

## 3.7 Meter Dual-Reflector Earth Station Antennas

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

***Now communications system integrators and designers can bring their systems on line faster, more economically, and with superior performance with the Andrew 3.7 M earth station antenna.***

The Andrew 3.7 M earth station antenna features advanced dual-reflector technology together with a two-piece precision spun aluminum reflector assembly. This combination provides extremely accurate surface contour, exceptionally high gain, superior efficiency, and closely controlled pattern characteristics.

Our wide selection of type-approved antennas speed system commissioning. The Andrew 3.7 Type-Approved earth station antenna can be deployed in the field with minimal testing of G/T to become fully certified as an Intelsat® standard E-2, or E-1 station.

Andrew earth station antennas 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. The easily installed pedestal or pipe mount allows for non-critical foundation orientation. The 48 inch (1219 mm) diameter by 24 inch (610 mm) equipment enclosure with doors allows hub mounting of LNA systems.\*\*

For cost effective system expansion, modular equipment options include 2- or 4-port\* combining network configurations, dual-speed motor drive systems for worldwide applications, feed rotation systems\*, anti-icing equipment, and pressurization systems. Microprocessor Steptrack Control and motorizable mount options are also available.

#### **Features**

- High gain, excellent pattern characteristics
- Gregorian optics
- Self-aligning main reflector—no special field alignment
- 3-year warranty on all structural components
- 180 MPH high wind option available

\* K and Ku-Band only

\*\* Enclosure available on pedestal mounts only



#### **Compliances and Type-Approvals**

- ASIASAT
- APSTAR
- Intelsat® E-2 or E-1 (IA012A00) + (IA012B00)
- EUTELSAT (EA-A002)
- U.S. FCC regulation 25.209 at Ku-Band
- ITU-R, S.580-5 and S.465-5



## Specifications for 3.7 Meter Dual-Reflector Earth Station Antennas

### Electrical

#### Operating frequency band

C-Band receive, GHz	3.625–4.2
C-Band transmit, GHz	5.850–6.425
X-Band receive, GHz	7.25–7.75
X-Band transmit, GHz	7.90–8.40
Ku-Band receive, GHz	10.7–13.25
Ku-Band transmit, GHz	13.75–14.8
K-Band transmit, GHz	17.3–18.4

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

Rx Freq., GHz	Rx Gain	Tx Freq., GHz	Tx Gain
3.625	41.6	5.850	45.9
4.000	42.7	6.175	46.4
4.200	43.1	6.425	46.6
7.250	47.7	7.900	48.2
7.500	47.9	8.150	48.4
7.750	48.1	8.400	48.6
10.700	50.6	13.750	52.5
10.950	50.8	14.000	52.7
11.950	51.6	14.250	52.8
12.750	52.1	14.500	53.0
		14.800	53.2
		17.300	54.8
		18.400	55.2

#### Polarization

C-Band	Circular (switchable to linear) or linear only
X-Band	Circular
Ku-Band	Linear
K-Band	Linear or circular

#### Polarization discrimination, (linearly-polarized)

>35 dB across 1 dB beamwidth – C- or Ku-Band or K-Band

#### Voltage axial ratio, (circularly-polarized) across the 1 dB beamwidth

C-Band	<1.09:1 on axis, Tx
C-Band	<1.20:1 on axis, Rx
X-Band	<1.20:1 on axis, Tx and Rx

#### Beamwidth, mid-band, degrees, receive (transmit)

	C-Band	Ku-Band	X-Band	K-Band
3 dB	1.20 (0.80)	0.42 (0.36)	0.65 (0.60)	0.42 (0.30)
15 dB	2.0 (1.40)	0.85 (0.69)	1.19 (1.09)	0.85 (0.60)

#### Antenna noise temperature,

Under clear sky conditions, at 68°F (20°C), with 2 port combiner.

Elevation	C-Band, K	X-Band, K	Ku-Band, K
10°	43	48	52
30°	38	35	39
50°	36	33	37

Antenna VSWR, transmit and receive <1.25:1

### Mechanical

Feed type	Dual-reflector, Gregorian
Reflector material	Precision-formed aluminum
Reflector segments	2
Mount type	El over AZ, pedestal or pipe
Antenna pointing range, coarse/(continuous)	
Elevation	0–90° (90°)
Azimuth	180° (120°)
Polarization	360° (180°)
Hub/enclosure dimensions, (when applicable) pedestal mount only	
Diameter, in (mm)	48 (1.2)
Depth, in (mm)	24 (0.61)

### Environmental

Operating temperature, F (C)	-58° to 125° (-50° to 52°)
Manual mount, F (C)	-58° to 125° (-50° to 52°)
Motorizable mount, F (C)	-40° to 125° (-40° to 52°)
Wind loading	
Survival	
Standard, mph (km/h)	125 (200) in any position of operation
Optional high wind, mph (km/h)	180 (292) in any position of operation 200 (324) at stow position
Operational	
Motor drives, mph (km/h)	45 (66) gusting to 65 (97)
Rain, in (mm)	4 (102) per hour
Solar radiation, BTU/hr/ft <sup>2</sup> (watts/m <sup>2</sup> )	360 (1135)
Relative humidity, %	100
Shock and vibration,	
As encountered by commercial air, rail and truck shipment.	
Atmospheric conditions,	
As encountered in a moderately corrosive coastal/industrial area.	
Severe conditions require additional protection.	

### G/T Performance

#### C-Band

LNA/LNB noise temperature, K	65	45	30
ES37 G/T at 10° EL, dB/K	22.3	23.2	24.0

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

#### X-Band

LNA/LNB noise temperature, K	50	75	100
ES37 G/T at 10° EL, dB/K	27.6	26.6	25.9

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

#### Ku-Band

LNA/LNB noise temperature, K	165	125	90
ES45 G/T at 10° EL, dB/K	28.2	29.1	30.1

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

### Uplink EIRP Capability

#### C-Band

HPA Output, watts	25	125	500
Uplink EIRP, dBW	60.3	67.3	73.4

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

#### X-Band

HPA Output, watts	25	100	400
Uplink EIRP, dBW	62.4	68.4	74.4

Based on a 2-port circularly-polarized antenna configuration at 8.15 GHz and 0 dB allowance for waveguide (IFL) loss between the HPA and the antenna.

#### Ku-Band

HPA Output, watts	125	500	3000
Uplink EIRP, dBW	74.1	80.1	87.9

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

### Typical Pedestal Mount Slab Foundation

Soil bearing capacity, lb/ft <sup>2</sup> (kg/m <sup>2</sup> )	2000 (14,646)
Reinforcing steel, lb (kg)	194 (88)
Concrete compressive strength, lb/in <sup>2</sup> (kg/cm <sup>2</sup> )	3000 (211)
Foundation size	REF: 203340
Length, ft (m)	9.0 (2.74)
Width, ft (m)	9.0 (2.74)
Depth, ft (m)	1.0 (0.3)
Concrete volume, yd <sup>3</sup> (m <sup>3</sup> )	3.0 (2.3)

### Typical Pipe Mount Slab Foundation

Soil bearing capacity, lb/ft <sup>2</sup> (kg/m <sup>2</sup> )	2000 (14,646)
Reinforcing steel, lb (kg)	353 (160)
Concrete compressive strength, lb/in <sup>2</sup> (kg/cm <sup>2</sup> )	3000 (211)
Foundation size	REF: 240165
Length, ft (m)	10.0 (2.74)
Width, ft (m)	10.0 (2.74)
Depth, ft (m)	1.0 (0.3) to 2.5 (0.76)
Concrete volume, yd <sup>3</sup> (m <sup>3</sup> )	5.3 (4.3)

### Typical Shipping Information

Net weight, lb (kg)	1750 (800)
Shipping weight, lb (kg)	2670 (1220)
Shipping volume, ft <sup>3</sup> (m <sup>3</sup> )	530 (15.0)
Shipping container	
Quantity 1	Standard 20 ft land/sea container
Quantity 2	Standard 40 ft land/sea container



Connecting the Wireless World

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