



AM/FM Reception Problems

(Simple Checks To See What Is Causing Bad Reception)

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99% Percent Of Reception Problems

Almost every reception problem is caused by one of two things: a bad ground on the antenna, or a bad antenna cable running from the antenna to the radio.

There are (2) parts to an antenna and you have to understand the antenna cable itself. Antenna cables are coaxial style cables. Coax cables have a thin center conductor wire at the center of the cable and an outer metal braid just under the plastic jacket of the cable. The center conductor carries the signal and the outer shield serves two purposes, it shields the inner conductor from radiated noises and acts as the negative voltage path. 99% of antenna reception problems can be traced to either one of these two parts of the antenna cable.

Bad Grounds At The Antenna

Bad grounds are synonymous with static on the AM/FM reception. Bad grounds are caused by a couple of things: the base of the antenna is loose, or there is corrosion on the antenna connector plugged into the radio.

The base of the antenna is loose: most antennas are secured to the frame of the vehicle by clamping or “sandwiching” the base of the antenna to the metal frame of the vehicle. This effectively grounds the antenna to the frame of the vehicle. When the base of the antenna loosens from vibration, the ground path between the frame of the vehicle and the antenna input of the radio tends to gain electrical resistance. This added electrical resistance is carried through the metal braided shield inside the antenna cable and is picked up by the tuner inside the radio. This resistance can cause static on the AM/FM reception.

Corrosion on the antenna cable connector plugged into the radio: the concept is the same, corrosion causes an increase in resistance between the metal braided shield inside the antenna cable and the ground of the antenna input of the radio. This increase in resistance caused by corrosion is also picked up by the tuner inside the radio and can cause static on the AM/FM reception.

A Bad Antenna Cable - Or A ‘Broken’ Center Conductor Wire Inside The Cable

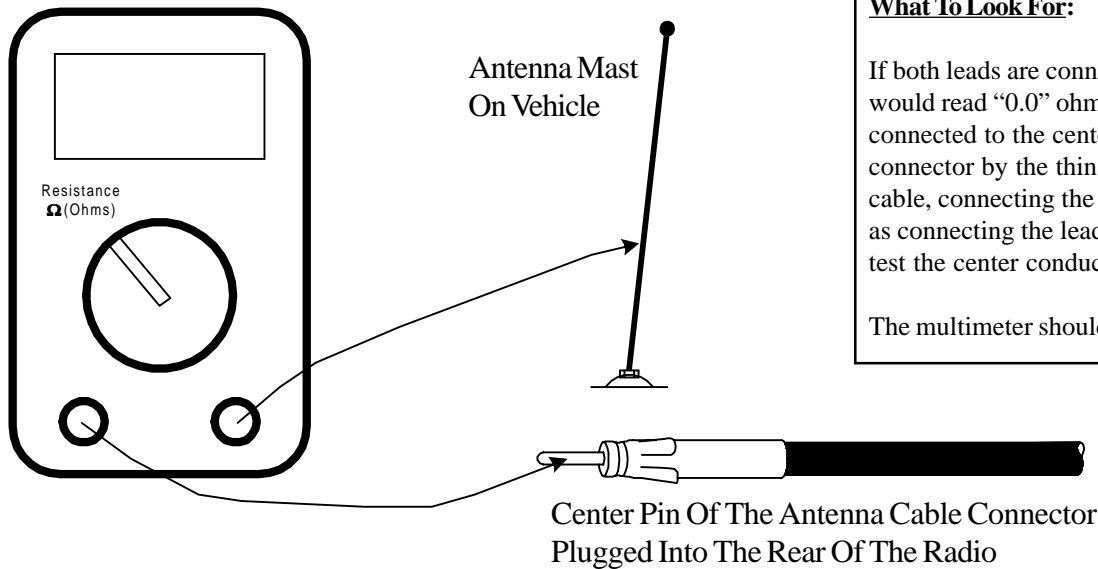
Here is a common complaint: “I get good FM reception, but I get lousy AM reception”. This may sound familiar to you???

A radio can get FM reception just by having large objects near the radio. But, AM reception is very dependent upon the mast of the antenna outside of the vehicle. This mast is nothing more than an extension of the center conductor inside the antenna cable. It is common for the thin, hairlike center conductor inside the antenna cable to break. When this happens, the antenna mast outside of the vehicle is NOT connected to the radio anymore. As a result, AM reception is usually lost or at least very bad.

Simple Tests To Check For Antenna Problems

How to check the center conductor of the vehicles antenna cable

Digital Multimeter
(set to read resistance)



How To Set Up The Multimeter:

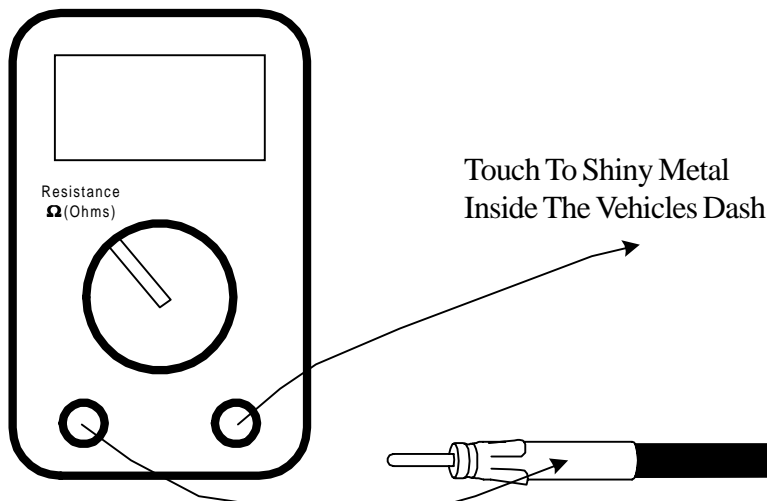
- 1) Set the multimeter to read resistance or ohms
- 2) Connect one lead to the antenna mast
- 3) Connect the other lead to the center pin on the antenna cables connector at the radio

What To Look For:

If both leads are connected together, the multimeter would read “0.0” ohms. Since the antenna mast is connected to the center pin of the antenna cable connector by the thin inner conductor inside the cable, connecting the leads to each will be the same as connecting the leads together. Doing this will test the center conductor inside the cable.

The multimeter should read between 0 to 2 ohms.

How to check the antenna cable to see if it has a solid electrical ground



How To Set Up The Multimeter:

- 1) Set the multimeter to read resistance or ohms
- 2) Connect one lead to shiny metal inside the dash
- 3) Connect the other lead to the outer metal sleeve on the antenna cables connector at the radio

What To Look For:

If both leads are connected together, the multimeter would read “0.0” ohms. The outer metal sleeve on the antenna cable connector is actually grounded to the vehicle at the antenna itself. Thus, the outer metal sleeve should be the same as any shiny metal surface in the vehicle and conduct through the multimeter when one probe touches metal and the other touches the metal sleeve on the connector.

The multimeter should read between 0 to 2 ohms.