



## **CLEARWAVE FM ANTENNA OWNER'S MANUAL**

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### **PERFORMANCE AND DESIGN**

In the century and a quarter since the very first Edison mast antennas (circa 1885), antenna design has grown into a highly sophisticated field, buttressed by elegant mathematical theory and modeling. Over this entire time, progress in the field has always focused on optimizing signal strength or signal-to-noise ratio; there have been no attempts to optimize an antenna for best sound, as best I can determine.

The Clearwave FM Antenna is the outcome of a careful series of listening experiments to arrive at an antenna design that sounds WAY better than any available indoor or outdoor antenna, powered or unpowered. To conduct these experiments meticulously and exhaustively, we tested the following variables:

- Conductor: shape (round versus ribbon), ribbon thickness and width, alloy, and directionality.
- Dielectric: various polymers versus no dielectric.
- Antenna configuration: monopole versus dipole.

The experiments were a resounding success: contrary to the entrenched opinions of the vast majority of electrical engineers, every one of the above variables makes a clearly audible difference in the sound quality of FM reception, quite independently of their effects on signal strength (which are inconsequential). Our resulting Clearwave antenna design is significantly better sounding than both mass market and audiophile brands of unpowered antennas—whether whips, dipoles or Yagis—and notably better sounding than the powered antennas. The Clearwave matches the signal strength and weak station performance of standard FM whips or dipoles. It is not a highly directional antenna and if it were, the sound quality would be degraded; it is therefore not



suitable for fringe area reception.

### INSTALLATION TIPS

1. Unwrap the antenna ribbon and attach the small spade lug to the antenna input screw marked "Plus" or "Antenna" on the back of your FM tuner; the other antenna input screw will be marked "Ground".
2. Stretch the ribbon straight up from the back of the tuner and either a) use the enclosed adhesive dot to attach the upper end of the antenna to the wall behind the tuner; or b) use a piece of thread or transparent fishing line to suspend the upper end of the antenna from the ceiling or from high on the wall. In this vertical orientation, the antenna is omni directional, much like a whip antenna.
3. Alternatively, you can stretch out the antenna ribbon horizontally to either side of the tuner and fasten the end as in a) or b) above. In this case, the antenna will be somewhat directional with the strongest reception for stations in a direction perpendicular to the ribbon. If you wish to take advantage of this directionality, then you'll need to try the ribbon at varying angles to the wall (though keeping it approximately horizontal).
4. If you have a modern receiver that has only a screw-on, 75 ohm connection for coaxial cable instead of the traditional two screw, 300 ohm connection for twin lead antenna wire, then you'll need to call us for a special adapter.