

General Description

OPNM8808C 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.



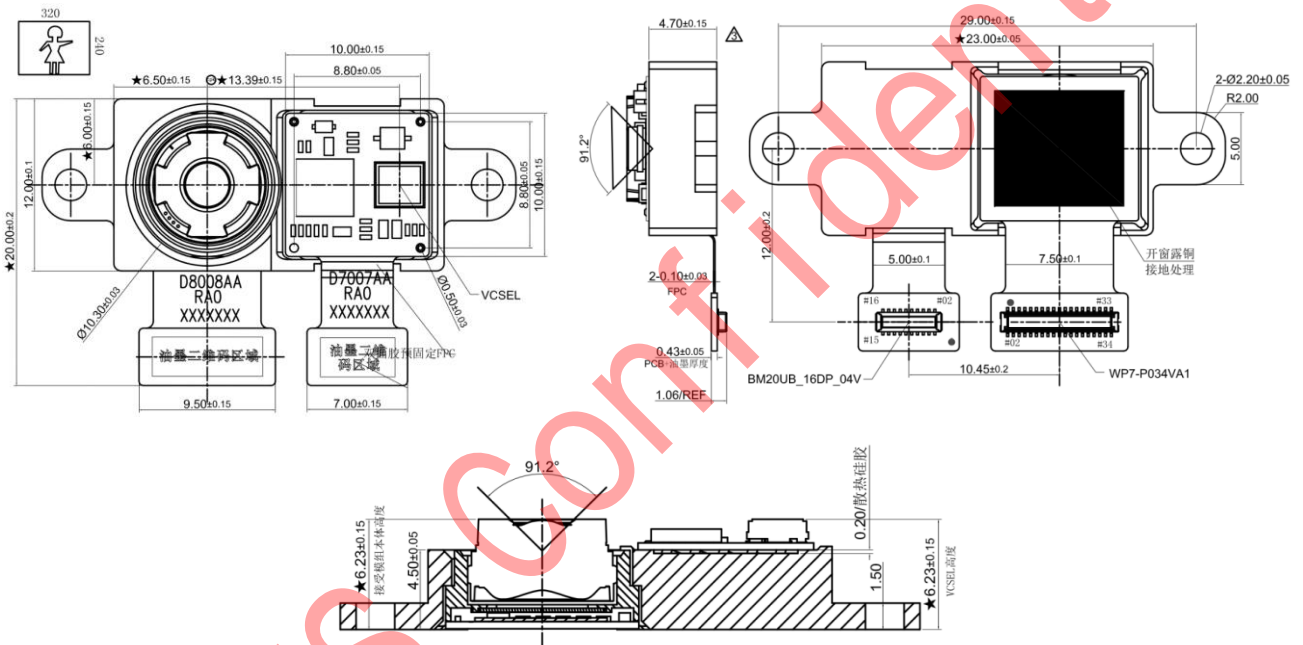
Key Specifications

Parameter	Description
Sensor	OPN8008D, global shutter
Resolution	320 * 240
Pixel size	15um
Sensor size	1/3"
Dimensions	23mm * 12mm * 6.23mm
Frame rate	10 – 60 fps
Measurement range	0.15 - 5m
FoV	71.8°(H) * 56.5°(V)
Distortion	<2.5%
Illumination	850nm, 2W
Input clock	27Mhz
Power supply	Sensor: 3.3V single power supply, >=300mA VCSEL: 4.6V, >= 2A
Power consumption	340mW. Typ
Depth accuracy	<=1%
Interface	MIPI CSI-2, 2 lanes

Typical Applications

- ✓ SLAM
- ✓ 3D reconstruction
- ✓ Visual support for robot grippers
- ✓ Localization, tracking and identification of individuals (humans, animals)
- ✓ People counting and motion analysis

Module Dimensions



Module connectors shown in above Figure:

- ✓ WP7-P034VA1 is connector for RX, and mating connector is WP7B-S034VA1.
- ✓ BM20UB_16DP_04V is the connector for TX, and mating connector is BM20B(0.8)-16DS-0.4V(51).

Pin Definitions of TX

Pin No.	Name	Description
1	MCLK	Reference Clock,27MHz
2,4	VDD_3V3	3.3V Power Supply
3,6,7,13	GND	Ground
5	LED_DRV	Illumination drive signal
8	NC	No connection
9	SCL	I2C SCL
10,12,14,16	LDD_3V3	VCSEL Supply
11	SDA	I2C SDA

Pin Definitions of RX

Pin No.	Name	Description
1	AV_3.3V	3.3V Power Supply
2	GDRV	Sync in
3	AGND	Analog ground
4,7,10,13,16,17,22,23,29,31,33,34	DGND	Digital ground
5	GDRV_O	Sync out
6	MDN1	CSI-2 non-inverting data output of data lane 1
8	MDP1	CSI-2 inverting data output of data lane 1
9	MCN	CSI-2 non-inverting clock output
11	MCP	CSI-2 inverting clock output
12	MDN0	CSI-2 non-inverting data output of data lane 0
14	MDP0	CSI-2 inverting data output of data lane 0
15	MCLK	Reference Clock,27MHz
18	SCL	CCI, Camera control interface
19	RESET	Reset (active low)
20	SDA	CCI, Camera control interface
21	SLV_LSB	Sensor CCI address selector
24	SCLK	SPI Clock

Pin No.	Name	Description
25	NA	No connection
26	SI	SPI Data In
27	ID	Temperature sensor I2C address selector
28	SO	SPI Data Out
30	CS	SPI Cs
32	LED_DRV	Illumination drive signal

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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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