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

Developers in automotive, aerospace, defense, and even rugged industrial markets are already taking advantage of these robust solutions.

Without them, they’re just taking pictures.

**FPGA POWERED VIDEO SOLUTIONS**

The systematic DornerWorks development process guides you from idea to revenue so you can focus on growing your business with remarkable products.

**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

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

DornerWorks.com | +1.616.245.8369
DornerWorks delivered the project, FROM ALPHA TO BETA in the time frame and budget they promised.

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 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.

MULTI-CAMERA FOR ADAS

• 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.