

## PolarFire FPGA Imaging

### Industry leading low power Imaging

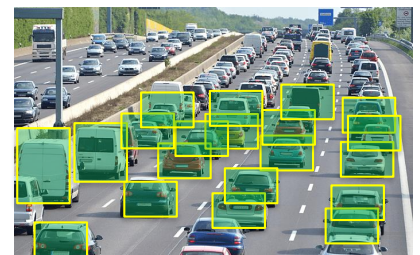
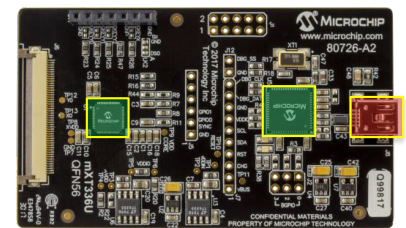
Microchip's FPGA product portfolio offers scalable production ready IPs through in-house development and using our third party partner ecosystem. The in-house IP portfolio covers the latest embedded vision IPs like MIPI, SLVS-EC, CoaXPress, Serial Digital Interface (SDI), HDMI etc, while our partners cover offerings in Machine Learning, H.264, DisplayPort and HDCP IPs, with many more IPs being added continuously.

Microchip FPGAs enable power-optimized machine learning inference on the edge. Compared to MCU, CPU, GPUs and AI ASICs, Microchip FPGAs: Offer large DSP compute capacity (up to 1480 x18 x 18 Math Blocks) vs. MCU/ MPU/ CPU

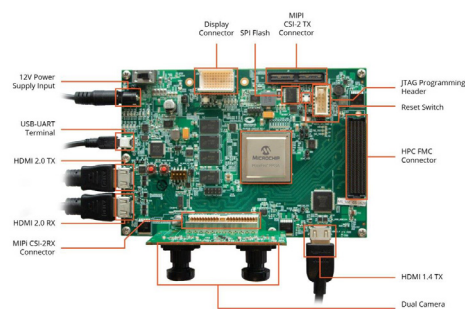
- ◆ Have lower power dissipation (~3-4W Core Power) vs. CPU/ GPU (>20W)
- ◆ Have up to 50% lower power dissipation over competitive mid-density FPGAs
- ◆ Offer scalability based on required performance
- ◆ Integrate video, connectivity, security etc. vs. ASICs

Examples of Microchips IP:

IP	Features
MIPI CSI-2 Rx	Up to 1.5 Gbps per lane x 4 lanes, 4Kp60
MIPI CSI-2 Tx	Up to 1 Gbps per lane x 4 lanes, 4Kp30
HDMI 2.0 Rx	Supports HDMI 2.0, 8-bit color, 1080p60
HDMI 2.0 Tx	Supports HDMI 2.0 and 1.4, 4Kp60
USXGMII	Supports 1, 2.5, 5 and 10G over Ethernet Cu PHY: EDCS-1150953
3G/HD SDI Rx	1.485 Gbps HD-SDI and 2.97 Gbps 3G-SDI
3G/HD SDI Tx	1.485 Gbps HD-SDI and 2.97 Gbps 3G-SDI
6G/12G SDI Rx	6 Gbps (1080p120, 2160p30) and 12Gbps (2160p60)
6G/12G SDI Tx	6 Gbps (1080p120, 2160p30) and 12 Gbps (2160p60)
SLVS-EC	Supports 2.3 Gbps per lane x 2 lanes in RAW8 data type
CoaXPress v1.1	6.25 Gbps down, 20.83 Mbps up connections, Host and Device IP
ISP Bundle	Bayer, Video DMA, Alpha Blending, Color Space (RGB, YCbCr), Image Sharpening, Display Enhancement, Edge Detection, Display Controller, Pattern Generation, MIPI CSI-2 Rx/ Tx and LVDS 7:1 Display Rx/ Tx



Available 3rd Party IP includes: H.264 Encoders, JPEG 2000 Compression, CoaxExpress 12.5Gbps Host and Device, Core Deep Learning Caffe CNN Compiler and many more



### PolarFire FPGA Video and Imaging Kit

Microchip's PolarFire Video and Imaging Kit offers a 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.