Enclosures  GPStation-6™

NEXT GENERATION, HIGH PERFORMANCE GNSS IONOSPHERIC SCINTILLATION AND TEC MONITOR (GISTM) RECEIVER ENCLOSURE WITH LOW PHASE NOISE OSCILLATOR

MODERNIZED GISTM RECEIVER TECHNOLOGY
GPStation-6 is a next-generation GNSS Ionospheric Scintillation and TEC Monitor (GISTM) receiver. The multi-frequency, multi-constellation GPStation-6 design is based on the mature GSV4004B GISTM receiver that has been used in ionospheric monitoring networks and space weather applications around the world since 2004. By combining the proven GSV4004B receiver design with NovAtel’s latest 120 channel OEM628™ GNSS measurement engine, the GPStation-6 offers a future proof modernization path for existing customers and a leading edge solution for new customers in this unique application space.

FUTURE-PROOFED SCALABILITY
GPStation-6 is software upgradable in the field to provide the custom performance required for application demands. The receiver can track all present and upcoming GNSS constellations and satellite signals including GPS L1/L2/L2C/L5, SBAS L1/L5, GLONASS L1/L2, Galileo E1/E5a/E5b/AltBOC, QZSS L1/L2C/L5 and BeiDou signals and delivers high performance GNSS signal tracking together with ionospheric scintillation and TEC measurements.

GISTM FEATURES
A maximum sampling rate of 50 Hz generates high rate ionospheric scintillation measurements for each of the 120 available tracking channels. The receiver tracks and reports ionospheric scintillation and TEC measurements for all supported signal types. A 25 Hz raw signal intensity noise bandwidth and 25 Hz phase noise bandwidth ensures that all the spectral components of both amplitude and phase scintillations are measured.

CUSTOMIZABLE UTILITY SOFTWARE
The provided GPStation-6 software utilities support automated receiver configuration and control, log decoding, specialized post-processing algorithms and real-time data display. The GPStation-6 receiver software and utilities are based on the same software that the GSV4004B included, allowing for easy transition of existing work flows to the new GISTM platform.

BENEFITS
+ Measure ionospheric activity for research applications
+ Monitor localized space weather impact on GNSS
+ Familiar workflow and data for existing GSV4004B users

FEATURES
+ 50 Hz phase data and amplitude sampling
+ 120 independent tracking channels
+ Amplitude and phase scintillation indices output
+ Code TEC and Carrier TEC output
+ Customizable utility software for data collection and analysis

If you require more information about our GISTM receiver, visit www.novatel.com/products/scintillation-tec-monitor/
## PERFORMANCE

**Channel Configuration**
- 120 channels

**Signal Tracking**
- GPS: L1, L2, L2C, L5
- GLONASS: L1, L2-C/A, L2P
- Galileo: E1, E5a, E5b, AltBOC
- BeiDou: SBAS, L1, L5
- QZSS: L1, L2C, L5

**Horizontal Position Accuracy**
- Single point L1: 1.5 m
- Single point L1/L2: 1.2 m

**Measurement Precision**
- Fully independent code and carrier measurements:
  - GPS/C/A code: 4 cm
  - GPS L1 carrier phase: 0.5 mm
  - GPS L2 P(Y) code: 8 cm
  - GPS L2 carrier phase: 1.0 mm
  - GPS L2C code: 8 cm
  - GPS L2C carrier phase: 1.0 mm
  - GPS L5 code: 3 cm
  - GPS L5 carrier phase: 0.5 mm

**Ionospheric Modeling**
- Phase and Amplitude Data: 50 Hz (raw or detrended)

**Code TEC and Carrier TEC**
- GPS: L1-C/A, L2C, L5
- GLONASS: L1, L2
- Galileo: E1, E5
- SBAS: L1, L5
- QZSS: L1-C/A, L2C, L5

**Maximum Data Rate**
- Measurements: 50 Hz
- Position: 50 Hz
- Time to First Fix: Cold start < 50 s, Hot start < 35 s

**Signal Reacquisition**
- L1: < 0.5 s (typical)
- L2: < 1.0 s (typical)

**Time Accuracy**
- 20 ns

## PHYSICAL AND ELECTRICAL

**Dimensions**
- 233 × 154 × 71 mm

**Weight**
- 1.4 kg

**Power**
- Input voltage: +11 to +18 VDC
- Power consumption: 6 W (typical)

**Antenna LNA Power Output**
- Output voltage: +5 VDC
- Maximum current: 100 mA

**Communication Ports**
- 1 USB/RS-232 port
- 2 RS-232 serial ports capable of 9,600 to 921,600 bps
- 1 I/O port (PPS, Event, ERROR and Position valid)

**Connectors**
- Power: 4-pin LEMO
- Antenna Input: TNC female
- OSC: 10 MHz output BNC female
- COM 1: DB-9 male
- COM 2: DB-9 male
- COM 3: DB-9 male
- I/O: DB-9 female

**Environmental**
- Temperature:
  - Operating: -20°C to +45°C
  - Storage: -45°C to +85°C

**Compliance**
- FCC, CE, Industry Canada

## FEATURES
- Field upgradable software
- PAC multipath mitigating technology
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark inputs
- Built-in low phase-noise 10 MHz oscillator

## INCLUDED ACCESSORIES
- Serial cable (null)
- I/O cable
- Power cable
- Serial cable (straight)
- USB cable
- Utility software CD

## OPTIONAL ACCESSORIES
- GPS-700 series antenna
- GNSS-750 antenna
- RF cables—5, 10 and 30 m lengths
- AC Adapter - International and North American

For the most recent details of this product: [www.novatel.com/products/scintillation-tec-monitor/gpstation-6/](http://www.novatel.com/products/scintillation-tec-monitor/gpstation-6/)

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1. The BeiDou signal is not finalized and changes in the signal structure may still occur. Designed for BeiDou Phase 3 compatibility
2. L2 P for GLONASS
3. L2 C/A for GLONASS
4. Typical value. No almanac or ephemerides and no approximate position or time
5. Typical value. Almanac and recent ephemerides saved and approximately position and time entered
6. Controlled by software model

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