

# Rapid Lesson Sharing

Event: Vehicle Radio Interference

We (Forest Radio Techs) have been getting reports of problems of radio reception in vehicles—hearing static/whining noise over the radio.

We have found one source for this problem: radio interference being caused by 12V USB/Cell cigarette chargers. To be able to reliably receive radio messages, we therefore recommend not using these chargers and to unplug them.

Cigarette lighter adapters that convert from 12V to USB 5V often use a DC Switching Supply to do the voltage/power conversion.

---

***If possible, use the USB charger built into the vehicle. They have been designed to prevent radio interference.***

---

Because the circuitry is exposed or just housed in plastic, Radio Frequency Interference (RFI), also called Electromagnetic Interference (EMI), can radiate easily. It can also conduct and radiate via the power leads that feed the unit. There will be harmonics based on the switching frequency. These can—and will—interfere with various radio receivers on various bands/frequencies.

The higher-priced Original Equipment Manufacturer (OEM) chargers have less interference. The models that offend the most are the cheapest versions.

If possible, use the USB charger built into the vehicle. They have been designed to prevent radio interference.

### **For More Information:**

<https://forums.radioreference.com/radio-equipment-installation-forum/299421-scanner-phone-car-chargers.html>

<http://www.silveradosierra.com/mobile-electronics/static-through-factory-stereo-when-charging-phone-t374433.html>

## **Safety Notice**

Any electrical or electronic device can cause interference or blocking to your mobile and portable radio, and even nearby vehicles and radios. If you are having problems receiving—especially in areas where you know you had reliable radio coverage in the past—unplug any electrical or electronic device in your vehicle and test it again. If the reception improves, consider that device suspect.

These devices include but are not limited to: inverters, USB chargers, phone chargers, cell phones, laptops, and MP3/music players.

In particular, the bullet-shaped USB chargers widely available have been shown to produce enough interference to completely block radio reception.



Bill Ostrander (541)664-3328 June 2013

Due to this radio interference, the Oregon Department of Forestry has issued an advisory to not use cheap USB converters in its vehicles. (See their “Safety Notice” on previous page.) It might be a good idea to get the word out that these chargers can cause radio problems.

Using these devices might mean missing important radio messages—posing potential safety issues.

---

### **LESSONS**

- ✓ Do not use USB chargers when radio reception is Mission Critical.
- ✓ While all 12V converters can cause radio interference, the higher-priced devices are usually engineered to reduce radio noise.

### **BONUS LESSONS**

- ✓ Also, using a handheld inside a truck with tinted windows does not work due to the tint having metal in it. The radio signal just bounces around in cab—not getting out. Therefore, to talk on the handheld: turn off truck, then get out and away from it.
- ✓ We also found radio interference coming from the new vehicles due to the ignition coils on top of the engine and all the electronics now installed inside, especially on the keyless ignition models.

---

**This RLS was submitted by:**  
**Radio Technician**

**Do YOU  
have a Rapid Lesson  
to share?**

**Click this button:**

Share  
Your Lessons