

# 1.0 m Type-Approved Ku-Band Tx/Rx Antenna Systems

Intelsat Type-Approval #IA084A00

| Ka-Band                     | Receive              | Transmit      | Receive                            | Transmit    |
|-----------------------------|----------------------|---------------|------------------------------------|-------------|
| Polarity                    | Linear               | Linear        | Circular                           | Circular    |
| Frequency                   | 18.2 - 21.2 GHz      | 27.5 - 31 GHz | 19.7-20.2 GHz                      | 29.5-30 GHz |
| <b>Feed - 2 - Port Xpol</b> |                      |               |                                    |             |
| Return Loss                 | 17.7 dB typ          | 20 dB typ     | 16 dB typ                          | 18 dB typ   |
| Insertion Loss              | 0.3 dB typ           | 0.1 dB typ    | 0.5 dB typ                         | 0.3 dB typ  |
| Tx/Rx Isolation             | 40 dB                | 80 dB         | 40 dB                              | 80 dB       |
| Feed Interface              | WR42                 | WR28          | WR42                               | WR28        |
| <b>Antenna</b>              |                      |               |                                    |             |
| Efficiency                  | 65%                  | 65%           | 65%                                | 65%         |
| Cross Polarization On Axis  | 30 dB                | 35 dB         | 21 dB                              | 21 dB       |
| within 1 dB Beamwidth       | 22 dB                | 25 dB         | 21 dB                              | 21 dB       |
| Tx/Rx Sidelobe Level        | 29 - 25 log $\theta$ |               | $100\lambda/D < \theta < 20^\circ$ |             |
|                             | -3.5                 |               | $20^\circ < \theta < 26.3^\circ$   |             |
|                             | 32 - 25 log $\theta$ |               | $26.3^\circ < \theta < 48^\circ$   |             |
|                             | -10                  |               | $48^\circ < \theta$                |             |
| Gain                        | 44.2 dBi             | 47.8 dBi      | 44.6 dBi                           | 48.1 dBi    |
| (29.75 Tx, 19.95 Rx)        |                      |               |                                    |             |
| Noise Temperature           | 78K @ 30°EL          | ---           | 90K @ 10°EL                        | ---         |

| Ku-Band                    | Transmit             | Receive                            |
|----------------------------|----------------------|------------------------------------|
| Polarity                   | Linear               | Linear                             |
| Frequency                  | 13.75 - 14.5 GHz     | 10.7 - 12.75 GHz                   |
| <b>Feed - 2 Port Xpol</b>  |                      |                                    |
| Return Loss                | 20 dB typ            | 17.7 dB typ                        |
| Insertion Loss             | 0.1 dB typ           | 0.3 dB typ                         |
| Tx/Rx Isolation            | 80 dB                | 40 dB                              |
| Feed Interface             | WR75                 | WR75                               |
| <b>Antenna</b>             |                      |                                    |
| Efficiency                 | 70%                  | 70%                                |
| Cross Polarization On Axis | 35 dB                | 35 dB                              |
| within 1 dB Beamwidth      | 26 dB                | 26 dB                              |
| Tx/Rx Sidelobe Level       | 29 - 25 log $\theta$ | $100\lambda/D < \theta < 20^\circ$ |
|                            | -3.5                 | $20^\circ < \theta < 26.3^\circ$   |
|                            | 32 - 25 log $\theta$ | $26.3^\circ < \theta < 48^\circ$   |
|                            | -10                  | $48^\circ < \theta$                |
| Gain                       | 41.9 dBi             | 40.2 dBi                           |
| (14.125 Tx, 11.725 Rx)     |                      |                                    |
| Noise Temperature          | ---                  | 61K @ 10°EL<br>53K @ 30°EL         |

|                            |                      |                                 |
|----------------------------|----------------------|---------------------------------|
| <b>Dual Optics Specs</b>   |                      |                                 |
| Cross Polarization on axis | 35 dB                | 35 dB typ                       |
| within 1 dB Beamwidth      | 35 dB                | 35 dB typ                       |
| Tx/Rx Sidelobe             | 29 - 25 log $\theta$ | $2.5^\circ < \theta < 7^\circ$  |
| Level                      | +8                   | $7^\circ < \theta < 9.2^\circ$  |
|                            | 32 - 25 log $\theta$ | $9.2^\circ < \theta < 48^\circ$ |
|                            | -10                  | $48^\circ < \theta$             |

|                           |            |             |
|---------------------------|------------|-------------|
| <b>Feed - 2 Port Xpol</b> |            |             |
| Return Loss               | 20 dB typ  | 17.7 dB typ |
| Insertion Loss            | 0.1 dB typ | 0.3 dB typ  |
| Tx/Rx Isolation           | 80 dB      | 40 dB       |
| Feed Interface            | WR75       | WR75        |

|                               |          |               |
|-------------------------------|----------|---------------|
| <b>Antenna Specifications</b> |          |               |
| Efficiency                    | 70%      | 70%           |
| Midband Gain                  | 41.9 dBi | 40.2 dBi      |
| Noise Temperature             | ---      | 61 K @ 10° EL |
|                               | ---      | 53 K @ 30° EL |

|                           |             |                          |                             |
|---------------------------|-------------|--------------------------|-----------------------------|
| <b>Mechanical Data</b>    |             |                          |                             |
| f/D Ratio                 |             |                          | 0.635                       |
| Focal Distance            |             |                          | 25 in / 63.5 cm             |
| Mount Type                |             |                          | elevation over Azimuth      |
| Mast Pipe Size            |             |                          | 3 in / 7.30 or 7.62 cm      |
| Offset Angle              |             |                          | 22°                         |
| Elevation Adjustment      |             |                          | continuous Fine Adjustment  |
| Azimuth Adjustment        |             |                          | continuous, 360° Continuous |
| <b>Environmental Data</b> |             |                          |                             |
| Wind Loading              | Operational | 60 mph, gusts of         | 100 kph, gusts to           |
|                           | Survival    | 120 mph                  | 193 kph                     |
| Temperature               | Operational | -40° to 140° F           | (-40° to 60°C)              |
|                           | Survival    | -60° to 180°F            | (-51° to 82°C)              |
| Rain                      | Operational | 1.5 in/hr                | (3.1 cm/h)                  |
|                           | Survival    | 3 in/ hr                 | (7.6 cm/h)                  |
| Ice                       | Survival    | 2.5cm (1 inch) radial or | 1.3cm (.5 inch)             |

## Patriot Antenna Systems

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All product specifications subject to change without notice.

# 1.0 m Type-Approved Ku-Band Tx/Rx Antenna Systems



**TX-INT100KU**  
Intelsat Type-Approval #IA084A00



**TX-EUT100KU**

## Features

- Navigator™ Style Fine Azimuth and Fine Elevation Adjustments
- Single Piece Deep Drawn Metal Reflector
- Sturdy 2" Square Boom Accommodates Many Outdoor Units, Holds up to 14 lbs / 6.35 kg at end of boom
- Az/El interface to 2 7/8 or 3 in O.D. Pipe/ 7.30 or 7.62 cm
- Includes Two port Linear Tx/Rx Ku-Band Feed assembly

## Description

### **A Low Cost, High Quality Performer**

The Patriot 1.0 meter Intelsat and Eutelsat Type-Approved antenna systems feature a solid stamped metal reflector with superior surface accuracy and one of the strongest feed booms in the industry. The Patriot "one-size-fits-all" approach eliminates the complexity of different models of the same size antenna with different weight ratings.

### **Easy Installation with Longer Field Life**

The Azimuth and Elevation mount comes equipped with fine tune capability, reducing pointing errors during installation and allowing more accurate boresighting on the satellite. Each feed horn is equipped with a UV protected feed window for longer field life, and each system is powder coated. Choose one of our non-penetrating mounts or wall mounts for a complete ready-to-install unit.