Ripac Sets New Standards For Performance And Value...

COMPACT-I

Smart New Value-Packed Innovations For *CompactPCI* Packaging Solutions

- *COMPACT-I* System
- Type IVs & VII Handles
- RiTherm & Developer System
- RiBox Solutions
- Modular Backplanes & Stiffeners
- Variety Of Accessory Items

Switch to perfection

RITTAL®

Rittal Ripac's New COMPACT-I System Offers...

REAL COMPACTPCI A

Rittal, the original *CompactPCI* packaging company, has continuously led the industry with new packaging ideas and innovations designed specifically for *CPCI* applications. Our extensive line of *CPCI* subrack systems can be customized with cooling options, high performance *CPCI* backplanes, power supplies, as well as a wide range of drive chassis. From the simplest component to an advanced family of subracks, Rittal has dedicated itself to developing and designing new *CPCI* technology for you.

Focus on *CompactPCI*.

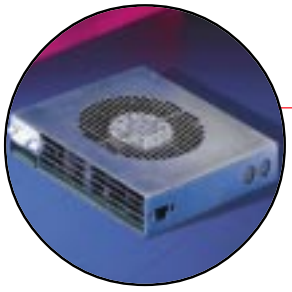
Rittal continues to focus its research and development team on *CPCI* solutions as the increase in *CPCI* computer board applications grows faster than any other bus architecture. This is due to the number of desirable features that *CPCI* offers to equipment design engineers and operators. For instance, *CPCI* provides:

- A system design that will accommodate a large number of lines coming in the back, allowing unrestricted module insertion and module swapping in the front of the system.
- A specification that has been finalized regarding hot swap, live insertion and multiprocessor capabilities, at a competitive cost.

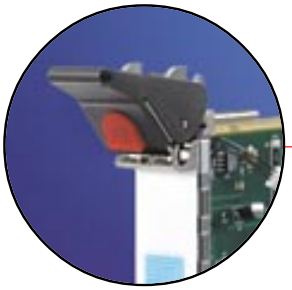
It is forecasted that the *CPCI* computer board market for real-time and embedded applications will continue to increase at phenomenal rates. What's more, OEMs, system integrators and end users have indicated that *CPCI* is the architecture for the future.

More *CompactPCI* Technology.

And with this *CPCI* growth comes additional innovations within Rittal's *CPCI* product line. Hot new products include the *COMPACT-I* subrack system with slide-out peripheral chassis, Type IV superior and VII telecom handles, Rittal RiBox, as well as innovative components like keying tools, backplane stiffeners and UL recognized earth/ground connections.

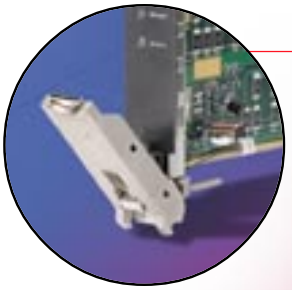


Our smart cooling products include the RiCool supercool blower systems that offer 220cfm per 1U high unit.

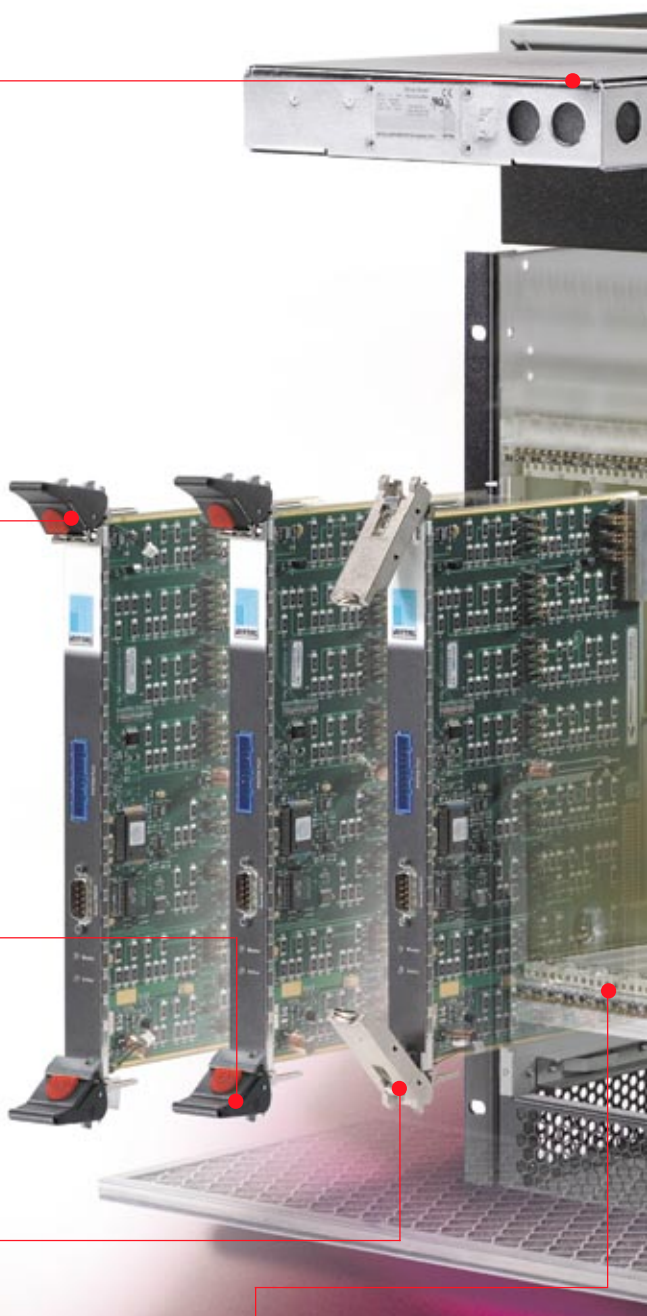


The new Version I Type IVs metal handle features a positive lock function for hot swap applications.

The Version II Type IVs metal handles are capable of injecting/extracting up to 180 lbs./815N force.



New Version II Type VII handles are available in silver metal and offer almost unlimited life expectancy.



Rittal's new programmable keying tool enables easy insertion of keys with one simple move for both the front and rear of the subrack.

ADVANCEMENTS.

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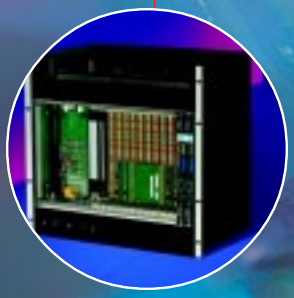


The rear of the COMPACT-I unit features easy access for rear I/O modules.

These durable Type VII handles are ideal solutions for front panel telecom applications.

UL recognized ground connections allow a pluggable earth/ground contact for rear CPCI I/O modules.

The aluminum/ sheet steel design of the COMPACT-I system balances performance and economy for medium/ high volume applications.

Superior Performance *CompactPCI* Handles...

TYPE IVs

For front panels, please reference the Rittal *CompactPCI* catalog (page 21).

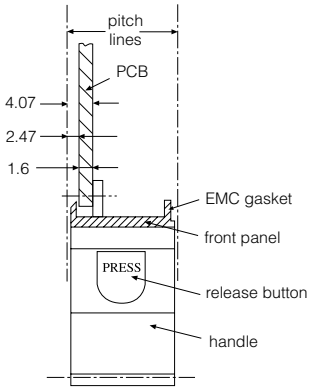
Two versions are available:

Version I: A hot swap version with positive locking.

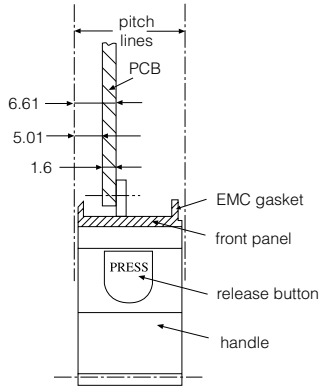
Version II: Features a 0.10" offset for increased component side 2 space.

This new generation of high performance *CompactPCI* Type IV superior handles features a cost effective, indestructible design for long life expectancy. The quality of existing plastic *CPCI* handles depends on the interface of the *CPCI* module handle into the corresponding *CPCI* system, in addition to the perfect handling of the operator. The new generation of *CPCI* superior handles is capable of injecting/extracting 3U, 6U and 9U (two handles for 1190 pins at 180 lbs./815N) *CPCI* modules with almost unlimited injection/extraction cycles. Existing plastic *CPCI* handles are suitable for 3U (one handle for 308 pins at 48 lbs./215N and 6U (two handles for 749 pins at 118 lbs./525N) *CPCI* module injection/extraction cycles, while existing at a limited life expectancy (anything from 50 to 200 maximum cycles). The positive lock function of the Type IVs handles for hot swap allows the user easy functionality: insert the hot swapped module into the system and then push the handle into the lock position. Only at this point is the microswitch activated and the system receives the module.

Version I: Standard PCB position



Version II: Offset PCB position



Features and Benefits

- Capability of injecting/extracting 3U, 6U and 9U *CPCI* modules with almost unlimited cycles
- Compliance with *CPCI*, VME64x and VIPA
- Full *CPCI* module front panel I/O space
- Integral PCB attachment
- Keying chambers
- Positive lock for hot swap
- Alignment pin for ESD protection and 30A GND connection (UL recognized)
- Microswitch option
- Labeling option
- Multiple handle tying/ganging pin option

CompactPCI Type IVs Handles				
Version	Color	Position	Packs of	**Part No.**
I	Black	Top	1	**3688617**
I	Black	Bottom	1	**3688618**
II	Black	Top	1	**3688619**
II	Black	Bottom	1	**3688620**

Configuration

Handle assembled with one front panel mounting screw (M2.5 x 6)

Options:

- Module retention screw
- Microswitch
- Handle tying/ganging pin for double/triple wide modules
- Front panels and front panel service (please inquire)

Material:

Version I: Metal handle insert with plastic cover/snap lock
Metal holder

Version II: Metal handle insert with plastic cover/snap lock
Metal holder

Color:

Version I: Black with red release button

Version II: Black with red release button

Optional module retention screw	**Part No. 3687051**	100 pcs. (M2.5 x 11)
Optional multiple handle tying/ganging pin	**Part No. 3686935**	1 pc. (min. order qty – 20 pcs.)
Optional PCB mounting screw	**Part No. 3654320**	100 pcs. (M2.5 x 8)
Optional microswitch	See *CompactPCI* catalog page 20	
Microswitch assembly	**Part No. 3686536**	1 assembly
Through-hole mounted PCB header	**Part No. 3686537**	1 pc. (min. order qty – 10 pcs.)
Surface mounted PCB header	**Part No. 3686541**	1 pc. (min. order qty – 10 pcs.)

Application Driven *CompactPCI* Telecom Handles...

TYPE VII

For front panels, please reference the Rittal *CompactPCI* catalog (page 21).

This generation of telecom handles was designed to meet applications which do not use the module front panel as the major I/O interface, as typically found in telecommunication applications.

The design, however, is based on the *CompactPCI* injector/extractor handle design and includes all the *CPCI* features, except for limiting the module front panel I/O space. One important additional feature has been added–namely the PCB can be shifted by 0.1" (2.54mm) to increase offset component side 2 of the PCB (by decreasing the component side 1 of the same amount). This requires the corresponding PCB guide rails to be offset by the same amount. This feature has been implemented in the PICMG 2.11 Power Interface Specification. Two versions of this Type VII telecom handle are available.

Version I Type VII telecom handles are made of durable plastic and reduce the module front panel I/O space by approximately 2.13" (54mm) when using a top and bottom mounted handle. The maximum injection/extraction force for a pair of these Version I Type VII telecom handles is approximately 118 lbs./525N force–typically 6U *CPCI*. Since it is made of plastic, the life expectancy is limited (approximately 200 insertion/extraction cycles depending on the quality interface of the module handle/connector features).

Version II Type VII telecom handles are made of metal and have an almost unlimited life expectancy. However, the module front panel I/O space is reduced by 2.76" (70mm) when using a top and bottom mounted handle. The maximum insertion/extraction force for a pair of these Version II Type VII telecom handles is approximately 190 lbs./835N force–typically 9U *CPCI*. Please note: when designing in such high injection/extraction forces, attention is to be paid to the overall mechanical system design and especially to the backplane design.

Two versions are available:

Version I: Plastic — suitable for both standard and offset

Version II: Metal — suitable for both standard and offset

Features and Benefits

- Compliance with *CPCI*, VME64x and VIPA (front panel I/O reduced)
- PICMG 2.11 compliance
- PCB offset by 0.1" (2.54mm) for increased component side 2 space
- Keying chambers
- Positive lock for hot swap
- Alignment pin for ESD protection and 30A GND connection (UL recognized)
- Microswitch option
- Labeling option
- Multiple handle tying/ganging pin option

***CompactPCI* TypeVII Handles**				
Version	Color	Position	Packs of	**Part No.**
I	Black	Top	1	**3686134**
I	Black	Bottom	1	**3686135**
II	Silver	Top	1	**3687927**
II	Silver	Bottom	1	**3687928**

Configuration

Handle assembled with one front panel mounting screw (M2.5 x 6)

Options:

- Module retention screw
- Microswitch
- Handle tying/ganging pin for double/triple wide modules
- Front panels and front panel service (please inquire)

Material:

Version I: Plastic

Version II: Metal

Color:

Version I: Black

Version II: Silver metal

Optional module retention screw	**Part No. 3687051**	100 pcs. (M2.5 x 11)
Optional multiple handle tying/ganging pin	**Part No. 3686935**	1 pc. (min. order qty – 20 pcs.)
Optional PCB mounting screw	**Part No. 3654320**	100 pcs. (M2.5 x 8)
Optional microswitch	See *CompactPCI* catalog page 20	
Microswitch assembly	**Part No. 3686536**	1 assembly
Through-hole mounted PCB header	**Part No. 3686537**	1 pc. (min. order qty – 10 pcs.)
Surface mounted PCB header	**Part No. 3686541**	1 pc. (min. order qty – 10 pcs.)

Innovative Rittal Ripac Products For *CompactPCI* Applications...

COMPACT-I SYSTEM

Rittal, the original *CompactPCI* packaging company, has literally set the standards for electronic packaging solutions. Our latest design is a cost/performance efficient *CPCI* system designed for medium and high-volume production applications, as typical in the telecommunication, data communication, or computer telephony industries. This award-winning system is designed to integrate the user's custom requirements into a unique *CPCI* system concept. For instance, an all-sheet steel design can be customized for high volume applications with limited *CPCI* features at a low cost. Or a sheet metal/extrusion design can be designed for applications that require all *CPCI* features at a moderate cost.

The photo to the left illustrates a typical COMPACT-I system with RiCool blowers.

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1999 BEST OF SHOW Computer Telephony

Features And Benefits

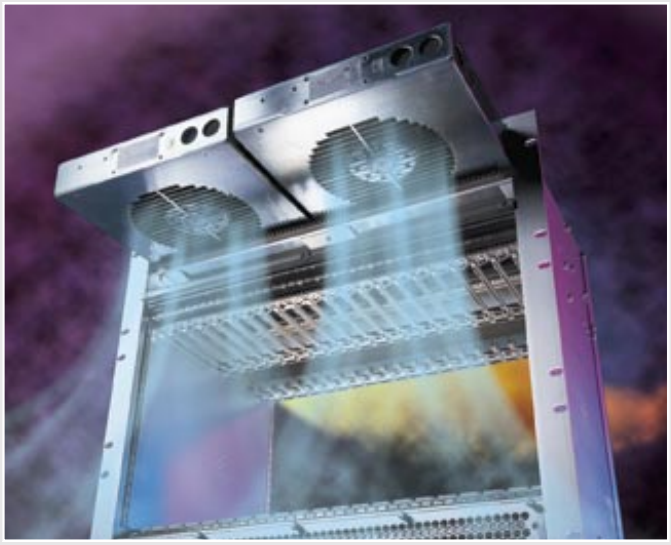
- Pre-plated sheet steel (.04"/1mm) outer covers with optional paint finish
- Unique inner *CPCI* cage
  - IEEE 1101.10 and IEEE 1101.11 compliance
  - Front mounted PCBs only or front/rear mounted PCBs
  - High-volume customization with sheet metal formed PCB guides
  - Ideal for 6U or 9U PCB applications
  - Available in several PCB and PSU combinations (3U in 6U or 3U/6U in 9U)
- Alternative EIA rack mount positions (front or recessed)
- EMI/RFI containment
- Slide-out (peripheral) chassis
- Modular *CPCI* backplanes
  - Off-the-shelf ultra-quiet family of modular, hot swap backplanes
  - Provide a quick-to-market solution
  - *CPCI*, *CPCI*/H.110, and H.110 backplanes and bridges
- Custom-designed *CPCI* backplanes
- Climate control options
  - RiCool super cool blower (500W to 1.5KW system heat dissipation)
  - Muffin fans (up to 500W system heat dissipation)
- Power supply options
  - Pluggable power supplies per PICMG Spec. 2.11
  - Pluggable open frame power supplies
  - Open frame power supplies
  - ATX power supplies

Standards Compliance

As a global innovator, Rittal realizes the importance of adhering to worldwide standards such as *CPCI* and IEEE. In fact, we have built the implementation of these standards directly into the development of our Ripac products. This attention to detail has made Ripac the most specified *CPCI* packaging products in the world.

The COMPACT-I system conforms to the following standards:

- PICMG Spec. 2.0 *CPCI* Core
- PICMG Spec. 2.1 *CPCI* Hot Swap
- PICMG Spec. 2.10 *CPCI* Keying
- PICMG Spec. 2.11 *CPCI* Power Interface
- IEEE Std. 1101.1 Dimensions for PCBs and subracks
- VITA 30 2mm Connector Practice
- IEEE Std. 1101.10 Extraction/insertion handles, EMC, ESD, keying and solder side covers
- IEEE Std. 1101.11 Rear I/O PCBs and subracks, protective ground for I/O PCBs
- IEC Std. 61076-4-101 Metric 2mm connector
- All plastic materials conform to UL 94-V0



COMPACT-I System Redundant Cooling

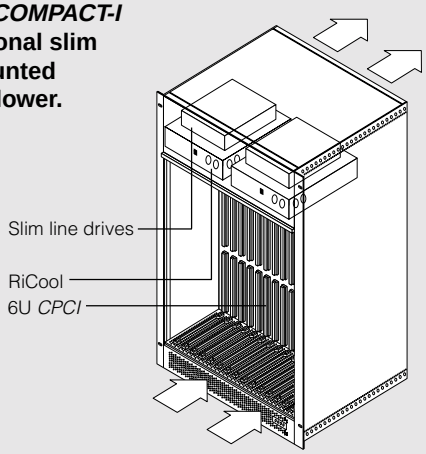
The 10U *COMPACT-I* system as shown to the left is suitable for front and rear mounted *CPCI* boards and is designed for systems with a heat dissipation of 500W to 1.5KW. To deal with this heat, the system is equipped with two powerful hot swap RiCool blowers that deliver 220cfm (at a static pressure of 1.6" of water, 400Pa each). RiCool provides a variety of intelligent features, including failure alarm signal, temperature speed control, locked rotor protection and automatic restart.

For applications with heat dissipation below 500W, the traditional axial/ muffin fans (at a static pressure of .3" of water, 80Pa) may be designed in the system, in place of the RiCool blowers. The removable muffin fan chassis would then be mounted typically below the PCBs.

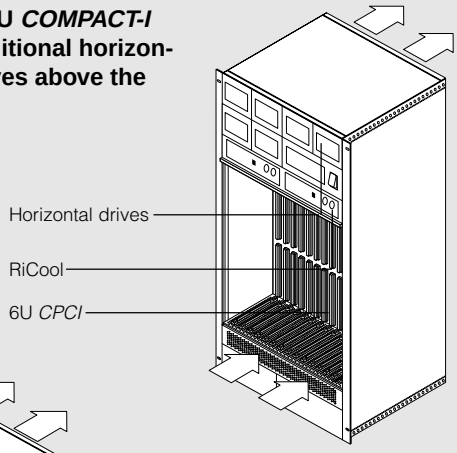
Optional RiTherm load boards enable the user to validate the thermal characteristics of the system before all PCBs are designed.

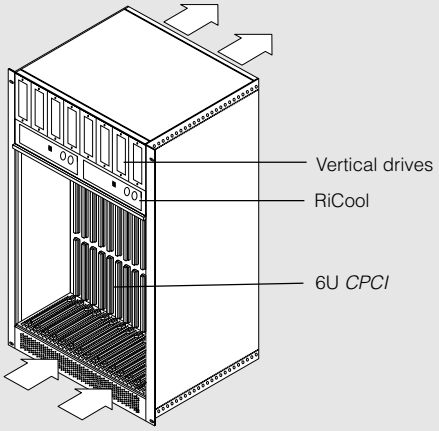
Typical RiCool-equipped *COMPACT-I* systems are also available as shown below.

Modified to a 10U *COMPACT-I* system with additional slim line horizontal mounted drives above the blower.

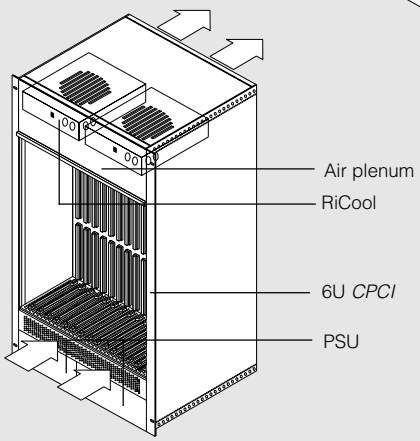


Modified to a 13U *COMPACT-I* system with additional horizontal mounted drives above the blower.



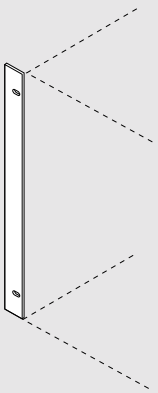


Modified to a 12U or 13U *COMPACT-I* system with vertical mounted drives mounted above the blower.

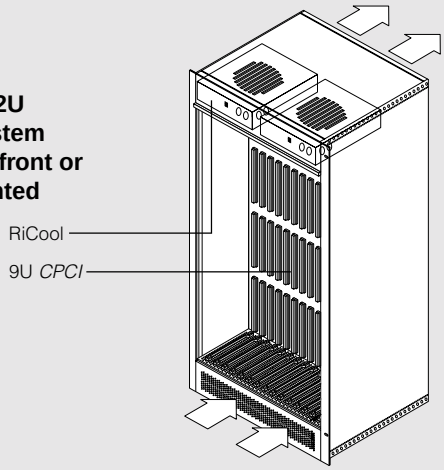


Modified to a 12U *COMPACT-I* system with enhanced airflow plenum and bottom mounted, hot swappable power supply.

Modified to a ?U *COMPACT-I* system. Add your sketch and Rittal will quote your specific application.



Modified to a 12U *COMPACT-I* system suitable for 9U front or front/rear mounted boards.



Test And Debug I/O Boards With Rittal's...

CPCI DEVELOPER SUBRACK

During the process of developing *CompactPCI* boards, access to components may be required. This can be done by using a *CPCI* extender card, which tends to be expensive and may cause possible distortion to sensitive signals. Rittal, the original *CPCI* packaging company, is introducing a simple and inexpensive solution to test and debug *CPCI* front-loaded and rear-loaded I/O boards—the Rittal *CPCI* Developer Subrack. The *CPCI* Developer is designed so that the power for the backplane will come from the existing bench top supply. Alternatively, a pluggable power supply may be used in place of PCB slots, or an inexpensive ATX power supply may be plugged directly into the backplane.

Features And Benefits

- Fully *CPCI* compliant subrack
- Suitable for front-loaded *CPCI* boards (6U x 160mm) and rear-loaded I/O boards (6U x 80mm)
- Optional mix of 6U x 160mm with 3U x 160mm PCBs and 6U x 80mm with 3U x 80mm PCBs
- Two AC fans with combined 54cfm (approx. 31L/second)
- Choice of *CPCI* or *CPCI*/H.110 backplanes
- Complies to the following standards:
  - PICMG Spec. 2.0 *CPCI* Core
  - PICMG Spec. 2.1 *CPCI* Hot Swap
- PICMG Spec. 2.10 *CPCI* Keying
- PICMG Spec. 2.11 *CPCI* Power Interface
- IEEE Std. 1101.11 Rear I/O PCBs and subracks, protective ground for I/O PCBs (optional)
- All plastic materials conform to UL 94-V0

Configuration

***CPCI* Developer Subrack (without backplane) Part No. 9807801**

- Subrack with specially designed side plates for PCB access
- Upper 6U for 6U *CPCI* front- and rear-loaded PCBs
- Lower 2.5U for fan tray and table (cable) clearance
- 8.5U (14.88"/378mm) total height x 42 HP (10.5 slot) usable width x (11.5"/292mm) depth
- Protective, removable top cover
- AC muffin fan chassis with interface connector
- ESD jack

QuickPick *CPCI* /H.110 Backplanes

All backplanes are *CPCI*, full hot swap with system slot on the right side. Please select the backplane required for your application. All backplanes are shipped separately.

- 3U x 8 slot x 32-bit *CPCI* backplane Part No. 3687859*
- 3U x 8 slot x 64-bit *CPCI* backplane Part No. 3686546*
- 6U x 8 slot x 32-bit *CPCI* backplane Part No. 3687866
- 6U x 8 slot x 64-bit *CPCI* backplane Part No. 3686549
- 6U x 8 slot x 64-bit *CPCI*/H.110 backplane Part No. 3687872
- Backplane cable harness Part No. 3686570**
- Termination card Part No. 3686554
- Backplane mounting hardware (20 pcs.) Kit No. 3686896

* *May require an optional termination card if not fully loaded.*

** *Customer must modify attachment to bench top.*

Accessory Options

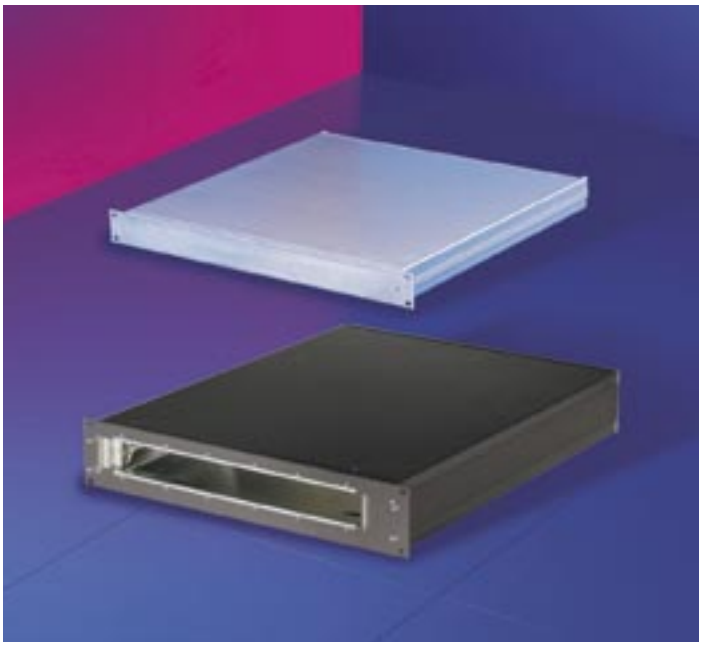
For additional information, please contact Rittal.

- Conversion if 3U-only *CPCI* backplanes are utilized
- Conversion if two levels of 3U is used within the available 6U
- Choice of 3U and 6U 32- and 64-bit *CPCI* backplanes, from 2 to 8 slots
- *CPCI* bridge for 9 or 10 slot applications
- Choice of 6U 64-bit *CPCI*/H.110 backplanes, from 5 to 8 slot
- *CPCI*/H.110 bridges for 10 slot applications
- Backplane cable harness to PSU (customer modifications may be required)
- Pluggable power supplies
- ATX 250W power supply

See our comprehensive range of *CPCI* backplanes and power supplies in the Rittal *CompactPCI* catalog.

For Horizonal Mounted *CPCI* Modules...

RiBox



For horizontal mounted *CompactPCI* modules, Rittal Ripac provides the new RiBox pizza box. Maximum internal space usage and effective RFI/EMI (EMC) shielding provisions were the prime requirements for the RiBox design.

The RiBox concept focuses on an empty and unfinished box design that invites you to adopt your specific application to it. Fundamentally, either the mounting of an internal (horizontal) mother board or the plug-in of *CPCI* modules (front only or front and rear) is possible. Since the positioning of the *CPCI* modules within the RiBox is dependant on the complexity of your application, the RiBox can be purchased either unmodified (see sizes and part numbers below) or modified to your particular requirements.

The Rittal Ripac modular range of *CPCI* backplanes may be used in a 2U RiBox (2 and 3 slots) while the 1U RiBox (1 slot) will require a custom *CPCI* interface.

The RiBox as offered below has only a protective/conductive finish. However, a specified paint or a popular vinyl covered aluminum sheet finish may be chosen for your modified RiBox based version.

The RiBox is available in two models (19" and desktop) and two heights (1U and 2U).

Rittal will provide quotations for modified RiBoxes at a minimum quantity of 50 units.

Best Of Show
Interop
ComputerTelephony

Features And Benefits

- The front panel is designed to accept self-adhesive overlay foils that hide the front mounting screws.
- 1U 19" rackmount and desktop unit complies to EIA-310-D specifications.
- The rear panel is designed to accept screen printing and a component cut-out service is available.
- The bottom cover is designed to be the chassis plate for PCBs and/or components. Modification services include stand-offs, mounting holes, GND bolts, etc. Additional internal chassis plates on request.
- The top cover performs as a solid protection.
- Effective EMC gasketing option.
- Custom width or depth.
- *CPCI* boards can be mounted horizontally with a conversion kit.
- Component cut-out/front panel overlay services are also available.

19" RiBox

Height (U)	# of *CPCI* slots possible	Width		Depth		Finish	Part No. 1 pc.
	4 HP	inches	mm	inches	mm		
1	1	17.64	447	5.91	150	Clear chromated, conductive	**3687814**
				7.87	200		**3687815**
				9.84	250		**3687816**
				11.81	300		**3687817**
				13.78	350		**3687818**
2	3	17.64	447	5.91	150		**3689044**
				7.87	200		**3689045**
				9.84	250		**3689046**
				11.81	300		**3689047**
				13.78	350		**3689048**

For the desktop version of the RiBox (same Width (W) and Depth (D) dimensions), please contact Rittal.

If recessed or flexible 19" rack mounting flanges are required, please contact Rittal.

Configuration

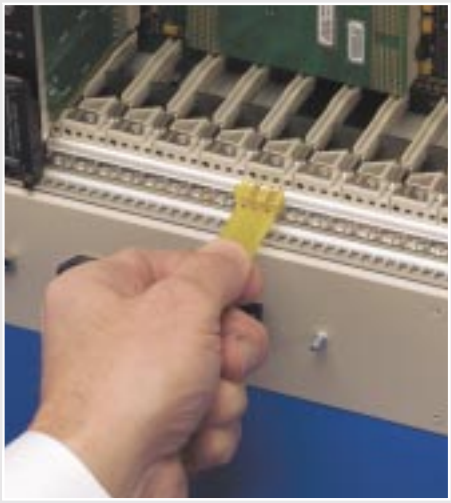
Construction:
The RiBox is constructed of a lightweight but rigid all-aluminum material consisting of a front extruded panel, a rear extruded panel and top/bottom covers. Only four screws hold the 1U RiBox together. Optional stainless steel EMC gaskets can be added to improve the shielding protection if required.

Finish:
The RiBox is clear chromated as standard. For paint and vinyl coated finishes, please contact Rittal.

Description	Dimensions	
	inches	mm
Width EIA-310-D, IEC 60297-1, DIN 41494	19	482.6
Outside width	17.74	448
Inside usable width	16.93	430
Rack mount holes EIA-310-D, IEC 60297-1, DIN 41494	18.31	465.10
Outside heights (-0.4) EIA-310-D, IEC 60297-1, DIN 41494	1.75/1U 3.50/2U	44.45 88.90
Inside usable heights between covers	1.65/1U 3.40/2U	42 86.45
Inside usable heights of front/rear panels	1.42/1U 3.17/2U	36 80.45
Overlay height	1.61/1U 3.36/2U	41 85.45
Outside depth	See table	
Inside usable depth between front/rear panels	Outside depth minus 7.0 (0.275)	
Front/rear panel thickness	0.12	3
Front/rear panel leg depth	0.42	10.6

Programmable Keying Of *CPCI* Modules And Systems...

KEYING TOOLS



Keys and Programmable Keying Tool			
Description	Color	Qty	**Part No.**
Key	Gray	100	**3684325**
Key	Red	100	**3684326**
Keying Tool	Yellow	1	**3687956**

Various PICMG Technical Subcommittees, including the Telecommunications Interest Subcommittee (TISC) and the VME64x Subcommittee, have defined signal-to-pin assignments for the user-defined pins of the J4/P4 and the J5/P5 *CompactPCI* connectors. Specifications are also under development which replicate the PCI bus on the J4/P4 and the J5/P5 connectors. In addition, there is at least one specification under development which might lead to future pin assignment conflicts on the J2/P2 connectors. These assignments for bussed signals will certainly overlap. The result will be risk of damage to equipment and in some cases, hazard to persons operating the equipment.

To safely support overlapping uses of *CPCI* user definable pins, use of the keying mechanisms defined in the 2mm connector standard IEC 61076-4-101 (J4/P4 connectors), IEEE 1101.10 handle and PCB guide rails are required.

While the 2mm connector keying is offered by the connector manufacturers, Rittal's keying solution is concentrated on the IEEE 1101.10 requirements.

Since there was only a very limited area available to define a keying solution (4000+ combinations) for the IEEE 1101.10 standard, the keys are small, but very effective.

To help the module and system assembler, Rittal has developed a **programmable keying tool** which eases the insertion of the keys.

One end of this programmable keying tool is designed for inserting in one easy move up to three keys into the front end of the subrack mounted guide rail keying chambers. An integrated alignment pin provides for the orientation.

On the other end, this tool is designed for inserting in one easy move up to three keys into the rear of the *CPCI* module front panel keying chambers. An integrated alignment hole also provides for the orientation.

User note:

- First, key the tool by using the existing keys.
- Then load the keys for the subrack/module into the pre-keyed tool backwards.
- Then push the loaded keying tool against the subrack/module keying chambers by aligning the keying tool with either keying tool orientation feature.
- Keys will simply snap into their position.

CPCI Specifications Unit: PICMG 2.10

Material:
Keys: Plastic UL 94-VO
Keying Tool: Plastic UL 94-VO

For A Hot Pluggable, Redundant Cooling System...

RICOOL BLOWERS

The powerful RiCool blowers have been designed to provide effective cooling for *CPCI* systems which require a redundant cooling feature and/or have a heat dissipation of over 500W.

The ability of the RiCool blower to generate 1.6"/40.64mm (H_2O) of static pressure confirms that the RiCool blower is able to provide effective cooling in a densely packed *CPCI* system.

By comparison, a typical system cooled with three 4.7" x 4.7" 18W (110cfm at free delivery) muffin fans, generates only 0.22" to 0.40" (H_2O) static pressure. The estimated (operating) static pressure point of a muffin fan assembled, fully loaded *CPCI* system is 0.3" to 0.5" (H_2O). Under those conditions one RiCool blower provides at least 40% higher airflow.

Each 19" *CPCI* system can accept two RiCool blowers.

Electromagnetic Emissions For RiCool Blowers
The RiCool blowers comply with the EMI Standard per FCC part 15, subpart J of Docket 20780, Class A & B emissions limit across the frequency spectrum from 30MHz to 1GHz.

Safety
RiCool is in conformity with the requirements of the Low Voltage Directive, Nr. 73/23/EEC EN 60950: 1992 +A1 +A2 +A3 +A4 +A11.

RiCool Blowers		
Description	Qty	**Part No.**
RiCool blower 12V	1	**3344012**
RiCool blower 24V	1	**3344024**
RiCool blower 48V	1	**3344048**
RiCool blower 48V w/ internal thermistors	1	**3688063**

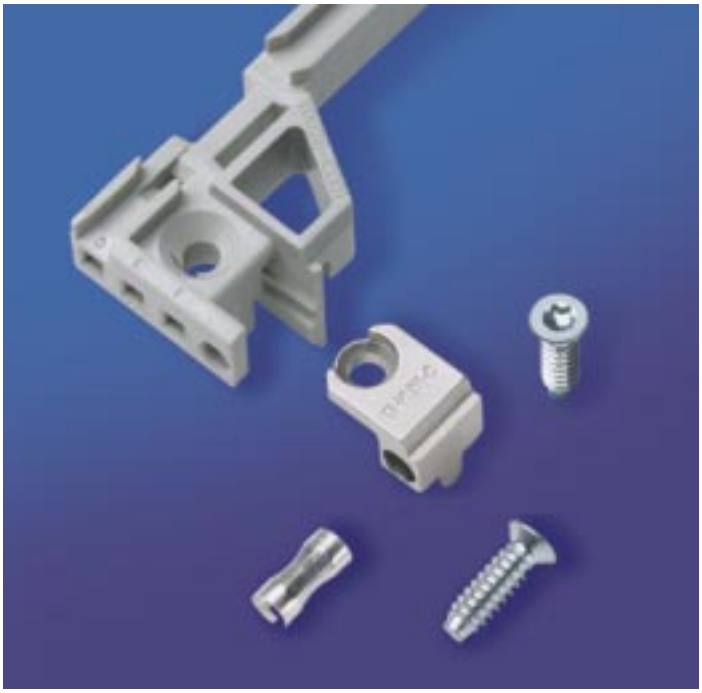
Note: *For technical details, see the CompactPCI catalog.*

Temperature/Speed Control Thermistors		
Description	Qty	**Part No.**
PTC thermistor for 12V	1	**3686887**
PTC thermistor for 24V	1	**3686888**
PTC thermistor for 48V	1	**3686889**

RiCool Hot Plug Connector		
Description	Qty	**Part No.**
6 Pin Molex RiCool mounted receptacle 15-06-0061	1	**Part of RiCool**
6 Pin Molex *CPCI* system mounted plug 15-06-0065 connector housing only	1	**9810117**
Kit, connector housing w/ terminals	1	**3688600**

For Rear *CPCI* I/O Modules...

GROUND CONNECTIONS



The PICMG Telecom Interest Subcommittee (TISC) requested that IEEE 1101.11 provide a means for allowing the *CompactPCI* rear I/O module front panel to be at protective earth potential when fully inserted in the *CPCI* system.

Typically, rear I/O panels were of a single, monolithic rear panel design – usually hard wired with an earth/ground connection to the chassis earth/ground. With the large number of 6U *CPCI* backplane I/O pins, *CPCI* rear I/O modules (managing rear I/O wiring/interfaces) are designed to the same modularity and fast interchangeability as the front mounted *CPCI* active modules. If each individual rear I/O module would be earth/ground hard wired with a traditional earth/ground connection, there would be possibly no space available on the I/O module front panel, and in practice this would become an unmanageable situation. This is why PICMG - TISC required an alternative solution.

IEEE 1101.11 defines in chapter 15 that the mechanical and electrical requirements for this type of "pluggable" earth/ground contact should be only one component towards providing earthing/grounding of a complete system.

Separately, Rittal submitted their earth/ground contact design (in accordance with IEEE 1101.11) to UL for UL 1950 recognition testing (30A).

The UL recognized test has been undertaken with a single earth/ground contact per rear I/O module only. If the earth/ground contact is present, the rear *CPCI* I/O module front panel ESD clip mounted into the guide rail is not required. However, the PCB ESD clip in the guide rail may still be required to wipe the ESD of the I/O module PCB during insertion.

Configuration

***CPCI* Specifications**

- PICMG 2.0 (3.6.1 a)

Material:

- Handle/PCB holders with earth/ground pin: zinc alloy die-casting, nickel plated (not part of the delivery)
- Earth/ground receptacle: zinc alloy die-casting, tin plated
- Earth/ground contact: beryllium copper, silver plated
- Assembly screw: M3.5 x 10 hardened steel, chromated

Note: *This screw has a Torx feature and requires a Torx T-10 compatible drive bit*

Earthing/Grounding Connections

Description	Qty	Part No.
Guide rail I/O - 80mm top, gray	1	**3687936**
Guide rail I/O - 80mm bottom, gray	1	**3687937**
Earth/ground contact and receptacle	50	**3687951**
Retention screw	50	**3684109**

Note: *Typically the earth/ground contact is only necessary in the bottom position of the subrack/module. This requires one bottom guide I/O rail, one earth/ground contact and receptacle and one retention screw. The upper subrack/module position typically requires only one top I/O guide rail and one retention screw. The 160mm guide rail adaptor is only being used if earth/ground contact is required for system front mounted (160mm deep) CPCI modules.*

Additional *CPCI* Backplane Solutions...

COMPACTPCI BACKPLANES

front view rear view

The intention of this modular *CPCI* backplane series is to get you "on the way" as quickly as possible with your *CPCI* prototype. For your production needs, custom "monolithic" backplanes may be required (for reduced power cabling, please inquire).

The comprehensive modular series of *CPCI* backplanes as shown in our *CompactPCI* catalog has been expanded upon.

This modular series of *CPCI* backplanes is excellent for use in low volume applications (under 100 per year) or in situations that require many different system configurations. These applications can be found in industrial automation, software/hardware development systems or specialized telecommunication, data communication and telephony applications.

If you are starting out with the standardized *CPCI* backplane architecture and require modification for your specific application, our Rittal/Kaparel *CPCI* backplane design team truly has the expertise for all the electrical and mechanical aspects expected from a *CPCI* high speed ultra-quiet backplane.

For custom backplanes, please contact Rittal, as a backplane design may already be in progress.

Kaparel CompactPCI
Integrated Backplane Architecture Solutions

Additional 6U Modular *CPCI*/H.110 Backplanes		
Description	Qty	Part No.
RP 4400 8 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane No additional termination required H.110 is connected on P4 to the system slot	1	**3687872**
RP 4402 8 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane No additional termination required H.110 is not connected on P4 to the system slot (right)	1	**9805494**
RP 4420 7 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is connected on P4 to the system slot (right)	1	**3687873**
RP 4422 7 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is not connected on P4 to the system slot (right)	1	**3688504**
RP 4430 6 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is connected on P4 to the system slot (right)	1	**3687874**
RP 4432 6 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is not connected on P4 to the system slot (right)	1	**3688505**
RP 4440 5 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is connected on P4 to the system slot (right)	1	**3687875**
RP 4442 5 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is not connected on P4 to the system slot (right)	1	**3688506**
RP 4450 4 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is connected on P4 to the system slot (right)	1	**3688507**
RP 4460 3 slot x 6U/7U x 64-bit x H.110/*CPCI* backplane H.110 is not connected on P4 to the system slot (right)	1	**3688508**

Additional 6U Modular *CPCI* Backplanes		
Description	Qty	Part No.
RP 1322 7 slot x 3U/3.5U x 32-bit rear I/O on J2 system slot (right)	1	**3688500**
RP 1405 8 slot x 6U/6.5U x 64-bit system slot (left)	1	**3688501**
RP 1455 4 slot x 6U x 64-bit system slot (left)	1	**3688502**
RP 1465 3 slot x 6U/6.5U x 64-bit system slot (left)	1	**3688503**

Additional 6U Modular *CPCI* Backplanes		
Description	Qty	Part No.
RP 1130 *CPCI* to *CPCI* backplane bridge	1	**3686571**
RP 1150 H.110 to H.110 backplane bridge	1	**3687880**

Low Profile *CPCI* Bridges		
Description	Qty	Part No.
RP 1132 Left-right 64-bit rear bridge	1	**9810637**

RP44xx H.110 Backplanes

Technical Specifications:

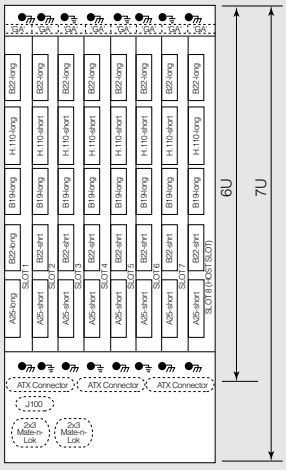
CPU slot: 64-bit

Available slots: 3 to 8 @ 6U

Technically the same as the RP14xx modular backplane series but with J4/P4 H.110 pin assignment. To be able to provide for good electrical connections, these H.110 backplanes are extended by 1U on the bottom (to 7U overall height).

The 8 slot version is shown.

System slot right.



RP4400-8 Slot, 7U, 64-Bit

To Combat Unwanted Backplane Bow...

BACKPLANE STIFFENERS

A fully connector loaded 6U *CPCI* module requires approximately 118 lbs./525N force to be inserted into a fully connector loaded *CPCI* backplane. The safe mating area of the 2mm *CPCI* connector pin is as little as .078" (2.00mm). At the same time, the module into subrack assembly permits only a maximum tolerance of plus/minus .035" (0.9mm) and the backplane bow must be calculated within this plus/minus tolerance (see IEEE 1101.1 chapter 11, 8). This requires tremendous attention to mechanical detail and conformance to specification when designing a *CPCI* system.

While larger slot count *CPCI* 6U backplanes may be rigid enough to counter the 118 lbs. force when injecting/extracting a *CPCI* module from the system, certainly the lesser slot width 6U backplanes will bow, resulting in poor interconnection.

For such situations Rittal has designed a backplane stiffener for its *CPCI* backplane range. Tests have proven that the backplane flex can be reduced by as much as 70% (6U x 3 slot) on Rittal's 6U *CPCI* backplanes at a backplane thickness of 0.14" (3.5mm).

This Rittal *CPCI* backplane stiffener can be retrofitted to all Rittal/Kaparel *CPCI* RP/PS backplanes without any physical change to the backplane itself, permitting full use of the backplane front mounted and rear mounted *CPCI* modules.

Configuration

- Backplane stiffener
- Backplane stiffener to backplane mounting screw - 5 pcs.
- Spacer A - 1 piece (used for non-backplane through hole attachment)
- Spacer B - 1 piece (used for backplane through hole attachment)

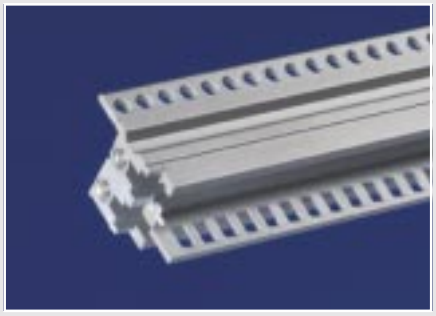
Material:

- Extruded aluminum

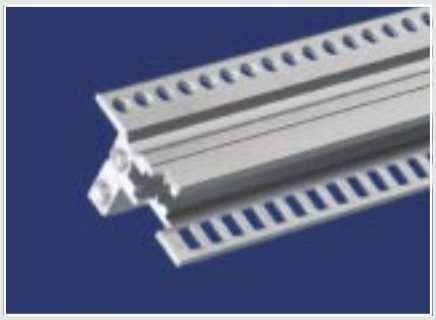
***CPCI* 6U Backplane Stiffener**		
Description	Qty	**Part No.**
Backplane stiffener kit - 6U	1	**3688088**

Ruggedized *CPCI* Horizontal Support Members...

SUPPORT RAILS



Standard Version



***COMPACT-I* Version**

On one hand, every *CPCI* system must be designed with maximum convection airflow in mind. This in turn will allow maximum forced air to pass over the *CPCI* modules, requiring the horizontal module support members of the system to be as slim as possible.

On the other hand, the combined weight of *CPCI* modules, drives and power supplies that are plugged into a *CPCI* system may be so great that the bottom module support rails may deflect (or sag), causing modules to "misalign" or even to "fall out" of their guidance features. To prevent this occurrence, rugged horizontal support members are required.

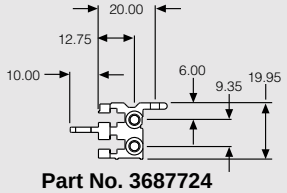
Rittal's double horizontal support rail is intended to be positioned on the front/rear of a *CPCI* system at the bottom only or top/bottom of the system. Since the rear support rails are tight together by the backplane(s), there is no double rail required.

Also, because of the double retention, the *CPCI* injector/extractor handles are unable to "twist" these double support rails, thereby improving the injection/extraction action. These rails are therefore ideal for NEBS applications.

These ruggedized double rails will require a minimum *CPCI* system height of 4U (for a 3U *CPCI* module) and 7U (for a 6U module).

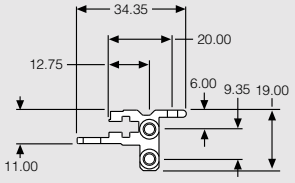
Double *CPCI* Support Rails		
Description	Qty	**Part No.**
Standard Version 84 HP	1	**3687724**
COMPACT-I Version 84 HP	1	**3688024**
Retention screw M4 x 12 self locking	100	**3654300**

Standard Version



Part No. 3687724

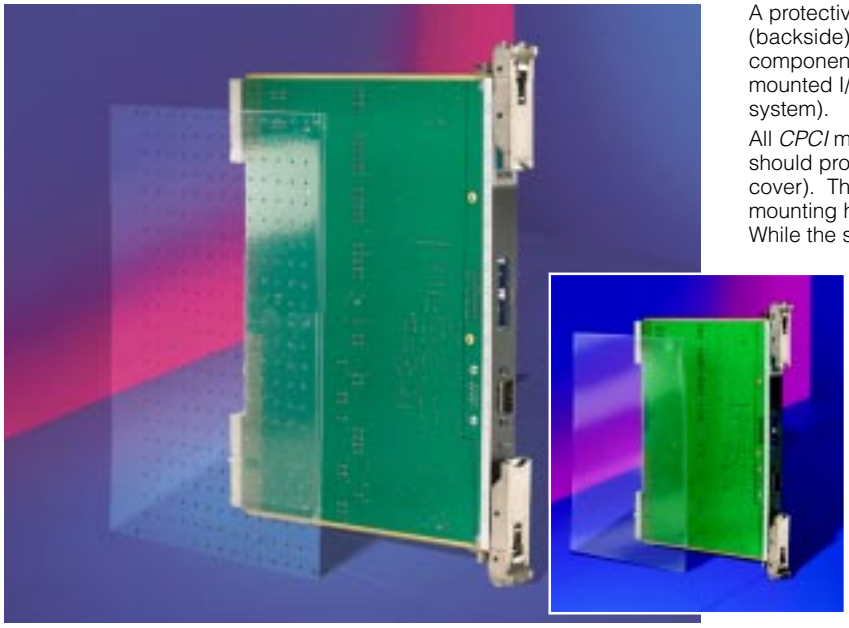
***COMPACT-I* Version**



Part No. 3688024

UL 94-VO And Anti-Static...

Solder Side Covers



A protective solder side cover mounted over the component side 2 (backside) of the PCB may be required to prevent damage of backside components when *CPCI* front mounted modules and/or *CPCI* rear mounted I/O modules are installed/extracted from the subrack (*CPCI* system).

All *CPCI* modules having backside components or through-hole pins should provide a means for mounting a protective cover (solder side cover). The positioning and the hole size for *CPCI* solder side cover mounting holes are defined in IEEE 1101.11 Annex A and PICMG 2.0. While the solder side covers are optional per PICMG 2.0, the PICMG 2.1 hot swap specification shall provide a means for mounting a protective cover (solder side cover).

Rittal offers two types of *CPCI* solder side covers – solid and vented. Solder side covers are mounted to the backside of the *CPCI* module PCB at the front panel end with the existing PCB to front panel mounting screw and on the connector side with the plastic (removable) retention clip.

Configuration

- Pentastat SC660/050C
- UL 94-VO
- Anti-static
- Surface resistivity of $1x10^{10}$ Ω/❑
- Thickness .019"/0.5mm
- Clear color
- Maximum temperature: +162°F/+72°C
- Non-washable
- Non-toxic, non-contaminating, reusable, recyclable

Specifications:

- IEEE 1101.10
- IEEE 1101.11 Annex A
- PICMG 2.0
- PICMG 2.1
- UL 94-VO (meets or exceeds MIL-B-81705-C)
  Yellow card QMFZ 8; E17348A and E171348B

***CPCI* Solder Side Covers - Solid**			
Description	For PCB size	Qty	**Part No.**
Solder side cover - solid	6U x 160mm	1	**3686574**
Solder side cover - solid	6U x 80mm	1	**3686573**
Solder side cover - solid	3U x 160mm	1	**3686572**
Retention clip	-	100	**3687955**

***CPCI* Solder Side Covers - Perforated with 2mm holes**			
Description	For PCB size	Qty	**Part No.**
Solder side cover - perforated	6U x 160mm	1	**3687934**
Solder side cover - perforated	6U x 80mm	1	**3687933**
Solder side cover - perforated	3U x 160mm	1	**3687932**
Retention clip	-	100	**3687955**

Advanced *CPCI* System Cooling Analysis...

RiTHERM

The RP39xx Thermal Load Boards

The RiTherm load board is a concept that enables users to validate the thermal characteristics of their system before all PCBs are designed. In past projects, system designers have often underestimated the need for heat dissipation. This miscalculation of the cooling system can cause costly problems, such as a missed product launch. Rittal and Kaparel have designed a simple system that will enable you to validate cooling dynamics of your particular system before it is built.

The RP6100 Thermal System

The RiTherm system consists of a 10U *CompactPCI* subrack equipped with two powerful hot swappable 12V RiCool blowers. The *CPCI* backplane is of your choice. The system shown is designed to accept up to 21 slots of front/rear mounted (6U x 160mm front/6U x 80mm back) RiTherm load boards simulating your actual *CPCI* boards.

Features And Benefits

- Simulation of I/O or SBC boards up to 90W each
- Support up to 21 load boards
- Six temperature sensors on each front load board
- Three precision airflow sensors on each load board
- 38 configurable resistor loads per 6U x 160mm load board
- No sensor wires required
- Uses the J1 connector of the *CompactPCI* spec. for power only
- Uses the J5 connector for rear I/O load board power interface
- The load boards will fit into any IEEE 1101.10 compatible *CPCI* system or subrack
- Simple Window95/98 user interface with graphics and data logging
- Daisy-chain RS232 port supported
- Low voltage detector

Description

The RiTherm load board and the RiTherm system concept are built around the RP39xx load board. The RP39xx load board is a 6U/3U *CompactPCI* form factor instrumentation board and is *CPCI* based. It provides a resistive heating array, temperature and airflow sensors.

The intended applications are:

- Evaluation and measurement of cooling in 6U/3U *CPCI* systems.
- Evaluation of power supply quality on *CPCI* backplanes.
- Voltage measurement of 5V, 3.3V, and +12V/-12V on each load board.

The RP3901 load board

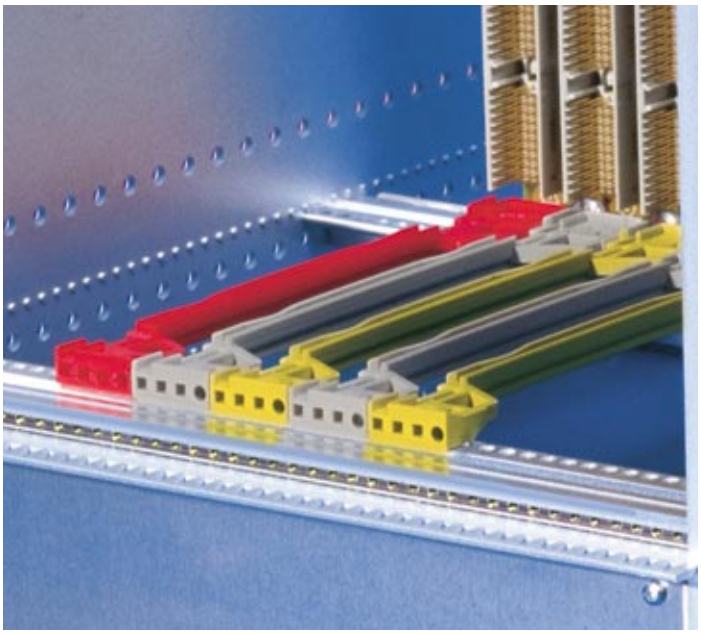
RiTherm		
Description	Model	**Part No.**
10U RiTherm system w/o *CPCI* backplane and PSU	RP6100	**3687498**
Load board with airflow sensors, 6U x 160mm	RP3901	**3687826**
Load board with airflow sensors, 6U x 80mm	RP3903	**3687987**
Load board with airflow sensors, 3U x 160mm	RP3904	**3687988**
Thermal accessory kit with software and cables	RP3902	**3686886**

How To Order RiTherm

You can order either a complete RiTherm system consisting of the RiTherm subrack (chassis) with your choice of (no. of slots) *CPCI* backplane and (no. of) power supplies and drives or the individual RiTherm RP39xx load boards to be plugged into your *CPCI* system. When ordering a RiTherm system, you must specify the number of slots to be occupied by the load boards and the pluggable power supply (if used). For choice of *CPCI* backplanes, see our comprehensive range of *CPCI* backplanes.

For System / Peripheral / Power Supply Slots...

CPCI PCB Guide Rails



The PICMG 2.0 specification only makes reference in chapter 4.1.10 to the system slot identification (guide rails) by defining the color red to identify CPU system slots. All other slot positions (guide rails) can be of any other color than red. Additionally the PICMG 2.11 specification defines in chapter 3.2 a that the pluggable power supply (PSU) guide rails have to provide for a $^1/_2$ HP offset and shall be green in color. However, PICMG 2.11 defines in appendix B that the existing practice of using any color guide rail with (no offset) is also acceptable practice for the 38 pin in-rack power supply connector.

PICMG 2.0 refers in chapter 4.2.1 to the rear I/O guide rails.

Material: Plastic UL 94-VO

***CPCI* Module Guide Rails**											
Description used for slot	Position	Color	Offset $^1/_2$ HP	Retention screw required	ESD clip PCB available	ESD clip front panel available	Earth/GND* contact available	Keying* pegs available	Qty req. for 1 *CPCI* module	Qty	**Part No.**
System	Top/bottom	Red	No	Optional	Yes	Yes	-	Yes	2	1	**3686063**
Peripheral	Top/bottom	Gray	No	Optional	Yes	Yes	-	Yes	2	1	**3684669**
Peripheral	Top/bottom	Yellow	No	Optional	Yes	Yes	-	Yes	2	1	**3689089**
Rear I/O	Top	Gray	No	*M3.5 x 10	Yes	-	Yes	Yes	1	1	**3687936**
Rear I/O	Bottom	Gray	No	*M3.5 x 10	Yes	-	Yes	Yes	1	1	**3687937**
PSU 38 pin	Top/bottom	Gray	No	Optional	Yes	Yes	-	Yes	2	1	**3684669**
PSU 38 pin	Top/bottom	Green	No	Optional	Yes	Yes	-	Yes	2	1	**3688055**
PSU 47 pin	Top/bottom	Green	Yes	Optional	Yes	Yes	-	Yes	2	1	**3687832**

Note: For earth/ground contact, see page 11.
For keying, see page 10 and page 63 of the *CompactPCI* catalog.
* For Torx T-10 compatible drive bits.

Optional *CPCI* Guide Rail Parts			
Description	Qty required for 1 *CPCI* module	Qty	**Part No.**
ESD clip, PCB	1 or 2	50	**3684204**
ESD clip, front panel	1 or 2	50	**3684205**
Earth/ground contact	1	50	**3687951**
*Retention screw M3.5 x 10 for rear I/O guide rail with or without earth/ground contact	2	50	**3684109**
Retention screw, optional	4	100	**3654360**
Keying pegs, red	1 to 6	100	**3684326**
Keying pegs, gray	1 to 6	100	**3684325**

* For Torx T-10 compatible drive bits.

Stop The Chimney Effect With...

AIRFLOW BLOCKERS

In order to adequately and consistently cool *CPCI* modules and power supplies, unoccupied or empty slots will have to be blocked as they are the major cause for poor or inconsistent cooling. This is known as the chimney effect.

The airflow blocker is clipped over the installed module slot guide rail, preventing air to pass and at the same time, preventing the insertion of a *CPCI* module. The filler panel in turn is bolted in place of the *CPCI* module front panel, contributing to the control of the system airflow and maintaining system EMI integrity.

By not using an empty slot airflow management device, the cooling efficiency of the *CPCI* system may reach such a reduced degree that *CPCI* modules stop functioning.

The airflow blocker is designed for one 4 HP *CPCI* module (160mm deep). The airflow blocker is not suitable for the $^1/_2$ HP offset power supply guide rail.

Configuration

Material: Plastic UL 94-V0
Color: Blue

***CPCI* Airflow Blocker**				
Description	Compatible with guide rail	Qty required per slot	Qty	**Part No.**
Airflow blocker	3684669 3686063 3688055	1 or 2 Top/bottom	1	**3687924**

Ensure Intended Airflow Management With...

SYSTEM FILLER PANELS

For all other front panels, please reference the Rittal *CompactPCI* catalog (page 21).

Filler panels are used to cover unused slots as well as to ensure intended airflow management, increase safety and prevent EMI emission.

There are two types of filler panels available:
- 3U and 6U non-EMC (flat w/o gasket)
- 3U and 6U EMC (U channel w/gasket)

Configuration

Material: Aluminum
Finish: Chromated

Filler Panels Non-EMC				
U	**Part No.**			
	4 HP	8 HP	12 HP	16 HP
3	**3684891**	**3684895**	**3684897**	**3687829**
6	**3684913**	**3684917**	**3684919**	**3687830**

Please order screws and retention sleeves separately:
Part No. 3658160 100 pcs. ⊖ slotted
Part No. 3684084 100 pcs. ⊕ pozidrive

Filler Panels EMC				
U	**Part No.**			
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CompactPCI Standards And Specifications.

As a global innovator, Rittal realizes the importance of adhering to worldwide standards such as *CompactPCI* and IEEE. In fact, we have built the implementation of these standards directly into the development of our Ripac products. The following is a summarized list of the associated *CompactPCI* specifications being developed under the auspices of the PICMG Technical Committee.

Specifications

PICMG 2.0, R3.0 *CompactPCI*
This is the core *CompactPCI* specification that defines the mechanical structure, plus pin assignments of the PCI electrical layer to the 2mm connector system. Additional specifications are provided to support a complete *CompactPCI* base system.

PICMG 2.1 Hot Swap Subcommittee for Improvements
This specification is still under development and defines the electrical, mechanical and software mechanisms for hot swapping (live insertion and live withdrawal) of *CompactPCI* boards in a live system. The draft specification will also define how to build systems to support dynamic configuration and how to build high-availability systems.

PICMG 2.2 VME64x
This specification maps all the VME64x (VITA 1.1-199x) bused signal lines to the 2mm connector systems, *CompactPCI* J4/P4 and J5/P5 connectors. The definition will provide bridging between VME64x boards and *CompactPCI* boards in a single *CompactPCI* slot. A single monolithic backplane can be built that will provide slots for both VME64x and *CompactPCI* boards.

PICMG 2.3 PMC On *CompactPCI*
This specification provides several ways of mapping the PMC (IEEE P1386.1) 64-pin J4 I/O connector to the user-defined connectors on *CompactPCI* backplanes.

PICMG 2.4 IP On *CompactPCI*
This specification provides several ways of mapping an Industry Pack (VITA 4-1996) 50-pin I/O connector to the user-defined connectors on *CompactPCI* backplanes.

PICMG 2.5 Computer Telephony
This specification adapts *CompactPCI* core specification to computer telephony type applications along with pin assignments of the H.110 (TDM) bus defined by ECTF.

PICMG 2.6 PCI-to-PCI Bridge for *CompactPCI*
This draft specification defines the bridging of two *CompactPCI* local buses in a single slot. The A bus is defined on the J1/P1 and J2/P2 connectors (normal *CompactPCI*) and the B bus is defined on the J4/P4 and J5/P5 connectors.

PICMG 2.7 Dual *CompactPCI* Backplane
This draft specification defines how two independent *CompactPCI* bus segments can be built in a 6U form factor. The lower bus (A bus) is defined for the J1/P1 and J2/P2 connectors and the upper bus (B bus) is defined on the J4/P4 and J5/P5 connectors.

PICMG 2.8 PXI (PCI Extensions For Instrumentation)
This draft specification adapts *CompactPCI* for instruments in a fashion similar to the way that VMEbus was extended to VXI (VME Extensions for Instrumentation). The core *CompactPCI* architecture is the basis for this definition.

PICMG 2.9 SMBus Extensions For *CompactPCI* (Final Stages)
This specification defines how the PCI SIG's System Management Bus (SMBus) can be adapted to *CompactPCI* type applications - including hot swap.

PICMG 2.10 Backplane And Front Panel Keying
This standard will summarize the assignment of the *CompactPCI* backplane J1/P1 and J4/P4 connectors keys, and also special assignment of the front panel keys defined in IEEE 1101.10.

PICMG 2.11 Power Interface
This defines the electrical and mechanical interfaces and minimum requirements for modular *CompactPCI* pluggable power supplies.

PICMG 2.12 Software Interoperability
This draft specification defines software for the PICMG 2.1 hot swap specification.

PICMG 2.13 Redundant System Slot
This draft specification defines redundant system slot applications.

PICMG 2.14 Multi Computing
This draft specification defines multi computing applications.

PICMG 2.16 *CompactPCI* Packet Switching Backplane Draft

Standards

IEEE 1101.1*
IEEE Standard for Mechanical Core Specifications for Microcomputers using IEC 60603-2 connectors.
This standard makes reference to:
- IEC 60297-3
- IEC 60297-4
- EIA 310-D

IEEE 1101.10*
IEEE Standard for Additional Mechanical Specifications for Microcomputers using the IEEE 1101.1 equipment practice. This standard makes reference to:
- IEC 60297-3
- IEC 60297-4
- IEC 60297-5-100/107 (FDIS)
- IEC 61587-1
- IEC TS 61587-3

IEEE 1101.11*
IEEE Standard for Mechanical Rear Plug-in Units Specifications for Microcomputers using IEEE 1101.1 and IEEE 1101.10 equipment practice. This standard makes reference to:
- IEC 60297-3
- IEC 60297-4
- IEC 60297-5-100/107 (FDIS)
- IEC 61587-1
- IEC TS 61587-3

IEC 61076-4-101
Connectors with assessed quality, for use in d.c. low-frequency analogue and digital high speed applications.
Part 4: Printed board connectors
Section 101: Detail specification for two-part connector modules having a basic grid of 2mm for printed boards and backplanes in accordance with IEC 60917.

VITA 30 2mm Connector for Euroboard Systems.

Difference Between Standards And Specifications
The common practice of referring to a document as a standard or a specification depends upon which organization is supporting the document. If a document is supported by IEEE, ANSI, IEC and other officially sanctioned, standard-setting organizations, it is called a standard. If a document is supported by an independent trade association or special interest group (such as PCI SIG, PICMG or ECTF), it is referred to as a specification.

***Note:** All 3 IEEE standards mentioned must be used in conjunction.

These standards and specifications are current as of the printing of this catalog. For more information, please visit www.picmg.org, www.ieee.org, www.iec.ch or www.vita.com

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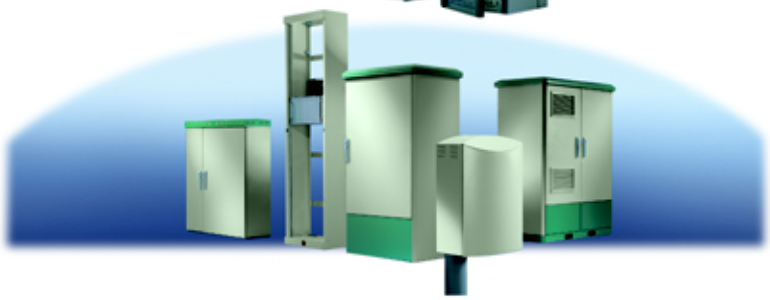

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