



Airbus A3xx FCU - Backlight Modification

Kav Simulations A3xx FCU LCD

Thanks for your purchase of our Airbus A3xx FCU LCD. This document outlines the details of modifying the backlight for independent power control, allowing dimming through PWM.

The FCU has 2 power connections, VDD (+ve) & VSS (-ve). Due to design restrictions, we weren't able to add separate power connections for the backlight, so the LCD driver chip and the backlight are powered from the same power connections. This means that it cannot be dimmed otherwise the LCD will stop working. But, there is a way that we can modify the module to allow independent control of the backlight.



Interface Configuration

- Pin 1: CS (Serial Shift Pulse Input)
- Pin 2: CLK (Serial Shift Pulse Input)
- Pin 3: DI (Serial Data Input)
- Pin 4: VSS (Power Ground)
- Pin 5: VDD: (Power Anode)

Operating Data

- Operating Voltage: 4.8V – 5.2V
- Operating Current: <300uA (5.0V)
- Operating Temperature: -10°C – +60°C
- Storage Temperature: -20°C – +70°C

Separate Backlight Power

The intensity of the LCD is suitable, and it should be noted that as with any LCD, the viewing angle will change the intensity also. The LCD is designed to viewed straight on, and so viewing it from above or below will reduce the intensity.

If you need to power the backlight independently, then it is possible. First, remove the resistors for the LED's from the PCB (shown in figure 1). You must remove R3, R4, R5 and R6. Then for **each** backlight 'A' terminal (there are 2, one on either side of the board), you need to place two 100 Ohm resistors in parallel between your 5V power in and the 'A' terminal. This is shown in figure 2.

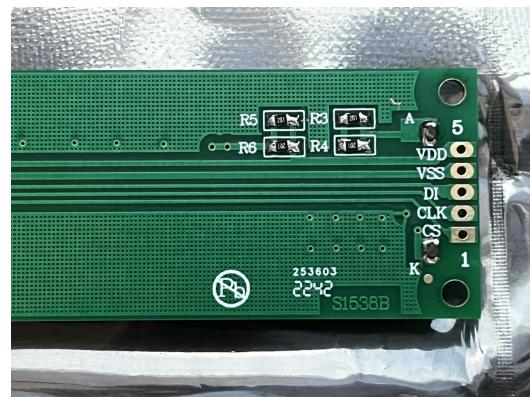
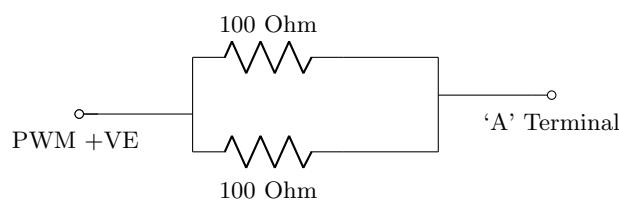
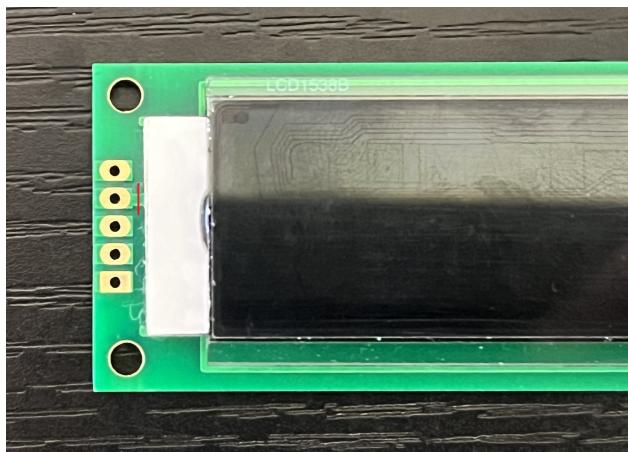
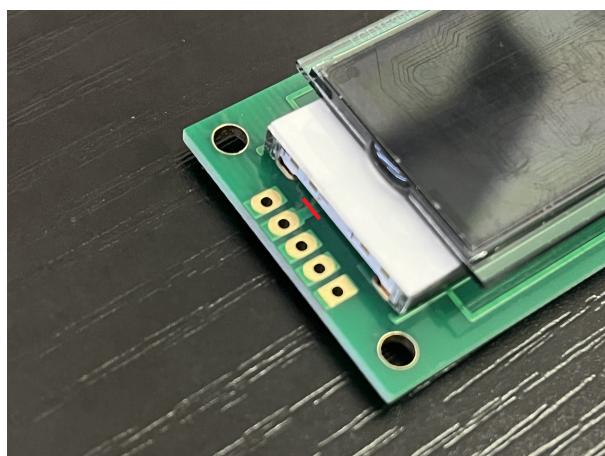


Figure 1: Back of PCB

**Figure 2: Circuit Diagram**

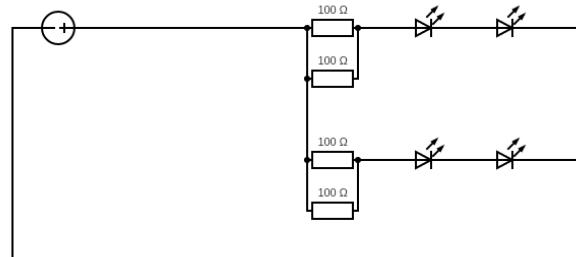
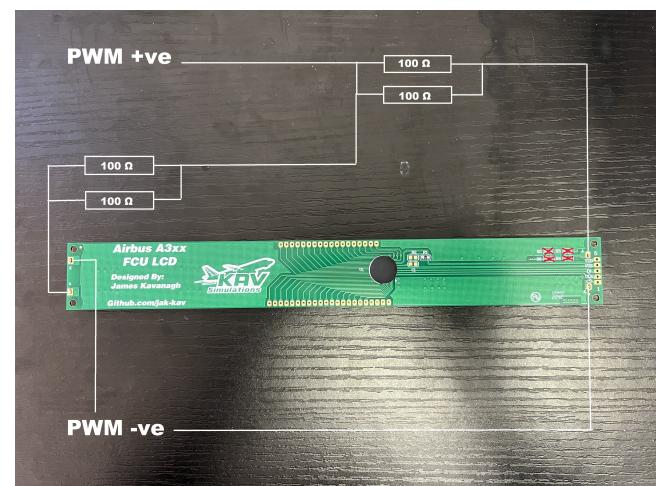
Ground Power

You may also isolate the ground, and this is done by simply cutting a trace on the PCB. On the top of the PCB (the LCD side), you will see a trace going into the VSS terminal. You need to cut this trace so it is no longer connected. Reference the red line in the following pictures:

**Figure 3: Trace Cut Top****Figure 4: Trace Cut Side**

Circuit Reference Picture

To give a more over view of the modification, please refer to the following pictures.

**Figure 5: Complete Circuit Reference****Figure 6: Rough Circuit Drawing**

Final Words

This modification is intended to give you the option to control the backlight. In undertaking this modification, we cannot be held responsible for any irreversible damage you may cause to the product. In so undertaking this modification, the product is exempt from any return, refund or liability. The modification is not an officially endorsed option, and is done so entirely at the owners risk.

Thank you for taking the time to read this document, and we hope that you found it useful. If you do still have any questions, then please contact us at info@jak-kav.co.uk.