Product Information

SRS-8493-COOLCONDUCT

CompactPCI® Serial • 19-Inch System Rack

CoolConduct® Technology for High Power Systems

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The **SRS-8493-COOLCONDUCT** is a 19-inch (4U/84HP) CompactPCI® Serial system rack, suitable for demanding industrial applications such as multiprocessing across several CPU cards or GPU boards (CUDA). A special technology was developed by EKF and partners for optimum cooling of each card slot, named **CoolConduct®**.

The top frame of the chassis is provided with a powerful heat exchanger system. Any card slot will be cooled down via flexible mounted skids, which match the ridge of a suitable heat spreader on any particular board.

Skids and heat spreaders are made up of massive copper. The runners are overcoated with a special substance for optimum heat conduction.

Opposite to other known high power solutions, **CoolConduct®** allows to swap boards easily, without a tool for loosening and fastening sleeves with cooling medium. Several hundred Watts power can be dissipated at significant lower system cost compared to other technologies. The SRS-8493-COOLCONDUCT racks are built to custom, with different backplane styles and power supplies available.
3 subracks can be connected to a single pump

Data communication and power supply

Cold cooling liquid
Hot cooling liquid

Pump

Inside vehicle circuit
Outside vehicle circuit

Radiator
### Feature Summary

#### General
- High Power **CoolConduct®** series rack
- Dimensions 482.6mm x 177mm x 282mm (W x H x D) including heat exchanger unit
- 4U/84HP 19-inch technology
- Built to custom

#### Card Slots
- **PICMG®** CompactPCI® Serial backplane(s) (other standards such as VPX on request)
- Suitable for CompactPCI® Serial cards 3U/4HP (other standards e.g. VPX on request)
- Each card slot can be equipped with a **CoolConduct®** flexible heat dissipation skid
- **CoolConduct®** cards require solid copper heat spreaders, 3D milled according to the on-board components shape, for heat transfer to the dissipation skid

#### Heat Exchanger
- Integrated primary heat exchanger unit, based on coolant technology
- Bayonet coupling sockets for easy attachment of the remote cooling-fluid pump
- Pump control characteristics can be easily customized and upgraded
- Pump Flash firmware update via USB on request (please contact support@ekf.com)

#### Power Supply
- Industrial grade dual DC power supply 2 x 12V tbd A
- Other input voltages AC/DC on request
### Feature Summary

#### Applications
- High performance industrial computing (kilowatt computers) e.g.: Experimental autonomous cars
- 3D Precision digital cartography
- Systems with multiple CPU cards (multiprocessing)
- Systems with multiple GPU boards for 3D visualization and parallel computing (CUDA)
- Railway applications (EN50155)

#### System Requirements
- EPDM sleeve length between pump and CoolConduct® rack \( \leq 6 \text{ m} \)
- EPDM sleeve length between pump and radiator \( \leq 6 \text{ m} \)
- Vertical mounting height difference between system elements \( \leq 2.5 \text{ m} \)

#### Regulatory
- Designed & manufactured in Germany
- ISO 9001 certified quality management
- Long term availability
- Rugged solution
- RoHS compliant

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Please note: If an EKF product was labelled with this special sign according to ISO 7010 M002, please contact support@ekf.com for availability of additional documentation which may be important for proper usage.
CoolConduct® Heat Spreader on a CPU Card
SRS-8493-COOLCONDUCT • Sample Application

SRS-8493-COOLCONDUCT • Sample Rear Panel
### SRS-8493 Links

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<tr>
<td>CompactPCI® Serial Boards</td>
<td><a href="http://www.ekf.com/s/serial.html">www.ekf.com/s/serial.html</a></td>
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### Ordering Information

For popular SRS-SERIAL SKUs please refer to
www.ekf.com/liste/liste_21.html#SRS
CoolConduct® Heat Spreader on a CUDA GPU Card
CoolConduct® TLP-PUMP • Coolant Circulation System

CoolConduct® TLR-RADIATOR • Heat Exchanger
Basically, the CoolConduct® Concept (TL* Series) is open for any modular computer systems. This document describes a CompactPCI® Serial application environment.

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<td>Turn Key Ready Set</td>
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<td>Rack - Pump - Radiator - Accessories</td>
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<tr>
<td>TLC-XXXX-CHASSIS (aka SRS-8493-COOLCONDUCT)</td>
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<td>CoolConduct® System Rack</td>
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<td>Based on CompactPCI® Serial</td>
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<td>TLP-XXXX-PUMP</td>
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<td>Coolant Circulation System for up to 3 Racks</td>
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<td>Accessories (Sleeves, Coolant)</td>
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<td>CompactPCI® Serial CPU Card</td>
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<td>CompactPCI® Serial GPU Carrier Card</td>
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CoolConduct® System Overview

Note: Fill the CoolConduct® system with a 2:1 ratio mixture of distilled water and BASF Glysantin® G48® coolant. The radiator must be mounted outside of the vehicle for optimum performance.
CoolConduct®

Industrial Computers Made in Germany
boards. systems. solutions.