

General Description

OPNE8008B is a USB powered 3D camera development kit based on OPNOUS Time-of-Flight (TOF) technology using a VCSEL based IR illumination. The high integration, low power consumption and high precision make this it an ideal development kit for 3D depth sensing applications.

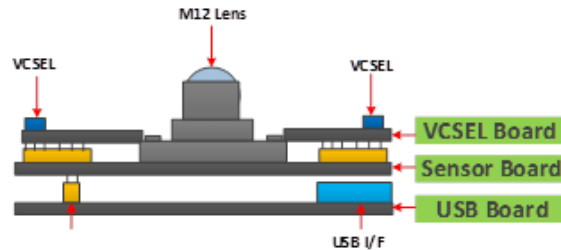


Key Specifications

Parameter	Description
Sensor	OPN8008Q
Resolution	320 * 240 pixels
Dimensions	53mm * 44mm * 30mm
Frame rate	10 – 60 fps
Measurement range	0.15 - 5m
FoV	40° * 30°, 77° * 62°, customize supported
Illumination	850nm/940nm * 1/2, customize supported
Power consumption	340mW.Typ
Depth accuracy	<=1%, 1m – 5m <=1cm, 0.2m – 1m
Interface	USB3.0, power and data
Operating system	Windows 7/8/10,

Hardware Description

The TOF Camera development kit consists of one VCSEL board, one sensor board and one USB board as below figure.



Besides boards, there are two more cables:

- ✓ 1 USB 3.0 cable, for data stream and power for sensor board and USB board;
- ✓ 1 USB power cable, power for illumination board;



USB 3.0 cable

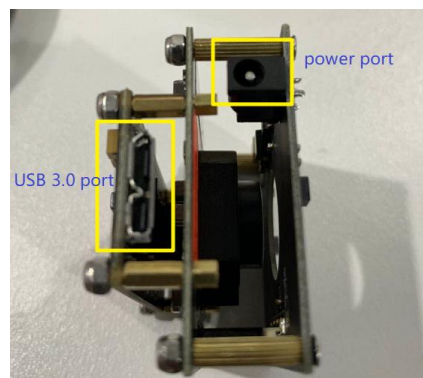


USB power cable

Power-on Sequence

Please follow below sequence to power on camera.

1. Connect camera's USB3.0 port to PC's USB 3.0 port through USB 3.0 cable;
2. Connect camera's power port to PC's USB2.0/3.0 port or other USB port through USB power cable, which can supply over 500mA current.

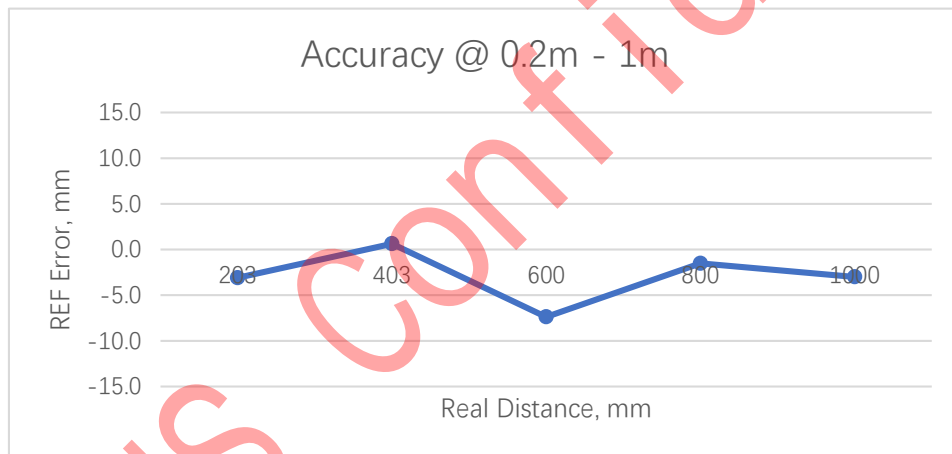
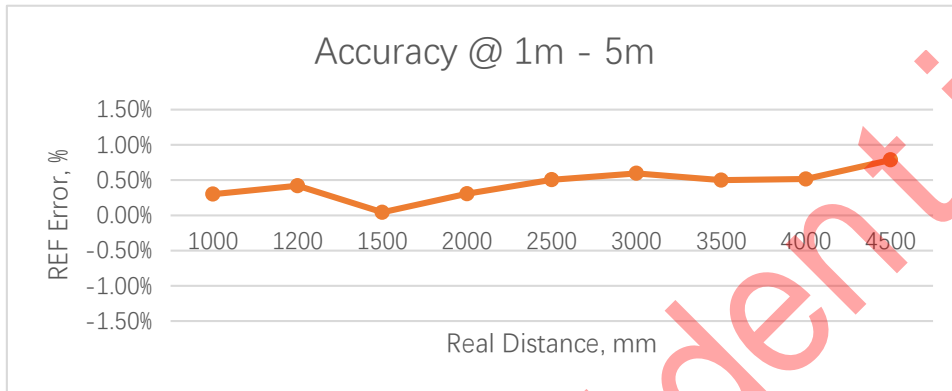


Typical Performance

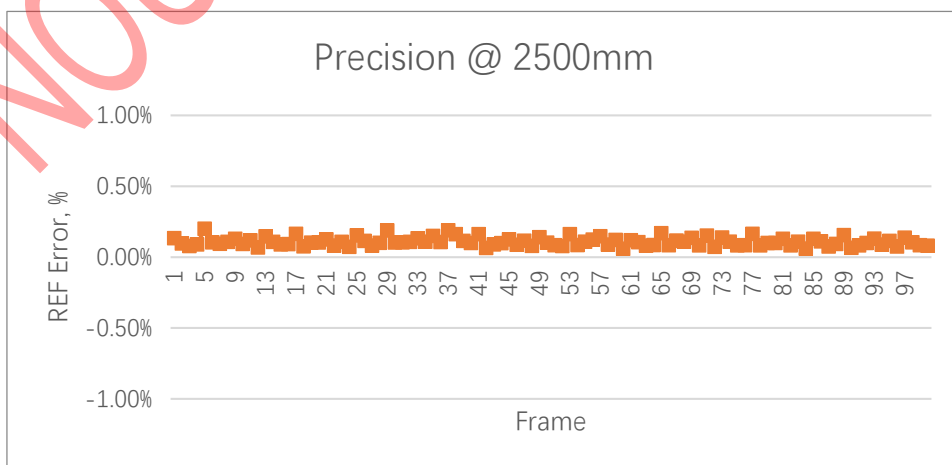
All performance is tested in darkroom, white wall if without extra description.

REF is defined as 10 * 10 pixels in image center.

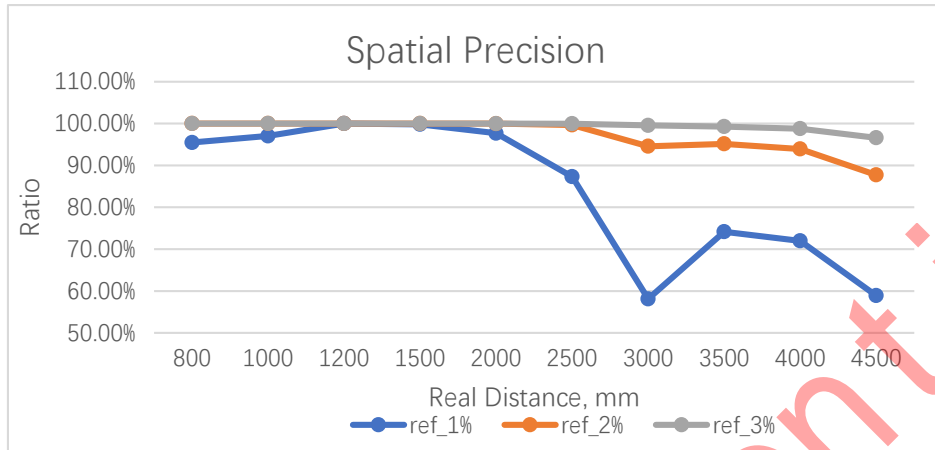
TOF ACCURACY



TOF TEMPORAL PRECISION

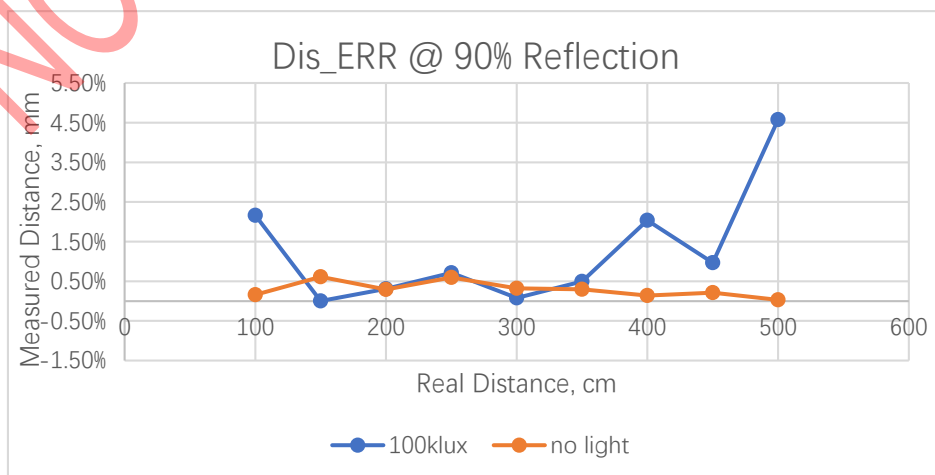
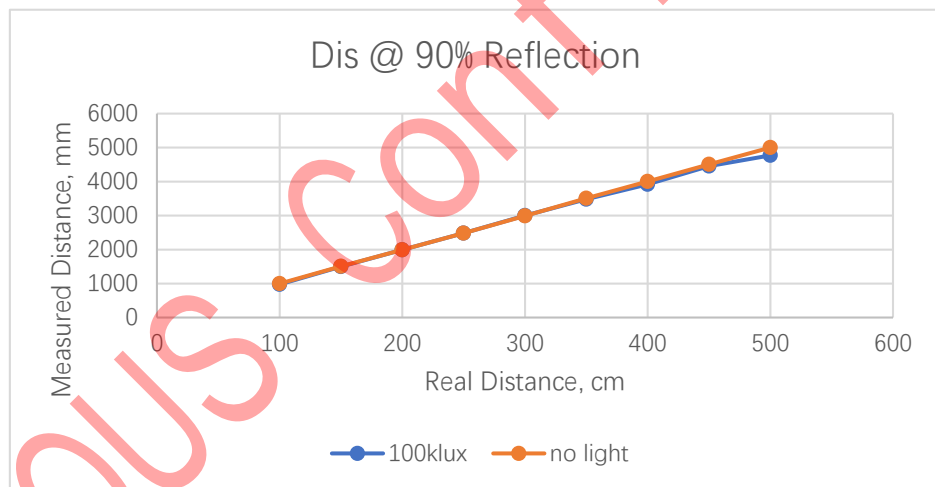


TOF SPATIAL PRECISIO



97% pixels in ROI @ REF Error <= 3%,
88% pixels in ROI @ REF Error <= 2%,
59% pixels in ROI @ REF Error <= 1%.

TOF ACCURACY vs AMBIENT LIGHT



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Revision History

Revision	Date	Description
v1.0	2019/2/14	Initial revision.
v1.1	2020/2/8	Update doc format

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