v3.1 Changelog

Firmware v3.1 for all Ouster sensors

Ouster

Apr 30, 2024

Contents

1   Supported Products

The current firmware is supported on the following Ouster products:

- Rev 7 - P/N 860-105xxx-07

    - OS0,

    - OS1,

    - OSDome

2   Firmware Changelog

Firmware versions (3.0 & later) are only compatible on OS0/OS1/OSDome Hardware versions Rev7 and later. Please refer to FW 2.x or prior if you have hardware version Rev7 OS2, Rev 06 OS0/OS1/OS2 and prior generation sensors.

2.1   Firmware v3.1.0

Date May 2024
Description

"Added"

- Add Low Data Rate Dual Return profile i.e., *FUSA_RNG15_RFL8_NIR8_DUAL-v3.x*.
- Add config parameter for `min_range_threshold_cm` (Refer to *min-range-feature* for more information).
- Add config parameter for `return_order` (Refer to *return-order-feature* for more information).
- Add config parameter for `Delete Config` (Refer to *delete-config* for more information).
- Add PTP L2 E2E support, via a new PTP profile "default-l2-relaxed".
- Add new alerts, please refer to *alerts-error-table* section for more information.
- Add config parameter for *user-editable-data* section in the API user guide, this field can be used for a number of purposes such as storing specific information about the sensor, qualifying a sensor, calibration data, or any other information.
- Add config parameter for *restart-sensor* to restart sensor or reinitialize a sensor.
- Add End-to-End Cyclic Redundancy Check (CRC) in configurable data packet format.
- Add config parameter for *imu-data-packet*. User can get `imu_data_format` and `POST` config to change `gyro_fsr` and `accel_fsr` from `NORMAL` to `EXTENDED`.

- Add `Alert Flags` in Lidar data packet. All of the `udp_lidar_profile` have been updated to include alert flags at the packet level.

"Improved"

- Improved robustness for cold start.
- Reduced the occurrence of false alerts for `VCSEL_CURRENT_LOW`.
- Improved motor stability when decelerating to lower RPM during lidar mode switches.
- Minor PTP software update and reduced fault recovery time.
- Improved existing alerts to notify users when the network is not reachable. This enhancement enables users to promptly address connectivity issues, improving the overall reliability of the system.
- Improved startup time/reinit time by ~10-15 seconds.
- Improved sensor's webUI (*web-interface*) to display client and UDP destination address.
- Allow IMU port to be set to `0` to disable IMU packet transmission.
- Improved recovery after Ethernet link loss that previously caused UDP stream to stall.

"Fixed"

- Apply PPS setting in `STANDBY` in order for `api/v1/time/sensor` to reflect provisioned configuration in `STANDBY`.
- Fixed handling of `NMEA` messages with fractional seconds. Previously, If NMEA sentence contains a fraction of a second time, the sensor would round the fraction up resulting into a future timestamp. This has been fixed.
- Fixed PPS/NMEA lock and time synchronisation. Previously, Sensor does not lock when gps is connected and Sync pulse in is selected. The sensor does not lock to an external PPS signal from GPS. This has now been fixed.
- Correct `IMU` polling rate to `100hz`.
- Fixed *get-alerts-http* input cursor correctly limits alert log.
- Fixed timestamp loop in PPS mode when PPS signal is lost. Timestamp will free-run instead of looping.
- Fixed sensor error that occurred when using continuously for 1-4 months depending on mode. Please refer to *release-notes-2.x* for more information.
- Support for local `udp_dest` address via sensor Web_UI.
- Fixed a bug where the lidar starts to send data when powering ON before establishing connection with the client machine.
- Fixed a bug where the sensor would be stuck in `UNKNOWN` state during multiple API requests while streaming point clouds.
- Fixed Alert section i.e., categories changed from `WARNING` to `ERROR`. No functional changes to alert behavior.
- Fixed a bug in point cloud behaviour that caused highly reflective objects below min_range to make other objects disappear.

- Fixed a bug that prevents sensor from going into `ERROR` stopped state or restarting while doing cold start. This improves the reliability and overall robustness of the cold start path.

"Changed"

- Replaced mDNS name from `_roger._tcp` to `_ouster-lidar._tcp`. `_roger._tcp` is in planned deprecation.

- Replaced alert category for `CONFIG_INVALID` to `` `CONFIG ``. Please refer to alerts and error section in the firmware user manual.

"Removed"

- TCP API has now been **DEPRECATED** in FW 3.1. Please refer to *http-api* section instead.

- LEGACY Data packet profile has been **DEPRECATED**, please refer to *lidar-data-format-v3.x* for more information.

2.2   Firmware v3.0.1

Date February 2023

Description

"Updated"

- `beam_to_lidar_transform` for Rev7 OS0 and OS1 sensors.

- `lidar_to_sensor_transform` for Rev7 OSDOME sensors.

"Added"

- New HTTP Command to configure speed override (Refer to *system-firmware*)

2.3   Firmware v3.0.0

Date January 2023

Description

"Fixed"

- Bug Fix in High Input Voltage Alert behavior.

- Bug in keep-alive behavior for HTTP 1.1.

- Bug fix in get_lidar_data_format.

"Improvements"

- Improved point cloud behavior due to enhanced retro-reflector range accuracy improvement.

"Changed"

- Default value of udp_profile_lidar will be set to single return profile. For more information refer to *single-return-v3.x*.

"Added"

- 1024x20 and 2048x10 lidar modes with dual returns.
- Shot limiting status flags and thermal shutdown.
- Azimuth laser masking.
- Two new Signal multiplier modes - 0.25 and 0.5 Mode.
- New alerts, refer to *alerts-error-table*.

3 API Changelog

3.1 Firmware v3.1.0

- Date: May 2024

Added

- Add config parameter for `min_range_threshold_cm` (Refer to *min-range-feature* for more information).
- Add config parameter for `return_order` (Refer to *return-order-feature* for more information).
- Add config parameter for `Delete Config` (Refer to *delete-config* for more information).
- Add config parameter for *restart-sensor* to restart sensor or reinitialize a sensor.
- Add config parameter for *user-editable-data* section, which can be used for a number of purposes such as storing specific information about the sensor, qualifying a sensor, calibration data, or any other information.
- Add config parameter for *imu-data-packet*. User can get `imu_data_format` and `POST` config to change `gyro_fsr` and `accel_fsr` from `NORMAL` to `EXTENDED`.

Removed

- TCP API has now been **DEPRECATED** in FW 3.1. Please refer to *http-api* section instead.
- LEGACY Data packet profile has been **DEPRECATED**, please refer to Lidar Data Packet Format section of the Firmware User Manual for more information.

Fixed

- Fixed bug in *get-alerts-http* API.

3.2 Firmware v3.0.1

- Date: February 2023

Added

- New HTTP Command to configure speed override (Refer to *system-firmware*)

3.3 Firmware v3.0.0

- Date: January 2023

Fixed

- Bug in keep-alive behavior for HTTP 1.1.