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COMTEL ELECTRONICS



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VME64X Backplane Data Sheet



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Company Profile



Comtel Electronics GmbH has acquired a leadership position in the business of electrical interconnection components and systems, both as a manufacturer of standard and custom products and as a supplier of design service and custom prototypes.

The key reason for Comtel's success in the market has been the close collaboration with our customers.
These are leading international high-technology companies active in the telecommunications, data processing, military and aerospace markets in the design and manufacturing of innovative products.

Our custom Backplane engineering expertise has a proven track record. We provide optimized designs that meet all electrical requirements and are cheaper and easier to produce.
We specialize in re-designing existing Backplanes to reduce layer-counts and therefore the cost. Right first time, conformance to industry norms, Design For Manufacturing (DFM) and Design For Testing (DFT) are all areas of custom Backplane engineering in which we excel.
The latest CAD and simulation tools along side full measurement and characterization facilities form the basis of this technological lead.

Comtel designs and manufactures standard-architecture Backplanes, custom-specific Backplanes, sub-racks and integrated enclosures. Our standard-architecture product range includes VME, VME64x, VXI, VXS, VPX, Gigabit VME64x CompactPCI®, PXI, AdvancedTCA® and microTCA™.

Comtel, as an IS0 9000:2000 certified manufacturer, uses fully automated fabrication and assembly processes and sophisticated Design To Production (DTP) techniques guaranteeing consistently high quality product while benefiting from reduced manufacturing costs.
Backplane testing using various techniques to gain the best coverage including in-circuit-test, functional, burn-in and high pin count capabilities.

Our objective is to continue development of our resources to stay at the forefront of Backplane and System technology. We provide consequently innovative Backplane and System solutions, which meet the ever-increasing technical and commercial demands of the global market.

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Data Sheet



VME64x Backplanes
ANSI/VITA 1.1-1997

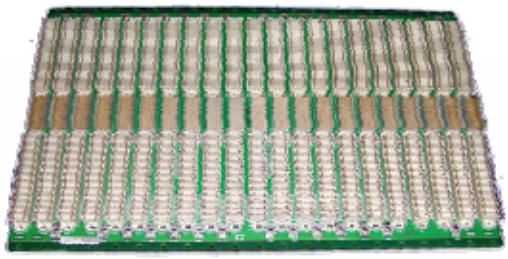
Revision *1.30*

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Comtel VME64x Backplanes
ANSI/VITA 1.1-1997
2 & 21 slots Backplanes





Introduction

Unique Design - Comtel's **VME64x** Backplane range implements innovative and beneficial features. Building on the success of Comtel's **VME** SMT Backplanes, the **VME64x** implements surface mount technology for termination, automatic daisy-chaining and capacitive decoupling. The design enables on-board termination, allowing 21-slots in a 19"-wide form factor, but with the simplicity of single-sided surface mount assembly.

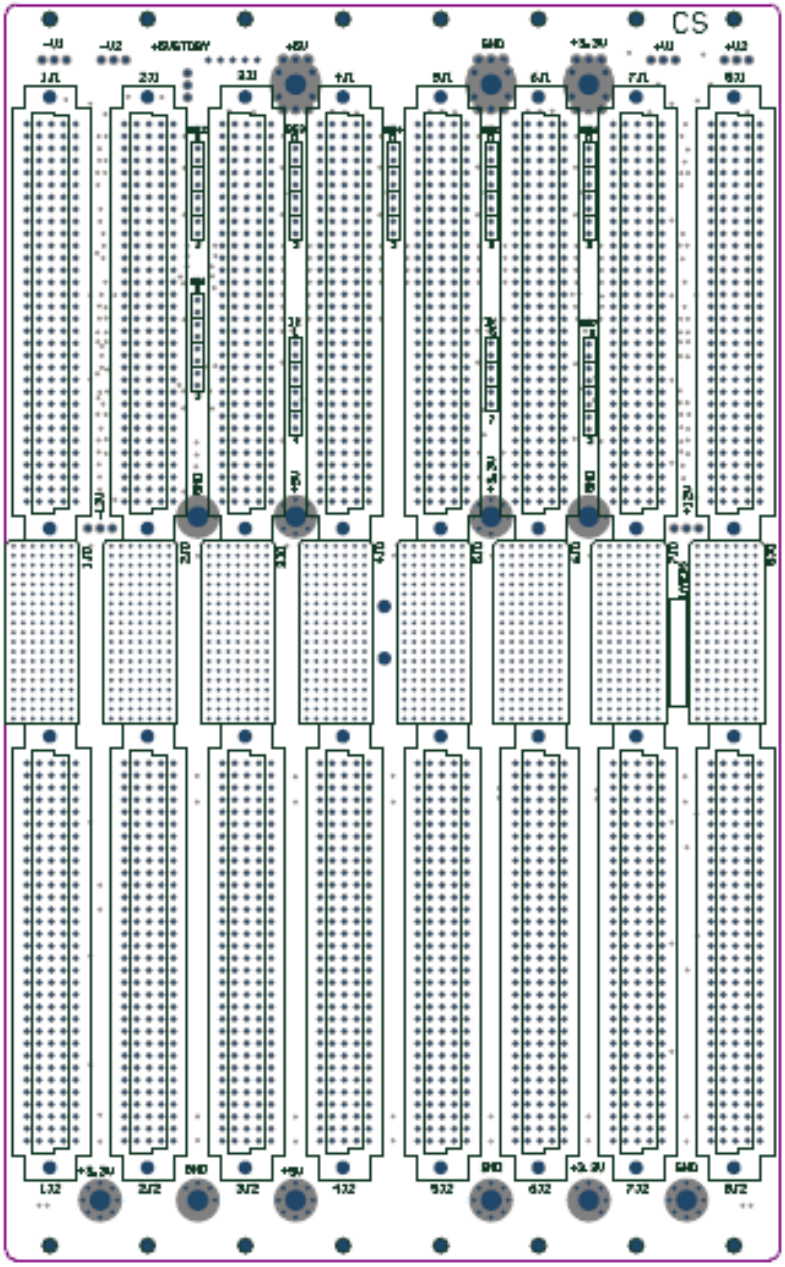
Features

- 10 layer stripline controlled impedance construction
- Available in 2 to 21 slots
- SMD Technology for excellent signal integrity and improved manufacturability
- On-board termination without extra width
- Active/passive automatic daisy-chain or jumper pin manual daisy-chain
- Passive 330Ω/470Ω termination
- High current power entry taps positioned near corresponding connector pins for minimum current paths
- Rear plug-up long-tail connectors and shrouds configurable to customer needs
- Additional user defined bus lines per custom requirements
- Optional decoupling capacitor positions
- +V and -V auxiliary (i.e. 48V) power rails

VME64 Extensions Features

- IEC 61076-4-113 160 pin, 5 row DIN connector for J1 & J2
- IEC 61076-4-101 2mm Hard Metric 133pin, 7 row connector for J0
- 35 more ground return pins on J1/J2 for improved signal integrity, 38 ground pins on J0
- 46 additional user defined I/O pins on J2
- 12 spare bus lines for user expandability
- Test & Maintenance bus supported
- Slot geographical addressing
- Supports Hot Swap capability, pre-mating pin connector system
- 80MB/s VME64 MBLT data transfer rate 160MB/s Peak Transfer rate using 2edge VME protocol with ETL
- +3.3V, 48V and additional +5V power

Front View



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Technical Description



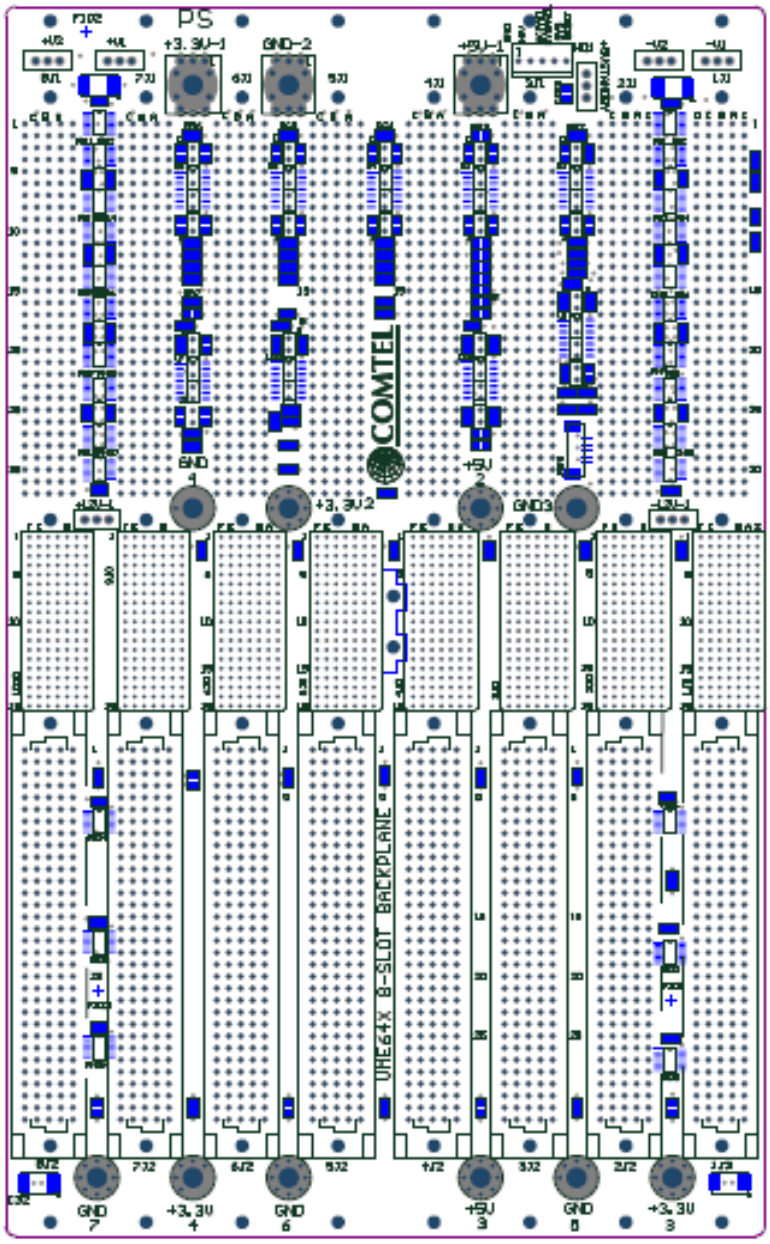
Termination - the width of the 5-row DIN41612 connector leaves limited space for termination components on the Backplane. However, using on-board termination requires no extra board width outside of the connector area. The assembly process demands only single-sided surface mount processing and avoids the intricacies and extra processing associated with double-side reflow processing on press-fit Backplanes.

J0/P0 Connector - The J0 2mm connector, available optionally, provides an additional 95 user definable feed-thru pins. Custom specific pin-outs and bussing are available for J0 - please contact Comtel for further information.

Auxiliary Power – Is available as a Faston connectors +V1, -V1 and +V2, -V2

Power connections
High current power bolts (up to 70A each) are positioned along the top of J1 and bottom of J2. Low profile power taps are placed between J1 and J0, for additional, local connections to the major power rails and, more specifically, to the+12V and -12V rails. The low profile taps enable cabling to run close to the Backplane and thus avoid interference with the rear-transition cards. This connection scheme has the advantage of short current paths within the Backplane owing to the taps' proximity to the corresponding power pins on the **VME64x** connectors. The short current paths minimise voltage drop and noise emissions.

Rear View



Description: V6X-08-P0-0-0

Specifications



Bus Structure:
VME64x, 32/64 bit, J1/J2 monolithic

Connectors:
160 pin, 5 row, J1/J2, IEC 61076-4-113
133 pin, 7 row, J0, IEC 61076-4-101

Dimensions:
Width (in.) = (# slots x 0.80) - 0.13
Height 10.35" (263mm)
Weight: 3.32 lbs. (1.51 kg; 12 slot))

Assembly:
SMT/ press-fit assembly

Control:
System header for SYSRESET, SYSFAIL, ACFAIL, +5V and GND; 5 pin MTA-100

PCB:
10 layers, FR4 epoxy-glass laminate, multilayer, stripline, SMOBC, silkscreen on two sides, 1 oz. on copper signal and power planes minimum, UL 94V-0, 0.154" thickness

Impedance:
50 Ohms, non-loaded PCB

Termination:
Passive, onboard; 330 Ohms to 5V, 470 Ohms to GND

Decoupling:
High-frequency decoupling at each slot; 0.1µF ceramics (SMT) Low-frequency decoupling distributed across backplane; 100µF Tantalum (SMT)

Rear shrouds:
Extended rear tails and shrouds on P0 and J2, all slots; short tail connectors on all J1 slots (no shrouds)

DC distribution:
70A rated power bolts for +5, +3.3, +/-12VDC, +/-V1, +/-V2 and return with M4 screws

Performance:
End-to-end voltage drop and ground shift less than 150mV (12-slot backplane, 5V at 140A)

Compliance:
ANSI/VITA 1-1994, ANSI/VITA 1.1-1997

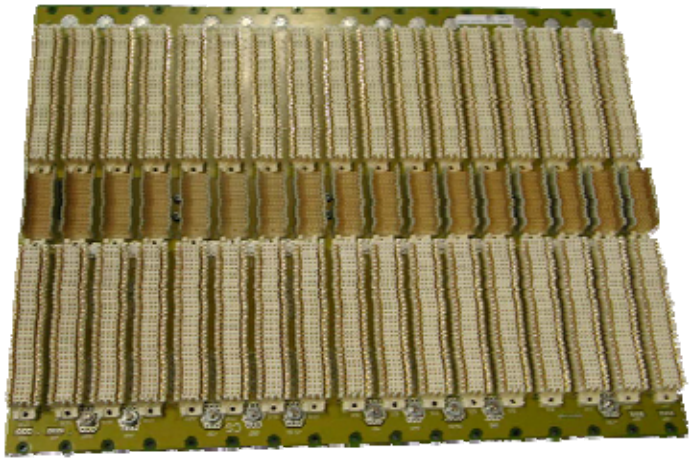
Connectors:
System Connector (5 pin; mates to AMP #640440-5)
1 | GND | +5V | ACFAIL | SYSFAIL | SYSRESET | 5

Environmental:
Temperature ranges:
Operation: -20°C to 75°C
Storage: -40°C to 125°C
Flammability rating: UL94-V0

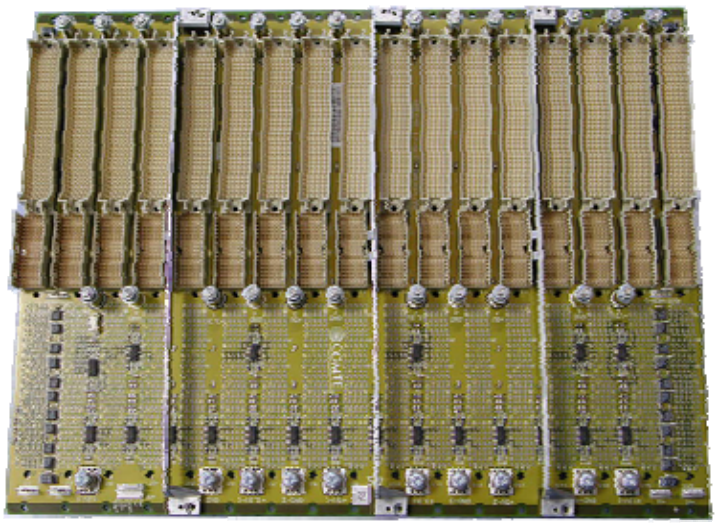
Regulatory: Designed to meet UL, CSA, CE requirements

Warranty: 1 year

Front View



Rear View



Description: V6X-17-P0-0-0

Ordering Information



Comtel **VME64x** Backplanes are available in the following standard configurations.
Please consult your Comtel sales contact for other slot sizes and configurations:

Part number & Description

300 02588 - VME64x, 6U BP 2 slot - W/O P0
360 04713 - VME64x, 6U BP 2 slot
300 03021 - VME64x, 6U BP 3 slot - W/O P0
300 03039 - VME64x, 6U BP 3 slot
300 03329 - VME64x, 6U BP 4 slot
300 03878 - VME64x, 6U BP 5 slot - W/O P0
300 01473 - VME64x, 6U BP 5 slot
305 02587 - VME64x, 6U BP 7 slot - W/O P0
300 02295 - VME64x, 6U BP 7 slot
300 03022 - VME64x, 6U BP 8 slot - W/O P0
300 01525 - VME64x, 6U BP 8 slot
300 02109 - VME64x, 6U BP 9 slot
300 03020 - VME64x, 6U BP 10 slot - W/O P0
300 02558 - VME64x, 6U BP 10 slot
300 02717 - VME64x, 6U BP 12 slot - W/O P0
300 00474 - VME64x, 6U BP 12 slot
300 02307 - VME64x, 6U BP 15 slot
300 02036 - VME64x, 6U BP 16 slot - W/O P0
300 02010 - VME64x, 6U BP 16 slot
300 02839 - VME64x, 6U BP 17 slot
300 02775 - VME64x, 6U BP 18 slot
300 03137 - VME64x, 6U BP 20 slot
300 02672 - VME64x, 6U BP 21 slot - W/O P0
300 02556 - VME64x, 6U BP 21 slot

Custom-specific VME64x Backplanes

Additional Backplane versions are available from Comtel with different power entry schemes to suit individual applications. Comtel can readily provide custom-specific Backplanes tailored to the individual application according to the requirements of the customer, please contact Comtel for further details

Accessories

Various board stiffener accessories are available for applications, where additional Backplane support is required (e.g. when rear plug-up modules do not provide support).

Sample : V6X-08-P0-0-0

V6X	08	PO	0	0
Form Factor **V6X =** VME64x 6U, Backplane **V3X =** VME64x 3U, Backplane	**No' of slots** **02-21**	**PO Connector** **PO** = with Connector **None** = without Connector	**DAISY CHAIN** **0** = automatic active daisy-chain **1** = automatic passive daisy-chain (ABG) **2** = jumper daisy-chain rear side only **3** = jumper daisy-chain both	**Power Connection** **0** = Tap with M4 screw 70A max **1** = Faston bug with M4 screw 12A **2** = Power bug with M4 screw 25A **3** = Power Bridge

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COMTEL ELECTRONICS



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