



Product Information

SRS-8493-COOLCONDUCT

CompactPCI® Serial • 19-Inch System Rack

CoolConduct® Technology for High Power Systems

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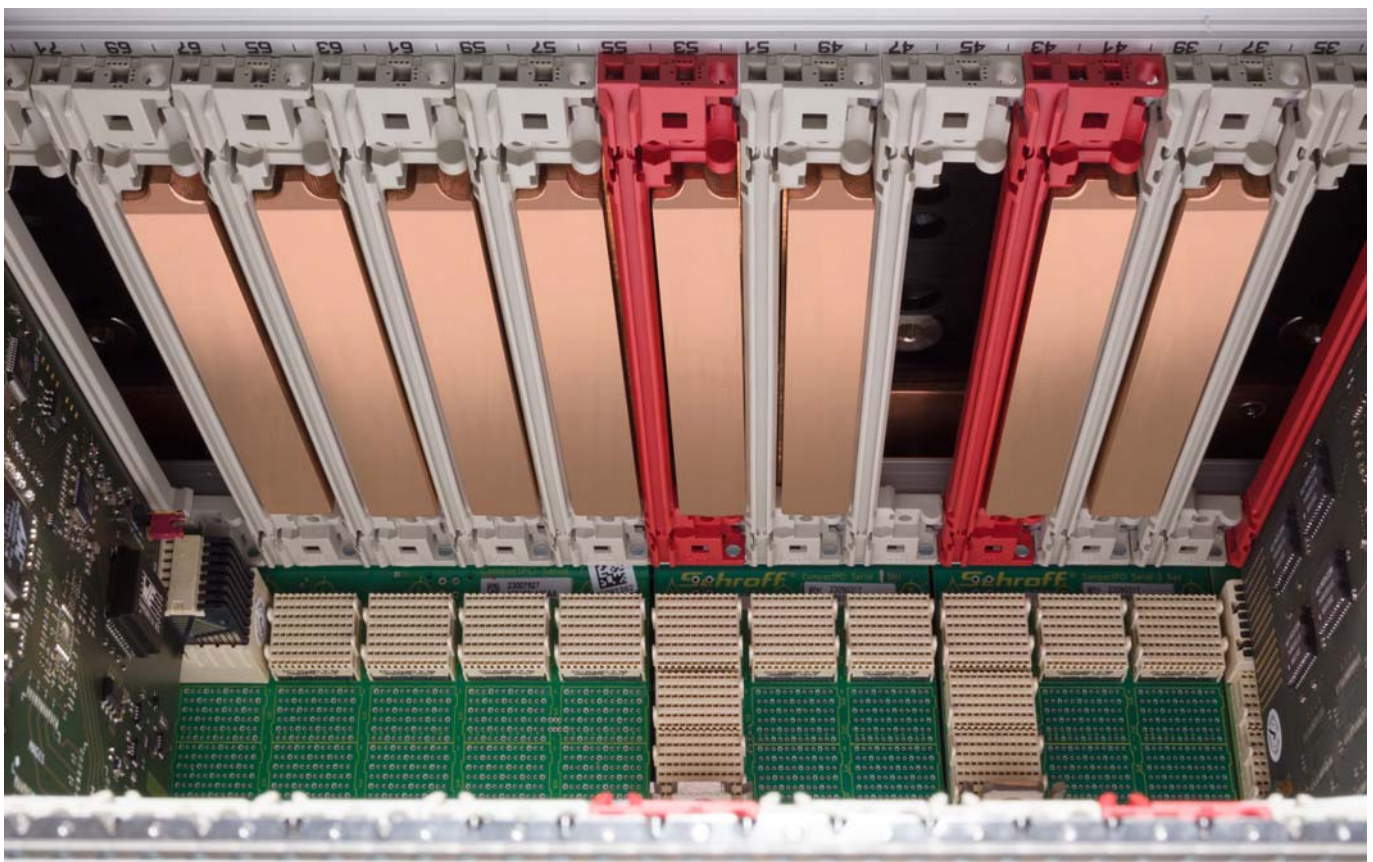
SRS-8493-COOLCONDUCT

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.

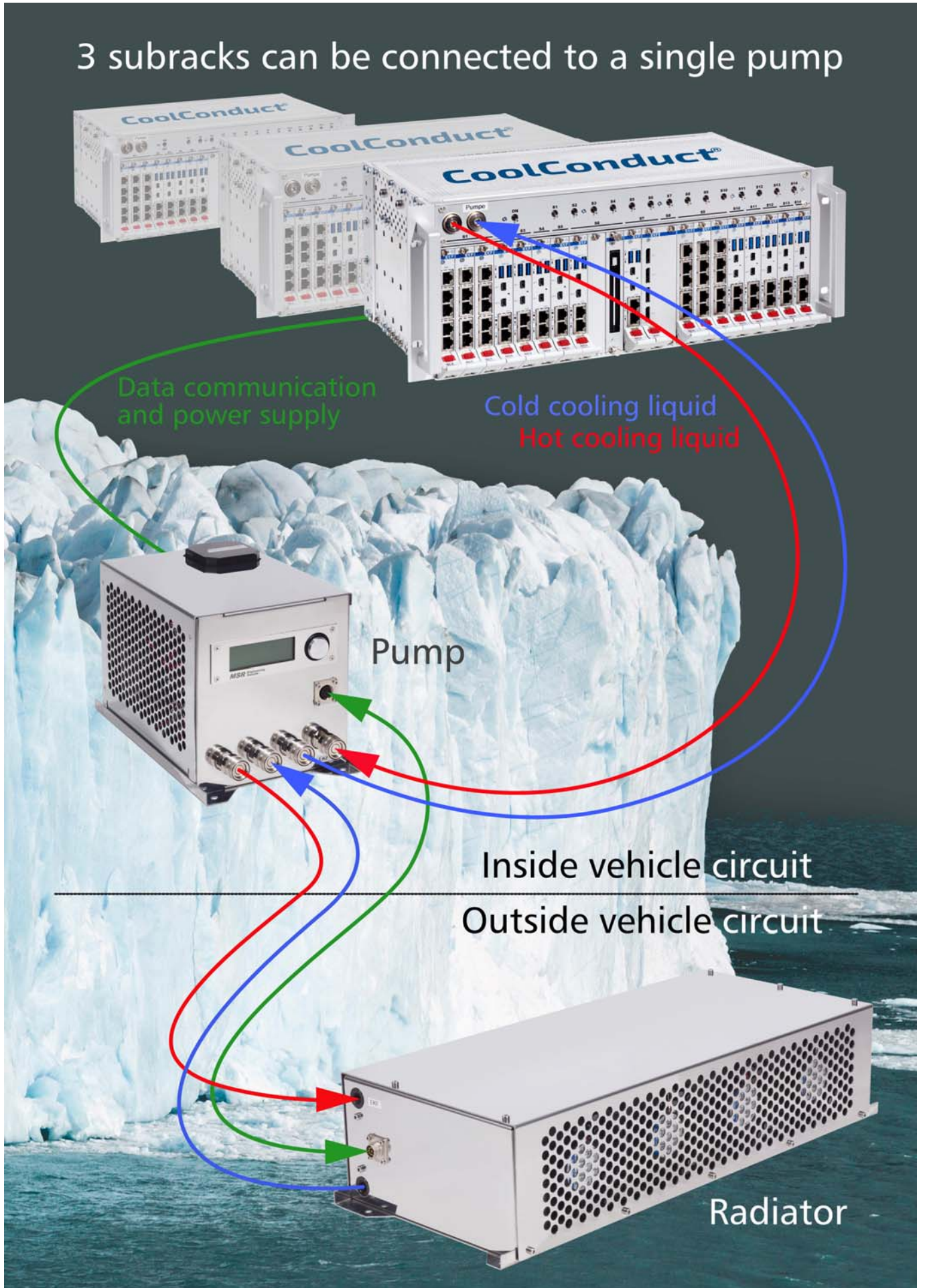
Skids and heat spreaders are made up of massive copper. The runners are overcoated with a special substance for optimum heat conduction.

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.



CoolConduct® Heat Skids

3 subracks can be connected to a single pump



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

items are subject to changes w/o further notice

Please note: If an EKF product was labelled with this contact support@ekf.com for availability of additional



special sign according to ISO 7010 M002, please 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	
SRS-8493 Home	www.ekf.com/s/srs/srs8493/srs8493.html
CompactPCI® Serial Boards	www.ekf.com/s/serial.html
CompactPCI® Serial Overview	www.ekf.com/s/smart_solution.pdf

Ordering Information

For popular SRS-SERIAL SKUs please refer to
www.ekf.com/liste/liste_21.html#SRS



SRS-8493-COOLCONDUCT • Redundant Power Supplies



CoolConduct® Heat Spreader on a CUDA GPU Card








CoolConduct® TLP-PUMP • Coolant Circulation System

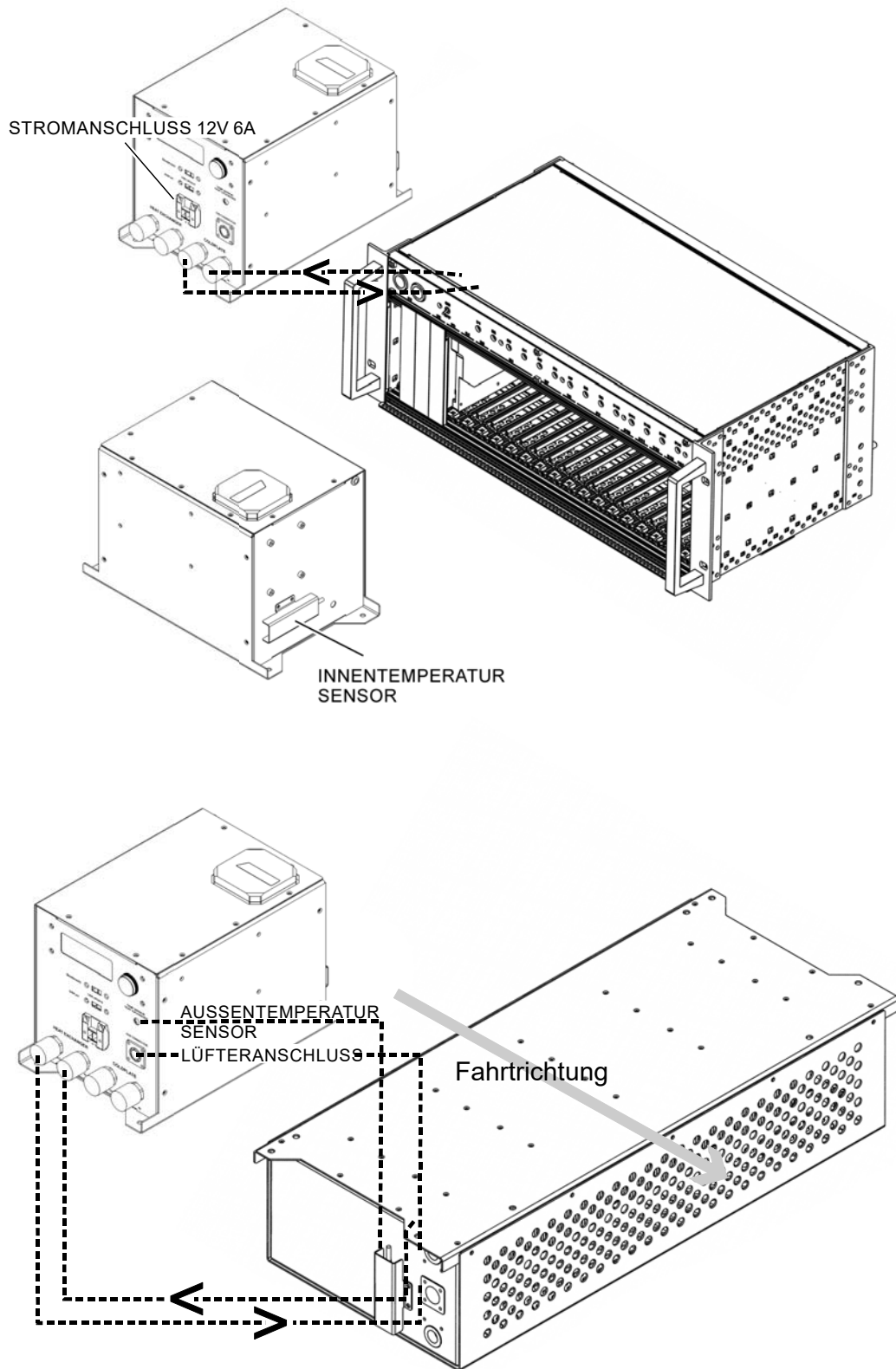


CoolConduct® TLR-RADIATOR • Heat Exchanger

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

CoolConduct® Components	
<p>TLS-XXXX-SET Turn Key Ready Set Rack - Pump - Radiator - Accessories</p>	
<p>TLC-XXXX-CHASSIS (aka SRS-8493-COOLCONDUCT) CoolConduct® System Rack Based on CompactPCI® Serial</p>	
<p>TLP-XXXX-PUMP Coolant Circulation System for up to 3 Racks</p>	
<p>TLR-XXXX-RADIATOR Heat Exchanger</p>	
<p>TLA-XXXX-COOLCONDUCT Accessories (Sleeves, Coolant)</p>	
<p>SC3-XXXX-LARGO CompactPCI® Serial CPU Card CoolConduct® Strengthened</p>	
<p>SV2-XXXX-MOVIE CompactPCI® Serial GPU Carrier Card CoolConduct® Strengthened</p>	

CoolConduct® System Overview



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

CoolConduct®

Industrial Computers Made in Germany
boards. systems. solutions.

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