

# Topcon GR-5 with Vanguard

The latest GR-5 features the multi-constellation 226-Channel Vanguard GNSS chip with Universal Tracking Channel Technology. The GR-5 also includes Topcon's patented Fence Antenna Technology design which offers a compact and lightweight antenna that covers the entire GNSS frequency band for unmatched performance. With Vanguard, Fence Antenna, and Topcon's advanced acquisition algorithms, the GR-5 receiver delivers the most robust GNSS tracking performance available.

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.

## Features & Benefits

- 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

### The Topcon GR-5 represents the next generation in GNSS receiver technology

Topcon is proud to be the world leader in advanced satellite positioning technology. As the original pioneer of dual-constellation with GPS and GLONASS constellation integration, Topcon continues to lead all other manufacturers with the most sophisticated receiver technology and design.

### GNSS Satellite Tracking Optimization with Vanguard™ Technology

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 fully operational GPS and GLONASS constellations, but also has ability to support all planned signals from developing systems like 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.

### Enhanced Sensitivity with Patented Fence Antenna™ Technology

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

### Advanced Multipath Suppression

Not only does Topcon's 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 demanding environments beyond any other RTK GNSS receiver.

### Leadership Technology

In side-by-side tests with other RTK GNSS receivers the latest Topcon GR-5 with patented Fence Antenna™ Technology outperformed the competition in tracking behavior and overall RTK performance, and continues to lead the industry RTK radio range.

With Vanguard Technology™, Universal Tracking Channel and 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 solution.



GNSS	
Signals Tracked	GPS: L1, L1C, L2, L2C, and L5 GLONASS: L1, L2 Galileo*: E1, E5a, E5b, AltBOC BeiDou: B1, B2 SBAS L1 C/A WAAS/MSAS/EGNOS QZSS L1 C/A, L1C, L2C

<b>Number of Channels</b>	226-Channel Vanguard Technology with Universal Tracking Channels capable of All-in-View tracking
<b>Antenna Type</b>	Integrated Fence Antenna (1) with Ground Plane
<b>Accuracy</b>	
<b>Static</b>	H: 3mm + 0.1ppm (2) V: 3.5mm + 0.4ppm (2)
<b>RTK</b>	H: 5mm + 0.5ppm V: 10mm + 0.8ppm
<b>Communications</b>	
<b>Optional Radio Type</b>	Integrated UHF TX/RX, or 915MHz Spread Spectrum
<b>Base Radio Output</b>	up to 1.0W, user selectable
<b>Cellular Communications</b>	Integrated HSPA or CDMA (optional)
<b>I/O Communications</b>	Class 2 Bluetooth® USB and Serial
<b>Data &amp; Memory</b>	
<b>Memory</b>	Removable SD/SDHC Memory Card (up to 32 GB)
<b>Data Update/Output Rate</b>	1Hz - 50Hz Selectable
<b>Real Time Data Output Format</b>	TPS, RTCM SC104 2.x, 3.x, CMR, CMR+
<b>ASCII Output</b>	NMEA 0183 version 2.x and 3.0
<b>Environmental</b>	
<b>Enclosure</b>	Dust and Water ingress protected Magnesium I-Beam Housing
<b>Operating Temperature</b>	-30°C to +70°C** (-22°F to 158°F)
<b>Shock Rating</b>	2 meter pole drop to concrete, IEC 60068-2-29, IEC 60068-2-27
<b>Vibration Rating</b>	Compliance with MIL-STD 810F - 514.5 - Cat.24
<b>Notes</b>	
<b>Note</b>	1. Patent pending. Multiple patents are associated with Fence Antenna technology. 2. 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).
<b>Note</b>	* Support for Galileo signals is incorporated. Positioning solution with these signals will be integrated and made available when the constellation has matured and is ready for commercial use. ** -30°C to +60°C with integrated batteries.

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