OLE 2D 270°Mini LiDAR Sensor User Guide

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OLEI
欧镭激光

Quick Start Use Manual

LR-1BS3/3d/5/5d

2D 270° Mini LiDAR Sensor

Sensing Reality

CE FC RoHS

QSEN-1BS3/3d/5/5d-201912

Contents

1.Electrical Connection

LR-1BS3/3d/5/5d contains two connectors on the back side, which are 4PIN Ethernet, 5 PIN power and I/0 connector, which is shown as below.

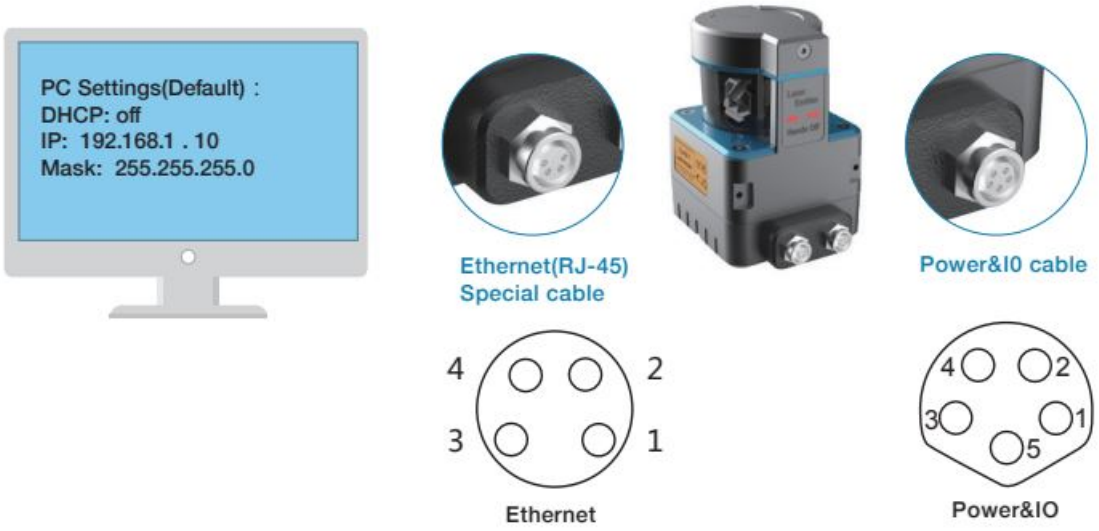
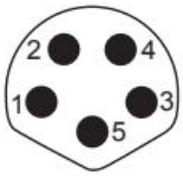


Figure 1: Connection diagram

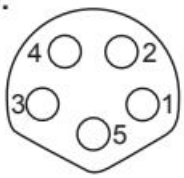
2. Power and I/O connector

Power supply requirement for LR-1BS3/5 is 12V~32V. The pin definitions of power and I/O connector are as follows:

Male:



Female:



No.	Definition	Wiring color
1	GND	Black
2	VCC	Red
3	GND_ I0	Gray
4	VCC_I0	Brown
5	OUT0	Blue

Figure 3: Power and I/O connector

3. Mechanics Connection

There are 2M3 screw holes (3mm depth) on the back for mounting of LR-1BS3/3d/5/5d. There are also 2M3 screw holes (3mm depth) at the bottom for mounting of LiDAR. The back of the LR-1BS3/5 LiDAR has 2 connections; The bottom of the LR-1BS3d/5d LiDAR has 2 connections.

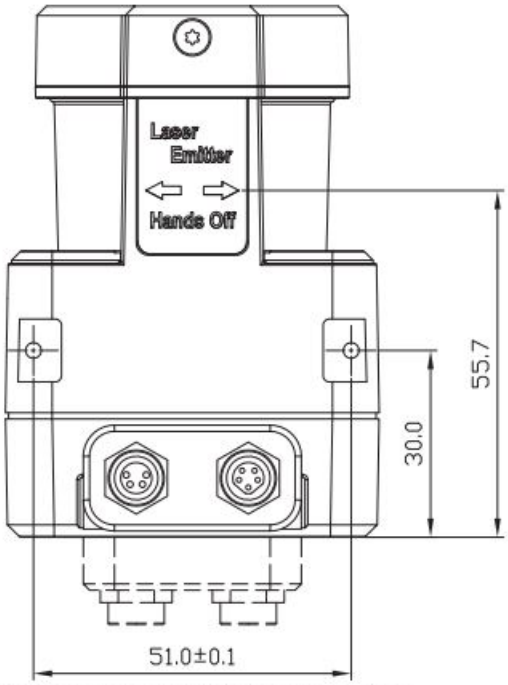


Figure 3: LR-1BS3/3d/5/5d rear view

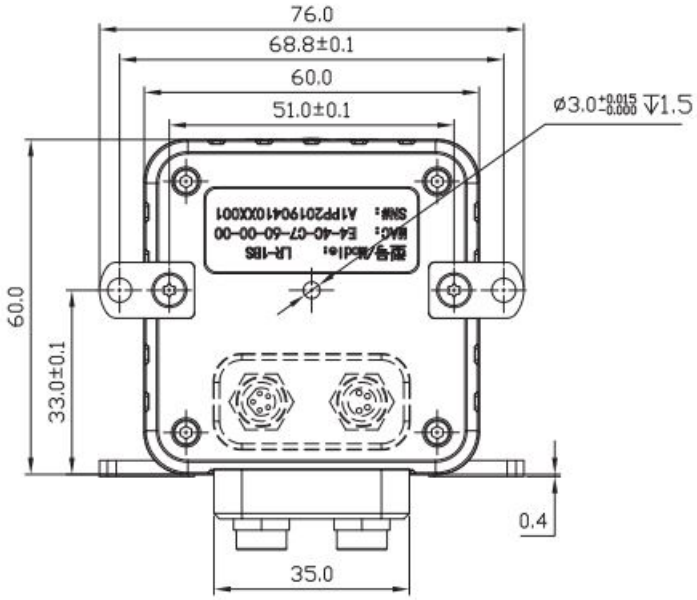


Figure 4: LR-1BS3/3d/5/5d bottom view

4. Communication

The LR-1BS3/3d/5/5d is connected to the computer through a standard Ethernet RJ-45 Connector, which follows the UDP protocol. The point cloud packet receiving port number is 2368, The IP setup process is shown below:

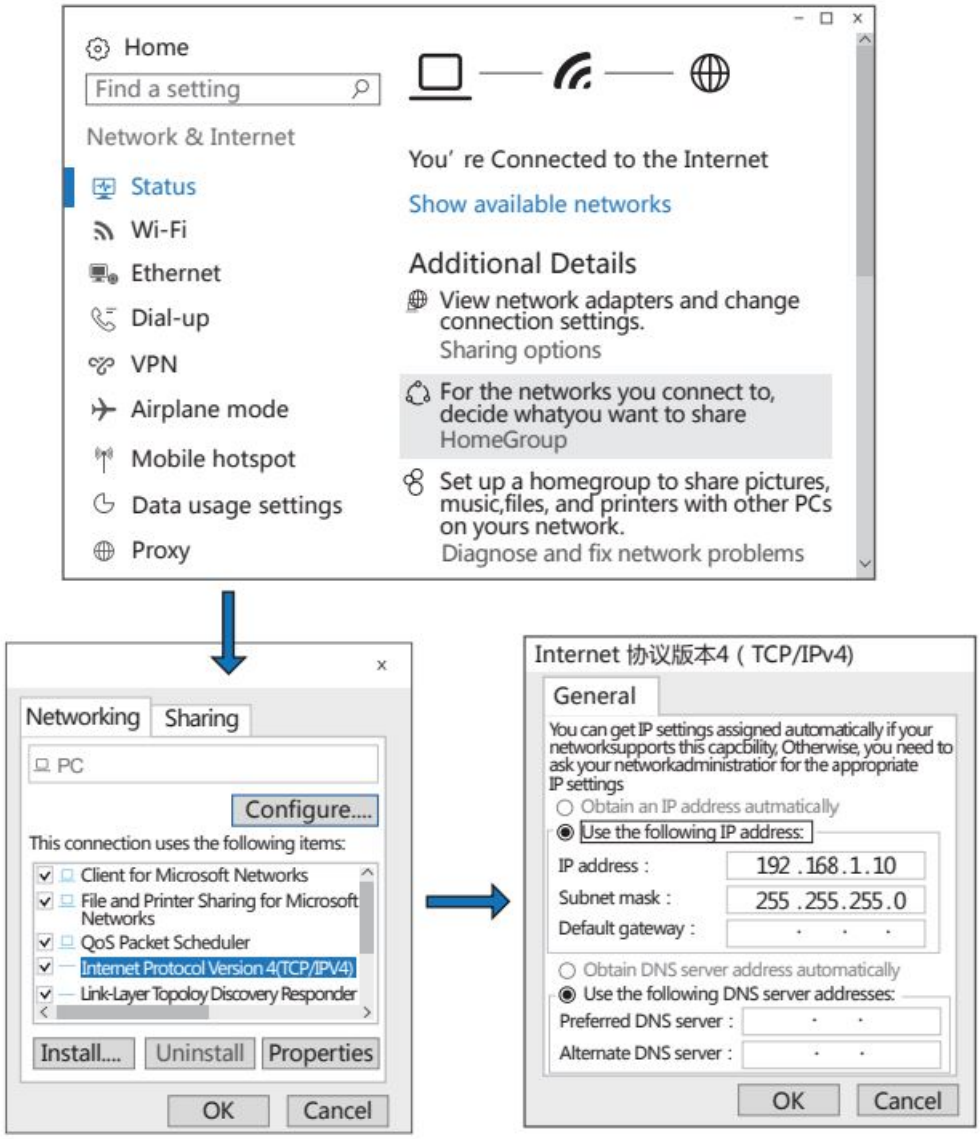
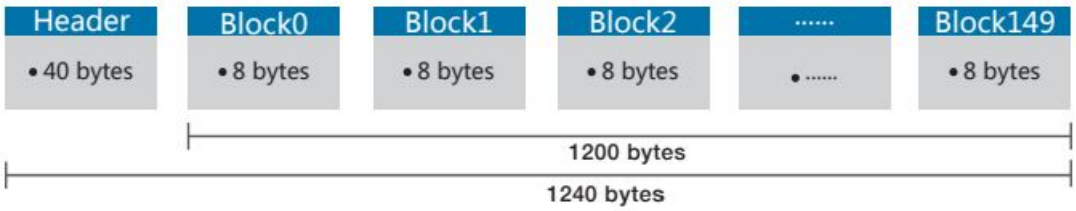


Figure 5: Network IP Settings

Both the LiDAR and the computer IP addresses must be set in the same subnet and conflict should be avoided. Factory setting: IP: 192.168.1.100, subnet mask: 255.255.255.0. Computer IP: 192.168.1.10 Subnet mask: 255.255.255.0. The IP settings can be modified on the configuration web page.

5. Communication Data Protocol

UDP/IP standard internet protocol. Data are in little-endian format, lower byte first Data Packet Format



The total length of a data frame is 1240 bytes, including:
Frame header: 40 bytes
Data block: 150 x 8 1,200 bytes

Offset	Length	Description
0	4	ID, it is always 0xFEF0010F
4	2	Protocol version code, the current code is 0x0200
6	1	Distance scale, distance = readout data x distance scale
7	3	Brand name code, use capital letters and digits. Using "\0" for missing code
10	12	Commercial type code: ended with "\0"
22	2	Internal type code
24	2	Hardware version
26	2	Software version
28	4	Time stamp: unit ms, presenting hour, minute, second, millisecond with 24 hours cycle
32	2	Bit[14:0]: Rotation rate Bit 15: Rotation direction(0: clockwise, 1: counter clockwise)
34	1	Safe zone status, same as the hardware INPUT/OUTPUT BIT[3:0]: same as Output[3:0], BIT[7:4]: same as Input[3:0]
35	1	Error status. A corresponding bit of "1" indicates an error BIT0: Motor fault, BIT1: Abnormal voltage, BIT2: Temperature fault
36	4	Reserved (TBD)

Figure 6 Definition of Frame Header

Offset	Length	Description
0	2	Angle, unsigned integer. Range: 0~35999 Unit: 0.01° /LSB, range 0° ~ 359.99° Note: Data block is invalid if this value is greater or equal than 0xFF00
2	2	Distance readout data, unsigned integer, indicating that the distance is determined by "readout data x distance scale"
4	2	Signal strength, indicates the strength of the received signal, range 0~65535
6	2	Reserved (TBD)

Figure 7 Data block definition

6. Webserver configuration

The LR-1BS3/3d/5/5d's parameter is configured on the webserver as follows:

- Open the web browser Please use Chrome, Firefox, Edge and other standards-compliant browsers Enter the right IP Address, The sensor's IP address comes from the factory set to its default value 192.168.1.100;
- Select the required speed value in motor RPM: 600/900/1200/1500, corresponding to the 10/15/20/25Hz LiDAR scanning frequency;
- Host IP: Your computer IP Address

- Host Port: Your computer Port
- LiDAR IP: LiDAR IP Address
- Net Mask: Subnet mask
- Gateway: Gateway address

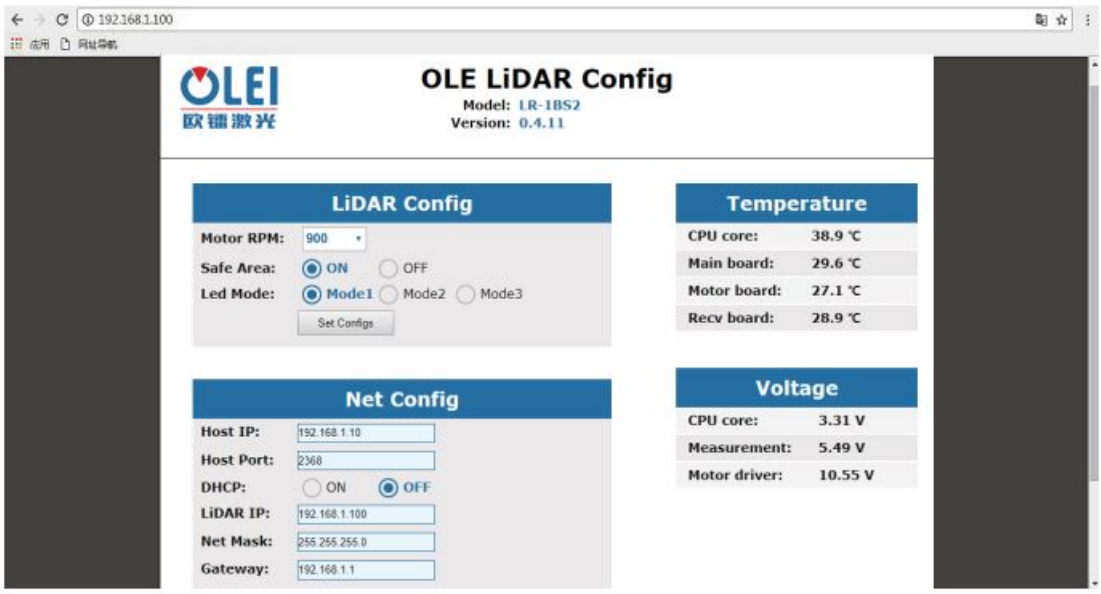


Figure 8: Web page parameter configuration

7. Service and maintenance

Please visit the OLEI official website for enquiry of service and maintenance information;
Website: **www.ole-systems.com**
Path: Service and Support>>Service and maintenance

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http://weixin.qq.com/r/SCrB2WrE2zekrS66939a

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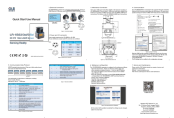
Documents / Resources

	**OLE 2D 270°Mini LiDAR Sensor** [pdf] User Guide OLE, 2D, 270 Mini, LiDAR, Sensor, LR-1BS3, LR-1BS3d, LR-1BS5, LR-1BS5d

References

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