JV-D3Gx

3MP Automatic Defogging Camera

GENERAL DESCRIPTION

The camera is equipped with the SONY automotive-grade CMOS image sensor and Maxim GMSL serializer. 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 RGGB
ISP	Built-in
Image Size	1/2.42 inch CMOS
Output Pixels	1920H*1536V @30fps（default） 1920H*1536V @60fps
Resolution	center ≥800LW/PH， around ≥600LW/PH （RedFox-D3GF only meet the center standard）
Pixel Size	3.0um*3.0um
Frame Rate	MAX 60fps
HDR Support	Yes
LEM	Yes
HDR Range	Up to 120 dB
Output data	YUV422
Serializer	MAXIM MAX96717G
Camera Interface	GMSL2
Power Supply	9~16V Camera
Current	400mA@12V(with Heating)
Connector	Amphenol Fakra Z Code （Camera）
Operating temp. range	-40~+85℃
Dimensions	W: 30mm, L:30mm
Weight	<100g

Features

- Output format YUV422
- Support multi−camera synchronization
- Support different focal length lens
- Support external trigger
- Raw materials meet the RoHS

Application

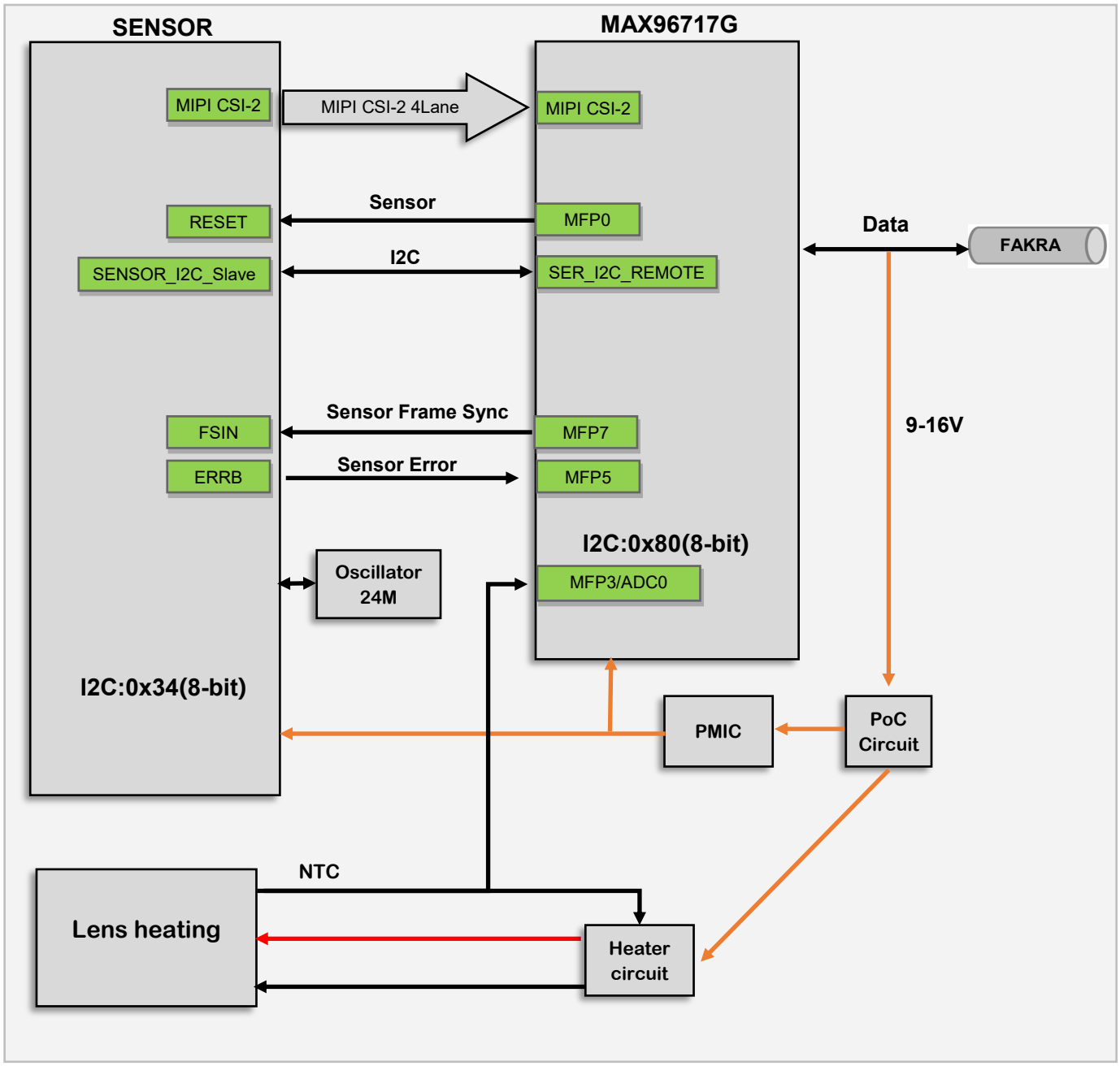
- Automation
- ADAS + Viewing Fusion
- High Dynamic Range Imaging
- Autonomous Driving
- Robotics

HARDWARE SETTING

Serializer	
Model	Max96717G
I2C Address	0x80 (8bit address)
Oscillator	25Mhz
Rate	6Gbps

sensor	
I2C Address	0x34 (8bit address)
Frame Sync	Controlled by Max96717G MFP7
Reset	Controlled by Max96717G MFP0 H： sensor enable L: sensor disable
Oscillator	24MHz

BLOCK DIAGRAM



Operation Mode

- **Manual Mode: The heating function is enabled and disabled through software configuration.**

1.Enable heating: The operation instructions are as follows

IIC address： 0x80 (8BIT：0X80； BIT：0X40)

Register address： 0x02CA

Written value： 0x90

Example： i2ctransfer -y -f 16 w3@0x40 0x02 0xca 0x90

2.Disable heating: The operation instructions are as follows

IIC address： 0x80 (8BIT：0X80； 7BIT：0X40)

Register address： 0x02CA

Written value： 0x00

Example： i2ctransfer -y -f 16 w3@0x40 0x02 0xca 0x00

- **Automatic Mode: When the lens surface temperature is > 0°C, the heating is inactive; when the ambient temperature is ≤ 0°C, the heating is automatically enabled.**

Operation instructions are as follows:

IIC address ： 0x80(8BIT：0X80； 7BIT：0X40)

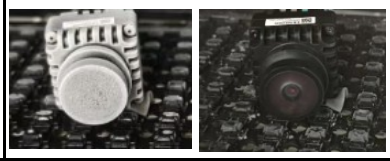
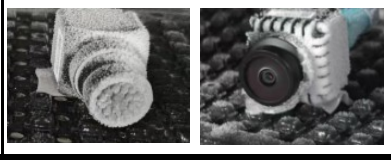
Register address： 0x02CA

Written value： 0x91

Example： i2ctransfer -y -f 16 w3@0x40 0x02 0xca 0x91

- **Mode Switching Description: After manually turning off the heating, it is necessary to write the automatic mode command again to enable the automatic heating function.**

Statistics of Defrosting and Deicing Time under Different Voltages

Item	Input Voltage			Ambient Temperature	Comparison Pictures before and after Heating
	9V	12V	16V		
Defrosting	6min30s	4min40s	4min	-20℃	
Deicing	7min30s	5min	4min	-25℃	

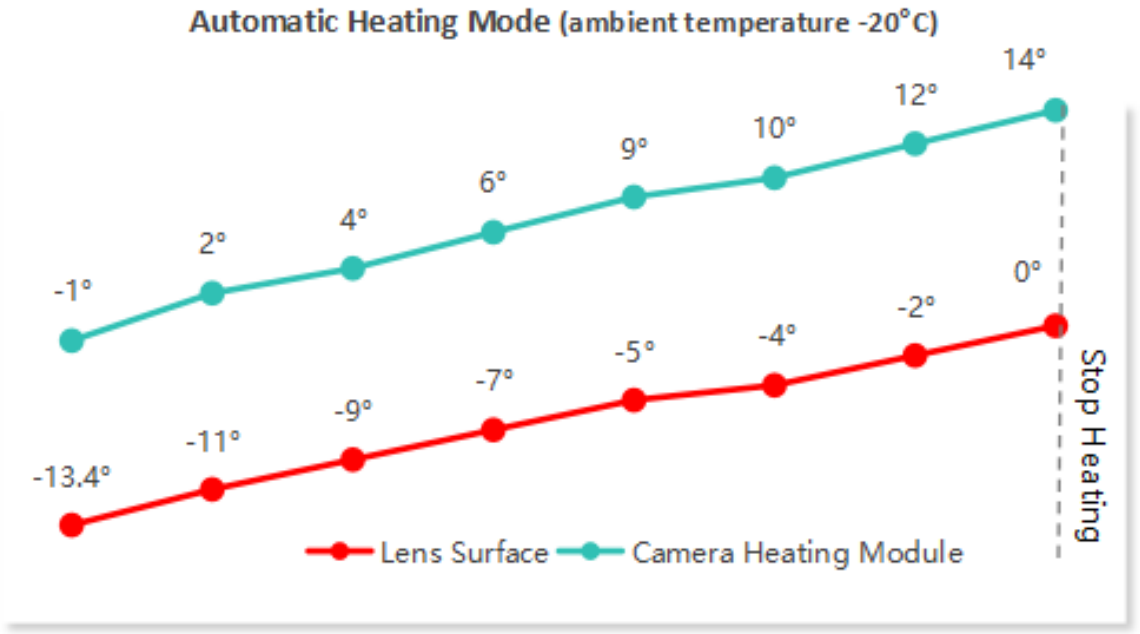
Note: This product supports 9-16V power supply. The higher the POC voltage, the higher the defrosting efficiency. It is recommended to use a higher voltage input within the specified range.

The Temperature Difference between Lens Surface and Camera Heating Modul

- **Automatic Mode:**

When the ambient temperature is ≤0℃, the heating function activates automatically, when the lens surface temperature exceeds 0℃, the heating module remains inactive.

The temperature differential between the lens surface and the camera heating module is approximately 14°C

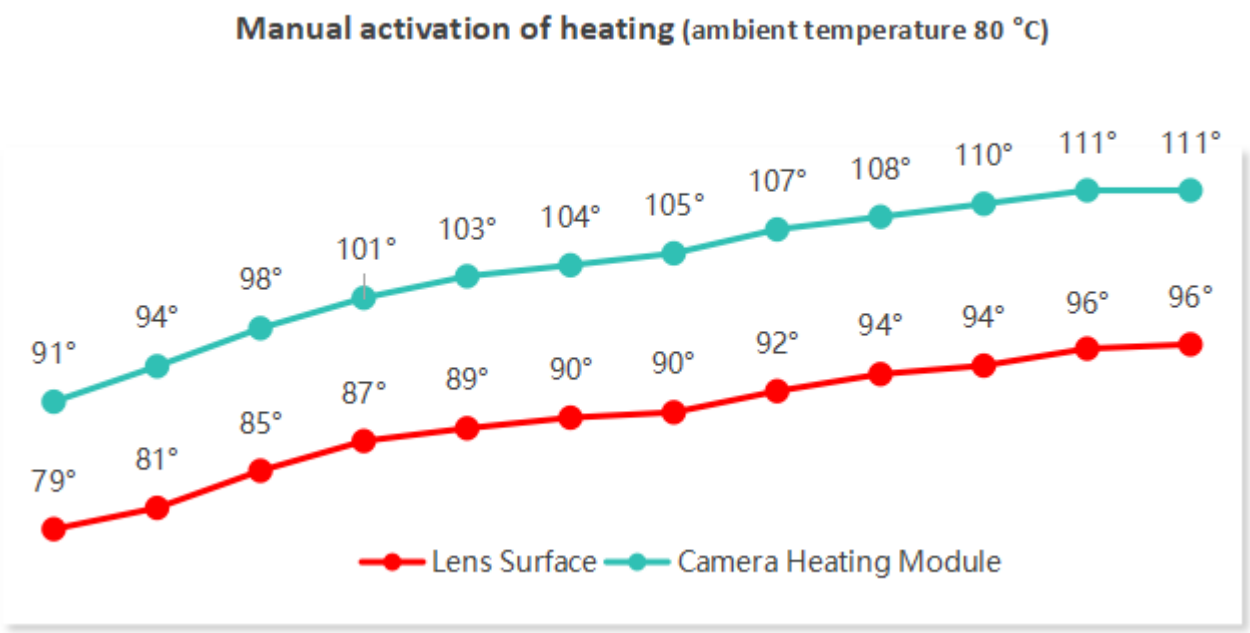


- **Manual Mode:**

When the lens surface temperature exceeds 0°C, heating must be activated manually.

When the lens surface temperature is approximately 16°C higher than the ambient temperature, the heating module continues to operate while the lens surface temperature stabilizes.

The temperature differential between the lens surface and the camera heating module remains approximately 14°C.



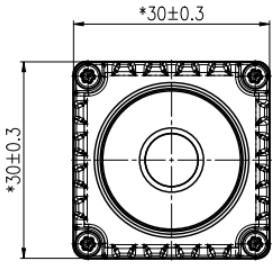
Note： All temperatures in the chart are in degrees Celsius.

MODEL AND LENS

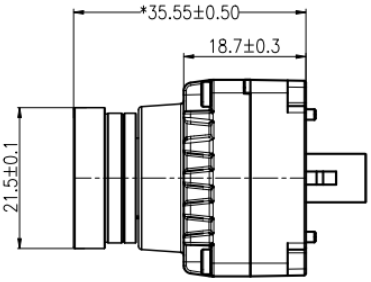
Model	HFOV	VFOV	F.No	EFL (mm)	DOF	Max Optical Distortion	Water proof	Lens Mount
JV-D3GN	53.2°	43.6°	1.6	5.76	2.3-INF Focus at 6.9m	-22.4%	IP67	AA
JV-D3GW	118.4°	91.4°	2.0	3.04	0.51~INF Focus at 1.5m	-92%	IP67	AA
JV-D3GF	196°	160°	2	1.31	0.1~INF Focus at 0.4m	-84%	IP67	AA

DIMENTIONS

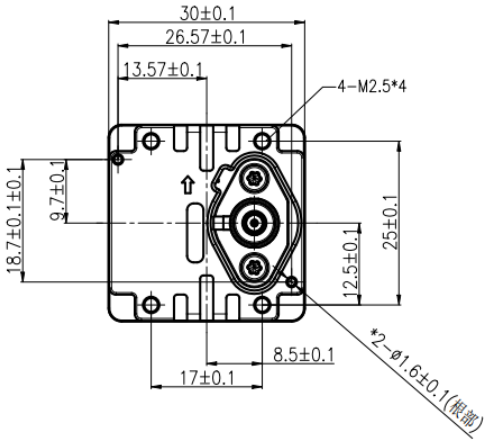
RedFox-D3GN:



Front View

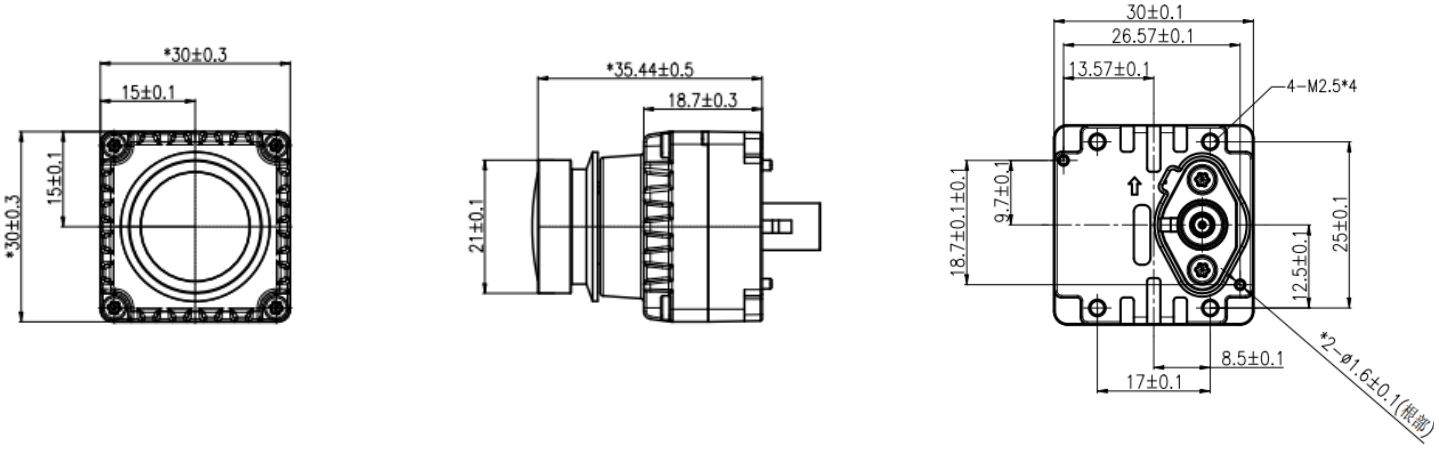


Side View

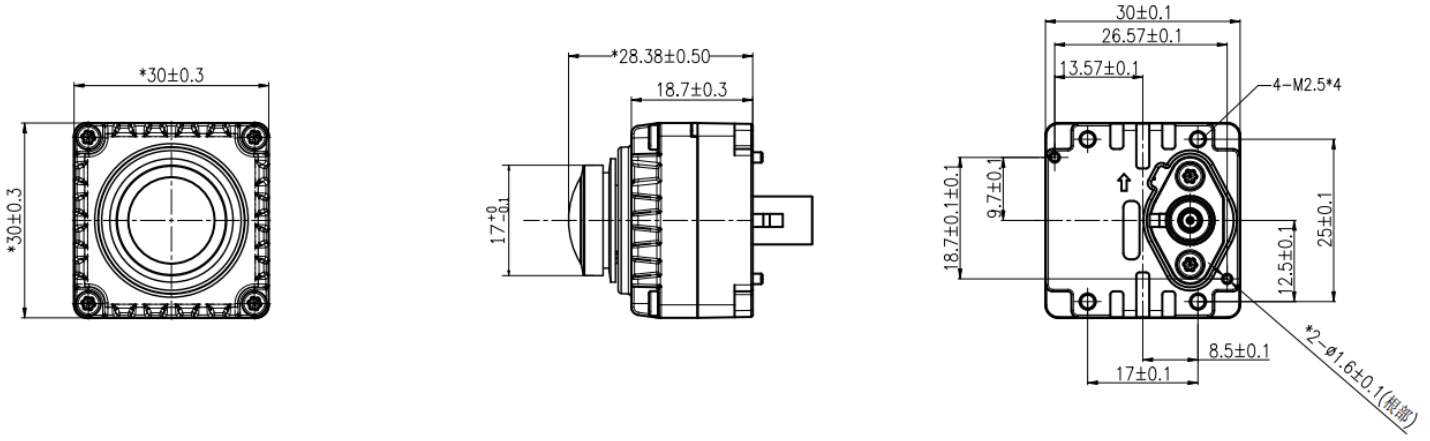


Rear View

JV-D3GW:



JV-D3GF:



Front View　　Side View　　Rear View

Note：

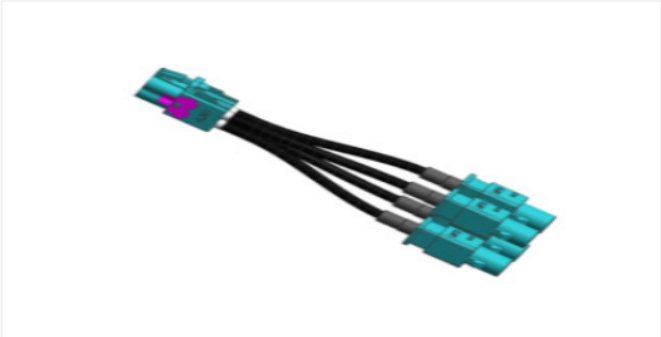
△ Please visit the Sensing Cloud Service Platform to obtain the relevant materials. The website address is：

http://service.sensing-world.com/

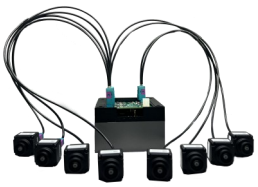
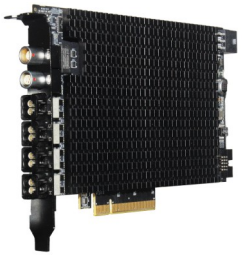
This icon indicates the imaging direction is positive.

COAXIAL CABLE

Name	Model	Specifications
Mini-fakraCoaxialCable4-in-111(Rosenberg)	R4JC-JC-ZZZZ-0500L	Mini-fakra, 4-in-1, 0.5m, Famale to Famale
Mini-fakra Coaxial Cable4-in-1 (TE)	T4JC-PC-ZZZZ-0500A	Mini-fakra, 4-in-1, 0.5m, Male to Famale
Mini-fakraCoaxial Cable4-in-1(Rosenberg)	R4JC-PC-ZZZZ-0500L	Mini-fakra, 4-in-1, 0.5m, Male to Famale
Mini-fakra Coaxial Cable4-in-1 (TE)	T4JC-JC-ZZZZ-0500A	Mini-fakra, 4-in-1, 0.5m, Famale to Famale
CameraCoaxial Cable	SG-JSZPSZ2000L	2m, Male to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZ2000L	2m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZPSZ3000L	3m, Male to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZ3000L	3m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZPSZ5000L	5m, Male to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZ5000L	5m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZ7000L	7m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZ8000L	8m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZPSZL100L	10m, Male to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZL100L	10m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZL120L	12m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZL160L	16m, Famale to Famale, IP67
CameraCoaxial Cable	SG-JSZJSZL200L	20m, Famale to Famale, IP67



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/ 

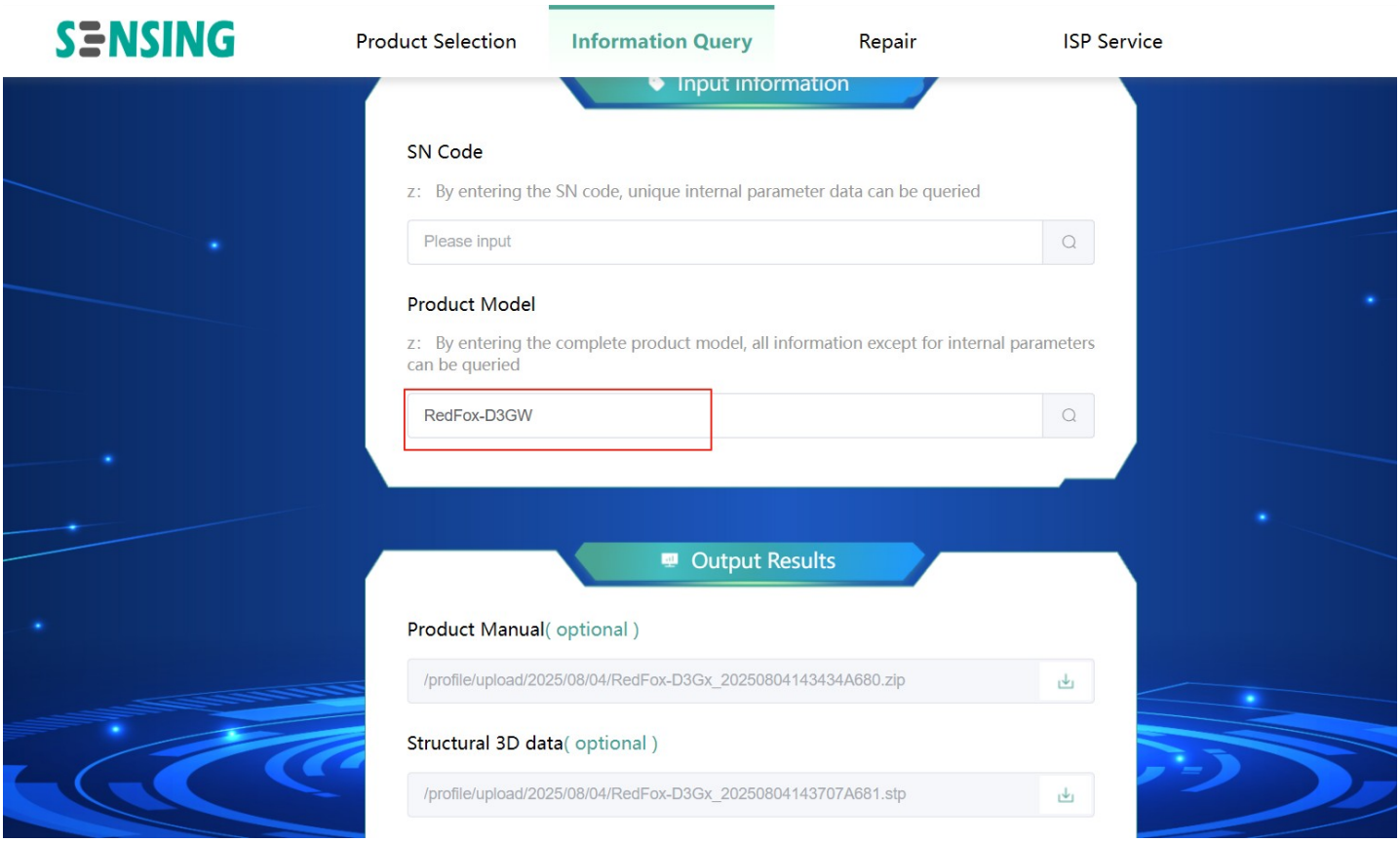
PANDA serial PG2 USB converter usage method

- Enable manual heating mode: On the device control interface, select the configuration "RedFox-D3Gx_Set_continuous_heating.ini" and click Confirm.
- End manual heating mode: Select the configuration "RedFox-D3Gx_Set_to_stop_heating.ini" and click Confirm.
- Automatic heating mode: On the device control interface, select the configuration "RedFox-D3Gx_Set_automatic_heating.ini" and click Confirm.

Request for Specification Sheet and Digital

Log in to the Sensing Service Platform, go to In-Sale - Information Inquiry, and input the product model to query the product manual and 3D structural model.

Platform path: http://service.sensing-world.com/



REVISION HISTORY

Vesion	Description	Date
Rev1	First release	2025/08
Rev2	Correct the temperature units in the specification sheet to degrees Celsius.	2025/09

Contact Us

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