THE PERFORMANCE STANDARD FOR LOW COST GPS + SBAS OEM BOARD

A12 Receiver

LOW POWER SOLUTION

The A12™ OEM board from Thales Navigation Professional Products combines our proven precise GPS positioning technology and our high-performance OEM expertise on a low-cost board, about half the size of a business card. It incorporates several features traditionally associated with "high end" GPS boards, making A12 the preferred choice for system integrators and OEM providers. Using unique software algorithms and the latest GPS technology, Thales Navigation has optimized the A12 for fleet management and navigation applications such as vehicle tracking, mobile data, car navigation, telematics, and handheld computing. The A12 supports remote operation and is capable of tracking Satellite Based Augmentation System (SBAS – WAAS/EGNOS/MSAS) satellites to provide precise DGPS positioning. A12 has the same form factor and interface of its predecessor, the Ashtech® G8 Board™, but consumes only 0.23 watts of power. This Ashtech product is now part of the Thales Navigation Professional Products family.

INNOVATIVE FEATURES

The A12 from Thales Navigation has been designed to minimize the impact of common mobile application problems like obstructions to satellite visibility and GPS signal multipath in extreme environments such as urban canyons. In addition, the A12's advanced satellite reacquisition techniques enable the unit to reacquire a satellite previously hidden from view in less than one second after reappearing. With capabilities like these, you can rest assured that the A12 delivers reliable, consistent position reports in the toughest conditions around.

A12 DEVELOPMENT KIT

The A12 Evaluation and Development Kit for system integrators and OEM developers is available to assess A12 performance, begin development, and fully incorporate A12 into your application. It includes A12 housed in an easy-to-use enclosure, antenna, cables, and everything you need to integrate the A12, including the Windows-based Ashtech Evaluate™ software. Use the kit with confidence to prove the A12's power and productivity in all of your GPS mobile application needs.

COMPATIBILITY

A12 is hardware compatible with the Ashtech G8. A12 has same dimensions, mounting holes, and identical I/O connector pin-out as G8. A12 is available in two different versions. Version 1 is enclosed in a shield case and features I/O connector suitable for cable interface. Version 2 is the same as version 1, but is enclosed in a mechanical shield case. A12 is also available in a rugged sensor enclosure for easy evaluation.

THALES NAVIGATION

A12 RECEIVER

TECHNICAL SPECIFICATIONS

Standard Features
- 12-channels, continuous tracking 10 GPS + 2 SBAS configuration
- L1 frequency, C/A code (SPS)
- DGPS ready (Remote)
- 1-Hz update rate

Accuracy
Real Time Position[1]

Autonomous
Horizontal CEP	3.0 m (9.843 ft)
Horizontal 95%	5.0 m (16.48 ft)

SBAS (WAAS/EGNOS/MSAS)
Horizontal CEP	1.0 m (3.28 ft)
Horizontal 95%	3.0 m (9.843 ft)

DGPS
Horizontal CEP	0.8 m (2.62 ft)
Horizontal 95%	1.5 m (4.92 ft)

Acquisition Time[2]
Typical Acquisition Time
Hot start	<10 sec
Warm start	<45 sec
Cold start	<150 sec

Typical Reacquisition Time
Total satellite blockage
for < 20 seconds   1–2 sec

Total satellite blockage
for < 180 seconds   3–5 sec

Communication
- Standard NMEA–0183 V3.0 interface utilizing common Ashtech OEM board command set

- Differential remote operation using RTCM V2.2 Message Types 1, 3 and 9.
- 1 full-duplex serial port (TTL compatible) for primary I/0
- 1 half-duplex serial port (TTL compatible) for RTCM
- Software-selectable baud rate ranging from 1200 bps to 115K bps

Physical and Environmental
Operating Temp
    –30°C to +80°C
    (–22°F to 176°F)
Storage Temp
    –40°C to +85°C
    (–40°F to 185°F)
Humidity
    95% RH, non-condensing
Vibration
5-20 Hz	0.008 g^2/Hz
20-100 Hz	0.05 g^2/Hz
100-900 Hz	3 dB/octave

Size
    Version1 (with shield case):
inches	1.58 x 2.41 x 0.52
mm	40 x 61.2 x 13.3

    Version2 (without shield case):
inches	1.54 x 2.36 x 0.51
mm	39 x 60 x 13

Weight
A12 (version1)	1.6 oz. (45.4 gr)
A12 (version2)	0.7 oz. (18.0 gr)

Speed (max)   514 m/s (1,000 knots)
Altitude (max)   18,288 m (60,000 ft)

Electrical
I/O Interface	TTL Levels
Primary Voltage	3.3 to 5.0 VDC
Current consumption	55-70 mA
Power (typical)	230 to 250 mW @3.3 to 5.0 VDC
Back-up Voltage	2.7–3.6 VDC = 6 µA

Antenna
For information about compatible antennas or antenna accessories, please contact Thales Navigation directly.

Evaluation and Development Kit
Kit includes:
- PC compatible Evaluate Software and Mission Planning Software
- A12 Evaluator: A12 OEM board (Version 1) within enclosure with 12 VDC power supply and RS-232 interface.
- Magnetic-mount antenna with cable
- Null modem cable and RS-232 interface cable with integral power connector
- Power source adapters (flying lead, auto lighter adapter, AC adapter)

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1   *Position accuracies are based on tests calculated in low multipath environment under clear sky conditions. Accuracy may degrade in high multipath environments.*

2   *Assumes that at least 4 GPS satellites are clearly visible.*

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