

CSOBeech



Because Owning And Flying Your Beechcraft Can Be Done Safely AND For Less Money!

[Airframe](#)
[Avionics](#)
[Engine](#)
[Planning & Wx](#)
[PDF Downloads](#)
[Networking](#)
[CSOB1 Picks](#)
[TBD](#)

 [Your Garmin Portable GPSMAP Loses Clock Time & Satellite Locations](#)



Is your Garmin GPSMAP-276, 296, 376C, 396 or 496 losing it's time clock memory or you have to Auto Locate all the time because the unit does not remember where it was when you last turned it off?

FYI, here is the **Auto Locate procedure**:

Hold the "Out" button down, hit the power button. Don't release the "Out" button until it asks you to acknowledge "I Agree".

To "refresh" your XM subscription click [HERE](#)

Well, these could be symptoms of the (expletives deleted) 3 volt VARTA MC621 internal battery having died!

[Step-by-Step Garmin Internal Battery Replacement Procedure w/Pictures](#)

My buddy Al has a just over 1-year old Garmin 496 and has been having to auto locate his satellites more and more often. He did some research and found many people with these portable units are having similar issues.

The issue appears to be caused by the internal battery only recharging during external charging with the unit ON! So all you folks who leave this portable in your airplane for weeks at a time and then go fly for an hour or two and MAYBE have it plugged in for charging while it is ON will be barely charging this internal battery. After a while of this kind of operation, the internal battery becomes discharged or worse, may become unresponsive. Leave your unit on overnight from time to time plugged in for charging and you can avoid this potential issue.

This is the internal battery for the Garmin portables, the rechargeable VARTA MC621:



Type: Lithium Manganese Dioxide. **Voltage:** 3V. **Capacity:** 3 mAh.
Height: 2.15 mm. **Diameter:** 6.8 mm.

The spec sheet on the VARTA MC621 Battery is [HERE](#) . It shows a capacity of 3.0 mAh is rechargeable and has a rating of 1,000 cycles, whatever a cycle means.

Just swell, because I have read reports of GARMIN wanting a \$350 (396) to \$400 (496) flat rate repair charge to change this little internal battery, that is reported to have been replaced by some users with nothing more than a CR-1025 watch battery. Be careful because the CR-1025 battery is NOT rechargeable!

My research shows that the CR-1025 battery is 10mm in diameter and the MC621 battery is 6.8mm in diameter. See the Energizer CR-1025 spec sheet [HERE](#). One user has reported on the internet that he installed the CR-1025 battery with good results. I also note from the spec sheets that the CR-1025 is 30 mAh vs. 3 mAh for the MC621. Did I already say it's NOT rechargeable like the OE battery? You decide!

Not exactly what you wanted to hear if you are an owner of one of the high dollar 396 or 496 units and the battery dies just after one-year warranty coverage has expired.

Don't get me wrong, Garmin Tech Support is great and they have helped me a number of times with my 376C issues over the last two years (bad XM puck, completely DOA unit, speaker charging cord connector blowout, extra unlock codes for my map software).

See the News Flash below for a great Garmin Tech Support success story.

NEWS FLASH 2/18/2009: This pirep just in from V-35 Bo owner Kyle H.,

I had been having repeated problems with my 396 taking forever to acquire satellites and the internal clock was never correct when I turned it on. I figured the internal battery problem that was described on your website was the issue I was seeing. I called Garmin and complained. They suggested a few things and low and behold it got my GPS working again without replacing the internal battery.

First they suggested using the AC charger and letting the unit fully charge overnight. I wasn't sure if he wanted me to leave the unit on or not, so I did leave it on.

Next they wanted me to update to the latest software, which I had already done and then reset the system. You reset the 396 by holding the Quit key while turning it on. It will ask you to confirm the reset. You loose all the GPS settings when you reset it, so they advise users to backup the setting using the MapSource software before doing the reset. Which I did. After restoring all the settings after the reset, I turned the unit on and let it acquire the satellites for about 15 minutes or so. Finally, I checked the internal clock, wrote down the time and turned the unit off for at least 24 hours. When I turned it back on the internal clock was correct.

After doing these few steps I haven't had any problems with the unit at all.

While talking to the Garmin rep, he explained that the internal battery is rechargeable and they've seen a lot of units that are quick cycled (like on short car trips) and the internal battery never has a chance to fully recharge. You can tell how well the battery is doing by checking the internal clock when it's turned on. Is the clock the exact same time as when you turned it off? If so, the battery is dead and may or may

not take a charge. If the clock is set for a few hours after you turned it off, then that tells you the internal battery is only able to power the clock for that many hours. And again, it may or may not be able to take a charge that will power it for a longer period of time. If after leaving the unit plugged in for overnight, the internal clock is consistently set to the time you turn the unit off, the next time you turn it on, then the battery is kaput.

OK, so my CSOB takeaway on this pirep is that you've got to use these units more often and cycle the battery through some charging cycles to keep this little internal battery from an early death. Get out and FLY PEOPLE, use that high dollar Garmin Box (or less desirably, but just as effective, plug the unit in overnight for a solid charge)!

Thanks for the pirep Kyle! 🙌

In the event you decide to deal with your internal battery yourself, here are some great "How To" instructions, courtesy of a find [HERE](#) at the www.gpsinformation.org forum. A giant thank you to poster "tsizmo" for his surgical prowess on dealing with this issue!

Warning: You will no doubt VOID any warranty protection you may have on your unit by performing this surgery yourself! Garmin Aviation Tech Support is: 866-739-5687

Also, see the Van's Air Force thread [HERE](#) for confirmation of other user reports.

Here is a [PDF](#) of another Battery Replacement Procedure by RV owner Bobby H.

Here is an awesome pirep dated 1/9/2009, from Baron owner and Beech Lister, Richard S., who changed his internal battery on his 376C with the help from this page (Double CSOB Bonus points for Richard for using the 376C CSOB Weather Box):

I thought I'd let everyone know that it is possible to successfully change the internal memory cell we've been discussing. I was able to do so on my 376c.

I used an [ML614 memory cell](#) with mounting tabs from DigiKey. This cell has the same 3.0 volt rating as the original cell, but a slightly higher capacity of 3.4 mAh, versus the 3.0 mAh rating of the original. Another option may be an ML621, which has a capacity of 4.5 to 5.3 mAh, depending on the manufacturer. The 614 cell with the mounting tabs was physically identical in diameter and lead tab geometry to the original, but just slightly thinner. Thanks for the source on this, AI.

The instructions and pictures from Mike were clear and accurate. The 376c has an additional ribbon cable to deal with (depth sounder connection?) that the 396/496 doesn't have. You will need a low wattage soldering iron with a very fine tip due to the small size of the leads and very close spacings of the circuit board traces. A calm, steady hand is needed as well. Skip the caffeine before this task!

Re-assembly was straight forward. I did not attempt to flow any dry nitrogen into the case during re-assembly, but it would be easy to do so. You could likely just keep one edge of the case slightly open and use a gentle flow from a nozzle on the nitrogen bottle you use for your struts and tires to displace the air inside the case as you close it and tighten the screws. Anyway, no condensation so far on the inside of the screen.

The unit started up normally, received solid XM signals, went through it's auto locate with solid GPS signals, and then reset itself to the correct time and date. I left it on overnight on the external charger and it worked fine. I turned it off for 24 hours, turned it back on and it started right up with the date, time, and satellite constellation instantly correct. No more wrong date/time/constellation with auto locate!

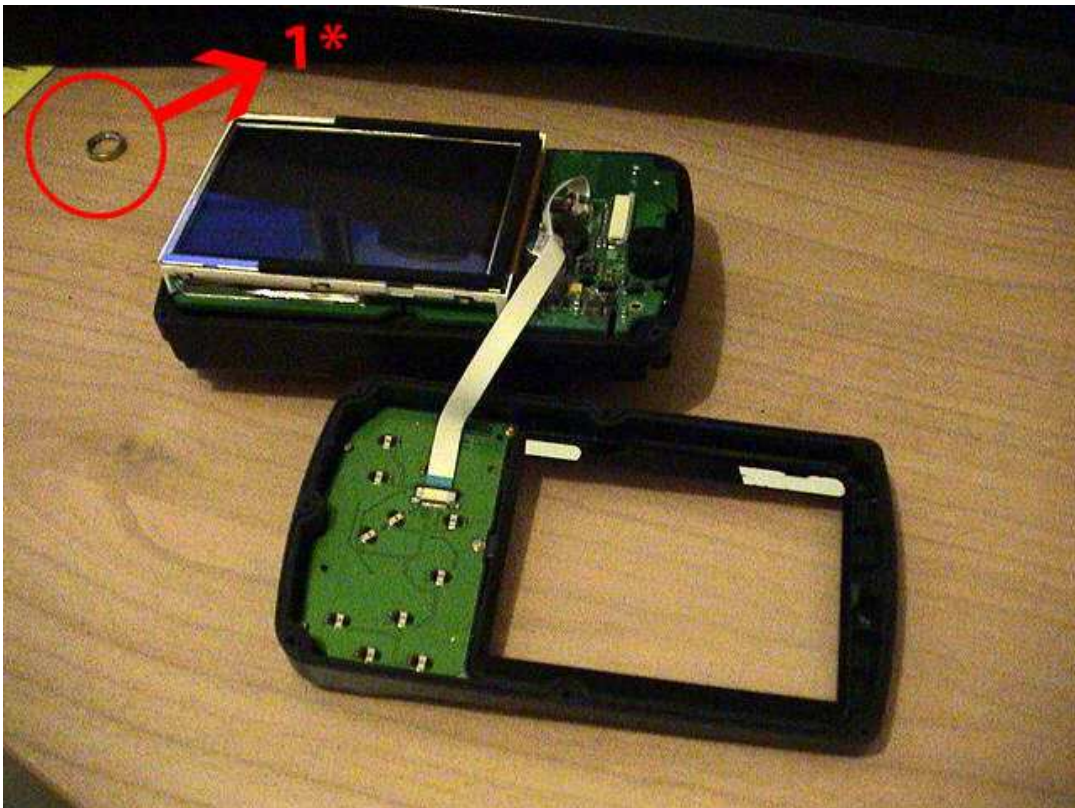
BTW, the old memory cell showed 0.24 volts no-load. No wonder the unit would lose its' mind after about 60 minutes of power-off.

The whole process took about half an hour and cost about \$10, versus a couple of weeks and several hundred bucks at Garmin. Isn't this [Beech List](#) great?

Thanks again AI and Mike!!!!

Step by Step Internal Battery Replacement Procedure

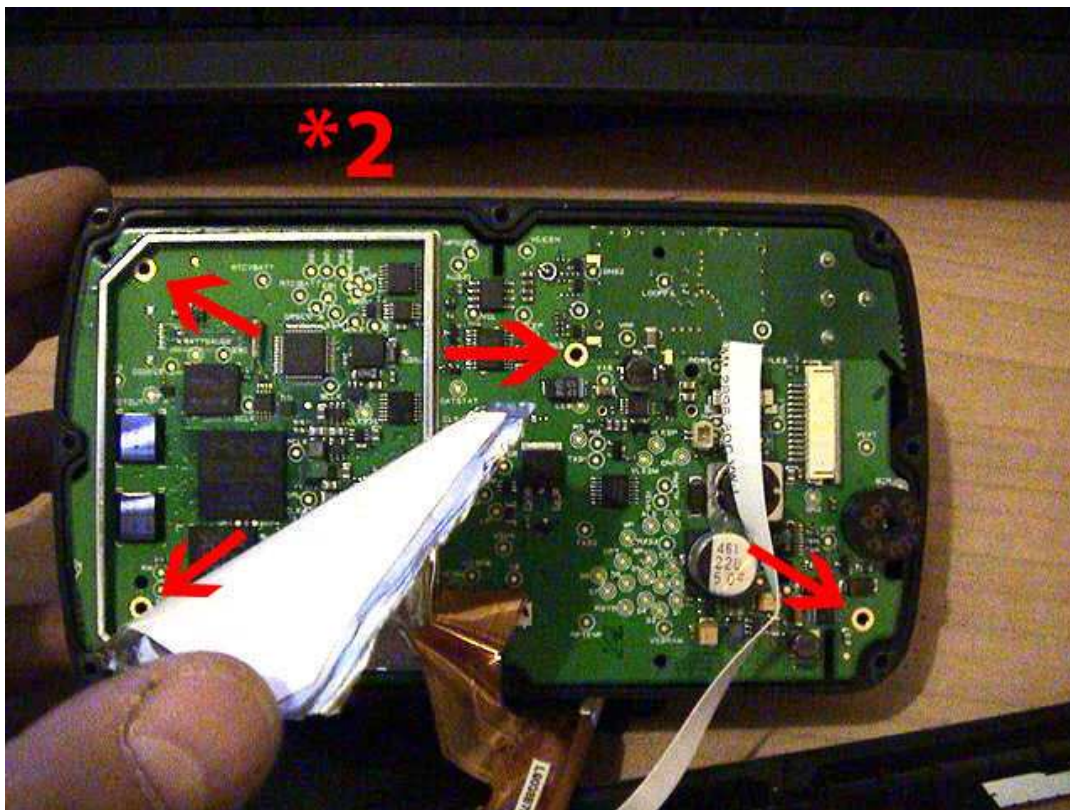
Ok first remove the screws from the box shell and the ring of the antenna base connector



Carefully lift the aluminum paper behind the LCD screen (don't worry it has only soft glue)



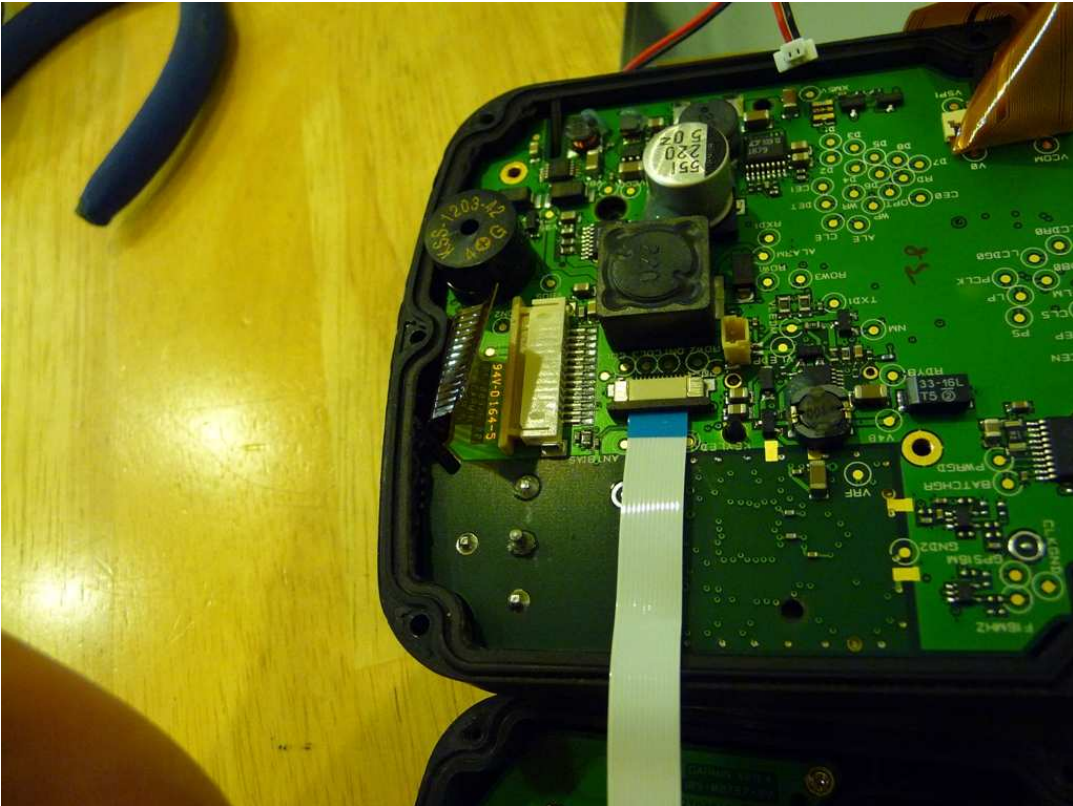
remove PCB screws



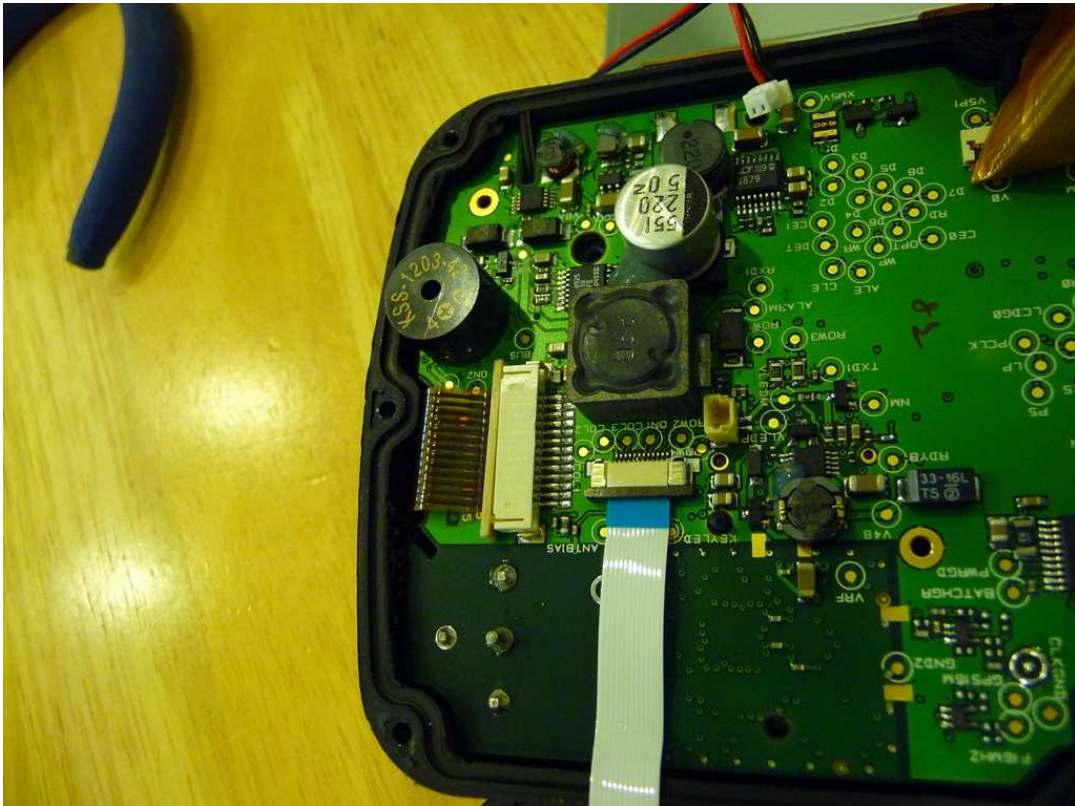
NEWS FLASH!

Here is the latest pirep from Lindy winning Bonanza owner, Doug G., after he did his GPSMAP 396 and found a ribbon cable that was not mentioned in the original battery replacement procedure:

"I finally got around to changing out the battery in my 396 last night. I had your page up with the photos and instructions as a guide. I came across something that is not covered and snapped a couple of pics should you want to update the page. I don't know which model was used for your page, but the 396 (and probably the 496) has another ribbon cable that is not shown. When I pulled the board out, the cable came out of the connector on the board (see photo below)."



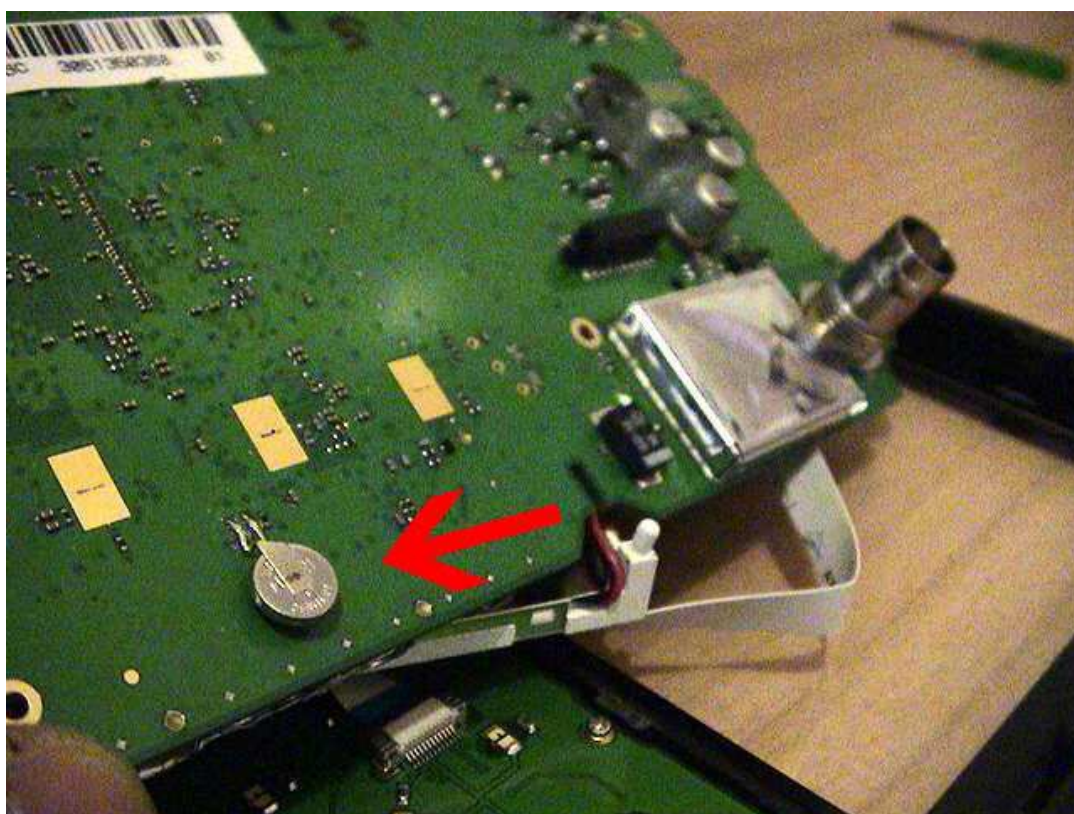
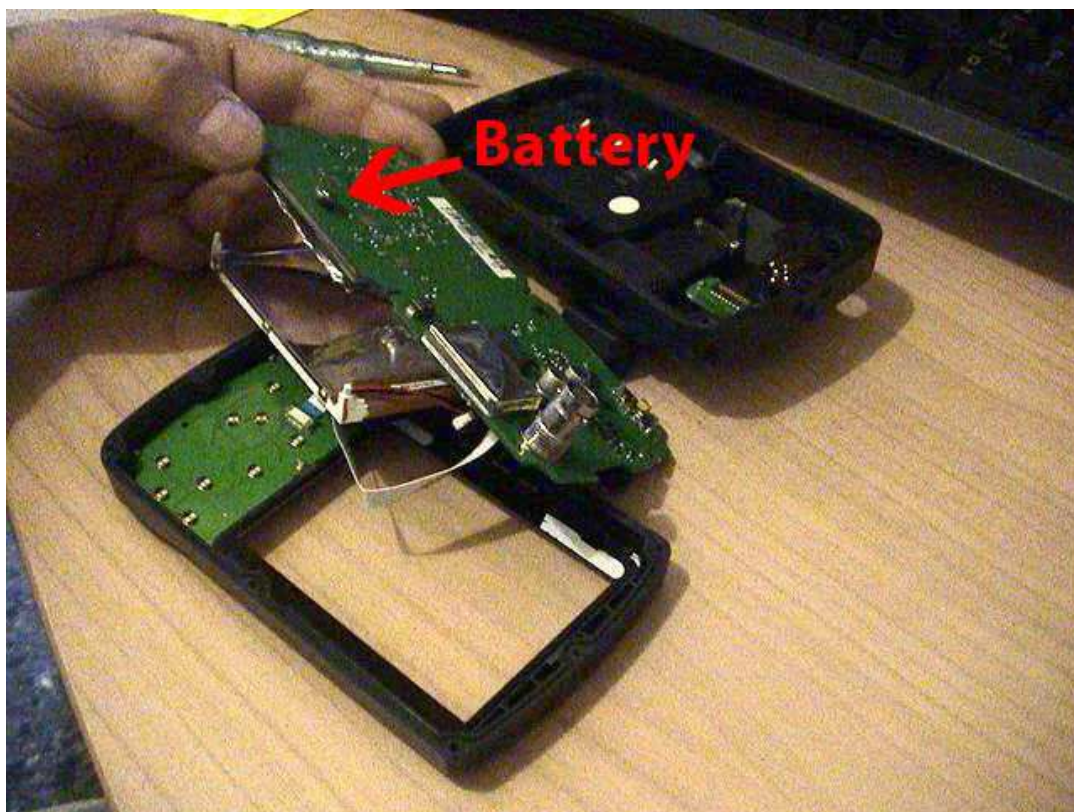
"I may have said some bad words when this first happened, but then I realized it is supposed to do that. I pulled the clamp (for lack of a better term) out of the receptacle, slid the ribbon in and pushed the clamp in to lock it in place (see photo below)."

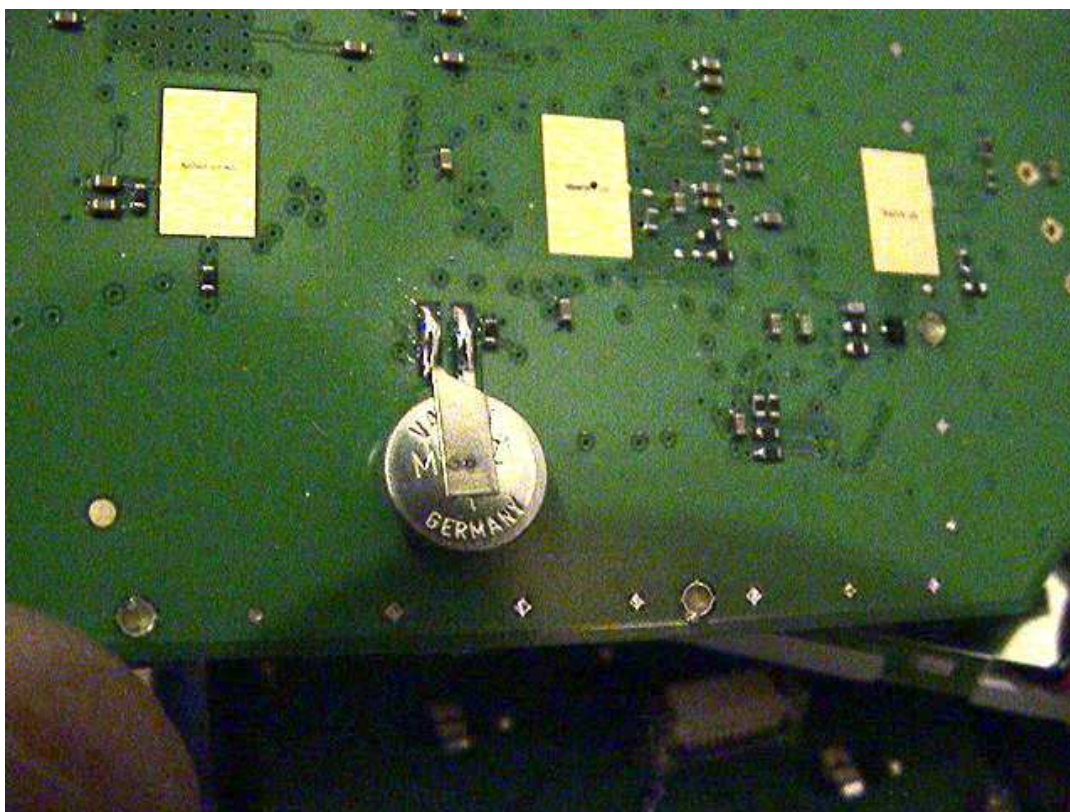


I figured someone else would probably have the same issue I did and wanted to let them know how to solve it. You can't get the board out without disconnecting the ribbon.

Paul B., S35 Bonanza owner, advises that the small ribbon cable has a retainer clip similar to the one just discussed.

at the back of the PCB you can see the battery





Tip from Paul B., S35 Bonanza owner: use a strip of tape to hold the new battery in place while it is being soldered.

It's a VARTA MC621



Replace this bugger and voila... no more acquiring satellites delay!

Sources for the MC621 battery might be:

APEX BATTERY
Power your Life, Work & Play

It also appears some users reported replacing their MC621 battery with a [Radio Shack #1025](#). Be advised, the 1025 battery is NOT rechargeable!

You would be well advised to check the voltage, size and polarity of the #1025 before proceeding with this surgery. My research shows that the [CR-1025 battery](#) is 10mm in diameter and the MC621 battery is 6.8mm in diameter. One user has installed the CR-1025 battery with good results. I also note from the spec sheets that the CR-1025 is 30mAh vs. 3 mAh for the MC621. You decide!

Eveready # ECR1025 also crosses to this battery. Another source for the ~ \$3 - \$5, CR-1025 battery might be (click on the logos):

APEX BATTERY
Power your Life, Work & Play



This looks like the ticket folks! It is an ML621-TZ1, has 5.5 mAh, is rechargeable, is the proper 6.8mm diameter and has the tabs already soldered onto it.

From Digi-Key [HERE](#)



Digi-Key Has a Comparable MC621 Battery [HERE](#)



Higher 3.4 mAh Capacity, Rechargeable & has Tabs Already in Place

*Digi-Key Part Number SY152-ND
Manufacturer Part Number ML614-TZ21*

0299406

[Home](#) | [About CSOB1](#) | [Airframe](#) | [Avionics](#) | [Engine](#) | [Planning & Wx](#) | [PDF Downloads](#) | [Classifieds](#) | [CSOB1 Picks](#) | [TBD](#) | [Contact Us](#)
Copyright © 2010 CSOBeech. All rights reserved.

**This CSOBeech.com site is not reviewed by, owned or affiliated with Hawker Beechcraft Corporation,
which is the sole owner of the BEEHCRAFT®, KING AIR® and other registered trademarks.**