

AXON™



PRODUCT MANUAL

Revision Status

Revision Number	Date	Revision Description
1	06/2025	Initial release

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Symbols



Read Technical Manual



Warning



CE
(Conformité Européenne)



Manufacturer



Serial Number



Date of Manufacture



Catalog Number



MagneticField Hazard



FCC
(Federal Communications
Commission)



WEEE
(Waste Electrical and
Electronic Equipment
Directive)
Do not dispose as
regular waste



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Safety Warnings/Cautions

WARNING

- Ommo products listed in this guide are highly accurate and sensitive devices. Check if there are no damage or loose components. Do not use the product if you notice any defects.
- Do not place the base station on ferrous metals and clear the tracking space from large ferrous objects. Ferrous metals can result in a malfunction of the base station and inaccurate tracking of the sensor devices.
- Maintain a minimum safe distance of 25 cm from the base station at all times
- Do not use the base station in proximity to patients or personnel with implanted medical devices (e.g., pacemakers, neurostimulators), as the magnetic field may cause device malfunction or displacement.
- Products arrive in a non-sterile condition. Refer to cleaning and sterilization instructions
- If a sterile device is provided (upon specific request), visually inspect for breaches in the sterile barrier system prior to use and do not use if packaging is damaged.
- Do not bend or kink cables and do not use devices if any cables are damaged.
- Place cables in a way that prevents tangling or tripping hazards.
- Only use the accessories such (e.g., cables) provided by Ommo. Use of third-party or unauthorized components may compromise functionality and safety.

CAUTION

- Use Axon products only as described and in combination with devices that are specified in the Product Manual.
- Do not attempt to modify any devices.
- To avoid unintentional movement of the sensor devices, do not place pressure on it or strain on the cable.
- Do not expose the devices to excessive UV light like direct sunlight, as this may affect the plastic housing
- The magnetic field may interfere with signals from electrocardiogram (ECG), electroencephalogram (EEG), pulse oximeter, blood pressure monitor, and other devices.

Maintain adequate separation between the base station and electrodes, sensors, cables, or leads.

- The magnetic field may interfere with other devices such as video, ultrasound, x-ray/fluoroscopy, and data signals. Maintain adequate separation between the base station and electrodes, sensors, cables, or leads.
- Keep ferromagnetic tools and objects away to prevent projectile hazards.
- Follow all facility protocols for magnetic safety.

System Overview

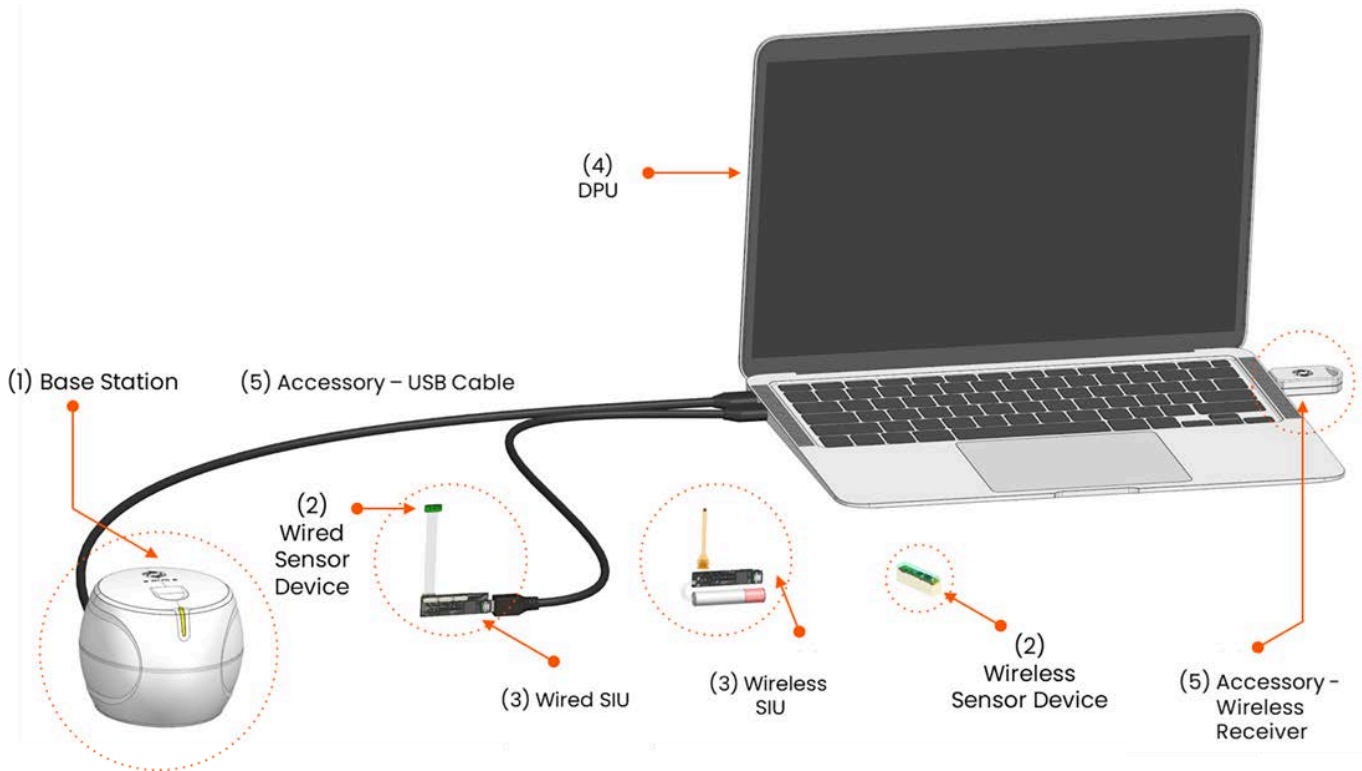
Ommo Technologies specializes in the design and manufacture of high-precision permanent magnet based tracking systems. We partner with top-tier OEMs globally, serving critical applications including but not limited to medical devices. Orbit and Axon products are engineered to meet the stringent requirements of medical device components.

Introduction

- Ommo provides a 3D tracking solution that uses **permanent magnets** to provide the **position and orientation of each sensor device** within its tracking range with submillimeter precision and accuracy. The system includes at least one base station, a sensor device interface unit (SIU), a sensor device, a data processing unit (DPU), and accessories. The setup will vary based on the customer's use case.
- **AXON™** is Ommo's first set of wired sensor devices and SIUs. This system connects to a DPU via the SIU's embedded USB cable.
- The sensor devices can be integrated into tools of various forms using our standard hardware or a custom design



Hardware Definitions



1. **ORBIT BASE STATION** is a unique magnetic signal generator with Ommo's patented permanent magnet mechanism. In the tracking coordinate system, sensor devices report their poses (position and orientation) relative to the base station as the origin (0,0,0).
2. **SENSOR DEVICE** is the item being tracked. Sensor devices are usually attached to or embedded in the target object. Each sensor device can output one or more poses with 6 degrees of freedom from its tracking unit*
- 2-1. **TRACKING UNIT** is a set of sensors, such as a magnetometer and an inertial measurement unit, that are fixed to a rigid body. Each tracking unit generates a single, independent 3D point of measurement that corresponds to one computed output**
3. **SENSOR-DEVICE INTERFACE UNIT (SIU)** collects, synchronizes, and transmits sensor device data to the data processing unit via a wired or wireless connection. Depending on the product, a SIU can support one or more sensor devices at the same time.

4. **DATA PROCESSING UNIT (DPU)** is a host computer that runs Ommo Service, which manages and communicates with the hardware and provides the client API. DPU is supplied by customers

5. **ACCESSORIES** are additional items that support the tracking system

5-1. **WIRELESS RECEIVER** plugs into a DPU and receives wireless data from SIUs which are then processed by Ommo Service. It can handle multiple wireless SIUs at once. Using many wireless receivers can increase the number of supported wireless devices.

Wireless receivers are NOT required for the Axon system; however, wireless devices and receivers may be used alongside Axon wired devices.

5-2. **USB CABLE** powers and transfers data between wired hardware in the tracking system. Ommo provides a custom USB-A to USB-C with shielding and biocompatible materials

*Currently, all of Ommo's sensor devices have one tracking unit. In the future, Ommo may offer flexible sensor devices with multiple tracking units

** Exception: sensor devices with multiple magnetometers can produce more than one computed output on non-default fusion mode (e.g., AX2, a dual magnetometer sensor device, on NO_FUSION mode produces two outputs for each magnetometer),

For more detailed information on our current products, please refer to the "Product Catalog"

Axon Devices

AXON Sensor Devices



AX1-1.5

1x high performance
magnetometers



AX2-1.5

2x high performance
magnetometers



AX2-3.0

2x high performance
magnetometers



**Sensor Tip
Dimensions
(mm)**



**Cable
Length**



**Catalog
(Model) No.**



Part No.

5.30 x 21.20 x 4.07	5.30 x 26.27 x 4.07	5.30 x 26.27 x 4.07
1.5m	1.5m	3.0m
13536	13537	13538
12252	12224	12279

	AX1	AX2
Operating Temperature	10 to 30°C	10 to 30°C
Operating Humidity	30 to 70% non-condensing	30 to 70% non-condensing
Storage/Transport Temperature	-10 to +50°C	-10 to +50°C
Storage/Transport Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Shelf Life	12 months between uses, maintain the following shelf life conditions: • Temperature: 23°C ± 5°C • Humidity: 50% ± 25%	12 months between uses, maintain the following shelf life conditions: • Temperature: 23°C ± 5°C • Humidity: 50% ± 25%
Tip Dimension	21.2 x 5.3 x 4.07 mm ³	26.27 x 5.3 x 4.07 mm ³
Weight	12.5g	12.5 (1.5m), 22.0g (3.0)

Cycle Life	100 cycles (Synapse Male)	100 cycles (Synapse Male)
Force	Insertion: 7.5N $\pm$ 3N Extraction: 10N $\pm$ 3N	Insertion: 7.5N $\pm$ 3N Extraction: 10N $\pm$ 3N
Biocompatibility	Sensor Tip Overmold/Cable: ISO 10993-5, 10993-10, AND ISO 10993-23 Plug: ISO 10993-5 AND ISO 10993-10 OR USP CLASS VI STANDARDS	Sensor Tip Overmold/Cable: ISO 10993-5, 10993-10, AND ISO 10993-23 Plug: ISO 10993-5 AND ISO 10993-10 OR USP CLASS VI STANDARDS
Ingress Protection	IP65	IP65

AXON SIUs



1 PORT SIU-3.0

1x device connection



3 PORT SIU-1.0

3x device connection



3 PORT SIU-3.0

3x device connection

 **End
Dimensions**
(mm)

 **Cable
Length**

**# Catalog
(Model) No.**

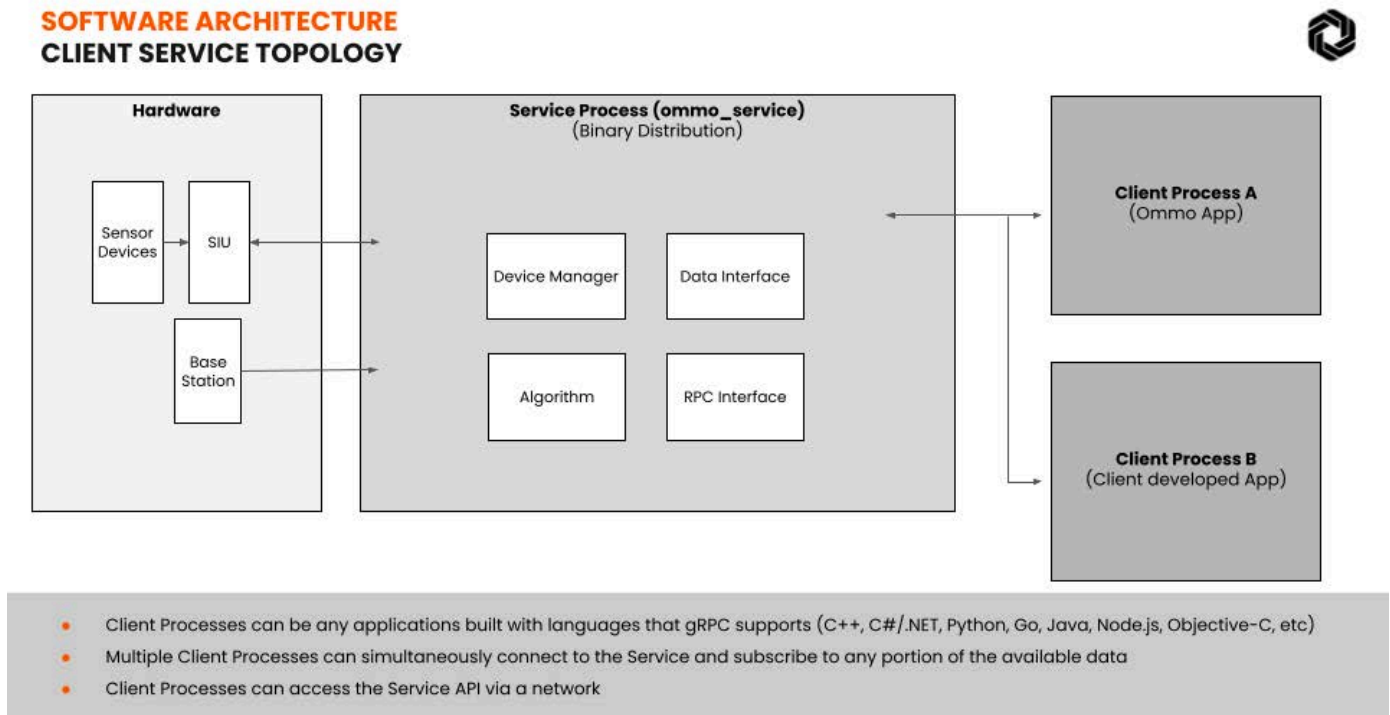
Part No.

18.25 x 49.86 x 9.40	57.40 x 47.60 x 9.40	57.40 x 47.60 x 9.40
3m	1m	3m
13539	13540	13541
12186	13469	13005

	Single Port SIU	3 Port SIU
Operating Temperature	10 to 30°C	10 to 30°C
Operating Humidity	30 to 70% non-condensing	30 to 70% non-condensing
Storage/Transport Temperature	-10 to +50°C	-10 to +50°C
Storage/Transport Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Shelf Life	12 months between uses, maintain the following shelf life conditions: • Temperature: 23°C ± 5°C • Humidity: 50% ± 25%	12 months between uses, maintain the following shelf life conditions: • Temperature: 23°C ± 5°C • Humidity: 50% ± 25%
Dimension	18.25 x 49.86 x 9.40 mm ³	57.40 x 47.60 x 9.40 mm ³

Weight	73g	75.5 (1m), 91.5g (3m)
Power	5V (USB), up to 50mA	5V (USB), up to 100mA
Cycle Life	3000 cycles (Synapse Female) 5000 cycles (USB-C)	3000 cycles (Synapse Female) 5000 cycles (USB-C)
Force	Insertion: 7.5N $\pm$ 3N Extraction: 10N $\pm$ 3N	Insertion: 7.5N $\pm$ 3N Extraction: 10N $\pm$ 3N
Biocompatibility	Complies with ISO 10993-5 AND ISO 10993-10 OR USP CLASS VI STANDARDS	Complies with ISO 10993-5 AND ISO 10993-10 OR USP CLASS VI STANDARDS
Ingress Protection	IP65	IP65

Software



Ommo Service interfaces with Ommo hardware and processes the data, providing 6DoF tracking data via a GRPC interface. Client applications can use the API to configure and control the hardware as well as request data at up to 1kHz ODR.

Client Applications can be developed using Ommo's SDK, which includes Ommo Service, Ommo App, the API documentation, and examples.

DPU Requirements

A Data Processing Unit (DPU) is required to operate the Orbit and Axon devices. Ommo recommends the following minimum specifications:

- Intel Core i5/AMD Ryzen 5 Series or newer generation
- 4GB+ random access memory (RAM)
- IEC60601 approved Class II power supply (for Medical Device only)
- 2x USB 2.0+ Ports
 - USB-A - Base Station
 - USB-C - AXON SIUs

- Operating system options:
 - Windows 10, 11 (64 Bit)
 - Ubuntu 22 (64 Bit)

The optimal DPU requirement for your system will vary significantly based on your specific use case and the configuration of the devices employed.

For battery-operated computers, ensure the power cord is plugged in for optimal computing power or the device is not performance limited while powered by the battery.

Memory Storage

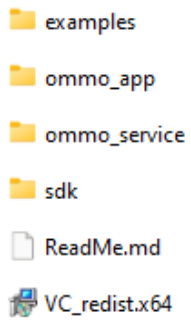
Device Information User is an unsigned and unprotected memory partition on the device. It remains writable by integrators both during factory setup and in-field operations.

Device Info Manufacturing and Device Info Perm are cryptographically signed during the manufacturing process using a secure hash. These partitions store critical functionality-related data and are protected to maintain data integrity throughout the device's operational lifespan.

Getting Started

Step 1 | Download the latest version of the zip file (e.g., `ommo_eval_sdk.zip`) from the shared Google Drive folder (Ommo Pilot Software & Documentation > SDK) or directly provided by Ommo

Step 2 | Unzip the file and save it to a directory of your choice. The folder structure should look as shown below



Step 3 | Unbox the Orbit kit that includes a base station and a custom USB-C to USB-A cable



Step 4 | Plug the USB-C into the base station and connect the USB-A end to the DPU. The base station LED will be white.

Step 5 | Connect an Axon sensor device to an SIU

- The LED will be white when the SIU is powered on. Once the system is fully operational, the LED will turn green. Refer to the LED guide [here](#)
- For the 3 Port SIU, repeat the process to connect multiple sensor devices

Synapse Connector guides users in plugging the sensor device into the SIU securely and easily. All Axon sensor devices (AX1, AX2-1.5, AX2-3.0) share the Synapse male interface and fit into the Synapse female interface on the single port SIU and the 3 port SIU. Align the arrow on the SIU and the sensor device plug.

SIU – Synapse Female



Sensor Device – Synapse Male



Single Port SIU + Axon Sensor Device



3 Port SIU + Axon Sensor Device

3 Port SIU features four LED indicators. The main LED indicates the SIU's operational state as defined in the section [here](#). A port LED will illuminate green when a sensor device is successfully connected to that port.



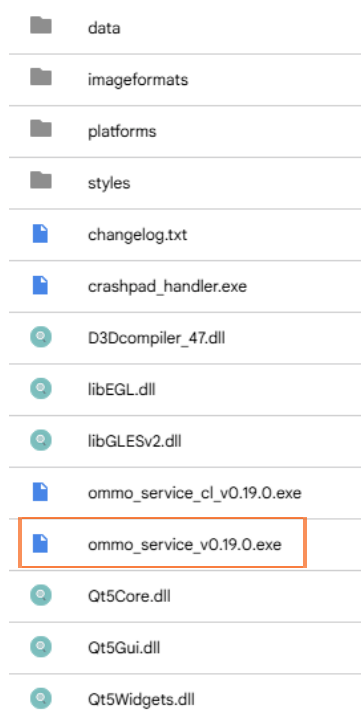
Step 6 | Connect the USB-C end of a SIU to a DPU

Step 7 | Launch “ommo_service” application from the “ommo_service” folder

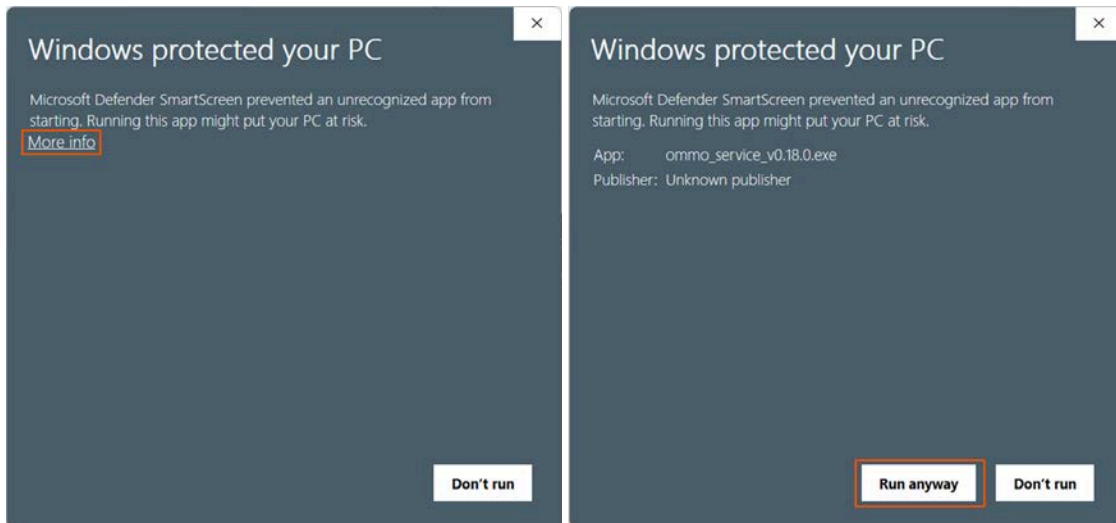
- **ommo_service.exe** will NOT show the black console window and is intended to be the software deployed and used in the field.

- **ommo_service_cl.exe** will show the black console window and the log output in the console window. This is intended to be used from the command line or debugging. Its functionality is otherwise identical to ommo_service.

- Use the latest available version (v0.19.0 or later)



- For the first time use, the following window may pop up. Click “More Info” and “Run Anyway”



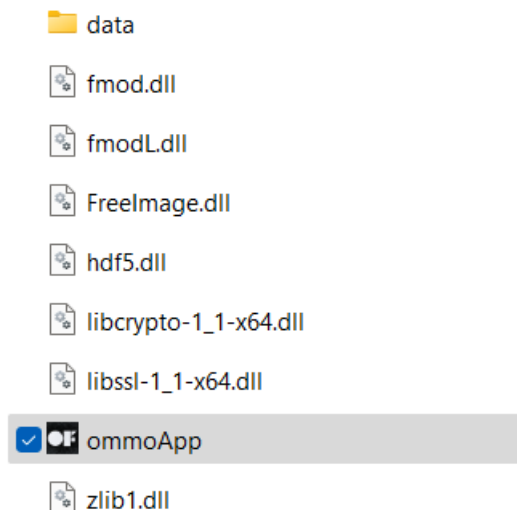
- If you're using ommo_service_cl, a command window will open. Do not close the window during use

```

C:\Users\...
[2023-09-21 17:30:57.653] [info] [main.cpp:main:225] [thread 24736] ommo_service version v0.16.0, alg version v0.14.29-1
7-gb01a807-dirty
[2023-09-21 17:30:58.124] [info] [main.cpp:main:253] [thread 24736] Loading splash screen
[2023-09-21 17:30:58.200] [info] [BatchedLogger.cpp:ommo::BatchedLogger::Start:33] [thread 24736] Creating logging thread.
[2023-09-21 17:30:58.200] [info] [ommoDataRouter.cpp:ommoDataRouter::Start:30] [thread 24736] Creating thread
[2023-09-21 17:30:58.200] [info] [usbConnectionNotifier.cpp:USBConnectionNotifier::Start:59] [thread 24736] Creating USB
Notifier thread.
[2023-09-21 17:30:58.200] [info] [usbConnectionNotifier.cpp:USBConnectionNotifier::RegisterWithOS:98] [thread 13740] Reg
istering for USB events.
[2023-09-21 17:30:58.218] [info] [rpcOmmoServerManager.cpp:rpcOmmoServerManager::ServerThreadedFunction:121] [thread 191
84] Server listening on localhost:50051
[2023-09-21 17:30:58.218] [info] [rpcGetConnectedDevicesServerCallData.cpp:rpcGetConnectedDevicesServerCallData::rpcGetC
onectedDevicesServerCallData:10] [thread 19184] CallData 0x1b88f0684f0 ready.
[2023-09-21 17:30:58.218] [info] [rpcAddDataListenerServerCallData.cpp:rpcAddDataListenerServerCallData::rpcAddDataListe
nerServerCallData:14] [thread 19184] CallData 0x1b88f069940 ready.
[2023-09-21 17:30:58.218] [info] [rpcAddDeviceChangeListenerServerCallData.cpp:rpcAddDeviceChangeListenerServerC
allData::rpcAddDeviceChangeListenerServerCallData:12] [thread 19184] CallData 0x1b88f06a430 ready.
[2023-09-21 17:30:58.218] [info] [rpcOpenDataFrameListenerServerCallData.cpp:rpcOpenDataFrameListenerServerCallData::rpc
OpenDataFrameListenerServerCallData:14] [thread 19184] CallData 0x1b88f06b0e0 ready.
  
```

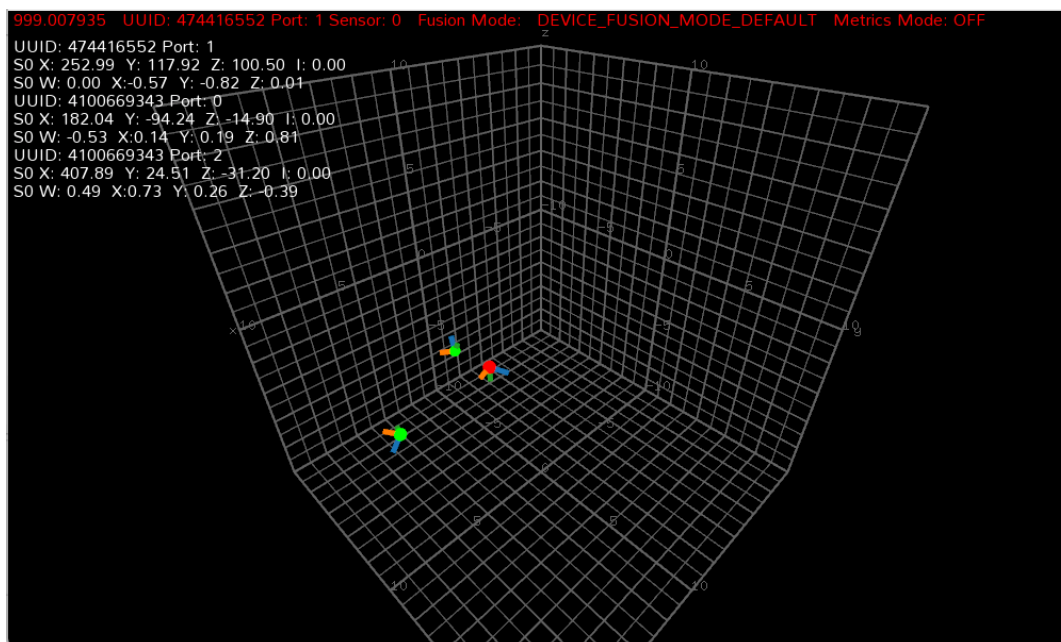
- Once Ommo Service is open, the base station and SIU LED will turn blue while the unit is starting and being set up

Step 8 | Launch "ommoApp" from the "ommo_app" folder

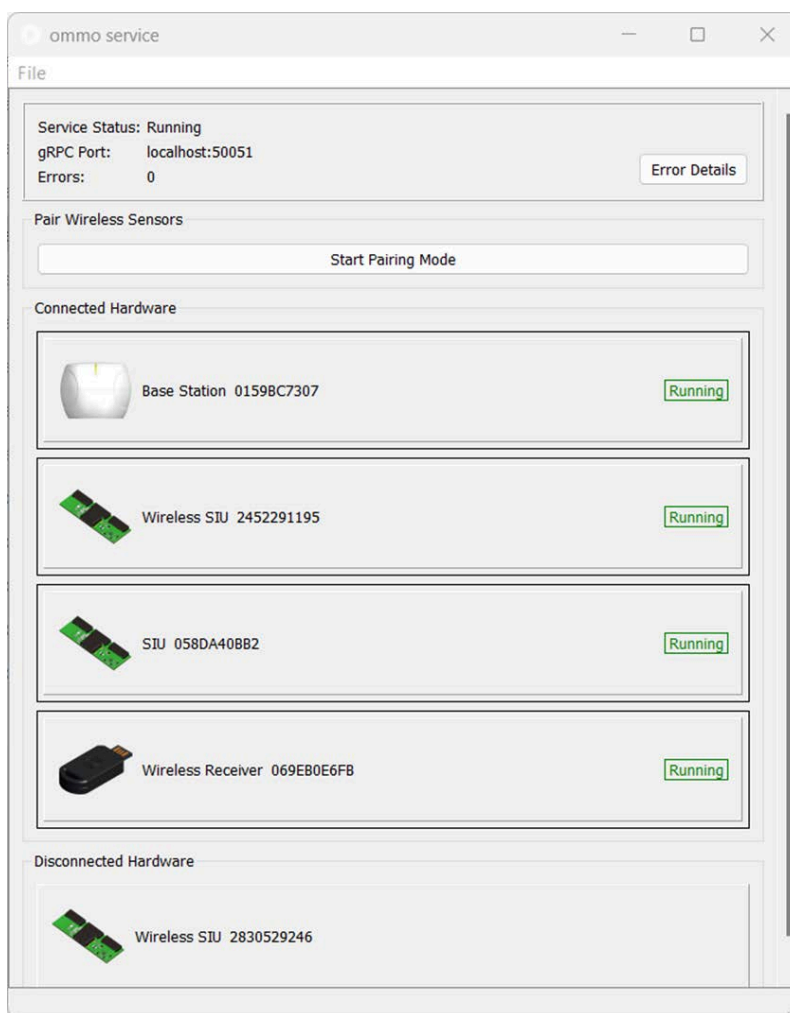


Step 9 | Once the base station and SIU's LEDs turn green, you are ready to track the sensor device(s).

- Once Ommo App requests data, the base station will reach its operating speed:
 - the base station LED will turn green and start sending data to Ommo Service
 - the SIU LED will turn green and start sending data to Ommo Service
 - This process should take less than 15 seconds
- You can now see the poses of connected sensor devices on Ommo App

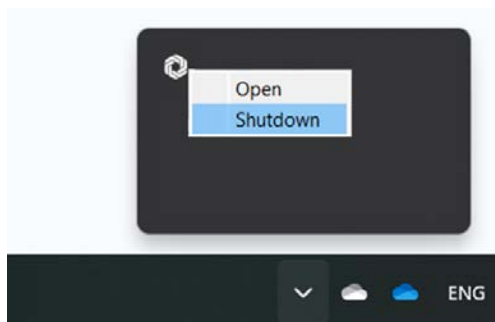


- You can see the status of the connected devices on Ommo Service UI



Step 10 | When you are done tracking, click “Shut down” on Service UI icon in the Window Taskbar

- The base station will stop running its mechanism
- The LEDs of the base station and SIU will return to white



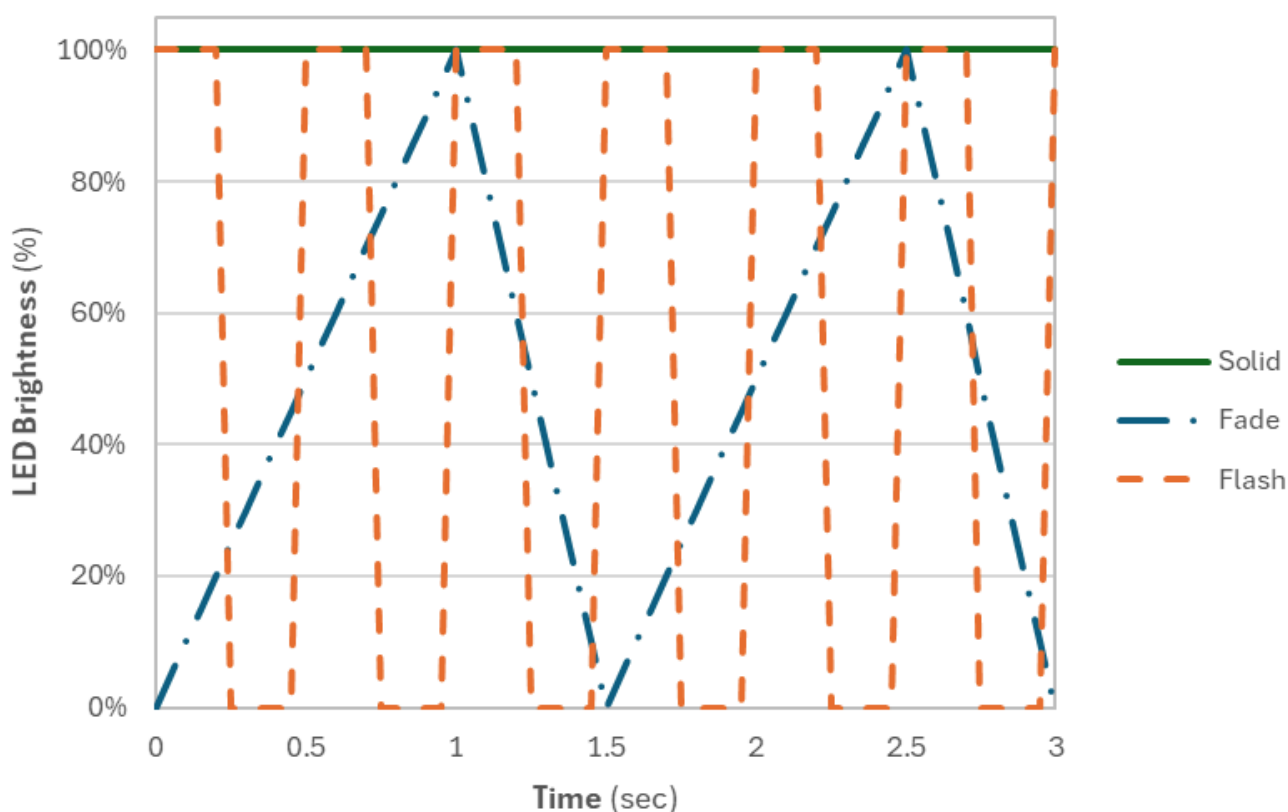
Understanding the LED Behavior

To comply with IEC 60601-1 guidelines for indicator lights, Ommo has updated the LED behavior of hardware.

The LED behaviors vary depending on the firmware version. Ommo delivers hardware programmed with the latest firmware

In addition to the colors of LED, Ommo uses the following LED behaviors to indicate the status of the devices

- **SOLID** | LED brightness stays constant at 100%
- **FADE** | LED brightness oscillates where it is gradually increased to 100% over 1 second and decreased to 0% over 0.5 seconds
- **FLASH** | LED brightness oscillates where it is 100% for 0.25 seconds and 0% for 0.25 seconds



Orbit Base Station LED Behavior

Firmware starting v5012		Status
Green Solid/Fade		Normal Operating Mode Base station has reached its operation speed and is sending data to Ommo Service. Solid: wired synchronization Fade: wireless synchronization
White Solid		Idle Mode Base Station is powered on. Magnet is not spinning and the USB port is not open.
Dark Blue Solid		Connected Standby Mode Base station is ready to receive commands from software. Base station will stay in this state until sensor device data has been requested by a client from the service (i.e starting Ommo App). If there is no sensor(s) on SIU attached, Ommo Service will not start the base station.
Light Blue Solid		Pairing Mode Base station has detected a new wireless SIU/sensor device and is working to set up the device *Camera does not capture the true color, light blue . In person, the LED color is distinguishable from white.
Orange Flash		Error Unrecoverable firmware error/hardware fault. Base station needs to be restarted Refer to Troubleshooting

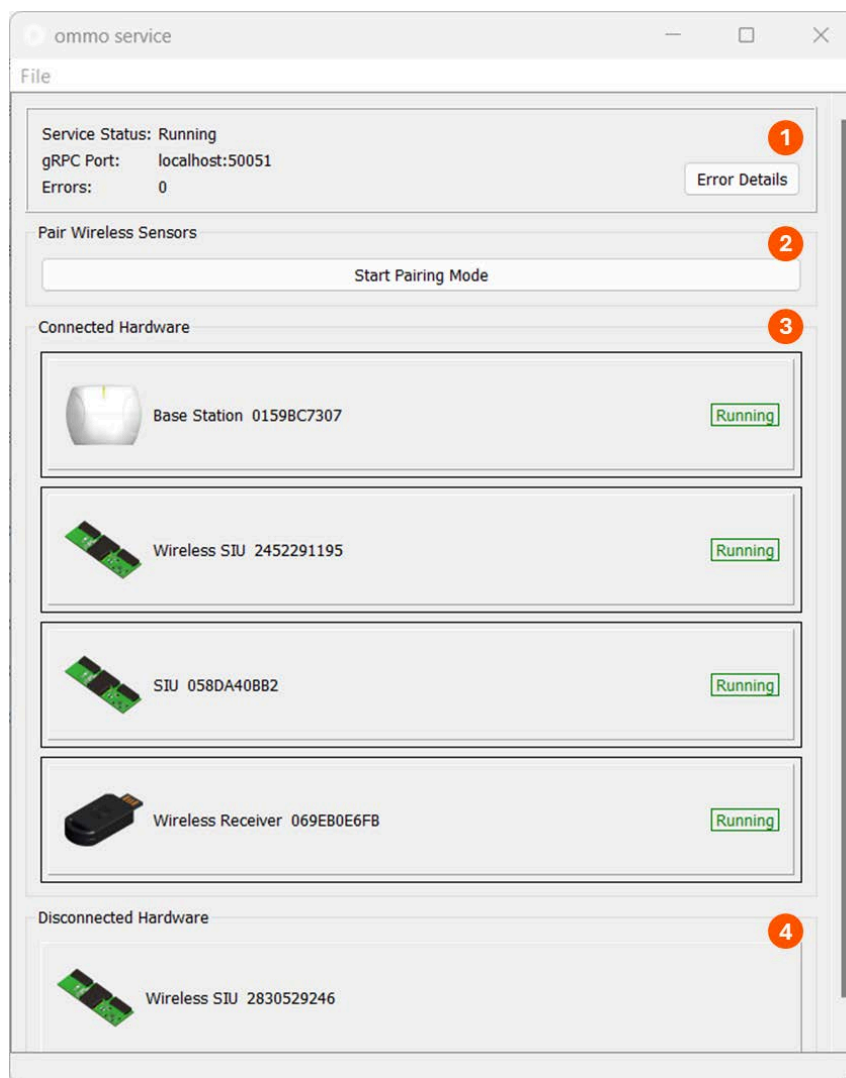
SIU LED Behavior

Firmware Starting v5012		Status
Green Solid/Fade		Normal Operating Mode SIU is operating normally and sending data Wired SIU: LED turns from Fade to Solid. Wireless SIU: Green Fade.
White Solid		Idle Mode SIU is powered on. Connection to base station lost/no base station found
Dark Blue Fade		Connected Standby Mode SIU is connected to Ommo Service via a wired connection and the port is opened. No data transmission at this stage (No sensors attached and set up cannot be completed; data has not been requested by Ommo App/client)
Light Blue Solid		Pairing Mode SIU is setting up a wireless connection with the base station *Camera does not capture the true color, light blue . In person, the LED color is distinguishable from white.
Dark Blue Flash		No Synchronization Mode No synchronization between the base station and SIU/sensor device. (i.e no base station; base station is not running; base station synchronization signal is not received) If SIU is operating in wireless mode, losing synchronization for 0.5s will return SIU to standby mode (Blue LED Fade)
Orange Flash		Error Unrecoverable firmware error/hardware fault. SIU must be restarted Refer to Troubleshooting
Magenta Flash/Solid		Low Battery Life Mode Indicates low battery life. Starts flashing at 10% and remains constant <3%. Available in select wireless devices.

LED Behavior is the same for all Ommo SIUs including the Axon 3Port and Single Port SIUs.

Ommo Service UI

The Ommo Service UI is the platform to check the status of the Ommo Service and the hardware.



1. You can see if Ommo Service is running as intended. If there are errors, you can click on “error details” to learn more
2. Click on “Start Pairing Mode” to pair wireless devices one by one
3. You can see the status of the currently connected hardware. You can click on each hardware to learn more
 - a. When you click on a SIU, you can see the status of the connected sensor device
 - b. If there are errors, you can click on “error details” to learn more

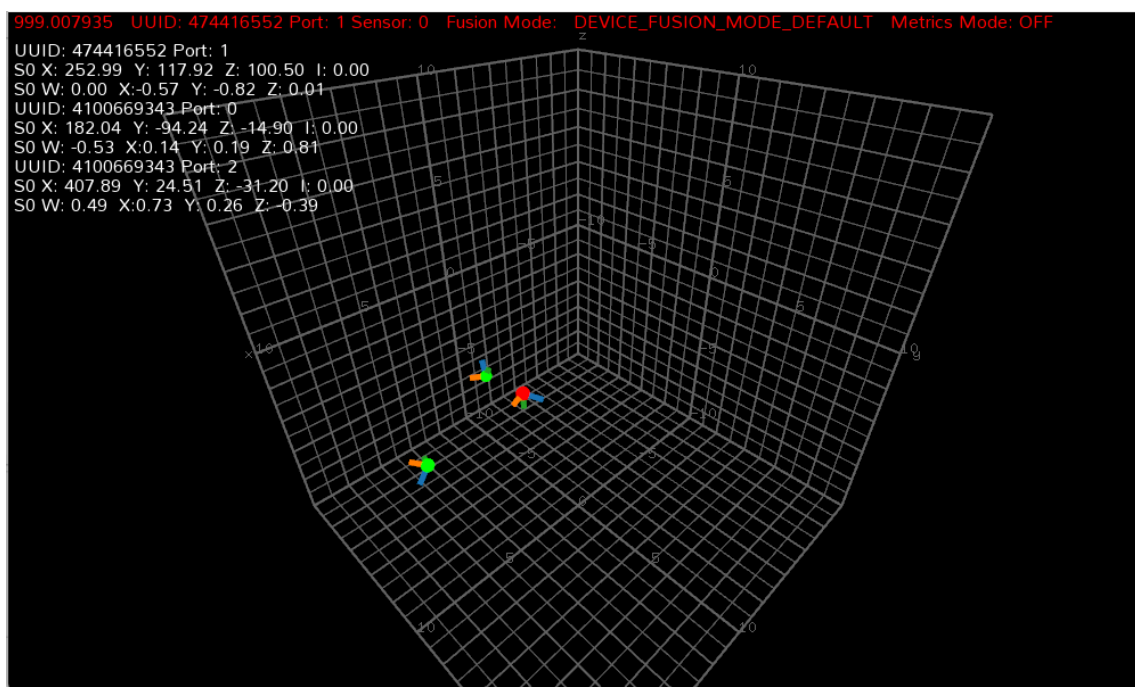


- You can see any hardware that was previously connected during this session of Ommo Service

Ommo App

Ommo App is an example application provided to showcase the provided ommo_sdk and to get the user up and running with displaying tracking information from the system.

3D Tracking Screen is the first screen you see on Ommo App. This screen displays all connected devices and their associated sensors' real-time position and orientation information. The red line at the top shows the currently selected sensor's information (packet rate, SIU UUID, SIU Port #, Sensor #) along with the available tracking and measurement modes.



For more detailed information on the software, refer to the "Ommo App User Guide"

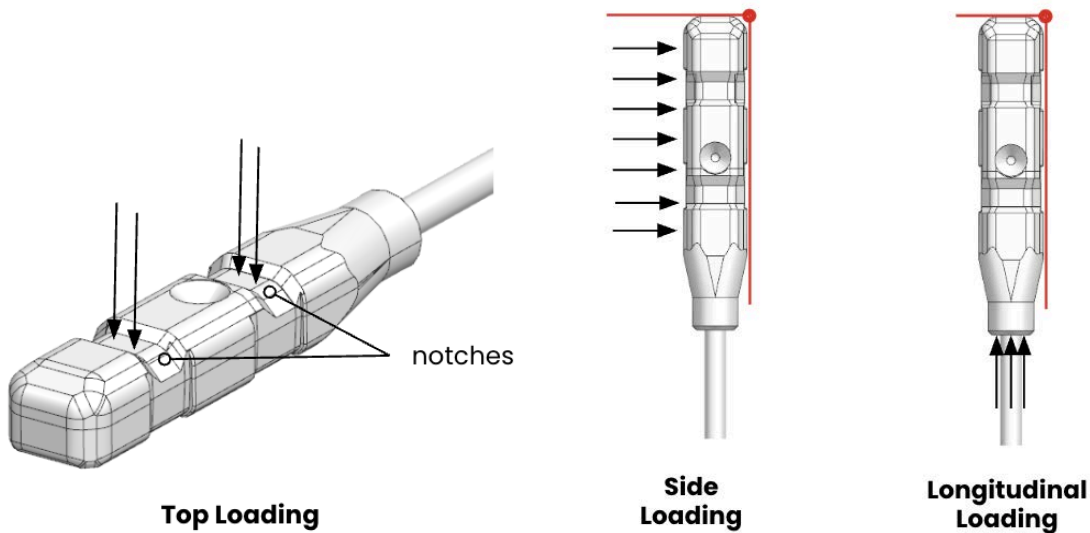
System Integration

Mounting Guidelines

To ensure optimal performance, Ommo recommends mounting Axon sensor devices in a manner that minimizes external bias.

Axon sensors can be subjected to three distinct loading types

- **Top Loading:** Axon sensors exhibit the highest sensitivity to forces applied in this orientation. Apply force exclusively to the designated notches on the top surface.
- **Side Loading:** Axon sensors demonstrate minimal sensitivity to forces applied laterally along their length. While force can be applied at any point, a distributed load or application at a minimum of two contact points is recommended for optimal biasing.
- **Longitudinal Loading:** Axon sensors are insensitive to longitudinal forces, particularly when applied to the rear surface of the device.



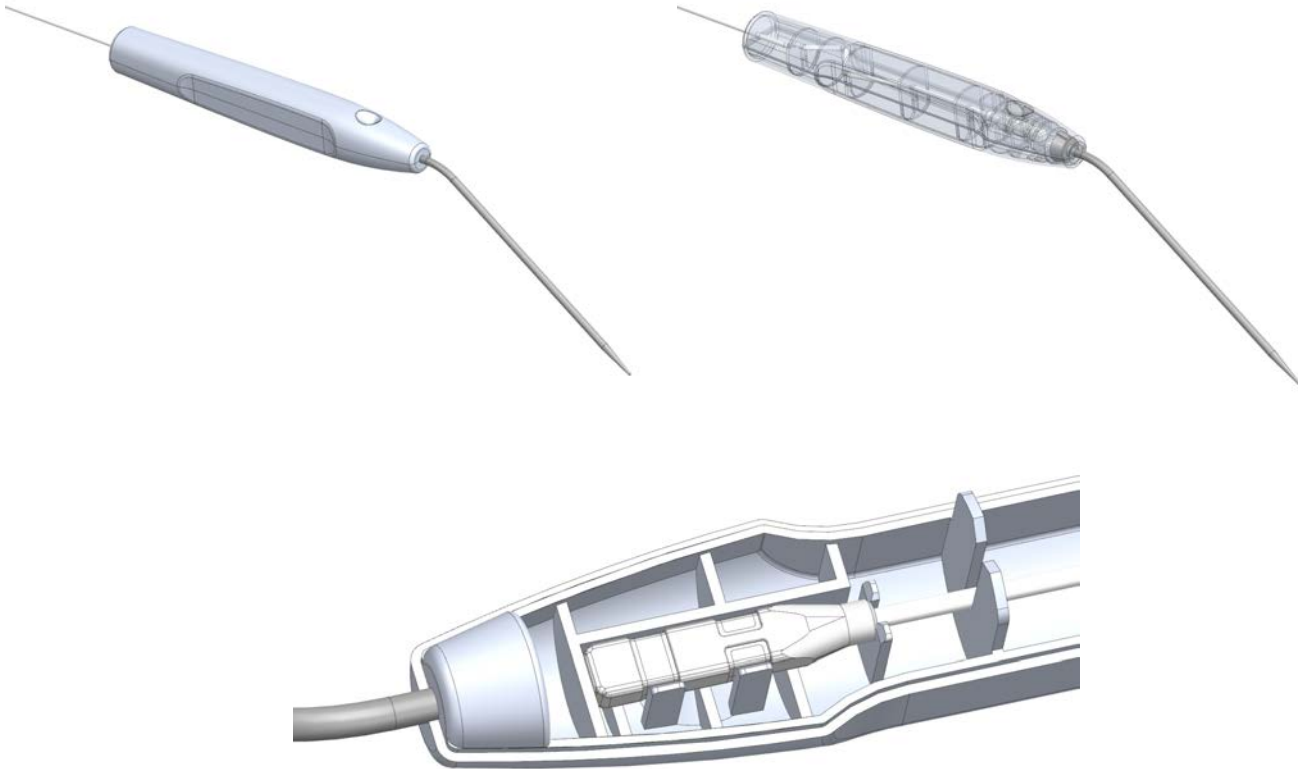
The following force levels have been tested and verified to have no discernible impact on sensor performance. These values are not maximum limits; further testing is required to qualify higher force applications.

- **Top Loading:** <8N
- **Side Loading:** <10N
- **Longitudinal Loading:** <10N

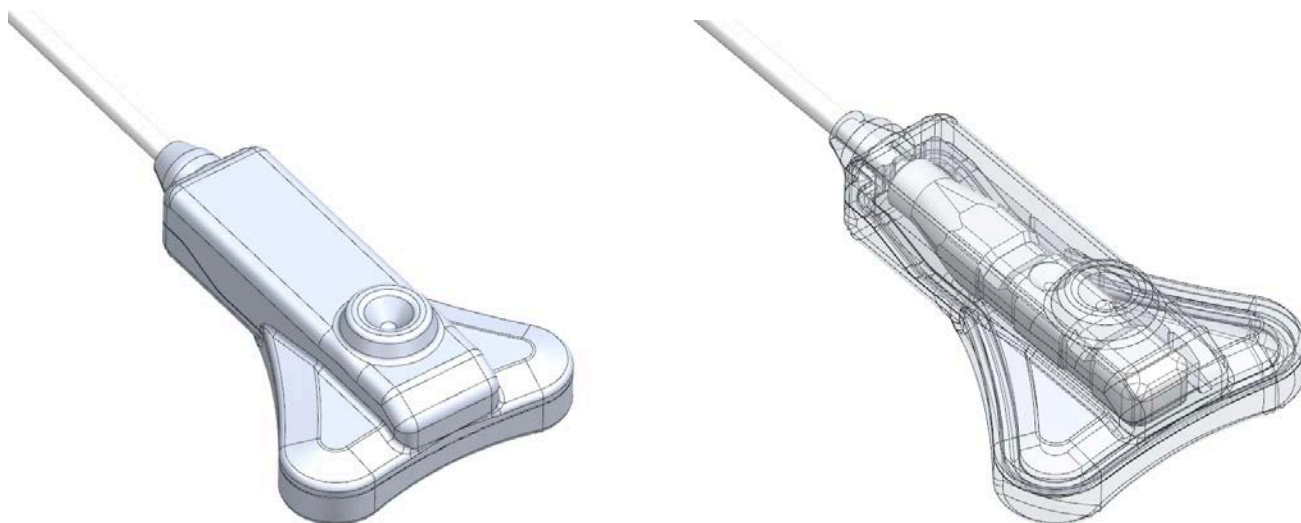
Instrument Examples

The AXON™ sensor device is designed to support flexible integration into various types of instruments and tools, depending on the intended application. Below are examples of common integration approaches

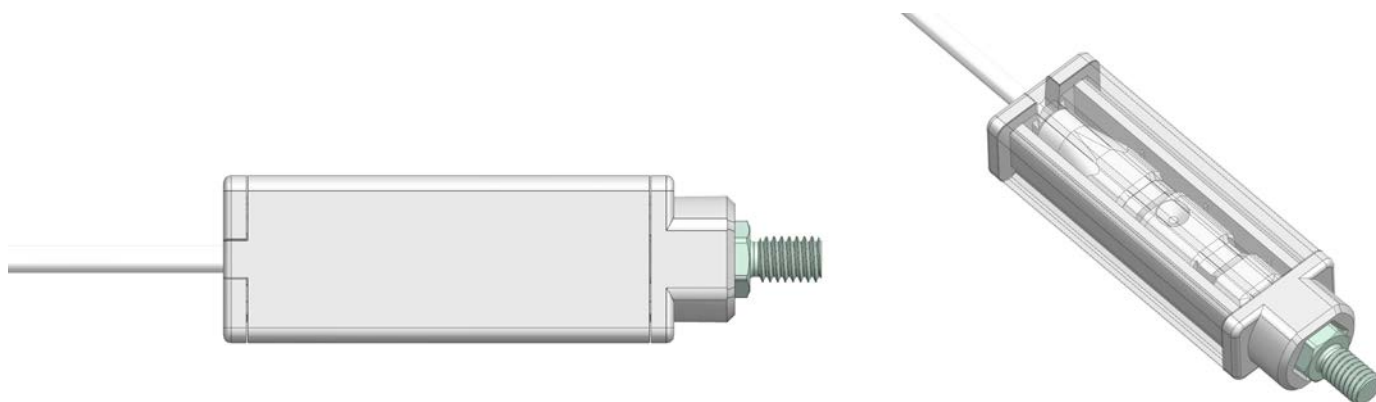
Pointer



Patient Reference



Mountable Sensor



Maintenance, Cleaning and Sterilization

Maintenance

Ommo products do not require routine maintenance, apart from cleaning.

Disposal

In accordance with the WEEE Directive, old electrical and electronic equipment must be disposed of separately and must not be included in regular domestic waste. The following materials are included in the product and must be shared with recyclers for proper disposal.

- Polychlorinated biphenyls (PCB) containing capacitors
- Mercury containing components such as switches or backlighting lamps
- Printed circuit boards if the surface of the printed circuit board is greater than 10 square centimeters
- Plastic containing brominated flame retardants
- Cathode ray tubes
- Chlorofluorocarbons (CFC)
- Hydrochlorofluorocarbons (HCFC)

Cleaning and Disinfecting

The Axon products's exterior surfaces are compatible with routine wipe cleaning and disinfection using the following solutions:

Approved Cleaning/Disinfecting Solutions:

- 70% Isopropyl Alcohol (IPA)
- Quaternary Ammonium Compound (QACs) disinfectants commonly used in healthcare settings

Axon Sensor

Axon sensor devices are designed to be single use.

1. Use a clean, soft cloth or wipe with the approved cleaning/disinfecting solution to remove any debris from the surfaces of the device
2. Allow the device to dry completely before use

Axon SIU

Axon SIUs are designed to be reusable.

1. Disconnect the Axon SIU from power before cleaning.
2. Use a clean, soft cloth or wipe with the approved cleaning/disinfecting solution.
3. In the case of contamination in the SIU port,
 - a. Spray inside the port with the approved solution
 - b. Soak or Stir the SIU port in 70% Isopropyl Alcohol for up to 5 min
4. Allow the device to dry completely before use

Caution:

- Do not use abrasive cleaning materials that may scratch surfaces.
- Do not use unapproved cleaning/disinfecting solutions without proper testing.

Inspect the device for any signs of damage or degradation after cleaning/disinfection.

Sterilization

Axon sensor devices are delivered non-sterile but designed to withstand Ethylene Oxide (ETO) sterilization. They have been tested under worst-case ETO sterilization environmental conditions to simulate the effects of an ETO sterilization cycle on sensor performance.

See below for the test conditions:

- ≥ 63 Degrees Celsius
- 70% relative Humidity
- 8 hours dwell time

Gas concentration & pressure were not a part of Ommo's testing.

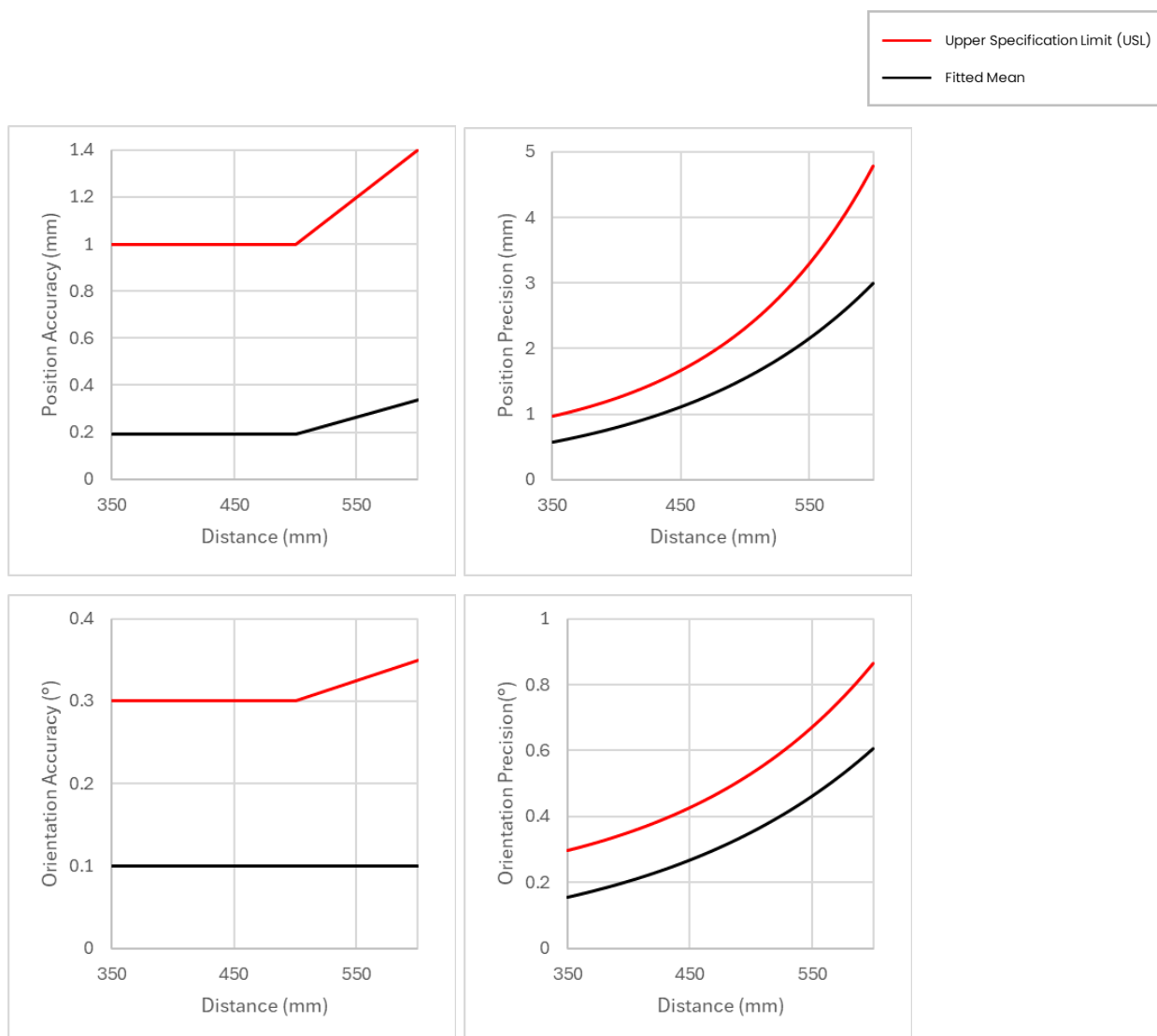
Medical device manufacturers are responsible for their own ETO sterilization validation.

Specifications

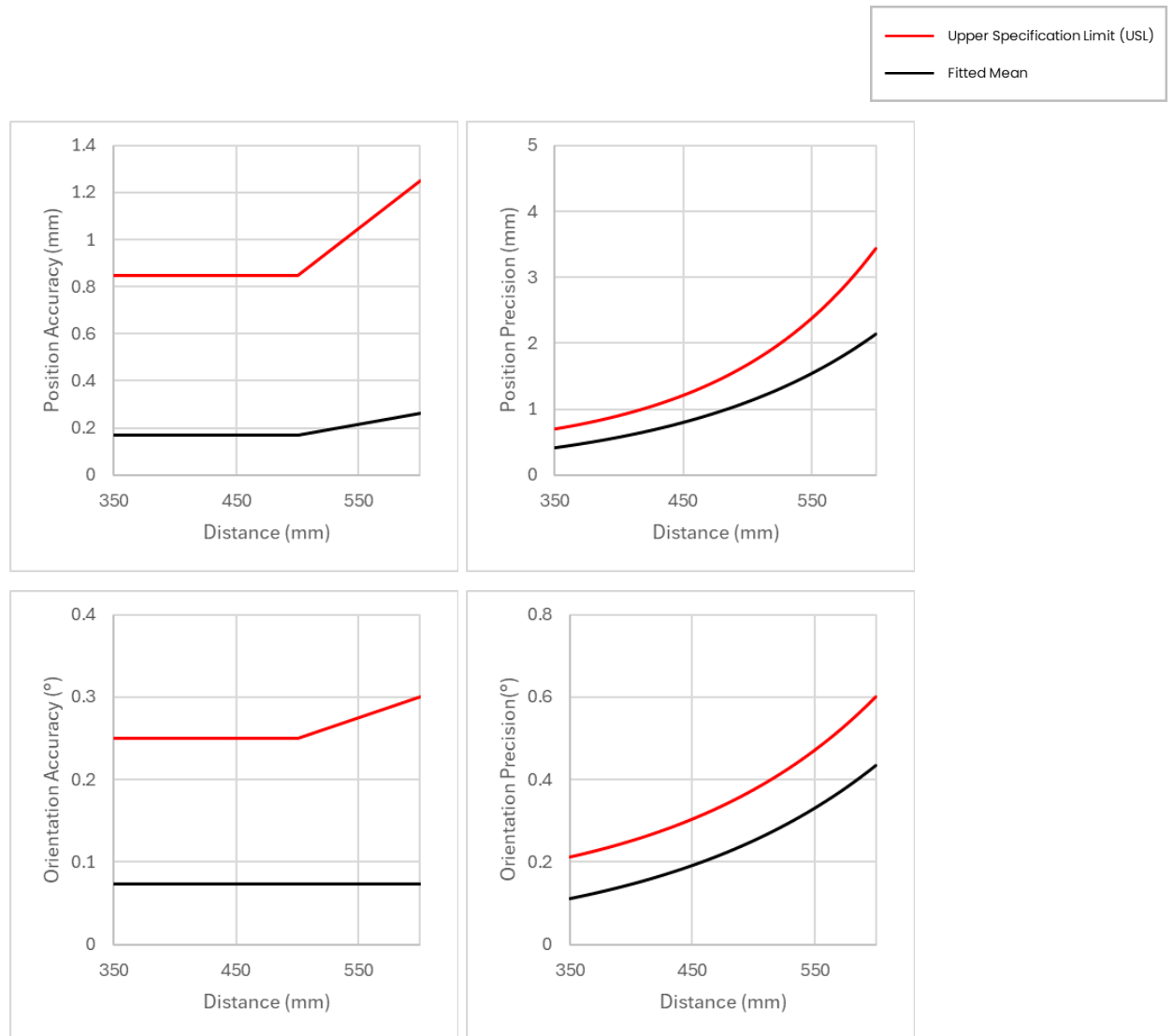
The following metrics are calculated using Ommo's proprietary validation method. Sensor devices are measured across 12 points within 350mm to 550mm from the base station.

Global Metrics	AX1	AX2
Position Accuracy (mm)	0.2	0.17
Position Precision (mm)	0.6	0.4
Orientation Accuracy (°)	0.1	0.08
Orientation Precision (°)	0.15	0.11

AX1



AX2



Certifications

Axon Sensor Devices

	Certification	Standard
1	CB	EN IEC 62638-1
2	CE EMC	EN 55032; EN 55035
3	IP 65, in accordance with 60601-1	IEC 60529, 60601-1
4	IEC/EN 60601-1	IEC 60601-1:2005 + A1:2012 + A2:2020 EN 60601-1:2006 + A1:2013 + A2:2021
5	IEC/EN 60601-1-2	EN 60601-1-2
6	ISTA 2A:2011 Packaged-Products*	ISTA 2A:2011
7	ROHS Verification	
8	REACH SVHC	
9	REACH ANNEX17	

Axon SIUs

	Certification	Standard
1	CB	EN IEC 62638-1
2	CE EMC	EN 55032; EN 55035
3	CE RED	EN 300 440; EN 301 489-1; EN 301 489-3; EN 62311
4	IP 65, in accordance with 60601-1	IEC 60529, 60601-1
5	IEC/EN 60601-1	IEC 60601-1:2005 + A1:2012 + A2:2020 EN 60601-1:2006 + A1:2013 + A2:2021
6	IEC/EN 60601-1-2	EN 60601-1-2

7	FCC ID	FCC PART 15.249 FCC PART 2.1091 FCC PART 18
8	RFID	AIM7351731 Rev 3.0
9	Wireless Coexistence	ANSI C63.27 AAMI TIR69
10	KC RF+EMC	KS X 3123 KS X 3124 / 3126 KS C 9832 / 9835
11	ISTA 2A:2011 Packaged-Products*	ISTA 2A:2011
12	ROHS Verification	
13	REACH SVHC	
14	REACH ANNEX17	
15	WEEE 3R	
16	POPs – SCCP & HBCDD	

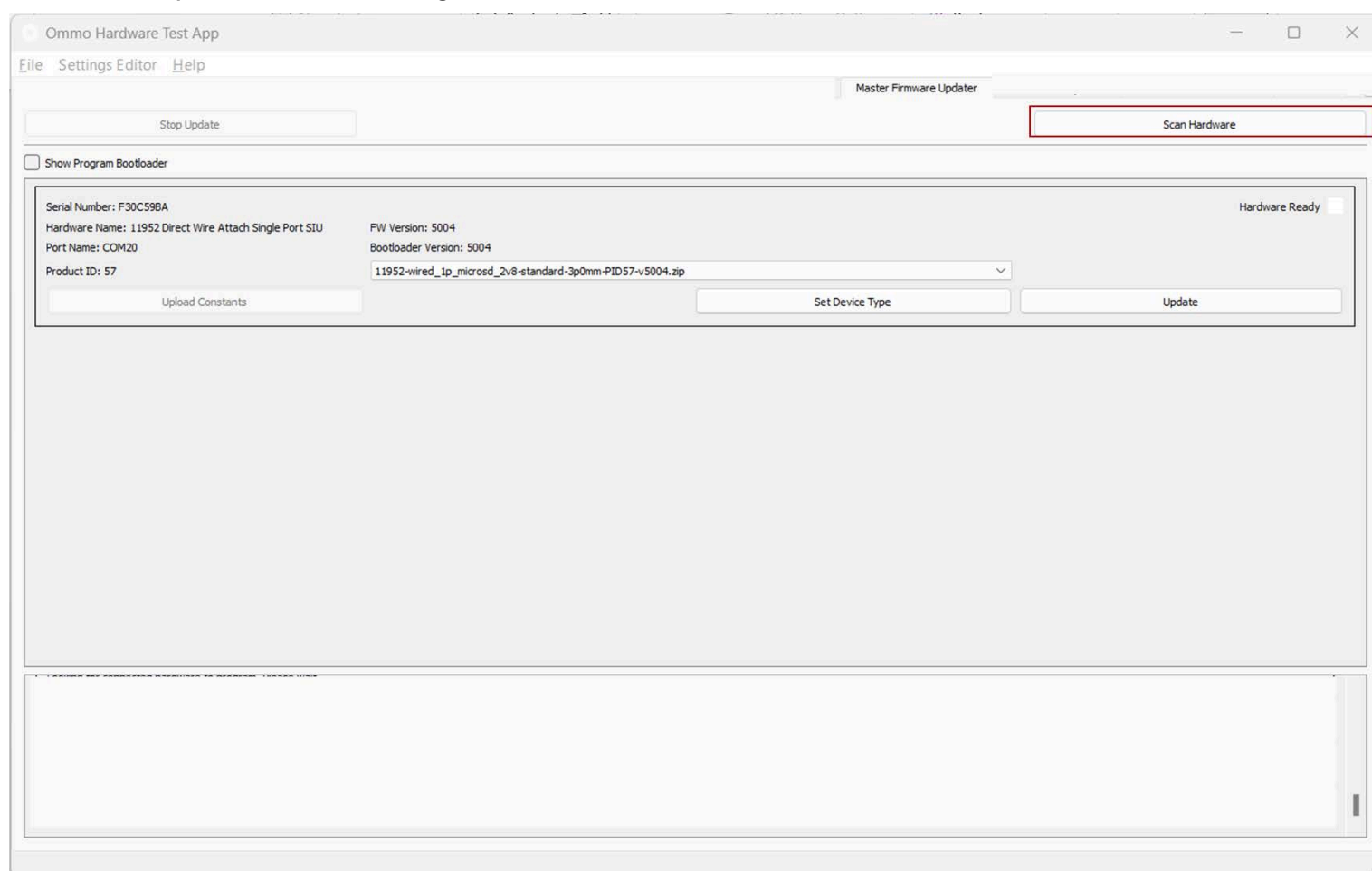
*To be completed by '25.Q3

Product Labels

Troubleshooting/FAQs

Q1: How do I check the firmware version of my hardware?

A: Plug in the hardware devices and open Ommo Firmware Updater. At the Master Firmware Updater tab, click “Scan Hardware”. This will show all the connected hardware and their firmware version. For specific details on how to use this app and update the firmware, refer to the Firmware Updater Guide. Note to update the firmware to v5004 or higher, firmware_updater v2.1.10 or higher needs to be used.

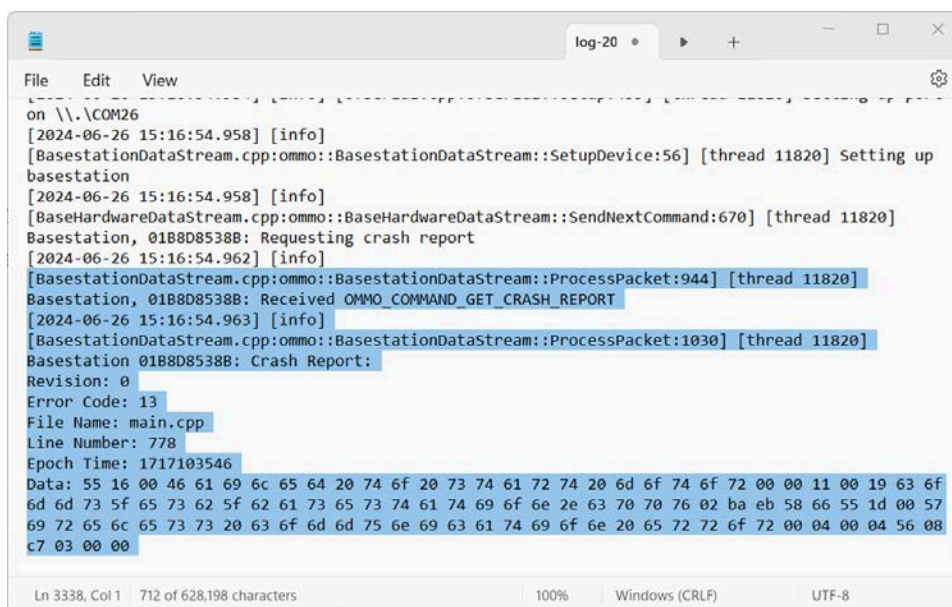
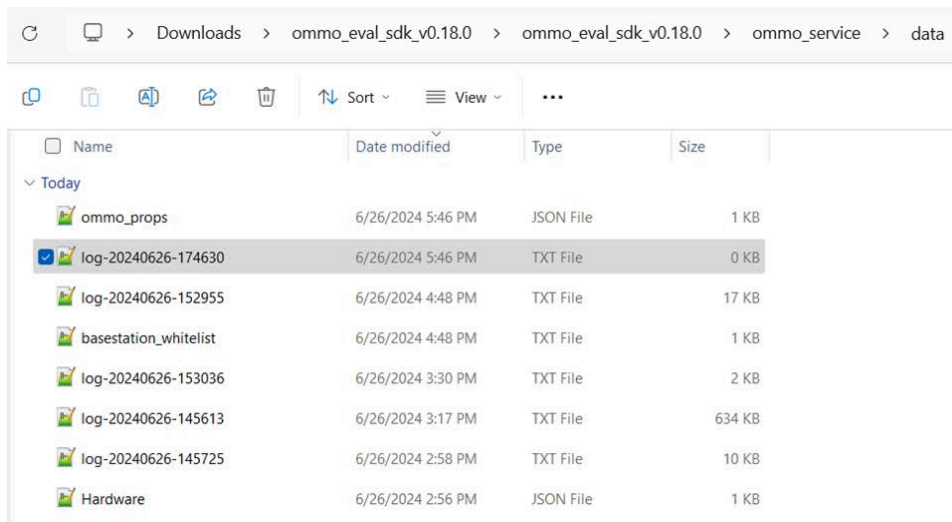
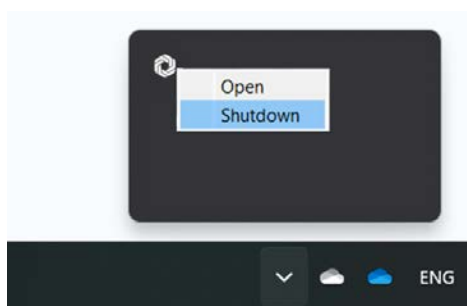


Q2: My hardware (SIU/base station) LED is flashing orange. What does this mean and what do I do?

A: Make sure your base station is **NOT sitting on ferrous metals** and the tracking space is free from large ferrous objects.

If the hardware is away from ferrous metals and the LED turns orange after starting Ommo Service, unplug and replug the hardware. Shut down Ommo Service. Share the crash report

with the Ommo team at ommo.co/support for further support. The crash report is included in the latest log file saved in Ommo Service's data folder.



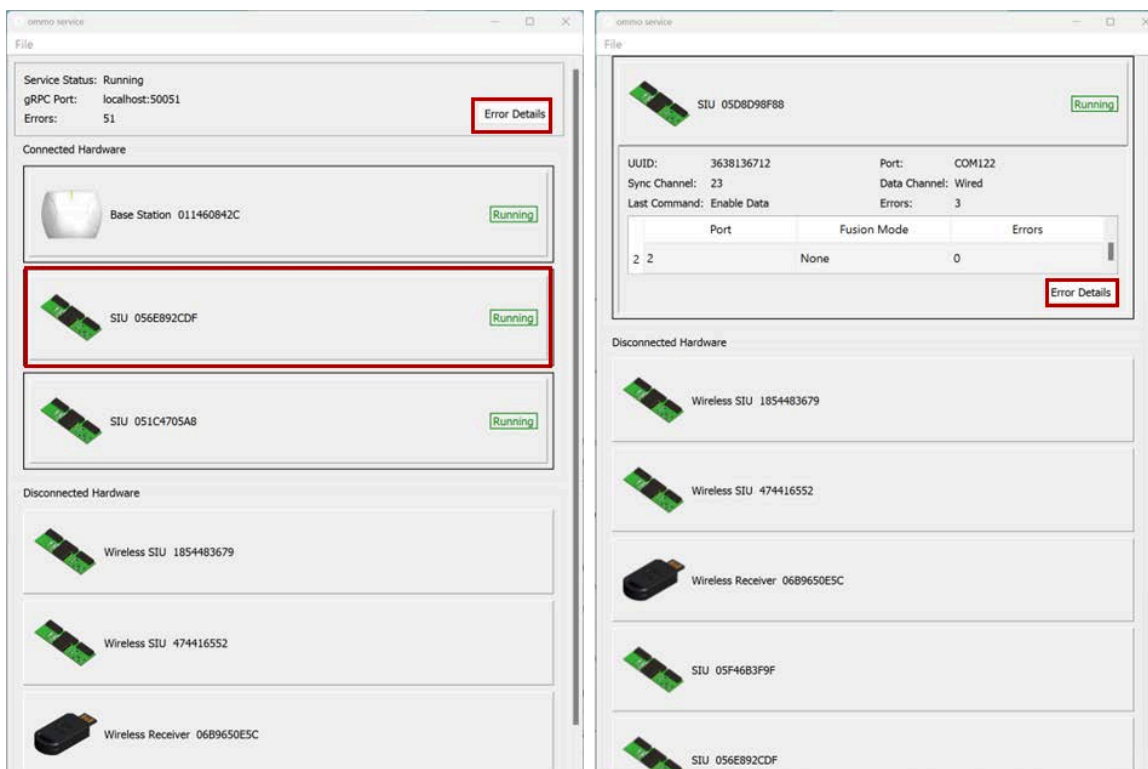
Q3: My base station/SIU LED is blue. What does this mean and what do I do?

A: Base station and SIU are both connected to Ommo Service but are not actively sending data. Check if at least one sensor device is plugged in and Ommo App is running. Base Station and SIU LED will turn green when they are sending data normally.

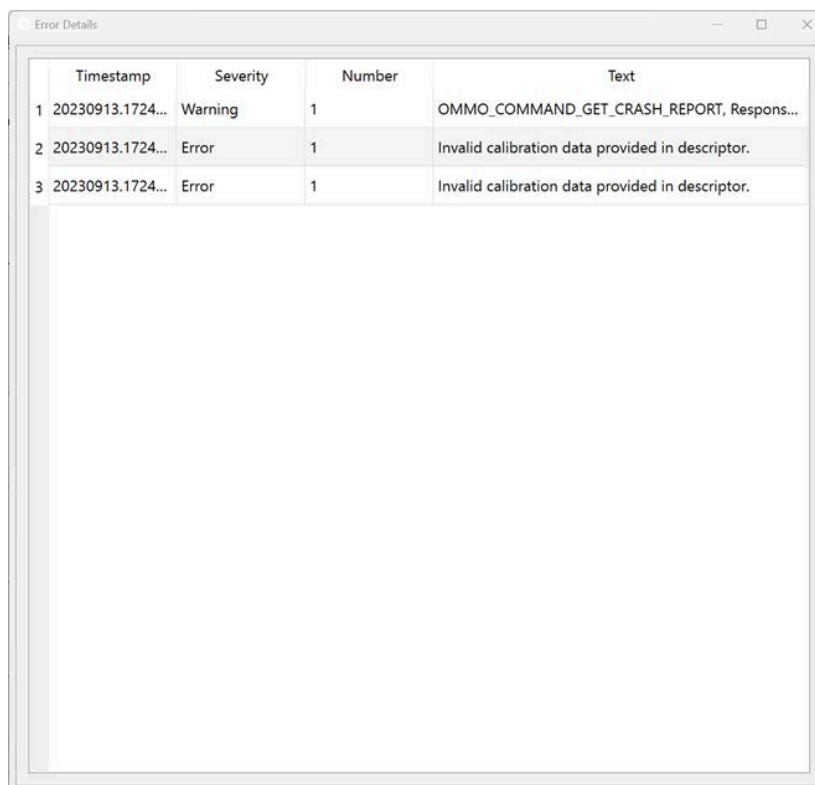
Q4: I connected sensor devices to the SIU but they are not shown on the Ommo App. How do I troubleshoot?

A: Ommo recommends using Ommo Service UI to understand the details of the error

- Check on the LED color of the base station and SIU. Their behavior is explained in a table here: [Base Station](#) and [SIU](#)
- Open up Ommo Service UI and click on the interested connected device
- If there are errors shown, click on "Error Details"



- Error details show the details of the error and when it happened.
- If the following error, "invalid calibration data provided in the descriptor" is displayed, your sensor devices need to be re-calibrated/updated. Please contact Ommo team (refer to Q5 below)



	Timestamp	Severity	Number	Text
1	20230913.1724...	Warning	1	OMMO_COMMAND_GET_CRASH_REPORT, Respons...
2	20230913.1724...	Error	1	Invalid calibration data provided in descriptor.
3	20230913.1724...	Error	1	Invalid calibration data provided in descriptor.

Q5: My error is not listed in this guide and I need additional help. How do I contact the Ommo team for support?

A: Go to **ommo.co/support** and fill out a ticket. Please share a detailed description/picture/videos/screenshot of the issue you're experiencing (e.g., LED behavior, error details on Ommo Service UI, service logs) to help us understand better. You can find the service log text file in the data folder in the Ommo Service file. (Refer to the 3rd picture below)





Bugs & Issues

Please submit any hardware or software issues here.

Contact us



General Support

Please submit any general questions or concerns for our system here.

Contact us



Feedback

Let us know what you think. Our team would love to hear from you!

Contact us

> ommo_eval_sdk_v0.16.0 > ommo_eval_sdk_v0.16.0 > ommo_service > data

☐ Name

Status

Date modified

Type

Size

 Hardware	✓	9/21/2023 5:32 PM	JSON File	1 KB
☒  log-20230921-173605	✓	9/22/2023 1:52 PM	Text Document	2 KB
 ommo_props	✓	9/21/2023 5:36 PM	JSON File	1 KB

Regulatory Compliance

Ommo's Orbit Base Station and components including Axon sensor devices and SIUs are not medical devices.

FCC Regulatory Compliance

The base station complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used following the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Compliance

The base station complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.