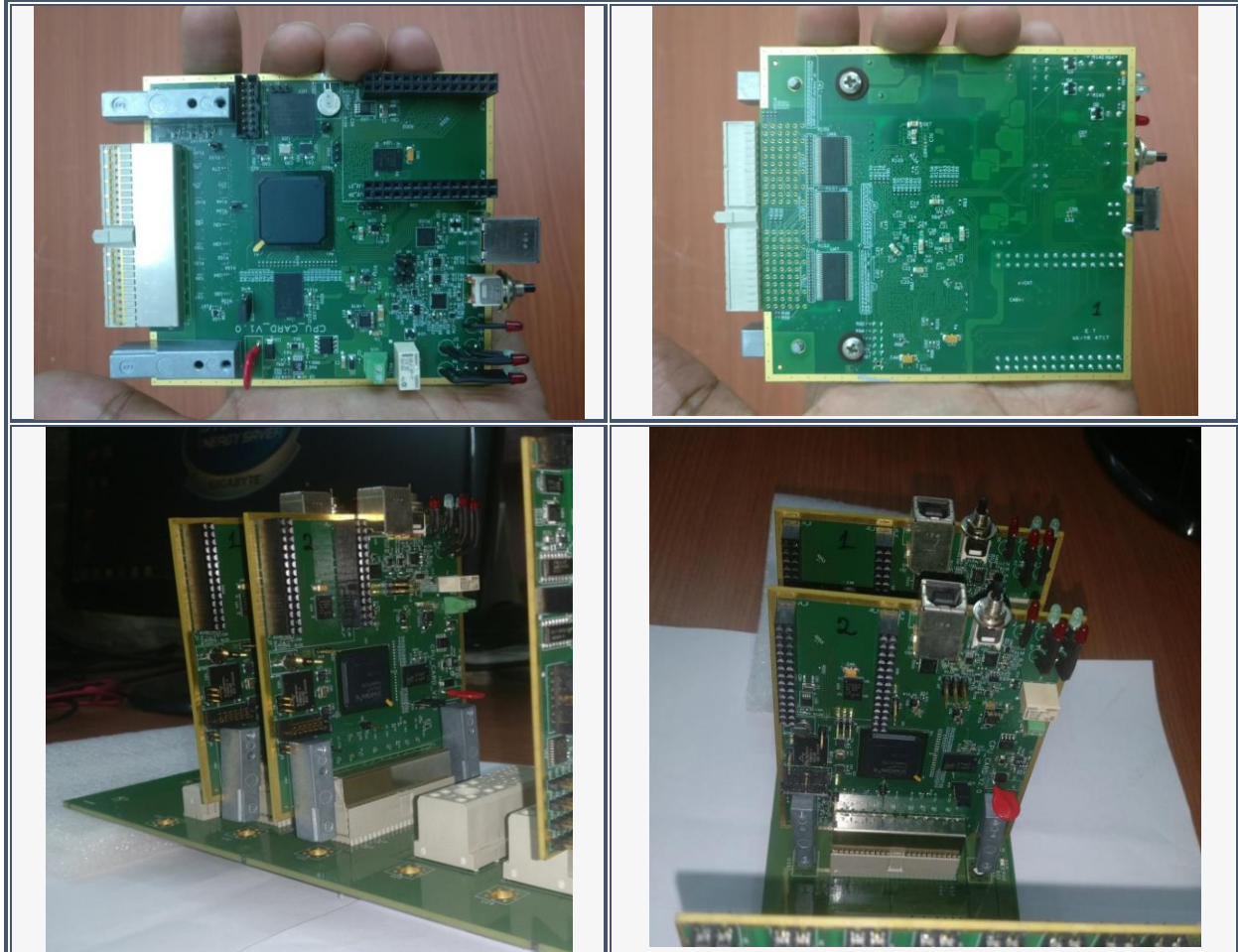## Table 1 - SPI INTERFACE BASED CPU CARD

FPGA based simple SPI Interface based Palm   -Top type Industrial grade general purpose Central Processing Unit Card for controlling all the IO Cards via the Back Plane Card for Nuclear process instrumentation.

- Simple SPI based Interface on cPCI form factor for connectivity between CPU Card and IO Cards via sturdy backplane connectors.
- 16MB, 200 MHz DDR interface for Micro-Blaze soft IP core operations - MT46V16M16CY-5B IT:M
- 256Mbit PARALLEL FLASH MEMORY for storage of FPGA program memory - S29GL256P11FFIV10
- LOW POWER 16Mb SRAM - CY62167EV30LL-45BVXI
- On board Voltage monitoring and Temperature circuitry and hardware watchdog timer for fail safe operation under board failure condition.
- Supervisory reset circuitry - MAX16060D
- 10 / 100 Mbps Ethernet Interface for offloading routine communication task from CPU using WIZNET ETHERNET CONTROLLER chips.
- PC connectivity using UART to USB controller chip - CP2103-GM

- On board REAL-TIME Clock - DS1339AU+
- Level translator circuitry between FPGA and the backplane interface - 74ALVC164245DGG_11
- Simple Hot-Swap Controller based Design.
- Fan-Less design.
- SI, PI, Thermal Analysis done.

THIS HAS BEEN DEVELOPED FOR IGCAR, KALPAKKAM FOR PROCESS INSTRUMENTATION APPLICATION