



PCI Express NIC42XX series Product Brief



The NIC42XX Card family is a fully-integrated RoHS-compliant PCIe Network Interface Service card that provides flexible processing capabilities for development of telecommunications and other data processing intensive applications.

The NIC42XX Card Family of intelligent Gigabit Ethernet network interface cards (NICs) targets secure network services and compression acceleration in security, storage and networking appliances with up to 12~24Gbps performance

NIC42XX Card provide OCTEON™ CN54/55/56/57XX which contains a variable hardware accelerator built-in. In case of Security Accelerator, it provides a high performance in IPsec protocol processing through hardware processing with DES/3DES/AES code algorithm and MD5/SHA solving algorithm. The TCP Accelerator providing a concurrent processing for each application flow through the hardware pre-processing in L2-L4 layer. The primary unit of accelerator is a packet order unit to execute it as concurrent processing of sixteen cores. This OCTEON™ CN54/5/6/7XX provides the high performances because of all packets are handled to parallel or pipeline method.

The NIC42XX Card Family is a network interface module with GbE serial links that provide the main Data Plane traffic connection. The NIC42XX integrates a PCIe interface to provide access to the local bus for the main control and data plane connection.

The NIC42XX provides four 10/100/1000 Base-T/TX interface in front panel.

Soldered NOR Flash provides 16M of non-volatile memory for boot, environment and application code storage. The NIC42XX provides Compact Flash Memory Socket(CF Type-I) for root file systems and mass storage.

The NIC42XX provides boot-up services, device drivers and Linux Support Package (LSP).



Item	Specification	
Physical Dimension	Standard Dimension	Half length / Full height / PCIe standard Single slot
	Dimension	6.6"(L) x 4.2"(W) x 0.6"(T)
Processor & Memory	Processor	Cavium Networks OCTEON™ CN54/55/56/57XX series. 500MHz to 800MHz, 6 core to 12 core
	SDRAM Memory	Two registered DDR2 Mini-RDIMM modules with ECC. Each module contains up to 2GB. Data-rate up to 800Mt/s
	Flash	Boot On Board 16MB NOR Flash CF Compact Flash Memory Socket (Type-1)
Interfaces specification	Ethernet	1000BASE-T, 1000BASE-TX, 10/100/1000 Mbps, Half- and full-duplex with auto MDIX
	Front I/O Connector	4 x RJ45 for Gigabit Ethernet with status LED
	PCIE Bus connector	PCI Express 1x8 Edge fingers according to the PCIe specifications.
	PCI Data path	PCI Express x8 or x4 lane
	PCI compliance	PCIe v1.1 standard
LED Indication	System	DC-DC PLL OK, User Define LED
	Interface	Link/Act and Speed LEDs for Each Ports
Debugging & Management	UART	Two UART ports. (Front bracket (stereo jack) & Board header)
	JTAG/EJTAG	Boards support JTAG for debugging and Full Fault Insertion Testing
	Sensor	Core and board Temperature Sensor
Power requirement	Up to 25W taken from the PCIe connector when running in low power	PCIe determines the max power that can be drawn from each voltage rail. In the high power mode the board will be driven by a combination of power from the PCIe edge connector and the external power connector
	Internal Card Cooling	Passive Heat Sink or Heat Sink with Fan
Environmental Specification	Operating Temperature	0 °C to 50 °C at sea level. A fan/heatsink combination should be used to ensure the thermal performance of the card.
	Operating humidity	10% to 95% non-condensing
	Storage Temperature	-40 °C to 85 °C
	Emission standard	TBD
	Safety Compliant	TBD
	RoHS(Lead-free)	ROHS-6 compliant
	Low Voltage Directive	TBD

NIC42XX Features

- OCTEON™ Plus CN54/5/6/7XX Multi-core Processors
- DDR2 VLP Mini-DIMM Socket for up to 4 Gigabyte packet memory
- 16MByte(2Mb x 8) NOR Flash Memory
- 1GB Compact Flash memory(x16 bus)
- For RJ45 Gigabit Ethernet(GE) port to front panel.
- Front panel LEDs for link/activity and speed indication
- PCI Express x4 or x8 lane
- External ATX 4P 12V connector for above 25W card
- Core and board Temperature Sensor
- Power shut down facility to deal with critical situation, critical temperature

NIC42XX Block Diagram

