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-700MS from NovAtel combines a CRPA 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.

Patented, leading edge technology

The system uses NovAtel’s patented seven-element Pinwheel® CRPA to receive GPS 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-700MS 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-700MS 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
**PERFORMANCE**

**GNSS (GPS) Signals**
Center frequency
L1  1575.42 MHz
L2  1227.6 MHz

**Controlled Reception Pattern (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
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
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-700ML**
- Single enclosure system for land and fixed applications
- 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 independent nulls.