

General Description

OPNM8508C is a tiny 3D camera module, based on OPNOUS Time-of-Flight (ToF) technology using VCSEL illumination. The high integration, low power consumption and high precision make this module ideal for depth sensing applications.



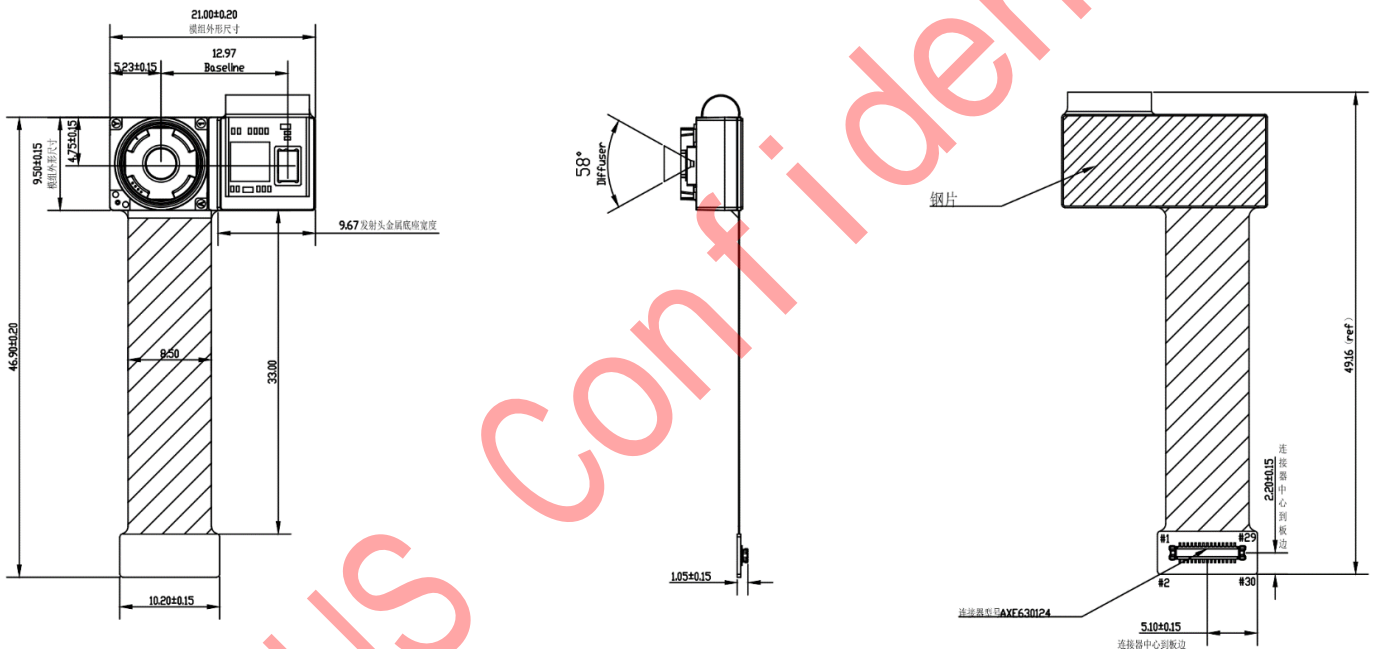
Key Specifications

Parameter	Description
Sensor	OPN8008D, global shutter
Resolution	320 * 240
Pixel size	15um
Sensor size	1/3"
Dimensions	21.00mm * 9.50mm * 6.33mm
Frame rate	10 – 60 fps
Measurement range	0.15 – 1.5m
FOV	71.8°(H) * 56.5°(V)
Distortion	<2.5%
Illumination	940nm, 3W
Input clock	27Mhz
Power supply	Sensor: 3.3V single power supply, >=300mA VCSEL: 4.6V, >= 2A
Power consumption	340mW. Typ
Depth accuracy	<=1% / <=1cm
Interface	MIPI CSI-2, 2 lanes

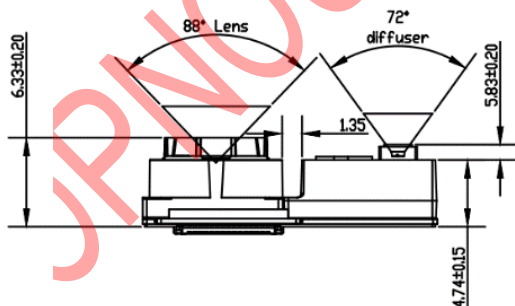
Typical Applications

- ✓ Face recognition and face motion tracking
- ✓ 3D reconstruction
- ✓ AR/VR
- ✓ Hand and finger tracking for gesture control and interaction with virtual objects
- ✓ visual support for robot grippers
- ✓ Localization, tracking and identification of individuals (humans, animals)
- ✓ People counting and motion analysis

Module Dimensions



Module connector shown in above Figure:



- ✓ Part Number of module connector is AXE630124.
- ✓ Mating connector is AXE530127.

Pin Definitions

Pin No.	Name	Description
1	AVDD_3V3	3.3V Power Supply
2	VCSEL_4V6	VCSEL Supply
3	AVDD_3V3	3.3V Power Supply
4	VCSEL_4V6	VCSEL Supply
5	DV33	3.3V Power Supply
6	VCSEL_4V6	VCSEL Supply
7	SLV_LSB	Address Select
8	GND	Ground
9	GND	Ground
10	SPI_MOSI	SPI Data In
11	MCLK	Reference Clock, 27MHz
12	SPI_MISO	SPI Data Out
13	GND	Ground
14	SPI_SCLK	SPI Clock
15	CSI_D0_P	CSI-2 non-inverting data output of data lane 0
16	SPI_nCS	SPI CS
17	CSI_D0_N	CSI-2 inverting data output of data lane 0
18	GND	Ground
19	GND	Ground
20	SYNC_IN	Sync input
21	CSI_CLK_P	CSI-2 non-inverting clock output
22	ERR	Error indicator
23	CSI_CL_N	CSI-2 inverting clock output
24	I2C_SCL	CCI, Camera control interface
25	GND	Ground
26	I2C_SDA	CCI, Camera control interface
27	CSI_D1_P	CSI-2 non-inverting data output of data lane 1
28	GND	Ground
29	CSI_D1_N	CSI-2 inverting data output of data lane 1
30	RESET_N	Reset (active low)

Revision History

Revision	Date	Description
v1.0	2019/11/20	Initial revision.
v1.1	2020/2/8	Modify VCSEL power voltage and doc format

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