# GNSS-700 Series: Satellite GNSS Receiver

The GNSS-700 Series Satellite GNSS Receiver is an upgraded version of our GPS12-V1. The GNSS-700 Series contains an improved core and an expanded interface board that improves the unit's functionality, accuracy and compatibility, while still relying on the foundation of a space qualified and proven design.

Key Features

→ 555 Channel GNSS Receiver

→ Fast Time to First Fix

→ Space Qualified Design

→ 1Hz Pulse Per Second Output

→ Build Time Interface Options
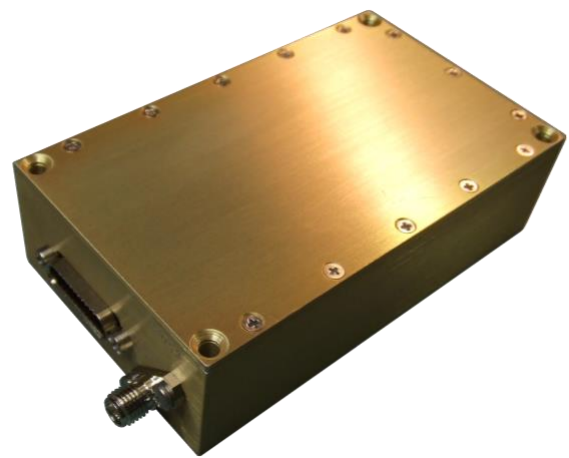
Performance Specifications

GNSS-700 Series:	GNSS-701	GNSS-702	
Frequencies:	L1, E1, B1	+ L2, E5b, B2	
Constellation Options:	GPS GPS+GLO GPS+BDS GPS+GLO+GAL	GPS GPS+GLO GPS+GAL GPS+GLO+BDS	
Position Accuracy:	< 5 meters RMS		
Velocity Accuracy:	< 0.10 meters/sec RMS		
Time Accuracy:	< 20 ηsec RMS		
Time to First Fix:	Cold Start: < 90s Warm Start: < 45s Hot Start: < 30s		

Electrical and RF

GNSS-700 Series

Input Voltage:	3.3V Regulated, 4.5-20V Unregulated, or 8-42V Unregulated (Build Time Option)
Typical Power Consumption:	**701**: 1.2W@3.3V, 1.4W@7.5V, 1.6W@28V (Includes Active Antenna) **702**: 1.5W@3.3V, 1.7W@7.5V, or 1.9W@28V (Includes Active Antenna)
Data Interface:	2 Serial Ports (LVCMOS or RS-422) with Binary and ASCII Messages up to 460 kbps, 1 USB2.0 Port, 1 CAN Bus Port using SAE-J1939 and NMEA-2000 Protocols up to 1Mbps
Available Signals:	LVCMOS Outputs: Pulse Per Second, Position Valid, Variable Frequency LVCMOS Inputs: Reset and 2 Edge-Triggered
I/O Messages:	Output: Over 150 Output Message Types (Position, Velocity, Time, etc.) Input: Over 100 Input Command Types
RF Inputs:	1 SMA Female for Active Antenna

Mechanical and Environmental

Mass:	167 grams
Size:	93.98 mm x 55.88 mm x 26.04 mm (3.7" x 2.2" x 1.025")
Operating Temperature:	-20°C to +60°C
Storage Temperature:	-40°C to +85°C

Product Line Heritage

SpaceQuest has delivered over 42 GPS Receivers, of which 18 have launched to date. A representative list of past missions and customers is shown below.

- → AprizeSats 1, 2, 3, 4, 5, 8 and 10
- → exactView 5, 6, and 11 (exactEarth)
- → Genesis 1, 2 (Bigelow Aerospace)
- → PicoSat (Naval Postgraduate School)
- → M-SAT (Univ. of Missouri)
- → FASTSat (NASA MSFC)
- → TacSat-3 (Swales)
- → Dynetics
- → FalconSat-5 and 6 (USAFA)
- → iSAT (NASA MSFC)
- → PROX-1 (Georgia Tech)
- → KAIST

GNSS-700 Series ver 2019-08-09