

# THALES



## Z-Max<sup>®</sup>.Net

NETWORK GENERATION

>> GET FREE FROM  
OPERATIONAL CONSTRAINTS



## Z-Max.Net

### Liberate Yourself!

Z-Max.Net is the next-generation survey solution from Thales. **The .Net generation offers NTRIP, GPRS and RTCM V3.0 network communication.** Z-Max.Net delivers high accuracy and enhanced performance for all your survey needs.

Z-Max.Net is the most flexible GPS surveying system available, offering multiple operating modes, configurations and communication protocols:

- Survey in NTRIP, VRS or FKP networks.
- Select your communication mode: GSM/GPRS, UHF, unique combined UHF+GSM/GPRS module or external source.
- Switch seamlessly from post-processing to RTK.
- Use Z-Max.Net as a base or rover.

You can perform any GPS survey with Z-Max.Net.



### Survey with Added Freedom

The innovative design offers comfort and ease-of-use. Detachable modules make configuration changes and system upgrades simple.

You can use the intuitive keyboard or Bluetooth® wireless field terminal to perform any survey with added freedom. Configure your Z-Max.Net “all-on-the-pole” or in the comfortable backpack for long-duration missions.

Z-Max.Net fits your needs and frees your mind from technology concerns. Simply select the operating mode and you're ready to go!



### Get the Max Out of Your GPS

Z-Max.Net delivers the strongest RTK on the market. A combination of unique technologies from Thales enables you to optimize your time and maximize your profit. Z-Max.Net offers two-second initialization, extended operation up to 50 km (30 miles) and cuts static data collection time by up to 50%.<sup>1</sup>

Powered by state of the art technologies, Z-Max.Net ensures exceptional RTK coverage and data confidence even in difficult environments.



### All-In-One Surveying Solution

Z-Max.Net enhances your surveying capabilities, improves your data quality and upgrades your deliverables with a comprehensive suite of software tools. FAST Survey™ field software simplifies data collection and real-time operation. GNSS Solutions™ office software provides powerful support to a wide range of applications, handling both real-time and post-processing data within the same project.

Z-Max.Net delivers survey-grade positioning on demand, boosts your productivity and sets you free from operational constraints.

## KEY FEATURES AND USER BENEFITS

### Survey Your Way

The ultra-flexible Z-Max.Net survey system lets you control your survey your way. It operates in a wide range of data formats including ultimate standards such as NTRIP and RTCM V3.0.

Z-Max.Net features GSM/GPRS modem and offers a unique combined UHF-GSM/GPRS module supporting all operational configurations. Z-Max.Net is available with the Pacific Crest UHF data link, or the unique Thales UHF for high-performance and superior results when surveying on long baselines.

Z-Max.Net is so flexible that data can even be communicated using an external radio modem like CDMA or EDGE when necessary.

Whichever configuration you chose, Z-Max.Net adapts to your survey environment and delivers the best performance.

### Strongest RTK on the Market

- Patented **Z-Tracking™** and advanced multipath mitigation technologies ensure the strongest centimeter-level position even in weak signal conditions.
- **Instant-RTK®** technology enhances survey productivity by offering two-second initialization: The fastest on the market.
- Thales' unique **LRK®**, long range kinematic technology, combines fast, real-time centimeter-level positioning up to 50 km (30 miles).
- State-of-the-art **Prism™** technology cuts data collection time by as much as 50% for post-processed surveys.<sup>1</sup>

Plus, Z-Max.Net is ready for tomorrow's RTK networks with features that include **GPRS, NTRIP, RTCM V3.0, VRS and FKP.**

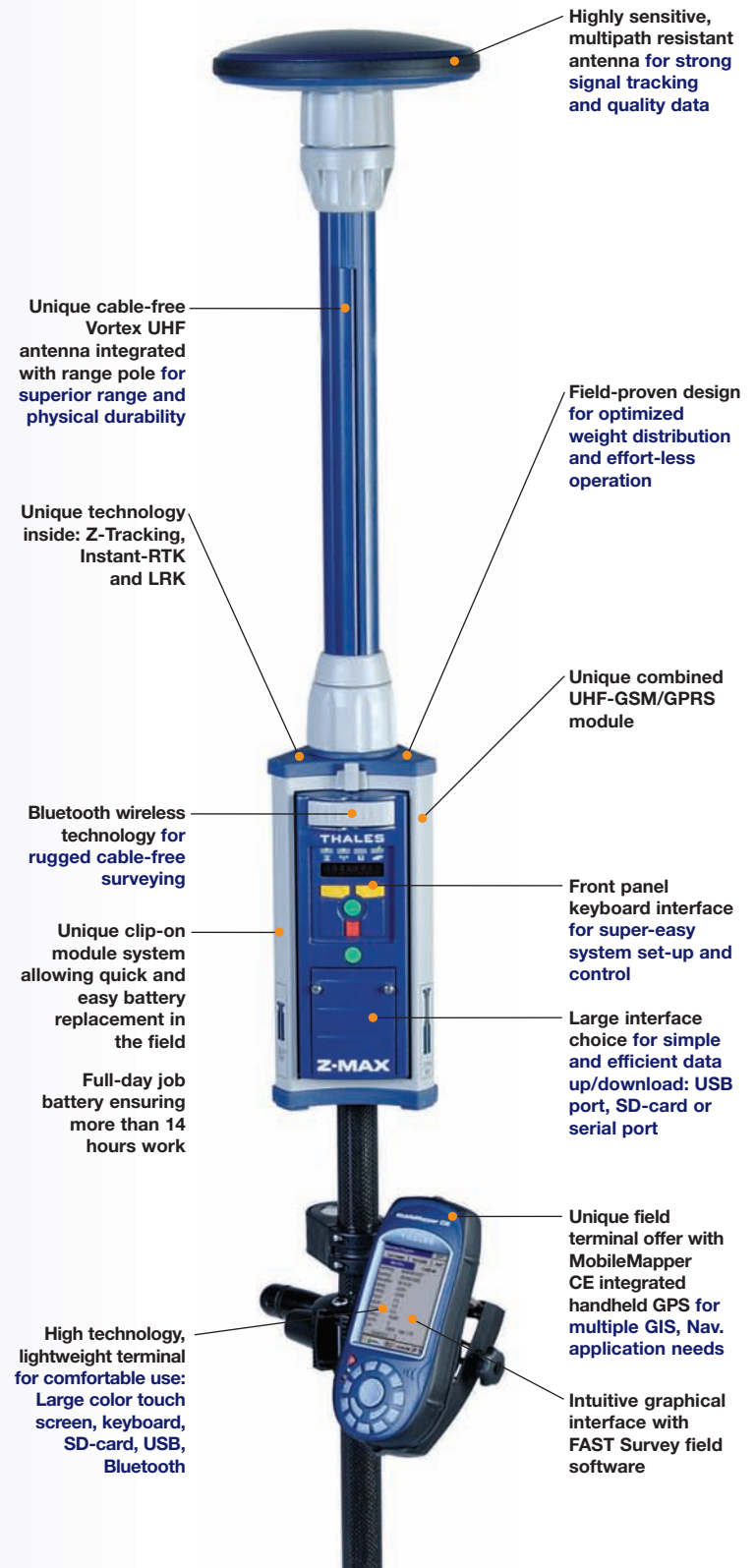
### Increased Productivity

Z-Max.Net is designed to increase your productivity with fast initialization, easy modular configuration, superior long-range capability and reliable accuracy. Surveys are faster than ever in both RTK and post-processed mode.

The modular design and flexibility makes upgrades easy and cost-efficient, protecting your investment and ensuring a high return. In today's changing survey industry, Z-Max.Net is the clear choice.

### Maximum Simplicity

Every aspect of the Z-Max.Net survey system is designed to simplify the job of the surveyor.



## COMPLETE SOLUTION IN THE FIELD AND AT THE OFFICE

### State of the Art Field Terminals

Z-Max.Net offers two high-quality field terminals: the MobileMapper™ CE from Thales and the classic Allegro CX™ from Juniper Systems Inc.®

Features such as color touch screen, SD-card, USB and Bluetooth wireless technology, are included to ensure a robust, easy-to-use, cable-free RTK rover.

Combined with MobileMapper CE, Z-Max.Net becomes the only survey system on the market to include an additional handheld GPS for multiple application needs (GIS, navigation, and more). Only Z-Max.Net can offer that kind of advantage.

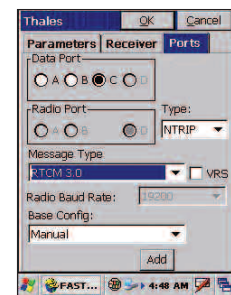
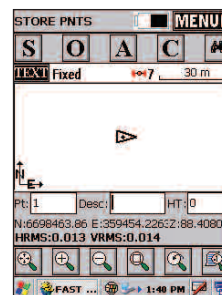


### FAST Survey - Field Software

FAST Survey from Thales is graphical field software for topography and construction, designed to optimize the functionality and performance of the Z-Max.Net GPS system. The ability to collect single coordinate shots, full RTK vectors, raw GPS data and all data types concurrently, provides a flexible solution for your changing needs.

#### Power in the Palm of Your Hand

FAST Survey is both powerful and easy to use. Scaleable map-view screen displays points and lines as they are surveyed, offering large-print controls for rapid, reliable data collection. Rich attributing, full editing in the field and export to industry-standard data formats provides true field-to-finish capability, saving time and effort.



Any collection of data can be viewed in different forms through simple drag and drop operations. Importing raster or vector map formats enables you to open background projects and combine them with land survey projects.



### GNSS Solutions - Office Software

GNSS Solutions is a comprehensive software package with all of the tools required to successfully process GPS, GLONASS and SBAS survey data. Focusing on simplicity, the software guides you through mission preparation planning, processing, quality control, reporting and data exporting.

#### Intuitive Handling of Graphical Data

The innovative Thales approach to presenting survey data in graphical and tabular form makes post-processing with GNSS Solutions a simple and enjoyable experience.

#### Accuracy and Reliability

GNSS Solutions can handle both real-time and post-processing data within the same project. The software includes advanced blunder detection and quality analysis tools to ensure extremely accurate and reliable results. Loop closures, automatic repeat, observation analysis, automatic control analysis, and least-squares adjustments are integral components of GNSS Solutions.

## Z-Max.Net: Flexibility in the Field

As a Z-Max.Net surveyor you are prepared for any job condition and ready to meet your customers' needs. Quality, productivity, ease-of-use, cost-efficiency and profitability: **Z-Max.Net delivers it all.**

### Network Generation

New communication protocols, such as NTRIP and GPRS, provide higher performance and lower cost access to differential data for RTK surveying. The number of correction service providers is rising and base station networks will expand over the coming years, transforming rover/base surveying to rover only. Z-Max.Net offers the advantage of the latest data communication standards so you are ready to adapt to tomorrow's survey world.

Combined with a MobileMapper CE field terminal, Z-Max.Net is the only survey system on the market to include an additional handheld GPS for multiple application needs (GIS, navigation and more).



### Base / Rover Configuration

Z-Max.Net is the most flexible survey system on the market. Thanks to its wide data format compatibility (RTCM V.2.x, CMR/CMR+, DBEN, RTCM V3.0 and other standards). Z-Max.Net easily combines with your equipment and ensures seamless operation within any network.

As a base, Z-Max.Net broadcasts simultaneously through UHF and GSM, providing 100% field coverage for the rover.



### Post-Processed Surveys

Z-Max.Net performs all types of post-processed surveys - static, stop-&-go and kinematic - reaching unprecedented accuracy levels.

Base data can come from a CORS station or any GPS receiver. Raw data from Z-Max.Net can also be used with the OPUS processing system. Whatever the source, unique Prism technology cuts survey data collection time by up to 50%<sup>1</sup>



### GPS Characteristics

#### Static, Rapid Static

- 24 parallel channels all-in-view
- L1 C/A code and carrier
- L1/L2 P-code, full wavelength carrier
- Z-Tracking
- Multipath mitigation
- Integrated real-time WAAS/EGNOS
- Update rate: 10 Hz
- Protocol: NMEA0183

### Accuracy Specifications<sup>1,2</sup>

#### 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 Performance<sup>1,2</sup>

#### SBAS (WAAS/EGNOS) (rms)

- Horizontal: <3 m (10 ft)

#### 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)

#### Instant-RTK Initialization

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

### Data Logging Characteristics

#### Recording Interval

- 0.1 - 999 seconds

### Physical Characteristics

#### Size

- **Unit:** 26.9 x 12.5 x 14 cm (10.6x4.9x5.5 inch)
- **Antenna:** 19 cm dia x 10.1 cm h (7.5 x 4.0 inch)

#### Weight

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

#### Front Panel

- Eight-character alphanumeric LED display
- 4 tri-color LEDs
- 5-key keyboard

#### Memory

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

#### I/O Interface

- RS232, RS232/422, USB, Bluetooth

### Environmental Characteristics

#### Receiver

- Operating temperature: -30° to +55°C (-22° to +131°F)
- Storage temperature: -40° to +85°C (-40° to +185°F)
- Meets IP54 for moisture
- 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)

### Power Characteristics

- Max-Run battery life > 14 hrs.
- 10-28 VDC input
- Regulated 12 VDC output on serial ports

### Controller Language Support

- English, French, German, Spanish

### System Components

#### Standard

- Z-Max.Net GPS receiver
- GPS antenna
- Power module, charger included
- System bag
- Hard-shell shipping case

#### Communication Module<sup>3</sup>

- Thales UHF
- Pacific Crest
- GSM/GPRS Tri-band
- GSM/GPRS Dual-band (US)
- GSM/GPRS EU + Thales UHF
- GSM/GPRS EU + PacCrest UHF
- GSM/GPRS US + Thales UHF
- GSM/GPRS US + PacCrest UHF

#### Field Terminal kit with FAST Survey<sup>3</sup>

- MobileMapper CE
- Allegro CX from Juniper

#### Other<sup>3</sup>

- Thales UHF transmitter kit
- Pacific Crest transmitter kit
- RTK rover backpack kit
- Rechargeable battery kit

<sup>1</sup> Performance values assume minimum of five satellites, following the procedures recommended in the product manual. High-multipath areas, high PDOP values and periods of severe atmospheric conditions may degrade performance.

<sup>2</sup> Accuracy and TTFB specifications based on tests conducted in Nantes, France, and Moscow. Tests in different locations under different conditions may produce different results.

<sup>3</sup> System composition varies depending on the chosen configuration

### Office Software Suite - GNSS Solutions

#### Key software functions include:

- Integrated transformation and grid system computations allow for processing, adjusting, reporting and exporting point positions in user-selected or user-defined systems
- Pre-defined datums along with user-defined capabilities using the 7-parameter method of computing and applying datum transformation parameters
- Survey mission planning
- Automatic vector processing
- Least-squares network adjustment

- Data analysis and quality control tools
- Coordinate transformations
- Reporting
- Exporting
- Geoid 03
- English, Spanish, French, German language support

#### System Requirement

- Windows 2000 / XP
- Pentium® 133 or higher
- 32 MB RAM
- 90 MB disk space required for installation

### Field Software Suite - FAST Survey

#### Key software functions include:

- Map view
- Geodetic geometry: intersection, azimuth/distance, offsetting, poly-line, curve, area
- Z-Max.Net GPS support : configuration, monitoring and control
- Coordinate system support: predefined grid systems, predefined datums, projections, Geoids, local grid
- Data import/export: DXF, SHP, RW5, LandXML, ...
- Survey utilities: calculator, RW5 file viewing
- Compatibility with optical surveying instruments
- Road construction

#### Supported Hardware

- MobileMapper CE
- Juniper Allegro CX

### Thales

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