



Product Information

SN3-GONG

**CompactPCI<sup>®</sup> Serial** • Dual-Port 10GBASE-T Ethernet NIC

Document No. 7634 • 22 August 2016



## General

*The SN3-GONG is a peripheral slot card for CompactPCI® Serial systems. The board is equipped with an Intel® X540 10GBASE-T Ethernet controller, and two RJ45 front panel jacks for attachment of Cat 6 or Cat 6A cables up to 100m length. The ability to auto-negotiate between 100Mbps, 1Gbps, and 10Gbps speeds provides the backwards compatibility for a smooth transition and easy migration to 10GbE.*

The X540 is based on PCI Express® 2.1 (up to 5GT/s) and supports x1, x2, x4 and x8 link widths. For optimum performance, the SN3-GONG should be installed in a CompactPCI® Serial fat pipe slot.

The SN3-GONG is well suited for high performance industrial networking applications. Drivers are available for all major operation systems.

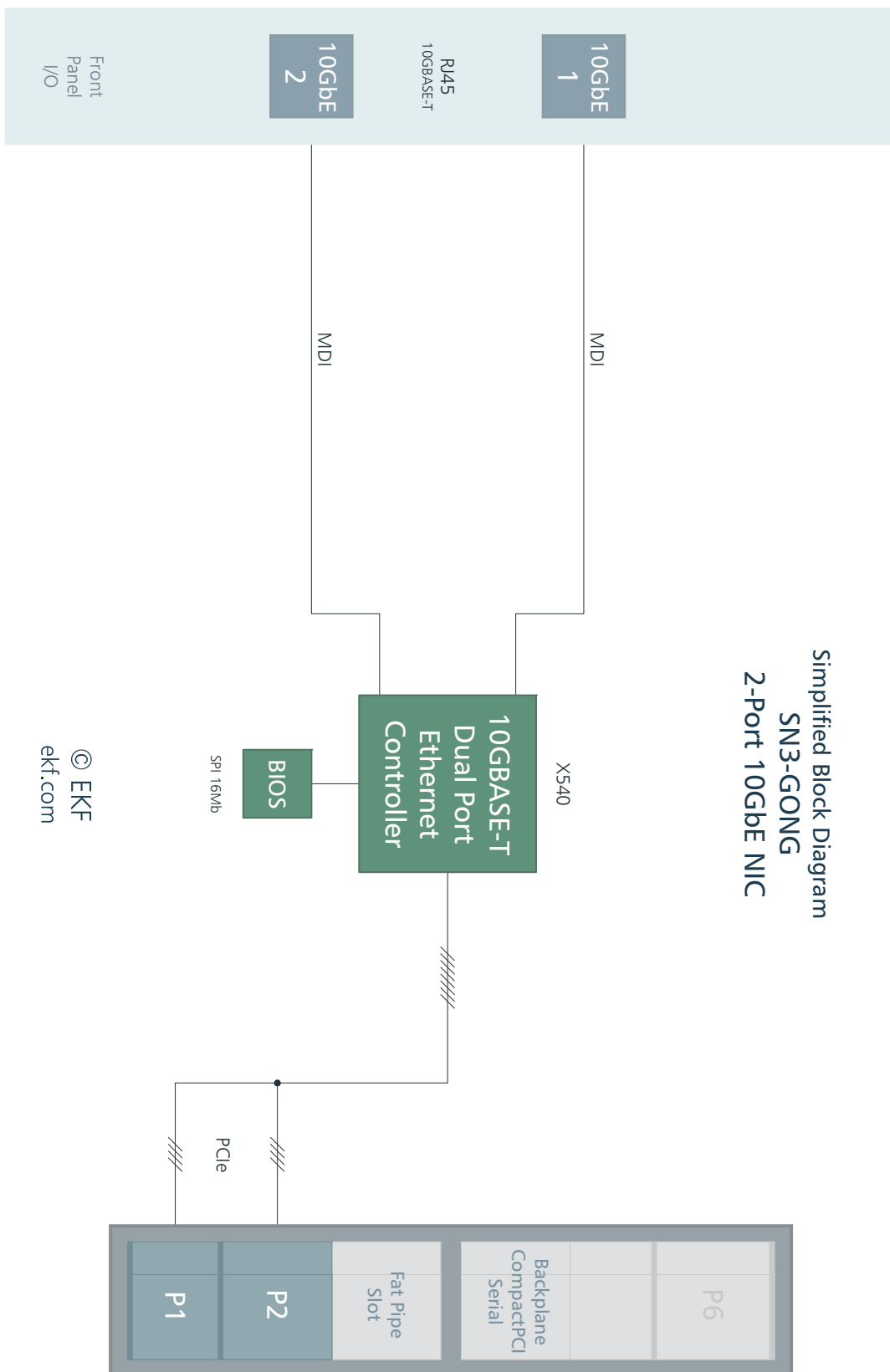


## Feature Summary

- ▶ PICMG® CompactPCI® Serial (CPCI-S.0) peripheral slot card
- ▶ Single Size Eurocard 3U 4HP 100x160mm<sup>2</sup>
- ▶ cPCI-S backplane connectors P1 & P2
- ▶ Suitable for PCIe x 1 to PCIe x 8 standard peripheral slots, and fat pipe peripheral slots
  
- ▶ Gigabit Ethernet controller Intel® X540
- ▶ Link modes 10GBASE-T, 1000BASE-T, and 100BASE-T (IEEE 802.3an, 802.3, 802.3u, and 802.3ab)
- ▶ IEEE 802.3an auto-negotiation for automatic link configuration (speed, duplex, flow control)
- ▶ Automatic cross-over detection function (MDI/MDI-X)
- ▶ Automatic cable diagnostics
- ▶ IEEE 802.3x and 802.3z compliant flow control support
- ▶ Data Center Bridging (DCB) support 802.1Qaz, 802.1Qbb
- ▶ IEEE 802.1Q (VLAN), IEEE 802.1ad (Double VLAN)
- ▶ Hardware-based time stamping (IEEE 1588) and support for 802.1AS - Precise Timing Protocol
- ▶ 15.5KB Jumbo Frame support
- ▶ Rich feature set security functions and I/O virtualization
- ▶ Comprehensive offload and performance features e.g. iSCSI, FCoE
- ▶ Driver support for all major operating systems
- ▶ Two front panel connectors RJ45 with integrated magnetics and echo circuit for noise and EMI cancelling
  
- ▶ Designed & manufactured in Germany
- ▶ ISO 9001 certified quality management
- ▶ Long term availability
- ▶ Rugged solution (coating, sealing, underfilling available on request)
- ▶ RoHS compliant
- ▶ 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 47 years
- ▶ EC Regulations EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)

items are subject to changes

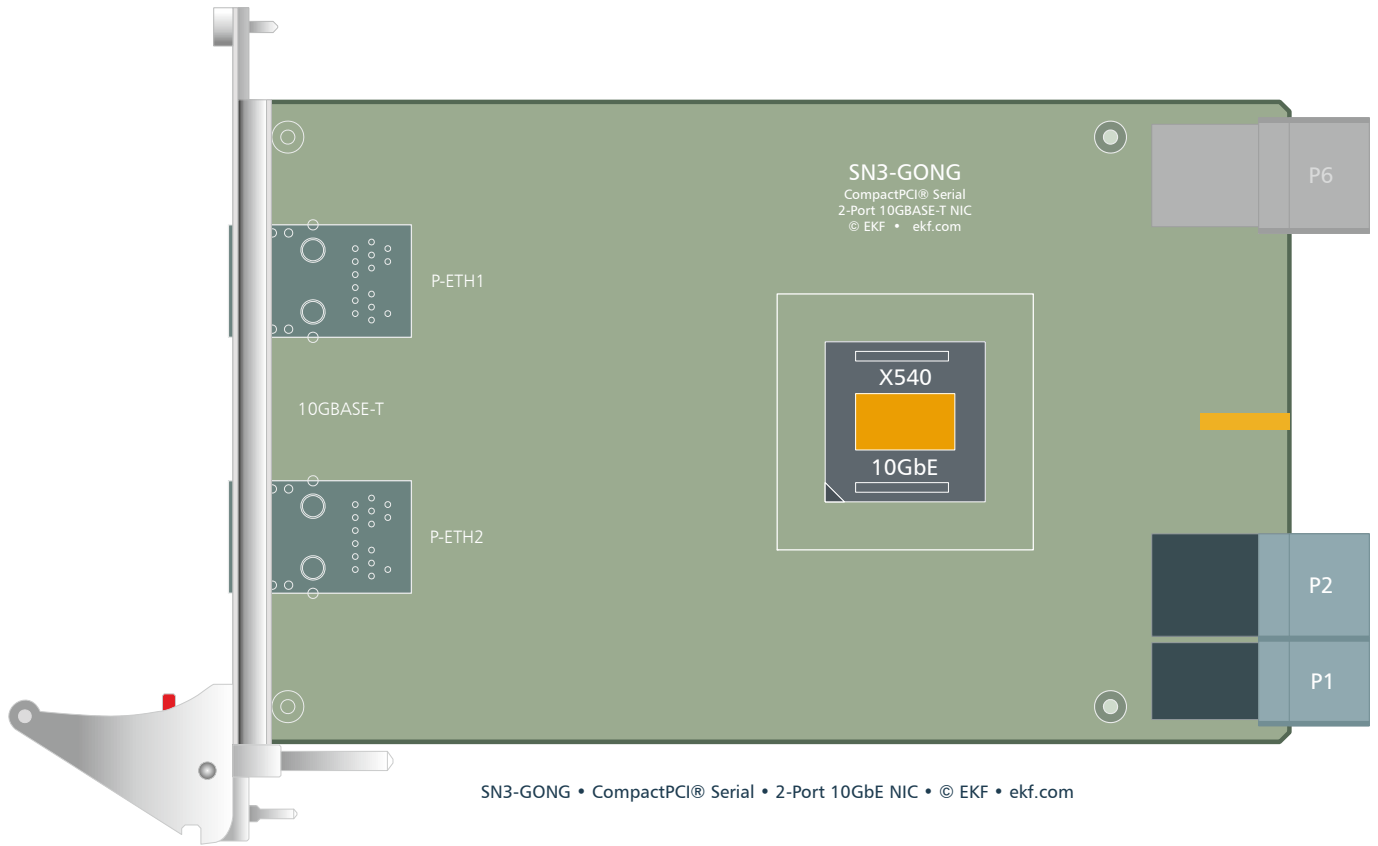
### Block Diagram



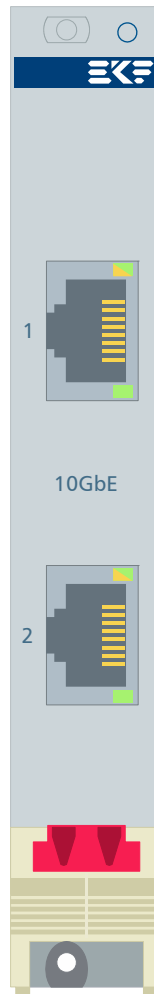
Simplified Block Diagram  
SN3-GONG  
2-Port 10GbE NIC

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### Component Assembly



## Front Panel



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SN3-GONG  
2-Port NIC  
10GBASE-T

### RJ45 Connectors

10 Gigabit Ethernet			
270.11.08.01 Single RJ45 Jack (2 pos)			
<p>10GBASE-T RJ45</p> <p>Part #270.11.08.01 draft - do not scale • © EKF • www.ekf.com</p> <p>Upper LEDs: yellow=10Gbit/s green=1Gbit/s</p> <p>Lower LED:: on=link established blinking=activity (data)</p>	Ports 1-2	1	MDX0+
		2	MDX0-
		3	MDX1+
		4	MDX2+
		5	MDX2-
		6	MDX1-
		7	MDX3+
		8	MDX3-

### Ethernet Driver Download

<https://downloadcenter.intel.com/SearchResult.aspx?lang=eng&keyword=x540>

### P1 CompactPCI® Serial 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	1 PE TX02+	1 PE TX02-	GND	1 PE RX02+	1 PE RX02-	GND	1 PE TX03+	1 PE TX03-	GND	1 PE RX03+	1 PE RX03-
5	1 PE TX00+	1 PE TX00-	GND	1 PE RX00+	1 PE RX00-	GND	1 PE TX01+	1 PE TX01-	GND	1 PE RX01+	1 PE RX01-	GND
4	GND	<i>1_</i> <i>USB2+</i>	<i>1_</i> <i>USB2-</i>	GND	PE_CLK IN+	PE_CLK IN-	GND	<i>1</i> <i>SATA</i> <i>TX+</i>	<i>1</i> <i>SATA</i> <i>TX-</i>	GND	<i>1</i> <i>SATA</i> <i>RX+</i>	<i>1</i> <i>SATA</i> <i>RX-</i>
3	<i>1</i> <i>USB3</i> <i>TX+</i>	<i>1</i> <i>USB3</i> <i>TX-</i>	GA0	<i>1</i> <i>USB3</i> <i>RX+</i>	<i>1</i> <i>USB3</i> <i>RX-</i>	GA1	<i>SATA</i> <i>SDI</i>	<i>SATA</i> <i>SDO</i>	GA2	<i>SATA</i> <i>SCL</i>	<i>SATA</i> <i>SL</i>	GA3
2	GND	I2C SCL	I2C SDA	GND	<i>RSV</i>	<i>RSV</i>	GND	RST#	WAKE#	GND	PE_ EN#	SYS EN#
1	+12V	<i>STBY</i>	GND	+12V	+12V	GND	+12V	+12V	GND	+12V	+12V	GND

pin positions printed italic/gray: not connected

For signal descriptions please refer to PICMG CPCI-S.0 R1.0 CompactPCI® Serial Specification



## P2 CompactPCI® Serial Backplane Connector

P2 CompactPCI® Serial Fat Pipe Peripheral Slot Backplane Connector												
EKF Part #250.3.1208.20.00 • 96 pos. 12x8, 16mm Width												
P2	A	B	C	D	E	F	G	H	I	J	K	L
8	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>
7	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND
6	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>
5	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND
4	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>
3	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND	<i>IO</i>	<i>IO</i>	GND
2	GND	1 PE TX06+	1 PE TX06-	GND	1 PE RX06+	1 PE RX06-	GND	1 PE TX07+	1 PE TX07-	GND	1 PE RX07+	1 PE RX07-
1	1 PE TX04+	1 PE TX04-	GND	1 PE RX04+	1 PE RX04-	GND	1 PE TX05+	1 PE TX05-	GND	1 PE RX05+	1 PE RX05-	GND

*pin positions printed italic/white: not connected*

For signal descriptions please refer to PICMG CPCI-S.0 R1.0 CompactPCI® Serial Specification

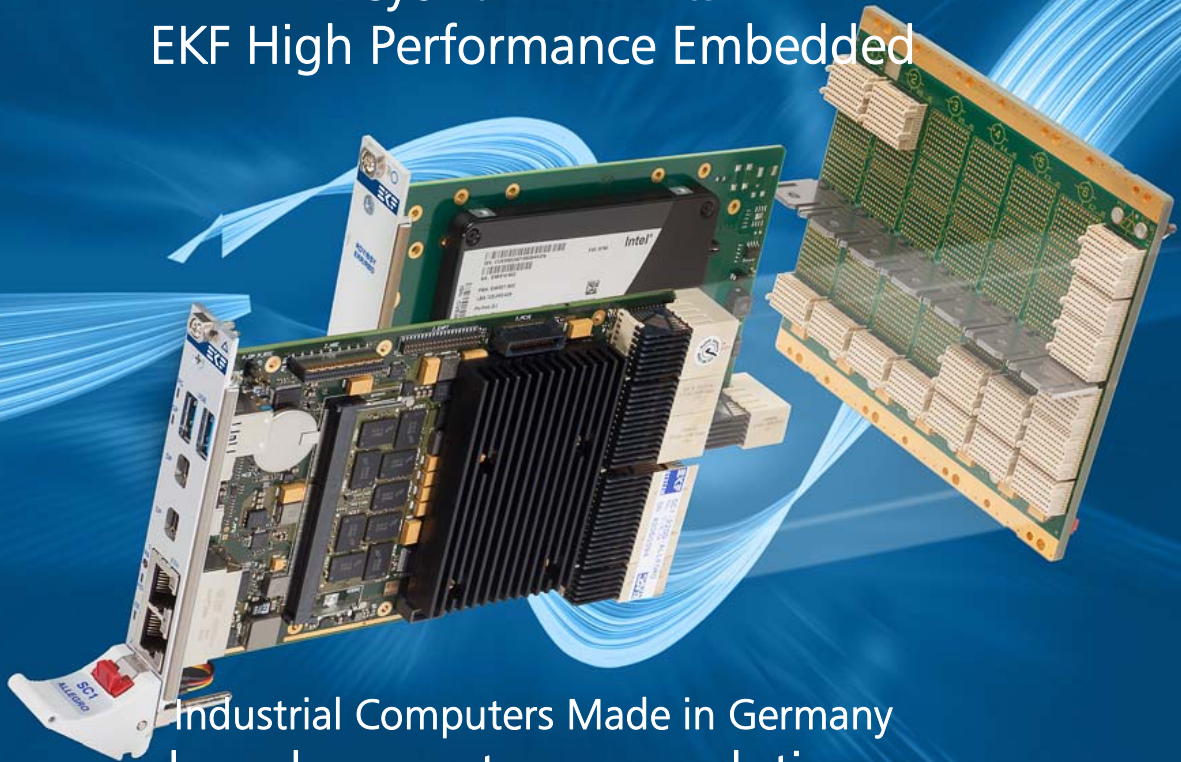
SN3-GONG Links	
SN3-GONG Home (2 x RJ45 10GbE)	<a href="http://www.ekf.com/s/sn3/sn3.html">www.ekf.com/s/sn3/sn3.html</a>
Intel® Driver Download	<a href="https://downloadcenter.intel.com/SearchResult.aspx?lang=eng&amp;keyword=x540">https://downloadcenter.intel.com/SearchResult.aspx?lang=eng&amp;keyword=x540</a>
SN5-TOMBAK Home (2 x SFP+ 10GbE)	<a href="http://www.ekf.com/s/sn5/sn5.html">www.ekf.com/s/sn5/sn5.html</a>
CompactPCI® Serial Ethernet Switches	<a href="http://www.ekf.com/s/serial.html#SL">www.ekf.com/s/serial.html#SL</a>
CompactPCI® Serial Ethernet Controllers	<a href="http://www.ekf.com/s/serial.html#SN">www.ekf.com/s/serial.html#SN</a>
CompactPCI® Serial Overview	<a href="http://www.ekf.com/s/serial_concise.pdf">www.ekf.com/s/serial_concise.pdf</a>
CompactPCI® Serial - All You Need to Know	<a href="http://www.ekf.com/s/smart_solution.pdf">www.ekf.com/s/smart_solution.pdf</a>

### Ordering Information

For popular SN3-GONG SKUs please refer to  
[www.ekf.com/liste/liste\\_21.html#SN3](http://www.ekf.com/liste/liste_21.html#SN3)



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