LES

Levelling
Equipment
Services

Leica GS18 T
Data sheet

Engaging software

The Leica GS18 T is accompanied with the revolutionary Captivate software, turning complex data into the most realistic and workable 3D models. With easy-to-use apps and familiar touch technology, all forms of measured and design data can be viewed in all dimensions. Leica Captivate spans industries and applications with little more than a simple swipe, 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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Leica Geosystems

Leica GS18 T

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 20 - 40 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 (L1, L2, L2C, L5), Glonass (L1, L2, L3[2]), BeiDou (B1, B2, B3[2]), Galileo (E1, E5a, E5b, Alt-BOC, E6[2]), QZSS (L1, L2, L5, LEX[2]), NavIC L5[3], SBAS (WAAS, EGNOS, MSAS, GAGAN), L-band
Number of channels		555 (more signals, fast acquisition, high sensitivity)
Tilt compensation	Increased measurement productivity and traceability	Calibration-free Immune to magnetic disturbances

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
Real-time kinematic tilt compensated	Topographic points (not for static control points)	Additional Hz pole tip uncertainty typically less than 10 mm + 0.7 mm/° 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
Code differential	DGPS / RTCM	Typically 25 cm

COMMUNICATIONS

Communication ports	Lemo Bluetooth®	USB and RS232 serial Bluetooth® v2.1 + EDR, class 1.5
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 and Leica proprietary VRS, FKP, iMAX, MAC (RTCM SC 104)
Built-in data links	GSM / UMTS / LTE phone modem Radio modem	Fully integrated, external antenna Fully integrated, receive and transmit, external antenna 403 - 470 MHz, 1 W output power, up to 28800 bps over air
External data links		GSM / GPRS / UMTS / LTE / CDMA and UHF / VHF modem

GENERAL

Field controller and software	Leica Captivate software	Leica CS20 field controller, Leica CS35 tablet
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	Removable SD card, 8 GB Leica GNSS raw data and RINEX data at up to 20 Hz
Power management	Internal power supply External power supply Operation time[4]	Exchangeable Li-Ion battery (2.8 Ah / 11.1 V) Nominal 12 V DC, range 10.5 - 28 V DC 7h receiving (Rx) data with internal radio, 5 h transmitting (Tx) data with internal radio, 6 h Rx/Tx data with internal phone modem
Weight and dimensions	Weight Dimensions	1.20 kg / 3.50 kg standard RTK rover setup on pole 173 mm x 173 mm x 108 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)

LEICA GS18 T GNSS RTK ROVER	BASIC	PERFORMANCE	UNLIMITED
SUPPORTED GNSS SYSTEMS			
Multi-frequency	•	✔	✔
GPS / GLONASS / Galileo / BeiDou / QZSS	✔ / • / • / • / •	✔ / • / • / • / •	✔ / ✔ / ✔ / ✔ / ✔
SUPPORTED GNSS SYSTEMS			
DGPS/RTCM, RTK Unlimited, Network RTK	•	✔	✔
SmartLink fill / SmartLink	• / •	• / •	✔ / •
POSITION UPDATE & DATA RECORDING			
5 Hz / 20 Hz positioning	✔ / ✔	✔ / ✔	✔ / ✔
Raw data / RINEX data logging / NMEA out	✔ / • / •	✔ / • / •	✔ / ✔ / ✔
ADDITIONAL FEATURES			
Tilt compensation	✔	✔	✔
RTK reference station functionality	•	✔	✔
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] Believe to comply, but subject to availability of BeiDou ICD and Galileo commercial service definition. Glonass L3, BeiDou B3, QZSS LEX and Galileo E6 will be provided through future firmware upgrade.
[3] Support of NavIC L5 is incorporated and will be provided through future firmware upgrade.
[4] Might vary with temperature, age of battery, transmit power of data link device.

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