Servotor32 Factory Test Procedure

October 25, 2012

Required Equipment

- Equipment Under Test (EUT): Servotor32
- USB A Cable
- Servotor32 Testing Rig rev1
- Known-good sample of Servotor32

Required Software

- No PC or Software is required

Inspection

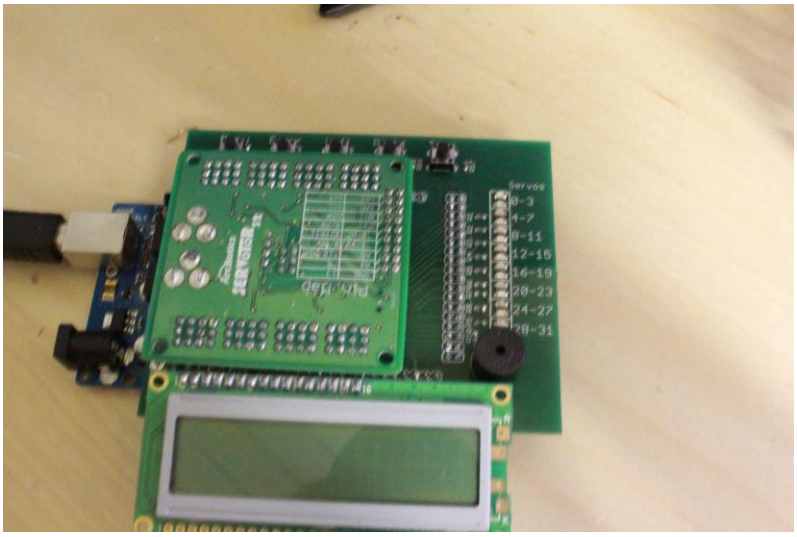
Visual

1. Check EUT for missing components
2. Check in particular U1 and RN1-8 for sufficient solder and bridging between pins

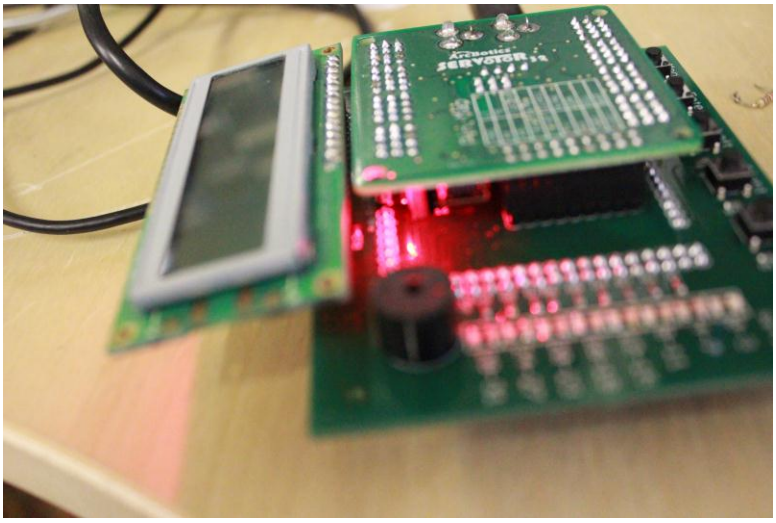
Automated Test Procedure

Plug in the USB A connector into the Test Rig and any usb port.

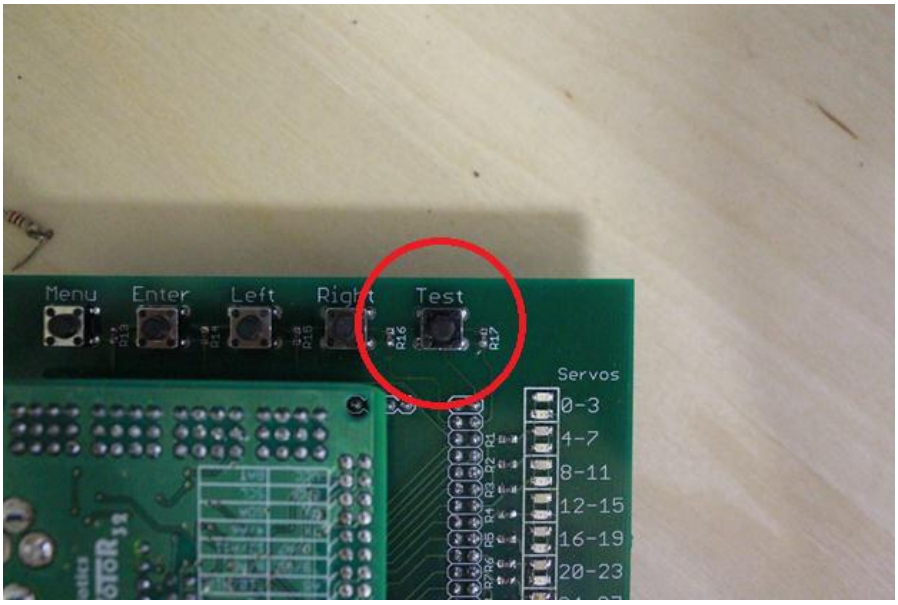
Plug in the Servotor32 upside down into the Testing Rig as shown:



When plugged in to an active board, the EUT should have the green power LED on and pulse the red LED for 4-8 seconds, then shine bright red for 0.5 seconds, then off. The green LED will remain on.

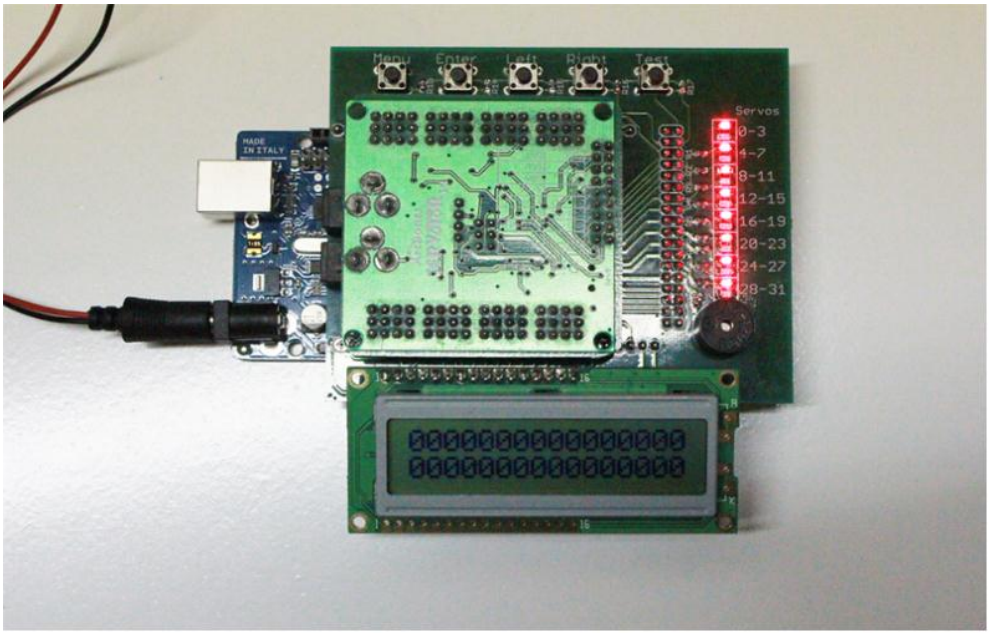


Press the test button on the Testing Rig as shown:

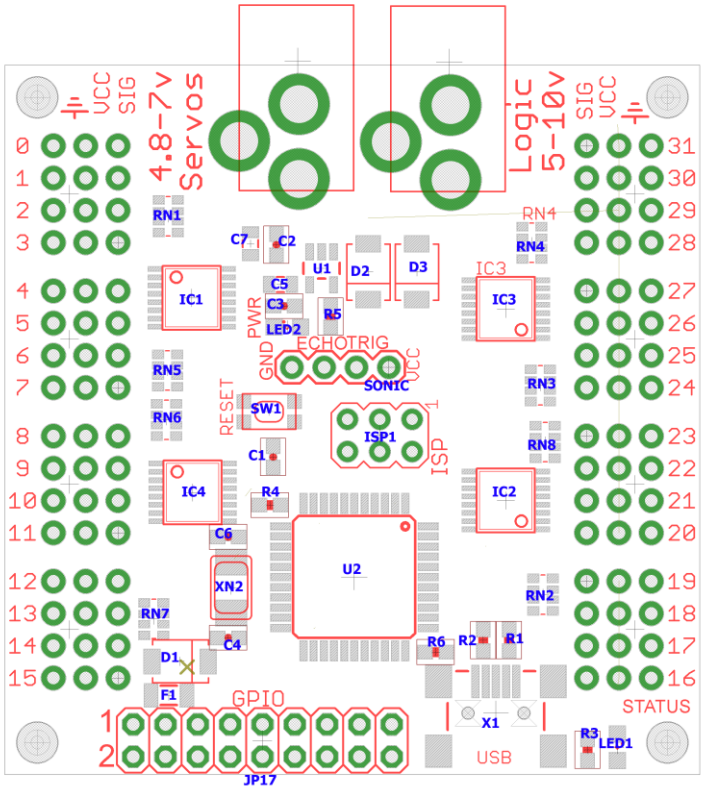


After 8 seconds of waiting to make sure that the board has booted properly, the Testing Rig will test all the pins for connectivity and bridging.

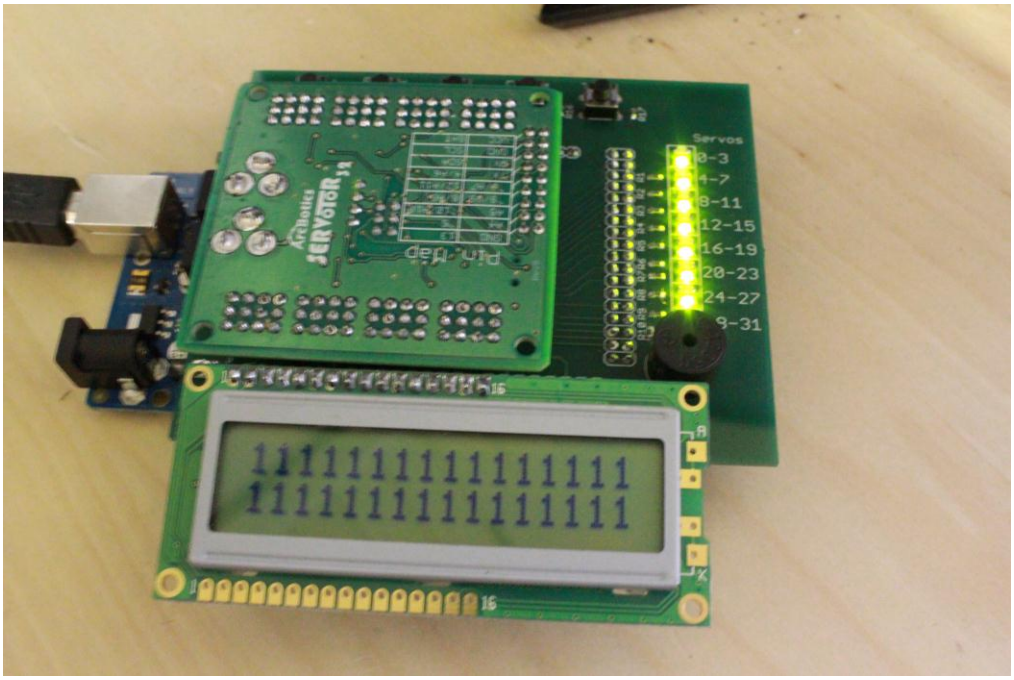
If there are any bad pins, those pin groups will show red, and the display will show which pins are bad:



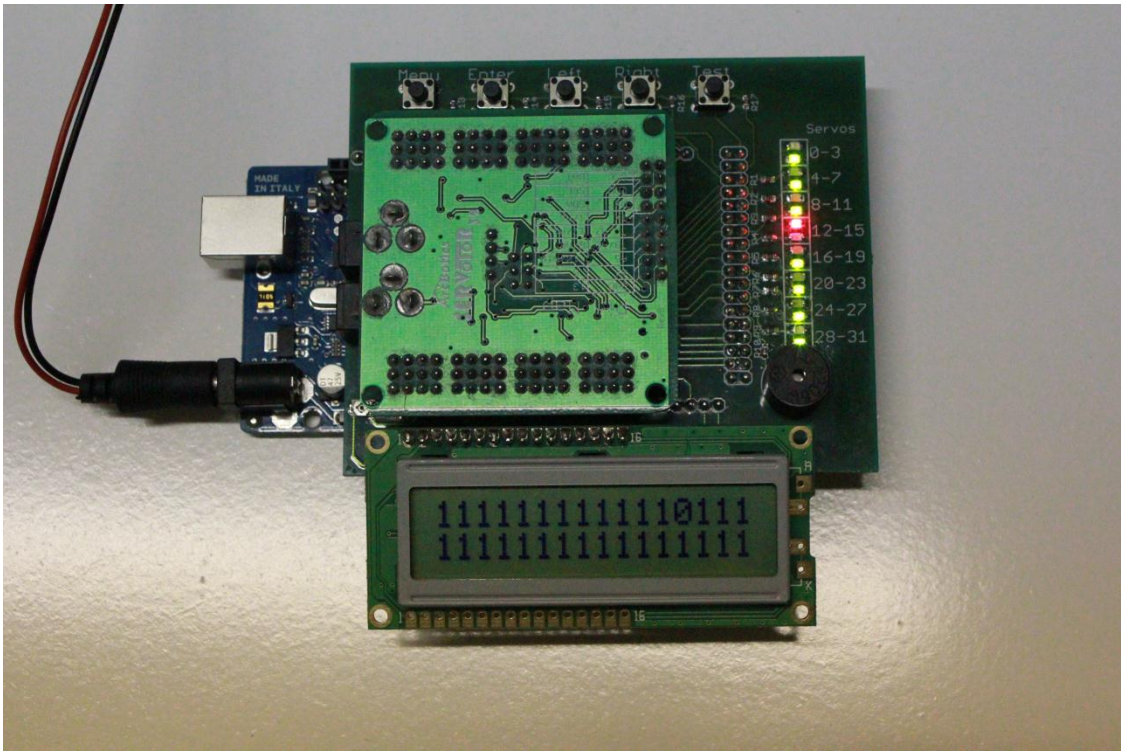
If all pin are bad, the board has not communicated properly. It is most likely not on. Check that the Atmega32u4 is properly connected, the crystal is seated properly, and that C4, C6 and R4, R6 are in place. Make sure the firmware and fuse settings are properly loaded.



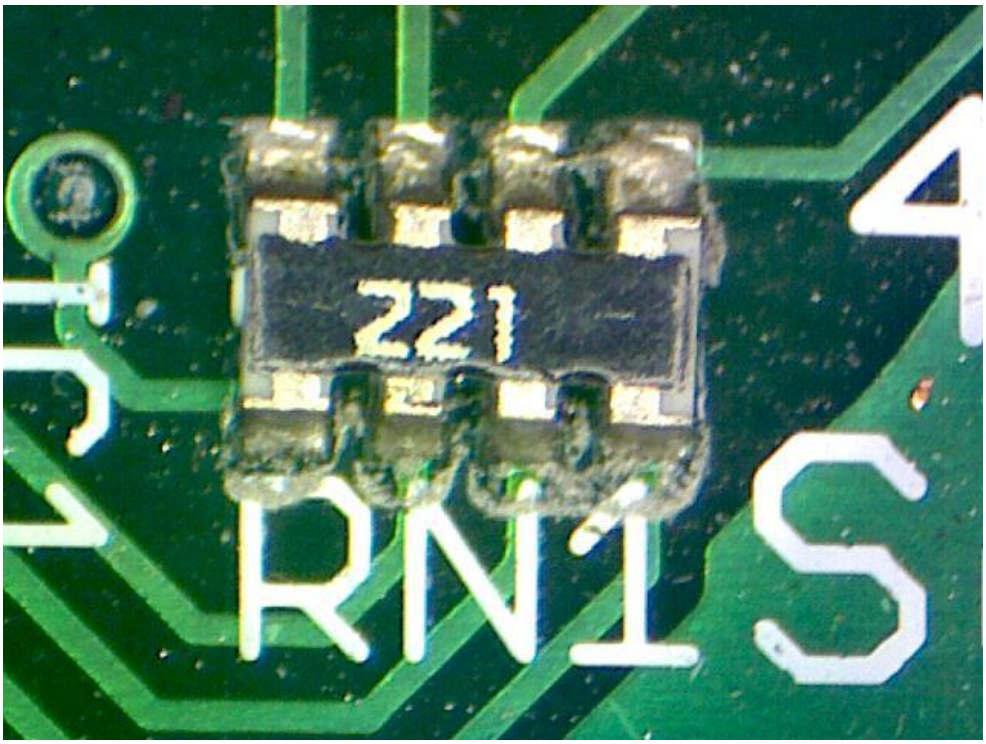
If all pins are good, all light will show green. The board will beep short twice. This indicates the board is good:



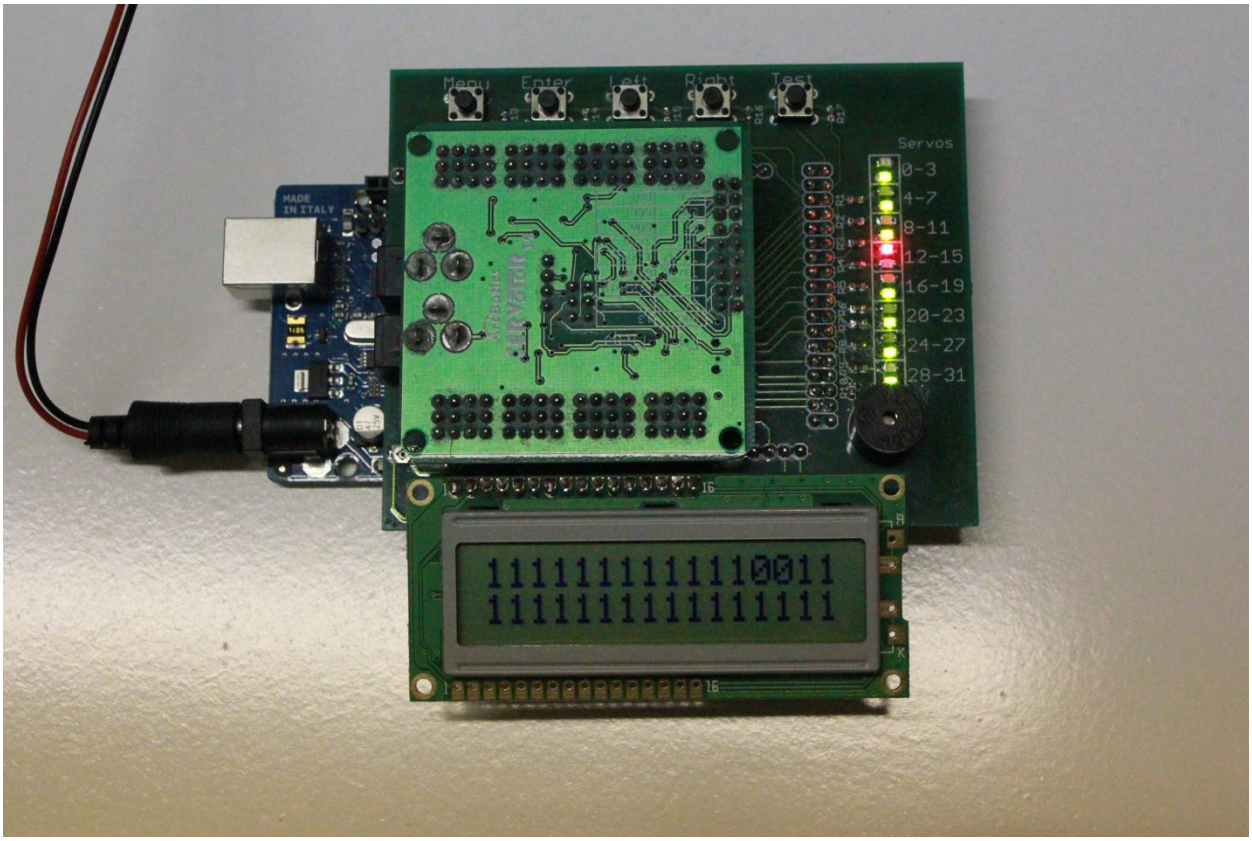
If only one pin on a chip resistor network is bad, as show here:



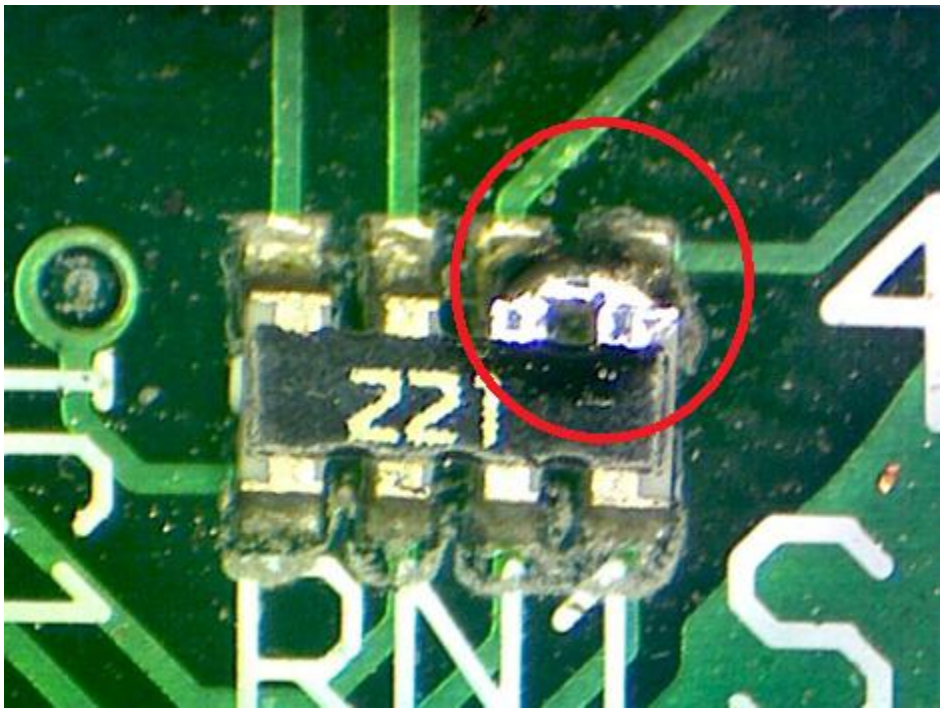
It is most likely due to insufficient solder. Re-apply solder to the appropriate pins on the chip resistor, like this:


221
RN1
S

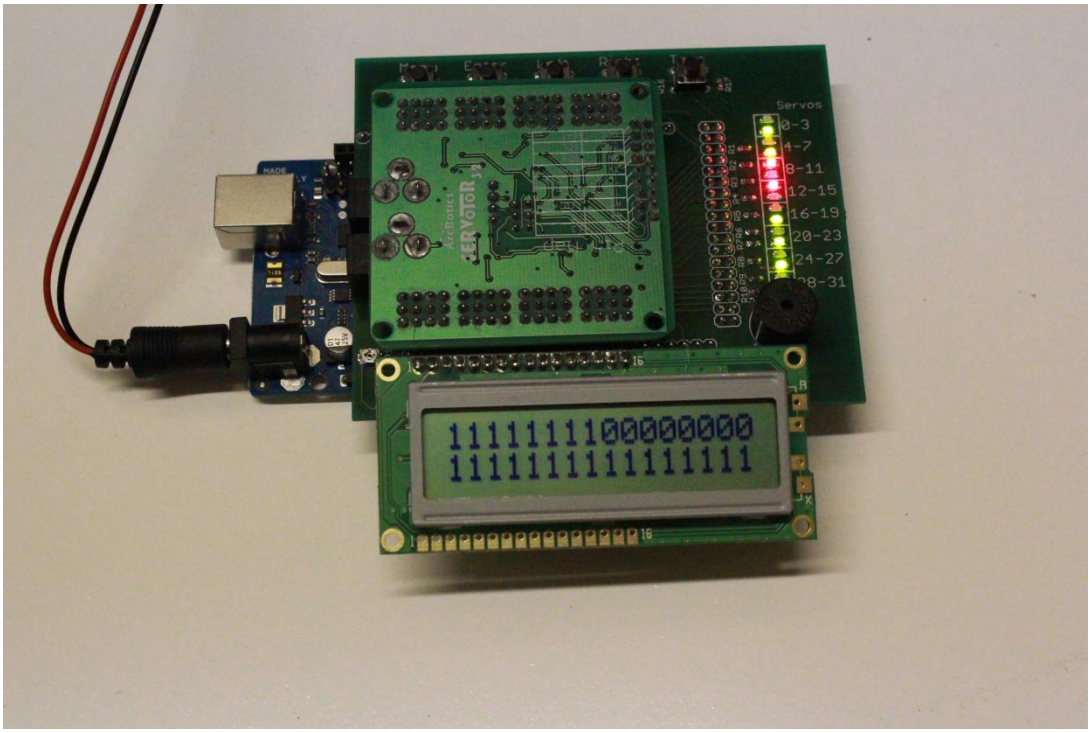
If two or more pins in a row on a chip resistor are bad, as show here:



It is likely due to bridging between those pins. Clear off the excess solder between the pins:



If 8 pins in a row are bad, as shown here:



It is most likely due to a bad connection on the shift register, either from insufficient solder or bridging between some of the pins. Re-apply the nearest shift register to those pins.