

DornerWorks FPGA SUPERCHARGED VIDEO SOLUTIONS

A high-speed, low-latency video system could push your projects to **new heights of adoption.**

Like developers in automotive, aerospace, defense, and rugged industrial markets, your video products can benefit from FPGA acceleration, and we can guide you to a solution.

ACCELERATE YOUR VIDEO PIPELINE DEVELOPMENT

PROCESSING



DISTRIBUTION



DornerWorks can architect video pipelines to your requirements, help you integrate 3rd party or custom IP, and optimize your software and FPGA systems to work seamlessly.

Technology complexities shouldn't derail your innovation.

Partner with DornerWorks and you will reach market quickly, launch products that stand out, and understand how they work.

Schedule a consultation with us today so you can get back to growing your business.



FRONT END FILTERING

- Dark current suppression
- Demosaic
- Scaling
- Cropping
- Color correction
- Convolution filters
- Color space conversion
- Frame rate conversion
- Format conversion
- Flat field correction
- Tone mapping
- (De)interlacing



ROBUST PROCESSING

- Video frame mixing/blending
- Overlay generation
- Frame min/max/avg
- Histogram statistics
- Resolutions greater than 3840x2160
- Aggregated video bandwidth greater than 60 Gbps



I/O VERSATILITY

- HDMI
- DisplayPort
- HD-SDI
- MIPI CSI-2
- CoaXPress
- CameraLink
- FPD-Link
- GMSL
- RS-170
- NTSC
- BT656
- Bayer



SYSTEM DESIGN

- Video aggregation
- Multi-stream video multiplexing/demultiplexing
- SERDES
- PCIe
- ADAS
- Situational awareness
- Ancillary data processing
- Resource and performance analysis

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“DornerWorks is a professional, flexible, AND AN *ESSENTIAL* PART OF OUR TEAM”



360-DEGREE AWARENESS

- An Altera Stratix IV FPGA was used to process five 1080p HD-SDI and two NTSC video inputs into a single video output.
- Each video input was scaled and positioned into a mosaic over a single video output.
- Dedicated video frame buffering was provided by DDR3 memory.
- The system software was run on a soft-core processor implemented in the FPGA logic.
- A custom PCB with the video processing FPGA was designed to meet MIL-STD specifications for ground vehicles.



AERIAL SYSTEMS

- A pair of Altera Arria 10 SoC devices was used to aggregate and display up to five different video sources via six HD-SDI outputs and one 6G-SDI output.
- Video from a combination of CameraLink and CoaXpress cameras was aggregated by one Arria 10 SoC device onto a 4 x 10Gbps QSFP+ fiber link to the second Arria 10 SoC device where the video was demultiplexed, a software generated overlay applied, and sent out 6 HD-SDI output via a full cross-bar switch.



MULTI-CAMERA FOR ADAS

- A pair of Xilinx Zynq UltraScale+ devices was used to process up to seven 12MP 12-bit video streams, and up to three 1MP 8-bit video streams simultaneously.
- All video streams ran at 30 fps and was received via MIPI CSI-2 and parallel interfaces.
- The video was filtered, color corrected, color space converted, and multiplexed over a PCIe 3.0 x8 link to the system for additional video processing.
- The un-processed video was sent via a PCIe 3.0 x4 link to the system for logging.

GET STARTED TODAY



Connect with us now. Together we will map out a plan that meets your product goals and helps you lead the market.



SCHEDULE A CONSULTATION

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