

IR Remote control failures

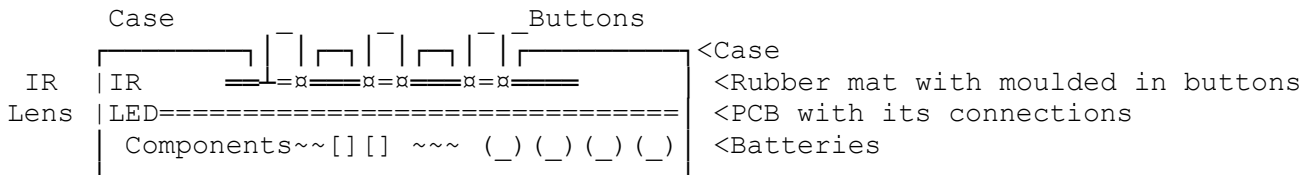
By G8MNY

(Update Sep 12)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

Although universal replacements are available most do not offer the full set of functions. So you may loose essential buttons like setup, or they may be quite complex to get that mode out of the universal remote control. Because of this it is worth while having a good go at a proper repair.

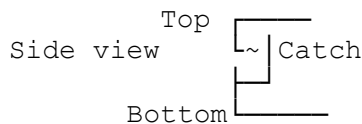
TYPICAL REMOTE



Each button has a conductive tip (=) that bridges 2 PCB tracks.

OPENING

One of the main problems is opening a control, some have screws (e.g. in battery compartment) as well as many hidden catches all the way around that require top (or bottom) of the case to be bigger, so that the case catches can be released without breaking them.



It is not easy to release all the catches on all sides without marking the case while levering it, or breaking the odd catch by not levering it in the right place.

Steve, G1KQH says.. "Sometimes heating the side of the case of the remote with a hairdryer, makes the plastic more flexible and you can ease, or bend, the catches off without breaking. DO NOT OVERHEAT!! "

REMOVING LIQUIDS

These rubber pad devices often fail due to liquid getting trapped under the rubber mat. Coffee, Tea, Sweet, will NEVER dry out on its own between the mat & the PCB. So open it up & carefully remove the PCB (may have screws) & then the rubber mat (over location points spigots). If is has sold plastic buttons as well leave them in place! Wash the mat & PCB in hot water, then & thoroughly dry. This should leave the contacts clean & fully functioning. If there were separate plastic buttons over the mat, clean them making sure you do not rearrange them if they have engraved tops. Put back the rubber noting any alignment points/spigots. Put back the PCB (& any screws).

TESTING IR CONTROLS

Before you click back the case if you can test it. This used to be difficult if there was not a telltale LED on the remote, but nowadays most TV cameras can see IR to some extent, so it can be easier to hook up a camera to see the action of all the buttons rather than test with RC main item.

IR QRM

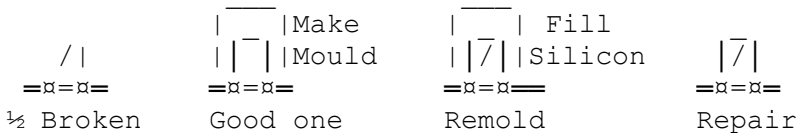
Some locations can stop IR Rx clearly seeing the IR control data. This can be sunlight on the sensor, or light from some low energy lamps, that may be operating on simular frequency to the IR pulses, & the low IR emmission just enough to jam the IR Rx.

BATTERY CONNECTIONS

These are often wire or thin plate. If a quality unit they may be made of stainless steel. Often the failure is in the connections, either not enough pressure or corroded contacts. Too much pressure or dropping can weaken the spring metal, if to the point of fatigue use added tin can/sponge to extend contact life. If corroded but still intact then wash parts with hot water & dry. Grease up the parts (inc battery) to stop all further corrosion. If the parts are too far gone replace with paper clips/cut tin can etc.

BROKEN BUTTONS

These can be repaired by taking a plastiseen/wax mould of good one, then cooling it to harden (fridge) & using silicon rubber sealant in the empty mould, & pressing it into a broken button.



When set (24 hours) warming up the mould, so it can be removed. Trim away any spill with a sharp modelling knife. The Silicon may take a few days to properly harden to the same strength as the rubber buttons. Paint the button to match (if you can!)

CONTACTS

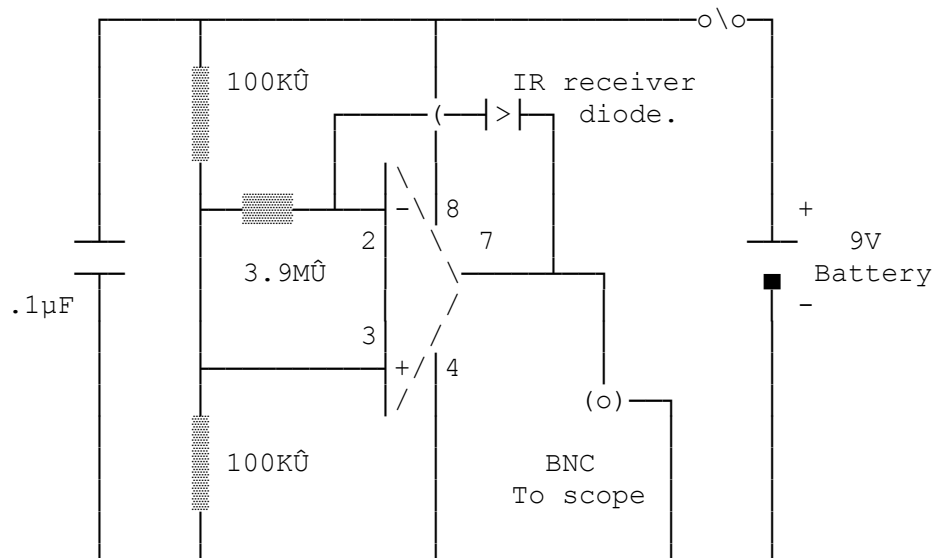
If the button contact is worn away either on the rubber or PCB sometimes a repair is possible with special silver conductive paint or even just a "B" pencil rubbed over the conductive pad & PCB contacts.

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 From Osvaldo lwdse

I did this simple tester to check until the IR led itself, and it is very usefull. Although it has passed a lot of time since I don't repair no more those apparatus because it's low cost and new ones are easily available, I send in the expectance some people can use it.

It only uses a JFET/MOSFET operational amplifier as a current to voltage converter, because the Phototransistor is used without normal bias. This saves power wasted in the CE junction. In this case, a very high input impedance in the OPA is mandatory.

This is the circuit:



TL081

Also a led can be added with a dropping resistor at the output of the amplifier, and also a comparator can be used, like a TS393 or TLC372, but it needs pull up resistors at its output.

Using a 9V battery, it can be done portable, & a scope can reveal the code.

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP