



## SUPERIOR RTK PERFORMANCE IN A MODULAR DESIGN

# Z-Max Surveying System

The Z-Max™ surveying system from Thales Navigation is a precision GPS surveying solution designed for topography and construction. Offering superior RTK performance, an innovative design and a total software solution, Z-Max delivers survey grade positioning on demand.

### SUPERIOR RTK PERFORMANCE

Z-Max rises above other GPS receivers with ADAPT-RTK™. This breakthrough technology dramatically expands centimeter-accurate coverage by rapidly adapting to current conditions. With ADAPT-RTK, Z-Max ensures exceptional RTK coverage and data confidence.

### INNOVATIVE MODULAR DESIGN

Z-Max features a unique modular design, with interchangeable base and rover receivers, for quick and easy system optimization in the field. The versatile system offers options for power, portability, communications, data collection, downloading and post-processing.

**Wireless Roving:** Integrated Bluetooth™ advanced wireless system enables a convenient cable-free RTK rover.

**Long-Range Communication:** UHF or cellular – or industry-first UHF plus cellular – simply snap into place.

**New Vortex™ UHF Antenna:** Breakthrough technology eliminates conventional radio antennas and cables.

**On-Board Software:** A full range of options are available, including control, stop and go, RTK setup and data collection – all without an additional field computer.



### THE TOTAL SURVEYING SOLUTION

The Z-Max system leverages the latest in surveying technology by integrating field and office software solutions focused on topographic and construction surveying. With this comprehensive suite of software tools, the Z-Max total surveying solution can enhance your surveying capabilities, boost your productivity, improve your data quality, and upgrade your deliverables.

FAST Survey™ software is a powerful graphical field companion to Z-Max that enables feature coding, real-time line work, coordination of system setup, COGO and seamless connectivity to a variety of optical total stations – all available through a simple touch-screen menu.

GNSS Studio™ software is the Z-Max GPS surveying office manager, intuitively guiding you through the entire GPS data collection process, from planning to professional quality deliverables.

# Z-MAX SURVEYING SYSTEM

## TECHNICAL SPECIFICATIONS

Features	Benefits
ADAPT-RTK. Automatic Decorrelation and Parameter Tuning.	Adapts to different environments to maximize coverage area of centimeter-accurate solutions for RTK. Two second initialization (typical) baselines <20 km (12 miles) centimeter-level solution availability up to 50 km (31 miles) in long-range mode.
Z-Max modular design	Tripod mounted data collection, cable-free RTK rover and RTK rover with a backpack, all with the same GPS receiver platform.
On-Board control software	Perform control, topo and even RTK surveys all without the need for additional field computer and software.
Integrated software solution for Topography and Construction	Move jobs from planning through deliverable with GNSS Studio office software and FAST Survey field software.
Bluetooth wireless connectivity	Eliminates the cost and hassles of cables.
Modular Communications technology	Flexible communications options, including Thales UHF, Pacific Crest UHF, GSM cellular and GSM plus UHF, are modular and simply snap on to the Z-Max.
Vortex UHF antenna technology	UHF antenna integrated with range pole provides superior range and physical durability.
Modular, lithium-ion power technology -14 hour size - 7 hour size	Smart battery system provides long runtime, an integral charger and up-to-the-minute capacity information and reliable, trouble-free operation.
Dual-frequency GPS all-in-view operation	Maximize GPS measurement redundancy for surveying by tracking all observables of all GPS satellites visible above the horizon.
P-Code decryption using patented Z-tracking™ technique	The cleanest signal quality commercially available for civilian use.
Automatic multipath mitigation	Robust operation in real-world surveying environments

### Performance Specifications

#### Static, Rapid Static \*

- Horizontal 0.005 m + 0.5 ppm  
(0.016 ft + 0.5 ppm)
- Vertical 0.010 m + 0.5 ppm  
(0.033 ft + 0.5 ppm)

#### Post-Processed Kinematic

- Horizontal 0.010 m + 1.0 ppm  
(0.033 ft +1.0 ppm)
- Vertical 0.020 m + 1.0 ppm  
(0.065 ft +1.0 ppm)

#### Real-Time DGPS position

- < 0.8 m (2.62 ft)

#### Real-Time Kinematic Position (fine mode)

- Horizontal 0.010 m + 1.0 ppm  
(0.033 ft + 1.0 ppm)
- Vertical 0.020 m + 1.0 ppm  
(0.065 ft + 1.0 ppm)

#### ADAPT-RTK Initialization

- 99.9% reliability
- Typical 2 second initialization for baselines < 20 km

### Technical Specifications

#### GPS Receiver Environmental

- Meets IP54 for moisture \*
- Operating temperature: -30° to +55°C  
(-22° to +131°F)
- Storage temperature: -40° to +85°C  
(-40° to +185°F)
- Shock: 1.5 m (4.92 ft) pole drop
- Vibration: MIL-STD-810F Method 514.4  
(I-3.1.1, I-3.4.8, I-3.4.9) \*

#### Physical

- Receiver Module: 1.371 kg (3.02 lb)
- Antenna Module: 0.64 kg (1.17 lb)
- Power Module: 0.52 kg (0.96 lb)

#### Power \*

- 9-24 VDC input
- 10-24 VDC output on serial ports
- Max-Run battery > 14 hrs. run-time @ 0 °C
- Max-Lite battery > 7 hrs. run-time @ 0 °C

#### Memory

- 48 hours of 1 sec. raw GPS data with 64 MB Secure digital
- 128 MB SD card available

### Standard Features

- Dual frequency with Z-Tracking
- On-board controller software
- 10 Hz Data recording
- Z-Max GPS Antenna Module
- Padded Carry Bag
- Hard Shell Case
- Office utilities including Mission Planning, Download and RINEX converter

### Optional Features

- Thales Navigation UHF Communication Module
- Pacific Crest UHF Communication Module
- GSM Communication Module
- GSM+UHF Communication Module

### System Software

#### GNSS Studio Office Software

- L1 Processing
- RTK Support
- L1 + L2 Processing Option

#### FAST Survey Field Software

- GPS Control
- Optical Instrument Control (optional)
- Advanced Road Construction (optional)

*Performance values assume minimum of 5 satellites, following the procedures recommended in the product manual. High-multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.*

*\*Based on preliminary tests.*

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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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