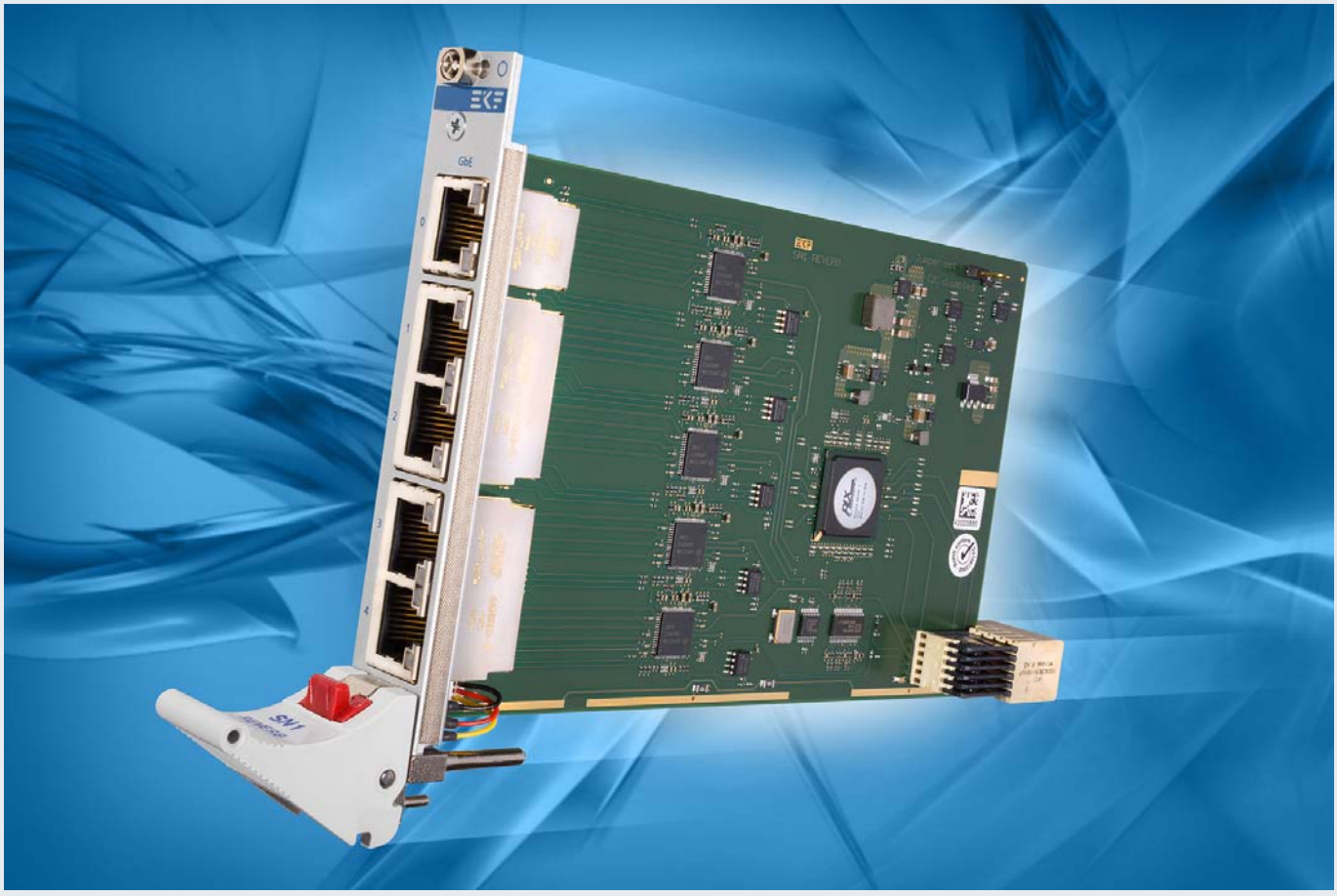
SYSTEM

Product Information

SN1-REVERB

CompactPCI® Serial • 5-Port Gigabit Ethernet NIC

Document No. 6946 • 19 May 2016



General

The SN1-REVERB is a peripheral slot card for CompactPCI® Serial systems. The board is equipped with five independent PCI Express® based Gigabit Ethernet controllers, wired to associated RJ45 front panel jacks.

The Intel® I210-IT (I211-AT) Ethernet NICs provide latest networking technology, e.g. power management for increased efficiency and Audio-Video Bridging (AVB) for tightly controlled media stream synchronisation, buffering, and reservation.

The on-board PCI Express® packet switch allows for operation of the SN1-REVERB either in a CompactPCI® Serial fat pipe slot, or even a standard peripheral backplane slot. The optimum performance can be achieved with a PCIe x 4 link established via the backplane connector P1.

The SN1-REVERB is well suited for high performance industrial networking applications. Drivers are available for all major operation systems.

SN1-REVERB

Theory of Operation

The SN1-REVERB is equipped with five independent Intel I210 industrial temperature range Gigabit Ethernet controllers. Each of them requires a PCI Express® x1 lane, which is provided by a PCI Express® Gen2 packet switch. The downstream ports operate at 2.5GT/s, fully sufficient for the 1Gbps Ethernet data transfer speed. The PCIe x 4 upstream port of the PCI Express® packet switch is capable to operate at 4 x 5.0GT/s (Gen2), if supported by the CompactPCI® Serial system slot controller (CPU board) for the chosen SN1-REVERB card slot.

The PCI Express® packet switch is a flexible interface between one to four PCI Express® lanes, derived from the CompactPCI® Serial backplane connector P1 (upstream link), and 5 GbE NICs (single lane downstream links). For maximum data throughput the SN1-REVERB should be inserted either into a CompactPCI® Serial fat pipe slot (which provides 8 PCIe lanes), or PCIe x 4 capable standard peripheral slot. For typical applications however, reasonable performance can be already achieved in a PCIe x 1 CompactPCI® Serial peripheral slot.

SN1-REVERB in a SRS-BLUBOXX

Feature Summary

- PICMG® CompactPCI® Serial standard (CPCI-S.0) peripheral slot card
- Single Size Eurocard 3U 4HP 100x160mm^2
- cPCI-S backplane connector P1
- Suitable for PCIe x 1 or PCIe x 4 standard peripheral slots, and fat pipe peripheral slots

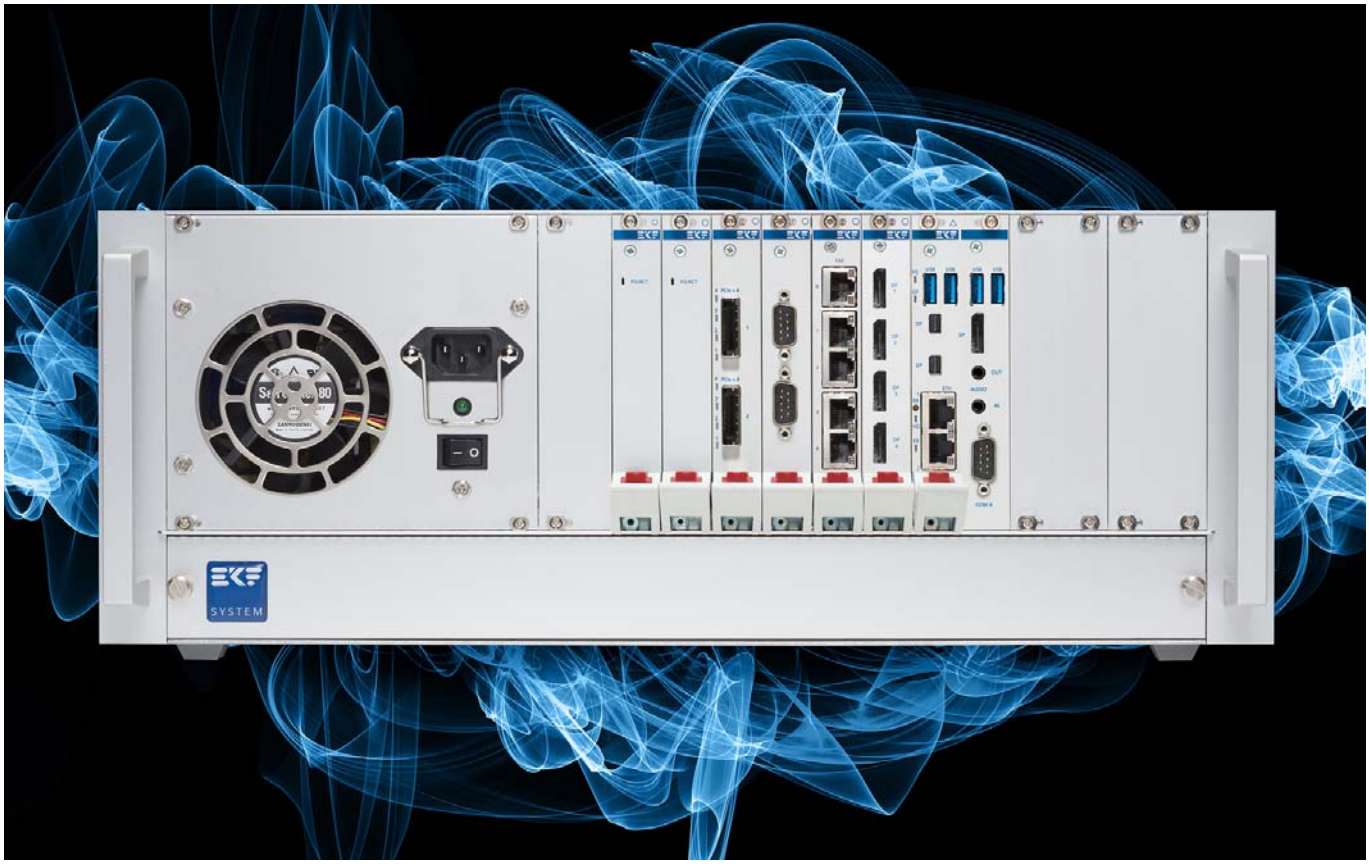
- PLX PCI Express® Gen2 packet switch for optimum bandwidth distribution
- 1 x Upstream port PCIe x 4 or PCIe x 1, Gen2 or Gen1 PCI Express® over backplane
- 5 x Downstream ports PCIe x 1 to Gigabit Ethernet NICs

- Five independent Gigabit Ethernet controllers (5 x MAC address) Intel® I210-IT
- Intel® I211-AT Gigabit Ethernet controllers populated as an alternate (depends on SKU)
- Integrated PHYs 1000BASE-T, 100BASE-TX, 10BASE-T (IEEE 802.3, 802.3u, 802.3ab)
- IEEE 802.3ab Auto Negotiation for automatic link configuration
- Auto MDI, MDI-X Crossover at all speeds
- Full duplex operation at 10/100/1000Mbps
- 9.5KB Jumbo Frame support
- Hardware-based time stamping (IEEE 1588) and support for 802.1AS - Precise Timing Protocol
- Support for Energy Efficient Ethernet (EEE) standard of IEEE 802.3az
- Option IEEE 802.1Qav compliant Audio-Video Bridging (AVB)
- IPv4, IPv6, TCP/UDP checksum offloads
- Driver support for all major operating systems
- Five front panel connectors RJ45 with integrated magnetics

- Long term availability
- Rugged solution (coating, sealing, underfilling on request)
- RoHS compliant
- Designed and manufactured in Germany
- ISO 9001 certified quality management
- Commercial operating temperature range 0°C to +70°C
- Industrial operating temperature range -40°C to +85°C on request
- Storage temperature -40°C to +85°C, max. gradient 5°C/min
- Humidity 5% ... 95% RH non condensing
- Altitude -300m ... +3000m
- Shock 15g 0.33ms, 6g 6ms
- Vibration 1g 5-2000Hz
- MTBF 34.2 years
- EC Regulations EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)

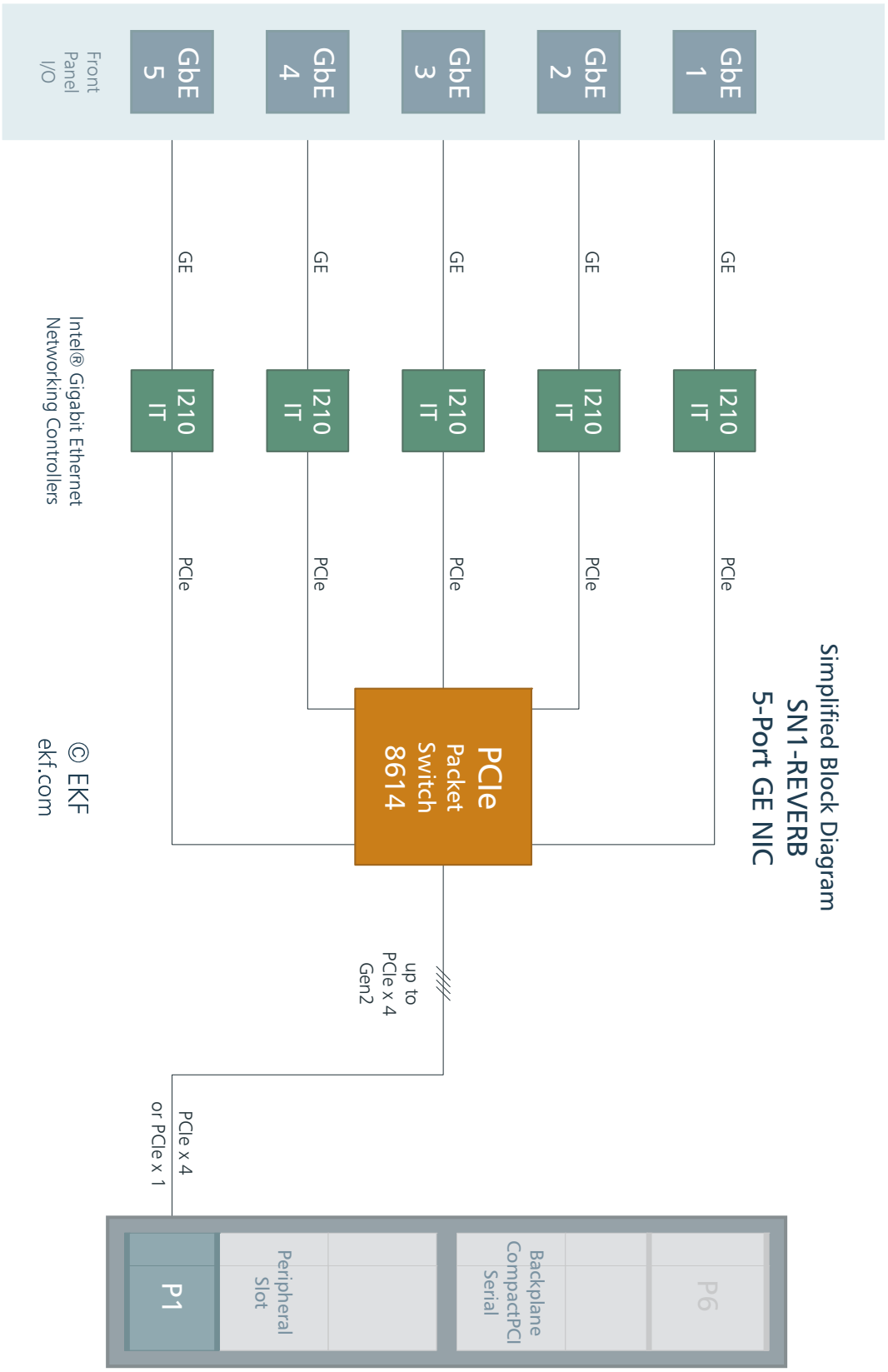
items are subject to changes

SN1-REVERB in a CPCI Serial System

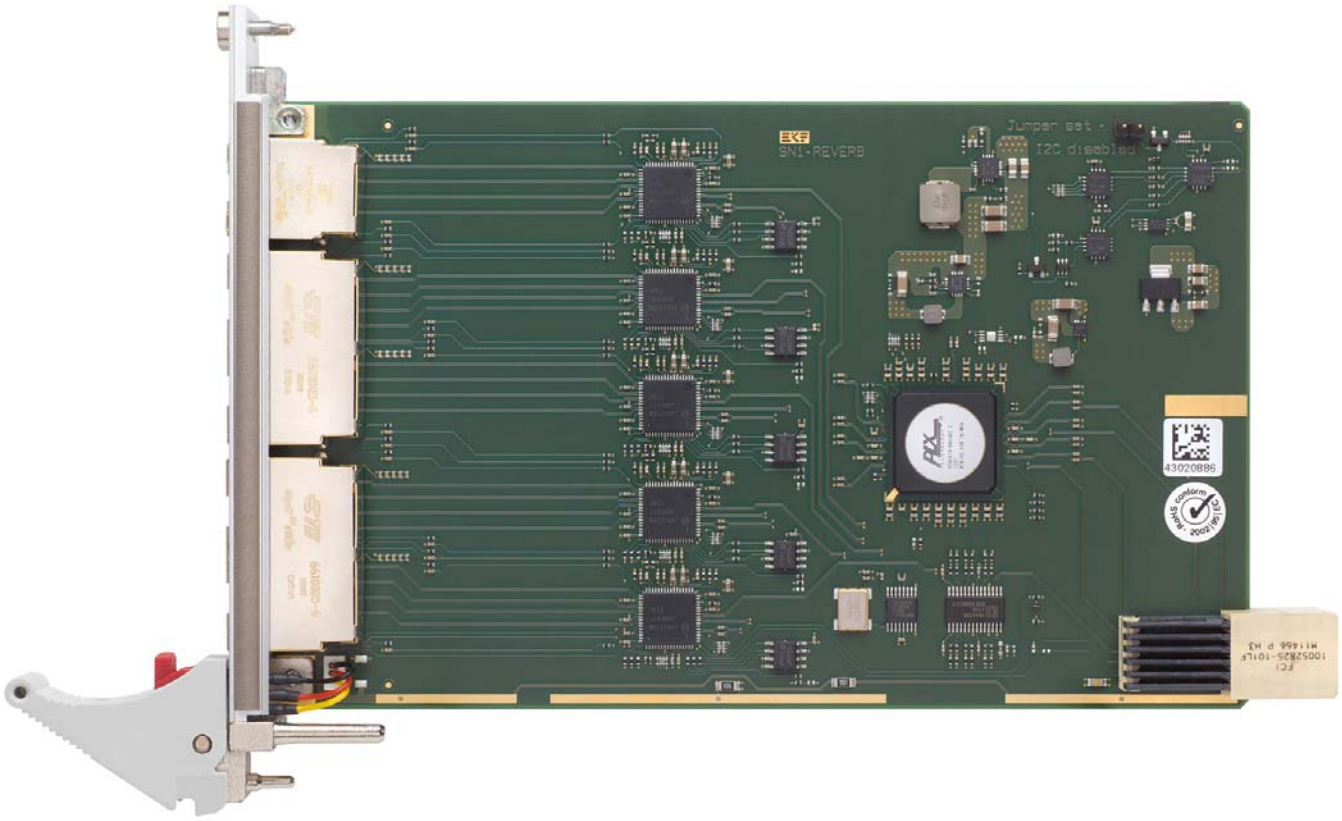


SN1-REVERB in a CPCI Serial System

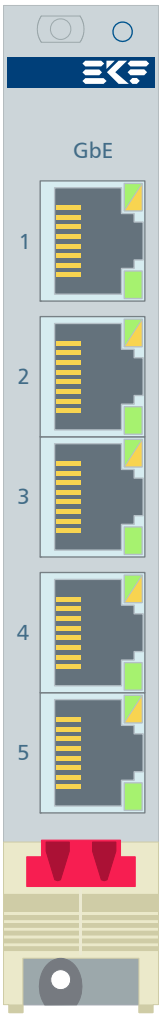
Block Diagram



Component Assembly



Front Panel

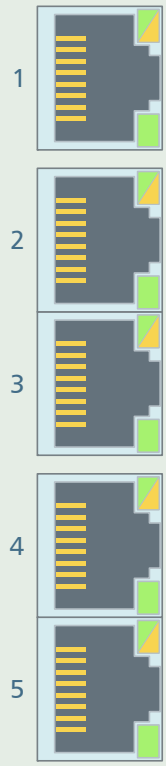


SN1-REVERB
5-Port GE NIC

RJ45 Connectors

Gigabit Ethernet

270.01.08.05 Single RJ45 Jack • 270.02.08.5 2 x Dual RJ45 Jacks



Upper LEDs:
yellow=1Gbit/s green=100Mbit/s off=10Mbit/s

Lower green LEDs:
on=link established blinking=activity (data)

Ports 1-5		
	1	MDX0+
	2	MDX0-
	3	MDX1+
	4	MDX2+
	5	MDX2-
	6	MDX1-
	7	MDX3+
	8	MDX3-

Backplane Connector

P1 CompactPCI® Serial Peripheral Slot Backplane Connector
EKF Part #250.3.1206.20.02 • 72 pos. 12x6, 14mm Width

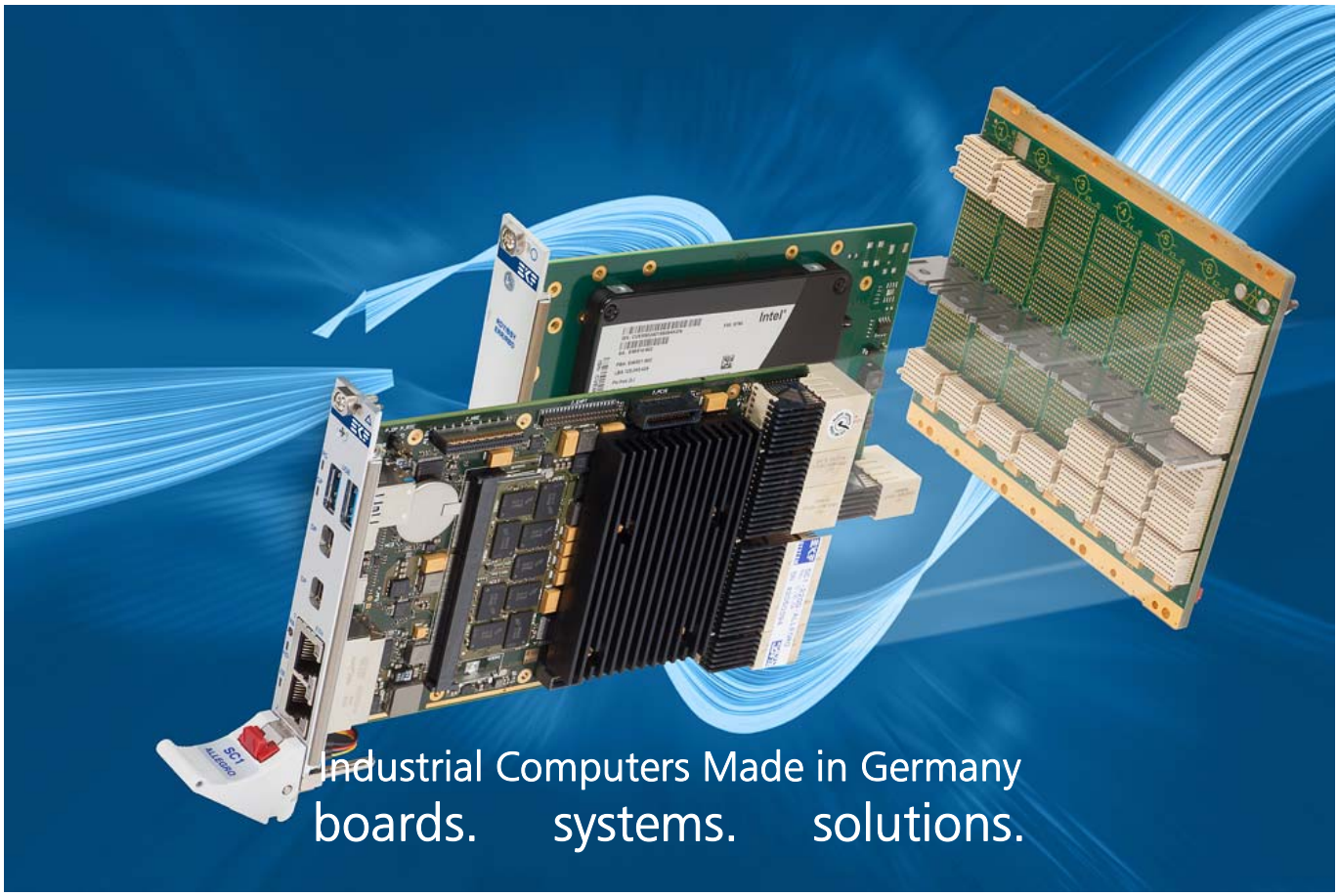
P1	A	B	C	D	E	F	G	H	I	J	K	L
6	GND	PE TX02+	PE TX02-	GND	PE RX02+	PE RX02-	GND	PE TX03+	PE TX03-	GND	PE RX03+	PE RX03-
5	PE TX00+	PE TX00-	GND	PE RX00+	PE RX00-	GND	PE TX01+	PE TX01-	GND	PE RX01+	PE RX01-	GND
4	GND	USB2+	USB2-	GND	PE CLK+	PE CLK-	GND	SATA TX+	SATA TX-	GND	SATA RX+	SATA RX-
3	USB3 TX+	USB3 TX-	GA0	USB3 RX+	USB3 RX-	GA1	SATA SDI	SATA SDO	GA2	SATA SCL	SATA SL	GA3
2	GND	I2C SCL	I2C SDA	GND	RSV	RSV	GND	RST#	WAKE#	GND	PE EN#	SYS EN#
1	+12V	STBY	GND	+12V	+12V	GND	+12V	+12V	GND	+12V	+12V	GND

pin positions printed gray: not connected

SN1-REVERB Links	
SN1-REVERB Home	www.ekf.com/s/sn1/sn1.html
Intel® I210/I211 Driver Download	www.ekf.com/s/sn1/sn1.html
CompactPCI® Serial Overview	www.ekf.com/s/serial_concise.pdf
CompactPCI® Serial - All You Need to Know	www.ekf.com/s/smart_solution.pdf

Ordering Information

For popular SN1-REVERB SKUs please refer to
www.ekf.com/liste/liste_21.html#SN1



EKF Elektronik GmbH
Philipp-Reis-Str. 4 (Haus 1)
Lilienthalstr. 2 (Haus 2)
59065 HAMM
Germany

Phone +49 (0)2381/6890-0
Fax +49 (0)2381/6890-90
Internet www.ekf.com
E-Mail sales@ekf.com