High Definition Stereo Video Imaging

High definition stereo video imaging design places high speed data storage and high speed data transfer demands on digital video systems. High definition video operating at rates from 720P24 to 1080P60 move stunning amounts of data in very short time intervals. Stereo video imaging provides the viewer with a truly life-like, three dimensional image that at once exhibits depth with high visual acuity and requires double the amount of video processing required from a single high definition video stream.

High definition video imaging advances diagnostic applications to new levels. Image processing from Orchid Technologies is part of the design.

High Definition Video Image Processing

High fidelity, dual channel, 10-bit wide Bayer-encoded image data is input to an Altera Stratix IV FPGA. Dual channel processing within the FPGA performs Bayer to RGB data conversion, Gamma Correction, White Balance, RGB to YCrCb data conversion, framing and output resynchronization as two HD-SDI video streams. Unique to the Altera Stratix IV FPGA architecture are high speed transceivers and large internal high speed memory structures. All data processing is performed on-chip within a highly pipelined video processing structure.

Stereo HD-SDI Video Output Streams

Stereo imaging achieves the illusion of a three dimensional image when the camera system is properly positioned and the image stream is synchronized. One stream must be 'gen-locked' to the other. Small disturbances to image synchronization are magnified by noticeable break-down of the three dimensional effect. Careful hardware timing and clocking design hold the image stable.

Orchid Technologies: Custom HD-SDI Video

The development of custom electronic products for our OEM clients is Orchid's entire business. The design of custom video imaging systems with rapid design cycles, demanding technical requirements, and unforgiving schedules sets us apart. Call Orchid Technologies today!

"Under stressful time and delivery pressure, Orchid worked quickly and with cheer to deliver."

- Video Systems Development
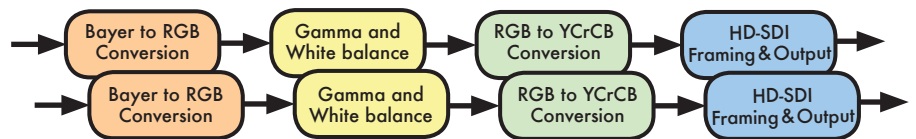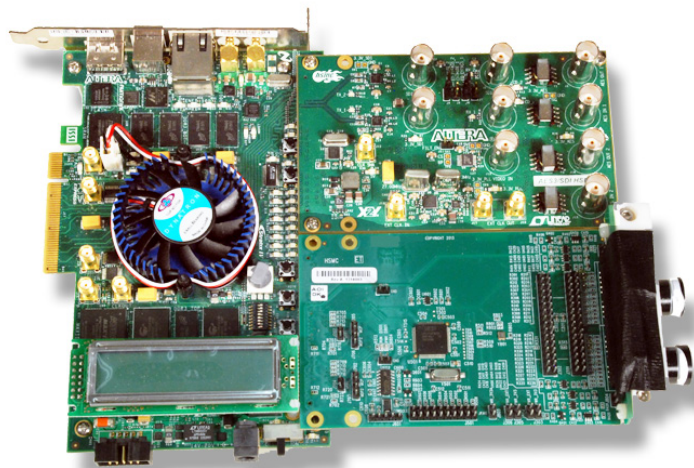*– HW Manager*

ORCHID TECHNOLOGIES ENGINEERING & CONSULTING, INC.

Custom Engineering From Concept to Production

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