



**Improve the localization and navigation of mobile robotic vehicles with the Terabee Robot Positioning System, a radio-frequency absolute positioning system. Turn location data into valuable insights to improve your mobile robot navigation systems.**

Designed for accuracy, Terabee Robot Positioning System uses Ultra wideband (UWB) technology to allow mobile robots to navigate safely without pre-mapped routes.

The system works by attaching “trackers” to each robot, while fixed reference points called ‘anchors’ transmit wireless signals to the tracker to determine its location. Trackers and anchors use the same form-factor, generically referred to as beacons.

Our starter kit consists of 4 anchors provided with 4 mounting brackets and 4 3-meter power cables, 1 tracker provided with 1 1.8-meter power/data cable, and is supported by a GUI for easy system configuration.

## Key features

- Position data available in the tracker
- 2D or 3D position up to 10 times per second
- Auto anchor positioning for fast deployment
- Scalable to 32 anchors and 15 trackers <sup>(4)</sup>
- Radio-frequency technology at 6.5 Ghz
- Tracker to anchor range up to 40m
- Interfaces: RS232
- Compact beacon form factor: Ø66 mm x 62.5 mm, 45 grams

## Technical specifications

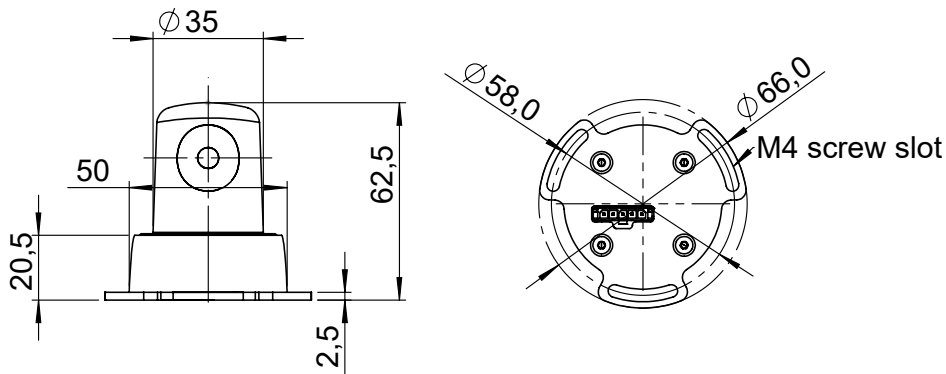
Product code	TB-RPS-SK
<b>Performance</b>	
Ranging technology	Ultra wideband
Anchor to anchor range <sup>(2)</sup>	up to 40 m
Output X, Y axis accuracy <sup>(3)</sup>	+/- 10cm
Output Z axis accuracy <sup>(3)</sup>	+/- 30 cm
Output resolution	1mm
Max number of anchors	32
Max number of trackers	Up to 6000 (15 trackers recommended for 10 Hz update rate)
Radio-frequency	UWB, Channel 5: Band 6240 to 6739.2 MHz Center frequency 6489.6 MHz
Update rate <sup>(4)</sup>	Up to 10 Hz
Auto anchor positioning	Yes
Scaling network <sup>(5)</sup>	Yes
<b>Electronics</b>	
Supply voltage	5V - 24V
Power consumption tracker	Maximum at 24V DC: 25 mA Maximum at 5V DC: 120 mA
Power consumption anchor	Maximum at 24V DC: 25 mA Maximum at 5V DC: 120 mA
<b>Communication</b>	
RS232	Baudrate 115200 8-N-1
<b>Enclosures</b>	
Dimensions of beacon	Ø66 mm x 62.5 mm
Weight of beacon	Approx. 45 g
Enclosure rating	IP65 (when back-panel mounted)
Housing material	Main body: ABS Bottom lid (beacons): Aluminium
Type of connection	RS232: Molex MicroFit 3.0 5-pin male connector
Ambient temperature operation (at $V_{IN} = 24 V$ )	-10°C to 70°C
Mounting	Curved slots for M4 screws
<b>Cabling</b>	
Anchor power cable	USB 2.0 Type A male, MicroFit 3.0 5-pin female connector
Tracker power and data cable	RS232 to USB adapter (USB 2.0 Type A male, MicroFit 3.0 5-pin female connector)
<b>Conformity</b>	
Reference standard (certifications on-going) <sup>(6)</sup>	CE, FCC, IP65, RoHS, vibration & shock

- (1) Before integrating the system with your application, make sure that a risk assessment is carried out and that appropriate safety measures are implemented (e.g. anti-collision system, personnel training, etc.).
- (2) Recommended distance 20m, for optimal performance. Line of sight is required.
- (3) Specifications are derived from tests in controlled conditions. Note that any variation in radio-frequency signal characteristics (e.g. caused by multipath effect or antenna orientation) can affect the system's performance.
- (4) 10 Hz with up to 15 trackers, 1 Hz with 150 trackers, minimal rate 0.01667 Hz with 6000 trackers.
- (5) Scaling network, means 2 networks can operate next to each other, if the proper setup guidelines are followed.
- (6) Refer to the conformity certificate in the User Manual for details.

## Applications

- Mobile robotics localization<sup>(1)</sup>
- Drone localization
- Research and education

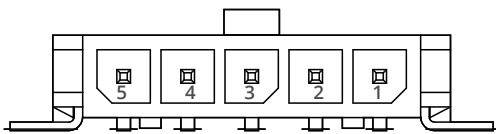
## Dimensions



## Connector pinout (RS232)

Connector P/N: 0436500513

Mating connector P/N: 0436450500



Slave Beacons connector (RS232)		
Pin No.	Name	Function
1	5-24V	5-24V DC power supply
2	GND	Ground (power supply and data)
3	RFU	Reserved for future use
4	RX_RS232	RS232 Reception input
5	TX_RS232	RS232 Transmit output

**Have any questions? Contact us today!**