

# Accelerate your Secure Data Streams

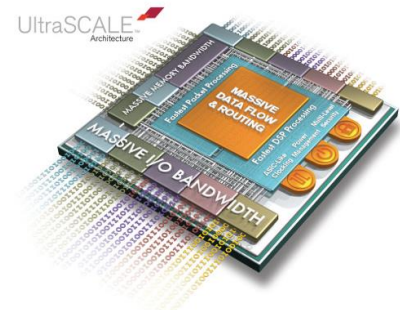
Speed, Flexibility, and Encryption with Minimal Latency

## DornerWorks Streaming I/O Platform

Using the **Xilinx Zynq UltraScale+** processor core, the DornerWorks System-On-Module (SOM) will enable you to implement RAM intensive FPGA accelerated computations. One of many potential video applications this platform enables 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.



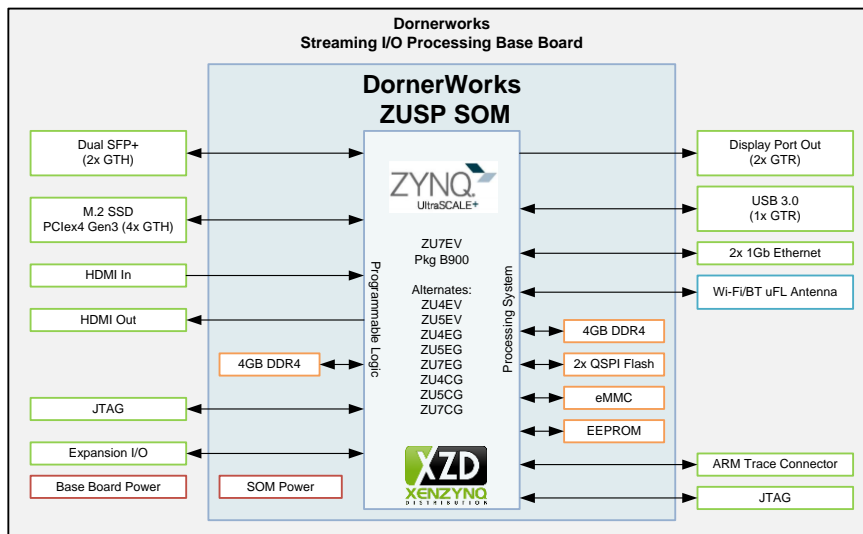
## Key Platform Features



- 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

## Other 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



**Let's Talk**

Together, we will determine a customized solution that fits your needs.

Contact us to learn more  
[www.DornerWorks.com](http://www.DornerWorks.com)  
[sales@dornerworks.com](mailto:sales@dornerworks.com)  
 616-245-8369

## 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** – PCIe Gen3 x4, 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

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

Programmable Logic (PL)	Device Name	ZU4	ZU5	ZU7
	Programmable Functionality	System Logic Cells (K)	192	256
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*
Tranceivers	GTH 16.3Gb/s Tranceivers	16	16	24
Speed Grades	Extended		-1 -2 -2L -3	
	Industrial		-1 -1L -2	

\* Only available in the EV device

## 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.

## Launch your next project with DornerWorks

Get a trusted partner with these three easy steps:

1. We will listen to your needs and give you a quote for your project.
2. We will collaborate with you on the best ways to meet your goals.
3. You will receive a true development partnership for your product.

