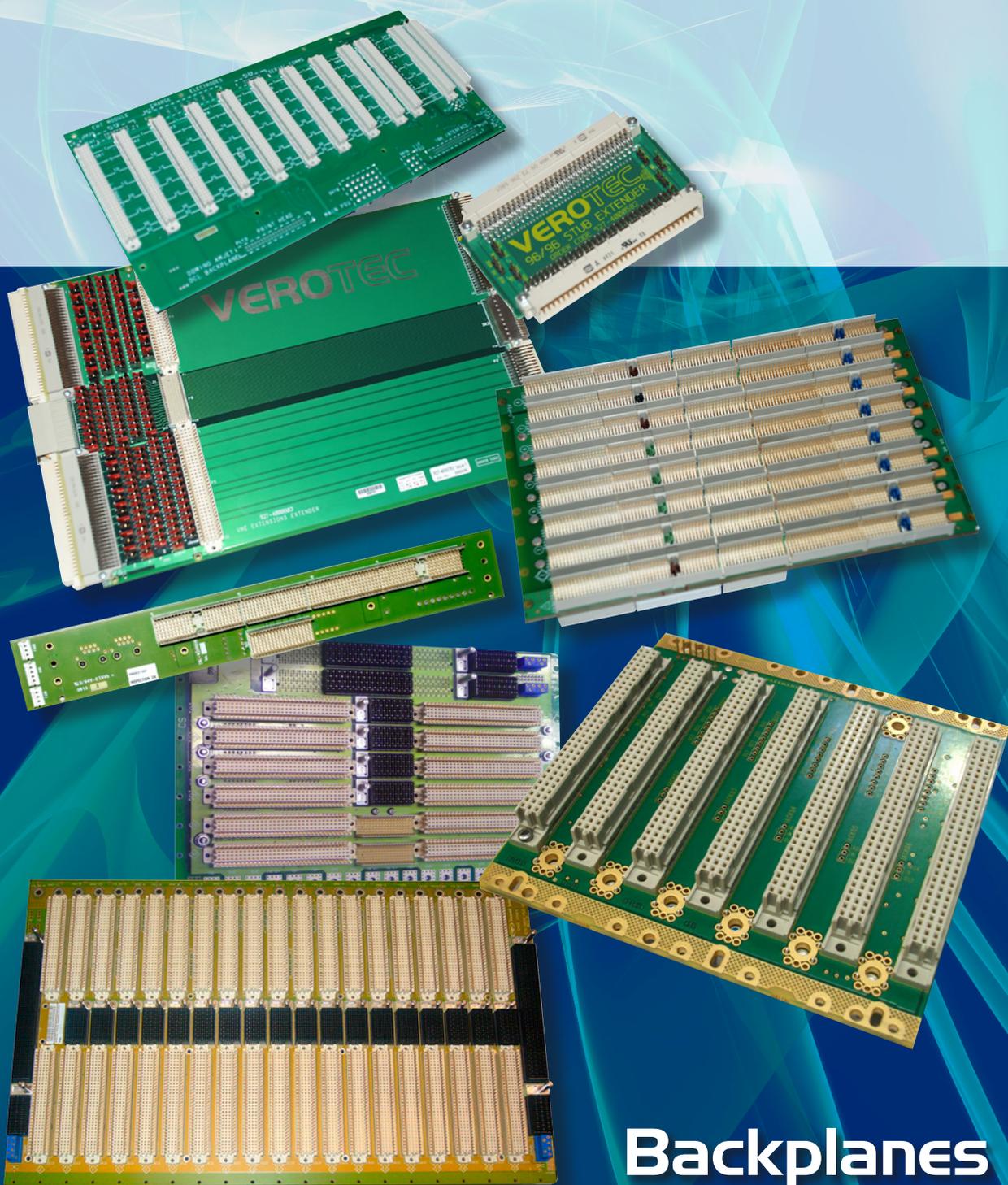


# VEROTEC

Electronics Packaging



**Backplanes and  
Extender boards**



## CCUSTOM BACKPLANES

TecServ+ is the vehicle by which Verotec delivers its value added services. These fall within 5 main categories and are described below. When it comes to backplanes, we've worked with many customers in the past to design, manufacture and help bring to market modified and custom versions of our standard products – a small selection of these are pictured below. If you have any special backplane requirements, please contact our sales office.

### ENGINEERING SERVICES:

- + Complete review of commercial, electro-mechanical, environmental and regulatory product requirements with customer.
- + Import of STEP, IGES, DWG & DXF file formats
- + Mechanical and electrical design using latest CAD software
- + 3D Modelling to allow conceptual testing before production
- + Component selection from a vast library of parts

### MANUFACTURING SERVICES:

- + Prototype / pre-production samples using small batch shop
- + Modification of standard catalogue products (including machining, CNC punching, laser cutting, painting & silk-screening)
- + Manufacture of custom / bespoke products (including fabrication, machining, CNC punching, plating, painting & silk-screening)
- + Assembly & kitting of components
- + Integration & mechanical / electrical testing of complex systems

### COMPLIANCE SERVICES:

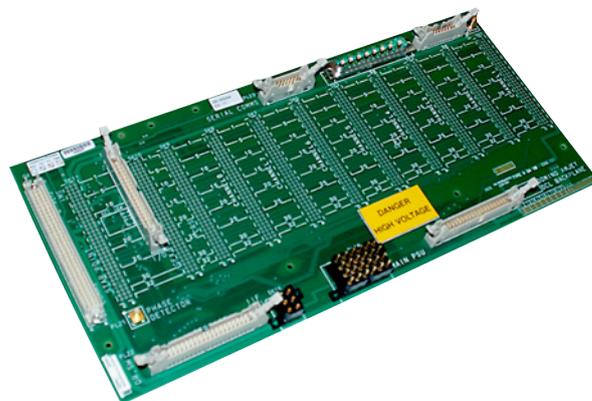
- + Validation of product design and/or specification
- + Advice on environment legislation (RoHS, Reach, Weee etc.)
- + In-house pre-compliance testing for CE marking (Safety, EMC)
- + Supply of product technical construction file
- + Testing & certification of a product at an approved test house (for EMC, shock & vibration, altitude, temperature, humidity etc.)

### LOGISTICAL SERVICES:

- + Express manufacturing service for quick turnaround of urgent orders
- + Special / bespoke packaging for safe transport of goods
- + Scheduled orders (including JIT and KAN BAN systems)
- + Stock holding & distribution
- + Exporting (including export packaging, land/sea/air transportation, freight forwarding, customs documentation & shipping manifests)

### PROJECT MANAGEMENT SERVICES:

- + Initial project consultation
- + Capability and feasibility study
- + Estimation of project cost and leadtime
- + Management of design process (specification to validation)
- + Management of manufacturing process (prototype to production)
- + Cost reduction programmes throughout product life cycle



**Fully custom backplane incorporating a mix of connector technologies in both solder & press fit – industrial printing application**



**Custom 6U, 2 x 4 slot CompactPCI backplane incorporating pressfit and surface-mount components – simulation application**



**Legacy 3U STEbus backplane – off-shore application**

## INTRODUCTION

Verotec design, supply and integrate bus based products and systems. Our extensive standard range consists of open-architecture backplanes and extender boards for VME, VME64x, VXI, VPX, VXS, CompactPCI, PXI, AdvancedTCA and uTCA. Many years of design knowledge and expertise in backplane technology means that, in addition to standard product, we're able to offer modified to fully custom designs to your specifications. We can also support a number of legacy backplane products such as STEbus.

## CONTENTS:

<b>Capability</b>	
Backplane Design Capability	12.04
Backplane Manufacturing Capability	12.05
<b>Standard Backplanes</b>	
<b>VMEbus</b> (ANSI/VITA 1-1994)	12.06
3U J1 and J2, 6U J1/J2 Monolithic, 1-21 slots	
<b>VME64 Extensions</b> (ANSI/VITA 1.1-1997)	12.07
6U, J1/J2, 1-21 slots	
<b>VXIbus</b> (Revision 1.4)	12.08
5, 6 and 13 slot in "C" and "D" size	
<b>VPX / Open VPX</b> (VITA 46, VITA 65)	12.09
Various configurations	
<b>VXS</b> (VITA 41)	12.10
Various configurations	
<b>CompactPCI</b> (PICMG 2.0 Rev.3)	12.11
3U, 6U, 2-8 slots	
<b>CompactPCI Computer Telephony</b> (CT/H.110)	12.11
Various configurations	
<b>CompactPCI Packet Switching</b> (PICMG 2.16)	12.11
Various configurations	
<b>CompactPCI Plus I/O</b> (PICMG 2.3)	12.11
Various configurations	
<b>CompactPCI Serial</b> (PICMG cPCI-S.0)	12.11
Various configurations	
<b>PXI</b> (Revision 2.2)	12.12
3U and 6U, 8 slots	



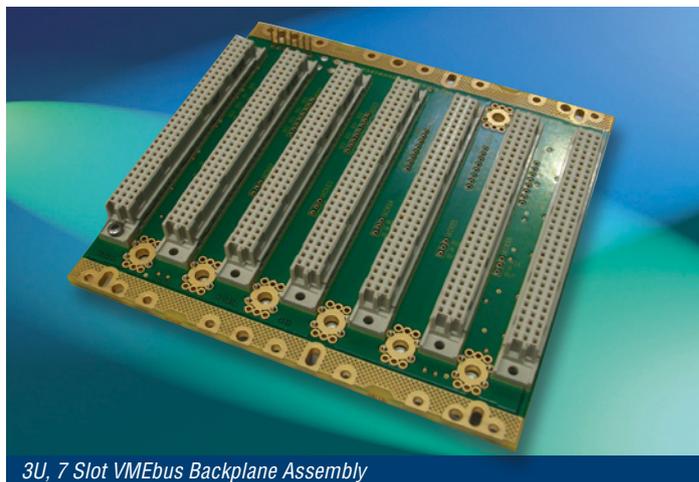
6U 8 Slot PXI Backplane Assembly



VME64x Extender Board Assembly



6U 21 Slot VXS Backplane Assembly



3U, 7 Slot VMEbus Backplane Assembly



4 Slot CompactPCI Backplane Assembly

# Backplanes and Extender Boards – Design Capability



VME Industrial Trade Association



PCI Industrial Manufacturers Group

## STANDARD BACKPLANE DESIGN

Verotec works with leading standards organizations such as VITA and PICMG (above) to bring to market the latest open-architecture products. These include a wide range of backplanes conforming to VME, VXI, OpenVPX, CompactPCI, PXI and AdvancedTCA standards.



## SOFTWARE TOOLS

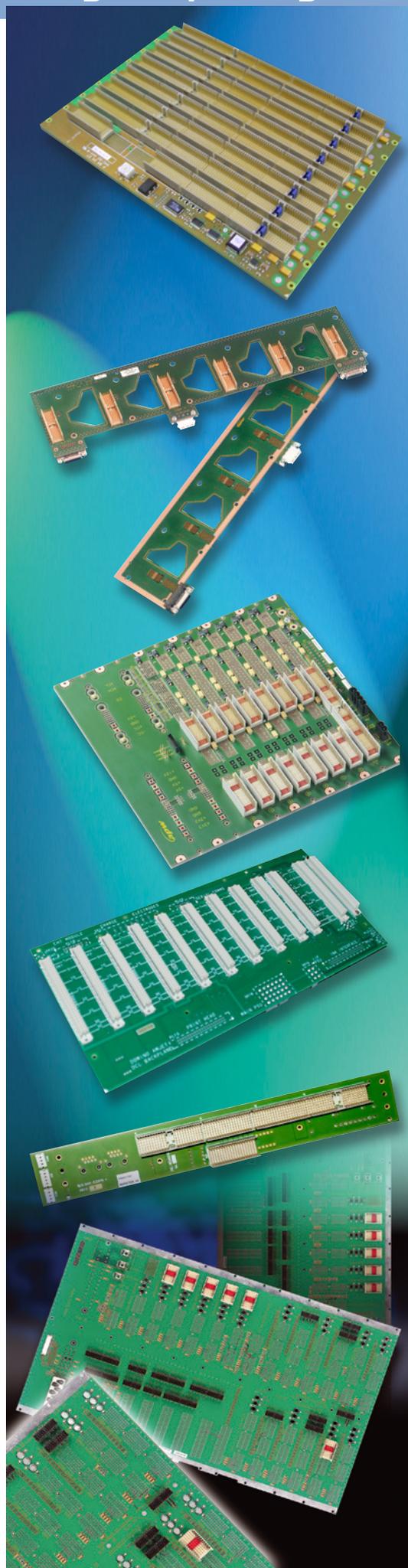
We use a number of software tools to aid backplane design, including Cadence Allegro, Mentor Graphics and Pads. Our knowledge and experience means we can meet the most demanding design specifications & requirements whilst rising to the challenges of modern day environmental issues

## DESIGN CAPABILITIES / EXPERIENCE

- Large library of standard parts
- Extensive knowledge of connector technologies
- Experience in high speed signal transmission
- Controlled differential / characteristic impedances
- Large format & high layer count designs
- Power distribution and decoupling
- Crosstalk reduction and termination techniques
- Environmental issues (EMC, Shock & Vibration etc.)
- Regulatory compliance (CE, RoHS, UL etc.)
- Standards compliance (PICMG, VITA etc.)

## CUSTOM BACKPLANES

Many years of design knowledge and expertise in backplane technology means that, in addition to our standard products, we're able to offer modified standard or fully custom designs to your specifications. Examples of such backplanes are shown to the right.



Backplane Design

# Backplanes and Extender Boards – Manufacturing Capability

## BACKPLANE MANUFACTURE

Our backplane manufacturing facility in the UK is at the forefront of technology and is equipped with some of the latest surface mount, soldering, press fit and testing machinery available. Assembly and test facilities are ESD protected with workmanship meeting the requirements of IPC610 Class III.

## QUALITY & TEST

All Verotec backplanes are manufactured with systems approval in accordance with ISO 9001:2008. Every backplane is tested and inspected before it leaves the factory whilst meeting fully the requirements of both ROHS and REACH directives.



BS ISO 9001:2008 Reg: FM 569208

## MANUFACTURING CAPABILITIES

### Surface Mount

- PCB's up to 1,500mm x 800mm
- Rapid change-over times
- In-line inspection
- Process compatibility with PIHIR (pin-in-hole-intrusive-reflow) assembly techniques

### Pressfit

- Semi and Fully-Automatic Presses
- Computer controlled insertion
- Manual presses 12Kn to 40Kn

### Soldering

- Lead-free flow soldering
- Computer controlled wave forms
- Adjustable width for speedy changeovers
- Vapour phase reflow oven, ideal for large, thick backplanes and heavy power planes, with uniform heat dissipation and no 'hotspots'

### Test

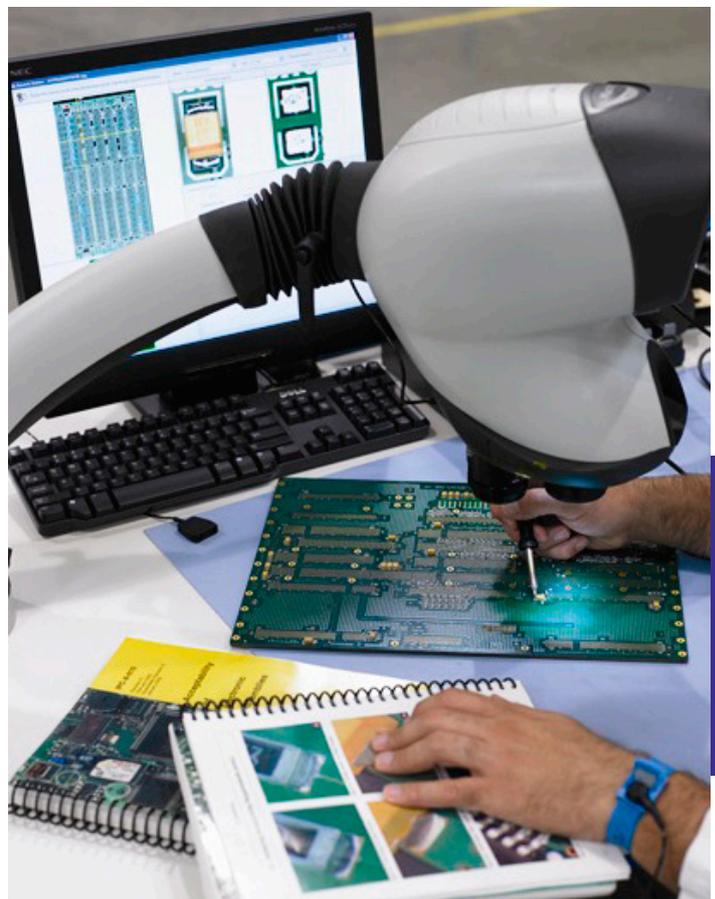
- Terotest LINX backplane Intelligent Module, backplane Testers ~ 65,550 node count
- Robot tester for testing high complexity, large pin field backplanes
- Optical inspection for pin alignment to 0.25mm



Automatic connector press



ROBAT Backplane test



PCB inspection



Custom Backplane Assembly

# Backplanes and Extender Boards – VMEbus



## INTRODUCTION

Verotec offer a comprehensive range of VME backplanes from 1 to 21 slots wide in J1, J2 (3U) and J1/J2 monolithic (6U) variants. They offer excellent performance in the areas of crosstalk, ground shift, controlled impedance, power distribution and termination design. In addition to form factor and slot size, a choice of mechanical (switching connectors) or electronic (OR-gate) automatic daisy chaining is available.

## FEATURES

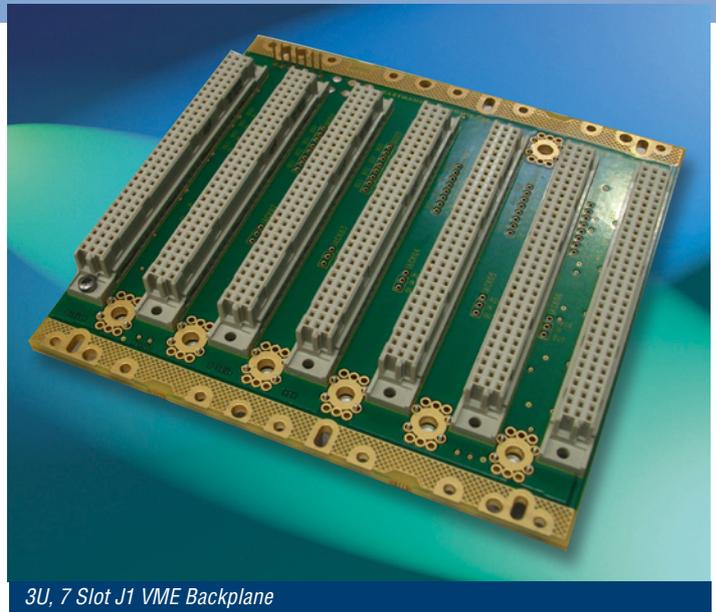
- Conforms to VME64 specification (ANSI/VITA 1-1994)
- True 3U/6U eurocard height
- Excellent crosstalk performance, low ground shift
- Automatic daisy chain of BG/IACK signals (mechanical or electronic)
- On-board, passive termination
- Latchable service header for system reset, AC fail & system fail signals (Contact us for connector details and pinning)
- Power on via M4 screw / 6.35mm faston tab (busbars available on request for larger slot sizes.)
- Extended tails with shrouds on all J2 connectors
- Conductive surface area top and bottom (chassis GND) for EMC-tight seal between backplane and subrack.
- High frequency coupling capacitors (10nF, 200V) in each slot.

## ORDERING

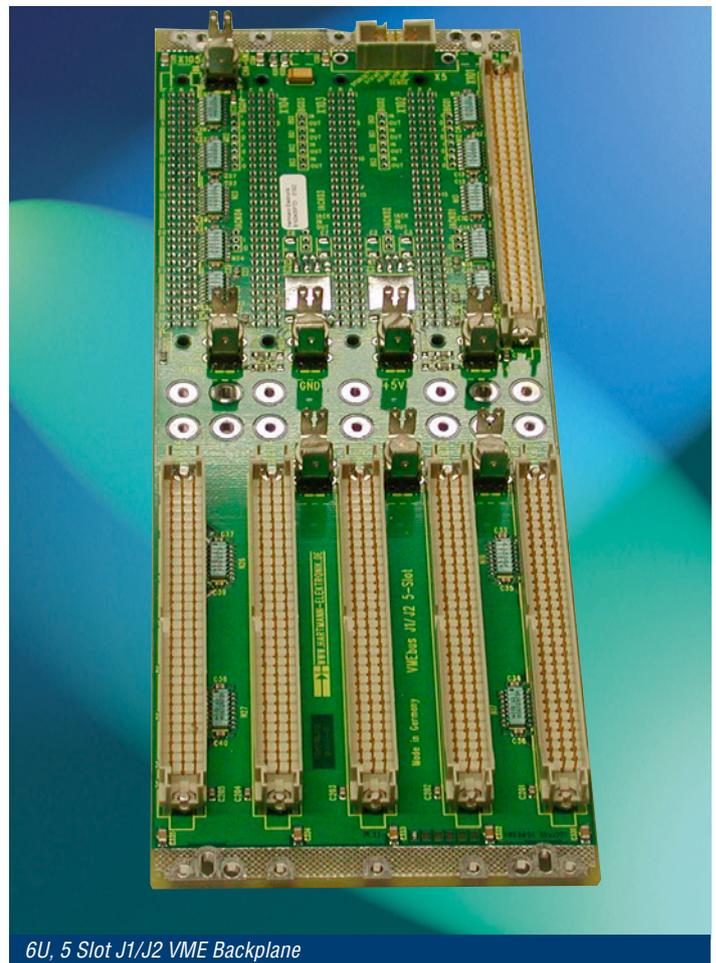
To configure your VMEbus backplane, use the chart below.

	Form Factor	Daisy Chain	Slot Size
927-VME	-J1	-M	-1 to -21
	-J2	-E	
	-J1J2		

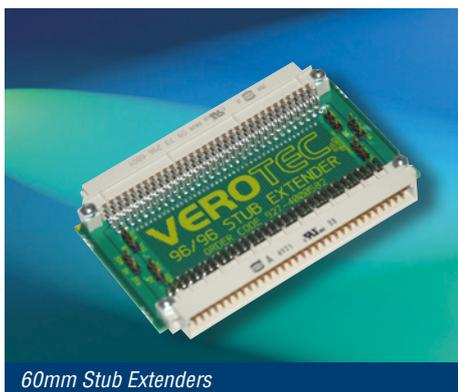
For example, a 3U, 7 slot, J1 VME backplane with electronic bus granting (as shown above right) would have the part number: 927-VME-J1-E-7



3U, 7 Slot J1 VME Backplane



6U, 5 Slot J1/J2 VME Backplane



60mm Stub Extenders

## 60MM STUB EXTENDERS

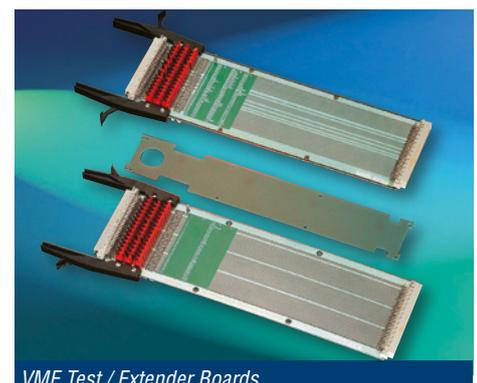
Multilayer stub extender boards are designed to allow a 160mm daughter card to fit into a 220mm subrack system. Available for VME or as a DIN 96/96 way un-committed version.

Description	Ordercode
J1 60mm stub extender	927-4000581
J2 60mm stub extender	927-4001360
96/96 60mm stub extender	927-4000582

## VME TEST / EXTENDER BOARDS

Designed to bring cards out of a system for fault diagnostic or development work, these multilayer extenders provide jumper links for signal line interrogation, ejector levers and termination facility.

Description	Ordercode
J1 VME test / extender	927-4001361
J2 VME test / extender	927-4001362
3U-6U Conversion Kit	927-4001363



VME Test / Extender Boards



## INTRODUCTION

VME64 Extensions backplanes from Verotec are available in a 6U formfactor, from 1 to 21 slots wide, and with or without P0 connectors. VME64x incorporates a 5 row, 160way DIN connector which provides extra I/O and signal lines but also backward compatibility with traditional VMEbus systems that use the 96way DIN interconnect. Additional features include:

- An optional P0/J0 metric connector giving 95 extra user definable pins (note: these are not bussed)
- +3.3v power and 4 x auxillary power planes
- Test and maintenance bus
- Geographic addressing (slot identification)
- 35 more ground returns for improved signal integrity

## FEATURES

- Conforms to VME64x specification (ANSI/VITA 1.1-1997)
- Fits within a 6U Eurocard
- Available in 01-21 slot widths
- Surface mount, active termination
- Electronic, on-board, automatic daisy chain (BG/IACK signals)
- Power connections via busbars (M6 screws) and power studs (M3)
- Decoupling capacitors in every slot
- All P2 connectors long tail / gold-plated
- With or without P0 connectors

## ORDERING

To configure your VME64 Extensions backplane, use the chart below

	P0 Connectors	Slot Size
927-VMEX	-PF (P0 Fitted)	-01 to -21
	-NF (Not fitted)	

For example, a 6U, 12 slot, VME64 Extensions backplane (as shown above) would have the part number: 927-VMEX-PF-12

## 6U VME64 EXTENSIONS EXTENDER BOARDS

Available with or without the centre P0 connectors, these 6U multilayer extenders are for use in VME64x applications and are designed to bring cards out of a system for fault diagnostic or development work. Jumper links are provided on all signal lines for interrogation and an additional connector is fitted for connection to a logic analyser or termination module. Available separately is a metal frame to support the card and provide extraction functionality by two ejector levers.

## FEATURES

- 10 Layer stripline construction
- Individual signal track screening
- Jumper links on all signal tracks
- Connector position for logic analyser / terminator
- Optional card support frame with ejector mechanism
- Available with or without P0 connector

## SPECIFICATIONS

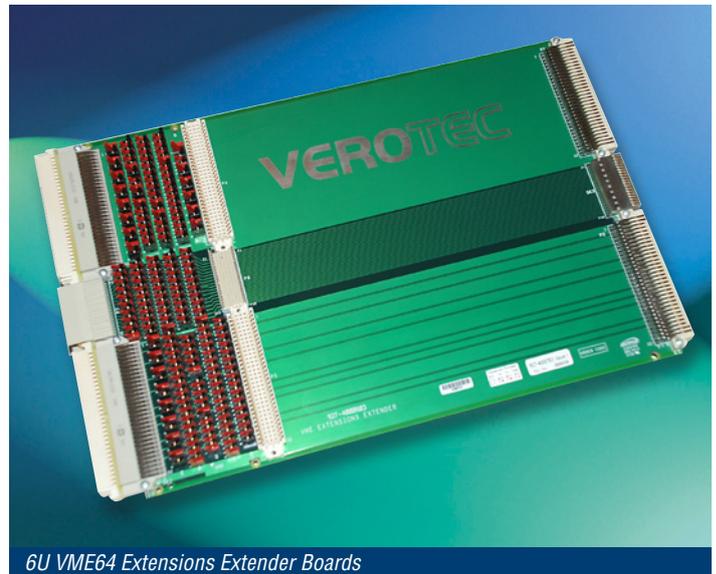
Board Height 6U (262.0mm)  
Board Thickness 2.1mm (0.08")  
Board Length 330.0mm (13")

## ORDERING INFORMATION

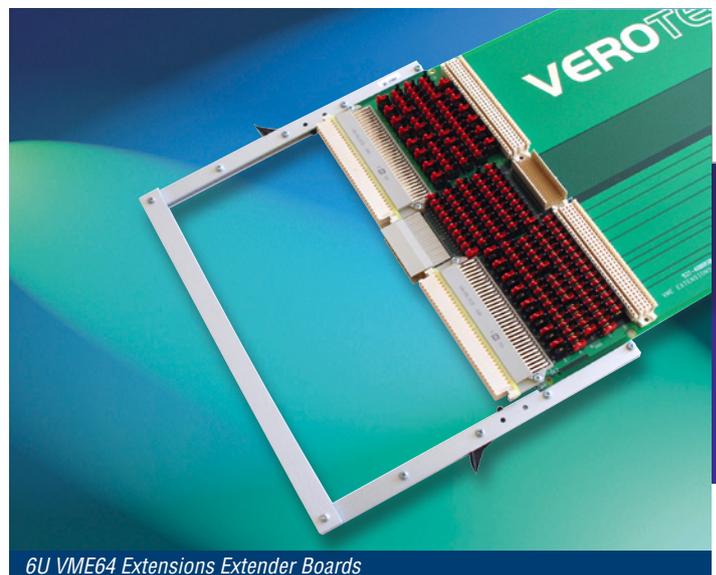
Description	Ordercode
6U VME64x Extender with P0 connector	927-4000603
6U VME64x Extender without P0 connector	927-4000604
6U VME64x Extender with P0 connector and support frame	927-4000783
6U VME64x Extender without P0 connector, with support frame	927-4000784



6U, 12 Slot VME64 Extensions Backplane



6U VME64 Extensions Extender Boards



6U VME64 Extensions Extender Boards



## INTRODUCTION

The specification governing VXIbus – an acronym for VMEbus eXtension for Instrumentation – defines the use of 4 x bus module sizes (fig.1), with the “A” and “B” modules being the same as 3U & 6U VMEbus cards. Although the VXI specification, broadly speaking, follows the VME standards, it includes defined functions on the P2 connector and a further set of functions on the P3 connector. The most important variation in the two standards arises from the fact that any VXIbus instruments incorporated in a system must be capable of being physically screened against EMC on all sides with a provision for additional chassis screening between instruments.

The Verotec range of VXI backplanes include “C” size (6U) and “D” size (9U) formfactors in a variety of slot widths which fully conform with the latest revision (rev.1.4) to the VXIbus specification. As with all our backplanes, we are able to offer semi or fully customised versions to suit unique applications

## FEATURES

- Fully conforms to VXIbus specification (revision 1.4)
- 12 Layer stripline construction
- Tightly controlled characteristic impedance
- On-board passive termination
- Auto bus grant connectors fitted as standard
- Differential tracking and line length equalization techniques utilized to minimise signal skew on all high speed lines
- On-board socketed ECL buffers for CLK10 & CLK100 distribution.
- High speed decoupling capacitors positioned between termination networks.
- Exposed ground plane area to facilitate RFI grounding of plug-in modules.
- Additional decoupling capacitor positions provided between each connector slot to facilitate fine tuning of the system.
- High power versions available

## ORDERING INFORMATION - STANDARD

Description	Dimensions	Ordercode
“C” Size, 5 slot	262.0 x 152.4cm	927-4001364
“C” Size, 6 slot	262.0 x 182.88cm	927-4001365
“C” Size, 13 slot	262.0 x 395.0cm	927-4001366
“D” Size, 5 slot	395.0 x 152.4cm	927-4001367
“D” Size, 13 slot	395.0 x 395.0cm	927-4001368

## ORDERING INFORMATION – HIGH POWER

“C” Size, 13 slot	1.9KW	927-4001369
“D” Size, 13 slot	3.0KW	927-4001370

## VXI HIGH POWER BACKPLANES

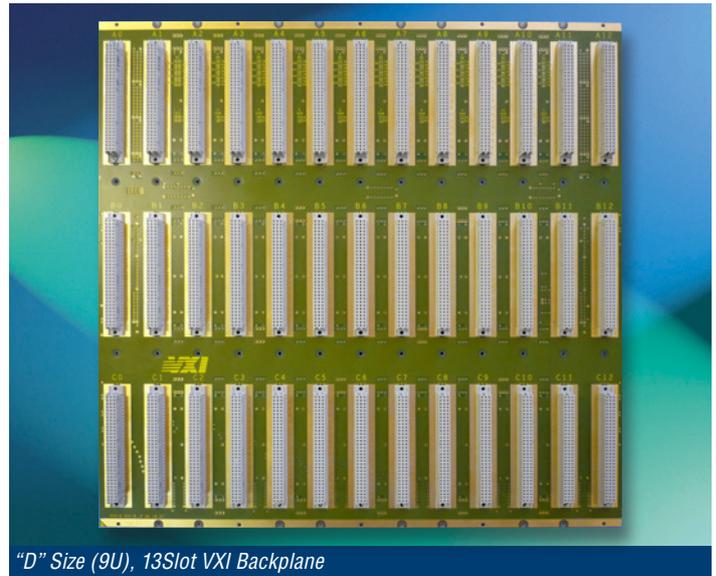
A high power option is available on 13 slot “C” and “D” size backplanes. Extra power positions are added to the backplane to ensure that every voltage can have the maximum current drawn as specified by the VXI specifications. To introduce the power on to the backplanes, special laminated busbars are used.

## SPECIFICATIONS

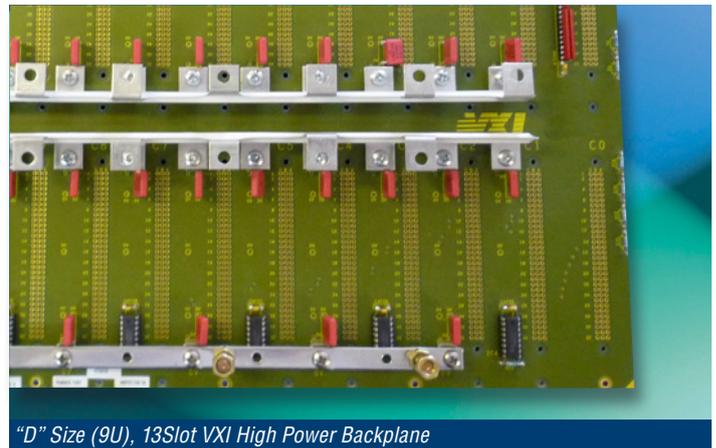
Board Thickness	5.35mm (0.21")
Connector Pitch	6HP (30.48mm/1.2")

## ENVIRONMENTAL

Temperature range (storage)	-40deg.C to +120deg.C
Temperature range (working)	-20deg.C to +85deg.C
Altitude	3000M
Humidity	90% R.H. non-condensing
Shock and vibration resistance	Exceeds ETS 300-019-2-5 (Table 2a T5.2)
MTBF to MIL-HBK-217E	>225,000 hours
Conditions:	Ground benign, temperature @ 25deg.C
Rapid decompression:	Exceeds DEF STAN 00-35 test CL9 class F(4)
Safety assessment (3rd party)	EN60950

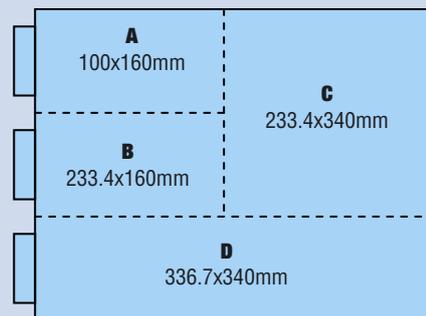


“D” Size (9U), 13Slot VXI Backplane



“D” Size (9U), 13Slot VXI High Power Backplane

Figure 1



For information on VXI duty modules & accessories, please refer to page 2.22 of the “Front Panels & Plug-in Units” section.



## INTRODUCTION

Defense and aerospace system designers are looking to serial switch fabric architectures to provide an interconnect able to deliver cost-effective systems with bandwidth and performance levels unreachable by traditional VME-based systems. While VME continues to provide an excellent solution for a great number of applications, it is unable to provide the bandwidth and performance required to address new specialized multiprocessing tasks.

VPX (VITA 46) and OpenVPX (VITA 65) are two new standards recently developed to address demanding applications that require throughput greater than 320 Mbytes/s and to provide multiprocessing and streaming I/O beyond the capability of VME's parallel bus architecture

The new, rugged, conduction-cooled board architecture is targeted at switched fabric signaling rates of up to 6.25 Gbits/s, exceeding VME's limit of about 1 Gbits/s. VPX uses the high-speed multi-gig connector in a mesh topology, vastly increasing the potential bandwidth of the system, while maintaining backward compatibility with legacy VME technology via preservation of the VMEbus 6U mechanical form factor and through-mapping of the current VMEbus signals to the VPX connectors.

VPX combines best-in-class technologies to assure a very long technology cycle similar to that of the original VMEbus solutions. Traditional parallel VMEbus will continue to be supported by VPX through bridging schemes that assure a solid migration pathway.

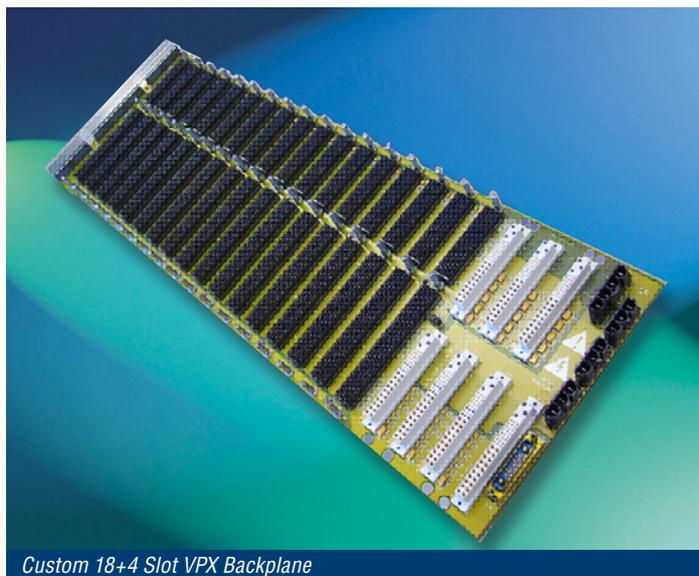
Verotec's expertise in Backplane technology and its resources in the latest, sophisticated design tools have been applied to produce a unique range of VPX Backplanes, including hybrid versions that incorporate the standard 160mm DIN connector, allowing backward compatibility with VME64x. The VPX Backplanes match performance and cost-effectiveness by realising a fully optimised signal and power distribution environment. Design techniques ensure uniform impedance controlled signaling environment and ground guarding minimises line-to-line crosstalk.

## FEATURES

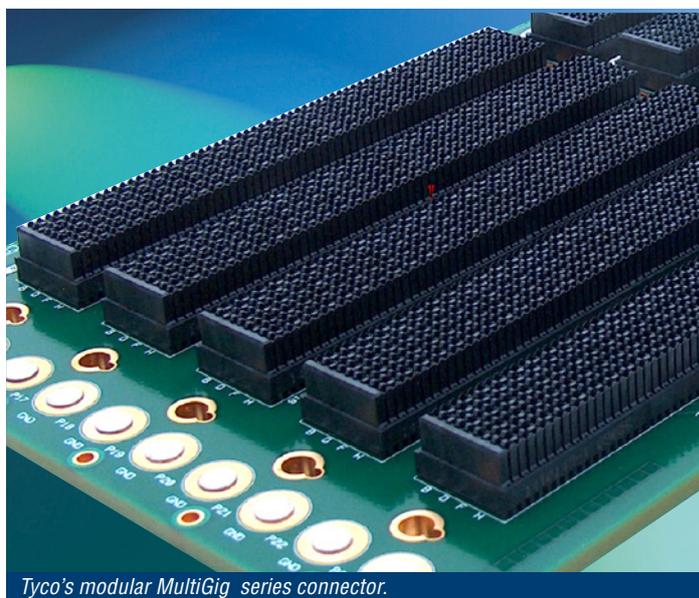
- Compliant to the latest VITA 46 and VITA 65 standards
- Various slot widths
- 3U or 6U standard Eurocard formfactor
- Hybrid versions available
- High speed, multi-gig connector
- High performance, low noise

## ORDERING INFORMATION

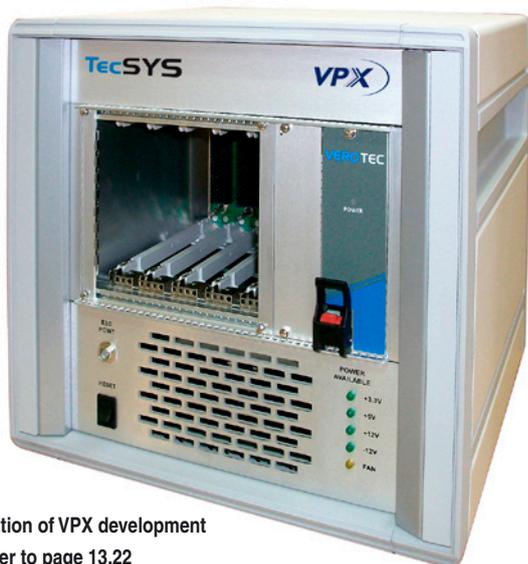
Due to the custom nature of VPX / OpenVPX applications and the countless backplane configurations possible, backplanes are designed and manufactured to order. That said, we do have a number of designs which can be shared – please contact us for further details.



Custom 18+4 Slot VPX Backplane

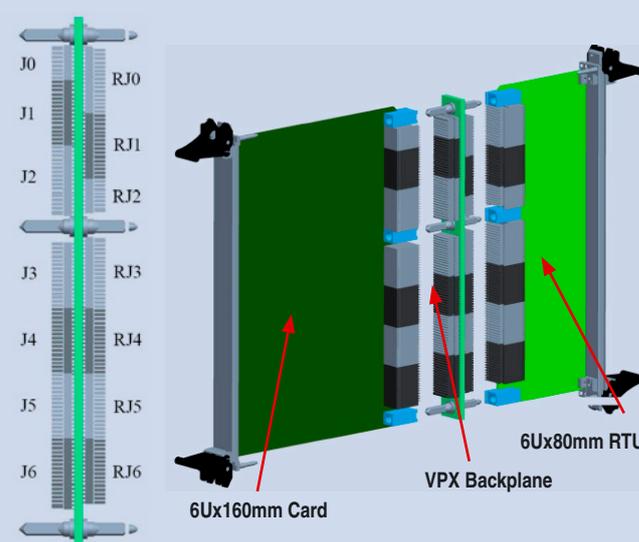


Tyco's modular MultiGig series connector.



For information of VPX development chassis, refer to page 13.22

## VPX CONNECTOR ARRANGEMENT





## INTRODUCTION

Defense and aerospace system designers are looking to serial switch fabric architectures to provide an interconnect able to deliver cost-effective systems with bandwidth and performance levels unreachable by traditional VME-based systems. While VME continues to provide an excellent solution for a great number of applications, it is unable to provide the bandwidth and performance required to address new specialized multiprocessing tasks.

VXS (VITA 41) is one of two new standards recently developed to address demanding applications that require throughput greater than 320 Mbytes/s and to provide multiprocessing and streaming I/O beyond the capability of VME's parallel bus architecture.

VXS stands for VMEbus Switched Serial Standard. The standard is VITA 41. VXS has the same form factor as standard VME boards, but uses a different type of P0 connector and a different electrical interface.

The VXS specification defines 2 types of boards: Payload cards and Switch cards. Payload cards are standard VME64x boards with a new P0 connector for serial links. Switch cards are not backward compatible with the legacy VMEbus standard via P1 and P2 connectors.

VXS Backplanes may operate in a number of configurations; Star, Dual-Star, Mesh, or Daisy-Chain. VXS supports InfiniBand bus, Serial RapidIO, Gigabit Ethernet, and PCI Express Bus.

## FEATURES

- Compliant to the latest VITA 41 Standards
- Various slot widths
- 6U standard Eurocard formfactor
- Hybrid versions available
- High speed, multi-gig connector
- High performance, low noise

## ORDERING INFORMATION

Due to the countless possible VXS configurations, we design and manufacture your backplane product to order. We do however have two hybrid VME64x and VXS standard product designs available as shown.

### Bus Structure

<i>8 Slot Hybrid Version</i>	<i>21 Slot Hybrid Version</i>
Dual VITA 41 Switches (7-8)	Dual VITA 41 Switches (1 & 21)
4 x VXS Payload slots (3-6)	18 x VXS Payload slots (3-20)
2 x VME64x slots (1+2)	1 x VME64x slot (2)

### Electrical

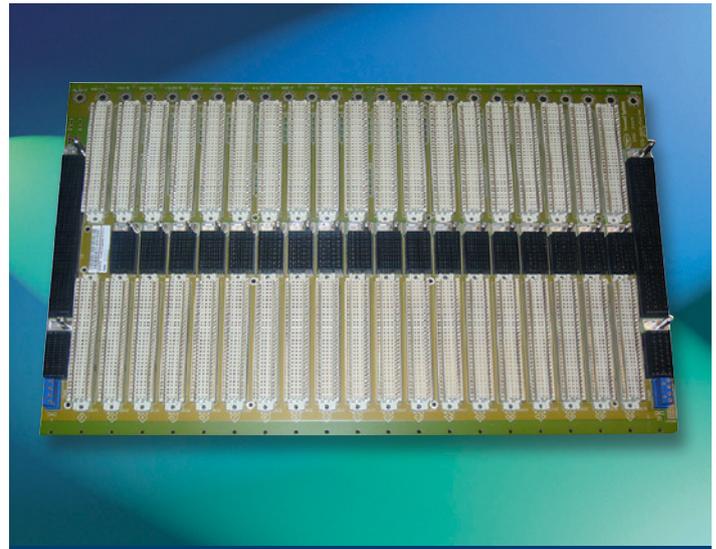
Termination	Passive, on-board, 330/470ohm
Impedance	50 Ohms (VME), 100 Ohms (Differential, VXS)
Decoupling	High frequency decoupling at each slot, distributed Low frequency bulk decoupling.
Control	System header for SYSRESET, SYSFAIL, ACFAIL, +5v, GND
Power Distribution	35A Screw terminals for +5v, +3.3v & GND 15A Spade terminals for +/-12v, V1/V2

### Environmental

Temperature range (storage)	-40deg.C to +125deg.C
Temperature range (working)	-20deg.C to +75deg.C
Flammability Rating	UL94-V0

### Compliance

Regulatory	ANSI/VITA 41.0, 1.1-1997 Designed to meet UL, CSA, CE requirements
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21 Slot Hybrid VXS Backplane



8 Slot Hybrid VXS Backplane

### VXS Formfactor

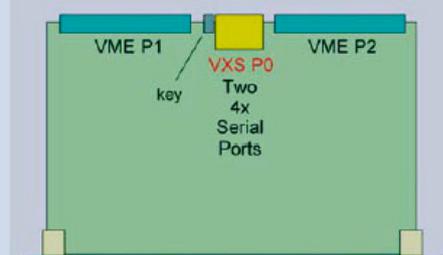


Figure 1. VXS Payload Card



Figure 2. VXS Switch Card

## INTRODUCTION

CompactPCI is an adaptation of the Peripheral Component Interconnect (PCI) specification, rev.3, for industrial and/or embedded applications that require a more robust mechanical form-factor than (but electrically compatible to) normal desktop PCI. Verotec design and manufacture a range of backplanes conforming to the below specifications / standards:

### COMPACTPCI – CORE (PICMG 2.0 REV.3)

Our standard range of high performance, hot swap, CompactPCI backplanes are available in 3U, 6U & 9U form factors and from 2 to 16 slots wide\*. The generic base design allows many different product configurations to be realised (32/64Bit, 33/66MHz, left/right system slot, 5v/3.3v I/O signalling voltage and rear connections, power options etc.) making them suitable for a wide range of end user applications. \* Note: A rear pallet bridge is required for backplanes above 8 slots wide – these are included with the backplane.

### PACKET SWITCHING (PICMG 2.16)

PICMG 2.16 supplements the robust, reliable and hot-swap capable CompactPCI architecture with the easily integrated, low-cost, high performance, and extensible Ethernet. The 2.16 specification extends rather than replaces CompactPCI because it over-lays, on the P3 connector, up to two embedded switched Ethernet networks in a star-topology. Slots can be routed either as "Fabric" or "Node" slots with a separate system / controller slot if required.

### COMPUTER TELEPHONY (CT/H.110)

On CT/H.110 backplanes, the P4 connector is used for implementing the H.110 TDM bus signals as well as the telecom power rails and control signals. It has 3 different mating length pins and is selectively loaded in order to meet the hazardous voltage safety requirements. The P5 connector is used for telephony I/O with 3 mating levels provided according to the pin assignments.

### COMPACTPCI PLUS I/O (PICMG 2.3)

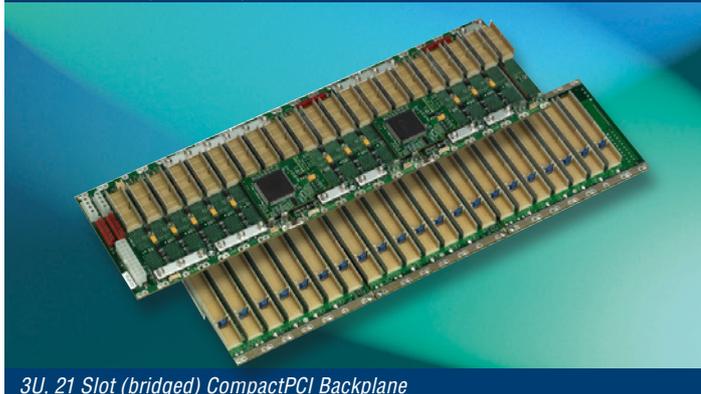
Designed as a migration path to CPCI Serial (below), PICMG 2.3 adds fast serial data transfer, and is backward-compatible to CompactPCI (PICMG 2.0). It defines the pin assignment of the user-defined pins on the J2 connector (PICMG 2.0), sufficient for 4 PCI Express x1 links, 4 SATA, 4 USB 2.0, as well as 2 Ethernet 1000BaseT interfaces to the backplane. The new standard uses a different 2mm connector with 5 Gb/s to support the new high frequency signals. Even though signal pins are individually shielded and independent of the other pins, the connector is completely compatible to CompactPCI. This means a CompactPCI 2.3 CPU can be operated in a PICMG 2.0 system.

### COMPACTPCI SERIAL (PICMG CPCI-S.0)

Whilst adopting some key, proven features of CompactPCI (PICMG 2), the cPCI-S.0 standard does away with the traditional PCI parallel bus completely and defines a point-to-point (serial) topology. The system slot provides 8 x PCI Express, SATA, USB (2&3) and Ethernet 10GBASE-T interfaces whilst the peripheral slots provide one of each of the above except Ethernet where up to 8 connections are offered. A different connector arrangement means there is no backward compatibility with PICMG 2.0.

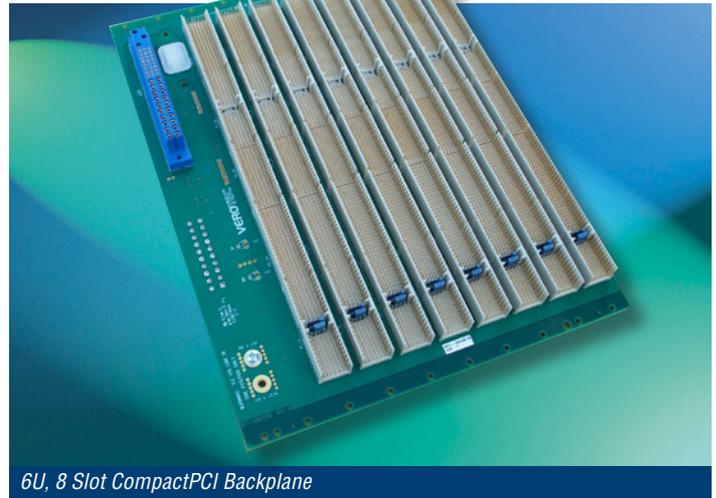


6U+3U, 4 Slot (Horizontal) CompactPCI Backplane



3U, 21 Slot (bridged) CompactPCI Backplane

# CompactPCI®



6U, 8 Slot CompactPCI Backplane

## ORDERING INFORMATION

The below table should be used to configure a unique part number for the CompactPCI backplane required. Note that not all combinations are possible and not all options are applicable.

	927 -	X	X	X	X	X	XX
<b>SPECIFICATION</b>							
CompactPCI (PICMG 2.0 Rev.3)	5						
Packet Switching (PICMG 2.16)	6						
Computer Telephony (CT/H.110)	7						
CompactPCI Plus I/O (PICMG 2.3)	8						
CompactPCI Serial (PICMG cPCI-S.0)	9						
<b>Bandwidth / I/O Voltage / Clock Speed</b>							
	N/A	0					
32Bit, 3.3V, 33MHz	1						
64Bit, 3.3V, 33MHz	2						
32Bit, 5.0V, 33MHz	3						
64Bit, 5.0V, 33MHz	4						
32Bit, 3.3V, 66MHz	5						
64Bit, 3.3V, 66MHz	6						
32Bit, 5.0V, 66MHz	7						
64Bit, 5.0V, 66MHz	8						
<b>Form Factor / System Slot Orientation</b>							
3U, left hand			1				
6U, left hand			2				
3U, right hand			3				
6U, right hand			4				
6U+3U (Horizontal Mounting), left hand			5				
6U+3U (Horizontal Mounting), right hand			6				
<b>Topology and I/O Connections</b>							
Parallel Bus, no I/O connectors				0			
Parallel Bus, with I/O connectors				1			
Single Star, no I/O connectors				2			
Single Star, with I/O connectors				3			
Dual Star, no I/O connectors				4			
Dual star, with I/O connectors				5			
Full Mesh, no I/O connectors				6			
Full Mesh, with I/O connectors				7			
<b>Power-On Options</b>							
Power Bugs (M6 screw)					1		
6.3mm Faston Blade					2		
Power Bugs with Busbar (M6 screw)					3		
ATX Connector					4		
Single P47 Positronic					5		
Dual P47 Positronic					6		
Triple P47 Positronic					7		
<b>Slot Width</b>							
	01-21 slots						01-21



## INTRODUCTION

PXI (CompactPCI eXtensions for Instrumentation) was developed to fulfil the requirements of users, primarily of instrumentation and automation systems, who needed increased performance, reliability and functionality from compact, PC based systems. In order to allow users to benefit from existing software and component availability, PXI maintains compatibility with industry standard PCs.

PXI adopts the electrical specification of the Peripheral Component Interface (PCI) and the physical specification and high performance connectors and rugged packaging systems of CompactPCI. This permits both PXI and CompactPCI to implement up to seven peripheral slots as opposed to four in a conventional PCI system. By employing PCI-PCI bridges systems can be configured which accommodate a higher number of slot positions.

The PXI specification introduces electrical features such as triggering and system clock capabilities to satisfy the requirements of high performance instrumentation applications, as well as offering two-way interoperability with CompactPCI products. In common with CompactPCI, PXI can draw on a large, standing base of industry-standard software, ranging from a low-level device driver via operating systems to complete, high-level graphical Application Programming Interfaces.

PXI also implements VISA (Virtual Instrumentation Software Architecture), used to locate - and communicate with - serial, VXI and GPIB interface modules. The capabilities of VISA is extended by PXI beyond the limits of these interfaces, allowing for the location and control of PXI modules. The instrumentation software model adopted by the instrumentation community is preserved by PXI.

## FEATURES

- Compliant to PXI Revision 2.2
- Compliant to PICMG 2.0 Revision 3.0
- Hot Swap compliant to PICMG 2.1 Revision 2.0
- 3U & 6U versions, 4-18 slots wide
- 8-14 Layer PCB
- 32/64Bit, 33/66MHz clock
- 10MHz clock driver on backplane
- Standard and custom versions available
- Rear pallet PXI bridge for higher slot counts (straight CPCI female connectors for bridge, plugged on the extended pins of the front CPCI P1 & P2 connectors)
- High performance, low noise
- Controlled characteristic impedance @ 65/75ohms
- Matched trace length for PXI\_CLK10 and PXI\_STAR signals
- 24-Way latching service header for DEG, FAL, PRST signals & remote voltage sense for +5v, +3.3v, +/-12v

## SPECIFICATIONS

### Bus Structure

PXI 64 Bit, system slot left

### Bridge

Rear mounted PXI 64Bit pallet bridges with user selectable trigger detection; factory setting is right to left.

### Environmental

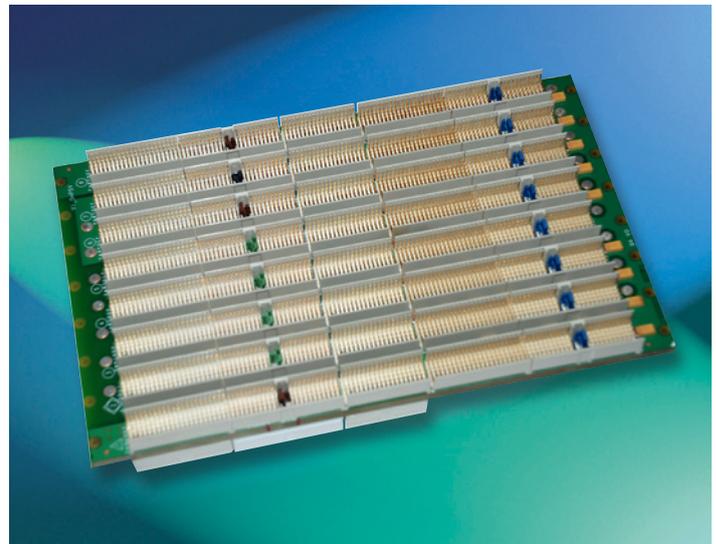
Temperature range (storage)	-40deg.C to +125deg.C
Temperature range (working)	-20deg.C to +75deg.C
Flammability Rating	UL94-V0
Humidity	95%
Regulatory	Designed to meet UL, CSA, CE requirements

## ORDERING INFORMATION

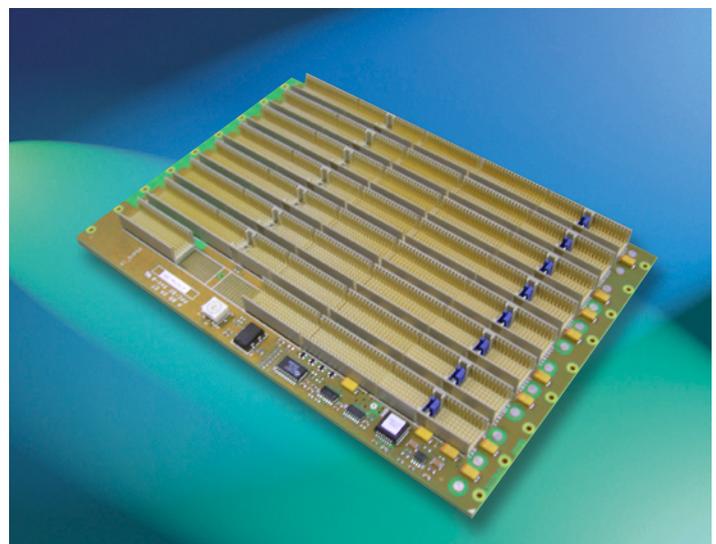
Description	Ordercode
3U, 8 slot PXI Backplane	927-4001724
6U, 8 slot PXI Backplane	927-4001725
3U, 14 slot PXI Backplane	927-4001726



3U, 8 Slot & 14 slot PXI Backplane



6U, 8 Slot PXI Backplane



Custom 6U, 8 Slot PXI Backplane