

EARTH STATION ANTENNA 13.2 METERS ASL 13.2 LMC / LMKu

Antenna Features

- Wide variety of feed options designed to meet the latest international standards.
- Doubly contoured, high strength, lightweight aluminium panels fabricated on new aircraft quality tooling providing exacting close tolerances.
- All steel structure are hot dipped galvanized after fabrication providing a thermal homogeneous structure to support operation at high frequencies.
- Pedestal mounted azimuth jack providing ease of relocation for 190° coverage in two 120° segments.
- Generous hub enclosure, 9.28 cubic meters (328cu. ft.), with easy access for inclusion of RF components.
- Stainless steel and galvanized metric hardware throughout.
- Low cost apron type foundation design including anchor bolts and embedded hardware.

Optional Features

- S, C, X, Ku, DBS and Ka Band
- Tx/Rx, 2Tx/2Rx, TT&C, 6 Port Feeds
- Hybrid, Hi Power and Low Pim Feeds
- Two and Three Axis Motorization Packages
- Staircase and Platform for ready access to hub
- Aircraft Warning Lights
- Lightning Protection
- High Wind Designs
- Low Temperature Designs
- Deicing for Feed, Reflector and Sub reflector
- Single or Dual TX waveguide integration from Hub to across upper Az axis



MECHANICAL PERFORMANCE

Antenna Diameter	13.2 Meter (37 Ft)
RF Configuration	Cassegrain Optics
Hub Dimensions	102.5" (2.60 M) diameter x 56" (1.42 M) height
Antenna Structure	Elevation over Azimuth, Pedestal & Reflector, Hot Dipped Galvanized After Fabrication
Reflector Panels	Three tiers: Twelve (12) Inner, Twenty-four (24) Mid, and Twenty-four (24) Outer.
Azimuth Drive	190 Degree coverage in two (2) 120 Degree Segments, Self Locking, Mechanical Screw Jack Mounted to Pedestal
Elevation Drive	5 to 90 Degree Continuous, Self Locking, Mechanical Screw Jack
Maximum Feed Pressure	0.50 psi
Foundation	33 Ft x 27 Ft x 2 Ft 66 cubic yards of concrete, 7000 lbs. of deformed re-enforcing bar.

ENVIRONMENTAL PERFORMANCE

Operational Wind	45 mph (72km/h) Gusting to 60 mph (97km/h) High Wind designs available
Survival Wind	130 mph (209 km/h) at any position
Operational Temperature	+5F to +122F (-15C to +50C)
Survival Temperature	-22F to +140F (-30C to +60C)
Rain	4 inches/hr (10cm/hr)
Relative Humidity	100%
Solar Radiation	360 BTU/hr/ft ² (1000 Kcal/hr/m ²)
Ice (survival)	1 in (2.54cm) on all surfaces, no wind: 0.5 in (1.25cm) on all surfaces at 80 mph (130km/h) gusts
Atmospheric Conditions	As per the environment in industrial areas or coastal regions
Shock and Vibration	As encountered by commercial truck and air transportation
Seismic	0.1 G Vertical and 0.3 G Horizontal Acceleration (8.3 Richter/11 Modified Mercalli Scale)

Feed Configuration		C-Band		C-Band		Ku-Band	
		4 Port Feed		4 Port Feed		4 Port Feed	
		CP		LP		LP	
		Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency	GHz	3.4 3.8 4.2	5.725 6.225 6.725	3.4 3.8 4.2	5.85 6.25 6.65	10.7 11.725 12.75	13.75 14.125 14.5
Ambient Temperature	Centigrade	23 23 23	23 23 23	23 23 23	23 23 23	23 23 23	23 23 23
Diameter	meters	13.2 13.2 13.2	13.2 13.2 13.2	13.2 13.2 13.2	13.2 13.2 13.2	13.2 13.2 13.2	13.2 13.2 13.2
Theoretical Gain Go	dbi	53.45 54.41 55.28	57.97 58.69 59.37	53.45 54.41 55.28	58.16 58.73 59.27	63.41 64.19 64.92	65.58 65.81 66.04
Antenna Gain Gs	dbi	51.70 52.66 53.52	56.32 57.04 57.7	51.64 52.60 53.47	56.45 57.02 57.55	61.24 62.62 62.7	63.5 63.72 63.94
Antenna Noise Temperature	Kelvin	51 51 50		53 53 53		68 69 69	
LNA Noise Temperature	Kelvin	30 30 30		30 30 30		65 65 65	
Effective LNA Noise Temp	Kelvin	33 33 33		33 33 33		68 68 68	
System Temperature	Kelvin	84 84 83		86 86 86		136 137 137	
	dbK	19.23 19.22 19.22		19.37 19.36 19.36		21.34 21.36 21.38	
Antenna System G/T	dbK	32.47 33.44 34.30		32.28 33.24 34.11		39.9 40.64 41.32	
7.5		59 59 59	56 57 57	61 61 61		79 80 83	80 82 83
10		55 55 55	53 53 53	58 58 58		74 75 77	74 75 76
20		51 51 50	48 48 48	53 53 53		68 69 69	65 66 66
40		50 49 49	46 46 46	52 52 52		66 67 67	63 63 63
Maximum Transmit Power	Watts	420 420 420	5000 5000 5000		5000 5000 5000	420 420 420	2000 2000 2000
Transmit eirp	dbW	78 79 80	93 94 95		93 94 95	88 88 89	97 97 97
Sidelobe envelope	dbi	29-25log(t) 1>20	29-25log(t) 1>20	29-25log(t) 1>20	29-25log(t) 1>20	29-25log(t) 1>20	29-25log(t) 1>20
% peak sidelobes over envelope		3db/10%	3db/10%	3db/10%	3db/10%	3db/10%	3db/10%
Cross-pol	db	30	30	35	35	35	35
Tx > Rx Rejection	db	85	0	85	0	85	0
Rx > Tx Rejection	db	0	85	0	85	0	85
Insertion Loss	db	0.45	0.4	0.55	0.5	0.8	0.7



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