

Leica GS18 I

Data sheet



Innovative

The Leica GS18 I is an accurate and easy to use GNSS RTK Rover. It utilises highly innovative Visual Positioning technology based on seamless integration of GNSS, IMU and a camera. It enables you to measure survey grade points in images on site and in the office. Create point clouds from captured data with Infinity to expand possibilities even further.



Fast

Designed to measure a large amount of points efficiently. The Leica GS18 I allows you to capture images and measure hundreds of points within minutes. There's no need to physically reach the point to measure it. This allows you to reduce time spent on-site and cut down re-work: once you've captured the site, you can measure all details whenever you want to.



Versatile

Imaging power has changed the rules of the game. By having the power to measure what you see, you can now reach places you couldn't before without switching tools or climbing through obstacles. That gives you flexibility in the field, frees up equipment and crews and truly maximises productivity in your projects, which results in increased profits.

leica-geosystems.com



- when it has to be **right**

Leica
Geosystems

Leica GS18 I



GNSS TECHNOLOGY & SERVICES

| | | |
|----------------------|---|---|
| Self-learning GNSS | Leica RTKplus | Adaptive on-the-fly satellite selection |
| HxGN SmartNet Global | HxGN SmartNet Pro HxGN SmartNet+ HxGN SmartNet PPP | Network RTK and unlimited worldwide RTK bridging and PPP service Network RTK and RTK bridging service Unlimited worldwide RTK bridging and PPP service |
| Leica SmartCheck | Continuous check of RTK solution | Reliability 99.99% |
| Signal tracking | GPS GLONASS Galileo BeiDou QZSS NavIC SBAS TerraStar | L1, L2, L2C, L5 L1, L2, L2C, L3 E1, E5a, E5b, AltBOC, E6 B1I, B1C, B2I, B2a, B3I L1, L2C, L5, L6 ² L5 WAAS, EGNOS, MSAS, GAGAN L-Band, IP |
| RAIM | Receiver Autonomous Integrity Monitoring | Detection and elimination of faulty satellite signals for enhanced positioning solution and GNSS integrity |
| Number of channels | | 555 (more signals, fast acquisition, high sensitivity) |
| Tilt compensation | Increased measurement productivity and traceability | Calibration-free Immune to magnetic disturbances |

IMAGING

| | | |
|---------------------|---|---|
| Measuring camera | Sensor Field of view Video frame rate | Global shutter with 1.2 MP Hz 80°, V 60° 20 Hz |
| Image group capture | 2 Hz capturing rate | Max. capturing time: 60 s, size of an image group appr. 50 MB |
| Point cloud | Leica Infinity software | Derive point clouds from image groups |

MEASUREMENT PERFORMANCE & ACCURACY¹

| | | |
|--|---|--|
| Time for RTK initialisation | | Typically 4 s |
| Real-time kinematic (Compliant to ISO17123-8 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 |
| RTK bridging | Up to 10 min bridging of RTK outages | Hz 2.5 cm V 5 cm |
| PPP | Initial convergence to full accuracy typically 10 min, Re-convergence < 1 min | Hz 2.5 cm V 5 cm |
| 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 |
| Code differential | DGNSS | Hz 25 cm V 50 cm |
| Image point measurement | 1-click measurement in field & office | Typically 2 cm – 4 cm (2D ¹) captured from 2 – 10 m distance |

COMMUNICATIONS

| | | |
|------------------------------------|--|---|
| Communication ports | Lemo Bluetooth® WLAN | USB and RS232 serial Bluetooth® v4.0 (BLE & BR/EDR), class 1.5 802.11 b/g/n for field controller communication only |
| Communication protocols | RTK data protocols NMEA output Network RTK | Leica 4G, Leica, CMR, CMR+, RTCM 2.2, 2.3, 3.0, 3.1, 3.2 MSM NMEA 0183 v4.00 & v4.10 and Leica proprietary VRS, FKP, iMAX, MAC (RTCM SC 104) |
| Built-in 4G LTE modem ³ | LTE frequency bands UMTS frequency bands GSM frequency bands | 20,8,3,1,7 1,2,3,4,5,7,8,12,13,18,19,20,26,28,38,40,41,66 13,17,5,4,2 19,3,1 8,3,1 1,3,2,4,5,6,8,19 5,4,2 6,19,1 900,1800 850,900,1800,1900 850,900,1800,1900 MHz |
| Built-in UHF modem ⁴ | Receive & transmit UHF radio modem | 403 – 473 MHz, channel spacing 12.5 kHz, 20 kHz, 25 kHz, max. 1 W output power up to 28800 bps over air 902 – 928 MHz (licence free in North America), max 1 W output power |

GENERAL

| | | |
|-------------------------------|--|---|
| Field controller and software | Leica Captivate software | Leica CS0 field controller, Leica CS30 & CC180 & CC200 tablets |
| User interface | Buttons and LEDs Web server | On / Off and Function button, 8 status LEDs Full status information and configuration options |
| Data recording | Storage Data type and recording rate | Internal memory up to 4 GB, Removable SD card Leica GNSS raw data and RINEX data at up to 20 Hz |
| Power management | Internal power supply External power supply Operating time ⁵ | Exchangeable Li-Ion battery (2.8 Ah / 11.1 V) Nominal 12 V DC, range 10.5 – 26.4 V DC Typical time up to 8 h |
| Weight and dimensions | Weight Dimensions | 1.25 kg / 3.55 kg standard RTK rover setup on pole 173 mm x 173 mm x 109 mm |
| Environmental | Temperature Drop Proof against water, sand and dust Vibration Humidity Functional shock | -30 to +50°C operating with camera, -40 to +65°C operating without camera, -40 to +85°C storage Withstands topple over from a 2 m survey pole onto hard surfaces IP66 IP68 (IEC60529 MIL STD 810G CHG-1 510.6 I) MIL STD 810G CHG-1 506.6 II, MIL STD 810G CHG-1 512.6 I) Withstands strong vibration (ISO9022-36-08 MIL STD 810G 514.6 Cat.24) 95% (ISO9022-13-06 ISO9022-12-04 MIL STD 810G CHG-1 507.6 II) 40 g / 15 to 23 msec (MIL STD 810G 516.6 I) |

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. A full BeiDou and Galileo constellation will further increase measurement performance and accuracy.
² QZSS L6 will be provided through future firmware upgrade.

³ Depending on version. In order Europe (SN < 4912000) | Worldwide (SN >= 4912000) | NAFTA | Japan version

⁴ Available for the GS18 I UHF variants only.

⁵ Might vary with temperature, age of battery, transmit power of data link device or use of wireless communication devices.