TerraG1

IMU-RTK GNSS RECEIVER



SMART
PRECISE
VERSATILE

TerraGenie

SMART + PRECISE + VERSATILE

More than just a receiver

TerraG1 is where cutting-edge technology meets practical application in surveying, construction, and mapping. With its 1408-channel prowess and seamless connectivity, including Wi-Fi, Bluetooth, NFC, UHF, and 4G, this device is tailored for the dynamic demands of any job site.

TerraG1 is powered by Terra Genie's advanced third-generation antenna and the revolutionary Antijam algorithm, which elevates signal tracking efficiency by an impressive 30%. Its robust design, complemented by a calibration-free IMU sensor, ensures reliability and ease of use in the field. With smart power management enabling up to 34 hours of continuous operation, TerraG1 sets a new benchmark in GNSS surveying productivity.
As the first in the world, this model offers unparalleled field adaptability with dynamic TPS control points and integrated TBR targets, facilitating seamless integration with any total station and ensuring high performance even in GNSS-denied areas.



Precision, Endurance, Connectivity: Empowering Professionals Everywhere

Advanced Survey Precision

Equipped with a powerful 1408-channel GNSS core and pioneering Antijam technology, the TerraG1 transforms surveying with its rapid acquisition of centimeter-level accuracy. Its innovative quick-start functionality propels you into action within 30 seconds, enhancing productivity across various terrains. The device's advanced third-generation antenna amplifies signal reception by up to 30%, ensuring unparalleled precision with multi-constellation support including GPS, Glonass, BeiDou, Galileo, and QZSS.

Enhanced Integration and Adaptability

The TerraG1 introduces groundbreaking features with dynamic TPS control points and the world's first GNSS antenna equipped with built-in TBR targets. These integrated targets are compatible with any total station, enhancing the flexibility and application of the TerraG1 in varied surveying environments. A specially developed algorithm allows TerraGenie software solutions to extend the functionality of the system in GNSS-denied areas, seamlessly integrating both total station and GNSS measurements in one efficient workflow. This capability ensures consistent, high-quality data collection even in challenging conditions.

Designed for the Field

The TerraG1 is engineered for endurance, offering up to 34 hours of operational autonomy on a single charge, eliminating the need for additional power sources. Its ultra-efficient SoC architecture and intelligent power management extend survey capabilities without interruption. Crafted from durable magnesium alloy, the TerraG1 withstands the rigors of any environment, ensuring reliability through its shock, dust, and water-resistant design.

Connectivity Redefined

The TerraG1 stands as a beacon of connectivity, integrating Wi-Fi, Bluetooth, NFC, and built-in 4G and UHF modems to adapt to any survey scenario. Its comprehensive connectivity suite ensures seamless data transfer and constant access to RTK corrections, facilitating accurate positioning regardless of the project demands. The high-resolution color display offers instant clarity on device status to ensure smooth operation across various modes.

Empowering Every Professional

With its built-in IMU, the TerraG1 revolutionizes surveying efficiency, enabling rapid, tilt-compensated measurements that enhance productivity by up to 30%. The device's intuitive interface and real-time capabilities make it an indispensable tool for engineers, surveyors, and construction professionals alike, providing precision and ease of use in every task.

SPECIFICATIONS

GNSS Performance[1]

Channels	1408 channels
GPS	L1C, A, L2C, L2P(Y), L5
GLONASS	L1, L2, L3*
Galileo	E1, E5a, E5b, E6*
BeiDou	B1I, B2I, B3I, B1C, B2a, B2b
QZSS	L1, L2, L5, L6*
NavIC/ IRNSS	L5*
PPP	B2b-PPP
SBAS	L1, L5

GNSS Accuracies[2]

Real time kinematics (RTK)	Horizontal: 8 mm + 1 ppm RMS Vertical: 15 mm + 1 ppm RMS Initialization time: <10 s Initialization reliability: >99.9%
Post - processing kinematics (PPK)	Horizontal: 3 mm + 1 ppm RMS Vertical: 5 mm + 1 ppm RMS
High-precision static	Horizontal: 2.5 mm + 0.1 ppm RMS Vertical: 3.5 mm + 0.4 ppm RMS
Static and rapid static	Horizontal: 2.5 mm + 0.5 ppm RMS Vertical: 5 mm + 0.5 ppm RMS
Code differential	Horizontal: 0.4 m RMS Vertical: 0.8 m RMS
Autonomous	Horizontal: 1.5 m RMS Vertical: 2.5 m RMS
Prism constan	Additive constant for distance measurement accuracy: 100mm
Positioning rate (3)	1 Hz, 5 Hz and 10 Hz
Time to first fix (4)	Cold start: < 45 s, Hot start: < 10 s Signal re-acquisition: < 1 s
IMU update rate	200 Hz
Tilt angle	0~60°
RTK tilt-compensated	Additional horizontal pole-tilt uncertainty typically less than 8 mm + 0.7 mm/° tilt

Hardware

Size (L x W x H)	Φ 16 mm x 9 mm (Φ 0.63 in x 0.35 in)
Weight	1.3 kg (2.87 lb)
Front panel:	1.1" OLED Color Display 2 LED, 2 physical buttons
Environment	Operating: -40°C to +65°C (-40°F to +149°F) Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% condensation
Ingress protection	IP67 waterproof and dustproof, protected from temporary immersion to depth of 1 m
Waterproof and breathable membrane	Prevents water vapor from entering the device under harsh environments such as sun exposure and sudden heavy rain
Shock	Survives a 2-meter pole drop
Tilt sensor	Calibration-free IMU for pole-tilt compensation. Immune to magnetic disturbances. E-Bubble leveling

Communication

SIM Card Type	Nano-SIM card
Network modem	Integrated 4G modem. LTE(FDD): B1,B2,B3,B4,B5,B7,B8,B20 DC-HSPA+/HSPA+/ HSPA/UMTS: B1, B2, B5, B8 EDGE/GPRS/GSM 850/900/1800/1900 MHz
Wi-Fi	802.11 b/g/n, access point mode
Bluetooth®	V 4.2
Ports	1x 7-pin LEMO port (RS-232) 1x USB Type-C port (external power, data download, firmware update) 1x UHF antenna port (TNC female)
UHF radio	Standard Internal Rx/Tx: 410 - 470 MHz Transmit Power: 0.5 W to 2 W Protocol: CHC, Transparent, TT450, Satel Link rate: 9,600 bps to 19,200 bps Range: Typical 3 km to 5 km, up to 15 km with optimal conditions
Data formats	RTCM 2.x, RTCM 3.x, CMR input / output HCN, HRC, RINEX 2.11, 3.02 NMEA 0183 output NTRIP Client, NTRIP Caster
Data storage	8 GB internal memory

Electrical

Power consumption	Typical 2.8 W (depending on user settings)
Li -ion battery capacity	Built-in non-removable battery 9,600 mAh, 7.4 V
Operating time on internal battery [5]	UHF/ 4G RTK Rover: up to 34 h UHF RTK Base: up to 16 h Static: up to 36 h

Certifications

Power consumption	Typical 2.8 W (depending on user settings)
CE Mark; FCC Part 15 Subpart B Class B;	NGS Antenna Calibration; MIL-STD-810H, method 514.8
Operating time on internal battery [5]	UHF/ 4G RTK Rover: up to 34 h UHF RTK Base: up to 16 h Static: up to 36 h
External power input	9 V DC to 28 V DC

TerraGenie

All Geogenie items are assembled & enhanced by Etkes LTD
Hashdera St., Tzofit, 44925, Israel | Tel: +972-9-7415043, Fax: +972-9-7415097 | www.terra-genie.com | Info@gmxsys.com