

SG2-AR0233C-5200-F3A-Hxxx

2MP FPDLink CAMERA



www.sensing-world.com

GENERAL DESCRIPTION

The camera is equipped with On-semi CMOS image sensor AR0233 and TI FPDLink III. 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 2.6MP AR0233 RGGB
ISP	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	TI DS90UB953
Camera Interface	FPDLink III
Power Supply	9~16V POC
Current	<250mA@12VDC
Connector	Amphenol Fakra (Z Code)
Operating temp. range	-40~+85°C
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	DS90UB953
I2C Address	0x30 (8bit address)

ISP	
Model	GW5200
I2C Address	0xDA (8bit address)
Reset	Controlled by DS90UB953 GPIO_1

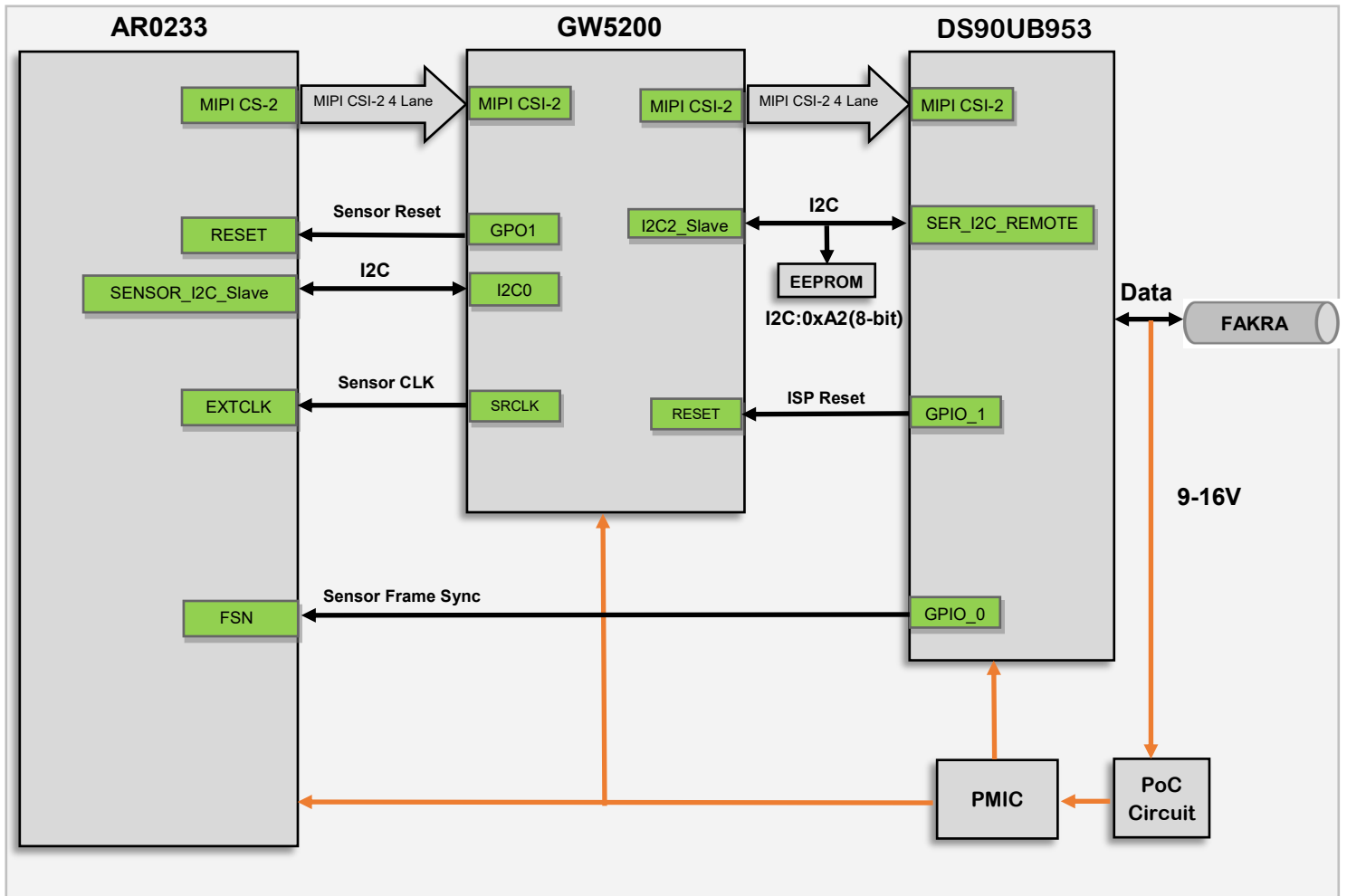
Sensor	
Model	AR0233
I2C Address	0x20 (8bit address)
Frame Sync	Controlled by DS90UB953 GPIO_0

Interface Circuit Diagram





BLOCK DIAGRAM



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;
- ※ For SerDes setting code, please contact Sales@sensing-wolrd.com ;
- ※ Support store camera internal parameters, if you need to obtain the internal parameters reading method, please note before placing the order



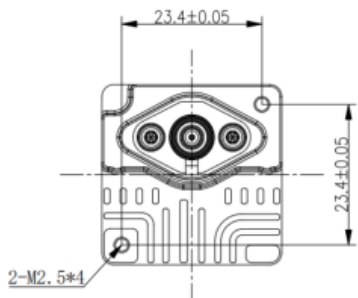
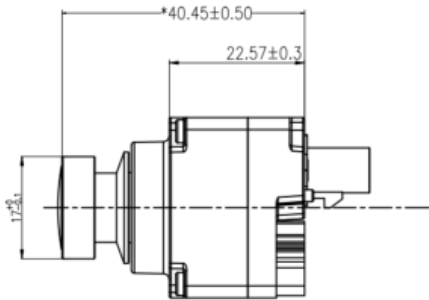
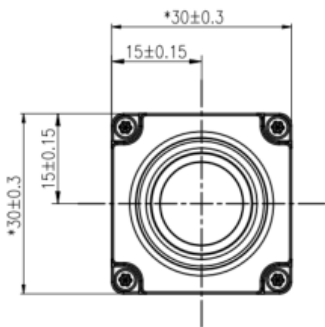


MODEL AND LENS

Model	HFOV	VFOV	F.No	EFL	Max Optical Distortion	Water-	Lens
SG2-AR0233C-5200-F3A-H60FA	60°	32°	1.6	5.8mm	-21.5%	IP67	AA
SG2-AR0233C-5200-F3A-H100F1A	100°	53°	1.6	3.55mm	-45%	IP67	AA
SG2-AR0233C-5200-F3A-H120UA	118.4°	62.6°	2.0	3.04mm	-62%	IP67	AA
SG2-AR0233C-5200-F3A-H190XA	196°	112°	2.0	1.51mm	-155%	IP67	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
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	Not supported

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





DEVELOPMENT KIT

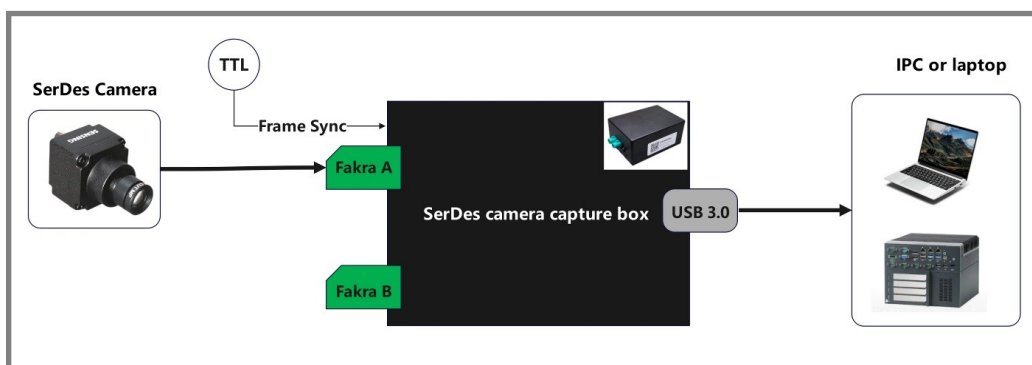
◇ SerDes Camera to USB Converter



- SG2-AR0233C-5200-F3A can connect to **SG8-U30-FPDLink** as a USB 3.0 camera .
- USB Camera Part Number: **SG2-AR0233C-FPDLink-U30-Hxxx** (include 1xSG8-U30-FPDLink, and 1xSG2-AR0233C-5200-F3A)

◇ 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



※ Support connected one camera only





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	Mar.2024

