

NavStar GMS700

Description

Purpose-built, battery-powered automated movement detection. Designed for rapid field deployment in slopes, open-pit mines, dams, landslides, and structures.

NavStar's GMS700 combines compactness and high-precision in a GPS/GNSS sensor with a 1.35 kg, Fibreglass Reinforced Polyester 16 cm cube enclosure, making it suitable for rapid deployment on various projects while maintaining connection via Integrated Mesh, WiFi, or LTE radios using the 900MHz frequency band.

With environmental sensors for temperature, input voltage, input current, charge voltage, charge current and runtime metrics, the GMS700 is designed to provide 24/7 automated monitoring data in extreme climates, from temperatures of -40°C to $+85^{\circ}\text{C}$.

The GMS700 uses a Real-time Kinematic GNSS processing-based monitoring system consisting of one main base station and one or more GNSS Rover units. The base station is always powered and active, receiving data from as many satellites as possible.

The GMS700 is fully supported by the GeoExplorer Platform for integrated monitoring projects collecting real-time monitoring data.

PHYSICAL AND ELECTRICAL

ENCLOSURE DIMENSIONS	160 mm x 160 mm x 100 mm
ENCLOSURE MATERIAL	Fibreglass reinforced polyester
WEIGHT*1.35	1.35 kg
CONNECTORS	NC(F) for GNSS Antenna BNC(F) for Radio Antenna 2" Pole Clamps included. Flexible hole pattern also work for alternate mounting.
MOUNTING	
TEMPERATURE	Operating: -40°C to $+85^{\circ}\text{C}$ Storage: -55°C to $+85^{\circ}\text{C}$
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	
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 HOUR AVERAGE)	3 mm	8 mm
VERTICAL REPEATABILITY (24 HOUR 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

LITHIUM BATTERY	1 x 68AH 14.4v Battery Pack 1-3 year lifespan~ Non-rechargeable
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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.

SPECIFICATIONS