

| | REF. DESIGNATORS | PARTS LIST | |
|----|--------------------|--------------|-------------------------|
| 1 | | 4X3 PCB | PRINTED CIRCUIT BOARD |
| 20 | Q1 TO Q20 | 2N3904 | NPN TRANSISTOR |
| 4 | | LTP-1257AA | BI-COLOR 5X7 LED MATRIX |
| 2 | SW1 & SW2 | SWITCHES | TOGGLE |
| 3 | S1, S2, S3 | SWITCHES | PUSH BUTTON |
| 1 | | PIC16F877 | PRE-PROGRAMMED MICRO |
| 1 | IC1 | SOCKET | 40 PIN SOCKET |
| 1 | Q21 | CRYSTAL | 4 MEG |
| 2 | C1, C2 | CAPACITOR | 22 PF |
| 1 | C3 | CAPACITOR | .01 Uf |
| 2 | IC3, IC4 | BUSSES | 74HC245 SURFACE MOUNT |
| 1 | R1 | RESISTOR | 140 OHM |
| 1 | R5 | RESISTOR | 1K OHM |
| 5 | R2, R3, R4, R8, R9 | RESISTOR | 10K OHM |
| 1 | R10 | RESISTOR | 47 OHM |
| 1 | RED TO +, BLK TO - | BATT. HOLDER | 4 AA |
| 1 | D1 | DIODE | 1N4148 |
| 1 | D2 | JUMPER | |

STEP 3: ADD 4 LED MODULES.
IMPORTANT: MAKE SURE THE LETTERING
ON THE MODULES IS AT THE **BOTTOM**.
SOLDER ONCE MODULES ARE IN PLACE.

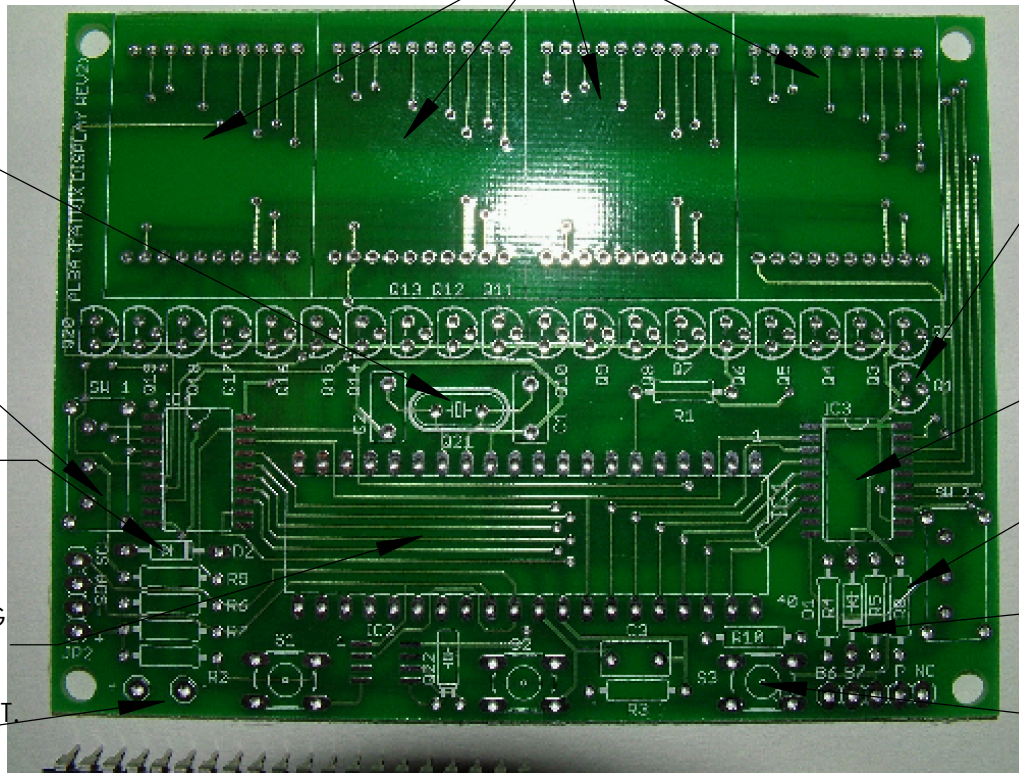
STEP 4:
CRYSTAL AND CAPS
(Q21, C1, C2)

STEP 7:
SOLDER SW1, SW2.
THEY ONLY FIT ONE
WAY.

STEP 8:
SOLDER JUMPER IN
PLACE OF DIODE

STEP 10:
SOLDER 40 PIN
SOCKET.
PAY ATTENTION TO
PIN 1 WHEN ADDING
THE PIC MICRO.

STEP 11:
SOLDER BATT SOCKET.
ALSO C3



STEP 2:
ADD TRANSISTORS (Q1 - Q20). MATCH
THE FLAT SIDE

STEP 1:
SOLDER 74HC245 (IC3, IC4)
PAY ATTENTION FOR PIN 1.

STEP 5:
SOLDER ALL RESISTORS. SEE PARTS LIST
FOR REF. DESIGNATORS.

STEP 6:
SOLDER DIODE. BLACK MARK GOES TO
THE STRIPE.

STEP 9:
SOLDER S1, S2, S3 .