

# Key2Midi 64 et 32

Encoder MIDI board

## User manual



### Preamble

The Key2Midi board isn't a musical instrument by itself. It is intended to be the interface between an accordion or organ keyboard and a MIDI music sound module or any electronic equipment responding to Midi standard.

The purpose of this user manual is not to explain the MIDI protocol. It is assumed the user has a basic knowledge of this

### Main features:

- 64, 48 or 32 direct input, non-multiplexed. Multiplexing is done in the board itself
- inputs can be +5v (High) or Gnd (Low)

- 2 analog inputs sending Midi messages expression and volume.
- Sizes: 40 \* 168 mm (64) , 40\*115 (32), 40\*135 (48)
- The MIDI channel can be changed on the card by a push buttons and led, or by MIDI. This simple procedure is explained later in this document.
- Very easy mapping of sent notes by the freeware « PARAMETOR ». This simple procedure is explained later in this document.
- Protection against bad polarity
- Compatible with any instrument repending to Midi standard
- In case of many keyboards, boards can be chained.
- Wiring of inputs by 16 pin connectors and ribbon cable, available in option here: accessories
- To send a midi note, you have to apply a 5 volt tension (or Gnd) to one input.
- The board can supply the power for optical rank if needed, with limit of 700mA. Some optical kits will be available soon.

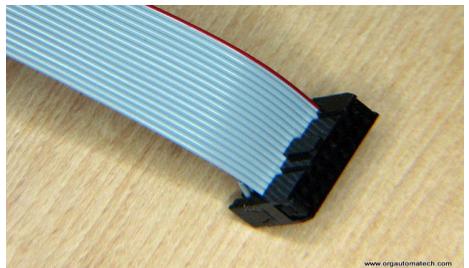
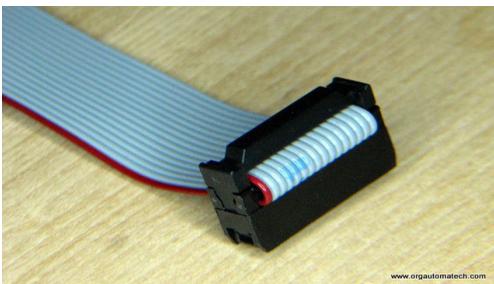
### **Electrical features:**

The board needs a power supply that gives between 8 and 15 volt DC. A small phone (old fashion) charger (8-12volt) will work fine if there is no optical reader to power.

Please, avoid to use an old transformer and just a diodes bridges.

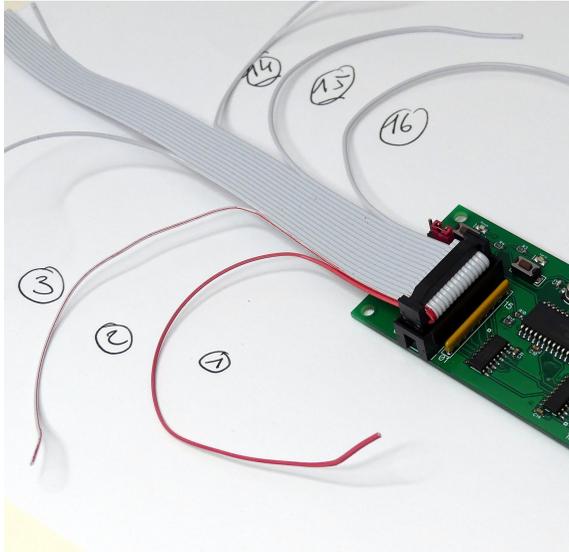
There is 4 \* 16 pin connectors on board (2 for K2M 32). You can wire there directly your key contacts with 16 wire ribbons. Common of all contacts is the +5v on the board, so then when you press a key, the +5v is going to corresponding input.

Ribbon cable and female connectors are available on Orgautomatech site, page “accessories”



#1 is the red wire, look at the picture closely.

Here is on the picture, the right way to connect the ribbon. With for 50cm long ribbon, you can connect all the keys of a standard keyboard, if you place the board in the middle, of course.



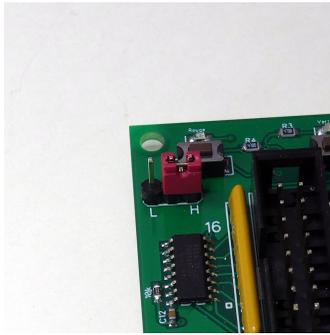
You can possibly, power an optical reader rank, under limit of 700 mA. Please, adapt the power supply to this consumption. If it is over this limit, please power the optical equipment directly with a different power supply, just let the Gnd common to the 2 power supplies.

The inputs are “pulled down” by a 10ko resistor. Take this in account for your photo-transistors.

### **L-H modes**

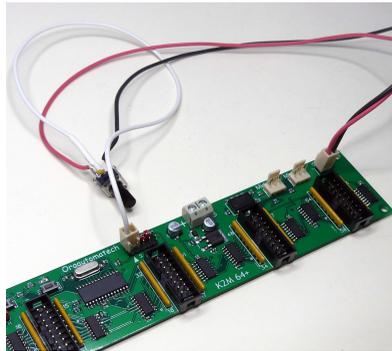
The normal mode is H (high), ie the inputs are active (sending an note ON) when we apply +5 volts.

On the contrary, in L mode, the inputs are active and sending the note ON when the Gnd is applied to the input. This may be necessary, for example, with hall effect detectors, to avoid over-consumption. You just need to change the position jumper to choose your mode.



## Analog inputs

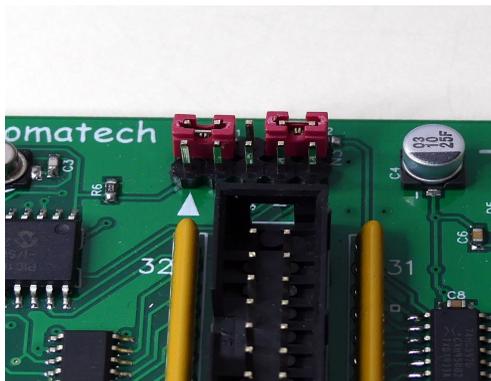
These new K2M cards have 2 analog inputs, sending the Midi expression and volume messages. You will need to connect a (quality) potentiometer to the points marked A1 and A2, A1 is the input for the expression, A2 for the



volume, as well as on the + and gnd, see photo.

Ask me before ordering if you want another control change.

If you do not use these inputs, you must leave the jumpers in place, as in the photo. In this case, at startup, two messages (expression and volume) will be



sent with a value of 127.

## **MIDI wiring**

Wire a Midi cable between your K2M MIDI OUT and your midi sound module MIDI IN.

The MIDI IN socket in for wiring another K2M board, in case of another keyboard. Note messages are driven to the MIDI OUT.

Please note that you should not connect the K2M MIDI IN to your computer MIDI OUT. This would cause problems, especially if your sequencer MIDI THRU is on: an undesirable loop would result!

There is an exception to this rule: when you are mapping the notes with Paramotor. In that case, nothing must be connected to the K2M MIDI OUT.

## **Midi channel setting**

The MIDI channel can be set easily, without changing anything else, and without a computer, directly on the board.

To verify or check the board's currently set MIDI channel: push the «channel» button once and count the number of red LED flashes. That number is the MIDI channel.

To set the MIDI channel:

1. Push the setting button – the green led switches off. While holding it down, press the channel button as many times as the channel you want, for example once for channel 1, twice for channel 2, etc. Don't be too quick. Each press must last at least ½ second.
2. When it's done, release the setting button. The green led switches on again. The new channel is recorded.
3. You can verify your setting by pushing the channel button and count the number of red LED flashes

This procedure is needed only once. The board stores the midi channel in memory even when it is switched off.

Channel can also be changed by Orgautomatech freeware “Paramotor”.

## **Notes mapping**

Key2Midi board can send 64 (or 32, or 48) MIDI notes, to choose among 128.

Default factory mapping is MIDI number 48 to 111. If this doesn't suit your needs, you will have to attribute a MIDI number to each of the inputs. You'll need to do this only once, as board stores them in memory even when switched off. You do not have to follow a particular order, notes can be ascending or descending, chromatic or not. However, you should not have the same note twice.

Program your boards one by one, without connect MIDI OUT of one to MIDI IN of another!

The procedure is very simple, you need JAVA to be installed on your computer (Windows or Mac as well). Then, you can download PARAMETOR here: <http://www.blog4ever.com/blog/fichier-653148-7107168-69227.html>

- 1. Link your computer out to the K2M board Midi in. Do not plug anything in the board Midi Out socket.
- 2. Switch on the board
- 3. In the software Parametor, fill the boxes with the notes you want regarding of exit numbers.
  4. select "64 outputs" (or 32 for K2M 32) and "setting"
  5. Press "Send "

The green LED on the card will shut down, the red LED will light up briefly, then the green LED is on again, it's done. All in less than a second!

Please note than, even you want to change only a few notes, you have to send all the notes, always select the number of notes corresponding to your board.

Parametor allows you to save your scale, so, you'll haven't to tape all the note numbers in the cases next time.

You can save your scale, so, you'll not have to re-tape the number next time.

While you are in Parametor, you can also change the velocity value of sent notes.

You can also program a latency time, (rebound), depending on your contacts quality.

### **Functioning**

A few tenths of second after switching on the board, the green LED lights signifying that the board is ready to work.

Key2Midi works on only one channel at a time, but sends via MIDI OUT all notes coming in via MIDI IN . So you can connect another board (daisy chain) .

When applying a tension over 3 volt (5.5 volt max) at an input, the board sends a Midi “note on” message , of the number attributed to this input, and sends a Midi “note off” message when this tension stops.

Sent note velocity value default is 100.

If you set a latency value for input, the board wait for the time set to send the note. This latency can be set with Parameter (0 up to 127 ms). The feature is useful when scanning an organ roll with some “bridges” on notes.

If you push the channel button, a “all note off” message is sent on all the 16 channels.

Si vous appuyez sur le bouton channel, un message « all note off » est envoyé sur tous les canaux.

### **Guarantee**

The Key2Midi as all the Orgautomatech boards has a one-year guaranty against manufacturing fault. Each board is tested before shipping. I advice you to try it with its factory settings before changing the note mapping.

### **Trouble shooting:**

If there seems to be a problem, please check a few things before sending back the board:

The green LED doesn't light after switching on the board:

- Check the power polarity

The green LED lights, but no sound is coming out my sound module:

- Is the midi cable connected to the board’s MIDI OUT and in the sound module MIDI IN? Don't laugh, this happens also to me...
- The MIDI IN is used to connect another board. It must **not** be connected to the MIDI OUT of the computer or MIDI THRU of the

sound module!

- Is the board midi receiving channel the same as the channel being sent?

Don't forget: the power supply must be a regulated DC.

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