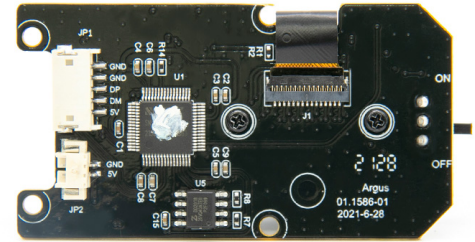
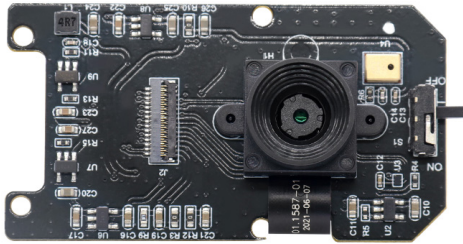




## HAMPO-USB-1587-V1.0 8MP SAMSUNG S5K3H7 M6.5 Auto Focus USB 2.0 Camera Module



HAMPO-USB-1587-V1.0 is an auto focus, 8MP S5K3H7 CMOS sensor, image quality is very high and stable. The camera module has automatic focus function. Capture clear images of objects at different distances through auto focus.

Field of view 79.5° true color image without distortion, suitable for document scanner, LED large screen display, LED display, intelligent electronic blackboard and other educational products. Compatible with Windows 7, 8/10/11, Linux operating system.

### Key Features:

- More than HD: This camera adopts 8MP S5K3H7 sensor for sharp image and accurate color reproduction.
- Capture Video with Audio
- High Quality of Image/Video: The camera with high definition 3264\*2448P and lower color reproduction deviation produce sharp image and accurate information
- Applications: This tiny 33mmx31mm, compatible with 32mm x 32mm camera board can be installed in most hidden and narrow position for a home surveillance system, monitoring 3D Printer, document scanner, OCR reader, beauty instrument, object recognition and tracking or other machine vision application.



## HAMPO-USB-1587-V1.0

### 8MP SAMSUNG S5K3H7 M6.5 Auto Focus USB 2.0 Camera Module

<b>Camera Module No.</b>	<b>HAMPO-USB-1587-V1.0</b>
<b>Resolution</b>	8 MP
<b>Frame rate</b>	30fps
<b>Sensor Type</b>	1/3.06"
<b>Pixel Size</b>	1.4 um x 1.4um
<b>EFL</b>	3.48mm
<b>F.NO</b>	2.2
<b>Dynamic Range</b>	80 dB
<b>View Angle</b>	79.5°(DFOV)
<b>Lens TTL</b>	3.98 mm
<b>Module Type</b>	Auto Focus
<b>Lens Model</b>	HAMPO-LENS-5005
<b>Interface</b>	MIPI
<b>Output Format</b>	YUY2/MJPG
<b>Auto Control</b>	Saturation, Contrast, Acutance White Balance, Exposure
<b>Audio</b>	Digital Mic
<b>Voltage</b>	AVDD2.8V/DVDD1.2V/DOVDD2.8V
<b>Working Current</b>	Max 200mA
<b>PCB Size</b>	57mm*31mm
<b>System Compatibility</b>	Win7/8/10/11、 Linux
<b>Software for USB Camera</b>	AMCAP, Webcam Viewer, V4L2 Controls Contacam, VLC Player, MotionEye OS iSpy, ZoneMider, Yawcam
<b>Lens Constructiont</b>	5P + 1R
<b>Operating Temperature</b>	-30°C to +85°C
<b>Mountnt</b>	M6.5*P0.255mm

Wide Compatibility with Windows, Android, Mac OS, Linux, or Raspberry Pi



Windows

android

Mac OS

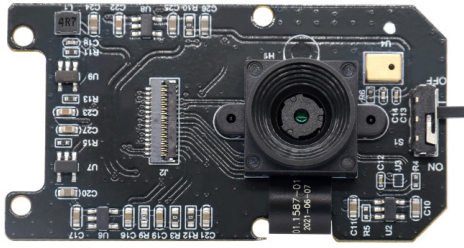
Linux

Raspberry Pi

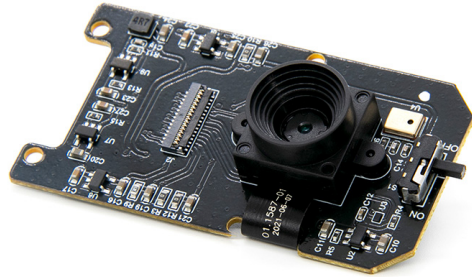


# HAMPO-USB-1587-V1.0

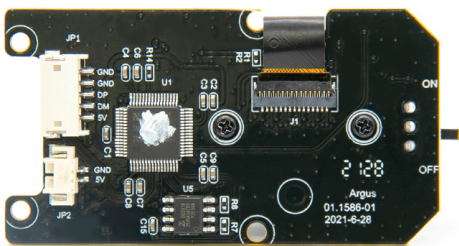
## 8MP SAMSUNG S5K3H7 M6.5 Auto Focus USB 2.0 Camera Module



Top View



Side View



Bottom View



Side View



## HAMPO-USB-1587-V1.0

### 8MP SAMSUNG S5K3H7 M6.5 Auto Focus USB 2.0 Camera Module

FORMAT	RESOLUTION	FRAME RATE
		USB 2.0
MJPG	640 x 480 (VGA)	30 FPS
	1024 x 768 (Super VGA)	30 FPS
	1280 x 720 (720P)	30 FPS
	1920x 1080 (2MP)	30 FPS
YUY2	640 x 480 (VGA)	30 FPS
	1024 x 768 (Super VGA)	10 FPS
	1280x 720 (720P)	10 FPS
	1920 x 1080 (2MP)	5 FPS

1	AVDD2.8V	2	DN3
3	AGND	4	DP3
5	DVDD1.2V	6	DGND
7	DOVDD2.8V	8	DN2
9	DGND	10	DP2
11	LED-	12	DGND
13	LED+	14	DNCK
15	RESET	16	DPCK
17	DGND	18	DGND
19	SEN_CLK	20	DN1
21	DGND	22	DP1
23	SCL	24	DGND
25	SDA	26	DNO
27	DGND	28	DPO
29	AF_OUT	30	DGND
31	AF+		

**Top view**

**Side view**

**Bottom view**

主板接口型号: FH26\_30S\_0.3HW

**Module Specification:**

- 1>芯片[Sensor]: S5K3H7
- 2>丝印[Fpc/Pcb silk-screen]:
- 3>连接器[Connector]:
- 4>镜头[Lens]:
- 5>马达[VCM]:

焦距[EFL]: 光圈[F/NO]: 视场角[Fov<D>]:  
 镜片结构[CONSTRUCTION]:  
 最大成像圆[Max Image Circle]: 4.8mm

HP Tech CD.,LTD	
3rd ANGLE	TITLE : 02.03.1587.10
UNLESS OTHERWISE SPECIFIED GENERAL TOLERANCE:	MODEL :
LEVEL TOLERANCE TYPE	PART NO. :
DIM A B C D	MATERIAL :
4-3 #0.03 #0.03 #0.1 #0.15	FINISHED :
3D-50 #0.05 #0.05 #0.1 #0.15	文件编号:
3D-100 #0.05 #0.05 #0.15 #0.2	版本:
>100 #0.08 #0.12 #0.2 #0.25	
ANGULAR #0.5° #0.5° #0.8° #1°	

Lens parameter:5P+IR

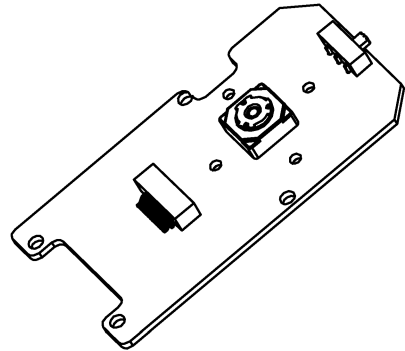
EFL: 3.48mm

F.NO:2.2

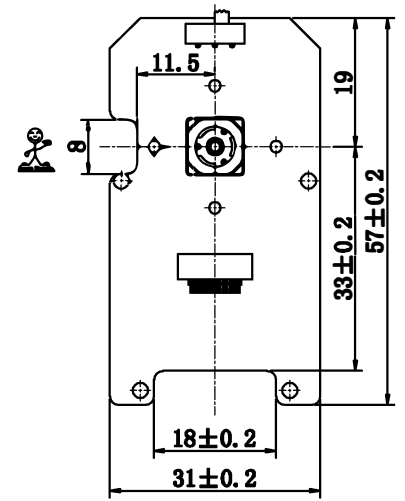
View Angle:D79.5°

Chip Type:1/3.06"

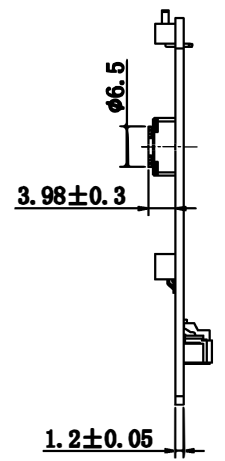
Thread Size:M6.5xP0.255



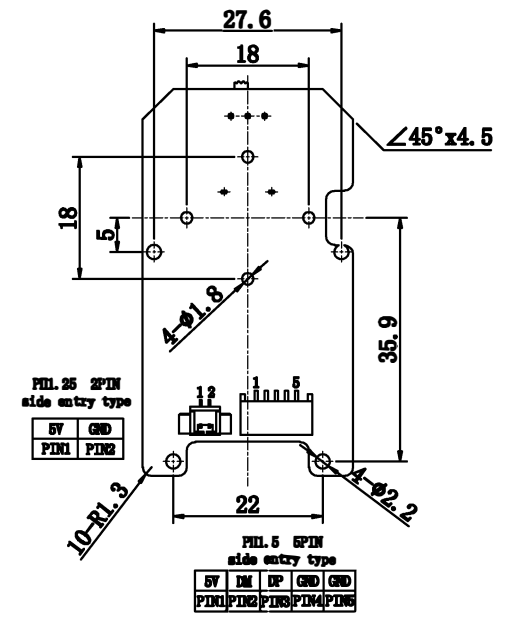
TOP VIEW



SIDE VIEW



BOTTOM VIEW



NOTE

UNSPECIFIED TOL:		SIGNATURE	DATE	R & D Center		DONGSHAN HANPO ELECTRONIC TECHNOLOGY CO., LTD				
	.XXX ± 0.005	DWN. BY	MIKE	2022.05.18	PART NAME		Camera Module			
	.XX ± 0.05	CHK. BY			DWG NO		2.03.1587.011_Module			
	.X ± 0.1	APP. BY			MATERIAL	/	SCALE	UNIT	SHEET	SIZE
∠ ± 0.5°	TREATMENT	/		1:1	mm	1/1	A4	/		

# Product Overview

## 1.1 Introduction

The S5K3H5XA is a highly integrated 8M pixel camera chip that includes a CMOS image sensor (CIS), image correction functionality and serial transmission using 4-lane MIPI. It is designed for fast yet low power operation, delivering full resolution capture at 30 frames per second (fps). It is fabricated by the SAMSUNG 65 nm back side illumination (BSI) CMOS image sensor process developed for imaging applications to realize a high-efficiency and low-power photo sensor. The sensor consists of  $3264 \times 2448$  effective pixels that meet with the 1/3.2-inch optical format.

The CIS has on-chip 10-bit ADC arrays to digitize the pixel output and on-chip Correlated Double Sampling (CDS) to drastically reduce Fixed Pattern Noise (FPN). It incorporates on-chip camera functions such as lens shading correction, defect correction, exposure setting, white balance setting, image scaling and image data compression.

It is programmable through a CCI or SPI serial interface and includes on-chip one-time programmable (OTP) none-volatile memory (NVM).

The S5K3H5XA is suitable for a low-power camera module with a 2.8 V/1.2 V power supply.

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## 1.2 Features

- 8Mp sensor with 1/3.2"optics
- Pixel size: 1.4  $\mu\text{m}$
- Effective resolution: 3264 (H)  $\times$  2448 (V)
- Electronic rolling shutter and global reset
- Support digital video stabilization margins in FHD/HD video modes
- Frame rate:
  - Capture: 8M-4:3 30 fps (2640 Mbps)
  - HD video: 1.5M-16:9 120 fps
  - High speed: QVGA 240 fps
- Interfaces:
  - Fine interface frequency control using additional dedicated PLL for EMI avoidance and integration flexibility.
  - MIPI CSI2 – four lanes (1Gbps per lane)
  - 10-bit parallel video interface, with reduced frame rate
  - Output formats: RAW8 (using DPCM/PCM compression), RAW10, RAW12 (for test only)
- Control interface:
  - SPI interface – Three-wire serial communication circuit up to 18 MHz.
  - I2C-compatible – Two-wire serial communication circuit up to 400 kHz.
  - Context switch: Two register sets for fast mode change for an unlimited or configurable number of frames.
- Low-power HW standby mode with internal power switch. Pull-down option for HW standby configuration.
- Xenon/LED flash
- Mechanical shutter
- 8 Kbit on-chip OTP memory to support defect corrections, chip ID and module-to-module compensation.
- Analog gain x16
- Vertical and horizontal flip mode
- Continuous frame capture mode
- 2/2, 4/4 – average/average sub sampling readout
- Pixel elimination readout function
- x1.5, x2, x3, x4 Bayer downscaler function
- Lens shading correction function
- Bad pixel correction
- On-chip temperature sensor
- Built-in test pattern generation
- Supply voltage: 2.8 V for analog and 2.8 V or 1.8 V for I/O, 1.2 V for digital core supply
- Operating temperature: – 30  $^{\circ}\text{C}$  to + 70  $^{\circ}\text{C}$



## Camera Reliability Test

Reliability Inspection Item			Testing Method	Acceptance Criteria
Category	Item			
Environmental	Storage Temperature	High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature	High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 24 Hours	Temperature Chamber	No Abnormal Situation
	Humidity	60°C 80% 24 Hours	Temperature Chamber	No Abnormal Situation
	Thermal Shock	High 60°C 0.5 Hours Low -20°C 0.5 Hours Cycling in 24 Hours	Temperature Chamber	No Abnormal Situation
Physical	Drop Test (Free Falling)	Without Package 60cm	10 Times on Wood Floor	Electrically Functional
		With Package 60cm	10 Times on Wood Floor	Electrically Functional
	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Z-Axis 2mm 30min	Vibration Table	Electrically Functional
	Cable Tensile Strength Test	Loading Weight 4 kg 60 Seconds Cycling in 24 Hours	Tensile Testing Machine	Electrically Functional
Electrical	ESD Test	Contact Discharge 2 KV	ESD Testing Machine	Electrically Functional
		Air Discharge 4 KV	ESD Testing Machine	Electrically Functional
	Aging Test	On/Off 30 Seconds Cycling in 24 Hours	Power Switch	Electrically Functional
	USB Connector	On/Off 250 Times	Plug and Unplug	Electrically Functional







## Camera Inspection Standard

Inspection Item		Inspection Method	Standard of Inspection		
Category	Item				
Appearance	FPC/ PCB	Color	The Naked Eye	Major Difference is Not Allowed.	
		Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
	Holder	Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
		Gap	The Naked Eye	Meet the Height Standard	
		Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
		Damage	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Lens	Scratch	The Naked Eye	No Effect On Resolution Standard	
		Contamination	The Naked Eye	No Effect On Resolution Standard	
		Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	No Issue On Appearance.	
	Function	Image	No Communication	Test Board	Not Allowed
			Bright Pixel	Black Board	Not Allowed In the Image Center
Dark Pixel			White board	Not Allowed In the Image Center	
Blurry			The Naked Eye	Not Allowed	
No Image			The Naked Eye	Not Allowed	
Vertical Line			The Naked Eye	Not Allowed	
Horizontal Line			The Naked Eye	Not Allowed	
Light Leakage			The Naked Eye	Not Allowed	
Blinking Image			The Naked Eye	Not Allowed	
Bruise			Inspection Jig	Not Allowed	
Resolution			Chart	Follows Outgoing Inspection Chart Standard	
Color			The Naked Eye	No Issue	
Noise			The Naked Eye	Not Allowed	
Corner Dark			The Naked Eye	Less Than 100px By 100px	
Color Resolution			The Naked Eye	No Issue	
Dimension	Height	The Naked Eye	Follows Approval Data Sheet		
	Width	The Naked Eye	Follows Approval Data Sheet		
	Length	The Naked Eye	Follows Approval Data Sheet		
	Overall	The Naked Eye	Follows Approval Data Sheet		

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## Company HAMPO

Dongguan Hampo Electronic Technology Co., Ltd. was established in 2015, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. Hampo is occupying 150,000 square feet automated plants with 500 employees of annual throughput 180,000,000 units cameras.

Hampo provides OEM, ODM design, contract manufacturing, and builds the camera products. You may provide the requirements to us, even with a hand draft, our sales and engineering work together to meet your needs. We consider ourselves your last-term partner in developing practical and innovative solutions.

Our team covers everything from initial concept development to mass produced product. Hampo specializes in customized camera design, raw material, electronic engineering, firmware/software development, product testing, and packing design. Our experienced strategic supply systems offer a robust and dependable manufacturing capacity for orders of various sizes.



## Limited Warranty

Hampo provides the following limited warranty if you purchased the Product(s) directly from Hampo company or from Hampo's website, [www.hampotech.com](http://www.hampotech.com). Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. Hampo guarantees that the Product(s) will be free from defects in materials and workmanship under normal use for a period of one (1) year from the date you receive the product ("Warranty Period").

For all Product(s) that contain or develop material defects in materials or workmanship during the Warranty Period, Hampo will, at its sole option, either: (i) repair the Product(s); (ii) replace the Product(s) with a new or refurbished Product(s) (replacement Product(s) being of identical model or functional equivalent); or (iii) provide you a refund of the price you paid for the Product(s).

This Limited Warranty of Hampo is solely limited to repair and/or replacement on the terms set forth above. Hampo is not reliable or responsible for any subsequent events.

