Leica GEOSYSTEMS



Leica GS11 GNSS smart antenna

Nothing beats clarity in the field

Built to perform

Professional Leica GNSS technology, integrated dual cameras, and calibration-free tilt compensation bring trusted performance to the field. Dual hot-swappable batteries keep crews working without interruption, while the cameras provide the foundation for visual surveying workflows.

Visual surveying, powered by Leica X-PAD

Leica X-PAD enables visual stakeout, measuring from images, AR quality checks, and automatic image documentation with the GS11. By adding real-world visual context, surveyors can navigate to points faster and understand, verify, and complete work with greater clarity before leaving the site.

Leica GS11



GNSS technology & services		
Positioning services	Network RTK	Hexagon SmartNet NRTK and other network RTK services
Signal tracking	GPS / GLONASS Galileo / BeiDou QZSS / NavIC SBAS	L1, L2, L2C, L5 / L1, L2, L2C, L3 E1, E5a, E5b, E6b / B1I, B1C, B2I, B2a, B2b, B3I L1, L2C, L5, L6 / L5 WAAS, EGNOS, MSAS, GAGAN
Number of channels		1400+, multifrequency, multi-constellation
Tilt compensation	Increased measurement productivity and traceability	Calibration-free, Immune to magnetic disturbances
Imaging		
Front-facing camera	Sensor | Field of view | Video frame rate	Global shutter with 2 MP | Hz 80°, V 69° | 25 fps
Down-facing camera	Sensor | Field of view | Video frame rate	Rolling shutter with 5 MP | Hz 80°, V 69° | 25 fps
Laser point measurement		
Laser type	Sensor	Green, Laser Class 3R
Measurement performance & accuracy[1]		
Time for RTK initialisation		Typically < 5 s
Real-time kinematic (Compliant to ISO17123-11 standard)	Single baseline Network RTK	Hz 8 mm ± 1 ppm / V 15 mm ± 1 ppm Hz 8 mm ± 0.5 ppm / V 15 mm ± 0.5 ppm
Real-time kinematic tilt compensated	Not for static control points	Additional Hz uncertainty less than 2 mm + 0.3 mm/° tilt down to 30° tilt
Post processing	Static (phase) with long observations Static and rapid static (phase)	Hz 3 mm + 0.1 ppm / V 3.5 mm + 0.4 ppm Hz 3 mm + 0.5 ppm / V 5 mm + 0.5 ppm
PPP	Galileo HAS BeiDou B2b	Hz 20 cm/V 40 cm Hz 5 cm/V 10 cm, 20 min converging time
Image point measurement		Typically 5 mm + 2 mm/m (2D) up to 10 m distance
Laser point measurement		Typically 10 mm + 5 mm/m (2D) up to 25 m distance
Communications		
Communication ports	Lemo / USB / Bluetooth® / WLAN	Serial / USB-C / Bluetooth® v5.0 / 802.11 a/b/g/n/ac
Communication protocols	RTK data protocols NMEA output Network RTK Security protocol	CMR, CMR+, RTCM 3.0, 3.2 MSM NMEA 0183 v4.00 & v4.10 VRS, FKP, iMAX, MAC (RTCM SC 104) TLS 1.0 / TLS 1.1 / TLS 1.2
Built-in LTE modem	LTE frequency bands UMTS frequency bands GSM frequency bands	1,2,3,4,5,7,8,12,13,18,19,20,25,26,28,38,39,40,41 1,2,4,5,6,8,19 2,3,5,8
Built-in UHF modem	Function Frequency range GS11 T UHF | GS11 I UHF Channel spacing GS11 T UHF | GS11 I UHF	Receive and transmit, max. 1 W output power 410 – 470 MHz | 403 – 473 MHz 12.5 / 25 kHz | 12.5 / 20 / 25 kHz
General		
Field software and controller	Leica X-PAD	Leica CSX8 and other Android devices
User interface	Buttons and LEDs Web server	On / Off button, 4 status LEDs
Data recording	Storage Data type and recording rate	Internal memory up to 8 GB RINEX data up to 20 Hz
Power management	Internal power supply External power supply Operating time[2]	Two hot-swappable Li-Ion batteries (3.35 Ah / 7.2 V, 24.12 Wh) Nominal 12 V DC, range 10.5 – 26.4 V DC Typical time up to 12 h in GNSS rover mode (non-AR tilt stake-out only)
Weight and dimensions	Weight | Dimensions	1.27 kg / 3.50 kg standard RTK rover setup on pole 167 mm × 167 mm × 72 mm
Environmental	Temperature Drop Proof against water, sand and dust Vibration Humidity	-10 to +60 °C operating with camera -30 to +65 °C operating without camera -10 to +60 °C operating with laser distance meter -40 to +80 °C storage GS11 T, -20 to +60 °C storage GS11 I Withstands topple over onto hard surfaces attached to a 2 m survey pole IP66/67 Withstands strong vibration 95%

Leica GS11 GNSS receivers	**GS11 T**	**GS11 I**
Tilt compensation	✓	✓
Imaging	×	✓
Laser point measurement	×	✓

All specifications are subject to change without notice.
[1] Measurement precision, accuracy, reliability and time for initialisation are dependent upon various factors including number of satellites, observation time, atmospheric conditions, multipath etc. Figures quoted assume normal to favourable conditions.
[2] Might vary with temperature, age of battery, transmit power of data link device or use of wireless communication devices.

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Laser radiation, avoid direct eye exposure.
Class 3R laser product

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