Earth Station Antenna

ASI 11.3M Limited Motion Ka-Band Antennas

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.

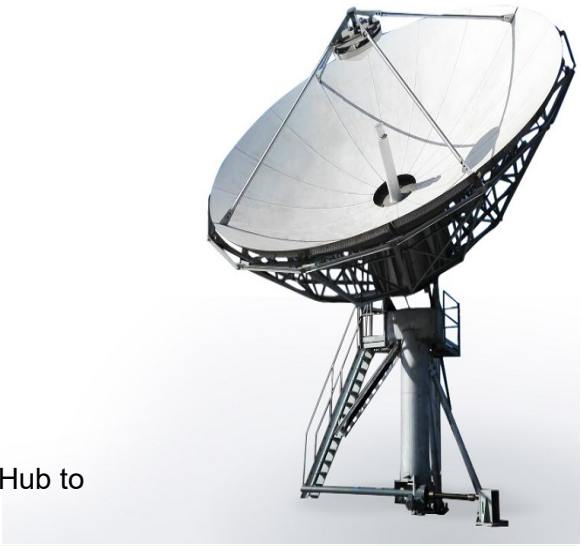
Comprised of a team of Engineers and Satellite Professionals, both of whom with a stellar history reaching back to the beginnings of the Satellite Industry, ASI is uniquely qualified to bring to the market new, modern, state-of-the-art, antennas that will provide years of exceptional service. Coupled 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 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.
- All steel structures 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 (328 cu. ft.), with 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
* 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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Preliminary Antenna Performance Estimate 11.3-Mtr		Band - 1 Receive CP			Band - 2 Transmit CP		
Frequency: Ka FRU 17.7-21.2 & 27.5-31.0							
Frequency Range	**GHz**	**17.7**	**19.45**	**21.2**	**27.5**	**29.25**	**31**
Ambient Temperature	**Centigrade**	23	23	23	23	23	23
Diameter	**Meters**	11.3	11.3	11.3	11.3	11.3	11.3
Theoretical Gain Go	**dbi**	67.78	68.59	69.34	71.60	72.13	72.64
Antenna Gain Gs	**dbi**	64.92	65.64	66.29	68.70	69.09	69.45
Antenna Noise Temperature	**Kelvin**	77	91	122			
LNA Noise Temperature	**Kelvin**	120	120	120			
Effective LNA Noise Temperature	**Kelvin**	121	121	121			
System Temperature Ts	**Kelvin**	198	212	243			
	dbK	22.96	23.27	23.86			
Antenna System G/T	**dbK**	41.96	42.37	42.42			
Elevation Angle	**20 degrees**						
Antenne Noise Temperature at :							
7.5°	**Elevation**	106	134	180			
10°	**Elevation**	94	117	157			
20°	**Elevation**	77	91	122			
40°	**Elevation**	69	80	100			
Maximum Transmit Power	**Watts**				500	500	500
Transmit eirp	**dbW**				96	96	96
Antenna Pattern Features:							
3db beamwidth	**deg**		0.08			0.06	
10db beamwidth	**deg**		0.13			0.10	
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			0	
Rx > Tx Rejection	**db**		0			85	
Insertion Loss	**db**		0.70			0.60	
Rx - Rx Isolation	**db**		35				
Tx - Tx Isolation	**db**					35	
Return Loss (VSWR)	**db**		17	(1.3:1)		17	(1.3:1)
Waveguide Size	**dBi**		WR-28			WR-42	

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MECHANICAL PERFORMANCE

Antenna Diameter	11.3 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	Two Tiers, Twelve (12) Inner: Twenty-four (24)Outer - Precision, Stretched Formed, Aluminum, High Quality Panels
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	2 7ft x 21ft x2ft : 34.2 yds^3 of concrete and 3100 lbs. of reinforcing 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)

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