

GAJT-AE3

Multi-constellation, multi-frequency GNSS Anti-Jam Technology (GAJT) for up to 8 antenna elements



Jamming and interference are constant threats

Jamming and interference, whether intentional or unintentional, can seriously degrade GNSS positioning, 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.

Enhanced functionality, same battle-proven small form factor

GAJT-AE3 is the next evolution of battle-proven anti-jam technology from Hexagon | NovAtel for space-constrained air platforms. GAJT-AE3 protects all GNSS bands and provides multi-jammer direction finding for best-in-class protection and situational awareness. All these improvements are achieved with a lower SWaP than the competition. Paired with a compatible antenna array from Hexagon | Antcom, this anti-jam solution offers enhanced GNSS tracking performance in benign environments. All these improvements are achieved while maintaining the same form and fit of the previous generation product, GAJT-AE2.

How it works

GAJT-AE3 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

Interference mitigation is achieved by applying proprietary digital null forming algorithms to the signals, creating dynamic nulls to give protection against narrowband and wideband interference sources. The unit is comprised of RF front ends and null forming electronics. Integration with your GNSS receiver is seamless; DC power supply and data output are via separate connectors. We recommend antenna arrays from Antcom for use with the GAJT-AE3.

Protects GNSS navigation and precise timing receivers

GAJT-AE3 protects all GNSS bands, L-Band corrections, and Iridium PNT. The wide bandwidth of the GAJT-AE3 ensures compatibility with M-Code GPS.

Benefits

- Highest level of anti-jam protection for space-constrained aerial platforms
- Easy to integrate
- Anti-jam protection in dynamic multi-jammer scenarios
- Compatible with legacy and modern GNSS receivers
- Digitised signal output
- Enhanced situational awareness
- Pairs seamlessly with Antcom antenna arrays

Features

- Protection for GNSS position, navigation, and timing
- Up to 65 dB of interference suppression
- Multi-constellation, multi-frequency (MCMF) protection
- Protects L-Band corrections and Iridium PNT
- Protects and supports M-Code signals
- Creates adaptive digital nulls in up to 7 simultaneous directions per band
- Multi-jammer direction-finding
- Advanced situational awareness with full spectrum capture
- Multiple antenna configurations possible with Antcom's custom CRPAs
- Easy installation with bolt or rail mounting options
- Rapid antenna array customisation available through Antcom

Performance

Protected bands

GPS	L1, L2, L5
GLONASS	G1, G2, G3
Galileo	E1, E5a/b, E6
BeiDou	B1, B2, B3
QZSS	L1, L2, L5, L6
NavIC (IRNSS)	L5
SBAS	L1, L5
L-Band corrections	1525 – 1559 MHz
Iridium	STL

Interference rejection

Interference suppression	up to 65 dB
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Number of simultaneous nulling directions per band when paired with an 8-element antenna array 7

Electrical

Noise figure (typical)	5 dB
LNA gain	30 dB
VSWR	≤2.0:1
RF output	50 Ω MCX

Power consumption

8 elements in full function	30 W
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Input voltage

+16 to +36 VDC

Connectors

Power and communication ports	Micro D-Subminiature 24-pin
RF inputs	MCX (female)
RF output	MCX (female)

Physical

Dimensions	180 x 140 x 25 mm
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Weight

Bolt down variant	814 g
Rail mount variant	714 g

Installation options

slot mounted
bolt mounted

Environmental

Temperature¹

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

Vibration¹

MIL-STD-810H, 514.7, 514.8, 516.8
DO 160G (Section 8)

Shock¹

MIL-STD-810H, 503.7, 516.7
DO 160 (Section 7)

Humidity¹

100% relative humidity
MIL-STD-810H, 507.6
DO 160 (Section 6)

EMC & power compliance

MIL-STD-704
DO-160
MIL-STD-461G

Corrosion

MIL-STD-810H, 509.7

Atmospheric pressure

MIL-STD-810H, 500.6

Operating pressure and temperature

DO-160 (Section 4)

Timing

Fixed timing delay

Required other equipment

- Up to 8-element Antcom antenna array
- Power/data cable
- Up to 9 impedance matched RF cables
- GPS/GNSS receiver

Compliance

CE, FCC

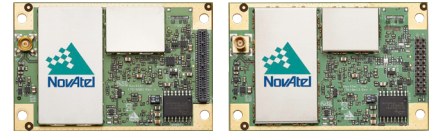
Export approvals

Canadian Controlled Goods

Product pairing suggestions

Receiver

OEM7 series



- MCMF
- Advanced interference mitigation
- 20 g vibration performance rating
- SPAN GNSS+INS integration functionality
- Defence special firmware including anti-spoofing

Antenna array

8NC-7.62CGGNSSP-XX-X-NGG



- 8-element antenna array
- Compatible with GAJT-AE3
- 7 independent null directions per band
- MCMF
- Passive antenna (no LNA required)

8NF-4x8RGGNSSP-XX-X-NGG



- 8-element antenna array
- Compatible with GAJT-AE3
- 7 independent null directions per band
- MCMF
- Passive antenna (no LNA required)

Custom antenna options from Antcom

Hexagon | Antcom are experts in communication and navigation antennas. We have standard antenna arrays to pair with the GAJT-AE3, or we can custom design an antenna for your platform, and manufacture it for high-volume applications.

¹ As measured in a GAJT-AE3 test enclosure.

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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8NC-7.62CGGNSSP-XX-X-NGG series antenna

8-element MCMF CRPA

The 8NC-7.62CGGNSSP-XX-X-NGG product family is an 8-element Controlled Reception Pattern Antenna (CRPA) designed for Multi-Constellation, Multi-Frequency (MCMF) Global Navigation Satellite System (GNSS) reception. This antenna is suitable for class 4 and 5 aerial platforms.

The 8NC-7.62CGGNSSP-XX-X-NGG is designed to provide the maximum performance possible from the GAJT-AE3. When paired with a GAJT-AE3, the 8NC-7.62CGGNSSP-XX-X-NGG can provide up to 7 adaptive digital nulls per band.



Features

- GNSS coverage including:
 - GPS L1/L2/L5 with M-Code support
 - Galileo E1/E5a/E5b/E6
 - GLONASS L1/L2/L3
 - BeiDou B1/B2/B3
 - QZSS L1/L2/L5/L6
 - L-Band corrections
- Up to 7 simultaneous adaptive digital nulls per band when paired with a GAJT-AE3
- SMA connectors
- Passive antenna (no power requirement)

Benefits

- MCMF for assured positioning, navigation and timing (APNT)
- Suitable for class 4 and 5 aerial platforms
- Maximum anti-jam protection to maintain critical operations in contested areas

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Mechanical and environmental

Dimensions

Diameter	7.62" (193.5 mm)
Height	1.37" (34.8 mm)

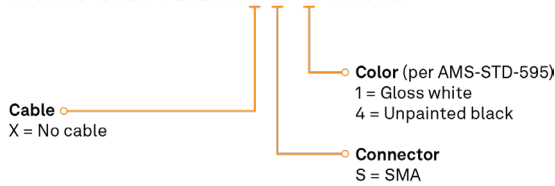
Weight (typical) 42 oz (1191 g)

Materials

Radome	Ultem 1000
Base	6061-T6 aluminium alloy

Part number decoder

8NC-7.62CGGNSSX-XX-X-NGG



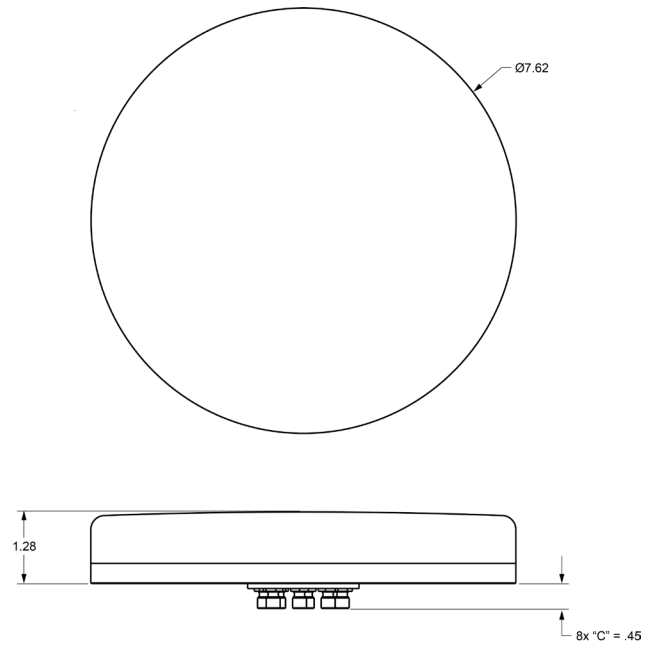
Product pairings

GAJT-AE3

- MCMF GNSS protection
- Protects against jammers in up to 7 directions
- Federated design for aerial platforms
- Multiple antenna array options including conformal customisation and full customisation



Mechanical drawings



Contact Hexagon | Antcom

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For the most recent details of this product: antcom.com

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8NF-4x8RGGNSSP-XX-X-NGG series antenna

8-element MCMF CRPA

The 8NF-4x8RGGNSSP-XX-X-NGG product family is an 8-element, lightweight Controlled Reception Pattern Antenna (CRPA) designed for Multi-Constellation, Multi-Frequency (MCMF) Global Navigation Satellite System (GNSS) reception. The rugged enclosure is designed to withstand the harsh environmental conditions seen in military, aerospace and other applications and is suitable for class 3 and larger aerial platforms.

Optimised for smaller UAV platforms and missiles, the 8NF-4x8RGGNSSP-XX-X-NGG provides excellent performance with the GAJT-AE3. When paired with a GAJT-AE3, the 8NF-4x8RGGNSSP-XX-X-NGG can provide up to 7 adaptive digital nulls per band.

Antcom is able to customise this product family to meet your specific requirements, including a conformal radome for better platform fit. Please contact us for more information about customisation options.

Options

- | | |
|------------------|---|
| Color | <ul style="list-style-type: none"> • Gloss white • Lusterless black |
| Connector | <ul style="list-style-type: none"> • SMA |



Features

- GNSS coverage including:
 - GPS L1/L2/L5 with M-Code support
 - Galileo E1/E5a/E5b/E6
 - GLONASS L1/L2/L3
 - BeiDou B1/B2/B3
 - QZSS L1/L2/L5/L6
 - L-Band corrections
- Up to 7 simultaneous adaptive digital nulls per band when paired with a GAJT-AE3
- SMA connectors
- Paint color options available
- Passive antenna (no power requirement)

Benefits

- MCMF for assured positioning, navigation and timing (APNT)
- Lightweight and aerodynamic, it is optimised for smaller UAV platforms and missiles
- Suitable for class 3 and larger aerial platforms

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Electrical

Signals received

GPS	L1, L2, L5
GLONASS	G1, G2, G3
Galileo	E1, E5a, E5b, E6
BeiDou	B1, B2A, B3I
QZSS	L1, L2, L5, L6
L-Band corrections	
Iridium PNT	

Mechanical and environmental

Dimensions

Length	7.95" (201.9 mm)
Width	4" (101.6 mm)
Height	1.46" (37.1 mm)

Weight (typical) 34oz (964 g)

Temperature -55°C to +85°C

Altitude 70,000 ft

Vibration 30 G_{RMS}

Materials

Radome	Ultem 1000
Base	6061-T6 aluminium alloy

Part number decoder

8NF-4x8RGGNSSX-XX-X-NGG



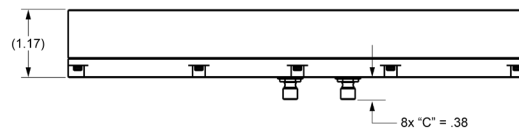
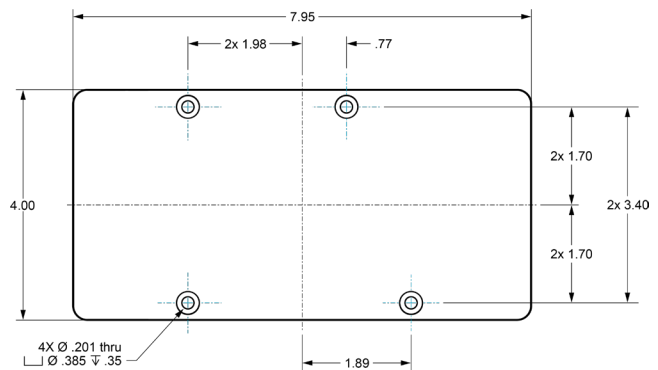
Product pairings

GAJT-AE3

- MCMF GNSS protection
- Protects against jammers from up to 7 directions
- Federated design for aerial platforms
- Multiple antenna array options including conformal customisation and full customisation



Mechanical drawings



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