SCZGE Series Smart Industrial Digital Camera V1.0

Introduction

With technical progress in FPGA, the ARM-based SoC FPGA platform integrates an enhanced ARM processor, customizable FPGA, memory controllers and peripherals, which allow traditional industrial cameras and PC systems combination change to a compact smart camera with functions of image capture, process, analyze and transmission. Miniaturization, distributed, networked and highly integrated embedded intelligent vision system is becoming a trend of future.

Our latest SCZGE series smart camera adopts Xilinx's latest Zynq-7000 All Programmable SoC platform, which is based on a 28nm technical process, tightly integrates the ARM processor and FPGA framework. PS unit has high performance and low power consumption features of dual-core ARMCortex-A9 MPCore; PL unit has up to 74K logic unit and 160 DSP hardware processing unit; integrated 1GB DDR3 memory and 4GB eMMC. The SCZGE series smart camera can meet the strict requirements of industrial vision HD acquisition, high-speed real-time processing, compact structure and high reliability.

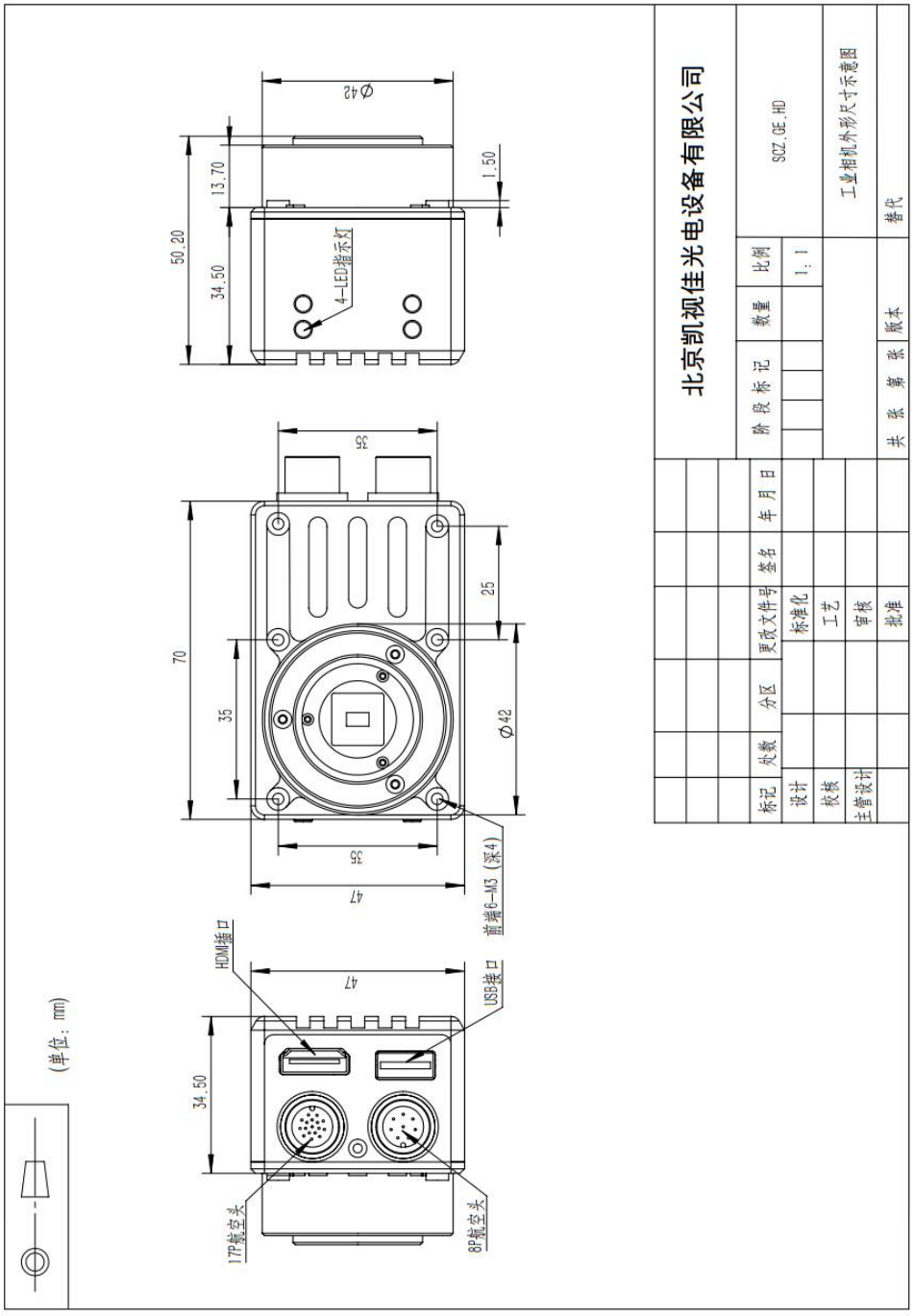
At the same time the camera has various of peripheral interfaces, GigE, RS232, HDMI, TF card, GPIO, etc., with the tailored custom linux kernel v4.0.0 version which is released in 2015 and embedded image acquisition SDK interface, the camera can simplify visual application development process, adapt to complex and changing industrial field applications. In addition, with Vivado HLS, a hardware acceleration tool which is provided by Xilinx, can convert users' parallelizable C / C ++ image processing algorithms into VHDL or Verilog hardware description language and use the FPGA in the system to accelerate hardware and optimize system performance.

Specification

Model	SCZE130M-GEHD
CPU	Dual-core ARM Cortex-A9 processor
Highest Dominant Frequency	866Mhz
Memory	1GB DDR3 SDRAM
FLASH	4GB eMMC
Extended Storage	TF Card, support upto 64Gb
Peripheral Interface	1 USB2.0 HOST, 1 RS232, 1 GigE, PS MIO with optocoupler isolation, 4 outputs / 2 inputs, 1 external trigger input, 1 flash output, 1 HDMI output, 1 USB input
Indicating Light	1 power indicator, 2 user-programmable bi-color working status indicator, 1 bi-color network status indicator
Image Sensor	1/1.8” CMOS sensor, E2V EV76C560
Shutter	Global shutter
Effective pixels	1.3MP
Resolution	1280x1024
Pixel Size	5.3μm
Frame Rate	60fps
Color	Mono
Lens Mount	C-Mount
Power Input	6V-24V DC
Power Consumption	5W
Working Temperature	0-60℃
Storage Temperature	-30 - 80℃
Camera Size	70.0 mm x 47.0 mm x 32.5mm
Camera Net Weight	180g
Accessories	12V power supply / M12-8 Gigabit Ethernet cable / M12-15 power cable / HDMI cable

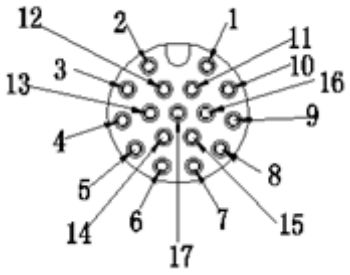
Dimension

Unit: mm



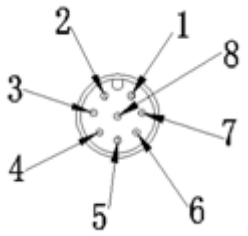
Camera Interface Illustration

(1) M12-17P Aviation plug Interface



M12-17 Core Male interface connection illustration			
Serial No.	Color	Function	Remark
1	Orange(thick)	12V_IN	
2	Red	RS232_RXD	
3	Blown	RS232_TXD	
4	Pink(thick)	USB_5V	
5	Grey	USB_D-	
6	Black	USB_D+	
7	White/Red(thick)	USB_GND	
8	White/Blue	GPIO_OUT2	
9	Yellow	GPIO_OUT3	
10	Purple(thick)	GPIO_GND	
11	Yellow/Green	GPIO_OUT1	
12	Green/Black	GPIO_OUT0	
13	White	GPIO_INPUT1	
14	Blue	GPIO_INPUT0	
15	Green	FLASH	
16	Green/Brown	TRIGGER	
17	Black/White(thick)	GND	
Coating	Red/Black		
Note: Cable is 1 meter, tail has not been treated			

(2) M12-12P Aviation plug Interface



M12-17 Core female interface connection illustration			
Serial No.	Color	Function	Remark
1	White/Orange	MD1_P	
2	Orange	MD1_N	
3	White/Green	MD2_P	
4	Blue	MD2_N	
5	White/Blue	MD3_P	
6	Blue	MD3_N	
7	White/Brown	MD4_P	
8	Brown	MD4_N	
Coating	braided shield		
Note: CAT 6 shielded cable length 2 m, tail pressured with 8P shielded crystal head (not injection molding)			