

# 'MANTIS' 2.4m Flyaway Antenna System

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

- The Mantis 240 is one of the most advanced compact lightweight 2.4m Flyaway antenna systems in operation today. Supplied with electronics in single thread, power combined or 1:1 redundant configurations the Mantis can provide all your transportable uplink needs.
- All contained in just 3 lightweight flightcases
- Easily deployed by a single user
- Carbon fibre / carbon composite antenna construction for minimum weight
- Fully compliant with all satellite operator specifications
- Deployable by one man in less than 15 minutes
- Motorized tracking option for inclined orbit operation



# Specification

<b>RF</b>		
<b>Type</b>		
Circular (axially symmetric) Segmented		
<b>Diameter</b>		
2.4 m		
<b>Configuration</b>		
Prime focus		
<b>FREQUENCY</b>		
<b>C-Band</b>		
<b>Tx</b>		
5.85 to 6.425 GHz (Option 6.65 & 6.725 GHz)		
<b>Rx</b>		
3.625 to 4.2 GHz (Option from 3.4 GHz)		
<b>X Band</b>		
<b>Tx</b>		
7.90 to 8.40 GHz		
<b>Rx</b>		
7.25 to 7.75 GHz		
<b>Ku-Band</b>		
<b>Tx</b>		
13.75 to 14.5 GHz		
<b>Rx</b>		
10.70 to 12.75 GHz		
<b>DBS-Band</b>		
<b>Tx</b>		
17.3 to 18.4 GHz		
<b>Rx</b>		
10.70 to 12.75 GHz		
<b>GAIN</b>		
<b>C-Band</b>		
<b>Tx</b>		
44.1 dBi (typ. 7.9 GHz) (44.0 min.)		
44.7 dBi (typ. 8.4 GHz) (44.6 min.)		
<b>Rx</b>		
43.4 dBi (typ. 7.25 GHz) (43.3 min.)		
44.0 dBi (typ. 7.75 GHz) (43.9 min.)		
<b>X Band</b>		
<b>Tx</b>		
41.5 dBi (typ. 5.85 GHz) (41.4 min.)		
42.3 dBi (typ. 6.425 GHz) (42.2 min.)		
<b>Rx</b>		
37.4 dBi (typ. 3.625 GHz) (37.3 min.)		
38.6 dBi (typ. 4.2 GHz) (38.5 min.)		
<b>Ku-Band</b>		
<b>Tx</b>		
49.0 dBi (typ. 13.75 GHz) (48.8 min.)		
49.5 dBi (typ. 14.50 GHz) (49.3 min.)		
<b>Rx</b>		
46.9 dBi (typ. 10.70 GHz) (46.7 min.)		
48.4 dBi (typ. 12.75 GHz) (48.2 min.)		
<b>DBS-Band</b>		
<b>Tx</b>		
51.0 dBi (typ. 17.3 GHz) (50.8 min.)		
51.6 dBi (typ. 18.4 GHz) (51.4 min.)		
<b>Rx</b>		
46.9 dBi (typ. 10.70 GHz) (46.7 min.)		
48.4 dBi (typ. 12.75 GHz) (48.2 min.)		
<b>Ka-Band</b>		
<b>Tx</b>		
55.2 dBi (typ. 27.5 GHz)		
<b>Rx</b>		
51.4 dBi (typ. 18.0 GHz)		
<b>OFF-AXIS GAIN</b>		
<b>Tx Co-Polar</b>		
29 - 25 log $\theta$ dBi for $100\lambda/D < \theta < 20^\circ$		
-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 $48^\circ < \theta$		
<b>Rx Co-Polar</b>		
32 - 25 log $\theta$ dBi for $100\lambda/D < \theta < 48^\circ$		
-10 dBi for $48^\circ < \theta$		
<b>Tx/Rx Cross Polar</b>		
19 - 15 Log $\theta$ dBi for $1.8^\circ < \theta < 7^\circ$		
-2 dBi for $7^\circ < \theta < 9.2^\circ$		
<b>Polarisation</b>		
Linear orthogonal / circular		
<b>Feed</b>		
<b>Linear</b>		
1 Tx port 1 Rx port		
2nd Rx port (optional)		
<b>Circular</b>		
1 Tx port 2 Rx port		
<b>CROSS POLAR ISOLATION</b>		
<b>C / Ku / DBS Band Linear</b>		
30 dB Tx / Rx		
<b>C / X Band Circular</b>		
30 dB Tx (axial ratio 1.07)		
20 dB Rx (axial ratio 1.22)		
(all relative to co-polar gain within 1 dB contour)		
<b>VSWR</b>		
<b>C/X/DBS/ Ku Band Tx</b>		
1.3:1		
<b>C-Band Rx</b>		
1.4:1		
<b>Ku / DBS-Band Rx</b>		
1.35:1		
<b>PORT TO PORT ISOLATION</b>		
<b>C-Band Linear</b>		
<b>Tx / Rx 5.85-6.425 GHz</b>		
35 dB (90 dB incl Filter)		
<b>Rx /Tx 3.625-4.2 GHz</b>		
35 dB		
<b>C-Band Circular</b>		
<b>Tx / Rx 5.85-6.425 GHz</b>		
20 dB (80 dB incl Filter)		
<b>Rx /Tx 3.625-4.2 GHz</b>		
20 dB		
<b>Ku-Band</b>		
<b>Tx / Rx 13.75-14.5 GHz</b>		
40 dB (110 dB incl Filter)		
<b>Rx / Tx 10.7-12.75 GHz</b>		
30 dB		
<b>DBS-Band</b>		
<b>Tx / Rx 17.3-18.4 GHz</b>		
40 dB (110 dB incl Filter)		
<b>Rx / Tx 10.7-12.75 GHz</b>		
30 dB		
<b>MECHANICAL</b>		
<b>Mount</b>		
Elevation over Azimuth		
<b>Operation</b>		
Manual		
Motorised Azimuth/Elevation (optional)		
<b>INTERFACE</b>		
<b>C-Band</b>		
<b>Tx</b>		
WR137 Quick Release		
<b>Rx</b>		
<b>Linear</b>		
SMA (N-type with LNB fitted)		
<b>Circular</b>		
N-Type		
<b>X Band</b>		
<b>Tx</b>		
WR112 Quick Release		
<b>Rx</b>		
WR112 (SMA with LNA fitted)		
<b>Ku-Band</b>		
<b>Tx</b>		
WR75 Quick Release		
<b>Rx</b>		
WR75 (Optional Quick Release / N-type with LNB fitted)		
<b>DBS Band</b>		
<b>Tx</b>		
WR62 Quick Release		
<b>Rx</b>		
WR75 (optional Quick Release / N type with LNB fitted)		
<b>MOVEMENT</b>		
<b>Azimuth adjustment</b>		
$\pm 45^\circ$ coarse adjust, $\pm 2.5^\circ$ fine adjust		
<b>Elevation adjustment</b>		
$0^\circ$ to $90^\circ$ (with additional Mount elevation)		
<b>Pol. adjustment</b>		
$\pm 95^\circ$ (linear polarisation only)		
<b>DIMENSIONS</b>		
<b>Mount Case</b>		
540 mm x 540 mm x 670 mm		
<b>Segment Case (QTY 2)</b>		
990 mm x 990 mm x 490 mm		
<b>WEIGHT</b>		
<b>Mount Case</b>		
26 Kg		
<b>Primary Segment Case</b>		
49 Kg		
<b>Secondary Segment Case</b>		
49 Kg		
<b>TEMPERATURE</b>		
<b>Operational</b>		
-20 to +50°C		
<b>Transport</b>		
-40 to +70°C		
<b>Windspeed</b>		
12 m/s operational		
20 m/s survival		
<b>Pointing Stability</b>		
$< \pm 0.2^\circ$		
<b>Humidity</b>		
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