



NavStar GMS800

Purpose-built for exceptional monitoring performance.



Monitoring Solution

NavStar's GMS800 is a compact, high-precision GPS/GNSS sensor that provides accurate three-dimensional displacement and tilt measurements for deformation monitoring.

With no moving parts and the ability to provide 24/7 automated monitoring data in extreme climates, the GMS800 sensors are an ideal choice for monitoring slopes and structures such as; open-pit mines, dams, landslides, and other natural hazards.



Energy Efficient

The GMS800 supports our new Supercapacitor power system for a long term maintenance free solution. In RTK mode, the Supercapacitor system requires only 30 minutes of sunlight per day for 24/7 operation with hourly readings using a small 20W solar panel.



Small Size, Big Connection

With its 16cm cube enclosure, the GMS800's small size makes it suitable for rapid deployment on a variety of project types while maintaining connection. Communication is possible via Integrated Mesh, WiFi or LTE radios.

GMS800 Technical Specifications

Physical and Electrical		
Enclosure Dimensions	160mm x 160mm x 100mm	
Enclosure Material	Fiberglass Reinforced Polyester	
Weight*	1.35 kg	
Connectors	TNC(F) for GNSS Antenna BNC(F) for Radio Antenna	
Mounting	2" Pole Clamps included. Flexible hole pattern also work for alternate mounting.	
Temperature	Operating: -40°C to +85°C Storage: -55°C to +85°C	
Power Consumption	42mWH per measurement. ~8000 measurements with 6 x Lithium D Batteries at room temperature with 'In RTK mode'	
Sensors		
GNSS Channels	555	
GNSS Signals Received	GPS L1 C/A, L1C, L2C, L2P, L5 GLONASS+ L1 C/A, L2 C/A, L2P, L3, L5 Galileo+ E1, E5 AltBOC, E5a, E5b, E6 BeiDou+ B1I, B1C, B2I, B2a, B3I QZSS+ L1 C/A, L1C, L2C, L5, L6	
Biaxial Tilt Accuracy	< 0.01°	
Environmental Sensors	Temperature, Input Voltage, Input Current, Charge Voltage, Charge Current, Runtime Metrics	
Typical GNSS Measurement Performance		
	Post processing mode	Real-time kinematic mode
Horizontal Repeatability (24 hr average)	3 mm	8 mm
Vertical Repeatability (24 hr average)	5 mm	15 mm

Included GNSS Antenna †	
Signals Received	GPS L1/L2 GLONASS L1/ L2 Galileo E1 Beidou B1
Dimensions	176 mm D x 55 mm H
Connector	TNC (F)
Mounting	5/8" Coarse Thread Mount
Phase Center Ability	< 2.0mm
Noise Figure	< 2.0dB (typical)
Power Supply Options	
Solar / Lead Acid	2.6AH 12v Integrated Lead Acid power supply system including internal solar controller. 10W solar panel typical
Solar / Supercapacitor	Maintenance free supercapacitor system with advanced charge efficiency. 10W solar panel typical.
Telemetry	
Mesh Radio	868MHz, 900MHz, 2.4GHz
WiFi	802.11 B/G/N
LTE	Bands 1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28 and 39
LTE Carrier Approvals	AT&T (LTE-M), Verizon (LTE-M), Bell (LTE-M), Telus (LTE-M)

* Without battery
† Optional, requires extra license
‡ Additional antenna options available

The repeatability and precision of GNSS measurements at a particular location and time are affected by the number and geometric distribution of satellites in the visible sky, the effect of multipathing, the distance of the unit from the base station, and other factors. The measurement performance stated above assumes a typical installation with favourable topography.



GMS800s can be used with NavStar's ACAL Advanced Calibration system for high precision prism monitoring.



Fully supported by the GeoExplorer platform for integrated monitoring projects.



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