‘MANTIS’ 1.9m Flyaway Antenna System

Available in Single, Dual, Tri and Quad band configurations for C, X, Ku, Ka and DBS bands

- The MANTIS 190 1.9m Flyaway antenna is manufactured using the latest carbon fibre materials to provide a lightweight rugged system accommodated in only 2 flight cases. Electronics are available in single thread, power combined or 1:1 redundant configurations.

- Only 2 lightweight carbon fibre flight cases
- Easily deployed by a single user
- Flight cases IATA baggage compliant
- Constructed from latest carbon fibre composite materials for minimum weight
- Multiple band operation
- In operation worldwide
- Motorised tracking available for inclined orbit operation
- Intelsat type approved at C band

VISLINK COMMUNICATIONS

Specification

RF
Type
Circular (axially symmetric) Segmented

Diameter
1.9 m

Configuration
Prime focus

FREQUENCY
C-Band
Tx
5.85 to 6.425 GHz (Option 6.65 & 6.725 GHz)
Rx
3.625 to 4.2 GHz (Option from 3.4 GHz)
X-Band
Tx
7.9 to 8.4 GHz
Rx
7.25 to 7.75 GHz
Ku-Band
Tx
13.75 to 14.5 GHz (Option from 13.0 GHz)
Rx
10.70 to 12.75 GHz
DBS-Band
Tx
17.3 to 18.1 GHz
(Optional 18.4 GHz)
Rx
10.70 to 12.75 GHz

GAIN
C-Band
Tx
39.5 dBi (typ. 5.85 GHz) (39.4 min.)
40.3 dBi (typ. 6.425 GHz) (40.2 min.)
Rx
35.3 dBi (typ. 3.625 GHz) (35.2 min.)
36.6 dBi (typ. 4.2 GHz) (36.5 min.)
X-Band
Tx
41.8 dBi (min. GHz)
Rx
41.0 dBi (min. 7.25 GHz)
Ku-Band
Tx
47.0 dBi (typ. 13.75 GHz) (46.8 min.)
47.5 dBi (typ. 14.50 GHz) (47.3 min.)
Rx
44.7 dBi (typ. 10.70 GHz) (44.6 min.)
46.2 dBi (typ. 12.75 GHz) (46.1 min.)
DBS-Band
Tx
48.7 dBi (typ. 17.3 GHz) (48.6 min.)
49.1 dBi (typ. 18.1 GHz) (49.0 min.)
Rx
44.7 dBi (typ. 10.70 GHz) (44.6 min.)
46.2 dBi (typ. 12.75 GHz) (46.1 min.)
Ka-Band
Tx
52.9 dBi (typ. 27.5 GHz)
Rx
49.1 dBi (typ. 18.0 GHz)

OFF-AXIS GAIN
Tx Co-Polar
29 - 25 log θ dBi for $100\lambda/D < \theta < 20^\circ$
-3.5 dBi for $20^\circ < \theta < 26.3^\circ$
32 – 25 Log θ dBi for $26.3^\circ < \theta < 48^\circ$
-10 dBi for $48^\circ < \theta$
Rx Co-Polar
32 - 25 log θ dBi for $100\lambda/D < \theta < 48^\circ$
-10 dBi for $48^\circ < \theta$
Tx/Rx Cross Polar
19 - 15 Log θ dBi for $1.8^\circ < \theta < 7^\circ$
-2 dBi for $7^\circ < \theta < 9.2^\circ$

Polarisation
Linear orthogonal / circular

Feed
Linear
1 Tx port 1 Rx port
2nd Rx port (optional)
Circular
1 Tx port 2 Rx port

Cross polar isolation

C / Ku-Band Linear
30 dB Tx / Rx

C-Band Circular
30 dB Tx (axial ratio 1.07)
20 dB Rx (axial ratio 1.22)
(all relative to co-polar gain within 1 dB contour)

PORT TO PORT ISOLATION
C-Band Linear
Tx / Rx 5.85-6.425 GHz
35 dB (90 dB incl Filter)
Rx /Tx 3.625-4.2 GHz
35 dB
C-Band Circular
Tx / Rx 5.85-6.425 GHz
20 dB (80 dB incl Filter)
Rx /Tx 3.625-4.2 GHz
20 dB
X-Band
Tx/Rx
Circular 20 dB (100 dB incl. Filter)
Ku-Band
Tx / Rx 13.75-14.5 GHz
40 dB (110 dB incl Filter)
Rx / Tx 10.7-12.75 GHz
30 dB
DBS-Band
Tx / Rx 17.3-18.4 GHz
40 dB (110 dB incl Filter)
Rx / Tx 10.7-12.75 GHz
30 dB

MECHANICAL
Mount
Elevation over Azimuth

Operation
Manual
Motorised Azimuth/Elevation (optional)

INTERFACE
C-Band
Tx
WR137 Quick Release
Rx
Linear
SMA (N-type with LNB fitted)
Circular
N-Type
Ku-Band
Tx
WR75 Quick Release
Rx
WR75 (Optional Quick Release / N-type with LNB fitted)

MOVEMENT
Azimuth adjustment
$\pm$ 45° coarse adjust, $\pm$ 2.5° fine adjust

Elevation adjustment
0° to 90° (with additional Mount elevation)

Pol. adjustment
$\pm$ 95° (linear polarisation only)

DIMENSIONS
Mount Case
540 mm x 540 mm x 510 mm
Segment Case
810 mm x 810 mm x 490 mm

WEIGHT
Mount Case
25 Kg

Segment Case
54 Kg

TEMPERATURE
Operational
-20 to +50°C
Transport
-40 to +70°C

Windspeed
16 m/s operational
27 m/s survival

Pointing Stability
$< \pm$ 0.2°

Humidity
0 to 100% RH

These specifications are accurate at the time of issue but may be subject to change and will not form part of any contract. *Issue A*

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