

3D TOF Sensor Module

B5L

Evaluation Software Manual

3D TOF Sensor Module



E599-E1-01

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■Revision History

Revision	Year/Month	Contents
A	2020/9	First Release

Additional Notes

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Note that the contents of this document or specifications for B5L noted in this document may change without notice.

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Introduction

This document is the manual (hereafter referred to as “This Manual”) for the OMRON 3D TOF Sensor Module B5L Evaluation Software (hereafter referred to as the “Application”).

1 Outline

The Application is used to evaluate the various functions of the OMRON 3D TOF Sensor Module B5L (hereafter referred to as the “Device”) on a machine.

2 Caution

Make sure to read the Device’s documentation and user’s manual before using it.

Make sure to read the Device’s documentation and user’s manual when verifying its proper operation.

Make sure to follow the instructions in the Device’s documentation and user’s manual when using it.

3 Operating Environment

The Application was tested in the environment described below.

OS	Windows 10 Professional 64-bit
CPU	Intel® Core™ i5-7200 CPU @ 2.50GHz
Communication	USB2.0

4 Operating Procedures

1. Power on the Device, and then connect the Device to the machine with a USB cable.
2. Make sure that the Pilot LED of the Device is lit.
3. Run the Application (TOFImagerTool.exe), after the Device is waked up.

5 How to use the Application

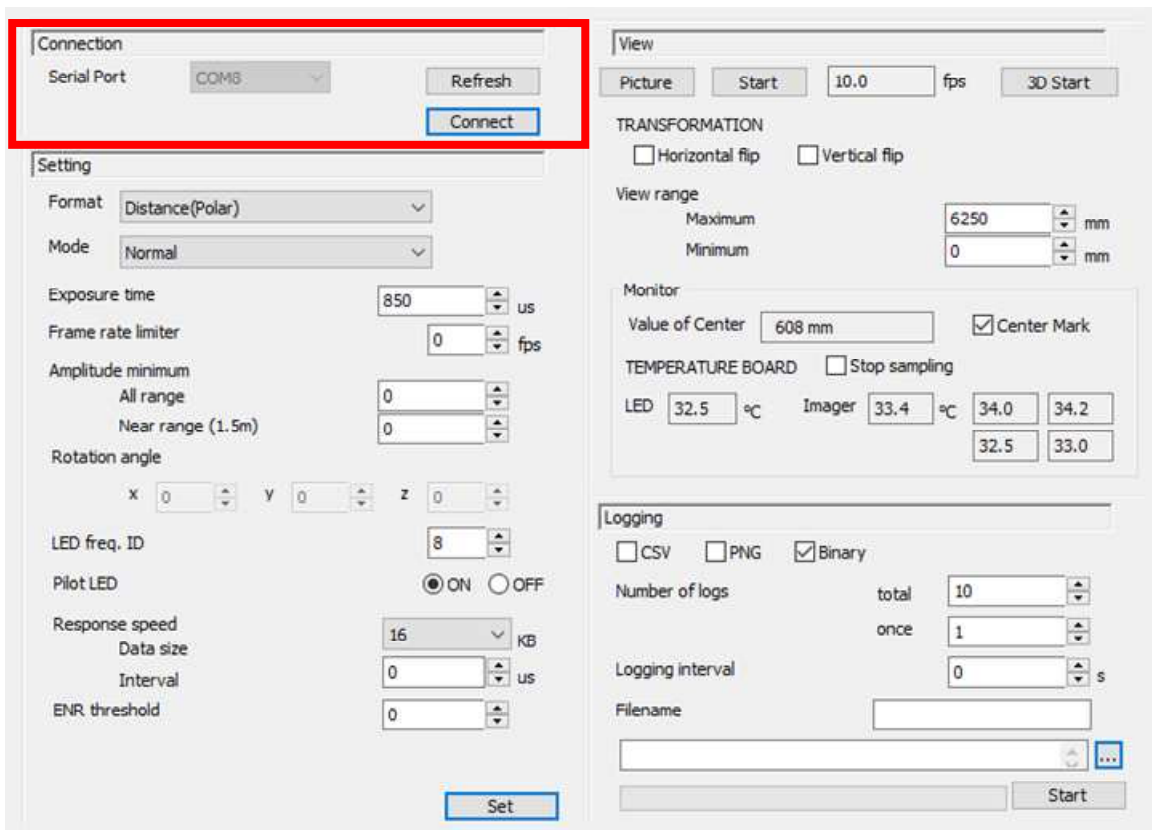
5.1 Connection

Select COM port number from drop-down list of the Application, and then push “Connect” button (Refer to red frame of figure below.)

It is possible to confirm the number of the port used for the Device by looking in “Device Manager” > “Ports (COM & LPT)” > “USB Serial Device (COM#)” on the machine used.

If the Device’s COM port number does not come out in the drop-down list or user wants to disconnect the Device from machine, push “Refresh” button.

Note that proper operations will not be guaranteed if the wrong port is specified.



5.2 Device Settings

If necessary, change setting on the Device, and then push “Set” button (Refer to red frame of figure at next page.) Meaning of each setting is as follows (Refer to user’s manual for detail information.)

Format : Setting of result format (Select from 7 settings below.)

Amplitude	: amplitude data
Distance(Polar)	: distance data (polar coordinates)
Distance(Cartesian)	: distance data(rectangle coordinates without rotation)
Distance(Cartesian rot)	: distance data(rectangle coordinates with rotation)
Distance(Polar)+AMP	: distance data (polar coordinates) and amplitude data
Distance(Cartesian)+AMP	: distance data(rectangle coordinates without rotation) and amplitude data
Distance(Cartesian rot)+AMP	: distance data(rectangle coordinates with rotation) and amplitude data

Mode : Setting of operation mode (Select from 2 settings below.)

Normal	: Normal mode
High speed	: High speed mode

Exposure time : Setting of exposure time

Frame rate limiter : Setting of frame rate

Amplitude minimum :

All range	: Setting of MIN_AMP(for all range)
Near range(1.5m)	: Setting of MIN_AMP(for near range)

Rotation angle : Setting of T3D rotation angle

LED freq.ID : Setting of LED frequency ID

Pilot LED : Setting of pilot LED enable/disable

Response speed :

Data size	: Setting of transmission size of response speed (Select from 5 settings below.) 1,2,4,8,16
Interval	: Setting of transmission interval of response speed

ENR threshold : Setting of ENR threshold

Connection

Serial Port: COM8 Refresh

Connect

Setting

Format: Distance(Polar) ▼

Mode: Normal ▼

Exposure time: 850 us

Frame rate limiter: 0 fps

Amplitude minimum

All range: 0

Near range (1.5m): 0

Rotation angle

x: 0 y: 0 z: 0

LED freq. ID: 8

Pilot LED: ON OFF

Response speed: 16 KB

Data size: 0

Interval: 0 us

ENR threshold: 0

Set

View

Picture Start 10.0 fps 3D Start

TRANSFORMATION

Horizontal flip Vertical flip

View range

Maximum: 6250 mm

Minimum: 0 mm

Monitor

Value of Center: 608 mm Center Mark

TEMPERATURE BOARD Stop sampling

LED: 32.5 °C Imager: 33.4 °C 34.0 34.2

32.5 33.0

Logging

CSV PNG Binary

Number of logs

total: 10

once: 1

Logging interval: 0 s

Filename:

Start

5.3 Machine Settings about result window

If necessary, change machine setting about result window. (Refer to result window in figure below.)

Meaning of each setting is as follows. (Refer to red frame of main window in figure below.)

TRANSFORMATION :

Horizontal flip : Result is displayed horizontally flipped in result window, if this checkbox is checked.

Vertical flip : Result is displayed vertically flipped in result window, if this checkbox is checked.

View range :

Maximum : Setting of maximum value of distance result displayed in result window.

Minimum : Setting of minimum value of distance result displayed in result window.

Monitor :

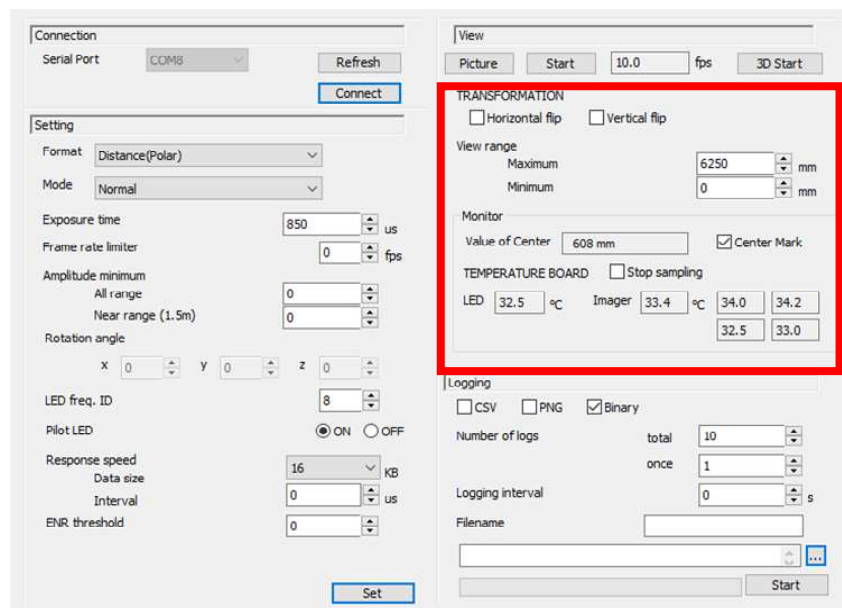
View of Center : Distance result at center coordinate is displayed.

Position of center coordinate is displayed in result window,

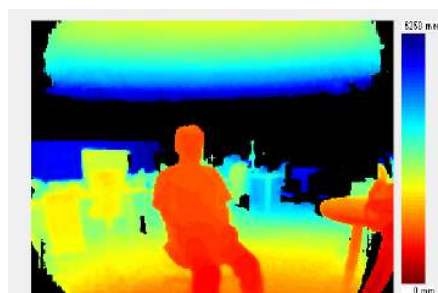
if “Center Mark” checkbox is checked.

TEMPERATURE BOARD : LED and Imager temperature during measurement is displayed.

Display is stopped, if “Stop sampling” checkbox is checked.



< Main window >



< Result window >

5.4 Measurement Start

Start measurement. (Refer to red frame of main window in figure below.)

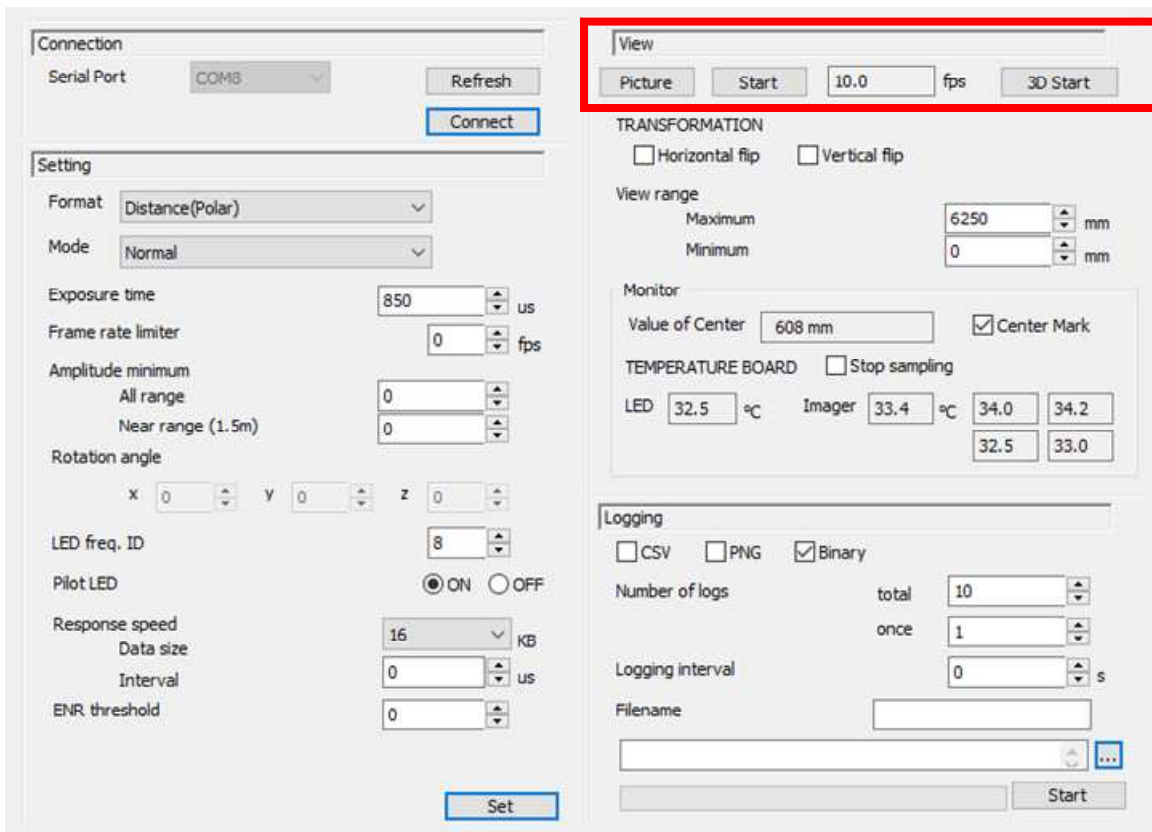
If “Picture” button is pushed, measurement is started, result is got once, and then measurement is stopped.

If “Start” button is pushed, “Start” button is changed to “Stop” button, results are got continuously.

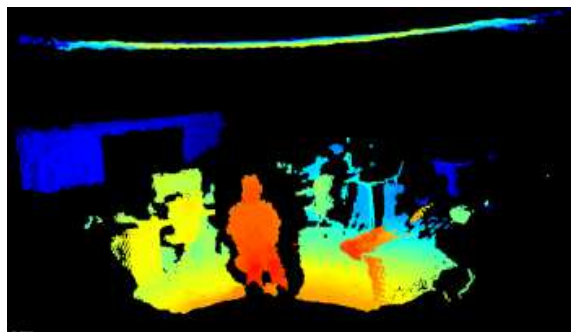
The result is displayed in 3D, if “3D Start” button is pushed during measurement. (Refer to result window (3D) in figure below)

* Some time are required to display 3D. If 3D doesn't appear, move mouse wheel in the window or drag any point of the window inside.

Measurement is stopped, if “Stop” button is pushed.



<Main window>



<Result window(3D)>

5.5 Log Settings and Logging Start

Measurement result can be stored as specified log format. (Refer to red frame of figure at next page.)

Following log formats are available depending on result format setting.

Amplitude	: CSV、PNG、 Binary
Distance(Polar)	: CSV、 PNG、 Binary
Distance(Cartesian)	: CSV、 PCD
Distance(Cartesian rot)	: CSV、 PCD
Distance(Polar)+AMP	: CSV、 PNG、 Binary
Distance(Cartesian)+AMP	: CSV、 PCD
Distance(Cartesian rot)+AMP	: CSV、 PCD

Prefix of log files name can be set in “File name” box and log files are stored in selected folder.

Set following 3 value and push “Start” button, and then measurement and logging is started.

Logging and measurement are stopped after getting of total number of logs.

(Measurement is not stopped, if the logging “Start” button is pushed after starting measurement in the way explained in section 5.4.)

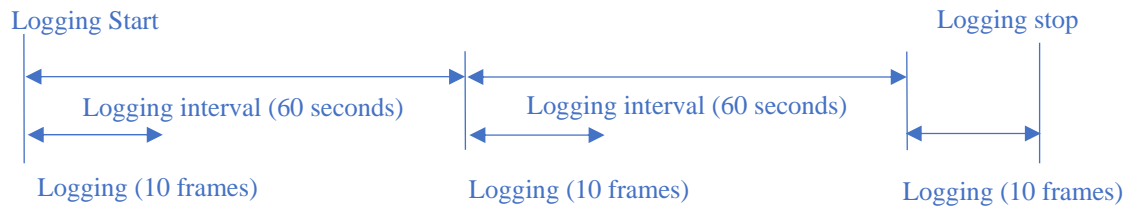
Number of logs :

total : Setting of total number of logs

once : Setting of number of logs per one acquisition

Logging interval : Setting of interval each acquisition

For example, Logging timing is as follows, if “once” is 10, “total” is 30, and “Logging interval” is 60.



Connection

Serial Port: COM8 Refresh

Connect

Setting

Format: Distance(Polar) ▼

Mode: Normal ▼

Exposure time: 850 us

Frame rate limiter: 0 fps

Amplitude minimum

All range: 0

Near range (1.5m): 0

Rotation angle

x: 0 y: 0 z: 0

LED freq. ID: 8

Pilot LED: ON OFF

Response speed: 16 KB

Data size: 0

Interval: 0 us

ENR threshold: 0

Set

View

Picture Start 10.0 fps 3D Start

TRANSFORMATION

Horizontal flip Vertical flip

View range

Maximum: 6250 mm

Minimum: 0 mm

Monitor

Value of Center: 608 mm Center Mark

TEMPERATURE BOARD Stop sampling

LED: 32.5 °C Imager: 33.4 °C 34.0 34.2

32.5 33.0

Logging

CSV PNG Binary

Number of logs

total: 10

once: 1

Logging interval: 0 s

Filename:

...

Start

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