

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

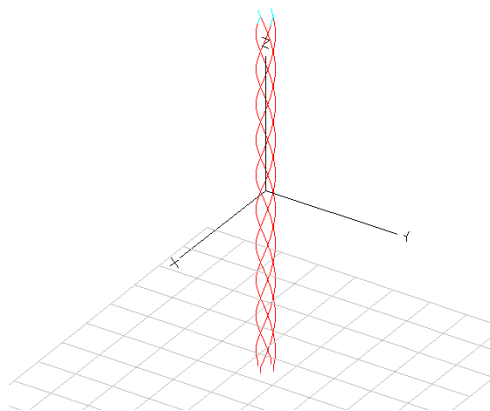
Quadrifilar Helix Antennas

Antenna Development Corporation, Inc. (*AntDevCo*) employees have been the principal designers and manufacturers of spacecraft quadrifilar helix antennas for the Canadian MOST (S-band) and Goddard Space Flight Center ST-5 (DSN X-band) spacecraft programs. These antennas are capable of supporting high data rates and up to 10 Watts of transmitted power (depending on the antenna frequency). Applications include USAF SGLS, NASA SN (Including TDRSS forward/return pairs), and the NASA DSN. The antennas transmit and receive circular polarization with single frequency or dual band operation.

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 designs were developed by the Physical Science Laboratory at New Mexico State University. As a spin off from the University, *AntDevCo* continues the quality and attention to detail efforts characteristic of the laboratory.

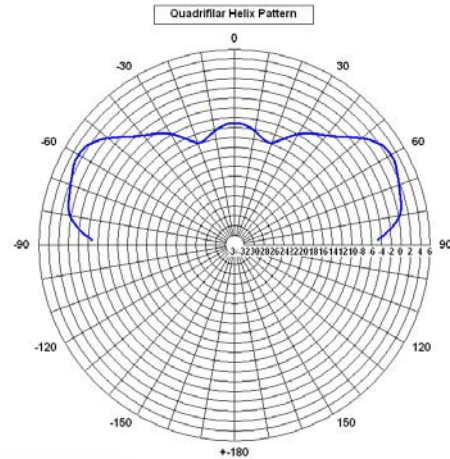
The antennas may also be ordered with semi conductive radomes for satellite applications where no exposed dielectrics are allowed. In summary, the antennas and services are:

- Space Qualified
- Low mass
- High Performance
- Custom antenna radiation patterns available



Quadrifilar Radiator – Simulation in NEC

AntDevCo has had good success with modeling and verifying quadrifilar helix antenna performance.



Quadrifilar Helix Radiation Pattern (simulation)

Nominal Specifications

- Gain: 3 dB nominal at 60° for quadrifilar helix units (optimized for 800 km orbits)
- Frequency: L band, S-band, & X-band frequencies. Single and dual frequency models are available.
- Bandwidth: 40 MHz nominal (S-band)
- Impedance: 50 Ohms
- Polarization: Circular
- VSWR: < 1.5
- Axial Ratio: < 4 dB over most of the pattern
- Connector: SMA Female
- Dimensions: 4" X 4" X 3" standard
- Mass: < 250 grams
- Temperature: -100 C to +100 C
- Power: Up to 10 Watts CW

AntDevCo is ISO 9001:2000 registered..

Come to us for expert help with your small satellite antenna needs.

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