

## Mantis 190/240 Flyaway Antenna System

The World's Most Popular Flyaway Solution

### OVERVIEW

A comprehensive range of lightweight, compact satellite terminals for all transportable applications.

### BENEFITS

- Mantis is available in 1.9m and 2.4m antenna sizes
- Available in single, dual, tri and quad band configurations
- Bands available:
  - 1.9m - C, X, Ku & DBS
  - 2.4m - C, X, Ku & DBS
- Fully compliant with all satellite operator specifications
- Motorised tracking option for inclined orbit operation
- Electronics available in single thread, power combined or 1:1 redundant configuration
- Antennas are approved for use with most Satellite operators
- Variety of uplink electronics packages available
- Available in most colours to order
- Co-polar Rx available on Ku antennas
- Second Rx port available on C Band linear antennas



### Key Features

- Manufactured using latest carbon fibre composite materials for minimum weight
- Easily deployed by a single user
- Compact design, IATA weight compliant options

### Typical Applications

- Satellite Newsgathering
- Remote Newsgathering



## 1.9m MANTIS

## TYPE

- Circular (axially symmetric) segmented

## CONFIGURATION

- Prime focus

## MEETS THE REQUIREMENTS OF

- ITU-R S.580-6
- ITU-R S.465-5
- INTELSAT IESS-601
- EUTELSAT ESS-502
- MIL STD 188-164A
- STANAG 4484 (as applicable)

## MECHANICAL

## Mount:

- Elevation over azimuth

## OPERATION

- Manual and/or 2 axis motorisation

## MOVEMENT

## Azimuth adjustment:

- +/- 180° coarse adjust (restricted elevation), +/- 2.5° fine adjust

## Elevation adjustment:

- 0° to 90° (with adjustable mount elevation)

## Polarisation adjustment:

- +/- 95° (Linear polarisation only)

## FREQUENCY

## C CP:

- Tx 5.85 to 6.425 GHz
- Rx 3.625 to 4.2 GHz

## C LP:

- Tx 5.85 to 6.65 GHz (option to 6.725 GHz)
- Rx 3.40 to 4.2 GHz

## X:

- Tx 7.9 to 8.4 GHz
- Rx 7.25 to 7.75 GHz

## Ku:

- Tx 13.75 to 14.5 GHz (option from 13.0 GHz)
- Rx 10.70 to 12.75 GHz

## DBS:

- Tx 17.3 to 18.1 GHz (option to 18.4 GHz)
- Rx 10.70 to 12.75 GHz

## TX GAIN

## C:

- Tx 40.1 dBi typ @ 6.25 GHz

## X:

- Tx 42.4 dBi typ @ 8.15 GHz

## Ku:

- Tx 47.2 dBi typ @ 14.25 GHz

## DBS:

- Tx 49.2 dBi typ @ 17.85 GHz

## G/T

## C:

- 3.95 GHz = 15.0 dBk (assumes LNB 60 dB Gain 0.5 dB NF)

## X:

- 7.40 GHz = 19.3 dBk (assumes LNA 50 dB Gain 0.8 dB NF)

## Ku:

- 11.20 GHz = 23.3 dBk (assumes LNB 60 dB gain 0.7 dB NF)

## DBS:

- 11.20 GHz = 23.3 dBk (assumes LNB 60 dB Gain 0.7 dB NF)

## CROSS POLARISATION ISOLATION

## C Band Linear

- -30 dB Tx / Rx

## C and X Band Circular

- 30 dB Tx (axial ratio 1.07)
- 20 dB Rx (axial ratio 1.22)

## Ku and DBS Band Linear

- -35 dB

## PORT TO PORT ISOLATION

## C Band Linear

- Tx / Rx 35 dB (90 dB incl filter)
- Rx / Tx 35 dB

## C Band Circular

- Tx / Rx 20 dB (80 dB incl filter)
- Rx / Tx 20 dB

## X Band

- Tx / Rx 20 dB (100 dB incl filter)
- Rx / Tx 20 dB

## Ku Band

- Tx / Rx 40 dB (110 dB incl filter)
- Rx / Tx 30 dB

## DBS Band

- Tx / Rx 40 dB (110 dB incl filter)
- Rx / Tx 30 dB

## STANDARD DIMENSIONS &amp; WEIGHTS

## Mount case

- Dimensions 540 x 540 x 510 mm [21.2" x 21.2" x 20 in"]
- Weight 25 kg [55.1 lbs]

## Segment case

- Dimensions 810 x 810 x 490 mm [31.9" x 31.9" x 19.2"]
- Weight 54 kg [119 lbs]

## 2.4m MANTIS

## Type

- Circular (axially symmetric) segmented

## Configuration

- Prime focus

## Meets The Requirements of

- ITU-R S.580-6
- ITU-R S.465-5
- INTELSAT IESS-601
- EUTELSAT ESS-502
- MIL STD 188-164A
- STANAG 4484 (as applicable)

## Frequency

## C CP:

- Tx 5.85 to 6.425 GHz
- Rx 3.625 to 4.2 GHz

## C LP:

- Tx 5.85 to 6.65 GHz (option to 6.725 GHz)
- Rx 3.40 to 4.2 GHz

## X:

- Tx 7.9 to 8.4 GHz
- Rx 7.25 to 7.75 GHz

## Ku:

- Tx 13.75 to 14.5 GHz (option from 13.0 GHz)
- Rx 10.70 to 12.75 GHz

## DBS:

- Tx 17.3 to 18.1 GHz (option to 18.4 GHz)
- Rx 10.70 to 12.75 GHz

## Tx Gain

## C:

- Tx 42.1 dBi typ @ 6.25 GHz

## X:

- Tx 44.4 dBi typ @ 8.15 GHz

## Ku:

- Tx 49.3 dBi typ @ 14.25 GHz

## DBS:

- Tx 51.2 dBi typ @ 17.85 GHz

## G/T

## C:

- 3.95 GHz = 17.0 dBk (assumes LNB 60 dB Gain 0.5 dB NF)
- X:7.40 GHz = 21.4 dBk (assumes LNA 50 dB Gain 0.8 dB NF)

## Ku:

- 11.20 GHz = 25.4 dBk (assumes LNB 60 dB gain 0.7 dB NF)

## DBS:

- 11.20 GHz = 25.4 dBk (assumes LNB 60 dB Gain 0.7 dB NF)

## Cross Polarisation Isolation

## C Band Linear

- -30 dB Tx / Rx

## C and X Band Circular

- 30 dB Tx (axial ratio 1.07)
- 20 dB Rx (axial ratio 1.22)

## Ku and DBS Band Linear

- -35 dB

## Port to Port Isolation

## C Band Linear

- Tx / Rx 35 dB (90 dB incl filter)
- Rx / Tx 35 dB

## C Band Circular

- Tx / Rx 20 dB (80 dB incl filter)
- Rx / Tx 20 dB

## X Band

- Tx / Rx 20 dB (100 dB incl filter)
- Rx / Tx 20 dB

## Ku Band

- Tx / Rx 40 dB (110 dB incl filter)
- Rx / Tx 30 dB

## DBS Band

- Tx / Rx 40 dB (110 dB incl filter)
- Rx / Tx 30 dB

## Mechanical

## Mount:

- Elevation over azimuth

## Operation

- Manual and/or 2 axis motorisation

## Movement

## Azimuth adjustment:

- +/- 180° coarse adjust, (restricted elevation) +/- 2.5° fine adjust

## Elevation adjustment:

- 0° to 90° (with adjustable mount elevation)

## Polarisation adjustment:

- +/-95° (Linear polarisation only)

## Standard Dimensions &amp; Weights

## Mount case

- Dimensions 540 x 540 x 670 mm [21.2" x 21.2" x 26.4"]
- Weight 26 kg [57.3 lbs]

## Segment case (qty 2)

- Dimensions 990 x 990 x 490 mm [39" x 39" x 19.2"]
- Weight 49 kg [108 lbs]

## IATA Dimensions &amp; Weights

## Mount case

- Dimensions 540 x 540 x 670 mm [21.2" x 21.2" x 26.4"]
- Weight 29 kg [63 lbs]

## IATA DIMENSIONS &amp; WEIGHTS

## Mount case

- Dimensions 540 x 540 x 510 mm [21.2" x 21.2" x 20"]
- Weight 29.5 kg [65 lbs]

## Hub &amp; Segment case

- Dimensions 810 x 810 x 490 mm [31.9" x 31.9" x 19.2"]
- Weight 29.9 kg [67 lbs]

## Feedarm &amp; Segment case

- Dimensions 900 x 765 x 365 mm [35.4" x 30.1" x 14.4"]
- Weight 28.7 kg [66 lbs]

## ENVIRONMENTAL

## TEMPERATURE

## Operational:

- -20°C to +60°C (-4°F to 140°F)

## Transport:

- -40°C to +70°C (-40°F to 158°F)

## WINDSPEEDS

## Operational:

- 12 m/s (27 mph)

## Survival:

- 20 m/s (45 mph)

## HUMIDITY

- 0 to 100% RH

## Hub case:

- Dimensions 990 x 990 x 490 mm [39" x 39" x 19.5"]
- Weight 31 kg [68.3 lbs]

## Segment softbag (qty 3)

- Dimensions 1030 x 960 x 440 mm [40.5" x 37.8" x 17.3"]
- Weight 25.3 kg [55.7 lbs]

## Feedarm &amp; cartridge case (C-band only)

- Dimensions 1130 x 650 x 185 mm [44.5" x 25.6" x 7.2"]
- Weight 29.5 kg [65 lbs]

## Temperature

## Operational:

- -20°C to +60°C (-4°F to 140°F)

## Transport:

- -40°C to +70°C (-40°F to 158°F)

## Windspeeds

## Operational:

- 14 m/s (30 mph)

## Survival:

- 27 m/s (60 mph)

## Humidity

- 0 to 100% RH

