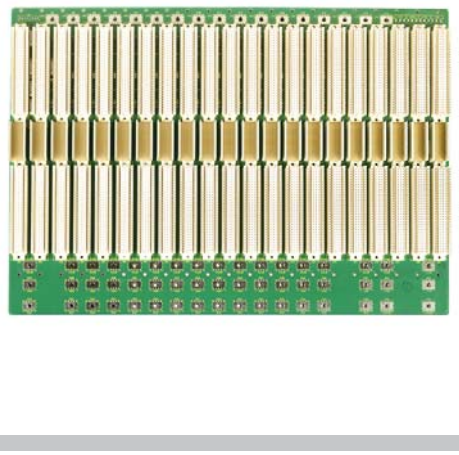
7U VME64x BACKPLANES

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 connections at bottom for easier cabling
- Superior power distribution
- Virtually zero crosstalk
- Meets VITA 1.7 Increased Current Specification
- 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

- 7U height
- 2 to 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.

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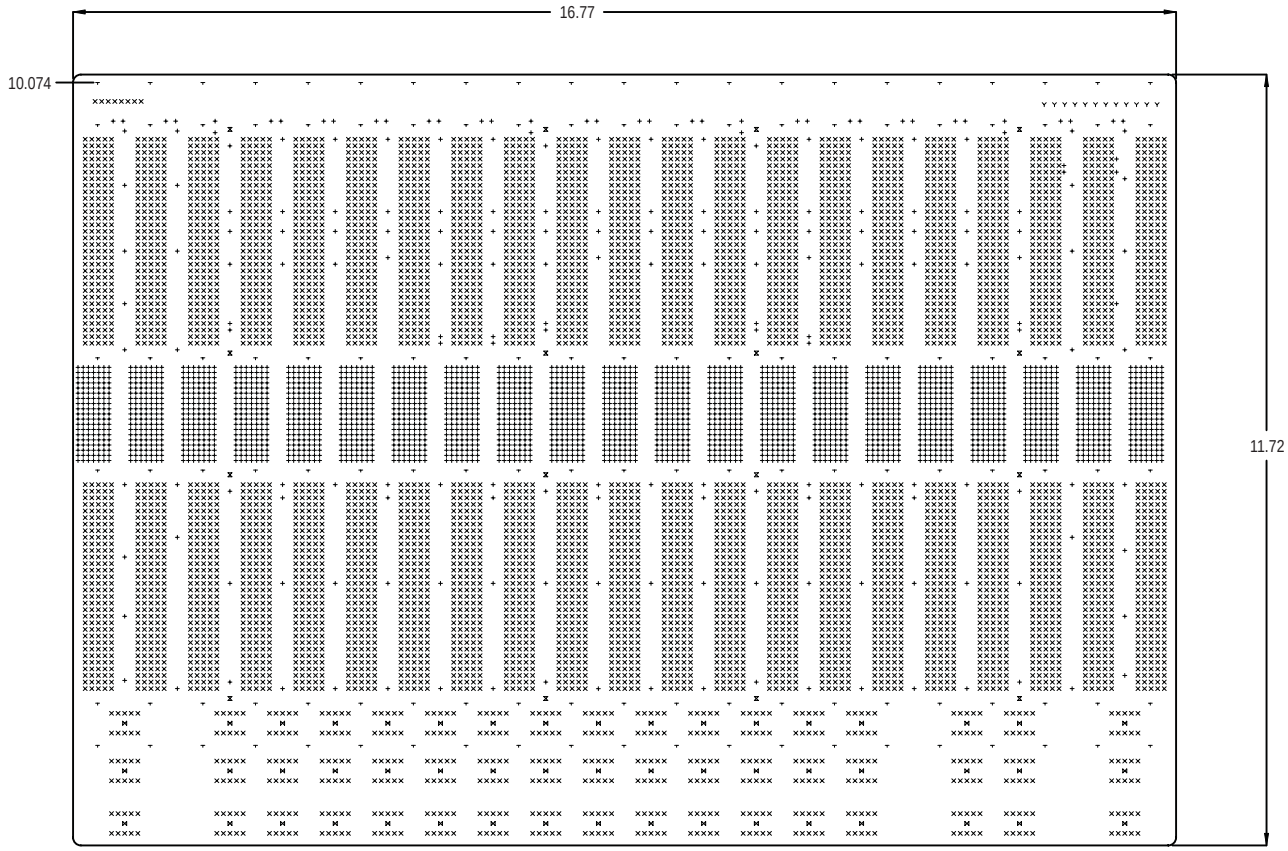
Line Drawing



Order Information

	Height		Width		
Slots	**in**	**mm**	**in**	**mm**	**Part Number**
2	11.716	297.600	1.560	39.620	101V64XM02
3	11.716	297.600	2.365	60.070	101V64XM03
4	11.716	297.600	3.165	80.390	101V64XM04
5	11.716	297.600	3.965	100.710	101V64XM05
6	11.716	297.600	4.765	121.030	101V64XM06
7	11.716	297.600	5.565	141.350	101V64XM07
8	11.716	297.600	6.365	161.670	101V64XM08
9	11.716	297.600	7.165	181.990	101V64XM09
10	11.716	297.600	7.965	202.310	101V64XM10
11	11.716	297.600	8.765	222.630	101V64XM11
12	11.716	297.600	9.565	242.950	101V64XM12
13	11.716	297.600	10.370	263.270	101V64XM13
14	11.716	297.600	11.170	283.590	101V64XM14
15	11.716	297.600	11.970	303.910	101V64XM15
16	11.716	297.600	12.770	324.230	101V64XM16
17	11.716	297.600	13.570	344.550	101V64XM17
18	11.716	297.600	14.370	364.870	101V64XM18
19	11.716	297.600	15.170	385.190	101V64XM19
20	11.716	297.600	15.970	405.510	101V64XM20
21	11.716	297.600	16.770	425.830	101V64XM21

PRODUCT CONFIGURATIONS

6U VME64x Backplanes

(Example: 101V64XM21-1621)

101	Product	Form	Slots	-_ _ _ _ _Configuration

Product
V64x = VME64x with electronic daisy chain

Form
M1 = Monolithic J1J2, 7U

02-21 = Slots

Configuration

Power Interface
0 = 10 pin power tap with 6/32 screw
1 = M4 threaded stud
2 = 10 pin power taps with busbar kit
9 = Custom (9_ _ _ sequential numbers)
8 = Not applicable

J1 Connectors and Shrouds
0 = 96 pin, 13mm with shrouds first and last slots, all other slots 96 pin, 6mm connectors
1 = 96 pin, 17mm with shrouds first and last slots, all other slots 96 pin, 6mm connectors
2 = 160 pin, 17mm with shrouds, all slots
3 = 160 pin, 13mm with shrouds, all slots
4 = 160 pin, 13mm without shrouds, all slots
5 = 160 pin, 17mm without shrouds, all slots
6 = 160 pin, 5mm without shrouds, all slots
7 = 96 pin, 5mm without shrouds, all slots
X = Not applicable

J2 Connectors and Shrouds
0 = 96 pin, 13mm with shrouds
1 = 96 pin, 17mm with shrouds
2 = 160 pin, 13mm with shrouds, all slots
3 = 160 pin, 13mm with shrouds, all slots
4 = 160 pin, 13mm without shrouds, all slots
5 = 160 pin, 17mm without shrouds, all slots
6 = 160 pin, 5mm without shrouds, all slots
X = Not applicable

J0 Connector and Shrouds
0 = No J0 connector
1 = 95 pin (19 x 7 position 17mm with shrouds)
X = Not applicable

RoHS Compliance
R = RoHS compliant

Common Configuration Examples

-0620	-0621	-1620
-0620R	-0621R	-1621

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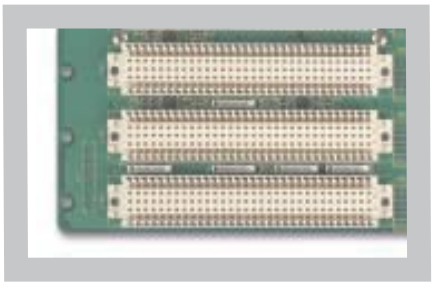
Power bugs



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.

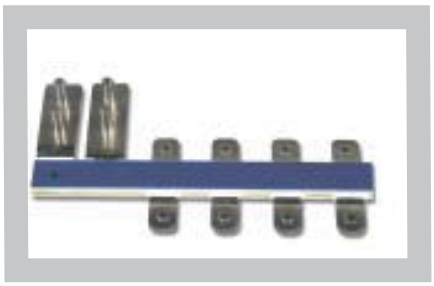
Automatic Daisy Chaining

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