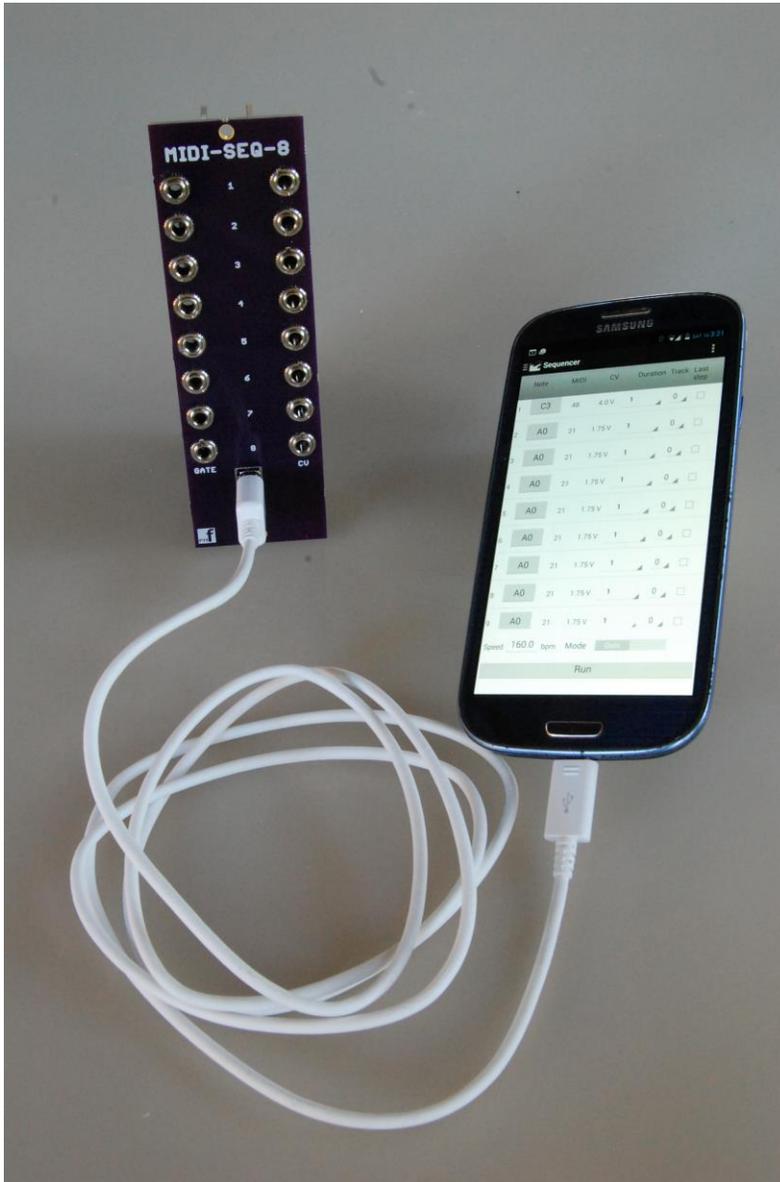


Midi-Seq-8 v1.1 – User Guide

This is the setup and user guide. The unit is designed for a monophonic Analog synthesizer.



The module is designed and sized for **Euro rack** systems. You will need a 16 pin **Euro rack** power ribbon connector with $-12/0/+12$ and an optional $+5V$ which is connected to a synth power supply.

Programming the MIDI-SEQ-8

1. If the PIC24 chip is preprogrammed there is nothing else to do.
2. If you intend to program the chip yourself with our .HEX file, use your favorite method to program the chip. If using the ICSP port on the GATES board and MPLAB-X IDE , you can follow this tutorial to set up a pre-built project with our HEX file:

<http://microchip.wikidot.com/mplabx:projects-prebuilt>

Android app connection

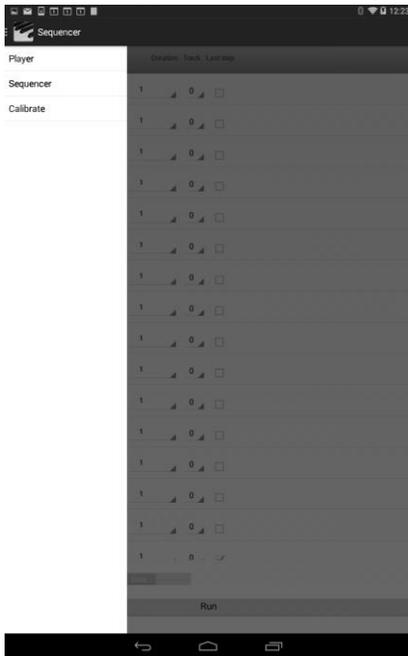
1. Use the GooglePlay Store to find and install the free app on your device. Search for: “pmfoundations” (all one word) and select the “Midi Sequencer”.
2. Connect the power supply to the MIDI-SEQ-8.
3. Connect the Android device to the USB connector.
4. The Android device should show that the battery is charging.
5. The Android device should pop up a dialog asking for your permission to connect to the Accessory. If you don’t see this dialog, follow this procedure:
 - a. Look for an item in the notification list: “Connected as a”
 - b. Click this notification
 - c. Select PTP (might say Camera)
 - d. Now disconnect and reconnect the device from the MIDI-SEQ-8
6. When you accept the permission, the LED should light on the CV board.

Calibrating the MIDI-SEQ-8

If you bought PCBs or a kit, you should only need to calibrate the unit once. If you bought a pre-built and tested unit, you can skip this section.

1. Power up the device and allow it to warm up for a few minutes
2. Connect the –VE probe of a multimeter set to the 20V range to the ICSP pin 4 marked GND with a rectangle around the pin.
3. Plug in a patch cord to CV socket 1
4. Connect the +VE probe of the multimeter to the patch cord.

5. Open the app and use the navigation menu to open the Calibrate screen



6. Click C3 and read the voltage. This is a C note octave 3
7. Adjust the trimmer for channel 1 (corner of the board) until exactly 4.00V is displayed on the multimeter
8. Click C1 and make minor adjustments to the trimmer for channel 1 until exactly 2.00V is displayed on the multimeter. Try the following also:
 - a. C2 = 3V
 - b. C3 = 4V
 - c. C4 = 5V
 - d. C5 = 6V
 - e. C6 = 7V
9. Repeat the adjustments until you have the tracking as close as possible to 1V per octave.
10. Now do steps 4-9 for each of the remaining channels 2-8 by moving the patch cord into the relevant jack socket and testing the voltages.

Calibrating your Synthesizer

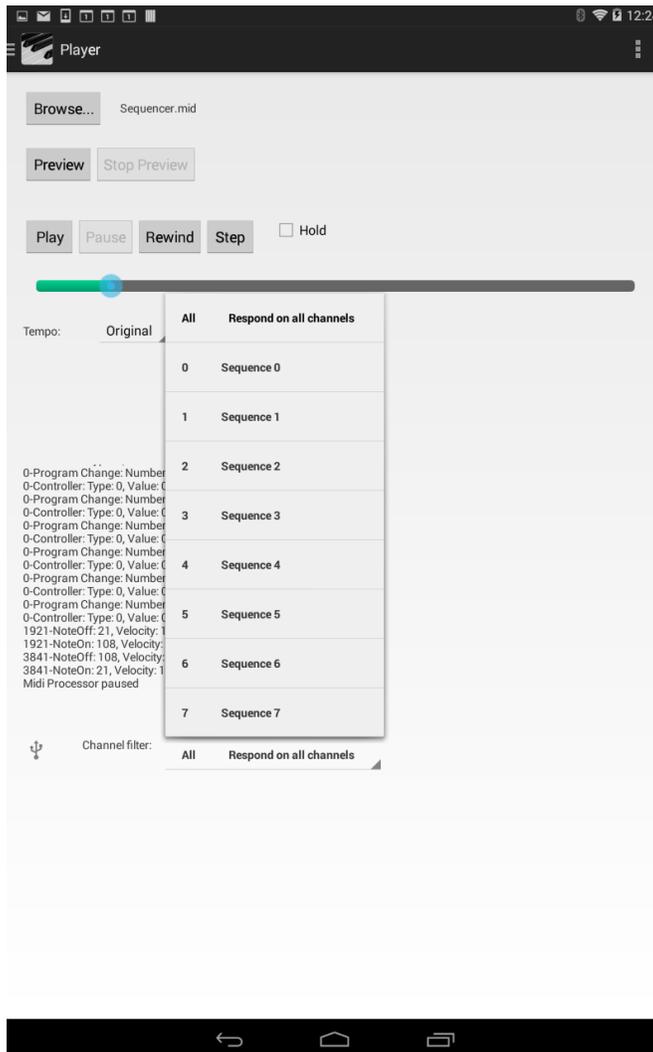
1. Power up the device and the synth and allow them to warm up for a few minutes
2. Produce a tone from your synthesizer using a selected VCO and chosen ADSR, VCA, filters etc. Set the VCA so that it has 0 initial gain and is waiting for a gated envelope shaper to run the VCA.
3. Connect the CV and gate jacks of Channel 1 to your synth VCO CV input and envelope shaper GATE input respectively.
4. Open the app and use the navigation menu to open the Calibrate screen
5. Click C3 and you should hear the tone on your synthesizer. This is a C note octave 3
6. Use the synth VCO frequency controls to obtain the note C3. (Approx 131Hz)
7. Click C1 to C7 to hear all the C notes from Octave 1 to 7

8. You can tune the synth to other frequencies if you know what you are doing!

Playing midi files (.MID extension)

1. To get MIDI files onto your device, you can connect the device to your PC with the USB cable and copy/paste files with the .MID extension into folders of your device which should appear as a window on the PC.
2. Alternatively, you can use your device web Browser to find and download files.
3. You can download these samples by opening them in your Android browser and saving on your device.
 - a. Minuet.MID
4. Connect the CV and gate jacks to your synth VCOs and envelope shapers for as many channels as you are using.

5. Open the Player screen on the device by swiping from the left to get the navigation menu.



6. Open a MIDI file of your choice by selecting Browse and browsing to the file location.
7. You will need to experiment with various MIDI files to learn about the capabilities of the MIDI-SEQ-8. Files with many chords will not play very well since the module is designed to play a single note on each channel.

Using the sequencer

1. Connect the CV and gate jacks to your synth VCOs and envelope shapers for as many channels as you are using.

2. Open the Sequencer screen on the device by swiping from the left to get the navigation menu.



3. Build up to a 16 step sequence by selecting notes/rests and durations
4. Select Run to transfer the sequence to the Player where you can use the player controls to play the sequence. Your creativity is required here!