

MOLTEN

USER MANUAL

V1.0.8



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INTRODUCTION

Thank you for purchasing Molten for iPad. Molten is a powerful and intuitive tool for creating percussive sounds and rhythm sequences.

The step sequencer is one of the earliest and most used forms of controlling a musical synthesizer. A series of buttons or knobs are used to represent each note in a measure. Physical limitations often restricted these devices to 16 buttons, or steps, each step being a 16th of a measure. Such rigid patterns of notes were laid out on a grid and sometimes chained together to form larger compositions.

With the advent of the electronic drum machine in the early 1980's from manufacturers such as Roland (the TR series), Linn and Akai, the popularity of pattern based programming increased. The manipulation of synthetic drum sounds has formed the basis of popular music ever since. The 16 note grid has been widely used in popular common (4/4) time music.

But what if you could split those buttons in half or thirds? To make rhythms not tied to a rigid grid? With Molten you can. Molten permits you to divide time, to divide the grid into a sequence of notes that don't fall into a rigid pattern. This flexibility permits the composition of tuplet based rhythms outside of the common (4/4) time. Coupled with a powerful 8-track sample based synthesis engine, Molten is also a capable drum machine.

MOLTEN MAIN FEATURES

- Easily and quickly create rhythms with complex time signatures
- Intuitively divide a note into tuplets
- Sample based synthesis with user loadable samples
- Each pattern has 8 instrument tracks
- Each instrument track has it's own effects processor which can be tweaked in real-time
- Global master effects processor including delay, reverb, EQ and compressor
- Share your pattern compositions as audio or MIDI files or transfer patterns between Molten users

RECENT CHANGES

Version	Notes
1.0	Initial Release
1.0.2	Maintenance Release
1.0.3	Added AudioCopy/Paste and MIDI Spec
1.0.4	Added Tap Tempo
1.0.5	Maintenance Release
1.0.6	MIDI menu
1.0.7	Maintenance Release
1.0.8	Added MIDI note setup

QUICK START

This quick start will guide you through some of the basic operations to allow you to start using Molten right away. First to launch the Molten application, tap the Molten icon on the iPad's home screen. Make sure the iPad's volume is turned up. We recommend using headphones or powered external speakers for the best possible sound quality. Use the [MASTER VOL] knob (master volume) to adjust the volume.

USER INTERFACE OVERVIEW



1. Page Selection
[P1] to [P4] brings up the grid page editor numbered 1 through 4.
2. Transport Controls
[PLAY] button. Initialise playback of the pattern.
[STOP] button. Stops the playback of the pattern.
[PAUSE] button. Pause and resume the playback of the pattern.
[LOOP] button. Loop only the current grid page.
3. [MASTER VOL] knob. Sets the overall volume level.
4. Function Switches
[SETTINGS] button. Enter the Settings Menu.
[INST/SEQ] button. Toggle between the instrument and sequencer editor page.
[TEMPO] button. Brings up the tempo menu. The current tempo is always indicated by the speed the tempo LED is flashing.
[PATTERNS] button. Brings up the Patterns Menu.
[DIVISION] button. Brings up the grid division menu.
[SWING] button. Brings up the swing menu.
5. LCD Display
Displays parameter values.
6. Data Wheel
This is a general-purpose dial used to modify the current menu function or parameter. Also includes the flashing green tempo LED.
7. Track Controls
[M] button. Mute the track; this track is silenced.
[S] button. Solo the track; only soloed tracks are heard.
[TRIG] button. Used for direct triggering of the sound associated with this track.
[VOL] knob. Overall track volume.
8. Note Grid

BASIC OPERATION

The following terminology is used throughout this manual to refer to various input gestures.

Tap lightly press the screen with your finger, similar to performing a mouse click.

Touch and hold touch the screen with your finger and leave it there, similar to performing a mouse drag.

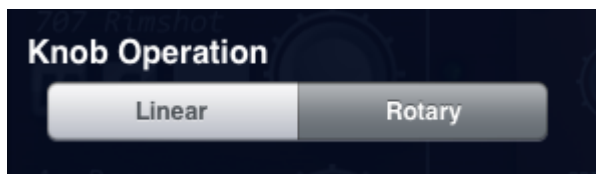
KNOB AND DIAL OPERATION

The knobs and dials on the Molten user interface can be operated in two ways. In both cases the operation is started by a touch and hold gesture.

Linear moving your finger up and down across the knob turns it.

Rotary using the knob as though it were a physical knob and operate it with a rotating motion. This is the default setting.

From the Settings Menu it is possible to select the knob operation that is the most comfortable for you to use.



1. Tap the [SETTINGS] button
2. To change the knob operation setting, tap the [Linear] button or tap the [Rotary] button.
3. To close the Settings Menu, tap outside of the menu.

SELECTING AND PLAYING A PATTERN

1. To select a pattern, tap the [PATTERNS] button.
2. Touch and hold the contents of the Patterns Menu to scroll through the list of available patterns.
3. To load a pattern, tap the name of the pattern.
4. Tap outside of the Patterns Menu to close the menu.
5. To play this pattern, simply tap the [PLAY] button. The pattern will start playing and will loop once it reaches the end. Tapping the [PLAY] button while playing will immediately restart the playback from the beginning. Tapping the [PAUSE] button will pause playback and tapping [PAUSE] again will resume playback.
6. To stop the playback, tap the [STOP] button.

Notes

- There might be occasions when Molten continues to make noise after you have tapped the [STOP] button. This situation can occur when there are long decaying tails on a sample or effect, such as reverb and delay. If the audio output becomes out of control, tap and hold the [STOP] button to initiate a [PANIC STOP].

PLAYING AND TWEAKING DRUM SOUNDS

1. Tap the [TRIG] key to hear the sound for that track.
2. To edit the sound, tap the [INST/SEQ] button. This will open the Instrument editor.
3. Tap the [SAMPLE] button to load a sound. You will now be presented with a list of available samples.
4. Tap and hold the samples menu to scroll through the list of available sounds.
5. Tap the name of a sample to load that sound.
6. Tap outside of the samples menu to close the menu.
7. Now turn any of the knobs to tweak the corresponding parameter. You can trigger the sound by tapping the [TRIG] button while you are turning the knobs.
8. To return to the sequencer grid, tap the [INST/SEQ] button.

Notes

- The green LED on the Instrument editor page indicates which track is currently being edited. By tapping any of the track controls, the editable instrument will follow with that selection. You can also tap the LED to switch between tracks.
- Molten supports the iPad's multiple touch interface allowing you to use several fingers to change many parameters at the same time.

USING THE TRACK EFFECTS

1. Tap the [INST/SEQ] button.
2. The track effects are arranged in the top part of the display.
3. Signal ordering occurs top to bottom, left to right.
4. Now turn any of the knobs to tweak the corresponding parameter.

USING THE MASTER EFFECTS

1. Tap the [INST/SEQ] button.
2. The master effects are arranged in the bottom part of the display.
3. Signal ordering occurs top to bottom, left to right.
4. Now turn any of the knobs to tweak the corresponding parameter.

SETTING THE TEMPO

1. Tap the [TEMPO] button.
2. The LCD Display will indicate the current tempo value as beats per minute (BPM).
3. Touch and hold the [DATA WHEEL] dial to adjust the tempo value.
4. The range of the tempo value is 20 to 300 BPM.

TAP TEMPO

1. Tap the [TEMPO] button.
2. The LCD Display will indicate the current tempo value as beats per minute (BPM).
3. Tap the centre of the [DATA WHEEL] dial at a steady rhythm to manually tap out the song tempo.
4. After two consecutive taps the tempo will be set and the new song tempo will be shown in the LCD Display.

SETTING THE SWING

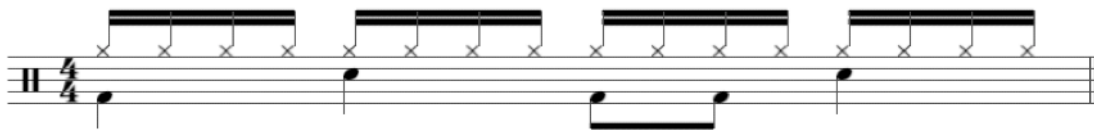
1. Tap the [SWING] button.
2. The LCD Display will indicate the current swing value as a percentage.
3. Touch and hold the [DATA WHEEL] dial to adjust the tempo value.
4. The range of the swing value is 50% to 75%.

PATTERN SEQUENCER

The sequencer is the core feature of Molten. It is designed to be a flexible pattern based rhythm step-sequencer. Unlike traditional step-sequencers that have a fixed step size of typically 16 or 32 steps, Molten has a dividable step size. This flexibility allows for the easy creation of tuplet-based rhythms. Likewise, many traditional step-sequencers have a fixed or box based time signature, usually 4/4. With Molten, the time signature is flexible. It is this combination that allows for the easy creation of rhythms often heard in musical genres that require time signatures other common time, 4/4.

The power of molten lies in its grid layout. Vertically you can see as many as 8 instrument parts running simultaneously. Horizontally you can have anywhere from 1 beat on a single page to 16 beats over 4 pages. Taken at face value this seems very similar to many traditional 16-step sequencers. However with Molten it is possible to divide any beat into as many as 9 pieces, and this is where things become interesting.

Here is a basic 4 beat pattern.



In Molten, using its default setting of 1 page with 4 beats divided into 4 pieces, it would look something like this.



Molten allows for 4 pages, 4 beats per page. So it is easy to create extended patterns with beat variations like the one below.



In the example below there are triplet fills on the last beat of each measure. Traditional 16-step sequencers have difficulty producing a pattern like this.



COMPOSING A PATTERN

Composing a pattern is a simple case of tapping the pattern grid.

1. To add a note, tap the grid cell where you want the note to be placed.
2. You can remove an unwanted note by tapping on an existing note.
3. To change a note's velocity value tap and hold the note, then slide your finger up and down across the note. The LCD Display will indicate the velocity value as it changes.
4. If you tap and hold a grid cell then slide your finger across the grid you can quickly add a row of notes. Any existing notes will be removed as you slide your finger over them.

Notes

- It is possible to edit the pattern while the sequencer is playing.
- Instrument, track effects and master effects parameters may also be adjusted while the pattern is playing.
- There is a no undo feature.

NOTE ON OFF AND VELOCITY

Each note in the pattern sequencer is represented by a note-on and a note-off message. This determines the length or duration of the note. If you were playing a musical instrument, such as a piano keyboard, connected via a conventional MIDI cable to another sound source, the note-on message occurs when you first press the key down. At this point, sound playback begins. When you release your finger from the key, a note-off message is sent and playback begins to end. This determines the duration of the note.

In a sequencer such as a Molten, these two messages are automatically added when the note is inserted into the pattern grid.

The velocity of the note, how hard you hit the physical key on the keyboard, determines the loudness of the note. This intensity is adjustable in Molten (see above) and is shown as red for high values and blue for low values.

The note-off message is important as it is used to determine the envelope release time in the instrument. By adjusting the length of the release we can adjust how much of the instrument's sample is played.

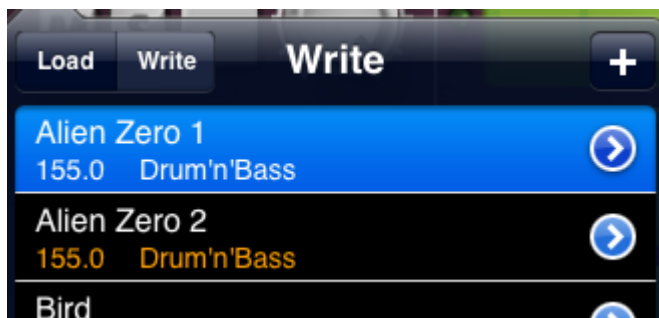
SAVING THE PATTERN

Molten does not use the concept of pattern memory or memory bank slots. Instead each pattern is a document that can be loaded and saved. The pattern that is presently being edited is called the current working pattern.

AUTOSAVE

When exiting Molten by pressing the iPad Home Button, the current working pattern is automatically saved. The next time Molten is launched this saved pattern is restored and made the current working pattern. This pattern is given the name “autosave”.

SAVING CHANGES TO A NEW PATTERN



1. To save the current working pattern, tap the [PATTERNS] button.
2. From the Patterns Menu, tap the [Write] button.
3. Then tap the [+] button on the right hand side of the menu to make a new pattern.
4. A new menu will appear whereby you can give the pattern the name it will be identified by, the author's name, and any tag information to help categorise the pattern, such as, genre.
5. If you wish to cancel the write operation tap the [Cancel] button.
6. Tap the [Save] button to complete the write operation and make a new pattern.
7. An alert will appear asking if you wish to save the existing pattern.
8. Tap the [Yes] button.

Notes

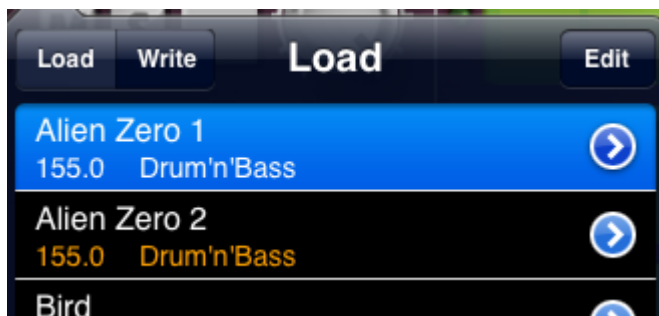
- If the pattern name already exists, it will be automatically updated to include a unique number.

SAVING CHANGES TO AN EXISTING PATTERN

1. To save the current working pattern, tap the [PATTERNS] button.
2. Tap the [Write] button to place the menu into WRITE mode.
1. Touch and hold the contents of the Patterns Menu to scroll through the list of available patterns. Patterns are sorted in ascending alphabetical order.
3. Tap the name of an existing pattern into which you will save your changes.
4. An alert will appear asking you to confirm that the write will overwrite and replace the existing pattern.
5. Tap [Yes] to confirm or tap [Cancel] to abort the write operation.
6. Tap outside of the Patterns Menu to close the menu.

LOADING A PATTERN

The Patterns menu shows each pattern name, followed by its tempo in BMP and the tag.



1. To load a pattern and replace the current working pattern, tap the [PATTERNS] button menu
2. Touch and hold the contents of the Patterns Menu to scroll through the list of available patterns. Patterns are sorted in ascending alphabetical order.
2. Tap the name of the pattern to load that pattern.
3. Tap outside of the Patterns Menu to close the menu.

Notes

- If the sequencer is currently running, it will be stopped.

EDITING A PATTERN'S NAME, AUTHOR AND TAG



1. Tap the [PATTERNS] button.
2. Touch and hold the contents of the Patterns Menu to scroll through the list available patterns. Patterns are sorted in ascending alphabetical order.
3. For the pattern entry you wish to edit, tap the blue [>] chevron button.
4. To update the name, author or tag associated with this pattern, tap on either of the data fields.
5. Use the iPad's keyboard to enter the new text.
6. Tap the [Back] button to save the changes.
7. Tap outside of the Patterns Menu to close the menu.

Notes

- This operation cannot be undone.

REMOVING A PATTERN

There are two ways to remove a pattern from the Patterns Menu.

Warning: deleting a pattern cannot be undone. If you remove one of the provided factory patterns, you can restore by using the Factory Reset option in the Settings Menu. However, this will restore all factory patterns. Otherwise, you have the option of copying the pattern file from your computer to the iPad using iTunes File Sharing. Individual factory patterns are available for download at the support website.

A. EDIT OPTION

1. Tap the [PATTERNS] button.
2. Tap the [Write] button.
3. Tap the [Edit] button.
4. Tap and hold the contents to scroll the contents of the Patterns Menu
5. Tap the red circular [-] button on the left the entry you wish to delete.
6. Tap the [Delete] button to confirm the deletion.
7. To cancel the deletion, tap anywhere inside of the Patterns Menu.
8. Tap the [Done] button to end and return to the previous state.
9. Tap outside of the Patterns Menu to close the menu.

B. SWIP TO DELETE

1. Tap the [PATTERNS] button.
2. Quickly touch and swipe your finger over the blue chevron at the right side of the Patterns Menu.
3. Tap [Delete] to remove this pattern.
4. Tap anywhere inside the Patterns Menu to cancel.
5. Tap outside of the Patterns Menu to close the menu.

STARTING A NEW PATTERN

To start editing a new pattern, the following options are available:

1. Load an existing pattern and modify it.
2. Clear the current working pattern by selecting the [Clear] option in the Settings Menu.
3. From the Patterns Menu take the following steps:
 - a. Tap the [WRITE] button.
 - b. Tap the [+] button.
 - c. Name the pattern, author and tag as appropriate
 - d. Tap the [Save] button.
 - e. An alert will appear asking you to confirm that the write will overwrite and replace the existing pattern.
 - f. Tap the [No] button.
 - g. This will make a new pattern but not write the current working pattern, therefore, leaving you an empty pattern with the same instrument settings.

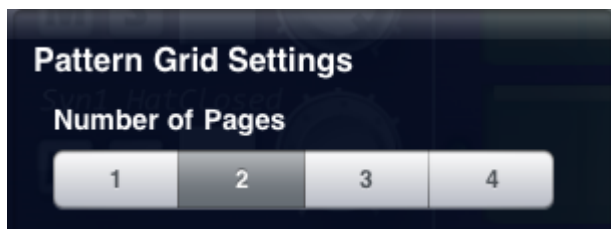
CHANGING THE PATTERN LENGTH

The length of the pattern can be adjusted in the Settings Menu. The overall length of the pattern is determined by the number of grid pages and the number of quarter notes per page. This adds up to be the total length of the measure.

Molten has up to 4 pattern grid pages. To change the current page tap one of the [P1], [P2], [P3], or [P4] buttons. The buttons dynamically appear with the length of the pattern, i.e. a 3 page pattern would only show 3 page buttons.

Each page may have between 1 and 4 quarter notes.

The Settings Menu is used to adjust the pattern length.



1. To change the number of pages, tap the [SETTINGS] button.
2. The number of pages can be adjusted by tapping one of the buttons [1] to [4].
3. The length of each page can be adjusted by tapping the corresponding number of beats for each page.
4. To close the Settings Menu, tap outside of the menu.

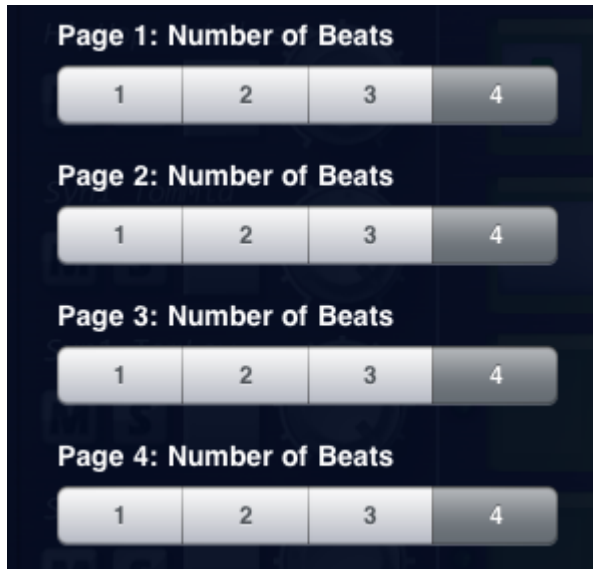
Notes

- If the pattern grid page already contains notes and the length of the page is reduced, notes will be removed from the end.
- Likewise, if the pattern grid page is expanded, any previously removed notes will be lost.

CHANGING THE TIME SIGNATURE

In Molten it is possible to adjust the time signature of the pattern by adjusting the length of each page. In a single page pattern with a length of 4 quarter notes or beats, the time signature would be 4/4. By modifying the length of the page the time signature is changed, for example, 1/4, 2/4, 3/4, or 4/4. By adding a second page, the time signature is added together. Therefore by adjusting the length of the second page, and leaving the first page at 4, the time signature may become: 5/4, 6/4, 7/4, or 8/4 and so forth for each of the 4 pages to a maximum of 16/4.

As each page is combined to form the overall time signature, it is possible to split the whole measure on the beat that feels the most logical to the performance. For example, a 6/4 measure may be made up of two pages of 3, or 1 page of 4 plus one page of 2, or any combination thereof.



1. To change the time signature, tap the [SETTINGS] menu.
2. The number of pages can be adjusted by tapping one of the buttons [1] to [4].
3. The length of each page can be adjusted by tapping the corresponding number of beats for each page.
4. To close the Settings Menu, tap outside of the menu.

LOOPING THE PATTERN

During the playback of the pattern, the sequencer will play through all of the pages in the pattern. At the end of the last page, it will loop back to the beginning. It is possible to adjust this behaviour by using the [LOOP] button.

1. To select the current page, tap the required page button [P1], [P2], [P3], [P4].
2. To loop only the current page, tap the [LOOP] button.
3. Tap [PLAY] to begin playback.
4. To loop the entire pattern, tap the [LOOP] button again.

During playback it is possible to change the current page. By utilising the [LOOP] button it is then possible to loop only within one of the pages. If the requested page to be looped is further along in the pattern sequence from where the current playback position is, the pattern will play through each page until it reaches the loop page. At the end of the loop page, it will then loop only that page.

DIVIDING THE BEAT

In each of the pattern grid pages, Molten displays the length of the page as a sequence of rectangles. These represent the number of quarter notes in this page. The thin light coloured rectangle identifies the quarter note or beat. The smaller green rectangles underneath are the places where you can add an individual note. When the light coloured bar is orange it shows the selected region we are able to divide. By dividing the quarter note region we are able to form tuplet rhythms. This is shown in the diagram below. With 4 quarter notes, the first three are divided into 4 or sixteenth notes. The final quarter note is currently selected (orange) and divided into a tuplet of 3.



1. The highlighted beat follows from the location of the recently added or removed note, or...
2. Tap the quarter note bar region to move the highlight.
3. To divide the beat, tap the [DIVISION] button.
4. Adjust the number of divisions with the [DATA WHEEL].

The range of the division is 1 to 9.

1. The [LED] shows the currently selected instrument and track.
2. To adjust the division across the whole length of the track, tap the [LED].

Notes

- If the grid cell contains a note when it is divided, that note will also be split and each new grid cell will be occupied with a new note.

CLEARING THE PATTERN

1. To clear the pattern, tap the [SETTINGS] button.
2. From the Settings Menu, tap [Clear].
3. All the notes on the pattern will be deleted.
4. To close the Settings Menu, tap outside of the menu.

Notes

- This operation cannot be undone.

FACTORY RESET

1. To reset any modified patterns back to their factory settings, tap the [SETTINGS] button.
2. Tap the [RESET] button in the Settings Menu.
3. To confirm the operation tap the [OK] button.
4. Any modified factory pattern data will be replaced with the factory patterns. New patterns will be unaffected.
5. To close the Settings Menu, tap outside of the menu.

Notes

- This operation cannot be undone.
- We encourage you to make regular backups of your patterns by copying the “.molten” pattern files to your computer.

TRACK MIXER

The TRACK MIXER is used to control the mix parameters for the individual track. This is useful in a live setting and also to set the balance of the pattern.



1. Each track can be individually muted, by tapping the [M] button.
2. Each track can be soloed, by tapping the [S] button.
3. Adjusting the volume knob can set the volume level for each track.
4. Tap the [TRIG] button to audition the instrument.
5. The name of the currently loaded sample file is also shown in this region.

Notes

- The [TRIG] sends a note-on and note-off message to the instrument. When the button is first touched the note-on message is sent. When the button is released a note-off message is sent.
- Tap and hold the button to open the Samples Menu and select a new sample.

SWING

Swing is used for adding a rhythmic “shuffle feel” to the pattern. This technique adds a small movement in the timing of the notes. Swing is shown as a percentage, with 50% being no swing. This percentage is taken from the tempo’s BPM and added to every second swung note, delaying the swung note by a small amount.

1. Tap the [SWING] button.
2. The LCD Display will indicate the current swing value as a percentage.
3. Touch and hold the [DATA WHEEL] dial to adjust the tempo value.
4. The range of the swing value is 50% to 75%.

The default setting is for the swing to affect every second sixteenth note but can also be set to affect every other eighth.

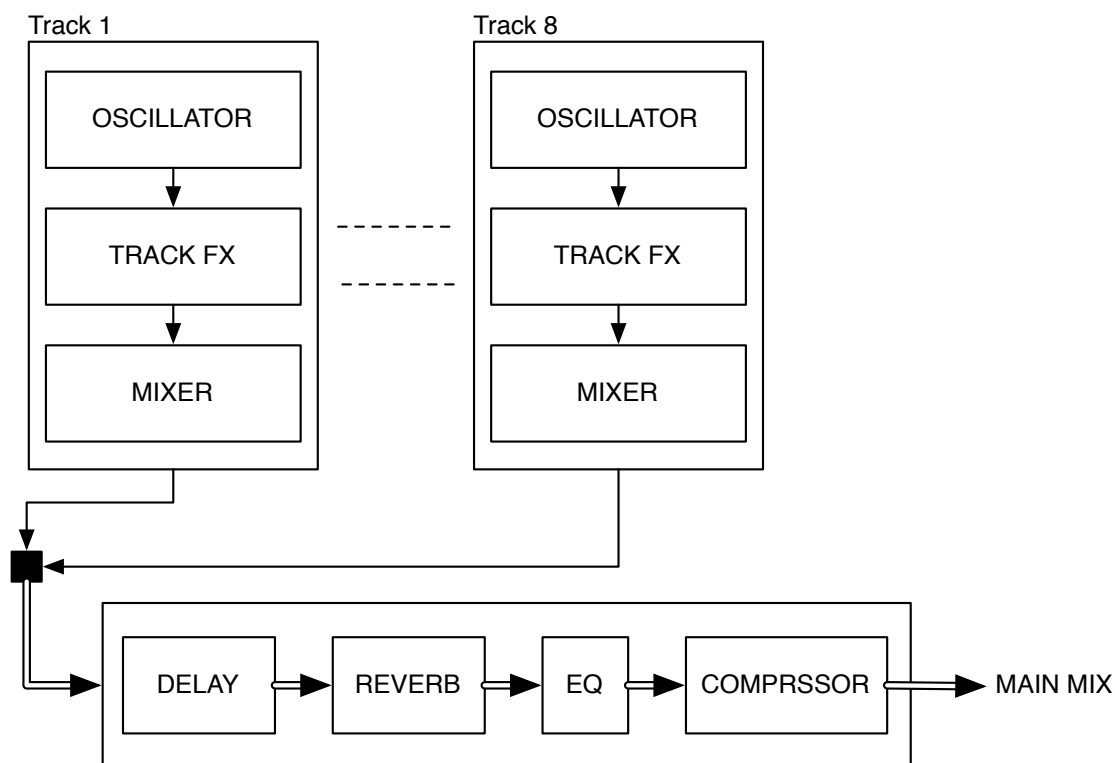
1. Tap the [SETTINGS] button.
2. In the Settings Menu, tap either the [8th] button or [16th] button.
3. Tap outside of the Setting Menu to close the menu.

SOUND SYNTHESIS

The basic sound-generating unit in Molten is called an *instrument*. Each instrument is a sample based playback system for generating specific drum sounds, such as, bass drum, snare or cymbals. Coupled with the flexible synthesis and effect system, the sound can be transformed completely, allowing you to come up with unique percussion sounds.

There are a total of 8 instruments. Each of the 8 tracks is assigned an instrument. The parameters for each instrument are unique to that instrument. Unlike other drum machines you may be familiar with, Molten does not have the concept of a “kit”. Instead, the instrument for each track can be assigned any sound sample in any order, duplicated if required. We have included several commonly used default kit templates to help you get started.

The following diagram shows the arrangement of the sound synthesis system.



Every track has its own dedicated effect module, called the TRACK EFFECT system. Each track effect consists of an amplitude modulation effect, a low-pass resonant filter, a 1-band parametric equalizer and a sample rate reduction effect.

The TRACK MIXER controls the volume and pan of each track.

Each track is routed and combined within the STEREO MASTER EFFECT system that contains a feedback delay, reverb, 3-band equalizer and compressor.

THE INSTRUMENT

Each instrument consists of an oscillator and a final stage volume envelope.

1. To access the instrument editor, tap the [INST/SEQ] button.
2. To audition the current instrument, tap the [TRIG] button.
3. It is possible to switch between instruments while the instrument editor page is active. Tap the [LED] in between the track volume knob and the instrument parameters.
4. Touching the TRACK MIXER controls on the left of the user interface will switch the instrument editor to that track.

OSCILLATOR

The oscillator is a monophonic sample player that supports time stretching.



SPEED controls the time period at which the sample is played back.

PITCH controls the pitch at which the sample is played.

WINDOW SIZE controls the temporal resolution of the time-frequency analysis.

DURATION controls the overall length of the sample.

SAMPLE tap the sample button to load the waveform to be used by the oscillator. Samples are categorised into two: factory samples and user samples. The name of the loaded sample file is shown in the TRACK MIXER. User samples may be deleted by swiping the far right area of the entry then pressing delete.

AUDIO PASTE tap the AudioPaste icon to select an audio clip to paste into the oscillator.

USER LOADABLE SAMPLES

Molten can read sound files that have been uploaded to the application via the iTunes File Sharing process. Uploaded files appear in the User Samples section of the samples menu if they have a .wav file extension. The supported file format is: WAV, 44.1KHz, 16-bit little-endian, mono.

By using iTunes File Sharing it is possible to add, delete and modify the files that are included in the User Samples menu. The Factory Samples are those included along with the Molten application and cannot be changed.

ENVELOPE

The envelope is the final stage of the instrument signal and is used to control volume. By modulating the amplifier or voltage controlled amplifier (VCA) stage, the sound can be given its basic shape.



ATTACK controls how long it should take for the sound to reach full volume after the note-on has occurred.

DECAY after the attack phase has finished, and the note-off has yet to occur, decay begins. During this phase the sound decreases in level until it reaches the Sustain level.

SUSTAIN controls the level the sound will reach after the Decay phase. Once this has happened, the sound will stay steady at this volume until the note-off. Note that the Sustain parameter is used to set a *level*, while Attack, Decay and Release are all used to set *times*.

RELEASE controls how long it should take for the sound to decay to silence after the note-off.

TRACK EFFECTS

The TRACK EFFECT system is available for all 8 tracks as an extension of the sound synthesis. The effects that are available for each track are:

- Tremolo
- 1-band parametric EQ
- Low-pass filter
- Bit crusher

The order of the effect chain is TREMOLO, EQ, FILTER, and BITCRUSHER and cannot be re-ordered.

To access the track effects, tap the [INST/SEQ] button.

TREMOLO

The tremolo is essentially a volume control that is controlled by a low frequency oscillator. It is also known as an amplitude modulator.



FREQUENCY controls the modulation frequency.

DEPTH controls the modulation depth.

GAIN controls the level of the effect.

BYPASS controls whether the effect is active in the signal chain.

PARAMETRIC EQ

With the 1-band parametric EQ you can boost or reduce a certain frequency band.



Hz controls the centre frequency that will be affected by the EQ gain.

Q controls the slope of the band.

GAIN controls the EQ gain. If it is set to a negative value, the volume of the frequency centred on the Hz parameter is reduced.

MS controls the interpolation time.

FILTER

The filter is in the style of a resonant low-pass voltage controlled filter (VCF).



CUTOFF controls where in the signal the filter should start cutting. When set to a low value only the lowest harmonics (the bass) will pass through.

RES controls the filter quality Q parameter. The resonance value controls how much the volume around the cut off frequencies are emphasised (louder).

GAIN controls the overall level of the effect.

BYPASS controls whether the effect is active in the signal chain.

BITCRUSHER

The bit crusher is a sample rate reduction effect. It reduces the sample rate of the incoming signal using sample and hold. This adds a form of distortion to the sound recreating the characteristics of 8-bit and 12-bit hardware.



DEPTH controls the amount of sample rate reduction.

SAMPLE RATE controls the sample rate.

GAIN controls the overall level of the effect.

BYPASS controls whether the effect is active in the signal chain.

EXPANDED TRACK MIXER

The expanded track mixer controls the balance of the track in the overall mix. It duplicates the TRACK MIXER while adding a pan control.



VOLUME controls the overall volume of the track.

PAN controls the left / right stereo position.

M mute or silence the track.

S solo the track.

STEREO MASTER EFFECTS

The stereo master effects system is a final stage effect processor that is applied before the final stereo main signal output. Output from each of the 8 tracks is fed into the master effects. The master effects are only available on the main outputs. You cannot use them on individual tracks.

The master effects include in this order DELAY, REVERB, EQ and COMPRESSOR. The order of the effect chain cannot be re-ordered.

To access the track effects, tap the [INST/SEQ] button.

MASTER DELAY

The delay is a single-tap feedback delay with adjustable delay time. Some of its functionality can resemble tape loops, solid-state delays, and robotic flange style effects.



DELAY controls the delay time.

FEEDBACK controls the delay feedback amount.

GAIN controls the overall level of the effect.

BYPASS controls whether the effect is active in the signal chain.

Notes

- The delay time is not tempo synced.

MASTER REVERB

The reverb simulates the ambience of a room.



BRIGHTNESS controls the brightness of the room. Low brightness gives the impression of a darker room by using a low pass filter, while maximum brightness leaves the reverb unfiltered.

ROOM SIZE controls the dimensions of a simulated room. In larger spaces, the reverb is audible for a longer period of time.

DRY controls the mix of the dry unprocessed signal.

WET controls the mix of the wet processed signal

BYPASS controls whether the effect is active in the signal chain.

MASTER EQ

The MASTER EQ is the final frequency-shaping tool. It is a 3-band equalizer.



LOW is the boost/cut for the low (bass) band.

MID is the boost/cut for the mid band.

HIGH is the boost/cut for the high (treble) band.

GAIN controls the overall level of the effect.

BYPASS controls whether the effect is active in the signal chain.

MASTER COMPRESSOR

The MASTER COMPRESSOR is a stereo dynamics processor designed to control the loudness of the final signal.



RATIO controls the compression ratio; the ratio of the signal reduction when the threshold is exceeded.

THRESHOLD controls the threshold level; signals above this threshold value are reduced in level.

ATTACK determines the amount of time it takes for the compressor to react when the signal exceeds the threshold.

RELEASE determines the amount of time it takes for the compressor to stop reducing the signal after the signal level falls below the threshold.

GAIN sets the amount of gain applied to the output signal.

BYPASS controls whether the effect is active in the signal chain.

SHARING YOUR PATTERNS

With Molten you can share your patterns with others in three ways:

1. Share the editable pattern file
2. Share the audio
3. Share the MIDI

THE PATTERN FILE

The pattern file is the application data file and it is given the “.molten” file extension. This file can be copied between users and their iPad’s, allowing a different person from who created the pattern to edit and use the pattern. This is akin to sharing a document in a word processor.

The pattern file includes all the sequencer and instrument parameter settings. It also includes the name of the samples used in each instrument. Note that if the other person does not have the sample files, specifically any User Samples that may have been used in the pattern, then those instruments will sound blank. In other words, the pattern file does not include the sample files. Any sample files should be shared as well where the copyright permissions permit such sharing.

To share the pattern file, use iTunes File Sharing to copy the “.molten” files between the iPad and the computer.

EXPORT AUDIO

In addition to sharing the pattern file, Molten includes the ability to “bounce down” the audio to a WAV file. This process records the audio, as it would sound during normal playback to a WAV file. The WAV file can then be copied from the iPad using iTunes File Sharing.

The exported audio includes the full effects system and can then be imported into another music application or digital audio workstation (DAW) of your choosing. Perhaps forming the basis of a larger song or track, and for additional mix processing.

Patterns exported in this way are named after the pattern file plus the tempo and an exported tag. For example, if the pattern was called “Dance Club” and had the tempo of 132 BPM, the exported file would be named:

“Dance Club-120bpm-exported.wav”

To export the audio:

1. Tap the [SETTINGS] button.
2. On the toolbar at the top of the screen, tap [Export].
3. From the menu, tap the [Bounce Pattern] button.
4. If the sequencer is currently running, it will be stopped.
5. While the bounce is in progress, you will not be able to perform any other operation.
6. When the audio bounce is complete, an alert is shown informing you of the name of the saved audio file. Tap [OK] to continue.

Notes

- The exported audio file format is: WAV, 44.1KHz, 16-bit little-endian, stereo.

MIDI FILE

Molten includes the ability to export the pattern grid as a traditional MIDI file. All of the note data from the full pattern grid is saved as regular note information. This also includes the note velocity values.

The MIDI file is a level 2 standard MIDI File, where each track in the pattern represents a key on the piano keyboard. The note naming follows the General MIDI standard drum map with the low C being the first track in the pattern, i.e. the one at the bottom of the screen nearest the transport controls. This is shown in the table below.

Value	Note Name	GM Name
36	C3	Bass Drum
37	C#3	Side Stick
38	D3	Acoustic Snare
39	D#3	Hand Clap
41	F3	Low Floor Tom
43	G3	High Floor Tom
44	G#3	Pedal Hi-Hat
46	A#3	Open Hi-Hat

The exported MIDI file does not include the settings for the effects parameters. Being only the note data, it may then be imported into a digital audio workstation and used to trigger other sound sources, either as plug-ins or hardware modules.

Files exported in this way are named after the pattern file and have the “.mid” file extension. For example, if the pattern were called “Dance Club”, the exported file would be named: “Dance Club.mid”

To export the MIDI file:

1. Tap the [SETTINGS] button.
2. On the toolbar at the top of the screen, tap [Export].
3. From the menu, tap the [MIDI File] button.
4. While the export is in progress, you will not be able to perform any other operation.
5. When the export is complete, an alert is shown informing you of the name of the saved MIDI file. Tap [OK] to continue.

Notes

- Unlike the audio bounce the sequencer is not interrupted while the MIDI file export is undertaken.

AUDIO COPY AND PASTE

Molten includes the ability to share audio between other applications installed on your iPad. This is achieved with Sonoma Wire Works AudioCopy & AudioPaste. The resulting copied audio includes the full pattern and effects, as though it were exported from the Export Audio option.

To copy the pattern’s audio:

1. Tap the [SETTINGS] button.
2. On the toolbar at the top of the screen, tap [Export].
3. From the menu, tap the AudioCopy icon.
4. While the copy is in progress, you will not be able to perform any other operation.
5. When the copy is complete, a new dialog is shown informing you of any Compatible Apps that can receive the copied audio.

The pasting of audio is supported by each of the voice’s oscillators. This allows you to bring audio into Molten from another application. It can then be used as part of the instrument.

HOW TO COPY FILES USING FILE SHARING

Also refer to: <http://support.apple.com/kb/ht4094>

1. Connect iPad to your computer using the included Doc Connector or USB cable.
2. Launch iTunes 9.1 or later on your computer.
3. Select your iPad from the Device section of iTunes
4. Click the Apps tab and scroll down to the bottom of the page.
5. Under the File Sharing section, you'll find a list of apps currently installed on your iPad that support File Sharing. Select the Molten app to view a list of files associated with Molten on your iPad.

HOW TO COPY FILES FROM YOUR COMPUTER TO MOLTEN

1. Be sure to select the Molten application in the Apps list under File Sharing.
2. Drag and drop files onto the Documents list to copy them to the app on your iPad, or...
3. Click the "Add..." button, locate the file or files you wish to copy from your computer, and click the "Choose" button. The selected files will be copied to the Molten app on your iPad immediately. Select only files that are supported by Molten. These are files with the extension ".molten" and ".wav".

HOW TO COPY FILES FROM MOLTEN TO YOUR COMPUTER

1. Be sure to select the Molten application in the Apps list under File Sharing.
2. Drag and drop files from the Documents list to a folder or window on your computer to copy them to your computer, or...
3. Select the file or files you want to copy to your computer from the Documents list and click the "Save to..." button. Select only files that are supported by Molten. Locate the folder on your computer to which you want to copy the files and click the "Choose" button. The selected files will be copied to your computer from the Molten app immediately.

MIDI IMPLEMENTATION

Molten supports CoreMIDI networking over Wi-Fi and a USB MIDI interface connected to the iPad with the Camera Connection Kit.

To see the list of currently available MIDI devices that Molten will use:

1. Tap the [SETTINGS] button.
2. On the toolbar at the top of the screen, tap [MIDI].
3. A list of available MIDI devices will be shown.

Molten will send and receive MIDI messages on any of the hardware devices listed. If you are using a supported USB MIDI interface, it will be shown in this menu.

LOCAL CONTROL

This option is used for turning local control on or off. The default setting is ON. When local control is OFF, Molten will not trigger internal sounds when using the sequencer or by pressing the [TRIG] buttons. Molten will only make sounds when triggered by incoming MIDI data. However, MIDI data is still sent out.

1. Tap the [SETTINGS] button.
2. From the toolbar at the top of the screen, tap [MIDI].
3. Slide the local control switch left or right to turn on or off.

TRANSMIT MIDI CLOCK

This option is used to enable or disable the transmission of MIDI Clock, also known as MIDI Beat Clock. When set to ON, Molten will send MIDI Clock data when the sequencer is running. By transmitting MIDI Clock to external devices it is possible to slave those devices to Molten as the master. The default setting is OFF.

EXTERNAL SYNC

This option is used to enable or disable external synchronisation. When set to ON, Molten will respond to MIDI Clock messages and synchronise the sequencer playback to this clock and tempo. The transport and tempo controls are disabled when external sync is ON. The default setting is OFF.

NOTES CONFIGURATION

Molten will send and respond to MIDI note on and off messages for each of the eight voices in the pattern sequencer. These values are assignable to aid with the operation of other synthesisers.

To adjust the MIDI note values that Molten will use:

1. Tap the [SETTINGS] button.
2. On the toolbar at the top of the screen, tap [NOTES].
3. Uses the sliders to adjust the note values for each of the eight voices.

To restore the note values to their defaults tap the [RESET] button.

Notes

- Adjusting the MIDI note values will also effect what is written into the exported MIDI file.

SPECIFICATIONS

SEQUENCER

8 tracks
Up to 144-steps
Supports swing and note velocity
Multi-touch capable user interface

SOUND SYNTHESIS

8 instruments
PCM sample playback
ADSR envelope
User loadable sample file WAV format @ 44.1KHz, 16-bit little-endian, mono

TRACK EFFECTS

Amplitude modulation
1-band parametric EQ
Resonant low-pass filter
Sample rate reduction

MASTER EFFECTS

Feedback Delay
Reverb
3-band EQ
Compressor

AUDIO OUTPUT

Stereo output
iPad Core Audio

PATTERN FILE FORMAT NOTES

Molten uses XML as its document file format. The “.molten” files are zip archives that contain the “molten_pattern.xml” file. For the file to load in Molten the XML must have this name and be zip compressed. If you want to access the XML directly for another application, unzip the “.molten” file.

MIDI REFERENCE

All parameters in Molten are accessible from MIDI control change messages. On the Molten user interface, Voice 1 is in the bottom left corner immediately above the transport controls.

DEFAULT NOTE MAPPINGS

MIDI channel 10

Hex	Dec	Note	Voice
24	36	C3	1
25	37	C#3	2
26	38	D3	3
27	39	D#3	4
29	41	F3	5
2b	43	G3	6
2c	44	G#3	7
2e	46	A#3	8

CONTROL CHANGE (CC) MESSAGES

MIDI channel 10

Hex	Dec	Parameter	Trn	Rec
08	08	Voice 1 - Volume	X	X
09	09	Voice 2 - Volume	X	X
0a	10	Voice 3 - Volume	X	X
0b	11	Voice 4 - Volume	X	X
0c	12	Voice 1 - Pan	X	X
0d	13	Voice 2 - Pan	X	X
0e	14	Voice 3 - Pan	X	X
0f	15	Voice 4 - Pan	X	X
14	20	Voice 1 - Speed	X	X
15	21	Voice 1 - Pitch	X	X
16	22	Voice 1 - Window size	X	X
17	23	Voice 1 - Duration	X	X
18	24	Voice 1 - Gain	X	X
19	25	Voice 1 - Attack	X	X
1a	26	Voice 1 - Decay	X	X
1b	27	Voice 1 - Sustain	X	X
1c	28	Voice 1 - Release	X	X
1d	29	Voice 1 - Trem freq	X	X
1e	30	Voice 1 - Trem depth	X	X
1f	31	Voice 1 - Trem gain	X	X
20	32	Voice 1 - Trem bypass	X	X
21	33	Voice 1 - EQ Hz	X	X
22	34	Voice 1 - EQ Q	X	X
23	35	Voice 1 - EQ gain	X	X
24	36	Voice 1 - EQ ms	X	X
25	37	Voice 1 - Filter cutoff	X	X
26	38	Voice 1 - Filter res	X	X
27	39	Voice 1 - Filter gain	X	X
28	40	Voice 1 - Filter bypass	X	X
29	41	Voice 1 - Bitcrusher depth	X	X
2a	42	Voice 1 - Bitcrusher samp.rate	X	X
2b	43	Voice 1 - Bitcrusher gain	X	X
2c	44	Voice 1 - Bitcrusher bypass	X	X
2d	45	Voice 2 - Speed	X	X
..		
..		
45	69	Voice 2 - Bitcrusher bypass	X	X
46	70	Voice 3 - Speed	X	X
..		
..		
5e	94	Voice 3 - Bitcrusher bypass	X	X
5f	95	Voice 4 - Speed	X	X
..		
..		
77	119	Voice 4 - Bitcrusher bypass	X	X

MIDI REFERENCE

MIDI channel 11

Hex	Dec	Parameter	Trn	Rec
08	08	Voice 1 - Volume	X	X
09	09	Voice 2 - Volume	X	X
0a	10	Voice 3 - Volume	X	X
0b	11	Voice 4 - Volume	X	X
0c	12	Voice 1 - Pan	X	X
0d	13	Voice 2 - Pan	X	X
0e	14	Voice 3 - Pan	X	X
0f	15	Voice 4 - Pan	X	X
14	20	Voice 1 - Speed	X	X
15	21	Voice 1 - Pitch	X	X
16	22	Voice 1 - Window size	X	X
17	23	Voice 1 - Duration	X	X
18	24	Voice 1 - Gain	X	X
19	25	Voice 1 - Attack	X	X
1a	26	Voice 1 - Decay	X	X
1b	27	Voice 1 - Sustain	X	X
1c	28	Voice 1 - Release	X	X
1d	29	Voice 1 - Trem freq	X	X
1e	30	Voice 1 - Trem depth	X	X
1f	31	Voice 1 - Trem gain	X	X
20	32	Voice 1 - Trem bypass	X	X
21	33	Voice 1 - EQ Hz	X	X
22	34	Voice 1 - EQ Q	X	X
23	35	Voice 1 - EQ gain	X	X
24	36	Voice 1 - EQ ms	X	X
25	37	Voice 1 - Filter cutoff	X	X
26	38	Voice 1 - Filter res	X	X
27	39	Voice 1 - Filter gain	X	X
28	40	Voice 1 - Filter bypass	X	X
29	41	Voice 1 - Bitcrusher depth	X	X
2a	42	Voice 1 - Bitcrusher samp.rate	X	X
2b	43	Voice 1 - Bitcrusher gain	X	X
2c	44	Voice 1 - Bitcrusher bypass	X	X
2d	45	Voice 2 - Speed	X	X
..		
..		
45	69	Voice 2 - Bitcrusher bypass	X	X
46	70	Voice 3 - Speed	X	X
..		
..		
5e	94	Voice 3 - Bitcrusher bypass	X	X
5f	95	Voice 4 - Speed	X	X
..		
..		
77	119	Voice 4 - Bitcrusher bypass	X	X

MIDI channel 12

Hex	Dec	Parameter	Trn	Rec
14	20	Delay - delay	X	X
15	21	Delay - feedback	X	X
16	22	Delay - gain	X	X
17	23	Delay - bypass	X	X
18	24	Reverb - brightness	X	X
19	25	Reverb - room size	X	X
1a	26	Reverb - dry	X	X
1b	27	Reverb - wet	X	X
1c	28	Reverb - bypass	X	X
1d	29	EQ - low	X	X
1e	30	EQ - mid	X	X
1f	31	EQ - high	X	X
20	32	EQ - gain	X	X
21	33	EQ - bypass	X	X
22	34	Compressor - ratio	X	X
23	35	Compressor - threshold	X	X
24	36	Compressor - attack	X	X
25	37	Compressor - release	X	X
26	38	Compressor - gain	X	X
27	39	Compressor - bypass	X	X

CONTACT INFORMATION

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WEBSITE

<http://www.onereddog.com.au>