

HARRIS 13 METER SATELLITE EARTH STATION ANTENNAS



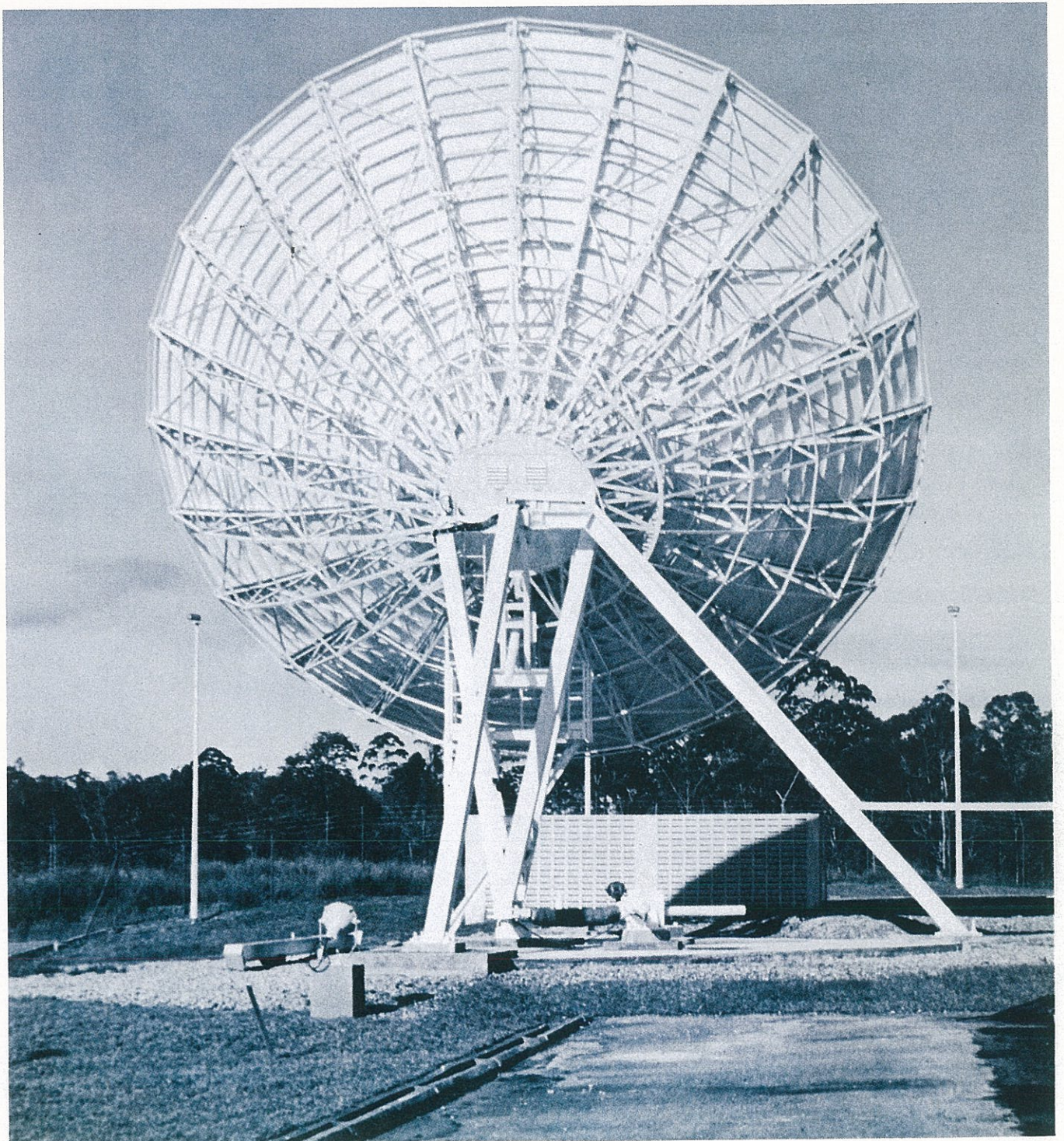
FEATURES:

- 53.3 dB gain at 4 GHz
- Fully field-proven worldwide
- For INTELSAT Standard "B" and similar applications
- Turn-key installation available for antenna or complete earth station



HARRIS 13 METER SATELLITE EARTH STATION ANTENNAS

For INTELSAT Standard "B" earth stations and similar applications requiring high gain and low sidelobes, the Harris 13-meter antenna is providing excellent service around the world. A Vee-shaped pedestal structure supports the reflector. Special pedestals are available for survival of high (150 mi/h) and extremely high (210 mi/h) wind conditions. As with all Harris antennas, the 13-meter is designed with an extra margin of ruggedness and mechanical quality, for years of trouble-free service.



STANDARD CONFIGURATIONS AND OPTIONS:

MODEL 5270: Antenna and standard Vee-shaped pedestal. Handcrank azimuth, elevation and polarization adjustment (standard).

DRIVE OPTIONS:

- Model 7022 ac motorized drive. Drive system includes remote control system and remote angle readout. The system provides simultaneous drive in azimuth, elevation and polarization. The control system includes thumbwheel switches to preset all angles for any two satellites, for simplified rapid switchover. For additional information, refer to the technical data sheets for Model 7022 Antenna Drive System.
- Other drive systems are available for special requirements.

FEED OPTIONS: The following feed systems are available:

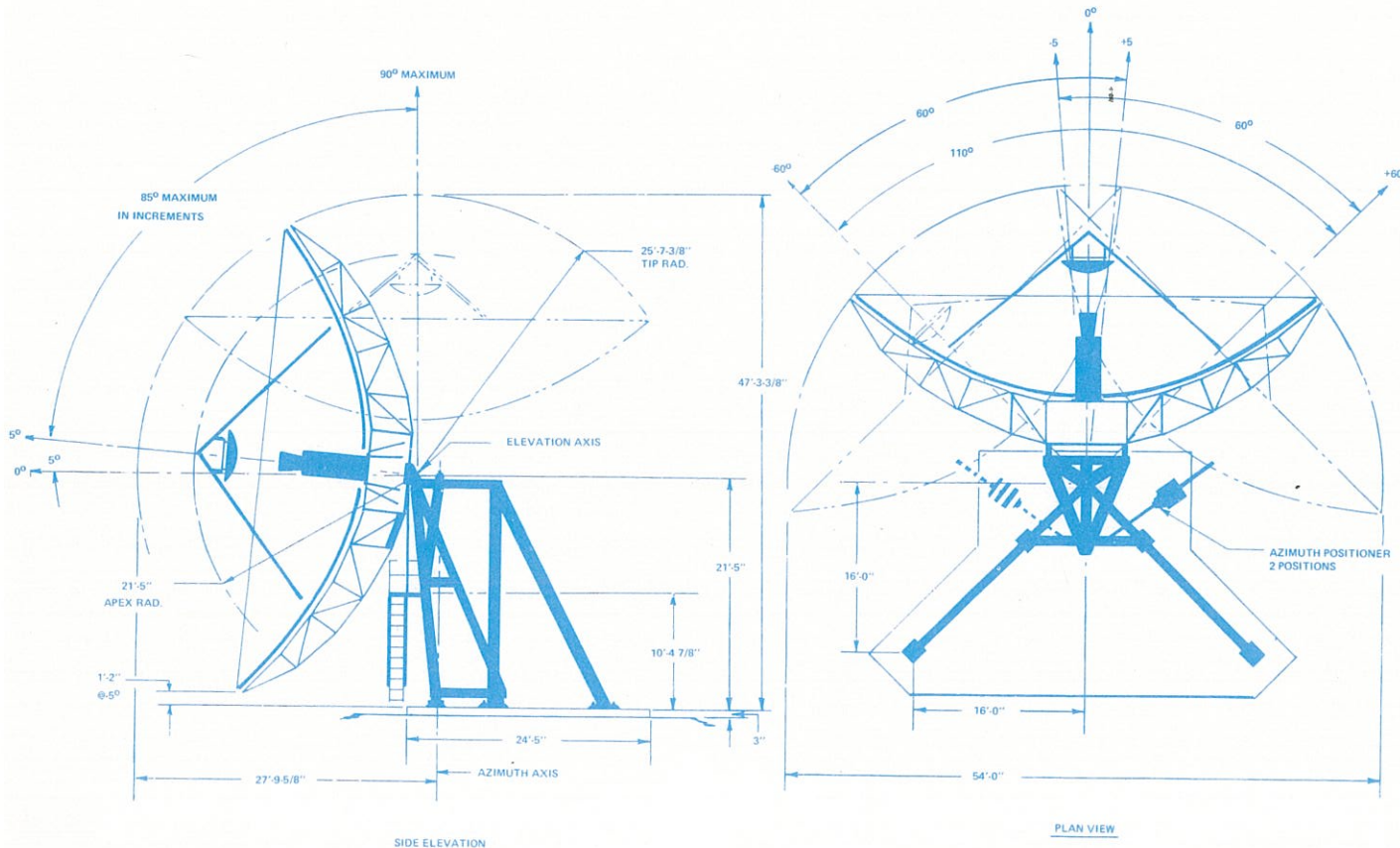
- Model 6715 dual polarization receive-only feed. Linear polarization is standard; circular polarization is optional.
- Model 6722 dual port transmit/receive feed. Linear orthogonal polarization is standard; linear copolar polarization (for use with Comstar) is optional. Circular polarization version of this feed is also optional.
- Model 6728 frequency reuse (four port) linear polarization transmit/receive feed.
- Model 6735 frequency reuse (four port) circular polarization transmit/receive feed.

ADDITIONAL SYSTEM OPTIONS:

- Feed deicing
- Half-reflector deicing
- Full-reflector deicing
- Aircraft warning light
- Lightning protection
- High wind (150 mi/h) survival
- Extreme wind (210 mi/h) survival
- LNA enclosure

MECHANICAL SPECIFICATIONS

Azimuth Travel	110° (2 increments)
Elevation Travel	5° to 90°
Weight - Reflector	14,200 pounds (6440 kg)
Weight - Pedestal	13,500 pounds (6125 kg)
Foundation	As shown below; depth 3.0 feet (0.9 m)
Foundation Concrete Volume	55 cubic yards (42 cubic m)
Soil Bearing Capacity (minimum)	2000 pounds/square feet (9760 kg/sq. m)



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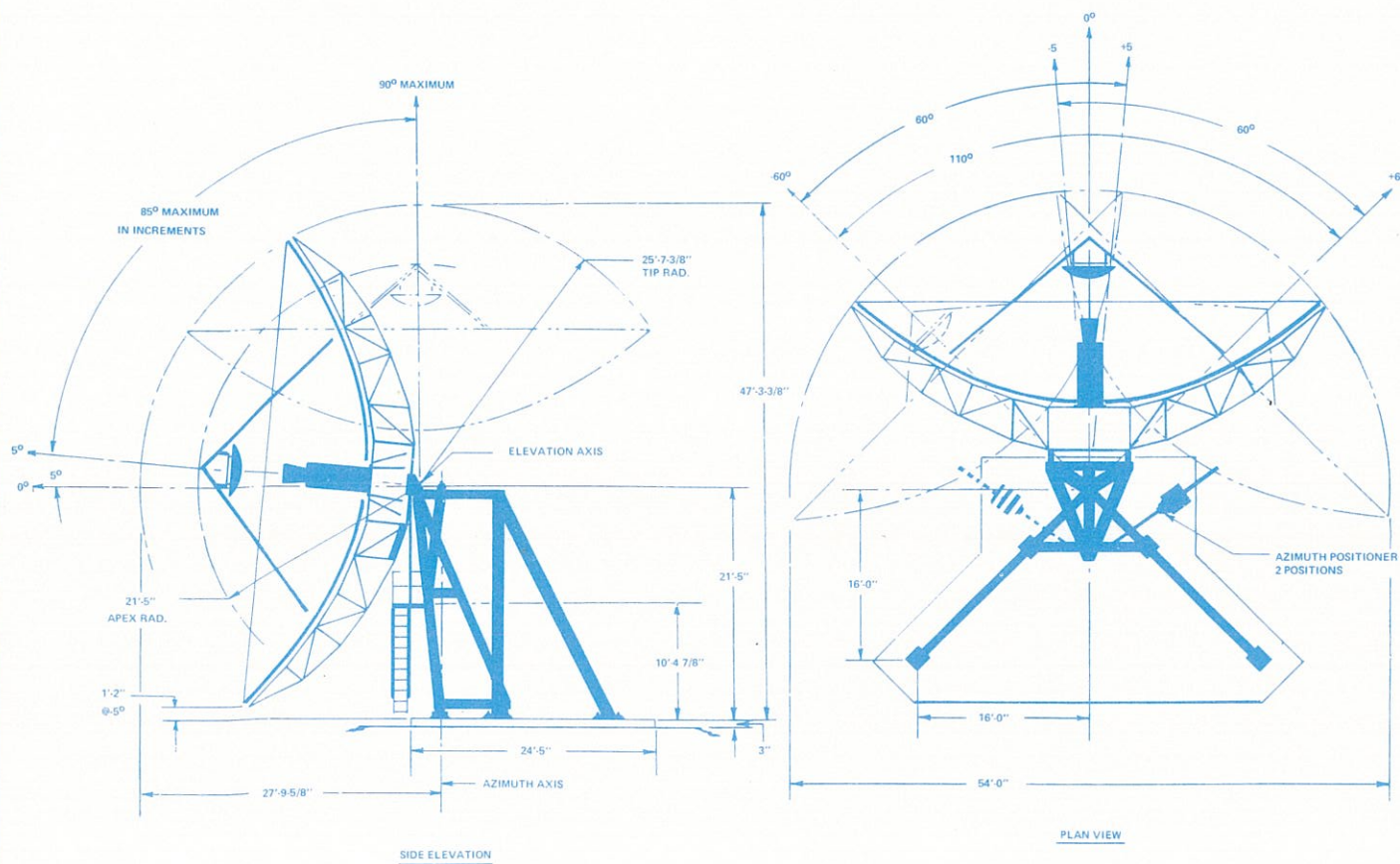
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SPECIFICATIONS

Electrical Specifications:

Receive Frequency	3.7 to 4.2 GHz	
Transmit Frequency	5.925 to 6.425 GHz	
Antenna Gain in dB at 4 GHz	53.3 with CP frequency reuse feed	
Antenna Gain in dB at 6 GHz	56.4	
Sidelobe Patterns:		
First Sidelobe	-14 dB	
1° to 48°	32 - 25 log ₁₀ θ	
48° to 180°	-10 dBi	
VSWR (Receive and Transmit)	1.3:1 or better	
Axial Ratio:		
Linear Polarization	35 dB (typical 40 dB)	
Frequency Reuse Circular Polarization	0.5 dB (INTELSAT IVA, V)	
Tx/Rx Circular Polarization	2.9 dB (INTELSAT III, IV)	
Antenna Noise Temperature in °K	5° elevation:	53
(with CP frequency reuse feed)	10° elevation:	42
	20° elevation:	34
	40° elevation:	31
Antenna Beamwidth in Degrees	At receive, -3 dB:	0.38
	At receive, -15 dB:	0.8
	At transmit, -3 dB:	0.25
	At transmit, -15 dB:	0.5
Typical G/T in dB at 20° Elevation Angle, Clear Horizon, 4 GHz.	With 40°K LNA:	34.0
	With 100°K LNA:	31.6
Polarization Rotation.	Manual ±90° (linear FRU feeds ±50°), optional remote motor drive and readout	

Environmental Specifications:

Operational Winds	60 mi/h (97 km/hr)
Degraded Operation	60 mi/h (97 km/hr), gusts to 90 mi/h (145 km/hr)
Survival Winds (any position)	125 mi/h (200 km/hr), optional designs for 150 mi/h 240 km/hr and 210 mi/h (338 km/hr) available
Ambient Temperature (Operational)	-25°C to +45°C (-13°F to 113°F)
Ambient Temperature (Survival)	-30°C to +70°C (-22°F to 158°F)
Rain (Operational and Survival)	Up to 4 in./hr (10 cm/hr)
Relative Humidity (Operational and Survival)	0% to 100% with condensation
Solar Radiation	360 BTU/hr/sq ft
Radial Ice (Operational)	1/4 inch (0.6 cm) on all surfaces except reflector, with deicing heaters energized
Radial Ice (Survival)	1 inch (2.6 cm) on all surfaces; 1/2 inch (1.3 cm) on all surfaces with 80 mi/h (130 km/hr) wind gusts
Shock and Vibration	As encountered during shipment by commercial air, rail or truck
Corrosive Atmosphere	As encountered in coastal regions and/or heavily industrialized areas
Seismic (Survival)	0.2 G's horizontal, 0.1 G's vertical

Specifications and statements appearing in this brochure are subject to change without notice.



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