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Frame Grabber & Video Streamer Product Overview

The FI Advantage
Products Overview
Systems Integrators

PCIe 2.0 x4 Products

AccuStream 1000
AccuStream 1000 SDI
AccuStream 2000
AccuStream 2000 SDI

PCI 32/64 Products

Legacy Products

Software & Accessories

Auto-SYNC
IDEA Software
Linux Software
Video Splitter

Medical Imaging System

TIMS Medical Video Platform

OVERVIEW



Designed specifically for medical imaging and other demanding video applications, I-RGB is the highest accuracy and highest performance frame grabber and video streamer available for RGB video inputs. I-RGB is based on the I-Series architecture, guaranteeing the same industry-leading image accuracy and bus transfer performance that Foresight Imaging has built its reputation upon with the I-Series of frame grabbers and video streamers. Further, I-RGB includes Auto-SYNC, the revolutionary automated video analysis software for both non-standard and standard video sources.

ACCURACY

I-RGB delivers the diagnostic quality and inspection-quality images that demanding customers in medical imaging and metrology applications require. Extremely low pixel jitter of ±1.0 ns, superior analog design, and a 47 dB S/N ratio provide the accuracy and precision needed in high performance applications. Color video digitization is performed at 8 bits each of R, G, and B (24 bits per pixel). Y-only monochrome acquisitions are at 8 bits per pixel. Color formats include RGB 8:8:8 and YUV 4:2:2.

PERFORMANCE

As a member of the I-Series of frame grabbers and video streamers, I-RGB has the identical high-speed PCI bus mastering, scatter-gather technology, and double buffering. This leading technology delivers over 120 MB/second sustained transfers to system memory. Such high performance requires minimal CPU intervention so that it is free to work on other tasks or process the incoming data immediately. Consecutive video images are transferred in real-time to system memory enabling real-time video streaming applications, such as cine loop cardiology, to utilize the power of I-RGB. Real-time streaming to disk is supported with appropriate high performance disk drives. Real-time display is simultaneously enabled by real-time transfer of image data directly to display card memory over the PCI bus. I-RGB also features independent, dual video data paths. For example, this allows the simultaneous display of YUV 4:2:2 color video and the transfer of full 24 bit RGB video data for processing.

VIDEO

I-RGB is available in three models: I-RGB 25, I-RGB 50, and I-RGB 75. These support pixel input rates up to 25 MHz, 50 MHz, and 75 MHz respectively. One RGB input is supported from a variety of medical input devices, cameras, and other video sources. I-RGB acquires images and video streams from both non-standard and standard video inputs via its DVI-analog connector. Input resolution is up to 2 megapixels total area. RGB loop-through output is provided via a 15 pin D-shell connector (VGA type). I-RGB also provides H and V sync input/output. For fine tuning of the video signal, 8 bit gain, 8 bit black level, and phase controls are available. LUTs are available on each of the R, G, B, and Y-only channels.

CONTROLS

In addition to its leading accuracy and performance, I-RGB provides the controls necessary for integrating demanding applications in medical imaging, machine vision, and scientific imaging. These controls include a dedicated trigger input, separate camera power, a dedicated high current digital output, camera integration control, strobe control, and general purpose digital I/Os.

SOFTWARE

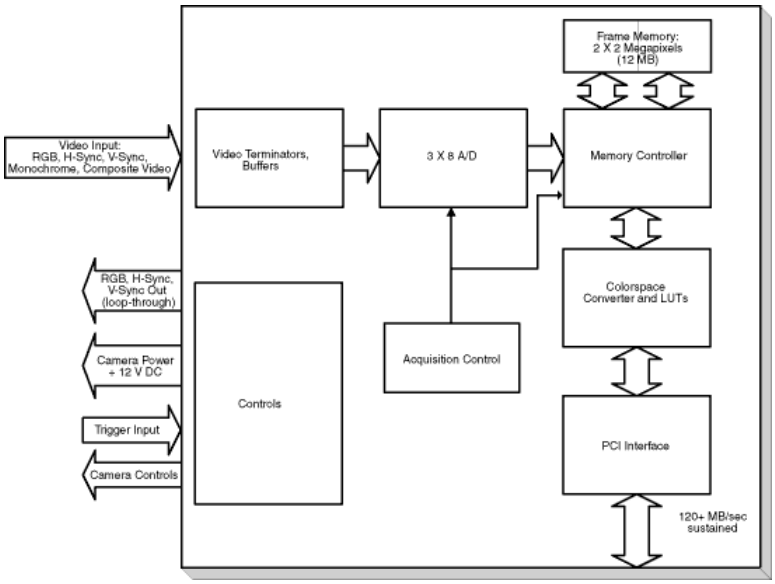
But what is superior hardware without excellent software? Consistent with Foresight Imaging's history of complete, easy-to-use software, I-RGB is supported by Auto-SYNC, Foresight Imaging's flagship, automatic configuration software. Auto-SYNC ensures quick and simple installation and image capture by automatically configuring I-RGB to the incoming video signal. Included with Auto-SYNC are full video adjustment capabilities to fine-tune the incoming video signal including gain, black level, phase, resolution, and much more. I-RGB is supported by the IDEA (Imaging Development Environment for Applications) software development kit. By using IDEA, developers have the confidence of knowing that they can write their application once and have support built-in for the entire I-Series (both current and future) and AccuStream product families. Eliminated forever is the need to re-write software every time a new frame grabber-related requirement arises or a new board is introduced. The software compatibility built into the architecture of IDEA allows the simple movement to other products in

the I-Series or AccuStream family. With IDEA, ActiveX controls are provided to facilitate easy development with Visual Basic, Visual C++, and Delphi. Extensive example programs (with source code) are provided with I-RGB. Functions of the example programs include triggered acquisition, video streaming to AVI files, integration with Pegasus Imaging compression software for streaming, and overlays. For users with higher-level application requirements, drivers are available for Common Vision Blox, Image-Pro Plus, Optimas, and TWAIN.

Ordering Information

Press Here for information on how to order I-RGB Products.

I-RGB Specifications



VIDEO

- Video input: RGB, composite video, monochrome
- Non-standard and standard video resolutions and frequencies
- Input range: 0.5 V pp to 1.0 V pp
- Offset: -1.0 V to 2.0 V DC
- 75 ohm termination
- 8 bit gain, 8 bit black level, phase adjustment
- AC coupled with DC restoration
- Composite sync (analog or TTL)
- Offset: -1.0 V to 2.0 V DC
- Bandwidth: 150 MHz
- Pixel rate: up to 75 MHz (25 MHz for the I-RGB 25; 50 MHz for the I-RGB 50)
- AC coupled with DC restoration
- Horizontal frequency: 105 kHz
- Pixel resolution: up to 2 megapixels total area
- H and V sync input/output

IMAGE QUALITY

- Pixel jitter: ±1.0 ns
- S/N ratio: 47 dB
- Linearity: Better than 99%
- Gain and offset stability: 1% from 15°C to 40°C
- A/D conversion: 8 bits each of R, G, & B (24 bits per pixel)
- Color formats: RGB 8:8:8; YUV 4:2:2

CONTROLS

- Dedicated trigger input
- Camera power: +12 V DC @ 1.0 A
- Camera integration
- Eight general purpose TTL digital I/Os
- Strobe control
- Dedicated high current digital output

PERFORMANCE

- 120+ MB/sec sustained to system memory via PCI bus master
- Real-time video streaming
- Real-time transfer to VGA memory
- Storage memory: 2 Megapixels; double buffered (12 MB total)

PHYSICAL

- Three-quarters size PCI card
- One female DVI-analog connector
- One female 15 pin D-shell connector (VGA type)

CABLING

- Standard VGA and DVI cables (optional)
- I-RGB DVI-analog to multi-BNC cable (optional)

SOFTWARE

- Windows XP Professional
- Example application programs (source code included)
- Real-time video streaming with AVI file creation
- IDEA software development kit
- ActiveX controls
- Common Vision Blox, Image-Pro Plus, Optimas, and TWAIN drivers

ORDERING INFORMATION

Press Here for information on how to order I-RGB 165 and I-RGB 200 Products.

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