

LidarUtilities

Software for Host Computers User Manual

Classification: Internal

Doc Version: LU1-en-240720

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■ About this manual

Please make sure to read through this user manual before your first use and follow the instructions herein when you operate the product. Failure to comply with the instructions may result in product damage, property loss, personal injuries, and/or a breach of warranty.

Access to this manual

To obtain the latest version, please do one of the following:

- Contact your sales representative of Hesai.
- Contact Hesai technical support: service@hesaitech.com

Technical support

If your question is not addressed in this user manual, please contact us at:

- service@hesaitech.com
- <https://www.hesaitech.com/technical-support/>
- <https://github.com/HesaiTechnology>

Legends and format



Warnings: Instructions that must be followed to ensure safe and proper use of the product.



Notes: Additional information that may be helpful.

Monospace font: field names

For example: **Distance** represents the Distance field.

1. Introduction

LidarUtilities is a software for receiving hosts that connect to a Hesai's lidar. It can be used to retrieve lidar information, configure, and upgrade the lidar.

Please contact technical support to obtain the installation files.

Current software version: 3.0.35

1.1. Applicability

This software applies to the product models using AUTOSAR system architecture:

- AT128P
- OT128
- FT120

1.2. System requirements

Supported operating systems:

- 64-bit Windows 10/11
- Ubuntu 18.04/20.04/22.04/24.04

1.3. User interface

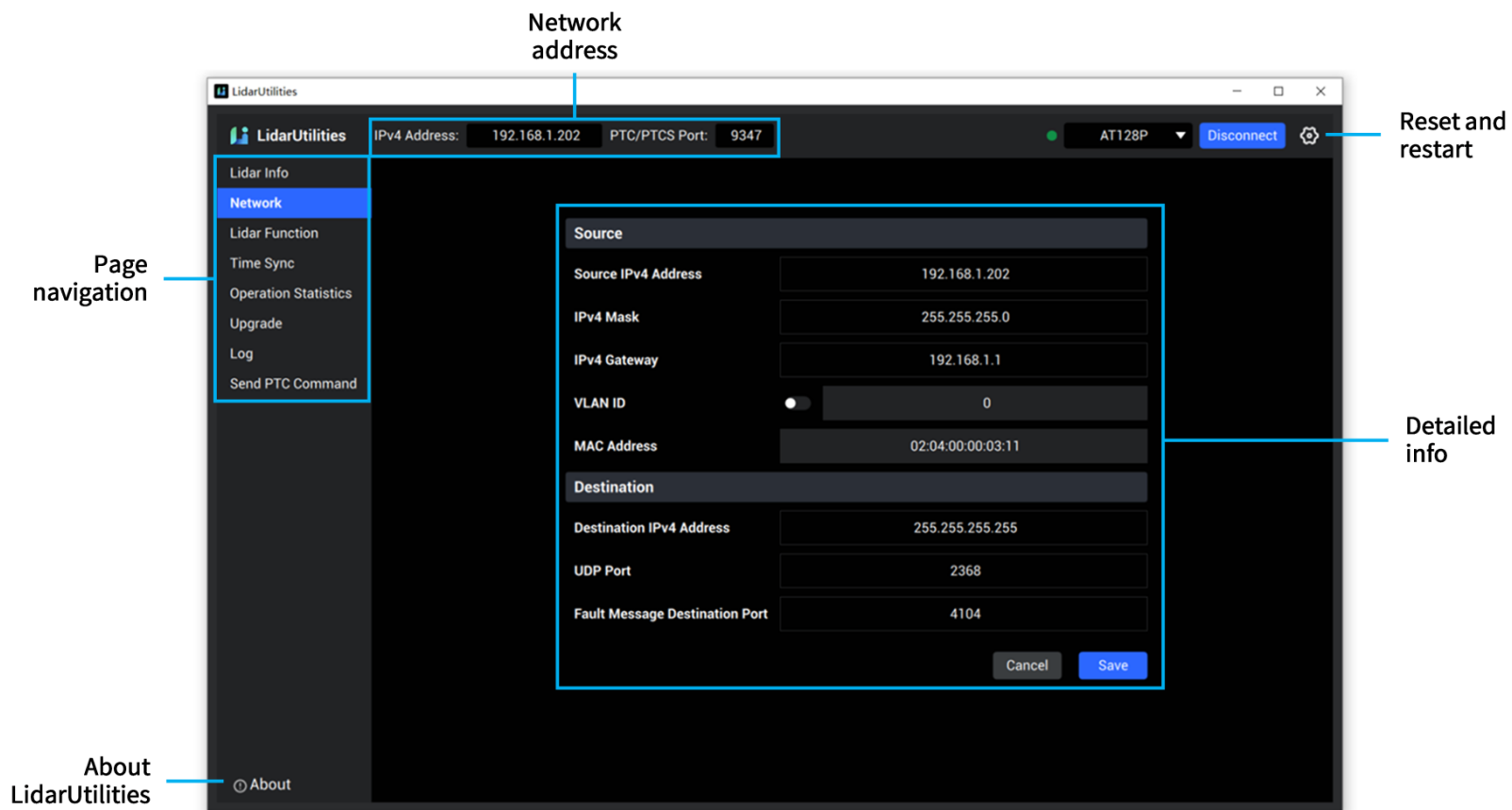


Figure 1. User interface



- "Reset" is only available to OT128.
- The information shown in the user interface may differ for other product models.
- The fields in gray background are read-only.

2. Connect to lidar

1. Refer to *Network settings on the receiving host* in the lidar's User Manual and set the network address accordingly.
2. Input the lidar unit's source IP address (IPv4 address) and PTC/PTCS port in the top left corner.

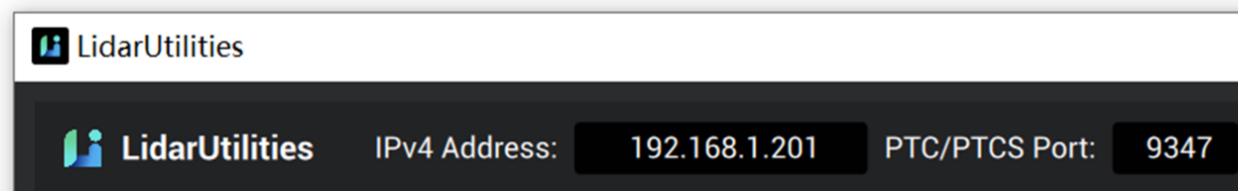



Figure 2. IP address and PTC/PTCS port

 Please contact Hesai technical support to obtain the source IP address and PTC/PTCS port.

3. Click [**Connect**].
4. If the connection succeeds, the red dot in [Figure 3](#) will turn green.

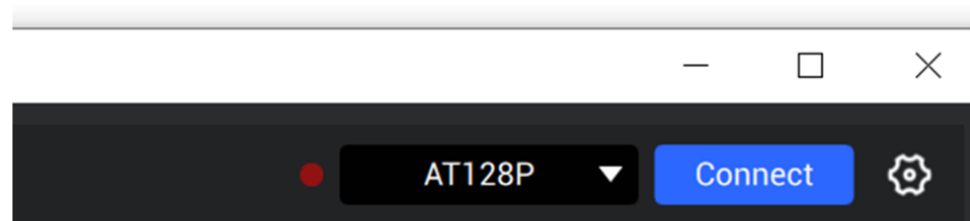


Figure 3. Connection

If the connection fails, try the following suggestions:

- Ensure the network address of the receiving host is correctly configured.
- Ensure the lidar connectors are properly connected.
- Ensure the lidar, adapter, cables, and connection box are intact.
- Turn off the firewall of the domain, private, and public networks, or add LidarUtilities to firewall exceptions.

If the source IPv4 address is changed (see [Section 4 Network](#)), LidarUtilities will disconnect automatically.

Follow these steps to reconnect:

1. For AT128P, restart the lidar; for the other lidar models, skip this step.
2. Input the new source IP address.
3. Click [**Connect**].

3. Lidar info



Figure 4. Lidar info

| Field | Description |
|-------|---------------|
| SN | Serial number |
| PN | Part number |

4. Network

Source

| | |
|---------------------|---------------------------------------|
| Source IPv4 Address | 192.168.1.202 |
| IPv4 Mask | 255.255.255.0 |
| IPv4 Gateway | 192.168.1.1 |
| VLAN ID | <input checked="" type="checkbox"/> 0 |
| MAC Address | 02:04:00:00:03:11 |

Destination

| | |
|--------------------------------|-----------------|
| Destination IPv4 Address | 255.255.255.255 |
| UDP Port | 2368 |
| Fault Message Destination Port | 4104 |

Cancel Save

Figure 5. Network page

5. Lidar function

Lidar Function


| | |
|----------------------|--|
| Return Mode | Last Return |
| Spin Rate | 200 rpm |
| Sync Angle | <input checked="" type="checkbox"/> 30 |
| Trigger Method | Angle-based |
| Reflectivity Mapping | Linear mapping |
| Standby Mode | In operation |
| Rotation Direction | |

Cancel


Save

Figure 6. Lidar function page

5.1. Set the azimuth FOV

 This feature is available to OT128 only.

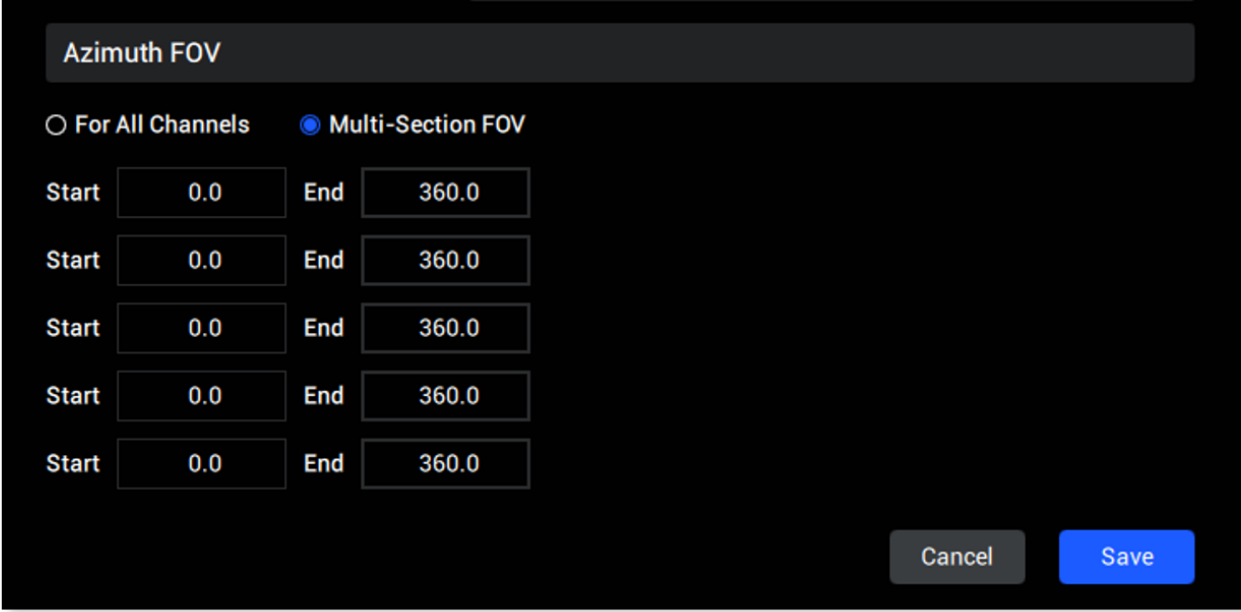
- To set **one** range that applies to all channels:
 1. Click [**For All Channels**].
 2. Input a start angle and an end angle.
 3. Click [**Save**].



The screenshot shows a dialog box titled "Azimuth FOV". It has two radio buttons: "For All Channels" (which is selected) and "Multi-Section FOV". Below the radio buttons, there are two input fields: "Start" with the value "0.0" and "End" with the value "360.0". At the bottom right, there are two buttons: "Cancel" and "Save".

Figure 7. For all channels

- To set **one to five** continuous ranges that apply to all channels:
 1. Click [**Multi-Section FOV**].
 2. Input start angles and end angles.
 3. Click [**Save**].

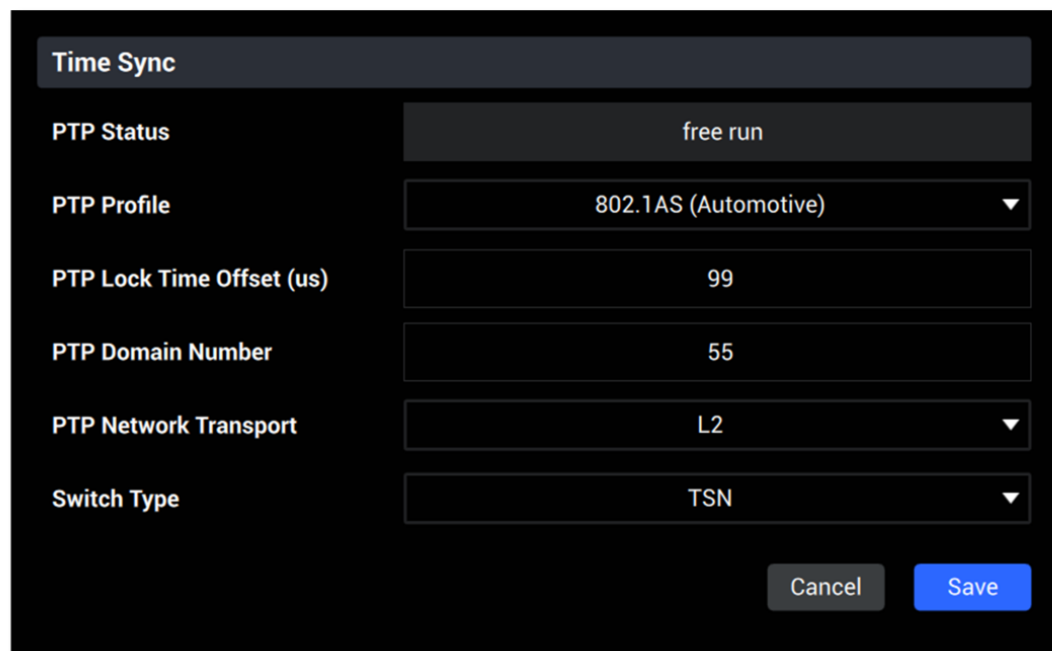


The screenshot shows a dialog box titled "Azimuth FOV". It has two radio buttons: "For All Channels" (unselected) and "Multi-Section FOV" (selected). Below the radio buttons, there are five rows of input fields. Each row has a "Start" label followed by a text box containing "0.0", and an "End" label followed by a text box containing "360.0". At the bottom right of the dialog box, there are two buttons: "Cancel" and "Save".

| Start | End |
|-------|-------|
| 0.0 | 360.0 |
| 0.0 | 360.0 |
| 0.0 | 360.0 |
| 0.0 | 360.0 |
| 0.0 | 360.0 |

Figure 8. Multi-section FOV

6. Time sync



The image shows a 'Time Sync' configuration window with a dark theme. It contains several settings: PTP Status is set to 'free run'; PTP Profile is a dropdown menu showing '802.1AS (Automotive)'; PTP Lock Time Offset (us) is a text input field with '99'; PTP Domain Number is a text input field with '55'; PTP Network Transport is a dropdown menu showing 'L2'; and Switch Type is a dropdown menu showing 'TSN'. At the bottom right, there are 'Cancel' and 'Save' buttons.

| Time Sync | |
|---------------------------|------------------------|
| PTP Status | free run |
| PTP Profile | 802.1AS (Automotive) ▼ |
| PTP Lock Time Offset (us) | 99 |
| PTP Domain Number | 55 |
| PTP Network Transport | L2 ▼ |
| Switch Type | TSN ▼ |

Cancel Save

Figure 9. Time sync page

7. Operational statistics

| Climate | |
|----------------------|-------------------|
| Internal Temperature | 28.8°C |
| Availability | |
| Start-Up Times | 354 |
| System Uptime | 0 h 0 min 23 s |
| Total Operation Time | 428 h 46 min 27 s |

Figure 10. Operational statistics page

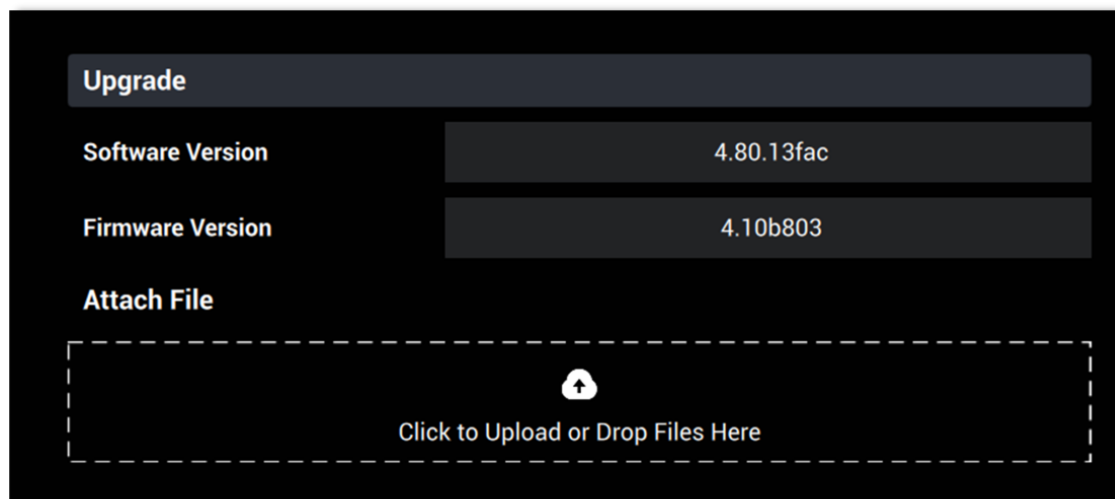
8. Upgrade



- Before upgrading, please contact Hesai technical support to obtain the upgrade file.
- It is recommended to place a protective cover or other opaque material over the lidar's optical window when upgrading.

Click  icon in the dashed box, select and upload the upgrade file; or drag the file into the box.

- If upgrade succeeds, the lidar will restart automatically. After reconnection, the latest software version will display in "Lidar Info" and "Upgrade" pages.
- If the upgrade fails, hard restart the lidar and try again.




| Upgrade | |
|--|------------|
| Software Version | 4.80.13fac |
| Firmware Version | 4.10b803 |
| Attach File | |
| <div> Click to Upload or Drop Files Here</div> | |

Figure 11. Upgrade page

9. Log

Check real-time log on this page, or download the Operation Log and Freeze Frames.

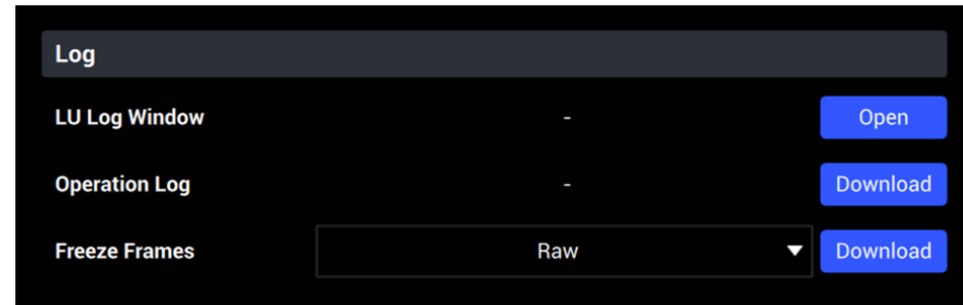


Figure 12. Log page

 Operation log download is not available to FT120.

10. Send PTC commands

Send Command

Command Code

8D

Payload

Send

Return

Header

47 74 8D 00 00 00 00 02

Payload

01 00

Command Log

| Time | Command Code | Payload |
|---------------------|--------------|-------------|
| 2024-07-19 15:42:35 | 8D | |
| 2024-07-19 15:42:06 | 38 | |
| 2024-07-19 15:41:13 | ff | 00 00 00 70 |

Figure 13. Send PTC commands page



- The command code and payload are both hexadecimal digits; the prefix "0x" is not required.
- Each byte in the payload is separated by a space.

Appendix A: Legal notice

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Hesai Product Warranty Service Manual is on the Warranty Policy page of Hesai's official website: <https://www.hesaitech.com/warranty-policy/>

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