Mars Servo

EnTegra Solutions

Single Board Computer for Servo Loop Control Applications

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Features

- SoC Zynq
- Quad Adc
- Quad Dac
- Digital IO
- Dual RS232 UART
- Ethernet
- USB JTAG

Applications

- Servoloop Control
- Data Acquisition
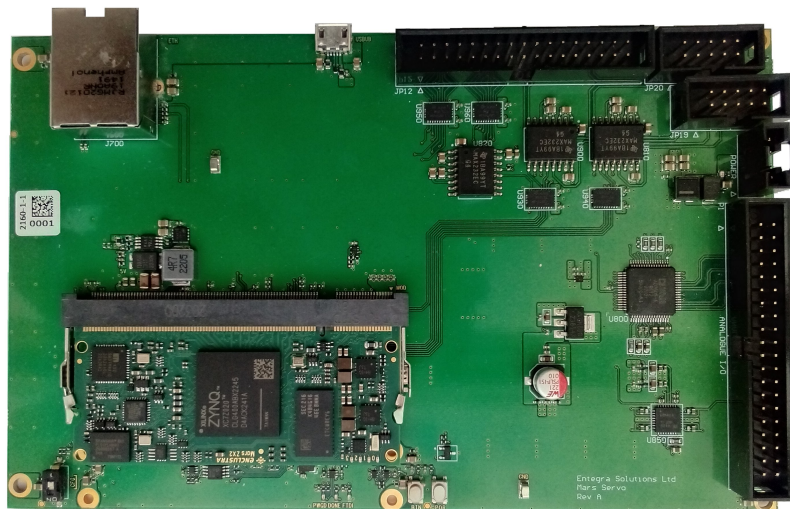- Monitoring
- Instrumentation

Software

- Vitis IDE
- C/C++ Tools
- ARM® dual-core Cortex™-A9
- Baremetal or Linux

Power

- +/-12V

Size

- 160x100mm

Description

The Mars Servo is designed for closed loop servo applications, featuring quad channel analogue to digital, quad channel digital to analogue, digital IO and RS232 & Ethernet communications. At the heart is a Zynq 7010/7020 System-on-Chip module which offers a dual ARM® Cortex™-A9 core and FPGA resources. Traditionally, this task was solved using a Digital Signal Processor centric board.

The analogue input is provided using a AD7605-4, giving four simultaneously sampled differential channels upto 100ksps, 16-bit samples with an input range +/-10V dc coupled (optional +/-5V). The conversion clock is generated by the Zynq logic.

The analogue output is provided using a DAC81404, giving four simultaneously converted 16-bit channels at +/-10V or +/-5V or 0 to 10V or 0 to 5V upto 10ksps with drive capability of +/-15mA per channel, dc coupled.

The digital input & output provides 8 bits of 5V TTL input and 8 bits of 5V TTL output with 32mA per channel sink/source capability. Serial communication to legacy systems is provided with dual RS232 ports and 16550 UART's in logic. 1Gb Ethernet is available directly from the Zynq.

The development kit comes complete with logic and drivers for the peripherals. Develop your application in the AMD Vitis Unified Software Platform in C/C++. Choose between using baremetal or Linux operating system.

Call for custom designs of both hardware and software.

Block Diagram

Serial connector	Analogue I/O connector	RJ45 Ethernet
Serial connector		

Quad ADC's

Quad DAC's

Flash

RS232 Serial ports

Zynq (ARM core & logic)

DRAM

PSU's

Digital I/O

Power connector

Digital I/O connector

USB