Leica GS18
Data sheet

Engaging software

The Leica Captivate field software is the perfect companion for the GS18. Everything from measuring, viewing, and sharing data is done within one software. Easy-to-use apps and precise 2D views/3D models enable you to understand, create, and utilise data effectively. Captivate spans industries and project use cases with little more than a simple tap, regardless of whether you work with GNSS, total stations, or both.

Seamlessly share data among all your instruments

Leica Infinity imports and combines data from your GNSS RTK rover, total station and level instruments for one final and accurate result. Processing has never been made easier when all your instruments work in tandem to produce precise and actionable information.

ACC»

Customer care only a click away

Through Active Customer Care (ACC), a global network of experienced professionals is only a click away to expertly guide you through any challenge. Eliminate delays with superior technical service, finish jobs faster and avoid costly site revisits with excellent consultancy support. Control your costs with a tailored Customer Care Package (CCP), giving you peace of mind you are covered anywhere, anytime.

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GNSS TECHNOLOGY		
Self-learning GNSS	Leica RTKplus SmartLink (worldwide correction service) SmartLink fill (worldwide correction service)	Adaptive on-the-fly satellite selection Remote precise point positioning (3 cm 2D)[1] Initial convergence to full accuracy typically 18 min, Re-convergence < 1 min Bridging of RTK outages up to 10 min (3 cm 2D)[1]
Leica SmartCheck	Continuous check of RTK solution	Reliability 99.99%
Signal tracking	GPS | GLONASS Galileo | BeiDou	L1, L2, L2C, L5 | L1, L2, L2C, L3 E1, E5a, E5b, AltBOC, E6 | B1I, B1C, B2I, B2a, B3I
	QZSS | NavIC	L1, L2C, L5, L6[2] | L5[3]
	SBAS | L-Band	WAAS, EGNOS, MSAS, GAGAN | Terrastar
RAIM	Receiver Autonomous Integrity Monitoring	Detection and elimination of faulty satellite signals for enhanced position solution and GNSS integrity
Number of channels		555 (more signals, fast acquisition, high sensitivity)
MEASUREMENT PERFORMANCE & ACCURACY[1]		
Time for 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
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
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 control communication only
Communication protocols	RTK data protocols NMEA output Network RTK	Leica, Leica 4G, 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[4]	LTE frequency bands UMTS frequency bands GSM frequency bands	20, 8, 3, 1, 7 | 13, 17, 5, 4, 2 | 19, 3, 1 8, 3, 1 | 5, 4, 2 | 6, 19, 1 900,1800 | 850,900,1800,1900 MHz
Built-in UHF modem[5]	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 CS20 field controller, Leica CS30 & CS35 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[6]	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	1.20 kg / 3.50 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	-40 to +65°C operating, -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)
TILT COMPENSATION UPGRADE		
Tilt compensation	Increased measurement productivity and traceability	Calibration-free Immune to magnetic disturbances
Real-time kinematic tilt compensated	Not for static control points	Additional Hz uncertainty typically less than 8 mm + 0.4 mm/° tilt down to 30° tilt

LEICA GS18 GNSS RTK ROVER	PERFORMANCE	UNLIMITED
SUPPORTED GNSS SYSTEMS		
Multi-frequency	✔	✔
GPS / GLONASS / Galileo / BeiDou / QZSS	✔ / • / • / • / •	✔ / ✔ / ✔ / ✔ / ✔
RTK PERFORMANCE		
DGPS/RTCM, RTK Unlimited, Network RTK	✔	✔
SmartLink fill / SmartLink	• / •	✔ / •
POSITION UPDATE & DATA RECORDING		
20 Hz positioning	✔	✔
Raw data / RINEX data logging / NMEA out	✔ / • / •	✔ / ✔ / ✔
ADDITIONAL FEATURES		
Tilt compensation	•	•
RTK reference station functionality	✔	✔
4G LTE Phone / UHF Radio (receive & transmit) modem	✔ / •	✔ / •

✔ Standard • Optional

[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] Support of NavIC L5 is incorporated and will be provided through future firmware upgrade.

[4] Depending on version. In order Europe | NAFTA | Japan version

[5] Available for the GS18 UHF variants only.

[6] Might vary with temperature, age of battery, transmit power of data link device and use of wireless communication devices.

Leica Geosystems AG
Heinrich-Wild-Strasse
9435 Heerbrugg, Switzerland
+41 71 727 31 31

- when it has to be **right**

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