# PolarFire Splash Kit

## Quickstart Card

### Kit Contents — MPF300-SPLASH-KIT-ES

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PolarFire Splash Kit Board with MPF300TS-1FCG484EES device</td>
</tr>
<tr>
<td>1</td>
<td>12 V power pack/AC adapter</td>
</tr>
<tr>
<td>1</td>
<td>USB 2.0 A-male to Mini-B</td>
</tr>
<tr>
<td>1</td>
<td>1 year free Libero Gold Software license</td>
</tr>
<tr>
<td>1</td>
<td>Quickstart card</td>
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</tbody>
</table>

![PolarFire Splash Kit Board](image_url)

**Key Components:**
- 10/100/1000 BASE-T PHY (VSC6541)
- Power Status LEDs
- Reset Switch
- Power ON/OFF Switch
- 12 V Power Supply Input
- USB UART Terminal
- FTDI Chip
- LPC FMC Connector
- DIP Switch
- JTAG Programming Header
- User Push-Button Switches
- 10/100/1000 Ethernet FU45 Connector

**ASICs:**
- X32 DDR4 Memory
- X4 PCIe Edge Connector
- PolarFire™ FPGA with MPF300TS-1FCG484EES
- SmartFusion (A2F200M33-1FCG256) Device for Power Monitoring
Overview
Microsemi’s PolarFire Splash Kit is a general-purpose hardware platform for evaluating the lowest power, cost-optimized, non-volatile PolarFire FPGAs. This kit has a 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, and crypto processor hard IPs.

Design Applications
- Industrial automation
- Wireless access networks and cellular infrastructure
- FMC expansion
- High-speed I/O
- Imaging and video
- Security
- Power measurement

Hardware Features
- 300K LE PolarFire FPGA in a FCG484 package (MPF300TS-1FCG484EES)
- PCI Express (x4) edge connector
- FMC connector (LPC)
- x32 LPDDR4
- On-board power monitoring
- RJ45 interface for 10/100/1000 Ethernet using SGMII on GPIO
- USB for UART interface and programming
- 1 Gb SPI Flash memory
- JTAG and SPI programming interface
Programming
Microsemi’s PolarFire Evaluation Kit provides FPGA programmability using an on-board embedded FlashPro5 programmer.

The board can also be programmed with standalone FlashPro4/5 hardware (not included with kit).
IAP programming and debug support is also provided on the board.
See Documentation Resources for more information about programming procedures.

Jumper Settings

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Pin</th>
<th>Factory Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>J5, J6, J7, J8, J9</td>
<td>2-3</td>
<td>Closed</td>
</tr>
<tr>
<td>J4, J11, J32</td>
<td>1-2</td>
<td>Closed</td>
</tr>
</tbody>
</table>

Running the Demo Design
The PolarFire Splash Board comes with a preprogrammed JESD204B standalone demo design.

Setting Up the Board
The following steps set up the PolarFire Splash Kit Board to run the JESD204B demo.
1. Connect the power supply cable to the J2 connector on the board.
2. Connect the USB cable from the host PC to the J1 connector (FTDI port) on the board.
3. Power on the board using the SW1 slide switch.

The following LEDs glow when the board is completely powered-up and the demo design is running.
- Power supply LEDs: LED1 to LED6
- Demo LEDs: DS1, DS3, DS4, DS5, DS6, and D5
Software and Licensing

Libero® SoC PolarFire Design Suite offers high productivity with its comprehensive, easy-to-learn, easy-to-adopt development tools for designing with Microsemi’s PolarFire FPGAs. 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 https://www.microsemi.com/products/fpga-soc/design-resources/design-software/libero-soc-polarfire#downloads

A Gold license is required to program the PolarFire Splash Kit. A Software ID letter enclosed with the kit contains Software ID and instructions on how to generate this license. For more information, see https://www.microsemi.com/products/fpga-soc/design-resources/dev-kits/polarfire/polarfire-splash-kit#licensing

Documentation Resources

For more information about the PolarFire Splash Kit, including user's guides, tutorials, and design examples, see the documentation at https://www.microsemi.com/products/fpga-soc/fpga/polarfire-fpga#documentation

Support

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

Microsemi sales offices, including representatives and distributors, are located worldwide. To find your local representative, go to http://www.microsemi.com/salescontacts