



KAYA
INSTRUMENTS

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High Speed Mezzanine Card (HSMC) for CoaXPress™

Overview

The HSMC-CXP is the industry's first High Speed Mezzanine Card defined by Altera providing a high performance CoaXPress compliant connection. The HSMC-CXP is capable of capturing video from up to 4 CXP mode cameras and is ideally suited to industrial, defense and aerospace applications. This mezzanine card can be also used as camera simulator, emulating up to 4 transmitting channels. Customer specific data pre-processing or custom protocols are easily accommodated via FPGA carrier card. The HSMC-CXP also provides isolated GPIO for input/output signals, such as triggers, shaft encoders, exposure control and general I/O.



The HSMC-CXP uses a standard HSMC connector as an interface to the host board, general purpose I/O and external power supply connector. Up to 4 host and 4 device links can be provided using vertical BNC connectors. Each link supports standard CXP bitrates up to 6.25 Gbps. Each host link is capable of providing up to 13W of power to compatible devices via Power over CoaXPress (PoCXP). The HSMC-CXP can support up to 4 individual host links, or combinations of aggregated CoaXPress links (e.g. two cameras requiring two links, and two additional cameras each using one link). Additionally, up to 4 individual or aggregated device links are supported.

About CoaXPress



CoaXPress is a new digital transmission standard that allows high speed data from a device, such as a camera, to be transferred to a host, such as a frame grabber. Each CoaXPress link supports up to 6.25 Gbps data rates, along with device power up to 13W and device control at 20 Mbps – all on a single coax cable. For very fast devices, the links can be aggregated to provide multiples of the single coax bandwidth. Long cable lengths are supported – up to 40 meters at 6.25 Gbps and over 100 meters at 3.125 Gbps.

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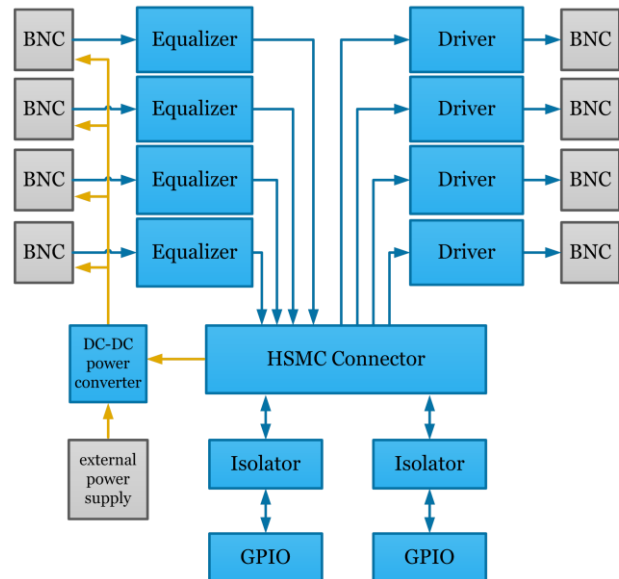
Features

- **Interfaces:**
 - Up to 4 CoaXPress host links
 - Up to 4 CoaXPress device links
 - 12 opto-isolated inputs
 - 12 opto-isolated outputs
 - External power supply for extended use of power over CXP (optional)
- Altera HSMC compliant
- 8 BNC vertical connectors
- MIL-I-46058c conformal coating (optional)
- 78mm x 92mm, single slot HSMC
- Power over CoaXPress support
- Support standard CoaXPress data rates up to 6.25Gpbs
- -40°C to 85°C operating environment temperature (industrial grade)

Applications

- ✓ High speed cameras
- ✓ High definition cameras
- ✓ Panoramic cameras
- ✓ Existing coax systems upgrade
- ✓ Defense remote systems
- ✓ Slip Ring systems
- ✓ Automotive Surround View system
- ✓ Surveillance
- ✓ Robotic Vision

HSMC-CXP Block Diagram



Available Configurations

Model	Host Links	Device Links
HSMC-CXP-1R1T	1	1
HSMC-CXP-4R	4	0
HSMC-CXP-4T	0	4
HSMC-CXP-2R2T	2	2
HSMC-CXP-4R1T	4	1
HSMC-CXP-1R4T	1	4

Deliverables

- HSMC-CXP card
- Hardware user manual
- Coax cables (optional)

Complimentary CXP FPGA IP

- CoaXPress IP for FPGA
- Supports host and device interfaces
- Altera and Xilinx

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