



NCRA • TIFR

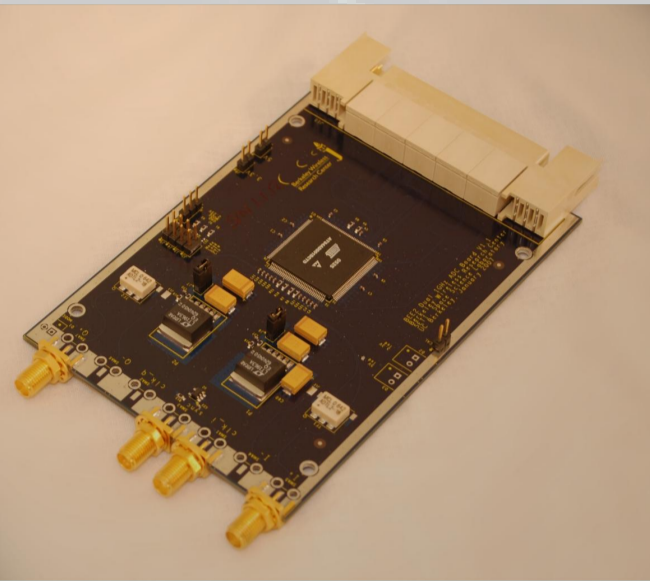
BACKEND SYSTEM COMPONENTS



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Backend system upgrade employs latest technology devices to achieve the increased bandwidth and faster processing of signals. These include devices developed inhouse as well as in collaboration with other groups.

iADC



Analog to Digital Converter is a dual channel card based on CASPER technology.

No of Bits : 8 bits/ch, 2 Channels

Sampling rate : 1Gsps (2ch),2Gsps (1ch)

Analog BW : 1500 MHz. Atmel AT84AD001B ADC chip.

Ext. Sync input.

Four parallel data output streams at 1/4 th sampling rate.

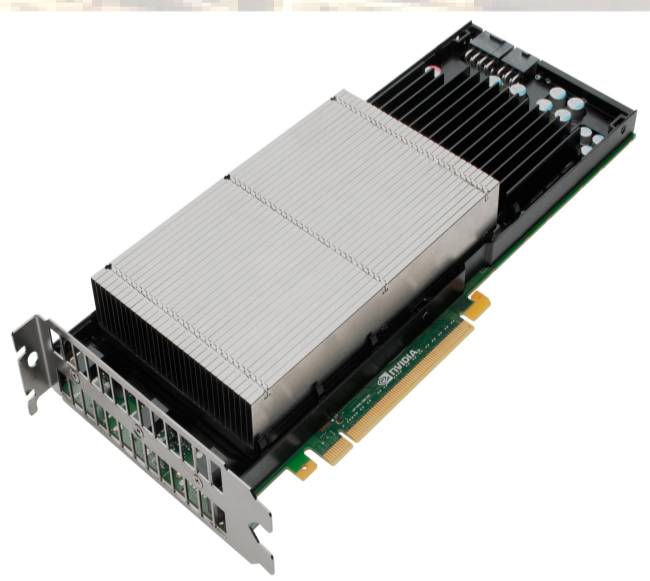
CX4-SFP



This unit converts the 10Gbps ethernet outputs on ROACH to SFP+ standard for use with network switches – developed in collaboration with MTE, Pune.

No. of Ports : 8 nos. PHY chip : Vitesse 8484

K-20



Graphics Processing Unit from Nvidia.

No. of CUDA cores : 2496

Frequency : 740 MHz

Performance : 1.17 Tflops

Power consumption: 235 watts

Memory & speed : 5 GB & 5 GBytes/sec.

Memory interface : PCIx16 & Memory B/W : 208 GBPS

Re-configurable Open Architecture

Computing Hardware is a FPGA board based on CASPER technology used for high speed astronomical signal processing. Programmable through

JTAG, SD card & eth network. Power PC on Linux OS.

Interfaces : 2 X ZDOK, 4 X 10Gbps CX-4 & 1 X 1 Gbps

RJ45. FPGA : Xilinx Virtex-5. DDR2 memory : 16GB,

300MHz. QDR2 Memory : 2X 36MB, 300MHz.

10GbE Ethernet switches.

Used for high speed data transfer

between FPGA boards and Host PCs.

Multiport stackable switches to be used.

High performance rackable PCs for hosting the GPUs.

Dell precision T620 / R720 to be used.

CPU used : intel-xeon X5550

Slots for GPU: 2 PCI-x16

Slots for 10GbE NIC : 2 PCI-x8

Slots for Infiniband card : 1 PCI-x16/8



ROACH



10GB S/W



GPU PC