

## GNSS/INS 紧密组合系统 ZCG300



**ZCG300** 紧密组合导航系统采用紧耦合技术将高精度、专业级、多通道、单/双频全球卫星定位系统接收机的原始载波相位及伪距和由高精度石英挠性加速度计及光纤陀螺集成的惯性测量单元紧密结合，具有体积小、重量轻、性价比优等特点。

**ZCG300** 紧密组合导航系统可提供水平姿态、航向等定姿信息，经度、纬度、高度等定位信息，以及三维加速度、角速度等惯性测量信息；系统可扩展 GLONASS、BD2 卫星接收功能，并可针对不同应用环境扩展里程计或高度气压计等辅助传感器进一步提高系统精度和适用性，可广泛应用于陆海空各领域，实现有力地导航、制导与控制 (GN&C)。

### 应用范围

- 航空
- 长途运输
- 车辆的导航与控制
- 姿态参考
- 船舶姿态的动态测量
- 采矿和自动耕作
- 火车和集装箱跟踪

### 特点

- GNSS/INS 紧密结合；
- 价格低廉，体积小，重量轻；
- 全密封可靠设计，保证恶劣环境下可正常工作；
- 抗振动冲击和电磁干扰；
- 差分 GNSS 兼容（可选）；
- GLONASS 兼容（可选）；
- 扩展里程计或高度气压计等传感器（可选）。

**ZCG300** tightly integrated navigation system applies tight integration technology to combine the original carrier phase and pseudorange from a professional, high accuracy multi-channel and single/dual frequency GNSS receiver with high accuracy quartz accelerometer & FOG based Inertial Measurement Unit (IMU). The system is featured as small size, light weight and high cost performance.

**ZCG300** tightly integrated navigation system provides attitude information (such as horizontal attitude and heading), positioning information (such as longitude, latitude and altitude) and inertial measurement information (such as 3D acceleration and angular rate). The receiver is extendable with GLONASS. Its measurement accuracy and applicability can be further extended by assistant sensors such as odometer or barometric altimeter, etc. It can be widely applied in various areas of ground, marine and aviation to provide powerful Guidance, Navigation & Control (GN&C).

### Application

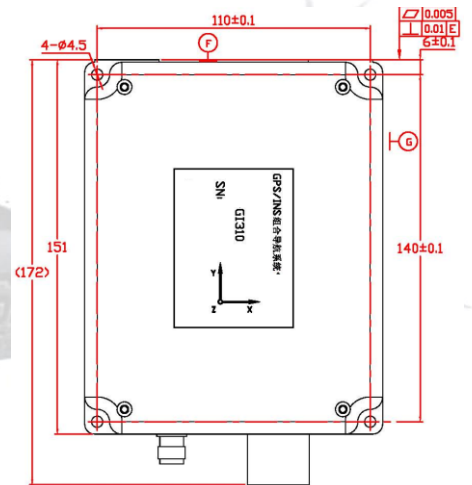
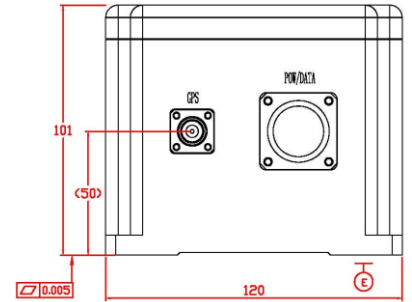
- Aviation
- Long-Haul Transportation
- Vehicle Guidance and Control
- Attitude Reference
- Marine Dynamics
- Mining and Auto-Farming
- Train & Container Tracking

### Features

- Tightly integrated GNSS/INS;
- Low cost, small size and light weight;
- Reliable rugged-design to safeguard stable performance under harsh environment;
- Vibration & shock resistance and EMI resistance;
- Compatible with differential GNSS (optional);
- Compatible with GLONASS (optional);
- Extendable with odometer or barometric altimeter, etc. (optional).

性能指标/Specification

系统精度 System Accuracy	航向 1/Heading1		≤0.1 deg, 1 σ
	水平姿态 1 (横滚和俯仰) Horizontal Attitude 1 (roll & pitch)		≤0.05 deg, 1 σ
	位置 1 2 Position1 2	水平/Horizontal	1.5 m, CEP
		高程/Altitude	2 m, CEP
	速度 1/Velocity1		≤0.1 m/s, 1 σ
	GNSS 失锁 No GNSS Signal (Pure INS)	航向保持 Heading	≤0.01 deg @ 60 s
≤0.5 deg @ 1 hr			
水平姿态保持 Horizontal Attitude		≤0.01 deg @ 60 s	
		≤0.05 deg @ 1 hr	
器件主要特性 Device Main Parameter	陀螺 Gyroscope	量程/Range	±300 deg/s
		零偏稳定性 Bias Stability	≤0.5 deg/h
		零偏重复性 Bias Repeatability	≤0.5 deg/h
	加速度计 Accelerometer	量程/Range	±10 g (可定制/customizable)
		零偏稳定性 Bias Stability	≤0.06 mg
		零偏重复性 Bias Repeatability	≤0.06 mg
GNSS		B1&B2, L1&L2, SBAS	
定位时间 Time to Fix	冷启/Cold Start	≤60 s	
	典型重捕/Typical Reacquisition	≤1 s	
滤波模式 (定制) Filtering Mode (customizable)	空中模式/Air Mode	空速补偿 Air speed Compensation	
	水下模式/Underwater Mode	多普勒补偿 Doppler Compensation	
	车载模式/Vehicle Mode	里程计+GNSS 补偿 Odometer +GNSS Compensation	
接口特性 Interface	电压/Voltage	9~36 VDC	
	功耗/Power Consumption	≤12 W @ 24 VDC	
	电气接口/Electrical	RS232/RS422	
	数据更新率 (可设) Data Update Rate (configurable)	100 Hz @ 115,200 baud rate	
环境特性 Environmental	工作温度/Operating Temperature	-40°C~+60°C	
	存储温度/Storage Temperature	-50°C~+70°C	
	振动/Vibration	6 g @ 20~2000 Hz	
	冲击/Shock	30 g, 11 ms, 1/2 Sine	
物理特性 Physical	尺寸/Size (L*W*H)	151×120×101 mm	
	重量/Weight	≤1.2 kg	



- GNSS 有效, GNSS 信号间断时间 ≤30 s;  
GNSS valid, GNSS interruption time ≤30 s;
- 其他位置定制精度:  
Other positioning accuracy:
  - SBAS 0.6 m
  - DGNSS 0.4 m
  - RTK 0.02 m+1 ppm