

ELECTRICAL/ELECTRONIC SYSTEMS

H 7. Diagnose radio static and weak, intermittent, or no radio reception; determine necessary action. (P-3)

Automotive Audio Systems

Automotive audio systems may be limited to a basic AM-FM radio or may include a tape deck or CD player. When a problem exists, the manufacturer's diagnostic procedures should be used. Some audio systems are very complex and interact with the vehicle security system. On these systems, something as simple as replacing a vehicle battery may lock up the audio system and require a security code and proper procedure to unlock it. No radio reception could be the result of an open in the fuse or power feed wire, or a poor ground connection at the unit itself. A simple test for these connections, as well as for speaker connections, is to check the operation of the tape deck or CD player. After the power and ground circuit are verified, the antenna connection should be checked. Some technicians keep a "known good" antenna in their tool chest to temporarily connect to a radio to test for a defective antenna or bad antenna connection. If the radio still has no reception and there are no security problems or codes, then the radio will likely need to be removed for service or replacement. An intermittent radio reception problem is usually due to a poor electrical connection or an internal radio problem.

A weak radio signal could be an antenna problem or an internal radio problem. Try a known good antenna. If static occurs only on a rough road it may be a bad connection or an internal radio problem. If static occurs only with the engine running, it is usually related to engine or engine accessory electrical problems. An improper or damaged spark plug or spark plug cable can cause a tapping or clicking sound in repetition with the firing of the spark plug. A defective generator diode or internal problem can cause a whine to be heard over the radio that increases in frequency as the engine/generator speed increases. Turn-signal flashers and the operation of relays, if not suppressed, can cause clicking or snapping noises over the radio as they operate.

Electromagnetic interference (EMI) suppression devices (suppression capacitors and coils) are used by auto manufacturers on various circuits (ignition modules, generators, and electric motors) to reduce radio noise. Metal shielding and ground straps are also used. Unwanted radio interference may exist if any of these devices are defective or removed.