Gen3 Instrument Cluster Panel (ICP) Degradation – Blurry/Hazy/Greasy/Moldy/Damp Energy Monitor

A little late, but I experienced the same Prius dash Instrument Cluster Panel (ICP) moderate degradation of quality (G3-2010, ~135k miles). The problem lies with the right side of the ICP (energy monitor section). The left side is simply a reflection of the speed from the horizontal speedo display. If you have a problem there, that's for another thread! My problem had been getting progressively worse over the years, but it final annoyed me enough to tackle the repair/replacement. Here is my diagnosis and relatively easy fix.

Internet research shows the ICP assembly part numbers increase throughout model years of Gen3 Prius. This is usually because of new features (good), or hardware/software "bug fixes" (bad). I suspect a fair number of early revisions were "bug fixes." When only the last digit increments up, that probably means a variation in software/hardware to fix a problem. In my research, I couldn't discern any real difference between nav/no-nav or Led/no-Led ICP. For example, some searches for nav part number showed part was also used in no-nav cars. So essentially, I think many of the various revisions of the assembly are interchangeable to your car, with one big caveat***. Here are some part numbers I gathered up. This is generally very confusing and I'm not 100% sure this applies, but this is my best guess for now.

2010 Part: 83800-47370-3 (my car, sadly) - the earliest known part number I could find.

2010 Part: 83800-47370-4 - internet research

2011 Part: 83800-47640 - internet research

2012/2013 Part: 83800-47B30, 83800-47B31 - internet research

2014/2015 Part: 83800-47D31 - internet research

Failure Analysis: There were many theories in Prius Chat: mold, mildew, some sort of grease, or display film disintegrating; trapped moisture. Judging by the general confusion in posts, these were mostly incorrect. Upon inspecting my assembly – after removing from the car, and after disassembling the cluster itself: Blurriness develops from an overheated or over-radiated pink plastic coverplate that sits in front of the ICP energy display. The ICP display itself is a thick piece of glass sitting behind the pink plastic coverplate. It appears like this glass is too hot or too close to the coverplate. Over time, maybe display overheats due to electronics degradation; maybe it's just too close to the coverplate; or maybe the coverplate plastic material is just too weak/soft and prone to overheating; or changing from the display radiation, like how plastic degrades in sunshine. It appears like heat is the cause, and the plastic coverplate slowly liquifies and dries in repetitive cycles as you drive the car over the years. This results in a haze over the coverplate, which looks like mold/mildew/grease/moisture; but isn't. Imagine taking a heat gun to some plastic. So the finish fades and its very similar to the haze buildup on plastic headlights over the years. This, by the way, is a clue on how to fix the problem.

Fix/Procedure:

1. Disconnect the 12v battery.

2. Remove the dashboard - somewhat arduous but not too difficult. Involves popping off many little parts. *NOTE: search YouTube for Prius Gen3 dash removal.* A key item to mention is pay attention to the middle top defrost vents and the dash clips that slide into these vents. When re-assembling, if you cannot get the dash to align nicely, don't "he-man" shove it forward. You'll bend or break these little tabs on the dash cover and likely not get the below vent to fasten/seal around the dash.

3. Remove the ICP after dash removal. This involves three front-mounted screws on the assembly. Next gently tug up and roll the assembly out of the dash (roll toward the windshield). Lastly, pop out the electrical connector and using some pliers, pry the wire harness cable tie from the ICP.

4. Start disassembling the ICP itself to get to the pink plastic coverplate:

-remove 7 screws on the black rear-plastic ICP cover (screws all same size).

-be careful because you are now exposing the printed circuit board (PCB) and electronics.

-position the ICP with the back facing you on a work bench and carefully pry off the black cover. Don't bend the plastic tabs much as this is likely old, possibly brittle plastic. However, I was surprised at the plastic quality. Good job to Toyota for this!

-after removing the cover, remove the two attached ribbon cables to the main PCB - done by prying little brown lock clips on the cable fastener.

-now you can gently remove the main PCB, and expose the pink plastic coverplate. It's probably a 5 cent part, and so annoying!

5. Next start to clean the coverplate - didn't work!

-I started with soap and water - that didn't work.

-I progressed to isopropyl alcohol (IPA) - that didn't work.

6. Next, the "light bulb" goes off - this problem is like hazy headlights. luckily, I had some Meguiars headlight haze polishing gel & some pads. since the plastic seemed very soft, I didn't use the two high-grit pads in the Meguiar kit. I figured this might be too much for the little piece. I went to the last step in the headlight cleaning process. I just used the gel and a microfiber cloth. this took about 5 minutes of polishing, and in the process, I could see very faint polishing scratch marks - just from the gel. The gel has a very fine suspension of grit. It was scratching the coverplate, but also clearing the problematic haze – or gooped up plastic. I figured, the very faint scratches wouldn't be visible once assembled back in the car, and this was a good trade off. You could only see these polishing marks when holding the coverplate to the light at the correct angle. Anyway, after about 4-5 applications of gel and polishing, the haze disappeared!

7. re-assemble the ICP with the newly polished coverplate! easy, but don't over-tighten the ICP back cover plate 7 screws. As a side note, the PCB has a metal cover over some capacitors and a mini transformer of sorts, this metal cover was loose and the back plate was touching a metal plate, abutting

the PCB, next to the glass. Perhaps this was overheating the thing, so I took the metal cover off and gently bent the locking tabs a bit so it snapped on better.

8. With the ICP assembly back together, re-install it in the dash and re-build the dash from all the little components! Just keep in mind my caution about the defrost vent locking tabs under the dash. And if you have a second person, this process will go much simpler.

The result looks much better after polishing. I probably got the thing to almost like new. It will probably start to occur again over time, but I hope to get 10-30k on it before it goes bad. I may eventually invest in a newer ICP, but this is also a pain. See why in my additional comments below. Anyway, hope this helps!

Additional comments:

1. when pulling off the dash, pay attention to some locking tabs in the top middle, which are clipped into the defrost vent. these are easily bendable. Additionally, when installing dash, make sure to align these things perfectly so the defrost vent locks into the dash. Don't shove the big dash assembly. If it doesn't align, there is a reason – most likely these little tabs.

2. The left and right window dash 10mm bolts on my car were majorly loose upon disassembly. I guess the heat/cool cycles of the dash may have done this. My dash squeaked before this procedure, and I suspect it was from the loose bolts, so I applied some Loctite to the bolts during re-assembly. This helped get rid of a fair number of squeaks! My dash guts already had tons of felt lining all over the place – from the factory.

3. *** if you are thinking of getting a replacement ICP, remember that the mileage is stored on a little EPROM chip on the assembly PCB. See picture. this is a pain in the ass to re-program but can be done. To sidestep this, you could get a used ICP with whatever mileage the donor car had on it, but this would raise big red flags during a resell condition. My best thought here is to get someone/company to re-program the donor ICP before installing. Or you can do this trick: A. buy ICP with slightly more miles than your car; B. Temp Install new ICP to see its mileage; C. reinstall your old ICP; D. Drive until car is at new ICP mile marker; E, final install the new ICP. this delays gratification and is also a pain the butt. This company is Wisconsin appears to have a re-programming service: Tanin Auto Electronix | Auto Repairs, Sales and DIY Parts https://www.taninautoelectronix.com/

4. if you go the used ICP purchase route, I would avoid all parts in the following revision: "83800-47370". I'm pretty sure that the apparent 2011 "83800-47640" part number would work in a 2010. And that is different enough to likely have the fix in it. I think you could probably get an even newer ICP assembly too. Based on some research, I found parts sellers who apparently pulled out a 2012/13 part number from a 2010/2011 car. And some sellers claim the newer part numbers work on all 4 or 6 years of the G3 Prius. I also think that a low mileage, northern climate donor car might be best, as there is less chance for overheating during its lifetime. Also ensure a free or low-cost return policy on this ICP part, as most sellers will have no idea what to even look for in recognizing this problem. So it's a crap-shoot when ordering one, if you cannot return it for at least a full refund.

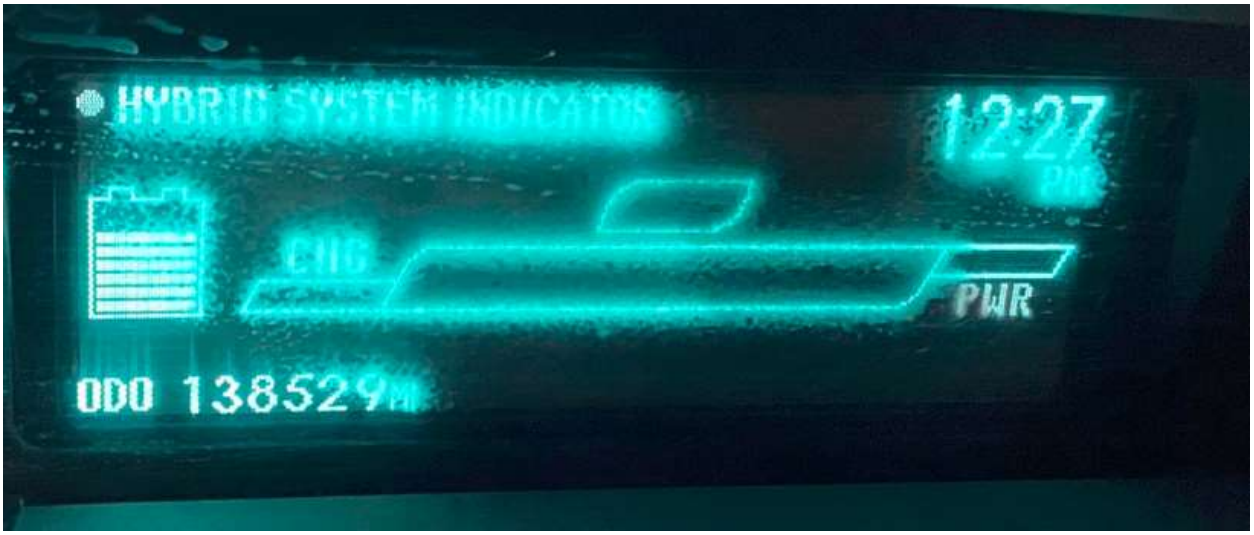
5. If you are thinking of getting just a new coverplate, that is probably a 25cent part, which Toyota could probably sells for $10 bucks. I cannot find the part number for that, but if someone has an official Toyota ICP diagram, I think there will be a part number. I'm not sure Toyota will even sell that though.

6. Before digging into your dash, others have mentioned to check these easy things if your ICP isn't working: A. 12v battery voltage is good B. ICP dimmer is rolled up enough to light up the display. C. For left-side ICP display, it reflects the image, so make sure a little card or paper didn't fall on top of the flat/hidden main projector.

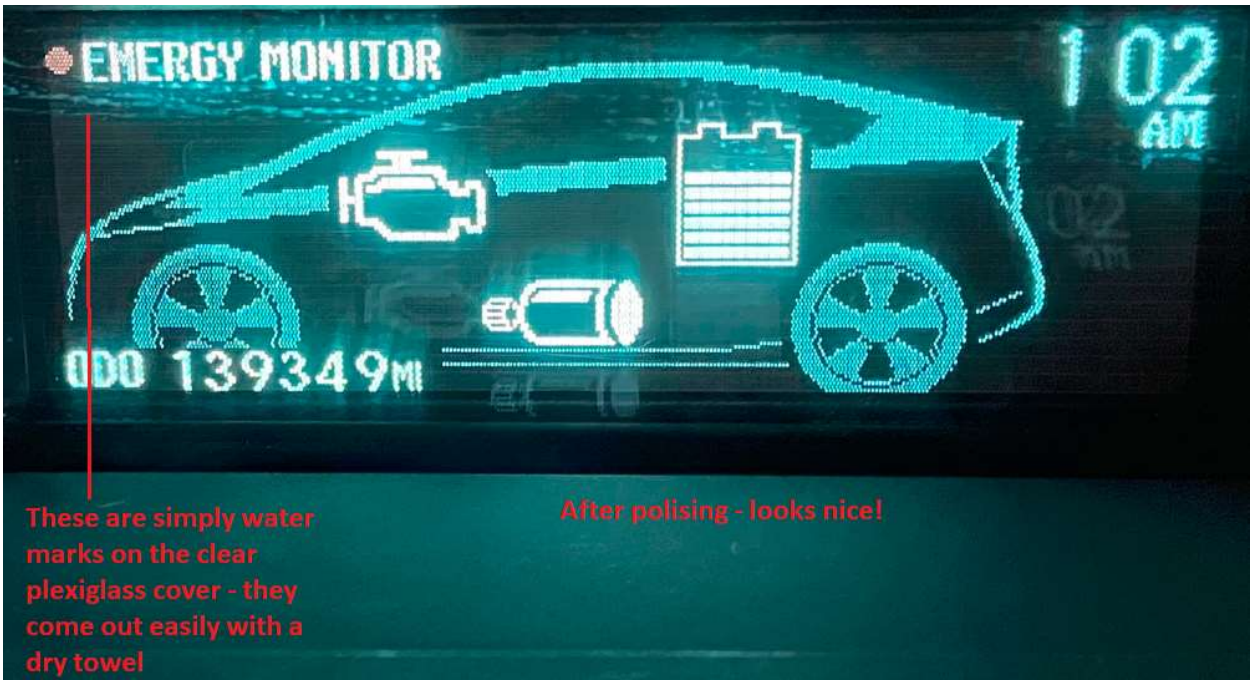
7. After any work involving electronics, I would always scan car to make sure you don't have any invisible CEL codes - basically a code which is lying around in the OBD computer, not apparently important enough to light up CEL. In this case, having techstream and/or CarScanner plus (mobile app) to run a code check after the procedure is probably a good idea. I use CarScanner Plus (CSP) iphone app with veepeak OBD adapter. Works very nicely. I also have Dr Prius app, but CSP is much more of a diagnosis tool.

Pictures:

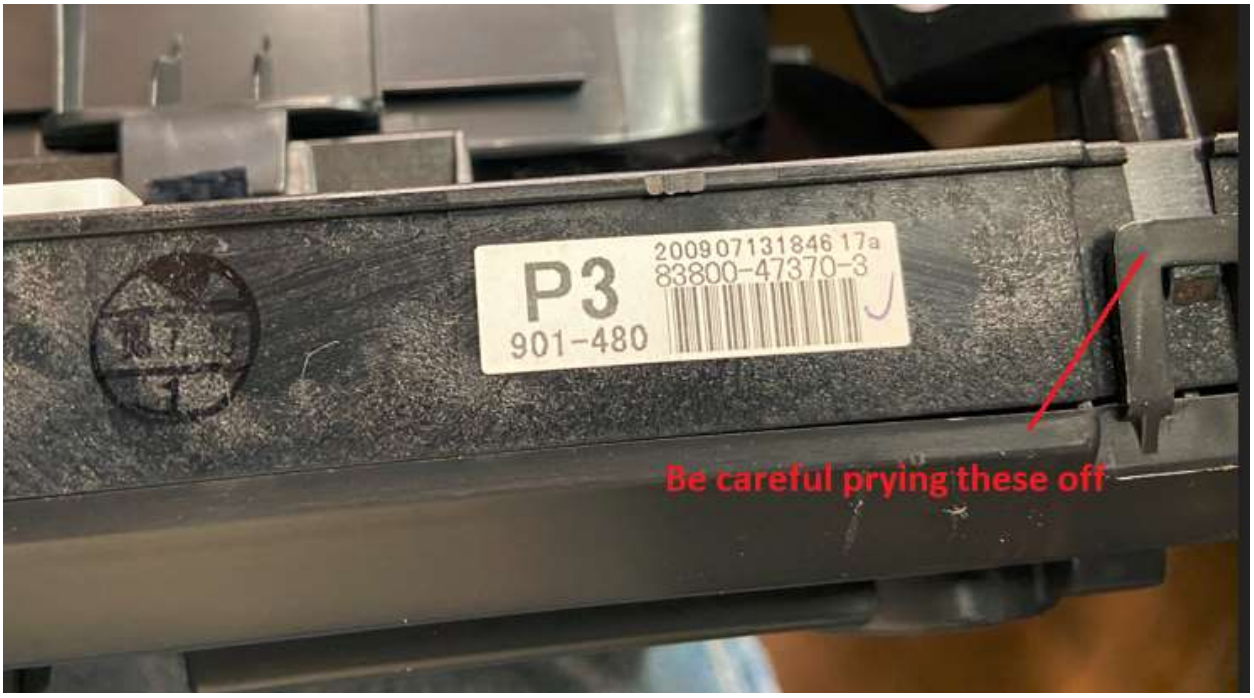
1. My before pictures, showing the haze:

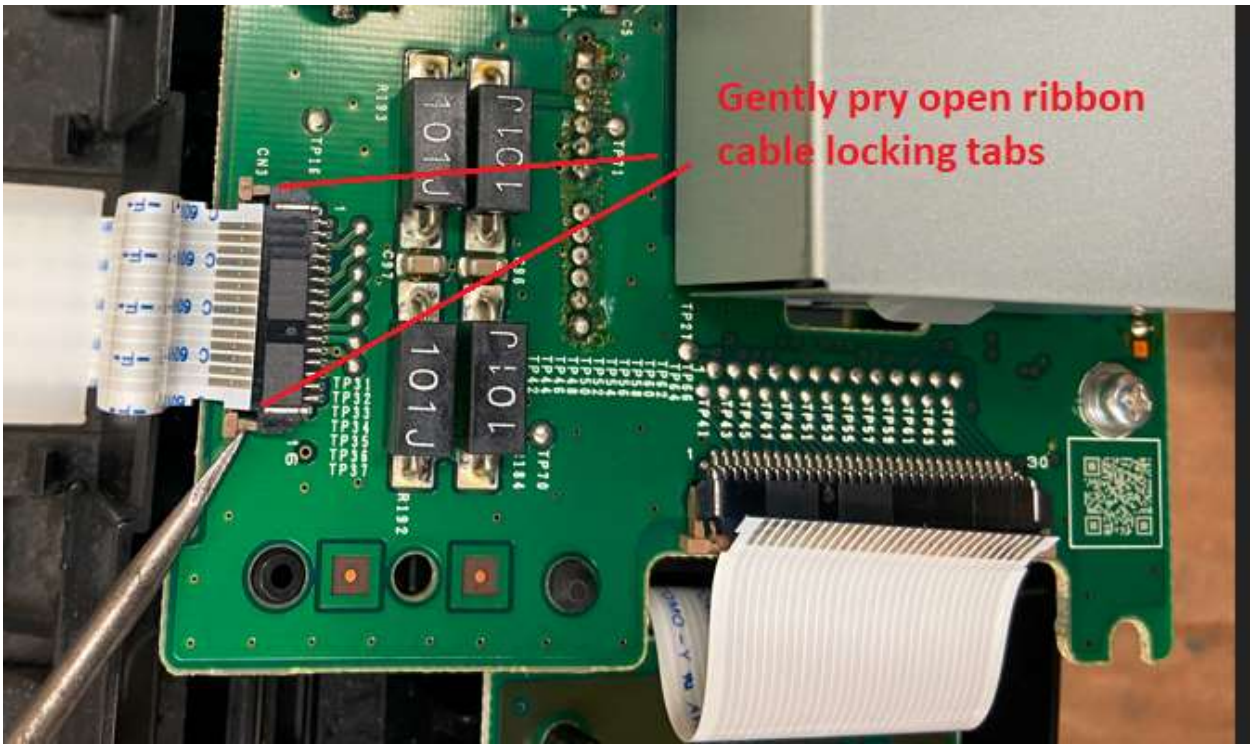


2. My pictures, after polishing:



3. Miscellaneous pictures, with repair tips.





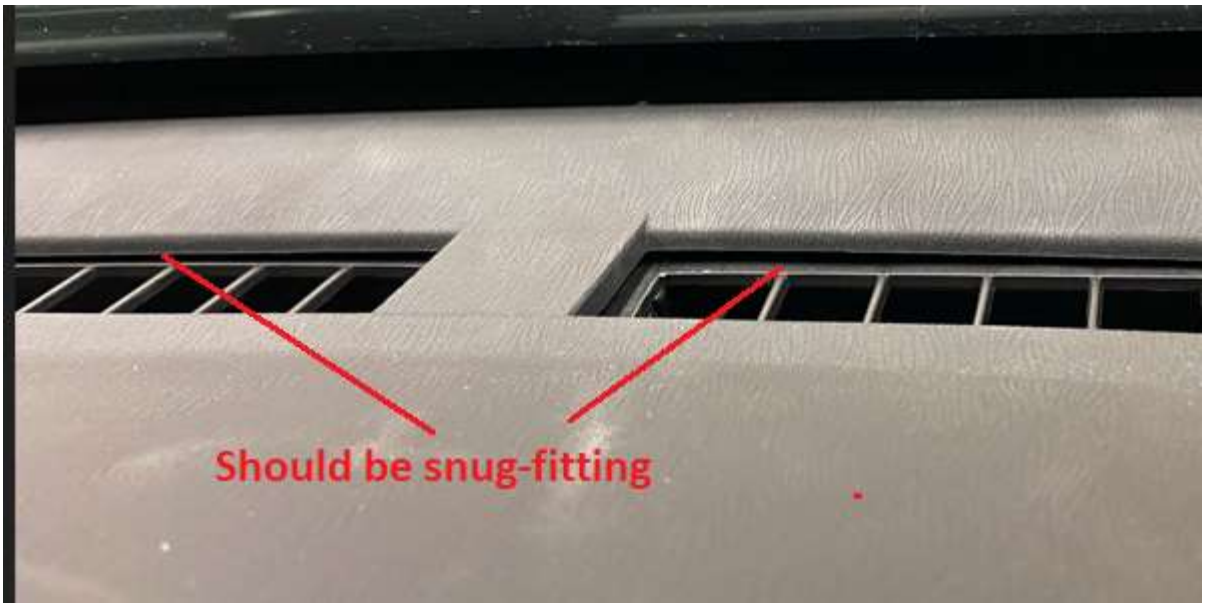

Bend outward slightly to
increase locking ability -
may help with heat
dissipation - see write up


These are your defrost vent
locking tabs. Pay close attention
to this during re-assembly.


Gently tighten all 10/12mm bolts while dash is off - hoepfully squeak protection. Mine were pretty tight, except the left right dash fastner bolts.


Unscrew your shift lever; unclip the square cover plate. And use this opportunity to clean all that gunk from the coverplate.

Apply thread locker on dash 10mm bolts to prevent squeaking going forward. these were very loose upon dissassembly.



4. Meguiars polishing process for headlights and coverplate:
   - **A. Clean with soap and water – headlight & coverplate**
   - B. Polish with Pad1 and gel – headlight only / skip coverplate
   - C. Polish with Pad2 and gel – headlight only / skip coverplate
   - **D. Polish with Microfiber and gel – headlight & coverplate**
   - **E. Clean with soap and water – headlight & coverplate**

5. If you want to turn this into a full-time hobby, can de-solder this chip and program it – to adjust mileage on the new ICP, which you purchase from Internet. You might also consider simply swapping these chips from your old PCB to the new “used” one. Chip number is 93A86, where “A” could be different revisions. I wouldn’t try supplanting your old chip into a new PCB, unless the part numbers are exact.