MIL EMBEDDED

Front Panels *158*

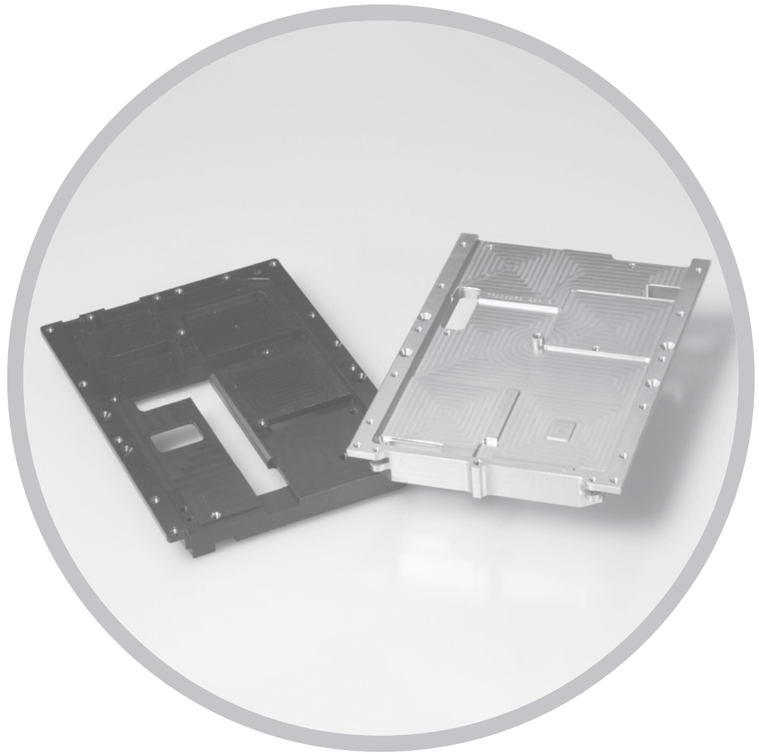
Wedgelocks *159–160*

Wavelock™ Data Sheet *160*

Heat Frames *161*

ATR Boxes / Enclosures *161*

Complex RF Shield Enclosures *161*



WAKEFIELDTHERMAL

FRONT PANELS



Standard & custom front panels that are silk-screened, fully assembled, and ready to mount.

Parts are made from extrusion and manufactured on high-speed CNC machines , providing a superior finish and precision fit to a specific application.

FEATURES AND OPTIONS

- Panel cutouts
- Multi-color silk-screened
- Choice of EMC gaskets
- Choice of surface finish
- Optional hot swap microswitch installation
- Assembly and kitting

APPLICATIONS

- VME Flat Panel
- Compact PCI
- 1101.10 compliant
- PMC
- XMC
- FMC
- Electrical/Electronic instrumentation, controls, and devices.
- Electronic communication equipment.
- Computer system front and rear back panels.
- 19 inch panel plates - 1U, 2U and 3U make for many different applications.
- Audio devices, vacuum tube amplifiers, and signal processing equipment.

RoHS

FMC & PMC BEZEL KITS DATA SHEETS



FMC & PMC Mezzanine Cards describes a specification of I/O mezzanine modules in conjunction with FPGA or another device with configurable I/O capability. The design allows use on any industry standard slot card with form factors such as VME, VPX, CompactPCI, AdvancedTCA, MicroTCA, PCI, PXI, and many others.. Wakefield Thermal can customize your specific application needs for custom FMC & PMC Bezels.

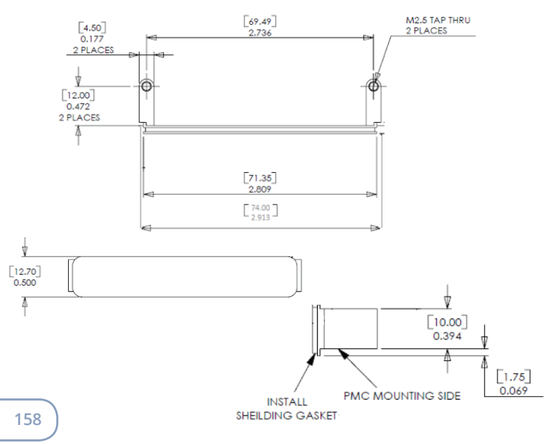
FEATURES

- Material: Aluminum
- Kit:
  - Bezel
  - Elastomer Gasket
  - Two M2.5 x 6mm
  - PH Stainless Steel Screws
- Custom cutouts, silkscreen or overlays available

WV Part Number	Description	Kit Description	Size
PMC-BEZEL-KIT-01	Aluminum PMC Bezel Kit (1050056-00)	PMC Bezel, Elastomer Gasket, Qty. Two M2.5 x 6mm Screws	0.659" L x 0.500" W x 2.913" H (16.75mm x 12.70mm x 74.00mm)
FMC-BEZEL-KIT-01	Aluminum FMC Bezel Kit (1050117-00)	FMC Bezel, Elastomer Gasket, Qty. Two M2.5 x 6mm Screws	0.659" L x 0.500" W x 2.404" H (16.75mm x 12.70mm x 61.00mm)
PMC-GASKET-01	PMC EMC GASKET O RING (1070010-00)	Spare, Replacement Component	
FMC-GASKET-01	FMC EMC GASKET O RING (1070036-00)	Spare, Replacement Component	

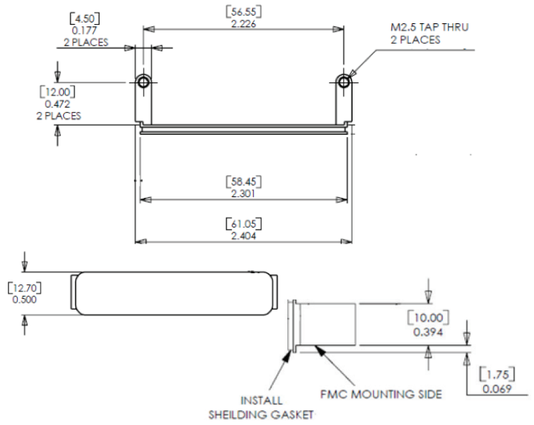
PMC-BEZEL-KIT-01

KIT WITH PMC GASKET & MOUNTING HARDWARE



FMC-BEZEL-KIT-01

KIT WITH FMC GASKET & MOUNTING HARDWARE



WAKEFIELDTHERMAL

WEDGELOCKS



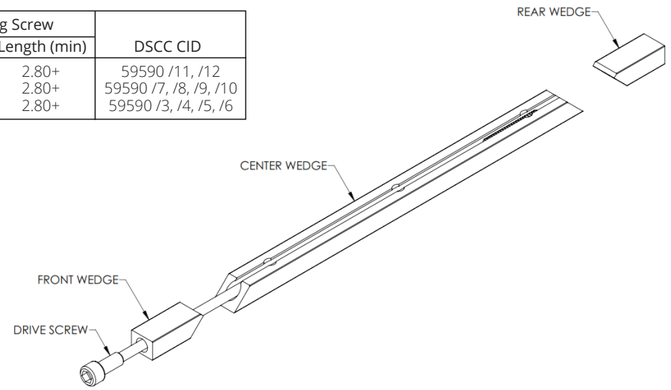
Rugged fastener or retainer used to clamp a PCB within a cold wall slot.

- Provides clamping force to resist shock and vibration in rugged environments
- Provides a thermally conductive path from the heat frame to the cold wall
- Flexible mounting options to meet customer requirements
- Available separately or integrated into Heat Frame
- Ability to cross competitors Part Numbers

Wedgelocks are available in various profiles and allow for configurable length, mounting and plating selections. For configurations not shown within the data sheets, please contact the factory to review.

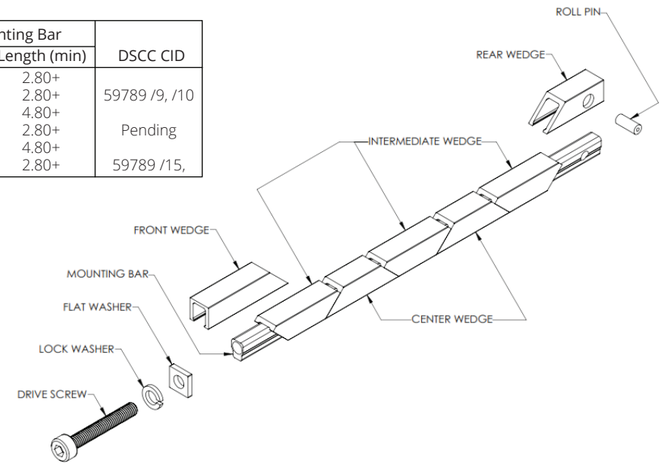
"B" STYLE WEDGELOCK

"B" Style	# of Wedges	Assembly with Long Screw			DSCC CID
		Height	Width	Length (min)	
418B	3	0.180	0.240	2.80+	59590 /11, /12
422B	3	0.220	0.220	2.80+	59590 /7, /8, /9, /10
426B	3	0.260	0.225	2.80+	59590 /3, /4, /5, /6



"C" STYLE WEDGELOCK

"C" Style	# of Wedges	Assembly with Mounting Bar			DSCC CID
		Height	Width	Length (min)	
419C	5	0.192	0.25	2.80+	
422C	5	0.225	0.225	2.80+	59789 /9, /10
422C7	7	0.225	0.225	4.80+	
426C	5	0.260	0.250	2.80+	Pending
426C7	7	0.260	0.250	4.80+	
438C	5	0.375	0.365	2.80+	59789 /15,



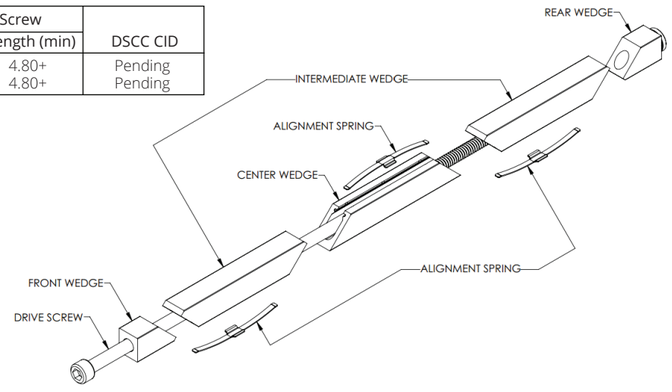
** All dimension provided in Inches*
*** Standard profiles and lengths listed, inquire for other sizes*

WAKEFIELDTHERMAL

WEDGELOCKS

"D" STYLE WEDGELOCK

"D" Style	# of Wedges	Assembly with Long Screw			DSCC CID
		Height	Width	Length (min)	
422D	5	0.220	0.220	4.80+	Pending
426D	5	0.260	0.225	4.80+	Pending



** All dimension provided in Inches*
*** Standard profiles and lengths listed, inquire for other sizes*

WAVELOCK™ DATA SHEET

Wavelock™ is a patent-pending, low-cost, high-performing, form fit, and function alternative to wedgelocks for some applications. A Wavelock assembly consists of only two discrete parts and represents the simplest form of a card retainer within a wedgelock envelope. The discrete parts are a wave spring and an injection molded carrier. Additional benefits include easy tool-free installation and visual indication of correct installation.

FEATURES AND BENEFITS

- Low cost for light shock and vibration applications.
- Light weight assembly with uniform clamping force.
- Narrow width for maximum PCB component area.
- Low profile design allows for decreased slot pitch.
- Special lengths, finish, and other design options available.

MATERIAL

- Carrier: Polysulfone (PSU)
- Wave Spring: 17-7 PH Stainless Condition C to CH900

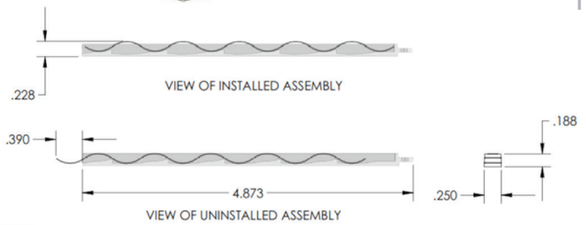
RoHS

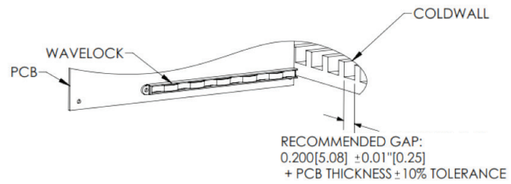
ENGAGED STATE



RELAXED STATE





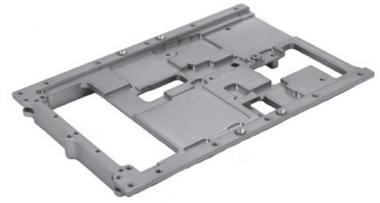


WAKEFIELDTHERMAL

HEAT FRAMES

Milled aluminum heat frames are used with electronics design to meet or exceed rugged specification requirements.

Heat frames are CNC precision-machined out of solid aluminum (or copper) and precisely match the topography or skyline of an electronic printed circuit board being ruggedized.



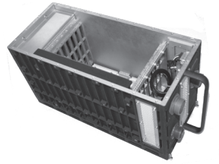
FEATURES AND OPTIONS

- Plating options include Chromate, Black Anodize, and Electroless Nickel.
- Integrated Heatpipes when needed
- When combined with thermal-interface material or "gap pads," conduction-cooled heat frames increase a board's operating temperature range, as well as its resistance to shock and vibration.
- Designs can integrate Front or Rear I/O and can also include Top and Bottom Covers for compliance with Two-Level Maintenance.
- When integrated with wedgelocks and ejectors, this product allows VME, cPCI and other boards to fit within conduction cooled chassis slot dimensions with zero insertion force.

APPLICATIONS

- IEEE 1101.2
- VITA 30.1
- VITA 48 (both 0.8" and 1.0" slot pitch)
- Mezzanine cards
- Ruggedized Enviroments

ATR BOXES / ENCLOSURES



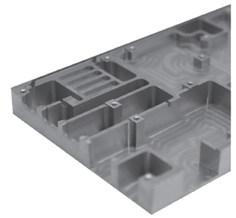
Typically the rugged housings for multiple VME, CompactPCI or VPX computers boards. Enclosures can be bolted, brazed or epoxied together.

- Standard configuration COTS and Custom ATR enclosures
- Power supply and Backplane available when required
- Brazed or Epoxied and bolted Solutions
- Complete Custom Design capabilities to meet specific customer constraints
- Finishes Anodize :
- Chem Film
- Dual Plating
- Painting

COMPLEX RF SHIELD ENCLOSURES

Complex machined parts can be executed through Wakefield-Vette's North Carolina facility. One major product line it supports intricate machined parts for the RF industry.

RF shielded enclosures refers to any box, chassis, or other packaging that prevents the passing of electromagnetic interference or radio frequency.



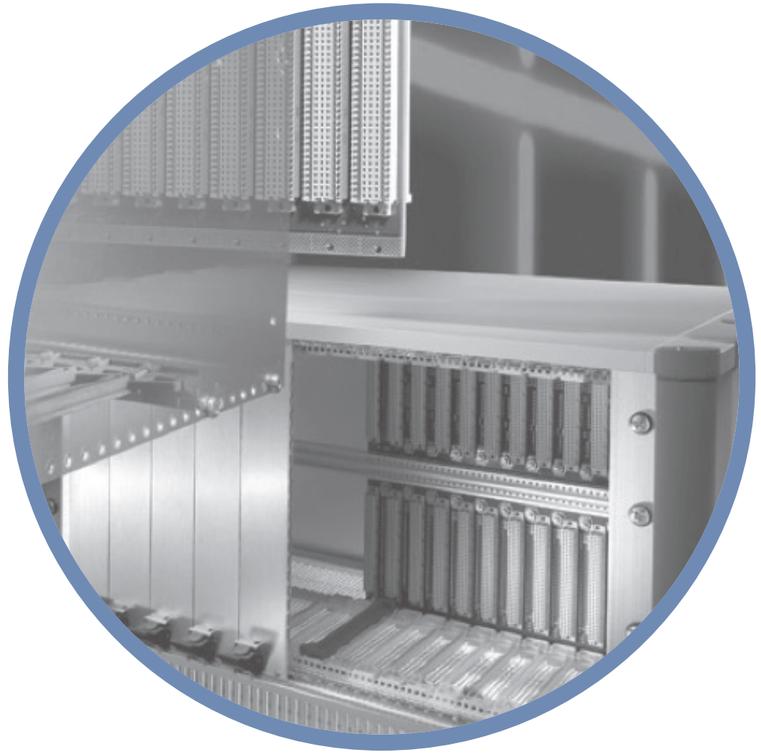
APPLICATIONS

- Desktop Shielded Enclosure
- Software-defined Radios
- Rugged/Embedded Computing
- TEMPEST/Secure Computing
- Sensor Equipment
- Surveillance Equipment
- Tactical Devices
- EMI Shielded Enclosure for Communications Equipment

ELECTRONICS PACKAGING SYSTEMS

Electronic Packaging Systems *164–165*

System Level Packaging *166–167*



Wakefield Thermal manufactures both custom and standard electronic packaging solutions. In June of 2015, Wakefield Thermal announced an exclusive strategic partnership with Heitec AG, a recognized leader in electronic packaging systems (EPS), to sell, customize, and service the Heitec product line (formerly Rittal) to the North American marketplace.

Wakefield Thermal has the ability to modify a customer's unique specification within a quick turnaround time which separates it broad product line from the rest in North America.

Wakefield Thermal has achieved a leading position in the Rugged COTS packaging marketplace, providing for VME/VME64x, VXS/VPX, VXI,PXI, AdvancedTCA, and MicroTCA, and CompactPCI/2.16 architectures.

ELECTRONIC PACKAGING SYSTEMS



FRONT PANELS & EJECTOR HANDLES

Wakefield Thermal manufactures custom front panels that are silk-screened, fully assembled, and ready to mount to your PCB. Parts are made from extrusion and manufactured on high-speed CNC machines to mill your custom cut outs and features, providing a superior finish and precision fit to your board. We also have the ability to stamp front panel cutouts to meet your specifications or high volume requirements.



STANDARD FRONT PANELS

Subrack system for direct mounting in a cabinet. Mounting either on top hat rails or on mounting plate. Suitable for installation of standardized PCBs or plug-in units.



INJECTORS & EJECTORS

We offer all VME and compactPCI related front panel accessories, including gaskets and handles to meet Vita 41, 46, 48, 57, and IEEE 1101.10 requirements.



CUSTOM FRONT PANELS

In addition to a variety of standard finishes and options , Wakefield Thermal offers custom front panel production along with our in-house silk-screening process. We offer build to order ATCA and PCI panels, as well as customized AMC, PMC, and FMC bezels.



MEZZANINE FRONT PANELS

Extruded aluminum and Zinc Die Cast for PCI mezzanine cards and conforms to IEEE 1386.

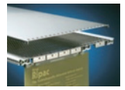
ELECTRONIC PACKAGING SYSTEMS COMPONENTS

Besides complete subrack and system solutions Wakefield Thermal offers a wide range of individual components and accessories for setup, mounting and upgrade. Our inside and outside sales staff will gladly help you to find the right selection of components and support you in compiling the optimum package to fulfill your individual preferences and requirements.



CARD GUIDES

Keyable Guide rails to IEEE 1101.10. Prepared to accommodate a ground contact for assembly of a plug-type connection. Available in different form factors and material including plastic.



COVERS

Covers are slid into the front and rear horizontal rails for mounting backplanes/ connectors. There are several styles of this product line.



HORIZONTAL RAILS

The adaptor rails accommodate the guide rails when fastened to the center horizontal rail. Front and rear horizontal rails available to meet the very simple to the very complex subrack configurations including rails to meet the IEEE 11001.10/1101.11 specifications.



BACKPLANES

Wakefield Thermal offers various backplanes, Our engineering team can help assist in any backplane design with your PICMG, VITA-based, VME, VME 64X, cPCI, uTCA, or custom architecture design.

SUBRACKS



The modular concept of Ripac subracks facilitates a wide range of application options with a minimum of components. All Ripac subracks are based on the same horizontal rails and system components. The difference lies in the design of the side panels and installation options. The subracks are shock and vibration-tested and comply with IEC 60 297-3-101, -102, -103.



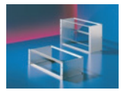
RIPAC COMPACT

Subrack system for direct mounting in a cabinet. Mounting either on Din rails or on mounting plate. Suitable for installation of standardized PCBs or plug-in units.



RIPAC EASY

Subrack system for standard applications or high mechanical loads. In cases that require easy handling and fast assembly.



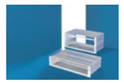
RIPAC ECO

Subrack system for standard applications. Suitable for installation of standardized PCBs or plug-in units of 160 and 220 mm depth.



RIPAC VARIO

Subrack system for standard applications or complex installations. Suitable for installation of standardized PCBs or plug-in units up to 400 mm depth.



RIPAC VARIO EMC

Subrack system for EMC applications or complex installations. Suitable for installation of standardized PCBs or plug-in units up to 400 mm depth.



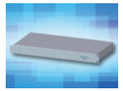
RIPAC VARIO MOBILE

Subrack system for applications in rail vehicles. Suitable for installation of standardized PCBs or plug-in units.



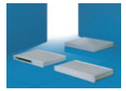
ELECTRONIC CASES

The RiCase instrument case impresses with its modern design and high functionality. Particular features include the numerous color variants and the all-metal enclosure construction. The Ripac Vario-Module system enclosure (desktop or rack-mount enclosure) is fully compatible with the latest Ripac subrack range, making it ideal for individual configuration and assembly as a microcomputer system. At just 1 U, the HeiBox system enclosure offers a high packaging density in the smallest space.



HEIBOX ECO

Cost optimized 1 U system housing for use as rack-mount enclosure or instrument case.



RIBOX

Optionally for use as an instrument case or rack-mount enclosure. Accommodates Eurocards/Double Eurocards (horizontal), bridges, hubs, routers or modems.



RICASE

Instrument case for installation of 19″ slide-in assemblies and elements. For mobile and stationary applications.



RIPAC VARIO MODULE

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60 297-1 for installation in enclosures.

SYSTEM LEVEL PACKAGING



CPCI / CPCI SERIAL

Wakefield Thermal offers a wide selection of CompactPCI systems that conform to IEC 60 297-3 and IEEE 1101.1/10/11, as well as PICMG 2.0. Systems include backplane and power supply, excellent cooling, fully assembled, pre-wired and tested.



RACK MOUNT SYSTEMS

Configuration of 19″ industrial computer systems according to CompactPCI specification for Telecommunication and Industrial Automation.



CPCI SERIAL PLATFORM SYSTEMS

Configuration of 19″ industrial computer systems according to CompactPCI Serial specification.

MicroTCA



MicroTCA offers standardized modularity, compact design and high scalability and bandwidth. Additionally, the consistent platform strategy reduces the time to market. Whenever ultra fast data transmission or data storage is required, MicroTCA systems are the first choice. This is true not only for telecom applications but also for industrial control systems or medical engineering.



CubeTCA

Based on the MTCA specification the compact CubeTCA offers a wide range of application fields in the industrial sector. The CubeTCA can either be assembled directly on the mounting plate or integrated within the target system.



AIR MANAGEMENT PANELS

Filler sheets are mounted on the AMC face plates and are used to route the airflow in ATCA carriers and MicroTCA systems.



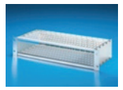
MicroTCA DEVELOPMENT SYSTEM

Instrument MicroTCA development systems are suited for design of hard and software or for testing AMC modules.



FACE PLATES

These face plates are used for AMC cards and ATCA carriers, or as filler panels in MicroTCA systems.



MicroTCA RACK MOUNT SYSTEMS

MicroTCA specification is designed as an amendment to the ATCA standard as a lower-cost compact version for the low-end sector. The main features are a compact design, high scalability, modularity and considerably reduced system costs.



PicoTCA

Based on the MTCA specification, PicoTCA is a modular ready-torun system, which carries up to 12 AMCs and 1 MCH. Due to the robust construction, the 19” rack can be used both in the telecommunication and in the industrial sector.

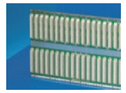
WAKEFIELDTHERMAL

ELECTRONICS
PACKAGING SYSTEMS

VME



Wakefield Thermal supplies complete plug & play solutions for VME applications. Systems are based on standard components which may be configured to your specification. VME systems are complete with power supply, backplane, measures for EMC and ESD protection, climate control, fully assembled, pre-wired, and tested.



BACKPLANES

The VME64 is a new addition to the VME family to ANSI/VITA 1-1994 and supports 64-bit data traffic. The VME64x extends the VME family to ANSI/VITA 1.1-1997 and is available with the optional 133-pole 2 mm connector J0. 160-pole connectors are used with VME64x.



MPS MONITORING

The monitoring electronics for microcomputer packaging systems (MPS) offers a highly flexible, scalable security concept for key parameters such as temperature, voltage and fan speed.



RACK MOUNT SYSTEMS

Ripac systems available in many different variations. Prepared to accommodate VMEbus boards and drives while having MPS Monitoring feature.



SLIM BOX VARIO

Configuration of 19″ industrial computer systems according to VME specification.