

M185 software step sequencer



M-185

User Documentation

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Overview

The M185 software step sequencer is based on the hardware sequencer of the same name, created by RYK. It's a unique step sequencer in that it has stage-specific gate modes and clock pulse count. Although it is easy to understand and use, like straightforward X0X programming, it allows for sequences with a much greater degree of variation and liveliness than traditional step sequencers!

Like the hardware M185 sequencer, the software M185 sends control signals to other sound generating synthesizers, that in turn make the sound. The hardware M185 generates control voltages, gates and trigger signals, which are then routed to control voltage-based synths. The software M185 on the other hand generates MIDI signals, which are then routed to either software or hardware-based MIDI synthesizers. The software M185 can also host audio instrument plugins, and so can itself generate sound as well.

What's New in Version 2.3

Version 2.3 of the M185 software sequencer is primarily a maintenance release, addressing one important bug and now with compatibility for Mac OS Big Sur (11.x), including Apple M1 support (via Rosetta2). See the Version History section at the end of this document for details on all changes.

History

The M185 software step sequencer is modeled after the hardware DIY sequencer developed by RYK in 2008. Meant to integrate into existing Roland System 100m modular synthesizer systems, there were a few runs of circuit boards and kits produced and offered for sale via the forums at the sys100m.org forum site: <http://sys100m.org/>.



The hardware M185 works with control voltages, and I only had a few voltage controlled synths that I could use with it. That would have been fine, but I kept thinking about clock sync with

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other MIDI gear, etc... - in short, although I was sure it would have made a great addition to my studio as a control voltage-based unit, I kept coming back to the fact that I needed a MIDI version of it, both MIDI sync-able as well as MIDI note transmitting.

It then occurred to me that I could reproduce most of the M185's functions in software, which would allow me to get that MIDI integration I wanted! I started work on it in late 2010, and I approached RYK in January 2011 to see if he would be interested in collaborating on the effort, since I had never used a hardware M185, and could only infer its functions through the documentation that RYK provided. He enthusiastically agreed, and what you have now is the results of those efforts!

System Requirements



Macintosh

- OS X 10.11.6 – 11.x (Big Sur compatible, runs on M1 chip via Rosetta 2), 64-bit plugins only



Windows

- Windows 7, 8 or 10, 64-bit only, 64-bit plugins only

Installation



Macintosh

The Macintosh version is supplied as a Macintosh disk image file (.dmg). Just double click the downloaded file, and you will see a new window appear on your desktop. Drag the M185 application icon to the Applications window icon that you see – this will install the M185 application on your computer:

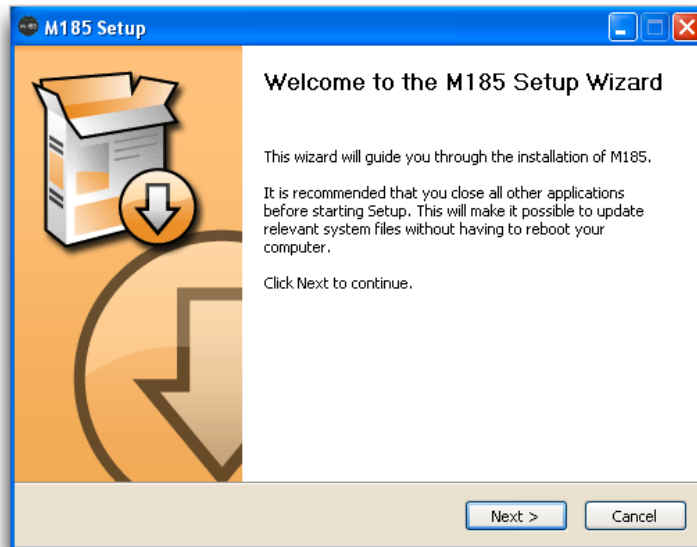


After the file has copied, you can unmount the disk image, and delete the .dmg file (or keep it somewhere safe if you'd like, for future installations).



Windows

The Windows version is supplied as a compressed .zip file. Unzip the file, and you will be left with a file called M185 Installer.exe (or M185 Demo Installer.exe if installing the demo version). Double click this file to run the installer, and follow its instructions:



After installation, you will find a shortcut available to launch the M185 application in the Windows Start menu, in addition to uninstallation and documentation shortcuts. You can keep the M185 Installer.exe file somewhere safe if you'd like, for future installations.

Uninstallation



Macintosh – Just drag the M185 application out of the Applications folder to the Trash.

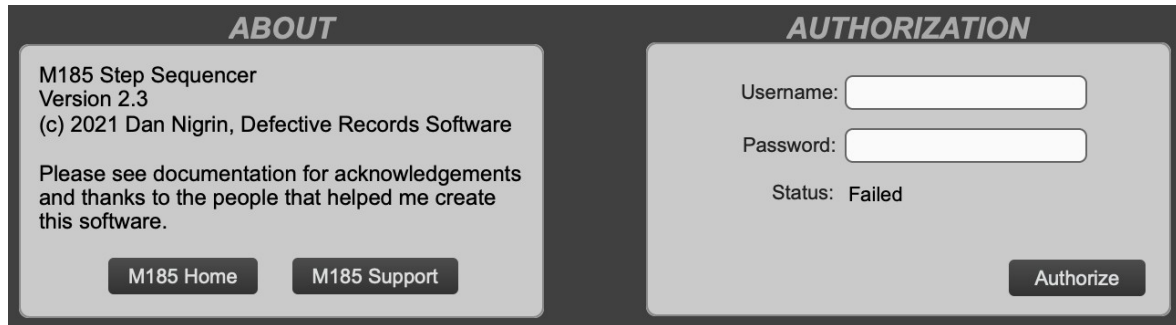


Windows – Use either the Windows Add/Remove Programs control panel to remove the application, or use the Uninstall shortcut in the Windows Start menu.

Authorization & Initial Startup

If you're trying the demo version of the M185 sequencer, you can start to use it immediately after installing it.

If you are installing the full version of the M185 sequencer, you'll need to authorize it before being able to use it. Start the application, and you'll find yourself at the About & Authorization screen:



Enter your Username and Password, and then click the Authorize button. Be careful, cApiTaliZation MaTteRs! If successful, the Status field will change to “Registered”, and you will see a “Start Sequencing!” button, which when clicked will allow you to begin to use the software. If not successful, you will be left at the Authorization screen to try again.

To verify your authorization status, or to remind yourself of your Username and Password, you

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can select the About M185 menu item to be brought back to the About and Authorization screen at any time.

Upon successful first authorization of the full version, or immediately after first startup when using the demo version, the application will proceed to scan your plugins for compatibility, as well as to sort through which are VST instrument versus VST effect plugins. Only VST instruments are supported. If you have a large number of plugins, this scan may take some time. The program will display which plugin is currently being scanned. On subsequent startups, the program will only scan new plugins, so the scan is much faster compared to the initial scan. If the application has a problem with a particular plugin, it will be blacklisted; see “Blacklisted Plugins” in next section regarding the Setup screen.

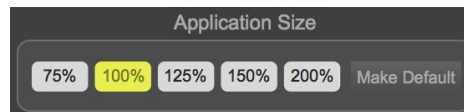
Setup Screen

The M185 sequencer has a Main screen, where most sequencer interaction occurs. It also has a Setup screen, where audio, plugin and MIDI control settings are configured. The buttons on the bottom of the M185 interface allow you to select which window to see. You can also toggle between the two screens by pressing the “.” (period) key on your keyboard.



Application Size

The M185 sequencer allows you to scale the application window smaller or larger depending on your screen resolution and personal preference. Once you find a setting you like, you can click the Make Default button to have the application use that size for each subsequent launch. If you choose a size that's too big for your current monitor, you'll be shown a warning, allowing you to choose a smaller size.

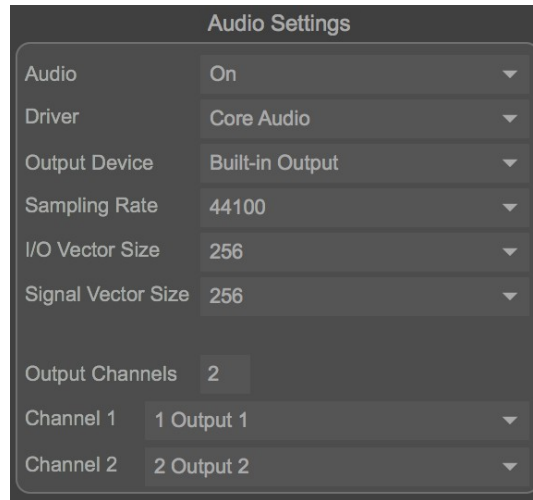


Audio Settings

This section allows you to turn audio processing on and off, select the audio driver used, and onfigure the audio inputs and output devices, including setting the sample rate and audio buffer

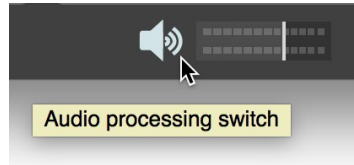
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sizes. Some of the configuration options will depend on which driver and devices are selected, as well as whether you are working on a Macintosh or a Windows machine.



It should be noted that despite its name, Audio processing must be On when using MIDI clock sync, even if you are not using plugins!

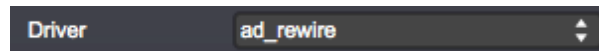
You can also turn Audio processing off and on from the lower right of the M185 window, by clicking on the Audio I/O button.



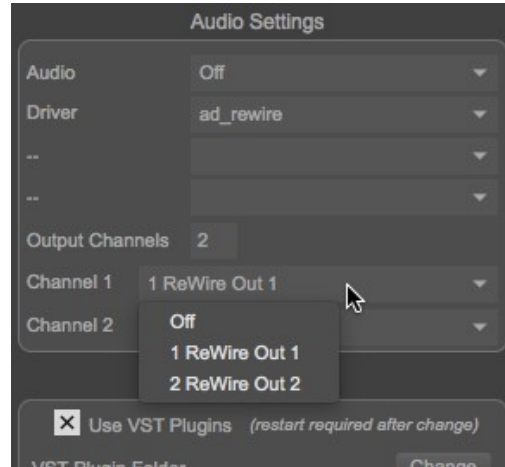
The I/O Vector Size controls the number of samples that are transferred to and from the audio interface at one time. The Signal Vector Size sets the number of samples that are calculated by M185 at one time. This can be less than or equal to the I/O Vector Size, but not more. Use the I/O Vector Size and Signal Vector Size adjustments to improve timing performance, and/or eliminate clicks/pops in the audio output. Lower values will improve M185's timing accuracy, but at the expense of greater CPU load; if you begin to hear clicks and pops in audio coming from plugins being used in the application, try increasing the values for these parameters.

ReWire Audio Slave Support

M185 supports Propellerhead's ReWire standard acting as a ReWire “slave” device, allowing for audio created within M185 using plugins to be routed directly into a ReWire “mixer” or host device, such as most current DAWs. To use ReWire, select the “ad_rewire” audio Driver – do this *before* starting your ReWire host application (e.g. your DAW):



You will now see M185 inputs 1 and 2 in your ReWire host application once you start it – they correspond to the stereo output from M185.

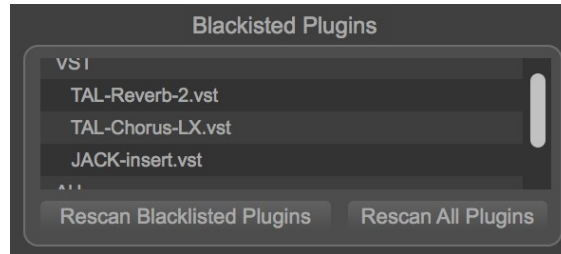


**Please note that on Windows, you may need to run the M185 application as Administrator the first time you select the `ad_rewire` audio Driver. This will be the case if you don't see the individual ReWire out selections as in the above image. To run the program as an Administrator, right click the application, and select "Run As Administrator." Then select the `ad_rewire` Driver. This only needs to be done once to set your system up appropriately.*

Blacklisted Plugins

M185 can use 64-bit versions of VST, VST3 or AU (AU on Mac only) plugins. This section shows a list of any blacklisted plugins (i.e. they did not pass a plugin validation check), and provides the ability to rescan those plugins (for example, if you installed an updated version of one and want to retest it), or to rescan all plugins.

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MIDI Note and CC Control

See **External MIDI Control** section below for a detailed description of these functions.

Usage

The M185 sequencer is a step sequencer like many others, however it has the unique attribute of having stage-selectable gate modes and clock pulse count. What?? Not to worry, it's pretty straightforward, and you will understand quickly how it works.

Let's start by looking at each individual “stage.”

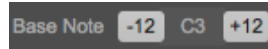
Stages

The M185 has sixteen steps, or “stages” as they are called. As your sequence progresses, each stage is sequentially activated. Stages have several settings; these include note selection, pulse count and gate mode.



Note Selection

Note selection for each stage is based on the combination of the Note Offset dial, and the value of the Base Note, specified below in the Pattern section:



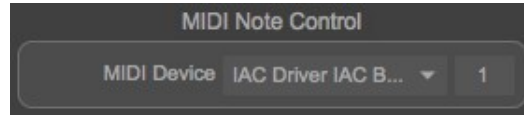
The note that is selected for the stage is the addition of the Note Offset plus the value of the Base Note. So if the note dial shows +1, and the Base Note is C3, then the resulting stage note is C#3. The sum of the Note Offset dial and the Base Note is displayed just below the Note Offset dial (the C#3 in the image below):



You can specify the value of the Note Offset dial (valid range -24 to 24) in a variety of ways: by using your mouse, by clicking on it and typing in a value from your computer keyboard, via MIDI Note Control (see below), or by using the Randomize Notes function (see Randomization section). You can reset the Note Offset dial to 0 by clicking the arrow just above the dial. You can reset all the Note Offset dials by clicking the Reset Notes button in the Randomization section.

To use MIDI Note Control, go to the Setup page and select the MIDI input device and channel that you would like the M185 to monitor for incoming note information:

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Now any notes that are played on your MIDI keyboard will change the note offset dial *in the currently active stage*. It will not affect notes in the other stages.

To prevent MIDI note input from changing a particular stage's note offset dial, click the Lock Stage icon at the top right of the stage; this will prevent MIDI note input (and Randomization) from changing its value.

Understand that the notes that are actually output by M185 may be affected by the **Scale** function, described later.

Pulse Count

As your sequence progresses through each stage, each stage will be “activated” for the number of clock pulses as specified by the stage's Pulse Count parameter, represented by the buttons on the right side of each stage numbered 1 to 8:



So if a stage has a Pulse Count set to 6 for example, then it will be active for 6 clock pulses. What does “active” mean? Let's move on to the Gate Mode setting...

Gate Mode

Each stage can be set to use one of four gate modes: Mute, Single, Multi, and Hold. These modes specify what happens when that stage is activated. They are represented, top to bottom, by the four vertically arranged buttons on the left of each stage:



In Mute mode, the stage is silent for however many clock pulses it is set for. In Single mode, the specified note triggers for the first clock pulse of the stage, and then it is silent for the remainder of clocks (if any) in the stage. In Multi mode, the note is retriggered for each clock

pulse of the stage. Finally, in Hold mode, a single note is held for the duration of all of the clock pulses of the stage.

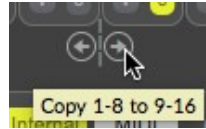
One additional feature is “Ratcheting” mode (previously referred to in earlier versions as “Trill”), optionally available only when Multi mode has been selected for the stage. In this mode, instead of having each note trigger per clock pulse of the stage, *all* notes are triggered within one clock pulse duration. So in the example shown below, the stage will be active for only one clock pulse, but four notes will be played successively within that one clock pulse. This has the effect of creating a “ratchet” or “trill” of notes:



In any of the modes, LEDs will light up red under the currently active pulse within the stage if a note has been created, and otherwise will light up green if no note is sounding.

Stage Copy

You can copy all attributes (except stage lock status) of stages 1-8 to stages 9-16, or vice versa, using the buttons just below the stages. The button with the rightward arrow copies stages 1-8 to 9-16, and vice versa for the leftward arrow:



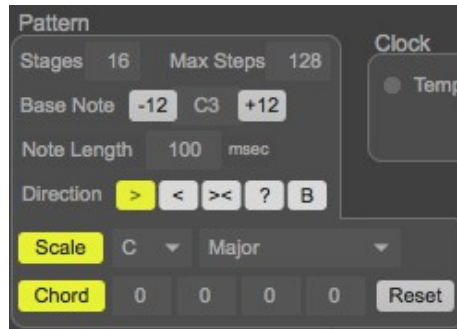
Stage Lock

Locking a stage will prevent MIDI note input and Randomization from affecting its Note value, as well as from being reset by the Reset Notes button. Locking a stage will also prevent its Length and Mode from being changed by their respective Randomize buttons. To lock a stage, simply click the lock icon in the upper right section of the stage. Clicking again will unlock it:



Pattern

The overall sequence of notes that will generated by the M185 is a combination of the settings of the stages, as well as the settings in the Pattern section. These Pattern settings include Number Stages, Max Steps, Base Note, Note Length, Direction, Scale and Chord:



Number Stages

This parameter specifies the total number of stages used in the pattern, from a minimum of one stage to a maximum of sixteen. When less than sixteen stages are used, only the active stages are visible and modifiable (the others are dimmed). In the example below, only four stages are active:

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Max Steps

This parameter will limit the number of steps, or clock pulses, that are cycled through before the sequence restarts at the first stage. It overrides both the number of stages that are selected, as well as the pulse count for each stage. Its valid range is from 1 to 128 steps.

Here's an example to help illustrate this. As you can see below, the Number Stages parameter is set to six, and each of those six stages is set to play for four clock pulses. Since the Max Steps parameter is set to 18 though, only the first four stages will cycle through all four of their pulses ($4 \times 4 = 16$); stage five will play through only two of its four set clock pulses ($16 + 2 = 18$) before the sequence restarts at the first stage, and stage six will not be played at all:

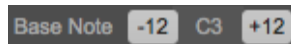
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The Max Steps parameter does not apply when the Direction parameter is set to Random or Brownian (see below for more about the Direction parameter).

Base Note

The Base Note parameter sets the baseline note upon which each stage's Note Offset is added to. This allows you to easily transpose entire sequences at once. The valid range for this parameter is C0 to C6. Use your mouse to change it, or click it and type a new value from your computer keyboard. Up and down one octave buttons are also provided for single click transpositions:



Note Length

The Note Length parameter specifies how long each note will play for when a stage is set to Single or Multi mode. The minimum value for this parameter is 1 millisecond, but note that many synthesizers will not be able to actually sound a note this short. Practically, the lowest value that is usable is around 10 or 15 milliseconds, again though, dependent on your synthesizer and the sound that it is set to play. Note that for very short Note Lengths, you may not see the LEDs flash on the M185 screen, since the duration is so short.

At the other extreme, you can set very long durations for the Note Length parameter (e.g. 500 milliseconds). In this case, if you are sending the MIDI information to a polyphonic synthesizer, and if the sequence tempo is set fast enough, the clock pulses (and potentially notes) will start to overlap (again, something not possible on the hardware M185). The LEDs on screen will reflect this overlap, as in this example:



Direction

This parameter sets the direction that the sequence will progress through the stages. It can move from left to right, right to left, ping pong, randomly or in a Brownian way:

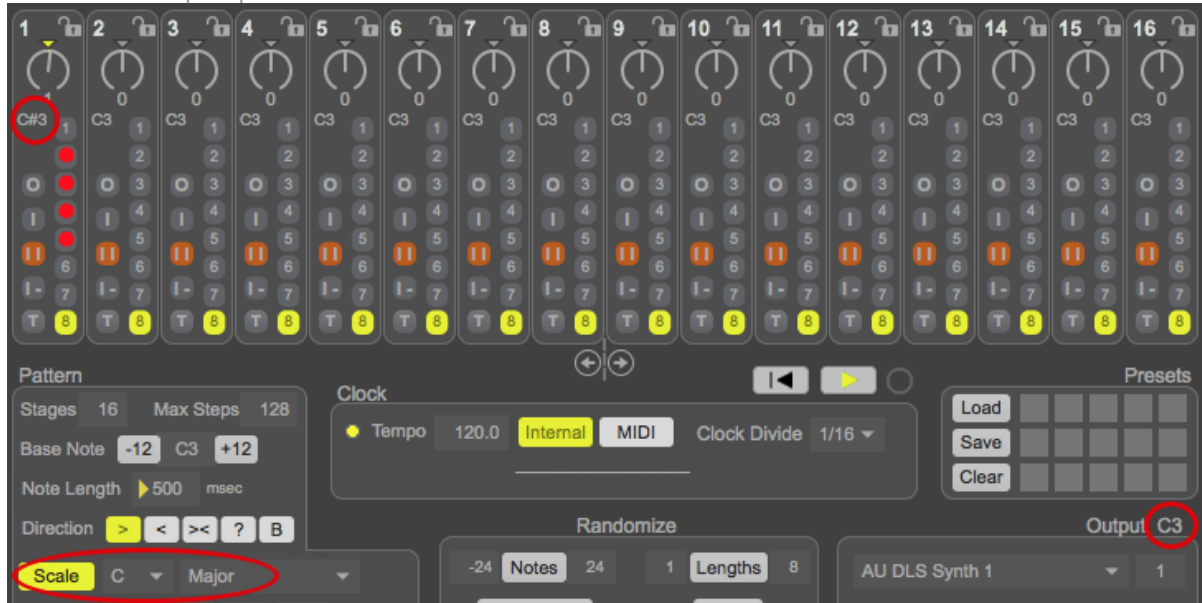


When in Random mode (“?”), stages are cycled through completely randomly. In Brownian mode (“B”, often referred to as “Drunken Walk”), the stages are “staggered” through in a random way; stages will often repeat, but eventually there is some movement in one direction or the other. In both of these modes, the Max Steps parameter is ignored.

Scale

You can constrain the notes that M185 outputs to a specific scale and root note by using the Note Scaling options. To do so, simply activate the Scale feature by clicking on its button. Then choose the desired scale type and root note in the drop down menus. It's important to note that the you will still be allowed to select any note within each stage, even when scale constrain is active; the output notes will be constrained when played however. You can see what notes are actually being output by the sequencer by referring to the note displayed immediately to the right of the Output section; it will always display the note value that is currently being output:

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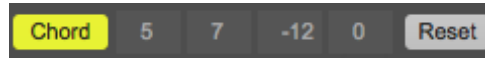
Note how the active stage (stage 1) has its note set to C#3, but because the Scale function is enabled with desired scale set to C Major, the actual output note is C3.

Chord

You can output chords rather than single notes for each stage of your sequence. To do so, activate Chord mode by pressing its button, and then specifying the note offsets (from -24 to 24 notes) from the note specified by the stages for up to 4 additional notes. You can either use the mouse to specify the note offsets, or clicking into each cell and typing a value with your

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computer keyboard. This allows you to create chords of up to 5 notes in size. To reset all notes back to zero offset, simply click the Reset button:



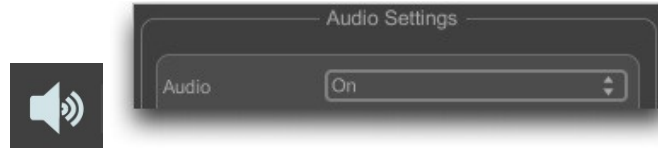
Clock

The software M185 sequencer can be driven from either its internal clock, or via MIDI clock that can be routed to it from either a hardware or software synthesizer. When in MIDI clock mode, select the MIDI device using the drop down menu which will appear to select the MIDI clock source. You need to ensure that the device you have selected is properly configured to send MIDI clock:



Note that Audio I/O needs to on for MIDI clock mode to work. You can do this either by activating the Audio I/O button in the lower right of main M185 window, or by ensuring that Audio is on in the Audio Settings section of the Setup screen.

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When in internal clock mode, the Play button will start the clock as well as the M185's transport. The blinking LED next to the Tempo text will indicate the clock's activity:



When in MIDI clock mode, starting the transport in your MIDI-clock generating application or hardware should both start the M185's clock as well as its transport (whether it starts the transport or not will depend on the specific application/hardware, and whether it sends MIDI transport information). Once the MIDI clock is running, you can stop the M185's transport with the Play button, but the MIDI clock information will continue to be received by the M185 (as indicated by the blinking LED). This allows you to stop/start the M185's sequence independently of your MIDI-clock generating device.

When in internal clock mode, you can adjust the speed of the clock using the Tempo parameter. It allows adjustment from 1 to 250 beats per minute (BPM).

When in MIDI clock mode, the tempo is set from the MIDI clock-generating device, and is not adjustable from within the M185 software. When the M185's transport is initially started, it can take a second or so for the M185 to sync itself to the tempo of the MIDI clock-generating

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device.

In both internal and MIDI clock modes, you can divide the clock into subdivisions smaller than quarter notes, using the Clock Divide drop down menu. M185 allows for whole, half, third, quarter, sixth, eighth, twelfth, sixteenth, twenty-fourth and thirty-second note subdivisions.

Transport

The M185's transport allows you to start and stop the sequence from playing.



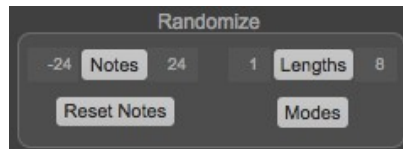
The Play button starts the clock and the transport when in Internal sync mode, and the transport when in MIDI sync mode (the clock start/stop is defined by the MIDI clock generating device).

The Rewind To Start button restarts the sequence to its first stage. It can be used when the transport is stopped, or when it is running.

The Manual Step button (represented as a circle, next to the Play button) is used in Internal sync mode, when the transport is off. It advances the sequence one clock pulse each time it is pressed.

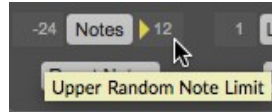
Randomize

M185 allows for randomization of all Stage's Note, Length and Mode values. This is done by clicking the respective buttons in the Randomize section:



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The range of allowable randomization values for Note and Length randomization can be adjusted by the lower and upper limit values surrounding the respective randomization buttons:



The allowable range for the Note randomization is from -24 to 24, and for the Length randomization from 1 to 8.

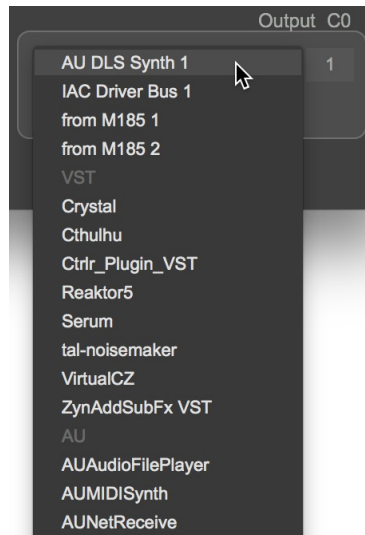
To reset all Stages Note values to 0, press the Reset Notes button.

Note that Randomization and Note Reset will not affect any Stages that have been locked, as described

Output

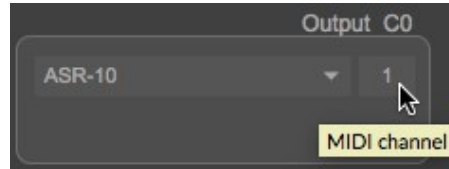
The software M185 sequencer can route its MIDI output to either a MIDI device (hardware or software), or to an internally hosted audio plugin instrument.

MIDI devices are listed first in the drop down menu, followed by the audio plugin instruments (if any) – these are organized in groups (VST, AU (Mac-only), VST3):

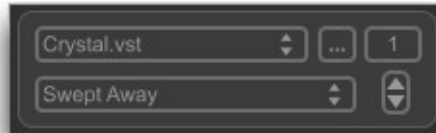


If a MIDI device is selected, you will be able to select its desired MIDI output channel as well:

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If a plugin has been selected, if it has available preset programs, you will be able to select them from the drop down menu that will appear below the plugin drop down. Alternatively, you can sequentially step through the available programs using the up and down arrows that also appear. Finally, you can open the plugin's user interface for further manipulation by clicking its disclose button (button with three dots on it).



Note that if you change a plugin's selected program using the plugin's custom user interface to do so, the program displayed on the M185 screen may not reflect the plugin's currently active one.

Presets

One of the nice features that the software M185 sequencer has compared with the hardware M185 is its Presets system. On a hardware M185, unless you write down the various settings of the pots and switches, you'd have a tough time reproducing an interesting pattern that you programmed in the past. Furthermore, switching between settings is time-consuming, and often requires that one step through intermediary settings of switches to get to the desired one, which might adversely affect your desired audio output.

The software M185 sequencer allows you to store up to fifteen presets in its memory at one time, each of which can be invoked with a single mouse click once stored. Furthermore, sets of presets can be named and stored to computer hard disk, and then recalled and loaded back in later.

Presets will store and recall almost all user adjustable parameters. It is important to note that the clock will restart at stage 1 when the preset is recalled.

Storing and Recalling Presets

When a preset location is empty, it will be a grey color. When hovering your mouse over a preset location, the preset's number will be displayed.



To store a preset, simply press and hold the Shift key on your keyboard, and click the desired preset location you would like to store it in (Shift-Click). The preset location will then turn blue. To recall a preset, simply click on one of the desired blue preset locations. The selected preset will then turn green:



To clear all presets locations, press the Clear button.

Saving and Loading Presets

Each collection of fifteen presets can be saved to disk for later recall. To save them, press the Save button, and specify your desired file name and location. The suffix “.json” will automatically appear at the end of the filename; it should not be removed from the filename, as the M185 cannot load preset files that do not end with an .json suffix.

To load a preset set, press the Load button, and navigate to the location on your hard disk where

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the desired preset file is stored. As mentioned above, the filename must end in “.json”. Loading presets will overwrite *all fifteen* preset locations, even if there is not a preset stored in the slot of the set that you are loading.

External MIDI Control

Most of the software M185's functions can be controlled using MIDI continuous controller (CC) messages sent from a hardware-based MIDI device, or from another MIDI application. These are configured using either the MIDI Learn function, or by the manual mapping of MIDI CC value to user interface element.

Inbound CC messages are scaled from their full range of 0-127 to the range of the interface element in question. This allows for the full travel of a midi controller to be utilized, even if the target user interface element only has a few different settings.

The first step in enabling external MIDI control is to choose which MIDI input device you wish to monitor for CC information. This is done at the top of the MIDI CC Control section, on the Setup screen.



Map MIDI controllers via MIDI Learn

Once the MIDI controller device is selected, switch back to the Main screen, and enable MIDI Learn mode by clicking the MIDI Learn button at the lower left of the M185's screen. It will pulse yellow to red, to indicate its active state.



When MIDI Learn is active, mousing over various parts of the M185's Main screen user interface will turn those user interface controls blue; this indicates that that control is “learnable” and in turn configurable for external control.

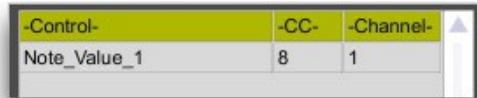


To link a user interface item with an external controller, simply click it; it will then turn orange, indicating that it is then actively “listening” for external MIDI controller information.



Now just move the desired controller on your hardware interface, or within another software application, to send the M185 a CC message. This will link that CC message to the selected user interface control. The controller will revert to its usual color, and you should see it move as you move your MIDI controller. You can also see the MIDI controller assignment on the Setup screen, in the MIDI CC Control section.

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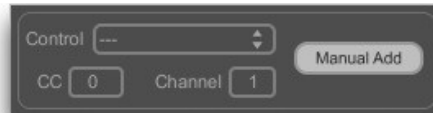


-Control-	-CC-	-Channel-
Note_Value_1	8	1

Continue this same process for each M185 control that you would like to map to an external controller. When done, click the MIDI Learn button again to inactivate MIDI Learn mode.

Map MIDI controllers manually

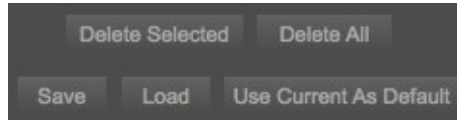
If you prefer to map the MIDI CC controls to user interface elements manually (for example, if you will be sending CC messages from a Digital Audio Workstation (DAW) and not from a hardware MIDI controller), you can do so within the “Manual Add” part of the MIDI CC Control section, on the Setup screen.



Select the user interface control from the Control drop down menu, then select the CC number and MIDI channel that you would like to control it with. Then press the Manual Add button, and you will see a new entry in the Controller map table below.

Modifying, Saving and Loading Controller maps

Once you are done, you can modify and/or save your controller assignments on the Setup screen in the MIDI Controllers section.



You can either delete one or all assignments, using the Delete Selected or Delete All buttons.

You can save your MIDI controller mapping by using the Save button. Save the mapping as a text file, using the .txt extension. If you forget to add a .txt extension, one will be added automatically to your filename. Similarly, you can load a previously saved set of controller assignment by using the Load button, and browsing for your saved controller assignment .txt file.

Finally, you can set your currently loaded set of controller assignments and controller MIDI device to be automatically loaded by default each time you start the M185 application. To do so, just press the Use Current As Default button.

Keyboard Control

The M185 software sequencer responds to certain key presses on your computer keyboard to control some of its functions.

Start / Stop – As mentioned in the Setting and Loading the Pattern section above, each press of the Spacebar will toggle the transport (Play button) on and off.

Numeric values – Some numeric parameters can be controlled using the number keys and/or by the up and down arrows on the computer keyboard. After entering a desired value using the number keys, follow by pressing the Return/Enter key. The controllable parameters include:

- Each stage's Note Offset value
- Stages value
- Max Steps value
- Base Note value
- Note Length value
- Chord values
- Tempo value
- Notes and Lengths upper and lower random limit values
- MIDI Channel value

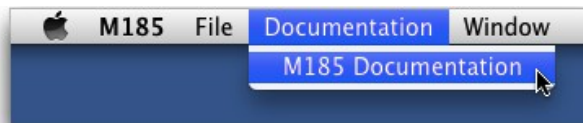
Panic – If the sequencer gets into a state in which there are “hung” notes, or other situations in which you would like to send an “All Notes Off” command, press P (upper or lower case) on your keyboard. “P” stands for “panic.”

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Main / Setup – To easily toggle between the Main and Setup screens, press the “.” (period) key.

Documentation & Help

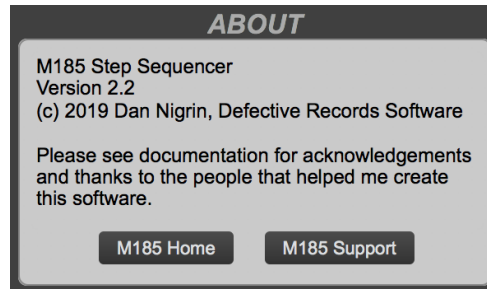
The M185 sequencer can launch its full documentation (this document) from within the application itself; just go to the Documentation menu, and choose “M185 Documentation”. This will launch a PDF viewing application in which to view the documentation:



On Windows, you can also find a shortcut to the documentation in the M185 Start menu shortcuts.

About Menu

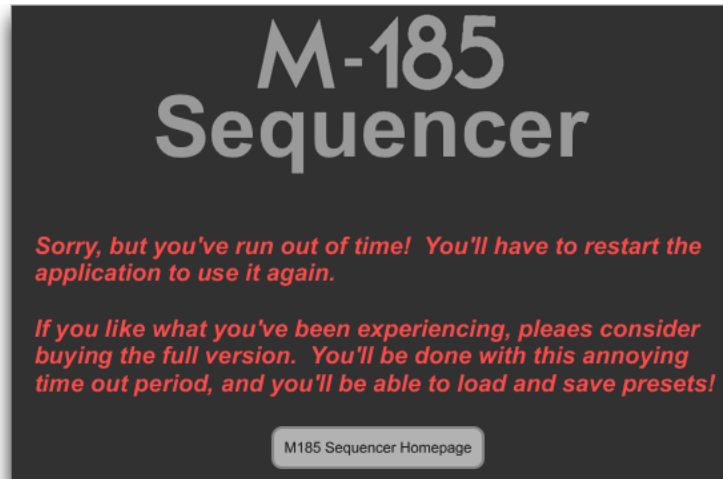
The About M185 menu item (in the M185 menu on Macintosh, and in the Help menu on Windows) will replace the M185 main screen with the About and Authorization screen. In addition to the Authorization information described above, it shows version and copyright information, acknowledgments and has direct links to the M185 software sequencer home and support pages. You can also get to the About and Authorization screen by clicking the M185 text on top of the main screen:



Demo Limitations

The demo version of the M185 sequencer is feature complete compared with the full version, with some exceptions:

- It does not allow use of presets. Although the presets slots are visible in the lower right corner of the interface, and though the save and load functions work, the presets are not usable in any way.
- It will time out after 30 minutes of use, showing the following message:



Differences With Hardware M185

The software M185 sequencer was designed with the intent of including as many of the original features and functions of the hardware version as possible. That said, a few features were not included:

- No Portamento
- No Step Subdivision mode
- When using the Max Steps parameter, if the current sequence length is *less* than the Max Steps, rest notes are not “padded” to reach the Max Steps value.

I may address these in a future version.

Although MIDI and software in general imposes some limitations, it also affords the ability to *enhance* the original hardware M185 design with several additional features:

- Fifteen preset slots for instant recall of parameters
- Sixteen stages rather than eight
- Scale constraints of output notes
- Random and Brownian direction modes
- Presets can be saved to and loaded from disk
- MIDI output to any hardware or software synth, including hosted audio plugins
- Internal or MIDI clock sync
- Clock divide capability
- Ratcheting mode available when in Multi mode within a stage
- Polyphonic potential when using long Note Length values, and when using Chord mode

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- When using the Max Steps parameter, not limited to setting it in multiples of four
- MIDI note control of each Stage's note
- MIDI control of virtually all user interface elements

FAQ

Q: Can I use the software M185 sequencer with other audio applications?

A: Of course – all you have to do is route the MIDI output of the M185 to your audio application.

On Macintosh systems, use the built-in Inter Application Control (IAC) Driver Bus to route MIDI from one application to another. Using the Audio MIDI Setup application (located in the Applications/Utilities folder), first be sure that within the MIDI tab, that the IAC Driver device is “Online.” Then, start your audio application and the M185 sequencer. Select the IAC Driver Bus as your MIDI output for the desired Bus(es) within the M185, and select the desired MIDI channel for it as well. Likewise, in your audio application, select the IAC Driver Bus and MIDI channel as the MIDI input. Alternatively, you can also use the virtual “From M185” MIDI busses that are created by the M185 when it is started up, rather than the IAC Driver.

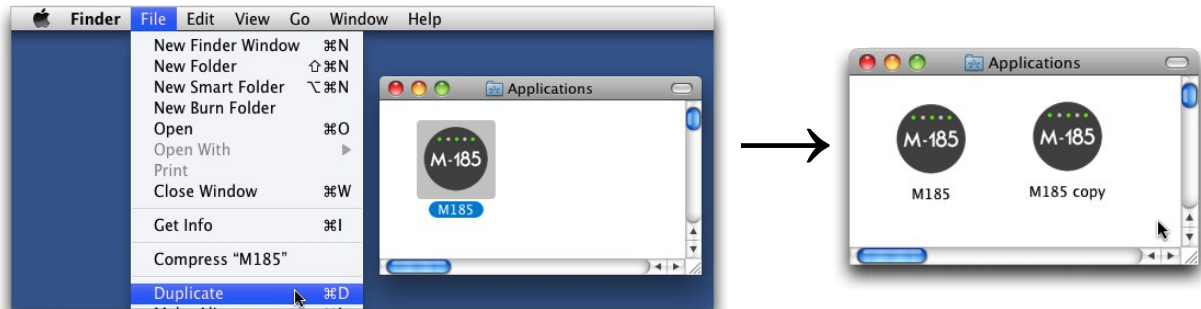
On Windows systems, a similar approach is used, except that you'll need to use a third party MIDI routing application to get the MIDI information from the M185 to your audio application, rather than a built in utility as on the Mac. An example of such an application is the free “LoopBe1”, available from <http://www.nerds.de/en/loopbe1.html> .

And starting in version 2.0, you can route M185's audio via ReWire to a DAW host that support ReWire.

Q: *Can I run more than one instance of the software M185 sequencer at the same time?*

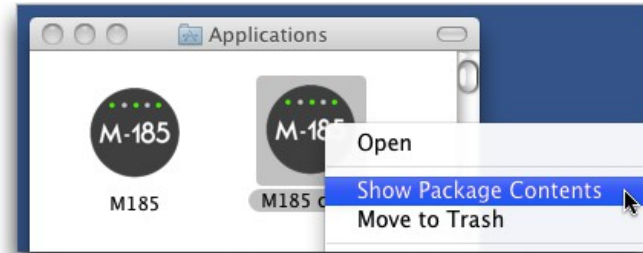
A: Yes, on Macintosh systems only – you have to duplicate the application and make a few changes to your duplicated application for this to work. Details on how to do this are below. It should be noted that when using the Internal clock within the duplicate applications, their respective clocks will not be in sync. If clock sync is desired between them, you should synchronize the applications to a MIDI clock source.

Click once on the M185 application within your Applications folder to select it, and then duplicate it, using the File/Duplicate function:

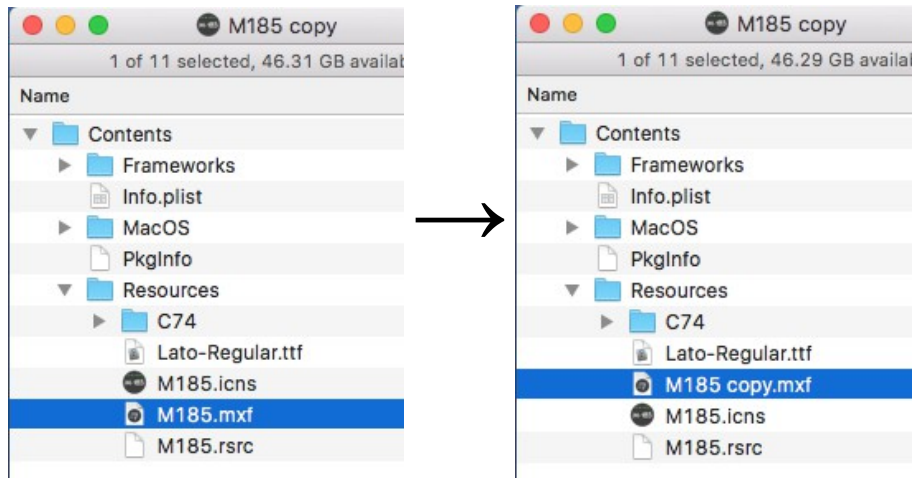


Now, Ctrl-click (or Right-click if you have a right button mouse) on the “M185 copy” application, and choose the “Show Package Contents” option:

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A new window with a folder called “Contents” will open – open that folder, and then the folder called Resources, and within it, rename the file “M185.mxf” to “M185 copy.mxf” :



You can now close all opened windows; double clicking the “M185 copy” application will now launch a separate copy of the application. You can rename the application anything you like

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(you don't have to leave it as “M185 copy”); just be sure that you rename the .mxp file the same way.

Q: Can I use the software M185 sequencer with control voltage synths?

A: Although it's not been formally tested, there's no reason this shouldn't work. You'll have to use something like MOTU's “Volta” or Expert Sleepers' “Silent Way” plugins. Route the MIDI note information from the M185 software sequencer to your plugin hosting application (as described above in the first FAQ entry), and from there use the plugin as you would normally.

Acknowledgments and Thanks

I would like to acknowledge RYK for the incredible work that has gone into creating and perfecting the M185 sequencer. He was very gracious when I approached him about recreating his sequencer in software, and has been extremely helpful debugging, suggesting features and in making sure I got it all right in general!

The M185 software sequencer was created using Cycling '74's Max software (<http://www.cycling74.com>). In addition, it uses, with permission, some 3rd party external objects – I'm indebted to their creators for them:

- getpaths (Mac); getenv (Windows); stricmp, posit, creatfolder (Mac, Windows), by Jasch (<http://www.jasch.ch/dl>)
- Modal Object Library (Mac, Windows), by VJ Manzo (<http://www.vjmanzo.com/clients/mol>)
- min.environment (Mac, Windows) by Tim Place

Thanks to everyone at the Defective Records, Sys100m.org, Electro-music.com, Muff Wiggler and Analogue Heaven online forums for their help and encouragement in building the software M185.

Thanks to everyone at Cycling '74 and on the Cycling '74 forums (<http://www.cycling74.com/forums>) for their invaluable help with Max issues.

Contact & Support

Support Forum

<https://defectiverecords.com/forum/categories/m-185>

Dan Nigrin

dan@defectiverecords.com

Copyright

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Version History

Version 2.3 (March 5, 2021)

- Fixed disappearance of Lock and Unlock icons on some systems
- Now Mac OS 11.x (Big Sur) compatible (including Mac M1 machines via Rosetta2)
- Enabled hi resolution mode on Mac
- Built with Max version 8.1.10 (flacba9, 64-bit)

Version 2.2 (July 11, 2019)

- Fixed Trill mode (now renamed Ratchet mode) so first step has correct duration
- Added more detailed audio driver sample rate and buffer size parameters, to allow for performance optimization
- Added ability to store default Application Size setting
- Application now starts up with audio switched On by default, rather than Off
- Built with Max version 8.0.6 (30aa3cb, 64-bit)

Version 2.1 (December 30, 2018)

- Now runs only as 64-bit application, and only allows for 64-bit plugins
- Now supports VST, VST3 and AU plugins (AU Mac-only)
- Entirely new plugin scanning process, should be more reliable and thorough, and avoids crashes.
- Plugin blacklisting, for plugins found to be problematic on app startup
- Basic support for Dark Mode (menus and title bar only, Mac 10.14.x or greater)
- Fixed bug with ReWire not working on Windows

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- Fixed bug where duplicate VST entries seen if only one VST plugin present
- Removed option to choose whether to operate with or without plugins
- Removed dependency on mkdir external on Windows platform
- Built with Max version 8.0.2 (a3679a2, 64-bit)

Version 2.0 (December 22, 2016)

- Changed MIDI note control so only currently playing Stage receives incoming MIDI note info
- Can now "lock" each Stage so neither MIDI note input nor randomization will change Stage values
- Increased to 16 Stages from 8
- Added up to 5 note Chord output ability
- Added Brownian ("drunken walk") mode
- Added ReWire audio slave support
- Added Note pitch randomization option, with adjustable range
- Added Stage length randomization option, with adjustable range
- Added Stage mode randomization option
- Changed Note selectors to relative mode (-24 to +24)
- Changed Transpose to Base Note
- Added quick up/down one octave buttons for Base Note change
- Added Note pitch reset option
- Added pentatonic option for scale constraint
- Removed graphical keyboard method of note selection
- Fixed Scales bug (Mac), where some Scale changes were not being recognized
- Fixed Maxsteps bug when in Reverse mode

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- Fixed Panic (P key) to work more reliably
- Built with Max version 7.31 (340a77a) 32-bit

Version 1.6.2 (March 2, 2013)

- Fixed bug where stage-specific attributes (e.g. number steps, mode, note number, etc...) not saved/recalled by presets
- Built with Max version 6.08 (a0c1b20)

Version 1.6.1 (November 26, 2012)

- Fixed bug where number of steps per stage not controllable by MIDI when saved CC map re-loaded
- Improved speed of loading and deleting MIDI CC maps with large number of controllers defined
- Built with Max version 6.08 (a0c1b20)

Version 1.6 (November 6, 2012)

- Global transpose function
- Constrain notes to scale
- Additional clock subdivisions
- MIDI CC controllers now scaled to cover their full 0-127 range
- Inactive stages now a bit lighter, so can edit them via MIDI CC even when inactive, and still see what you're doing
- Demo preferences now isolated from Full Version preferences
- On Macintosh, application signed with Apple Developer ID, so compliant with Mac OS Gatekeeper (10.7.x and 10.8.x) setting that allows identified Apple developer

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applications to be installed

- Built with Max version 6.07 (a1f899e)

Version 1.5.2 (Mid-2012) – not publicly released

- Application size configurable
- Streamlined Audio options section, fewer settings

Version 1.5.1 (November 18, 2011)

- Now compatible with 10.7.x (Lion) on Macintosh
- Saving external MIDI control information as default now works on Windows 7

Version 1.5 (June 8, 2011)

- External MIDI controller support via MIDI CC messages
- Map CC to UI control by MIDI “learn” functionality or by manual mapping
- MIDI Note control feature for Stages added
- Ability to specify default CC mappings and MIDI controller device
- “.” key now toggles between Main and Setup pages
- VSTs no longer duplicated in Output menu after Rescan Plugins or Rebuild Plugin Cache functions selected
- VSTs no longer duplicated in Output menu after viewing About M185 screen
- On Windows, clicking anywhere on app activates the window (not just on the title bar)
- Preferences folder now correctly named "M185 Preferences Folder" instead of "Klee Preferences Folder"
- On startup, each stage set to C4, instead of an ascending scale
- On Macintosh, Max/MSP users will no longer have M185 open inappropriately instead

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of Max, when double-clicking a Max patcher

- Built with Max/MSP version 5.18.

Version 1.5 Betas 1 through 3 (May 2 – 24, 2011)

- Bug fixes and firming up of feature set.

Version 1.5 Alpha (April – May, 2011)

- First version for internal testing.

Version 1.0 (March 7, 2011)

- First version released, including demo version.
- Built with Max/MSP version 5.17.

Version 1.0 Betas 1 through 3 (February 4 – 24, 2011)

- Bug fixes and firming up of feature set.

Version 1.0 Alpha (January – February, 2011)

- First version for internal testing.