Signal Acquisition & Processing Board

PRODUCT DESCRIPTION

Signal Acquisition and Processing Board is a Virtex-6 FPGA based card with onboard wideband ADCs. The board has a conduction cooled enclosure in 6U VPX form factor. The onboard ADCs accept sampling clock and IF signals from wideband receivers and provide 16-bit digital samples to FPGA. The board can be used for wideband IF data acquisition and signal processing applications in defense electronics.

This board finds application in the Frequency Hopping and Burst Intercept Monitoring System which is an Electronic Warfare system.

KEY FEATURES

- Wideband ADCs
  - 16-bit, 250 Msps
  - SMA AC coupled input
  - Configurable sampling rate
  - External trigger circuitry for multi-channel synchronization
- Real Time Clock
- Thermal and voltage monitors
- Available as
  - Air-cooled board
  - Conduction cooled board
- 6U VPX form factor

SPECIFICATIONS

FPGAs / ADC

- Xilinx Virtex-6 SX315T FPGA for signal processing
- Eight wideband ADCs sampling up to 250 Msps, 16-bits

Interfaces

- Two x4 lane SRI0 links to back plane
- Two Gigabit Ethernet ports to rear and one on the front panel
- I2C Interface
- 12 LVDS IO configurable as input or output
- 8 LVCMOS bidirectional IO
- 16 RS422 transmitter ports to rear
- 4 RS422 receiver ports to rear
- 1 RS232 port to rear
- JTAG connector for FPGA debug
Software
- Linux OS

Additional Information
- 512 MB and 1 GB DDR3 SDRAM
- 16 GB NAND flash with ECC support, 128 MB boot flash
- 512 MB SRAM
- DDC IP Core
- 4k point FFT Core
- SRIO x4 lane Gen2 Core

MECHANICAL
- 6U VPX board available as:
  - Air-cooled board
  - Conduction-cooled board

POWER CONSUMPTION
- The unit consumes 65W
- Input voltages are 12V, 5V and 3.3V AUX from VPX backplane

ENVIRONMENTAL
- Qualification: JSS 55555
  - MIL-STD-461E
- Temperature range: \(-20^\circ C\) and \(+70^\circ C\) (Storage)
  - \(-10^\circ C\) and \(+55^\circ C\) (Operational)

PART NUMBER(S)
The following variants of this board are available

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Variants</th>
<th>Conduction cooled</th>
<th>Air cooled</th>
<th>Eight ADC</th>
<th>Five ADC</th>
<th>16-bit ADC Sampling @250Msp</th>
<th>16-bit ADC Sampling @200Msp</th>
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<td>CB10A0</td>
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