

GAJT-710ML

Single enclosure GPS Anti-Jam Technology (GAJT) for land applications



Jamming and interference are constant threats

Jamming and interference, whether intentional or unintentional, can seriously degrade GNSS position, navigation and timing (PNT) availability—even to the point of total solution denial. Jammers create excessive noise, overpowering the low power GNSS signals and saturating the electronics in a GNSS receiver front end. Methods are needed to suppress this interference so your GNSS receiver continues to operate.

Battle proven small form factor

GAJT-710ML combines an antenna array and null forming electronics into a hardened enclosure that is suitable for a wide range of land vehicles and fixed installations.

How it works

GAJT-710ML mitigates interference by creating nulls in the antenna gain pattern in the direction of jammers, providing significant anti-jam protection even in dynamic multi-jammer scenarios. The output is a protected standard Radio Frequency (RF) signal, free from jamming and suitable for input to modern and legacy GNSS receivers

Leading edge technology

The commercial off-the-shelf (COTS) system uses NovAtel's seven element antenna array to receive GNSS signals in the L1 and L2 bands. Interference mitigation is achieved by applying proprietary digital null forming algorithms to the signals, creating dynamic nulls to give protection against narrowband and broadband interference sources. The unit is comprised of Radio Frequency (RF) front ends and null forming electronics. Integration to your GNSS receiver is seamless; DC power supply and data output are via separate connectors for which optional cables can be provided.

Protects GNSS navigation and precise timing receivers

GAJT-710ML protects GPS L1/L2, QZSS L1/L2, SBAS L1 and Galileo E1 signals. The wide bandwidth of the GAJT ensures future compatibility with M-Code GPS.

Benefits

- Commercial off-the-shelf (COTS)
- Low cost anti-jam protection for land vehicles
- Easy to integrate, ideal for retrofitting
- Anti-jam protection in dynamic multi-jammer scenarios
- Compatible with legacy and modern GNSS receivers, including M-Code
- Provides situation awareness

Features

- Affordable protection for GNSS position, velocity and time
- 40 dB of interference suppression
- Single enclosure system
- Simultaneous GPS L1/L2, QZSS L1/L2, SBAS L1 and Galileo E1 protection
- Supports M-Code on GPS L1 & L2
- Adaptive digital nulling
- Jammer direction finding (select models only¹)

1. Contact NovAtel for more information.

Performance

GNSS Signals

Center frequency	
GPS L1, QZSS L1, SBAS L1	1575.42 MHz ±12 MHz
GPS L2, QZSS L2	1227.6 MHz ±12 MHz
Galileo E1	1575.42 MHz ±12 MHz

Interference Rejection

Simultaneous L1/E1 and L2

Interference suppression	40 dB (typical)
Number of simultaneous nulling directions	6

Controlled Reception Pattern Antenna (CRPA)

Number of elements	7
Noise figure (typical)	3 dB
LNA gain	30 dB
VSWR	≤2.0:1
RF output	50 Ω TNC

Connectors

Power	MIL-C-26482, Series 2
RF	TNC (Female)
Data	MIL-DTL-38999, Series 3

Physical and Electrical

Dimensions

289 mm diameter × 120 height mm

Weight 7.5 kg

Power

Power consumption	25 W
Input voltage	+10 to +33 VDC

Environmental

Temperature

MIL-STD-810G(CH1) 501.6, NATO A-1	
Operating	-40°C to +71°C
Storage	-55°C to +85°C

Humidity MIL-STD-810G(CH1), 507.6, Proc. II

Altitude MIL-STD-810G(CH1), 500.6

Operating	3,600 m/12,000'
Storage	12,000 m/40,000'

Solar Radiation

MIL-STD-810G(CH1), 505.6, NATO A-1

Corrosion MIL-STD-810G(CH1), 509.6

MIL-STD-810G(CH1), 518.2
MIL-STD-810G(CH1), 504.2

Water

MIL-STD-810G(CH1), 512.6
MIL-STD-810G(CH1), 506.6
IEC 60529 IPX6
IEC 60529 IPX7

Sand and Dust MIL-STD-810G(CH1), 510.6

IEC 60529 IP6X

Vibration

MIL-STD-810G(CH1), 514.7
tracked and ground wheeled

Shock

MIL-STD-810G(CH1), 516.7

Compliance

FCC, ISED, CE

Accessories

- 5 m unterminated GAJT-710 vehicle power cable (01018776)
- GAJT-710 data cable (01019845)

Export Approvals

Canadian Controlled Goods

Other GAJT Products

GAJT-710MS



- Single enclosure system for warships and other marine vessels
- 7-element antenna array
- Easy to integrate, ideal for retrofitting

GAJT-410ML



- Compact enclosure system for land and fixed applications
- 4-element antenna array
- Direction finding and jammer status
- Available in Olive Drab or Desert Tan
- Also available in white (GAJT-410MS)

GAJT-AE-N



- Suitable for smaller platforms including UAVs
- Antenna electronics for 4-element antenna array
- Works with most 4-element antenna arrays (supplied separately)
- Available as a card only variant (GAJT-AE-R) for space constrained platforms.

4-Element Antenna Array

A 4-element antenna array allows gain pattern shapes to be changed in response to interference. Provides 3 independent nulls.



Contact Hexagon | NovAtel

sales.nov.ap@hexagon.com 1-800-NOVATEL (U.S. and Canada) or 403-295-4900 | China: 0086-21-68882300 | Europe: 44-1993-848-736 | SE Asia and Australia: 61-400-883-601. For the most recent details of this product: novatel.com

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