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VL-1-MIDI: Installation Notes

Overview

The VL-1-MIDI kit is based on the UMR kit. Because of the size of the VL-1, the UMR PCB must be housed outside of the VL-1. An enclosure is not included with

PCB Assembly

Follow the [UMR assembly instructions](#) for "scan high" configuration.

DIP Switch Settings

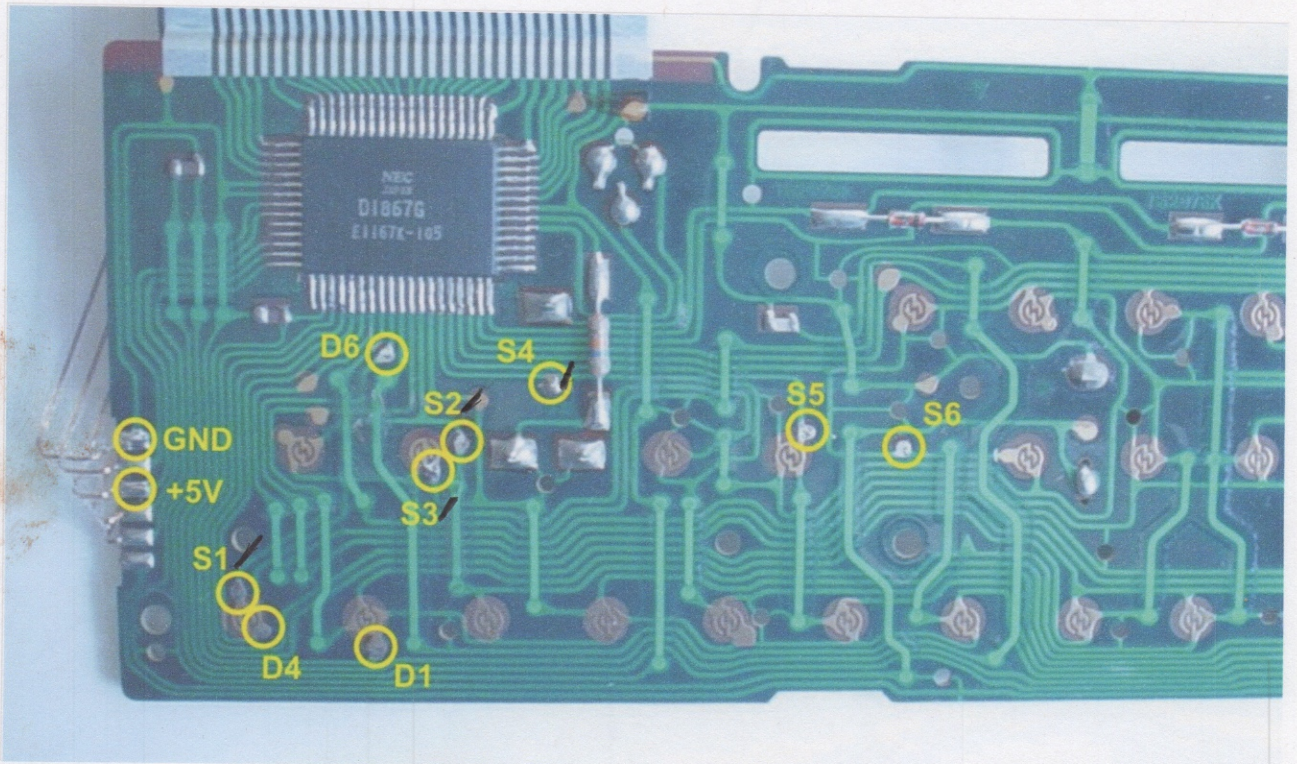
SW1 settings are ignored. Use SW2 to specify the incoming MIDI channel [as described here](#).

Connections

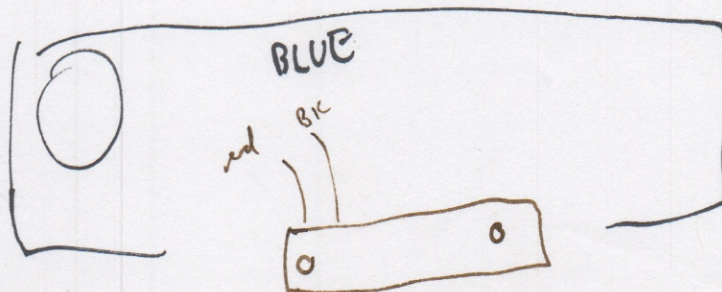
Connection points between the UMR and VL-1 are shown in the images below. Connect the following lines from the UMR circuit board to the VL-1:

- "DC IN" GND and 5V
- Select In 1-6 (S1-S6 in diagram)
- Data Out 1-6 (D1-D6 in diagram)

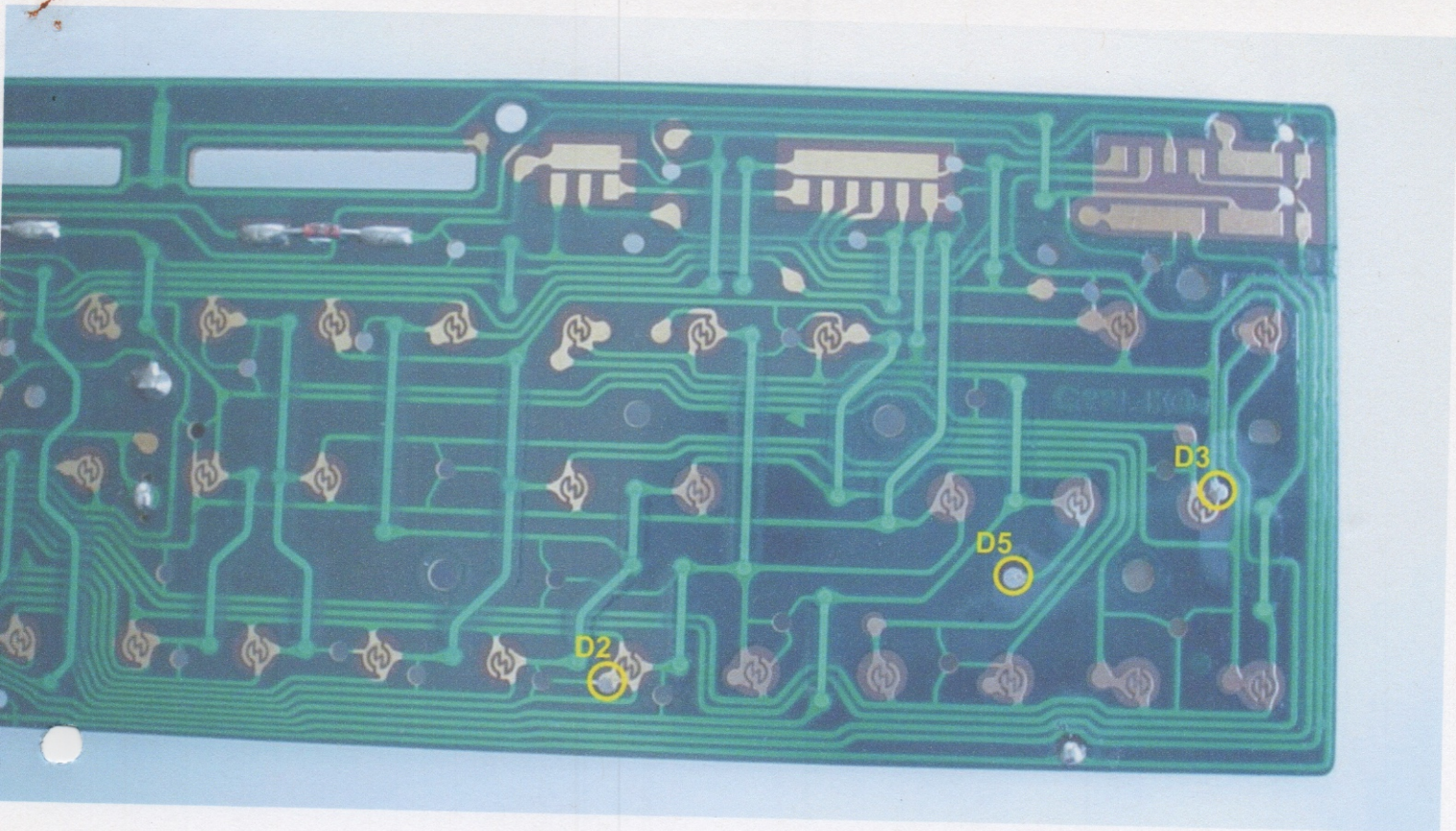
VL-1 PCB, Left Side

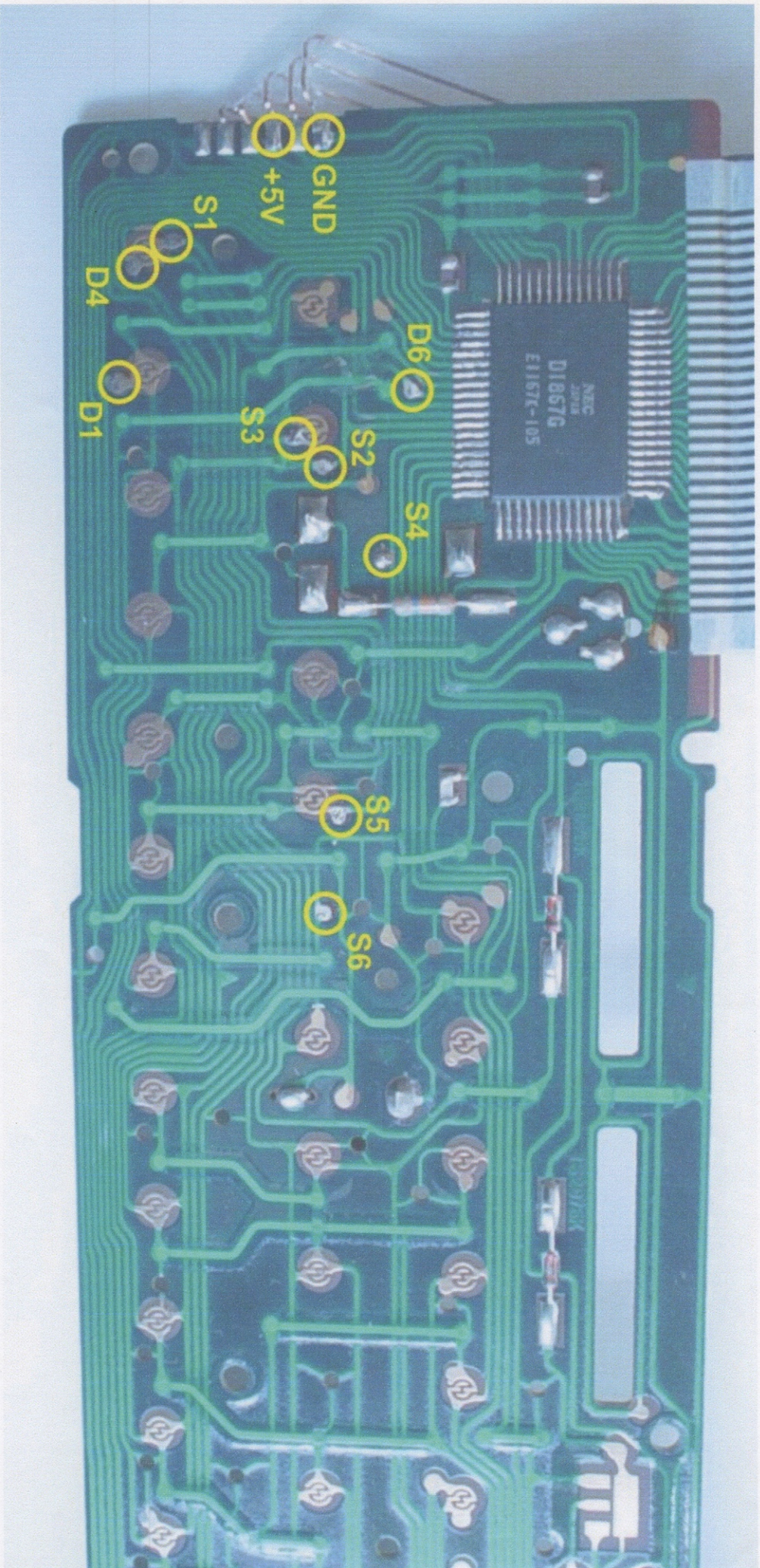


VL-1 PCB, Right Side



led's x2
midi
on/off
BIB box
LED
6x stand things





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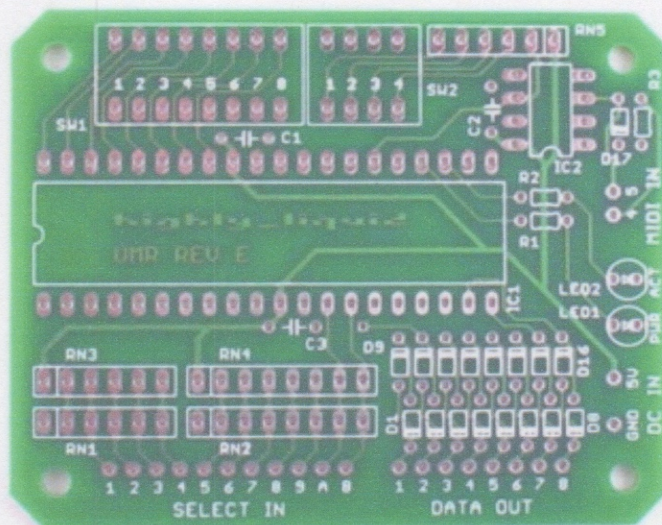
UMR: Assembly Notes

Important Information

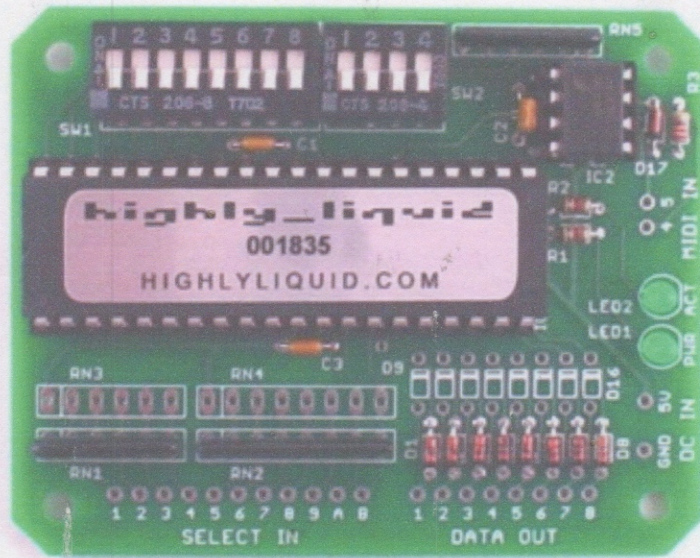
- The kit must be assembled in one of two configurations, according to the scan polarity of the host device. See the installation notes for the scan polarity of your keyboard model.
- The kit contains some ESD-sensitive parts. Please take reasonable static-control precautions when assembling the kit.

PCB Layout

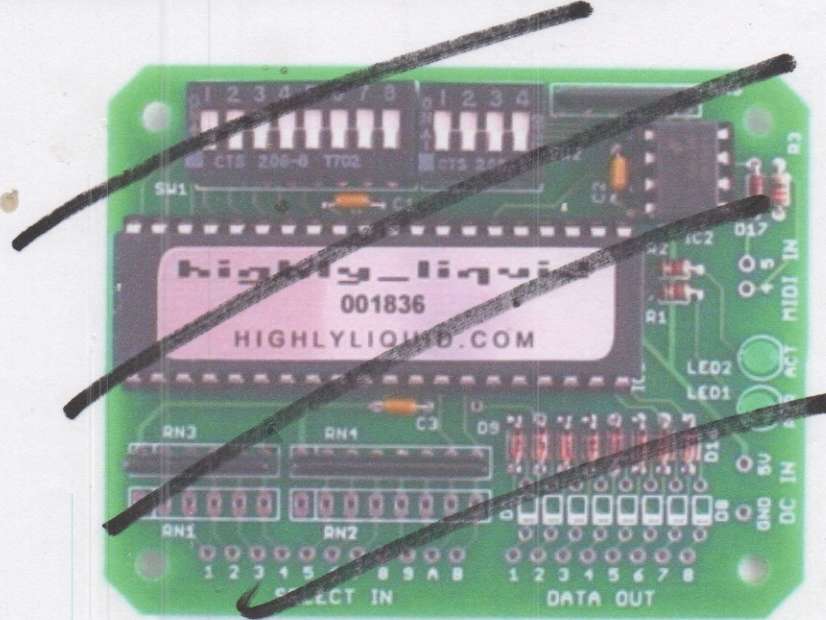
The location of each part is clearly marked on the UMR circuit board.



Assembled Board: Scan-High Configuration



~~Assembled Board: Scan-Low Configuration~~



MIDI Wiring








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



Parts List

All components are mounted on the side of the board with the white legend. Components can be mounted in any order, but it is easier to mount the smallest components first.

Part	Image*	Notes
C1- C3		None. ✓
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 D10		Mount these components only for a scan-low 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 numbers on circuit board legend.
SW2		Numbers on switch should match numbers on circuit board legend.

*Appearance of parts may vary.

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UMR: 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	-	-	-	-
2	-	-	-	on
3	-	-	on	-
4	-	-	on	on
5	-	on	-	-
6	-	on	-	on
7	-	on	on	-
8	-	on	on	on
9	on	-	-	-
10	on	-	-	on
11	on	-	on	-
12	on	-	on	on
13	on	on	-	-
14	on	on	-	on
15	on	on	on	-

16	on	on	on	on
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'-' = off

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)	-	-	-	-
37 (C#2)	-	-	-	on
38 (D2)	-	-	on	-
39 (D#2)	-	-	on	on
40 (E2)	-	on	-	-
41 (F2)	-	on	-	on
42 (F#2)	-	on	on	-
43 (G2)	-	on	on	on
44 (G#2)	on	-	-	-
45 (A2)	on	-	-	on
46 (A#2)	on	-	on	-
47 (B2)	on	-	on	on
48 (C3)	on	on	-	-
49 (C#3)	on	on	-	on
50 (D3)	on	on	on	-
51 (D#3)	on	on	on	on

'-' = off

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	-	-	-
2	-	-	on
3	-	on	-
4	-	on	on
5	on	-	-
6	on	-	on
7	on	on	-
8	on	on	on

'-' = off

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.

Selection becomes active at power-up.

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