Advanced Technologies | Datasheet

CALIAN®
Confidence. Engineered.

Ka/Q/V-band gateway antennas

Increase space segment capacity with higher capacity gateways

Calian, Advanced Technologies offers medium to large aperture composite carbon fiber reflector antennas with exceptional performance for the most demanding applications. Competitively priced ten meter antennas are now available, with plans to roll out additional sizes in the future.

- Increase capacity of feeder/gateway links using Ka/Q/V-band spectrum.
- Complete antenna system: feed, reflector, pedestal, integrated hub monopulse tracking system.
- Dimensionally stable carbon fiber technology reduces temperature distortions that de-focus metal antennas.

Low-Risk Deployment:

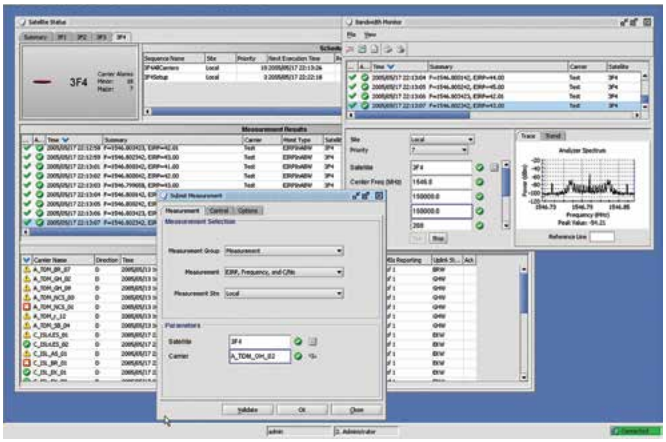
- Engineered for rapid field deployment, single day reflector installation is typical.
- Verified antenna system performance, field measurements available.
- Integrated hub reflector and optional larger pedestal housing electronics, mitigating the need for additional shelters.
- All electric de-ice system simplifies site acquisition and reduces cost, eliminates the need for gas supply.

Our carbon fiber design achieves a significant reduction in thermal distortion compared to metal—a critical factor at maintaining performance at higher frequencies.

Ka/Q/V-Band Gateway Antenna Specs

Antenna Control System Features

- Interfaces with Mon-A-Co and other M&C systems.
- Utilizes off the shelf motor drivers.
- DC brushless for low maintenance.
- 3-axis control: azimuth, elevation, polarization.
- Simplified interface via Ethernet.
- Remote controllable, field upgradeable.
- Multi-tier access system.
- Monopulse tracking, 2 channels.



General Mechanical Specifications

Elevation Travel (continuous)	• 3 – 90 deg
Azimuth travel (continuous)	• +/- 225 deg
Avg. Velocity (az or el)	• 1 deg/sec
Avg. Acceleration (az or el)	• 0.4 deg/sec2
Azimuth Drive Configuration	• Gear & pinion dual AZ motor drives (internally housed)
Elevation Drive Configuration	• Jackscrew single EL motor drive (enclosed, no boot)
Tracking Modes	• Program Track, Step Track, Monopulse

10m RF Specification

	Q-Rx	V-Tx	Ka-Tx
Frequency (GHz)	37.5 – 42.5	47.2 – 51.4	27.5 - 31.0
Antenna Gain (dBi) (0.25 dB margin)	69.2 (@40.0 GHz)	71.4 (@50. GHz)	66.9(@30.0 GHz)
Antenna Noise Temp (K) (30° El)	130K @ 40.0 GHz		
G/T (dB/K): 30° El, 230K LNA, including input losses (coupler, etc)	42.8 @ 40.0 GHz		
Polarization (Transmit & Receive)	Dual circular	Dual circular	Dual circular
Crosspol (Axial Ratio)	30.0 dB (0.5)	30.0 dB (0.5)	30.0 dB (0.5)
VSWR (Return Loss)	1.25:1 (19 dB)	1.25:1 (19 dB)	1.25:1 (19 dB)
Sidelobe Performance (Tx/Rx)	FCC CRF-47 §25.209	FCC CRF-47 §25.209	FCC CRF-47 §25.209

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