



# Earth Station Antenna

Models ASL 9.0 LMC / LMKu

## Engineering + Craftsmanship + Service

We welcome you to the world of **Alpha Satcom, Inc.** The oldest, new antenna company on the planet. **ASI** is dedicated to bringing to you, the discerning customer, world-class products and services at the right price and at the right time.

Comprised of a team of Engineers and Satellite Professionals, both of whom with a stellar history reaching back to the beginnings of the Satellite Industry, **ASI** is uniquely qualified to bring to the market new, modern, state-of-the-art, antennas that will provide years of exceptional service. Coupled with a network of select customer focused companies, **ASI** can address the various requirements your particular business plan requires. We invite you to step into the professional world of **Alpha Satcom, Inc.**

## Antenna Features

1. Wide variety of feed options designed to meet the latest international standards.
2. Doubly contoured, high strength, lightweight aluminium panels fabricated on new aircraft quality tooling providing exacting close tolerances.
3. All steel structure are hot dipped galvanized after fabrication providing a thermal homogeneous structure to support operation at high frequencies.
4. Pedestal mounted azimuth jack providing ease of relocation for 190° coverage in two 120° segments.
5. Generous hub enclosure, 5.97 cubic meters, with easy access for inclusion of RF components.
6. Stainless steel and galvanized metric hardware throughout.
7. Low cost apron type foundation design including anchor bolts and embedded hardware.
8. Three (3) years warranty.

## 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
- Platform Mounted Hand Winch





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### MECHANICAL PERFORMANCE

<b>Antenna Diameter</b>	9.0 Meters (29.5 Feet)
<b>RF Configuration</b>	Cassegrain Optics
<b>Hub Dimensions</b>	91" (2.3 M) diameter x 55" (1.4 M) height
<b>Antenna Structure</b>	Elevation over Azimuth, Pedestal & Reflector, Hot Dipped Galvanized After Fabrication
<b>Reflector Panels</b>	Sixteen (16) - Precision, Stretched Formed, Aluminum, High Quality Panels
<b>Azimuth Drive</b>	190 Degree coverage in two (2) 120 Degree segments, Self Locking, Mechanical Screw Jack Mounted to Pedestal
<b>Elevation Drive</b>	5 to 90 Degree Continuous, Self Locking, Mechanical Screw Jack
<b>Maximm Feed Pressure</b>	0.50 psi
<b>Foundation</b>	22ft x 21ft x2ft : 34.2 yds <sup>3</sup> of concrete and 3100 lbs. of reinforcing bar

### ENVIRONMENTAL PERFORMANCE

<b>Operational Wind</b>	45 mph (72km/h) Gusting to 60 mph (97km/h) High Wind designs available.
<b>Survival Wind</b>	130 mph (209 km/h) at any position
<b>Operational Temperature</b>	+5F to +122F (-15C to +50C)
<b>Survival Temperature</b>	-22F to +140F (-30C to +60C)
<b>Rain</b>	4 inches/hr. (10cm/hr.)
<b>Relative Humidity</b>	100%
<b>Solar Radiation</b>	360 BTU/hr./ft <sup>2</sup> (1000 Kcal/hr./m <sup>2</sup> )
<b>Ice (survival)</b>	1 in (2.54cm) on all surfaces, no wind: 0.5 in (1.25cm) on all surfaces at 80 mph (130km/h) gusts
<b>Atmospheric Conditions</b>	As per the environment in industrial areas or coastal regions
<b>Shock and Vibration</b>	As encountered by commercial truck and air transportation
<b>Seismic</b>	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 Range	GHz	3.625-4.2	5.85-6.426	3.625-4.2	5.85-6.426	10.7-12.75	13.75-14.5
Mid-Band Gain	dBi	49.09	53.28	49.34	53.63	58.48	60.36
VSWR Performance	deg	1.3:1	1.3:1	1.3:1	1.3:1	1.3:1	1.3:1
3dB Beam Width	deg	0.53	0.35	0.53	0.35	0.18	0.16
10dB Beam Width	deg	0.92	0.6	0.92	0.6	0.31	0.27
Antenna Noise Temperature	Kelvin	55		41		60	
10 Degrees Elevation	Kelvin	51		36		53	
20 Degrees Elevation	Kelvin	49		35		51	
40 Degrees Elevation	Kelvin	26		26		26	
LNA Noise Temperature	Kelvin	77		62		79	
System Temperature	dB/K	30.25		31.39		39.51	
Typical G/T @ 5 Degrees	Watts		5000		10000		10000
Tx Power Capability							
Port to Port Isolation							
Tx > Rx Rejection	dB	85	0	85	0	85	0
Rx > Tx Rejection	dB	0	85	0	85	0	50
Rx-Rx, Tx-Tx (CP)		35	35				
Rx-Rx, Tx-Tx (LP)				35	35	35	35
Cross-pol on Axis	dB	30	30	35	35	35	35
Cross-pol across 1dB Beam width	dB	30	30	30	30	30	30
Insertion Loss	dB	0.5	0.65	0.25	0.3	0.5	0.65
Sidelobe Envelope	dBi	29-25 Log Theta (1 to 20 deg) ITU-580					
Feed Interface		WR-229 CPR	WR-137 CPR	WR-229 CPR	WR-137 CPR	WR-75 CPR	WR-75 CPR

(All values listed are measured at rear feed output flange) (Note: Other Operation Frequencies Available)



