

Ku-, K- Band Capabilities

5.6 Meter Dual-Reflector Earth Station Antennas

Communications system integrators and designers can bring their systems on line faster, more economically, and with superior performance with the Andrew 5.6-meter Earth Station Antenna (ESA). In use worldwide in high-density data and voice communications networks and television broadcast video distribution applications, the Andrew 5.6-meter ESA features a uniquely formed dual reflector Gregorian system coupled with close-tolerance manufacturing techniques. This combination provides extremely accurate surface contour, high gain, superior efficiency, and exceptional pattern characteristics.

Our wide selection of Type Approved antennas speeds system deployment. Type Approved Andrew ESAs can be deployed in the field with minimal testing and decreased administrative and approval requirements.

Andrew ESAs provide maximum durability with minimal maintenance. The hot-dipped galvanized steel ground mount assembly ensures extended product life. Galvanized and stainless steel hardware maximize corrosion resistance. For cost effective system expansion, available modular equipment options include anti-icing equipment and pressurization systems. Microprocessor steptrack control and motorizable mount options are also available.

**Features:**

- High Gain, Excellent Pattern Characteristics
- Advanced Gregorian Optics
- Self-Aligning Main Reflector—No Field Alignment
- Deep Equipment Enclosure
- 3-year Warranty on All Structural Components

Type Approvals and Compliances:

- INTELSAT E-1, E-2, G, Z
- EUTELSAT
- FCC regulation 25.209
- ITU-R, S.580-4 and S.465-5
- Approved for use in the territory of Russia by the Ministry of Communications of the Russian Federation (Reference: Homologation Certificate No OC/I-A - ϕ -1)

Electrical

Operating Frequency Band	
<i>Ku-Band Receive</i>	10.7-13.25 GHz
<i>Ku-Band Transmit</i>	14.0-14.5 GHz
<i>K-Band Transmit</i>	17.3-18.9 GHz

Gain, with two port linear combiner (dBi, ±0.2 dB)			
<i>Rx Frequency</i>	<i>Rx Gain</i>	<i>Tx Frequency</i>	<i>Tx Gain</i>
10.700 GHz	54.5	13.75 GHz	56.6
10.950 GHz	54.7	14.00 GHz	56.8
11.950 GHz	55.5	14.25 GHz	57.0
12.750 GHz	56.1	14.50 GHz	57.1
13.250 GHz	56.3	14.80 GHz	57.3
		17.30 GHz	57.9
		18.40 GHz	58.4

Polarization
Linearly-Polarized

Polarization Discrimination, (Linearly-Polarized):
>35 dB across 1 dB beamwidth 19 - 25 log θ from 1.8° to 9.2°

Beamwidth, Mid-band, Degrees	<i>Ku-Band</i>
<i>3 dB Receive (Transmit)</i>	0.28 (0.23)
<i>15 dB Receive (Transmit)</i>	0.52 (0.44)

Antenna Noise Temperature - under clear sky conditions, at 68°F (20°C), with 2-port linear combiner.

	<i>(Ku & K-Band)</i>
<i>Elevation</i>	<i>Kelvin</i>
10°	49
30°	38
50°	35

Antenna VSWR, Transmit and Receive <1.3:1

Typical Shipping Information

Net Weight	3035 lb (1785 kg)
Gross Shipping Weight (typical)	5600 lb (2450 kg)
Shipping Volume (typical)	690 ft ³ (19.5 m ³)
Shipping Container	
Quantity 1	Standard 20 ft land/sea container
Quantity 3	Standard 40 ft land/sea container

G/T Performance

LNA/LNB Noise Temperature	165K	125K	90K
ES56 G/T at 10° EL (dB/K)	32.2	33.0	34.0

Based on a 2-port, linearly-polarized antenna configuration at 12 GHz and at 10° elevation under clear sky conditions.

Uplink EIRP Capability

HPA Output (Watts)	75	300	2000
Uplink EIRP (dBW)	75.7	81.7	90.0

Based on a 2-port antenna configuration at 14.25 GHz and 0 dB allowance for waveguide (IFL) loss between the HPA and the antenna.

Mechanical

Feed Type	Dual-Reflector, Gregorian
Reflector Material	Precision-Formed Aluminum
Reflector Segments	16
Mount Type	EI over AZ, Tripod

Antenna Pointing Range, Coarse/(Continuous)	
<i>Elevation</i>	0-90° (90°)
<i>Azimuth</i>	180° (120°)
<i>Polarization</i>	180° (180°)

Hub/Enclosure Dimensions	
<i>Diameter</i>	52 in (1.32 m)
<i>Depth</i>	46 in (1.17 m)

Wind Loading, Survival
125 mph (200 km/h) in any position of operation

Wind Loading, Operational
45 mph (72 km/h), gusting to 65 mph (105 km/h) (motor drives)

Temperature, Operational -40° to 125°F (-40° to 52°C)

Rain 4 in (102 mm) per hour

Solar Radiation 360 BTU/hr/ft² (1135 Watts/m²)

Relative Humidity 100%

Shock and Vibration As encountered by commercial air, rail and truck shipment

Atmospheric Conditions Moderate coastal/industrial areas. Severe conditions require additional protection.

Typical Slab Foundation Information

Soil Bearing Capacity	2000 lb/ft ² (9,764 kg/m ²)
Reinforcing Steel	1308 lb (593 kg)
Concrete Compressive Strength	3000 lb/in ² (211 kg/cm ²)
Foundation Size:	
<i>Length</i>	14 ft (4.5 m)
<i>Width</i>	14 ft (4.5 m)
<i>Depth</i>	1.5 ft (0.5 m)
Concrete Volume	12.1 yd ³ (9.3 m ³)

Note: Other typical foundation designs are available.



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