

3MP GMSL2 CAMERA

GENERAL DESCRIPTION

The camera is equipped with SONY CMOS image sensor ISX031 and Maxim GMSL2 serializer MAX96717F. It has an automotive-grade sensor with a well-tuned Image Signal Processor (ISP) that produces exceptional image quality. It comes with an IP67-rated enclosure and AA lens that is focused and glued in factory.

KEY PARAMETERS

Sensor	SONY 2.95MP ISX031 RGGB
ISP	Built-in
Image Size	1/2.42 inch CMOS
Output Pixels	1920H*1536V
Resolution	Center≥800LW/PH, Around≥600LW/PH (SG3S11AFSK only meet the center standard)
Pixel Size	3.0um*3.0um
Frame Rate	1920*1536@30fps
HDR Support	Yes
LFM	Yes
Output data	YUV422@8bit
Serializer	MAXIM MAX96717F
Camera Interface	GMSL2
Power Supply	9~16V POC
Current	<200mA@12VDC
Connector	Amphenol Fakra (Z Code)
Operating temp. range	-40~+85°C
Dimensions	W: 25mm, L:25mm
Weight	<50g



Features

- Output format: Uncompressed YUV422 format
- Support external trigger
- Support multi-camera synchronization
- Support different focal length lens



Application

- Automotive
- ADAS + Viewing Fusion
- High Dynamic Range Imaging
- Autonomous Driving
- Robots





HARDWARE SETTING

Serializer	
Model	Max96717F
I2C Address	0x80(8bit address)
Rate	GMSL2 （3G bps）

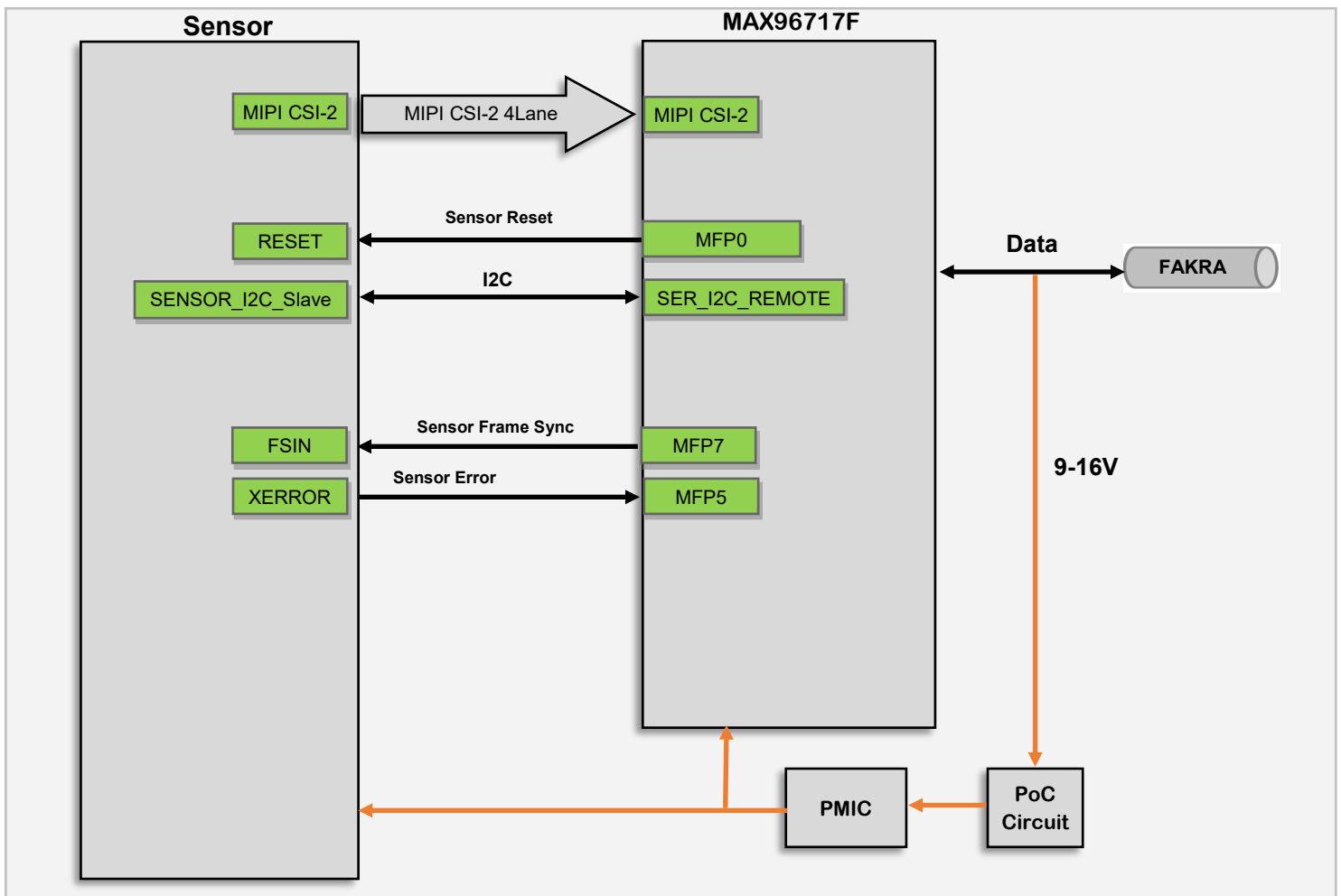
ISP	
Model	2.95MP RRGB Sensor
I2C Address	0x34 (8bit address)
Frame Sync	Controlled by Max96717F MFP7
Reset	Controlled by Max96717F MFP0

Interface Circuit Diagram





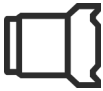
BLOCK DIAGRAM



Block Diagram

- ※ The camera module has a built-in ISP that outputs YUV data. The backend does not need to configure an image sensor, but only needs to configure SerDes;
- ※ For SerDes setting code, please contact Sales@sensing-wolrd.com ;
- ※ The camera support store camera internal parameters, if you need to obtain the internal parameters reading method, please note before placing the order





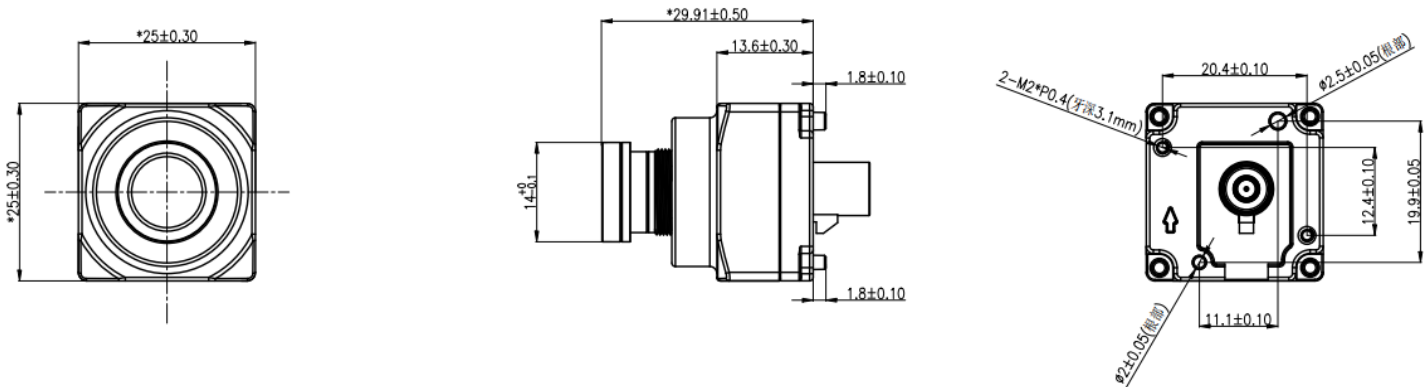
MODEL AND LENS

Model	HFOV	VFOV	F.No	EFL (mm)	DOF	Max Optical Distortion	Water- proof	Lens Mount
SG3S11AFCK	30°	24°	1.6	10.96	8.4-INF Focus at 25m	-2.5%	IP67	M12
SG3S11AFFK	60°	47°	1.5	5.83	2.34-INF Focus at 7m	-25.6%	IP67	AA
SG3S11AFJK	100°	78°	1.9	3.45	0.7-INF Focus at 2.1m	-50%	IP67	AA
SG3S11AFLK	118°	92°	2	3	0.51-INF Focus at 1.5m	-92%	IP67	AA
SG3S11AFSK	196°	154°	2.0	1.51	0.13-INF Focus at 0.4m	-155%	IP67	AA

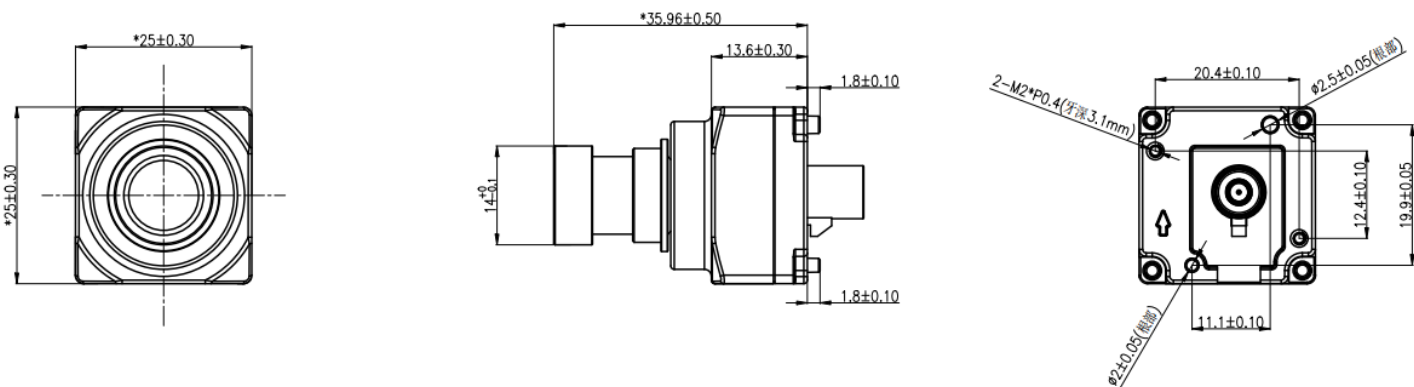


DIMENSIONS

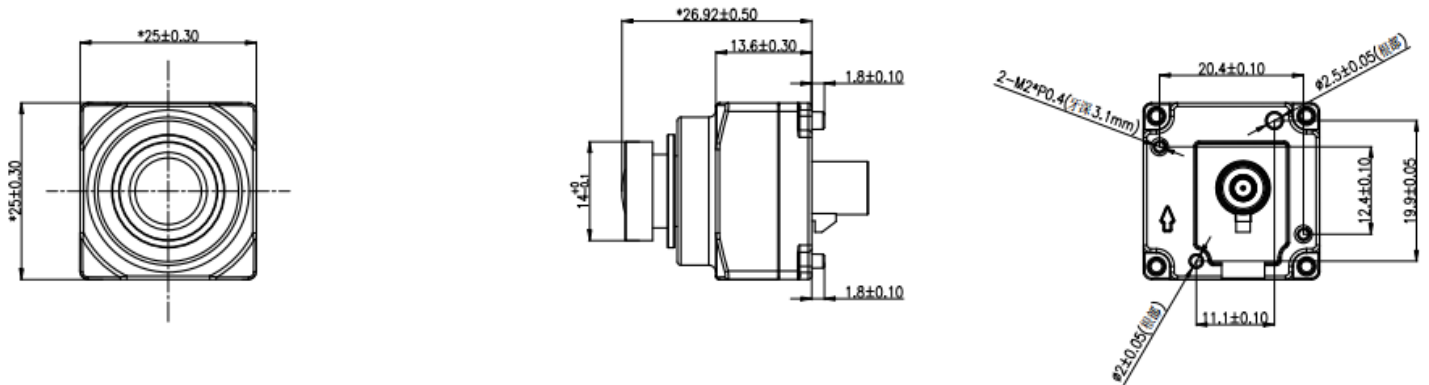
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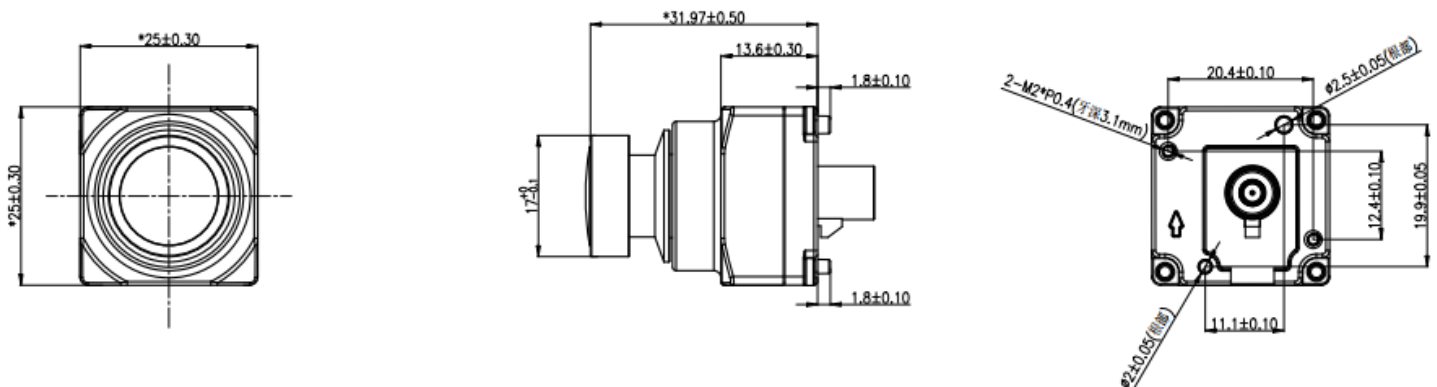
SG3S11AFFK:



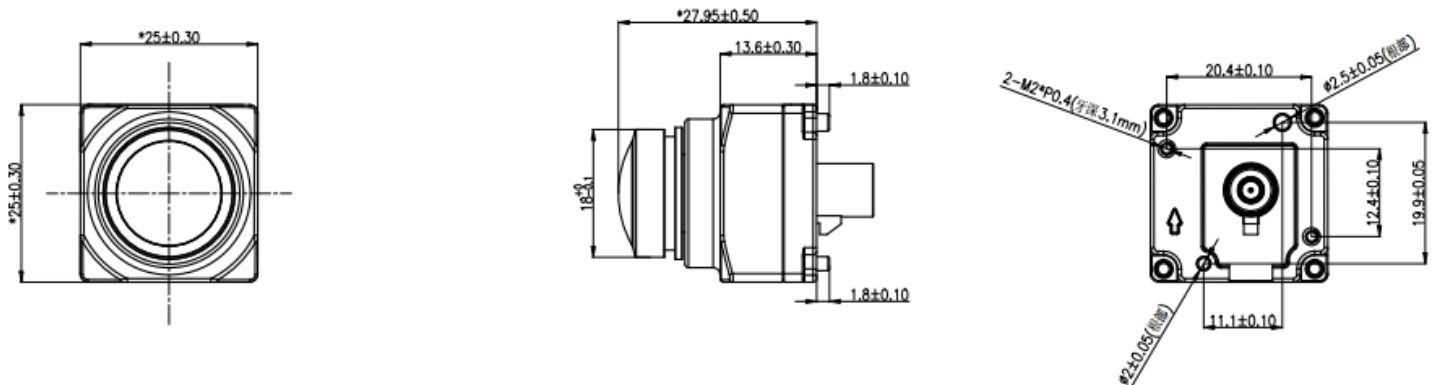
SG3S11AFJK:



SG3S11AFLK:



SG3S11AFSK:



Front View

Side View

Rear View

Note:



This icon indicates the imaging direction is positive.

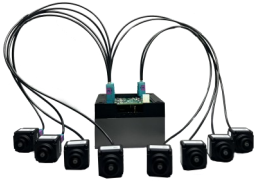
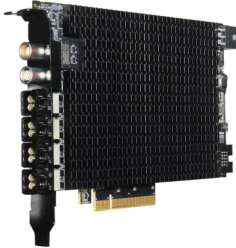
△ The height of this module varies when matching different lenses. Please refer to 3D digital analog size for details.

Dimension





PLATFORMS SUPPORT

Platforms	Product Link
NVIDIA Jetson platforms 	Provide development driver package https://www.sensing-world.com/jetson_camera_ecosystem 
SerDes Camera to USB Converter	Compatible with UVC protocol https://www.sensing-world.com/USB_Converter 
CoaxCapture II GMSL Capture Card	Provide development driver package https://www.sensing-world.com/Coaxcapture_Card 

※ For development support, please contact Sales@sensing-world.com;





DEVELOPMENT KIT

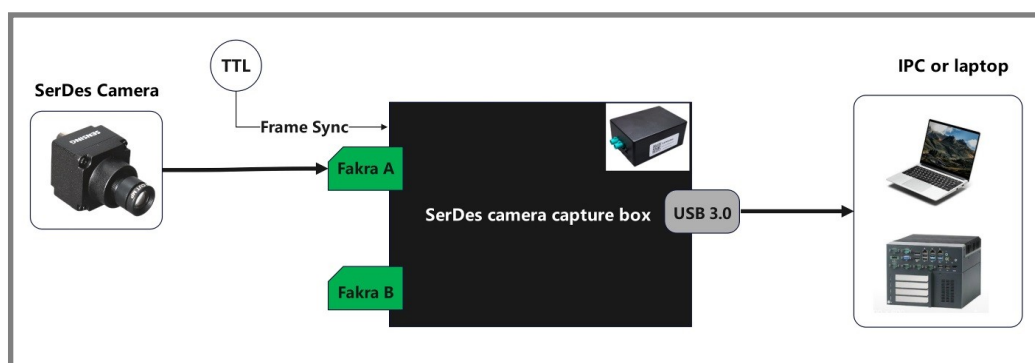
◇ SerDes Camera to USB Converter



- **SG3S11AFxK can connect to PANDA serial PG2 as a USB 3.0 camera .**

◇ KEY FEATURES

- USB 3.0 Super Speed support
- UVC compliance
- Provide customization services
- Power Supply by USB interface
- Weight: <100g
- Single Coax Cable transmit up to 20 meters PoC (Power over Cable)
- Support Windows only



※ Support connecting one camera only ;

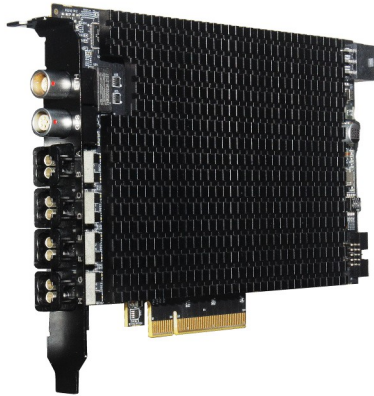




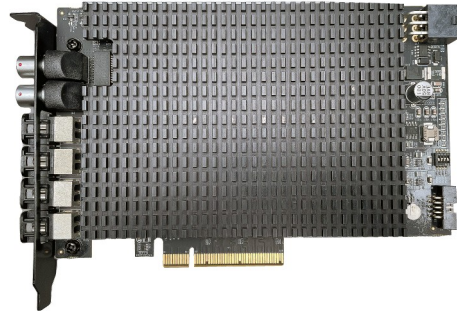
DEVELOPMENT KIT

◇ CoaxCapture II GMSL Capture Card

CCG3-8H



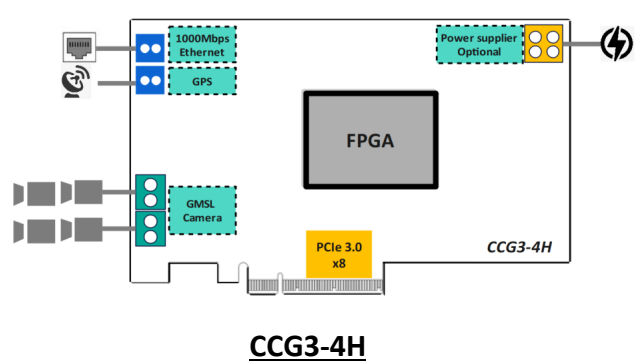
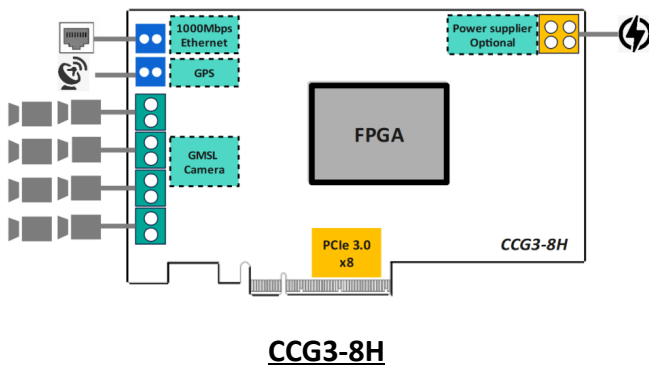
CCG3-4H



- SG3S11AFxK can connect to CCG3-4H/8H .

◇ KEY FEATURES

- CCG3-8H at most can support connect 8 pcs of this camera at the same time
- CCG3-4H at most can support connect 4 pcs of this camera at the same time
- PCI-e Gen3*8lane support x86 architecture
- Support external trigger synchronization
- Support GPS Timing synchronization
- Support network PTP timing

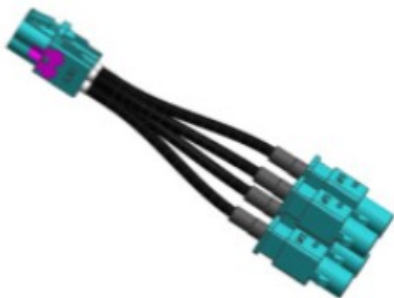




ACCESSORIES

◇ Coaxial Cable

Product Name	Order PN#	Specification
Mini-fakra Coaxial Cable 4-in-1(Rosenberg)	R4JC-JC-ZZZZ-0500L	Mini-fakra, 4 in 1, 0.5m, Female to Female
Mini-fakra Coaxial Cable 4-in-1 (TE)	T4JC-PC-ZZZZ-0500A	Mini-fakra, 4 in 1, 0.5m, Male to Female
Mini-fakra Coaxial Cable 4-in-1(Rosenberg)	R4JC-PC-ZZZZ-0500L	Mini-fakra, 4 in 1, 0.5m, Male to Female
Mini-fakra Coaxial Cable 4-in-1 (TE)	T4JC-JC-ZZZZ-0500A	Mini-fakra, 4 in 1, 0.5m, Female to Female
Camera coaxial Cable	SG-JSZPSZ2000L	2M, Male to Female, IP67
Camera coaxial Cable	SG-JSZJSZ2000L	2M, Female to Female, IP67
Camera coaxial Cable	SG-JSZPSZ3000L	3M, Male to Female, IP67
Camera coaxial Cable	SG-JSZJSZ3000L	3M, Female to Female, IP67
Camera coaxial Cable	SG-JSZPSZ5000L	5M, Male to Female, IP67
Camera coaxial Cable	SG-JSZJSZ5000L	5M, Female to Female, IP67
Camera coaxial Cable	SG-JSZJSZ7000L	7M, Female to Female, IP67
Camera coaxial Cable	SG-JSZJSZ8000L	8M, Female to Female, IP67
Camera coaxial Cable	SG-JSZPSZL100L	10M, Male to Female, IP67
Camera coaxial Cable	SG-JSZJSZL100L	10M, Female to Female, IP67
Camera coaxial Cable	SG-JSZJSZL120L	12M, Female to Female, IP67
Camera coaxial Cable	SG-JSZJSZL160L	16M, Female to Female, IP67
Camera coaxial Cable	SG-JSZJSZL200L	20M, Female to Female, IP67





Revision History

Version	Description	Release date
Rev1	First Release	Aug.2025

