6U VME64x BACKPLANES

ELMA
Your Solution Partner

Features

- Meets or exceeds ANSI/VITA 1.1-1997, VME extension standard
- Exceeds ANSI/VITA 1-1994 and IEEE P1014 specifications
- 10-layer controlled impedance stripline design
- Active BUSGRANT, IACK daisy chain
- Power bugs on top and bottom of slots
- Superior power distribution
- Virtually zero crosstalk
- Backplane stiffeners to provide durability, reliability

Board Specifications

- 10-layer board
- 2 oz. copper power and ground
- PCB UL recognized 94V-0
- PCB FR-4 or equivalent
- PCB .125" thick

Mechanical Specifications

- 6U height
- 5, 8, 12, 14, 15 and 21 slots

Description

The Elma Bustronic VME64x backplane series is designed to fully comply with the ANSI/VITA VME extension standard. We provide all standard features required for VME64x compatibility, including 160-pin VME extension connectors in J1 and J2, all defined ground pins connected to a ground plane, routing and termination of all VME and VME64x bussed signal lines, geographic address pins, distribution of +5V, +3.3V, +/-12V, +/-V1, +/- V2, and VPC, all on a single monolithic printed circuit board with J1 and J2 included. Additional features include active, electronic IACK/BUSGRANT daisy chaining standard; onboard, inboard termination; distributed high frequency capacitors for each slot, distributed low frequency capacitors; five signal layers, five power and ground planes.

Elma Bustronic constructs the board in ten layers — five signal layers, five power and ground planes. We incorporate a full stripline design, generously distributed decoupling capacitors, inboard termination, 2 oz. power and ground planes, transient analysis simulation programs. We could use fewer layers, but we use this design to isolate each signal layer so our backplanes provide superior performance.

Our standard design features three 2 oz. copper ground planes, which fully shield the backplane, minimize EMI/RFI emissions susceptibility, minimize crosstalk, and maximize power distribution. In addition, the robust outer ground layers provide mechanical and EMI/RFI protection for the backplane.

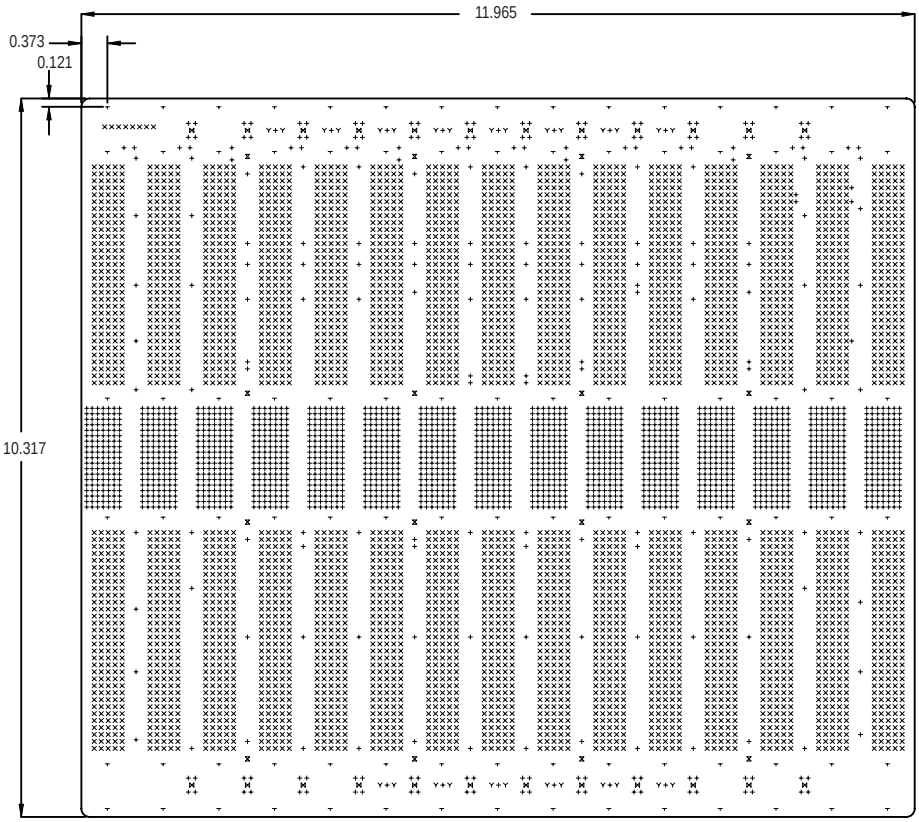
Two 2 oz. copper VCC planes, allow us tomaximize power distribution while they act as virtual ground planes for the signals in order to minimize noise and crosstalk. The high frequency decoupling capacitors at every slot and distributed low frequency electrolytic capacitors across the board also help this effort. Measured results verify that Elma Bustronic backplanes are among the quietest in the industry.

The combination of multiple 2 oz. copper layers of VCC and ground, plus the distributed capacitors allows Elma Bustronic backplanes to provide superior power distribution. Additionally, there are multiple, well-distributed power bugs to virtually eliminate voltage drop across the backplane. There is also a utility connector that allows minimal power insertion and provides access to status signals, including ACFAIL, RESET, and SYSFAIL.

The 6U VME64x backplane has the same routing and basic design as the 7U line with a couple of exceptions. The 6U “classic” VME64x backplane features power bugs above and below the slots to maximize space. The various headers are basically the same, except the 12-pin friction lock for +/- V1 and V2 has only 8 pins (one less pin per type). The 6U version does not comply with VITA 1.7 for higher current applications.

6U VME64x BACKPLANES

Line Drawing



Order Information

Slots	Height	Width	Part Number
5	6U	3.965	101V64XC05
8	6U	6.365	101V64XC08
12	6U	9.535	101V64XC12
14	6U	11.165	101V64XC14
15	6U	11.965	101V64XC15
21	6U	16.8876	101V64XC21

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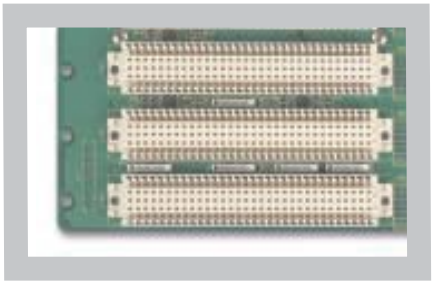
Power bugs



Daisy Chain

Design Elements

Power Distribution

The Elma Bustronic VME64x backplane family is designed with the power insertion area below the signal slots above the bottom-mounting rail so we can apply the maximum power potential to the backplane. We have inserted adequate numbers of power bugs in this area to accommodate more power than the 22 amps potential per slot. As an option, we offer 8/32" press-in power studs. +/- V1 and V2 are accommodated by a 12-pin friction lock header connector located at the top of the backplane and an 8-position utility connector for system functions, including Ground, +5V, ACFAIL, SYSFAIL, SYSRESET, +3.3V, +12V, and -12V.

Signal Layout

The Elma Bustronic design conforms to ANSI/VITA 1.1-1997. Onboard, inboard terminators are provided to reduce signal length and reduce possible signal reflections. A minimum stub length is utilized in routing and interconnecting to the terminators. IACK/BUSGRANT daisy chaining is accomplished utilizing surface mount components located between the J1 connectors. Elma Bustronic designs backplanes with the customer's system design in mind to ensure the highest performance, reliability, and value.

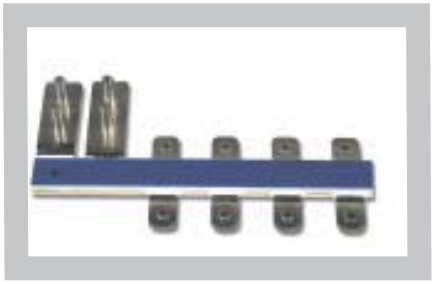
Automatic Daisy Chaining

Automatic daisy chain eliminates a major source of problems when configuring a VME64x system, while eliminating the need for access to the backplane. The VME64x backplane uses surface mount ICs for the daisy chaining. SMT is the latest in technology and offers the most space-saving and efficient processes.

Design Elements

Ejector Shroud

M4 Screw



Busbar