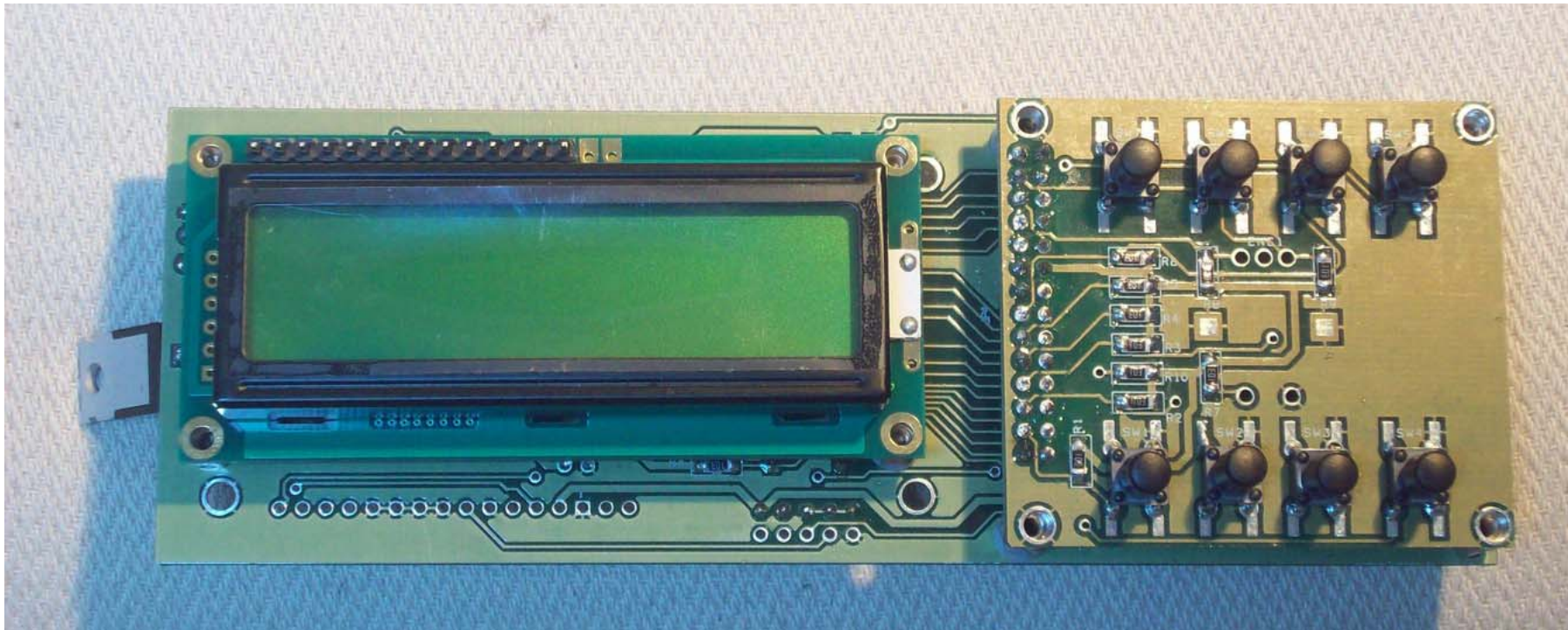
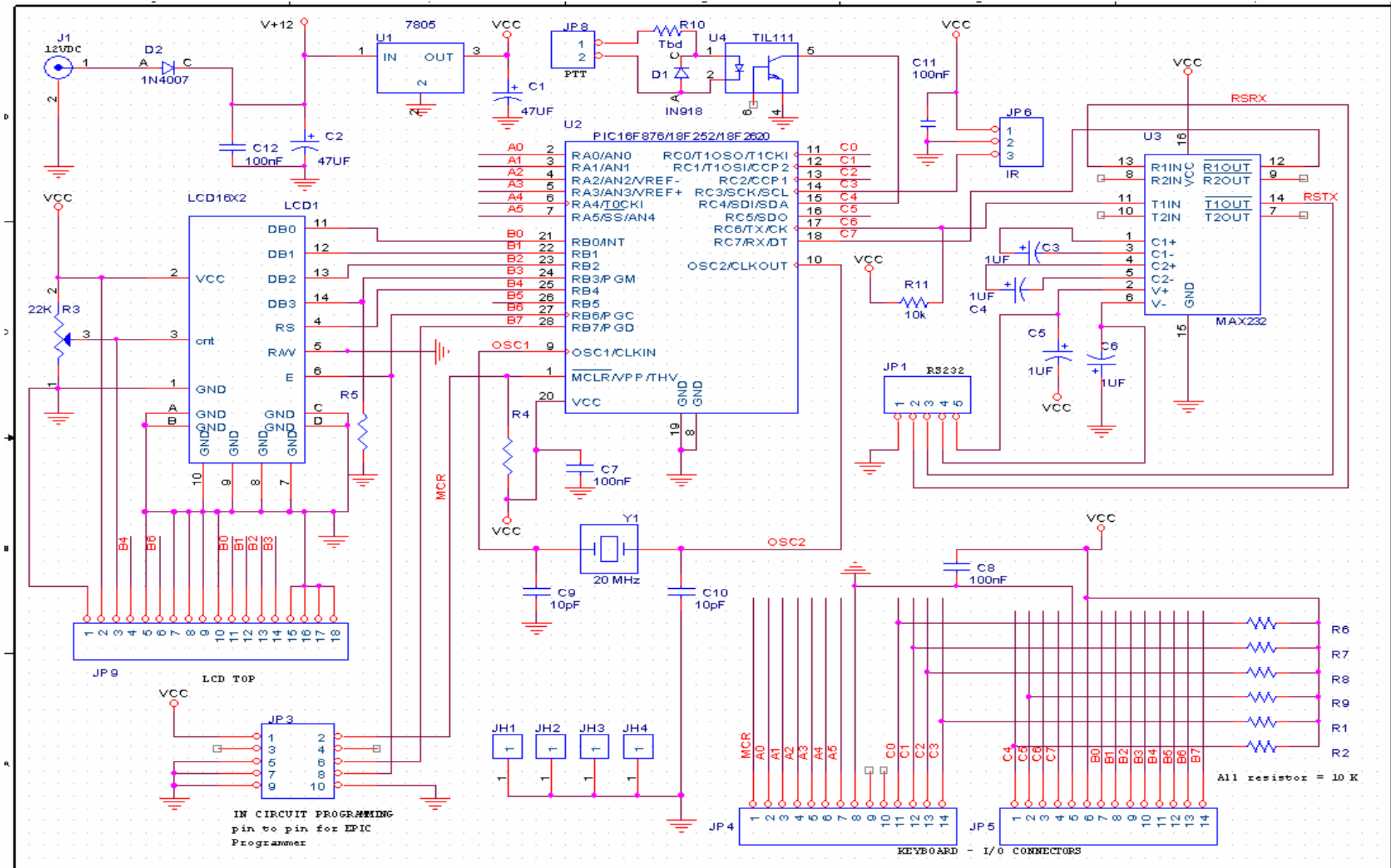


### PIC BOARD ED3

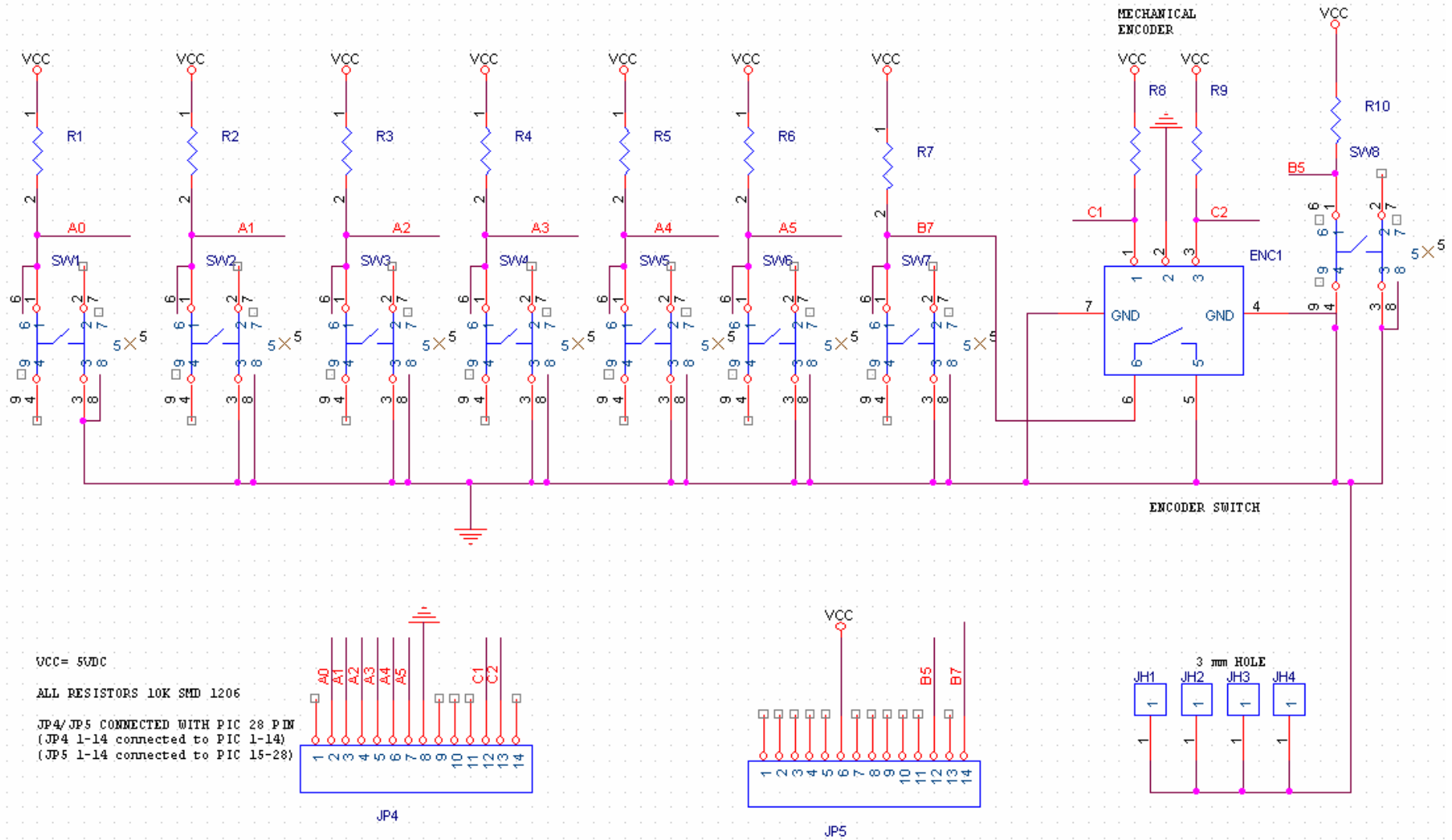


#### Specifications:

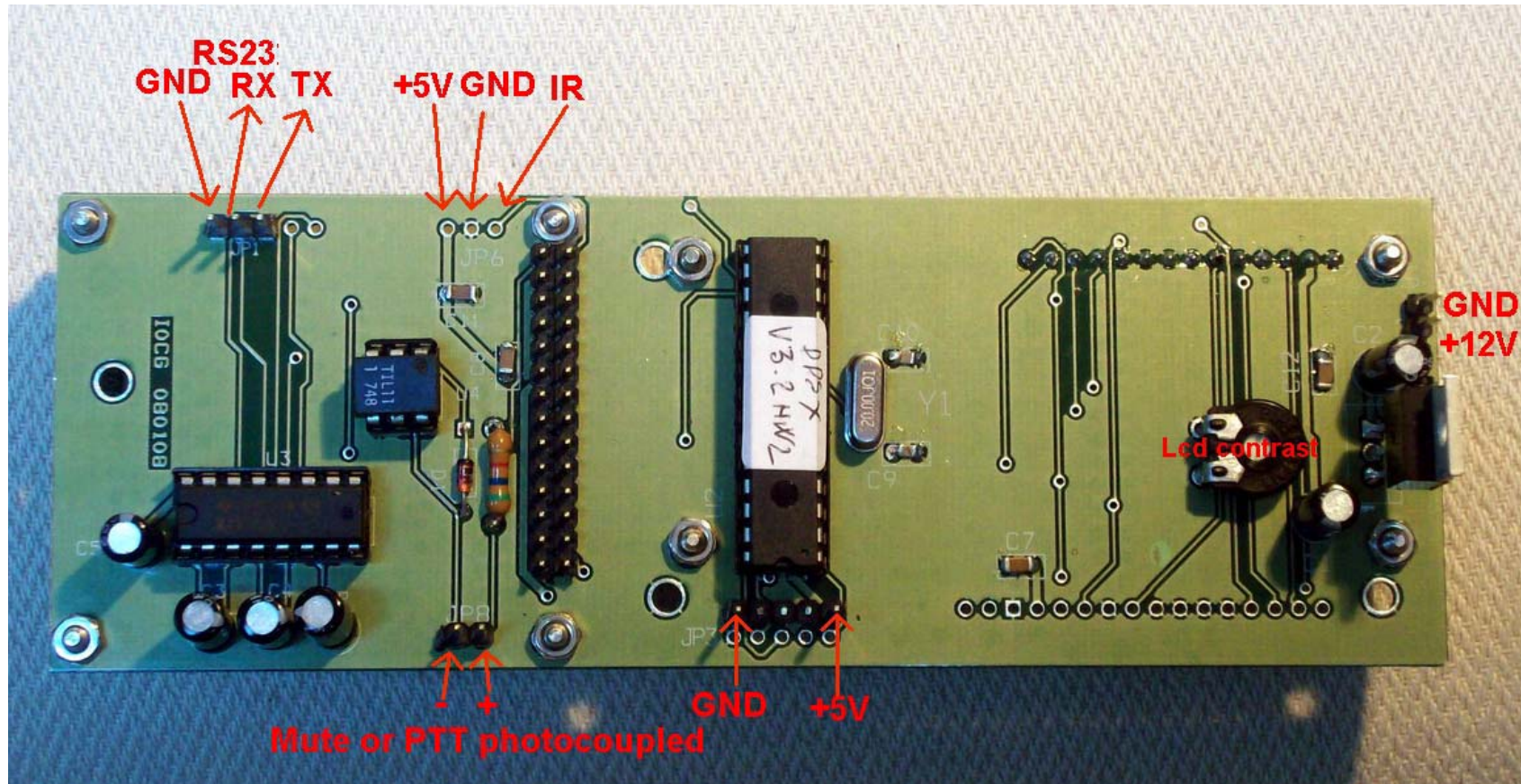
Supported PIC :	PIC16F876, PIC18F252, PIC18F2620
Total I/O :	22
Supported display:	2x 16 LCD with Bottom or Top connector
Serial Interface:	RS232
Keyboard:	with 8 Pushbutton + mechanical encoder
interface:	one Input photo insulated > 2000 V (used to interface with PTT in vintage TRX with negative logic)
Programming:	on board programming ( connector pin to pin with EPIC programmer)
Power supply:	8-15 VDC
Crystal reference:	10-40 MHz ( typical 20 MHz )



PIC board schematic ( IOCG PCB code: 080108)



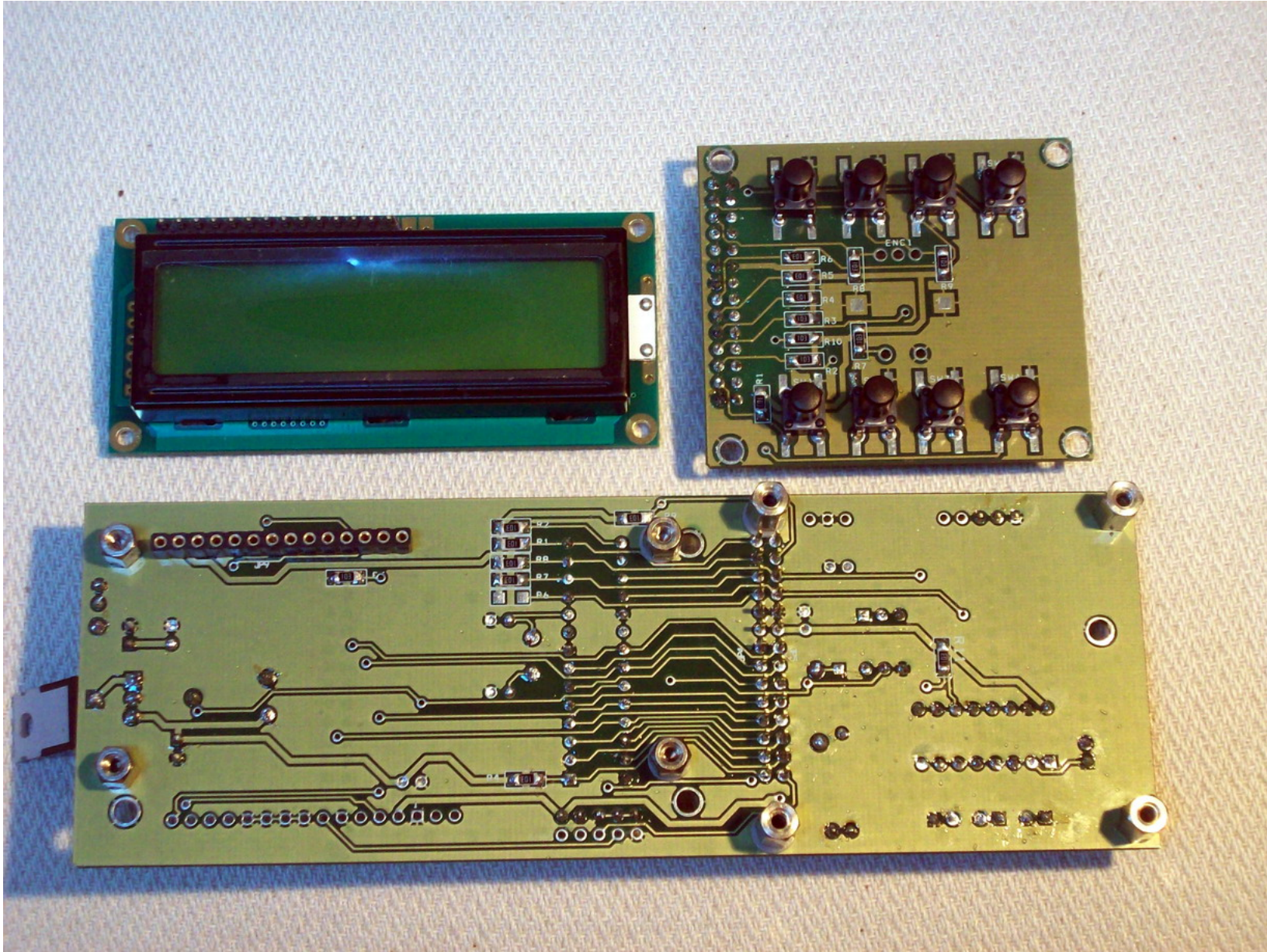
**The keyboard (I0CG PCB code 060107)**



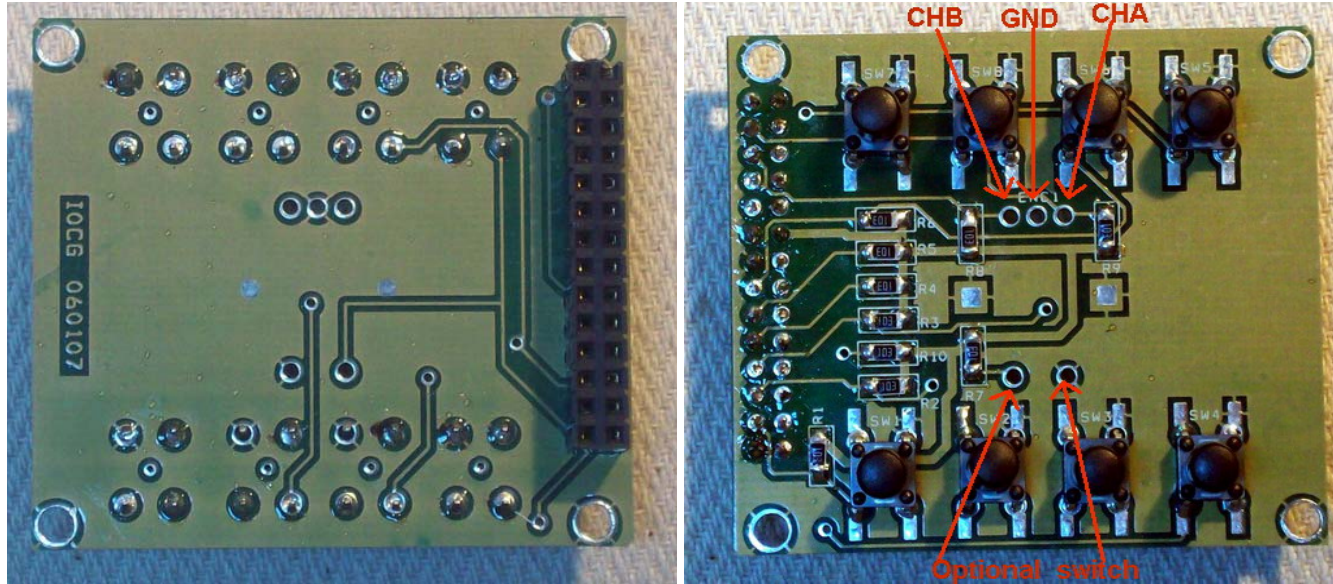
Layout component side

PIC board completely assembled

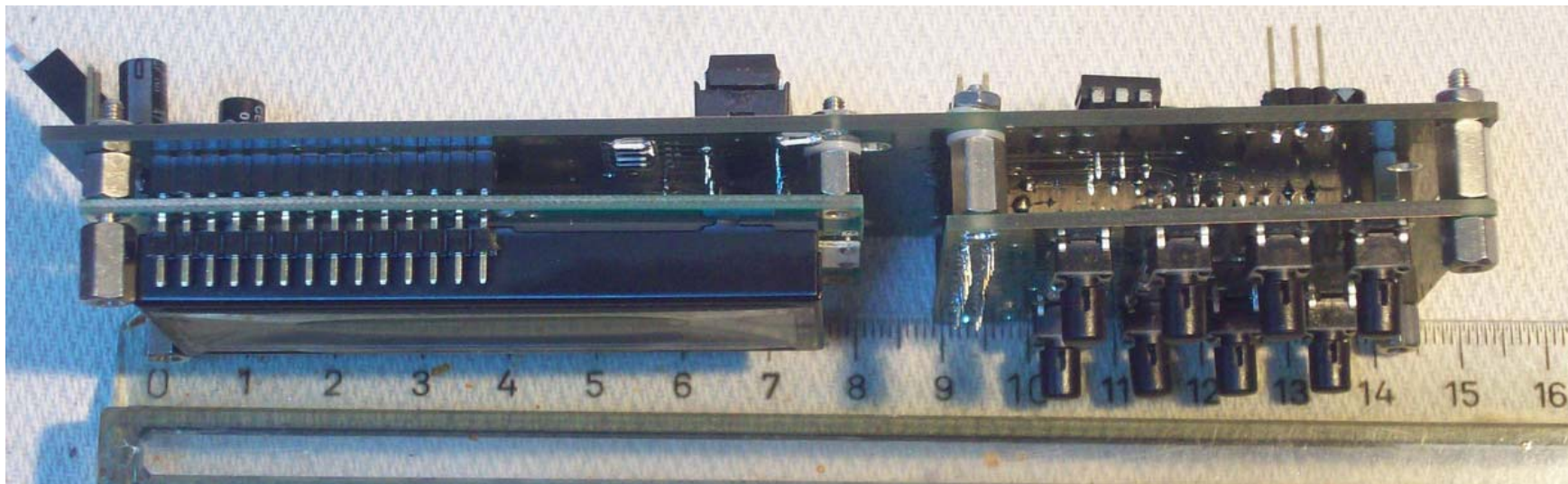
U3 (MAX232 ) and U4 ( opto-coupler TIL111 or H11AV2 ) can't be assembled as function of application.



**Layout display side +display and keyboard**



**Keyboard TOP and Bottom side (see pins for encoder installation)**



**Assembly detail**

### PIC board BOM

ITEM	QTY	Sch. reference	Value	note
1	2	C2,C1	47UF 25VL radial	
2	4	C3,C4,C5,C6	1UF 25VL radial	
3	4	C7,C8,C11,C12	100nF radial or SMD 1206/0805	
4	2	C9,C10	10pF radial or SMD 1206/0805	
5	1	D1	IN918	
6	1	D2	1N4007	
7	4	JH1,JH2,JH3,JH4	3 mm hole on PCB	No physical component
8	1	JP1	HEADER 5 pin 2.54 H 7mm	
9	1	JP3	HEADER 5X2 pin 2.54 H 7mm	
10	2	JP5,JP4	HEADER 14 pin 2.54 H 7mm	Reverse mounted on components side
11	1	JP6	HEADER 3 pin 2.54 H 7mm	IR connector (when used)
12	1	JP8	HEADER 2 pin 2.54 H 7mm	Opto-coupler connector
13	1	JP9	HEADER 18 pin 2.54 Low profile H= 5mm female	LCD 2 x 16 CHR. With Botton connector (in place of LCD1)
14	1	J1	HEADER 2 pin 2.54 H 7mm	DC in 8-13 VDC
15	1	LCD1	HEADER 14 pin 2.54 Low profile H= 5mm female	LCD 2 x 16 CHR. With TOP connector (in place of JP9)
16	6	R1,R2,R6,R7,R8,R9	10k SMD 1206/0805	
17	1	R3	22K	TRIMMER for LCD contrast
18	3	R4,R5,R11	10k SMD 1206/0805	
19	1	R10	Tbd	To be calculated for 10 ma
20	1	U1	7805	5 Voltage regulator
21	1	U2	PIC16F876/18F252/18F2620	With 18F2620 Y1 can be removed
22	1	U3	MAX232	
23	1	U4	TIL111	2000 V opto-coupler
24	1	Y1	20 MHz	4-20 Mhz can be used

<b>25</b>	<b>1</b>		<b>PCB I0CG cod. 080108</b>	
<b>26</b>	<b>4</b>		<b>Stand-off H5 mm 2.5MA(male/female)</b>	<b>Mechanical part (under LCD)</b>
<b>27</b>	<b>4</b>		<b>Stand-off H8 mm 2.5MA(male/female)</b>	<b>Mechanical part (under keyboard)</b>
<b>28</b>	<b>5</b>		<b>0.1mm insulator for 3 mm hole</b>	<b>To be used under some screw , where necessary</b>
<b>29</b>	<b>8</b>		<b>Bolt 2.5 mm</b>	<b>Mechanical part</b>
<b>30</b>	<b>1</b>		<b>U2</b>	<b>PIC socket 28 pin 0.3"</b>
<b>31</b>	<b>1</b>		<b>U3</b>	<b>Max232 socket (if used) 16 pin</b>
<b>32</b>	<b>1</b>		<b>U4</b>	<b>Opto-coupler socket (if used) 6 pin</b>

### Keyboard BOM

<b>ITEM</b>	<b>QTY</b>	<b>Sch. reference</b>	<b>Value</b>	<b>note</b>
<b>1</b>	<b>1</b>	<b>ENC1</b>		<b>Mechanical encoder with switch</b>
<b>2</b>	<b>1</b>	<b>JP5</b>	<b>HEADER 14 pin 2.54 mm female H 8mm</b>	
<b>3</b>	<b>1</b>	<b>JP4</b>	<b>HEADER 14 pin 2.54 mm female H 8mm</b>	
<b>4</b>	<b>10</b>	<b>R1-R10</b>	<b>10K SMD 1206</b>	
<b>5</b>	<b>8</b>	<b>SW1 – SW8</b>		<b>Switch SMD or through hole type</b>
<b>6</b>	<b>1</b>		<b>PCB I0CG cod. 060107</b>	
<b>7</b>	<b>2</b>		<b>Stand-off H5 mm 2.5MA (male/female)</b>	<b>Mechanical part</b>
<b>8</b>	<b>2</b>		<b>Screw 6 mm 2.5MA</b>	<b>Mechanical part</b>

#### Applications that are using this PIC Controller

- 1)ICOM PCR1000 RX control panel
- 2)TEN-TEC RX320D RX control panel
- 3)RTTY- CW generator
- 4)DDS VFO with AD9951 DDS ( control of RX TRX or SDR receiver or transceiver)
- 5)DDS-4 VFO for Vintage receiver ( Collins, Drake etc. )
- 6) DDS VFO with AD9912 ( High performance DDS with 1 GHz clock)
- 7) Dual DDS generator ( With two AD9912 DDS)