

uP-2 Example Operation

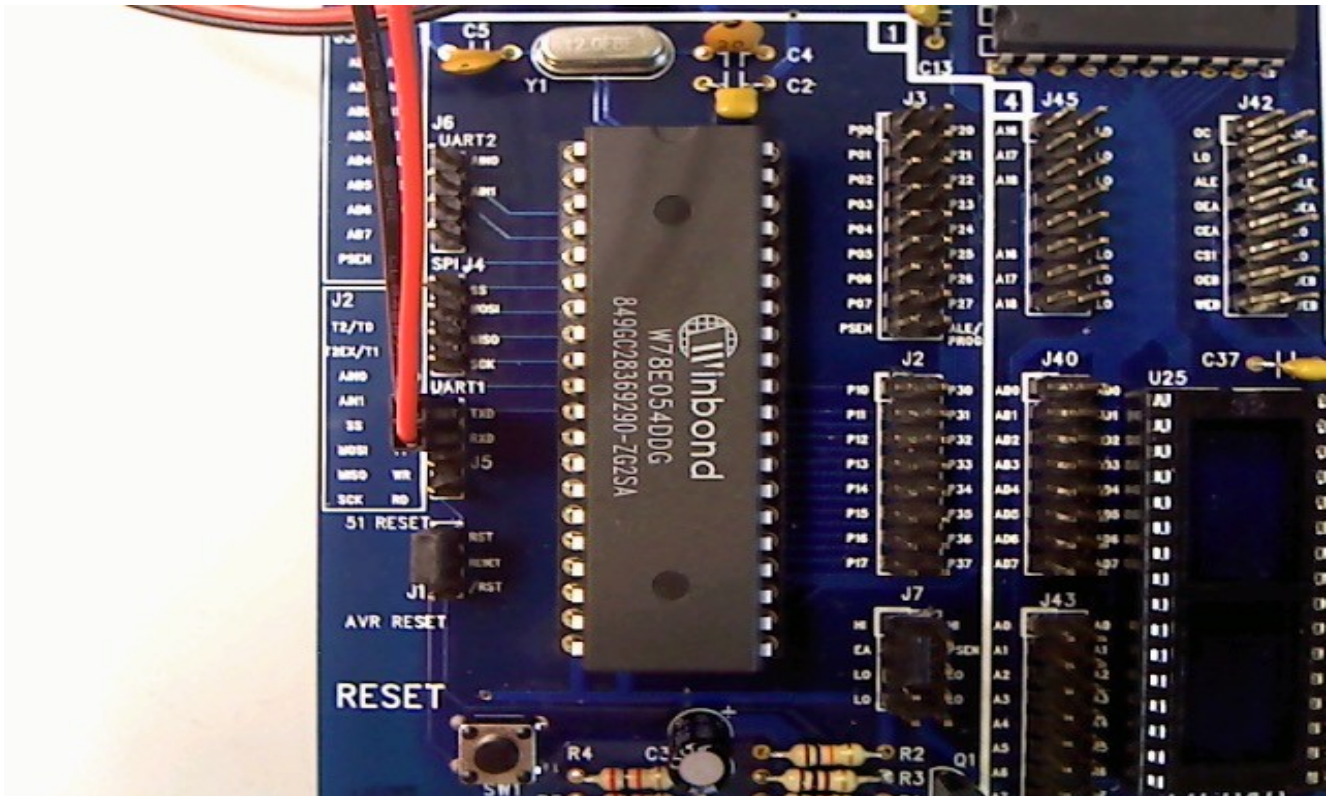
Example operation procedures:

1. Test procedures:

- 1) Install Nuvoton ISP software.
- 2) Connect RS-232 or USB to the CON2 or CON3 of the PCB.
- 3) Connect 2P rainbow cable from J5 (TX0, RX0) of area 1 to:
Connect RS-232 to J37 (RX0, TX0) of area 22.
Connect USB to J35 (RX0, TX0) of area 3.

Please note the cable order must same position as the character.

- 4) Connect power adaptor DC9V, outside negative, inside positive.
- 5) After finishing every test procedure, must switch off the SW23 for the next new test procedure.

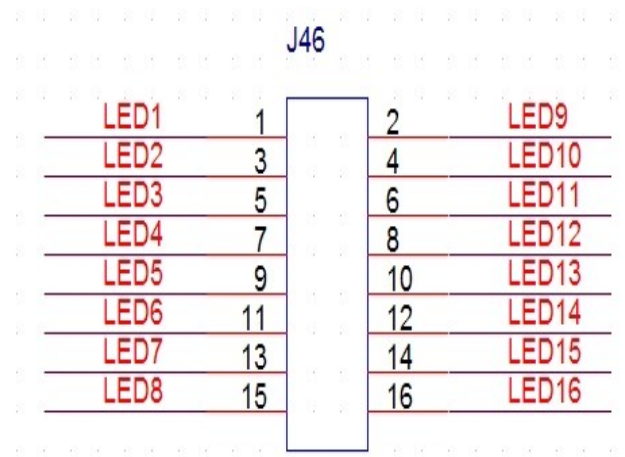
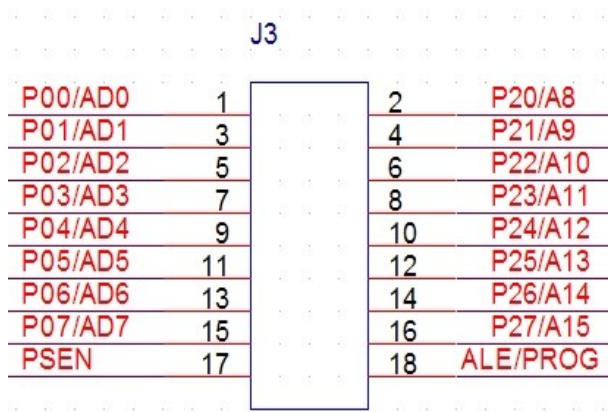


2. Example experimental test.

1) LED test

1.1) Connect 8P cable from black to purple, J3 (P00~P07) of area 1 to J46 (LED1~LED8) of area5. Connect J3 (P20~P27) of area 1 to J46 (LED9~LED16) of area 5.

8 P Cable	Connector no.		8 P Cable	Connector no.	
	J 4 6	J 3		J 4 6	J 3
Black	L E D 8	P 0 0	Black	L E D 9	P 2 0
Brown	L E D 7	P 0 1	Brown	L E D 1 0	P 2 1
Red	L E D 6	P 0 2	Red	L E D 1 1	P 2 2
Orange	L E D 5	P 0 3	Orange	L E D 1 2	P 2 3
Yellow	L E D 4	P 0 4	Yellow	L E D 1 3	P 2 4
Green	L E D 3	P 0 5	Green	L E D 1 4	P 2 5
Blue	L E D 2	P 0 6	Blue	L E D 1 5	P 2 6
Purple	L E D 1	P 0 7	Purple	L E D 1 6	P 2 7

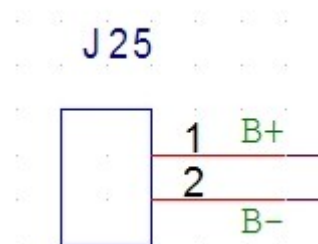
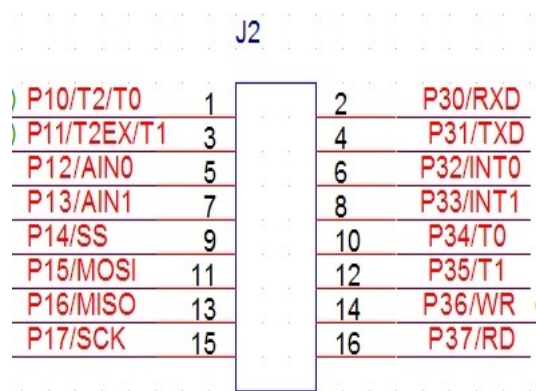


1. 2) Execute ISP, download the LED. HEX. You can see two line LED light out orderly, looks like marquee clockwise.

2). Beeper test

2.1)Connect 2P cable black and read P10, J2 of area to B+, J25 of area 12.

2 P cable	Connector	
	J 2	J 2 5
Black	P 1 0	B +
Red	P 1 1	B –

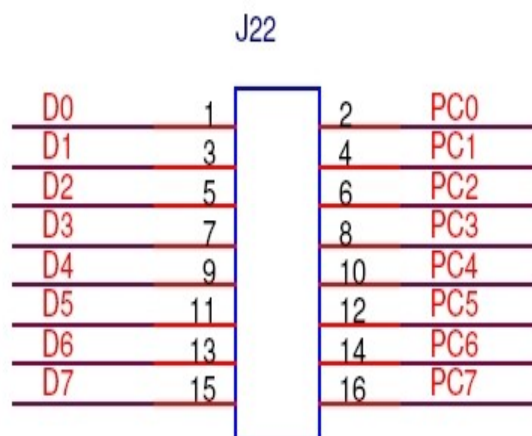
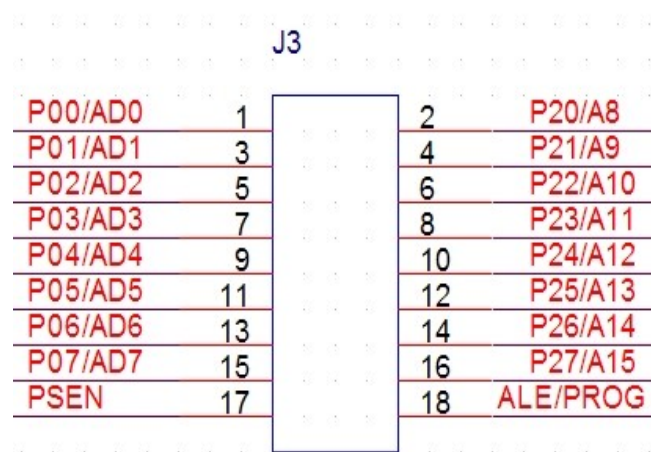


2.2) Execute ISP and download Happy birthday. HEX. You will hear Happy birthday from the beeper.

3) 8255 I/O test

3.1) connect 8P black ~purple J3(P00~P07) of area 1 to J22(D0~D7) of area 12.

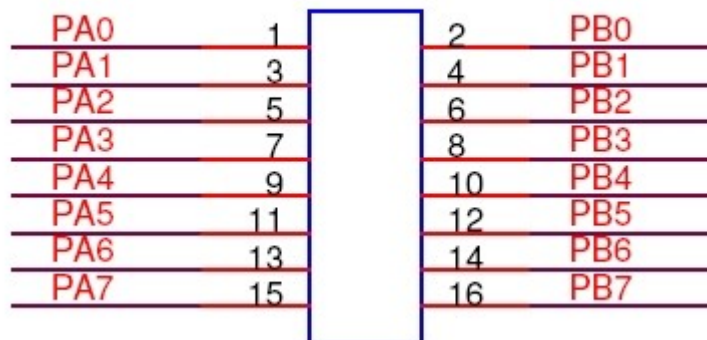
8 P Cable	Connector no.	
	J 3	J 2 2
Black	P 0 0	D 0
Brown	P 0 1	D 1
Red	P 0 2	D 2
Orange	P 0 3	D 3
Yellow	P 0 4	D 4
Green	P 0 5	D 5
Blue	P 0 6	D 6
Purple	P 0 7	D 7



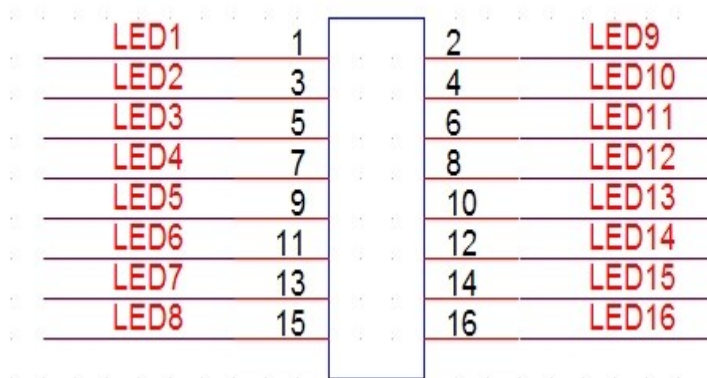
3.2) Connect 8P cable black~purple J21(PA0~PA7) of area 12 to J46(LED1~LED8) of area 5.

8 P Cable	Connector no.		8 P Cable	Connector no.	
	J 2 1	J 4 6		J 2 1	J 4 6
Black	P A 0	L E D 1	Black	P B 0	L E D 9
Brown	P A 1	L E D 2	Brown	P B 1	L E D 1 0
Red	P A 2	L E D 3	Red	P B 3	L E D 1 1
Orange	P A 3	L E D 4	Orange	P B 4	L E D 1 2
Yellow	P A 4	L E D 5	Yellow	P B 5	L E D 1 3
Green	P A 5	L E D 6	Green	P B 6	L E D 1 4
Blue	P A 6	L E D 7	Blue	P B 7	L E D 1 5
Purple	P A 7	L E D 8	Purple	P B 8	L E D 1 6

J21



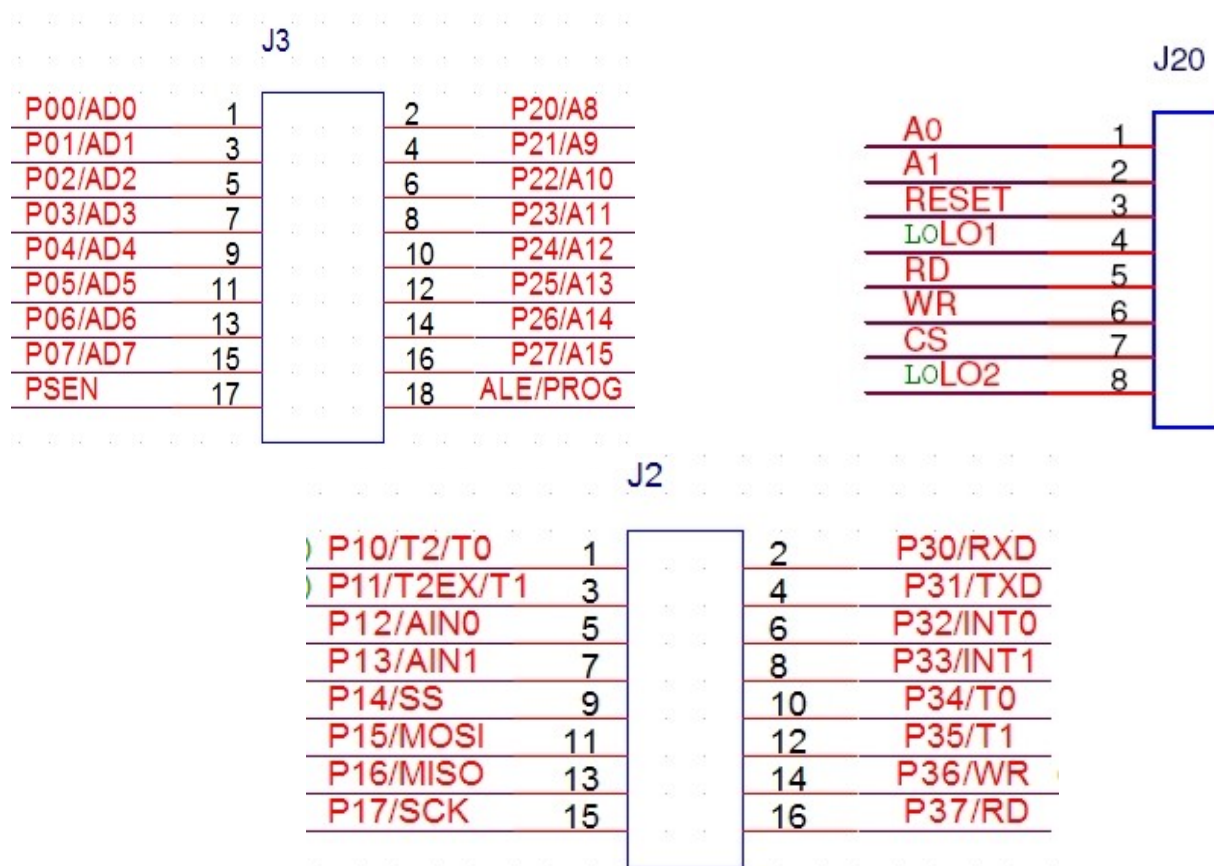
J46



3.3) Connect 4P cable black~orange J3 (P20~P23) of area 1 to J20 (A0, A1, RESET) of area 12.

3.4) Connect 2P cable black~red J2 (P36~P37) of area 1 to J20((W R , R D) of area 12.

4 P Cable	Connector no.		2 P Cable	Connector no.	
	J 3	J 2 0		J 2	J 2 0
Black	P 2 0	A 0	Black	P 3 6	W R
Brown	P 2 1	A 1	Red	P 3 7	R D
Red	P 2 2	R E S E T			
Orange	P 2 3				



3.5) Execute ISP and download 8255. HEX. You will see the the LED1~LED16 on the area5 light and out from left to right.

4) LCD test

4.1) Connect 8P cable black~purple J2 (P10~P17) of area 1 to J8 (D0~D7) of area 10.

4.2) Connect 4P cable black~orange J2 (P37~P34) of area 1 to J8 (R S ; R / W ; E N ; N · C) OF AREA 10.

8 P Cable	Connector no.		4 P Cable	Connector no.	
	J 2	J 8		J 2	J 8
Black	P 1 0	D 0	Black	P 3 7	R S
Brown	P 1 1	D 1	Brown	P 3 6	R / W
Red	P 1 2	D 2	Red	P 3 5	E N
Orange	P 1 3	D 3	Orange	P 3 4	N · C
Yellow	P 1 4	D 4			
Green	P 1 5	D 5			
Blue	P 1 6	D 6			
Purple	P 1 7	D 7			

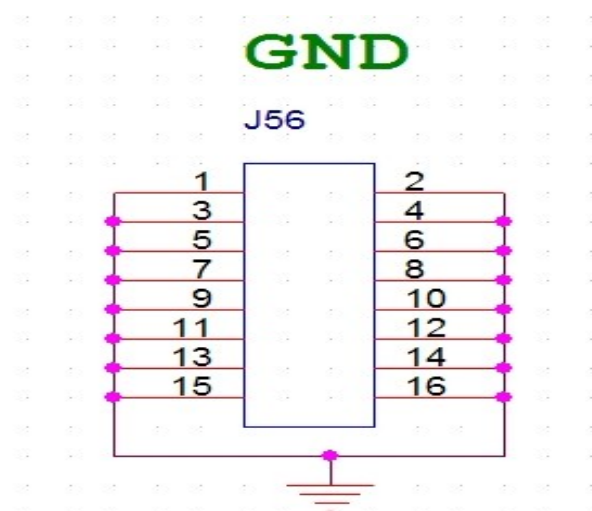
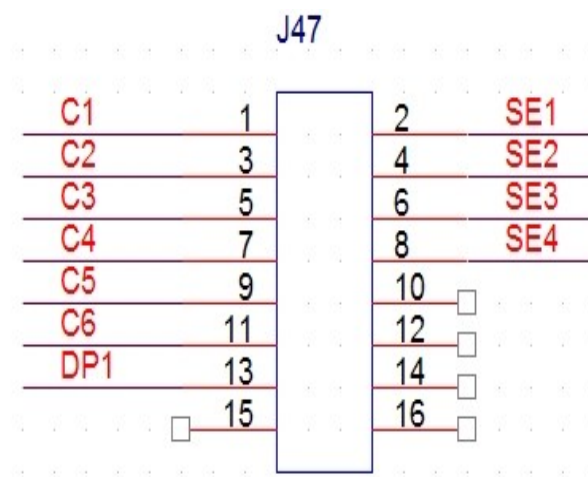


4.3) Execute ISP and download LCD. HEX. You will see the LCD of 10 area will show “uP-2 LCM Testing” .

5) Matrix keyboard test

5.1) Connect 8P cable black~purple J47 (C1~DP1) to J56 GND (1~15).

8 P Cable	Connector no.		4 P Cable	Connector no.	
	J 4 7	J 5 6		J 2	J 4 7
Black	C 1	G N D	Black	P 1 0	S E 1
Brown	C 2	G N D	Brown	P 1 1	S E 2
Red	C 3	G N D	Red	P 1 2	S E 3
Orange	C 4	G N D	Orange	P 1 3	S E 4
Yellow	C 5	G N D			
Green	C 6	G N D			
Blue	D P 1	G N D			
Purple	N · C	G N D			



5.2) Connect 8P cable black~purple J2 (C1~DP1) to J56 GND (1~15)

8 P Cable	Connector no.	
	J 2	J 2 8
Black	P 1 0	K E Y__Y 0
Brown	P 1 1	K E Y__Y 1
Red	P 1 2	K E Y__Y 2
Orange	P 1 3	K E Y__Y 3
Yellow	P 1 4	K E Y__X 0
Green	P 1 5	K E Y__X 1
Blue	P 1 6	K E Y__X 2
Purple	P 1 7	K E Y__X 3

5.3) Execute ISP and download KEYBORAD.HEX. The 4 x 4 keyboard on the area 14, each button instead of a number, when you press the buttons, the follows will show on the 7 segment display

12	13	1 4	1 5
8	9	1 0	1 1
4	5	6	7
0	1	2	3