AAC CLYDE SPACE

Satellite GNSS Receiver

GNSS-701

COMPACT YET POWERFUL GNSS RECEIVER

The flight proven GNSS-701 Satellite GNSS (Global Navigation Satellite System) Receiver is an upgraded version of our GPS12-V1, one of AAC SpaceQuest's bestselling components of all time. Our compact yet powerful next generation GNSS-701/702 Satellite GNSS Receiver has an improved core and an expanded interface card improving the components available features, accuracy, and compatibility, while still relying on the foundation of a proven design with over a decade of heritage. GNSS-701 are used to determine accurate determination of orbital position of the satellite, orbit maneuvers to enable accurate knowledge of time.
Our AAC SpaceQuest GPS receivers have been used on missions such as AprizeSats 1, 2, 3, 4, 5, 8 and 10, Genesis 1, 2 (Bigelow Aerospace), exact-View 5, 6, and 11 (exactE-arth), M-SAT (Univ. of Missouri), FalconSat-5 and 6 (USAFA), FASTSat (NASA MSFC), and many more.

KEY HIGHLIGHTS:

- 120 Channel GNSS Receiver
- Fast Time to First Fix
- < 5m Position Accuracy
- < 0.10 m/s Velocity Accuracy
- 1Hz Pulse Per Second Output
- Build Time Interface Options
- Tracks GPS, GLONASS, Galileo, and BeiDou

RELIABILITY

Flight proven across multiple mission applications for a range of customer requirements this readily available solution has inherited advanced error detection and correction.

PERFORMANCE

The space qualified GNSS-701 functions with low power consumption to achieve high performance, up to 1Hz Pulse Per Second Output.

HERITAGE

This solution has over a decade of heritage. AAC SpaceQuest has delivered over 42 GPS Receivers, of which 18 have launched to date.

TECHNICAL SPECIFICATIONS

Performance Specifications	GNSS-701-A Single Frequency	GNSS-701-B Dual Frequency	GNSS-701-C All Frequencies
Frequencies:	L1, E1, B1	+ L2, E5b, B2	+ L5, E5a, AltBOC, B3
Constellations:	GPS, GPS+GLO, GPS+GLO+GAL	GPS, GPS+GLO, GPS+GLO+BDS	GPS, GPS+GLO GPS+GLO+BDS, GPS+GLO+GAL+BDS
Position Accuracy:	<5 meters RMS	TBD	TBD
Velocity Accuracy:	< 0.10 meters/sec RMS	TBD	TBD
Time Accuracy:	20 ηsec RMS	TBD	TBD
Time to First Fix:	Cold Start: 90s Warm Start: 45s Hot Start: 30s	TBD	TBD

Electrical and RF	
Input Voltage:	3.3V Regulated, 4.5-20V Unregulated, or 8-42V Unregulated (Build Time Option)
Power Consumption:	A: 0.9W@3.3V, 1.0W@7.5V, 1.2W@28V (Includes Active Antenna) B: 1.3W@3.3V, 1.4W@7.5V, or 1.6W@28V (Includes Active Antenna) C: 1.8W@3.3V, 2.0W@7.5V, or 2.2W@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
Available Signals:	LVCMOS Outputs: Pulse Per Second, Position Valid, Variable Frequency LVCMOS Inputs: Reset and 2 Edge-Trigger
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:	160 grams
Size:	93.98 mm x 55.88 mm x 26.04 mm (3.7" x 2.2" x 1.025")
Operating Temperature:	-40°C to +85°C
Storage Temperature:	-55°C to +95°C
Radiation:	> 10 kRads

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:
enquiries@aac-clydespace.com

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www.aac-clyde.space