Leica GEOSYSTEMS

Leica GM30

Ready for today and tomorrow

All-in-one-GNSS monitoring receiver

The GM30 is designed for continuous operation and a wide range of monitoring scenarios. It is packed with full feature onboard software including Site Monitor, PPP, Leica VADASE, data logging and FTP/SFTP push. With low energy consumption, highly redundant communication capabilities and designed to withstand challenging environment conditions, this rugged receiver is ready for any challenge.

High-end GNSS technology

Exceeding GNSS signal needs today and tomorrow by supplying 555 GNSS channels, the GM30 monitoring receiver is future-proof, reliably delivering the highest quality results 24/7. With the support of all available and future GNSS signals, and with SmartTrack+ technology, it delivers accurate information on the status of sensitive structures to detect and react, even under the harshest conditions.

Versatile and customisable

The GM30 is ready to be customised for any monitoring scenario, from long-term static to dynamic high-frequency monitoring. It is easily combined with a variety of external devices and seamlessly connected with Leica Spider and Leica GeoMoS. In addition, the onboard data logging provides a direct connection with the Leica CrossCheck service.

HEXAGON

Leica GM30

GNSS TECHNOLOGY				
Leica SmartTrack+		Very low noise GNSS carrier phase measurements (<0.5 mm rms). Signal acquisition < 30 s[1]. Industry leading Pulse Aperture Correlator (PAC) multipath mitigation technology for superior quality measurements. Advanced radio frequency power spectrum analysis, automatic spoofing and interference detection with notification, as well as advanced interference mitigation.		
GNSS Signals[2]		GPS (L1C/A, L1C, L2P(Y), L2C, L5)[3]; GLONASS (L1, L2P, L2C, L3)[3] Galileo (E1, E5a, E5b, AltBOC, E6); BeiDou (B1I, B1C, B2I, B2a, B2b, B3I)[4]; QZSS (L1C/A, L1C, L2C, L5)[3]; NavIC (L5)[3]; SBAS (L1, L5; WAAS, EGNOS, GAGAN, MSAS); Available as GPS + GLONASS L1 only receiver.		
Number of channels		555 universal tracking channels		
MEASUREMENT PERFORMANCE AND ACCURACY[5]				
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
	Network RTK:	Hz: 6 mm + 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
	Time for initialisation (typical):	10s	10s	4s
PPP (Precise Point Positioning) VADASE (Velocity and displacement engine)		Initial convergence to full accuracy typically 6 min, Re-convergence < 1 min; Accuracy: Hz 2.5 cm | V 5 cm 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				
Ports		PWR: Lemo-1 female, 5 pin Serial P1: Lemo-1 female, 8 pin GNSS antenna: TNC female P3 slot-in antenna: TNC female Oscillator: MMCX female, 24QMA-50 2-3/133, 5/10 MHz Ethernet: RJ45 ruggedised, 10/100 Mbit USB client: Type Mini B		
Slot-in communication interface		Exchangeable radio/GSM/GPRS/UMTS/LTE devices supported. Automatic gateway routing provides backup of internet access for continuity of communications.		
TECHNICAL AND ENVIRONMENTAL				
Power supply		Nominal 24 V DC, range 10.5 – 28 V DC. Two external power inputs.		
Battery		External. Can serve as primary power source or as UPS backup.		
Power consumption		3.5 W typical, 24 V at 145 mA		
Dimension / weight (with rubber bumpers)		220x200x94 mm / 1.67kg		
Temperature		Operating: -40 to 65 °C, Storage: -40 to 80 °C		
Humidity		Up to 100% non-condensing. Compliance with ISO9022-13-06, ISO9022-12-04 and MIL-STD-810H 507.6-I		
Vibration		Withstands strong vibration during operation. ISO9022-36-08 and MIL-STD-810H 514.8 E-1 Cat.24		
Drop		Withstands 1 m drop onto hard surfaces.		
Proof against water, sand and dust		IP68 (IEC 60529) and MIL-STD-810H 506.6-I/ 510.7-I / 512.6-I. Dust tight. Protected against water jets. Waterproof tested up to 1.4 m / 2 h submersion.		
GENERAL				
User interface		Web Interface for full receiver control and status information.		
		ON/OFF Button. 1x Function button. 6x LED for power, memory, logging, RT out, RT in, position		
Data logging		Internal removable SD card up to 32GB. 12 parallel logging sessions with automatic clean-up and VADASE event-based file protection. Data rates up to 50 Hz. RINEX 2.11/3.xx/4.xx, 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 v2.1/2.2/2.3/3.0/3.1/3.2/3.3, BINEX, NMEA 0183 v4 and proprietary formats via TCP/IP, Ntrip, serial.		
RefWorx Web and FTP Services		Full control and configuration of the receiver over a web browser through Ethernet, mobile internet, serial or USB. Integrated watchdog for maximum quality and uptime. Backup and restore feature. Detailed event log and onboard messaging service. Ntrip server (source), Ntrip client and Ntrip caster functionality with unlimited number of mount points. Secure access using HTTPS, SSL/TLS certificates, access management and port blocking. SFTP/FTP server and client (push), Email notification, SNMP support.		
Leica Active Assist		Automatic on-site and real-time online support service.		

[1] Hot start (typical). Cold start <40 s (typical).
[2] 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.
[3] Hardware ready for: GPS L1P(Y), GLONASS L1P, L5 CDMA, QZSS L6, and NavIC L1 will be provided through future firmware upgrade.
[4] Designed for BeiDou Phase 2, Phase 3 compatibility.
[5] 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.