Defense GAJT-710MS™

SINGLE-ENCLOSURE GPS ANTI-JAM TECHNOLOGY (GAJT®) FOR MARINE APPLICATIONS

JAMMING AND INTERFERENCE ARE HERE TO STAY

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

LOW COST, SMALL FORM FACTOR

Until now, the high cost and large size of Controlled Reception Pattern Antennas (CRPAs) has limited their use to the largest capital ships while other vessels in the fleet were left vulnerable to GPS interference. The GAJT-710MS CRPA from NovAtel combines an antenna array and null forming electronics into a marine hardened enclosure that is suitable for installation on a wide range of marine vessels, from small patrol boats to large carriers.

LEADING EDGE TECHNOLOGY

The system uses NovAtel's Pinwheel® antenna array to receive GNSS signals in the L1 and L2 bands. Interference mitigation is achieved by applying proprietary digital beamforming algorithms to the signals, creating dynamic nulls to give protection against narrowband and broadband interference sources. Integration to your GPS receiver is seamless.

HOW IT WORKS

GAJT 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 of the GAJT-710MS is a standard Radio Frequency (RF) feed, suitable for input to legacy GPS receivers.

BUILT FOR THE FUTURE

GAJT protects L1 and L2 GPS signals. The wide bandwidth of the GAJT-710MS ensures future compatibility with M-Code GPS.

BENEFITS

+ Low cost anti-jam protection for ships and boats
+ Easy to integrate, ideal for retrofitting
+ Anti-jam protection in dynamic multi-jammer scenarios
+ Compatible with legacy GPS receivers

FEATURES

+ Affordable protection for GPS position, velocity and time
+ Up to 40 dB of additional anti-jamming protection
+ Single enclosure system
+ Simultaneous GPS L1 and L2 protection
+ Adaptive digital nulling

For more information about GAJT, visit www.novatel.com/GAJT or email GAJT@novatel.com

GAJT-710MS™

PERFORMANCE

GNSS (GPS) Signals

Center frequency	
L1	1575.42 MHz
L2	1227.6 MHz

Controlled Reception Pattern Antenna (CRPA)

Number of elements	7
Bandwidth	±11 MHz (centered on L1 and L2)
Noise figure	3 dB
LNA gain	30 dB
VSWR	≤2.0:1
RF output	50 Ω TNC

INTERFERENCE REJECTION

Simultaneous L1 and L2

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

PHYSICAL AND ELECTRICAL

Dimensions	290 × 290 × 120 mm
Weight	7.5 kg

Power

Power consumption	25 W
Input voltage	+10 to +28 VDC

ENVIRONMENTAL (target)

MIL-STD-810G

Temperature

MIL-STD-810G 505.5

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

Humidity

MIL-STD-810G 507.5, Proc. II

Altitude

MIL-STD-810G 500.5

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

Solar Radiation

MIL-STD-810G 505.5

Corrosion

MIL-STD-810G, 509.5
MIL-STD-810G

Water

MIL-STD-810G, 512.5
IEC 60529 IPX6

Sand and Dust

MIL-STD-810G, 510.5

Salt Fog

TBD

Submersion

IP67

Vibration

MIL-STD-810G, 514.6

Shock

MIL-STD-810G, 516.6

Compliance

CE, FCC, WEEE

Connectors

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

ACCESSORIES

- 5 m unterminated GAJT vehicle power cable

EXPORT APPROVALS

Canadian Controlled Goods

OTHER GAJTS

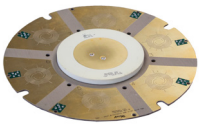
GAJT-710ML

- Single enclosure system for land and fixed applications
- 7-element antenna array
- Easy to integrate, ideal for retrofitting

GAJT-AE-N

- Suitable for smaller platforms including UAVs
- Antenna electronics for 4-element antenna arrays
- Works with most 4-element antenna arrays (supplied separately)

7-element Pinwheel Antenna Array



The 7-element Pinwheel antenna array allows gain pattern shapes to be changed in response to interference. Provides 6 independent nulls.

For more information about GAJT, visit www.novatel.com/GAJT or email GAJT@novatel.com

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