

OMMO ORBIT



ORBIT is the world's first permanent magnet-based 3D position tracking system that combines submillimeter precision with unrivaled versatility, resilience, and ease of use.

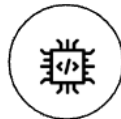
Designed for the medical market to be the most reliable and resilient position tracking system, ORBIT's robust performance is now ready to be customized for your own application.



FEATURES AND BENEFITS



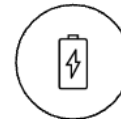
INDEPENDENT TRACKING



EMBEDDABLE MICRO SENSORS



NO OCCLUSION IN ANY DIRECTION



POWER EFFICIENT



ABSOLUTE POSITIONING



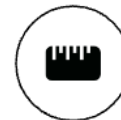
SCALABLE ARCHITECTURE



NO CALIBRATION REQUIRED



RESISTS EM INTERFERENCE



SUBMILLIMETER PRECISION



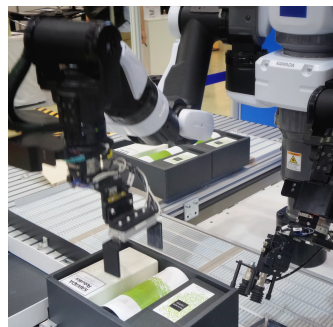
WIRELESS READY

APPLICATIONS



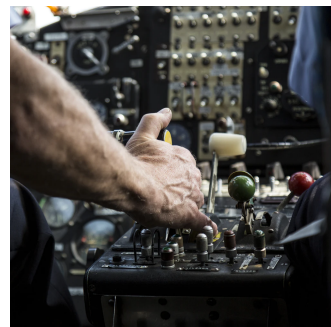
NAVIGATION & INTERVENTION

- Surgical navigation
- Dental implants
- Planning
- Rehabilitation



ROBOTICS & AUTOMATION

- Surgical robots
- Process automation
- Collaborative robotics
- Remote operations



TRAINING & SIMULATION

- Retail
- Industrial
- Defense
- Simulators



ENTERPRISE & CONSUMER

- Digital twins
- AR / VR / XR
- Metaverse
- Media / Production

CORE COMPONENTS

MAGNETIC FIELD GENERATOR (BASE STATION)



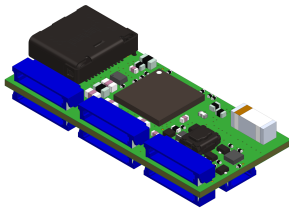
- Patented permanent magnet mechanism
- Unique magnetic signal source
- Sensor synchronization signal source
- Origin of tracking coordinate system

TRACKING UNIT (TU)



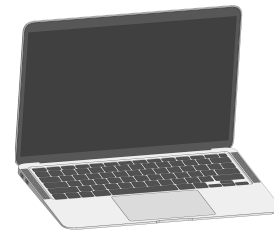
- Measures unique magnetic signal
- An independent 3D tracking point
- Consists of one or more magnetometers + an optional IMU (for sensor fusion enabled devices)
- 0.8~3mm in size

INTERFACE UNIT (IU)



- Samples, synchronizes, and transmits TU data to the DPU
- Each IU supports up to 12 TU
- Supports wired or fully wireless connection to DPU
- Multiple IU can be used simultaneously

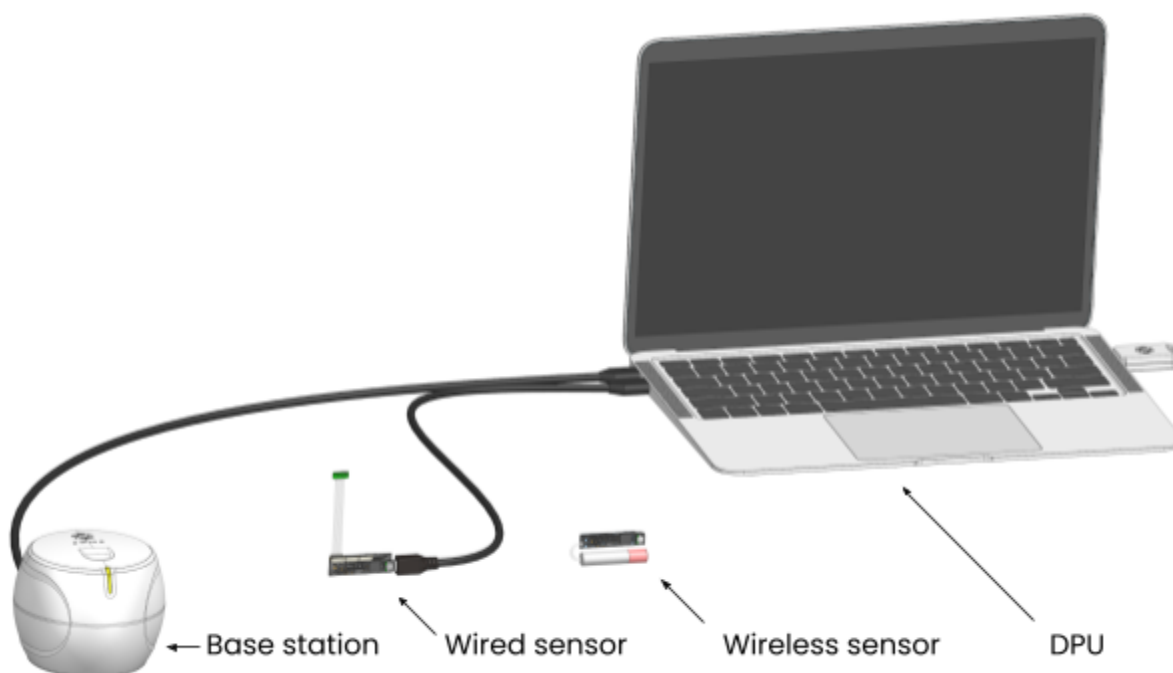
DATA PROCESSING UNIT (DPU)



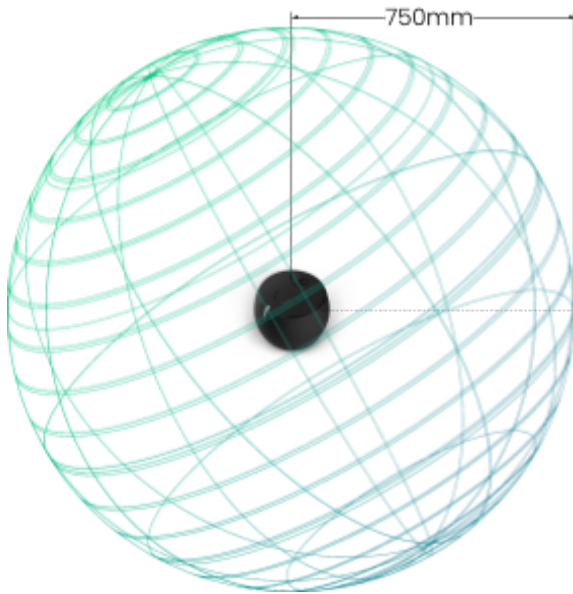
- Runs service process that manage / communicate with HW and provide a client API
- Windows, Mac, and Linux supported
- Supplied by customers

*TU and IU can be integrated/combined into a single device/module based on customization requests

SYSTEM OVERVIEW



TRACKING SPECIFICATIONS



Tracking range/volume	750mm radius in all direction
Data	6DOF (position + orientation)
Data output rate	Up to 1 kHz
Position accuracy	Up to 0.1mm
Orientation accuracy	Up to 0.1 degrees

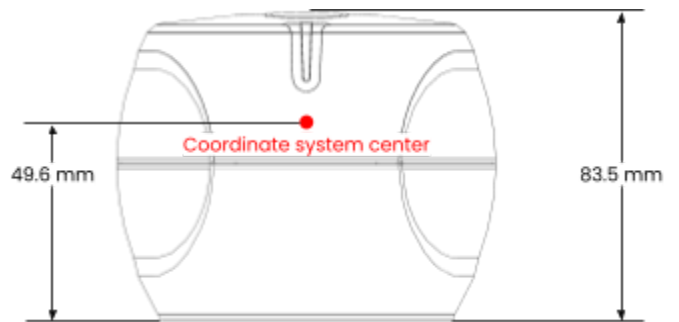
BASE STATION SPECIFICATIONS

Footprint

Top-down view



Front view



Size 100.6mm x 83.5mm (D x H)

Weight ~500g

Power consumption Max: <500mA @ 5V
Typ: <400mA @ 5V

Mounting option 4x M3 Mounting Holes

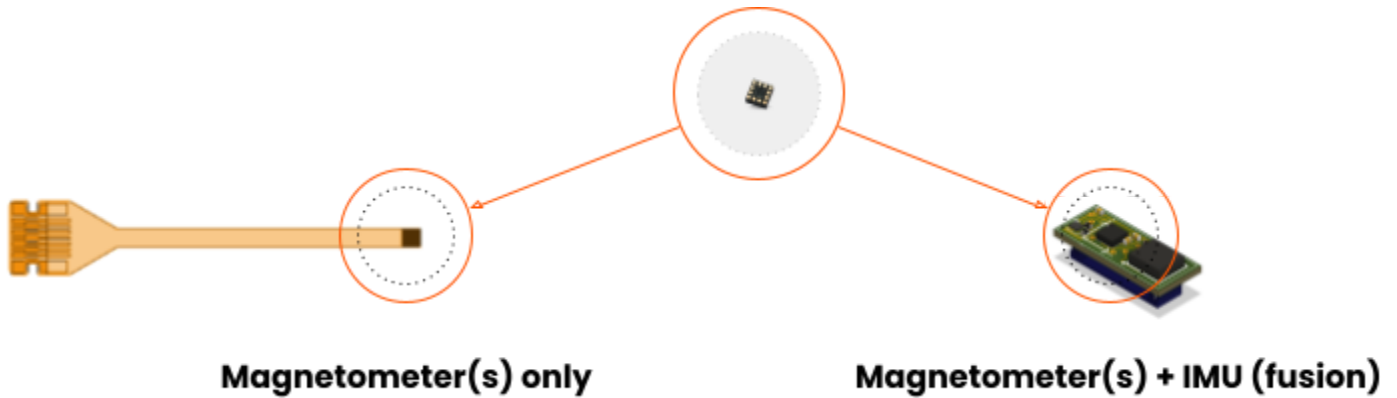
Ingress rating IP 22 (subject to change)

Connection Power & Data: USB C 2.0
Sensor sync: Proprietary 2.4 Ghz protocol

*Performance varies depending on the sensor configuration and the distance from the base station

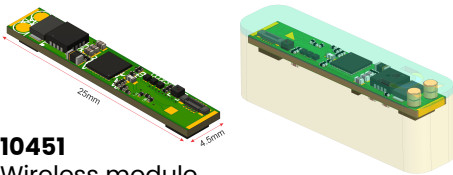
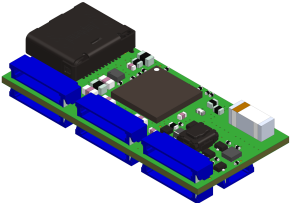
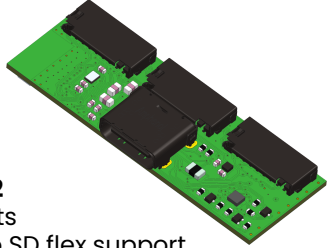
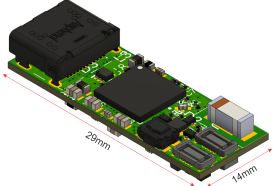
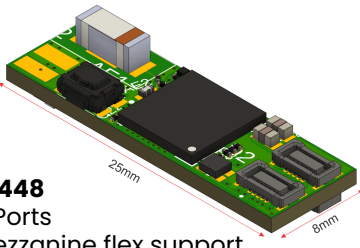
TRACKING UNIT OPTIONS / SPECIFICATIONS

Composition / Form Factors

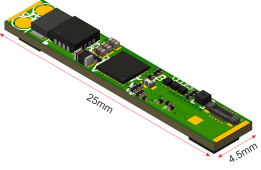
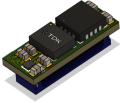
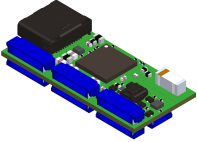



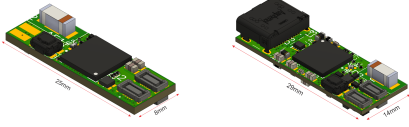


	Standard	Magnetometer Fusion	IMU Fusion
Composition	Single magnetometer <ul style="list-style-type: none"> • Miniature (0.8 x 0.8 x 0.4mm) • High-performance (3 x 3 x 1mm) 	2+ magnetometers <ul style="list-style-type: none"> • High-performance only 	Magnetometer(s) + an IMU <ul style="list-style-type: none"> • High-performance only
Form Factors	<ul style="list-style-type: none"> • FPC • SMT board • Wireless module 	<ul style="list-style-type: none"> • SMT board • Wireless module 	<ul style="list-style-type: none"> • SMT board • Wireless module

INTERFACE UNIT OPTIONS

Wireless Only	Combination (wired + wireless)	Wired Only
Rechargeable Battery & Onboard Sensors	Rechargeable Battery & External Sensors	Hub-style with Disposable Sensor Support
 <p>10451 Wireless module On board sensor</p>	 <p>10328 6 Ports Wired SMT support On board sensor Lipo battery support</p>	 <p>10322 3 Ports Micro SD flex support USB-C connection</p>
Primary Cell/Single-Use Battery & External Sensors	 <p>10298 3 Ports Mezzanine flex support USB-C connection Lipo battery support</p>	
 <p>10448 3 Ports Mezzanine flex support Primary battery support</p>		

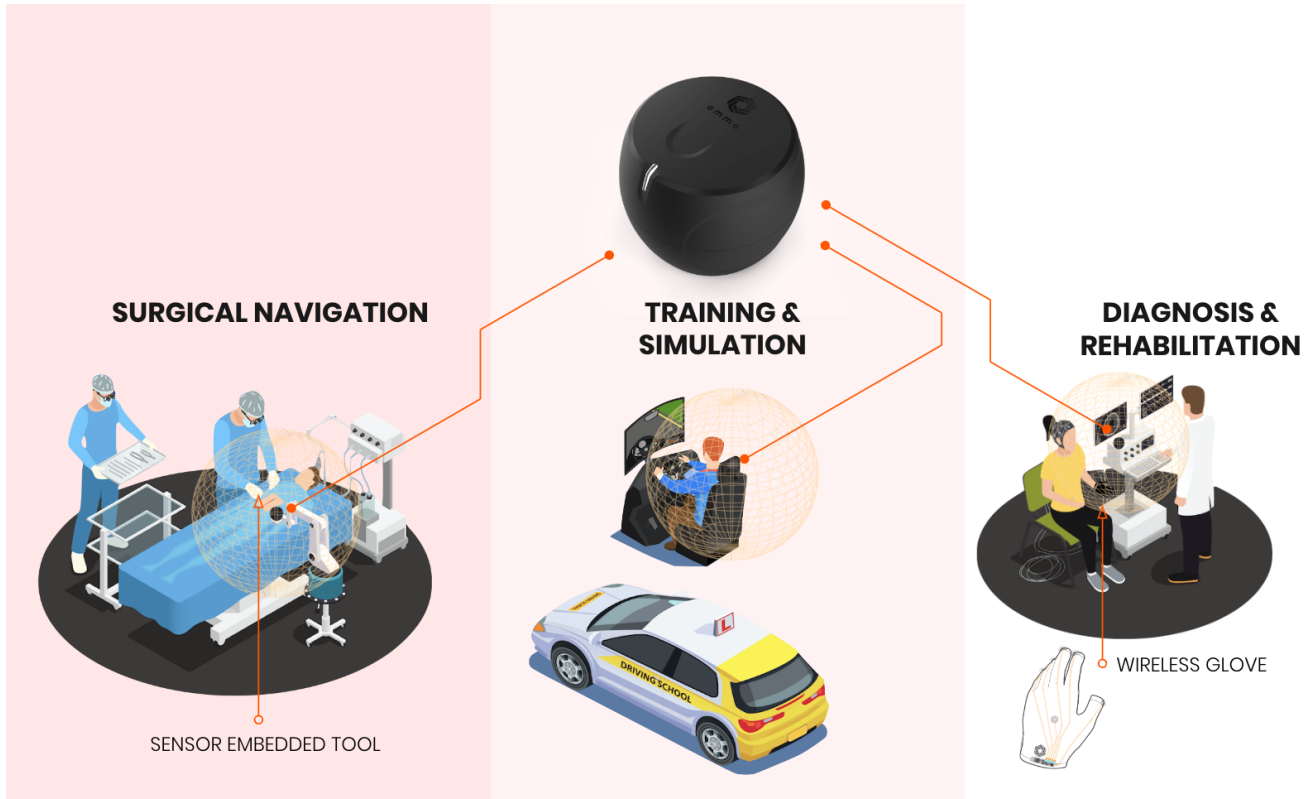
TU + IU ARCHITECTURE & USE CASES

Architecture	TU Form Factors	Compatible IU	Use Cases
Standalone Wireless	 <p>High-Performance (single & dual) + IMU</p>	Not required	<ul style="list-style-type: none"> • Patient registration, Capsule endoscope • Ideal for independent object tracking
Wired SMT	 <p>High-Performance + IMU</p>	 <p>10328</p>	<ul style="list-style-type: none"> • Wearables (e.g. gloves, accessories) • Ideal for multi-sensor arrangements
Micro SD Flex	 <p>Miniature OR High-Performance</p>	 <p>10322</p>	<ul style="list-style-type: none"> • Disposables (e.g. catheters, needles) • Ideal for replaceable tips
Mezzanine Flex	 <p>Miniature OR High-Performance</p>	 <p>10448 10298</p>	<ul style="list-style-type: none"> • Surgical tools (e.g. drills, cutters) • Ideal for semi-permanent tips

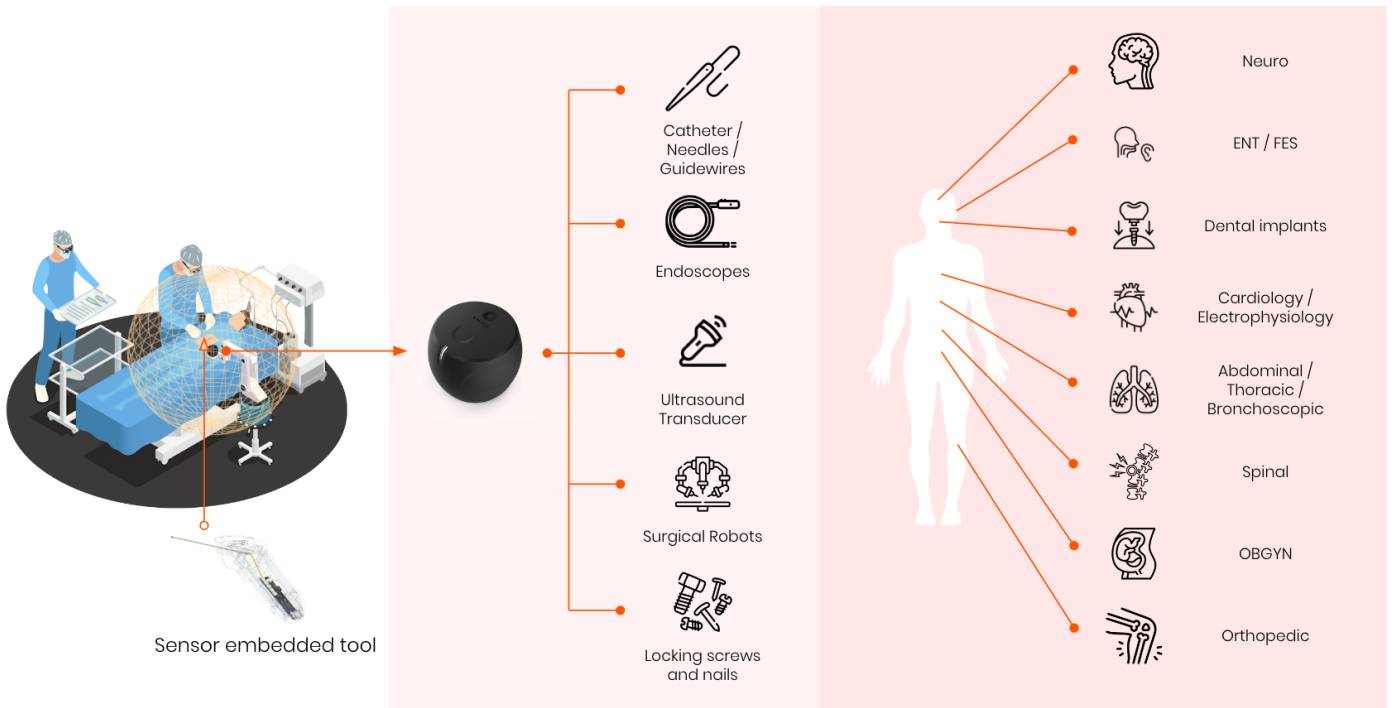
INTERFACE UNIT SPECIFICATIONS

Model #	Size	On Board Sensor Types / Counts	Connections
10451	<ul style="list-style-type: none"> • 27.4mm x 6.9mm • 27.4mm x 6.9mm x. 8.56mm (with battery) 	<ul style="list-style-type: none"> • 2x High-Performance magnetometers • 1x IMU 	<ul style="list-style-type: none"> • Wireless
10448	<ul style="list-style-type: none"> • 25mm x 8mm 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Wireless • 3x Mezzanine Flex
10328	<ul style="list-style-type: none"> • 30.5mm x 14mm 	<ul style="list-style-type: none"> • 1x High-Performance magnetometers 	<ul style="list-style-type: none"> • USB C & Wireless • 6x Wired SMT
10298	<ul style="list-style-type: none"> • 29mm x 14mm 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • USB C & Wireless • 3x Mezzanine Flex
10322	<ul style="list-style-type: none"> • 40mm x 14mm 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • USB C • 3x Micro SD Flex

USE CASE OVERVIEW

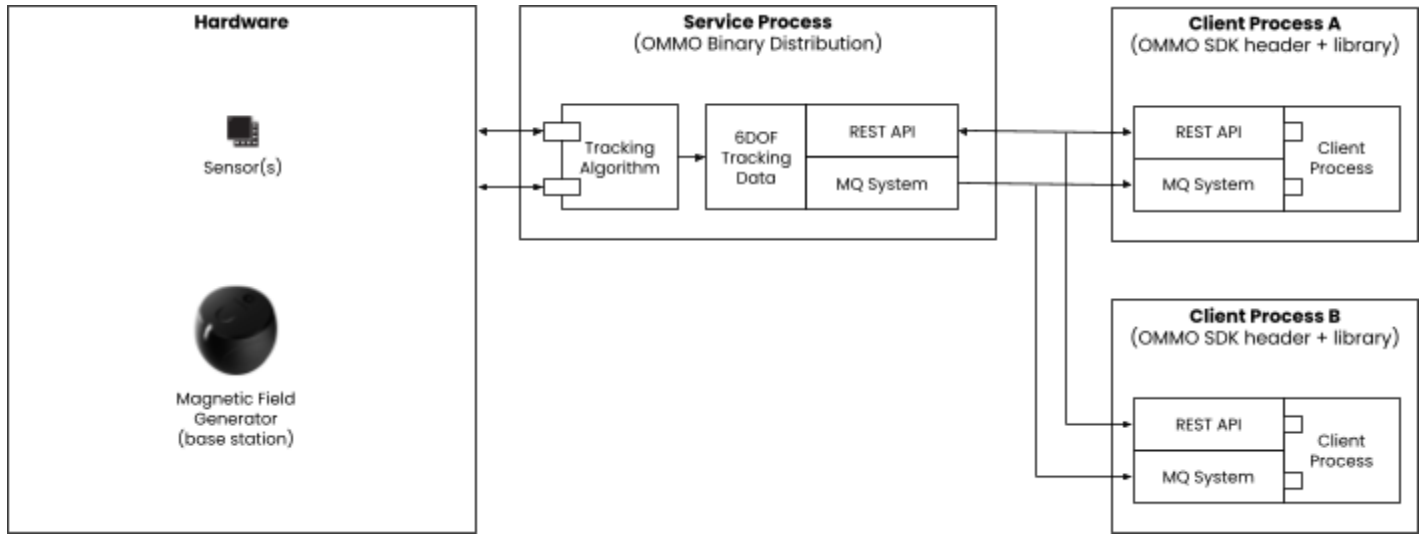


MEDICAL TOOLS / TREATMENT AREAS



SOFTWARE

Client process



OS compatibility

Windows, macOS, Linux