

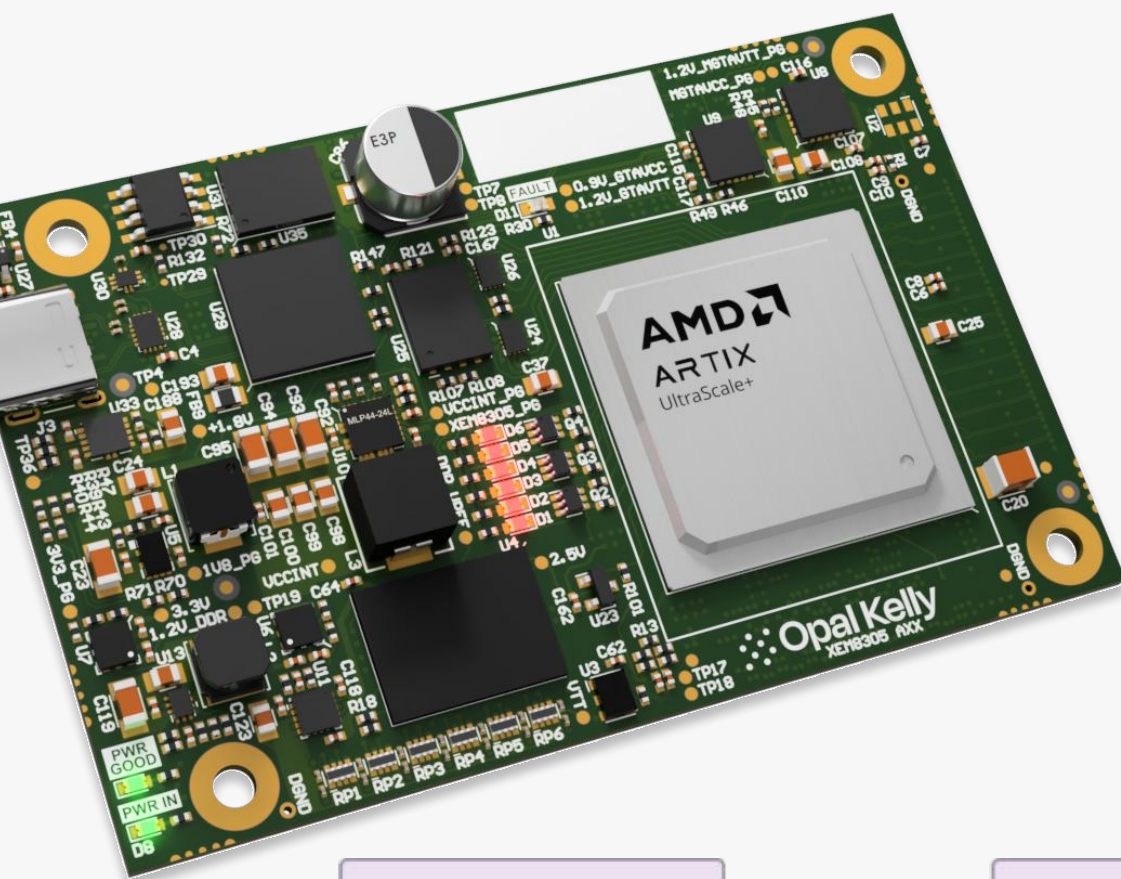
Company & Product Summary

XEM8305

FPGA Development Board and Integration Module

 **Opal Kelly**

XEM8305-AU15P

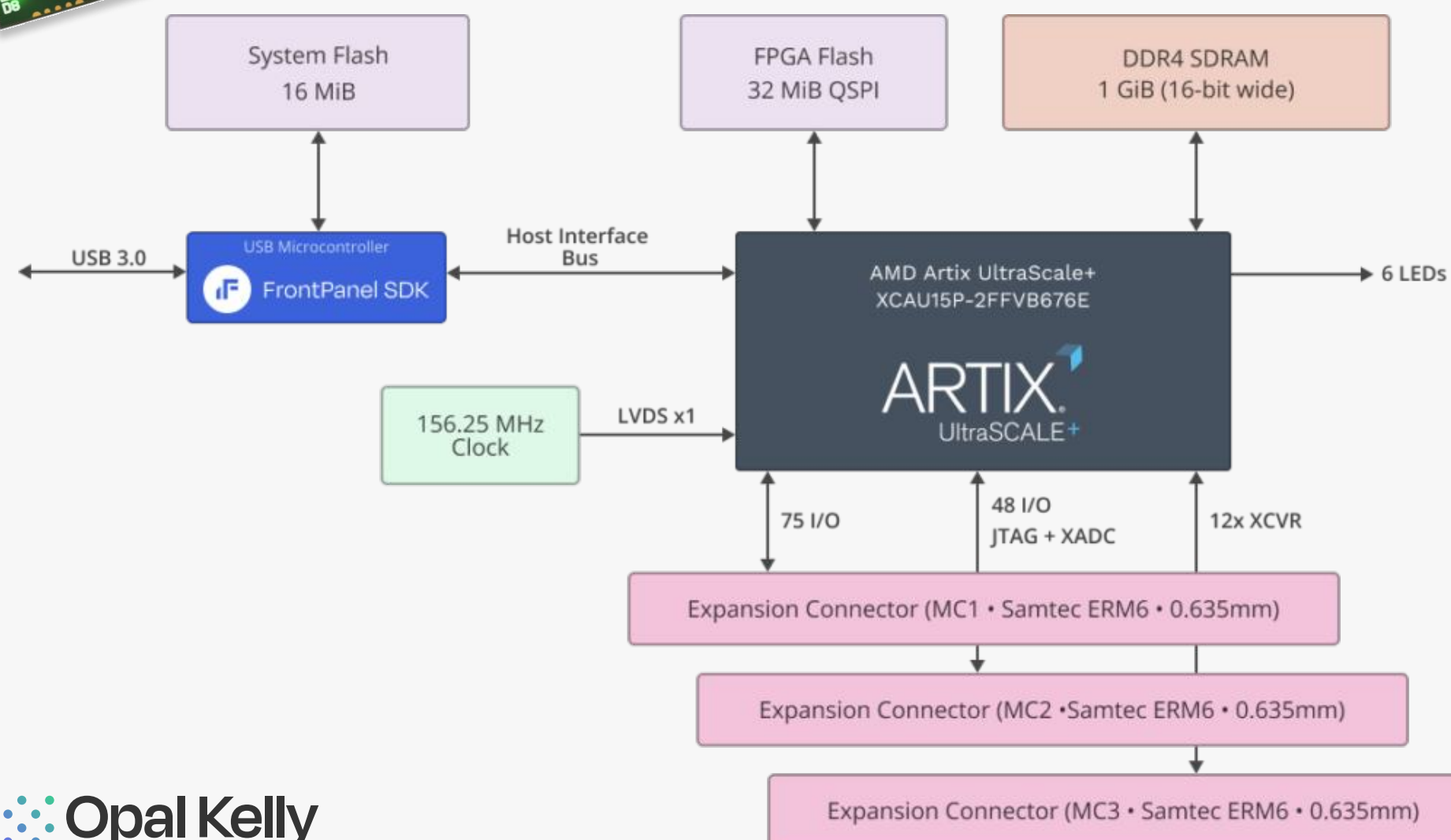


AMD Artix UltraScale+ AU15P

1 GiByte DDR4 memory
16 MiB SPI System Flash
32 MiB QSPI FPGA Flash



FrontPanel® SDK



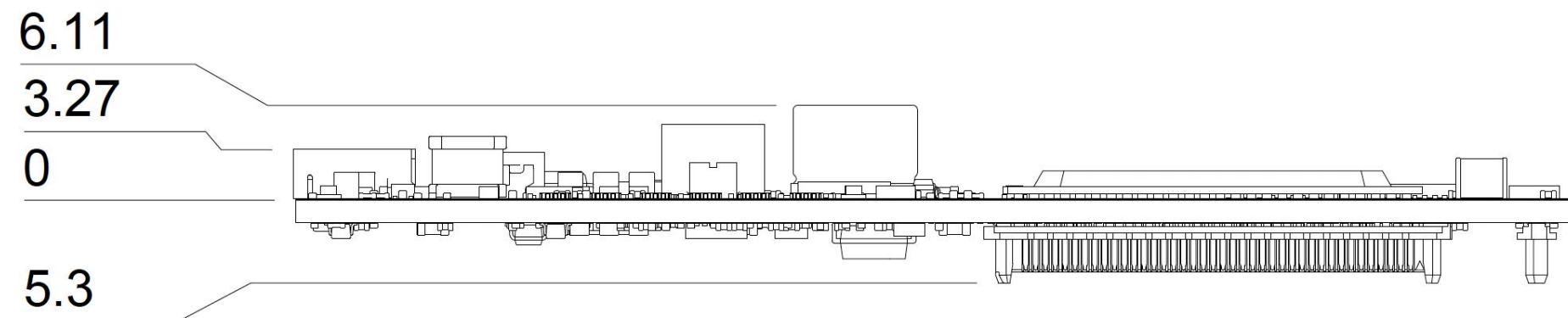
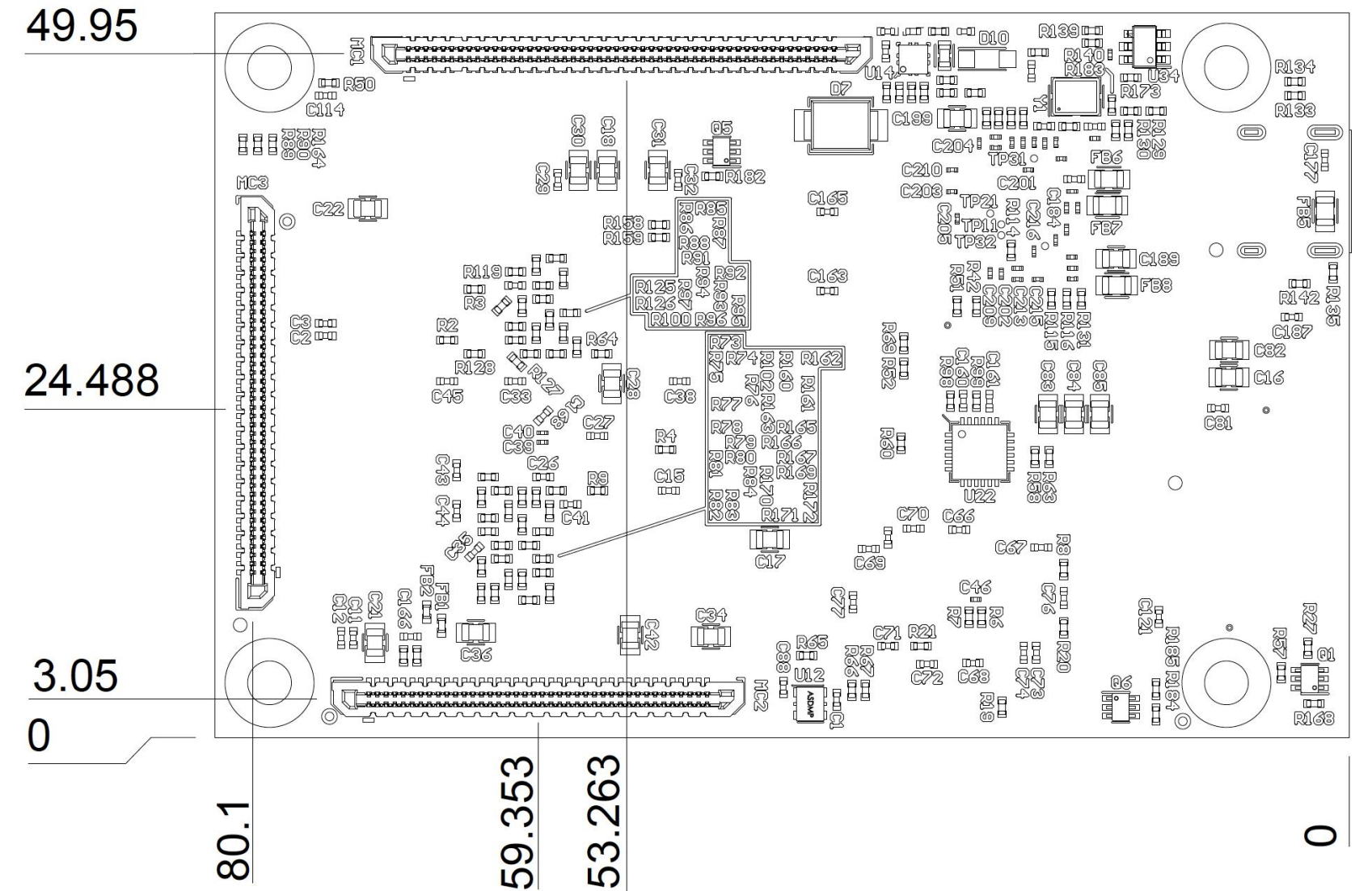
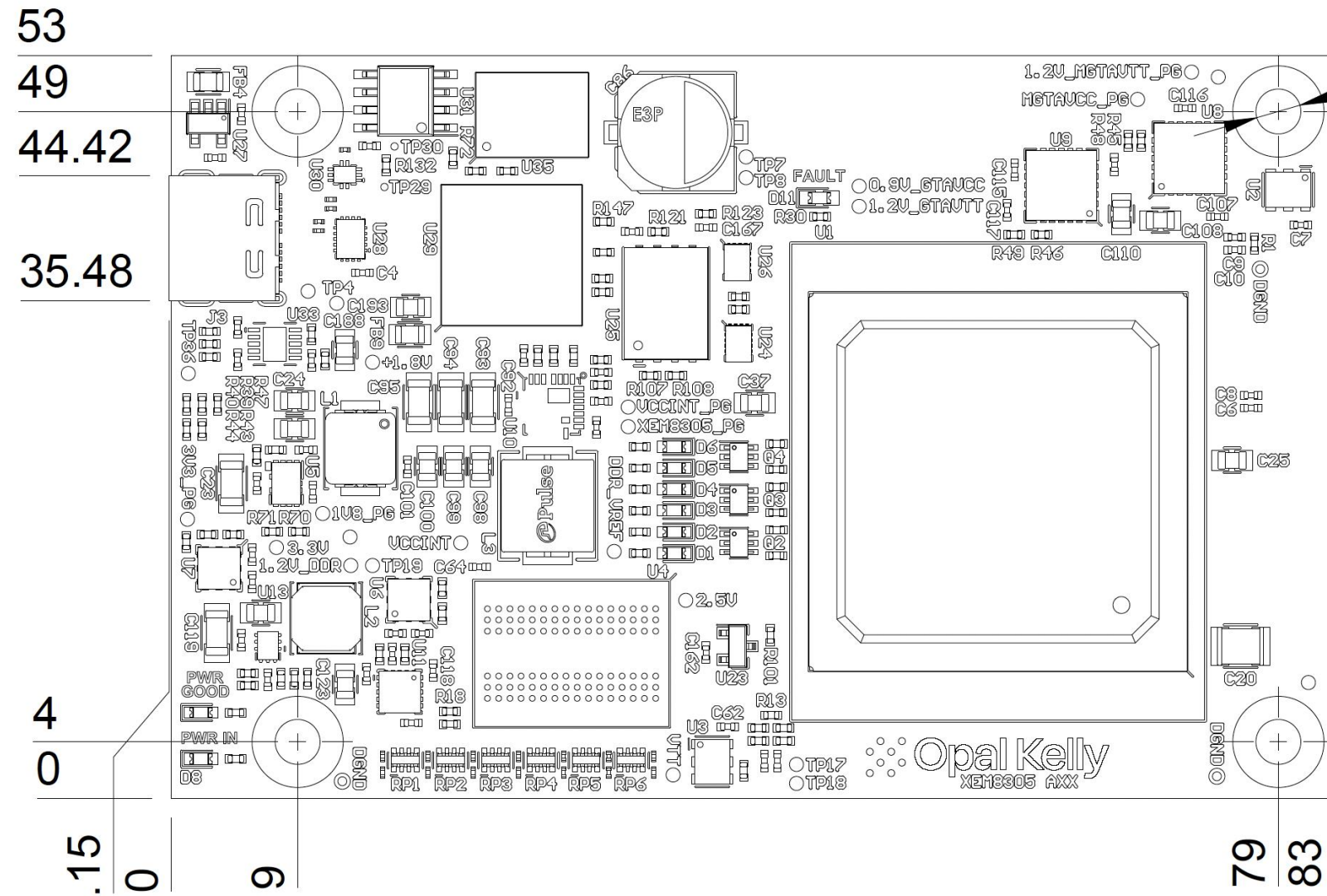
Host Interface	USB 3.0 Type C, SuperSpeed FrontPanel Support
FPGA	XCAU15P-2FFVB676E
Memory	1 GiByte DDR4, 16-bit wide data
NV Memory	16 MiB SPI System Flash 32 MiB QSPI FPGA Flash
Oscillator	156.25 MHz for FPGA fabric
FPGA I/O Voltage	Up to +3.3V

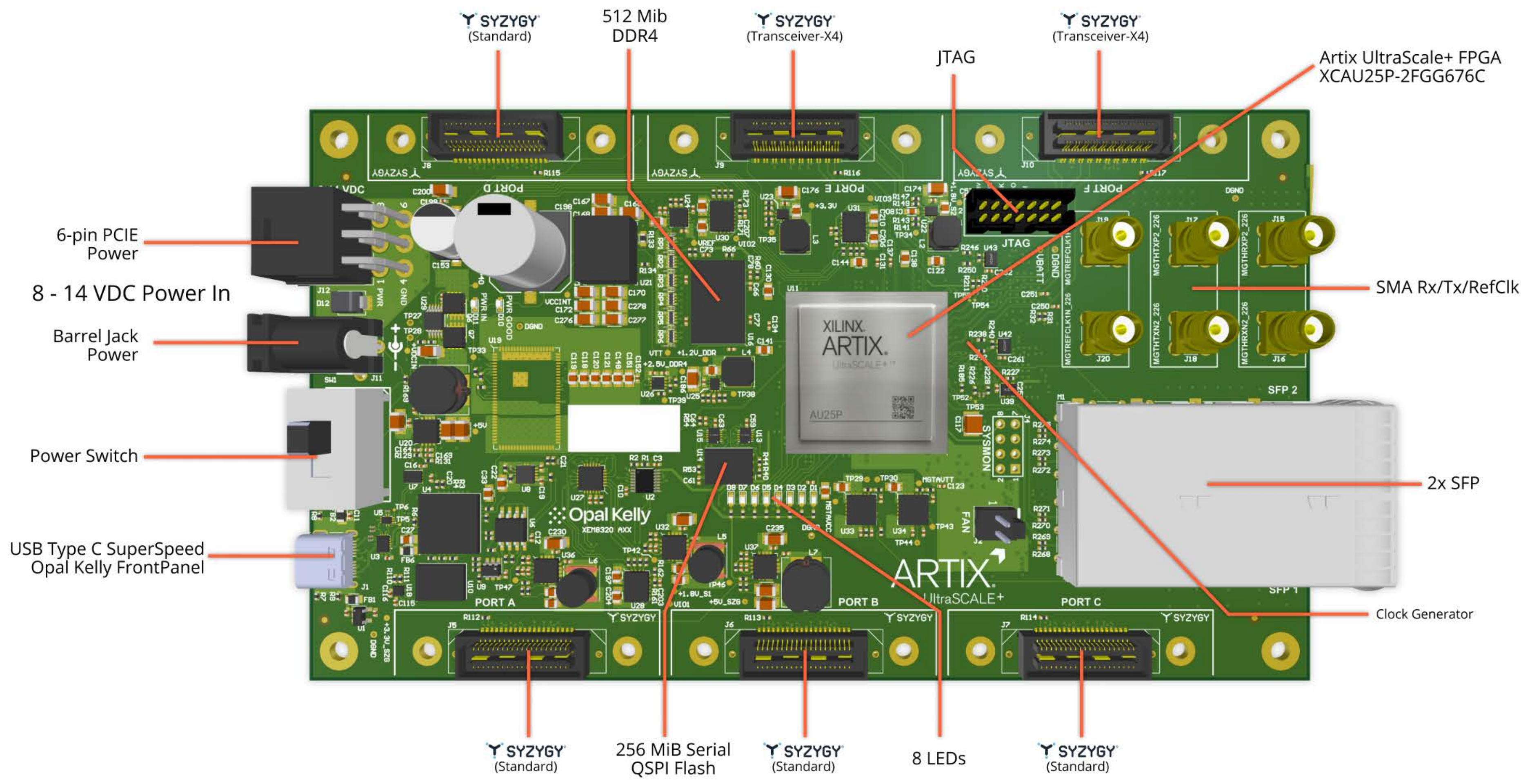
	MINIMUM	TYPICAL	MAXIMUM	UNITS
DC Input	+5.0		+15.0	VDC
DC Input Ripple	-	-	50	mVp-p
Operating Temperature	0	-	+70	°C
Storage Temperature	-50	-	+100	°C
Weight		30		grams
Clock Frequency		156.25		MHz
Clock Jitter		0.5		ps RMS

FEATURE	XEM8305-AU25P
FPGA	XCAU15P-2FFVB67
System Logic Cells	170,100
CLB Flip-Flops	155,520
CLB LUTs	77,760
Distributed RAM (max)	2.5 Mb
Block RAM (Mib)	5.1 Mb
Block RAM	144 blocks
DSP Slices	576
Clock Management Tiles	3
GTH Transceivers	12

XEM8305

Mechanical Drawings





SYZYGY (Standard)

512 Mib DDR4

SYZYGY (Transceiver-X4)

SYZYGY (Transceiver-X4)

Artix UltraScale+ FPGA XCAU25P-2FGG676C

6-pin PCIe Power

8 - 14 VDC Power In

Barrel Jack Power

Power Switch

USB Type C SuperSpeed Opal Kelly FrontPanel

JTAG

JTAG

SMA Rx/Tx/RefClk

2x SFP

Clock Generator

SYZYGY (Standard)

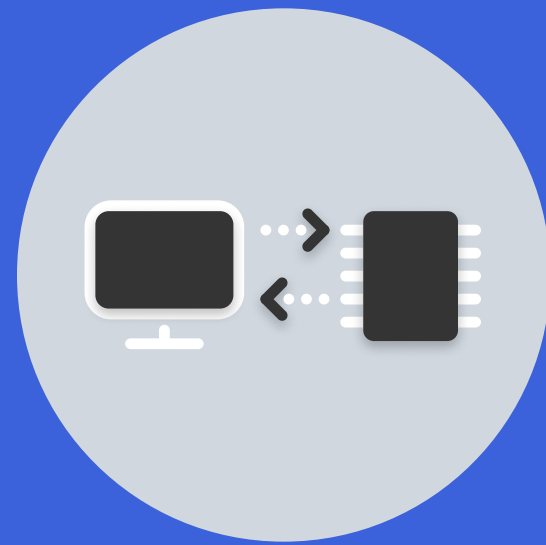
256 MiB Serial QSPI Flash

SYZYGY (Standard)

8 LEDs

SYZYGY (Standard)

FrontPanel[®] System Components



Software API and a robust driver to communicate with your device over USB, PCI Express and the internet.

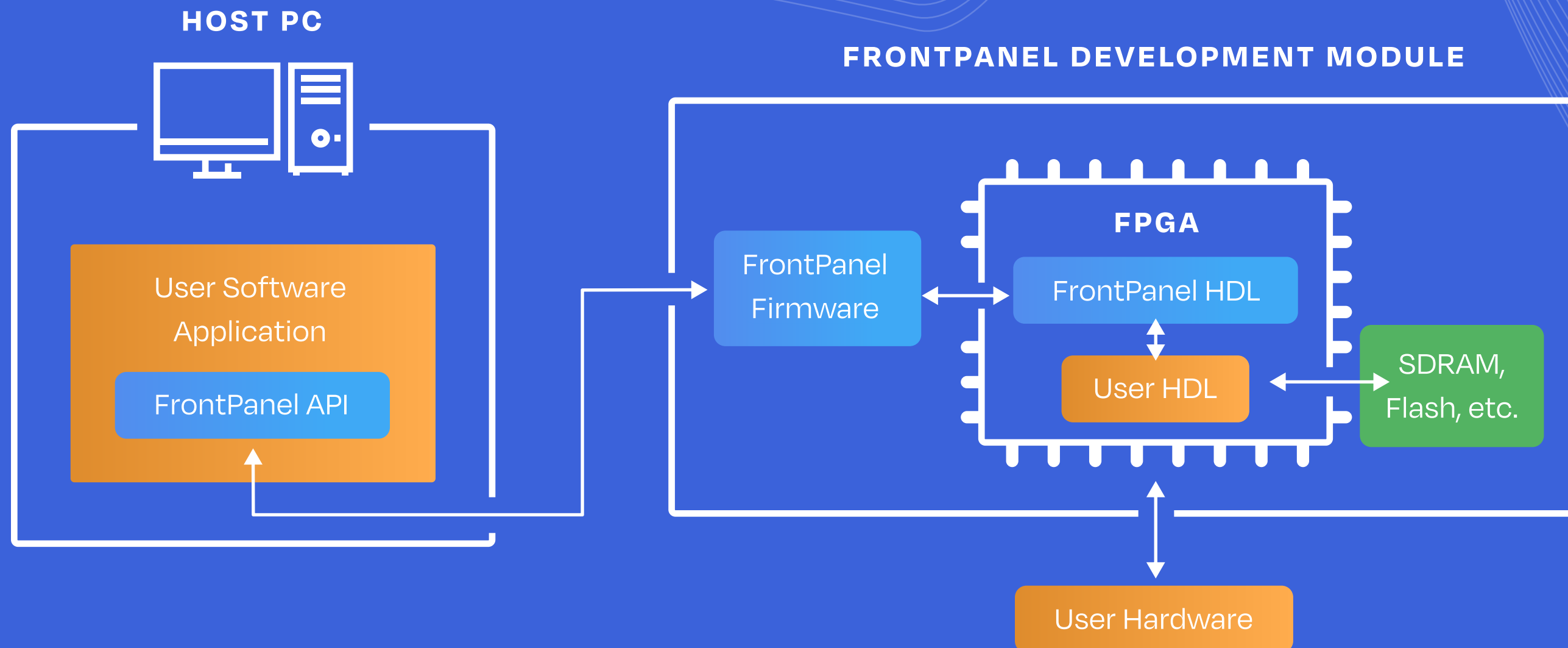


Proprietary device firmware to manage FPGA configuration and communication as well as other device management and monitoring.



Lightweight FPGA IP blocks that integrate with your HDL to make host communication simple and easy.

FrontPanel[®] System Architecture



Build high-performance software-connected FPGA applications for prototypes, proof-of-concept, and production

FrontPanel[®] SDK

- Multi-platform, multi-language
- Easy to use. High performance. Stable and reliable.
- USB 2.0, USB 3.0, PCI Express, and TCP/IP
- C++, C# (.NET), Python, Java, Ruby APIs
- Windows DLL / Shared Object for 3rd-party integration (e.g. MATLAB, LabView)

FrontPanel[®] over IP (FPoIP)

- Familiar API, extended over TCP/IP networks
- Protocol, server, and client implementations
- Server for USB-based devices: Windows, Linux, and macOS hosts
- Lua-based server-side scripting for latent conditions
- Javascript implementation for in-browser operation

