The new wave in HF solutions

Safe and secure
Dependable performance

HF and Defence Product Catalogue

Tactical and strategic products backed by exceptional design and implementation services
Tactical Wideband Microwave Antennas APL Series, 1350-2700MHz

Product Description
The tactical microwave antenna APL-4T operates in the 1350-2700MHz frequency band and can be installed at the top of a vertically erected mast.

Features & Benefits
- The antenna covers the full frequency range 1350-2700MHz and operates in linear polarization. The choice between horizontal and vertical polarization is achieved by the choice of orthogonal fittings at the rear of the antenna.
- The parabolic reflector is illuminated by a primary feed which is fitted to the center of the assembly with a quick fastener system.
- The antenna assembly is protected by an highly resistant coating of TAN X army green IR NATO 24X5.
- In addition to its radio-electrical performances, its main features are:
  - Light weight and rugged design.
  - Ease of deployment and reduced drag.
  - Installation is quick and requires only one operator.

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Line Antenna,</td>
</tr>
<tr>
<td>Product Type Microwave Antenna -</td>
</tr>
<tr>
<td>Frequency Range, [MHz]</td>
</tr>
<tr>
<td>Power Rating, [kW]</td>
</tr>
<tr>
<td>Impedance, [ohms]</td>
</tr>
<tr>
<td>Polarization Horizontal;</td>
</tr>
<tr>
<td>Isotropic Gain, [dB]</td>
</tr>
<tr>
<td>VSWR</td>
</tr>
<tr>
<td>Half Power Beamwidth E-Plane, [degrees]</td>
</tr>
<tr>
<td>Half Power Beamwidth H-Plane, [degrees]</td>
</tr>
<tr>
<td>Front to Back Ratio, [dB]</td>
</tr>
<tr>
<td>Side Lobe (max), [dB]</td>
</tr>
<tr>
<td>Cross Polarization, [dB]</td>
</tr>
<tr>
<td>Weight, [kg(lb)]</td>
</tr>
<tr>
<td>Mounting (Standard), [mm(in)]</td>
</tr>
<tr>
<td>Effective Area Front (full antenna), [sqm (sq ft)]</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Coating</td>
</tr>
<tr>
<td>Colour</td>
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</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
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<tbody>
<tr>
<td>Weight, [kg(lb)]</td>
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</tr>
<tr>
<td>Coating</td>
</tr>
<tr>
<td>Colour</td>
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</tbody>
</table>

RFS The Clear Choice™ APL-4T Date: 14.01.2014
Tactical Wideband Microwave Antennas APL Series, 1350-2700MHz

Radiation Patterns

Vertical and Horizontal

Gain

VSWR – over average ground

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems
Technical Data Sheet

BDH230 Series

Broadband Biconical Dipoles 2 - 30MHz

Product Description

This broadband series of antennas covering 2.3 to 30MHz is designed for short to long range (depending on frequency) transmitting or receiving applications. Polarization is horizontal and pattern essentially omnidirectional.

Features & Benefits

- These antennas, being broadband, do not require tuning, thus eliminating the need for any form of antenna tuning unit (ATU) with its associated losses.
- No terminating resistors are employed and so full power is available for radiation.
- The broadband feature is ideal for multi-channel or frequency agile synthesized HF radio equipment.
- The antenna comprises two horizontal conical sections, the elements of which are connected in the centre to a common feed line. Either a 300 ohm balanced line, or a 50 ohm coaxial feeder with a balun option may be used to feed the antenna.
- Average power rating of the standard antenna is 10kW with higher rating to special order.
- Baluns are available with average power rating of 1kW and 10kW. Higher ratings are also available.
- Supplied complete with all masts

Specifications

Electrical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range, [MHz]</td>
<td>2.3 - 30</td>
</tr>
<tr>
<td>Gain, [dBi]</td>
<td>6-8 typical (see gain curve)</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Horizontal pattern</td>
<td>Essentially omnidirectional</td>
</tr>
<tr>
<td>Impedance, [ohms]</td>
<td></td>
</tr>
<tr>
<td>Balanced</td>
<td>300</td>
</tr>
<tr>
<td>Unbalanced (with balun)</td>
<td>50</td>
</tr>
<tr>
<td>Input connector</td>
<td></td>
</tr>
<tr>
<td>1kW (50 ohms)</td>
<td>N-type</td>
</tr>
<tr>
<td>10kW (50 ohms)</td>
<td>1 5/8” EIA</td>
</tr>
<tr>
<td>Maximum input power, kW</td>
<td>1kW Average (4kW PEP), 10kW Average (40kW PEP) with balun option</td>
</tr>
<tr>
<td>VSWR</td>
<td>2.0:1 typical, 2.5:1 Max (see VSWR curve)</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height, [m]</td>
<td>21.4</td>
</tr>
<tr>
<td>Mast spacing, [m]</td>
<td>58</td>
</tr>
<tr>
<td>Ground Area, [m]</td>
<td>44 x 105</td>
</tr>
<tr>
<td>Wind Rating survival no ice, [km/h]*</td>
<td>205</td>
</tr>
<tr>
<td>Wind Rating survival 1cm radial ice, [km/h]*</td>
<td>130</td>
</tr>
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</table>

Shipping information

<table>
<thead>
<tr>
<th>Shipper</th>
<th>Packed weight [kg]</th>
<th>Packed size [mm]</th>
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<tbody>
<tr>
<td>BDH230</td>
<td>230</td>
<td>950 x 950 x 700</td>
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<tr>
<td>MS3-30/21 Mast (21m)</td>
<td>550</td>
<td>600 x 1700 x 3040</td>
</tr>
<tr>
<td>SMBDH Stubmast</td>
<td>18</td>
<td>2800 x 100 x 120</td>
</tr>
<tr>
<td>T1000-530 balun</td>
<td>4</td>
<td>included with antenna</td>
</tr>
<tr>
<td>T10K-530 balun</td>
<td>70</td>
<td>920 x 660 x 570</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
   - BDH230
2. Specify Input Impedance/Power
   - Model 0
     - 0: 300 / 10kW
     - 2: 50 / 1kW
     - 3: 50 / 10kW
   - Always 1 Mast Requirements
3. Specify Mast Requirements
   - 0: None
   - 2: Mast & Stub Mast Kits

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at http://www.rfsworld.com
**Product description**

This broadband series of antennas covering 3.1 to 30MHz is designed for short to medium range transmitting or receiving applications. Polarization is horizontal and pattern essentially omnidirectional.

**Features & Benefits**

- These antennas, being broadband, do not require tuning, thus eliminating the need for any form of antenna tuning unit (ATU) with its associated losses.
- No terminating resistors are employed and so full power is available for radiation.
- The broadband feature is ideal for multi-channel or frequency agile synthesized HF radio equipment.
- The antenna comprises two horizontal conical sections, the elements of which are connected in the centre to a common feed line. Either a 300 ohm balanced line, or a 50 ohm coaxial feeder with a balun option may be used to feed the antenna.
- Average power rating of the standard antenna is 10kW with higher rating to special order.
- Baluns are available with average power rating of 1kW and 10kW. Higher ratings are also available.

**Specifications**

### Electrical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range, MHz</td>
<td>3.1 - 30</td>
</tr>
<tr>
<td>Gain, dBi (Above perfect ground)</td>
<td>6-8 typical (see gain curve)</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Horizontal pattern</td>
<td>Essentially omnidirectional</td>
</tr>
<tr>
<td>Impedance, ohms</td>
<td></td>
</tr>
<tr>
<td>Balanced</td>
<td>300</td>
</tr>
<tr>
<td>Unbalanced (with balun)</td>
<td>50</td>
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<td>Maximum input power, kW</td>
<td>1kW Average (4kW PEP), 10kW Average (40kW PEP) with balun option</td>
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<tr>
<td>VSWR</td>
<td>2.0:1 typical, 2.5:1 Max (see VSWR curve)</td>
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### Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Mast Height, m</td>
<td>15.4</td>
</tr>
<tr>
<td>Mast spacing, m</td>
<td>39.2</td>
</tr>
<tr>
<td>Ground Area, m</td>
<td>33 x 75</td>
</tr>
<tr>
<td>Wind Rating survival no ice, km/h*</td>
<td>205</td>
</tr>
<tr>
<td>Wind Rating survival 1cm radial ice, km/h*</td>
<td>130</td>
</tr>
</tbody>
</table>

### Shipping information

<table>
<thead>
<tr>
<th>Component</th>
<th>Packed weight (kg)</th>
<th>Packed size (mm)</th>
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<tbody>
<tr>
<td>BDH330</td>
<td>180</td>
<td>900 x 900 x 600</td>
</tr>
<tr>
<td>MS3-30/21 Mast (21m)</td>
<td>400</td>
<td>600 x 1200 x 3040</td>
</tr>
<tr>
<td>SMBDH Stubmast</td>
<td>18</td>
<td>2800 x 100 x 120</td>
</tr>
<tr>
<td>T1000-530 balun</td>
<td>4</td>
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</tr>
<tr>
<td>T10K-530 balun</td>
<td>70</td>
<td>920 x 660 x 570</td>
</tr>
</tbody>
</table>

*Wind ratings are calculated to Australian Standards AS1170.2:2011
**Techncial Data Sheet**  
**BDH330 series**

**Broadband Biconical Dipoles 3.1 - 30MHz**

- **Patterns over average ground**
  - **Azimuth Radiation Patterns**
    - 3.1MHz
    - 6MHz
    - 10MHz
    - 20MHz
    - 30MHz
  - **Elevation Radiation Patterns**
    - 3.1MHz
    - 6MHz
    - 10MHz
    - 20MHz
    - 30MHz

- **Gain**
  - Frequency (MHz) vs. Gain (dBi)

- **VSWR - Average ground**
  - Frequency (MHz) vs. VSWR

- **Antenna ground dimensions**

**Ordering information**

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

- **BDH330**
- Model
- Always 1
- Mast requirements

- 300 / 10kW (no balun)
- 50 / 1kW
- 50 / 10kW suspended balun

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RFS The Clear Choice ™

Radio Frequency Systems

Please visit us on the internet at http://www.rfsworld.com

Date: 16.05.2013
Product Description

This broadband series of antennas covering 3.5 - 30 MHz is designed for medium range transmitting or receiving communications. Polarization is horizontal and the radiation pattern is essentially omnidirectional.

Features & Benefits

- These broadband antennas do not require tuning eliminating the need for any form of antenna tuning unit.
- No terminating resistors are employed so full power is available for radiation.
- The broadband feature is ideal for multi-channel or frequency agile synthesized HF radio equipment.
- The antenna comprised of two horizontal conical sections, the elements of which are connected in the centre to a common feed line. A 300 ohm balanced line is required to feed the antenna.
- Average power rating of the standard antenna is 50kW.

Specifications

**Electrical**

- Frequency range, [MHz] 3.5 - 30
- Gain, [dBi] 6-8 typical (see gain curve)
- Polarisation Horizontal
- Horizontal pattern Essentially omnidirectional
- Impedance, [ohms] 300 Balanced
- Maximum input power, kW 50kW Average (200kW PEP)
- VSWR 2.0:1 typical, 2.5:1 Max (see VSWR curve)

**Mechanical**

- Mast Height, [m] 15.4
- Mast spacing, [m] 40.5
- Ground Area, [m] 33 x 75
- Wind Rating survival no ice, [km/h]* 205
- Wind Rating survival 1cm radial ice, [km/h]* 130

**Shipping information**

<table>
<thead>
<tr>
<th></th>
<th>Packed weight [kg]</th>
<th>Packed size [mm]</th>
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</thead>
<tbody>
<tr>
<td>BDH230</td>
<td>190</td>
<td>900 x 900 x 600</td>
</tr>
<tr>
<td>MS3-30/21 Mast (21m)</td>
<td>400</td>
<td>600 x 1200 x 3040</td>
</tr>
<tr>
<td>SMBDH Stubmast</td>
<td>18</td>
<td>2800 x 100 x 120</td>
</tr>
</tbody>
</table>
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements
Delta Antenna D Series 1.5 - 30 MHz

**Product Description**

Delta antennas are designed for coverage over short to medium distances and exhibit essentially a omni-directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

**Features & Benefits**

- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by above ground open wire. Within the range of delta antennas are other models where the oblique elements are fed by coaxial cables that can be installed over or underground.
- With these omnidirectional models, antenna elements are in a single plane with the feed distributed from a central balun transformer, through horizontal feed "wings", to the bottom of the oblique elements. Each element is fed anti-phase to the other.
- Ground anchors secure wings and oblique elements in position.
- Two of these omnidirectional deltas can be attached to a single mast and operated as separate transmit antennas. Isolation between the two is 30dB. A dual antenna variant, for circular polarisation, can also be supplied.

**Specifications**

**Electrical**
- Frequency Range [MHz]: 1.5 - 30
- Impedance (Nominal): 50 ohms
- Gain [dBi]: Refer chart
- VSWR Less than: 2.0:1
- Power (Max): 1kW Av. 4kW PEP
- Radiating Conductors: Marine grade stainless steel

**Mechanical**
- Mast Height [m]: 22
- Antenna Width (W) [m]: 58
- RFS mast guy radius [m]: 14.5
- Wind Rating* (with suitable RFS mast) [km/hr]: 230

**Shipping Information**
- Packed Weight (less mast and balun) [kg]: 35
- Packed Size (less mast/balun) [mm]: 900 x 650 x 350
- Packed Weight (mast) [kg]: 185
- Packed Size (mast) [mm]: 450 x 200 x 4800

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

**Azimuth Radiation Patterns (at 30deg EL Angle)**

- 1.5 MHz
- 5 MHz
- 10 MHz
- 15 MHz
- 30 MHz

**Elevation Radiation Patterns**

- 1.5 MHz
- 5 MHz
- 10 MHz
- 15 MHz
- 30 MHz

**Gain**

- Frequency (MHz): 1.5, 2, 2.5, 3, 3.5, 4
- Gain (dB): -20, -15, -10, -5, 0

**VSWR – over average ground**

- Frequency (MHz): 1.5, 2, 2.5, 3, 3.5, 4
- VSWR: 1

**Antenna ground dimensions**

- Dimensions indicated for average ground setup.

**Ordering Information**

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

- **Model:** D130
- **Power Rating:** 1000 W Av
- **Mast Requirements:**
  - 0: None
  - 1: Mast, Halyard, Stub Mast Kit
  - 3: Mast, Halyard, Stub Mast Kit & Jury Kit

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems
**Delta Antenna D Series 2 - 30 MHz**

**Product Description**
Delta antennas are designed for coverage over short to medium distances and exhibit essentially a omni-directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

**Features & Benefits**
- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by above ground open wire. Within the range of delta antennas are other models where the oblique elements are fed by coaxial cables that can be installed over or underground.
- With these omnidirectional models, antenna elements are in a single plane with the feed distributed from a central balun transformer, through horizontal feed "wings", to the bottom of the oblique elements. Each element is fed anti-phase to the other.
- Ground anchors secure wings and oblique elements in position.
- Two of these omnidirectional deltas can be attached to a single mast and operated as separate transmit antennas. Isolation between the two is 30dB. A dual antenna variant, for circular polarisation, can also be supplied.

**Specifications**

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>2 - 30</td>
</tr>
<tr>
<td>Impedance (Nominal)</td>
<td>50 ohms</td>
</tr>
<tr>
<td>Gain [dBi]</td>
<td>Refer chart</td>
</tr>
<tr>
<td>VSWR Less than</td>
<td>2.0:1</td>
</tr>
<tr>
<td>Power (Max)</td>
<td>250W Av. 1kW PEP or 1kW Av. 4kW PEP</td>
</tr>
<tr>
<td>Radiating Conductors</td>
<td>Marine grade stainless steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
<td>22</td>
</tr>
<tr>
<td>Antenna Width (W) [m]</td>
<td>58</td>
</tr>
<tr>
<td>RFS mast guy radius [m]</td>
<td>14.5</td>
</tr>
<tr>
<td>Wind Rating* (with suitable RFS mast) [km/hr]</td>
<td>230</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shipping Information</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Packed Weight (less mast and balun) [kg]</td>
<td>35</td>
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<tr>
<td>Packed Size (less mast/balun) [mm]</td>
<td>900 x 650 x 350</td>
</tr>
<tr>
<td>Packed Weight (mast) [kg]</td>
<td>185</td>
</tr>
<tr>
<td>Packed Size (mast) [mm]</td>
<td>450 x 200 x 4800</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

D230 Series

Model
Power Rating
Always
Mast Requirements

2
250 W Av

1
Always

0
None

2
250 W Av

3
1000 W Av

5
Mast, Halyard, Stub Mast Kit & Jury Kit

Date: 9.01.2014

Radio Frequency Systems

Please visit us on the internet at http://www.rfsworld.com
Delta Antenna D Series 3 - 30 MHz

**Product Description**

Delta antennas are designed for coverage over short to medium distances and exhibit essentially a omni-directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

**Features & Benefits**

- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by above ground open wire. Within the range of delta antennas are other models where the oblique elements are fed by coaxial cables that can be installed over or underground.
- With these omnidirectional models, antenna elements are in a single plane with the feed distributed from a central balun transformer, through horizontal feed "wings", to the bottom of the oblique elements. Each element is fed anti-phase to the other.
- Ground anchors secure wings and oblique elements in position.
- Two of these omnidirectional deltas can be attached to a single mast and operated as separate transmit antennas. Isolation between the two is 30dB. A dual antenna variant, for circular polarisation, can also be supplied.

**Specifications**

**Electrical**

<table>
<thead>
<tr>
<th>Frequency Range [MHz]</th>
<th>3 - 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance (Nominal)</td>
<td>50 ohms</td>
</tr>
<tr>
<td>Gain [dB]</td>
<td>Refer chart</td>
</tr>
<tr>
<td>VSWR Less than</td>
<td>2.0:1</td>
</tr>
<tr>
<td>Power (Max)</td>
<td>250W Av. 1kW PEP or 1kW Av. 4kW PEP</td>
</tr>
<tr>
<td>Radiating Conductors</td>
<td>Marine grade stainless steel</td>
</tr>
</tbody>
</table>

**Mechanical**

<table>
<thead>
<tr>
<th>Mast Height [m]</th>
<th>16.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna Width (W) [m]</td>
<td>46</td>
</tr>
<tr>
<td>RFS mast guy radius [m]</td>
<td>12.5</td>
</tr>
<tr>
<td>Wind Rating* (with suitable RFS mast) [km/hr]</td>
<td>230</td>
</tr>
</tbody>
</table>

**Shipping Information**

| Packed Weight (less mast and balun) [kg] | 30  |
| Packed Size (less mast/balun) [mm]     | 900 x 650 x 350 |
| Packed Weight (mast) [kg]              | 155 |
| Packed Size (mast) [mm]                | 380 x 200 x 4800 |

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns at 30 deg Elevation

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

<table>
<thead>
<tr>
<th>Model</th>
<th>Power Rating</th>
<th>Mast Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>D330</td>
<td>250 W Av</td>
<td>None</td>
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<td></td>
<td>1000 W Av</td>
<td>Mast, Halyard &amp; Stub Mast Kit</td>
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<tr>
<td></td>
<td>2</td>
<td>Mast, Halyard, Stub Mast Kit &amp; Jury kit</td>
</tr>
</tbody>
</table>

Date: 9.01.2014
Delta Antenna DC Series 2 - 30 MHz

Product Description

Delta antennas are designed for coverage over short to medium distances and exhibit essentially a omni-directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

Features & Benefits

- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by coaxial cables that can be installed over or underground. Within the range of delta antennas are other models where the oblique elements are fed by above ground open wire.
- The lack of overground wings offer advantages where personnel safety and peculiar site features are an issue.
- A central balun supplies anti-phase signals to the bottom of the oblique elements via underground coaxial cable lines and secondary balun transformers.
- Two of these omnidirectional deltas can be attached to a single mast and operated as separate transmit antennas. Isolation between the two is 30dB. A dual antenna variant, for circular polarisation, can also be supplied.

Specifications

**Electrical**
- Frequency Range [MHz]: 2 - 30
- Impedance (Nominal): 50 ohms
- Gain [dBi]: Refer chart
- VSWR Less than: Less than 2.0:1
- Power (Max): 250W Av. 1kW PEP or 1kW Av. 4kW PEP
- Radiating Conductors: Marine grade stainless steel

**Mechanical**
- Mast Height [m]: 22
- Antenna Width (W) [m]: 44
- RFS mast guy radius [m]: 14.5
- Wind Rating* (with suitable RFS mast) [km/hr]: 230

**Shipping Information**
- Packed Weight (less mast and balun) [kg]: 49
- Packed Size (less mast/balun) [mm]: 900 x 650 x 350
- Packed Weight (mast) [kg]: 185
- Packed Size (mast) [mm]: 450 x 200 x 4800

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns (at 45deg AZ angle)

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

DC230  •  2  •  2  •  0
Model  Power Rating  Antenna Cable Type  Mast Requirements

2  250 W Av  LCF ½”
3  1000 W Av
0  None
0  Mast, Halyard & Stub Mast Kit
3  Mast, Halyard, Stub Mast Kit & Jury Kit
5  Mast, Halyard, Stub Mast Kit & Jury Kit

RFS The Clear Choice™

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Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems

Date: 9.01.2014

DC230 Series
Delta Antenna DC Series 3 - 30 MHz

Product Description

Delta antennas are designed for coverage over short to medium distances and exhibit essentially a omni-directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

Features & Benefits

- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by coaxial cables that can be installed over or underground. Within the range of delta antennas are other models where the oblique elements are fed by above ground open wire.
- The lack of overground wings offer advantages where personnel safety and peculiar site features are an issue.
- A central balun supplies anti-phase signals to the bottom of the oblique elements via underground coaxial cable lines and secondary balun transformers.
- Two of these omnidirectional deltas can be attached to a single mast and operated as separate transmit antennas. Isolation between the two is 30dB. A dual antenna variant, for circular polarisation, can also be supplied.

Specifications

Electrical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>3 - 30</td>
</tr>
<tr>
<td>Impedance (Nominal)</td>
<td>50 ohms</td>
</tr>
<tr>
<td>Gain [dBi]</td>
<td>Refer chart</td>
</tr>
<tr>
<td>VSWR Less than</td>
<td>Less than 2:1:1</td>
</tr>
<tr>
<td>Power (Max)</td>
<td>250W Av. 1kW PEP or 1kW Av. 4kW PEP</td>
</tr>
<tr>
<td>Radiating Conductors</td>
<td>Marine grade stainless steel</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
<td>16.5</td>
</tr>
<tr>
<td>Antenna Width (W) [m]</td>
<td>32</td>
</tr>
<tr>
<td>RFS mast guy radius [m]</td>
<td>12.5</td>
</tr>
<tr>
<td>Wind Rating* (with suitable RFS mast) [km/hr]</td>
<td>230</td>
</tr>
</tbody>
</table>

Shipping Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed Weight (less mast and balun) [kg]</td>
<td>44</td>
</tr>
<tr>
<td>Packed Size (less mast/baluon) [mm]</td>
<td>1000 x 700 x 350</td>
</tr>
<tr>
<td>Packed Weight (mast) [kg]</td>
<td>155</td>
</tr>
<tr>
<td>Packed Size (mast) [mm]</td>
<td>380 x 200 x 4800</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns (at 45deg AZ angle)

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

DC330

Model

Power Rating

Antenna Cable Type

Mast Requirements

2

2

0

2

2

0

3

5

None

Mast, Halyard & Stub Mast Kit

Mast, Halyard, Stub Mast Kit & Jury Kit

250 W Av

LCF ½" 1000 W Av
**Product Description**

This Delta antenna is designed for coverage over short to medium distances and exhibits a slightly directional, high angle radiation pattern. Radiation results from a wave travelling upwards to a resistive termination at the apex of the antenna.

**Features & Benefits**

- Each antenna is available with or without a support mast and is supplied complete with the appropriate balun and termination. When masts are supplied they include all installation hardware.
- The oblique elements on this antenna type are fed by coaxial cables that can be installed over or underground.
- The lack of overground wings offer advantages where personnel safety and peculiar site features are an issue.
- A central balun supplies anti-phase signals to the bottom of the oblique elements via underground coaxial cable lines and secondary balun transformers.
- These semi-directional antennas have two oblique elements set at an angle to each other supported by a common mast which creates a slightly directional pattern. Arrangement of the feed is similar to that used with the DC Series.

**Specifications**

**Electrical**

- Frequency Range [MHz] 3 - 30
- Impedance (Nominal) 50 ohms
- Gain [dBi] Refer chart
- VSWR Less than Less than 2.5:1
- Power (Max) 250W Av. 1kW PEP or 1kW Av. 4kW PEP
- Radiating Conductors Marine grade stainless steel

**Mechanical**

- Mast Height [m] 14
- Antenna Width (W) [m] 32
- RFS mast guy radius [m] 12.5
- Wind Rating* (with suitable RFS mast) [km/hr] 230

**Shipping Information**

- Packed Weight (less mast and balun) [kg] 44
- Packed Size (less mast/balun) [mm] 1000 x 700 x 350
- Packed Weight (mast) [kg] 155
- Packed Size (mast) [mm] 380 x 200 x 4800

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Technical Data Sheet

DDC330 Series

Delta Antenna DDC Series 3 - 30 MHz

Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

DDC330 • 2 • 2 • 0

Model  Power Rating  Antenna Cable Type  Mast Requirements

2  250 W Av  LCF ½”

3  1000 W Av

0  None

3  Mast, Halyard & Stub Mast Kit

5  Mast, Halyard, Stub Mast Kit & Jury Kit

Date: 2.07.2014

Please visit us on the internet at http://www.rfsworld.com
VHF/UHF Dipole Antennas DTLB Series 115 - 500 MHz

Product Description
The DTLB115 is a Tactical crossband antenna covering the VHF and UHF aeroband frequencies from 115 to 500MHz. This antenna is used extensively for ground-to-air communications from control towers or shelters as well as for counter-measure operations. For detailed model specifications and ordering information please contact RFS.

Features & Benefits
- The DTLB115 antenna is made of aluminium alloy and wrapped with a polyester radome, providing excellent protection against the harshest conditions of rain, icing, sand storms, marine corrosion and industrial pollution.
- The antenna connection is via a coaxial cable which exits from the lower mounting tube: Length - 1.00m, Connector - N socket.

Specifications

### Electrical

- **Product Line Antenna, Tactical**
- **Product Type** VHF/UHF Omnidirectional - Tactical Dipole Antenna
- **Frequency Range, [MHz]** 115 - 500
- **Power Rating, [kW]** 0.4 cw
- **Impedance, [ohms]** 50
- **Polarization,** Vertical
- **Isotropic Gain, [dBi]** 2.5
- **VSWR** 2:1
- **Half Power Beamwidth E-Plane, [degrees]** 90
- **Half Power Beamwidth H-Plane, [degrees]** Omnidirectional
- **Input Connector** N type socket
- **Coaxial Tail Length, [cm (in)]** 100 (39.4) length of RG213U

### Mechanical

- **Operating Temperature Range, [°C (°F)]** -30 to +70 (-22 to 158)
- **Weight, [kg (lb)]** 11.5 (25.3)
- **Dimensions (Height/Length), [cm (in)]** 135 (53.1)
- **Radome Height, [cm (in)]** 95 (37.4)
- **Radome Diameter, [cm (in)]** 36 (14.2)
- **Mounting (Standard), [mm (in)]** Fastening by 2 rings for mast 60 - 95 (2.4 - 3.7)
- **Effective Area Front (full antenna), [sq m (sq ft)]** 0.4 (4.30)
- **Wind Rating (no ice), [km/h (mph)]** 220 (137)
- **Wind Rating (2cm Ice), [km/h (mph)]** 140 (87)
- **Material** Aluminium alloy
- **Material - Radome** Polyester
- **Colour** Army green (IR NATO 24X5); White; Grey
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Horizontal pattern (H plane)  
1400MHz Frequency

Vertical pattern (E plane)  
1400MHz Frequency
**Horizontal Log Periodic Antenna 3 - 30 MHz**

**Product Description**
The HLP Log Periodic Antenna is a high performance, directional, horizontally polarized antenna designed to provide reliable communication circuits over short, medium and long distances.

**Features & Benefits**
- Characterized by high gain performance while maintaining excellent front to back ratio, the HLP antennas are capable of providing coverage in excess of 5000kms.
- The broadband feature enables transmission over 3-30MHz band.
- Although virtually ground independent and exhibiting radiation patterns consistent over the entire frequency band, take off angles can be tailored to suit various systems applications.
- The HLP has been designed for incorporation within multi-element array and rosette configurations.
- The rugged design of the antenna ensures its suitability for wind velocities up to 306km/hr.

**Specifications**

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>3 - 30MHz</td>
</tr>
<tr>
<td>Input Impedance Unbalanced [ohms]</td>
<td>50</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt; 1.8:1 Max.</td>
</tr>
<tr>
<td>Antenna Gain [dBi]</td>
<td>up to 12.0 (See Gain Curve)</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>Directional</td>
</tr>
<tr>
<td>Maximum Input Power [kW]</td>
<td>1 Average, 4 PEP, 10 Average, 20 PEP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
<td>33 rear, 15 front</td>
</tr>
<tr>
<td>Antenna Ground Dimensions [m]</td>
<td>94 x 120</td>
</tr>
<tr>
<td>Mast &amp; Guy Material</td>
<td>Galvanised Steel</td>
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<tr>
<td>Radiator Material</td>
<td>Copper</td>
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</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Survival Wind Speed (No Ice)</td>
<td>306 km/hr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shipping information</th>
<th>Packed weight</th>
<th>Package Size (mm)</th>
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</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>Mast</td>
<td>TBA</td>
<td>TBA</td>
</tr>
</tbody>
</table>
Horizontal Log Periodic Antenna 3 - 30 MHz

Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

HLP330 Series

Date: 9.01.2014

Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems
Rotatable Log Periodic Antenna 3.8 - 30 MHz

**Product Description**
The HLR series are high performance, rotatable log periodic antennas designed to provide reliable link establishment over short, medium and long distances.

**Features & Benefits**
- Characterized by high gain performance, the HLR antennas are capable of providing coverage in excess of 5000kms.
- The broadband feature enables transmission over 3.8-30MHz.
- A high performance rotary joint enables continuous rotation with a complete 360º turn achieved in two minutes.
- A unique design feature of the HLR antenna series is the ability to raise and lower the antenna without the use of cranes or special erection towers.
- The rugged design of the antenna ensures its suitability for cyclonic wind velocities.

**Specifications**

**Electrical**
- Frequency range, [MHz]: 3.8 - 30
- Gain, [dBi]: 8.5-12 (see gain curve)
- Polarisation: Horizontal
- Azimuth Beamwidth: 72 degrees typical
- Impedance, [ohms]: 50
- Input connector:
  - 1kW (50 ohms): N-type
  - 10kW (50 ohms): 1 5/8" EIA
- Maximum input power, kW: 1kW Average (4kW PEP), 10kW Average (25kW PEP)
- VSWR: 1.5:1 typical, 2:1 max (see VSWR curve)
- AC Power Supply: 3 phase, 115/230 V 50/60 Hz
- AC Power: 2kVA
- Antenna Rotation: 360 deg continuous

**Mechanical**
- Mast Height, [m]: 30
- Mast Guy Radius, [m]: 25
- Wind Rating survival no ice, [km/h]*: 289 and 306 (two different models)
- Temperature range [deg C]: -30 to +60

**Shipping Information**

<table>
<thead>
<tr>
<th>Item</th>
<th>Packed weight [kg]</th>
<th>Packed size [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>Mast</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>T1000-520 balun</td>
<td>4</td>
<td>included with antenna</td>
</tr>
<tr>
<td>T10K-520 balun</td>
<td>70</td>
<td>920 x 660 x 570</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Technical Data Sheet  
HLR430 Series  
Rotatable Log Periodic Antenna 3.8 - 30 MHz

Patterns over average ground

**Azimuth Radiation Patterns**

- 6MHz
- 10MHz
- 20MHz
- 30MHz

**Elevation Radiation Patterns**

- 6MHz
- 10MHz
- 20MHz
- 30MHz

**Gain**

- Frequency (MHz)
- Gain (dBi)

**VSWR – over average ground**

- Frequency (MHz)
- VSWR

**Antenna ground dimensions**

- Reference Point
- GA1
- GA2
- GA3
- GA8

**Ordering Information**

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

- HLR430 • 1 • 0 • 1
  - Model
  - Input Impedance & Power
  - Mast Requirements
  - Always 0
  - 50 / 1kW
  - 50 / 10kW
  - None
  - Mast

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at http://www.rfsworld.com

RFS The Clear Choice™

Radio Frequency Systems

Date: 9.01.2014
Semidelta Antenna SD Series 2 - 14 MHz

Product Description
An economical, broadband, omni-directional travelling wave antenna, the SD214 is designed for coverage over short to medium distances and exhibit essentially an omni-directional high angle radiation pattern. Two versions are available, one rated at 100W average, the other, 500W average.

Features & Benefits
- The SD214 is simple to install and erection can be carried out by unskilled personal within 30 minutes.
- A halyard is incorporated for ease of erection and enables the antenna to be deployed from a wide range of support structures.
- A simple metal stake or pipe is required to secure the lower end of the antenna provide a ground connection and affix the supplied input balun.

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency Range [MHz]</td>
<td>2 - 14</td>
</tr>
<tr>
<td>Impedance (Nominal) [ohms]</td>
<td>50 - unbalanced</td>
</tr>
<tr>
<td>VSWR (Average Ground)</td>
<td>2.0:1 - typical, 2.5:1 maximum</td>
</tr>
<tr>
<td>Power Rating [W]</td>
<td>100 Av 400 PEP or 500 Av 2000 PEP</td>
</tr>
<tr>
<td>Radiating Conductors</td>
<td>Marine Grade stainless steel</td>
</tr>
<tr>
<td>Radiation Patterns</td>
<td>See diagrams</td>
</tr>
<tr>
<td><strong>Mechanical</strong></td>
<td></td>
</tr>
<tr>
<td>Connector</td>
<td>N-type socket</td>
</tr>
<tr>
<td>Packed weight [kg]</td>
<td>7</td>
</tr>
</tbody>
</table>
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

RFS The Clear Choice™

SD214 Series

Date: 9.01.2014

Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems
Product description
The RFS Model SD230T antenna is a transportable, broadband, lightweight, traveling wave antenna for short to medium range ionospheric communications.

Features & Benefits
- Designed specifically for use by the defense forces or emergency services, this antenna can be erected within 20 minutes on an existing mast.
- Supplied in a canvas carry bag, the SD230T antenna comes complete with wire elements, balun transformer, terminations, halyard and pulley assembly, stub mast and counterpoise earth system. Normally a user supplied item, the main mast is available as an option if required. A counterpoise earth system is provided for use when the antenna is erected over soil with poor conductivity or over concrete.
- To aid in the rapid deployment of the SD230T antenna, the wire elements are made of a plastic coated, highly flexible copper braid reinforced with Kevlar fibers. These wire elements are wound on formers for ease of storage. The balun transformer and terminations are sealed to prevent the ingress of moisture and to reduce the possibility of damage to these components during normal usage.
- The SD230T is also available with stainless steel wire elements.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range, MHz</td>
<td>2 - 30</td>
</tr>
<tr>
<td>Power Rating, kW</td>
<td>0.2 Average 0.6 PEP, 1.0 Average 3.0 PEP</td>
</tr>
<tr>
<td>Impedance, ohms</td>
<td>50 unbalanced</td>
</tr>
<tr>
<td>Azimuth Radiation Pattern</td>
<td>Non-directional</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2.5:1 for 2 to 30MHz</td>
</tr>
<tr>
<td>Input Connector</td>
<td>N type socket</td>
</tr>
<tr>
<td>Mast/Antenna Height, m (ft)</td>
<td>12 (39.4) +/- 1.5 (4.9)</td>
</tr>
<tr>
<td>Ground Dimensions, m (ft)</td>
<td>22.5 (73.8) x 2 (6.6)</td>
</tr>
<tr>
<td>Packed weight, kg</td>
<td>17</td>
</tr>
<tr>
<td>Packed dimensions, cm</td>
<td>70 x 43 x 32</td>
</tr>
</tbody>
</table>

Note: Ground area excludes mast guys and counterpoise
Radio Frequency Systems
Please visit us on the internet at http://www.rfsworld.com
RFS The Clear Choice ™

All information contained in the present brochure is subject to confirmation at time of ordering

1. Specify Model
2. Specify Power requirements
3. Wire element material

Tactical Semidelta Antenna 2 - 30MHz

Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain (dBi)

VSWR - Over average ground

Antenna ground dimensions

Ordering information

SD230T
0
1
0
Model
Input Power
Always
Wire element material

0
200W
1
1kW
Copper braid
Stainless steel

Date: 16.05.2013
Product Description

The SD0530T series of antennas are transportable, broadband, lightweight, travelling wave antenna for short to medium range ionospheric communications. Polarization is horizontal and pattern essentially omnidirectional.

Features & Benefits

- Designed specifically for use by the defence forces or emergency services, this antenna can be erected in a short amount of time on an existing mast.
- Supplied in a canvas carry bag, the SD0530T antenna comes complete with wire elements, balun transformer, terminations, halyard and pulley assembly, stub mast and counterpoise earth system. The main mast is normally a user supplied item. A counterpoise earth system is provided for use when the antenna is erected over soil with poor conductivity or over concrete.
- The wire elements are made of stainless steel wire. These wire elements are wound on formers for ease of storage. The balun transformer and terminations are sealed to prevent the ingress of moisture and to reduce the possibility of damage to these components during normal usage.

Specifications

**Electrical**

- Frequency Range: 0.5 - 30MHz
- Input Impedance: 300 ohms
- VSWR: 2.5:1 max, 1.6:1 average
- Antenna Gain: Up to 3dBi (See Gain Curve)
- Horizontal Pattern: Non directional
- Maximum Input Power: 200 W Average (600 W PEP)

**Mechanical**

- Mast Height [m]: 12
- Ground Dimensions [m]: 39 x 14 (not including mast and guys)
- Radiator Material: Stainless Steel

**Environmental**

- Temperature: -20 to +60 deg C
- Survival Wind Speed (No Ice): 130 km/hr

**Shipping information**

<table>
<thead>
<tr>
<th>Packed weight</th>
<th>Package Size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBA</td>
<td>TBA</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions
Product description

These simple low cost broadband horizontally polarized antennas are designed for medium to long range transmission or receiving applications.

Characterised by an increase in gain and directivity when operated within the higher frequency band, the ST series provides an economical option to a full horizontal Log Periodic Dipole design.

The antenna comprises two sloping wires resistively terminated at the centre point of the vee near ground level. The apex of the vee is supported by a suitable mast whilst the antenna is fed via a balun transformer at the mast head.

The ST series is available with or without mast systems of which two versions are available:
• Tubular aluminium (MA)
• Triangular galvanized steel (for high wind loading) (MS)

Features & Benefits

• Broadband 3-30MHz, ideal for multi-channel or frequency agile synthesized HF radio equipment.
• 250W and 1000W versions available
• Directional pattern

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
<th>3 - 30 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td></td>
</tr>
<tr>
<td>Polarization</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Power Rating-Average</td>
<td>Optional to 1kW</td>
</tr>
<tr>
<td>VSWR</td>
<td>Typically less than 2:1, Max. 2.5:1</td>
</tr>
<tr>
<td>Power Gain</td>
<td>Refer Figures</td>
</tr>
<tr>
<td>Radiation Pattern</td>
<td>Directional</td>
</tr>
<tr>
<td>Connector</td>
<td>“N” Socket</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
</tr>
<tr>
<td>Mast Guy Radius [m]</td>
</tr>
<tr>
<td>Ground Dimensions*</td>
</tr>
<tr>
<td>Vee Length [m]</td>
</tr>
<tr>
<td>Vee Width [m]</td>
</tr>
<tr>
<td>Wind Rating</td>
</tr>
<tr>
<td>With RFS aluminium tubular Mast (Series MA1)** [km/hr]</td>
</tr>
<tr>
<td>With RFS Steel Lattice Mast (Series MS3)** [km/hr]</td>
</tr>
</tbody>
</table>

* Additional space must be allowed for main mast guys.
Wind ratings are calculated to Australian Standards AS1170.2:2011
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain (dBi)

VSWR

Antenna ground dimensions

Ordering information

1. Specify Model
2. Specify power rating (Av)
3. Specify Mast Requirements
Sloping Triangle Antenna 5 - 30MHz

Product description
These simple low cost broadband horizontally polarized antennas are designed for medium to long range transmission or receiving applications.

Characterised by an increase in gain and directivity when operated within the higher frequency band, the ST series provides an economical option to a full horizontal Log Periodic Dipole design.

The antenna comprises two sloping wires resistively terminated at the centre point of the vee near ground level. The apex of the vee is supported by a suitable mast whilst the antenna is fed via a balun transformer at the mast head.

The ST series is available with or without mast systems of which two versions are available:
- Tubular aluminium (MA)
- Triangular galvanized steel (for high wind loading) (MS)

Features & Benefits
- Broadband 5-30MHz, ideal for multi-channel or frequency agile synthesized HF radio equipment.
- 250W and 1000W versions available
- Directional pattern

Specifications

**Electrical**
- Frequency Range (MHz): 5 - 30
- Polarization: Horizontal
- Power Rating-Average: Optional to 1kW
- VSWR: Typically less than 2:1, Max. 2.5:1
- Power Gain: Refer Figures
- Radiation Pattern: Directional
- Connector: “N” Socket

**Mechanical**
- Mast Height [m]: 15.5
- Mast Guy Radius [m]: 11
- Ground Dimensions*
  - Vee Length [m]: 80
  - Vee Width [m]: 63
- Wind Rating
  - With RFS aluminium tubular Mast (Series MA1)** [km/hr]: 160
  - With RFS Steel Lattice Mast (Series MS3)** [km/hr]: 230

* Additional space must be allowed for main mast guys.
Wind ratings are calculated to Australian Standards AS1170.2:2011
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain (dBi)

VSWR

Antenna ground dimensions

Ordering information

1. Specify Model
2. Specify power rating (Av)
3. Specify Mast Requirements

ST 530
Model
1
Power/Impedance
1
Wind Rating
0
Mast Requirements

2 250W Av/50Ω
3 1kW Av/50Ω
4 1kW Av/600Ω

1 160km/h
2 230km/h
0 None
1 Mast and Stub Mast kit (MA)
2 Mast and Stub Mast kit (MS)
4 Stub Mast
Tandem Delta Antenna TDG Series 2 - 30 MHz

Product Description
A high angle radiating antenna designed for ionospheric propagation over short to medium distances. Specifically designed for ground to air systems utilising high performance and reliability.

Features & Benefits
- The Tandem Delta is a derivation of the RFS series of delta antennas.
- Unlike the standard delta or other travelling wave antennas, where radiation results from a wave travelling upward to a resistive termination at the apex, the Tandem Delta does not incorporate a terminating resistor. All input power is therefore radiated and, in consequence, these new antennas have a higher gain than the standard delta. Furthermore, removal of the terminating resistor means that higher power ratings are more readily achieved.
- Because of its high radiation angle characteristics, the Tandem delta antenna is less prone to long distance interference and local electrical noise. It is strongly recommended for high grade communication networks.
- Tandem Delta antennas operate completely independently of ground conditions. Their polarisation is elliptical.
- RFS masts, and stubmasts for this antenna, are available as options.

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>2 - 30</td>
</tr>
<tr>
<td>Gain [dBi]</td>
<td>See gain curve</td>
</tr>
<tr>
<td>Impedance [ohms]</td>
<td>600 balanced, 50 unbalanced with balun</td>
</tr>
<tr>
<td>Power (Max) [kW]</td>
<td>1.0 AV 4 PEP or 10 AV 40 PEP</td>
</tr>
<tr>
<td>VSWR</td>
<td>2.5:1 max</td>
</tr>
<tr>
<td>Radiation pattern</td>
<td>Refer charts</td>
</tr>
<tr>
<td>Polarization</td>
<td>elliptical</td>
</tr>
</tbody>
</table>

| Mechanical                     |        |
| Radiating Conductors           | 1 kW - Marine grade stainless steel, 10 kW - Copper |
| Mast height [m]                | 30.5 |
| Ground dimensions [m]          | 92 x 92 |
| Wind rating* [km/h]            | 160 |
| Packed weight [kg]             | 1300 |
| Packed volume [m³]             | 8 |

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns (at 36deg AZ Angle)

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

TDG230

Model

Input Impedance / power

Always 1 Mast Requirements

600 ohm/10kW
50 ohm/1kW
50 ohm/10kW

None

Mast, Anchor & Stub Mast Kit
Tandem Delta Antenna TDG Series 3 - 30 MHz

Product Description

A high angle radiating antenna designed for ionospheric propagation over short to medium distances. Specifically designed for ground to air systems utilising high performance and reliability.

Features & Benefits

- The Tandem Delta is a derivation of the RFS series of delta antennas.
- Unlike the standard delta or other travelling wave antennas, where radiation results from a wave travelling upward to a resistive termination at the apex, the Tandem Delta does not incorporate a terminating resistor. All input power is therefore radiated and, in consequence, these new antennas have a higher gain than the standard delta. Furthermore, removal of the terminating resistor means that higher power ratings are more readily achieved.
- Because of its high radiation angle characteristics, the Tandem delta antenna is less prone to long distance interference and local electrical noise. It is strongly recommended for high grade communication networks.
- Tandem Delta antennas operate completely independently of ground conditions. Their polarisation is elliptical.
- RFS masts, and submasts for this antenna, are available as options.

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>3 - 30</td>
<td></td>
</tr>
<tr>
<td>Gain [dBi]</td>
<td>See gain curve</td>
<td></td>
</tr>
<tr>
<td>Impedance [ohms]</td>
<td>600 balanced, 50 unbalanced with balun</td>
<td></td>
</tr>
<tr>
<td>Power (Max) [kW]</td>
<td>1.0 AV 4 PEP or 10 AV 40 PEP</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>2.5:1 max</td>
<td></td>
</tr>
<tr>
<td>Radiation pattern</td>
<td>Refer charts</td>
<td></td>
</tr>
<tr>
<td>Polarization</td>
<td>Elliptical</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiating Conductors</td>
<td>1 kW - Marine grade stainless steel, 10 kW - Copper</td>
<td></td>
</tr>
<tr>
<td>Mast height [m]</td>
<td>21.5</td>
<td></td>
</tr>
<tr>
<td>Ground dimensions [m]</td>
<td>60 x 60</td>
<td></td>
</tr>
<tr>
<td>Wind rating* [km/h]</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>Packed weight [kg]</td>
<td>860</td>
<td></td>
</tr>
<tr>
<td>Packed volume [m3]</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Patterns (at 30deg EL Angle)

Elevation Radiation Patterns (at 36deg AZ Angle)

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

All information contained in the present brochure is subject to confirmation at time of ordering.
Product description
These horizontally polarised antennas are suitable for short to medium distance coverage and provide an economical option to the full Biconical dipole where cost and real estate may be an issue.

Pattern is essentially omnidirectional, however for long distances links the dipole should be orientated broadside to the required direction of communication.

The TWD series is available with two average input power option 250 watts and 1000 watts.

Features & Benefits
- Broadband 2-30MHz, ideal for multi-channel or frequency agile synthesized HF radio equipment.
- 250W and 1000W versions available
- Omnidirectional pattern

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range [MHz]</td>
<td>2 – 30</td>
<td></td>
</tr>
<tr>
<td>Input impedance</td>
<td>50 ohms unbalanced</td>
<td></td>
</tr>
<tr>
<td>Input connector</td>
<td>&quot;N&quot; Type</td>
<td></td>
</tr>
<tr>
<td>250W (50 ohms)</td>
<td>&quot;N&quot; Type</td>
<td></td>
</tr>
<tr>
<td>1kW (50 ohms)</td>
<td>&lt;2.5:1 Max, (see VSWR curve)</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>50 ohms</td>
<td></td>
</tr>
<tr>
<td>Antenna gain</td>
<td>Typically 6-8 (See gain curve)</td>
<td></td>
</tr>
<tr>
<td>Polarisation</td>
<td>Horizontal</td>
<td></td>
</tr>
<tr>
<td>Horizontal pattern</td>
<td>Essentially omnidirectional</td>
<td></td>
</tr>
<tr>
<td>Max Input power</td>
<td>250W Average, 1kW PEP</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended mast (not supplied) Height [m]</td>
<td>12-18</td>
<td></td>
</tr>
<tr>
<td>Distance between Masts [m]</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Antenna survival wind speed (No ice) [km/h]*</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Spreaders</td>
<td>Aluminium</td>
<td></td>
</tr>
<tr>
<td>Insulators</td>
<td>Heavy duty glazed porcelain</td>
<td></td>
</tr>
<tr>
<td>Radiator material</td>
<td>Marine grade stainless steel</td>
<td></td>
</tr>
<tr>
<td>Termination units supplied</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shipping information</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed weight [kg]</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Packed volume [m³]</td>
<td>7.5</td>
<td></td>
</tr>
</tbody>
</table>

*Wind ratings are calculated to AS 1170.2:2011 Australian Standards:
Technical Data Sheet  
TWD230 series

Travelling Wave Dipoles 2 - 30MHz

Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain (dBi)

VSWR - Over average ground

Antenna ground dimensions

Ordering information
1. Specify Model
2. Specify power rating (Av)

TWD230 • 0 0 0 
Model Always "0" Always "0" Power rating

0 250W av

1 1kW av

All information contained in the present brochure is subject to confirmation at time of ordering.

RFS The Clear Choice™
TWD230 series

Date: 08.02.2013

Please visit us on the internet at http://www.rfsworld.com
Radio Frequency Systems
Travelling Wave Dipole TWD Series 3 - 30 MHz

Product Description
These horizontally polarised antennas are suitable for short to medium distance coverage and provide an economical option to the full Biconical dipole where cost and real estate may be an issue. Pattern is essentially omnidirectional, however for long distances links the dipole should be orientated broadside to the required direction of communication. The TWD series is available with two average input power option 250 watts and 1000 watts.

Features & Benefits
- Broadband 3-30MHz, ideal for multi-channel or frequency agile synthesized HF radio equipment.
- Suitable for fixed or tactical installations.
- The antenna can be deployed from a wide range of support structures, horizontally or on a slope.

Specifications

<table>
<thead>
<tr>
<th><strong>Electrical</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>3 - 30</td>
</tr>
<tr>
<td>Impedance [ohms]</td>
<td>50 unbalanced with balun</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>250W AV 1kW PEP or 1kW AV 4kW PEP</td>
</tr>
<tr>
<td>Input Connector</td>
<td>“N” Type</td>
</tr>
<tr>
<td>VSWR</td>
<td>2.5:1 max (see VSWR curve)</td>
</tr>
<tr>
<td>Antenna Gain</td>
<td>See gain curve</td>
</tr>
<tr>
<td>Radiation pattern</td>
<td>Refer charts</td>
</tr>
<tr>
<td>Polarization</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>Generally Horizontal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Mechanical</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast height [m]</td>
<td>10 to 15</td>
</tr>
<tr>
<td>Distance Between Masts [m]</td>
<td>40</td>
</tr>
<tr>
<td>Radiating Conductors</td>
<td>Marine grade stainless steel</td>
</tr>
<tr>
<td>Insulators</td>
<td>Heavy Duty Glazed Porcelain</td>
</tr>
<tr>
<td>Survival Wind Speed (no ice)* [km/h]</td>
<td>160</td>
</tr>
<tr>
<td>Termination units supplied</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Shipping Information</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Packed weight [kg]</td>
<td>22</td>
</tr>
<tr>
<td>Packed volume [m3]</td>
<td>7.5</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
### Patterns over average ground

#### Azimuth Radiation Patterns

3MHz | 5MHz | 10MHz | 20MHz | 30MHz

#### Elevation Radiation Patterns

3MHz | 5MHz | 10MHz | 20MHz | 30MHz

### Gain

![Gain Graph](image)

### VSWR – over average ground

![VSWR Graph](image)

### Antenna ground dimensions

20 m ±50 mm

### Ordering Information

1. Specify Model
2. Specify Maximum Input Power

<table>
<thead>
<tr>
<th>Model</th>
<th>Always 0</th>
<th>Always 0</th>
<th>Maximum Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWD330</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>250W av</td>
</tr>
<tr>
<td>1kW av</td>
</tr>
</tbody>
</table>

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at [http://www.rfsworld.com](http://www.rfsworld.com)
**Technical Data Sheet**

**TWD530 series**

**Travelling Wave Dipoles 5 - 30MHz**

---

**Product description**

These horizontally polarised antennas are suitable for short to medium distance coverage and provide an economical option to the full Biconical dipole where cost and real estate may be an issue.

Pattern is essentially omnidirectional, however for long distances links the dipole should be orientated broadside to the required direction of communication.

The TWD series is available with two average input power option 250 watts and 1000 watts.

---

**Features & Benefits**

- Broadband 5-30MHz, ideal for multi-channel or frequency agile synthesized HF radio equipment.
- 250W and 1000W versions available
- Omnidirectional pattern

---

**Specifications**

**Electrical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>5 – 30MHz</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>50 ohms unbalanced</td>
</tr>
<tr>
<td>Input Connector</td>
<td></td>
</tr>
<tr>
<td>250W (50 ohms)</td>
<td>&quot;N&quot; Type</td>
</tr>
<tr>
<td>1kW (50 ohms)</td>
<td>&quot;N&quot; Type</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2.5:1 Max (see VSWR curve)</td>
</tr>
<tr>
<td>Antenna Gain</td>
<td>See Gain Curve</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Horizontal</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>Essentially omnidirectional</td>
</tr>
<tr>
<td>Max. Input power</td>
<td>250W average 1kW PEP, 1kW average 4kW PEP</td>
</tr>
</tbody>
</table>

**Mechanical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended mast height [m]</td>
<td>7-10</td>
</tr>
<tr>
<td>Distance Between Masts [m]</td>
<td>29</td>
</tr>
<tr>
<td>Survival Wind Speed [km/hr]</td>
<td>160 km/hr (to AS1170.2)</td>
</tr>
<tr>
<td>Spreader</td>
<td>Aluminium</td>
</tr>
<tr>
<td>Insulators</td>
<td>Heavy Duty Glazed Porcelain</td>
</tr>
<tr>
<td>Radiator Material</td>
<td>Marine Grade Stainless Steel</td>
</tr>
<tr>
<td>Termination units supplied</td>
<td>2</td>
</tr>
</tbody>
</table>

**Shipping information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed weight [kg]</td>
<td>20</td>
</tr>
<tr>
<td>Packed volume [m³]</td>
<td>7.5</td>
</tr>
</tbody>
</table>

---

Note 1 Wind ratings are calculated to Australian Standard AS1170.2:2011
Patterns over average ground

Azimuth Radiation Patterns

Elevation Radiation Patterns

Gain (dBi)

VSWR - Over average ground

Antenna ground dimensions

Ordering information

1. Specify Model
2. Specify power rating (Av)

TWD530 • 0 0 0
Model Always "0" Always "0" Power rating

0 250W av

1 kW av
Vertical Log Periodic Dipole Antenna 3.5 - 30 MHz

Product Description
The VLP series can be customized or tailored to suit lower frequency operation and specific customer requirements or applications. The VLP series is available for Receive or Transmit applications from 1kW to 10kW power rating.

Features & Benefits
- These antennas are characterized by a radiation pattern that is essentially constant at all frequencies.
- The rugged design of the VLP series ensures its suitability for wind velocities up to 230km/hr.
- The broadband feature is ideal for multi-channel or frequency agile synthesized HF radio equipment.
- Electrically steerable arrays, comprising of a number of antennas radiating from a common support mast can be supplied to suit customer specifications.
- Antenna gain is dependent on the length of the earth mat.

Specifications

<table>
<thead>
<tr>
<th>Electrical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range [MHz]</td>
<td>3.5 - 30</td>
</tr>
<tr>
<td>Input Impedance Unbalanced [ohms]</td>
<td>50</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;1.8:1 Max</td>
</tr>
<tr>
<td>Antenna Gain [dB]</td>
<td>up to 12.5 with earth mat (See Gain Curve)</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Vertical</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>Directional</td>
</tr>
<tr>
<td>Maximum Input Power [kW]</td>
<td>1 Average, 4 PEP, 10 Average, 20 PEP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
</tr>
<tr>
<td>Antenna Ground Dimensions [m]</td>
</tr>
<tr>
<td>Earth mat Area [m]</td>
</tr>
<tr>
<td>Mast &amp; Guy Material</td>
</tr>
<tr>
<td>Radiator Material</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survival Wind Speed (No Ice)</td>
</tr>
<tr>
<td>Survival (1 cm radial Ice)</td>
</tr>
<tr>
<td>Temperature Range [degrees C]</td>
</tr>
</tbody>
</table>
Patterns over average ground

Azimuth Radiation Patterns (typical, all frequencies)

Elevation Radiation Patterns (typical at 15 MHz)

Gain (perfectly conducting ground)

Gain (200m long earth mat)

VSWR – over ground mat

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

VLP 3.5

Model

VLP 3.5

Input Impedance & Power

VLP 3.5

Always 0

VLP 3.5

Mast Requirements

50 / 1kW

50 / 10kW
Product Description

Designed for medium distance Omnidirectional operation, RFS Monopoles are vertically polarized and are characterised by broad frequency band and medium angle radiation patterns.

With high power handling, these antennas provide an economical solution, with long term reliability and stability of electrical characteristics. Particular attention has been paid to the matching of dissimilar metals to minimise electro-chemical corrosion.

Monopole antennas require a radial ground mat system for specified performance. Ground mat kits are supplied with each antenna. The radiator comprises a cage of stranded marine grade stainless steel wire.

The standard support structure is a guyed triangular galvanised steel mast supported on a heavy duty ceramic insulator. The insulated tower base is fitted with a horn gap for lightning protection.

Features & Benefits

- Power ratings from 1kW to 50kW.
- Ground mat kits included with each antenna.
- Radiators manufactured from marine grade stainless steel wire.
- Triangular galvanised steel mast.
- Insulated tower base, fitted with lightning protection.
- Designed for severe environments, wind rating of 306km/hr.

Specifications

**Electrical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>2 – 30MHz</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>50 ohms unbalanced</td>
</tr>
<tr>
<td>Input Connector</td>
<td>1kW (50 ohms) “N” Type</td>
</tr>
<tr>
<td></td>
<td>10kW (50 ohms) 7/8” EIA</td>
</tr>
<tr>
<td></td>
<td>15kW (50 ohms) 1 5/8” EIA</td>
</tr>
<tr>
<td></td>
<td>40kW (50 ohms) 3 1/8” EIA</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2.5:1 Max, 2.0 to 2.15MHz, &lt;2:0:1 Max, 2.15MHz to 30MHz</td>
</tr>
<tr>
<td>Antenna Gain</td>
<td>up to 8 dBi (See Gain Curve)</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Vertical</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>True Omnidirectional</td>
</tr>
<tr>
<td>Maximum Input Power*</td>
<td>Max 50kW average, 100kW PEP</td>
</tr>
</tbody>
</table>

*Depending on input connector

**Mechanical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mast Height [m]</td>
<td>34</td>
</tr>
<tr>
<td>Ground Dimensions [m]</td>
<td>76 x 76 (including radial earth)</td>
</tr>
<tr>
<td>Mast &amp; Guy Material</td>
<td>Galvanised Steel</td>
</tr>
<tr>
<td>Mast Guy Radius [m]</td>
<td>22</td>
</tr>
<tr>
<td>Material - Guy Assemblies</td>
<td>Galvanised steel and heavy duty fail-safe insulators</td>
</tr>
<tr>
<td>Earth Mat Radius [m]</td>
<td>38</td>
</tr>
<tr>
<td>Material – Earth Mat</td>
<td>64 Radials of 16SWG (1.6mm) Copper wire</td>
</tr>
<tr>
<td>Radiator Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Survival Wind Speed (No Ice)</td>
<td>306 km/hr (to AS1170,2)</td>
</tr>
</tbody>
</table>

**Shipping information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Packed weight [kg]</th>
<th>Packed Size [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>WM230 (less Mast)</td>
<td>430</td>
<td>2.0 x 2.0 x 0.3 and 5.0 x 1.5 x 0.25</td>
</tr>
<tr>
<td>MS3-30/34 Mast (34m)</td>
<td>891</td>
<td>2.3 x 0.9 x 3.0</td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Pattern (all frequencies)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

### Ordering Information

<table>
<thead>
<tr>
<th>WM230</th>
<th>•</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
<td>Always 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Connector</td>
<td>Always 0</td>
</tr>
</tbody>
</table>

1. N Type
2. 7/8" EIA
3. 1 5/8" EIA
4. 3 1/8" EIA
Broadband Monopole Antenna WM Series 2 - 45 MHz

Product Description
Designed for medium distance Omnidirectional operation, RFS Monoples are vertically polarized and are characterised by broad frequency band and medium angle radiation patterns.

With high power handling, these antennas provide an economical solution, with long term reliability and stability of electrical characteristics. Particular attention has been paid to the matching of dissimilar metals to minimise electro-chemical corrosion.

Monopole antennas require a radial ground mat system for specified performance. Ground mat kits are supplied with each antenna. The radiator comprises a cage of stranded marine grade stainless steel wire.

The standard support structure is a guyed triangular galvanised steel mast supported on a heavy duty ceramic insulator. The insulated tower base is fitted with a horn gap for lightning protection.

Features & Benefits
- Power ratings from 1kW to 50kW.
- Ground mat kits included with each antenna.
- Radiators manufactured from marine grade stainless steel wire.
- Triangular galvanised steel mast.
- Insulated tower base, fitted with lightning protection.
- Designed for severe environments, wind rating of 306km/hr.

Specifications

**Electrical**
- Frequency Range: 2 – 45MHz
- Input Impedance: 50 ohms unbalanced
- Input Connector:
  - 1kW (50 ohms): "N" Type
  - 10kW (50 ohms): 7/8” EIA
  - 15kW (50 ohms): 1 5/8” EIA
  - 40kW (50 ohms): 3 1/8” EIA
- VSWR: <2.5:1 Max, 2.0 to 2.15MHz, <2.0:1 Max, 2.15MHz to 45MHz
- Antenna Gain: up to 8 dBi (See Gain Curve)
- Polarisation: Vertical
- Horizontal Pattern: True Omni directional
- Maximum Input Power*: Max 50kW average, 100kW PEP
  - *Depending on input connector

**Mechanical**
- Mast Height [m]: 34
- Ground Dimensions [m]: 76 x 76 (including radial earth)
- Mast & Guy Material: Galvanised Steel
- Mast Guy Radius [m]: 22
- Material - Guy Assemblies: Galvanised steel and heavy duty fail-safe insulators
- Earth Mat Radius [m]: 38
- Material – Earth Mat: 64 Radials of 16SWG (1.6mm) Copper wire
- Radiator Material: Stainless Steel
- Survival Wind Speed (No Ice): 306 km/hr (to AS1170.2)

**Shipping information**
- Packed weight [kg]
  - WM230 (less Mast): 430
  - MS3-30/34 Mast (34m): 891
- Packed Size [m]
  - WM230 (less Mast): 2.0 x 2.0 x 0.3 and 5.0 x 1.5 x 0.25
  - MS3-30/34 Mast (34m): 2.3 x 0.9 x 3.0

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Pattern (all frequencies)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information
1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements
Product Description

Designed for medium distance Omnidirectional operation, RFS Monopoles are vertically polarized and are characterised by broad frequency band and medium angle radiation patterns.

With high power handling, these antennas provide an economical solution, with long term reliability and stability of electrical characteristics. Particular attention has been paid to the matching of dissimilar metals to minimise electro-chemical corrosion.

Monopole antennas require a radial ground mat system for specified performance. Ground mat kits are supplied with each antenna. The radiator comprises a cage of stranded marine grade stainless steel wire.

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Features & Benefits

- Power ratings from 1kW to 50kW.
- Ground mat kits included with each antenna.
- Radiators manufactured from marine grade stainless steel wire.
- Triangular galvanised steel mast.
- Insulated tower base, fitted with lightning protection.
- Designed for severe environments, wind rating of 306km/hr.

Specifications

### Electrical

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>3 – 30MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Impedance</td>
<td>50 ohms unbalanced</td>
</tr>
<tr>
<td>Input Connector</td>
<td></td>
</tr>
<tr>
<td>1kW (50 ohms)</td>
<td>“N” Type</td>
</tr>
<tr>
<td>10kW (50 ohms)</td>
<td>7/8” EIA</td>
</tr>
<tr>
<td>15kW (50 ohms)</td>
<td>1 5/8” EIA</td>
</tr>
<tr>
<td>40kW (50 ohms)</td>
<td>3 1/8” EIA</td>
</tr>
<tr>
<td>50kW (50 ohms)</td>
<td>3 1/2” EIA</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2.5:1 Max, 2.0 to 2.15MHz, &lt;2.0:1 Max, 2.15MHz to 30MHz</td>
</tr>
<tr>
<td>Antenna Gain</td>
<td>See Gain Curve</td>
</tr>
<tr>
<td>Polarisation</td>
<td>Vertical</td>
</tr>
<tr>
<td>Horizontal Pattern</td>
<td>True Omni directional</td>
</tr>
<tr>
<td>Maximum Input Power*</td>
<td>Max 50kW average, 100kW PEP (Dependent on input connector)</td>
</tr>
</tbody>
</table>

### Mechanical

<table>
<thead>
<tr>
<th>Mast Height [m]</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Dimensions [m]</td>
<td>52 x 52 (including radial earth)</td>
</tr>
<tr>
<td>Mast &amp; Guy Material</td>
<td>Galvanised Steel</td>
</tr>
<tr>
<td>Mast Guy Radius [m]</td>
<td>16</td>
</tr>
<tr>
<td>Material - Guy Assemblies</td>
<td>Galvanised steel and heavy duty fail-safe insulators</td>
</tr>
<tr>
<td>Earth Mat Radius [m]</td>
<td>26</td>
</tr>
<tr>
<td>Material – Earth Mat</td>
<td>64 Radials of 16SWG (1.6mm) Copper wire</td>
</tr>
<tr>
<td>Radiator Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Survival Wind Speed (No Ice)</td>
<td>250 km/hr (to AS1170.2)</td>
</tr>
</tbody>
</table>

### Shipping information

<table>
<thead>
<tr>
<th>Packed weight [kg]</th>
<th>WM230 (less Mast)</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packed Size [m]</td>
<td>2.0 x 2.0 x 0.3 and 5.0 x 1.5 x 0.25</td>
<td></td>
</tr>
<tr>
<td>WM330 (25m) Mast</td>
<td>648</td>
<td></td>
</tr>
<tr>
<td>Packed Size [m]</td>
<td>1.35 x 0.9 x 3.0</td>
<td></td>
</tr>
</tbody>
</table>

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:
Patterns over average ground

Azimuth Radiation Pattern (all frequencies)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
2. Specify Input Impedance/Power
3. Specify Mast Requirements

WM330 Series

RFS The Clear Choice™

Radio Frequency Systems

Please visit us on the internet at http://www.rfsworld.com

Date: 9.01.2014
**Product Description**

Designed for medium distance Omnidirectional operation, RFS Monopoles are vertically polarized and are characterised by broad frequency band and medium angle radiation patterns.

With high power handling, these antennas provide an economical solution, with long term reliability and stability of electrical characteristics. Particular attention has been paid to the matching of dissimilar metals to minimise electro-chemical corrosion.

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The standard support structure is a guyed triangular galvanized steel mast supported on a heavy duty ceramic insulator. The insulated tower base is fitted with a horn gap for lightning protection.

**Features & Benefits**

- Power ratings from 1kW to 50kW.
- Ground mat kits included with each antenna.
- Radiators manufactured from marine grade stainless steel wire.
- Triangular galvanized steel mast.
- Insulated tower base, fitted with lightning protection.
- Designed for severe environments, wind rating of 306km/hr.

**Specifications**

**Electrical**

- Frequency Range: 4 – 30MHz
- Input Impedance: 50 ohms unbalanced
- Input Connector:
  - 1kW (50 ohms) “N” Type
  - 10kW (50 ohms) 7/8” EIA
  - 15kW (50 ohms) 1 5/8” EIA
  - 40kW (50 ohms) 3 1/8” EIA
  - 50kW (50 ohms) 4 1/2” EIA
- VSWR: <2.5:1 Max, 2.0 to 2.15MHz, <2.0:1 Max, 2.15MHz to 30MHz
- Antenna Gain: See Gain Curve
- Polarisation: Vertical
- Horizontal Pattern: True Omni directional
- Maximum Input Power*: Max 50kW average, 100kW PEP (Dependent on input connector)

**Mechanical**

- Mast Height [m]: 19
- Ground Dimensions [m]: 40 x 40 (including radial earth)
- Mast & Guy Material: Galvanized Steel
- Mast Guy Radius [m]: 12.5
- Material - Guy Assemblies: Galvanized steel and heavy duty fail-safe insulators
- Earth Mat Radius [m]: 20
- Material – Earth Mat: 64 Radials of 16SWG (1.6mm) Copper wire
- Radiator Material: Stainless Steel
- Survival Wind Speed (No Ice): 306 km/hr (to AS1170.2)

**Shipping information**

- Packed weight [kg]:
  - WM230 (less Mast): 365
  - MS3-30/34 Mast (19m): 490
- Packed Size [m]:
  - 2.0 x 2.0 x 0.3 and 5.0 x 1.5 x 0.25
  - 2.3 x 0.34 x 3.0

* Wind ratings are calculated to AS1170.2:2011 Australian Standards:

RFS The Clear Choice™

Date: 9.01.2014

Please visit us on the internet at http://www.rfsworld.com
Patterns over average ground

Azimuth Radiation Pattern (all frequencies)

Elevation Radiation Patterns

Gain

VSWR – over average ground

Antenna ground dimensions

Ordering Information

1. Specify Model
   WM430
2. Specify Input Impedance/Power
   • 3
3. Specify Mast Requirements
   1
   0
   Input Connector
   Always 3
   Always 0
   N Type
   1/8" EIA
   3/16" EIA
   4/12" EIA

All information contained in the present brochure is subject to confirmation at time of ordering.

Please visit us on the internet at http://www.rfsworld.com

Radio Frequency Systems