Leica GEOSYSTEMS



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Leica iCON iCG11 GNSS smart antenna

Dependable GNSS performance, enhanced by visual workflows

Get to the point, faster

Enabled by an integrated dual-camera system, visual workflows help contractors work faster, safer, and with greater confidence. Live-view stakeout navigates users to design points more efficiently, while tilt compensation and image-based measurements simplify work in difficult or hard-to-reach locations. By viewing results in their real-world context, crews can verify work before leaving site, catch issues earlier, and reduce rework.

Scale without complexity

Built for construction, the Leica iCG11 supports the workflows contractors rely on every day, from stakeout and grade checking to verification and documentation. Shared software workflows, project data, and field processes create a consistent field experience. Expand GNSS capabilities across more projects and more users with no compromise on productivity and usability.

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Leica iCON iCG11



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 and RTK reliability		Typically < 5 s, 99.95%
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 Channel spacing	Receive and transmit, max. 1 W output power 403 – 473 MHz and 902 – 928 MHz (license-free in North America) 12.5 / 20 / 25 kHz
General		
Field software and controller	Leica iCON site/build Leica X-PAD *(available in selected regions only)*	Leica CC200/CC180/CC170 field controller 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 iCG11 T, -20 to +60 °C storage iCG11 I Withstands topple over on a 2 m survey pole onto hard surfaces IP66/67 Withstands strong vibration 95%

Leica GS11 GNSS receivers	iCG11 T	iCG11 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