CamSim

CoaXPress & Camera Link Camera Simulators

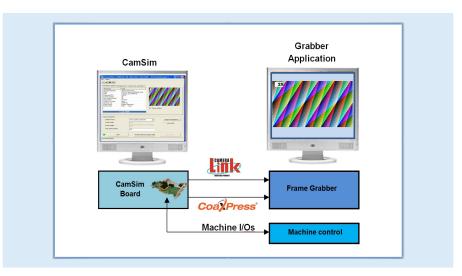


Key Features

- Simulates all CoaXPress 1.1 image formats, including Raw, Mono, Planar, Planar Raw, Bayer, RGB, RGBA, YUV, YCbCr601, YCbCr709
- Simulates all camera link v2.0 configurations (base /medium /full/80-bit (DECA))
- Supplies machine simulator capability by adding user IOs
- · Supports BMP, RAW input image files
- Pattern generator for transmitting color and grayscale test patterns
- Fully programmable image timing and data parameter configuration via userfriendly GUI
- API methods for developing user simulator applications
- User-configurable Camera Control (CC) lines for triggering options
- Camera Link throughput capabilities of 1-10 pixels simultaneously at 7,000-85,000 KHz. Pixel bit depth varies from 8 to 36 bits per pixel
- Software and FPGA customization for extended machine simulation and/or custom logic/processes
- Up to 16 GB image buffer
- 4x DIN 1.0/2.3 connectors for simulating up to 4x 6.25 Gb/s cXp links
- Two SDR-26 connectors for simulating all camera link modes

Target Applications

- Vision Algorithms Development
- Image Processing Application Testing
- Vision System Reliability Testing
- Debugging Rare Bugs



The Gidel **CamSim™** is a flexible high-performance camera simulator that generates CoaXPress and camera link video stream and test patterns for testing frame grabbers or vision/imaging systems. The system supports all CoaXPress v1.1 and Camera Link™ v2.0 configurations and can be customized for any user-defined camera protocol and interface.

The CamSim enables most development to be done in a low-cost lab environment. Thus, the CamSim significantly improves productivity and reduces the overall expense of developing vision and imaging systems. Gidel's CamSim data flow repetition capability ensures that algorithms are validated and work as expected with pertinent input. Moreover, once the rare bug is detected, its respective data flow can be accurately reconstructed to locate the bug and quickly fix it.

The CamSim suite includes:

Application Software: An intuitive GUI enabling full control of the image simulation, including: transmitting image from user files or pattern generator files and configuring the camera link and timing parameters.

API Methods: A set of CamSim API methods that can be used to develop a customized user application.

Gidel Board: A PCIe FPGA board incorporating Gidel CamSim firmware for transmitting the image data.



North America:

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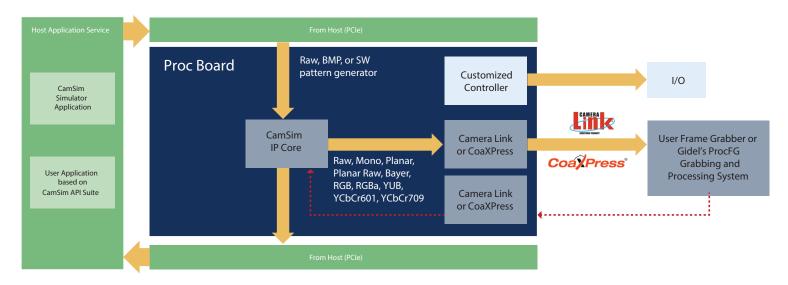
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CamSim CoaXPress & Camera Link Camera Simulators



| FEATURE | SPECIFICATIONS |
|--------------------------------|---|
| CoaXPress Link Modes | Up to 4x 6.25 Gb/s links |
| Camera Link Modes | 1 80-bit (Deca), Full, Medium or Base Camera Link with option for PoCL |
| Pixel Formats | Raw, Mono, Bayer, RGBA (8, 10, 12, 14 and 16 bits/color), RGB (8, 10 and 12 bits/color), YUV, YCbCr601, YCbCr709 |
| Max. Resolution | Horizontal: 16 K pixels (24-bit) Vertical: 65 K lines (16-bit) or infinite in Line scan simulation |
| Camera Link Tap Configurations | All configurations as defined by the Camera Link standard, includ- ing 80-bit (Deca): 10 taps/8bits, 8bits/10taps. |
| Camera Link Pixel Clock | Up to 85 MHz |
| Connectors | 4x DIN 1.0/2.3 (CoaXPress) 2x SDR26 (mini Camera Link) VGA15-pin I/O |
| Frame Buffer | 1-16 GB |

| FEATURE | SPECIFICATIONS |
|-------------------------------|--|
| Host Bus | PCle x8 Gen. 3 |
| Host Throughput | Up to 64 Gb/s |
| Form Factor | PCIe low-profile |
| Camera Types | Area and Line |
| GPI0 | RS422, opto-coupler, LVTTL and 30V at 0.9A |
| Software Support | CamSim GUI, API and examples. For open FPGA grabber version en- abling customization, ProcWizard Development tool |
| OS Support | Win 10 and Server 2012 (64-bit) and Linux (kernel 2.6.x- 3.10.x). Linux version doesn't support GUI, only API. |
| Certifications | RoHS, Conflict Minerals, ISO |
| Operating Ambient Temperature | 0 – 54 C, relative humidity up to 90% (non-condensing) |
| MTBF | > million hours |



CamSim System Overview



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