Low Profile CompactPCI Backplane

Description

The Elma Bustronic Low Profile cPCI backplane series saves a slot-size of width on the backplanes. By placing power studs and power blades throughout key locations, as opposed to the side of the backplane, space is saved. This allows the 4-slot Low Profile cPCI to fit within a 2U horizontal chassis and the 8-slot to fit within a 4U horizontal chassis, etc. The 160CPCIxxx part numbers are bridge-compatible versions of the Low Profile cPCI backplane family. Consult factory for details.

All Elma Bustronic cPCI backplanes are designed to be fully compliant to the PICMG basic specification 2.0 R3.0 and Hot Swap specification 2.1 R1.0. The H.110 versions conform to PICMG H.110 Computer Telephony specification 2.5 R1.0. Some configurations are compliant to the PICMG 2.16 Packet Switching Backplane specification.

Elma Bustronic uses stripline construction to assure the highest possible performance. By exclusively utilizing stripline construction, we eliminate a significant source of EMI/RFI radiation and give all signals similar characteristic impedances and minimal signal skew. This allows for significantly higher data transfer rates as signal skew factors into the rate calculations four times.

Features

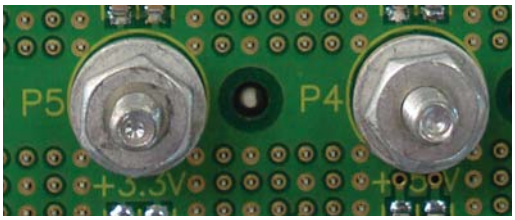
- Conforms to PICMG basic specification 2.0 R3.0
- PICMG Hot Swap specification 2.1 R2.0
- Versions conforming to PICMG 2.16 are available
- Versions conforming to PICMG 2.5 R 1.0 for Computer Telephony are available
- Designed to save a slot size of width, fit into low profile horizontal chassis
- 8-layer and 10-layer controlled impedance stripline designs
- Virtually zero crosstalk

Board Specifications

- 10-layers, 8-layers (2-slot), PICMG 2.16 versions vary
- 2 oz. copper power and ground
- PCB UL recognized 94V-0
- PCB FR-4 or equivalent
- PCB .134" thick, (.125") 2-slot, (.140") 3-slot, PICMG 2.16 versions vary

Mechanical Specifications

- 3U - 3 slot
- 6U - 4, 6, 8 slots
- 7U - 2, 3 slots
- 32-bit, 64-bit (32-bit capable)



Close-up of Power Studs

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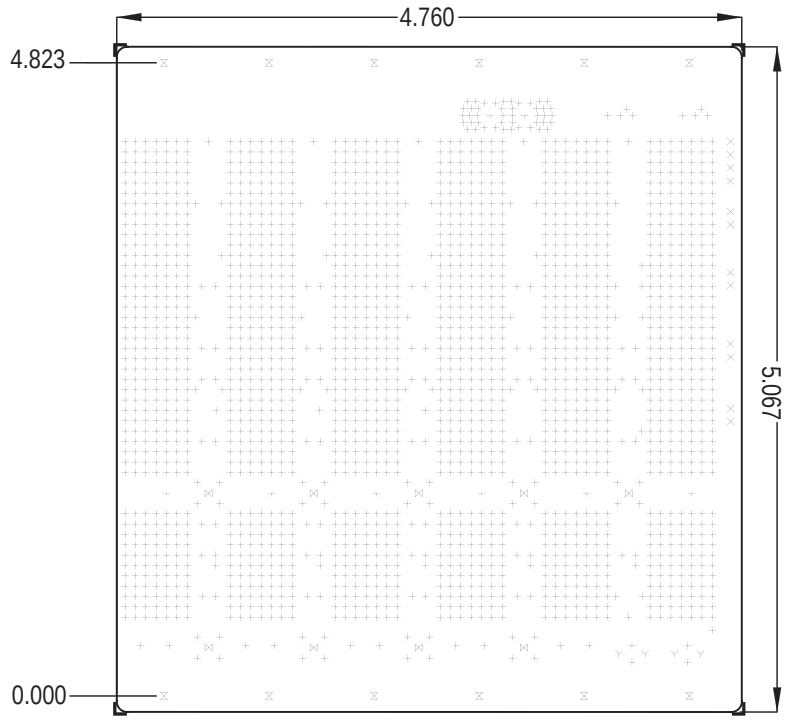
Line Drawing



ORDER INFORMATION

Slots	Height	Width	Thickness	Description	Part Number
3	3U	2.470 in.	.125”	cPCI only, right justified, 32-bit	105CP3R303
6	6U	4.760 in.	.125“	cPCI only, right justified	105CP3R606
4	6U	3.180 in.	.134”	cPCI only, 20-pin header, right justified	105CPCI604
4	6U	TBD	TBD	cPCI only, left justified, bridge compatible	160CPCI604
5	6U	3.978 in.	.013”	cPCI only, left justified, bridge compatible	160CPCI605
6	6U	4.708 in.	.134”	PICMG 2.16, 1 fabric, 5 nodes w/cPCI, right justified	107PS11608
8	6U	6.380 in.	.125”	cPCI only, left justified	105CPCI608
8	6U	6.380 in.	.125”	cPCI only, left justified, 32-bit	105CP3L608
8	6U	6.380 in.	.125”	cPCI and H.110, left justified	105CTEL608
8	6U	6.380 in.	.134”	PICMG 2.16, 1 fabric, 7 nodes w/cPCI, right justified	107PS11608
8	6U	6.380 in.	.134”	PICMG 2.16, 1 fabric, 7 nodes w/cPCI and H.110, right justified	108PS11608
8	6U	6.380 in.	.152”	PICMG 2.16, 2 fabric, 6 nodes w/cPCI, 20-pin header, right justified	107PS21608
8	6U	6.380 in.	.152”	PICMG 2.16, 2 fabric, 6 nodes w/cPCI and H.110, right justified	108PS21608
2	7U	1.670 in.	.125”	cPCI only, left justified	105CPCI702
2	7U	1.670 in.	.125”	cPCI and H.110, left justified	105CTEL702
3	7U	2.470 in.	.140”	cPCI only, ATX, right justified	105CPCI703

Low Profile CompactPCI Backplane

(Example: 105CP3R303-10X0)

105	Product	Form	Slots	-_ _ _ _ _Configuration

Product
CPCI = CPCI Backplane, 64 Bit
CTEL = H.110 compatible, 64 Bit
CPCR, CTER = 64 Bit, system slot right
CPCL = 64 Bit, system slot left
CP3R, CT3R = 32 Bit, system slot right
CP3L, CT3L = 32 Bit, system slot left

Form
3 = 3U height
6 = 6U height
7 = 7U height

02-21 = Slots

Configuration

Power Interface
0 = Power taps on GND, +5V, +3.3V, faston blades for +/- 12V
1 = Studs
9 = Custom (9XXX sequential numbers)
X = Not applicable

Connectors for P1 & P2
0 = P1 short, P2 long
1 = P1 short, P2 short
2 = P1 short, No P2
X = Not applicable

Connectors for P3, P4 & P5
0 = Not applicable
1 = Not applicable
2 = Not applicable
3 = P3 long type AB, P4 short (slot 1 long), P5 long type AB for CTEL
4 = P3 long type AB, P4 long all slots, P5 long type AB for CTEL
5 = P3 & P5long type AB, P4 long type A
X = Not applicable

Shrouds
0 = P2 only
1 = Not applicable
2 = Not applicable
3 = Not applicable
4 = Not applicable
5 = P2 if long tail, P4 type A all slots, P3 & P5 type AB for CTEL
6 = P2 if long tail, P4 slot 1 type A , P3 & P5 type AB for CTEL
7 = P2 if long tail, P4 type A , P3 & P5 type AB
X = Not applicable

RoHS
R = RoHS compliant

Common Configuration Examples

-0136	-0157	-10X0	-1157	-11XX	-20X0
-0136R	-0157R	-10X0R	-1157R	-11XXR	-20X0R

Low Profile CompactPCI Backplane

3U Low Profile

The 3U Low Profile line currently consists of a 3-slot left justified version that is 32-bit. For more information on this backplane or for custom 3U Low Profile designs, contact Elma Bustronic.

6U Low Profile

Various Elma Bustronic 6U cPCI backplanes come in the Low Profile layout. This includes most of the PICMG 2.16 cPSB and PICMG 2.17 StarFabric backplanes, and a couple of 32-bit designs. See the Ordering Information on page 3 for details on each style or contact Elma Bustronic for further information.

7U Low Profile

Currently, three versions of Elma Bustronic's Low Profile CPCI backplanes come in 7U length, with the power connections in the "extra 1U" of height. Standard 6U cPCI boards are used with these backplanes. The 2-slot cPCI backplane features include two power bugs for GND, one power bug each for +3.3V and +5V; one power blade each for +12V, -12V, and PS-ON, and two power blades for V I/O. Three +12V fan tray headers are located on the front, with one on the back. The design also includes a backplane stiffener to help prevent the backplane from bowing. Also, a thin profile design next to the power bugs allows cable access from the other side of the chassis.

The 3-slot cPCI backplane features one 20-pin ATX connector, three 3-pin and two 2-pin friction lock headers, a 3-pin V I/O bridge, and one 3-pin fan power connector. Other features include a backplane stiffener and a thin profile design next to the ATX connector. For drawings or a photo of the 3-slot backplane, please contact Elma Bustronic.

Shelf Manager Connection

Some versions of our Low Profile cPCI backplane contain a 20-pin header. Incorporated into the header with other signal functions are pins for the Intelligent Platform Management Bus (IPMB). These connections are usable for standard shelf managers, or the IPM Sentry.

The IPM Sentry is an advanced unit that goes beyond basic monitoring of voltages, fans, and temperature by adjusting the speed of the fans, sending out remote alarms, maintaining a System Event Log (SEL) along with a Sensor Data Record (SDR), collect information on the Field Replaceable Units, and more. Contact Elma Bustronic for more info.

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Design Elements

Power Distribution

The Elma Bustronic EasyPlug CPCI backplane series features the 47-pin Positronic power connector. The 3U and 6U cPCI versions are standardly with the power connectors in a vertically oriented position. The 9U cPCI are standardly with the power connectors in a horizontally oriented position.

Signal Layout

The Elma Bustronic design conforms to the PICMG basic specification 2.0 R3.0 and basic Hot Swap specifications 2.0 R2.0. Some versions comply with the PICMG 2.5 R 1.0 Computer Telephony and/or PICMG 2.16 Packet Switching specifications. A minimum stub length is utilized in routing and interconnecting to the signal traces. Our design techniques avoid crosstalk and noise caused by inadequate ground and power.

Jumpering

Jumpers can be installed to close a circuit. The backplane has labeled areas for jumper installation. The following applies to all of Elma Bustronic's CompactPCI and H.110 backplanes in 2-8 slot sizes. Configurations with 2-5 slots have an addition jumper consideration, the M66EN# jumper.

64-EN# Jumper

If the jumper is installed, 64-EN# P2-B5 (see Hot Swap specification, PICMG 2.1) is ground, and 64-bit boards will initialize for 64-bit operation. If the jumper is not installed, 64-EN# isopen, and 64-bit boards will initialize for 32-bit operation.

2-5 Slot Backplane Only

M66EN# Jumper

If the jumper is installed M66EN# P1-D21 is ground and the backplane operates in 33MHz mode. If the jumper is not installed M66EN# is bussed and the backplane operates in 66MHz mode.

Related Products from Elma Electronic:

- System Platforms – need a chassis for your backplane?
- cPCI Embedded Computing Products – SBCs, Switches, Storage, and More

Did you know we also offer with this cPCI backplane?

- cPCI Extenders, load boards, RTMs, test modules
- Customization, integration