

CASIO PG310/PG380 CAPACITOR REPLACEMENT

Can I begin by pointing out that the following actions cured the capacitor problem that my PG380 was suffering from. **I take no responsibility if you attempt this and you make things worse or drop a bollock somewhere along the line. All statements herein refer to the circuit board as fitted to my guitar.** I'm a guitarist not an electronics technician.

I know nothing about different revision levels of circuit boards that Casio produced. I do know that the circuit board on my Casio differed to the schematic circuit supplied with the Casio service manual.

The cause of the problem is apparently due to the chemical breakdown of the electrolytic capacitors that Casio used in the manufacture of the circuit boards. There are the same type of electrolytic capacitors on other circuit boards in the guitar. I have not replaced these and I do not intend to do so whilst the guitar is working correctly.

The first requirement is to locate and remove the circuit board. It is named M380-MA3M and is located under the panel shown below.

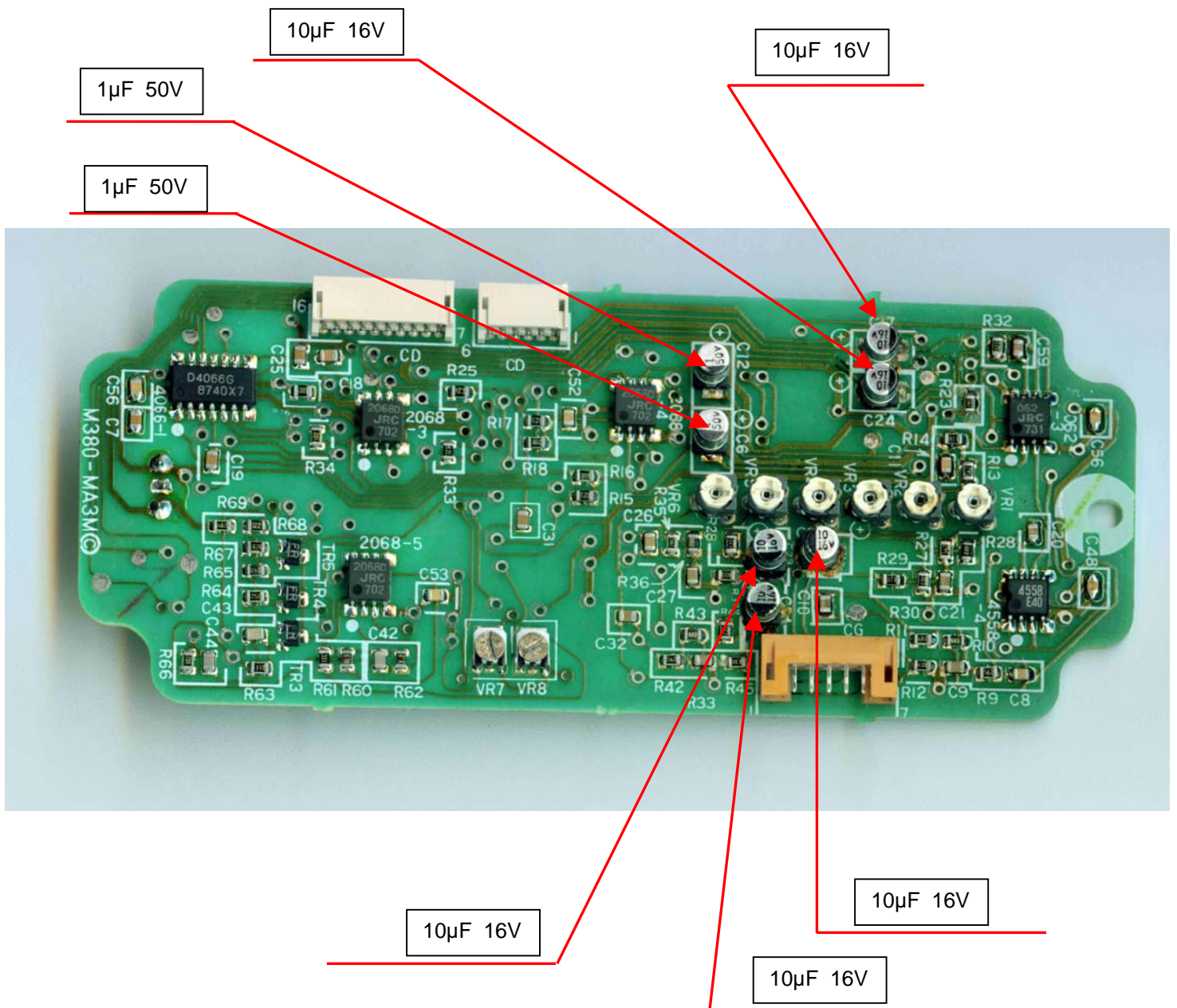


There are actually two circuit boards under this panel. The one required is the topmost one. The panel is quite easily removed. Please be careful. Notice how the panel is fitted. Note where the various cable connectors

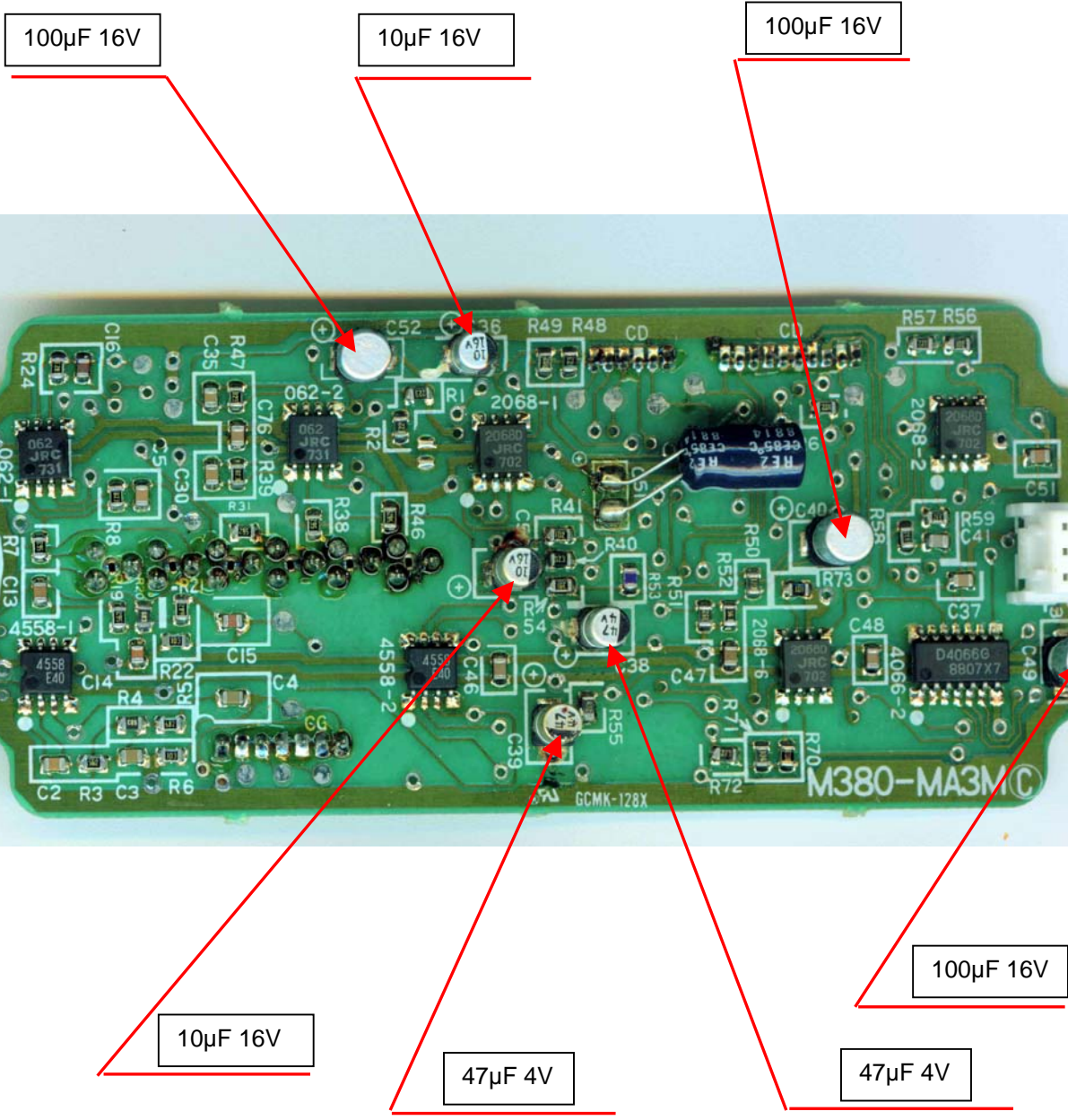
join the board. As a precaution earth yourself to remove bodily static electricity before you touch the board.

There are seven of the relevant capacitors on the top surface of the board and another seven on the bottom surface.

TOP SURFACE



BOTTOM SURFACE



I do not know if a different type of capacitor other than electrolytic will do as a replacement. I used modern miniature low profile electrolytic capacitors that I purchased from Maplin in the UK. The replacement capacitors need to be small so that the circuit board cover can fit back in place. The capacitors fitted by Casio have little pads on the bottom of them that were soldered, presumably by machine, onto the pads on the circuit board. The capacitors I used as replacements had wire 'legs' on them. I couldn't get capacitors with exactly the same voltage requirement as the Casio ones so I assumed that the nearest voltage above would be acceptable.

When I came to remove the existing capacitors I found that the majority of them were so badly corroded that they fell off when I applied a little pressure. Those that didn't were removed by applying a little heat to the pads with a soldering iron whilst applying a little pressure to the capacitor. Again be careful. Try not to apply too much heat to avoid damaging the other components. Don't forget that heat hurts.

When all of the capacitors were removed I cleaned up the pads on the circuit board using a little fine wire wool.

Fitting the replacement capacitors requires a steady hand and a good eye. I don't propose to give a lesson on soldering as I'm sure that there are plenty of more authoritative instructions available on the internet.

An important concern is the polarity of the capacitors. The black segment on the existing capacitors is the negative pole. If you look closely at the photographs you will see the + sign printed on the circuit board next to the positive pole of the capacitors. The new capacitors will probably have a black stripe down the side that indicates the polarity of the leg being pointed to. Just make sure that the positive leg of the capacitor is soldered to the pad nearest the + sign on the circuit board.

Don't attempt to drill holes in the circuit board to accommodate the capacitor legs. They have to be soldered to the existing pads.

Good Luck.