

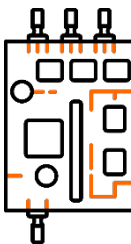
# Product line: Multi-Sensor RTK/PPP Module



Industrial Casing  
(with Touchscreen)



3D-Printed Casing



- Up to 3 integrated Multi-frequency, Multi-GNSS receivers
- Integrated industrial-grade MEMS-IMU.  
Optional: High-grade MEMS-IMU with improved bias stability
- CAN bus interface for reading wheel and steering measurements
- Integrated Quad-core processor (1.5 GHz, 8 GB RAM, 16 GByte memory) running ANavS GNSS/ INS/ odometry tightly coupled positioning engine
- Various interfaces: Ethernet, Wi-Fi, CAN, LTE



Link: [Product Summary for Dual-Frequency variant](#)



Link: [Product Summary for Triple-Frequency variant](#)

# Product line: Multi-Sensor RTK/PPP Module

## Order Information:

Multi-Sensor RTK/PPP-Module (MSRTK) including the **tightly coupled sensor fusion engine** with **Dual-Frequency GNSS receivers**, **IMU** and **Odometry** data

P/N	Description
30.10.1.11.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>1-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.10.1.12.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>2-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.10.1.13.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>3-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.21.1.11.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>1-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>
30.21.1.12.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>2-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>
30.21.1.13.2.1	All-GNSS-Constellation, <b>Dual-Frequency</b> GNSS-Receiver, <b>3-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>

# Product line: Multi-Sensor RTK/PPP Module

## Order Information:

Multi-Sensor RTK/PPP-Module (MSRTK) including the **tightly coupled sensor fusion engine** with **Triple-Frequency GNSS**, **IMU** and **Odometry** data

P/N	Description
30.10.1.31.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>1-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.10.1.32.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>2-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.10.1.33.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>3-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>3D-Printed Casing</b>
30.21.1.31.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>1-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>
30.21.1.32.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>2-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>
30.21.1.33.2.1	All-GNSS-Constellation, <b>Triple-Frequency</b> GNSS-Receiver, <b>3-Antenna-Setup</b> , industrial-grade MEMS-IMU, <b>Industrial Casing with Touchscreen</b>

# Product line: GNSS Antennas

## Order Information:

Configurable for Multi-Sensor RTK/PPP-Module (MSRTK) and RTK Reference Stations. Depends on used GNSS-Receiver Type (Dual or Triple Frequency).



P/N	Description
30.00.0.51.0.0	Full-Constellation and Dual-Frequency GNSS Patch-Antenna
30.00.0.52.0.0	High-Class, Full-Constellation and Dual-Frequency GNSS Antenna
30.00.0.53.0.0	Survey-Grade, Full-Constellation and All-Frequency GNSS Antenna



# Product line: Inertial Measurement Units

## Order Information:

Configurable for Multi-Sensor RTK/PPP-Modules (MSRTK). The industrial-grade MEMS IMU is part of the standard system configuration.



P/N	Description
30.00.0.00.2.0	<b>Industrial-grade MEMS IMU (ASM330LHH):</b> Bias-Stability: 3°/hr, ARW*:0.21 deg/√Hz
30.00.0.00.3.0	<b>Mid-grade MEMS IMU (Epson-MG365):</b> Gyro-Performance: Bias-Stability 1.2°/hr, ARW*: 0.1 deg/√Hz Accelerometer-Performance: Bias-Stability: 0.1mg, VRW*: 0.05m/s/√Hz
30.00.0.00.4.0	<b>High-grade MEMS IMU (Epson-MG370):</b> Gyro-Performance: Bias-Stability 0.8°/hr, ARW*: 0.06 deg/√Hz Accelerometer-Performance: Bias-Stability: 0.01mg, VRW*: 0.025m/s/√Hz

ARW: Angular Random Walk, VRW: Velocity Random Walk

# Product line: Inertial Measurement Units

## Performance during GNSS-Outages:

### Mid-grade MEMS IMU (Epson-MG365):



Outage Duration	Positioning Mode	POSITION ACCURACY (M) RMS		VELOCITY ACCURACY (M/S) RMS	
		Horizontal	Vertical	Horizontal	Vertical
0 s	RTK <sup>14</sup>	0.02	0.03	0.020	0.015
	SP	1.00	0.60	0.020	0.015
	PP <sup>15</sup>	0.01	0.02	0.015	0.010
10 s	RTK <sup>14</sup>	0.25	0.15	0.065	0.025
	SP	1.25	0.70	0.065	0.025
	PP <sup>15</sup>	0.01	0.02	0.015	0.010

### High-grade MEMS IMU (Epson-MG370):



Outage Duration	Positioning Mode	POSITION ACCURACY (M) RMS		VELOCITY ACCURACY (M/S) RMS	
		Horizontal	Vertical	Horizontal	Vertical
0 s	RTK <sup>15</sup>	0.02	0.03	0.015	0.010
	SP	1.00	0.60	0.015	0.010
	PP <sup>16</sup>	0.01	0.02	0.010	0.010
10 s	RTK <sup>15</sup>	0.15	0.10	0.040	0.020
	SP	1.15	0.70	0.040	0.020
	PP <sup>16</sup>	0.02	0.02	0.010	0.014
60 s	RTK <sup>15</sup>	5.00	1.00	0.220	0.035
	SP	6.00	1.60	0.220	0.035
	PP <sup>16</sup>	0.17	0.06	0.013	0.015