



Antenna Development Corporation
151 S. Walnut St., Suite B-6, Las Cruces, NM 88001

Medium Gain Patch Antennas

Antenna Development Corporation, Inc. (AntDevCo) has designed and developed a medium gain spacecraft microstrip patch antenna. This antenna is capable of supporting high data rates and up to an estimated 25 Watts of transmitted power. **This single-frequency unit is designed for the NASA Space Network frequency of 2211 MHz – other, custom, frequencies are available.** Applications include GPS, USAF SGLS, NASA SN, radar transponder, and the NASA DSN. The antennas can be supplied with LHCP, RHCP, or linear polarizations. S-band units are supplied in a standard form factor of 8.2 X 8.2 inches. The antenna thickness depends on the bandwidth required – the nominal thickness is 0.065 inches for S-band units. The standard antenna has no radome covering – a space-qualified foam radome is available and recommended to protect the structure. An antenna with a Duroid radome version is also available that has about twice the mass as the standard unit.

All antennas are supplied with extensive testing data including principal plane radiation pattern plots, gain bounds plots, and coverage statistics. Simulations of the expected performance on your satellite can also be supplied.

The antennas may also be ordered with semi-conductive radomes for satellite applications where no exposed dielectrics are allowed.

- Space qualified by similarity
- Conformal form factor
- Low mass
- High Performance

This antenna is based on flight assembly techniques developed by the Physical Science Laboratory at New Mexico State University.



**4-patch Single Frequency
Patch Array Antenna (8 X 8 inches)**

Specifications

- Gain: 10 dB nominal
- Frequency: L band, S-band, C-band, and X-band single frequencies by request.
- Bandwidth: 80 MHz nominal (S-band 2:1)
- HPBW: 45 degrees full width (Example at 2211 MHz)
- Impedance: 50 Ohms
- Polarization: Linear or Circular
- VSWR: < 1.3
- Axial Ratio: < 1.5 dB on axis
- Connector: SMA Female
- Dimensions: 8.2 X 8.2 (S-band)
- Mass: ~ 155 grams
- Temperature: -100 C to +100 C
- Power: up to 25 Watts CW
- IR properties Depends on radome option

AntDevCo is ISO 9001-2000 certified

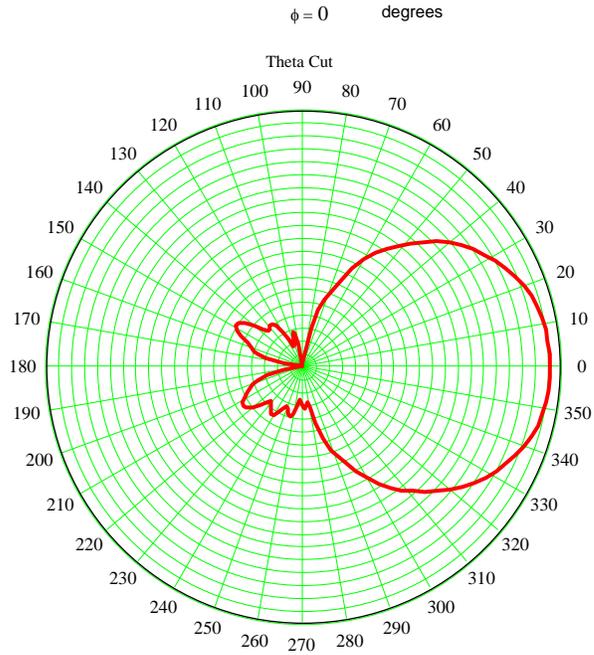
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Precision Antennas for Spacecraft, Rockets, and Missiles



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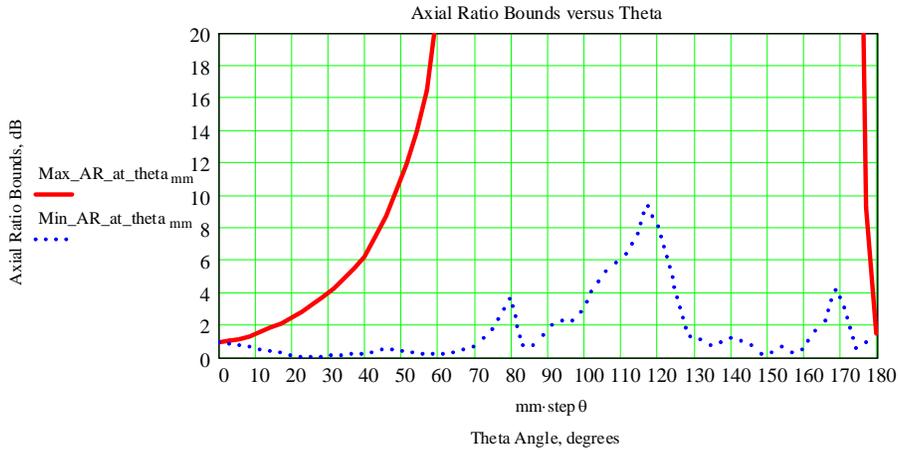
AUT Right Hand Circular Polarization Gain



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dB_per_div = 2 dB
 Plot_max = 12 dB max

rdp_data = "4-patch array 2211 conical scan data.prn"



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 serial = "4 patch array - S/N ADC-05001"

rdp_data = "4-patch array 2211 conical scan data.prn"

Test_date = "13 Dec 05"

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