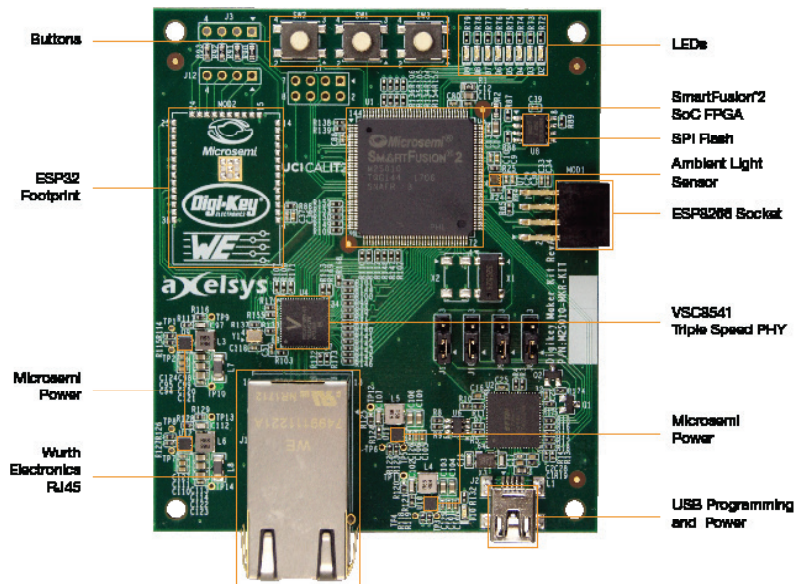


Digi-Key SmartFusion2 Maker Board

Kit Contents—M2S010-MKR-KIT

Qty	Description
1	Digi-Key Maker Board
1	Quickstart card



Digi-Key SmartFusion[®]2 Maker Board

Digi-Key's Maker Board provides designers with a low-cost evaluation board to access the SmartFusion2 system-on-chip (SoC) FPGA. This device integrates a 12K LE flash-based FPGA fabric, a 166 MHz ARM Cortex-M3 processor, DSP blocks, SRAM, eNVM, and general purpose GPIO interfaces all on a single chip.

The Digi-Key SmartFusion2 Maker Board (M2S010-MKR-KIT) supports a USB port for JTAG programming, UART communications, and powering the board. The board also features an SPI flash, a 50 MHz clock source, 8 user LEDs, 2 user pushbuttons, a light sensor, and the VSC8541 PHY for 100 Mbps/1 Gbps Ethernet. There are also two unpopulated laid out connections—these pinouts support an ESP8266 and an ESP32 Wi-Fi/Bluetooth module (not included). The pinout is set up for programming and communication to the SmartFusion2 SoC FPGA. The board can be used with Microsemi's Libero SoC v11.8 software or more recent versions of it. SoftConsole, an IDE for C/C++ programming of the ARM Cortex-M3 is available. The kit is powered through an LX7167A power module and includes integrated FlashPro5 programming hardware.



Microsemi Corporate Headquarters
One Enterprise, Aliso Viejo, CA 92656 USA
Within the USA: +1 (800) 713-4113
Outside the USA: +1 (949) 380-6100
Fax: +1 (949) 215-4995
Email: sales.support@microsemi.com
www.microsemi.com

©2017 Microsemi Corporation. All rights reserved.
Microsemi and the Microsemi logo are registered trademarks of Microsemi Corporation. All other trademarks and service marks are the property of their respective owners.

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California and has approximately 4,800 employees globally. Learn more at www.microsemi.com.

Microsemi makes no warranty, representation, or guarantee regarding the information contained herein or the suitability of its products and services for any particular purpose, nor does Microsemi assume any liability whatsoever arising out of the application or use of any product or circuit. The products sold hereunder and any other products sold by Microsemi have been subject to limited testing and should not be used in conjunction with mission-critical equipment or applications. Any performance specifications are believed to be reliable but are not verified, and Buyer must conduct and complete all performance and other testing of the products, alone and together with, or installed in, any end-products. Buyer shall not rely on any data and performance specifications or parameters provided by Microsemi. It is the Buyer's responsibility to independently determine suitability of any products and to test and verify the same. The information provided by Microsemi hereunder is provided "as is, where is" and with all faults, and the entire risk associated with such information is entirely with the Buyer. Microsemi does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other IP rights, whether with regard to such information itself or anything described by such information. Information provided in this document is proprietary to Microsemi, and Microsemi reserves the right to make any changes to the information in this document or to any products and services at any time without notice.

xxxxx 08.17



Pin Labels

LEDs (Red)

Function	FPGA Pin	Pin Name	Level
LED0	117	DDRIO37NB0	Active Low
LED1	118	DDRIO37PB0	Active Low
LED2	122	DDRIO43NB0	Active Low
LED3	123	DDRIO43PB0	Active Low
LED4	124	DDRIO44NB0	Active Low
LED5	125	DDRIO44PB0	Active Low
LED6	128	DDRIO47NB0	Active Low
LED7	129	DDRIO47PB0	Active Low

Push Buttons

Function	FPGA Pin	Pin Name
USER_PB1	143	DDRIO59PB0/GB0
USER_PB2	144	DDRIO63PB0

ESP8266 Module

Pin Number	Function	FPGA Pin	Pin Name
2	TXO	83	MSIO1NB2/USB_DIR_B
3	GPIO2	81	MSIO0NB2/USB_DATA7_B
4	CHPD	90	MSIO3NB2/USB_DATA1_B
5	GPIO0	93	MSIO5NB2/USB_DATA5_B
6	RST	88	MSIO3PB2/USB_DATA0_B
7	RXI	82	MSIO1PB2/USB_XCLK_B

ESP32 Wi-Fi-BT-BLE Module

Pin Number	Function	FPGA Pin	Pin Name
3*	BT_EN	19	MSIO79NB7
6	IO34	8	MSIO71PB7
7	IO35	9	MSIO72NB7
24	IO2	20	MSIO79PB7/GB1
25	IO0	7	MSIO71NB7
30	IO18	10	MSIO73NB7
31	IO19	13	MSIO76NB7
34*	RXD0	4	MSIO67PB7
35*	TXD0	3	MSIO67NB7
36	IO22	14	MSIO76PB7
37	IO23	15	MSIO77NB7

*Set jumpstart to Wi-Fi module to activate pin.

Software and Licensing

Libero® SoC Design Suite offers high productivity with its comprehensive, easy-to-learn, easy-to-adopt development tools for designing with Microsemi's low power Flash FPGAs and SoC. The suite integrates industry standard Synopsys Synplify Pro® synthesis and Mentor Graphics ModelSim® simulation with best-in-class constraints management and debug capabilities.

Download the latest Libero SoC release

www.microsemi.com/products/fpga-soc/design-resources/design-software/libero-soc#downloads

Generate a Libero SoC Silver license for your board

www.microsemi.com/products/fpga-soc/design-resources/licensing

Download the SoftConsole IDE installation files for Linux and Windows at

www.microsemi.com/products/fpga-soc/design-resources/design-software/softconsole#downloads

Documentation Resources

For more step by step instructions about the Digi-Key Maker board, including user's guides, tutorials, and design examples, see the documentation at

<https://www.digikey.com/product-detail/en/microsemi-corporation/M2S010-MKR-KIT/1100-1288-ND/6709124>

Included Demo Design

When the Digikey SmartFusion2 Maker Board is powered on, all 8 LEDs will flash on and off repeatedly. Once user button 1 is pressed, the ambient light sensor will be continuously read. The result of the light sensor reading will be shown visually across the 8 LEDs as a bar graph.

