

Replacing Rover 75/MG ZT Climate Control Unit Orange Lighting With Cool Blue!

Spunagain



1. Introduction

Following a post from Rincewind (the puddle of all knowledge on ZT260 related topics) on the <http://forums.xpowerforums.com>, which suggested that the new ZTs should have had blue backlit Climate control etc, I have developed my own version. The factory cars never got the conversion as the suppliers were unwilling to change them.

I bought a 2001 climate control unit from Ebay to experiment with and have pulled it apart and found a suitable route to getting that cool Chernobyl glow.

The bad news is that there are 26 surface mount LED to change (a very expensive way to do the back lighting IMHO) and you have to unsolder the LCD display to get at its back-light LEDs.

30 blue surface mount LEDs will cost you about £20 from RS or Farnell.

The light diffuser behind the LCD has to be changed from the orange one to a neutral one.

Below is a guide to how to carry out the conversion

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2.Important Notes.

If you balls this up it is your own fault not mine (that the legal bit)—I recommend you do what I did and get a spare one from a scrappy or Ebay to play with. (I have used roverbrowsers.com in the past).

CCU = Climate Control Unit.

I used a 464nm Blue LEDs in my conversion which is a pretty good match to the dials but may look a bit purple for when compared with my OLED illuminated Pioneer stereo - there are equivalents with 475nm wavelengths which may be better if you have an OLED powered stereo display.

I do not guarantee this in any way – it worked for me but you do this at your own risk.

It is best to get an experienced technician to do this or at the very least someone who is handy with a soldering iron!

If you can earth yourself with an earth strap do so. If not, having bare feet is and discharging yourself on something earthed like a metal table lamp is a good idea (I am not joking; I have lost count of the number of electrical gadgets I have destroyed with electrostatic electricity.)

For those of you with ZT260's or R75V8's. I am pretty sure that the CCU is programmed differently to the standard R75 or ZT (we all know the air con is different). If you are using a unit from a scrap yard it will probably be a standard R75 so do what I did just and swap the modified display board with the one in your V8 Climate control unit.

Scalpels are sodding sharp.

3.You will need

- Small Phillips Screwdriver
- Scalpel
- Tweezers or Watchmakers Pliers
- Spanner to disconnect the battery
- Soldering iron with a 1mm tip
- Solder
- Solder wick or Solder braid
- Solder sucker (this is a tool and not an infestation)
- 26 of Blue PLCC surface mount LED's. For a cheap but slightly wrong shade of blue use Farnell Part number 853-0300 (or any blue surface mount LED with: 110mcd intensity, 3.5V forward voltage, wavelength of 464nm or more (<http://uk.farnell.com/>) or Tel: 08701 200200 for orders. A better match but more expensive at £1.03 each is RS part number 454-4469 (<http://rswww.com/>)
- 4 off ¼ Watt 220 ohm resistors From RS, Maplin, Farnell etc.
- Colourless plastic takeaway container (the microwave-able kind)
- A wooden clothes peg to prise trim off

4.Removing the Unit

- 1) Disconnect the battery
- 2) The CCU is in the centre of the dashboard with the temperature display etc.
- 3) Remove the trim below the CCU using a non-scratching tool (I used half a wooded clothes peg) prising it out from the side worked for me.



- 4) Prise off the front cover of the CCU using a wooden tool, it is clipped in 5 places 2 on the bottom half and 3 on the top. It does need a little force to get it off!



- 5) Unscrew the 4 Phillips screws (2 at each side of the unit)



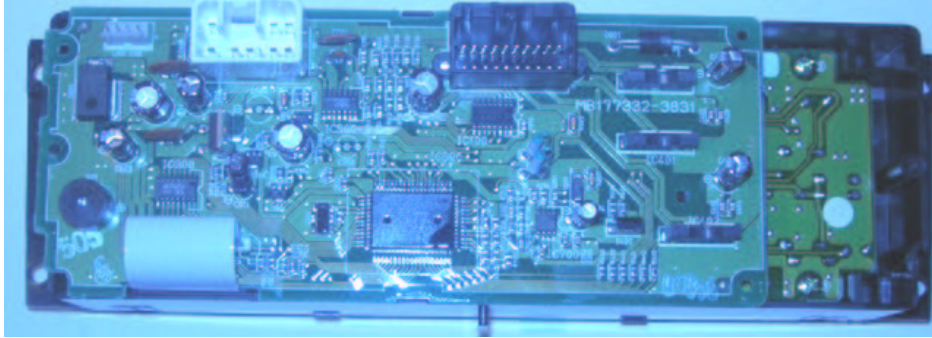
- 6) Withdraw the CCU from the Dashboard.
- 7) Unplug the 2 multi-way connectors from the CCU. Note multi-way connectors may need prising with a flat bladed screwdriver

5.Modification

- 1) Place the unit face down on a soft surface to protect the buttons from scratches
- 2) Remove the 3 Phillips screws from the back and retain



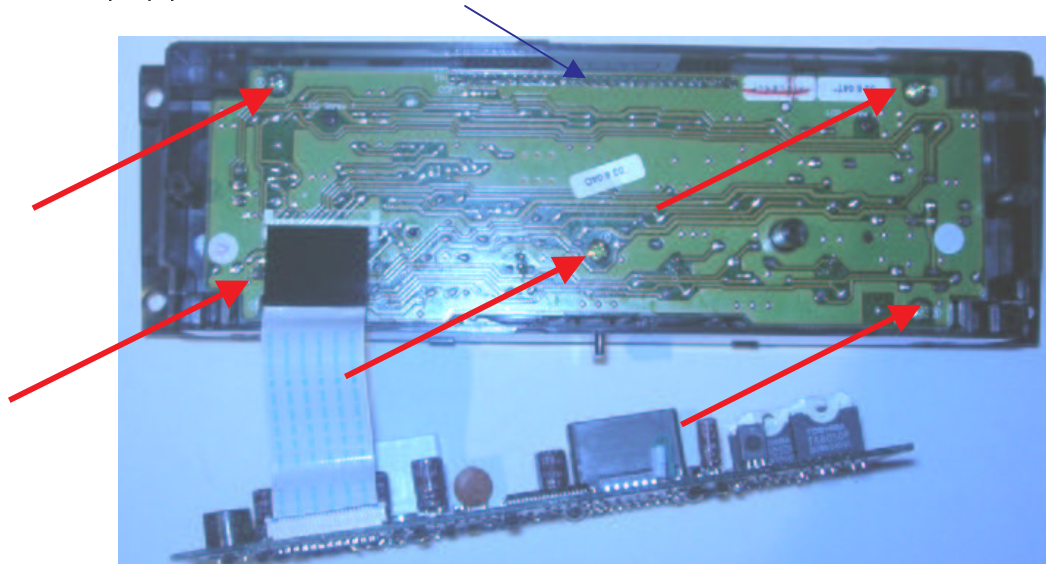
- 3) Remove rear Panel – you will see the control board for the unit



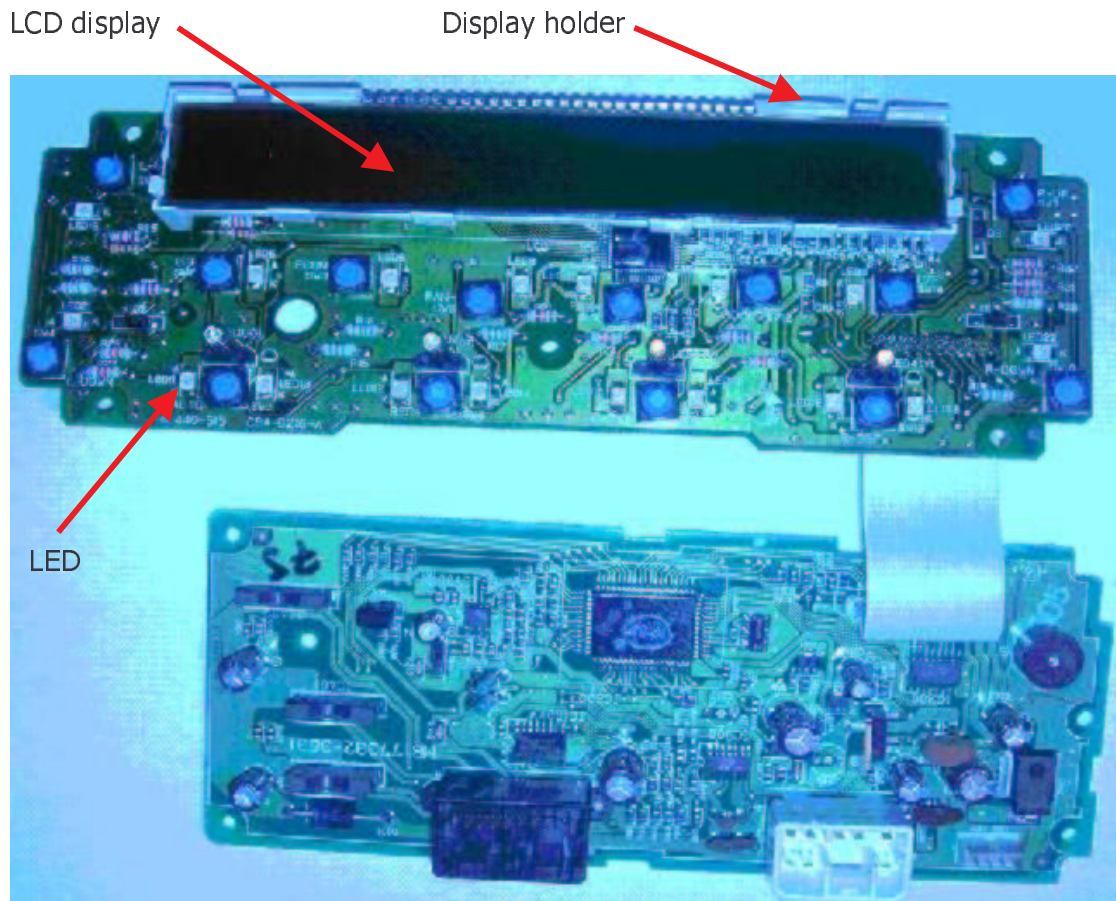
- 4) Lift the board gently out. You will see the Display board underneath. You can disconnect the display board ribbon cable by lifting the catches on each end of the white connector on the display board.

- 5) Remove 5 Philips screws from the Display board. (Red arrows)

LCD display pins to be de-soldered

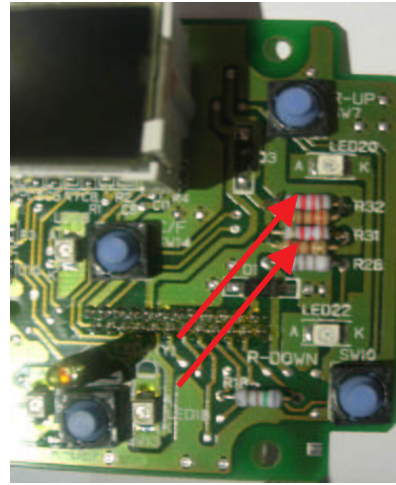
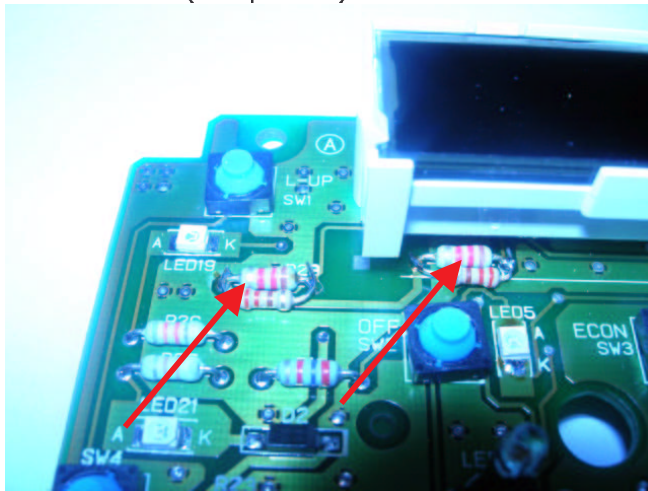


- 6) Lift the board gently out.
- 7) Use the soldering iron to remove the solder from the pins (about 20) connecting the LCD display. Keep the heat on until all the solder is clear of the hole or the display will not come out. Note IMHO removing the LCD from the display board is the hardest part of the entire process. (If you have Access to a proper PCB assembly and test workshop they have long soldering irons for heating all the pins at once for easy removal)



- 8) Unscrew 2 black screws holding the LCD assembly onto the display board
- 9) Gently ease the LCD assembly off the display board. Some of the pins may need additional heat from the soldering iron to free them.
 - a. The LCD is a very delicate unit please be careful not to break off the pins or break the glass.
- 10) Unclip the LCD unit from the white plastic holder and put somewhere safe.
- 11) Now remove all the LEDs except the four at the far ends – MARKED LED19, 20, 21, 22. The LEDs are the little 3.2mm x 2.8mm white oblongs.
 - a. To remove each LED remove the solder from one end of the LED by holding some solder braid to the base of one end with the soldering iron until the solder flows or it smokes! Then heat the other end of the LED and prise that the LED up with the tip of the iron. Then grip the LED with a pair of tweezers, heat the other end and lift the LED away.
 - b. Once you have removed all the LED's tin each Circuit board pad with a little fresh solder
- 12) Now fit the New LEDs. The notch on the case marks the cathode, which is marked "k" on the circuit board. THIS IS VERY IMPORTANT. Ensure there is a good solder joint for each connection. Hold the LED in place with Tweezers while you solder it.

- 13) Now take your 4 220ohm resistors and clip them so the leads are about 5mm long.
- 14) Solder them across the 4 marked 220 ohm resistors so they are connected in series (see picture)



- 15) Now remove the orange diffuser from the LCH holder. Use it as a template to cut out a piece of colourless translucent but not clear material. I used two pieces of plastic cut from a Chinese takeaway container (Blue Peter moment) one on its own does not diffuse enough, then put the new diffuser in the place of the orange diffuser. You could use a little glue to hold it in the white plastic if you like but I did not bother.
- 16) Fit the LCD unit back into the White Holder
- 17) Fit the LCD assembly to the display board and replace the 2 black fixing screws.
- 18) Solder all the LCD display pins back to the display board.
- 19) Reassemble the unit and refit! Remember to reconnect the ribbon cable and check the ribbon cable is fitted properly and that the connector clips are in place. (If this is a V8 remember to reassemble the unit with the V8 control board)

6. Refitting the Unit

- 1) Plug in the 2 multi-way connectors into the rear of the CCU.
- 2) Replace the CCU into the CCU shaped hole in the Dashboard
- 3) Unscrew the 4 Phillips screws (2 at each side of the unit)
- 4) Replace the front cover of the CCU and gently push it home.
- 5) Replace the trim below – it just clips into place
- 6) Reconnect the battery
- 7) You're done! Turn on the ignition and check the display is illuminated evenly and that with the lights on all of the buttons are backlit blue.
- 8) Bathe in the cool blue glow of your climate control display and button back lighting!

7. Fault-finding

No Illumination

Turn the climate control on after it has been disconnected the default is off – gave me a fright!

Check the multi way connectors are plugged in properly

Check the ribbon cable is fitted properly and that the connector clips are in place.

Some switches are not working (probably in groups of 3)

Bad solder joint on one of the “dead” LEDs – check – re-solder solder joints.

Dead LED – replace!

Uneven LCD display

Your diffuser is not diffuse enough – try another type of plastic!

Very dim LCD display

Your diffuser is too diffuse – try another type of plastic!

LCD segments not working

Check solder on the LCD display pins

Check the pins are firmly clipped to the LCD glass

8.Help

You can PM me via my Handle – “Spunagain” on either the excellent sites below.

<http://forums.xpowerforums.com>

www.Pistonheads.com

I will do conversions but I am not keen!

You can help me help you by sending me any tips or tricks I have missed.

If you have a spare instrument pod for me to do the same conversion for the odometer please get in touch! If I can convert it I will do it for free for the first one I get but with no guarantee that I will not completely knacker it! Sorry!

Cheers

Spunagain April 2006