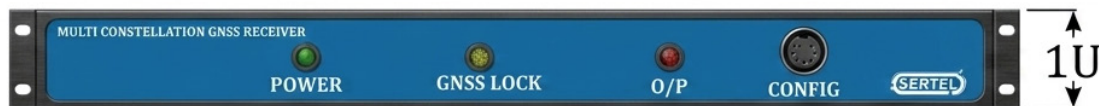


# MULTI-FREQUENCY GNSS RECEIVER

## T-MF-GNSS-300 | Compact High-Precision Multi-Constellation Positioning Module

Centimetre-Level Accuracy |  $\geq 200$  Channels | GPS · GLONASS · Galileo · BeiDou · NavIC | IP65/IP67 | FCC · CE · RoHS

### PRODUCT OVERVIEW



The T-MF-GNSS-300 is a multi-frequency, multi-constellation GNSS receiver designed for highprecision positioning in space-constrained applications. Combining an extremely compact formfactor with advanced interference mitigation technology, the receiver delivers reliable, centimetrelevel positioning in challenging electromagnetic environments. A comprehensive range of interfaceoptions - including Serial, USB, and Ethernet - facilitates straightforward integration into existing system architectures.

With TerraStar satellite-delivered correction services, the T-MF-GNSS-300 achieves centimetrelevel positioning accuracy globally, without dependency on local reference station networks or expensive communications infrastructure. The receiver is suitable for precision agriculture, autonomous vehicles, survey, marine, and defence applications requiring high-availability, highintegrity positioning.





## BUILT-IN FLEXIBILITY — FIRMWARE & SCALABILITY

T-MF-GNSS-300 firmware from Hexagon | NovAtel enables users to configure the receiver precisely for their application requirements. The platform is scalable from sub-metre to centimetre level positioning and is field-upgradeable to support all T-MF-GNSS-300 family software options, futureproofing the investment against evolving operational needs.

### Available Firmware Options

Option	Capability
ALIGN	Precise heading determination and relative positioning between two GNSS antennas
GLIDE	Decimetre-level pass-to-pass positioning accuracy for precision agriculture and machine control
SPAN GNSS+INS	Tightly coupled GNSS and Inertial Navigation System (INS) technology for continuous 3D position, velocity, and attitude through GNSS outages
GRIT	GNSS Resilience and Integrity Technology - advanced spoofing detection, interference detection and mitigation, and positioning protection
RTK	Centimetre-level real-time kinematic positioning using local base station corrections
TerraStar PPP	Base-free centimetre and decimetre-level Precise Point Positioning (PPP) using TerraStar satellite-delivered correction services

## DESIGNED FOR THE FUTURE

The T-MF-GNSS-300 features configurable tracking channels that optimise satellite availability in any operational condition. The receiver tracks all current and upcoming GNSS constellations and signal types, including GPS, GLONASS, Galileo, BeiDou, NavIC and SBAS. As modernised satellite signals are introduced by the respective space agencies, the T-MF-GNSS-300 can be updated via software upgrade to maintain full compatibility without hardware replacement.



## TECHNICAL SPECIFICATIONS

### Signal Tracking

Constellation	Tracked Signals & Frequencies
Frequency Bands	L1(1559-1610) MHz L2(1217-1300) MHz L5(1164-1215) MHz S(2483.5-2500.3)MHz
GPS	L1 C/A, L1C, L2C, L5
GLONASS	L1 C/A, L2 C/A, L3 CDMA
Galileo	E1, E5A, E5B, E5AltBOC, E6
BeiDou	B1I, B1C, B2I, B2A, B2B, B3I
NavIC (IRNSS)	L5 (SPS), S(SPS)
SBAS	L1
Cold start	<60s
Warm Start	<35s
Re- acquisition	<1s

### Constellation supported

PVT mode	Multiconstellation Hybrid mode with user selectable frequency and signal. - Single, Dual, Triple and Quad frequency selectable positioning mode
Position Update Rate	$\geq 1\text{Hz}$
Position Accuracy	$\leq 5\text{m}$ (3D RMS) (Open sky scenario with supplied antenna.

### Maximum Operating Dynamics Limits

Velocity	515 m/sec
Altitude	18,000 m
Acceleration	$\geq 4\text{g}$



## Input Output Interface

Communication ports	UART (over RS232 levels), USB, Ethernet
1PPS Output	SMA (F)
External frequency input	10MHz, SMA(F)

## Physical and electrical

Dimensions	170x160x35mm / 1500 g
Input voltage	90V – 260V AC

## Environmental

Operating Temperature	-40°C to +85°C
Storage	-55°C to +95°C
Receiver Power Supply	10MHz, SMA(F) 230V(+/-10V), 50Hz (Suitable adapter to be provide if require
No of Channels	≥200 channels for simultaneous satellite tracking for the specified constellations in their respective frequency bands
RAIM support	Receiver Autonomous Integrity Monitoring (RAIM)
Output Format	NMEA/RINEX/ Proprietary -Latest version of these standard to be Supported
Output Data	Position, Velocity and Time solution. - Raw observation for each channel: Pseudo range, Accumulated Delta Range, C/N0, Doppler frequency, Atmospheric Errors, Receiver clock bias, Satellite Position and Velocity, Channels used and tracked information, Intersystem clock bias in case of multiple constellations - Navigation data bits for each Channel

## Compliance

Certification	FCC, CE and ROHS
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## MULTI FREQUENCY GNSS ANTENNA

### Antenna

Model	T-GPA-014-S15
Antenna Input	SMA(F)/TNC(F)
GPS	L1,L2,L5
Glonass	G1,G2,G3
Galileo	E1,E5ab,E6
Beidou	B1,B2,B3
NavIC	L5, S
Polarization	Right Hand Circular Polarization
Active Antenna	Gain 25 – 40 dB
Environmental Operating temperature	0 to 60 degree Celsius
Overall noise figure (including active antenna and receiver) consider cable between antenna and receiver as well	< 3db
Multipath Mitigation	Yes and preferably both on antenna side and baseband processing side
INPUT P1dB	≥-40dBm

**Note:**

Feature Available only on Specific requests and suitable price points

Output ports are customizable based on the requirements

Product development is continuous process, subject to change without prior notice