

Audio & Video

Coax Troubleshooting



Problem

- Fuzzy picture
- Booster light blinks and goes off when booster turned to on position
- Intermittent & inconsistent picture failure



Gather Information to Start the Diagnosis

- Does it happen all the time?
- Is the problem apparent on cable and antenna or just one of them?
- Are all components affected or just one?
- Did the system work properly at one time?
- Has anything been added or deleted on the coach recently?

Possible Causes

- Operator error
- Outside interference
- Hooked up wrong
- Shorted coaxial cable
- Improper crimp on F-connector
- Defective splitter or booster



Possible Solutions

Operator Error

Before involving the technician, the Service Advisor should verify the complaint and that the consumer is operating the system properly.

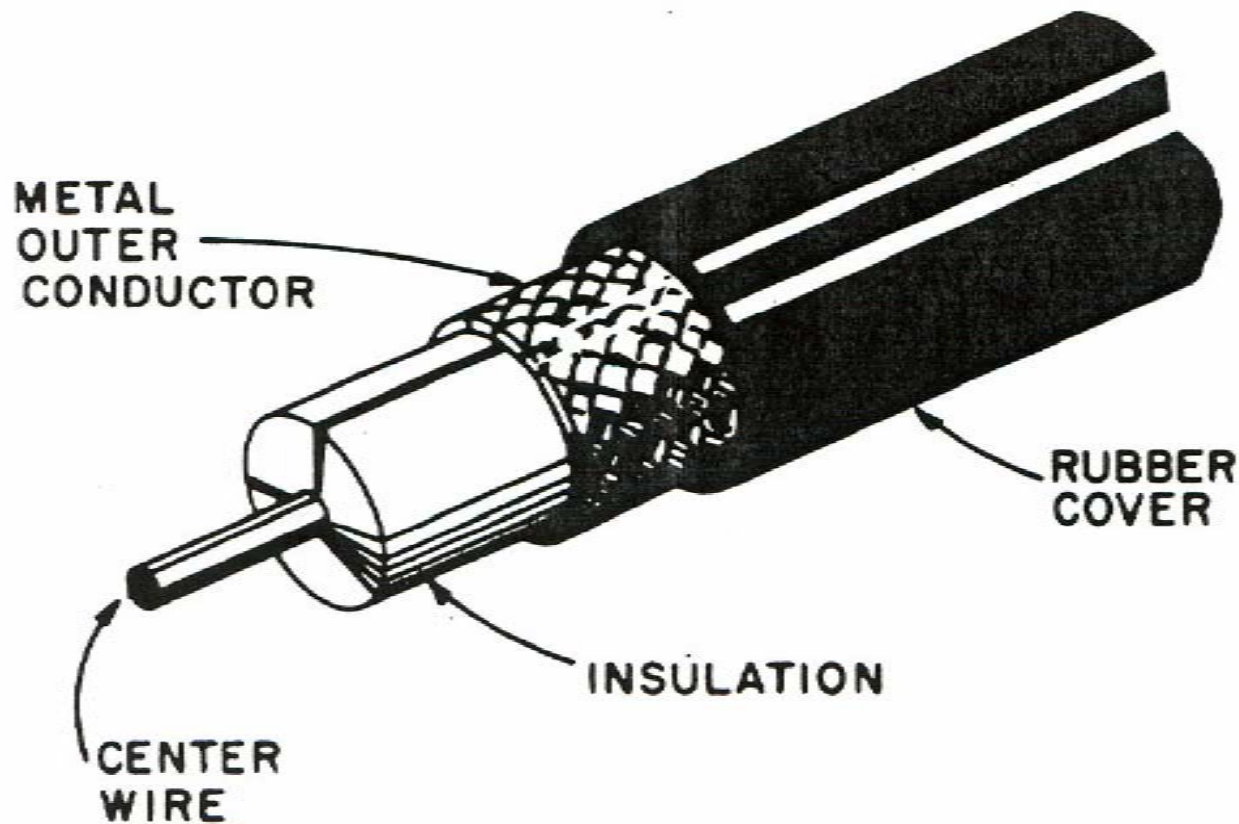
Solutions

- Outside Interference
 - Any 12-Volt or 110-Volt motor (with windings) running in the unit or close by (a neighbor) can interfere with audio and video components.
 - Power lines in the area can cause electro-magnetic interference.

Technical Diagnosis

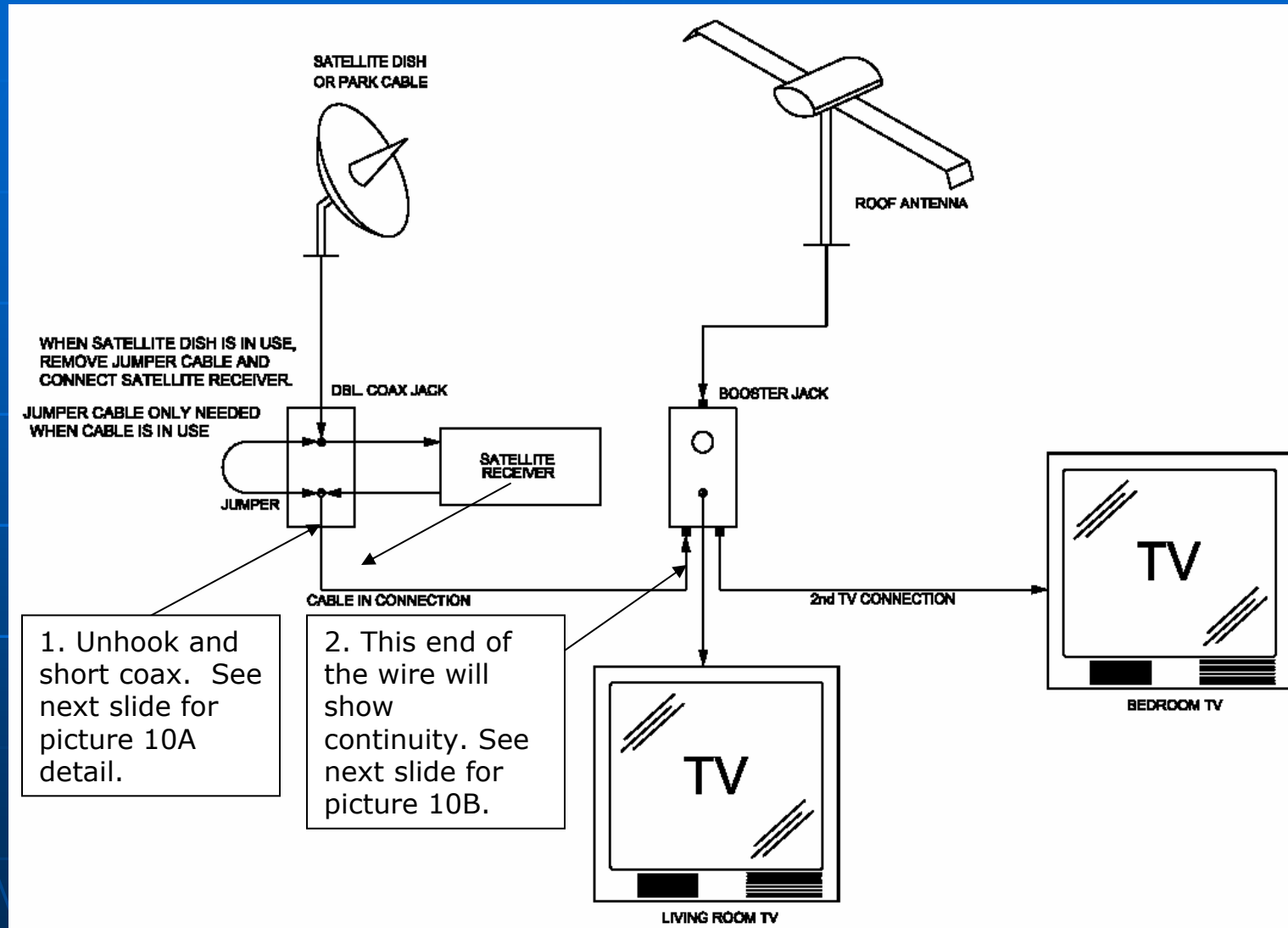
- Once it is determined there actually is a problem within the unit, isolate it logically using organized procedures.
 - Either use a known good cable feed or the output from a DVD or VCR player to test.
 - Isolate the circuit affected.
 - Check for proper hook up.
 - Verify In, Out, TV 1, TV 2 etc. lines are hooked to the proper terminals.
 - Not sure what line goes where, use the "Short Test" on the slide 9.

When working with coaxial cable, the technician must look at the cable as two separate wires – 1) the solid core wire and 2) a braded steel wire. These wires are separated by insulators.



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Tip: What Cable Goes Where?



Identifying Coax Wires



Picture 10A



Picture 10B

- The picture on the left (10A) shows an end with the coax shorted on purpose.
- The picture on the right (10B) shows the other end of the coax showing continuity.
- Note – both ends of the coax must be unhooked.

Technical Diagnosis

■ F-Connector Issues

- Inspect the connections for the affected circuit - See Properly Stripped Coax picture on page 13.
- Review following cable troubleshooting slides.

Technical Diagnosis

■ Open Circuit

- When using screw-on F-connectors, care must be taken not to shear off the braided steel conductor.
- The threads in the connector will cut the small strands of wire like a knife and create an open in the metal outer conductor.
- An open will create poor quality audio and video.

Properly Stripped Cable

The F-connector is a hollow tube with a threaded swivel nut on one end. The cable is stripped back with ¼ inch of white insulator exposed and a ¼ inch of the solid copper core wire exposed. The F-connector is inserted onto the cable.



When looking into the threaded part of the F-connector, you should see the solid core wire and the white insulator evenly centered prior to crimping the connection. No strands of shielded wire can come into contact with the core wire.

Improperly Stripped Coax

- Potential Short
 - If a single strand of the braided wire comes into contact with the solid core wire, the cable will be shorted-out resulting in little or no audio and video operation.



Right Tool for the Right Job

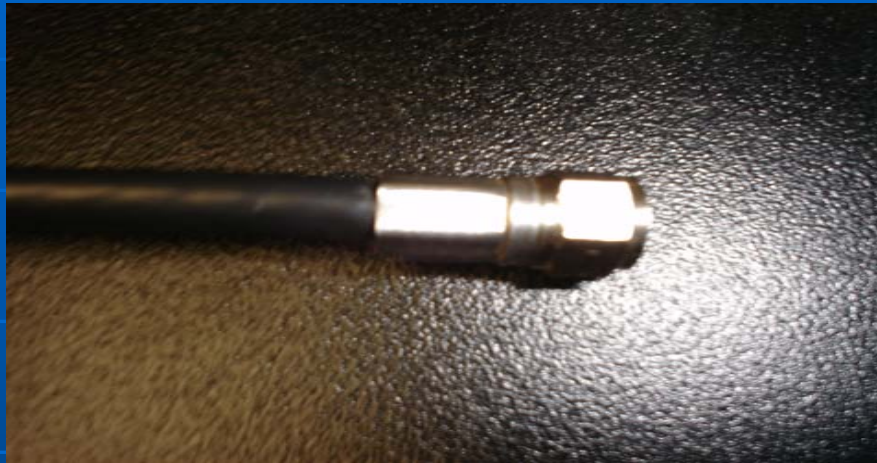


Correct crimper shown above and below.



- Special crimpers must be used when replacing cable ends.
- The jaws on cable crimpers apply even pressure around the diameter of the base of the F-connector.
- Standard wire crimpers will smash the connector and result in shorting.

Check Your Crimp



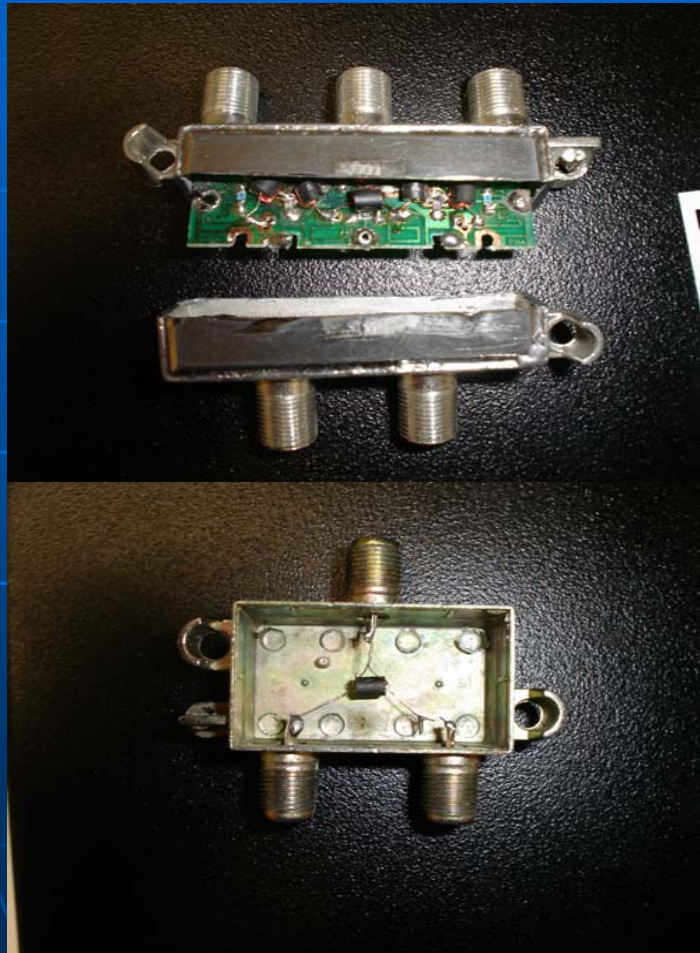
- Once you have established the solid core wire and the white insulator are centered in the connector and the crimp is even all the way around gently tug on the connector to insure it will not pull off.

Testing the Coax Itself

- When testing for shorts in the cable system, you must unhook the cable at both ends to avoid “ghosts” or false continuity.
- Using a VOM (multimeter), test between the solid core & the braded steel wire.
- No measurable resistance should be observed.



Chasing Ghosts



- If both ends of the coax are not unhooked, equipment with circuit boards in them will show a false short.
- Your meter will read the resistance of the board.

Splitter & Booster

- If splitter or booster are in question, replace with known, good component.

Summary

- Gather information to make sure there actually is an issue.
- Work your way through logically, avoid jumping around.
- Test your work.