

C-, X-, Ku-, or K-Band Capabilities

7.6 Meter Dual-Reflector Earth Station Antennas

Telelevision broadcasters and telecommunications system operators, integrators and designers can bring their systems on line faster, more economically, and with superior performance with the Andrew 7.6-meter Earth Station Antenna (ESA). In use worldwide in broadcast applications and high-density data, voice, communications networks, the Andrew 7.6-meter ESA features a computer-optimized dual reflector Gregorian system and close-tolerance manufacturing techniques. This combination provides extremely accurate surface contour, exceptionally high gain, superior efficiency, and closely controlled 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 steptack control and motorizable mount options are also available.



Features:

- High Gain, Excellent Pattern Characteristics
- Advanced Gregorian Optics
- Rugged Aluminum and Steel—125 mph (200 kph) Wind Survival
- No Field Alignment (C-Band)
- 3-year Warranty on All Structural Components

Type Approvals and Compliances:

- INTELSAT D, E-1, E-2, E-3, F-1, F-2, F-3, G
- Meets EUTELSAT standards
- ITU-R, S.580-4 and S.465-5
- US FCC regulation 25.209
- 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

C-Band Receive	3.400-4.2 GHz
C-Band Transmit	5.850-6.725 GHz
X-Band Receive	7.25-7.75 GHz
X-Band Transmit	7.90-8.40 GHz
Ku-Band Receive	10.7-13.25 GHz
Ku-Band Transmit	14.0-14.8 GHz
K-Band Transmit	17.3-18.4 GHz

Gain, with 2 port linear combiner (dBi, ±0.2dB)

Rx Frequency	Rx Gain	Tx Frequency	Tx Gain
3.400 GHz	47.2	5.850 GHz	52.1
3.625 GHz	47.8	6.175 GHz	52.6
4.000 GHz	48.7	6.425 GHz	52.9
4.200 GHz	49.1	6.725 GHz	53.2
7.250 GHz	54.0	7.90 GHz	54.6
7.500 GHz	54.2	8.15 GHz	54.7
7.750 GHz	54.4	8.40 GHz	54.9
10.700 GHz	56.7	13.75 GHz	58.9
10.950 GHz	57.0	14.00 GHz	59.1
11.950 GHz	57.8	14.25 GHz	59.3
12.750 GHz	58.3	14.50 GHz	59.4
		14.80 GHz	59.6
		17.30 GHz	60.2
		18.40 GHz	60.7

Polarization

Linearly- or Circularly-Polarized

Polarization Discrimination, (Linearly-Polarized):

>35 dB across 1 dB beamwidth 19 - 25 log θ from 1.8° to 9.2°

Voltage Axial Ratio, C-Band, circularly-polarized with 4-port combiner
<1.06:1 across the 1 dB beamwidth X-Band, <1.20:1 on axis, Tx and Rx

Beamwidth, Mid-band, Degrees	C-Band	Ku-Band	X-Band
3 dB Receive (Transmit)	0.58 (0.39)	0.22 (0.18)	0.33 (0.30)
15 dB Receive (Transmit)	1.18 (0.75)	0.39 (0.31)	0.62 (0.57)

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

Elevation (C-Band)	(X-Band) (K & Ku-Band)
10°	45 45 55
30°	36 36 41
50°	32 32 36

Antenna VSWR, Transmit and Receive <1.3:1

Typical Shipping Information

Net Weight	6500 lb (2950 kg)
Gross Shipping Weight (Typical)	8200 lb (3720 kg)
Shipping Volume (Typical)	780 ft³ (22.1 m³)
Shipping Container	
Quantity:1	Standard 20 ft land/sea container

G/T Performance (C-Band)

LNA/LNB Noise Temperature	65K	45K	30K
ES76 G/T at 10° EL (dB/K)	28.2	29.0	29.7

Based on a 2-port, linearly-polarized antenna configuration at 4 GHz and at 10° elevation under clear sky conditions.

G/T Performance (Ku- and K-Band)

LNA/LNB Noise Temperature	165K	125K	90K
ES76 G/T at 10° EL (dB/K)	34.4	35.3	36.1

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

G/T Performance (X-Band)

LNA/LNB Noise Temperature	50K	75K	100K
ES76 G/T at 10° EL (dB/K)	34.1	33.1	32.3

Based on a 2-port, linearly-polarized antenna configuration at 7.50 GHz and at 10° elevation under clear sky conditions.

Uplink EIRP Capability (C-Band)

HPA Output (Watts)	125	500	3000
Uplink EIRP (dBW)	73.5	79.5	87.3

Based on a 2-port antenna configuration at 6.175 GHz and 0 dB allowance for waveguide (IFL) loss between the HPA and the antenna.

Uplink EIRP Capability (Ku-Band)

HPA Output (Watts)	75	300	2000
Uplink EIRP (dBW)	79.0	85.0	93.4

Based on a 2-port antenna configuration at 17.70 GHz and 0 dB allowance for waveguide (IFL) loss between the HPA and the antenna.

Uplink EIRP Capability (X-Band)

HPA Output (Watts)	25	100	400
Uplink EIRP (dBW)	68.5	74.5	80.5

Based on a 2-port antenna configuration at 8.15 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	El over AZ, Tripod

Antenna Pointing Range, Coarse/(Continuous)

Elevation	0-90° (90°)
Azimuth	180° (120°)
Polarization	180° (180°)

Hub/Enclosure Dimensions

Diameter	52 in (1.33 m)
Depth	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 PSF (9,770 kgf/m²)
Reinforcing Steel	1.47 tons (1339 kg)
Concrete Compressive Strength	3000 lb/in² (211 kgf/cm²)
Foundation Size:	
Length	19.5 ft (5.94 m)
Width	19.5 ft (5.94 m)
Depth	2.5 ft (0.76 m)
Concrete Volume	35.2 yd³ (27 m³)

Note: Other typical foundation designs are available.



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