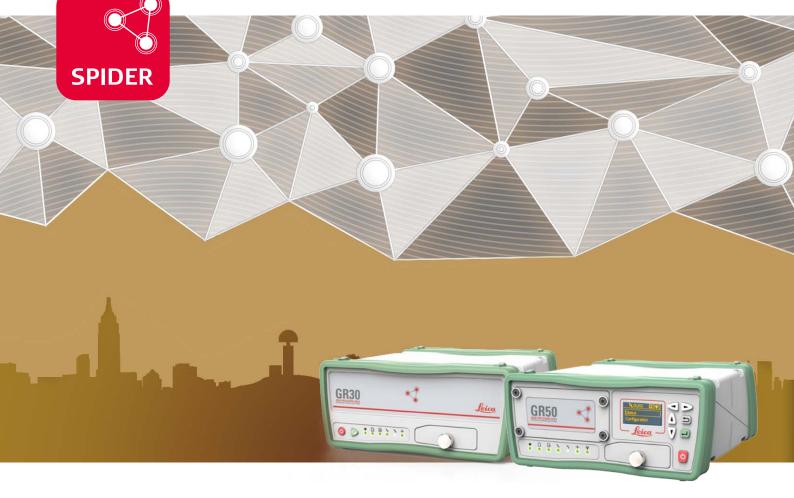# Leica GR30 & GR50
Versatile solutions for today and tomorrow

SPIDER

GNSS Performance

Prepared for the constantly changing requirements of GNSS technology, the GR30 and GR50 reference servers are optimised with multi-frequency, 555 channel capabilities. All GNSS installations are certain of receiving and delivering highly accurate and reliable data – today and tomorrow. Rugged and reliable, the GR-series comes with innovative SmartTrack+ technology, ensuring superior quality data even under the harshest conditions.

Smart and Reliable

From RTK, static networks or single base stations to structural monitoring, atmospheric and seismic studies or offshore positioning; all GNSS applications will find a highly reliable solution in the GR-series reference server. Reliable with highly redundant communication, low power consumption and data logging. Smart because RefWorx software offers the highest versatility.

ACC»

Customer care is only a click away

Through Active Customer Care (ACC), a global network of experienced professionals is ready 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, giving you peace of mind you're covered anywhere, anytime.

PART OF HEXAGON

- when it has to be **right**

Leica Geosystems

Leica GR30 & GR50

GNSS TECHNOLOGY

Leica SmartTrack+	Very low noise GNSS carrier phase measurements (< 0.5 mm rms). Industry-leading Pulse Aperture Correlator (PAC) multipath mitigation technology. Excellent low elevation tracking, fast acquisition time and jamming resistant.
GNSS Signals[1]	GPS (L1, L2P(Y), L2C, L5); GLONASS (L1, L2P, L2C, L3)[2]; Galileo (E1, E5a, E5b, AltBOC)[2]; BeiDou (B1, B2)[3]; QZSS (L1, L2C, L5); SBAS (WAAS, EGNOS, GAGAN, MSAS)
Number of channels	555 universal tracking channels

MEASUREMENT PERFORMANCE AND ACCURACY[4]

Code differential		Hz: 0.25 m + 1 ppm / V: 0.5 m + 1 ppm		
Site Monitor	RTK Positioning modes:	Reference station (smoothed)	Monitoring (instantaneous)	Network RTK (instantaneous)
	Single baseline (< 30 km):	Hz: 6 mm + 1 ppm V: 10 mm +1 ppm	Hz: 8 mm + 1 ppm V: 15 mm + 1 ppm	Hz: 8 mm + 1 ppm V: 15 mm + 1 ppm
	VRS, FKP, iMAX, MAC (RTCM SC 104):	Hz: 6 mm + 0.5 ppm V: 10 mm + 0.5 ppm	Hz: 8 mm + 0.5 ppm V: 15 mm + 0.5ppm	Hz: 8 mm + 0.5 ppm V: 15 mm + 0.5 ppm
	Time for initialisation (typical):	10s	10s	4s
VADASE	Velocity and displacement engine:	Velocity accuracy: Hz: 0.003 m/s, V: 0.005 m/s. Typical velocity derived displacement sensitivity: Hz: 1 cm/s, V: 2 cm/s		

PORTS AND CONNECTORS, COMMUNICATIONS

Ruggedized RJ45 Ethernet / Power over Eth. Serial RS232 / Slot-In / WLAN or Bluetooth® USB client (PC or tablet) / USB host (ext. disk) External oscillator / Event input / PPS Out Dual-Power Input	1 / - 1 / 1 / - 1 / - 1 / - / - 1	1 / Yes 2 / 1 / 1 1 / 1 1 / 1 / 1 1
Internal removable battery and built-in charger	-	GEB242 (up to 24h backup)
Slot-in communication interface	Exchangeable radio/GSM/GPRS/UMTS devices supported. Automatic gateway routing provides backup of internet access for continuity of communications.	

ELECTRICAL, PHYSICAL AND ENVIRONMENTAL

Power supply	Nominal 24 V DC, range 10.5 – 28 V DC. Two external power inputs.	
Power consumption	3.5 W typical, 24 V at 145 mA	3.1 W typical, 24 V at 130 mA
Dimension / weight (with rubber bumpers)	20 x 200 x 94 mm / 1.67kg	20 x 200 x 94 mm / 2.01 kg
Temperature	Operating: -40 to 65 °C, Storage: -40 to 80 °C	
Humidity	Up to 100%	
Vibration	Withstands strong vibration during operation. Compliance with ISO9022-36-08 and MIL-STD-810G - 514.6-Cat.24	
Drop	Withstands 1 m drop onto hard surfaces.	
Proof against water, sand and dust	IP67 (IEC 60529) and MIL-STD-810G - 512.5-I Dust tight, protected against water jets. Waterproof up to 1 m temporary submersion.	

GENERAL

User interface	Web Interface for full receiver control and status information.	
	On / Off and 1x function button 6x LED for power, memory, logging, RT out, RT in, position	On / Off and 6x button keypad, Display, 7x LED for power, memory, logging, RT out, RT in, position, Bluetooth®
Data logging	Removable SD card up to 32 GB. 12 parallel logging sessions. Data rates up to 50 Hz. RINEX 2.11/3.01/3.02, Hatanaka and Leica MDB formats including zip compression.	
Data streaming	Up to 20 parallel data streams with multiple connections. Data rates up to 50 Hz. Supports Leica, Leica 4G, CMR, CMR+, RTCM v2.1/2.2/2.3/3.2, BINEX, NMEA 0183 V 2.20 and proprietary formats via TCPIP, Ntrip, serial, USB and Bluetooth®	
RefWorx Web and FTP Services	Full control and configuration of the receiver over a web browser. Internet connection sharing (ICS) using the GR50 as a internet gateway for connected devices. Ntrip server (source), client and caster functionality with unlimited mount points. Secure access using HTTPS, SSL certificates, access management and port blocking. FTP server and FTP client (push), Email notification, SNMP support.	

[1] The tracking capability for a specific satellite system is based on publicly available information. For cases where public information is subject to change or not yet available Leica Geosystems cannot guarantee full compatibility.
[2] Hardware ready for: GLONASS L3 and L5 CDMA; Galileo E6; NavIC L5.
[3] Designed for BeiDou Phase 2, Phase 3, B1, B2 and B3 compatibility.
[4] Measurement precision, accuracy in position and height, reliability and time for initialisation are dependent upon various factors including the number of satellites tracked, the observation time, the ephemeris accuracy, the atmospheric conditions, multipath and resolved ambiguities. Figures quoted are RMS (root mean square) and assume normal to favourable conditions.

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Leica Geosystems AG

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