Company & Product Summary

XEM8310

FPGA Development Module & Integration Module

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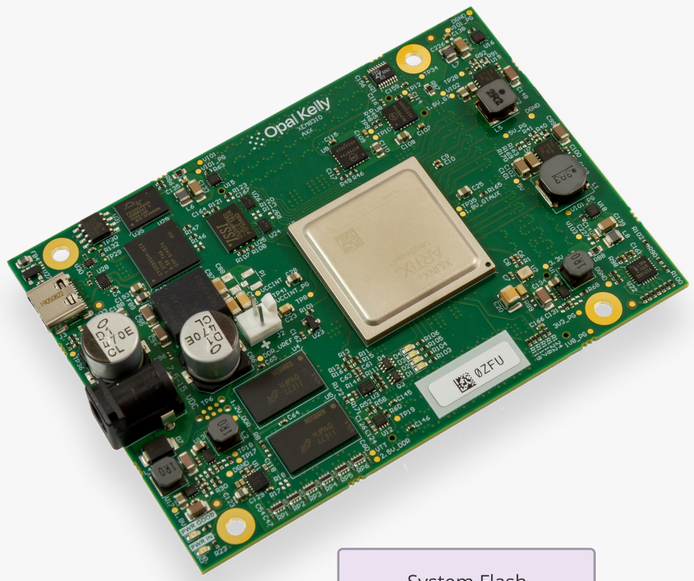
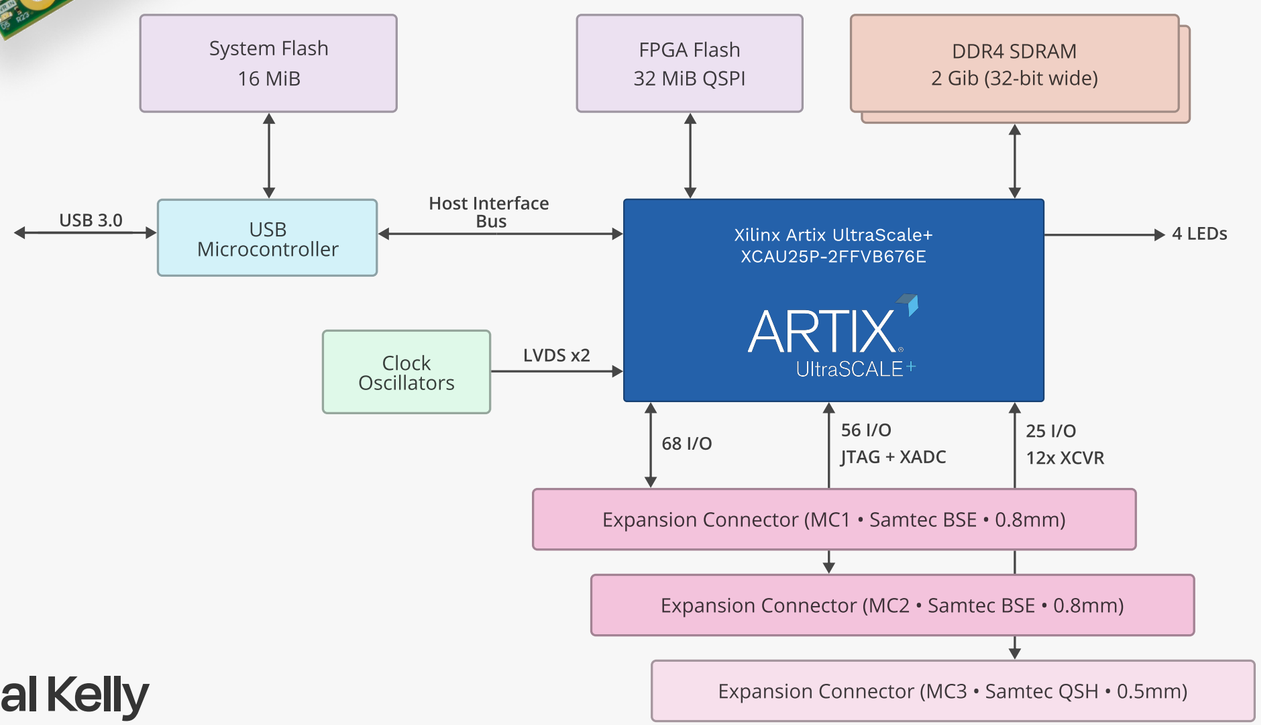
XEM8310



Xilinx Artix UltraScale+ AU25P

SuperSpeed USB 3.0 interface
2 GiB DDR4 memory
149 I/O and 12 Multi-Gigabit Transceivers
High-density board-to-board connectors

FrontPanel® SDK



Host Interface	USB 3.0 Type C, SuperSpeed FrontPanel Support
FPGA	XCAU25P-2FFVB676E
Memory	2 GiByte DDR4, 32-bit wide data interface
NV Memory	16 MiB System Flash 32 MiB FPGA Flash
Oscillators	100 MHz + 125 MHz transceiver reference
FPGA I/O	149 I/O + 12 transceiver lanes
FPGA I/O Voltage	Up to +3.3V, Software Programmable

	MINIMUM	TYPICAL	MAXIMUM	UNITS
DC Input	+7.5	-	+15	VDC
DC Input Ripple	-	-	50	mVp-p
Operating Temperature	0	-	+70	ºC
Storage Temperature	-50	-	+100	ºC
Weight		49		grams
Transceiver Reference Freq.		125		MHz
Oscillator Freq. Stability		± 50		ppm
Oscillator Jitter		2.5		ps RMS

FEATURE	XEM8310-AU25P
FPGA	XCAU25P-2FFVB676E
System Logic Cells	308,437
CLB Flip-Flops	282,000
Distributed RAM	4.7 Mib
Block RAM	10.5 Mib
DSP Slices	1,200
GTY Transceivers (16.375 Gb)	12
Clock Management Tiles	4

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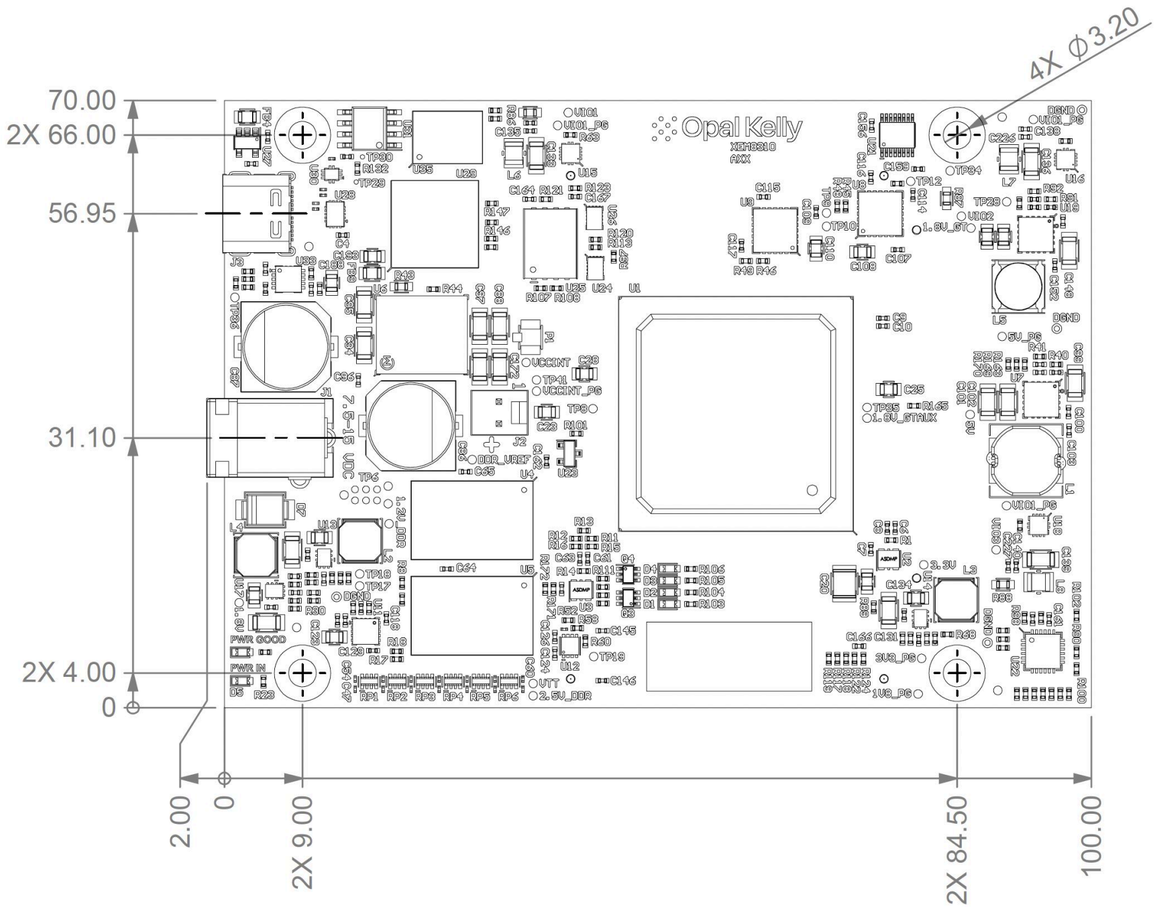
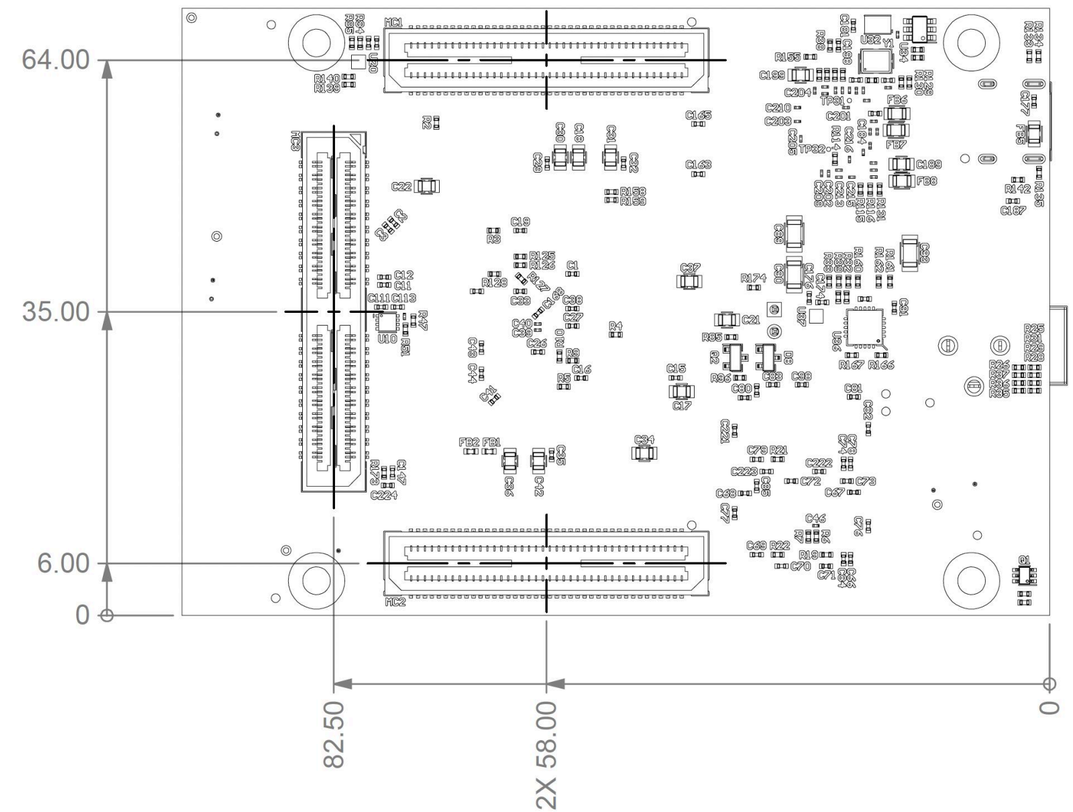
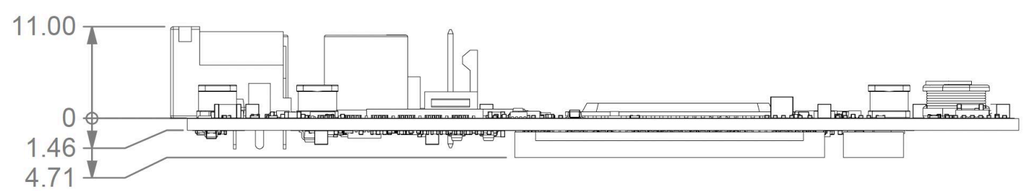
XEM8310

Mechanical Drawings







All dimensions in millimeters (mm)

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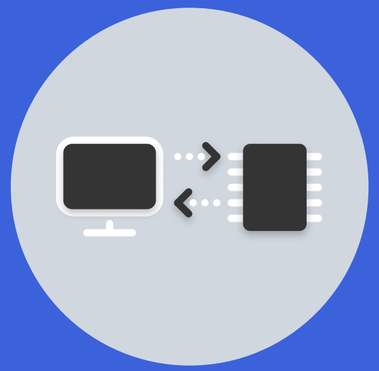
FrontPanel® System Components



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.

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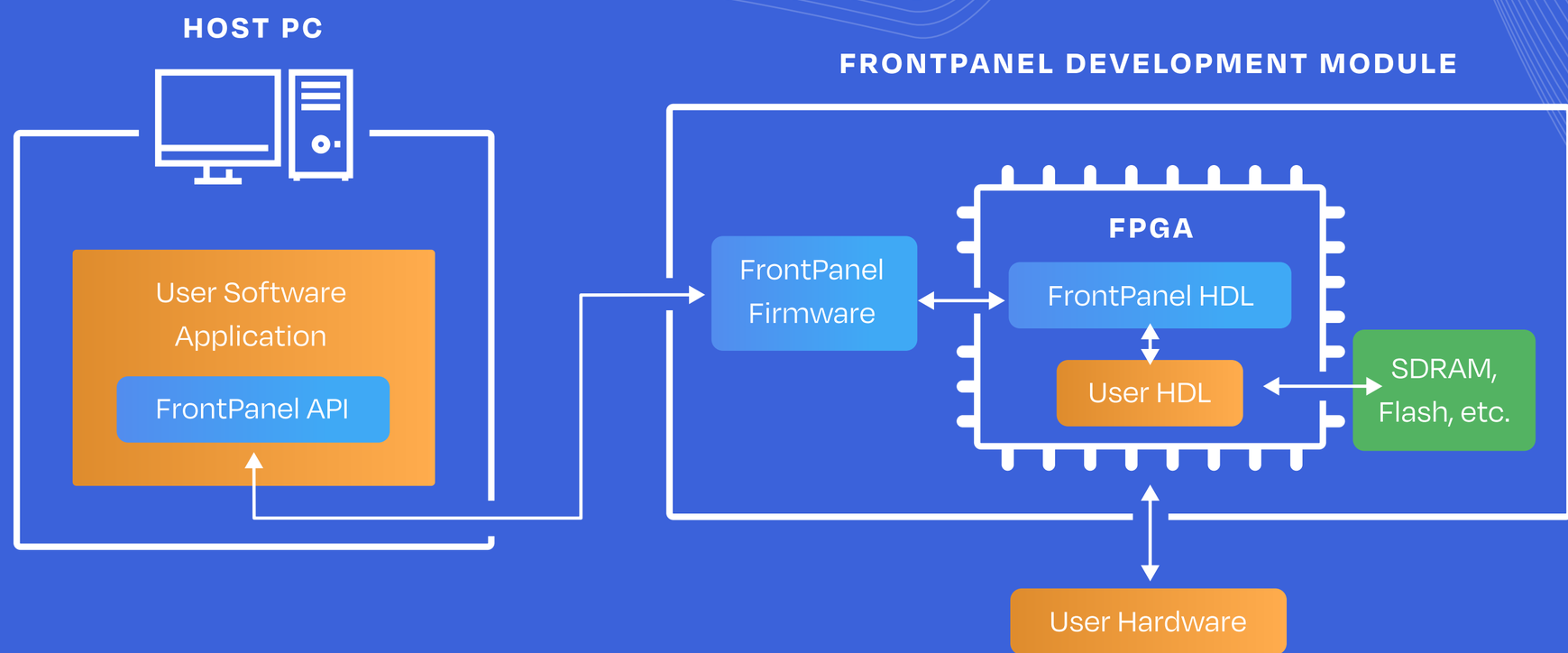
FrontPanel® System Architecture



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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

2.0 3.0 FPOIP

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- Founded 2004.
- Leading producer of powerful FPGA modules for high-performance data acquisition, instrumentation, and test & measurement
- Focus on lifecycle-managed modules for prototypes, proof-of-concept, and production use
- Modules include the FrontPanel SDK — a multi-platform, multi-language, FPGA-agnostic framework for professional-grade hardware / software connectivity
- Introduced SYZYGY connectivity standard in 2017
- ISO 9001:2015 QMS, certified 2019

Proof-of-Concept
Build fast. Build early.

Prototype
Focus on your core.

Production
Simplify your supply chain.

OUR CUSTOMERS

Over 2,000 corporate customers

Over 200 Universities worldwide

CUSTOMER SEGMENTS

Research Organizations

National Laboratories

Military / Aerospace

Scientific Instrumentation

Commercial

Texas Instruments · Qualcomm · Cirrus Logic · Sandia National Laboratories · Analog Devices · Microsoft · Massachusetts Institute of Technology · Samsung · Microchip · maxim integrated · National Semiconductor (The Sight & Sound of Information) · Agilent Technologies (Innovating the HP Way) · Google · intel

Applications & Deployments

Data Acquisition
Instrumentation
Test & Measurement
Machine Vision
Software-Defined Radio
Education & Research
Machine Learing / AI
Networking
RADAR, LIDAR
Satellite Imagery
Advanced / Remote Sensing
Semiconductor Simulation, Test, and Debug

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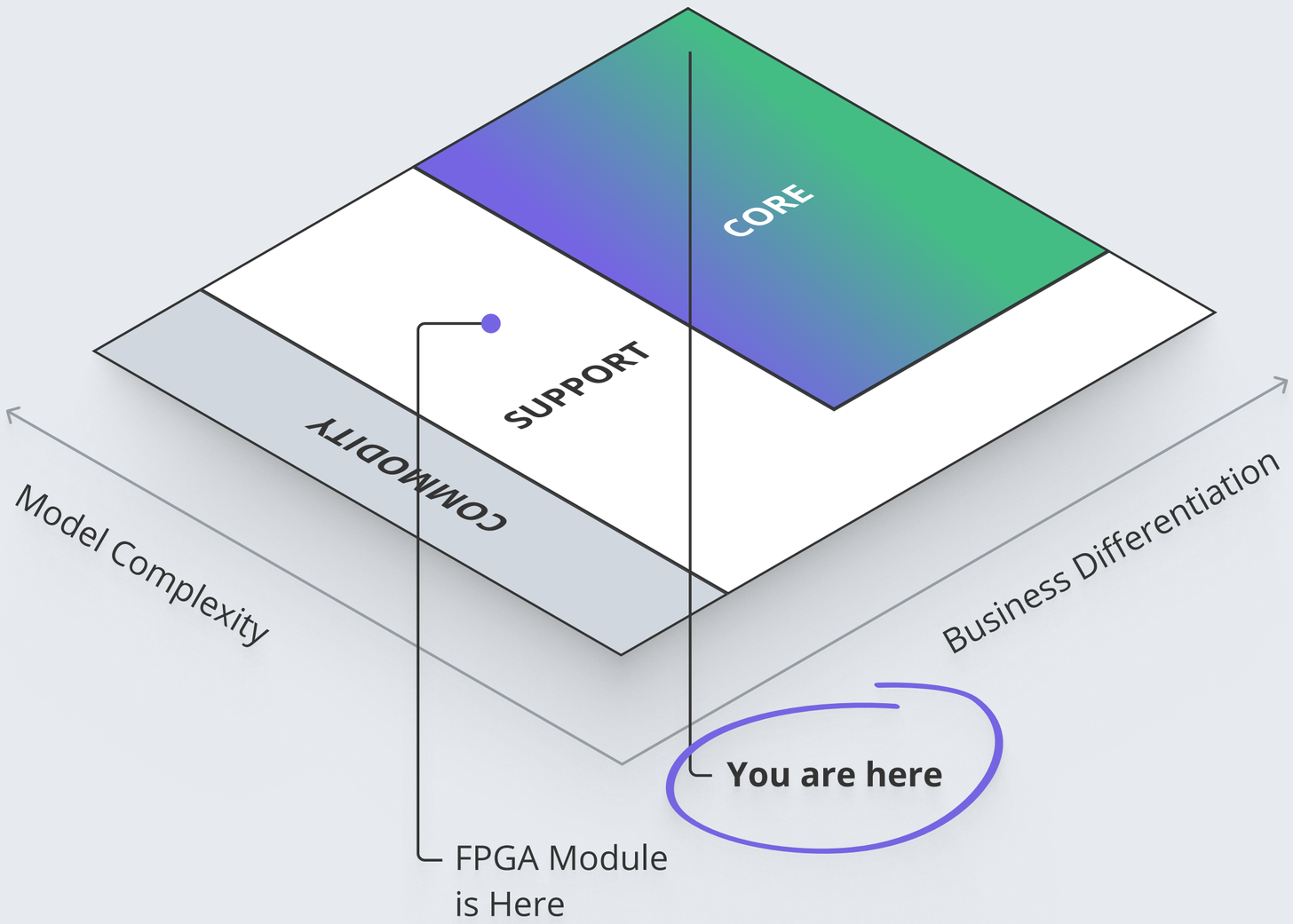
Focus on Your Core Expertise



Reduce time to market

Build a team that strengthens your core

Simplify your supply chain

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