Defense GAJT-700ML™

SINGLE-ENCLOSURE GPS ANTI-JAM TECHNOLOGY (GAJT®)

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 capital ships and key aircraft. QinetiQ Ltd and NovAtel Inc. have combined their world leading research and manufacturing capabilities to produce the first single unit GPS interference mitigation system that is economical and size appropriate for land vehicles.

PATENTED, LEADING EDGE TECHNOLOGY
The system uses NovAtel’s patented seven element Pinwheel® CRPA to receive GNSS signals in the L1 and L2 bands. Interference mitigation is achieved by applying QinetiQ’s proprietary digital beamforming algorithms to the signals, creating dynamic nulls to give protection against narrowband and broadband 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-700ML 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-700ML ensures future compatibility with M-Code GPS.

BENEFITS
+ 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 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
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  20 W
Input voltage  +10 to +28 VDC

ENVIRONMENTAL

MIL-STD-810G
Temperature
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, NATO A-1
Corrosion
MIL-STD-810G, 509.5
MIL-STD-810G, 518.1
Water
MIL-STD-810G, 512.5
IEC 60529 IPX6 and IPX7
Sand and Dust
MIL-STD-810G, 510.5
Vibration
MIL-STD-810G, 514.6 tracked and ground wheeled

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

UK Open General Export License
Canadian Controlled Goods

OTHER GAJT S

GAJT-700MS™
• Single enclosure system for warships and other marine vessels
• 7-element CRPA
• Easy to integrate, ideal for retrofitting

GAJT-AE-N™
• Suitable for smaller platforms including UAVs
• Antenna electronics for 4-element CRPAs
• Works with most 4-element CRPAs (supplied separately)
• Enclosure or card level system

7-element Pinwheel CRPA

The 7-element Pinwheel CRPA allows gain pattern shapes to be changed in response to interference. Provides 6 independant nulls.

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

novatel.com
sales@novatel.com
1-800-NOVATEL (U.S. and Canada)
or 403-295-4900
Europe 44-1993-848-736
SE Asia and Australia 61-400-883-601

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