

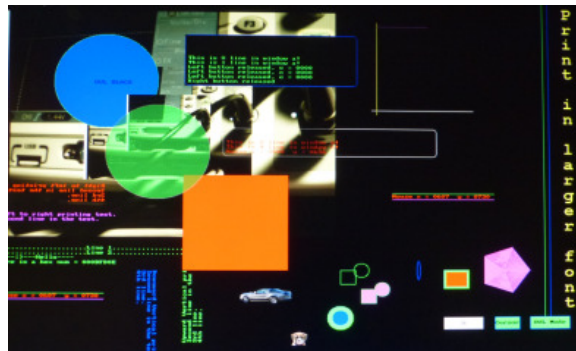
## FPGA/ASIC Camera Interface Module

### VIDEO INPUT FAST AND EASY

Great for Embedded systems  
 Configurable Output Frame Buffer Support  
 HW Buffer Ping/Pong support  
 HD Frame Size Support  
 Configurable Input Frame Crop  
 Configurable Input Decimation  
 Configurable output X/Y Loc  
 Integrated SCCB controller  
 FPGA Technology Independent  
 Efficient 16-bit Pixel Format  
 Selectable Interrupts on FS  
 Also Supports Video Streaming to Other Modules for Additional Processing  
 OmniVision™ Sensor Compatible  
 ~1200 Logic Elements (4 input LUT+FF) in Maximum Options Configuration  
 >100MHz Performance in Most Standard Speed Grade Devices

### SW API

Sensor Configuration/initialization  
 In/Out Frame Configuration  
 SCCB RD/WR Drivers



Actual screen shot of camera sensor output (upper left hand corner) in use with the Tectonic VGA Interface Module. Sensor output is overlaid with text and graphics in this example with varying decimation settings

Make your FPGA design come alive with vibrant colors and dynamic, rich, video input.

The Tectonic series of graphic and video IP modules make is easier than ever to get output from your FPGA/ASIC to the screen. The Camera Interface module is a core module that provides the interface directly to commonly available sensor modules, and is used to provide a method to move the video from the sensor directly to a frame buffer and/or to a series of additional video processing modules in the system through an easy to interface to Tectonic Video Stream Interface.

- Small HDL Based Design
- Fully Synchronous
- Rich SW API
- Fully Pipelined for Highest Performance
- Simple Slave/Register Configuration Interface
- Simple Master Interface to memory (for pixel storing)
- Easy to Use – When use with Tectonic's VGA Interface Module it provides the Quickest Time from Concept Video Display Realization
- Configurable Block Transfer
- Integrates with other Tectonic Video HW and Third Party modules

The module also builds in many must haves for engineers needing to accelerate the time from instantiation to displaying information on the screen in a professional format. Many important features are performed at the hardware level, offloading the processor such as, automatic decoding of the video form the sensor, decimation, cropping, and block memory transfers into selected frame buffer memory.

## API (Q1/2015)

Function call	Input	Operation
Sccb_write()	The SCCB device chip address, register address, and data	Used to configure the sensor or any other SCCB device on the SCCB bus
Sccb_read()	The SCCB device chip address and register address	Used to read back registers from the sensor or any other device on the SCCB bus.
Init_camera_interface()	Source crop information, destination location information, decimation settings, and destination frame buffer pointer configuration	Used to setup the video data transfers to memory (frame buffer or other) and the video parameters to use
Init_sensor()	Video mode, such as 640x480 and other,	Sets up the low level sensor registers

### RICH SW API

Many Primitive Calls Exposed

Additional API calls Under

Development

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