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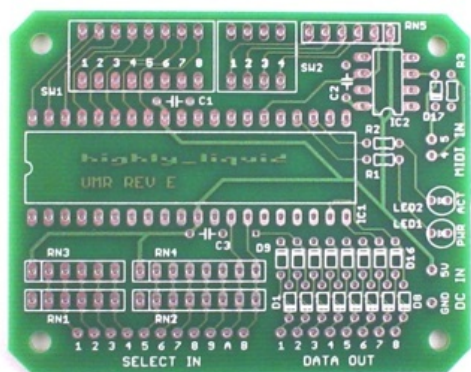
#1

**John**
ModeratorJoin Date: Jan 2009
Location: Columbus, Ohio, United States
Posts: 1,558 **UMR Assembly Instructions and DIP Switch Settings****Important Information**

- The kit must be assembled in one of two configurations, according to the scan polarity of the host device. See the installation notes for the scan polarity of your keyboard model.
- The kit contains some ESD-sensitive parts. Please take reasonable static-control precautions when assembling the kit.

PCB Layout

The location of each part is clearly marked on the UMR circuit board.



The appearance of the board differs based on the configuration:

Assembled Board: Scan-High Configuration



Assembled Board: Scan-Low Configuration



Assembly Tips

- Start by soldering the smallest components first and the largest parts last.
- All components are mounted on the side of the board with the white legend.

MIDI Wiring

Wire pins 4 & 5 of the MIDI connector to the corresponding "MIDI IN" terminals on the UMR.



Parts List

Appearance of parts may vary.

C1-C3



D1-D8: Mount these components **only** for a **scan-high** configuration. Dark band on diode must match the white band on the circuit board legend.



D9-D16: Mount these components **only** for a **scan-high** configuration. Dark band on diode must match the white band on the circuit board legend.



D17: Dark band on diode must match the white band on the circuit board legend.



IC1: Mount socket on the circuit board first, then insert IC into socket. Notched end must match notch in the circuit board legend.



IC2: Mount socket on the circuit board first, then insert IC into socket. End marked with dot must match notch in the circuit board legend.



LED1-LED2: Short lead on LED must match the flat side on the circuit board legend. Optionally, this part is mounted off-board using the included panel bezel.



R1-R2: 1kΩ resistor, marked with the following color bands: brown, black, red, gold.



R3: 220Ω resistor, marked with the following color bands: red, red, brown, gold.



RN1: Mount this component **only** for a **scan-high** configuration. Pin 1 (marked with a dot) must be inserted in the small box on the circuit board legend.



RN2: Mount this component **only** for a **scan-high** configuration. Pin 1 (marked with a dot) must be inserted in the small box on the circuit board legend.



RN3: Mount this component **only** for a **scan-low** configuration. Pin 1 (marked with a dot) must be inserted in the small box on the circuit board legend.



RN4: Mount this component **only** for a **scan-low** configuration. Pin 1 (marked with a dot) must be inserted in the small box on the circuit board legend.



RN5: Pin 1 (marked with a dot) must be inserted in the small box on the circuit board legend.



SW1: Numbers on switch should match the numbers on the circuit board legend.



SW2: Numbers on switch should match the numbers on the circuit board legend.



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#2



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DIP Switch Settings

Overview

Below are descriptions of the DIP switch settings for the UMR:

- DIP switch SW2 specifies the MIDI channel to which the UMR responds.
- DIP switch SW1 controls other parameters relating to the installation.

For most users, only the SW2 channel setting is of interest. Explicit SW1 settings are provided for each keyboard model in the installation notes.

Detailed SW1 descriptions are provided below for users attempting to install the UMR to an undocumented keyboard model. For more information about how SW1 settings relate to the host keyboard, see the keyboard matrix article.

All DIP switch selections become active at power-up.

Channel Selection

Use DIP Switch SW2 to select the incoming MIDI channel.

(MIDI Channel: Switch 1, Switch 2, Switch 3, Switch 4)

- 1: off, off, off, off
- 2: off, off, off, on
- 3: off, off, on, off
- 4: off, off, on, on
- 5: off, on, off, off
- 6: off, on, off, on
- 7: off, on, on, off
- 8: off, on, on, on
- 9: on, off, off, off
- 10: on, off, off, on
- 11: on, off, on, off
- 12: on, off, on, on
- 13: on, on, off, off
- 14: on, on, off, on
- 15: on, on, on, off
- 16: on, on, on, on

First Note

Use DIP Switch SW1 positions 1-4 to select the MIDI note for the first key on the host keyboard.

(First MIDI Note: Switch 1, Switch 2, Switch 3, Switch 4)

- 36 (C2): off, off, off, off
- 37 (C#2): off, off, off, on
- 38 (D2): off, off, on, off
- 39 (D#2): off, off, on, on
- 40 (E2): off, on, off, off
- 41 (F2): off, on, off, on
- 42 (F#2): off, on, on, off
- 43 (G2): off, on, on, on
- 44 (G#2): on, off, off, off
- 45 (A2): on, off, off, on
- 46 (A#2): on, off, on, off
- 47 (B2): on, off, on, on

47 (C2): on, on, on, on
 48 (C3): on, on, off, off
 49 (C#3): on, on, off, on
 50 (D3): on, on, on, off
 51 (D#3): on, on, on, on

Number of Data Lines

Use DIP Switch SW1 positions 5-7 to specify the number of data lines in use.

(Number of Data Lines: Switch 5, Switch 6, Switch 7)

1: off, off, off
 2: off, off, on
 3: off, on, off
 4: off, on, on
 5: on, off, off
 6: on, off, on
 7: on, on, off
 8: on, on, on

Scan Speed

The UMR firmware can respond to the host keyboard's "select" signals differently, depending on the speed of the key scan.

- Set DIP Switch SW1 position 8 to "off" for older, slower keyboards.
- Set DIP Switch SW1 position 8 to "on" for more recent, faster keyboards.



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