



Z-Max Surveying System

SUPERIOR RTK PERFORMANCE IN A MODULAR DESIGN

The Z-Max® surveying system from Thales Navigation 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.

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. Z-Max is capable of using VRS and FKP, so that optimal results can be obtained in networks of reference stations.

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 a uniquely combined UHF + GSM module – 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 the need of an additional field controller.



THE TOTAL SURVEYING SOLUTION

Offering superior RTK performance, an innovative design and a total software solution, Z-Max delivers survey-grade positioning on demand.

FAST Survey™ software is a powerful graphical field companion to Z-Max that enables feature coding, real-time line work, coordination of system setup, Geodetic Calculation 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 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.
Reference station network compatibility	Using the VRS or FKP positioning, Z-Max obtains optimal results from networks of reference stations in seconds.

Performance Specifications¹

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

Thales Navigation

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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

Memory

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

Languages Supported in Controller

- English
- Portuguese
- French
- Spanish
- German

Standard Features

- Dual frequency with Z-Tracking
- On-board controller software
- 10 Hz Data recording

Optional System Components

- Thales Navigation UHF Communication Module
- Pacific Crest UHF Communication Module
- GSM Communication Module
- GSM+UHF Communication Module
- Z-Max GPS Antenna
- Padded Carry Bag
- Hard Shell Case

System Software

GNSS Studio Office Software

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

FAST Survey Field Software

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

¹Performance 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.

THALES