

GAJT-AE-R

GPS Anti-Jam Technology (GAJT) electronics card stack for reduced size and weight



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 lightweight anti-jam

GAJT-AE-R is the antenna electronics for a Controlled Reception Pattern Antenna (CRPA) with a mounting bracket to simplify integration into the user's platform. GAJT-AE-R is designed for size and weight constrained applications such as small airborne and ground unmanned platforms where it may be preferable to mount the antenna electronics inside the vehicle. Users can select from a variety of 4-element CRPA antenna arrays.

How it works

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

Leading-edge technology

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 comprises 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. We recommend CRPA antennas from Antcom Corporation for use with the GAJT-AE-R.

Protects GNSS navigation and precise timing receivers

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

Benefits

- Commercial off-the-shelf (COTS)
- Low cost anti-jam protection for small platforms
- Easy to integrate
- Anti-jam protection in dynamic multi-jammer scenarios
- Compatible with legacy and modern GNSS receivers, including M-Code
- Works with most 4-element antenna arrays (supplied separately)

Features

- Affordable protection for GNSS position, velocity and timing
- 40 dB of interference suppression
- Simultaneous GPS L1/L2, QZSS L1/L2, SBAS L1 and Galileo E1 protection
- Supports M-Code on GPS L1 & L2
- Adaptive digital nulling
- Built in test and jamming status included in RS-232 output

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
Number of simultaneous nulling directions	3

Antenna Array Options

L1 and L2

- 4NF-5.5CG1215P 4 element CRPA family
- For additional options, please contact NovAtel

RF Ports

RF inputs	4 x 50 ohm MCX
RF outputs	1 x 50 ohm MCX

Power & Communication Ports

Power	Molex x1
Data	Molex x1

Physical and Electrical

Power

Power consumption	15 W
Input voltage	+10 to +32 VDC

RF Performance

Active Gain	40 dB
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Dimensions	150 x 120 x 35 mm
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Weight	585 g
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Environmental¹

MIL-STD-810G

Temperature¹

Operating	-40°C to +71°C
Storage	-55°C to +85°C

Vibration¹	MIL-STD-810G(CH1), 514.7
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Shock¹	MIL-STD-810G(CH1), 516.7
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Timing

Fixed timing delay

Export Approvals

Canadian Controlled Goods

GAJT Products

GAJT-710 series



- Single enclosure system for land and fixed applications
- 7-element antenna array
- Easy to integrate, ideal for retrofitting
- **GAJT-710ML**
Land vehicles and fixed installations
- **GAJT-710MS**
Warships and other marine vessels and coastal applications

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)

4-Element Antenna Array

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



1. As measured in a GAJT-AE-N enclosure.



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