



Rapid Prototyping with Power

DornerWorks Streaming I/O Platform

SOM architecture in development offers speed, flexibility, and encryption with minimal latency

Using the Xilinx Zynq UltraScale+ processor core, the DornerWorks System-On-Module (SOM), now in development, will enable you to implement RAM intensive FPGA accelerated computations. One of many potential video applications this platform allows is to encrypt Ultra High Definition(4k) raw video, and decrypt it for viewing on the other end of a high speed transport with minimal latency all while storing 100+ hours of h.264 compressed, encrypted 4k video to a high speed SSD.

As one of only three **Xilinx Premier Partners** that offer design services in North America, DornerWorks has guided hundreds of clients to successful product launches with custom hardware and software development services.



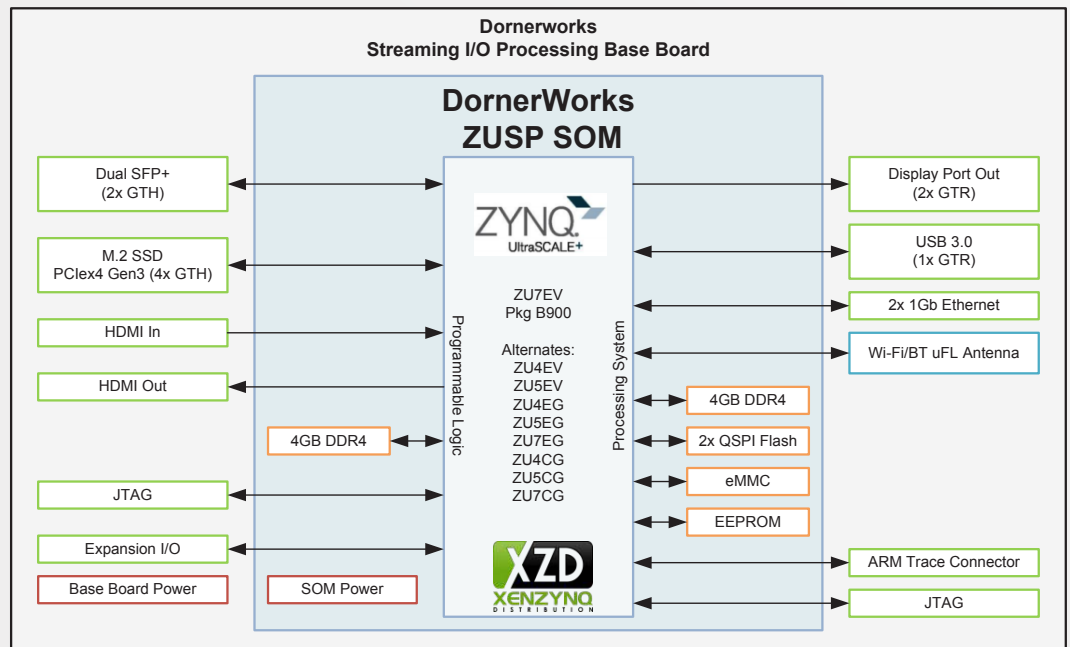
The DornerWorks hardware, software, and custom logic team can accelerate your product development.

Target Applications

- Real time data processing
- Machine learning
- IoT fog computing
- Interactive displays
- Image detection and recognition
- Autonomous vehicles
- Classified video transmission
- Computer vision
- Autonomous Machines
- Digital signal processing
- Surveillance Systems

Key Platform Features

- Dedicated RAM for accelerated computations
- Uncompressed Video encryption/decryption
- Encrypted video storage with base board
- 1GbE High Precision Time-Sensitive Networking
- Cost-optimized solutions with CG, EG, and EV device families
- SSD mass storage device (2TB via M.2 available)
- HDMI Input/Output with minimal part count
- EV device capable of H.264/H.265 encode of 600Mpixel/sec



You shouldn't have to be an expert in everything
Let us help you take your project to the next level, and provide the freedom you're looking for to focus on what matters most.

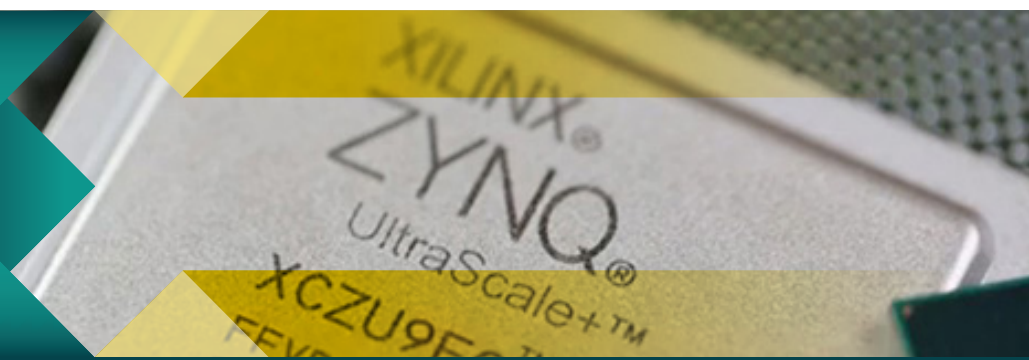
**What are you looking for in a SOM?
Connect and let us know today!**

www.DornerWorks.com
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Accelerate

Product Development

A robust and complete processing platform for your next stand-out product based on the Zynq UltraScale+ family



Be a part of our design process by contributing to the SOM roadmap!

Zynq UltraScale+ Capabilities

Processing System (PS)

Application Processor Unit - Quad-core (EV, EG), Dual-core (CG) – ARM Cortex A53 MPCore up to 1.5 GHz with L1 Cache 32KB I/D per core, L2 Cache 1MB, on-chip Memory 256KB memory

Real-Time Processor Unit – Dual-core ARM Cortex-R5 MPCore up to 600MHz with L1 Cache 32KB I/D per core, Tightly Coupled Memory 128KB per core memory

GPU – Mali-400 MP2 (EV, EG), up to 667MHz with L2 Cache 64KB memory

Connectivity – 2x PCIe Gen3, 2x USB3.0, HDMI, DisplayPort, 4x Tri-mode Gigabit Ethernet, 2x USB 2.0, 2x SD/SDIO, 2x UART, 2x I2C, 2X SPI, 4x 32b GPIO

Power Management – Full / Low / PL / Battery Power Domains

Security – RSA, AES, and SHA encryption

AMS – System Monitor – 10-bit, 1MSPS – temperature and voltage monitor

Zynq UltraScale+ Family Features Supported

CG – Baseline Device family for the Dornerworks SOM, ideal for High speed data computations and movement.

EG – Adds Quad Core A53 processing and the Mali-400 MP2 GPU to the CG's capabilities, ideal for products that also need graphical applications.

EV – Adds H.264/H.265 4k video encoding to the EG's capabilities, ideal for applications that need to transmit or store high definition video efficiently.

PS to PL Interface – 12 x 32/64/128b AXI Ports

	Device Name	ZU4	ZU5	ZU7
Programmable Functionality	System Logic Cells (K)	192	256	504
	CLB Flip Flops (K)	176	234	461
	CLB LUTs (K)	88	117	230
Memory	Max Distributed RAM (Mb)	2.6	3.5	6.2
	Total Block RAM (Mb)	4.5	5.1	11.0
	UltraRAM (Mb)	13.5	18.0	27.0
Clocking	Clock Management Tiles (CLTs)	4	4	8
Integrated IP	DSP Slices	728	1,248	1,728
	PCI Express Gen 3x16 / Gen 4x8	2	2	2
	AMS - System Monitor	1	1	1
	Video Codec Unit H.264/H.265	1*	1*	1*
Transceivers	GTH 16.3Gb/s Transceivers	16	16	24
Speed Grades	Extended		-1 -2 -2L -3	
	Industrial		-1 -1L -2	

* Only available in the EV device

Ready to Get Started?

Let's Talk

Follow our 3-step plan and together, we will determine a solution that fits your needs.



Discuss



Develop



Deliver