

CSAW Troubleshooting Guide

- CSAW's Pure Data Prototype patches have GUIs matching the controller layout with faders, knobs and buttons that reacts to controller mappings. For this reason, they can be useful for troubleshooting, so it's advised to open the relevant Prototype patch and check to see if this is responding to the controller before reading on.

PrototypeB Scenarios

The DAW session is not responding to controller functions.

- Open the PrototypeB.pd patch; is this responding to controller functions? If no, refer to the scenario below. If yes, then the issue is with how Pd is communicating with the DAW.
- Click the button on the PrototypeB.pd patch GUI to re-connect to the DAW and wait a minute. Did this work?
- Does the OSC control surface match the settings/port of the patch? Is there an OSC control surface in the DAW settings? Check the port number and IP.
- Has the key mappings file been imported?
- If the settings match and there's no broken Pd connection links, restart the PrototypeB patch and reupload the DAW config or open the template from the USB/project GitHub repo (<https://github.com/odonnellf/CSAW/>).

The PrototypeB.pd GUI is not responding to controller functions.

IMPORTANT: On first startup, messages will stop coming in to Pure Data from ESP after about a minute. This occurs due to the high number of messages being sent from ESP as pot voltages change rapidly – assumed to occur due to built-up potential energy from the last time the controller was plugged out. Wait for the PrototypeB patch to start reacting to actions again and continuously move/calibrate pots, even when it comes back up. Be patient as this can sometimes take about 2-3 minutes. 99.9% of the time, after this fixes itself, everything will run smoothly without issue.

- Double-click the 'main' patch in the top-right corner of PrototypeB.pd to open. Did this kickstart numerical values to start coming in to the various number boxes and is the patch responding?
- If not, then the OSC messages from ESP are not being received by Pure Data. This can be for a number of reasons:
 - Is the PC that is running the DAW/Pd connected to the appropriate network? Does it have the correct IP per the Quick Start Guide?
 - Are the ESP pins connected properly to Arduino? By default, RX and TX from the ESP-01 adapter are connected to pins 15 and 14. VCC and GND are connected to the smaller breadboard's VCC and GND rails.

- Upload the PrototypeA.ino file to Arduino and open the PrototypeA.pd patch on the appropriate COM port via USB. If the PrototypeA.pd GUI responds to controller functions after selecting the COM port, then there is nothing wrong with Arduino/sensor connections and the issue is with either ESP or Pure Data.
- Has the Arduino or ESP code been altered in any way? Re-upload the correct Prototype patch and ESP code from the USB or project GitHub repository. Section 4.2.1 outlines ESP code upload.

PrototypeA Scenarios

The PrototypeA.pd GUI is not responding to controller functions.

- Has the PrototypeA.ino Arduino sketch been uploaded to Arduino via USB? Similarly, ensure that Arduino is being powered over USB instead of DC/battery as PrototypeA's serial communication works over USB.
- Has the relevant USB COM port been selected in the PrototypeA patch? Check that Arduino is running and that all its pin-breadboard connections aren't loose.

Other

A specific pot/fader is not working in the DAW/Prototype patch.

- Open the Prototype patch and move the sensor. Is it responding in the patch? If yes, then there is a problem with how the message is being sent to the DAW or the mapping in the DAW is incorrect. All messages for CSAW were mapped appropriately so (assuming these have been edited), re-download the Prototype patch and re-upload the DAW config or open the template on the USB/repo.
- Are the jumper wires connected to the pot loose/separating from the pin connection? Some connections can come loose easier than others, especially when moving to a new surface, so ensure these are fit snugly.
- If the issue persists then there are a few potential reasons:
 1. Loose or damaged jumper wires – some wires are daisy-chained from sensors. While they were solidly stuck together it's possible that they may have become damaged or have come loose so double-check this.
 2. Similarly, there could be a loose breadboard connection. Follow the wires to the breadboard, ensuring that the two outside rotary pot pins are connected comfortably to VCC and GND rails on the breadboard (doesn't matter which as long as both are covered) and the middle pin connects to a pin next to one of the multiplexers (one of the 8 black circuit-boards that line the breadboards). For slide pots, DTB is the multiplexer connection and VCC/GND are labelled appropriately.
 3. The multiplexer pin connection could be faulty. Unfortunately, there's nothing to do here outside of ensuring the multiplexer pins fit fully into the breadboard.

Nothing is working at all!

- Is the Arduino component plugged in/are there LEDs indicating that the device is on? Similarly, if using wireless communication, is the red LED on the WiFi chip on? If not, check appropriate power/pin connections.
- Assuming it's powered on, it's unlikely that at least a few controls wouldn't be working correctly. If this is the case, check that the 5V and GND pins on Arduino are connected to the breadboard via the small red and blue jumper wires. Then check that all the analog and digital pin connections are correct and fit comfortably.

Note: The main document has a table of all pin connections in the Appendix C.11.