

## **ER-MINS-5680 MEMS Integrated INS**

### **Introduction**

This MEMS Integrated INS has a built-in full temperature of 0.5°/h high-precision MEMS gyroscope, a 100ug high-precision quartz accelerometer and a survey-level GNSS receiver of multi-mode and multi-frequency for dynamic fast alignment or GNSS dual antenna support fast and high precision orientation up to 0.1°. This Product support GNSS / odometer / DVL / barometric altimeter and other sensors external, with excellent scalability. Through the use of multi-sensor data fusion technology, to combine inertial measurement and phase together, it can make the system geographical adaptability and robustness Greatly improved. To meet the requirements of the mobile street surveying, marine mapping and other mapping fields applications , it is supported by the the original data storage and mapping level navigation post-processing software, which makes it possible for the user to choose according to demand.

### **Features**

High Precision MEMS Devices: 0.5°/hr gyroscope, 100ug accelerometer

Survey level GNSS receiver: support GPS/BDS/GLONASS

Dynamic fast alignment: support fast alignment, 1-2 minutes (need to be dynamic maneuver)

Dual antenna fast orientation: supports dual antenna fast assisted orientation: accuracy 0.1°( baseline 2m )

Support for storage: supports up to 16G data storage extensions, support navigation data/raw data/ external user data

<b>System real-time accuracy</b>	
Course	0.1° (dynamic alignment) 0.5° (low dynamic dual antenna assistance, 2mbaseline)
Attitude	0.05° (1σ)
Position	single point positioning ≤2m(CEP) RTK 50px+1ppm (CEP)
Speed accuracy	0.02m/s
Data update rate	200Hz (configurable)
Odometer combination navigation accuracy	1% driven distance(depending on the accuracy of the external odometer)
Start Time	≤ 10s
Alignment time	1~2min (depending on the form of dynamic maneuver) dual antenna assisted directional time ≤1min
<b>Key components parameters</b>	
Gyroscope	Range: ±400°/s zero partial stability: ≤0.5°/h
Accelerometer	Range: ±10g zero partial stability: ≤100ug
<b>User model</b>	
Car model (the default model)	airborne model、 ship model
<b>Data interface</b>	
Interface mode	1path (RS232/RS422custom configuration)、 1pathRS232、 1path RS4 22、 1path CAN2.0b、 1path network port、 1path differential signal、 2path single-ended、 support PPS、 EVENTMAR Kinput/output
Baud rate	9600-230400 bps( configurable)
<b>Physical characteristics</b>	
Supply voltage	24VDC rated (12~32VDC) power consumption <24W
Operating temperature	-40℃~+80℃
Physical size	145mm×120mm×72mm
Weight	<1.5kg

## Application

Space field	Unmanned aircraft Aerial surveying Photoelectric detection is stable	High dynamic measurement range Pneumatic altimeter combination Full temperature calibration compensation (-40~80 °C) Built-in 16G data storage INS/GNSS combination design
Land-based domain	Street View Cart Electric inspection unmanned car Intelligent unmanned car	support single, dual antenna mode support IE post-processing supports multiple interface outputs Do RTK mobile station support NMEA standard protocol