Mantis MSAT Portable Data Terminal

Overview
The ADVENT Mantis MSAT Man Portable Data Terminal is a highly portable tri-band satellite antenna system designed for rapid deployment in hostile environments.

Available with either a 65, 90 or 120cm reflector its small size and weight make it ideal for secure and non-secure satellite communications for a variety of applications:

- Secure Military Communications
- First on Scene Broadcast
- Emergency Services
- Special Operations
- Disaster Recovery
- Mining

Features
- X, Ku and Ka bands
- 65, 90 or 120cm reflector
- 12.5kg (65cm), 15kg (90cm) or 19kg (120cm)
- Mains / Battery Operation
- Fully integrated man portable design
- Interchangeable modem options
- Over 2Mbps data rate for the 65cm, over 5Mbps for the 90cm and over 10Mbps for the 120cm version
- Less than 5 minute set-up time to satellite acquisition
- Graphical interface control
- ITAR Free
X-Band Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx Frequency Band</td>
<td>7.9–8.4 GHz</td>
</tr>
<tr>
<td>Rx Frequency</td>
<td>7.25–7.75 GHz</td>
</tr>
<tr>
<td>EIRP [dB]</td>
<td>45.1 dBW</td>
</tr>
<tr>
<td>G/T @ 7.5 GHz</td>
<td>10.1 dB/K</td>
</tr>
<tr>
<td>Polarity</td>
<td>Linear</td>
</tr>
</tbody>
</table>

**90cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>48.1 dBW</td>
</tr>
<tr>
<td>G/T @ 7.5 GHz</td>
<td>13 dB/K</td>
</tr>
</tbody>
</table>

**120cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>51.0 dBW</td>
</tr>
<tr>
<td>G/T @ 7.5 GHz</td>
<td>15.5 dB/K</td>
</tr>
</tbody>
</table>

Ku-Band Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx Frequency Band</td>
<td>13.75–14.5 GHz</td>
</tr>
<tr>
<td>Rx Frequency Bands from</td>
<td>10.7–12.75 GHz</td>
</tr>
<tr>
<td>EIRP [dB]</td>
<td>46.2dBW [8W]</td>
</tr>
<tr>
<td>G/T @ 11.7 GHz</td>
<td>14.1 dB/K</td>
</tr>
<tr>
<td>Polarity</td>
<td>Linear H/V</td>
</tr>
</tbody>
</table>

**90cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>54.2dBW (25W)</td>
</tr>
<tr>
<td>G/T @ 11.7 GHz</td>
<td>18 dB/K</td>
</tr>
</tbody>
</table>

**120cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>58.8dBW (40W)</td>
</tr>
<tr>
<td>G/T @ 11.7 GHz</td>
<td>20.5 dB/K</td>
</tr>
</tbody>
</table>

Ka-Band Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tx Frequency Band</td>
<td>27–31 GHz</td>
</tr>
</tbody>
</table>

**Frequency available in 1GHz bandwidth steps depending on BUC**: 18.7–22.2 GHz

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rx Frequency Band</td>
<td>20.7 GHz</td>
</tr>
<tr>
<td>EIRP [dB]</td>
<td>18.5 dB/K</td>
</tr>
<tr>
<td>Polarity</td>
<td>Linear (Optional)</td>
</tr>
</tbody>
</table>

**90cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>21.3 dB/K</td>
</tr>
</tbody>
</table>

**120cm version:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIRP [dB]</td>
<td>24.0 dB/K</td>
</tr>
</tbody>
</table>

Common Specification

**Power Requirements**

90–260 VAC

External Battery Pack Option for DC Units

*Note: 10–36V DC (only available with 20W X band and 8W (and lower) Ku band terminals).

**Interfases**

AC Power

L-Band Tx Interface (External Modem)

L-Band Rx Monitor

L-Band Modem Output

RJ45 Ethernet (1 or 2 based on modem option)

EIA–530 (Modem dependent)

DVE Encoder version with SDI Input

**Modems**

Modems may be exchanged at base level maintenance.

**Modem Options**

iDirect e850 mp

Comtech DMD1050

Paradise–Q Lite modem

Ebit – Shiron modem

**Encoder option**

Advent DVE5100 (H.264)

**Control Interface**

Simple two button operator interface for field level control. Embedded web server for control and Management using external PC for initial base level configuration.

**Alignment**

Interactive user interface providing look angle directions for the selected satellite using positional information from an internal GPS receiver. Integrated beacon receiver provides signal strength for peaking.

**Physical Specification**

**Transportability**

One airline checkable case

**Packaging**

Optional Rucksack, or rugged carry case in one or two box solution depending on reflector size

**Weight**

**65cm version:**

12.5 kg / 27.5lbs (without carry case)

**90cm version:**

15 kg / 33lbs (without carry case)

**120cm version:**

19 kg / 42lbs (without carry case)

IATA compliant

**Environmental Specification**

**Operating Temperature**

-20°C to +55°C

**Storage Temperature**

-40°C to +80°C

**Operating Altitude**

3000 m

**Survival Altitude**

4500 m

**Operating Wind Speed**

11.16 ms (25mph / 40.23Kph) – no ballast

20.11 ms (45mph / 72.42Kph) – with ballast

**Shock**

MIL–810F Method S13.5 procedure IV

Vibration

MIL–810F Method S14.1 procedure I

Sand / Dust

DEF STAN 00–35, Pt 3, Iss 4, Test CL25

Water Ingress

DEF STAN 00–35, Pt 3, Iss 4, Test CL27

EMC

BS EN61000–6–2:2007

BS EN61000–6–1:2007

**CE marked**

Radiation Pattern Compliance

ITU-R S.465.5 and S.580–6 (65, 90 & 120cm)

FCC 25.209 with 25.212 (65, 90cm & 120cm)

ETSI EN 301.358 (65 & 90 & 120cm)

ETSI EN 301.35 (65cm)

MIL-STD-188–14A (65cm)

INTELSAT IESS–601 (90cm)

INTELSAT IESS–602 (90cm)

Eutelsat EESS02 (Os & 120cm Planned)

Registered with Intelsat, Eutelsat, Optus and Arabsat