

# Two-Way Radio Troubleshooting Guide:

*Six Simple Steps that can Save You Headaches and Thousands on repair bills each year.*



One bad radio can be a radio system PAIN IN THE NECK!



One bad radio can be a radio system pain in the neck, two bad radios is a nightmare. It's just like one bad apple spoiling the whole darn bunch! If one radio has a malfunctioning battery, microphone, speaker, or accessory jack problem, it can make it seem like there is something wrong with the entire system. The last thing you want is to send in a radio for repair or worse yet, get an invoice for a service call, just to find out one of your batteries needs to be replaced.

Before you send in your radio for repair, run through this checklist of common radio problems. Most of the time, it's a simple issue that just takes a simple process of elimination that can be solved easily without sending in your radio for repair and saving your departmental budget thousands each year. It is common for many managers to send in their radios for repair, pay for a service call, or even purchase new replacement radios without even taking some simple steps to find out why their radios are malfunctioning. We have many customers tell us they were charged by their former radio vendor a \$150 flat rate when they sent their radio in for repair, only to find out that one of their subordinates just wasn't putting it in the charger properly. Since most of these common problems are simple to solve, it's much easier to find the malfunctioning radios and isolate the issue by testing them in groups of at least three, rather than just two at a time.

**There are two types of chargers that come with radios:**

A) **Rapid Chargers** - Require one hour to fully charge a battery. When the battery is fully charged after one hour, the light on the charger turns from constant red to constant green.

B) **Overnight Chargers** - Require 12 hours (overnight) to fully charge a battery. The only indicator on this type of charger is a constant red light that indicates the charger is making proper contact with the battery. There is no indication that the battery is actually being charged or when it is finished. However, if your equipment is working properly, leaving the radio turned off in the charger for at least 12 hours should fully charge your battery.



If you have overnight chargers for your radios (where the light on the charger just illuminates steady red while charging your battery and never changes), you will have to make sure the radio is turned off and left in the charger for 12 hours. Many problems occur when the radio user has a 12 hour (overnight) charger and removes the battery much earlier, which prevents the battery from taking a full charge.

The following is a list of the most common problems and their solutions:

**1. Problem:**

Your brand new radios or replacement batteries are malfunctioning.

**Solution:**

If you have brand new radios with brand new batteries or you purchased brand new replacement batteries, make sure you leave them in the charger at least 12 hours the first time you charge them. It doesn't matter if you have rapid one hour chargers (even if the light turns green after one hour, leave them in for 12 hours) or overnight chargers where the light constantly illuminates steady red. This is to initialize the new batteries properly and ensure that you get maximum performance and the longest life span possible.

**2. Problem:**

*Your battery is only lasting a few hours on a charge.*

**Solution:**

The first step is to make absolutely sure the radio is turned off while in the charger. ***Almost all problems occur from a battery that is not fully charged, which is the main focus of this guide.*** Leaving the radio on in the charger will not only prevent the battery from being properly charged (it may not charge at all), it will quickly destroy the battery and require you to purchase replacements constantly. The number one rule to prolong battery life is THIS IS A VERY COMMON PROBLEM: **DO NOT USE THE CHARGER AS A STAND!** Office workers often have the charger on their desk and turn the radio on for the entire day without taking it out of the charger. It is also important to remember that you do not charge your battery with the radio on, ever; this destroys batteries quickly so they will no longer take a charge and will not be covered under the manufacturer's warranty.

**3. Problem:**

Your radio constantly beeps.

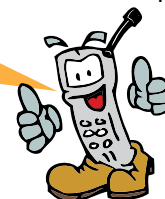
**Solution:**

Check to make sure your battery is charging properly. Is it being placed in the charger correctly? Check to see if the charger is plugged correctly into the wall (and getting power) and that the plug in the back of the charging cup is inserted correctly. (This is common sense, I know, but it does happen). Are the contacts on the back of the battery making contact with the terminals in the charger? Is the charger light illuminating when you place the radio in the charger? Is the charger light blinking for more than five minutes when the radio is placed in the charger? Does the light on the charger turn solid green (indicating a full charge) just after five minutes from placing the radio with the dead battery in the charger? These situations are definite signs that the battery will no longer take a charge and needs to be replaced

**NOTE:** If your radio is beeping on one channel, but works fine on another channel, this is just an indication that the radio does not have a frequency programmed into that channel and **doesn't mean your radio or battery are not working correctly.** Many radios have at least a 16 channel capacity, but the radio user only has one license for one channel. For example, the radio vendor will program your licensed frequency on channel one and leave the rest empty.



**If you have found that you are charging the battery correctly,  
it's time to check the battery!**



#### 4. Problem:

You're experiencing coverage problems, static, bad transmit, bad receive and/or overall poor radio performance.

#### Solution:

Find out which radios in your system have batteries that are more than a year old.

Ninety percent of the time a two-way radio malfunctions because, the battery is over a year old and cannot hold a charge (they die too quickly) and/or the voltage has dropped to a point where the radio has extreme static and performs poorly. The battery either needs to be recharged or replaced. Most batteries start to show signs of degrading performance after approximately 13 months of use. After one year, you should look for degrading radio performance such as coverage problems, static, or the battery simply does not last through a full eight hour shift even though it has been fully charged.

**The easiest way to confirm that you have an old battery that requires replacement is to take the battery off a radio that is working great and put it on the radio that is giving you trouble.** If the radio starts working perfectly, then you know the battery will require replacement. *(Note: Make sure that you have verified the battery was fully charged.)*

It is considerably cheaper and saves you from wasting time when you order a new replacement battery rather than send a radio in for repair that isn't broken in the first place.

However, if the radio still malfunctions with the battery from the good radio, you will likely need to **send your radio in for repair.**

#### 5. Problem:

Your earpiece, headset, speaker mic, or other accessory doesn't work.

#### Solution:

Before purchasing a new earpiece, try plugging in an earpiece, headset, speaker mic, etc. that you have confirmed is working properly on another radio, then try it on the radio that you were using the troublesome audio accessory on, if it still doesn't work, you know you have a bad accessory jack and your radio will have to be sent in for repair. If you find that the audio accessory does work, you will have to replace the defective accessory, but now you know exactly what the problem is and what simple steps to take to easily fix it.

#### 6. Problem:

Your radios are not working right and driving you crazy, but you don't know which one(s) are causing the problem.

#### Solution:

If you need to determine which radio or radios it is, take a radio that you have confirmed is working correctly and do a simple transmit and receive test with each radio in your system. This will give you the ability to find out which radio(s) are malfunctioning.

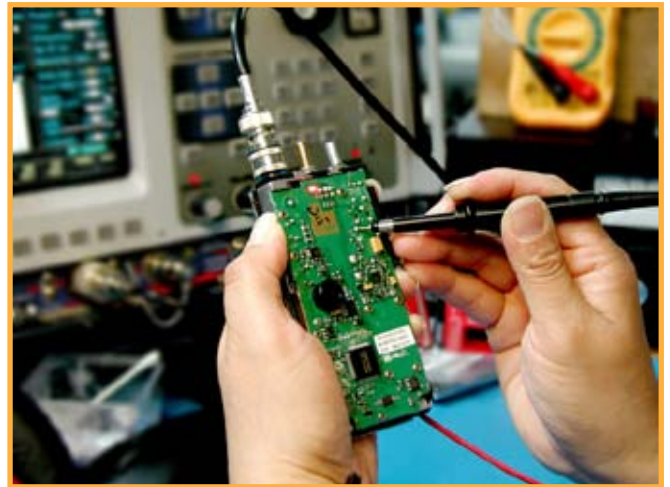
## Broken, Staticky Transmission?

**It could be a *bad battery!***



## Here is a quick Troubleshooting Checklist: ✓

1. Have you confirmed that the charger is plugged in and working properly?
2. Is the battery being placed in the charger correctly?
3. Once the battery is placed in the charger correctly, does the charger indicator keep blinking even after ten minutes? (Most likely the battery needs to be replaced, however, try the battery in a charger you know is working properly just to double check it's not the charger that's giving you the problem.)
4. Is the battery fully charged?
5. If the battery is brand new, have you made sure it was left in the charger for at least 12 hours?
6. Is the battery continuously beeping? Change the channel to Channel 1. If your radio doesn't stop beeping, you either have to charge the battery or purchase a replacement battery.
7. Is the battery more than a year old? After one year, battery capacity and voltage start to degrade, and this can cause static, coverage problems, audio problems, etc. Replacement batteries will have to be purchased.
8. To find out if you are having a radio or battery problem, take a battery off of a radio that you know for sure is working perfectly and try it on the malfunctioning radio. If the radio works fine, you have a battery issue; if the radio is still not working, you will have to send the problematic radio in for repair.
9. Are the earpieces, headsets, speaker mics, etc. plugged in all the way? Audio accessories have to be pushed in with some force. This is part of the design so they will not unplug easily.
10. Check the light on the radio to make sure it is illuminating red when you are pressing the Push to Talk button to make sure it is transmitting correctly.
11. To find out what radio is malfunctioning in a system, take a radio you know is working correctly and do a simple transmit and receive test with each radio in your system. This will enable you to find out which radio(s) is giving you trouble and needs to be sent in for repair.



Using this simple process of elimination, you can easily avoid many annoying and aggravating issues that interfere with your time and your department's productivity. And when you do need your radios repaired or replaced, it's easy to locate the helpful experts at Discount Two-Way Radio. When you call, you'll immediately speak to a live human being who will answer all your simple and complicated questions, and there are no dumb questions. Many times the experienced technicians can solve your problems right over the phone at no charge. They have the finest service department in the country and perform almost all two-way radio repairs within two working days. Most field technicians can be at your location the next business day. In addition, their huge inventory allows them to ship most orders immediately. Doing business with Discount Two-Way Radio is simple, convenient and most of all, affordable.

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