

GCINS01 INTEGRATED INERTIAL NAVIGATION SYSTEM

GCINS01 Integrated Inertial Navigation System is an extremely small form factor, lightweight, low power, cost effective and a complete navigation system with a wide variety of uses in the industry, especially in applications where the continuity of navigation information is important. It contains a GNSS receiver, a 3-axis magnetometer, and a barometer. It also contains an interface to receive and process external odometer signals. GCLAB's expertise in estimation theory allows exceptional integration of IMU, GNSS, magnetometer, barometer, and odometer data. GCINS01 is ITAR-free.

GCINS01 KEY CHARACTERISTICS

GNSS Capability	Single or Dual GNSS Receiver
Supply Voltage/Power Consumption	5±0.25V / <5 W
Weight/Size	TBD
Operating Temperature Range	-40°C to +85°C
Communication Interfaces	RS-422 (Full Duplex)
Discrete Interfaces	Time Mark Outputs (2), User Event In (2), Odometer Input

GCINS01 NAVIGATION PERFORMANCE (Typical)

POSITION		VELOCITY		HEADING	PITCH/ROLL
Horizontal (m, 1σ)	Vertical (m, 1σ)	Horizontal (m/s, 1σ)	Vertical (m/s, 1σ)	(°, 1σ)	(°, 1σ)
1.5	2	0.05	0.05	0.1	0.05



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GCINS01 GNSS RECEIVER SPECIFICATIONS

Receiver Type	Multi-band GNSS high precision receiver
Constellations	GPS, GLONASS, Galileo, BeiDou, QZSS, SBAS
Cold Start	30 s
Hot Start	2 s
Altitude Limit	80000 m
Velocity Limit	500 m/s

GCINS01 MAGNETOMETER PERFORMANCE

RANGE	STABILITY	NOISE
± 30 G	%0.1 FS	0.002 G RMS

GCINS01 BAROMETER PERFORMANCE

RANGE	STABILITY	NOISE
1250 hPa	0.2 hPa	0.0008 hPa RMS

