



## ESA24K-1

### 2.4 Meter ESA

The 2.4 meter prime focus earth station antenna incorporates features and versatility unmatched in its class and can be installed anywhere in the world without extensive and costly on-site testing.

The 2.4M is INTELSAT® (E-1 and G) and Eutelsat Type approved.



---

#### Features :

- Parabolic main reflector for excellent pattern characteristics and high gain
- Wind survival to 125 mph in any position of operation
- Feed replacement requires no electrical realignment
- Extended Tx band of 12.75 – 14.5 GHz

---

#### Electrical Performance Meets or Exceeds :

- U.S. FCC regulation 25.209 for mandatory pattern requirements for 2° satellite spacing
- INTELSAT® requirements for standard E-1 and G stations, IA033A00
- Eutelsat requirements for pattern and polarization discrimination, EA-A003
- Russian Homologation Certificate # OC/1-A0-136

---

#### Design Standards

**Material/Finish Reflector:** Aluminum, chromate converted per MIL-C-5541C and painted with highly diffusive white paint

**Ground Mount:** Customer provided 5.563 in O.D. nominal schedule 80 pipe

---

#### Mechanical Specifications

**Optics Type:** Prime Focus

**Reflector Material:** Precision formed aluminum

**Reflector Segments:** 1

**Mount Type:** Az over el, pipe

**Antenna Pointing Range,**Elevation (0)

**Course/(Continuous):** Azimuth 360 (0)

---

#### Environmental Conditions

**Operating Temperature:** -50° to 125°F (-45.5° to 52°C)

**Wind Loading, Survival:** Antenna, with or without motor drives will survive 125 mph (200 km/h) winds while in a stationary position

**Seismic (Earthquakes):** 1 G vertical and horizontal acceleration ; equivalent to a Richter magnitude 8.3 and grade 11 on the modified Mercalli scale

**Rain:** 4 in (102 mm) per hour

**Solar Radiation:** 360 BTU/hr/ft<sup>2</sup> (1135 W/m<sup>2</sup>)

**Relative Humidity:** 100

---

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

**Atmospheric Conditions:** As encountered in a moderately corrosive coastal and industrial area

## Earth Station Antenna and Feed System Specifications

**ESA24K-1** 2-Port manual Ku-band transmit/receive earth station antenna

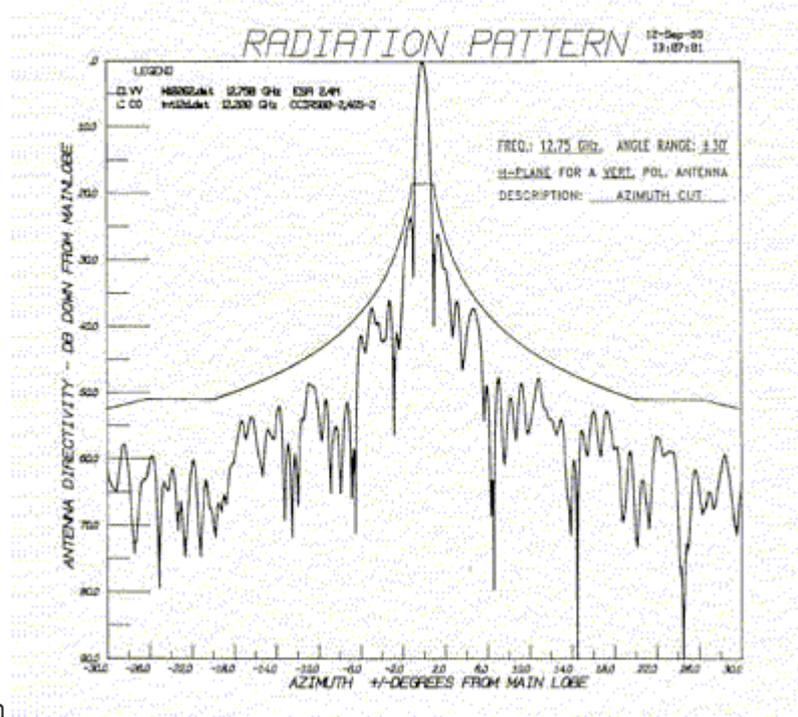
### Nominal Ku Band G/T Antenna Performance

LNA/LNB Noise Temperature: 90 K  
G/T @ 10 Degrees Elevation: 25.5 dB/K

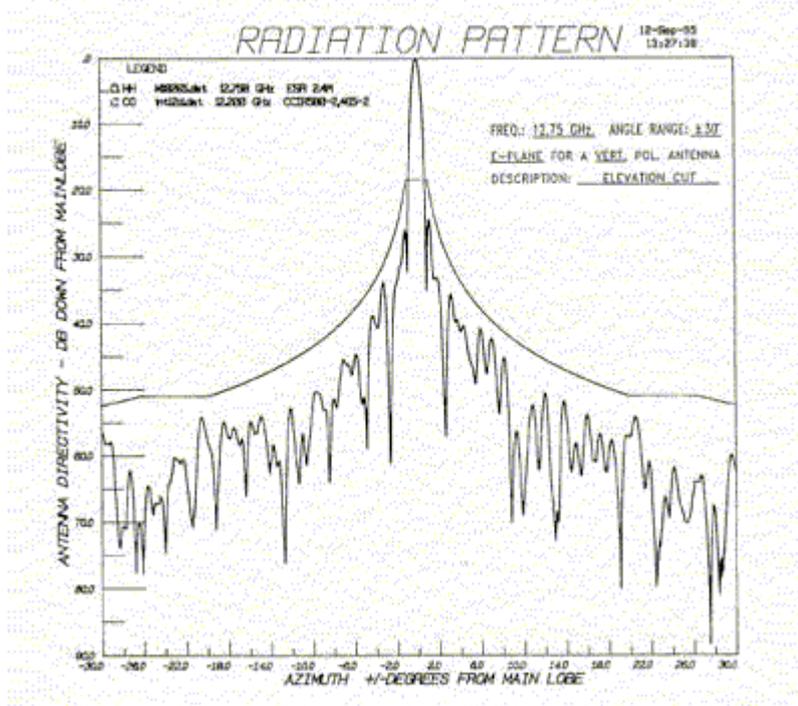
## 2 Port Ku Band Transmit / Receive Feed Systems

<b>Feed Part Numbers</b>	<b>173601-1001</b>
<b>Operation</b>	Transmit / Receive
<b>Polarization</b>	Linear
<b>Frequency, GHz</b>	10.950-12.750 Rx 12.750-14.500 Tx
<b>Port-to-Port Isolation, dB</b>	
Tx to Rx	35
<b>Interface Flange</b>	
Tx Port	Aluminum, CPR229G
Rx Port	Aluminum
<b>Gain @ feed output flange (dBi ± 0.2 dB)</b>	
<b>Frequency</b>	
10.9500 GHz	47.0
11.7000 GHz	47.4
12.7500 GHz	48.1
13.2500 GHz	48.7
14.5000 GHz	49.2
<b>Antenna Noise Temperature - clear sky conditions, at 68°F (20°C)</b>	
10° elevation	63
30° elevation	45
<b>Maximum Pressurization</b>	0.50 psi

## Typical Antenna Patterns - Ku Band



ESA24K-1, Azimuth



ESA24K-1, Elevation

**Cross and Polarization Axis Waveguide Kits**

**173615** Ku-band polarization axis w/g kit. Feed to reflector edge, Tx.

**Options**

Contact Sales for part number and pricing for your specific requirement.

Miscellaneous OCEANSHIP-SML Moisture barrier packing. 4.5M and below

**Antenna Dimensions**

Antenna Length 107 in

---

Antenna Width	44 in
Antenna Height	108 in

---

### Antenna Weights

---

Antenna Gross Weight	800 lb (363 kg)
----------------------	-----------------

---

### Typical Slab and Pier Foundation Specifications

Foundation Specification Drawing 237579

---

Note: Foundation specifications provided are for a typical design only. Certification of suitability for a particular installation by a professional engineer is required prior to its use for actual fabrication.

---

### Shipping Information

Typical Net Weight 265 lb (120.5 kg)

---

Note: Weights and dimensions may vary based upon actual equipment ordered and consolidation of parts. This information should be considered typical for antenna only.

---

Part numbers, designs and specifications provided are subject to change without notice.

---

Andrew Corporation. All Rights Reserved.