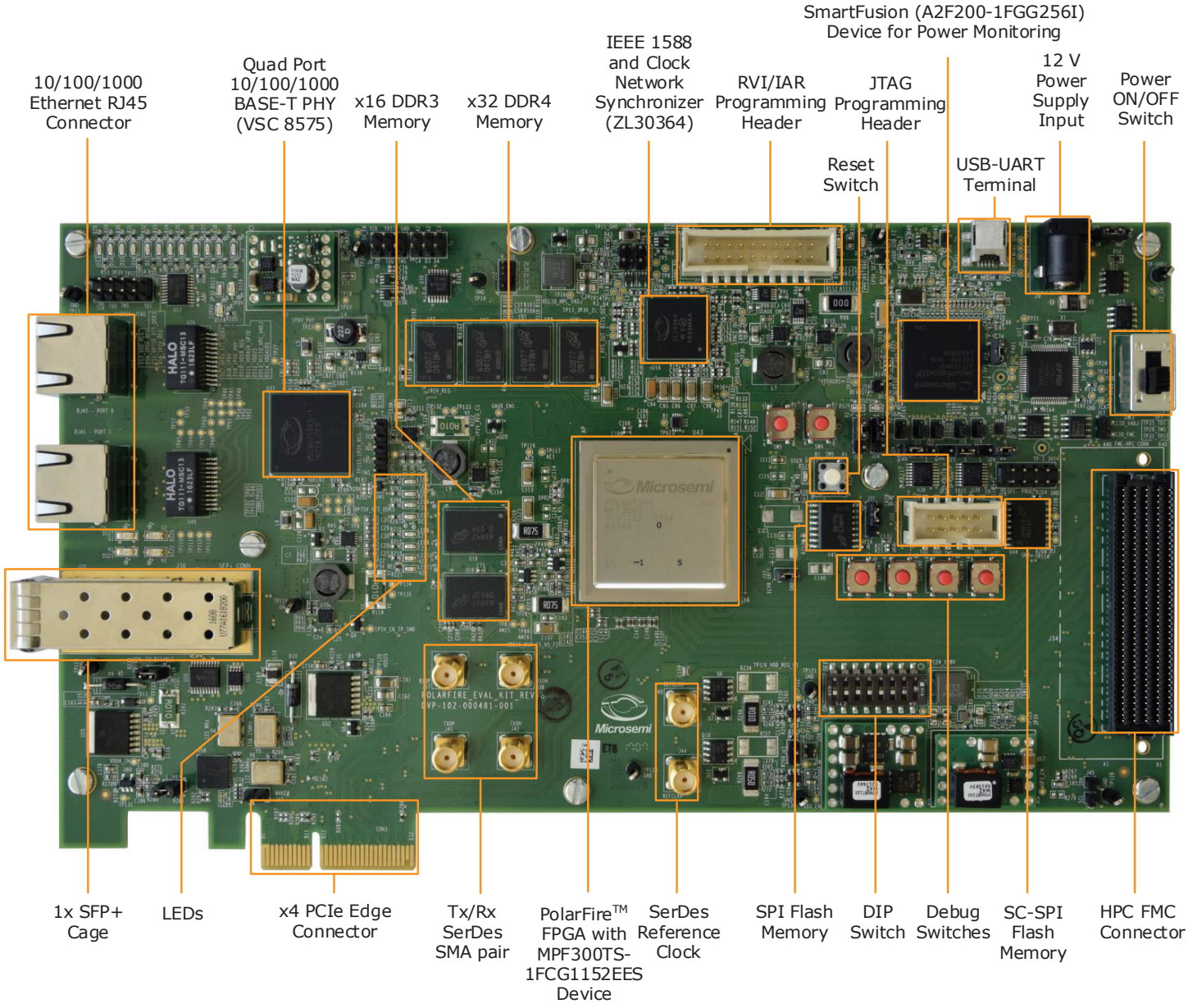
PolarFire Evaluation Kit Quickstart Card

Kit Contents—MPF300-EVAL-KIT-ES

Quantity	Description
1	PolarFire FPGA with 300K LE MPF300TS-1FCG1152EES Evaluation Board
1	USB 2.0 A to Mini-B cable
1	12 V, 5 A AC power adapter and cord
1	1 Year Libero Gold Software License ($995 value)
1	Quickstart card



Overview

Microsemi's PolarFire Evaluation Kit is an ideal platform for evaluating the lowest power, cost-optimized, non-volatile PolarFire FPGAs. This kit has a full-featured 300K LE PolarFire FPGA, which integrates reliable non-volatile FPGA fabric, 12.7 Gbps transceivers, 1.6 Gbps I/Os, best-in-class-performance, hardened security IP, and crypto processors. The silicon features power optimization with the lowest static power for 28 nm non-volatile FPGAs, its low power mode; Flash*Freeze yields best-in-class standby power and it has integrated DDR PHY, PCIe endpoint/root port, crypto processor hard IPs.

This kit enables easy design of applications that can include:

- Industrial automation
- Wireline access networks and cellular infrastructure
- Power measurement
- Security applications
- FMC expansion
- IEEE 1588 applications
- High speed I/O applications
- Universal Serial Bus (USB) applications
- Imaging and video applications

Hardware Features

- 300K LE PolarFire FPGA in an FCG1152 package (MPF300TS-1FCG1152EES)
- 1x SFP+ cage
- IEEE 1588 PLL
- SMA connectors for testing of full-duplex 12.7 Gbps SerDes channel
- 4 GB DDR4 x32 and 2 GB DDR3 x16
- PCI Express (x4) edge connector
- 2x RJ45 for 10/100/1000 Ethernet using SGMII on GPIO
- Dual 10/100/1000BASE-T PHY (VSC8575)
- SATA interface
- Power management unit for 1 V or 1.05 V PolarFire FPGA core voltage
- USB to UART Interface
- Embedded programming and debugging using SPI and JTAG
- On-board power monitoring
- 2x 1 GB SPI flash memory

Programming

Microsemi's PolarFire Evaluation Kit provides feasible programmability using an on-board embedded FlashPro5 programmer.

The board can also be programmed with standalone FlashPro4/5 hardware.

IAP programming and debug support is also provided on the board.

See Documentation Resources for more information about programming procedures.

Jumper Settings

The PolarFire Evaluation Kit comes with the following default jumper settings.

Jumper	Pin	Factory Default
J18, J19, J20, J21, and J22	2-3	Shorted
J17	1-2	Open

See Documentation Resources for full details about jumper settings.

Running the Demo

The PolarFire Evaluation Board comes with a preprogrammed JESD204B standalone demo design. The demo operates in loopback mode to establish a standalone JESD interface demo that does not require analog-to-digital (ADC) or digital-to-analog converters (DAC) by looping data between the TX and RX IP cores for JESD204B.

In order to run the demo, install the JESD204B_GUI application and set up the board as outlined in the following steps. For detailed instructions, refer to DG0755: PolarFire FPGA JESD204B Standalone Interface Demo Guide.

1. Connect the power supply cable to the J9 connector on the board.
2. Connect the USB cable from the host PC to the J5 connector (FTDI port) on the board.
3. Power on the board using the SW3 slide switch.