



Ka-BAND RADAR ANTENNA

The 42 inch diameter Ka Band Radar Antenna provides high-performance full 3-channel monopulse capability in a lightweight high-stiffness package for use in high-dynamics autotracking radar applications.

The feed system uses a monopod subreflector support made of quartz-epoxy, thus avoiding the structural resonance problems associated with spars. The reflector is a two-piece composite structure with a circular composite back-up structure to support the parabolic surface. The main antenna surface is a composite laminate composed of nine 0.010 inch thick carbon fiber bi-axial layers, resulting in a 0.090 inch thick solid laminate. This layered construction using these materials provides excellent structural stiffness and low weight, as well as transportation and environmental toughness.

The forward surface of the reflector is coated with a conductive coating to provide the electrical conductivity required for RF performance, and the entire reflector is painted with white polyurethane paint.

Six of these antennas have been delivered to British Aerospace Systems.

SPECIFICATIONS

Model Number	ACR4234
Frequency Range	34.0 – 34.4 GHz
Polarization	Linear
Peak Power	50 kilowatt with 15 PSIG pressure
Average Power	50 Watts
Gain	49 dB minimum
Beamwidth	0.59 degrees +/- 5%
Sidelobes	-18 dB maximum
Cross Polarization	-30 dB minimum
Sum Channel VSWR	1.5 maximum
Difference Channel VSWR	1.7 maximum
Null Depth	35 dB minimum
Error Slope	Error channel less than 17 dB below Sum at 1 mil off boresight
Waveguide Interface	Grooved WR28 Aluminum Cover Flange
Pressurization	15 PSIG
Mechanical Resonance	20 Hz minimum
Tracking Rate	100 degrees/sec
Tracking Acceleration	100 deg/sec/sec
Weight	26 pounds
Operating Temperature	-20 deg C to +50 deg C
Operating Wind	45 knots
Non-operating Wind	100 knots