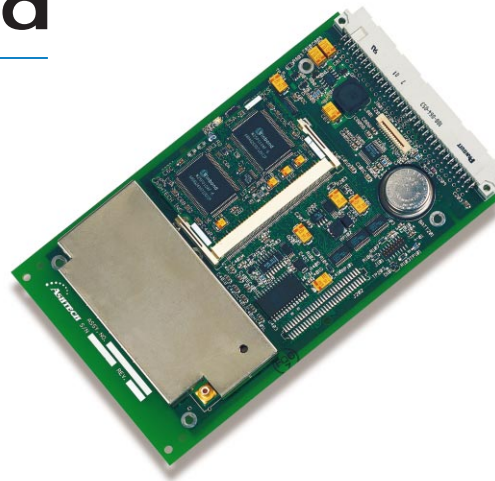


Ashtech Z-Eurocard

*12-channel, dual-frequency performance
delivers RTK results at the centimeter level*



The world-class Ashtech® Z-12™ receiver is the accepted benchmark for top-quality dual-frequency GPS receiver technology. Now, Magellan has adapted the proven performance of the Z-12 receiver onto a single board, the *Ashtech Z-Eurocard*, incorporating an optional spread spectrum radio that mounts directly to the board.

The Z-Tracking Advantage

The Z-Eurocard incorporates patented Z-Tracking™ Ashtech technology to mitigate the effects of Anti-Spoofing (encryption of the P-code) and provide dual-frequency performance. The unit provides up to a 13dB signal-to-noise ratio advantage over competing technologies such as cross-correlation, and also allows users the ability to track weaker satellite signals. The result is reliable, cm-level positions you can count on for all of your high-productivity GPS applications.

The Z-Eurocard has been designed specifically for real-time applications requiring high accuracy, high update rates, and low latency. It is intended for use in a variety of applications including construction, machine control, vehicle guidance, precision navigation, as well as land or offshore surveying.

Special Features Boost Capabilities

The Z-Eurocard builds upon the industry-leading performance parameters set by the Z-12, offering demonstrated resistance to jamming from outside radio sources. In fact, independent tests have shown that the Z-12

provides anti-jamming capability that is virtually unmatched by other dual-frequency receivers.

RTK operation requires a datalink between the base and remote receivers. The Z-Eurocard is designed to carry a spread-spectrum radio receiver that mounts directly on the board. For base stations, an external spread-spectrum radio transmitter is also available. These radios, using the 902 to 928 MHz frequencies, are license-free in the United States and in many other countries.

The Worldwide Standard in Base Station Technology

In global base station technology, the Z-12 receiver sets the standard. Chosen by the United States and Canadian Coast Guards, as well as many other similar organizations, the unit provides safe, reliable and accurate data. In fact, it is the preferred GPS base station for users worldwide.

The Z-Eurocard generates RTCM differential corrections, RTK data, and RTCM RTK data – compatible with any RTK remote station conforming to the internationally-recognized RTCM standard. So, you can operate Differential GPS (DGPS) and RTK remote units simultaneously with the same base station. In addition, you're not tied down with any proprietary formats. Because the Z-Eurocard uses the RTCM standard, you can purchase remote receivers of your choice without having to change your base station.

Use It as a Base or Remote

The Z-Eurocard is available in two distinct configurations: base or remote. The remote unit includes everything required for remote RTK operation in the standard configuration, and features RTK update rates at up to 10Hz. A remote Z-Eurocard can also be upgraded to include base station capability.

Take it for a Test Drive

Use the Z-Eurocard Development Kit to perform a comprehensive test-drive. The kit contains a Z-Eurocard GPS receiver with all the firmware options, power supply, ready-made interface cables, antenna, manuals, as well as the Ashtech Windows®-based Mission Planning and Evaluate™ software. Evaluate provides visual displays of satellite information such as SNR, receiver position and velocity, as well as data logging and analysis. Evaluate also communicates directly with the receiver so that you can easily set up a Z-Eurocard remote or base station for RTK operation.

Compatibility

The Z-Eurocard is mechanically and electrically compatible with the G12E-RTK, GG24 and GG-RTK Eurocards. Therefore, once you've integrated one card, you have essentially integrated them all.

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An Orbital Company

Ashtech
PRECISION PRODUCTS

Ashtech Z-Eurocard Specifications

Real-Time Position Accuracy¹

Autonomous²

Horizontal 3.0 m (CEP)

Synchronized RTK

Horizontal 1.0 cm (CEP)

Maximum position update rate: 1 Hz

Position latency equal to the base station data link latency +250ms

Fast RTK

Horizontal 2.0 cm (CEP)

Maximum position update rate: 10 Hz

<30 ms position latency

Velocity Accuracy¹ (knots)

0.1 (95%)

Stated accuracy occurs with a high speed datalink, such as the internal radio. Fast RTK accuracy will degrade with a slower data link.

Synchronized RTK accuracy will not degrade with a slower data-link.

Initialization times as low as 10 seconds following the acquisition of P-code for 8 or more satellites.

Base and Remote Standard Features

- 36-channel, all-in-view parallel tracking
- 12 channels L1 C/A code and carrier tracking
- 12 channels L1 P-code and full wavelength carrier tracking
- 12 channels L2 P-code and full wavelength carrier tracking
- Z-tracking
- <30 ms position latency
- Real-time data output (code and carrier)
- NMEA v2.3
- 1PPS timing signal (5V TTL)
- 10 Hz raw data output (code and carrier)
- Enhanced strobe correlator (advanced multi-path mitigation for both code and carrier phase)
- 1 year warranty
- 1 year free technical support

Remote Features

- RTK remote mode
- User selectable update rate up to 10Hz
- Less than 30ms position latency
- Differential and RTK support for RTCM v2.2 reception of Message Types 1, 2, 3, 6, 9, 16, 18, 19, 20, 21, 22, as well as Ashtech Compact RTK binary format
- Event marker

Base Station Features

- RTK base mode
- Differential and RTK base support for RTCM v2.2 Message Types 1, 2, 3, 6, 16, 18, 19, 20, 21, 22, as well as Ashtech Compact RTK binary format
- Point-positioning mode (automatic averaging)
- Remote monitoring

Environmental and Physical

- Operating Temp: -30°C to +70°C
- Storage Temp: -40°C to +85°C
- Power Consumption: 7.5W
- Input Voltage: 5 VDC +5%
- Size: 0.6"H x 3.9"W x 6.8"L
- Connector: DIN64 (compatible with the G12E-RTK GG24 and GG-RTK Eurocards) Straight pin header also available
- Weight: 0.5 lb.
- Humidity: 95% non-condensing (conformally coated)
- Vibration: Meets MIL spec 810E for shock, vibration, acceleration
- Speed (max): 1,000 knots
- Altitude (max): 60,000 ft.

Options

- Onboard spread spectrum radio

Communications

- 4 bi-directional RS-232 serial ports
- 1 internal port for onboard radio

Data-link Requirement

- Minimum datalink rate: 600bps (using Ashtech Compact RTK Message, generated once every 5 seconds, 12 satellites in view)

For optimal performance, it is recommended to send RTK messages once every second.

Z-Eurocard™ Development Kit

The Z-Eurocard Development Kit includes a Z-Eurocard receiver, all firmware options, antenna, power supply, cables, manuals, Ashtech Mission Planning™ software and manual, and the Ashtech Evaluate™ software and manual.

¹ Accuracy and TTFF specs. based on tests conducted in California. Differential tests performed using Ashtech Z-Sensor™ base station with Geodetic antenna and Z-Eurocard Board remote with Geodetic antenna (Marine IV antenna for TTFF). 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.

²Real-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.

Specifications are subject to change without notice.

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