

Product Brief

Saturn SX1

Spartan-3A DSP FPGA Module



Overview

The Saturn SX1 FPGA module is optimized for DSP applications. It offers high-performance yet low cost DSP FPGAs, large and high-bandwidth memory, LVDS I/Os and a USB 2.0 High-Speed device interface.

The Saturn Starter base board in conjunction with the Apollo evaluation platform enables rapid prototyping. A variety of Apollo expansion boards is available providing many different functions.

Linux and Windows USB drivers enable fast data transfer between the FPGA module and a host computer. Quick-start capability and easy integration is provided by the availability of the FX2 USB Light IP Core which comes with reference designs for FPGA firmware and host computer software.

Benefits

- Vast parallel processing power for DSP applications (up to 126 multipliers at 250 MHz = 31.5 GMAC/s)
- High-bandwidth data I/O thanks to the large number of available LVDS pairs
- Simple and low-cost integration thanks to standard interfaces (USB, UART) and single supply voltage
- Many IP cores are available from Xilinx, Enclustra and 3rd parties.

Highlights

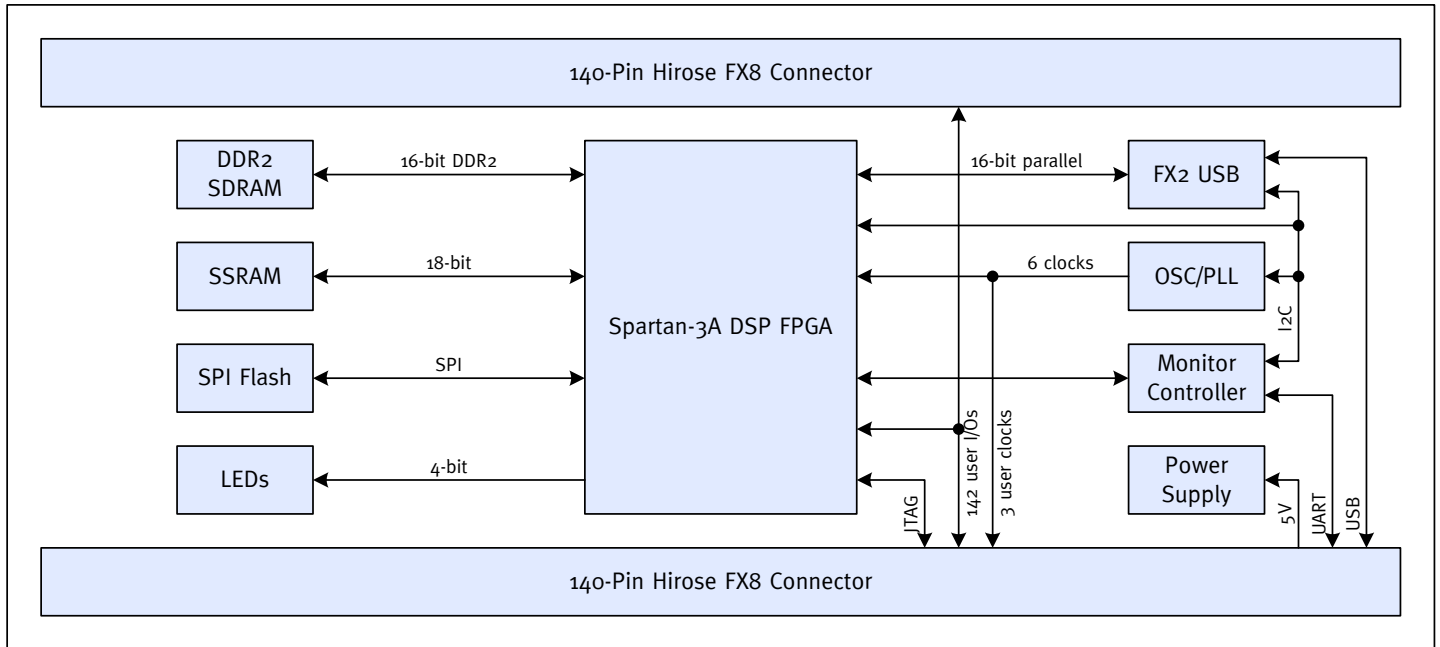
- Features the largest Xilinx low-cost FPGA optimized for digital signal processing
- Provides a FX2-based USB 2.0 High-Speed interface with data rates up to 30 MB/s. Linux and Windows drivers available.
- Comes in handy credit-card form factor
- Requires only a single supply voltage
- Available with different FPGA densities and speed grades

Features

- Xilinx Spartan-3A DSP FPGA in the CSG484 package
- Credit-card form factor (76 x 54 mm, dual 140-pin Hirose FX8 Connectors)
- 142 user I/Os, single-ended or differential
- Up to 16 MB SPI FLASH
- Up to 256 MB (64Mx16) DDR2 SDRAM
- Up to 1 MB SSRAM
- PLL for up to 3 user clocks
- FX2 USB 2.0 High-Speed interface
- Voltage and temperature monitoring

Module Architecture

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Product Selection Matrix

Product Number	FPGA	SPI FLASH	DDR2 SDRAM	SSRAM	USB 2.0	Temp. Range
SA-SX1-1800-4C	XC3SD1800A-4CSG484C	4 MB	64 MB	512 KB	✓	0..70°C
SA-SX1-3400-5C	XC3SD3400A-5CSG484C	4 MB	128 MB	1 MB	✓	0..70°C
Custom Configurations	XC3SD 1800 - 4 CSG484 C 3400 5	✗ 4 MB 8 MB 16 MB	✗ 64 MB 128 MB 256 MB	✗ 512 KB 1 MB	✗ ✓	0..70°C -40..+85°C

Minimum order quantities may apply for custom module configurations. Please contact us.

Target Applications

- Digital Signal Processing
- Video Processing
- Audio Processing
- Software Defined Radio
- Communications
- Embedded Computing

Related Products

- Enclustra Saturn Starter Base Board
- Enclustra Apollo CV2 Video Expansion Card
- Enclustra Apollo DT1 Touch Screen Expansion Card
- Enclustra Apollo NS1 Network Expansion Card
- Enclustra FX2 USB Light IP for Saturn SX1