STALWART

C-mount CMOS Color Digital Camera
STC5F Series

STC5F-Series

Introduction

STC5F series USB3.0 digital cameras adopt SONY Exmor CMOS sensor as the image-picking device and USB3.0 is used as the transfer interface.

STC5F series cameras hardware resolutions range from 1.5MP to 21MP and come with the integrated CNC aluminum alloy compact housing.

STC5F series cameras integrated with 12 bit Ultra-fineTM Hardware Image Signal Processor Video Pipline (Ultra-fineTM HISPVP) for Demosaic, Adjustments, Automatic Exposition, Gain Adjustment, One Push White Balance, Chrominance Adjustment, Saturation Adjustment, Gamma Correction, Luminance Adjustment, Contrast Adjustment, Bayer and finally form RAW data for 8/12 bit out. This will move the heavy burden of the processing from the PC to the Ultra-fineTM HISPVP and greatly accelerating the processing speed.

STC5F series cameras come with advanced video & image processing application ImageView; Providing Windows/Linux/ OSX multiple platforms SDK; Native C/C++, C#/VB.NET, DirectShow, Twain Control API; The STC5F series cameras can be widely used in bright field, dark field, fluorescent light environment and normal microscope image capture and analysis with higher frame rate.

Features

- SONY Exmor, Exmor R(Back-illuminated), Exmor RS CMOS sensor with USB3.0 interface;
- Real-time 8/12bit depth switch(depending on sensor);
- Ultra-fineTM HISP VP and USB3.0 5 Gbps interface ensuring high frame rates (Up to 17 frames for 21MP Resolution);
- Super high sensitivity up to 2350mV(IMX385);
- Ultra low noise and low power dissipation by using column-parallel A/D conversion;
- With hardware resolution among 1.5M to 21M;
- Rolling Shutter or Global Shutter;
- Standard C-Mount camera;
- CNC aluminum alloy housing;
- With advanced video & image processing application ImageView;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.Net, DirectShow, Twain, LabView.

Specification

Item	STC5F-2100C	STC5F-2000C	STC5F-1800C	STC5F-1560C
Sensor & Size(mm)	21M/IMX269 (C) 4/3 "(17.4x13.0)	20M/IMX183© 1"(13.06x8.76)	18M/SONY Special © 1/2.2" (5.86x 4.46)	15.6M/SONY Special © 1.1 " (13.0x13.0)
Pixel(μm)	3.3 x3.3	2.4 x2.4	1.2 x1.2	3.3 x3.3
G Sensitivity Dark Signal	399mv with 1/30s 0.1mv with 1/30s	462mv with 1/30s 0.21mv with 1/30s	130mv with 1/30s 0.1mv with 1/30s	399mv with 1/30s 0.1mv with 1/30s
FPS/Resolution	17@5280x3954 17@3952x3952 56@2640x1976 67@1760x1316 192@584x438	15@5440x3648 50@2736x1824 60@1824x1216	17@4880x3720 40@2448x1836 50@1728x1296	17@3952x3952 56@1976x1976 67@1316x1316
Binning	1x1 1x1 2x2 3x3 9x9	1x1 2x2 3x3	1x1 2x2 3x3	1x1 2x2 3x3
Exposure	0.1ms~15s	0.1ms~15s	0.1ms~15s	0.1ms~15s

Specification

Item	STC5F-1230C	STC5F-1200C	STC5F-900C	STC5F-830C	STC5F-830BC
Sensor & Size(mm)	12.3M/IMX304©, GS) 1.1"(14.13x 10.35)	12M/IMX226© 1/1.7"(7.40 x5.55)	9.0M/IMX305©, GS) 1" (14.13x 7.45)	8.3M/IMX274© 1/2.5"(6.22 x3.50)	8.3M/IMX334© 1/1.8"(7.68x 4.32)
Pixel(μm)	3.45x3.45	1.85x1.85	3.45x3.45	1.62x1.62	2.0x2.0
G Sensitivity Dark Signal	1146mv with 1/30s	280mv with 1/30s	1146mv with 1/30s	236mv with 1/30s	505mv with 1/30s
	0.1mv with 1/30s	0.1mv with 1/30s	0.15mv with 1/30s	0.1mv with 1/30s	0.1mv with 1/30s
FPS/Resolution	23.4@4096x 3000	25@4000x 3000	34@4096x 2160	32@3840x 2160	35@3840x 2160
	46.3@2048x 1500	50@2048x 1080	60@2048x 1080	65@1920x 1080	60@1920x 1080
Binning	1x1 1x1	1x1 2x2	1x1 1x1	1x1 2x2	1x1 2x2
Exposure	0.244ms~15s	0.1ms~15s	0.1ms~15s	0.244ms~15s	0.02ms~15s

Specification

Item	STC5F-830CC	STC5F-630C	STC5F-630BC	STC5F-500C
Sensor & Size(mm)	8.3M/IMX485© 1/1.2"(11.14x6.26)	6.3M/IMX178© 1/1.8" (7.37x4.92)	6.3M/IMX178© 1/1.8" (7.37x4.92)	5.0M/IMX264©,GS) 2/3" (8.45x7.07)
Pixel(μm)	2.9x2.9	2.4x2.4	2.4x2.4	3.45x3.45
G Sensitivity	2188mv with 1/30s	425mv with 1/30s	425mv with 1/30s	1146mv with 1/30s
Dark Signal	0.15mv with 1/30s	0.15mv with 1/30s	0.15mv with 1/30s	0.15mv with 1/30s
FPS/Resolution	45@3840x2160 70@1920x1080	30@3072 x2048 38@1536x 1024	59@3072 x2048 59@1536x 1024	35@2448x2048 50@1224x1024
Binning	1x1 2x2	1x1 2x2	1x1 2x2	1x1 1x1
Exposure	0.02ms~15s	0.1ms~15s	0.02ms~15s	0.1ms~15s

Specification

Item	STC5F-310C	STC5F-310BC	STC5F-200C	STC5F-150C
Sensor & Size(mm)	3.1M/IMX123© 1/2.8" (5.12x3.84)	3.1M/IMX265©, GS) 1/1.8" (7.07x 5.30)	2M/IMX385© 1/2" (7.2x4.05)	1.5M/IMX273©, GS)1/2.9" (4.968x 3.726)
Pixel(μm)	2.5x2.5	3.45x3.45	3.75x3.75	3.45x3.45
G Sensitivity Dark Signal	600mv with 1/30s 0.15mv with 1/30s	1146mv with 1/30s 0.15mv with 1/30s	2350mv with 1/30s 0.15mv with 1/30s	1146mv with 1/30s 0.15mv with 1/30s
FPS/Resolution	50@2048x1536 50@1920x1080	53@2048x1536 85@1024x768	125@1920x1080	164@1440x1080 320@720x540
Binning	1x1 1x1	1x1 1x1	1x1	1x1 2x2
Exposure	0.1ms~15s	0.1ms~15s	0.1ms~15s	0.1ms~15s

Other Specification for STC5F Camera	
Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-fineTM HISPVP /NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C# /VB.Net,, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System	Natural
Operating Environment	
Operating Temperature(in Centigrade)	-10~ 50
Storage Temperature(in Centigrade)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 5V over PC USB Port
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 2GB or More
	USB Port: USB3.0 High-speed Port
	Display: 17" or Larger
	CD-ROM

Dimension

The STC5F body, made from tough, CNC aluminum alloy, ensures a heavy duty, workhouse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. These measures ensure a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions