

Drumulator 8 Kits + MIDI Installation & User Instructions

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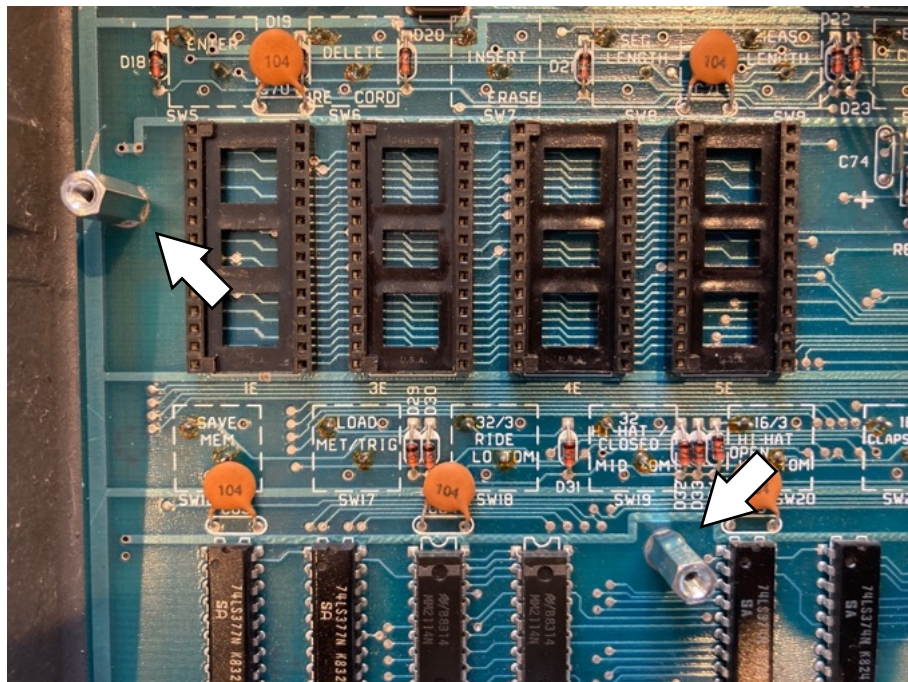
Drumulator 8 Kits + MIDI

Before starting the installation there are a few things to make sure of first:

- If your Drumulator already has a MIDI retrofit, be it the factory MIDI kit or a 3rd-party one; or has any kind of ROM switcher board or other ROM modification fitted, these will need to be removed and the machine put back to its original state.
- The Drumulator needs to be fully working – if it has underlying faults, installing the D8KM board will not fix them for you and will probably make any troubleshooting efforts more difficult.
- **Make absolutely sure that the Drumulator is turned off and unplugged!**

Installation

1. Place the Drumulator upside down on a soft surface and remove the eight screws securing the bottom panel to the housing.
2. Carefully remove the bottom panel – there are two cables going from the board to the transformer and regulator on the bottom panel. On most units both of these have connectors and can be disconnected. On early units, however, the regulator cable is soldered directly to the board, and it's advised to leave it connected while working on the unit, trying to avoid pulling on the wires. Alternatively, you can de-solder them and re-solder them again at the end, but be very careful to not mix them up.
3. Remove the four sound ROM ICs 1E, 3E, 4E, 5E from their sockets, and remove the program ROM IC 12K. Remove two screws, one left of 1E and one below 5E. Fit the two included UNC 4-40 x 9/16" standoffs in their places – do them up snugly but do not overtighten them.

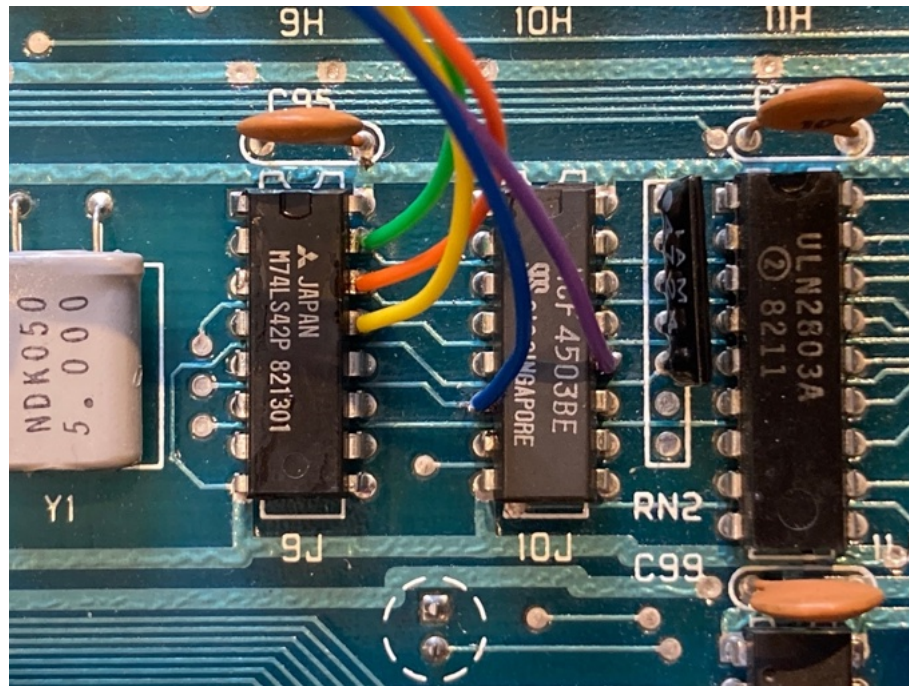


4. Plug the **short ends** of the two header strips into the socket on the underneath of the D8KM board. Now plug the D8KM board into the 1E socket, ensuring that the pins are correctly aligned. Using the two screws you just removed, fasten the D8KM board down on the standoffs.

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5. Plug the 5-way cable into the header on the D8KM board marked CN1. These wires are to be soldered to pins on ICs 9J and 10J:

| Number | Colour | Signal | Location |
|--------|--------|--------|------------|
| 1 | Purple | /CON1 | 10J pin 12 |
| 2 | Blue | /CON3 | 10J pin 6 |
| 3 | Green | PBSEL0 | 9J pin 15 |
| 4 | Yellow | PBSEL2 | 9J pin 13 |
| 5 | Orange | PBSEL1 | 9J pin 14 |



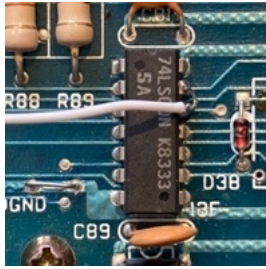
6. Remove resistor R34, located just above the MIX VOLUME potentiometer. If you're careful you can de-solder it from the component side without having to remove the board from the housing, or alternatively you can simply clip it out with a pair of diagonal cutters.

Note that on early Drumulator units this resistor and its neighbouring components are lifted off the board at one end with a piece of coaxial cable to correct for a foil layout error – see photos on Step 7 on next page.

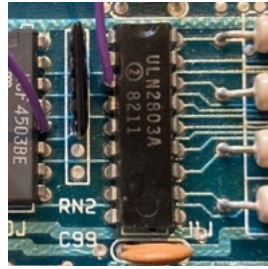
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- Plug the 6-way cable into the header on the D8KM board marked CN2. These wires are to be soldered to various locations on the Drumulator board:

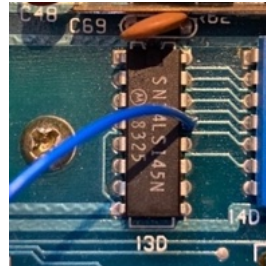
| Number | Colour | Signal | Location |
|--------|--------|----------|------------------|
| 1 | White | MIDI | 13F pins 12 & 13 |
| 2 | Purple | CATH5 | 11J pin 3 |
| 3 | Blue | DSPSEL2 | 13D pin 13 |
| 4 | Green | CLK IN | R34 top pin |
| 5 | Yellow | CLK OUT | R34 bottom pin |
| 6 | Orange | RUN/STOP | R73 bottom pin |



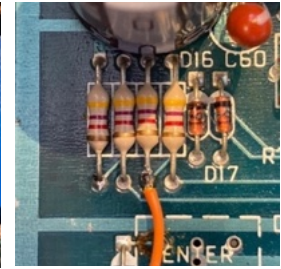
White wire to 13F pins 12 & 13



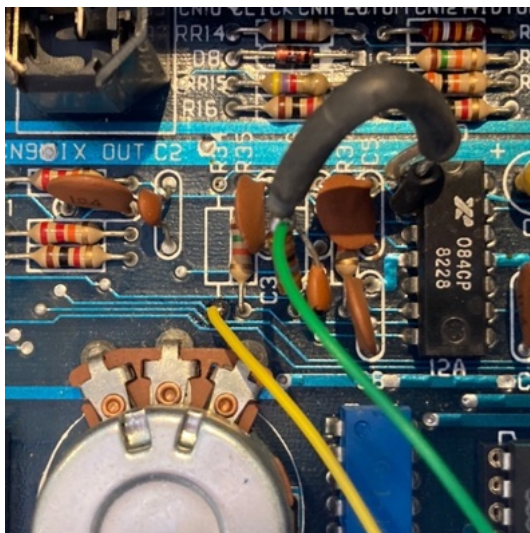
Purple wire to 11J pin 3



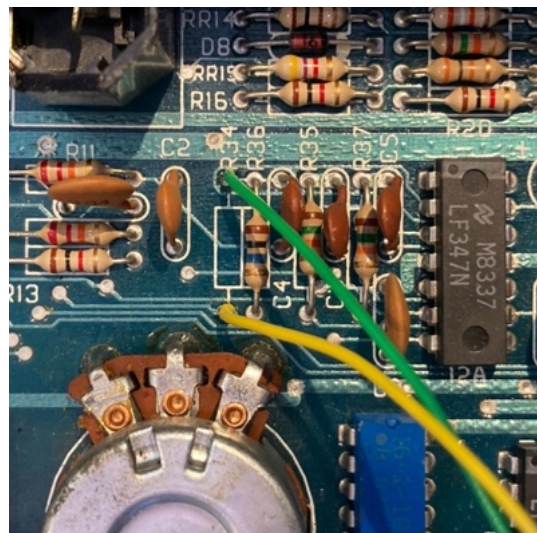
Blue wire to 13D pin 13



Orange wire to R73 bottom pin



Early units:
Green wire to coaxial cable junction
Yellow wire to R34 bottom pin



Later units:
Green wire to R34 top pin
Yellow wire to R34 bottom pin

- Secure the wiring in place with the included cable ties.
- Plug one end of the ribbon cable into the 12K socket on the Drumulator board, with the cable going to the left. Make sure that the pins are correctly aligned and that it is pressed fully home into the socket.

Plug the other end into the 12K socket on the D8KM board, with the cable going towards the front of the unit. Make a fold in the cable so that it will lie flat – see overview photo on page 1.

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10. Mark and drill the 16mm hole for the MIDI socket on the Drumulator's back panel. The recommended location is below the power switch, vertically in line with 'OFF' and horizontally in line with the 'O' in 'RUN/STOP'. Use a slow speed for the drill as the plastic housing is very soft and the swarf tends to melt onto the bit at high speeds. **Be very careful to not hit any wiring or anything else in the Drumulator when the bit emerges!**

Once this hole is drilled, use the MIDI socket as a template to mark and drill the two 3mm mounting holes. Mount the MIDI socket using the included M3 x 16mm screws, shakeproof washers and nuts. Plug the cable into the CN3 header on the D8KM board.

Note: If you already have a hole on the back panel from a previous MIDI retrofit, you can of course re-use it but you may need to extend or re-make the wiring for the MIDI socket if it is not long enough to reach. The connector on the supplied cable is a 3-way JST XH type.



11. Reconnect the two cables for the transformer and regulator and replace the bottom panel. Replace the eight screws.
12. Test the Drumulator and the new functions. If the display shows the 'Bad' message, the memory contents need to be cleared. To do so:
 - Select segment mode by pressing SONG/SEGMENT
 - Press and hold ERASE
 - While holding ERASE, press CASS, display will show flashing 'Poof'
 - Still holding ERASE, press ENTER and listen for metronome beep

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Switching Kits

To switch between the 8 kits included on the D8KM board, simply hold down one of the bottom row of buttons (numbered 1-8) and press the ENTER button. This can be done at any time while the Drumulator is running, except for when it is in MIDI input mode (explained on next page under MIDI Notes). The current kit selection is remembered when the Drumulator is powered off.

| | |
|-------|-------------------------------------|
| Kit 1 | Stock kit |
| Kit 2 | DigiDrums Alternate Drum Set 1 |
| Kit 3 | DigiDrums Electronic Drums 1 |
| Kit 4 | DigiDrums Electronic Drums 2 |
| Kit 5 | DigiDrums Rock Drums |
| Kit 6 | DigiDrums Jazz Drums |
| Kit 7 | DigiDrums Latin Percussion |
| Kit 8 | DigiDrums African + Misc Percussion |

MIDI Clock

To sync the Drumulator's sequencer to incoming MIDI clock, press the EXT CLOCK button. The LED above it will light. To switch back to the Drumulator's own internal clock, press it again.

While the Drumulator is set to use external clock, if MIDI clock is present (determined by MIDI Stop and Start messages) it will take precedence over the external clock signal and will also stop and start the sequencer. Without MIDI clock present, the external sync jack works exactly as normal, for both clock signals as well as loading patterns/songs from tape.

When using MIDI clock, the clock divider setting should be set to '1' (24 pulses per quarter note) by holding down the EXT CLOCK button and pressing the < and > buttons to adjust the value shown on the display.

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MIDI Notes

To play the Drumulator's sounds from MIDI notes, hold the EXT CLOCK button and press RUN/STOP to put it into MIDI input mode. The display and LEDs will go out and the buttons will stop doing anything – this is normal as the Drumulator suspends all sequencer and panel functions in this mode.

While in this mode, MIDI notes on the user-specified channel will trigger the sounds of the currently selected kit, with the volume of sounds controlled by the note velocity. To exit the MIDI input mode and go back to normal operation, press the ENTER button.

To set the MIDI channel, press and hold the EXT CLOCK button and use the < and > buttons to adjust the value shown on the display (while the Drumulator is **not** in MIDI input mode). This setting is remembered when the Drumulator is powered off.

Due to a quirk of the v3.00 Drumulator OS, which provides the MIDI note handling, the MIDI channel shares the same numeric value as the external clock divider setting. For example, if you set the MIDI channel to 4 you are also dividing the incoming external clock / MIDI clock by 4. In practice this isn't a big problem as you can't use MIDI note control and external clock at the same time anyway, but it is something to be aware of.

MIDI Note Mapping (for stock kit)

