

# How to midify a Korg MS10 using MIDImplant

The Korg MS 10 has got input jacks for CV and trigger input. With the MIDImplant you can easily midify your MS 10 using these input jacks. The internal powersupply is approximately +/- 15 volt. The MIDImplant is designed up to 17 volt. So the internal powersupply is perfect for the MIDImplant.

If you use those jacks, you will notice 3 disadvantages:

You have to patch the MIDImplant, the portamento is not working, the pitch is really low and you can only use 8 & 4 foot. The cure needs 4 resistors and an opamp. So let's improve things here!

## 1 Prepare and install the MIDImplant

Solder wires of about 25 cm to the corresponding places on the MIDImplant. If you want, you can put heat shrink tubing over the MIDImplant to protect it from short circuit but I don't think it's necessary here. Put all the cables through the hole in the PCB of the MS 10 for the connector (the one in the middle of the bottom of the PCB).

The MS 10 I'm midifying doesn't have it's original case, but I'm trying to find solutions so in the standard situation, you don't have to solder in the upper part of the MS 10, just to avoid you have to take the synth completely apart.

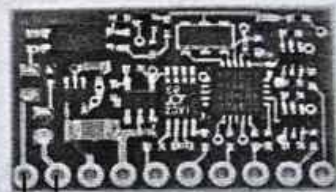
## 2. Layout

Picture below shows how to locate the soldering pads in MIDImplant, and depicts their role.

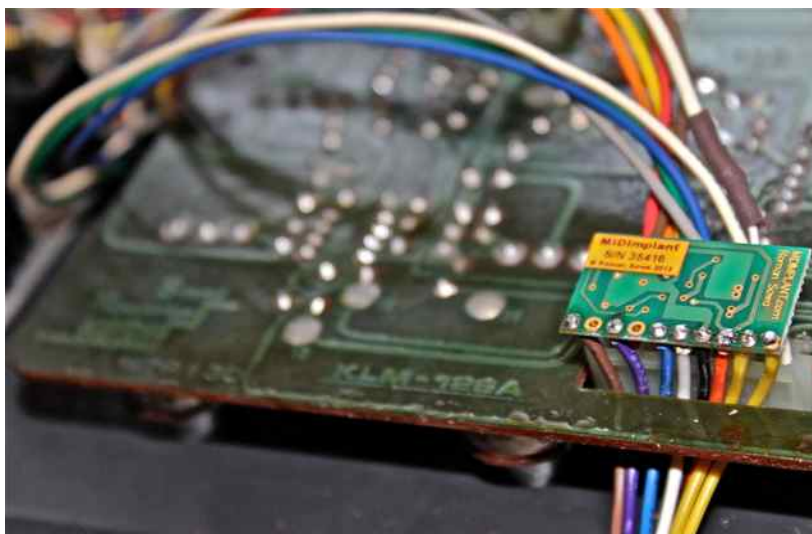
Counting from left to right they are:

- MIDI input (1-2)
- power supply 6-15V (3)
- power supply ground and for CV outputs (4)
- CV outputs (5-6)
- MIDI repeater output (7)
- setup (EDIT) button input (8)
- Gate outputs (9-10)

The EDIT button should be connected between the pads indicated in the picture, and ground if you don't need to



MIDI IN  
+6..15V  
GND  
CV2  
CV1  
THRU  
Learn  
Gate2  
Gate1



## 2 The MIDI connectors.

Order here: [www.midi-hardware.com](http://www.midi-hardware.com)

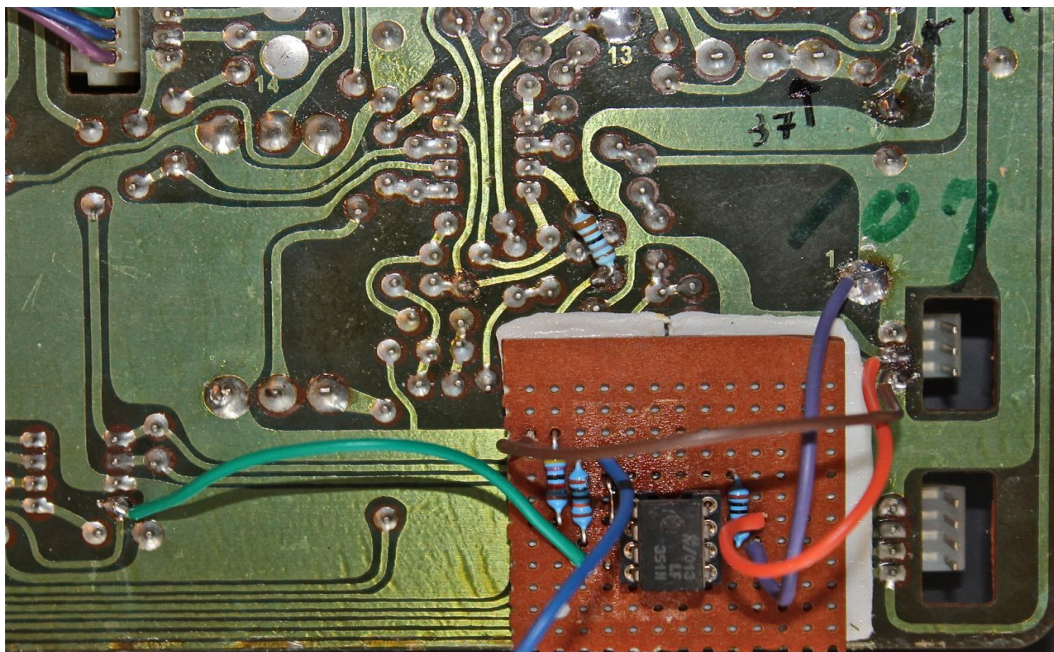
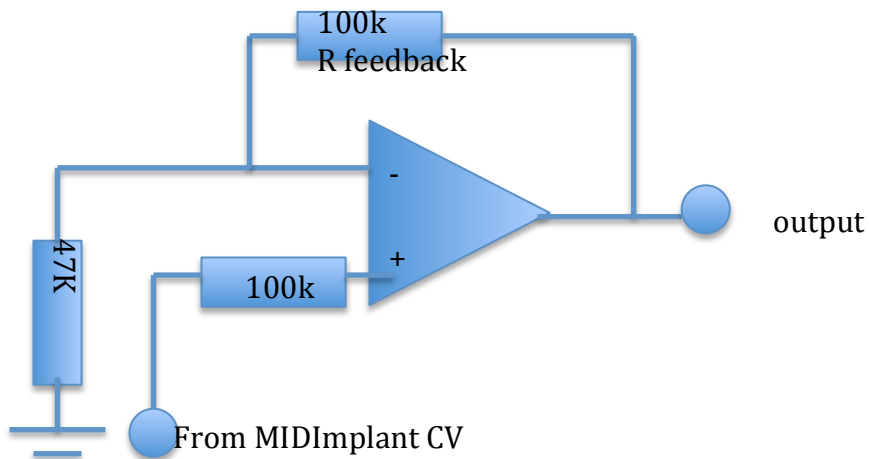
Installed and written by : [www.studioanimator.be](http://www.studioanimator.be)

This manual is written for a modified MS 10, the keyboard was removed and a midikit was installed. The midi never worked like it should. Time to improve with MIDImplant! I didn't have to drill any holes but you should anyway ☺.  
Drill holes in the back of the MS10 for the DIN connector(s) and for the switches.  
Connect the midi wires from the MIDImplant to the DIN connector.



### 3 CV-Opamp buffer.

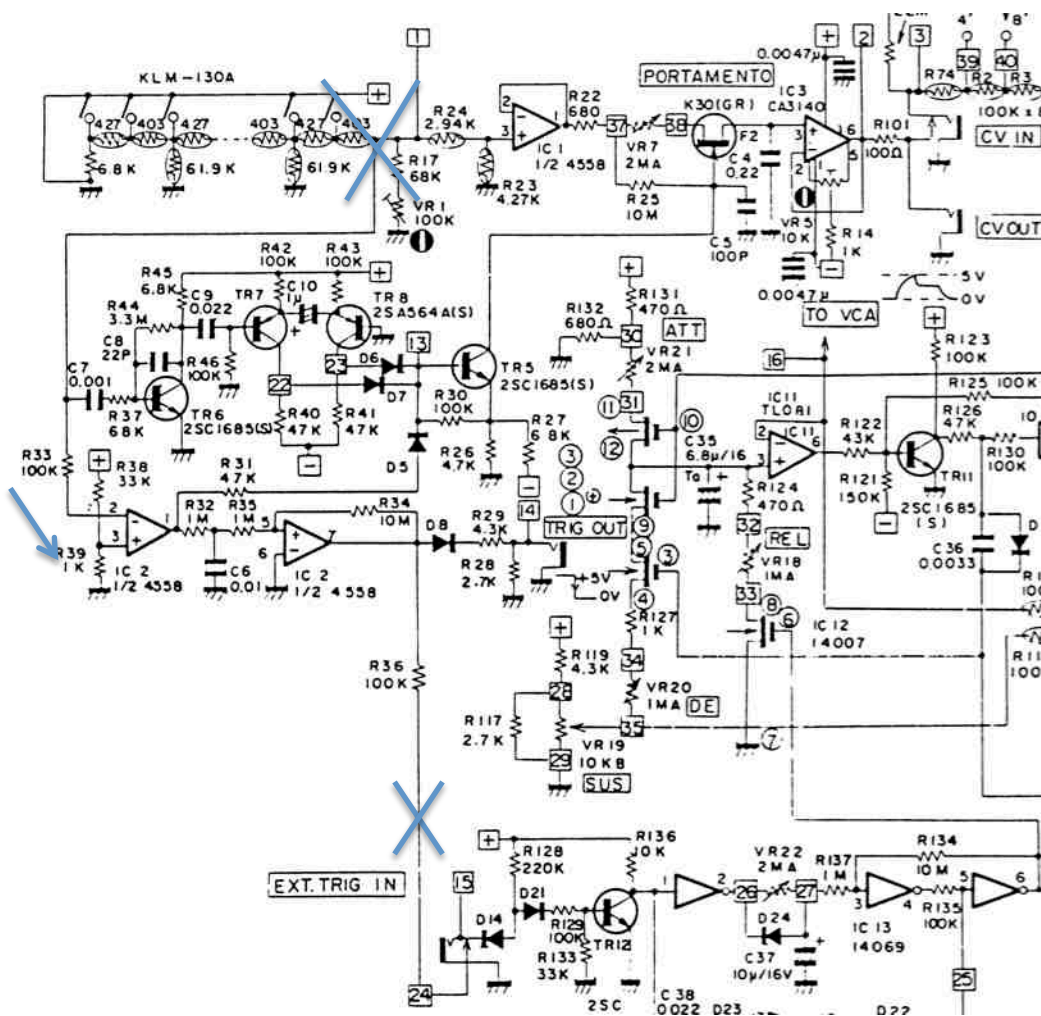
I don't know if The POTAMP will work, anyway I built a small buffer board. Make sure you connect the opamp to +/- 15 volt. Not +15 volt and ground. If you want you can replace the feedback resistor with a 75 k resistor in series with a 47k trimpot for calibration.



The easiest place to install this little board is next to the connector coming from the keyboard. On this spot of the MS 10 PCB there is not a lot going on, you find ground and +15 volt directly on the connector coming from the keyboard. The -15 volt you find on the surrounding opamps like IC2 and IC5.

The FET F2 will not close on the 4 lowest notes. This is because the midification goes lower than the MS 10 keyboard. If you don't like this, put an extra resistor (1k8 or 2K2) parallel over resistor R39. You will be able to play 5 octaves on your MS 10 through the MIDImplant. It's the resistor in the picture on the MS10 pcb

Like explained in the MIDImplant manual, the lowest octave will not be so accurate as the upper octaves. For accurate base lines put the MS 10 one scale lower and transpose MIDI one octave up. The MS 10 will then even go lower than the audio range over midi.



#### 4 Install switches

Install a push button if you like for programming the MIDImplant. If you don't like to drill holes, you can always program the MIDImplant via midi sysex.

Install a DPDT switch. You can remove gate out jack and install a switch there if you like. Then cut the wire that goes to ext. trig jack, the wire to this jack is the middle contact of one pole of the switch. Solder the wire that was going to the jack to the upper contact of the pole. The lower contact comes from the MIDImplant gate signal.



Do the same for the other pole of the switch and the CV. Cut the upper wire coming from the keyboard, the wire to the connector is the middle contact of the second pole of the switch. Solder the wire coming from the keyboard to the upper contact of the second pole. The lower contact comes from the CV opamp buffer board. In my example there is no keyboard so I can't show you a picture because I didn't install a switch.

## **6 Solder the power wires (black/orange).**

Don't use leadfree solder on the MS 10 PCB. Solder the ground wire (black) to the ground lug of one of the jacks. Solder the positive supply wire (orange) to a spot where you have +15 volt. A good place is the middle pin of the connector coming from the keyboard.

## **7 Connect the second CV/ gate.**

Choose what to do with the second CV. You can connect it to the filter or vca. I prefer to solder it to a jack so I can patch it and program it later to give me more options.

## **8 While the MS10 is open...**

While the MS 10 is now open you can install more jacks for filter & oscillator control input, VCO out, MIDImplant CV2 output. If you don't want to drill holes you can give up some jacks like white noise or bender. Let your imagination be your guide. If you have a KORG MONOTRON now is the time to add it to your MS10 to give you extra oscillators, filters, ... to expand it beyond the MS 20.

## **9 Configuring the MIDImplant.**

You can program the MIDImplant by midi learn or by sysex.

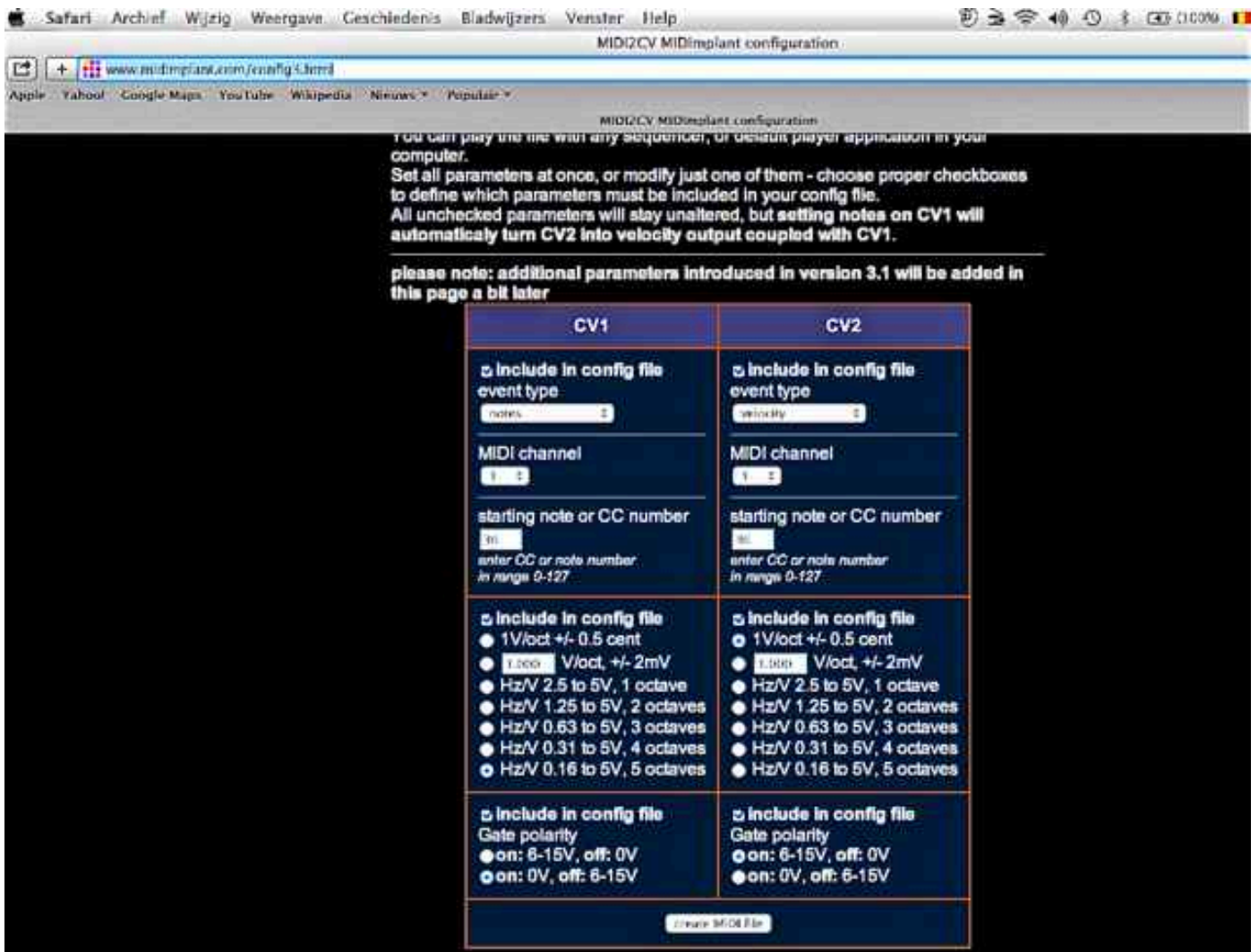
MIDI learn: starting note - press LEARN once

Hz/V - V/oct and number of octaves of Hz/V - press LEARN 3 times. For more information look at the manual.

You have to put the MIDImplant in V/Hz mode and gate polarity on 0V, off 15 volt.

For this go to <http://www.midimplant.com/config3.html>

For MAC users, use Safari. Click "create midi file". Then the "ALT" button and click on download midi file. The MIDI file is now in your downloads folder. Play it through your midi sequencer to the MIDImplant. I use SysEx Librarian, it's freeware and a great little program to backup all your midi equipment.



Now close the MS 10 and enjoy!!

After the installation I had the idea to install the MIDI Implant just behind a jack connector of the MS 10, let's say the white noise jack. If you stand right in front of the synthesiser you could see the bright LED on the MIDI Implant flashing when there is MIDI signal. That will be for the next MS10 I guess.