NTSC/PAL/SECAM to GigE Vision® converter

Applications:

- Quality inspection and sorting systems
- Medical and scientific imaging systems
- Intelligent traffic systems
- Military sensing systems Features
- Transmits imaging data from PAL/NTSC/SECAM cameras at Gigabit Ethernet rates
- Ultra-low latency and jitter
- GigE Vision® and GenICam™ compliant

Analog to GigE module, enclosed version

Sensor to Image S3A-1800 GigE Vision® boards stream video and imaging data in real time over standard GigE connections between PAL/NTSC/SECAM cameras and PCs using the industry-standard GigE Vision® protocol.

By leveraging the inherent capabilities of GigE, the S3ADSP-1800 boards over-come the limitations of traditional PAL/NTSC/SECAM systems: the need for proprietary frame grabbers, short distances between cameras and PCs and no networking flexibility for interconnecting multiple cameras or centralizing control and maintenance. S3ADSP-1800 board grabs data from PAL/NTSC/SECAM cameras, convert it to IP quickly and efficiently, and send it to PCs over GigE links using Cat-5e or Cat-6 cables. These operations are performed by Sensor to Image field-proven, purpose-built hardware with very low latency and jitter, at the full, 1 gigabit per second data rate. At the PC, the Cat-5e/6 cable plugs into an economical GigE network interface card (NIC), eliminating the need for a frame grabber. Point-to-point connections go up to 100 m.

Sensor to Image S3ADSP-1800 GigE Vision® boards use a sophisticated design in a industrial grade FPGA to manage control signals from host PCs and other system elements. This powerful capability allows users to precisely measure, trigger, and control the operation of system components.

As an element of Sensor to Image networked interface solutions, the S3ADSP-1800 are offered with field-proven software tools:

- Sphynx SDK – a feature-rich toolkit that provides the building blocks needed to quickly and easily design high-performance video applications that consume minimal CPU resources
- Sphynx XML sample files – XML files in source code which can be adapted to your individual needs creating GenICam™ compliant devices.

The Sensor to Image S3ADSP-1800 GigE Vision® boards are fully compliant with the GigE Vision® and GenICam™ standards. Together with Sphynx PC software it gives users a solid basis for camera control.

Analog to GigE module

GigE Vision® and Networking Features

Gigabit Ethernet based
Fully compliant GigE Vision® firmware load
Compatible with all 3rd party GenICam™ compliant vision software libraries (MIL, LabView, Halcon, Sapera, CVB, VisionPro, StreamPix, TroublePix)
Low-cost, easy-to-use equipment
Compatible with 10/100/1000 Mb/s IP/Ethernet networks
Supports IEEE 802.3 (Ethernet), IP, IGMP v.2, UDP and ICMP (ping)
Long reach: 100 m point-to-point, further with Ethernet switches or fiber converters
Multicast capability enables advanced distributed processing and control architectures

Sphynx SDK

PC filter driver and acquisition library for Windows and LINUX OS (sources on request)
Sample applications, including GenICam™ compliant viewer (sources on request)
Driver installation tool
Documentation

Characteristics enclosed Version

Temperature Range	0°C to +70°C, optional -40°C to +85°C
Power Supply	8–15 V, 3 Watt
Dimensions Housing in mm	69×50×100
Mounting technic	Power and Video on SUBD with mechanical lock, GigE on RJ45 without mechanical lock

Characteristics OEM Version

FPGA / CPU	Xilinx Spartan S3ADSP-1800 / µBlaze
DRAM / Flash / EEPROM	32 MByte / 8 MByte / 8 kByte
Module Interface	55 LVTTL lines, e.g. for data/adress bus, chip select
RS232 / CAN Interface / TTL-IO	1/Yes/2 in + 2 out
Temperature Range	0°C to +70°C, optional -40°C to +85°C
Power Supply	8–15 V, optional up to 30V, 2.5 Watt
Dimensions PCB in mm	92×80×20 (no power and debug connector as shown on page1)

Data Acquisition Features

Accepts single ended composite analog video signals 1 Vpp terminated by 75 OhmLVCMOS/ LVTTL controls and LVDS camera signals
10 bit analog to digital converter
Can acquire images FBAS or Y/C sources working due to NTSC, PAL or SECAM specification in monochrome or color mode (Trigger is not supported by these standards)
Video is send with pixel type MONO8 or YUV8
Deinterlacing of interlaced camera sources on request

AddOn Module

Camera Interface	DSUB15, 1 FBAS input, 1 Y/C input on DSUB15 with camera power supply. Sequential acquisition from 2 cameras,1 on FBAS and 1 on Y/C, is supported

Connectors

Power, IO:	10pin MOLEX pitch 1.25mm
Network:	RJ45

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