Leica GM30
Ready for today and tomorrow

Monitoring Solutions

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, Leica VADASE, data logging and FTP 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.

- when it has to be right

Leica
Geosystems
Leica GM30

GNSS TECHNOLOGY

Leica Smart Track+

Very low noise GNSS carrier phase measurements (<0.5 mm rms). Signal acquisition < 30 s. Industry leading Pulse Aperture Correlator (PAC) multipath mitigation technology for superior quality measurements. Advanced radio frequency power spectrum analysis and interference mitigation on all GNSS bands.

GNSS signals

GPS (L1, L2/P(Y), L2/C, L5); GLONASS (L1, L2/P, L2/C, L3); Galileo (E1, E5a, E5b, ARBOC, E6); Beidou (B1, B2, B3); QZSS (L1, L2/C, L5); NavIC L5; SBAS (WAAS, EGNOS, GAGAN, MSAS)

Available as GPS+GLONASS L1 only receiver.

Number of channels

555 universal tracking channels

MEASUREMENT PERFORMANCE AND ACCURACY

<table>
<thead>
<tr>
<th>Code differential</th>
<th>Hz: 0.25 m + 1 ppm</th>
<th>V: 0.5 m + 1 ppm</th>
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- **Site Monitor**
  - 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 +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

- **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

- **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 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.

- **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 / 1.67 kg

- **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 MILSTD-810G - 507.5-I

- **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 Button. 1x Function button. 6x LED for power, memory, logging, RT out, RT in, position

- **Data logging**
  - Removable SD card up to 32 GB. 12 parallel logging sessions. Data rates up to 50 Hz.

- **Data streaming**
  - Up to 20 parallel data streams with multiple connections. Data rates up to 50 Hz.

- **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 certificates, access management and port blocking.
  - FTP Server and FTP Client (push), Email notification, SNMP support.

- **Leica Active Assist**
  - Automatic on-site and real-time online support service.

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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: GLONASS L3, LS CDMA and Galileo E6 will be provided through future firmware upgrade.
4 Designed for Beidou Phase 2, Phase 3 compatibility. B3 will be provided through future firmware upgrade.
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.

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