

Advanced GNSS Receiver



- 226-Channel Vanguard Technology™ with Universal Tracking Channels
- Advanced Fence Antenna™ Technology
- High accuracy RTK with updates up to 100Hz
- Fully integrated radio and cellular configuration
- 32GB SDHC storage support
- Dual hot-swappable batteries providing a full day of operation

GR-5 Advanced GNSS Receiver

The GR-5 with Vanguard Technology™ is the most advanced RTK GNSS system.

The GR-5 features the multi-constellation 226-channel Vanguard GNSS chip with Universal Tracking Channel Technology. This patented technology uses flexible and dynamic tracking methods to automatically select and track any available satellite signal enabling Topcon's users to receive the maximum number of signals and measurements at any given time.

The GR-5 is not only capable of receiving signals from the fully operational GPS and GLONASS constellations, but also has the ability to support all planned signals from developing systems such as Galileo, Beidou (BDS) and QZSS. With current and developing satellite constellations, Universal Tracking Channel Technology optimizes GNSS signal tracking to guarantee maximum satellite geometry and availability.

Topcon's patented Fence Antenna design brings to the GR-5 superior signal reception and advanced multipath rejection in difficult environments. This technology provides a more robust and cleaner signal tracking which means unparalleled results.

With Vanguard Technology, Universal Tracking Channel and the Fence Antenna, the GR-5 is designed to deliver ultimate field performance even in challenging environments while maintaining unmatched accuracy, speed of initialization and fix reliability for RTK solutions.

In addition to advanced technologies, the mechanical design of the GR-5 makes it incredibly reliable, ergonomic, and durable. Guaranteed rugged, the GR-5 is the best GNSS receiver available in the market.



226-Channel Vanguard Technology™ with Universal Tracking

Topcon's exclusive channel tracking technology provides unmatched GNSS signal flexibility and expandability.



Cellular and Radio

The GR-5 has both cellular and radio communication which allows the GR-5 to be used in radio based RTK and Network RTK solutions.



Long Range UHF Radio

Only Topcon receivers can top-mount the radio antenna. This extends the range of RTK radio performance.



Operating Time

Get the most of your work day and maximize your time in the field with at least a full day of operation from the hot-swappable batteries.

MAGNET™ Field

Experience the advantage of MAGNET Field with the GR-5 RTK system. Whether connecting to a network or setting up a Base/Rover system, MAGNET Field makes you more productive. MAGNET Field provides the ability to share data to cloud storage and connect field crews to each other and the office.



Rugged Design

The GR-5 is guaranteed rugged by design. The frame of the GR-5 and the robust internal components are guaranteed to resist a 2m pole drop.



PRIMARY FEATURES



Pocket-3D

Pocket-3D puts the power of GNSS based site management in the hands of site foremen and grade checkers, making it easy for them to verify grades, reset stakes or topo any area on the site.



KIT COMPONENTS

Dual Receiver Package

- Two GR-5 Receivers
- Batteries (4) and Charger
- Communication Cables
- Radio Antennas
- Manuals and Utility Software
- Carrying Case
- Fixed Height Tripod



SPECIFICATIONS

GNSS

Signals Tracked	GPS, GLONASS, QZSS, SBAS, Galileo* and Beidou (BDS)*
Number of Channels	226-Channel Vanguard Technology™ with Universal Tracking Channels
Antenna Type	Integrated Fence Antenna™ with Ground Plane

Accuracy (RMS)**

RTK	H: 10mm + 1.0ppm V: 15mm + 1.0ppm
Static †	H: 3.0mm + 0.1ppm V: 3.5mm + 0.4ppm

Communication

Optional Radio Type	Integrated UHF TX/RX, or 915MHz Spread Spectrum
Base Radio Output	1.0W, user selectable
Cellular Communications	Integrated HSPA or CDMA (optional)
I/O Communications	Class 2 Bluetooth® USB and Serial

Data and Memory

Memory	Removable SD/SDHC Memory Card (up to 32GB)
Data Update/Output Rate	1Hz – 100Hz Selectable
Real Time Data Output	TPS, RTCM SC104, CMR, CMR+
ASCII Output	NMEA 0183 version 2.x and 3.0

Environmental

Enclosure	Magnesium I-Beam Housing
Operating Temperature	-22°F to +158°F (-30°C to +70°C†)
Dust/Water Protection	IP66
Shock Rating	2m pole drop to concrete IEC 60068-2-29, IEC 60068-2-27
Vibration Rating	Compliance with MIL-STD 810F - 514.5 - Cat.24

¹ Patent pending. Multiple patents are associated with Fence Antenna™ technology.

^{*} Support for Galileo and Beidou (BDS) signals is incorporated and will be available through firmware and OAF upgrades.

^{**} Subject to multipath anomalies and atypical satellite geometry. GNSS survey best practices must always be applied.

[†] Under nominal observing conditions and strict processing methods, including use of dual frequency GPS, precise ephemerides, calm ionospheric conditions, approved antenna calibration, unobstructed visibility above 10 degrees and an observation duration of at least 3 hours (dependent on baseline length).

^{††} -30 to +60°C with integrated batteries.

A detailed specifications datasheet is available on the Topcon website.

TOPCON TECHNOLOGY

Vanguard Technology™ and Fence Antenna™

Topcon's GR-5 represents the next generation in GNSS receiver technology.

Exclusive Tracking Technology

The GR-5 with Vanguard Technology™ provides the latest advancements and beats the competition in tracking behavior and overall GNSS RTK performance.



Fence Antenna™ Technology¹

Once again, Topcon has set a new industry standard with our state-of-the-art patented Fence Antenna Technology. This revolutionary new antenna design provides signal tracking capabilities not found in any other RTK receiver.

Enhanced Sensitivity

The most significant advancement comes with the Fence Antenna's performance tracking low elevation satellites. This patented¹ Fence Antenna technology provides unsurpassed sensitivity while simultaneously improving accuracy.

Advanced Multipath Suppression

Not only does the new Topcon Fence Antenna outperform other RTK receivers with enhanced sensitivity, but also provides multipath rejection characteristics that gives the GR-5 a level of tracking performance in difficult environments beyond any other RTK GNSS receiver.



For more specification information:
topconpositioning.com/gr5



7400 National Drive • Livermore • CA 94550
(925) 245-8300

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