Datasheet

CALIAN®
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6.2m GEO Earth Station antenna

Calian offers a 6.2m antenna system that is suitable for many SATCOM applications, including gateways, TT&C, or diversity stations. The motion control system in this antenna makes it capable of tracking geo-synchronous orbits. The antenna can be fitted with several different feeds to support your application. Our ground station integration experience in the satellite industry means this antenna is designed to meet the needs of your network.

Specifications

General configuration

Configuration	• Cassegrain, Ring Focus and Prime Focus designs • 2 axis motion, elevation over azimuth
Main reflector	• 6.2m diameter • Precision formed aluminum • Surface accuracy below 0.010" RMS
Sub reflector	• High accuracy subreflector
Hub	• 5x3 ft. for RF equipment integration
Pedestal	• High stiffness reinforced pedestal
Optional	• De-icing system • Adjustable polarization • Radome

M&C interface

- Ethernet interface for M&C and user interface
- Full remote operation and monitoring with multiple tracking options
- The antenna can be controlled via the web application or via a customer interface

Mechanical performance

Pointing accuracy	• < 0.015°
Speed	• 0.5°/s in azimuth • 0.3°/s in elevation
Travel range	• 200° in azimuth (continuous) • 0°- 90° in elevation
Drives	• Dual torque biased backlash-free drives in azimuth • Precision jack drive in elevation

Power

Drive systems	• 380 to 480VAC 50/60Hz 3-phase or 200 to 240VAC 50/60Hz 3-phase
De-icing system	• 208VAC 60Hz 3-phase or 400VAC 50Hz 3-phase
Auxiliary circuits	• 208/120VAC 60Hz or 230VAC single phase 50Hz

Feed

- Supports single and multi-band feeds, e.g., S to Ka, S/X, C/Ku, X/Ku, X/Ka, Ku/Ka, etc.
- CP and LP Broadband feed options available

Tracking options

Multiple open and closed loop tracking options include:

- Table track
- NORAD TLE
- Step track
- Orbit predictive track (optional)
- Monopulse (optional)

Environmental performance

Temperature	• Operational -20 to +60°C • Survival -40 to +70°C
Seismic	• 0.3g horizontal and vertical
Wind speed	• Operational 72kph (45mph) Gusting up to 100 kph (62 mph) • Survival: 200 kph (125 mph)
Humidity	• 0 to 100% with condensation
Ice accumulation	• 30mm thick on all exposed surfaces
Corrosion	• Galvanized ASTM-A123, stainless and galvanized fasteners, multi-layer epoxy-based paint

Shipping configuration and features

- Modular design to allow for easy shipping in standard containers
- Rapid deployment, assembly, and commissioning at customer site

Ka-band performance

	Rx	Tx
Frequency (GHz)	17.70 - 21.20	27.50 - 31.00
Feed Ports	2	2
Antenna Gain @ mid band	59.7 dBi	63.1 dBi
Beamwidth @ -3dB	0.16°	0.11°
G/Ts at Clear Sky @ 20° Elevation		
17.70 GHz	35.8 dB/K *1	
19.25 GHz	36.3 dB/K *1	
21.20 GHz	36.7 dB/K *1	
Power handling, per port (CW)		650 W
VSWR (Feed interface)	1.30	1.30
Cross Pol Isolation	30.8 dB	30.8 dB
Port to Port isolation Rx→Tx, Tx→Rx	85 dB	85 dB
Port to Port isolation Rx→Rx, Tx→Tx	18 dB	18 dB
Sidelobes	Meets ITU-R S-580-6	

*1 The G/T is evaluated with a 120K LNA bolted at the feed interface.

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www.calian.com/space/antennas
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