

# Z-Xtreme Survey System



## Instant-RTK Technology



### Features

- Rugged dual-frequency GPS
- Cost-effective centimeter accuracy
- Flexible survey solution

### Z-Xtreme

The Z-Xtreme™ from Magellan is a rugged, weather-proof, dual-frequency GPS receiver designed to provide surveyors with cost-effective, centimeter-accurate positions in a variety of system configurations. The Z-Xtreme receiver begins with state-of-the-art satellite electronics coupled with patented Z-Tracking™ and Instant-RTK™ technologies to deliver the highest level of GPS signal reception, commercially available. A removable battery and flash memory card provides enough capacity to last all day for maximum utility.

Components are completely integrated inside a weatherproof, high impact plastic housing, ensuring your investment is safe, rain or shine. You can even use the easy-to-operate interface on the front panel for important functions such as site information entry, survey status, and set-up of RTK base stations without the additional cost of a handheld controller.

### Optional GNSS Solutions Software for Easy GPS Data Processing

GNSS Solutions™ post-processing software gives optimal results from any combination of static, rapid static or kinematic data. With the capability of handling both real-time and post-processed data within a single project, GNSS Solutions is opening new horizons for surveyors.

### Optional Geodetic IV Antenna

The Geodetic IV™ antenna with removable ground plane is available as an option. The Geodetic IV is the standard antenna offered with Z-Xtreme RTK system.

# Z-Xtreme Technical Specifications

## Magellan Technology

- 12 channel all-in-view operation
- Full-wavelength carrier on L1 and L2
- Z-Tracking
- Multipath mitigation
- Dual-frequency smoothing for improved code differential
- Instant-RTK

## Performance Figures<sup>1</sup>

### Static, Rapid Static

- Horizontal: 0.005 m + 1 ppm (0.016ft+1ppm)
- Vertical: 0.010 m + 1 ppm (0.033ft + 1ppm)

### Post Processed Kinematic

- Horizontal: 0.010 m + 1 ppm (0.033ft + 1ppm)
- Vertical: 0.020 m + 1 ppm (0.065ft+1ppm)

### Real-Time Code Differential Position

- <1 m (3.28 ft)

### Real-Time Z Kinematic Position (Fine Mode)

- Horizontal: 0.010 m + 2 ppm (0.033ft + 2 ppm)
- Vertical: 0.020 m + 2 ppm (0.065ft + 2 ppm)
- Azimuth (arc sec): 0.4 + 2.0/baseline (km)

### RTK Occupation Time

- 2 seconds (typical - sub-centimeter accuracy with longer occupation time)

### Instant-RTK Initialization

- 99.9% reliability
- Typically <2 seconds with 6 or more satellites, PDOP <5, baseline length <7 km (4.35 mi), open sky and low multipath conditions

### RTK Operating Range

- Recommended: 10 km (6.21 mi)
- Maximum: 40 km (24.85 mi)

## Standard Features

- 16 MB PCMCIA removable memory card
- NMEA 0183 output
- Selectable update rate from 999 sec to 10 Hz
- Event marker
- Point positioning
- 1 PPS timing signal
- Session programming
- Wide array of coordinate transformations

- Removable internal battery
- 8-character alphanumeric LED display with 4-button interface
- 3 function LED display - Radio,Memory, Satellites/Power
- Multi-function audible alarm
- Quick reference card holder
- External mount capabilities
- External power input
- 4 RS-232 ports (115200 baud max, 3 external, 1 internal)
- 1-year warranty
- Free factory technical support

## Standard Accessories

- Communications software
- Padded system bag and hard case
- RS-232 data cable
- Receiver operating manual
- Quick reference field card

## Technical Data

### Environmental

- Z-Xtreme Receiver
- Meets MIL-STD 810E for wind driven rain and dust
- Operating temperature: -30° to +55°C (-22° to 131°F)
- Storage temperature: -40° to +85°C (-40° to 185°F)

### Geodetic 4 Antenna

- Meets IPX7 specifications for submersion
- Operating temperature: -55 to +75°C (-40° to 149°F)
- Storage temperature: -55° to +75°C (-67° to 167°F)

## Physical

- Weight
- Receiver: 1.59 kg (3.50 lb)
- Antenna: 0.82 kg (1.81 lb)
- Battery: 0.43 kg (0.95 lb)
- Dimensions
- 76.2 H x 196.85 W x 222.25 D mm
- (0.25 H x 0.646 W x 0.729 D ft)
- Power
- 10 - 28 VDC, 6.0 W

## Internal battery

- Capacity: 6000 mAh
- >9 hours (typical) @ 25°C (77°F)
- Operating temperature: -30° to +55°C (-22° to 131°F)
- Storage temperature: -40 to +60°C (-40° to + 140°F)

## PC card

- ATA Type II PCMCIA memory card (16 MB standard)
- Temperature range: -40° to +85°C (-40° to 185°F)
- Data capacity: 4500 epochs per 2 MB\*
- \* Based on one session, eight satellites' data and full measurements. This number can vary significantly depending on the conditions of the session.

## Optional Features

- Real-time kinematic (base and rover modes) for cm-accuracy
- RTCM 2.2 (Types 1, 2, 3, 9, 16, 18, 19, 20, 21, 22)
- Internal UHF radio for RTK rover operations
- External UHF radio for RTK base and rover operations
- Geodetic 4 antenna ground plane kit
- AC power cable
- Choke ring antenna
- Long haul backpack kit
- All-on-a-pole kit

## Optional Application Software

### GPS data processing

- GNSS Solutions

<sup>1</sup> Specifications assume operation follows all the procedures recommended in the product manual utilizing Instant-RTK, post processing with GNSS Solutions. High-multipath areas, high PDOP values, low satellite visibility, and periods of adverse atmospheric conditions and/or other adverse circumstances will degrade system performance. All accuracy specifications are RMS values.

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