

PL-880 RGB Backlight mod

And

PL-880 BT Bluetooth mod

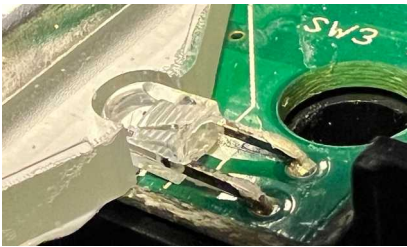
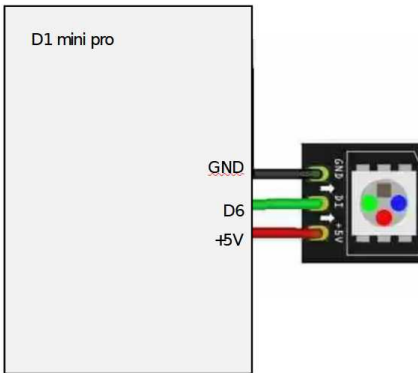
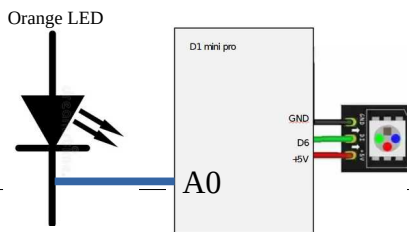
Author:

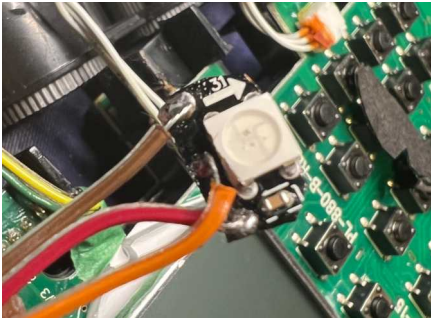

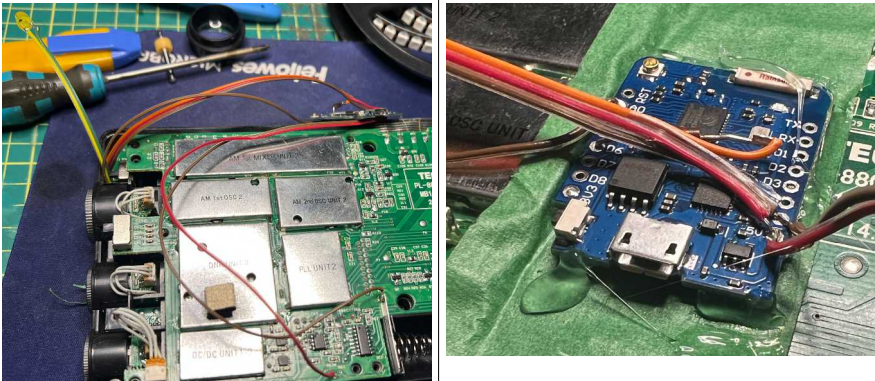

Miguel Perez <mape1082@hotmail.com> @2025

PL-880 RGB Backlight mod

As I find the orange back light a bit not comfortable specially when there is no other light around, I gave it a try and changed it to pure red. Could have replaced the LED but instead I used a microcontroller and an RGB LED (a section of one LED taken from an RGB LED strip).

So technically I can now program it to display any RGB color as well changing the brightness!

Remove original backlight LED		Don't break it! You will need it still, although it will be hidden.
Use the ESP8266 microcontroller and wire the LED taken from the LED strip.		<p>I ran a 220 OHM resistor from D6 to the LED.</p> <p>Upload the firmware using the provided main.cpp file. I used VS Code + platform IO.</p> <p>Test that it works.</p>
Now, we used the A0 pin to read the analog signal coming from the LED in the board.		You need to wire again the original LED, however this time you use two wires and move it away, since you need to leave room for the new RGB LED.

		<p>Wire A0 pin from ESP8266 to the cathode in the original LED.</p> <p>This is what the microcontroller will check in order to activate or deactivate the new RGB LED.</p>
		<p>You need to glue the new RGB LED in the same place where the original was, and try position it so as to have a smooth backlight effect in the LCD display.</p>
<p>Prepare the power source. Negative comes from negative battery connector. V+ is 3.7~4 V coming from the board as shown:</p>		<p>Just under between R63 and R61. That is our power source fro the microcontroller. Nice thing is that once the radio is powered off, so it does at this pin, so the microcontroller does not drain the battery.</p>
<p>Preview</p>		
		<p>I used masking tape but the best would be to use insulating tape.</p>

Final result



I programmed the RGB LED timeout to 6 seconds. You can change the timeout, and as well what color you want to have!

PL-880 BT Bluetooth mod

The simplest approach for me was to dismantle an existing 2-in-1 TX/RX Bluetooth module, remove its audio jack and battery, and wire it directly to the radio's main board. I then secured the module between the radio's board and the rear plastic cover. A small hole drilled in the back cover, hidden behind the support flap, provides access to the module's power button.

The result is excellent: even FM reception is now in clear, loud stereo – all internally! I may document this project on GitHub.

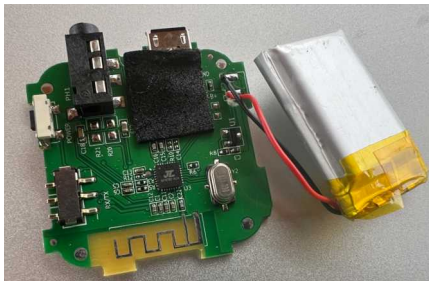
One current limitation is unreliable connection with my Bluetooth speaker (it disconnects after 1-2 seconds). However, it works perfectly with my Bluetooth headphones. I haven't tested other BT devices yet, but this serves as a proof of concept

[Bluetooth 2-in-1 TX RX module](#)



Had one dating back apparently from 2015.

Open it up, and remove both the battery and the audio jack.



BT board audio jack:

GND	CH1	CH2
		GND



Wire the audio signals from the line-out to the BT board

Line-out pin layout

CH1	CH1	
CH2		GND



Drill a hole in the back cover to access the BT power on button



I drilled the hole too high so had to adjust!

Final result



FM received in stereo and SW sounds crisp.

Note:
I found the TONE button does not have an effect in the line-out audio.
I still tend to control the audio from the knob however in BT you need to control the audio volume from the BT headset itself.