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UNIVERSAL LCD CONTROL MODULE V4.0

Assembly and operating instructions

Universal LCD control module is used to control all of our LCD-unit supporting products, which includes MAX PRO 3+, MAX PRO 4+, SE4 DSP+, PCI MAX 2006+, PCI MAX 2007+, LIMBO 2 and others. This document brings assembly instructions and gives some guidance related to operation of the LCD control module. For product specific instructions please check particular product's user's manual.

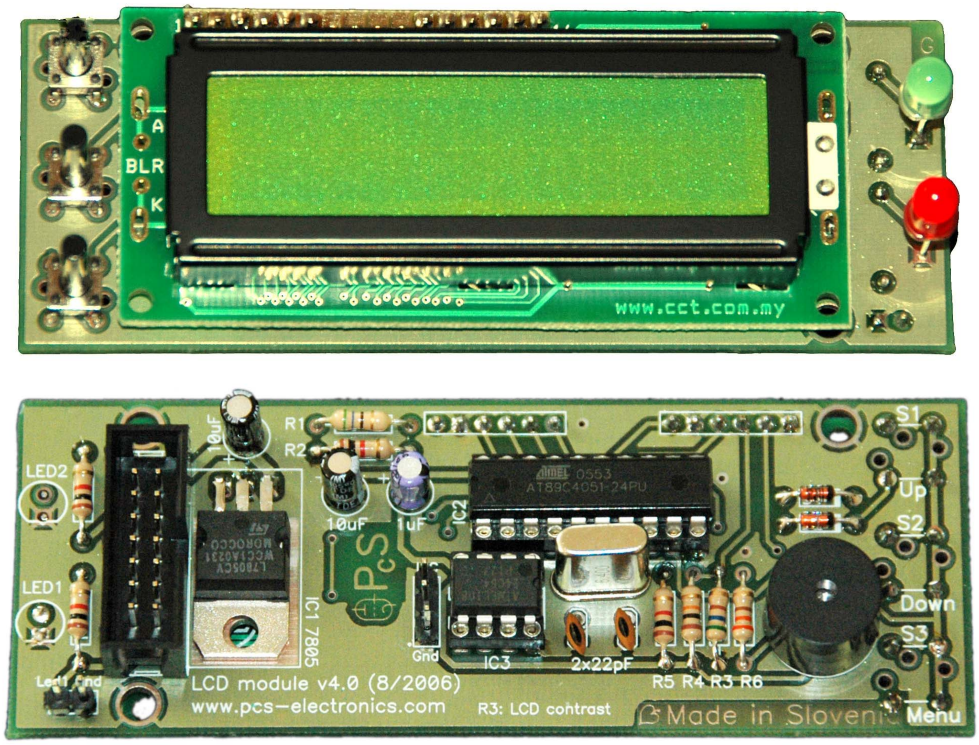


Fig. 1: UNIVERSAL LCD control module

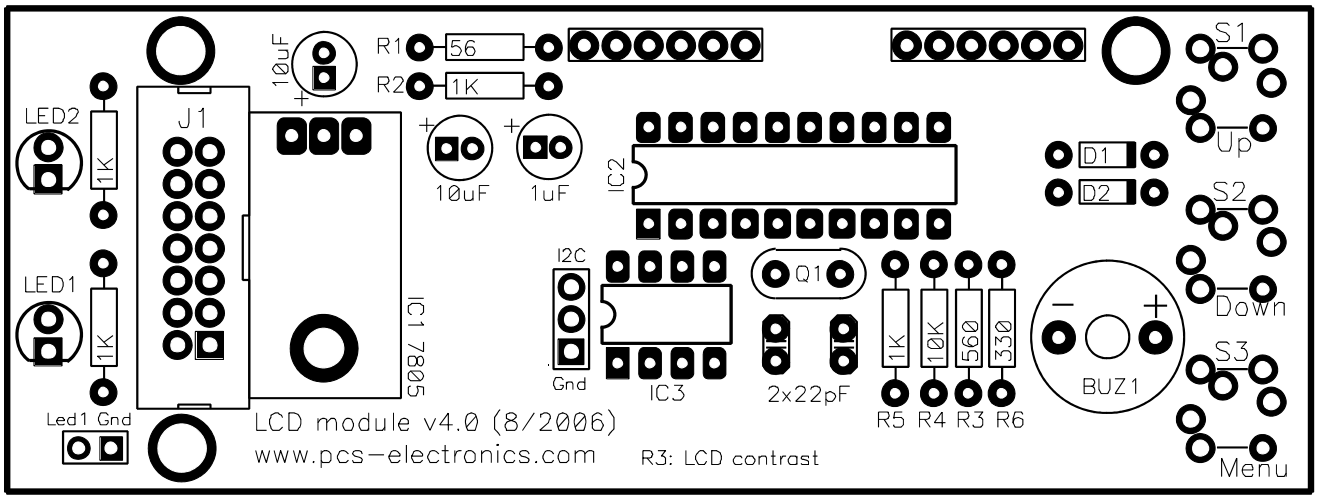


Figure 2: LCD control module board layout

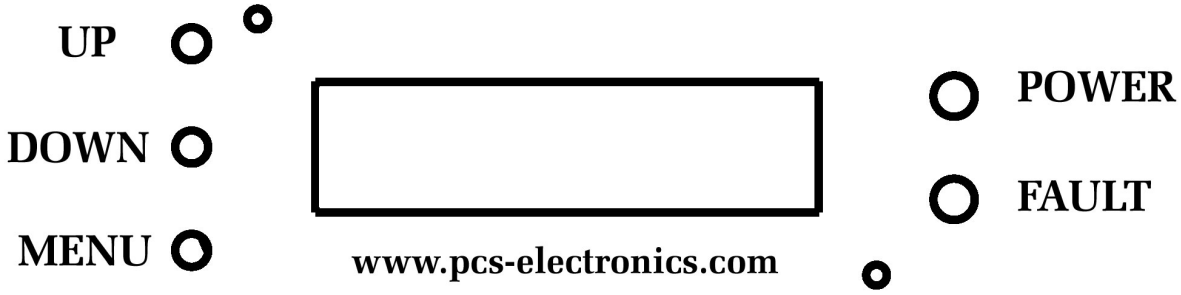


Figure 3: *LCD control module mounting – front enclosure view, two diagonal small holes are mounting holes, the rest are keys and 2 optional LED diodes.*

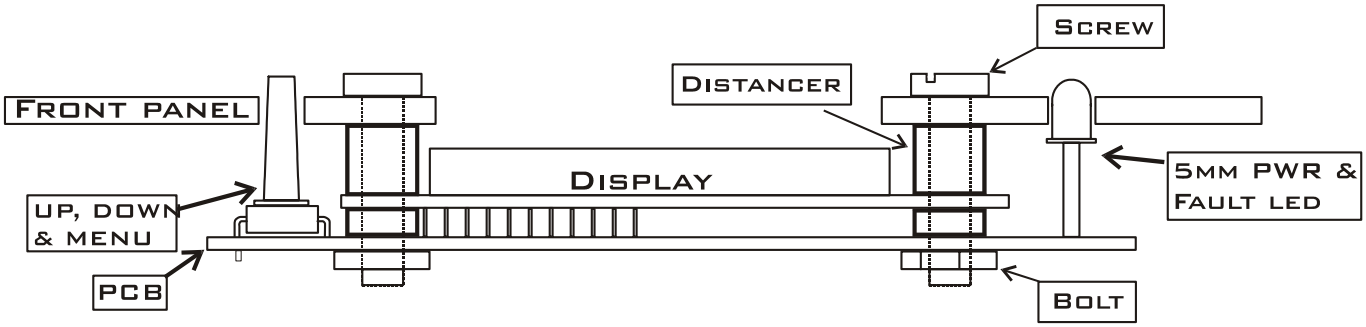
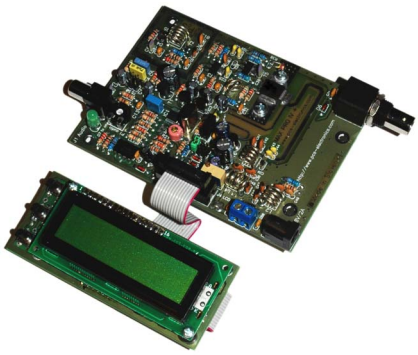
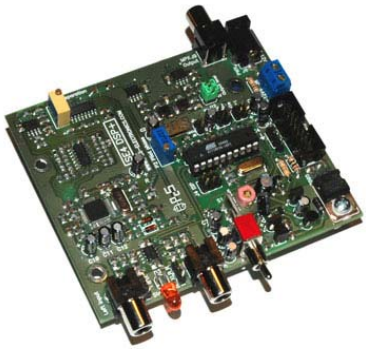


Fig 4: *Installing the LCD control module to the enclosure*

BILL OF MATERIALS FOR LCD CONTROL MODULE

QTY	Value	Reference	Type
1	Beeper, small oval speaker	BUZ1	
1	7805 TO220	IC1	
1	89C2051 or 89C4051	IC2	
1	24C16	IC3	
2	10uF – 47uF		
1	0.47-1uF		
2	22pF (marked as 22p or 221)		
1	Connector for speedy flat cable	J1	
1	Connector for I2C (optional)	J2	
2	1N4148	D1,D2	
1	LCD display, see pics for mounting		
1	6.4MHz crystal quartz	Q1	
3	Push button	S1, S2, S3	
1	560 ohms	R3	You can change LCD contrast by changing R3 Green, Blue, Brown, **Gold**
1	56 ohms	R1	Green, Blue, Black, **Gold**
2	1K	R2, R5	Brown, Black, Red, **Gold**
1	330 ohms	R6	**Orange**,**Orange**, Brown,**Gold**
1	22K	R4	Brown, Black, **Orange**, **Gold**
1	LED RED 5mm	LED1	
1	LED GREEN 5mm	LED2	
2	Bolts for LCD		Opposite corners
2	Screws for LCD		Opposite corners
2	Distancers for LCD		Opposite corners
1	PCB, 102x38mm		
1	IC socket, DIL 20	For IC2	





TIPS AND IDEAS

Please note that while LCD control modules are electrically and physically the same for a number of our products the actual code inside microcontroller differs for each individual product. This is usually easily recognizable by the appearance of the welcome screen presented shortly after power-up of the unit.

While each of these units is tested and should work perfectly out of the box, you may want to observe following tips and suggestions which will help you troubleshoot the unit or enhance its performance. Read more below for additional info.

CHANGING CONTRAST

While 99% of users will never feel the need to change contrast, depending on the operating temperature of your installation (who knows, you might be operating your unit from the North Pole or equatorial Africa) you may want to change LCD contrast. There's an easy fix for that. Change R3 to a higher or lower value depending on whether you want to increase or decrease contrast. For maximum comfort install a 2K2 trimmer here.

I2C HEADER / CONNECTOR

If you want to use one of our MAX PRO FM exciters together with stereo encoder (SE4, SE5…), you probably want to connect them via I2C cable to enable control with one single LCD module. You can now connect one end of the I2C cable directly to the LCD module and the other end to the stereo encoder. The FM exciter board will get the control signals from the usual 14-pin flat cable.

This change makes it easier to route cables in most enclosures. Namely, a long I2C cable can generate those annoying I2C error messages so keeping this cable short is a good idea.

KEYS

You can now install two types of keys to the LCD control board. We have provided holes for another common type, usually encountered in electronic stores. If you're not happy with the current type of keys, remove them and look for the new type in electronics stores.

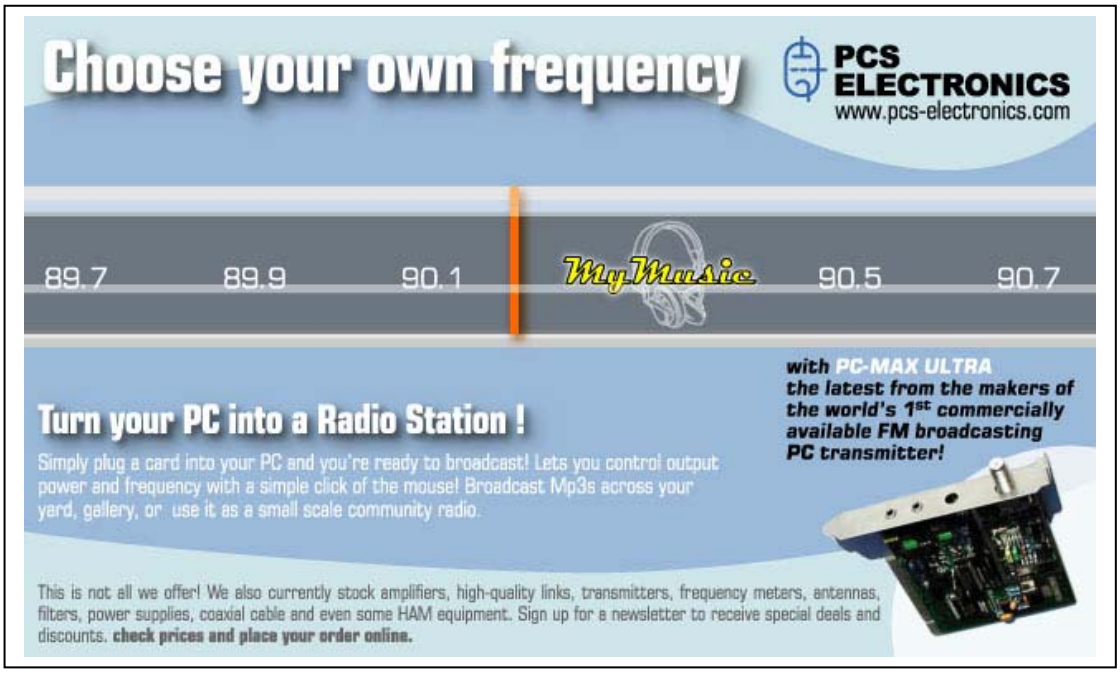
If you feel current keys are too short, place a 5mm LED with cutoff pins above it, aperture in the enclosure and the key will hold it in place.

LEDS

LED2 (top, green colour) is permanently wired to positive 12V terminal, making it a power indicator. The other led (LED1. red) can be typically used as a FAULT indicator. It is tied to pin1 of the IDC14 connector, but you can cut the trace going from the 1K resistor to pin1 of the IDC14 and supply your own signal to the 2-pin header (gnd and led1 are clearly marked).

Suggestion: If used with MAX PRO 3+, on the MAX PRO 3+ PCB board wire pin 1 from IDC14 (LCD control unit connector on mp3+ pcb) to the error pin (IDC14 for extensions). This way the fault led on LCD control unit will light when there is a SWR/TEMP/PLL problem.

ALSO AVAILABLE FROM PCS ELECTRONICS



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