TerraG1i

VISUAL IMU-RTK GNSS



INTUITIVE
ADABTABLE
EFFICIENT

TerraGenie

Command Visual Power
Dominate GNSS Performance

The TerraG1i receiver stands as the ultimate tool in RTK technology, fusing cutting-edge GNSS, IMU, and elite dual-camera systems to redefine user experience. Its 3D visual stakeout capability is a game-changer, offering unmatched ease and precision, propelling productivity in any construction or mapping challenge.

Equipped with dynamic TPS control points and integrated TBR targets, the TerraG1i extends its capabilities to seamlessly integrate both total station and GNSS measurements, enhancing precision even in GNSS-denied areas. This makes it not only adaptable but indispensable in complex environments.



With its video-photogrammetry prowess, the TerraG1i ensures precise measurements and access to the most elusive points, turning obstacles into opportunities. Designed to enhance aerial surveys with its compatibility with leading 3D modeling software, the TerraG1i is driven by Terra Genie's groundbreaking Antijam GNSS RTK algorithm, comprehensive multi-band channels, and a potent hybrid engine, ensuring steadfast accuracy in the face of adversity.

Equipped with a no-fuss Auto-IMU, the TerraG1i eradicates the complexities of manual setup, streamlining field operations. For swift, precise, and efficient task completion, the TerraG1i is the definitive choice.

1408-Channel GNSS for Unyielding Accuracy

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.

Intuitive Visual Stakeout for Precision and Speed

The TerraG1i transforms stakeout operations with its integrated star-level cameras, offering an immersive 3D visual navigation and stakeout experience. Antijam software's visual view streamlines surveying with clear, real-time guidance, making stakeout operations quick, accurate, and efficient. This visual aid boosts efficiency by up to 50%, providing a competitive edge for less experienced field operators.

Robust Build and Extended Battery Life for All-Day Field Operations

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Advanced 3D Modeling and Visual Surveying

With the TerraG1i, accuracy is in view. Combining GNSS, IMU, and premium camera technologies, this receiver excels at capturing survey-grade 3D coordinates quickly and accurately. It opens up new possibilities for measuring hard-to-reach, obstructed, and hazardous points with video photogrammetry, improving productivity by up to 60% and ensuring success in dynamic panoramic video capture.

State-of-the-Art Auto-IMU for Instantaneous Measurements

The TerraG1i'S state-of-the-art 200 Hz Auto-IMU eliminates the need for manual initialization, simplifying surveying operations significantly. Its automatic pole tilt compensation boosts surveying, engineering, and mapping efficiency by 30%, ensuring survey-grade accuracy over a pole-tilt of up to 60 degrees. Ideal for professionals who demand quick, reliable accuracy on the move.

Maximum Efficiency:
TerraG1i Advanced Visual Capabilities

1 Visual Navigation & Stakeout: Streamlining Precision

- **Effortless Stakeout**

  Achieve a 50% increase in efficiency with Antijam software's 3D view, simplifying stakeout tasks for operators at all experience levels.

- **Guided Navigation**

  Navigate with confidence, guided by a vivid, eye-catching directional arrow and real-time distance indicators for precise positioning.

- **Immersive Experience**

  Engage with a full 3D visual stakeout experience, marking points directly on the ground for unmatched clarity and accuracy.

- **Star-Level Clarity**

  Ensure visibility in all conditions with high-performance cameras, delivering clear stakeout displays, even in low-light scenarios.

2 Visual Survey: Overcoming Environmental Challenges

- **Boosted Productivity**

  Rapidly capture survey-grade 3D coordinates from video in even the most challenging site conditions, enhancing field productivity.

- **Access the Inaccessible**

  Effortlessly measure points in hard-to-reach areas, from ditches and construction sites to rivers and building interiors.

- **Clear the Obstructed**

  Navigate and survey with precision in environments cluttered with obstacles, including urban canyons and densely foliaged areas.

- **Safety First**

  Safely survey hazardous points such as electrical substations, high-voltage lines, and unstable structures from a safe distance.

3 3D Modeling: Enhancing Aerial Surveys

Pre and Post Modeling

Transform your aerial survey outcomes from blurred occlusions to sharp, detailed models by integrating TerraG1i with UAV technology.

Single-Session Modeling

Streamline single-building modeling with dynamic panoramic video capture, completing models in a single session.

Broad Compatibility

Seamlessly integrate with leading 3D modeling software like ContextCapture and smart3D, ensuring versatility and ease of use in your projects.



TerraG1i Visual Tools:
Turn every challenge into opportunity

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 (EGNOS Support)	L1, L5

GNSS Accuracies[2]

Real time kinematics (RTK)	H: 8 mm + 1 ppm RMS V: 15 mm + 1 ppm RMS Initialization time: <10 s Initialization reliability: >99.9%
Post - processing kinematics (PPK)	H: 3 mm + 1 ppm RMS V: 5 mm + 1 ppm RMS
High-precision static	H: 2.5 mm + 0.1 ppm RMS V: 3.5 mm + 0.4 ppm RMS
Static and rapid static	H: 2.5 mm + 0.5 ppm RMS V: 5 mm + 0.5 ppm RMS
Code differential	H: 0.4 m RMS | V: 0.8 m RMS
Autonomous	H:1.5 m RMS | V: 2.5 m RMS
Prism constan	Additive constant for distance measurement accuracy: 100mm
Visual survey	Typical 2~4 cm, range 2~15 m
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

Environments

Temperature	Operating: -40°C to +65°C (-40°F to +149°F) Storage: -40°C to +85°C (-40°F to +185°F)
Humidity	100% non-condensation
Ingress protection	IP68(6) (according to IEC 60529)
Drop	Survives a 2-meter pole-drop
Vibration	Compliant with ISO 9022-36-08 and MIL-STD-810G- 514.6-Cat.24.
Waterproof and breathable membrane	Prevents water vapor from entering under harsh environments.

Electrical

Power consumption	UHF/ 4G RTK Rover w/o camera: Typical 2.8 W, Visual Stakeout/Visual Survey: Typical 4 W
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 w/o camera: up to 34 h Visual Stakeout/Visual Survey:up to 24 h UHF RTK Base: up to 16 h Static: up to 36 h
External power input	9 V DC to 24 V DC

Hardware

Size (D x H)	Φ 16 mm x 9 mm (Φ 0.63 in x 0.35 in)
Weight	1.2 kg (2.65 lb)
Front panel:	1.1" OLED Color Display 2 LED, 2 physical buttons
Tilt sensor	Calibration-free IMU for pole-tilt compensation. Immune to magnetic disturbances. E-Bubble leveling.

Cameras

Sensor pixels	Global shutter with 2 MP & 5 MP
Field of view	75°
Video frame rate	25 fps
Image group capture	Method: video photogrammetry. Rate: typically 2 Hz, up to 25Hz. Max. capture time: 60s with an image group size of appr. 60MB
Illumination	Image group capture

Communication

SIM Card Type	Nano-SIM card
Network modem	Integrated 4G modem: TDD-LTE, FDD-LTE, WCDMA, EDGE, GPRS, GSM
Wireless connection	NFC for device touch pairing
Wi-Fi	Wi-Fi IEEE 802.11a/b/g/n/ac, access point mode
Bluetooth®	5.0 and 4.2 +EDR, backward compatible
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)
Built-in UHF radio	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	32 GB internal memory. Supports 128 GB external expansion

Compliance with Laws and Regulations

International standards:	NGS Antenna Calibration, IEC 62133-2:2017+A1, IEC 62368- 1:2014, UN Manual Section 38.3

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