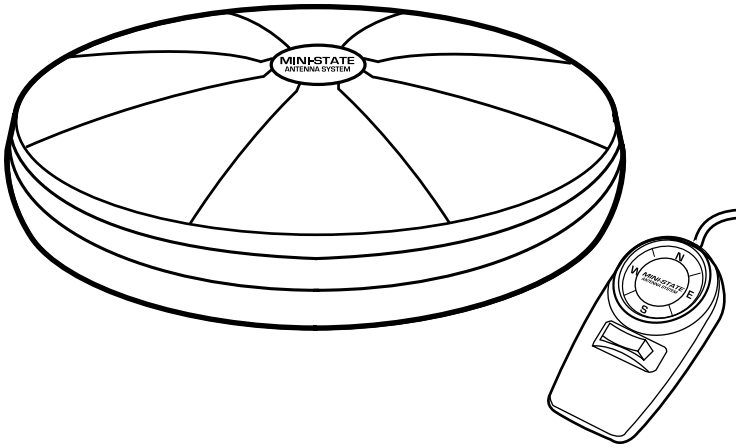
WARNING: INSTALLATION OF THIS PRODUCT NEAR POWERLINES IS DANGEROUS. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS

5MS740, 5MS750 Mini-State UHF/VHF Antenna



Your TDP Mini-State Directional, Rotating Antenna provides excellent reception of VHF/UHF TV channels in most viewing locations. The UV protected housing is made of impact-resistant filled co-polymer, making the exterior resistant to weathering and color change. It features both AC and DC operation and is excellent for use on recreational vehicles, boats, or in the home. The antenna features a solid-state amplifier that provides up to 20 dB average gain.

It comes with a rotator control unit, mounting hardware and mast mount kit, and 3-wire combination cable. The coaxial connectors are already assembled. Both coax and rotator cables are contained in a prefabricated single-jacket assembly.

Warning: When you install your antenna use extreme caution. If the antenna starts to fall, let it go! If the antenna touches a power line, contact with the antenna, mast, cable, or guy wires can cause electrocution and death. Call the power company to remove the antenna. DO NOT attempt to remove it yourself.

IMPORTANT SAFETY PRECAUTIONS

Many home do it yourself and professional antenna installers are injured or killed every year by electric shock, because they fail to see overhead wires as being potentially deadly. Touching any part of an antenna, mast, or guy wire to an overhead wire is the same as touching the wire with your bare hand.

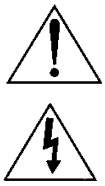
A very serious shock is almost sure to result when contacting an electrical wire. In the case of powerlines, the shock is like being struck by lightning. Many power wires are within 20 to 25 feet of the ground and could easily be touched by an assembled antenna and mast pole.

Please read and follow these important antenna safety rules:

1. Select an antenna installation site well away from overhead power wires.
2. Do not try to guess which overhead wires carry high voltage. Check with the power company.
3. If you see anything making contact with the overhead wires, call the power company to have it removed safely.
4. Do not run the downlead cable over power wires.
5. When removing an old antenna, get help from a qualified professional antenna installer if there is any doubt of clearing overhead power wires.
6. Never install an antenna on a windy day.
7. Do all the assembly work on the ground, then raise the antenna.
8. Make sure the antenna mast downlead cable is connected to suitable lightning arrestors.
9. Use 8 (or larger) AWG ground wire between the mast and ground.
10. Make sure the installation is secure. Use plenty of guy wires and new hardware.

BEFORE INSTALLATION

Note: to CATV SYSTEM INSTALLER
Article 820-40 of the NEC specified that the cable ground shall be connected to the grounding system of the building “as close to the point of cable entry as practical”.



To reduce the risk of electric shock, do not remove the cover (or back) of the antenna or power supply. No user-serviceable parts are inside. Refer servicing to qualified service personnel.

Note: Do not plug your Mini-State power supply into an AC outlet or DC power source until all electrical and antenna connections have been made. Doing so may short out the power supply/transformer and void your warranty.

Included in the Mini-State Antenna System:

VHF/UHF antenna with amplifier and rotator
Rotator control unit with 8' cable
12 VDC/120 VAC power supply unit
30' (5MS750) / 60' (5MS740) combination coaxial/3-wire rotator cable
Mounting hardware kit
Mast mount kit (mast not included)

SPECIFICATIONS

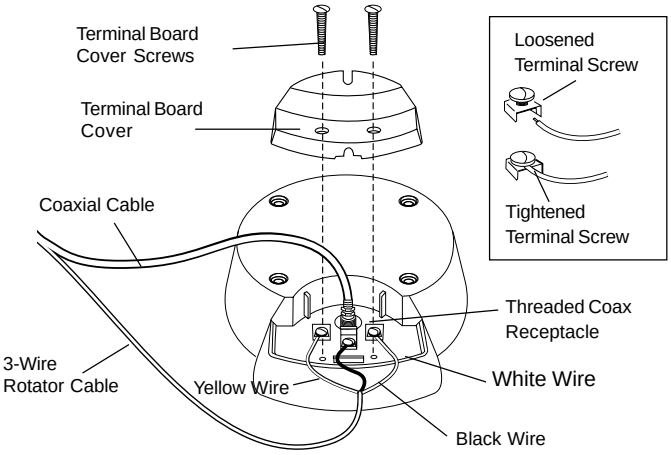
Bandpass:

VHF	58-88, 170-216 MHz
UHF	470-810 MHz
FM trap (fixed)	88-108 MHz, 20 dB
VHF/UHF Gain	20dB Average
Impedance	75 Ohms, Unbalanced
Power Requirement	12V DC, 120 VAC, 60 Hz (with supplied adapter)
Weatherproof housing	UV-protected, filled copolymer
Mounting	1-1/2 inch round mast

Specifications are typical: Individual units may vary. Specifications are subject to change and improvement without notice.

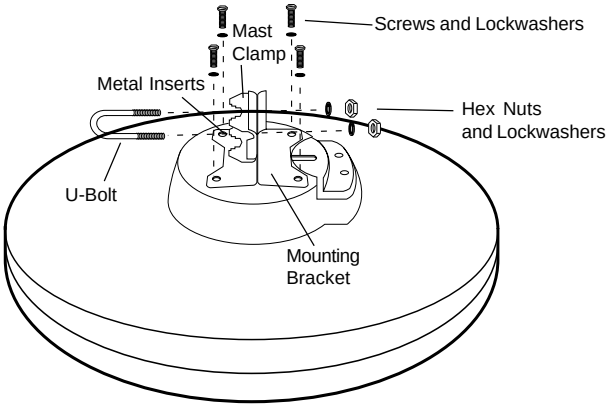
CONNECTING CABLE TO THE ANTENNA

1. Loosen the two screws on the terminal board cover on the bottom of the antenna. This will expose a threaded coaxial receptacle and three special screw-type terminals.
2. Screw the supplied coaxial cable's lead-in connector onto the threaded terminal. Caution: Be sure the center conductor of the cable is in the hole of the F connector before tightening.
3. Fasten the yellow rotator control wire to terminal 1, the black wire to terminal 2, and the white wire to terminal 3. Insert the wire into clamping terminals between the terminal body and nut as shown.
4. Replace the terminal cover so that the coaxial cable comes out through the notch in the side. Tighten the terminal cover screws. This will clamp the rotator cable in place.



ATTACHING THE MOUNTING BRACKET

1. Attach the antenna mounting bracket to the four slotted metal inserts on the bottom of the antenna using the four screws and lockwashers provided. (Do not unscrew these metal inserts. They hold the internal mechanism in place.)
2. Attach the mast clamp, and U-bolt to the mounting bracket using the four lockwashers and hex nuts. Do not tighten.



MOUNTING THE ANTENNA INDOORS

You can mount the antenna in an attic, closet or other out-of-the-way indoor location. The antenna can be mounted on a horizontal mast, closet rod, or on a short piece of mast suspended from a roof support by a 4-inch wall-mount bracket .

You can also insert the three legs into the matching holes on the underside of the antenna so that they angle outward to form a tripod support. Then place the antenna on a shelf in a closet. Be sure the antenna is not in a position where it could easily fall or be damaged.

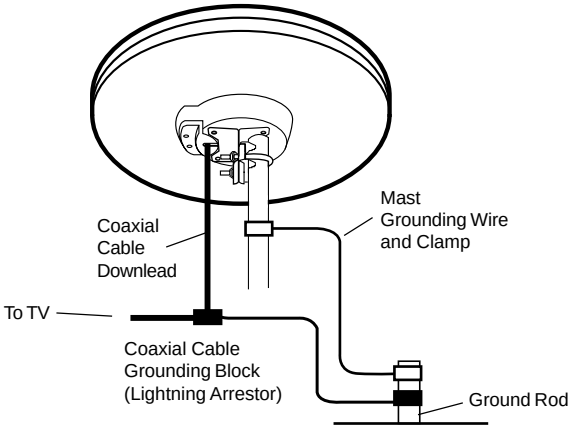
MOUNTING THE ANTENNA OUTDOORS

For the best results, mount the antenna away from trees or other obstructions. Higher frequencies are noticeably affected by these obstructions.

1. Mount the antenna on its mast and secure it by tightening the hex nuts evenly onto the U-bolt.
2. Use a wall-thru tube to neatly route cable thru walls.

LIGHTNING PROTECTION

- Ground wires for both the mast and downlead should be copper or aluminum wire, 8 AWG or larger.
- Mount a grounding block (not supplied) as close as possible to where the downlead enters the house.
- Downlead wire from the antenna to the grounding block and the mast ground wire should be secured to the house with standoff insulators, spaced 4-6 feet apart.



MOUNTING THE ANTENNA ON A RV OR BOAT

For best performance on vehicles and boats, the antenna should be mounted as high as practical and as far away from metal objects as possible. If the interior areas of the vehicle or boat are substantially enclosed or surrounded by metal surfaces, an exterior mounting location must be selected. For recreational vehicles with metal roofs, the antenna should be mounted at least six inches above the roof surface. For boats, best reception will be obtained if the antenna is mounted above the boat's highest deck or cabin structure. RV/boat mount kits are available to do these installations.

It is possible that mounting locations other than those mentioned above will provide satisfactory reception. It is recommended that several be tried to find the one that provides optimum performance before you permanently install the antenna.

ANTENNA ORIENTATION

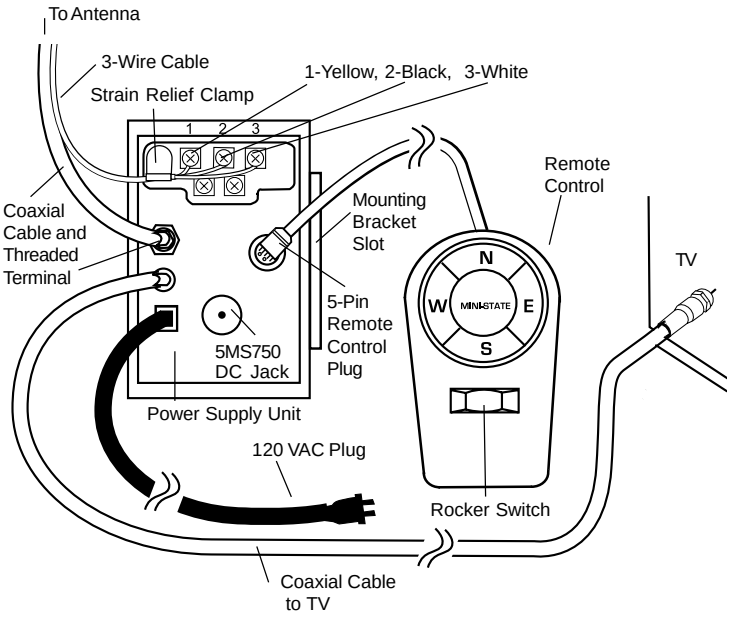
Because of the built-in rotator, antenna orientation is not critical. A double-arrowhead is molded into the outer rim of the housing to indicate the antenna's center-of-rotation.

In a residential or fixed location, pointing the double arrowhead toward the most often used TV station will reduce the amount of rotation needed for best reception.

For non-fixed locations, such as RVs or boats, the antenna may be installed with the double arrowheads facing in any direction. Optimum TV reception may be obtained from any location or orienting the antenna with its built-in rotator.

CONNECTING CABLES TO THE POWER SUPPLY

1. Attach the coaxial cable's downlead connector to the threaded coaxial terminal on the power supply unit, centering the inner conductor in the hole before tightening the nut.
2. Slip the 3-wire rotator cable through the strain relief clamp. Connect the yellow wire to Terminal 1, the black wire to Terminal 2, and the white wire to Terminal 3. Tighten the connections.
3. Insert the 5-pin remote control unit plug into the matching 5-pin receptacle on the power supply.
4. Attach the power supply mounting bracket to any convenient flat surface as shown and place the power supply into it.
5. Connect the power supply's coaxial cable's output to your TV's coaxial cable input.



CONNECTING TO A POWER SOURCE

Caution: Do not plug your antenna's power supply into an AC outlet or DC power source (5MS750) until all electrical and antenna connections have been made. Doing so may short out the power supply's transformer and void your warranty.

CONNECTING TO AN AC POWER SOURCE

Insert the power supply unit's power cord into the nearest 120-volt AC outlet. The cord may be left plugged in at all times since the amount of standby power used is very small, about the same as that of an electric clock.

CONNECTING TO A DC POWER SOURCE

Insert the DC power cord plug (5MS750) into the DC jack on the power supply unit. Attach the red wire to the positive terminal and the black wire to the negative terminal of the DC source used. The DC power cord's spade terminal ends can be removed if your installation requires another type of connector. **Note:** The DC power cord contains an inline protective fuse. For continuous protection against fire hazard, replace fuse only with the same type 0.8 ampere/250 volt rating.

ANTENNA OPERATION

With the TV set on and a station tuned in, rotate the antenna by pressing the rocker switch located on the ground unit. Pressing the right side of the switch will turn the antenna in a clockwise direction. Pressing the left side will turn it counterclockwise.

Although the actual antenna movement cannot be seen, the indicator arrow on the control unit will light, showing the antenna's rotation and the direction toward which it is aimed: N (north), S(south), E(east), W(west). In less than 30 seconds the antenna has made one full turn (360 degrees) and the End of Rotation light will come on. Observe the picture while rotating the antenna first in one direction and then the other, until the best picture quality is obtained. Releasing the rocker switch stops rotation.

MAINTENANCE

The Mini-State Antenna system is designed for long life and requires no routine maintenance. Should the unit ever require service, circuit description, mechanical and electrical diagrams and parts lists are included here for the guidance of the TV technician.

CIRCUIT DESCRIPTION

Your Mini-State antenna system consists of an antenna, amplifier, rotator drive unit, rotator control and AC/DC power supply.

The VHF section is a circularly shaped, slot tuned, broadband, unidirectional traveling wave antenna. The UHF section is a broadband, multi-element array. Both the UHF and VHF signals are amplified a minimum of 20 dB. The combined UHF/VHF signals travel down the coaxial cable to the power supply, and through C3 to the TV.

The power supply provides all the operating voltages for the system. Nine volts DC for amplifier power is supplied through the RF coaxial cable. The ground return circuit for the amplifier is via the coaxial cable shield. The power supply also provides DC voltage at socket pins 4 and 5 to energize the rotator motor and lamp circuits from the remote control unit.

A small DC motor turns the antenna. Direction of rotation is determined by switch SW1 and control unit diode D3 or D4. An end stop switch opens the motor circuit when the antenna has rotated to its end position. Diodes D1 and D2 allow the motor to reverse and rotate off the end stop.

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE
Antenna will not rotate, direction indicator lamps do not light	Power cord not plugged, No voltage to power supply, defective D1 in power supply, Defective voltage regulator
Antenna will not rotate; at least one direction indicator lamp lights properly	3-wire rotator cable open or incorrectly connected; Defective motor; Defective end stop switch
Antenna at end stop; will not rotate	End stop switch defective; End stop diodes D1 or D2 defective
Antenna rotating in wrong direction; Left button indication flashes when right button is pressed etc	Control cable connections a1 and 3 are reversed
Weak picture; no noticeable difference in picture when antenna is rotated	Defective amplifier transistor; Open connection between antenna and amplifier; Open or shorted coaxial lead-in cable; Shorted or open amplifier coax wrap-around cable inside antenna housing; Defective power supply

Mini-State Antenna
LIMITED WARRANTY

(expires on 12/31/04 due to discontinued Mini-State models)

We warrant that if anything goes wrong with your TDP Electronics Mini-State Antenna within one year of date of purchase, and it is our fault, we will repair the unit or replace it at no cost. This warranty excludes all costs arising from installation, removal, reinstallation or setup, transportation to and from the dealer, and damage due to misuse or neglect. In addition, indirect, incidental, or consequential damages are not covered. Some states do not allow the exclusion or limitation of indirect, incidental, or consequential damages, so the above limitation or exclusion may not apply to you. To obtain warranty service, please do the following:

1. Take the unit to the dealer from which it was purchased or any TDP Electronics Mini-State dealer.
2. Present your bill of sale or other evidence of the date on which the unit was first purchased.

IT IS NECESSARY THAT YOU RETAIN YOUR BILL OF SALE OR PROOF OF PURCHASE IN ORDER TO OBTAIN WARRANTY SERVICE.

OUT-OF-WARRANTY SERVICE
In the event your TDP Electronics Mini-State Antenna should fail after the 1 year limited warranty period, the RadioShack Service Center will either repair the non-functioning unit at a cost to be determined by the Service Center and approved by you before the actual repair process is started, or replace it with a remanufactured unit if available. The unit will be returned to you C.O.D.

When returning for repair, package the unit properly to prevent damage and ship prepaid to:
RadioShack Service Center, 2516 N.E. Loop 820
Fort Worth, TX 76106-1809

Please enclose your name, home phone number, daytime phone number, return ship address, and proof of purchase. You will be contacted by phone for more information about the antenna's malfunction. If the antenna is found not to be defective, there will be a fee of $20 for servicing plus shipping costs.