



www.polyexplore.com

PolyExplore

PolyExplore Inc. is a leading developer of inertial navigation solutions. Our innovative sensors are ideal for demanding unmanned systems applications such as UAVs (unmanned aerial vehicles) and UGVs (unmanned ground vehicles), as well as the next generation of high-performance autonomous driving systems.



MEMS RTK GNSS/INS POLYNAV 2000H/P

High accuracy position, velocity, acceleration, attitude, heading, angular rate and heave

GPS, GLONASS, Beidou, Galileo and SBAS

Dual frequency (L1 & L2) RTK

Dual antenna for accurate heading

Best in class price-performance ratio

100 Hz navigation solution and the raw measurement output

Accurate attitude/heading whether the platform is static or moving

Tactical grade IMU sensors

Multiple sensor fusion

ROS driver ready

Heave message



FOG INERTIAL NAVIGATION SYSTEM POLYNAV 2000F

High accuracy position, velocity, acceleration, attitude, heading, angular rate and heave

GPS, GLONASS, Beidou, Galileo and SBAS

Dual frequency (L1 & L2) RTK

Dual Antenna for accurate heading

Best in class price-performance ratio

100 Hz navigation solution and the raw measurement output

Accurate attitude/heading whether the platform is static or moving

Fiber Optic Gyroscope (FOG)

Multiple sensor fusion

ROS driver ready

Heave message



"ULTRA" GNSS/INS POLYNAV 2000S

Centimeter level positioning with precise attitude and heading whether the platform is static or moving

Precision velocity, acceleration, attitude (Roll, pitch, heading), and angular rate

GPS, GLONASS, Beidou, Galileo*, and SBAS, QZSS; 240 Tracking Channels

Dual frequency (L1 & L2) RTK

Global PPP

Dual antenna for accurate heading

Best in class price-performance ratio

100 Hz navigation solution and the raw measurement output

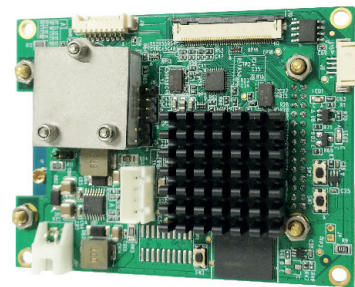
Tactical grade, near FOG performing solid-state IMU sensor

Multiple sensor fusion

ROS driver ready

Heave message

IP67 environmental rating



RTK GNSS/INS POLYNAV 2000P OEM

High accuracy position, velocity, acceleration, attitude (Roll, pitch, heading), angular rate

GPS, GLONASS, Beidou, Galileo and SBAS

Dual frequency (L1 & L2) RTK

Dual antenna for accurate heading

Best in class in size and price-performance ratio

100 Hz navigation solution and the raw measurement output

Accurate attitude/heading whether the platform is static or moving

Tactical grade IMU sensors

Multiple sensor fusion

ROS driver ready

Heave message

	POLYNAV 2000S	POLYNAV 2000P OEM	POLYNAV 2000P	POLYNAV 2000H	POLYNAV 2000F	POLYNAV 2000F1
GNSS						
Constellation	GPS/GLONASS/ BeiDou/Galileo/ SBASS/QZSS	GPS/GLONASS/ BeiDou/Galileo	GPS/GLONASS/ BeiDou/Galileo	GPS/GLONASS/ BeiDou/Galileo	GPS/GLONASS/ BeiDou/Galileo	GPS/GLONASS/ BeiDou/Galileo
Satellite signals	L1 & L2C/L2P (GPS), E1&E5b (Galileo)	L1 & L2	L1 & L2	L1 & L2	L1 & L2	L1 & L2
Position accuracy (RTK)	1.6 m CEP SPS 0.02 m RTK	1.6 m CEP SPS 0.02 m RTK	1.6 m CEP SPS, 0.02 m RTK	1.6 m CEP SPS 0.02 m RTK	1.6 m CEP SPS 0.02 m RTK	1.6 m CEP SPS 0.02 m RTK
Velocity Accuracy (RTK)	1 cm/s	1 cm/s	1 cm/s	1 cm/s	1 cm/s	1 cm/s
Roll/Pitch	0.015°	0.05°	0.005° (H), 0.01°(P)	0.005° (H), 0.01°(P)	0.05°	0.05°
Heading	0.08° (1 m base)	0.1°	0.1° (1 m base)	0.1° (1 m base)	0.01° (5 m base) 0.08° per 1 meter of baseline length	0.01° (5 m base) 0.08° per 1 meter of baseline length
Measurement rate	100 Hz	100 Hz (up to 400Hz)	100 Hz	100 Hz	100 Hz	100 Hz
Sensitivity	-160 dBm	-160dBm	-160 dBm	-160 dBm	-160 dBm	-160 dBm
Number of antennas	2	2	2	2	2	2
Inputs/comm	Ethernet, UART, RS232, CAN, DMI, PPS, Event Input		Ethernet, CAN, 2 Serial Ports, Odometer	Ethernet, CAN, 2 Serial Ports, Odometer	Ethernet, CAN, 2 Serial Ports, Odometer	Ethernet, CAN, 2 Serial Ports, Odometer
TIME TO FIRST FIX (TTFF)						
Cold start	< 60 s	< 60 s	< 60 s	< 60 s	< 60 s	< 60 s
Warm Start	< 45 s	< 45 s	< 45 s	< 45 s	< 45 s	< 45 s
Hot Start	< 11 s	< 11 s	< 11 s	< 11 s	< 11 s	< 11 s
Re-acquisition	< 2 s	< 2 s	< 2 s	< 2 s	< 2 s	< 2 s
INERTIAL SENSORS						
Gyro Dynamic Range	400°/s	±125°/s	±125°/s	125 °/s	490°/s	490°/s
Gyro Bias Instability	0.3 °/h	2°/h	2°/h	0.8 °/hr	0.1°/h	0.05 °/h
Gyro Random Walk	0.015°/√h	0.15°/√h	0.15°/√h	0.09°/√hr	0.017°/√h	0.012°/√h
Accelerometer Dynamic Range	10g	±8g	±8g	8 g	10g	10g
Accelerometer Bias Instability	0.03 ug	3.6ug	3.6ug	3.2 ug	0.1mg	0.01mg
Accelerometer Random Walk	0.015 m/s/√h	0.012m/s/√h	0.012m/s/√h	0.008 m/s/√hr	0.07m/s/√h	0.014m/s/√h
MECHANICAL						
Dimension	166 x 134 x 70 mm	80 x 60 x 22 mm	147 x 99 x 48 mm	147 x 99 x 48 mm	177 x 115 x 109 mm	177 x 115 x 109 mm
Weight	approx. 800 g.	13 g	500 g	500 g	1455 g (without antennas)	1455 g (without antennas)
ENVIRONMENTAL						
Operating temperature	-40° to 85° C	-40° to 85° C	-40° to 85° C	-40° to 85° C	-40° to 65° C	-40° to 65° C
Shock					Operating, 9 g, 11 msec, sawtooth	Operating, 9 g, 11 msec, sawtooth
Vibration					Operating 8 g rms, 20-2000 Hz random	Operating 8 g rms, 20-2000 Hz random
ELECTRICAL						
Input voltage	12–24 V DC	12–24 V DC	12–24 V DC	12–24 V DC	12–28 V DC	12–28 V DC
Power consumption	10W	5W	5W	5W	10 W	10 W