Product Information

CN7-REVERB • *CompactPCI* ® Gigabit Ethernet NIC

Five Independent GbE Ports

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*Available as a CompactPCI® peripheral board, the **CN7-REVERB** is provided with up to five high performance Gigabit Ethernet controllers, each wired to an associated front panel RJ45 jack.*

Since the chosen Intel® 82574IT GbE controllers are PCI Express® based, the CN7-REVERB is equipped in addition with a PCI to PCI Express® bridge, and a 6-port PCI Express® packet switch.

Each network controller has its own proprietary MAC address and can be used individually. The RJ45 connectors are compatible to 1000BASE-T, 100BASE-TX and 10-BASE-T applications. The Intel® 82574IT controllers are suitable for industrial temperature range, and provide latest networking technology for embedded applications such as the TimeSync protocol compliant with the 802.1as specification. Drivers for all major OS are available from the Intel® website.

CN7-REVERB

Summary of Features

Technics

- Single Size Eurocard 4HP 100x160mm^2
- CompactPCI® Peripheral Card 32-bit 33/66MHz
- PLX PCI to PCI Express® Bridge
- PLX 6-Port 6-Lane PCI Express® Gen2 Packet Switch
- Five Independent Gigabit Ethernet Controllers (5 x MAC Address)
- Intel® 82574IT Server Controllers for Industrial Temperature Range -40°C to +85°C
- Full Duplex Operation at 10/100/1000Mbps
- IEEE 802.3ab Auto Negotiation
- Auto MDI, MDI-X Crossover at All Speeds
- Support for 802.1AS - Precise Timing Protocol
- Suitable for AVB/TSN Compliant Applications
- VLAN Support Compliant with the 802.1Q Specification
- Support for 9KByte Jumbo Frames, 40KB Packet Buffer
- Support for TCP Segmentation 256KB
- IPv4 and IPv6 Support
- Power Requirements +5.0V 1.5A (typical) 2.5A (max)

Regulatory

- Long term availability
- Designed & manufactured in Germany
- ISO 9001 certified quality management
- Rugged solution (coating, sealing, underfilling on request)
- RoHS compliant
- Commercial and industrial temperature range
- Humidity 5% ... 95% RH non condensing
- Altitude -300m ... +3000m
- Shock 15g 0.33ms, 6g 6ms
- Vibration 1g 5-2000Hz
- MTBF 0.21 * 10^6 hours (MIL-HDBK-217F)
- EC Regulations EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)

CN7-REVERB

Theory of Operation

The CN7-REVERB is a CompactPCI® peripheral card, suitable for any common 32-bit CPCI parallel backplane, either 33MHz or 66MHz clock. Since the 82574IT Ethernet controllers are based on the PCI Express® high speed serial interface, the proven PLX PEX8112 PCI to PCI Express® bridge is provided on-board, as data transfer pathway.

In addition, the CN7-REVERB is equipped with the PLX PEX8606 6-lane 6-port PCI Express® packet switch. One lane is tied to the bridge chip as the upstream (host) port, while the other five downstream lanes/ports are dedicated to the Ethernet controller devices. Each PCI Express® port is a virtual PCI to PCI bridge device and will be configured using standard (BIOS) PCI enumeration. Hence, the original Intel® networking drivers and tools (available by download for a variety of OS) are unaltered and smoothly suitable for the CN7-REVERB.

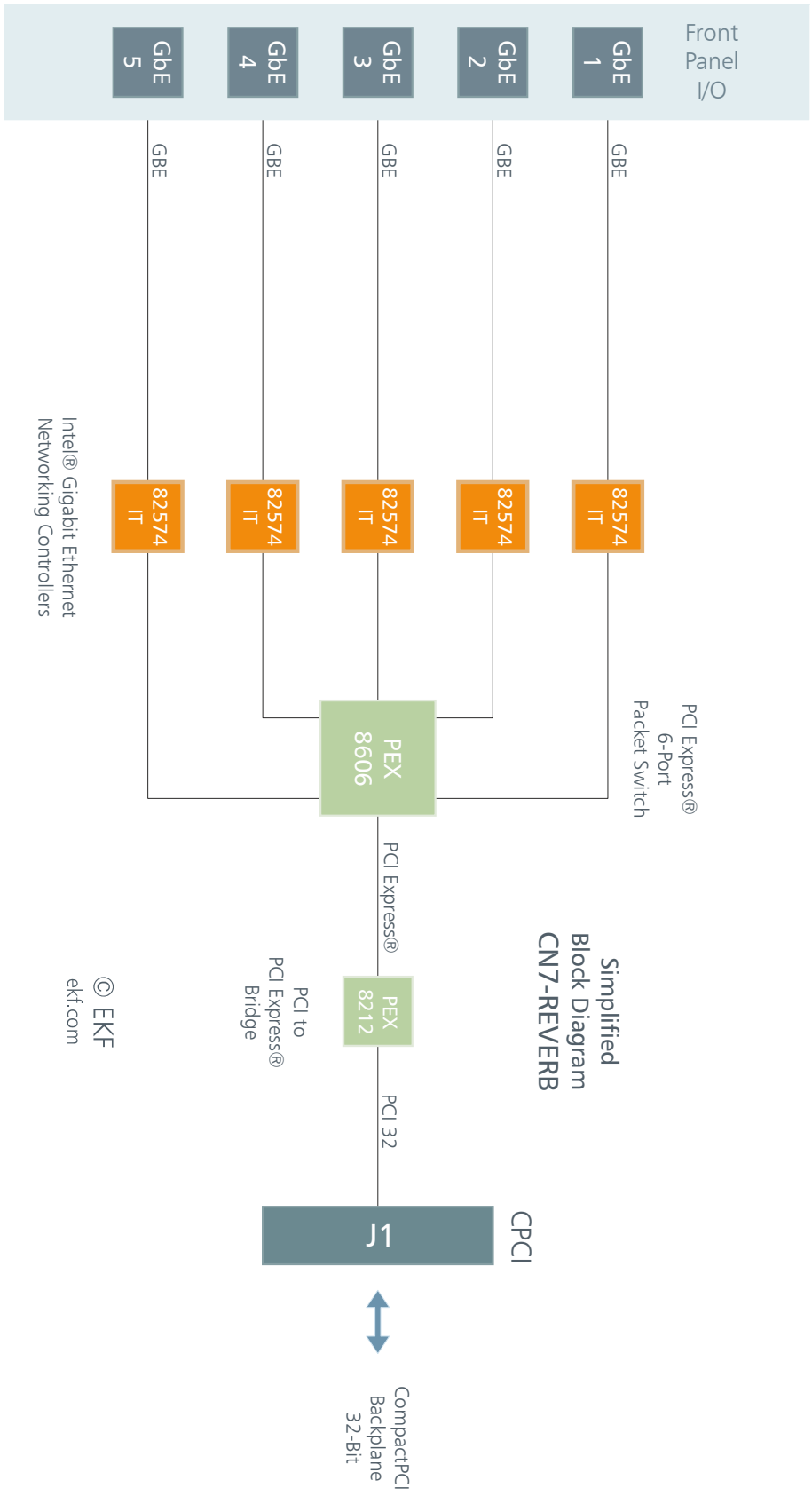
Application Note

The CN7-REVERB is a perfect solution for a variety of networking applications such as router, firewall, gateway, fieldbus segmentation or medium resolution vision systems.

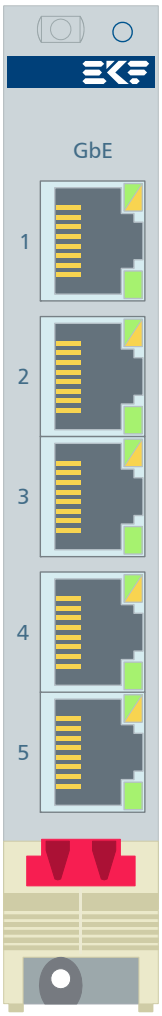
However, at 33MHz, the 32-bit CompactPCI® backplane would be limited to 133MByte/s maximum data throughput. Needless to say, that this bandwidth would not be sufficient, if an application needs continuous support for high data rates simultaneously over all the Ethernet ports available on the CN7-REVERB. Hence, for QOS based and realtime applications, e.g. vision systems with high resolution cameras, consider the CCL-CAPELLA as an alternative solution, with four independent 82574IT Ethernet controllers. Since the CCL-CAPELLA is a mezzanine side card to EKF CPU boards, the CPCI backplane bottleneck will be avoided (immediate connection established by a PCI Express® x 4 link instead).

Related Documents/Links	
Intel® 82574IT Driver Download	http://downloadcenter.intel.com
EKF CompactPCI® Classic Ethernet Solutions	www.ekf.com/c/cnic/cnic.html
EKF CompactPCI® Serial Ethernet Solutions	www.ekf.com/s/serial.html#SL

Block Diagram



Front Panel Options



CN7-REVERB

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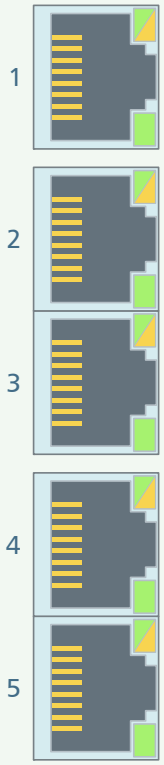
Gigabit Ethernet

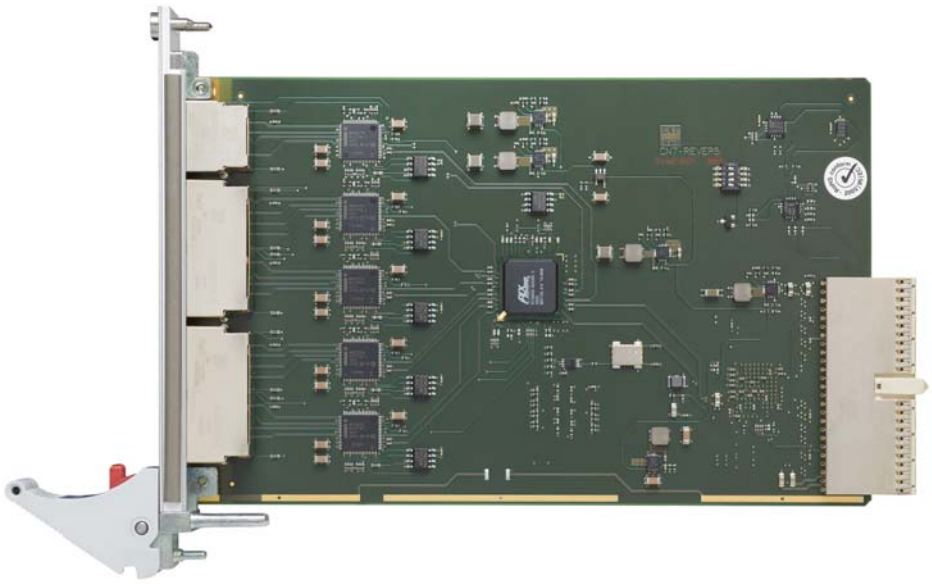
270.01.08.05 Single RJ45 Jack • 270.02.08.5 2 x Dual RJ45 Jacks



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-



CN7-REVERB

Ordering Information

For popular CN7-REVERB SKUs please refer to
www.ekf.com/liste/liste_20.html#CN7

Industrial Computers Made in Germany
boards. systems. solutions.

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