# Leica GS18 T

## Data sheet





### **Engaging software**

Leica Captivate field software is the perfect companion for the GS18 T. 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, level instruments and laser scanners for one final and accurate result. Processing has never been easier because 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.



leica-geosystems.com











# Leica GS18 T

#### GNSS TECHNOLOGY & SERVICES

Process   Pro		*		
HCMS SmartNete PRP Licket SmartClineck Continuous Mick Of RTK solution Signal Vandong GF, I CLANASS GRIBOR 1 Bellbour GRIBOR 1 Special Vandong GF, I CLANASS AND RESPONSE AND COLOR MARK CACAN I F. Land, EP C. D.	Self-learning GNSS	Leica RTKplus	Adaptive on-the-fly satellite selection	
Linkinstance Authorities (FIX britishing and HPP service  Signed brankfurg  CRIS (CALONAS)  CR	HxGN SmartNet Global			
Leice Sanchecks Continuous check of RIX solution Signal trading GSS (GOMASS Caltier) Referbol QSSS (I Self-Caltier) Cattler (Referbo) QSSS (I Mark Cattler (Referbo) And Receiver Autonomous Integrity Monitoring Self-Cattler (Referbo) And Receiver Autonomous Integrity Monitoring Self-Cattler (Referbo) And Receiver (Ref				
Signal tracking				
Galleo   Bellibo   CSS   Nam'				
ASS 1 FrenStorn  SMAS 1 FrenStorn  MASS 2 FrenStorn  Mass 1 FrenSt	Signal tracking			
RAMM Receive Authonomous Integrity Monitor  Routher of channels  Increased measurement productivity Collection and emission for fault yearlise great for enhanced position solution and CNSS integrity Monitor of channels  Increased measurement productivity Collection and CNSS integrity Monitor of channels  Increased measurement productivity Collection force, immune to magnetic disturbances  Increased measurement productivity Collection force, immune to magnetic disturbances  Increased measurement productivity Collection force, immune to magnetic disturbances  Increased Monitor Routh Collection force, immune to magnetic disturbances  Increased Routh Routhers  Interest Rik Initialization  Real-Line Inferrantic Complaint to IsO/1722-8 strandard)  Routher Compensated  Interest Interest Rik Control points  Interest Rik Control Rik Control Rik Control Points  Interest Rik Control Rik Control Rik Control Points  Interest Rik Control Rik Con				
Receiver Authoromous Integrity Monitorine Increased measurement productivity and Expension and demending of publy satisfies against for rehavour position solution and CMSS integrity Number of channels Illic compensation increased measurement productivity and compensation increased measurement productivity and traceability and t				
Namber of channek				
Illic compensation Increased measurement productivity and traceability  MEASUREMENT PERFORMANCE & ACCURACY  Time for RTK initialization  Neal-time for RTK initialization  Not for static control points  Additional Hz uncertainty spically less than 5 mm + 0.4 mm/* tilt down to 30° tilt  RTK bridging  Up to 10 min Initialization  Post processing  Static [phase] to 1 min  Post processing  Static phase with long observations  Static phase with long observation  Static phase with long observation  It 2 mm + 0.1 porn   13.5 mm + 0.4 ppm  Hz 3 mm + 0.5 ppm   5 mm + 0.4 ppm  Hz 3 mm + 0.5 ppm		Receiver Autonomous Integrity Monitoring		
measurement PERFORMANCE & ACCURACY*  Time for RYK initialisation Resolutine kinematic Rompilant to S017123-8 standard) Network RYK Networe				
MESSUREMY PERFORMANCE & ACCURACY  Therefore TRY individualisation Real-time for RTX individualisation	Tilt compensation		Calibration-free, Immune to magnetic disturbance	25
Real-time Kinematic   Compliant to 1501/123 as standard  Not for static control points   Hz 8 mm + 1 ppm   1/15 mm + 1 ppm   Not pmm   Not ppm   Not pmm + 0.5 ppm	MEASUREMENT PERFORMANCE & AG	CCURACY <sup>1</sup>		
	Time for RTK initialisation		Typically 4 s	
RTK bridging Up to 10 min bridging of RTK outages Hz 2.5 cm   V.5 cm   PPPP Initial convergence to full accuracy typically 10 min. Rec convergence < 1 min Post processing State (phase) with long observations State and against a phase) Post processing DoNS Hz 2.5 cm   V.5 cm   Post processing State (phase) with long observations State and against a phase) State and against a phase) Post processing DoNS Hz 2.5 cm   V.5 cm   Post procession Post pro	Real-time kinematic (Compliant to ISO17123-8 standard)			
PRPS   Initial convergence to full accuracy typically 10 min. Re- convergence to 1 min	Real-time kinematic tilt compensated	Not for static control points	Additional Hz uncertainty typically less than 5 mm	n + 0.4 mm/° tilt down to 30° tilt
PRPS   Initial convergence to full accuracy typically 10 min. Re- convergence to 1 min	RTK bridging			
Past processing   Static (phase) with long observations   Hz 3 mm + 0.1 pmn   V 3.5 mm + 0.4 ppm	PPP	Initial convergence to full accuracy		
Communication ports  Lemo   Bluetooth®   WLAN   USB and R5232 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   NMEM 2.183 v4.00 b v4.10 and Leica proprietary   Network RTK   NMEM 2.183 v4.00 b v4.10 and Leica proprietary   Network RTK   LET frequency bands   UMTS frequency bands   SM 1.75, v4.2   1.9, 3.1   SMIII-in LTF modem*   LET frequency bands   SM 1.75, v4.2   1.9, 3.1   SMIII-in LTF modem*   Receive & transmit UHF radio modem   40.3 - 473 MHz, channel spacing 12.5 kHz, 20 kHz, 25 kHz, max. 1 W output power up to 2.00, 8.00, 19.00 MHz   SBult-in LTF modem*   Receive & transmit UHF radio modem   40.3 - 473 MHz, channel spacing 12.5 kHz, 20 kHz, 25 kHz, max. 1 W output power up to 2.00, 18.00, 19.00, 18.0	Post processing			
Communication ports  Lemo   Bluetooth®   WLAN   S02.11 bl/g/n for field control communication only    Communication protocols   RTK data protocols   MRE output   MRE output    NEW output   MRE output   MRE output   MRE output    NEW output   MRE output   MRE output   MRE output    NEW output	Code differential	DGNSS	Hz 25 cm   V 50 cm	
Section   Sect	COMMUNICATIONS			
Communication protocols  RTK data protocols MNEA dutbut NNEA 0.138 v.20.00 E v.d.10 and talear proprietary N	Communication ports	Lemo   Bluetooth®   WLAN		
UMTS frequency bands GSM frequency bands GSM frequency bands GSM frequency bands SSM frequency bands SSM frequency bands Pool,1800   850,900,1800,1900 MHz Pool,1800   850,900,1800 MHz Pool,1800   850	Communication protocols	NMEA output	Leica, Leica 4G, CMR, CMR+, RTCM 2.2, 2.3, 3.0, 3 NMEA 0183 v4.00 & v4.10 and Leica proprietary	·
28800 bps over air or 902 - 928 MHz (licence free in North America), max. 1 W output powe GENERAL  Field controller and software  Leica CS20 field controller, Leica CS30 & CS35 tablets  User interface  Buttons and LEDs Web server  Buttons and RINEX data at up to 20 Hz Exchangeable Li-lon battery (2.8 Ah / 11.1 V) Nominal 12 V DC, range 10.5 - 26.4 V DC Typical time up to 8 h	Built-in LTE modem <sup>4</sup>	UMTS frequency bands	8, 3, 1   5, 4, 2   6, 19, 1	
Field controller and software  User interface  Buttons and LEDs Web server  Power management  Internal power supply External power supply Operating time*  Weight and dimensions  Environmental  Environm	Built-in UHF modem <sup>5</sup>	Receive & transmit UHF radio modem		
User interface  Buttons and LEDS Web server  Storage Data recording  Data recording  Storage Data type and recording rate Leica GNSS raw data and RNEX data at up to 20 Hz  Eleica GNSS raw data and RNEX data at up to 20 Hz  Evarianal power supply Coperating time  Weight and dimensions  Weight Drop Proof against water, sand and dust Vibration Humidity Coperating GNSS SYSTEMS   ELEICA GS18 T GNSS RTK ROVER  PERFORMANCE  UNLIMITED  ELEICA GS18 T GNSS RTK Unlimited, Network RTK  V COPS / CLONASS / Galileo / BeiDou / QZSS  RTK PERFORMANCE  DOS / CONASS / Galileo / BeiDou / QZSS  RAW GAB / RNEX data logging / NMEA out  VI-/-  RAW GAB / RNEX data logging / NMEA out  V /-/-  RAW GAB / RNEX data logging / NMEA out  V /-/-  RTK reference station functionality  On / Off and Function mation finding attoa (roft) and configuration options are storage functional options and configuration options and conf	GENERAL			
Data recording  Data type and recording rate by Data type and recording rat	Field controller and software	Leica Captivate software	Leica CS20 field controller, Leica CS30 & CS35 tab	plets
Data Type and recording rate   Leica GNSS raw data and RINEX data at up to 20 Hz	User interface			
External power supply Operating time of Operat	Data recording			Hz
Environmental  Environmental  Environmental  Environmental  Environmental  Environmental  Environmental  Temperature Drop Proof against water, sand and dust Vibration Humidity Functional shock  ELEICA GS18 T GNSS RTK ROVER  ELEICA GS18 T GNSS SYSTEMS  Withstands strong wibration (18090922-36-08)   MIL STD 810G CHG-1 512.6   1) Withstands strong wibration (18090922-12-04   MIL STD 810G CHG-1 507.6   II) Withstands strong wibration (18090922-12-04   MIL STD 810G CHG-1 507.6   II) Withstands strong wibration (18090922-12-04   MIL STD 810G CHG-1 507.6   II)  ELEICA GS18 T GNSS RTK ROVER  PERFORMANCE  W  GPS / GLONASS / Galileo / BeiDou / QZSS  W / · / · / · /   W W W  GPS / GLONASS / Galileo / BeiDou / QZSS  W / · / · / · /   PERFORMANCE  DGPS/RTCM, RTK fullmited, Network RTK  W  POSITION UPDATE & DATA RECORDING  20 Hz positioning  W  RW W  RW W  RW W  RW W  RW W  RW ADDITIONAL FEATURES  Tilt compensation  W  W  W  W  RTK reference station functionality  W  W  W  W  W  W  W  W  W  W  W  W  W	Power management	External power supply	Nominal 12 V DC, range 10.5 - 26.4 V DC	
Drop   Proof against water, sand and dust   Proof against water, sand and strong with state of the Stock of HILL STD 810G CHG-1 510.6   II)   Proof against water, sand and strong with state strong with state of (BIO9022-12-04-08   MILL STD 810G CHG-1 510.6   II)   Proof CHG-1 510.6   II)   Proof CHG-1 510.6   II)   Proof CHG-1 510.6   III)   Proof CHG	Weight and dimensions			le
SUPPORTED CNSS SYSTEMS  Multi-frequency	Environmental	Drop Proof against water, sand and dust Vibration Humidity	Withstands topple over from a 2 m survey pole of IP66   IP68   IEC60529   MIL STD 810G CHG-1 510. MIL STD 810G CHG-1 506.6 II   MIL STD 810G CHG Withstands strong vibration (ISO9022-36-08   MIL 95% (ISO9022-13-06   ISO9022-12-04   MIL STD	6     i-1 512.6  ) _ STD 810G 514.6 Cat.24)
Multi-frequency  GPS / GLONASS / Galileo / BeiDou / QZSS  VI-IV-IV  RTK PERFORMANCE  DGPS/RTCM, RTK Unlimited, Network RTK  V  HXGN SmartNet Global  POSITION UPDATE & DATA RECORDING  20 Hz positioning  V  Raw data / RINEX data logging / NMEA out  ADDITIONAL FEATURES  Tilt compensation  RTK reference station functionality  V  V  V  V  V  RTK reference station functionality	LEICA GS18 T GNSS RTK ROVER	PE	RFORMANCE	UNLIMITED
GPS / GLONASS / Galileo / BeiDou / QZSS  RTK PERFORMANCE  DGPS/RTCM, RTK Unlimited, Network RTK  V  HxGN SmartNet Global  POSITION UPDATE & DATA RECORDING  20 Hz positioning  Raw data / RINEX data logging / NMEA out  ADDITIONAL FEATURES  Tilt compensation  RTK reference station functionality  V / /   V	SUPPORTED GNSS SYSTEMS			
RTK PERFORMANCE  DGPS/RTCM, RTK Unlimited, Network RTK  HxGN SmartNet Global  POSITION UPDATE & DATA RECORDING  20 Hz positioning  V  ADDITIONAL FEATURES  Tilt compensation  V  RTK reference station functionality  V  V  V  V  V  V  V  V  V  V  V  V  V				
DGPS/RTCM, RTK Unlimited, Network RTK  V  HXGN SmartNet Global  POSITION UPDATE & DATA RECORDING  20 Hz positioning  V  ADDITIONAL FEATURES  Tilt compensation  RTK reference station functionality  V  V  V  V  V  V  V  V  V  V  V  V  V		55	V / · / · / · /	VIVIVIV
HxGN SmartNet Global · · · · · · · · · · · · · · · · · · ·		TK	~	
20 Hz positioning   Raw data / RINEX data logging / NMEA out   ADDITIONAL FEATURES  Tilt compensation   KTK reference station functionality    V  V  V  V  V  V  V  V  V  V  V  V				•
Raw data / RINEX data logging / NMEA out  ADDITIONAL FEATURES  Tilt compensation  RTK reference station functionality  V  V  V  V  V  V  V  V  V  V  V  V  V		ING		
ADDITIONAL FEATURES  Tilt compensation				
Tilt compensation  V RTK reference station functionality  V		out	VI.I.	VIVIV
RTK reference station functionality			V	<b>V</b>
	RTK reference station functionality			
		smit) modem	ν/·	v1·

✓ Standard • Optional

<sup>3</sup> Support of NavIC L5 is incorporated and will be provided through future firmware upgrade.

Depending on version. In order Europe | NAFTA | Japan version

Available for the GS18 T UHF variants only.

<sup>6</sup> Might vary with temperature, age of battery, transmit power of data link device and use of wireless

Copyright Leica Geosystems AG, 9435 Heerbrugg, Switzerland. All rights reserved. Printed in Switzerland – 2022. Leica Geosystems AG is part of Hexagon AB. 866429en - 04.22

### Leica Geosystems AG

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



<sup>&</sup>lt;sup>1</sup> 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.

measurement performance and accuracy.  $^{\rm 2}$  QZSS L6 will be provided through future firmware upgrade.