane drawing.

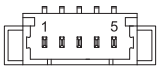
Physical Slot#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
GA[4] (J2-A22)	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	open	open	open	open	open	open
GA[3] (J2-B22)	GND	GND	GND	GND	GND	GND	GND	GND	open	open	open	open	open	open	open	open	GND	GND	GND	GND	GND	GND
GA[2] (J2-C22)	GND	GND	GND	GND	open	open	open	open	GND	GND	GND	GND	open	open	open	open	GND	GND	GND	GND	open	open
GA[1] (J2-D22)	GND	GND	open	open	GND	GND	open	open	GND	GND	open	open	GND	GND	open	open	GND	GND	open	open	GND	GND
GA[0] (J2-E22)	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open	GND	open

66 MHz Operation: Schroff CPCI backplanes up to 5 Slots can be operated at 33 MHz or 66 MHz, the signal M66EN is HIGH (open). Backplanes with more than 5 slots also fulfil the 66 MHz operation requirements in terms of clock trace length and skew, but M66EN is tied to GND to disable 66 MHz operation by default. For test purposes a copper link in between an SMD pad can be opened and closed again by using a zero Ohm resistor of size 0603. For position of the link see backplane drawing.

Hot Swap: Schroff CPCI backplanes fulfil the requirements for Basic Hot Swap of the Hot Swap Specification PICMG 2.1 R2.0. The signal BD_SEL# is tied to GND by a removable copper link. It can be replaced by a resistor-capacitor combination, both of package size 0603. Position is labelled "nB" where "n" stands for slot#, see backplane drawing.

Pinout IPMB/Utility connectors

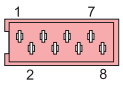
IPMB Connector



Pin	
1	IPMB_SCL
2	GND
3	IPMB_SDA
4	IPMB_PWR
5	n.c.

Mating connector:
Crimp housing: Molex 0510210500
Crimp terminal: Molex 0500798100
Schroff 23204-113
(connector with 750 mm single wires)

Utility connector



Pin	
1	GND
2	+5 V
3	+12 V
4	FAL#
5	-12 V
6	DEG#
7	+3.3 V
8	PRST#

Utility connector = Tyco 1-188275-8
Mating connectors:
Schroff 23204-811
(connector with 600 mm ribbon cable)
Schroff 23204-812
(connector with 600 mm single wires)

Backplane Topology

The CPCI/CPCI Serial hybrid backplane is splitted into a CPCI and a CPCI Serial section with a shared CPCI PlusIO system slot between the CPCI and CPCI Serial section. The former Rear I/O pins of the system slot connector P2 are used for the routing of serial links (SATA, USB2, PCIe, ETH) to the J1 and J6 connectors of the CPCI Serial slots as defined in the PICMG 2.30 CPCI PlusIO specification.

The CPCI/CPCI Serial hybrid backplanes can have a maximum of 7 CPCI peripheral slots and a maximum of 4 CPCI Serial slots.

Ethernet is implemented at connectors 5-J6 and 6-J6 by 4 differential pairs to support 10/100/1000Base-T and 10GBase-T.

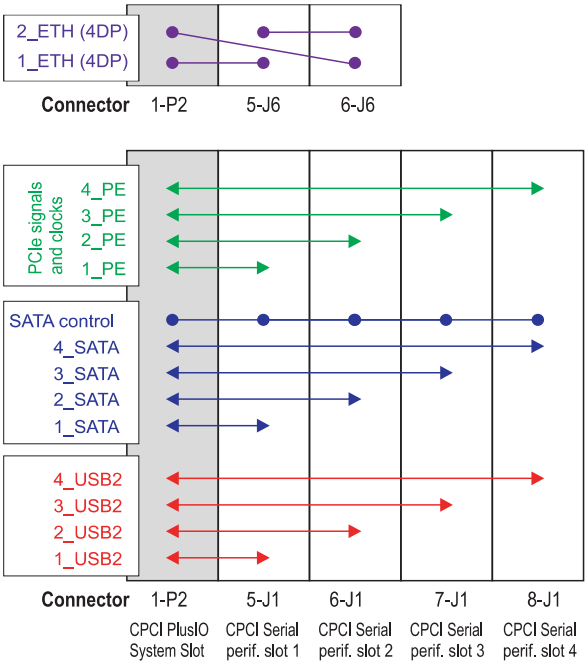
Rear I/O is supported at all CPCI peripheral slots at connector P2.

Rear I/O at the CPCI Serial slots (connectors 5-J2...8-J5) is possible as an assembly option.

Applicable Specifications:

- PICMG 2.0 R3.0 CPCI Core Specification
- PICMG 2.01 R2.0 Hot Swap
- PICMG 2.09 R1.0 System Management Bus
- PICMG 2.10 R1.0 Keying
- PICMG 2.30 Draft CPCI PlusIO
- PICMG CPCI Serial (CPCIS.0)

CPCI PlusIO serial link routing



Connectors

Pinout CPCI PlusIO Connector 1-P2 (System Slot)

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	CLK6	GND	2_ETH_B+	1_ETH_D+	1_ETH_B+	GND
20	GND	CLK5	GND	2_ETH_B-	1_ETH_D-	1_ETH_B-	GND
19	GND	GND	GND	2_ETH_A+	1_ETH_C+	1_ETH_A+	GND
18	GND	2_ETH_D+	2_ETH_C+	2_ETH_A-	1_ETH_C-	1_ETH_A-	GND
17	GND	2_ETH_D-	2_ETH_C-	PRST#	REQ6#	GNT6#	GND
16	GND	4_PE_CLK-	2_PE_CLK+	DEG#	GND	reserved	GND
15	GND	4_PE_CLK+	2_PE_CLK-	FAL#	REQ5#	GNT5#	GND
14	GND	3_PE_CLK-	1_PE_CLK+	4_PE_CLKE#	SATA_SCL	reserved	GND
13	GND	3_PE_CLK+	1_PE_CLK-	3_PE_CLKE#	SATA_SDO	SATA_SL	GND
12	GND	4_PE_Rx00+	1_PE_CLKE#	2_PE_CLKE#	SATA_SDI	4_SATA_Rx+	GND
11	GND	4_PE_Rx00-	4_PE_Tx00+	4_USB2+	4_SATA_Tx+	4_SATA_Rx-	GND
10	GND	3_PE_Rx00+	4_PE_Tx00-	4_USB2-	4_SATA_Tx-	3_SATA_Rx+	GND
9	GND	3_PE_Rx00-	3_PE_Tx00+	3_USB2+	3_SATA_Tx+	3_SATA_Rx-	GND
8	GND	2_PE_Rx00+	3_PE_Tx00-	3_USB2-	3_SATA_Tx-	2_SATA_Rx+	GND
7	GND	2_PE_Rx00-	2_PE_Tx00+	2_USB2+	2_SATA_Tx+	2_SATA_Rx-	GND
6	GND	1_PE_Rx00+	2_PE_Tx00-	2_USB2-	2_SATA_Tx-	1_SATA_Rx+	GND
5	GND	1_PE_Rx00-	1_PE_Tx00+	1_USB2+	1_SATA_Tx+	1_SATA_Rx-	GND
4	GND	VIO	1_PE_Tx00-	1_USB2-	1_SATA_Tx-	reserved	GND
3	GND	CLK4	GND	GNT3#	REQ4#	GNT4#	GND
2	GND	CLK2	CLK3	SYSEN#	GNT2#	REQ3#	GND
1	GND	CLK1	GND	REQ1#	GNT1#	REQ2#	GND

Pinout Connector x-P1 (Legacy CPCI Slots)

Pin	Z	A	B	C	D	E	F
25	GND	+5V	REQ64#	ENUM#	+3.3V	+5V	GND
24	GND	AD[1]	+5V	VIO	AD[0]	ACK64#	GND
23	GND	+3.3V	AD[4]	AD[3]	+5V	AD[2]	GND
22	GND	AD[7]	GND	+3.3V	AD[6]	AD[5]	GND
21	GND	+3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	VIO	AD[11]	AD[10]	GND
19	GND	+3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	+3.3V	PAR	C/BE[1]#	GND
17	GND	+3.3V	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	VIO	STOP#	LOCK#	GND
15	GND	+3.3V	FRAME#	IRDY#	GND	TRDY#	GND
14	GND						GND
13	GND						GND
12	GND						GND
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	+3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	GND	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	VIO	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ0#	GND	+3.3V	CLK0	AD[31]	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT0#	GND
4	GND	IPMB_PWR	HEALTHY#	VIO	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	+5V	INTD#	GND
2	GND	TCK	+5V	TMS	TDO	TDI	GND
1	GND	+5V	-12V	TRST	+12V	+5V	GND

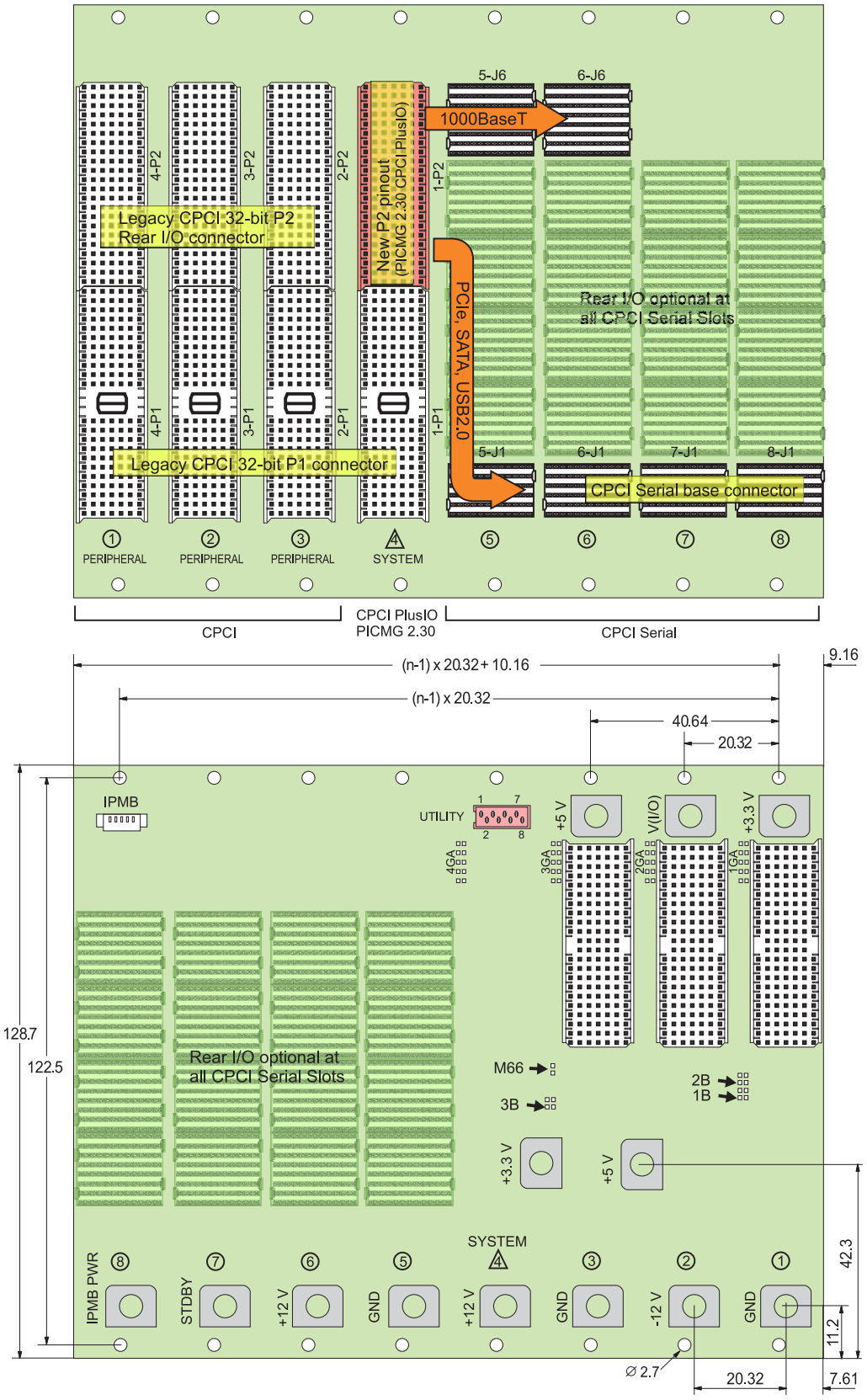
Pinout Connector x-J6 (CPCI Serial ETH Connector)

Pin	A	B	C	D	E	F	G	H	I	J	K	L
8												
7												
6												
5												
4												
3												
2	GND	2_ETH_A+	2_ETH_A-	GND	2_ETH_B+	2_ETH_B-	GND	2_ETH_C+	2_ETH_C-	GND	2_ETH_D+	2_ETH_D-
1	1_ETH_A+	1_ETH_A-	GND	1_ETH_B+	1_ETH_B-	GND	1_ETH_C+	1_ETH_C-	GND	1_ETH_D+	1_ETH_D-	GND

Pinout Connector x-J1 (CPCI Serial Base Connector)

Pin	A	B	C	D	E	F	G	H	I	J	K	L
6	GND			GND			GND			GND		
5	PE_Rx00+	PE_Rx00-	GND	PE_Tx00+	PE_Tx00-	GND			GND			GND
4	GND	USB2+	USB2-	GND	PE_CLK+	PE_CLK-	GND	SATA_Rx+	SATA_Rx-	GND	SATA_Tx+	SATA_Tx-
3	n.c.	n.c.	GND	n.c.	n.c.	GA1	SATA_SDI	SATA_SDO	GA2	SATA_SCL	SATA_SL	GA3
2	GND	IPMB_SCL	IPMB_SDA	GND			GND	RST_IN#	WAKE_IO#	GND	PE_CLKE#	
1	IPMB_PWR	STNDBY	GA0	+12V	+12V	GND	+12V	+12V	GND	+12V	+12V	GND

Backplane Dimensions



Graphic shows backplane 23007-601.
The overall width with different slot configuration is:
9.16 + 10.16 + (n-1) x 20.32 mm
n = number of slots.

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