



# Earth Station Antenna

## ASI 9.0M Turning Head Antenna

### Description:

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.](#)

### Product & Pedestal Features:

- Wide variety of feed options designed to meet the latest international standards.
- Doubly contoured, high strength, light weight aluminium panels fabricated on new aircraft quality tooling providing exacting close tolerances.
- Generous hub enclosure, 9.28 cubic meters (328 cu. ft.), with access for inclusion of RF components.
- A 360°, Azimuth drive with an external Gear Rothe Erde Slew Ring Bearing and a Dual Pinion Drive Gear Box and single drive.
- Mechanical screw jack for Elevation travel.
- Motors are 5HP for Elevation and 3HP for Azimuth.
- Conical Mount (with Az. Bearing interface).
- Galvanized Cylindrical Mount with access.
- Foundation Template with Anchor bolts.

### 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
- \* High Wind Designs
- \* Low Temperature Designs
- \* Anti-Ice for Feed, Reflector and Sub-Reflector
- \* Single or Dual TX Waveguide Integration from Hub to across Upper Az Axis



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



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<u>Preliminary Antenna</u>		Band - 1			Band - 2		
<u>Performance Estimate</u>		Receive			Transmit		
9.0-Mtr		LP			LP		
<b>Frequency: C-Band 3.4 — 4.2 &amp; 5.725 — 6.725</b>							
Frequency	GHz	3.4	3.8	4.2	5.75	6.25	6.725
Ambient Temperature	Centigrade	23	23	23	23	23	23
Diameter	Meters	9	9	9	9	9	9
Theoretical Gain Go	dbi	50.12	51.08	51.95	54.68	55.40	56.07
Antenna Gain Gs	dbi	47.89	48.85	49.72	52.91	53.63	54.29
Antenna Noise Temperature	Kelvin	50	49	49			
LNA Noise Temperature	Kelvin	30	30	30			
Effective LNA Noise Temperature	Kelvin	31	31	31			
System Temperature Ts	Kelvin	81	80	80			
Antenna System G/T	dbK	19.06	19.05	19.04			
	dbK	28.83	29.80	30.67			
Elevation Angle	40 degrees						
Antenna Noise Temperature at :							
	7.5° Elevation	59	59	59			
	10° Elevation	55	55	55			
	20° Elevation	51	51	50			
	40° Elevation	50	49	49			
Maximum Transmit Power	Watts				2500	2500	2500
Transmit eirp	dbW				87	88	88
Antenna Pattern Features:							
	3db beamwidth	deg	0.55		0.34		
	10db beamwidth	deg	0.94		0.59		
	Sidelobe envelope	dbi	29-25log(t)	1 > 20	29-25log(t)	1 > 20	
	% peak sidelobes over envelope			3db / 10%			3db / 10%
Antenna Terminal Characteristics							
	Cross-pol	db	35		35		
	Tx > Rx Rejection	db	85		85		
	Rx > Tx Rejection	db	85		85		
	Insertion Loss	db	0.50		0.50		
	Rx - Rx Isolation	db	18				
	Tx - Tx Isolation	db			35		
	Return Loss (VSWR)	db	17	(1.3:1)	17	(1.3:1)	
	Waveguide Size	dBi	WR 229		WR 137		

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All design, specifications and availabilities of products and services presented in this bulletin are subject to change without notice. 6/21



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ELECTRICAL	
Antenna Size	9.0-Mtr
Antenna Optics	Shaped Parabolic Cassegrain System
Feed Type	Composite, Conical Horn Feed & Sub-reflector
Feed Options	4 Port, Linear, C / Ext
Frequency	Ext - C Band Rx (Ghz) 3.4 - 4.2, TX (Ghz) 5.75 - 6.725
Antenna Gain (dBi)	Ext - C Band Rx(dBi) 48.85, TX (dBi) 53.63
G/T (Typical)	Ext - C Band 29.8 dB/K°
Cross Pol	35 dB
VSWR	1.30 : 1
Tx to Rx Isolation	85 dB
Feed Rotation	Motorized Drive
Output Waveguide Flange	RX : CPR229G TX : CPR 137G
Power Handling Capacity	2.5KW
Radiation Pattern	As per ITU - R.S.580 - 6

MECHANICAL		ENVIRONMENTAL	
Azimuth Travel	330° Continuous	Operational Winds	70 Kmph gusting to 100 Kmph
Elevation Travel	5° - 90°	Survival Winds	200 Kmph
AZ & EL Travel Rate	4° / Minute	Ambient Temperature	-15° to 50° C
Polarization Travel	180° Minimum	Rain	Up to 100 mm/hr
Feed Rotation	±90°	Humidity	100%
Weight of Reflector	2.5 Tons	Atmospheric Conditions	As per environment in industrial areas or coastal regions.
Weight of Pedestal	3.0 Tons		
Reflector Structure	Aluminum Alloy		
Mount Structure	Steel (Galvanized)		
Foundation Size	Varies as per pedestal		



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