JV8S-AR0820C-5300-G2A-Hxxx

8MP GMSL2 CAMERA

✏️ GENERAL DESCRIPTION

The camera is equipped with On-semi Semiconductor CMOS image sensor AR0820 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 AA lens that is focused and glued in our factory.

⊞ KEY PARAMETERS

Sensor	ONSEMI 8.3MP AR0820 RGGB
ISP	GW5300
Image Size	1/2 inch CMOS
Output Pixels	3840H*2160V
Pixel Size	2.1um*2.1um
Frame Rate	3840*2160@30fps
HDR Support	Yes
LFM	/
Output data	YUV422@8bit
Serializer	MAXIM MAX9295A
Camera Interface	GMSL2
Power Supply	9~16V POC
Current	<400mA@12VDC
Connector	Amphenol Fakra（Z Code）
Operating temp. range	-40~+85℃
Dimensions	W: 30mm, L:30mm, H:22.57mm
Weight	<80g

👁 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)
Rate	GMSL2　(6G bps)

ISP	
Model	GW5300
I2C Address	0xDA (8bit address)
Reset	Controlled by Max9295A MFP0

| Sensor	
Model	AR0820
I2C Address	0x20 (8bit address)
Frame Sync	Controlled by Max9295A MFP8

Interface Circuit Diagram

BLOCK DIAGRAM

AR0820 **GW5300** **MAX9295A**

AR0820		GW5300		MAX9295A
MIPI CS-2	MIPI CSI-2 4 Lane →	MIPI CSI-2		MIPI CSI-2
		MIPI CSI-2	MIPI CSI-2 4 Lane →	MIPI CSI-2

Sensor Reset: RESET ← GPO1

I2C: SENSOR_I2C_Slave ← → I2C0

I2C2_Slave ← **I2C** → **SER_I2C_REMOTE**

EEPROM
I2C:0xA2(8-bit)

Sensor CLK: RESET ← SRCLK

ISP Reset: RESET ← MFP0

Data: FAKRA

9-16V

Sensor Frame Sync: FSN ← MFP8

PMIC ← PoC Circuit
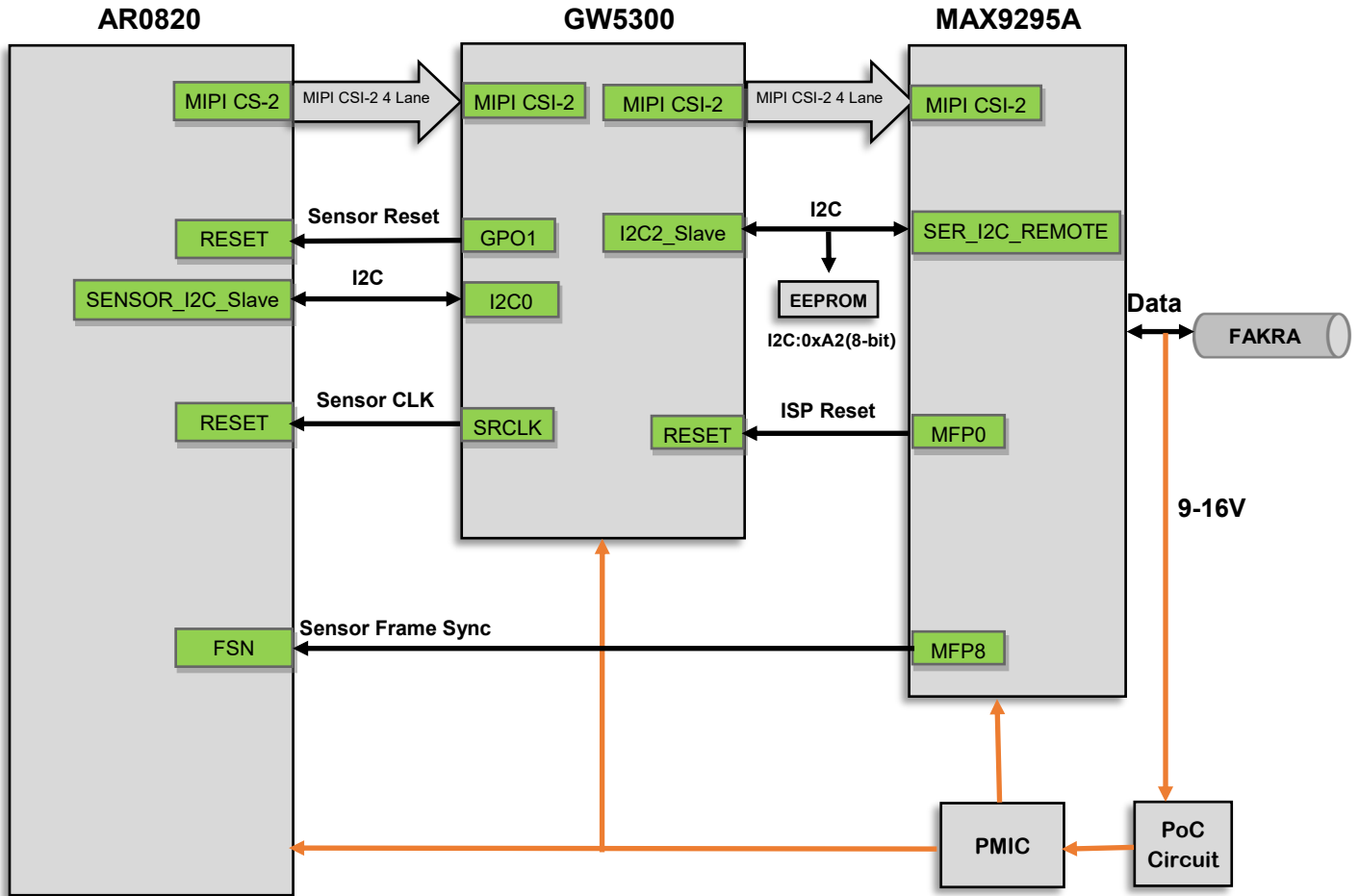
Block Diagram

※ The camera has an ISP image sensor, which outputs YUV data, and the backend does not need to configure the image sensor, only SerDes；

※ Support store camera internal parameters, if you need to obtain the internal parameters reading method, please note before placing the order
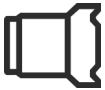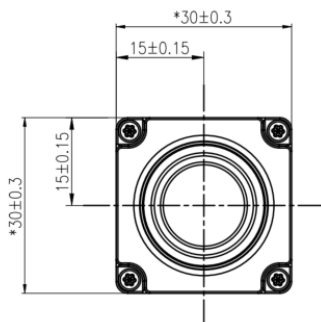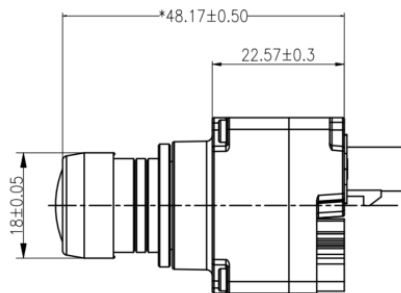
MODEL AND LENS

Model	HFOV	VFOV	F.No	EFL	Max Optical Distortion	Water-proof	Lens Mount
JV8S-AR0820C-5300-G2A-H30YA	30°	17°	1.6	15.3mm	-2.7%	IP67	AA
JV8S-AR0820C-5300-G2A-H60SA	60°	33°	1.8	7.87mm	-14%	IP67	AA
JV8S-AR0820C-5300-G2A-H120YA	120°	66°	1.6	4.01mm	-57.9%	IP67	AA

DIMENSIONS

Front View   Side View   Rear View
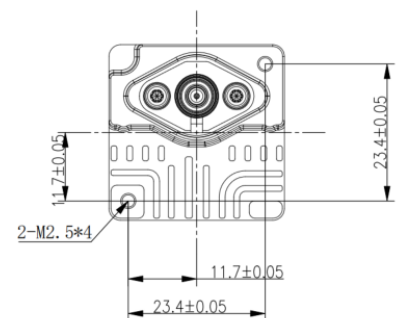
Note:

△ There are two different heights of this size to match different lenses. Please refer to 3D digital analog size for details.
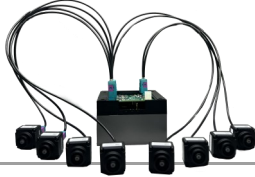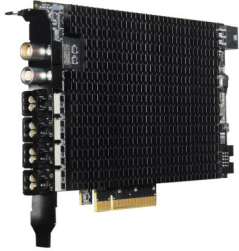
 This icon indicates the imaging direction is positive.

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	Not supported
CoaxCapture II GMSL Capture Card	Provide development driver package https://www.sensing-world.com/Coaxcapture_Card/

DEVELOPMENT KIT

## ◇ GMSL Video capture card（Gen2）
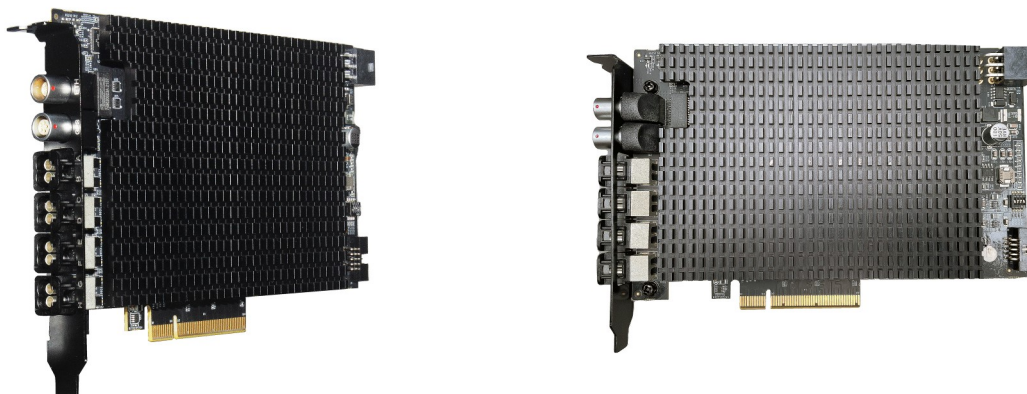
● <u>JV8-AR0820C-5300-GMSL2</u> can connect to **CCG3-4H/8H** .

◇ **KEY FEATURES**

→ CCG3-8H at most can support connect 8* JV8-AR0820C-5300-GMSL2 at the same time；

→ CCG3-4H at most can support connect 4* JV8-AR0820C-5300-GMSL2 at the same time ；

→ PCI-e Gen3*8lane and supports x86 architecture;

→ Support external trigger synchronization;

→ Support GPS Timing synchronization;

→ Support network PTP timing synchronization;
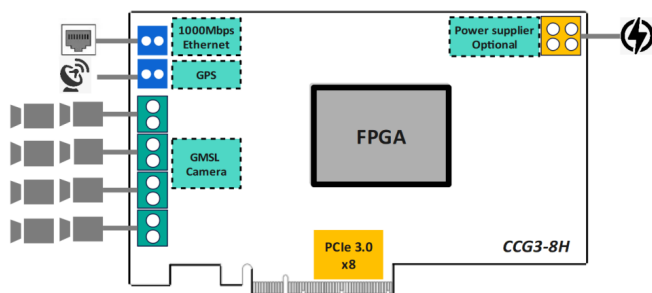
CCG3-8H
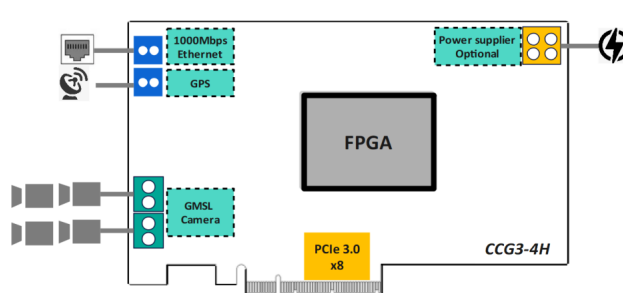
CCG3-4H

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	JV-JSZPSZ2000L	2M, Male to Female, IP67
Camera coaxial Cable	JV-JSZJSZ2000L	2M, Female to Female, IP67
Camera coaxial Cable	JV-JSZPSZ3000L	3M, Male to Female, IP67
Camera coaxial Cable	JV-JSZJSZ3000L	3M, Female to Female, IP67
Camera coaxial Cable	JV-JSZPSZ5000L	5M, Male to Female, IP67
Camera coaxial Cable	JV-JSZJSZ5000L	5M, Female to Female, IP67
Camera coaxial Cable	JV-JSZJSZ7000L	7M, Female to Female, IP67
Camera coaxial Cable	JV-JSZJSZ8000L	8M, Female to Female, IP67
Camera coaxial Cable	JV-JSZPSZL100L	10M, Male to Female, IP67
Camera coaxial Cable	JV-JSZJSZL100L	10M, Female to Female, IP67
Camera coaxial Cable	JV-JSZJSZL120L	12M, Female to Female, IP67
Camera coaxial Cable	JV-JSZJSZL160L	16M, Female to Female, IP67
Camera coaxial Cable	JV-JSZJSZL200L	20M, Female to Female, IP67

✏️ REVISION HISTORY

版本	描述	日期
Rev1	First release	Sep.2023
Rev2	Add model JV8S-AR0820C-5300-GMSL2-H20B	Nov.2023
Rev3	→ Update model name JV8S-AR0820C-5300-G2A → Update MODEL AND LENS → Update parts list	Feb.2024

Feb ,2024 –Rev.3