

KPR-77 MIDI Interface

Board Rev. 4
Installation Instructions

This kit includes:

- 1x Pre-assembled PCB
- 1x 14-way ribbon cable
- 1x 5-way cable
- 2x M3 x 10mm hex standoffs
- 2x M3 x 6mm countersunk machine screws
- 2x M3 x 6mm standard machine screws
- 2x M3 nylon washers

You will need:

- Fine tipped soldering iron & lead solder
- Drill with 3mm bit & countersink bit
- Phillips head screwdriver
- Wire strippers

Installation

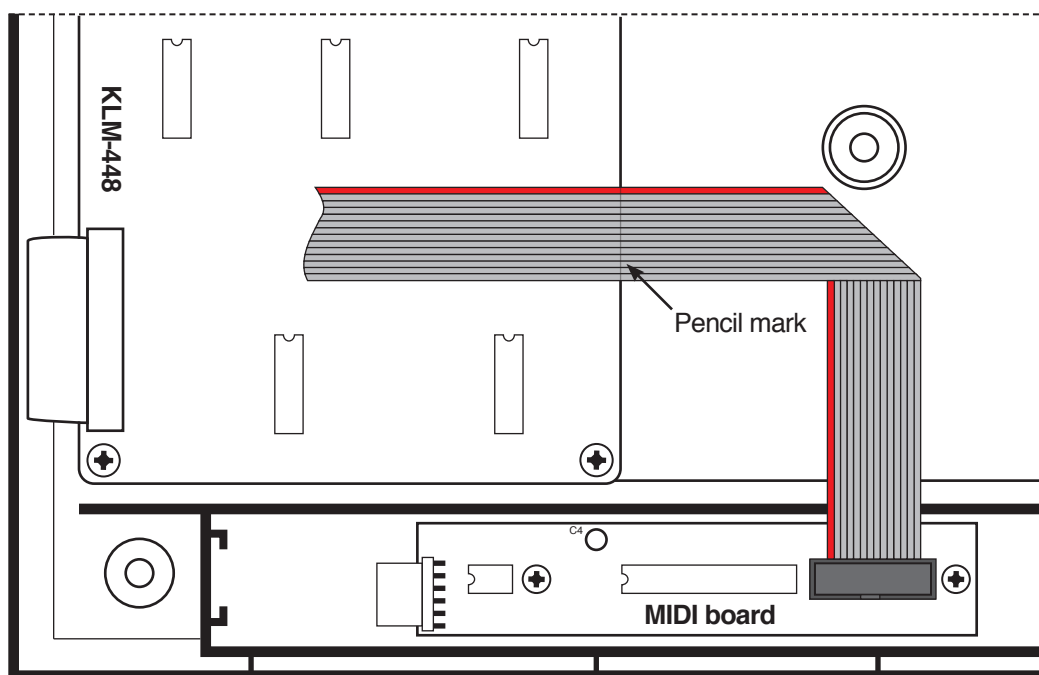
1. Remove the batteries if they are installed. Remove the 7x screws on the bottom of the KPR-77. Carefully lift up the top case, disconnecting 3x cables CN04, CN02 & CN01 going to the voice board in the bottom case. Also disconnect the 2x flat flex cables CN03 & CN07.

Note that the two halves will still be joined by the 2x wires going to the volume control / power switch. You can temporarily desolder them for better access, but it's not essential.

2. Position the MIDI board in the battery compartment with capacitor C4 on the MIDI board in line horizontally with the lower-right screw on the square KLM-448 board, so that the push button on the underneath of the MIDI board is accessible through the battery compartment door when it is opened.

Using the MIDI board itself as a template, mark and drill 2x 3mm holes in the bottom case. Countersink them from the exterior face so that the screw heads do not protrude. Fasten the 2x standoffs in the bottom case using the 2x countersunk M3 screws and the 2x washers. Mount the MIDI board on the standoffs using the 2x standard M3 screws.

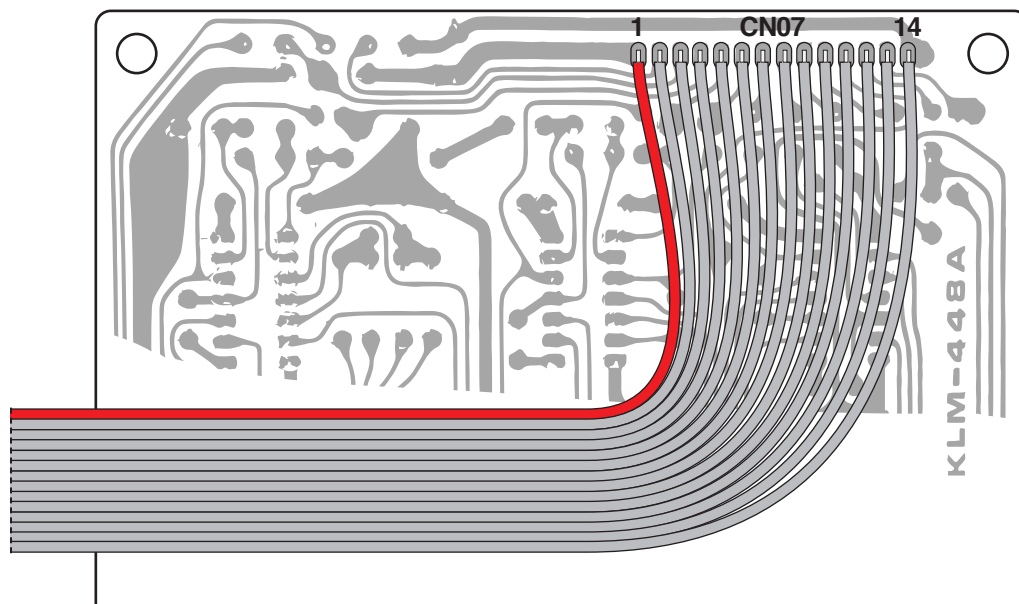
3. Plug the 14-way ribbon cable into the MIDI board and fold it at right angles, in front of the large plastic post in the middle of base of the KPR-77. There is a pencil marking 17cm in from the free end of the ribbon cable which should more or less line up with the right-hand edge of the KLM-448 board. Unplug the cable again once you've made the fold.



Installation

4. Unscrew and remove the square board KLM-448, found in the bottom-left of the case. Disconnect the flat flex cable which joins it to the large voice board.
5. Separate and fan out the wires of the 14-way ribbon cable to a few inches. Starting with the 14th wire (furthest away from the red stripe), strip 3mm of insulation and tin the wires. Solder the 14x wires to CN07 on the underneath of the KLM-448 board as shown.

It's recommended you cut the wires progressively shorter towards the 1st wire (marked with a red stripe), as they are connected at right angles to CN07.

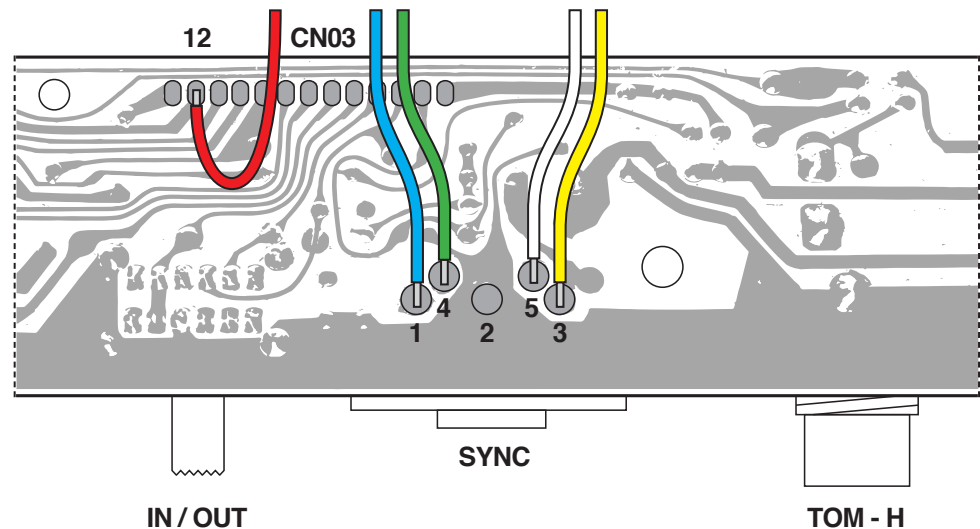


Ribbon cable wire	Connect to	Signal
1 (with red stripe)	CN07 pin 1	Ground
2	CN07 pin 2	Claps
3	CN07 pin 3	Closed hi-hat
4	CN07 pin 4	High tom
5	CN07 pin 5	Low tom
6	CN07 pin 6	Open hi-hat
7	CN07 pin 7	Cymbal
8	CN07 pin 8	Snare drum
9	CN07 pin 9	Bass drum
10	CN07 pin 10	Accent
11	CN07 pin 11	Flam (unused)
12	CN07 pin 12	Metronome bell
13	CN07 pin 13	Metronome click
14	CN07 pin 14	Unused

6. Replace the KLM-448 board and 4x screws in the bottom case, avoiding pinching the ribbon cable between tall components on the voice board and leads on the underneath of the KLM-448 board as far as possible. Plug the ribbon cable into the MIDI board.

Installation

7. Unscrew the connector board KLM-415B (4x screws). Fold it up towards you and feed the wires from the 5-way cable included with the kit underneath. Strip 3mm insulation from the free ends, tin and solder the 5x wires to the locations shown below:



Wire	Connect to	Signal
Red	CN03 pin 12	Power (+6V)
Blue	SYNC socket pin 1	Start / stop
Green	SYNC socket pin 4	MIDI +
White (or grey)	SYNC socket pin 5	MIDI -
Yellow	SYNC socket pin 3	Clock

8. Replace the connector board and 4x screws holding it down. Route the 5-way cable to the MIDI board and plug it in. It is keyed and can only be inserted the correct way up, but you may need to insert it from an angle to get it past the key.
9. Re-assemble the KPR-77 - while lowering the top case onto the bottom case, reconnect 3x cables CN04, CN02 & CN01 and 2x flat flex cables CN03 & CN07. If you desoldered the 2x wires to the volume control / power switch, resolder these as well.

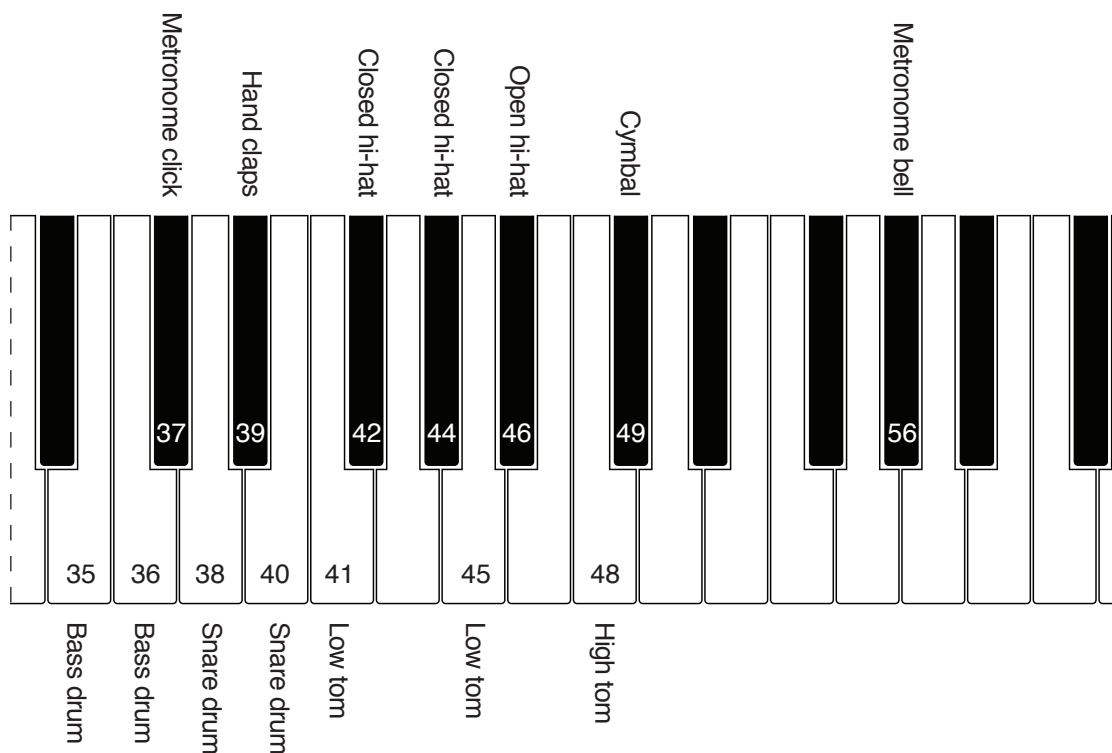
Make sure no wires are being pinched in the case and replace the 7x screws.

MIDI Functions

The KPR-77 can receive MIDI notes on a single channel, as well as MIDI clock. To set the MIDI channel, play a MIDI note on the channel you want the unit to receive on **while holding down the push button on the MIDI board**. The metronome bell will sound 3x times to signify that the channel has been learned. The setting is stored in memory and remembered at next power-on.

The velocity of the note will be taken as the accent threshold - notes played at or above this velocity will play accented, while notes played below this velocity will play un-accented, depending on the position of the ACCENT slider on the top panel.

The KPR-77's voices are triggered by the following MIDI notes:



To sync the KPR-77 to external MIDI clock, move the SYNC switch on the back of the unit to the IN position. As the KPR-77 internal clock operates at twice the resolution of MIDI clock (48 *pulses-per-quarter-note* vs 24ppqn), the internal sequencer will run in half time.

This can easily be corrected by changing the pattern scale though - with the KPR-77 in Write Mode and the pattern stopped, hold down the FUNC SET key and press the 13 key.