sensor to image

CANCam-GigE

Gigabit Ethernet camera series and developers platform

When Gigabit Ethernet allows simple and cheap data transfer over long distances, this technology became interesting for machine vision too. GigE Vision® is a protocol especially for machine vision devices, which specifies how to communicate between application and GigE device, e.g. a camera. Sensor to Image developed and offers a scalable GigE solution for various vision applications.

CANCam-GigE

CANCam-GigE is available in three different variants: as camera or data grabbing and transmitting device, as a small display device or as a universal communication module only.

Camera:
As camera CANCam-GigE is available with different CCD or CMOS sensor for area or line scan applications. Different video-interface modules are also available to support legacy grayscale or color analog cameras, CameraLink cameras or VGA and DVI video sources.

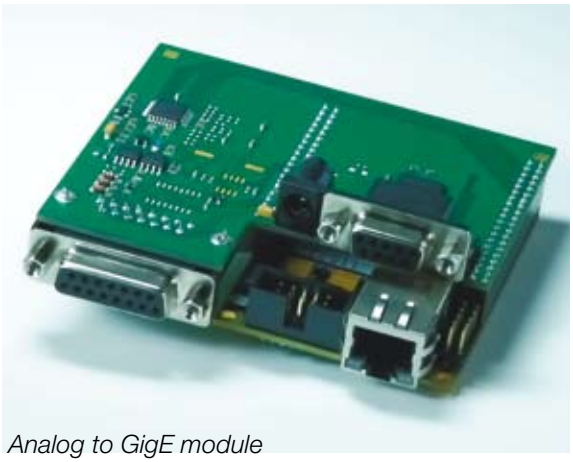
The camera series is fully GigE Vision® compliant and therefore could be used with any GigE Vision® or GenICam compliant imaging software, e.g. CommonVisionBlox supplied by Stemmer Imaging.

Display:
CANCam-GigE is able to act as a controller to get image data sent over GigE Vision displayed on a TFT or VGA screen. In this mode CANCam-GigE works as a GigE Vision® receiver and sends the captured data to a DVI/VGA based display controller board. This device can be used as a small visualization device e.g. to adjust GigE cameras without the need of PCs.

Communication module:
For developers it is possible to integrate the CANCam-GigE communication module with own hardware. For this the principles of works of the architecture are detailed documented, so it is possible to realize communication between customized data acquisition or output boards and the GigE communication board. In addition it is possible to modify and update firmware, so own features can be implemented easily. Of couse it is possible to realize customized solutions, e.g. to bring the communication board into another form factor.

To allow quick access to this technology, a reference design is available, which includes detailed documentation and the FPGA framework to enable the developer to create his own solution.

On software side, the CANCam-GigE communication board is supplied with Sensor to Image Sphinx library or the Image Manager by Stemmer Imaging to allow easy software development.



Analog to GigE module

COMPLETE CAMERA SYSTEM

Communication	CANCam-GigE Communication Board
Video Interface AddOn	Sensor Interface Board
Sensor	CMOS/CCD imager
Power Supply	8–15 V, 3 Watt
Dimensions Housing in mm	56×46×99
Lense Thread	C-Mount

COMMUNICATION BOARD

FPGA	Xilinx Spartan 3A-1400
CPU	MicroBlaze
CPU + Framebuffer shared Memory	64 MByte, optional up to 128 MByte
Flash Memory	8 MByte
EEPROM	8 KByte
Module Interface	55 LVTTL lines, e.g. for data/adress bus, chip select
RS232 / CAN Interface	1/Yes
TTL-IOs	2 inputs, 2 outputs
Image Processing Library	every GigE Vision®/GenICam compliant library
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	75×50×10

AVAILABLE SENSOR BOARDS

CANCam	GigE-0460	GigE-0836M/C	GigE-1330M	GigE-1420M/C	GigE-2014M/C	GigE-3015C	GigE-2k15
Sensor Type	CMOS matrix	CCD matrix	CMOS matrix	CCD matrix	CCD matrix	CMOS matrix	CMOS linear
Monochrome/Color	m/c	m/c	m	m/c	m/c	c	m
Shutter	global	global	rolling	global	global	rolling	global
Pixel	752×480	1024×768	1280×1024	1360×1024	1620×1220	2048×1536	2048
Pixel Size	6 µm×6 µm	4.65 µm×4.64 µm	5.2 µm×5.2 µm	4.65 µm×4.65 µm	4.65 µm×4.65 µm	3.2 µm×3.2 µm	7 µm×7 µm
Pixel Clock	27 MHz	20 MHz	48 MHz	14 MHz	30 MHz	48 MHz	30 MHz
Frames/s	60	36	30	20	14	15	15000

Other sensors on request

ADDON MODULES

Sensor Interface	■ Interface to 2 Sensor to Image sensor boards ■ Dimension: 50×50×10 mm
FPGA Sensor Interface	■ FPGA: Spartan3 –400 or 1000 ■ Framebuffer: 8–32 MB SDRAM ■ Image Processing Memory: 8–32 MB SDRAM or 256 kB SRAM ■ Interface to Sensor to Image sensor boards ■ Dimension: 50×50×10 mm
Analog Camera Interface	■ PAL, NTSC cameras, monochrome and color ■ Analog cameras up to 30 MHz pixelclock ■ Dimension: 90×75×10 mm
CameraLink Interface	■ Base/Medium interface for CameraLink cameras ■ Pixelclock <= 85 MHz ■ Option for Power-Over-CameraLink ■ Dimension: 90×75×10 mm
DVI/VGA Input Interface	■ DVI up to 1280×1024 @ 60 Hz in 16 bit RGB – or – ■ VGA up to 1280×1024 @ 60 Hz in 16 bit RGB ■ Dimension: 90×75×10 mm
DVI/VGA Output Interface	■ TFT Display (SHARP) from VGA (6,4″) up to XGA (12,1″) – or – ■ Analog VGA up to 1024×768 @ 60 Hz in 16 bit RGB ■ Dimension: 90×75×10 mm

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