3U CompactPCI Serial Reconfigurable Computing Module Based on FPGA of the Kintex UltraScale family

- FPGA Xilinx Kintex UltraScale
- Synchronous RAM: two independent memory banks 4 GB DDR4 each
- 1 GB NOR SPI FLASH for this user
- Connector for installation of FPGA Mezzannine Card
- System controller: Xilinx inc. CPLD CoolRunner-II
- Battery for IP Encryption Key
- Operating temperature range: From –40 to +80°C
- Humidity: up to 93%, no condensation; up to 98%, no condensation – for /Coated option
- Golden Image
- MultiBoot
- Load/recovery algorithm programmable by the user
- Changing bitstream via PCIe bus
Overview

FPU502 Module is designed for building high-performance industrial SDR-systems based on the CompactPCI Serial platform with parallel digital real-time data processing. Main areas of application are:

- data coding/decoding;
- digital signal processing;
- stream-oriented processing of audio and video information;
- analysis of broad-band signals and correlation detection;
- synthesis and processing of complex and signal-code sequences.

Supported specifications

- PICMG CPCI-S.0
- PICMG 2.01 R2.0 Hot Swap
- PICMG 2.09 R1.0 System Management Bus
- PCI Express Base Specification, rev.3.0
- ANSI/VITA 57.1 FMC Standard

Main computing resource

- FPGA Xilinx Kintex UltraScale

Reconfiguration

- Golden Image
- MultiBoot
- Load/recovery algorithm programmable by the user
- Changing bitstream via PCIe bus

RAM

- Synchronous RAM: two independent memory banks
  4 GB DDR4 each
- 1 GB NOR SPI FLASH for this user

Connector for installation of FPGA Mezzanine Card

- Corresponds to the LPC ANSI/VITA 57.1 FMC Standard

Signals for Rear IO board

- MGT x8
- Two external clock inputs
- Two external clock outputs

System controller

- Xilinx inc. CPLD CoolRunner-II

Battery for IP Encryption Key

JTAG IEEE1149.1 for software debugging outside the mounting rack

ANSI/VITA 57.1 FMC – a module designed to facilitate software debugging within the mounting rack

Interfaces: USB-JTAG, USB-UART

Operating temperature range

- From –40 to +80°C

Humidity

- Up to 93%, no condensation
- Up to 98%, no condensation, for /Coated option

External acting factors

- With a forced convection cooling, corresponds to the groups 1.1, 1.2, 1.3, 1.4.1, 1.6.4, 2.1.1, 2.1.2, 2.2.1, 2.3.1 according to the GOST RV standard 20.304-98 with consideration of the requirements of technical specifications
- With conduction cooling, corresponding to the groups 1.1, 1.2, 1.3, 1.4.1, 1.6.4, 2.1.1, 2.1.2, 2.2.1, 2.3.1 according to the GOST RV standard 20.304-98, with consideration of the requirements of technical specifications
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Ordering Information

FPU502 Configuration

FPU502 - 01

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All the versions of FPU502 with heatsinks (convection cooling) should use forced cooling with a flow rate of no less than 0.5 m/sec.

Conformal coating – optional.

Delivery checklist
1. FPU502 – 3U CompactPCI Serial Reconfigurable Computing Module
2. Packaging