C-, Ku- Band Capabilities

7.3 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 Andrew 7.3-meter Earth Station Antennas (ESAs). Excellent for high-density data, voice, communications networks, and broadcast applications, the Andrew 7.3-meter ESA features a uniquely formed dual reflector Gregorian system coupled with 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. Exceptional performance and versatility enables multiple band operation. The 2-port circular Rx/Tx combiners are field switchable from circular to linear polarization.

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
- Field Switchable Rx/Tx Combiner, 2-Port C-Band Circular
- Rugged Aluminum and Steel—125 mph (200 kph) Wind Survival
- 3-year Warranty on All Structural Components

Type Approvals and Compliances:

- INTELSAT D-1, F-1, F-2, F-3, G, (IA032A00 & IA032B00)
- 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)

ANDREW®

Electrical

Operating Frequency Band

C-Band Frequency Receive	3.4-4.2 GHz
C-Band Transmit	5.850-6.725 GHz
Ku-Band Receive	10.7-12.75 GHz

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

Rx Frequency	*Rx Gain*	*Tx Frequency*	*Tx Gain*
3.400 GHz	47.1	5.925 GHz	51.3
3.700 GHz	47.6	6.175 GHz	51.7
4.000 GHz	48.3	6.425 GHz	52.0
4.200 GHz	48.7	6.725 GHz	52.4
10.950 GHz	55.2	–	–
11.950 GHz	56.0	–	–
12.750 GHz	56.5	–	–

Polarization

C-Band	Linearly- or Circularly-Polarized
Ku-Band	Linearly -Polarized

Polarization Discrimination, (Linearly-Polarized):
>35 dB across 1 dB beamwidth19 - 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 <1.09 and 1.2 with 2-port

Beamwidth, Mid-band, Degrees	***C-Band***	***Ku-Band***
3 dB Receive (Transmit)	0.66 (0.44)	0.22 (0.18)
15 dB Receive (Transmit)	1.30 (0.83)	0.39 (0.31)

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

Elevation	*Kelvin (C-Band)*	*Kelvin (Ku-Band)*
10°	42	48
30°	31	34
50°	29	29

Antenna VSWR, Transmit and Receive <1.3:1

Typical Shipping Information

Net Weight	6500 lb (2948 kg)
Gross Shipping Weight (typical)	8200 lb (3720 kg)
Shipping Volume (typical)	780 ft³ (22.1 m³)
Shipping Container	Standard 20 ft land/sea container

G/T Performance (C-Band)

LNA/LNB Noise Temperature	65K	45K	30K
ES73 G/T at 10° EL (dB/K)	28.3	29.4	30.3

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

G/T Performance (Ku-Band)

LNA/LNB Noise Temperature	165K	125K	90K
ES73 G/T at 10° EL (dB/K)	32.5	33.3	34.2

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

Uplink BRP Capability* (C-Band)

HPA Output (Watts)	125	500	3000
Uplink EIRP (dBW)	72.6	78.7	86.4

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.

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	48 in (1.22 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.

*optional extended AZ range of 160° continous

Typical Slab Foundation Information

Soil Bearing Capacity	2000 lb/ft² (9,764 kg/m²)
Reinforcing Steel	1780 lb (807 kg)
Concrete Compressive Strength	3000 lb/in² (211 kg/cm²)
Foundation Size:	
Length	15.5 ft (4.7 m)
Width	15.5 ft (4.7 m)
Depth	2.0 ft (0.6 m)
Concrete Volume	17.8 yd³ (13.6 m³)

Note: Other typical foundation designs are available.

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