

SmartFusion2 SoC FPGA Advanced Development Kit Quickstart Card

Kit Contents – M2S150-ADV-DEV-KIT-ES

Quantity	Description
1	SmartFusion2 SoC FPGA 150K LE M2S150T-1FCG1152ES
1	USB A male to micro-B male cable, three feet long 28/28AWG USB 2.0
1	USB A to mini-B cable
1	12 V, 5 A AC power adapter
1	Quickstart guide
1	Libero SoC Platinum software one year license

Note: The M2S150-ADV-DEV-KIT-ES is a RoHS compliant.

Overview

Microsemi's SmartFusion[®]2 SoC FPGA Advanced Development Kit offers a full featured 150K LE device SmartFusion2 system-on-chip (SoC) FPGA. This 150K LE device inherently integrates reliable flash-based FPGA fabric, a 166 MHz Cortex[™]-M3 processor digital signal processing (DSP) blocks, static random-access memory (SRAM), embedded nonvolatile memory (eNVM), and industry-required high-performance communication interfaces—all on a single chip.

The Advanced Development Kit board has numerous standard and advanced peripherals such as: PCIe[®]x4 edge connector, two FMC connectors for using many off the shelf daughter cards, USB, Philips inter-integrated circuit (I²C), two gigabit Ethernet ports, serial peripheral interface (SPI), and UART. A high precision operational amplifier circuitry on the board helps to measure core power consumption by the device.

The SmartFusion2 SoC FPGA memory management system is supported by 1 GByte (GB) of on-board double data rate3 (DDR3) memory and 2 GBytes (GB) SPI flash—1GB connected to the Microcontroller Subsystem (MSS) and 1GB connected to the FPGA fabric. The serializer and deserializer (SERDES) blocks can be accessed through the peripheral component interconnect express (PCIe) edge connector or high speed sub-miniature push-on (SMA) connectors or through on-board FPGA mezzanine card (FMC) connector.

This kit enables you to design applications that involve one or more of the following:

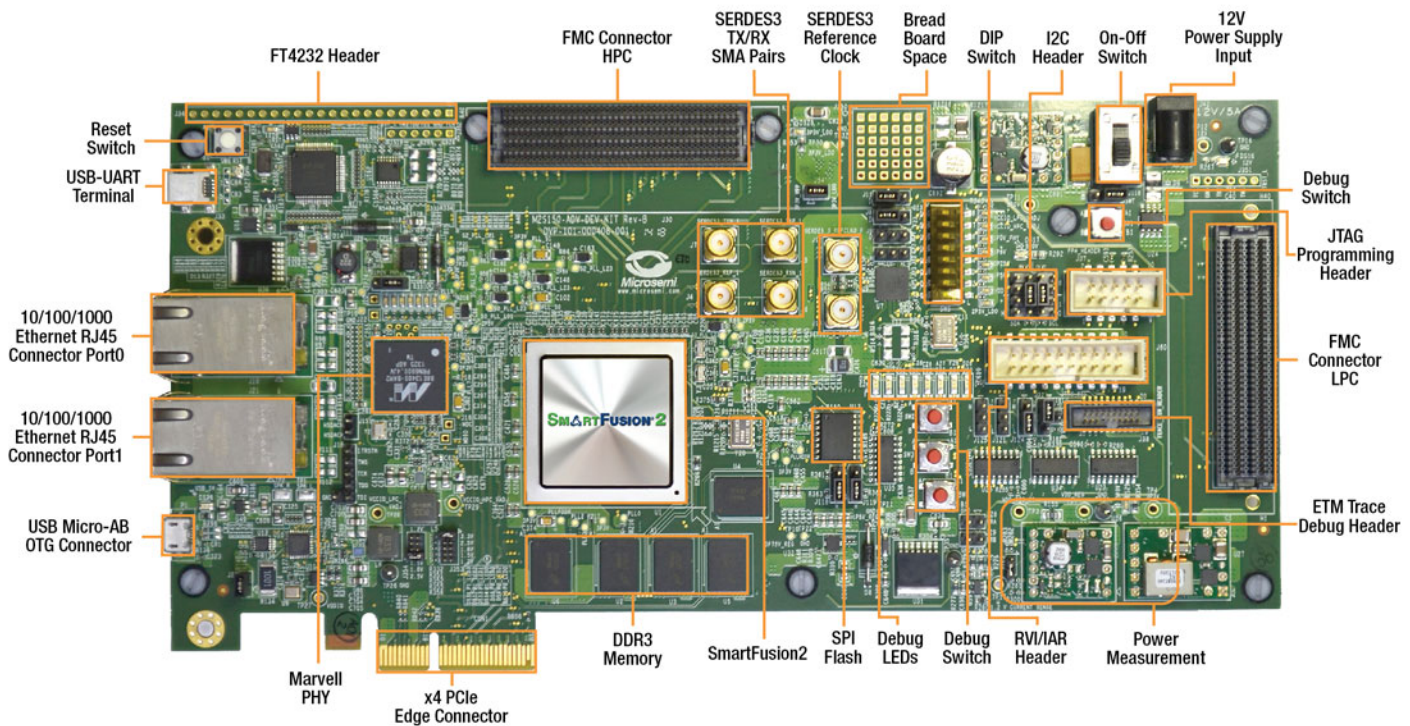
- Microprocessor applications
- Embedded ARM[®] Cortex[™]-M3 processor-based systems
- Motor control
- Industrial automation
- Power measurement
- Security applications
- FMC expansion
- High speed I/O applications
- Universal serial bus (USB) applications (OTG support)

Hardware Feature Overview

- SmartFusion2 SoC FPGA in the FCG1152 package (M2S150T-1FCG1152ES, 150K LE)
- DDR3 synchronous dynamic random access memory (SDRAM)
 - 4x256 MB for storing data.
 - 256 MB for storing the ECC bits
- SPI flash memory
 - 1 GB SPI flash connected to SPI port 0 of the SmartFusion2 SoC FPGA MSS.
 - 1 GB SPI flash connected to SmartFusion2 SoC FPGA fabric
- PCI Express Gen 2 x1 interface
- One pair SMA connectors for testing of the full-duplex SERDES channel
- Two FMC connectors with HPC/LPC pinout for expansion
- PCIe x4 edge connector

- RJ45 interface for 10/100/1000 Ethernet
- USB micro-AB connector
- Headers for I²C, SPI, GPIOs
- FTDI programmer interface to program the external SPI flash
- JTAG/SPI programming interface
- RVI header for application programming and debug
- Flashpro programming header
- Embedded trace macro (ETM) cell header for debug
- QUAD 2:1 MUX/DEMUX high bandwidth bus switch
- Dual in-line package (DIP) switches for user application
- Push-button switches and LEDs for demo purposes
- Current measurement test points

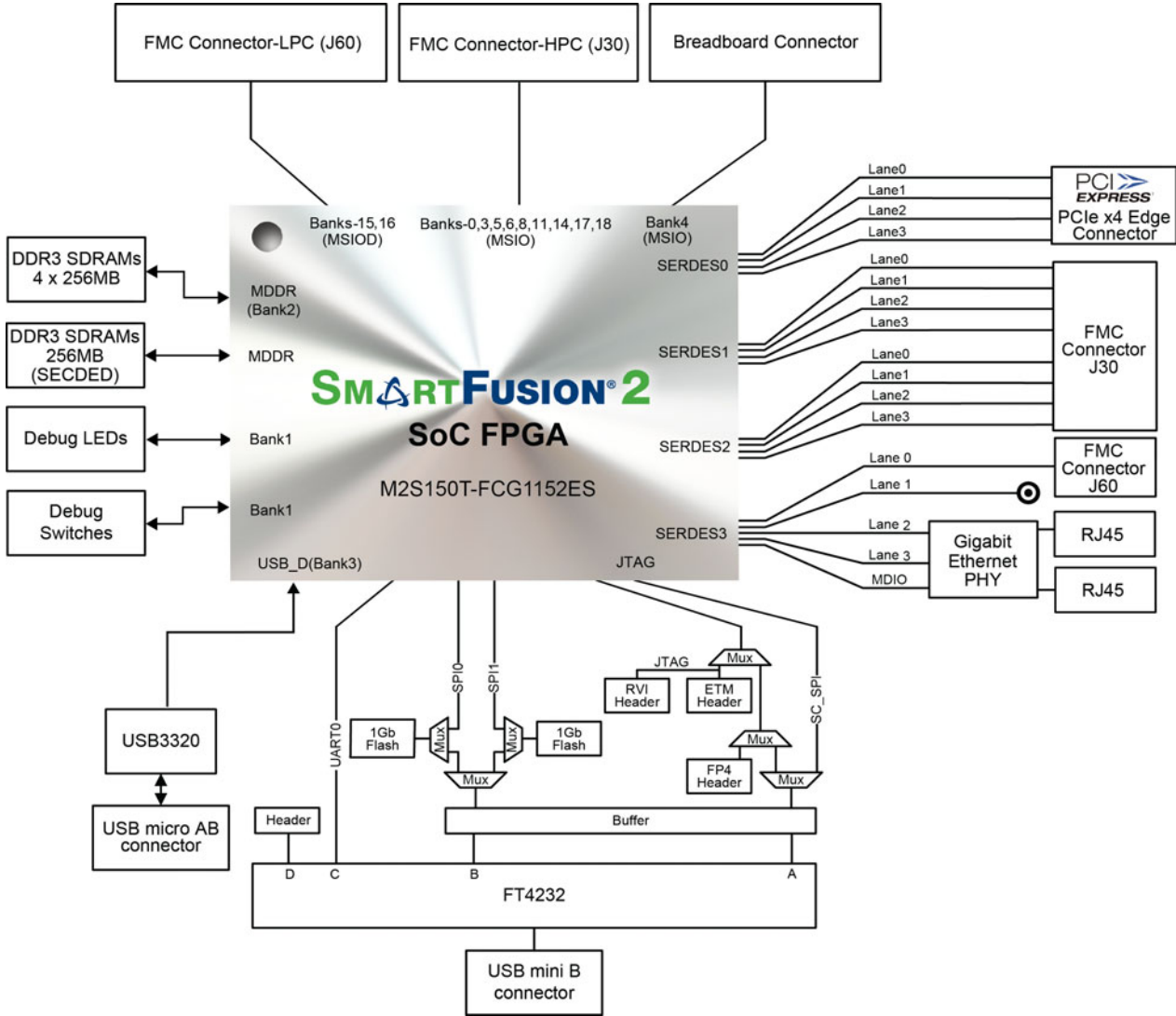
Development Board Callout



Embedded FlashPro5 Programming Procedures – REQUIRED FOR PROGRAMMING WITHOUT A STANDALONE FLASHPRO PROGRAMMER:

http://www.microsemi.com/document-portal/doc_download/134263-embedded-flashpro5-programming-procedures

Development Board Block Diagram



Software and Licensing

The SmartFusion2 SoC FPGA Advanced Development Kit is supported by the Libero[®] System-on-Chip (SoC) v11.4 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 Advanced Development Kit User's Guide](#) for more information.

The M2S150-ADV-DEV-KIT-ES requires a valid Platinum Libero SoC software license.

Upon receiving this kit, email your:

1. Full name
2. Address
3. Access code: **(available with kit)**
4. Sales or Purchase Order Number

to Microsemi at:

M2S150AdvDevKit.License@microsemi.com to receive your free 1-year Platinum license.

Documentation Resources

For further kit information, including user's guide, tutorial, and full design examples, refer to the [SmartFusion2 SoC FPGA Advanced Development 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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