FG600-MIPI: AN OPEN FPGA, PXIE BASED, MIPI FRAME GRABBER / DISPLAY SOLUTION

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Description | Features and Applications | Additional Images | IP Cores/Drivers/BSP | Ordering Information

FG600-MIPI is an FPGA based imaging solution using FMC-MIPI module. The hardware is in PXIe form factor. This solution capture images or video from MIPI CSI2 camera /image sensor via FMC-MIPI module and displays it on the host screen, as well as being able to file the incoming frames for later inspection. FG600-MIPI comprises a PXIe700 carrier card with an attached FMC-MIPI, and a MIPI camera adapter card. The hardware needs to be connected to a suitable host via PCIe interface and the host must run Windows 10 OS for the operation of Sundance DSP's host side driver and application.

The PXIe700 carrier card offers 4 lanes of Gen2 PCIe for host communication. The FMC-MIPI board has a Lattice MachXO3L FPGA for converting MIPI CSI2 image data to parallel image data with frame valid, line valid and pixel clock. For interfacing the image sensors, an adapter card is used. Two image sensors can be connected to the adapter card.

The HPC FMC-MIPI module comes with two Lattice MachXO3L FPGA and includes2 MIPI CSI2 input interfaces with 2 lanes converted to two 10-bit parallel interfaces. The IP core for converting the MIPI incoming serial data to parallel dat is included and pre-loaded to the FMC-MIP FLASH memory.

FG600-MIPI carrier card (PXIe700) comes with a Kintex7 XC7K410T in FFG900 package and includes:

- PXI control, trigger and clock
- 4 Lane PCIe Gen2 (Gen3 with softcore)
- SFP+ cage for 10Gb Ethernet or Fiber Optics
- JTAG
- White Rabbit support for nanosecond synchronization
- 2 banks of DDR3 memory, 1GB each, 32-bit wide and 128MB of FLASH

The package comprises PXIe700 carrier card, FMC-MIPI daughter card, MIPI-IMX169-C adapter card, an IMX169 image sensor, Samtec cable HLCD-30-03.00-BH-TH-2 and MIPI-to-parallel IP cores, PCIe driver, demo application, and a full user guide.

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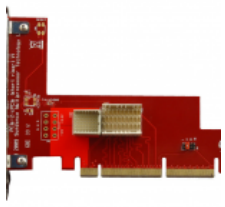

SMT580, PCIe to PXIe adapter card

FG600-CL, a PXIe, open FPGA, Based CameraLink Frame Grabber

PXIe700 with Kintex FPGA and HPC FMC

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