

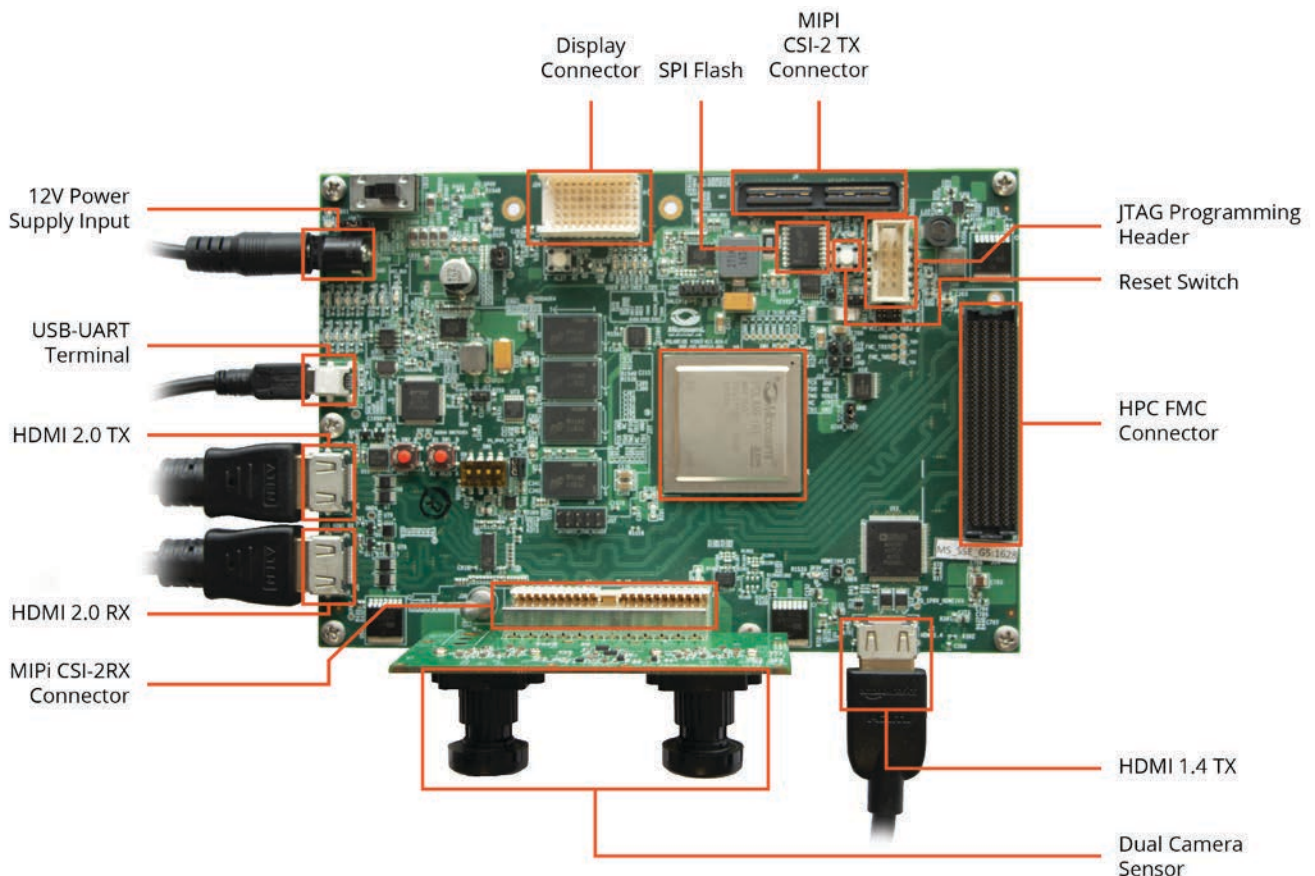
PolarFire Video and Imaging Kit

Quickstart Card

Kit Contents MPF300-VIDEO-KIT-NS

Quantity	Description
1	PolarFire FPGA with 300K LE MPF300T-1FCG1152E Board
1	Dual Camera Sensor board (VIDEO-DC-DUALCAM)
1	HDMI cable
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 Video Kit offers high-performance evaluation of 4K image processing and rendering using dual camera sensors as well as numerous display interfaces. The kit is purpose built for effortless prototyping of popular imaging and video protocols including MIPI CSI-2 TX, MIPI CSI-2 RX, HDMI 1.4 TX, HDMI 2.0, DSI and HD/3G SDI. With a 300 K logic element (LE) PolarFire FPGA with DDR4 and SPI-flash, the kit is ideally suited for mid-bandwidth imaging and video applications. The PolarFire device on-board optimizes input/outputs (I/Os), transceiver rates, look-up table (LUT4) architecture, memories, and DSPs for mid-density/mid-bandwidth ranges to deliver a superior solution at much lower power and lower total cost of ownership.

This kit enables easy design of applications that can include:

- Machine Vision
- Displays (Protocol conversion)
- Medical Imaging
- Surveillance
- Stereo Vision (Depth Estimation)

Hardware Features

- 300K LE PolarFire FPGA in an FCG1152 Package
- Sony Dual Camera Sensor (IMX334) over Amphenol FCI connector (CSI-2 RX)
- HPC FMC Connector
- 4 GB DDR4 x64
- Power Management Unit for 1 or 1.05 V PolarFire FPGA core voltage
- USB to UART Interface
- Embedded programming and debugging using SPI and JTAG
- 1x 1GB SPI Flash Memory
- HDMI 2.0 RX and TX
- HDMI 1.4 TX
- DSI Connector
- CSI-2 TX Connector

Programming

Microsemi's PolarFire Video 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

Jumper	Default Setting
J19, J28 and J36	1-2
J24	2-4
J25	5-6

See [Documentation Resources](#) for full details about jumper settings.

Running the Demo

The PolarFire Video Board comes with a preprogrammed picture in picture demonstrative design. Images captured from the camera over MIPI CSI-2 are processed by the dedicated ISP engine in the PolarFire fabric and displayed over HDMI.

In order to run the demo, set up the board as outlined in the following steps. For detailed instructions, refer to DG0849: PolarFire Dual Camera Video Kit Demo Guide.

1. Insert the Dual camera module into J38 on the PolarFire Video kit. Ensure to remove the camera lens caps.
2. Connect the 12 V power supply to connector J20 and the USB mini cable to connector J12.
3. Connect a HDMI cable from J2 to J35. Connect another HDMI cable between the HDMI port of a display and J1. If only one HDMI cable is available: Connect a HDMI cable between the HDMI port of the display and J2.
4. Power ON the board by sliding SW4 to the ON position.
5. The display will become “active” and a camera feed can be observed on the monitor; a picture in picture demonstration with a smaller inset image moving on the screen.

We recommend using a display device with a HDMI port. Avoid using HDMI adapters for optimal results.