IE5G_SS - Super Speed Image Processing Engine


Technical description:

- Based on a high-performance TI Keystone TMS320C6671 DSP and Xilinx family 7 FPGA.
- 5 Gbps USB 3.0 Super Speed host interface replacing 480 Mbps USB 2.0 High Speed interface.
- On board memory: 1600 MHz DDR3
- Up to 24-bit color in 120 MHz per camera native video interface.
- Two independent 10 Gbps interface connectors for future customizable video codecs or video input modules (Camera Link, CXP, etc.).
- Up to 4 GB SDRAM.
- 8x RS232 interfaces for camera and transporter control.
- Image multistreaming (color + bi-tonal output from the same source document), up to 64 output windows available.
- Flexible image output formats: color/grayscale JPEG, JPEG2000, TIFF grayscale, TIFF color uncompressed, TIFF bi-tonal with and without CCITT T6 compression.
- USB driver and DLL for MS Windows (32-bit and 64-bit) and Linux.

Advantages:

- Suitable for high speed scanners.
- Simplex (one camera) or duplex (two camera) modes available.
- Reduced electromagnetic interface emission design.
- Software customization available.
- Up to 600 pages per minute DIN A4/300 DPI simplex, multi-stream (dual output TIFF G4 and color JPEG).
- Automatic black border removal.
- Automatic document skew detection and rotation correction.

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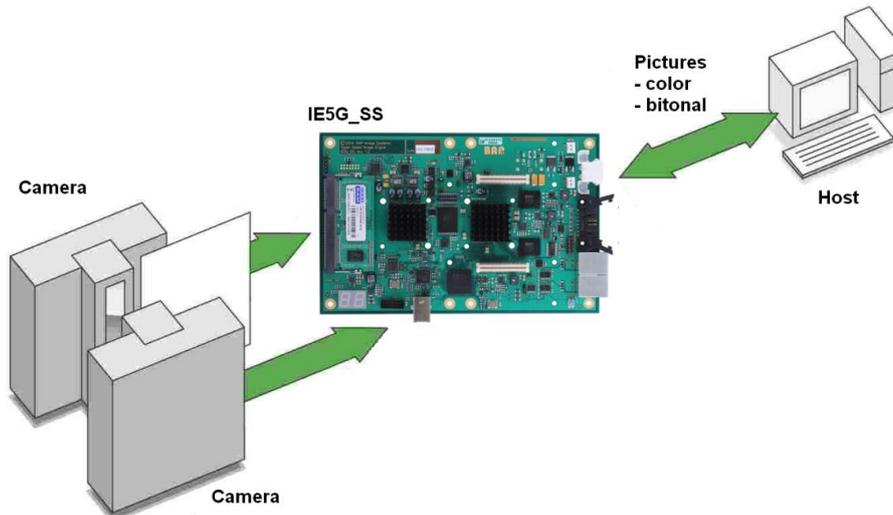
The board is designed to work natively with one or two BAPis cameras. Additional cameras of various kinds can be connected through daughterboard extensions. When connected to more than one camera, IE5G_SS is able to generate multitude images simultaneously from one scanned object. The board is compatible with BAPis cameras with a native, low-cost GLink interface and third-party cameras. Interface extension boards are available upon request (Camera Link, CoaXPress, and others). The default input interface is the internal BAPis camera interface (GLink). It requires a generic, low-cost Ethernet Cat-7 cable for video transmission and control commands between the IE5G_SS board and any BAPis camera. The processed images are sent to the host through a USB 3.0 Super Speed interface. MS Windows drivers are supported. Optionally, BAPis can provide drivers to other operating systems. The IE5G_SS can be installed as an embedded system in any device which has to perform complicated image processing functions in a limited timeframe.

The IE5G_SS was designed to work with digital color cameras from BAPis and third party cameras. With a performance of 600 PPM (1200 IPM) 300 DPI DIN A4 simplex dual-stream (JPEG color + T6 bi-tonal) the IE5G_SS can be used in high-speed duplex color scanners.

The IE5G_SS board has plenty of additional image processing functions. For example: compressions, image enhancement, Color Correction Matrix for perfect color matching, advanced color filters, advanced asymmetric image sharpening, color saturation control filter, color de-correlation, barcode and mark recognition, and others.

BAP Image Systems (BAPis) is a dependable and reliable imaging products and solution provider with highly proven industry experience. BAPis develops and manufactures cameras based not only on high speed CCD and CMOS line sensors, but also on area CMOS/CCD sensors. BAPis cameras are used in the machine vision industry as well as in the film industry. Additionally, BAPis develops and produces image grabbers and processing boards based on DSP and FPGA technologies using its own algorithms. Image processing boards are matched with camera performance and, when combined, are able to reach the highest possible throughput.

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