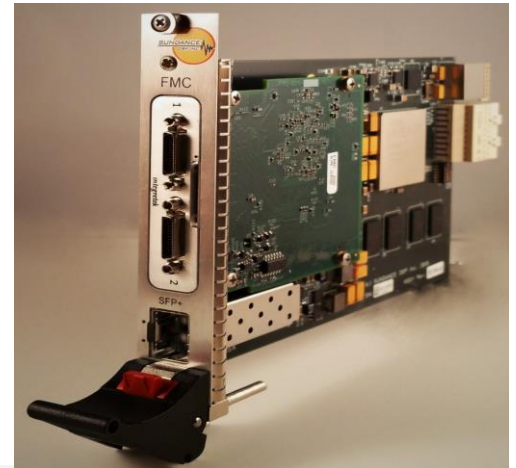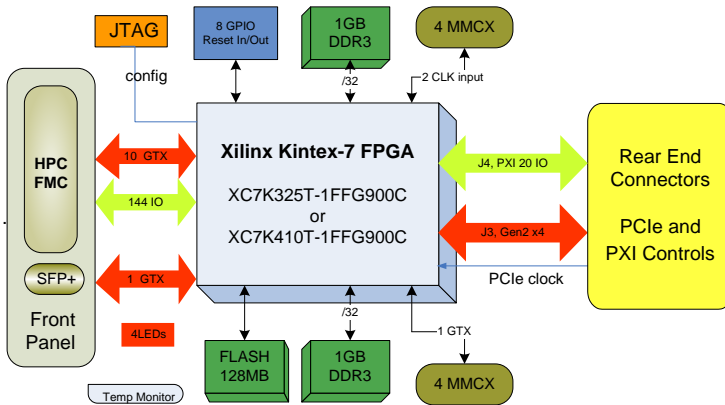SUNDANCE DSP – IP Cores, Prototyping, Evaluation Boards, Modules, Embedded System Tools, Design Services and more

PXIe, Xilinx Kintex-7™ FPGA Card with HPC FMC

Overview

PXIe700 is a powerful, flexible and expandable PXIe module fully compatible with PXI™-5 and ANSI-Vita-57.1 FMC carrier standards. PXIe is the platform of choice for the test, measurement and instrumentation market. The presence of an FMC site gives the ability to add different functionalities through the many available FMCs from various vendors. The host interface is via x4 Gen2 PCIe. The PCIe interface is hard coded in the FPGA and with the latest Xilinx tools the support avoids any licensing costs. If more powerful Gen3 or DMA support is required, then suitable cores can be purchased from Sundance DSP or third parties. The on-board FLASH can be used to store up to 3 bit streams for configuring the FPGA through the driver from the host. A JTAG interface is also available for reconfiguring the FPGA from host during development and debugging via ChipScope.

The module is populated with 2GB of DDR3 memory split over 2 banks with 32-bit interface.

The hardware is supported by Sundance SCom IP Core which communicates to the host through the PCIe interface and provides the user logic with a multichannel streaming interface.

Windows driver, DLL and user interface software is available. Sample test applications are provided to help jump start any developments. The support from VideoGuru toolset can turn this hardware into a powerful video test centre for NTSC, VGA, DVI, SMPTE, GigE-Vision, and other video standards (ask for supported video standards).

Part Number	XC7K325T	XC7K410T
Slices	50,950	63,550
Logic Cells	326,080	356,160
CLB Flip-Flops	407,600	445,200
Maximum Distributed RAM (Kb)	4,000	5,088
Block RAM/FIFO w/ ECC	445	715
Total Block RAM (Kb)	16,020	25,740

Features

- **3U PXIe card conforming to PXI-Express standard**
- **Kintex7 FPGA**
  - XC7K325T-1FFG900C or
  - XC7K410T-1FFG900C (optional industrial grade)
- **Interfaces**
  - PXI control, trigger and clock
  - 4 Lane PCIe Gen2 (Gen3 with softcore)
  - High Pin Count FMC connector with 10 GTX transceivers at 12.5 Gb/s each
  - 144 single ended IOs or 72 diff pairs to FMC
  - SFP+ for 10Gb Ethernet or Fiber Optics
  - JTAG
  - External clock input
  - 8 GPIO, could be used for Reset in/out
- **Memory**
  - 2 banks of DDR3 memory, 1GB each, 32-bit wide
  - 128 MB FLASH
- **Supports White Rabbit for nanosecond synchronization**
- **Supported by Sundance and third party IP cores**
- **MS Windows and Linux OS driver support**
- **Supported by VideoGuru software/firmware**

Applications

- Defense
- Medical
- Imaging
- Machine Vision
- Control
- Instrumentation and testing
- Software Defined Radio