Livox LiDAR SDK C/C++ API Reference

Livox

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ONE

BASIC TYPES AND FUNCTIONS

enum DeviceType
Device type.

Values:

kDeviceTypeHub = 0
Livox Hub.

kDeviceTypeLidarMid40 = 1
Mid-40.

kDeviceTypeLidarTele = 2
Tele.

kDeviceTypeLidarHorizon = 3
Horizon.

enum LidarState
Lidar state.

Values:

kLidarStateInit = 0
Initialization state.

kLidarStateNormal = 1
Normal work state.

kLidarStatePowerSaving = 2
Power-saving state.

kLidarStateStandBy = 3
Standby state.

kLidarStateError = 4
Error state.

kLidarStateUnknown = 5

enum LidarFeature
Lidar feature.

Values:

kLidarFeatureNone = 0
No feature.

kLidarFeatureRainFog = 1
Rain and fog feature.

enum ResponseStatus

Function return value definition.

Values:

kStatusSuccess = 0
Success.

kStatusFailure = 1
Failure.

kStatusNotConnected = 2
Requested device is not connected.

kStatusNotSupported = 3
Operation is not supported on this device.

kStatusTimeout = 4
Operation timeouts.

kStatusNotEnoughMemory = 5
No enough memory.

enum DeviceEvent

Device update type, indicating the change of device connection or working state.

Values:

kEventConnect = 0
Device is connected.

kEventDisconnect = 1
Device is removed.

kEventStateChange = 2
Device working state changes or an error occurs.

enum TimestampType

Timestamp sync mode define.

Values:

kTimestampTypeNoSync = 0
No sync signal mode.

kTimestampTypePtp = 1
1588v2.0 PTP sync mode.

kTimestampTypeRsvd = 2
Reserved use.

kTimestampTypePpsGps = 3
pps+gps sync mode.

kTimestampTypePps = 4
pps only sync mode.

kTimestampTypeUnknown = 5
Unknown mode.

struct DeviceInfo

Information of the connected LiDAR or hub.

Public Members

char **broadcast_code**[16]
Device broadcast code, null-terminated string, 15 characters at most.

uint8_t **handle**
Device handle.

uint8_t **slot**
Slot number used for connecting LiDAR.

uint8_t **id**
LiDAR id.

uint32_t **type**
Device type, refer to *DeviceType*.

uint16_t **data_port**
Point cloud data UDP port.

uint16_t **cmd_port**
Control command UDP port.

char **ip**[16]
IP address.

LidarState **state**
LiDAR state.

LidarFeature **feature**
LiDAR feature.

StatusUnion **status**

union StatusUnion
#include <livox_def.h> Information of LiDAR work state.

Public Members

uint32_t **status_code**
LiDAR work state status code.

uint32_t **progress**
LiDAR work state switching progress.

bool **Init**()
Initialize the SDK.

Return true if successfully initialized, otherwise false.

bool **Start**()
Start the device scanning routine which runs on a separate thread.

Return true if successfully started, otherwise false.

void **Uninit**()
Uninitialize the SDK.

struct BroadcastDeviceInfo
The information of broadcast device.

Public Members

char **broadcast_code**[16]
Device broadcast code, null-terminated string, 15 characters at most.

uint8_t **dev_type**
Device type, refer to *DeviceType*.

uint16_t **reserved**
Reserved.

typedef void (***DeviceBroadcastCallback**)(**const** *BroadcastDeviceInfo* *info)
`SetBroadcastCallback` response callback function.

Parameters

- `info`: information of the broadcast device, becomes invalid after the function returns.

void **SetBroadcastCallback**(*DeviceBroadcastCallback cb*)
Set the callback of listening device broadcast message. When broadcast message is received from Livox Hub/LiDAR, cb is called.

Parameters

- `cb`: callback for device broadcast.

typedef void (***DeviceStateUpdateCallback**)(**const** *DeviceInfo* *device, *DeviceEvent* type)
`SetDeviceStateUpdateCallback` response callback function.

Parameters

- `device`: information of the connected device.
- `type`: the update type that indicates connection/disconnection of the device or change of working state.

void **SetDeviceStateUpdateCallback**(*DeviceStateUpdateCallback cb*)
Add a callback for device connection or working state changing event.

Note Livox SDK supports two hardware connection modes. 1: Directly connecting to the LiDAR device; 2. Connecting to the LiDAR device(s) via the Livox Hub. In the first mode, connection/disconnection of every LiDAR unit is reported by this callback. In the second mode, only connection/disconnection of the Livox Hub is reported by this callback. If you want to get information of the LiDAR unit(s) connected to hub, see *HubQueryLidarInformation*.

Note 3 conditions can trigger this callback:

1. Connection and disconnection of device.
2. A change of device working state.
3. An error occurs.

Parameters

- `cb`: callback for device connection/disconnection.

uint8_t **AddHubToConnect**(**const** char **broadcast_code*, uint8_t **handle*)
Add a broadcast code to the connecting list and only devices with broadcast code in this list will be connected. The broadcast code is unique for every device.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `broadcast_code`: device's broadcast code.
- `handle`: device handle. For Livox Hub, the handle is always 31; for LiDAR units connected to the Livox Hub, the corresponding handle is (slot-1)*3+id-1.

uint8_t **`AddLidarToConnect`**(**`const`** char **broadcast_code*, uint8_t **handle*)

Add a broadcast code to the connecting list and only devices with broadcast code in this list will be connected. The broadcast code is unique for every device.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `broadcast_code`: device's broadcast code.
- `handle`: device handle. The handle is the same as the order calling AddLidarToConnect starting from 0.

uint8_t **`GetConnectedDevices`**(*DeviceInfo* **devices*, uint8_t **size*)

Get all connected devices' information.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `devices`: list of connected devices' information.
- `size`: number of devices connected.

CHAPTER

TWO

GENERAL FUNCTIONS

2.1 Query Device Information

struct DeviceInformationResponse
The response body of querying device information.

Public Members

uint8_t **ret_code**
Return code.

uint8_t **firmware_version**[4]
Firmware version.

typedef void (***DeviceInformationCallback**)(uint8_t status, uint8_t handle, *DeviceInformationResponse* *response, void *client_data)
Function type of callback that queries device's information.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **QueryDeviceInformation**(uint8_t *handle*, *DeviceInformationCallback* *cb*, void **client_data*)
Command to query device's information.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

2.2 Receive Point Cloud Data

struct LivoxEthPacket
Point cloud packet.

Public Members

uint8_t **version**
Packet protocol version.

uint8_t **slot**
Slot number used for connecting LiDAR.

uint8_t **id**
LiDAR id.

uint8_t **rsvd**
Reserved.

uint32_t **err_code**
Device error status indicator information.

uint8_t **timestamp_type**
Timestamp type.

uint8_t **data_type**
Point cloud coordinate format, 1 for spherical coordinate data, 0 for cartesian coordinate data.

uint8_t **timestamp**[8]
Nanosecond or UTC format timestamp.

uint8_t **data**[1]
Point cloud data.

typedef void (***DataCallback**)(uint8_t handle, *LivoxEthPacket* *data, uint32_t data_num)
Callback function for receiving point cloud data.

Parameters

- `handle`: device handle.
- `data`: device's data.
- `data_num`: number of points in data.

void **SetDataCallback**(uint8_t *handle*, *DataCallback* *cb*)
Set the callback to receive point cloud data. Only one callback is supported for a specific device. Set the point cloud data callback before beginning sampling.

Parameters

- `cb`: callback to receive point cloud data.

uint8_t **HubGetLidarHandle**(uint8_t *slot*, uint8_t *id*)
Get the LiDAR unit handle used in the Livox Hub data callback function from slot and id.

Return LiDAR unit handle.

Parameters

- `slot`: Livox Hub's slot.
- `id`: Livox Hub's id.

2.3 Set Coordinate System

uint8_t **SetCartesianCoordinate**(uint8_t *handle*, *CommonCommandCallback* *cb*, void **client_data*)
Command to change point cloud coordinate system to cartesian coordinate.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

uint8_t **SetSphericalCoordinate**(uint8_t *handle*, *CommonCommandCallback* *cb*, void **client_data*)
Change point cloud coordinate system to spherical coordinate.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

2.4 Error Message From Device

struct ErrorMessage
The response body of getting device error status.

Public Members

uint32_t **error_code**
Error code.

typedef void (***ErrorMessageCallback**)(uint8_t handle, *ErrorMessage* *message)
Callback of the error status message.

Parameters

- `handle`: device handle.
- `response`: response from the device.

uint8_t **SetErrorMessageCallback**(uint8_t *handle*, *ErrorMessageCallback* *cb*)
Add error status callback for the device.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.

2.5 Configure Static/Dynamic IP

struct SetDeviceIPModeRequest
The request body of the command for setting device's IP mode.

Public Members

uint8_t **ip_mode**
IP address mode: 0 for dynamic IP address, 1 for static IP address.

uint32_t **ip_addr**
IP address.

uint8_t **SetStaticDynamicIP**(uint8_t *handle*, *SetDeviceIPModeRequest* **req*, *CommonCommandCallback* *cb*, void **client_data*)

Set device's IP mode.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `req`: request sent to device.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

struct GetDeviceIPModeResponse

The response body of getting device's IP mode.

Public Members

uint8_t **ret_code**

Return code.

uint8_t **ip_mode**

IP address mode: 0 for dynamic IP address, 1 for static IP address.

uint32_t **ip_addr**

IP address.

typedef void (***GetDeviceIPInformationCallback**)(uint8_t status, uint8_t handle, *GetDeviceIPModeResponse* *response, void *client_data)

Callback function that gets device's IP information.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **GetDeviceIPInformation**(uint8_t *handle*, *GetDeviceIPInformationCallback* *cb*, void **client_data*)

Get device's IP mode.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

CHAPTER

THREE

LIVOX HUB FUNCTIONS

3.1 Query Connected LiDAR Unit Information

struct ConnectedLidarInfo
The information of LiDAR units that are connected to the Livox Hub.

Public Members

char **broadcast_code**[16]
Device broadcast code, null-terminated string, 15 characters at most.

uint8_t **dev_type**
Device type, refer to *DeviceType*.

uint8_t **version**[4]
Firmware version.

uint8_t **slot**
Slot number used for connecting LiDAR units.

uint8_t **id**
Device id.

struct HubQueryLidarInformationResponse
The response body of querying the information of LiDAR units connected to the Livox Hub.

Public Members

uint8_t **ret_code**
Return code from device.

uint8_t **count**
Count of device_info_list.

ConnectedLidarInfo **device_info_list**[1]
Connected lidars information.

typedef void (***HubQueryLidarInformationCallback**)(uint8_t status, uint8_t handle, *HubQueryLidarInformationResponse* *response, void *client_data)
`HubQueryLidarInformation` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.

- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **HubQueryLidarInformation**(*HubQueryLidarInformationCallback* *cb*, void **client_data*)
Query the information of LiDARs connected to the hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.2 Configure Lidars Mode

struct HubSetModeResponse
The response of setting LiDAR units working mode.

Public Members

uint8_t **ret_code**
Return code from device.

uint8_t **count**
Count of ret_state_list.

ReturnCode **ret_state_list**[1]
Return status list.

typedef void (***HubSetModeCallback**)(uint8_t status, uint8_t handle, *HubSetModeResponse* *response, void *client_data)
`HubSetMode` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

struct HubSetModeRequest
The request body of setting LiDAR units working mode.

Public Members

uint8_t **count**
Number of LiDAR units to set.

LidarModeRequestItem **config_list**[1]
LiDAR mode configuration list.

struct LidarModeRequestItem
LiDAR mode configuration information.

Public Members

char **broadcast_code**[16]
Device broadcast code, null-terminated string, 15 characters at most.

uint8_t **state**
LiDAR state.

uint8_t **HubSetMode**(*HubSetModeRequest* *req, uint16_t length, *HubSetModeCallback* cb, void *client_data)
Set the mode of LiDAR unit connected to the Livox Hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `req`: mode configuration of LiDAR units.
- `length`: length of req.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

struct LidarStateItem

Public Members

char **broadcast_code**[16]
Broadcast code.

uint8_t **state**
LiDAR state.

uint8_t **feature**
LiDAR feature.

StatusUnion **error_union**

struct HubQueryLidarStatusResponse
The response body of getting sub LiDAR's state.

Public Members

uint8_t **ret_code**
Return code.

uint8_t **count**
Number of LiDAR connected to the Livox Hub.

LidarStateItem **state_list**[1]
Device information of connected LiDAR units.

typedef void (***HubQueryLidarStatusCallback**)(uint8_t status, uint8_t handle, *HubQueryLidarStatusResponse* *response, void *client_data)
`HubQueryLidarStatus` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.

- `client_data`: user data associated with the command.

uint8_t **HubQueryLidarStatus**(*HubQueryLidarStatusCallback* *cb*, void **client_data*)
Get the state of LiDAR units connected to the Livox Hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.3 Sampling Control

typedef void (***CommonCommandCallback**)(uint8_t status, uint8_t handle, uint8_t response, void *client_data)
Function type of callback with 1 byte of response.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **HubStartSampling**(*CommonCommandCallback* *cb*, void **client_data*)
Start hub sampling.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `cb`: callback for the command.
- `client_data`: user data associated with the command.

uint8_t **HubStopSampling**(*CommonCommandCallback* *cb*, void **client_data*)
Stop the Livox Hub's sampling.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.4 Slot Power Control

struct HubControlSlotPowerRequest
The request body of toggling the power supply of the slot.

Public Members

uint8_t **slot**
Slot of the hub.

uint8_t **state**
Status of toggling the power supply.

uint8_t **HubControlSlotPower**(*HubControlSlotPowerRequest* *req, *CommonCommandCallback* cb, void *client_data)
Toggle the power supply of designated slots.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `req`: request whether to enable or disable the power of designated slots.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.5 Configure Livox Hub Extrinsic Parameters

struct HubSetExtrinsicParameterResponse
The response body of setting the Livox Hub's parameters.

Public Members

uint8_t **ret_code**
Return code.

uint8_t **count**
Count of ret_code_list.

ReturnCode **ret_code_list**[1]
Return code

typedef void (***HubSetExtrinsicParameterCallback**)(uint8_t status, uint8_t handle, *HubSetExtrinsicParameterResponse* *response, void *client_data)
`HubSetExtrinsicParameter` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

struct HubSetExtrinsicParameterRequest
The request body of setting the Livox Hub's parameters.

Public Members

uint8_t **count**
Count of cfg_param_list.

ExtrinsicParameterRequestItem **parameter_list**[1]
Configuration parameter list.

struct ExtrinsicParameterRequestItem
LiDAR configuration information.

Public Members

char **broadcast_code**[16]
Device broadcast code.

float **roll**
Roll angle, unit: degree.

float **pitch**
Pitch angle, unit: degree.

float **yaw**
Yaw angle, unit: degree.

int32_t **x**
X translation, unit: mm.

int32_t **y**
Y translation, unit: mm.

int32_t **z**
Z translation, unit: mm.

uint8_t **HubSetExtrinsicParameter**(*HubSetExtrinsicParameterRequest* *req, uint16_t *length*, *HubSetExtrinsicParameterCallback* *cb*, void *client_data*)
Set extrinsic parameters of LiDAR units connected to the Livox Hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `req`: the parameters to write.
- `length`: the request's length.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

struct HubGetExtrinsicParameterRequest
The request body of getting the Livox Hub's parameters.

Public Members

uint8_t **count**
Count of code_list.

DeviceBroadcastCode **code_list**[1]
Broadcast code list.

struct DeviceBroadcastCode

Public Members

char **broadcast_code**[16]
Device broadcast code.

struct HubGetExtrinsicParameterResponse
The response body of getting the Livox Hub's parameters.

Public Members

uint8_t **ret_code**
Return code.

uint8_t **count**
Number of LiDAR units connected to the Livox Hub.

ExtrinsicParameterResponseItem **parameter_list**[1]
Postion parameters of connected LiDAR unit(s).

struct ExtrinsicParameterResponseItem
LiDAR extrinsic parameters.

Public Members

uint8_t **ret_code**
Return code.

char **broadcast_code**[16]
Broadcast code.

float **roll**
Roll angle, unit: degree.

float **pitch**
Pitch angle, unit: degree.

float **yaw**
Yaw angle, unit: degree.

int32_t **x**
X translation, unit: mm.

int32_t **y**
Y translation, unit: mm.

int32_t **z**
Z translation, unit: mm.

typedef void (***HubGetExtrinsicParameterCallback**)(uint8_t status, uint8_t handle, *HubGetExtrinsicParameterResponse* *response, void *client_data)
`HubGetExtrinsicParameter` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **HubGetExtrinsicParameter**(*HubGetExtrinsicParameterRequest* **req*, uint16_t *length*, *HubGetExtrinsicParameterCallback* *cb*, void **client_data*)
Get extrinsic parameters of LiDAR units connected to the Livox Hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `req`: the LiDAR units broadcast code list.

- `length`: the request's length.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.6 Enable Lidar Unit Calculating Extrinsic Parameters

uint8_t **HubExtrinsicParameterCalculation**(bool *enable*, *CommonCommandCallback* *cb*, void **client_data*)

Turn on or off the calculation of extrinsic parameters.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `enable`: the request whether enable or disable calculating the extrinsic parameters.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

3.7 Enable or Disable The Rain and Fog Mode.

struct RainFogSuppressRequestItem

Public Members

char **broadcast_code**[16]
Device broadcast code.

uint8_t **feature**
Close or open the rain and fog feature.

struct HubRainFogSuppressRequest
The request body of toggling the LiDAR units rain and fog mode.

Public Members

uint8_t **count**
Number of LiDAR units connected to the Livox Hub.

RainFogSuppressRequestItem **lidar_cfg_list**[1]
Command data of connected LiDAR units.

struct HubRainFogSuppressResponse
The response body of toggling the LiDAR units rain and fog mode.

Public Members

uint8_t **ret_code**
Return code.

uint8_t **count**
Count of ret_state_list.

ReturnCode **ret_state_list**[1]
Return code

typedef void (***HubRainFogSuppressCallback**)(uint8_t status, uint8_t handle, *HubRainFogSuppressResponse* *response, void *client_data)

`HubRainFogSuppress` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **HubRainFogSuppress**(*HubRainFogSuppressRequest* **req*, uint16_t *length*, *HubRainFogSuppressCallback* *cb*, void **client_data*)

Toggling the rain and fog mode for lidars connected to the hub.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `req`: the request whether open or close the rain and fog mode.
- `length`: the request's length.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

CHAPTER

FOUR

LIDAR FUNCTIONS

4.1 Configure LiDAR Mode

enum LidarMode
Lidar mode.

Values:

kLidarModeNormal = 1
Normal mode.

kLidarModePowerSaving = 2
Power-saving mode.

kLidarModeStandby = 3
Standby mode.

uint8_t **LidarSetMode**(uint8_t *handle*, *LidarMode* *mode*, *CommonCommandCallback* *cb*, void **client_data*)
Set LiDAR mode.

Note Successful callback function status only means LiDAR successfully starting the changing process of mode. You need to observe the actually change of mode in DeviceStateUpdateCallback function.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `mode`: the mode to change.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

4.2 Sample Control

uint8_t **LidarStartSampling**(uint8_t *handle*, *CommonCommandCallback* *cb*, void **client_data*)
Start LiDAR sampling.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

uint8_t **LidarStopSampling**(uint8_t *handle*, *CommonCommandCallback* *cb*, void **client_data*)
Stop LiDAR sampling.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

4.3 Configure LiDAR Extrinsic Parameters

struct LidarSetExtrinsicParameterRequest
The request body for the command of setting LiDAR's parameters.

Public Members

float **roll**
Roll angle, unit: degree.

float **pitch**
Pitch angle, unit: degree.

float **yaw**
Yaw angle, unit: degree.

int32_t **x**
X translation, unit: mm.

int32_t **y**
Y translation, unit: mm.

int32_t **z**
Z translation, unit: mm.

uint8_t **LidarSetExtrinsicParameter**(uint8_t *handle*, *LidarSetExtrinsicParameterRequest* **req*, *CommonCommandCallback* *cb*, void **client_data*)
Set LiDAR extrinsic parameters.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `param`: the parameters to write.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

struct LidarGetExtrinsicParameterResponse
The response body of getting LiDAR's parameters.

Public Members

uint8_t **ret_code**

float **roll**
Roll angle, unit: degree.

float **pitch**
Pitch angle, unit: degree.

float **yaw**
Yaw angle, unit: degree.

int32_t **x**
X translation, unit: mm.

int32_t **y**
Y translation, unit: mm.

int32_t **z**
Z translation, unit: mm.

typedef void (***LidarGetExtrinsicParameterCallback**)(uint8_t status, uint8_t handle, *LidarGetExtrinsicParameterResponse* *response, void *client_data)
`LidarGetExtrinsicParameter` response callback function.

Parameters

- `status`: kStatusSuccess on successful return, kStatusTimeout on timeout, see *ResponseStatus* for other error code.
- `handle`: device handle.
- `response`: response from the device.
- `client_data`: user data associated with the command.

uint8_t **LidarGetExtrinsicParameter**(uint8_t *handle*, *LidarGetExtrinsicParameterCallback* *cb*, void **client_data*)
Get LiDAR extrinsic parameters.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

4.4 Enable and Disable the Rain/Fog Suppression

uint8_t **LidarRainFogSuppress**(uint8_t *handle*, bool *enable*, *CommonCommandCallback* *cb*, void **client_data*)
Enable and disable the rain/fog suppression.

Return kStatusSuccess on successful return, see *ResponseStatus* for other error code.

Parameters

- `handle`: device handle.
- `cb`: callback for the command.
- `client_data`: user data associated with the command.

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