ProMark™ 3 RTK

High Precision Without the High Cost

Logging point

Site ID	Site Description
LF11	PO3 ▶

Baseline	Remain	Solution
1.5 KM	00:00:10	Fixed

SV	PDOP	Age	HRMS	VRMS
8	2.1	2 s	0.03	0.02

47°17'56.55813N
001°30'29.52784W
88.415M

Power	Free Memory
	SD C:

| INIT | LOG | DONE |

ProMark™3 **RTK**

Proprietary Magellan RTK Technology

ProMark3 RTK offers complete real-time GNSS surveying and mobile mapping capabilities on an innovative platform at a remarkably affordable price.

Magellan's embedded BLADE™ technology, a proprietary GNSS processing solution, enables ProMark3 RTK to outperform other single-frequency RTK receivers, granting real-time performance in the most lightweight handheld system on the market.

An outstanding new GNSS engine, BLADE technology delivers centimeter accuracy for real-time and post-processing surveys and mapping operations. BLADE's unique GPS+SBAS RTK algorithm ensures quick initialization with single frequency receivers and takes full advantage of the maximum satellite coverage from the dual constellation.

With BLADE built in, ProMark3 RTK is feature rich, precise and reliable.

Powerful, Flexible and Affordable
In the tradition of ProMark3, ProMark3 RTK is easy-to-use and affordable. In addition to real-time surveying, ProMark3 RTK continues to provide both post-processing and mapping capabilities.

ProMark3 RTK offers a powerful FAST Survey™ option for extended requirements, including complex stake out, and enhanced compatibility with total stations.

ProMark3 RTK features the flexibility of two real-time survey modes:

- Base + rover system using a "plug and play" radio modem, powered and configured via the receiver
- Rover only with network connectivity, via NTRIP or Direct IP

Real-time features are fully compatible with previous version of ProMark3. A FREE firmware upgrade enables the new RTK features in the receiver and the GNSS Solutions office software.

Based on an advanced, easy-to-use, easy-to-learn technology, ProMark3 RTK is rugged and reliable, offering precision performance even under difficult conditions.

If you need an affordable, high-precision GNSS solution, YOU'VE GOT IT! – with the most popular handheld survey system on the market; ProMark3 RTK.

Expand Your Survey Potential

ProMark3 RTK offers superior GNSS capability in a complete range of survey modes, including real-time, real-time + raw data, post-processing and mapping. Ideally suited for short baseline surveys, such as construction site, stake out, and cadastral, ProMark3 RTK is a high-performance positioning and mapping solution.

ProMark3 RTK System: Base + Rover

ProMark3 RTK is available as an all-inclusive Base + Rover system with a licence-free plug-and-play radio kit.

This provides a great advantage when a network is unavailable or when surveying independently from 3rd party data corrections.

The integrated radios conform to the IP65 standard and are directly powered from the receiver and easily configured through a simple menu.

ProMark3 RTK in Network: Rover Only

ProMark3 RTK can be used as a rover only, connected to a real-time network. A Bluetooth connection can be established between ProMark3 RTK and a cellular phone.

ProMark3 RTK is compatible with NTRIP and direct IP and can be connected to any GPS network broadcasting corrections (RTCM 2.3, RTCM 3.1). In this rover configuration the real-time performance of the receiver is linked to the quality of the network (i.e.,distance to the station, interval between stations, VRS quality).

ProMark3 RTK: Post-processing

As with the original ProMark3 receiver, post-processing features are included in ProMark3 RTK. Raw data, simultaneously recorded during RTK jobs, can also be post-processed via the GNSS solutions office software for superior survey integrity.

Post-processing ensures full control of the quality of the data collected.

ProMark3 RTK: Mapping

ProMark3 RTK enables you to take any supported GIS file into the field. Easily navigate to field infrastructure for reckon and mapping. Update your GIS data and transfer the file back to the office GIS for the customer.

In mapping mode, ProMark3 RTK delivers decimeter to centimeter-accurate positioning.

Enhanced RTK Option:
FAST Survey Field Software

The FAST Survey option is provided to comply with demanding requirements, such as compatibility with a wide range of survey instruments, extensive data formats and local coordinate system availability. FAST Survey includes topographic features typically associated with dual-frequency. These easy-to-use features make it possible for professional surveyors and novice GPS users alike to run complete survey jobs, including stake out, and combining projects done in association with total stations.
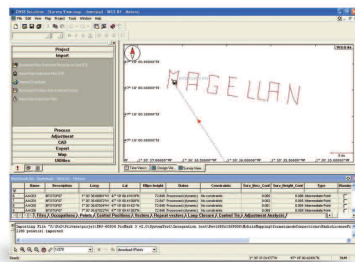
Survey Data Post-Processing:
GNSS Solutions Office Software

GNSS Solutions is a comprehensive software package with all the tools required to successfully process GPS and SBAS survey data. Focusing on simplicity, the software performs quick and easy data transfer and management.

Data Reliability

GNSS Solutions includes advanced error detection and quality analysis tools to ensure accurate and reliable results. Loop closures, automatic repeat, observation analysis, and least-squares adjustments are integral components of the software.

Intuitive Handling of Graphical Data

GNSS Solutions guides the user through mission preparation, planning, processing, quality control, reporting and exporting.

Survey data are presented in graphical and tabular form, making post-processing simple. Jobs can be viewed in different forms through simple drag and drop operations.

Raster Maps Support

The capability to import raster or vector map formats enables you to combine background projects with land survey projects and plan and prepare stake out missions in the office.
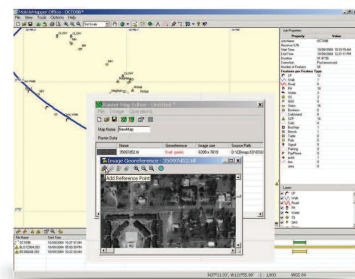
GIS Data Post-Processing:
MobileMapper Office Software

ProMark3 RTK is a mobile mapping system with full GIS data collection and navigation software. MobileMapper™ Office software links the receiver to the GIS base and provides convenient features such as:

- Quick and easy editing and exporting of data. Includes support for .SHP, .MIF, .DXF and .CSV files

- Uploading or creation of vector background maps for use in the field

- Raster image support

- Post-processing

Mapping Made Easy

ProMark3 RTK is a turnkey solution for the operator who wants to create or maintain GIS maps or feature in the field.

The software includes a Feature Library Editor that creates lists of features and attributes for describing GIS assets in the field. It can even generate the feature libraries automatically by reading imported .SHP and .MIF files.

ProMark3 RTK enables you to add mapping services to your portfolio, without investing in additional dedicated GIS equipment.

The ProMark3 RTK Advantage

+ Affordability

ProMark3 RTK provides centimeter-accuracy in a real-time solution at less than half the price of dual-frequency receivers. ProMark3 RTK easily beats the limits optical instruments have in terms of portability and range.

Ease-of-use, flexibility and cost-effectiveness make ProMark3 RTK the must-have GNSS system for any survey or mobile mapping job.

+ BLADE technology

Magellan's proprietary GNSS processing solution enables ProMark3 RTK to outperform other single-frequency RTK receivers and grants real-time performances in a lightweight handheld system. This exclusive technology drives rapid initialization, reliability and real-time centimeter-level accuracy to make the ProMark3 RTK a new reference for RTK surveying.

+ Professional solution

The ProMark3 RTK system is a rugged survey solution including radio modems, software and all accessories. It is designed for field workers that count on reliability, simplicity and high performance:

- Complete surveying and mobile mapping capabilities
- Lightest real-time positioning system on the market.
- Rugged and ergonomic features for enhanced comfort
- Embedded monitoring, diagnostics and quality control tools to qualify the job before leaving the field

+ Ease of Use

ProMark3 RTK offers a user-friendly interface that capitalizes on the ProMark ease of use. Its integrated design enables maximum portability. The simple interface, large color touch screen and full alphanumeric keypad make operation easy and quick.

- Learning curve for GPS operation is quick and hassle-free
- Set up base + rover system easily for real-time
- Complete jobs fast, both in the field and in the office

+ Multi-Application

ProMark3 RTK empowers you to perform both real-time and post-processing surveys and to offer GIS and mapping services to customers without a substantial investment in equipment and training.

Discover the ProMark Range

	ProMark3	ProMark3 RTK	ProMark3 RTK +FAST Survey
Post-processing (centimeter accuracy)	+	+	+
Mapping (decimeter to centimeter accuracy)	+	+	+
RTK (real-time centimeter accuracy)		+	+
Office software suite (surveying & mapping)	+	+	+
NTRIP, Direct IP, network compatibility		+	+
FAST Survey, enhanced RTK features		In Option	+

The ProMark range is fully upgradeable and backward compatible to ensure maximum flexibility and protect your investment over time. ProMark3 RTK is available as a rover only or as a rover + base system which includes a plug-and-play radio kit.

General Characteristics

- 14 parallel channels
- L1 C/A code and carrier
- SBAS tracking and use in RTK process
- Update rate: 1 Hz
- Time tagged (synchronous) and Fast RTK (extrapolation)
- RTCM 2.3 (rover mode) and 3.1 (base and rover mode)
- Compatible with VRS,FKP,MAC Networks
- Connectivity: NTRIP & Direct IP
- Protocol NMEA0183

Real-Time Accuracy[1] [4] [5]

RTK (horizontal accuracies)

- Fixed: 1cm (0.032ft) +1ppm
- Float: 20cm (0.656ft) +1ppm (CEP), convergence: 3 min

SBAS (WAAS/EGNOS) (rms)

- Horizontal: <1m (3ft)

DGPS (Beacon or RTCM) (rms)

- Horizontal: <1m (3ft)

Post-Processed Accuracy[1] [3]

Static Survey (rms)

- Horizontal: 0.005 m + 1 ppm (0.016 ft + 1 ppm)
- Vertical: 0.01 m + 2 ppm (0.032 ft + 2 ppm)
- Azimuth: < 1 arc second
- Observation Time: Ranges from 4 to 40 min depending on distance between the receivers and other environmental factors

Kinematic Survey

- Horizontal: 0.012 m + 2.5 ppm (0.039 ft + 2.5 ppm)
- Vertical: 0.015 m + 2.5 ppm (0.049 ft + 2.5 ppm)
- Recommended Initializer Bar Occupation: 5 min

Data Logging Characteristics

Recording Interval

- 1 - 30 seconds

Internal Memory Capacity

- Up to 72 hours of 10 satellite data @ 1 second interval

Physical Characteristics

Receiver

- Size: 19.5 x 9 x 4.6 cm (7.7 x 4.6 x 1.8 in)
- Weight: 0.48 kg (1.05 lb) with battery

Antenna

- Size: 19 x 9.6 cm (7.5 in DIA x 3.8 in H)
- Weight: 0.45 kg (1.00 lb)

Radio

- Size: 14,5 x 10 x 4 cm (5.7 x 3.9 x 1.6 in)
- Weight: 0.20 kg (0.44 lb)

User Interface

- Full color advanced TFT liquid crystal display with backlight
- 320 x 240 resolution with 262.144 colors
- Resistive touch panel
- Keyboard with backlight 20 buttons
- Audio: built-in speaker

Memory

- 128 MB SDRAM, 128 NAND Flash memory
- Removable SD Card: up to 1 GB

Communication

- Bluetooth wireless technology
- USB: host and slave
- RS232

Radio (base and rover mode)

- License-free radio 500 mW, 869 MHz for Europe, 902-928 MHz for North America

Environmental Characteristics

Receiver

- Operating Temp: -10°C to 60°C (14°F to 140°F)
- Storage Temp: -20°C to 70°C (-4°F to 158°F)
- Weather: Water-resistant
- Shock: 1.5 m (4.9 ft) drop on concrete

Antenna

- Operating Temp: -55°C to 85°C (-67°F to 185°F)
- Weather: Waterproof
- Shock: 2 m (6.6 ft) drop on concrete

Radio

- Temp: -20°C to 70°C (-4°F to 158°F)
- Meets IP65

Power Characteristics

- Battery type: 3.7 V Li-Ion, 3900 mAh
- Battery life: 8 hours (typical operation), 6 hours with radio connected
- External power for extended operation time

Receiver Language Support

- English, French, German, Spanish, Italian,Portuguese, Finnish, Swedish, Dutch, Custom language[2]
- Russian
- Chinese

Accessories

Standard System Accessories

- Clip-on I/O Module with power, USB and RS232 ports
- Universal AC adapter
- Stylus (2)
- Hand strap
- Carrying case
- USB data cable
- 32 MB SD memory card
- Padded field bag
- HI measurement device

Optional Accessories

- External Power kit
- Dual-slot battery charger
- USCG/IALA Beacon receiver

Emissions Certification

- Immunity (EN 55022 Class B)
- Susceptibility (EN 50082-1)
- FCC and CE certified

Field Software Option

FAST Survey Key Features:

- Map view
- Geodetic geometry: intersection, azimuth/distance, offsetting, poly-line, curve, area
- GPS 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

Office Software Suite

System Requirement

- Windows 2000 / XP
- Pentium® 133 or higher
- 64MB RAM mini, 128 MB RAM recommended
- 200 MB disk space required for installation

GIS: MobileMapper Office Key Features:

- Feature Library Editor
- Background Map Creation
- Job Creation and Editing
- Differential Correction
- GIS Data Display and Editing
- GIS Import/Export: ESRI .SHP, MapInfo .MIF and AutoDesk .DXF import/export and .CSV export

Survey: GNSS Solutions Key Features:

- 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
- Raster map support
- Survey mission planning
- Automatic vector processing
- Least-squares network adjustment
- Data analysis and quality control tools
- Coordinate transformations
- Geoid 03

[1] Performance varies on satellite conditions and may not apply at all time in all area in the world. High-multipath areas, poor satellite geometry, and periods of high-activity atmospheric conditions will degrade accuracy. Accuracy and TTFF specifications based on tests conducted in Nantes and Moscow. Tests in different locations under different conditions may produce different results.

[2] Limitations based on character availability may apply. Localization is under distributor's responsibility.

[3] PP accuracies assume minimum of 5 satellites, following the procedures recommended in the product manual. Post-processing with GNSS Solutions Software.

[4] RTK accuracies assume minimum of 7 satellites, following the procedures recommended in the product manual.

[5] For baselines <10 km

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P R O F E S S I O N A L