



# Earth Station Antenna

## Model ASI 9.0-Mtr

### 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, ASI is uniquely qualified to bring to the market new and 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

- 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 homogenous structure to support operation at high frequencies.
- Generous hub enclosure with easy access for inclusion of RF components.
- Pedestal mounted azimuth jack providing ease of relocation for 190° coverage in two 120° segments.
- Stainless steel and galvanized metric hardware throughout.
- Low cost apron type foundation design including anchor bolts and hardware.
- 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 & Platform easy access to hub
- Aircraft Warning Lights
- Lightning Protection
- High Wind Designs
- Low Temperature Designs
- Single or Dual Tx Waveguide Integration from Hub to Upper Axis
- Deicing for Feed, Reflector and Subreflector



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[www.alpha-satcom.com](http://www.alpha-satcom.com)



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MECHANICAL PERFORMANCE	
Antenna Diameter	9.0 Meters (29.5 Feet)
RF Configuration	Cassegrain Optics
Hub Dimension	91" (2.3M) diameter x 55" (1.4M) height
Antenna Structure	Elevation over Azimuth, Pedestal & Reflector, Hot Dipped Galvanized After Fabrication
Reflector Panels	Sixteen (16) - Precision, Stretched Formed, Aluminum, High Quality Panels
Azimuth Drive	200° Coverage in two (2) 120° segments, Self Locking, Mechanical Screw Jack Mounted to Pedestal
Elevation Drive Configuration	5° to 90° Continuous, Self Locking, Mechanical Screw Jack
Maximum Feed Pressure	0.50 psi
Foundation	22ft x 21ft x 2ft : 34.2 yds <sup>3</sup> of concrete and 3,100 lbs. of reinforced bar
ENVIRONMENTAL PERFORMANCE	
Operational Wind	45 mph (72km/h) Gusting to 60 mph (100km/h) High Wind designs available
Survival Wind	130 mph (209 km/h) at any position
Operational Temperature	+5°F to +122°F (-15°C to +52°C) option for operation at -30°C available
Survival Temperature	-22°F to +140°F (-30°C to +60°C)
Rain	4 inches/hr. (10cm/hr.)
Relative Humidity	100%
Solar Radiation	360 BTU/hr./ft <sup>2</sup> (1000 Kcal/hr./m <sup>2</sup> )
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)

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<b>Preliminary Antenna Performance Estimate</b> <b>9.0-mtr Ku FRU 10.7-12.75 &amp; 13.75-14.5</b> 9.0 meters Cassegrain Ku-Band System 4-Port LP		<b>Ku-Band</b>	
		<b>4 Port Feed</b>	
		<b>LP</b>	
		<b>Receive</b>	<b>Transmit</b>
<b>Frequency Range</b>	<b>GHz</b>	10.7-12.75	13.75-14.5
<b>Mid-Band Gain</b>	<b>dBi</b>	58.48	60.36
<b>VSWR Performance</b>		1.3:1	1.3:1
<b>3dB Beam Width</b>	<b>deg</b>	0.18	0.16
<b>10dB Beam Width</b>	<b>deg</b>	0.31	0.27
<b>Antenna Noise Temperature</b>			
10° Elevation	<b>Kelvin</b>	68	
20° Elevation	<b>Kelvin</b>	61	
40° Elevation	<b>Kelvin</b>	59	
<b>LNA Noise Temperature</b>	<b>Kelvin</b>	31	
<b>System Temperature</b>	<b>Kelvin</b>	90	
<b>Typical G/T @ 40 °</b>	<b>db/K</b>	38.7	
<b>Tx Power Capability</b>	<b>Watts</b>		10000
<b>Port to Port Isolation</b>			
Tx > Rx Rejection	<b>dB</b>	85	0
Rx > Tx Rejection	<b>dB</b>	0	85
Rx - Rx, Tx - Tx (CP)			
Rx - Rx, Tx - Tx (LP)		35	35
<b>Cross-pol on Axis</b>	<b>dB</b>	35	35
<b>Cross-pol across 1dB Beam Width</b>	<b>dB</b>	30	30
<b>Insertion Loss</b>	<b>dB</b>	0.5	0.65
<b>Sidelobe Envelope</b>	<b>dBi</b>	29-25 Log Theta (1-20°) ITU-580	
<b>Feed Interface</b>		WR-75 CPR	WR-75 CPR

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