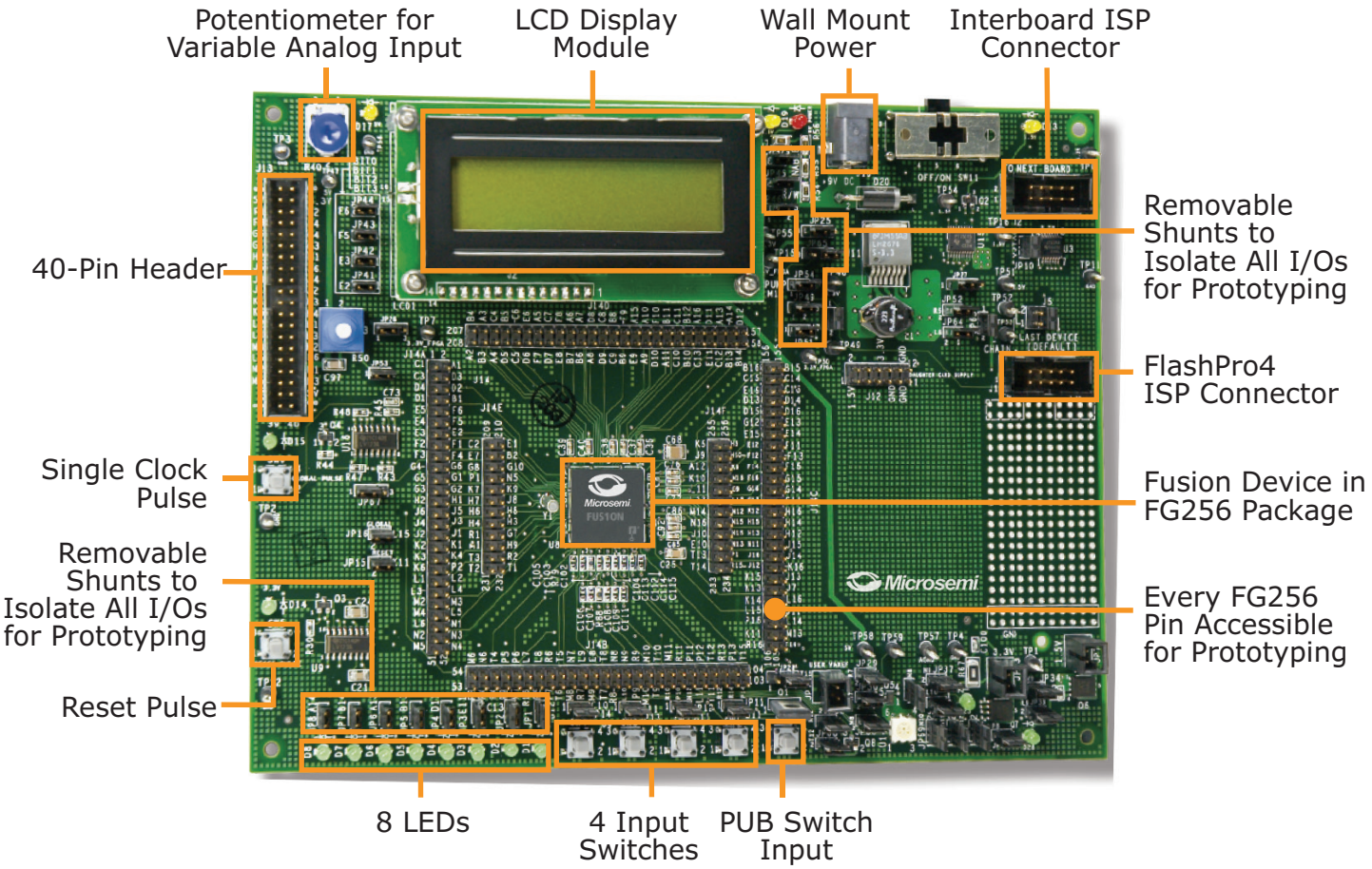
Fusion Starter Kit
Quickstart Card

Kit Contents—AFS-EVAL-KIT

Quantity	Description
1	Evaluation board with an AFS600-FG256 Fusion device
1	FlashPro4 programmer
1	9 V power supply with international adapters
1	Quickstart card



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Overview

The Fusion® Starter Kit contains basic requirements for fully experimenting with SoC Products Groups Fusion Analog mixed signal FPGA capabilities. The starter kit includes all I/Os connected to headers that can be connected to an external system and isolated from other components on the board.

The Fusion architecture provides access to a one-chip flash FPGA solution containing both analog and digital components, including a built-in flash drive.

Jumper Settings

There are several special jumpers and pins on the starter kit that need attention. Select the appropriate jumper settings for your design. Function and location of each jumper is available in the Fusion Starter Kit User's Guide. See the Documentation Resources section for more information.

Before powering up the board for running demo design, make sure the jumpers are in the following positions.

Jumper	Development Kit Function	Setting	Voltage
JP25	Selects value of VMV1	2–3	3.3 V
JP26	Selects value of VMV0	2–3	3.3 V
JP27	VJTAG voltage selection	2–3	3.3 V
JP28	Determines whether 1.5 V is internally generated or externally generated	1–2	Internal 1.5 V regulator

Running the Demo Design

To test the board, you can program the board with the demo design. The programming file for the demo can be downloaded from the Fusion Starter Kit Quickstart Card on the Fusion Starter Kit page. See the Documentation Resources section for more information.

The demo design configures the ADC input channels to sample the voltage and current provided to different loads, and the temperature from an on-board temperature sensor. Single-color LEDs and LCD are used to demonstrate the voltage levels, and a tricolor LED is used to indicate the different temperature levels with different colors.

After successful programming, the LCD shows "FUSION" after board power-up. The following table lists the different functionalities of the potentiometer, LEDs, and switches on the Fusion evaluation board for the demo design.

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On-Board Devices and Functions

Device	Function
Potentiometer R50	Turning the potentiometer drives AV0 with analog voltage 0 V–5 V.
LED D5	When AV0 > 1.5 V, D5 lights up.
LED D6	When AV0 > 2.5 V, D6 lights up.
LED D7	When AV0 > 3.3 V, D7 lights up.
LED D8	When AV0 > 4.5 V, D8 lights up.
Switch SW7	When depressed, the PUB pad is grounded to power up the voltage regulator.
Switch SW6	When depressed, generates a '1' to reset the 2-bit counter.
Switch SW5	When depressed, generates a clock pulse to the 2-bit counter.
Switch SW4	When depressed, shows the AFS600 core current on the LCD.
Switch SW3	When depressed, shows the AFS600 core voltage on the LCD.
Switch SW2	When depressed, shows the temperature sensed by the temperature sensor on the LCD.
Switch SW1	When depressed, shows the potentiometer output voltage on the LCD.
Tricolor LED U1	When temperature AT > 20 °C, the LED lights up blue.
Tricolor LED U1	When temperature AT > 30 °C, the LED lights up green.
Tricolor LED U1	When temperature AT > 40 °C, the LED lights up red.

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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.

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Documentation Resources

For more information about the Fusion Starter Kit, including user's guides, tutorials, and design examples, see the documentation at www.microsemi.com/products/fpga-soc/design-resources/dev-kits/fusion/fusion-starter-kit#documents.

Support

Technical support is available online at www.microsemi.com/soc/support and by email at soc_tech@microsemi.com

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