XMC-Based ADC + DAC Card

PRODUCT DESCRIPTION

The XMC-Based ADC + DAC Card is a high speed data acquisition and signal generation card based on standard VITA 42.0 XMC form factor (single-width). This XMC card features two 16-bit ADCs from Analog Devices and a dual channel DAC. The card also features a Xilinx Virtex-6 FPGA with DSP resources for performing signal processing.

The card is used for analog data acquisition in airborne Radar Digital Signal Processing System. The board may be used in defense data acquisition applications.

KEY FEATURES

- Two ADC channels and two DAC channels on XMC form factor
- Available as air-cooled and conduction-cooled XMC board
- The card can accept IF frequencies up to 900 MHz
- Integrated Digital Down Conversion (DDC) IP core
- The card is available as air-cooled as well as conduction cooled card

SPECIFICATIONS

FPGAs
- Onboard Xilinx FPGA Virtex-6 FPGA (supports LX130T/195T/240T/365T or SX315T/475T)

Interfaces
- IF input through SMA connectors with 50 ohm impedance
- Gen2 x8 PCI Express providing 5 Gbps sustained transfer rates per lane
- Host GPIO interface – 64 PMC IOs and 11 differential XMC IOs

Softwares / IP
- Linux OS on Virtex-6 FPGA
- Signal processing IP cores
  - DDC, DOS
- PCI Express Endpoint IP core

Additional information
- Two 200/250 Msps, 16-bit AC-coupled ADC channels
- Two 250 Msps, 16-bit DAC channels
- Ultra-low jitter programmable clock
- JTAG over XMC connector
- 2 banks of 1 GB (Total 2 GB) capacity DDR3 SDRAM (Optional upgrade to total 4 GB)
- FPGA system temperature and voltage monitoring
MECHANICAL

- Single width IEEE 1386 mezzanine card
- The card conforms to ANSI/VITA 42.0 specifications and is compatible with all VITA 42.3 PCI Express mezzanine module sites
- The standard XMC form factor board is available as
  - Air-cooled card
  - Conduction-cooled card
- The card weighs 130 grams

POWER CONSUMPTION

- The card consumes 22W (typical)
- Input voltage is 5V

ENVIRONMENTAL

- Qualification: Level 4 rugged
  - MIL-STD-810D
  - MIL-STD-461E
- Temperature range: −50°C and +100°C (Storage)
  - −40°C and +75°C (Operational)

PART NUMBER(S)

The following variants of this board are available:

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<tr>
<th>Part Numbers</th>
<th>Variants</th>
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<tbody>
<tr>
<td>CB1050</td>
<td>XMC Based ADC + DAC Card, Conduction-Cooled Board with PCIe Gen1</td>
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<tr>
<td>CB1051</td>
<td>XMC Based ADC + DAC Card, Conduction-Cooled Board with PCIe Gen2</td>
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<tr>
<td>CB1052</td>
<td>XMC Based ADC + DAC Card, Air-Cooled Board with PCIe Gen1</td>
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<td>CB1053</td>
<td>XMC Based ADC + DAC Card, Air-Cooled Board with PCIe Gen2</td>
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