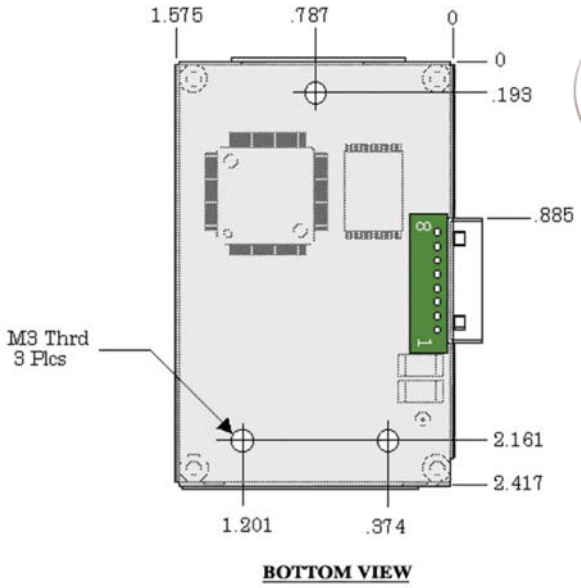
A12 Receiver

The Performance Standard for Affordable GPS OEM Boards

- *Small size and low power suitable for mobile applications*
- *Standard interface software for easy integration*
- *Optional WAAS/EGNOS Support*



BOTTOM VIEW

Certified ISO 9001 Since 1996

Low Cost Solution

The A12™ OEM board combines our proven precise GPS positioning technology and our high-performance OEM expertise on an affordable board about half the size of a business card. Incorporating several features traditionally associated with "high end" GPS boards, the A12's performance makes it today's 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. In addition, while the A12 has the same form factor and interface of its predecessor, the Ashtech® G8™, it consumes much less power than the G8.

Reliable Performance

The innovative A12 has been designed to minimize the impact of common mobile application problems like obstructions to satellite visibility and GPS signal multipath. Software tuned for the typical vehicle motion means that the A12 can provide improved, reliable tracking 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.

DGPS Delivers Precise Positioning

The A12 supports DGPS remote operation for applications requiring more precise positioning. The A12 is compatible with the U.S. and Canadian Coast Guards' DGPS beacon network messages, or other means of DGPS correction using the standard RTCM format.

Satellite Based Augmentation (SBAS)

The A12 is capable of tracking SBAS (WAAS/EGNOS/MSAS) satellites and utilizing the differential corrections from these satellites to provide precise DGPS positioning.

Compatibility

A12 is hardware and software compatible with the Ashtech G8, A12 has the same dimensions, mounting holes, and identical I/O connector pin-out as G8.

Easy to Integrate

The A12 is designed to minimize the effort in integrating GPS with other applications by utilizing industry standard NMEA 0183 messages. Easy to use commands provide a simple way to set up the receiver for a broad range of outputs. To further simplify integration, the A12 has the ability to use active or passive antennas. The A12 is compatible with antennas from antenna manufacturers across the world, meaning you can choose from a wide variety of sources, antenna shapes, LNA gains, cable lengths, connector styles, and mounting schemes.

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.

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Ashtech

A12 Receiver Specifications

Standard Features

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

Accuracy

Real Time Position

Autonomous

Horizontal CEP	4.0 m
Horizontal 95%	9.0 m

SBAS (WAAS/EGNOS/MSAS)

Horizontal CEP	2.0 m
Horizontal 95%	4.0m

DGPS

Horizontal CEP	1.0 m
Horizontal 95%	3.0m

Acquisition Time[1]

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 TTL full-duplex serial port for primary I/0
- 1 TTL half-duplex serial port for RTCM
- Software-selectable baud rate ranging from 1200 bps to 115K bps

Physical and Environmental

Operating Temp

–30°C to +80°C (Optional: -40°C to +80°C

Storage Temp

–40°C to +85°C

Humidity

95% RH, non-condensing

Size

inches	1.58 x 2.41 x 0.52
mm	40 x 61.2 x 13.3

Weight

A12 (with shield case) 1.6 oz. (45.4 gr)

Speed (max)	1151 mph
(1,000 knots)	(514 m/s)
Altitude (max)	60,000 ft (18,288 m)

Electrical

I/O Interface	TTL Levels
Primary Voltage	3.3 VDC ±5% (5 VDC available as an option)
Voltage Ripple	50 mV p-p ripple
Power (board)	<250 mW @ 3.3 VDC
Back-up Voltage	2.7–3.6 VDC = 12 µA

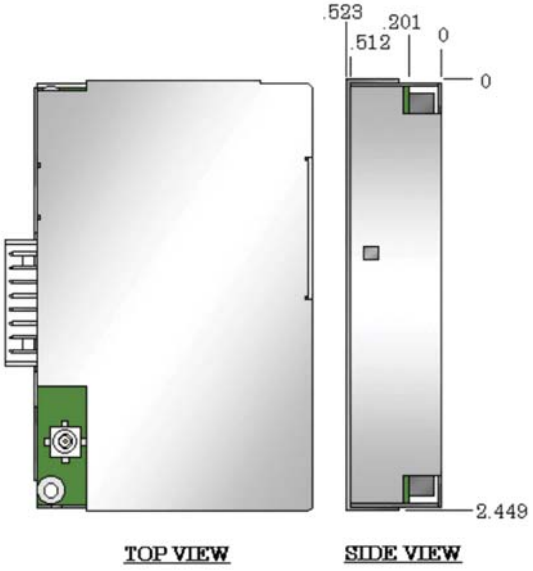
Antenna

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 GPS OEM Receiver Board

- A12 Evaluator: A12 OEM board within enclosure with 9-36 VDC power supply and RS-232 interface. A12 Evaluator is CE Mark approved, FCC Class A.
- 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)

[1] *Assumes that at least 4 GPS satellites are clearly visible.*

Specifications are subject to change without notice.

Ashtech