



GPS+GLONASS ALL-IN-VIEW POSITIONING SINGLE RECEIVER SOLUTION

GG24 GPS Receiver

GPS & GLONASS SEAMLESS INTEGRATION

With the addition of GLONASS to its leading GPS technology, Thales Navigation has expanded the availability, integrity and accuracy of global positioning tools. GLONASS, the Russian equivalent of GPS, adds another satellite constellation for precision positioning using the Ashtech® GG24™ receiver from Thales Navigation professional products. The GG24 is the first all-in-view GPS+GLONASS™ receiver. Its revolutionary design allows smooth integration into a wide range of positioning applications on land, sea or in the air. Incorporating the GG24 is simple because of our advanced methods to blend GPS and GLONASS into a single position solution. The sophisticated combination of the technologies is transparent to the user. The GG24 uses all available satellites from both systems to obtain the best position information. The GG24 is available as an OEM board in Eurocard format or in a rugged sensor housing.

INCREASED AVAILABILITY

One of the primary advantages of GPS+GLONASS is the increased satellite coverage. With 48 satellites from the combined constellations, there are twice as many satellites available for position computation. Thus, GPS+GLONASS is extremely beneficial in obstructed operating environments, such as in cities



around buildings, mountainous areas, under tree cover, or other areas where much of the sky and many of the satellites can be blocked. To take advantage of the increased satellite availability, the GG24 from Thales Navigation has 12 channels for L1 GPS and 12 channels for L1 GLONASS, providing all-in-view tracking for both constellations.

IMPROVED INTEGRITY

By using GPS+GLONASS, users benefit from the integrity of two independently operated satellite positioning systems. With more

GG24 GPS RECEIVER

satellites available, the constellation geometry is significantly improved, providing users with added confidence in the accuracy of the positioning solutions.

WINDOWS EVALUATION SOFTWARE

Evaluate™ software is available with the GG24 and provides visual displays of satellite information (e.g., SNR), receiver position and velocity, as well as data logging and analysis. It also allows

direct communication with the receiver. Compatible with all our receivers, the software runs on Windows version 3.x Windows 95/98 and Windows NT platforms.

TAKE IT FOR A TEST-DRIVE

The GG24 Development Kit, which includes the GG24 and all necessary components, enables you to perform a comprehensive test-drive. It contains a GG24 GPS receiver, the Evaluate software, power supply, ready-made interface cables, antenna, and manuals.

TECHNICAL SPECIFICATIONS

Real-Time Position Accuracy¹

Autonomous²

CEP: 3.2 m (10.50 ft)

Differential

CEP: 40.0 cm (15.75 in)

Velocity Accuracy¹ (knots)

0.1 (95%)

GG24 Standard Features

- 12 channels L1 GPS code & carrier
 - 12 channels L1 GLONASS code & carrier
 - Raw data output (code and carrier)
 - Strobe Correlator multipath mitigation
 - 30-second warm start (typical)
 - 40-second cold start (typical)
 - 2 second re-acquisition time (dynamic independent)
 - Geoid and Magnetic Variation models
 - Standard NMEA-0183 V2.01 output
 - 1PPS timing signal (5V TTL)
Precision: 45 ns (differential)
70 ns (stand-alone)
 - User-selectable standard datums
 - User-definable datum
 - Speed (Max): 514 m/sec* (1,000 knots)
 - Altitude (Max): 18287 m* (60,000 ft)
- * Higher altitude and velocities are available under validated export license.

GG24 Remote Features

GG24 Standard Features and:

- Differential Remote RTCM V2.2 Message Types 1,2,3,6,9,16, and 31,32,34,37 (from future V2.2)
- User selectable position and raw data update rate up to 2Hz
- 10Gs tracking capability
- Event Marker
- Programmable Measurement Strobe

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GG24 Base Station Features

GG24 Standard Features and:

- Differential GPS Reference Station RTCM V2.1 Message Types 1,2,3,6,9,16, and 31,32,34,37 (from future V2.2)
- User selectable position and raw data update rate up to 2Hz

Options

- RTK option
- Differential base RTCM V2.2
- 5Hz position and raw data output

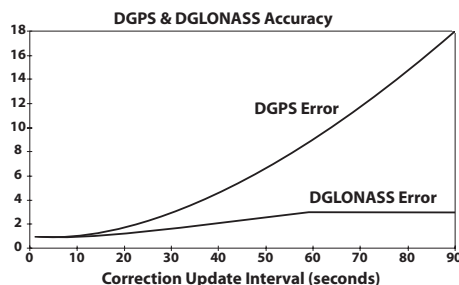
Communications

- 2 bi-directional RS232 serial ports

Antenna

Each GG24 receiver uses one antenna to receive both GPS and GLONASS signals. The antenna connects through a single antenna port on the GG24 receiver.

Physical & Environmental



GG24 Eurocard

- Operating Temp: -30°C to +70°C (-22°F to 158°F)
- Storage Temp: -40°C to +85°C (-40°F to 185°F)
- Power Consumption: 2.3W (receiver)
0.3W (typ. antenna)
- Input Voltage: 5VDC ±5%
100mV p-p ripple
- Weight: 500 gr (8 oz)
- Dimensions: 10 cm x 16.7 cm (3.94 in x 6.58 in)



GG24 Sensor

- Operating Temp: -30°C to +55°C (-22°F to 131°F)
- Storage Temp: -40°C to +85°C (-40°F to 185°F)
- Power Consumption: 3.2W (receiver)
0.3W (typ. antenna)
- Input Voltage: 6-15 VDC
- Weight: (3.4 lbs) 1.45.kg
- Dimensions: 172 mm x 58 mm x 225 mm (6.77 in x 2.28 in x 8.86 in)
- Water Resistance
- Wind-driven rain: MIL-STD 810E
- Wind-driven dust: MIL-STD 810E
- FCC: Class A
- CE Mark

¹ Accuracy and TTFB specs. based on tests conducted in California. Differential tests performed using Z-Sensor™ base station with Geodetic antenna and GG24 GPS Board remote with Geodetic antenna (Marine IV antenna for TTFB). Antenna benchmark locations determined using CORS sites Point Blunt (PBL1) and Pigeon Point (PPT1). Tests at different locations under different conditions may produce different results.

Position accuracy specifications are for horizontal positioning. Vertical error is typically <2 times horizontal error.

² Real-time position accuracies obtained with SA off. With SA on, accuracy of autonomous positioning may degrade up to 100 meters (95%) as specified by the U.S. Department of Defense.

³ When 20 hz positions are generated the maximum number of satellites used is 8, the receiver still tracks up to 12 satellites and raw data is still available for up to 12 satellites. When positions are generated at 10 hz, or lower, the receiver tracks and uses up to 12 satellites.



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NAVIGATION

Thales Navigation follows a policy of continuous product improvement; specifications and descriptions are thus subject to change without notice. Please contact Thales Navigation for the latest product information.

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