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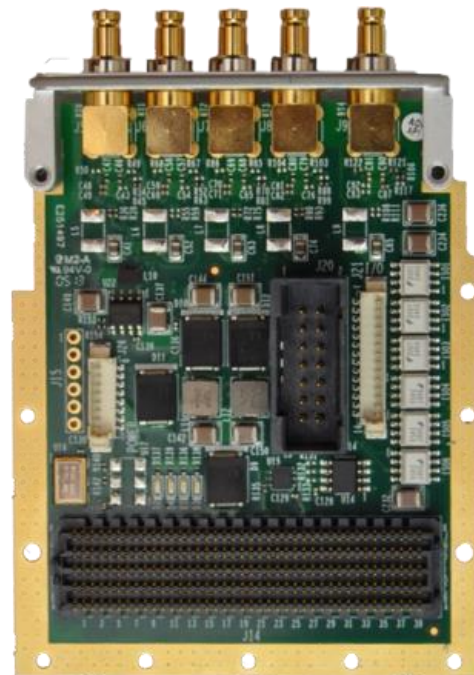91140 Villebon sur Yvette
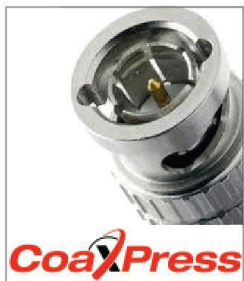FRANCE

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FPGA Mezzanine Card for CoaXPress™

Overview

The FMC-CXP is the industry's first FPGA Mezzanine Card (VITA 57.1) providing a high performance CoaXPress compliant connection. The FMC-CXP is capable of capturing video from up to 5 CoaXPress mode cameras and is ideally suited to industrial, defense and aerospace applications. This mezzanine card might be also used as camera simulator, emulating up to 5 transmitting channels. Customer specific data pre-processing or custom protocols are easily accommodated via FPGA carrier card. The FMC-CXP also provides isolated GPIO for input/output signals, such as triggers, shaft encoders, exposure control and general I/O. The FMC-CXP uses a high-pin count connector (HPC) as an interface to the host board, general purpose I/O and can be used in a ruggedized conduction cooled factor for harsher environments.

Up to 5 host/device links can be provided using front panel DIN 1.0/2.3 connectors. Each link supports standard CoaXPress 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 FMC-CXP can support up to 5 individual links, or combinations of aggregated CoaXPress links (e.g. one camera requiring one link, and two additional cameras each using two links).
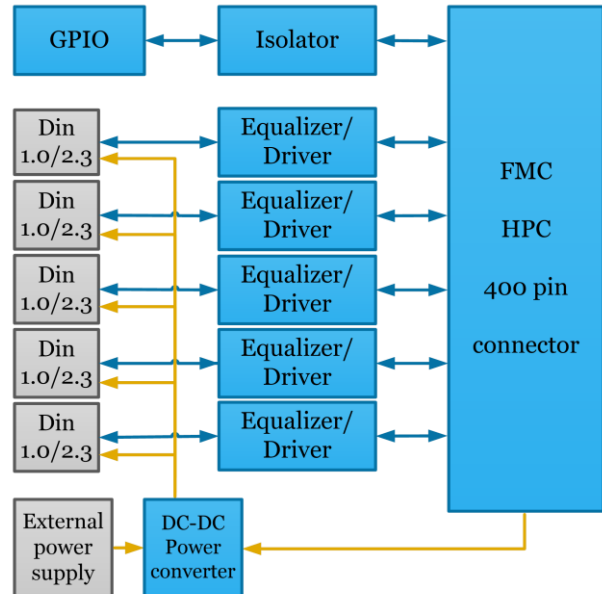
About CoaXPress

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 5 CoaXPress links
  - Each link can be host or device (configuration specific)
  - 6 opto-isolated inputs
  - 6 opto-isolated outputs
  - External power supply for extended use of power over CXP (optional)
- VITA 57.1 compliant
- Conduction or air cooled
- 5 x DIN 1.0/2.3 connectors available from the front panel
- MIL-I-46058c conformal coating (optional)
- HPC – High Pin count connector
- 63mm x 84mm, single slot FMC
- Power over CoaXPress support
- Support standard CoaXPress data rates up to 6.25Gpbs
- -40°C to 85°C operating environment temperature (industrial grade)

FMC-CXP Block Diagram

Available Configurations

Model	Host Links	Device Links
KY-FMCCXP-2R3T	2	3
KY-FMCCXP-4R1T	4	1
KY-FMCCXP-1R4T	1	4

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

Deliverables

- FMC-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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