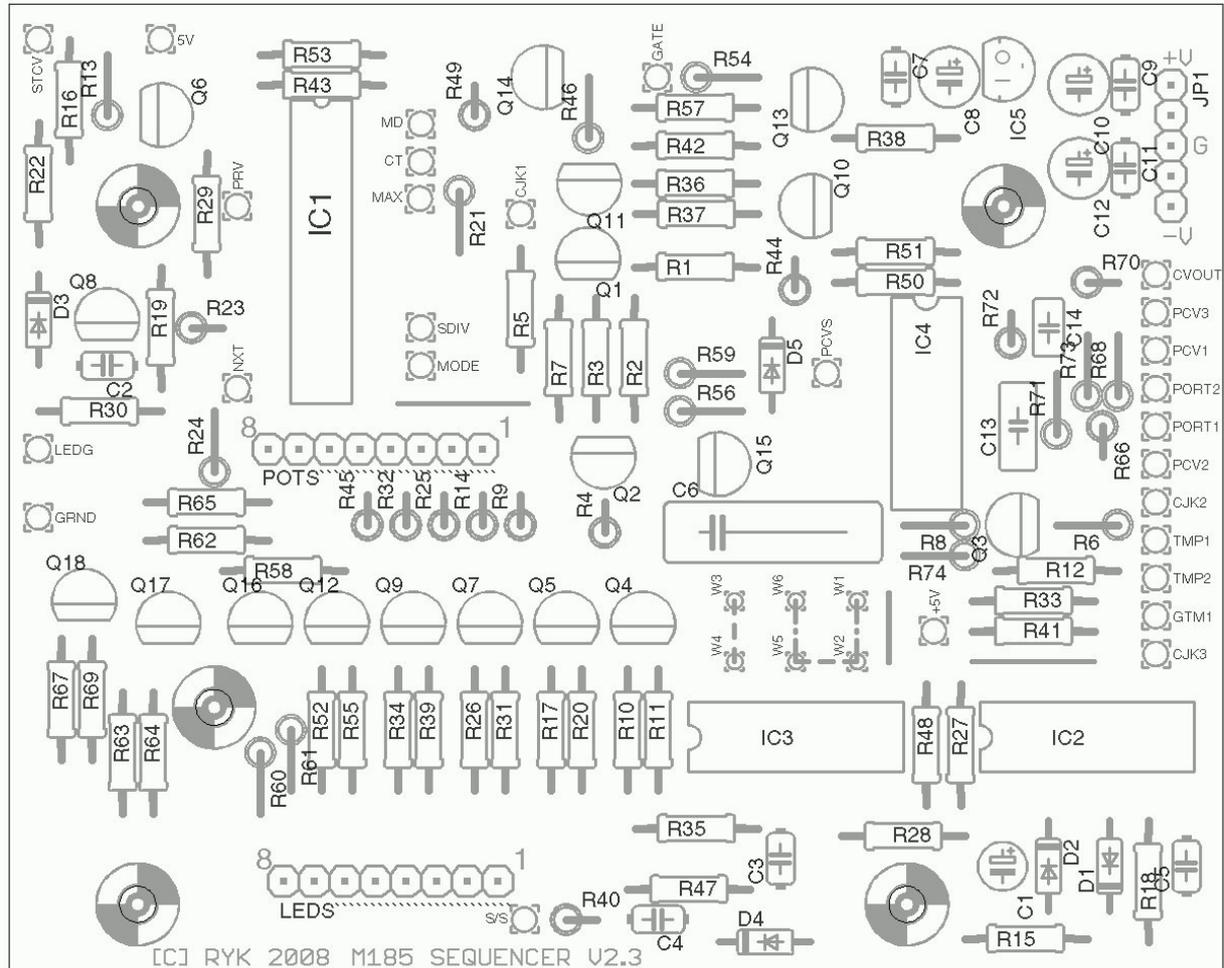


M-185 SEQUENCER V2.1 ONLY – CONSTRUCTION NOTES

Main PCB Component Layout



For the **V2.1 Version** of the sequencer software, components **Q6, R13, R16, R19, R21** are omitted, and there is the need for an extra IC **CMOS 4066** to be wired on a separate daughter board. [see below for schematic and wiring details]

TRANSISTORS

There are three types of transistors, which all look similar, identify the transistors carefully. Be careful when soldering the transistors, as the pads are very close together, make sure there are no “solder bridges”.

RESISTORS

It is very important that the resistors used on the panel switches are 1% type, otherwise incorrect stage settings and modes will occur.

R72 if the required value 5.26k cannot be found then **R72** can be made up from a 4.7K & 560R resistor in series.

R68 if the required value 66.6k cannot be found then **R68** can be made up from a 62K & 4.7K resistor in series.

CAPACITORS

C6 and **C13** should be high-quality polyester type capacitors, this is very important, otherwise the CV output will not be stable.
All other non electrolyte capacitors can be ceramic disc types.

INTEGRATED CIRCUITS

IC1, **IC2** & **IC3** are all static sensitive devices, please be careful. [no nylon shirts, long clean hair, woollen jumpers etc !] touch a ground source first [water tap] if worried.

Please use a **20pin DIL socket** for **IC1**, in case of software updates !

IC2 is a **4069UBE** logic device, NB the circuit will only function if it is an “unbuffered device” IE: Must be “**UB** or **UBE**”

IC5 is a voltage regulator, which looks very similar to the transistors.

WIRE JUMPERS

Just above **IC3** are a set of wire jumpers:-

Connect **W1** to **W2**.

Connect **W5** to **W6**.

Ignore **W3** & **W4**.

There are three other unnamed wire jumpers to connect:-

[1] To the left of **W1**&**W2**

[2] Below **R41**

[3] Below **R5**

CONNECTIONS

The power supply connection is at the top right of the board.

The circuit is designed and tested with +15V/-15V but in theory should work with +12V/-12V.

The **+5V** supply connections for the panel components are near the top left of the board, and just above/between **IC2** & **IC3**. NB there is an on-board regulator [**IC5**] so do not connect these to any other power source, they are only to supply the panel components.

The LEDs are connected to the board via the connector row at the bottom left of the board named “**LEDS**” starting from the right LED1, to the left LED8.

The LED cathodes are connected to **LEDG**, see “**M185_Panel_Wiring.PDF**”.

The CV Pots. are connected to the board via the connector row just below **IC1** named “**POTS**” starting from the right POT1, to the left POT8.

The switch connectors [**PRV,NXT,MD,CT,MAX,SDIV,NODE**] grouped around **IC1** are quite sensitive to interference, and care should be taken that these wires are not excessively long, or near sources of high RF.

Most of the other connections are on the right side of the board, with some others scattered elsewhere.

SWITCHES

Gate-mode switches are 1pole 4way or 2pole 4way [only 1 pole is used]

Step-count switches are 1pole 8way [these can be rotary, or supplied slide switch]

The gate-mode and step-count switches for stage 1 have a few resistors and one diode soldered to their terminals [see “**M185_Panel_Wiring.PDF**”]

All the other gate-mode and step-count switches have just the diodes [connected to their pole terminal], the rest of their terminals are all connected [in parallel] to the same pins on the stage one gate-mode and step-count switches [see “**M185_Panel_Wiring.PDF**”]

The **STAGES Control** can be either a 1pole 8way switch or a 50k potentiometer [see “**M185_Panel_Wiring.PDF**”]

The **MODE** and **STEPCOUNT** switches are 1pole 4way or 2pole 4way [only 1 pole is used].

POTENTIOMETERS

The stage CV controls are all 100k linear.

The tempo control is 100k linear.

The portamento control is 1M linear.

The gate time control is 50k linear.

The stages control can be 50k linear pot, or a 1pole 8way switch [see above]

All the CV potentiometers have a diode wired to their centre lug going to the **PCVS** connection on the main PCB. [see "**M185_Panel_Wiring.PDF**"]

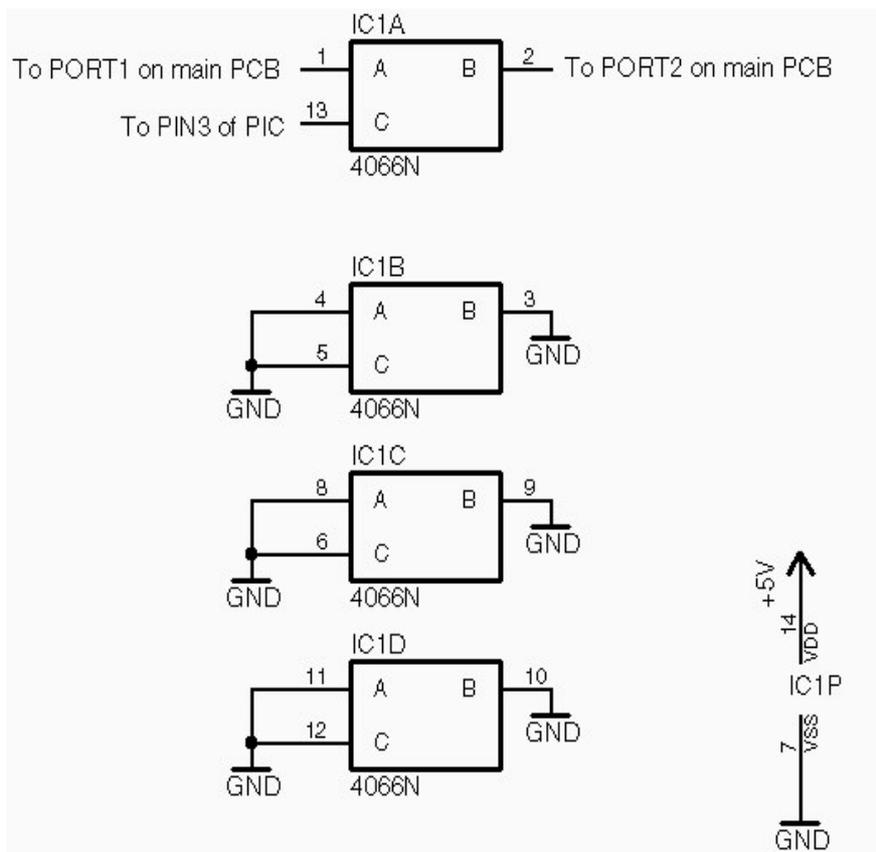
LEDS

Depending on the brightness type of LEDs used, **R10,R17,R26,R34,R52,R63,R67** can be changed to higher or lower value [suggested 470R for regular high-bright LED].

Due to the nature of the LED circuit, that uses two levels of cathode voltage for gate mode display, some LEDS might appear slightly duller than others, these can be hand selected if desired.

ADDITIONAL DAUGHTER BOARD SCHEMATIC & WIRING

This can be made on a small piece of stripboard and carefully insulated and secured to the main board.



The clock generator circuit of IC2 is based on the design of **Rene Schmitz**, and is used here by his kind permission.

<http://www.uni-bonn.de/~uzs159/>

All other parts of this circuit are copyright **RYK / eyecandy ltd** 2008.

