

## 8MP GMSL2 CAMERA

### GENERAL DESCRIPTION

The camera is equipped with OmniVision CMOS image sensor OX08B40, ISP GW5300 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/M16/AA lens that is focused and glued in our factory.



### KEY PARAMETERS

|                       |                               |
|-----------------------|-------------------------------|
| Sensor                | OmniVision 8.3MP OX08B40 RGGB |
| ISP                   | GW5300                        |
| Image Size            | 1/1.73 inch CMOS              |
| Output Pixels         | 3840H*2160V                   |
| Pixel Size            | 2.1um*2.1um                   |
| Frame Rate            | 3840*2160@30fps               |
| HDR Support           | Yes                           |
| LFM                   | Yes                           |
| Output data           | YUV422@8bit                   |
| Serializer            | MAXIM MAX9295A                |
| Camera Interface      | GMSL2                         |
| Power Supply          | 9~16V POC                     |
| Current               | <400mA@12VDC                  |
| Connector             | Amphenol (Z Type Fakra)       |
| Operating temp. range | -40~+85°C                     |
| Dimensions            | W: 40mm, L:40mm, H:23mm       |
| Weight                | <80g                          |



### Features

- Output format: Uncompressed YUV422 format
- AA/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 |

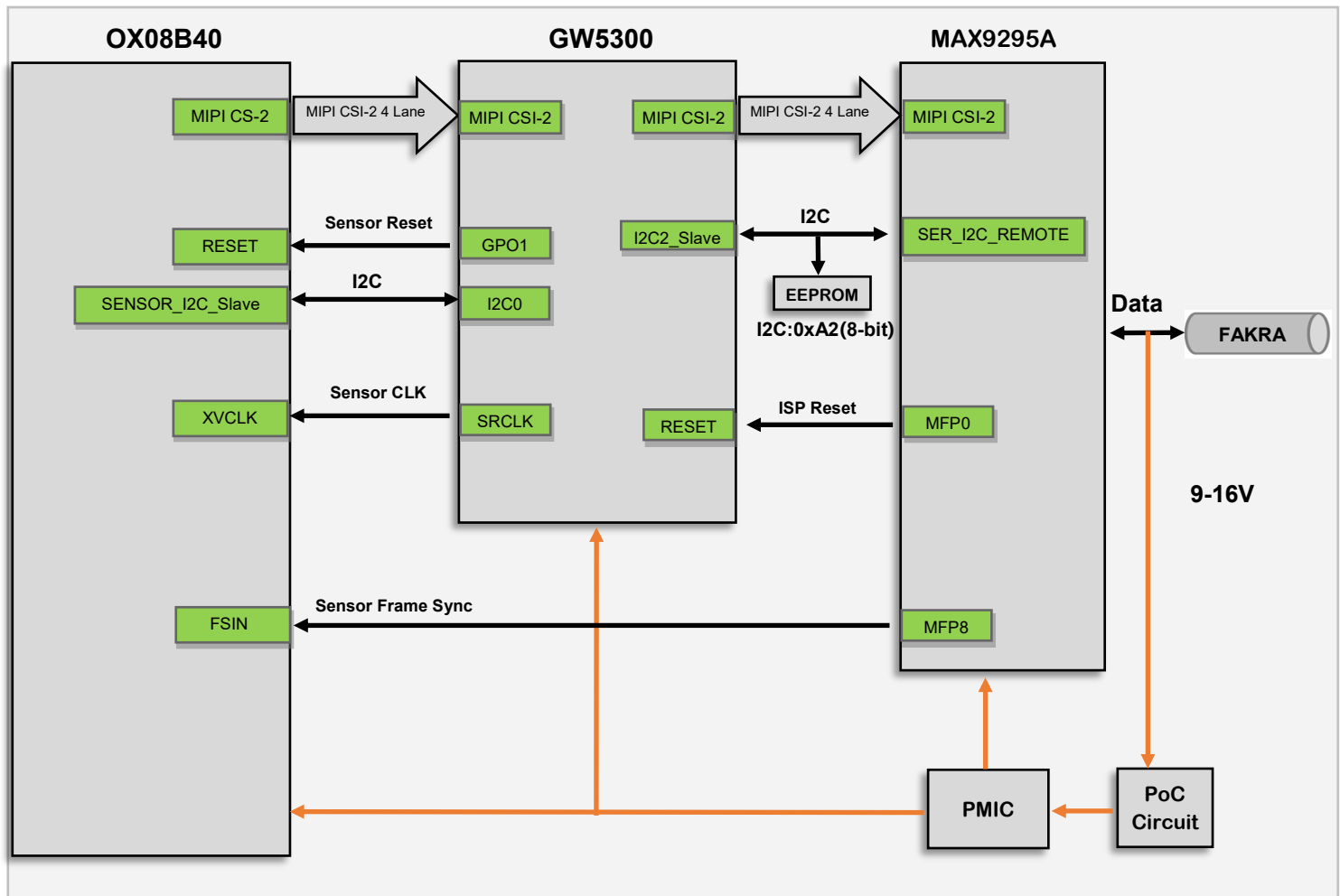
| Sensor      |                             |
|-------------|-----------------------------|
| Model       | OX08B40                     |
| I2C Address | 0x6c (8bit address)         |
| Frame Sync  | Controlled by Max9295A MFP8 |

Interface Circuit Diagram





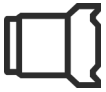
## BLOCK DIAGRAM



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](mailto:Sales@sensing-wolrd.com);
- ※ The camera has built-in **EEPROM**, which can store camera internal parameters, please note before placing the order;



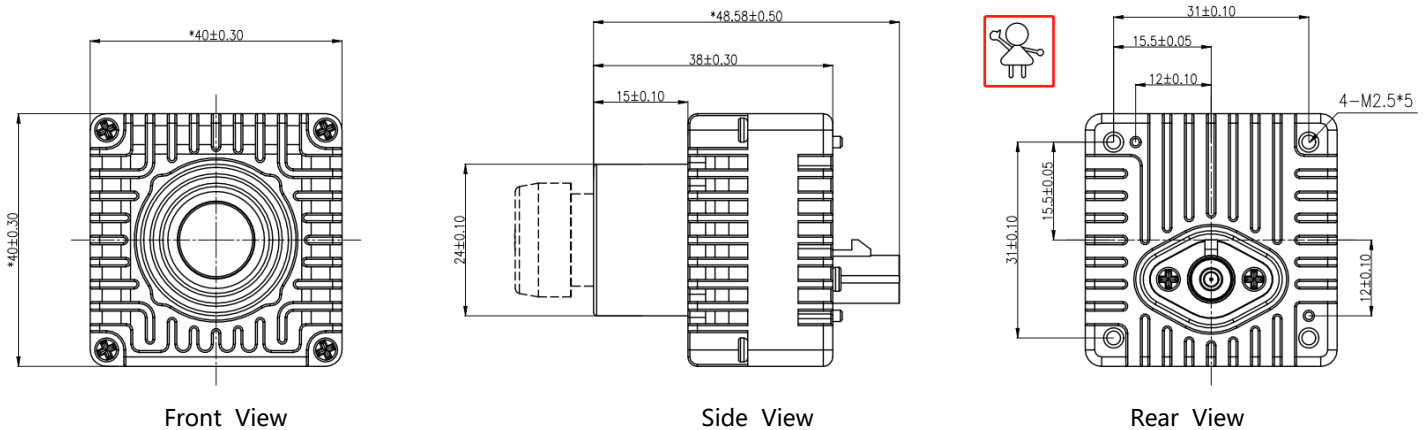


## MODEL AND LENS

| Model                         | HFOV | VFOV | F.No | EFL    | Max Optical Distortion | Water-proof | Lens Mount |
|-------------------------------|------|------|------|--------|------------------------|-------------|------------|
| SG8-OX08BC-5300-GMSL2-H30S1   | 30°  | 16°  | 1.6  | 15.3mm | -2.7%                  | IP67        | M16        |
| SG8-OX08BC-5300-GMSL2-H30S1A  | 30°  | 16°  | 1.6  | 15.3mm | -2.7%                  | IP67        | AA         |
| SG8-OX08BC-5300-GMSL2-H60S    | 60°  | 33°  | 1.8  | 7.87mm | -14%                   | IP67        | M12        |
| SG8-OX08BC-5300-GMSL2-H60SA   | 60°  | 33°  | 1.8  | 7.87mm | -14%                   | IP67        | AA         |
| SG8-OX08BC-5300-GMSL2-H120Y   | 120° | 66°  | 1.6  | 4.01mm | -57.9%                 | IP67        | M16        |
| SG8-OX08BC-5300-GMSL2-H120YA  | 120° | 66°  | 1.6  | 4.01mm | -57.9%                 | IP67        | AA         |
| SG8-OX08BC-5300-GMSL2-H120S1A | 120° | 55°  | 1.8  | 5.1mm  | -55%                   | IP5X        | AA         |
| SG8-OX08BC-5300-GMSL2-H120Y1A | 120° | 55°  | 1.8  | 5.1mm  | -65%                   | IP5X        | AA         |



## DIMENSIONS



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                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>NVIDIA Jetson platforms</p>  | <p>Provide development driver package</p> <p><a href="https://www.sensing-world.com/jetson_camera_ecosystem">https://www.sensing-world.com/jetson_camera_ecosystem</a></p>  |
| SerDes Camera to USB Converter                                                                                   | Not supported                                                                                                                                                                                                                                                 |
| CoaxCapture II GMSL Capture Card                                                                                 | <p>Provide development driver package</p> <p><a href="https://www.sensing-world.com/Coaxcapture_Card">https://www.sensing-world.com/Coaxcapture_Card</a></p>              |

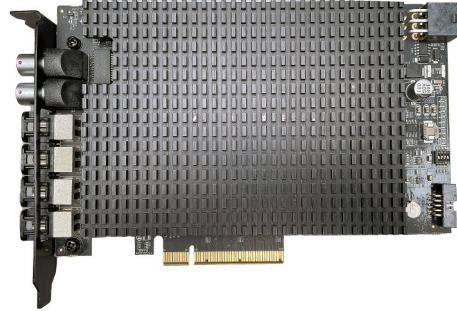
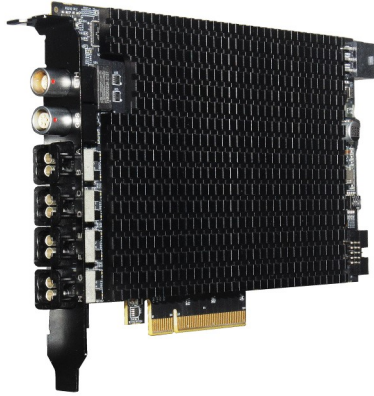
※ For development support, please contact [Sales@sensing-world.com](mailto:Sales@sensing-world.com) ;





## DEVELOPMENT KIT

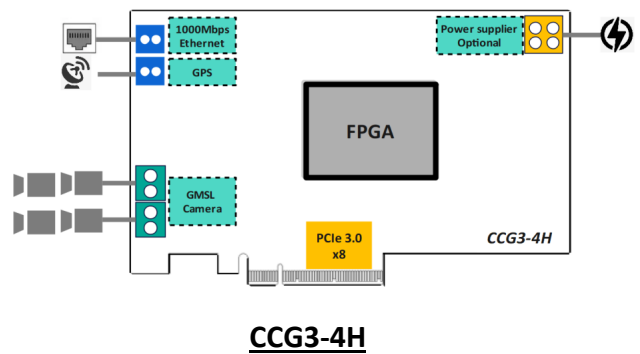
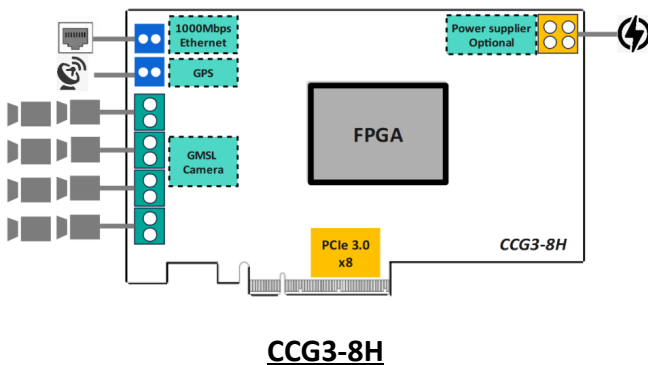
### ◇ CoaxCapture II GMSL Capture Card



- SG8-OX08BC-5300-GMSL2 can connect to **CCG3-4H/8H**.

### ◇ KEY FEATURES

- CCG3-8H at most can support connect 8\* SG8-OX08BC-5300-GMSL2 at the same time;
- CCG3-4H at most can support connect 4\* SG8-OX08BC-5300-GMSL2 at the same time ;
- PCI-e Gen3\*8lane;
- Support external trigger synchronization;
- Support GPS Timing synchronization;
- Support network PTP timing ;

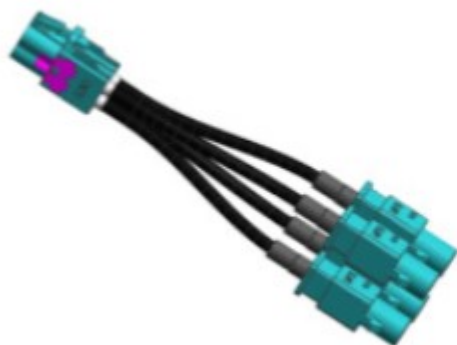




## ACCESSORIES

### ◇ Coaxial Cable

| Product Name                               | Order PN#          | Specification                              |
|--------------------------------------------|--------------------|--------------------------------------------|
| Mini-fakra Coaxial Cable 4-in-1 (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    | <div>→ Update connector description</div> <div>→ Update cable information</div> <div>→ Add block diagram</div> <div>→ Add supported platforms</div> | Mar.2023     |





# Contact Us

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