FOLDED COAXIAL
BASE STATION ANTENNAS

136-174 mc

OMIDIRECTIONAL TAD 1000 Series:
Radiation pattern over full 360° for normal coverage applications. Basic half-wave center fed design provides lower radiation angle and increased radiating aperture compared to the typical quarter-wave "ground plane" antennas.

CARDIOID TAD 1010 Series:
Extended coverage over 180° angle with minimum directive gain of 3 dB in direction of maximum signal strength. Ideal for special coverage applications, particularly base stations on shorelines or geographic borders.

OMIDIRECTIONAL TAD 1020 Series:
New design provides omidirectional pattern for high power applications and selected area coverage use. Radiation concentrated in forward direction with minimum directive gain of 3.8 dB.

FEATURES:

COMPLETE LINE MEETS ALL COVERAGE NEEDS—Three basic antennas meet all coverage requirements of high VHF band base station users. Units cover frequencies between 136 and 174 mc and serve stations with up to 500 watts RF power output.

RUGGED CONSTRUCTION—Antennas are ruggedly constructed to withstand wind and weather. The use of corrosion resistant materials throughout eliminates gradual signal degradation and bothersome maintenance problems. Mounting hardware is supplied with antennas.

NO GROUND PLANES NEEDED—The coaxial skirt section replaces the projecting rods of ground plane type antennas, minimizing the likelihood of wind damage and simplifying installation. Aluminum support tube is mounted easily on pipe, pole or tower and uses a new specially designed clamp for maximum support. Low VSWR is maintained by an integral, low-loss matching transformer in the support staff along with precision mechanical design and exacting element dimensions. DC ground feature minimizes signal degradation from electrostatic discharges and provides protection against destructive voltage surges from lightning strikes. Non-ferrous metals and stainless steel hardware are used throughout for long, maintenance-free life.

LOW VSWR—Voltage Standing Wave Ratio is maintained within 1.5:1 within the specified bandwidth in all models. This insures a high percentage of available power actually transmitted.

ACCESSORIES—A full selection of adaptors, connectors and transmission lines is available to complete antenna installation.

MOTOROLA COMMUNICATIONS AND ELECTRONICS, INC.
# Folded Coaxial Base Station Antennas

## Guaranteed Performance Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Freq. (mc)</th>
<th>Termination</th>
<th>Wind Rating with 1/2&quot; radial ice</th>
<th>Wind Rating without ice</th>
<th>Net Weight</th>
<th>Shipping Weight</th>
<th>Features</th>
</tr>
</thead>
</table>
| OMNIDIRECTIONAL | TAD 1001B | 136-141 | UHF Female | 100 mph | 150 mph | 6 lbs. | 7 lbs. | Impedance: 50 ohms (nominal)  
Maximum Power: 500 watts  
Maximum VSWR: 1.5:1  
Maximum Height: 56 in. (Note 1)  
Mounting: to 1¾″-3½″ O.D. pipe  
Maximum Lateral Thrust with 100 mph wind and ½″ radial ice: 32 lbs. |
| TAD 1002B | 141-150 | UHF Female | 100 mph | 150 mph | 7 lbs. | 8 lbs. | |
| TAD 1003B | 150-162 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| TAD 1004B | 162-174 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| CARDIOID | TAD 1012B | 141-150 | UHF Female | 100 mph | 125 mph | 7 lbs. | 8 lbs. | Impedance: 50 ohms (nominal)  
Maximum Power: 500 watts  
Maximum VSWR: 1.5:1  
Front-to-back Ratio: 10 db  
Gain Over Half-Wave Dipole: 3 db in forward direction  
Maximum Height: 56 in. (Note 1)  
Mounting: to 1¾″-3½″ O.D. pipe  
Maximum Lateral Thrust with 100 mph wind and ½″ radial ice: 55 lbs. |
| TAD 1013B | 150-162 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| TAD 1014B | 162-174 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| UNIDIRECTIONAL | TAD 1021B | 150-156 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | Impedance: 50 ohms (nominal)  
Maximum Power: 500 watts  
Maximum VSWR: 1.5:1  
Half-Power Angle: 95°  
Front-to-back Ratio: 10 db  
Gain Over Half-Wave Dipole: 5.8 db in forward direction  
Maximum Height: 56 in. (Note 1)  
Mounting: to 1¾″-3½″ O.D. pipe  
Maximum Lateral Thrust with 100 mph wind and ½″ radial ice: 75 lbs. |
| TAD 1022B | 155-162 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| TAD 1023B | 162-168 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |
| TAD 1024B | 168-174 | UHF Female | 100 mph | 125 mph | 7½ lbs. | 8½ lbs. | |

†Includes mounting stamp kit  
Note 1: From top of folded element to bottom of support staff

## Horizontal Radiation Patterns

**relative field strength**  
**advantages of folded coaxial design**

**Standard Quarter-Wave "Ground Plane" Antenna**

- Beam Max.

**Motorola Folded Coaxial Design Antenna**

- Beam Max.

OMNIDIRECTIONAL  
CARDIOID  
UNIDIRECTIONAL

Dimensions and weights are approximate.

**When Ordering, Specify Frequency**

Specifications Subject to Change Without Notice

---

Printed in U.S.A. (39) Merit

(Replaces E-3974a)