SG2-AR0233C-5200-GMSL2-Hxxx

2MP GMSL2 CAMERA

www.sensing-world.com

GENERAL DESCRIPTION

The camera is equipped with On-semi CMOS image sensor AR0233 and Maxim GMSL2. It has an automotive-grade sensor with a well-tuned Image Signal Processor (ISP) that produces exceptional image quality, which comes with an IP67-rated enclosure – is supplied with an M12 lens that is focused and glued in our factory.



KEY PARAMETERS

Sensor	ONSEMI 2.6MP AR0233 RGGB
ISP	GEO GW5200
Image Size	1/2.5 inch CMOS
Output Pixels	1920H*1080V
Pixel Size	3.0um*3.0um
Frame Rate	1920*1080@30fps
HDR Support	Yes
LFM	Yes
Output data	YUV422@8bit
Serializer	MAXIM MAX9295A
Camera Interface	GMSL2
Power Supply	9~16V POC
Current	<150mA@12VDC
Connector	Amphenol Fakra （Z Code ）
Operating temp. range	-40~+85℃
Dimensions	W: 30mm, L:30mm, H:22.5mm
Weight	<50g

Features

- Output format: Uncompressed YUV422 format
- S-mount IP67 compliant lens focused and glued at our factory
- Multi−Camera synchronization Support
- Support different focal length lens
- FCC , CE and RoHS

Application

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

HARDWARE SETTING

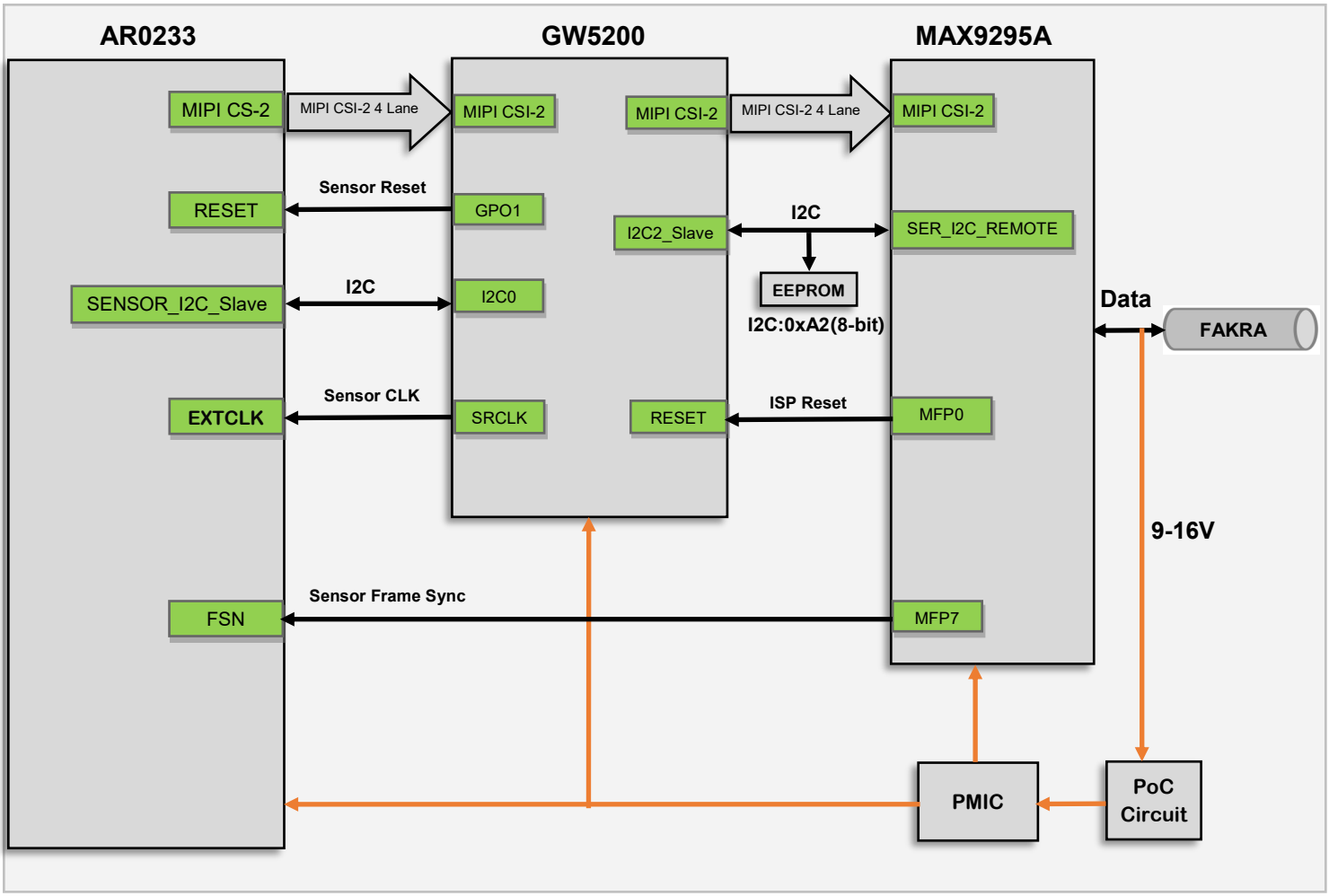
Serializer	
Model	Max9295A
I2C Address	0x80 (8bit address)
GMSL Rate	GMSL2 （6G bps）

ISP	
Model	GW5200
I2C Address	0xDA (8bit address)
Reset	Controlled by Max9295A MFP0

Sensor	
Model	AR0233
I2C Address	0x20 (8bit address)
Frame Sync	Controlled by Max9295A MFP7

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;

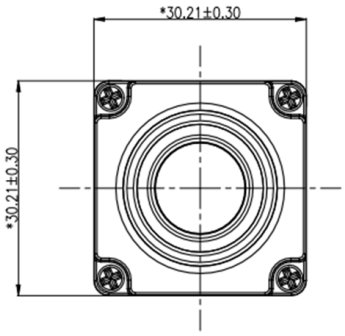
※ For SerDes setting code, please contact Sales@sensing-wolrd.com ;

※ The camera has built-in **EEPROM**, which can store camera internal parameters, please note before placing the order;

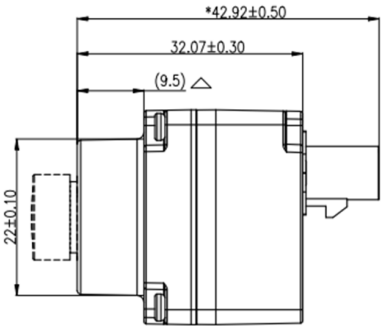
MODEL AND LENS

Model	HFOV	VFOV	F.No	EFL	Max Optical Distortion	Water-proof	Lens Mount
SG2-AR0233C-5200-GMSL2-H30X	30°	17°	1.6	10.96mm	-2%	IP67	M12
SG2-AR0233C-5200-GMSL2-H60F	60°	32°	1.6	5.8mm	-21.5%	IP67	M12
SG2-AR0233C-5200-GMSL-100F1	100°	53°	1.6	3.55mm	-45%	IP67	M12
SG2-AR0233C-5200-GMSL2-H120H	118°	62°	2.0	3mm	-62%	IP67	M12
SG2-AR0233C-5200-GMSL2-H190X	196°	112°	2.0	1.51mm	-155%	IP67	M12

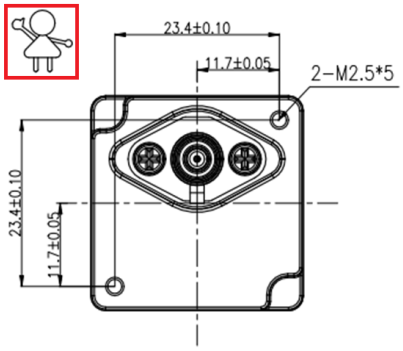
DIMENSIONS



Front View



Side View



Rear View

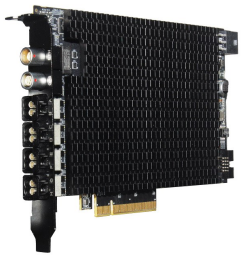
Note:

△ There are two different heights of this size to match different lenses. Please refer to 3D digital analog size for details.

This icon indicates the imaging direction is positive.

Dimension

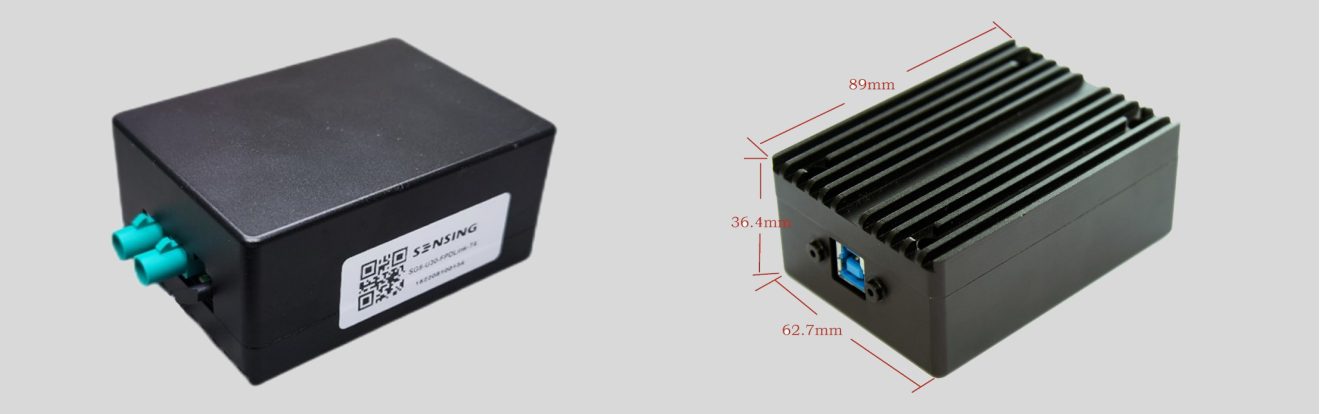
PLATFORMS SUPPORT

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-wolrd.com;

DEVELOPMENT KIT

◇ SerDes Camera to USB Converter



- SG2-AR0233C-5200-GMSL2 can connect to **SG8-U30-GMSL2** as a USB 3.0 camera **.**
- USB Camera Part Number: **SG2-AR0233C-GMSL2-U30-Hxxx** (include 1xSG8-U30-GMSL2 and 1xSG2-AR0233C-5200-GMSL2)

◇ **KEY FEATURES**



→ USB 3.0 Super Speed support

→ UVC compliance

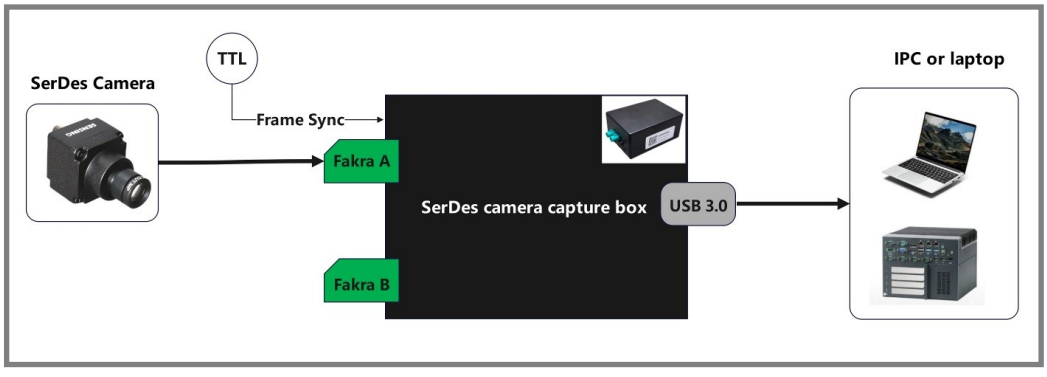
→ Provide customization services

→ Power Supply by USB interface

→ Weight: <300g

→ Single Coax Cable transmit up to 20 meters PoC (Power over Cable)

→ Support Windows only

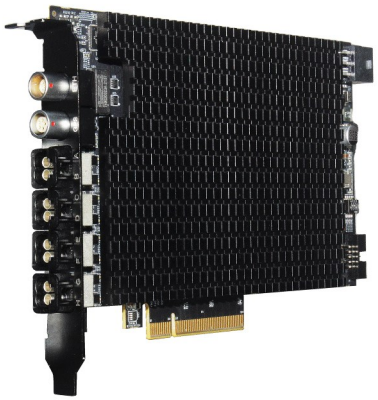


※ Support connected one camera only;

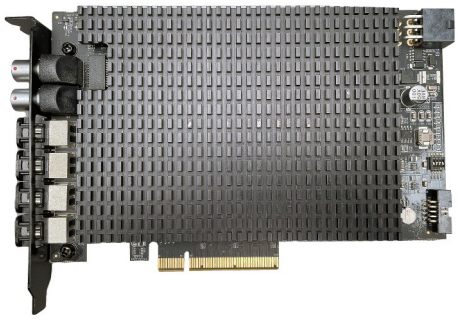
DEVELOPMENT KIT

◇ CoaxCapture II GMSL Capture Card

CCG3-8H



CCG3-4H



- SG2-AR0233C-5200-GMSL2 can connect to **CCG3-4H/8H** .

◇ KEY FEATURES

→ CCG3-8H at most can support connect 8 pcs of this cameras at the same time

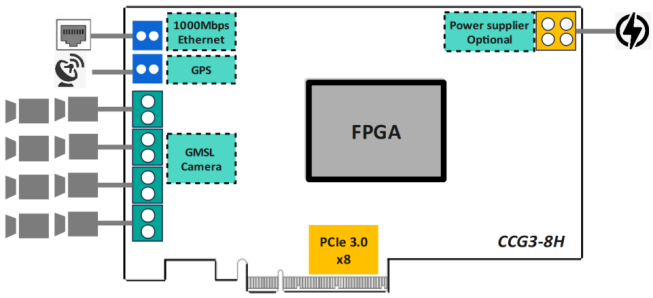
→ CCG3-4H at most can support connect 4 pcs of this cameras at the same time

→ PCI-e Gen3*8lane support x86 architecture

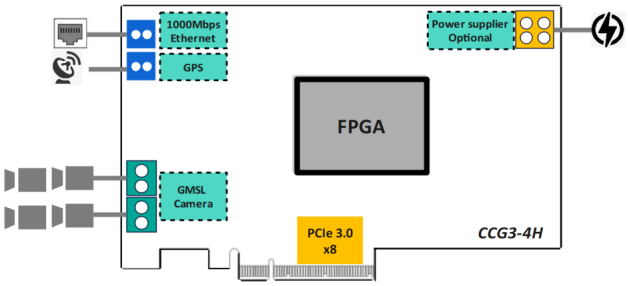
→ Support external trigger synchronization

→ Support GPS Timing synchronization

→ Support network PTP timing



CCG3-8H

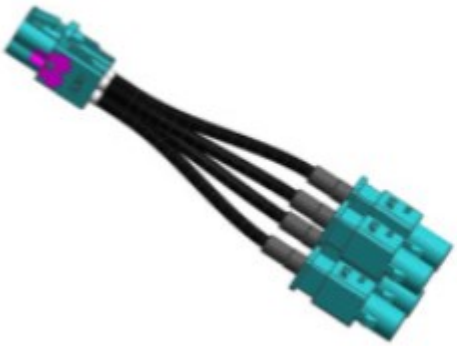


CCG3-4H

ACCESSORIES

◇ Coaxial Cable

Product Name	Order PN#	Specification
Mini-fakra Coaxial Cable 4-in-1 （TE）	T4JC-JS-ZZZZ-0500A	Mini-fakra, 4 in 1, 0.5m, Male to Female
Mini-fakra Coaxial Cable 4-in-1(Rosenberg)	R4PC-JS-ZZZZ-0500L	Mini-fakra, 4 in 1, 0.5m, Male to Female
Mini-fakra Coaxial Cable 4-in-1(Rosenberg)	R4JC-JS-ZZZZ-0500L	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	Oct.2020
Rev2	→ Update connector description → Update cable information → Add block diagram → Add supported platforms	Mar.2023

Contact Us

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