



Description

The Elma Bustronic CompactPCI backplane series is designed to be fully compliant with PICMG standards. The EasyCable™ line features power nuts along the side of the backplane for easy and convenient cabling. We have provided all the standard features required for full compatibility, including all pin connections for bussed signal lines and all defined power and ground pins connected to their respective planes. User defined V/I/O is standard. All of Elma Bustronic's standard CPCI backplanes conform to the PICMG basic specification 2.0 R2.1 and Hot Swap specification 2.1 R2.0 They are designed to maximize performance, minimize noise, and give the customer the most reliable, cost-effective products possible. To achieve superior performance, we construct the board in eight layers (12 layers for H.110) -- three signal layers, five power ground planes. We incorporate a full stripline design, generously distributed decoupling capacitors, and 2 oz. power and ground planes. Our standard design with two 2oz. copper ground planes fully shield the backplane, minimize EMI/RFI emissions susceptibility, minimize crosstalk, and maximize power distribution.

Two 2 oz. copper voltage planes allow us to maximize power distribution while they act as virtual ground planes for the signals in order to minimize noise and crosstalk. There is also a full V/I/O plane. By exclusively utilizing stripline construction, we eliminate a significant source of EMI/RFI radiation and give all the signals similar characteristic impedances, virtually identical propagation delays, and minimal signal skew. All these items allow for significantly higher data transfer rates, as signal skew factors into the data transfer 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 H.110 Computer Telephony specification 2.5 R1.0
- 8-layer and 12-layer controlled impedance stripline design
- Superior power distribution
- Virtually zero crosstalk

Board Specifications

- 8-layer board
(12-layer for H.110)
- 2 oz. copper power and ground
- PCB UL recognized 94V-0
- PCB FR-4 or equivalent
- PCB .125" thick
(.132" thick for H.110)

Mechanical Specifications

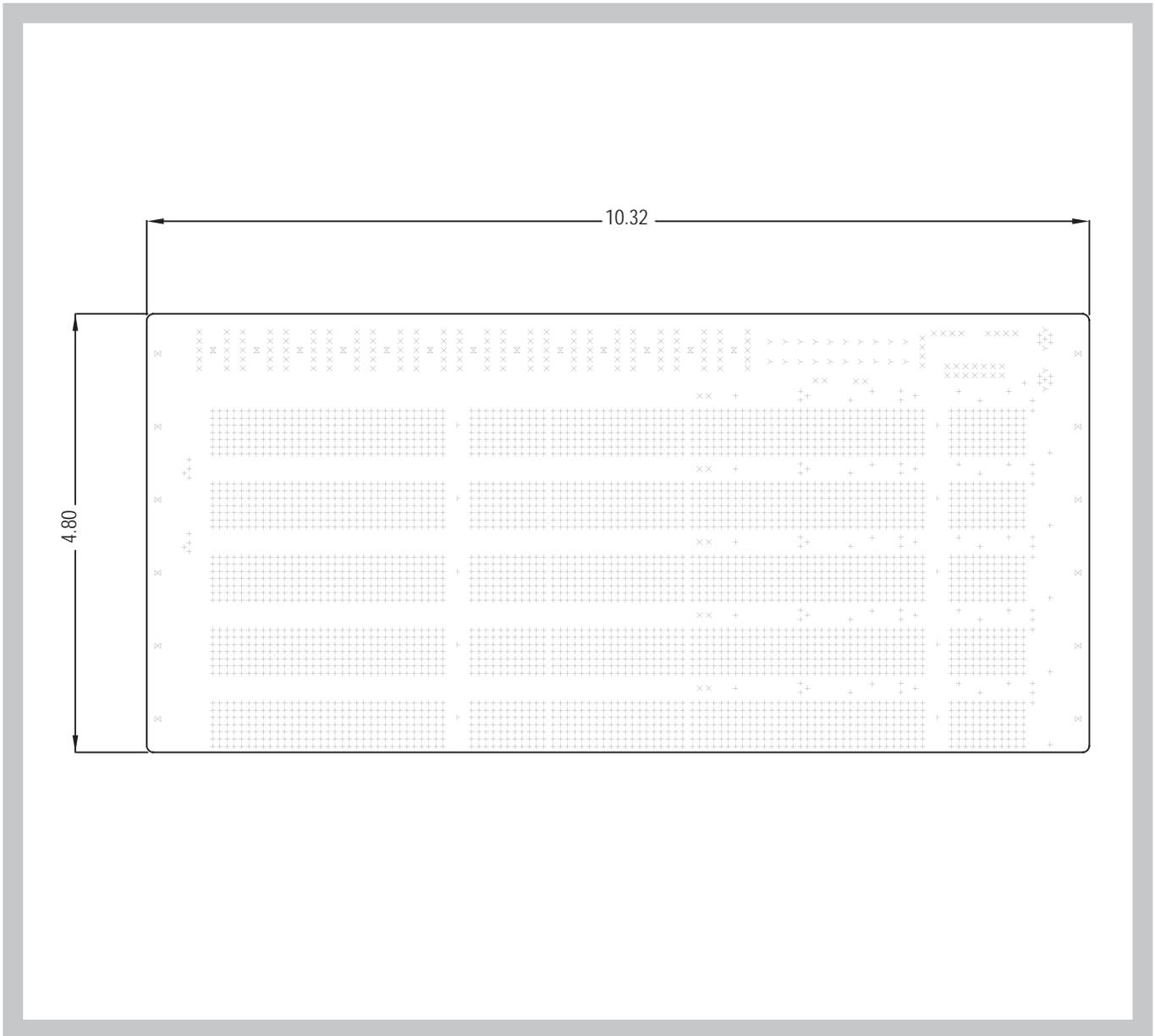
- 3U - 4, 6, 8 slots
- 6U - 3, 4, 5, 6, 8 slots
- 64-bit (32-bit capable)



Close-up of Power Studs

EasyCable™ CompactPCI Backplane

Line Drawing



ORDER INFORMATION

Slots	Height	Width	Description	Part Number
4	3U	4.002 in 101.650 mm	right justified	102CPCI304
6	3U	5.602 in 142.290 mm	right justified	102CPCI306
8	3U	7.202 in 182.930 mm	right justified	102CPCI308
3	6U	3.202 in 81.330 mm	right justified	102CPCI603
4	6U	4.002 in 101.650 mm	right justified, H.110	104CTEL604
5	6U	4.802 in 121.970 mm	right justified	102CPCI605
5	6U	4.435 in 112.650 mm	right justified, H.110	104CTEL605
6	6U	5.602 in 142.290 mm	right justified	102CPCI606
6	6U	5.602 in 142.290 mm	right justified, H.110	104CTEL606
8	6U	7.202 in 182.930 mm	right justified	102CPCI608
8	6U	7.202 in 182.930 mm	right justified, H.110	104CTEL608

EasyCable™ CompactPCI Backplane

(Example: 102CPCI608-4157R)

102	Product	Form	Slots	-----Configuration
	<p>Product CPCI = CPCI Backplane, 64 Bit</p> <p>Form 3 = 3U height 6 = 6U height</p> <p>Slots 04 = 4 slots 66mhz capable 05 = 5 slots 66mhz capable 06 = 6 slots 08 = 8 slots</p> <p>Configuration</p> <p>Power Interface _____</p> <p>0 = Power taps with 6-32 screws 1 = Not applicable 2 = 6-32 nuts and fastons for +12V, -12V (This is the only power interface for 3U backplanes) 4 = 6/32 pressed nuts, ATX connector and utility connectors 5 = ATX connector only, PWR taps +3.3V, 5V, V10, GND 6 = Power taps, ATX connector and utility connectors 9 = Custom (9XXX sequential numbers) X = Not applicable</p> <p>Connectors for P1 & P2 _____</p> <p>0 = P1 short, P2 long 1 = P1 short, P2 short 2 = P1 short, No P2 X = Not applicable</p> <p>Connectors for P3, P4 & P5 _____</p> <p>0 = Not applicable 1 = Not applicable 2 = Not applicable 3 = Not applicable 4 = Not applicable 5 = P3 & P5 long type AB, P4 long type A X = Not applicable</p> <p>Shrouds _____</p> <p>0 = P2 only 1 = Not applicable 2 = Not applicable 3 = Not applicable 4 = Not applicable 5 = Not applicable 6 = Not applicable 7 = P2 if long tail, P4 type A, P3 & P5 type AB X = Not applicable</p> <p>RoHS _____</p> <p>R = RoHS compliant</p>			

Common Configuration Examples

-4057 -4057R -4157 -4157R -40X0 -40X0R -41XX -41XXR

EasyCable™ CompactPCI Backplane

(Example: 104CTEL608-4146R)

104	Product	Form	Slots	- - - - Configuration
	<p>Product CTEL = H.110 compatible</p> <p>Form 6 = 6U height</p> <p>Slots 04 = 4 slots 66mhz capable 06 = 6 slots 08 = 8 slots</p> <p>Configuration</p> <p>Power Interface _____</p> <p>0 = Power taps with 6-32 screws 1 = Not applicable 2 = Not applicable 4 = 6-32 pressed nuts, ATX connector and utility connectors 5 = ATX connector, PWR taps +3.3V, 5V, V10, GND 6 = Power taps, ATX connector and utility connectors 9 = Custom (9XXX sequential numbers) X = Not applicable</p> <p>Connectors for P1 & P2 _____</p> <p>0 = P1 short, P2 long 1 = P1 short, P2 short 2 = P1 short, No P2 X = Not applicable</p> <p>Connectors for P3, P4 & P5 _____</p> <p>0 = Not applicable 1 = Not applicable 2 = Not applicable 3 = Not applicable 4 = P3 long type AB, P4 short (slot 1 long) P5 long type AB 5 = P3 long type AB, P4 type A long all slots, P5 long type AB X = Not applicable</p> <p>Shrouds _____</p> <p>0 = Not applicable 1 = Not applicable 2 = Not applicable 3 = Not applicable 4 = Not applicable 5 = P2 if long, P4 type A all slots, P3 & P5 Type AB 6 = P2 if long, P4 (slot 1) type A, P3 & P5 type AB 7 = Not applicable X = Not applicable</p> <p>RoHS _____</p> <p>R = RoHS compliant</p>			

Common Configuration Examples

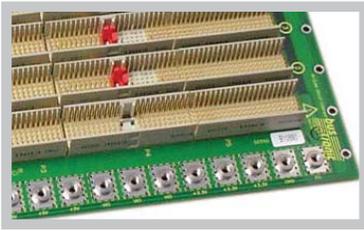
-4046

-4046R

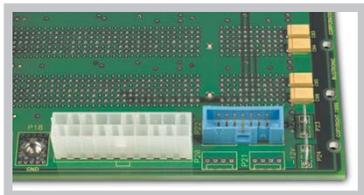
-4146

-4146R

EasyCable™ CompactPCI Backplane



Power Nuts



ATX & Utility Connectors



Fastons

Other Options



Power Bugs

Design Elements

Power Distribution

The Elma Bustronic EasyCable cPCI backplane family is designed with the power insertion area beside the signal slots, allowing for easy and efficient system integration. Adequate numbers of 6/32 nuts and an ATX connector (for the 6U versions) have been inserted in this area to accommodate more power than the 28 amps required per slot. The ATX connector allows for an ATX power supply to be plugged in. The connector has 20 pins standard on our 6U CPCI backplane. The fastons have been added to allow additional power while taking a minimum of space. The blades are rated at 12A each.

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. 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. Every Elma Bustronic backplane is designed with the customer's system in mind—ensuring the highest performance, reliability, and value.

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# is open, and 64-bit boards will initialize for 32-bit operation.

PS-ON# Jumper

If the jumper is installed, pin 14 PS-ON# on the ATX power connector is grounded. The ATX power supply will turn on immediately when plugged in. If the jumper is not installed, pin 14 PS-ON# on the ATX power connector is open. The ATX power supply will not turn on when plugged in. The PS-ON# jumper pins may be used to wire an on/off switch for the power supply.

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.

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- cPCI Embedded Computing Products – SBCs, Switches, Storage, and More



Did you know we also offer with this cPCI backplane?

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- Customization, integration

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Platforms

Backplanes

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Components

Cabinets

Rotary
Switches

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