SmartFusion2 SoC FPGA Evaluation Kit Quickstart Card

Kit Contents – M2S-EVAL-KIT

Quantity	Description
1	SmartFusion2 SoC FPGA 25K LE M2S025T-1FGG484
1	12 V/ 2 A Wall-Mounted Power Supply
1	FlashPro4 JTAG programmer
1	USB 2.0 A-male to mini-B Y-cable for UART/power interface (up to 1 A) to PC
1	Quickstart Guide
1	Libero SoC Gold Software License
1	PCIe Control Plane Demo Design
Note: The M2S-EVAL-KIT is RoHS compliant.	

Overview

Microsemi's SmartFusion®2 SoC FPGA Evaluation Kit is the lowest cost FPGA platform for developing cost-optimized FPGA designs using Microsemi's SmartFusion2 System-on-Chip (SoC) FPGAs, which integrate inherently reliable flash-based FPGA fabric, a 166 MHz ARM®Cortex™-M3 processor, advanced security processing accelerators, DSP blocks, SRAM, eNVM, and industry-required high-performance communication interfaces, all on a single chip. The SmartFusion2 SoC FPGA Evaluation Kit makes it easy to develop transceiver I/O-based FPGA designs to build PCI Express® and Gigabit Ethernet-based systems. The board is also small form-factor PCIe compliant, which will allow quick prototyping and evaluation using any desktop PC or laptop with a PCIe® slot.

The kit enables you to:

- Develop and test PCI Express Gen2 x1 lane designs
- Test signal quality of the FPGA transceiver using the full-duplex SERDES SMA Pairs
- Measure the low power consumption of the SmartFusion2 SoC FPGA
- Quickly create a working PCIe link with the included PCIe Control Plane Demo

The board includes an RJ45 interface to 10/100/1000 Ethernet, 512 MB of LPDDR, 64 MB SPI Flash, and USB-UART connections, as well as I^2C, SPI, and GPIO headers. The kit includes a 12 V power supply but can also be powered through the PCIe edge connector. Also included is a free Gold License for the Libero®SoC software toolset to enable FPGA development and to utilize the reference designs made available with the kit. In addition, a FlashPro4 JTAG programmer is included for programming and debugging.

Hardware Feature Overview

- SmartFusion2 SoC FPGA in the FGG484 package (M2S025T-1FGG484, 25K LE part)
- 64 MB SPI Flash memory
- 512 MB LPDDR
- PCI Express Gen2 x1 interface
- Four SMA connectors for testing of the full-duplex SERDES channel
- RJ45 interface for 10/100/1000 Ethernet
- JTAG/SPI programming interface
- Headers for I^2C, SPI, GPIOs
- Push-button switches and LEDs for demo purposes
- Current Measurement Test Points

Running the Demo

The SmartFusion2 SoC FPGA Evaluation Kit ships with the PCI Express Control Plane demo preloaded. For instructions on running the demo and for more information, refer to the SmartFusion2 SoC FPGA Evaluation Kit PCIe Control Plane Demo User's Guide.

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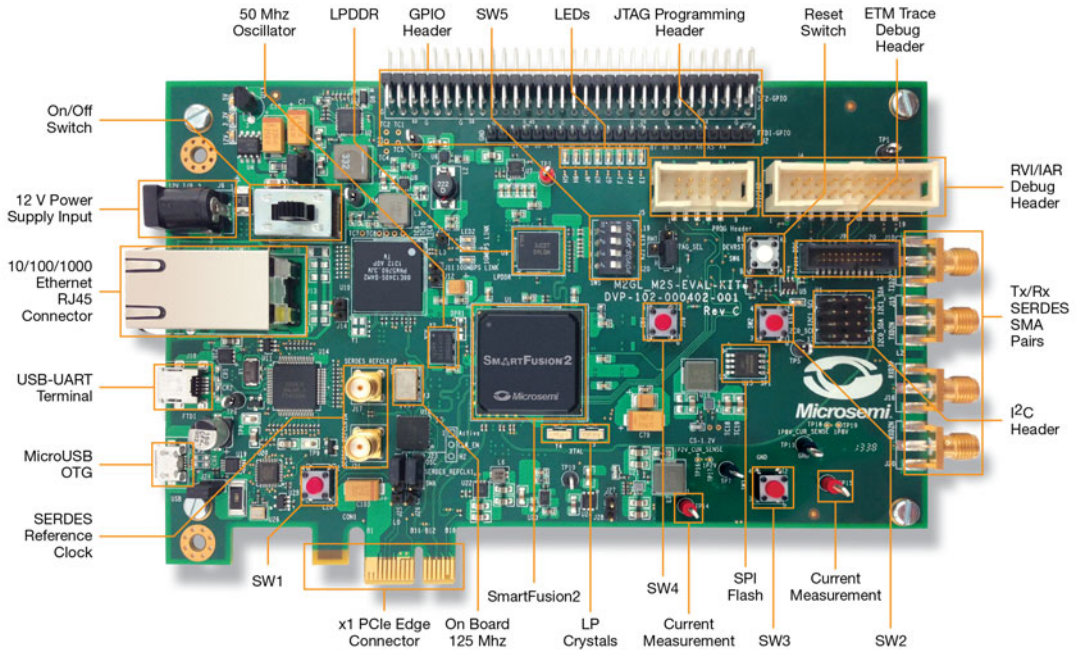
50 Mhz Oscillator
LPDDR
GPIO Header
SW5
LEDs
JTAG Programming Header
Reset Switch
ETM Trace Debug Header
On/Off Switch
12 V Power Supply Input
10/100/1000 Ethernet RJ45 Connector
USB-UART Terminal
MicroUSB OTG
SERDES Reference Clock
RVI/IAR Debug Header
Tx/Rx SERDES SMA Pairs
I2C Header
SW1
x1 PCIe Edge Connector
On Board 125 Mhz
SmartFusion2
LP Crystals
SW4
Current Measurement
SPI Flash
SW3
Current Measurement
SW2

Software and Licensing

The SmartFusion2 SoC FPGA Evaluation Kit is supported by the Libero System-on-Chip (SoC) v11.1 or later, which includes a web install option. SoftConsole Software IDE and FlashPro are enabled by default in the web install; these software tools can be used for software design and debug. Refer to the *SmartFusion2 SoC FPGA Evaluation Kit User's Guide* for more information at:

Software releases.

Libero SoC software requires a valid Gold, Platinum, or Standalone Libero software license.

If you need a new license, select FREE Libero SoC Gold license and request a new one from your Microsemi Customer Portal account. This license supports all tools for designing with the SmartFusion2 family and associated development kits:

License updates.

Documentation Resources

For further kit information, including user's guide, tutorial, and full design examples, refer to the SmartFusion2 SoC FPGA Evaluation Kit page.

New Demos and Tutorials will be posted as they become available.

Microsemi recommends that you sign up for Product Updates to be notified when new material is available. You can sign up for product updates from your Microsemi Customer Portal account.

Technical Support and Contacts

Technical support is available online and by email.To find your local representative visit Microsemi SoC Sales offices, including Representatives and Distributors, which are located worldwide.

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