

# 'MANTIS' 1.2m Single Box Flyaway Antenna

Available X, Ku, DBS and Dual band

- The MANTIS 120 1.2m Flyaway antenna is manufactured using the latest carbon fibre materials to provide a lightweight rugged system accommodated in only one flight case. Electronics are available in single thread, power combined or 1:1 redundant configurations.
- Single flight case
- New lightweight design
- Easily deployed by a single user
- IATA checked baggage compliant
- Constructed from latest carbon fibre composite materials for minimum weight
- Multiple band operation available



# Specification

## RF

**Diameter**  
1.2 m

**Configuration**  
Offset fed

## FREQUENCY

**Tx**  
12.75 to 14.5 GHz (Option from 13.0 GHz)  
or 17.3 to 18.1 to 18.4 GHz  
or 7.9 to 8.4 GHz  
**Rx**  
10.95 to 12.75 GHz  
or 7.25 to 7.75 GHz

## GAIN

**Tx**  
43.3 dBi (min. 14.0 GHz) (43.7 typ.)  
45.2 (min. 17.5 GHz)  
38.3 (min. 8 GHz)  
**Rx**  
41.2 dBi (min. 10.95 GHz) (41.7 typ.)

## WAVEGUIDE LOSS

**Tx**  
0.2 dB (Feedarm / OMT)  
**Rx**  
0.2 dB (OMT/Filter)

## OFF-AXIS GAIN

**Tx**

Exceeds the requirements of:

### Intelsat

29-25 log  $\theta$  dBi for  $100\lambda / D^\circ < \theta < 20^\circ$   
-3.5 dBi for  $20^\circ < \theta < 26.3^\circ$   
32 - 25 log  $\theta$  dBi for  $26.3^\circ < \theta < 48^\circ$   
-10 dBi for  $48^\circ < \theta < 180^\circ$

### Eutelsat

29 - 25 log  $\theta$  dBi for  $2.5^\circ < \theta < 7^\circ$   
+8 dBi for  $7^\circ < \theta < 9.2^\circ$   
32 - 25 log  $\theta$  dBi for  $9.2^\circ < \theta < 48^\circ$   
-10 dBi for  $48^\circ < \theta < 180^\circ$

### FCC

29 - 25 log  $\theta$  dBi for  $1.25^\circ < \theta < 7^\circ$   
+8 dBi for  $7^\circ < \theta < 9.2^\circ$   
32 - 25 log  $\theta$  dBi for  $9.2^\circ < \theta < 48^\circ$   
-10 dBi for  $48^\circ < \theta < 180^\circ$

## Rx

Exceeds the recommendations of:

29-25 log  $\theta$  dBi for  $100\lambda / D^\circ < \theta < 20^\circ$   
-3.5 dBi for  $20^\circ < \theta < 26.3^\circ$   
32 - 25 log  $\theta$  dBi for  $26.3^\circ < \theta < 48^\circ$   
-10 dBi for  $48^\circ < \theta < 180^\circ$

## Polarisation

Linear orthogonal

## Feed

1 Tx port 1 Rx port

## Cross polar isolation

> -35 dB relative to co-polar gain within 1 dB contour

## VSWR

**Tx**  
1.2:1  
**Rx**  
1.3:1

## PORT TO PORT ISOLATION

**Tx / Rx**  
40 dB (110 dB incl Filter)  
**Rx / Tx**  
30 dB

## MECHANICAL

**Mount**  
Elevation over Azimuth

## Operation

Manual  
Motorised Azimuth/Elevation (optional)

## INTERFACE

**Tx**  
**Ku Band**  
WR75 Quick Release  
**DBS Band**  
WR62

**Rx**  
WR75 Quick Release  
(N-Type with LNB fitted)

## MOVEMENT

**Azimuth adjustment**  
 $\pm 180^\circ$  coarse adjust,  $\pm 2.5^\circ$  fine adjust

## Elevation adjustment

$0^\circ$  to  $90^\circ$  (with additional Mount elevation)

## Pol. adjustment

$\pm 95^\circ$  (linear polarisation only)

## DIMENSIONS

**Single Case**  
495 mm x 1050 mm x 650 mm

## TEMPERATURE

**Operational**  
 $-20$  to  $+50^\circ\text{C}$

## Transport

$-40$  to  $+70^\circ\text{C}$

## Windspeed

20 m/s operational  
30 m/s survival

## Pointing Stability

$< \pm 0.2^\circ$

## Humidity

0 to 100% RH

## OPTIONS

H/V polarisation switch  
X-axis waveguide kit  
Transmit reject filter  
3 port feed  
4 port feed