Garmin® GPS-III+ Backup Battery Replacement

1/25/15 Update. I am still puzzling this out, but since I replaced the batteries on two GPS-III+ GPS units I have noted a serious performance problem. I have had one of these units since it was new, and I remember two instances that it displayed erroneous data. Both times I was in bad weather directly under thunderclouds. Over many thousands of miles of operation those were the only problems I had until about two years ago when I discovered that it would lose contact with the satellites entirely, or would show (empty bar on the signal strength page) the birds, but would not download information. This situation got worse and worse until it was happening several times per day. I emailed Garmin customer service, and they had no ready answers, but suggested that I do a master reset by holding the menu button while turning the unit on. This dumped all waypoints and other data. Since then I have been experimenting with it at home and all has been well, but I have not taken it on the road. I will be taking a trip in February and will quickly know if the problem is solved. If anyone else has had issues, I would sure like to hear from them. Please email me at n7cfo@n7cfo.com

3/1/15. The reset seems to have taken care of the problem. All is well!

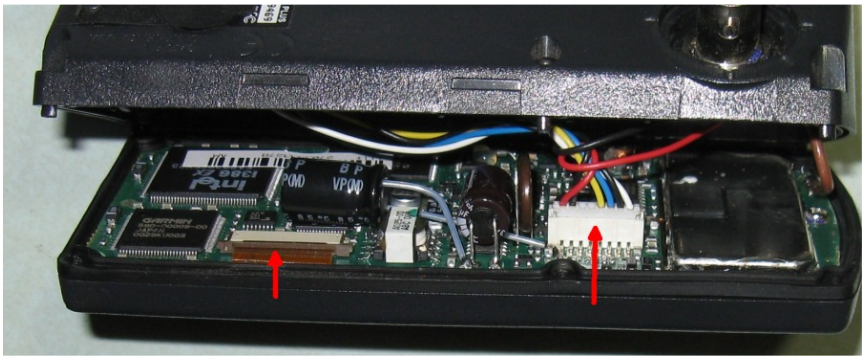
If you receive a screen message that your backup battery has lost charge, it is time to replace it. Here is how.

1. Tools and supplies
    a. Japanese JIS Standard "Phillips" head screwdrivers. These drivers are cut in a different manner and provide a good grip on the screws. You will mess the screws up if you do not use JIS screwdrivers.
    b. De-soldering gun, de-soldering braid or solder sucker.
    c. Soldering station with a fine tip
    d. Solder
    e. Precision sidecutters
    f. Battery. Panasonic VL1220-1VC. These are available from www.mouser.com

1. Replacing the battery. If you do not have the equipment and ability to do fine soldering do not attempt this project. Please note that removing the backup battery will delete all waypoints and other stored information.

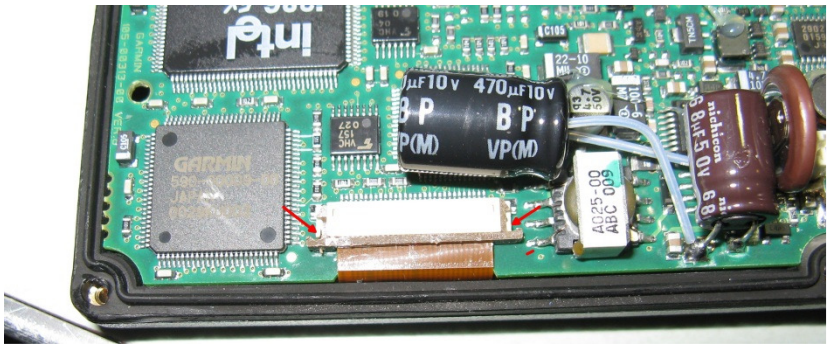
a. Remove six screws from the back of the case

b. Carefully open the case. There is a connector cable that you can damage if it suddenly pops open.

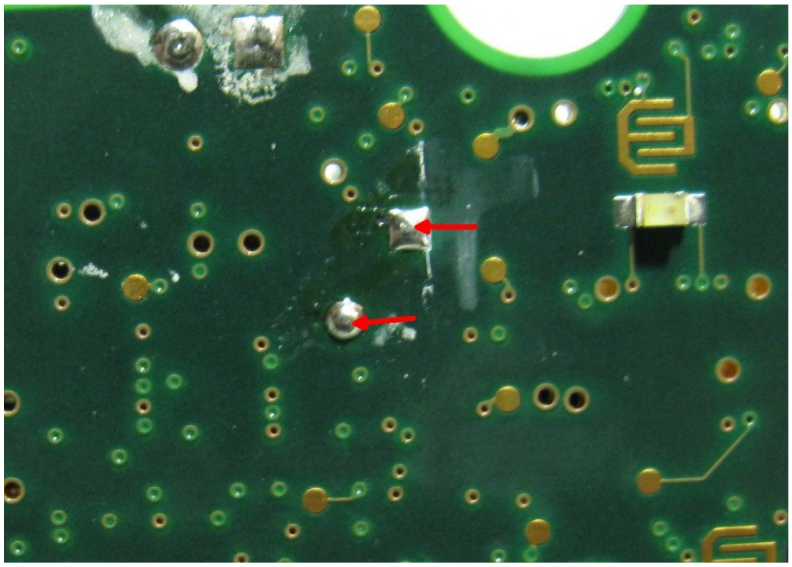


c. Using a jeweler's screwdriver, gently pry up the white cable connector from the circuit board and set the back of the case aside.
d. Locate the battery. It is on edge next to a capacitor just to the left of the white connector.

Using a jeweler's screwdriver, pull the plastic clamp back on the brown ribbon cable to the stops.



e. Remove the screw near the metal can on the antenna end of the board.
f. Gently tip the board up, hinging on the ribbon cable edge. The board will stick and it will take some leverage to get it up. The ribbon cable will slide out of the clamp.
g. Turn the board over and locate the battery pads on the back side of the circuit board and remove the solder.



h. Remove the battery and clean the holes in the pad.
i. Insert the new battery, and check the polarity. The positive side of the battery should be towards the metal can on the antenna end.
j. Solder the battery leads and trim them.
k. Replace the board in the chassis. Slide the ribbon cable into the clamp, set the board in place, and install the screw.
l. Replace the white cable clamp
m. Making sure antenna wire is not pinched, reassemble the case and install the screws.
n. You are done!