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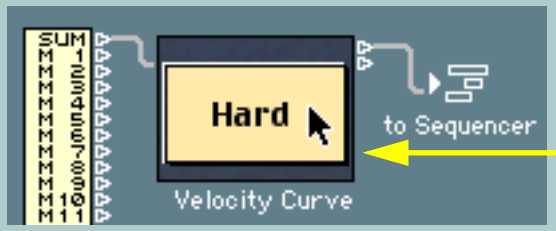
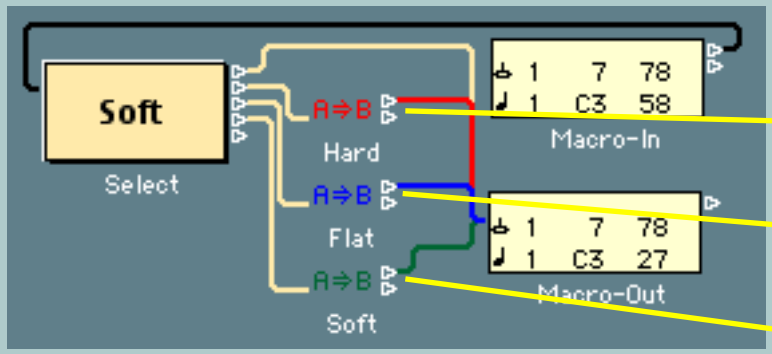
Velocity Curve

The Velocity Curve Macro is designed to adjust the feel of a MIDI keyboard by applying one of three typical 'velocity curves' shown in the illustration below. The process is quite simple, the 'Velocity Curve' menu is just a Cable Switcher in text style. Its four positions route MIDI messages either directly to the output ("Off" position) or through one of the three Transformer objects. The Transformers alter the velocity of MIDI note messages and leave all other MIDI messages unchanged.

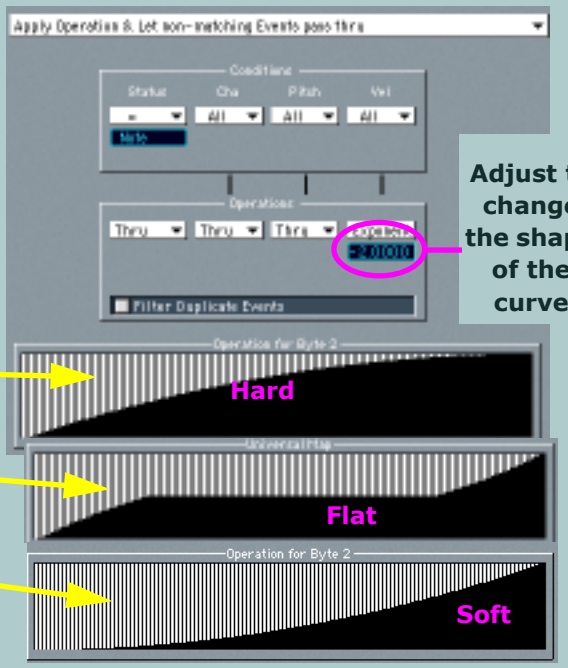
To apply the Velocity Curve to all incoming MIDI notes, place it between the Physical Input and the Sequencer Input as shown in the upper-left portion of the illustration.



Macro
Insert as shown
Select from menu



Circuitry—How it Works

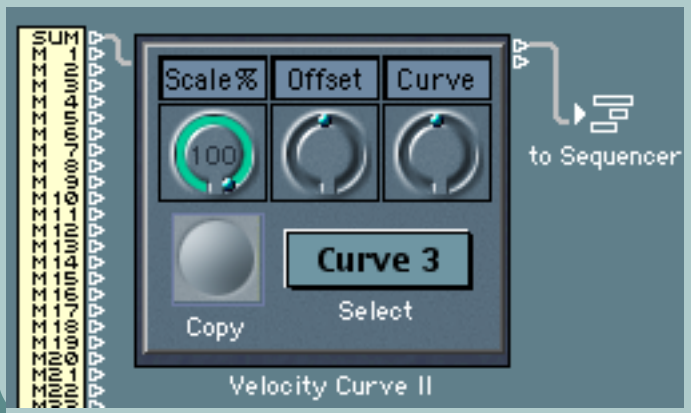


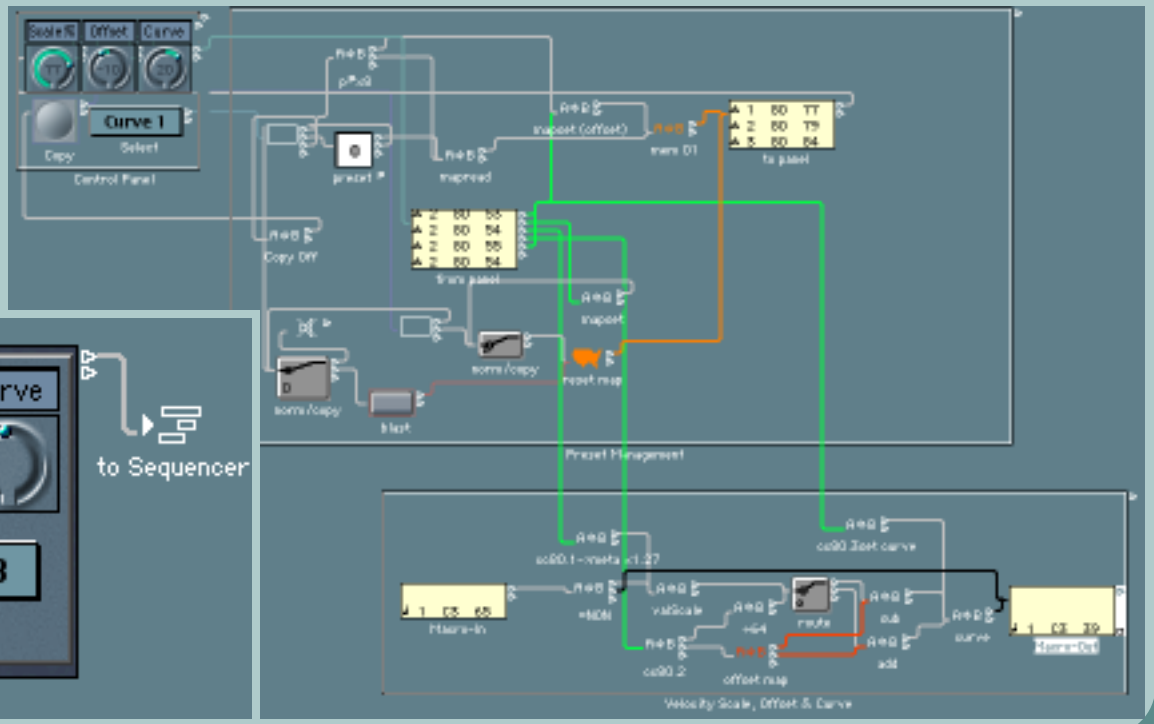
Adjust to change the shape of the curve

Velocity Curve II

Velocity Curve II is a more complex velocity process—first the velocity is scaled (1% to 100%) then an offset is added (-64 to +63) and finally a hard (log) or soft (exp) curve is applied. It also allows you to store and recall velocity curve presets. The current preset always matches the knob settings (i.e. it is always 'write-enabled'), but pressing the 'Copy' button will allow you to copy the current knob settings to the next selected preset number. (The button goes off automatically.)

A variation of this process is used in the Soft Mutes tool (click the link button below).

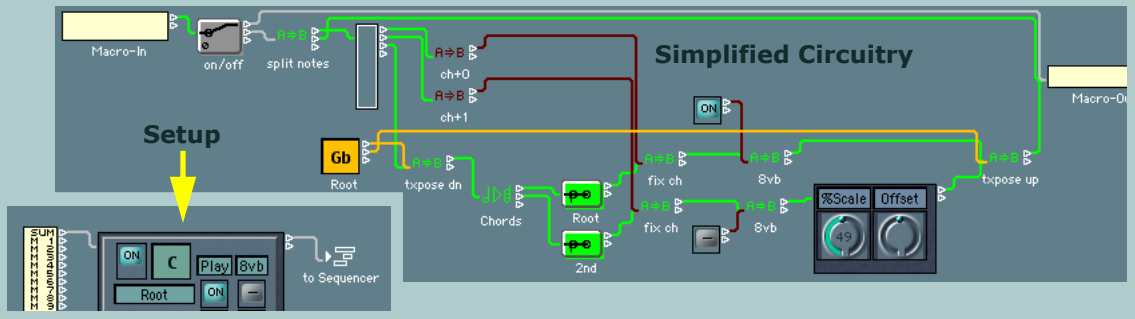




Chord Maker (a.k.a. Diatonic Transpose)

The purpose of the Chord Maker macro is to turn single notes into chords. It is based on the Chord Memorizer object with some additional circuitry for handling key changes, velocity scaling, multiple channels and octave transposition. The illustration at bottom shows a simplified, 2-voice version—hook it up as shown in the inset. For each incoming note, the Chord Memorizer produces the 7 tones of the diatonic scale starting on that note. Use the 'Play' buttons to select which notes are actually played—selecting only one play-note results in diatonic transpose of the corresponding interval.

- The '8vb' buttons determine whether the note is shifted down an octave.
- The 'Key Select' button determines which diatonic scale is used—incoming notes in the C1 to B1 range can remotely change this setting making the Chord Maker usable in live performance.
- The 'Panic' button turns all notes off. It is activated automatically when you change keys, but appears on the front panel just in case...
- The '%Scale' & 'Offset' knobs affect the velocities of all notex except the root allowing the chord to be softer than the melody.
- Each note is played on a different channel starting with the channel of the incoming note and incrementing down the interval list. This is convenient for scoring the recorded part as well as for separating the voices for playback.



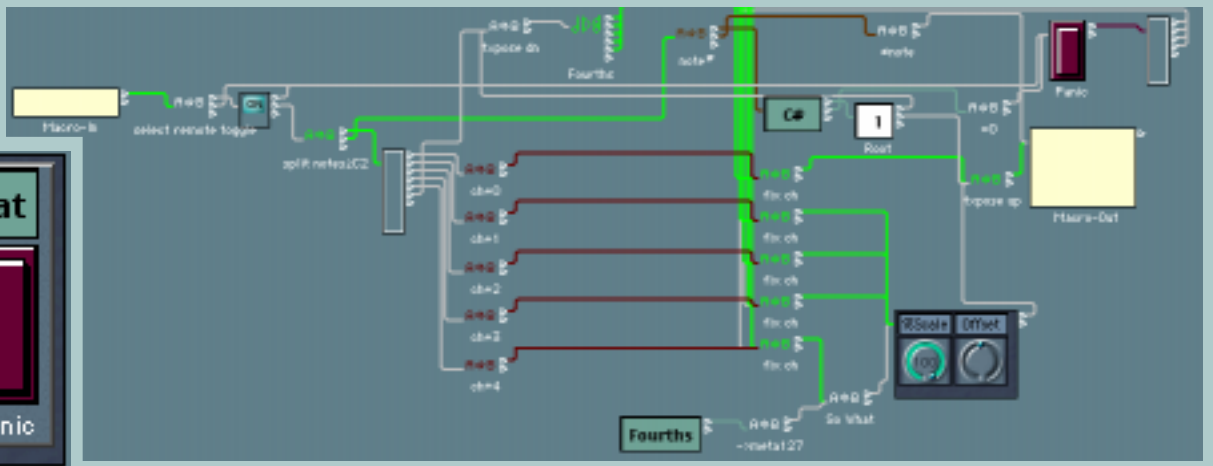
Chord Maker II (Stacked Fourths)

Instead of creating your own voicings, this version of Chord Maker creates 5-note voicings based on stacked fourths. There are two choices of voicings: stacked fourths and stacked fourths with a third on top (the first inverson of the stacked fourths voicing). The latter is often called the 'So What' voicing after the Miles Davis composition of the same name.

The hook up is the same as for Chord Maker—place it between the Physical Input and the Sequencer Input. The 'On' switch in the upper-left corner toggles Chord Maker II on and off.

The button on the upper-right toggles between 'Fourths' and 'So What'. In the 'Fourths' position, the chord consists of descending fourths below the played note except when a note falls on a non-scale tone it is lowered so that the interval becomes a tritone. In the 'So What' position, what would have been the bottom note in the fourths voicing is raised two octaves to form a third (major or minor) above the played note.

Again, each voice is on a separate MIDI channel.

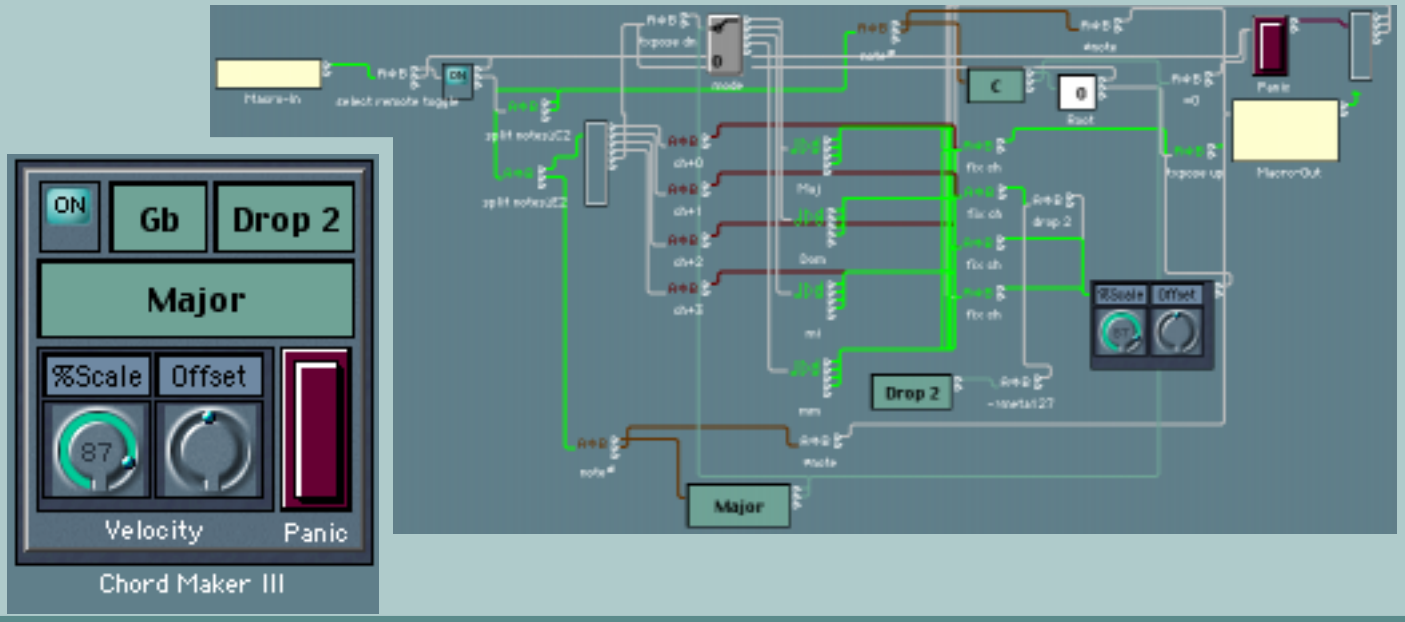


Chord Maker III (Block Chords)

This version of Chord Maker uses alternate notes from 8-note scales—one scale for each of the chord types: major 6th, dominant 7th, minor 7th and minor 6th. As you play through the scale, the chords alternate between the named chord and a diminished chord functioning as a dominant for the named chord:

Major 6th—C6 & G7^{b9} • Dominant 7th—C7 & G7^{b9} • Minor 7th—Cmi7 & G7^{b9} • Minor 6th—Cmi6 & G7^{b9}

There are two variations of each voicing—one called '4-way close' and the other called 'drop 2' in which the second voice from the top is lowered an octave. The voices are on separate MIDI channels. Notice that 4 Chord Memorizers are used. The chord-type menu switches between them and MIDI notes C2 thru E^{b}2 can be used to change chord types remotely.

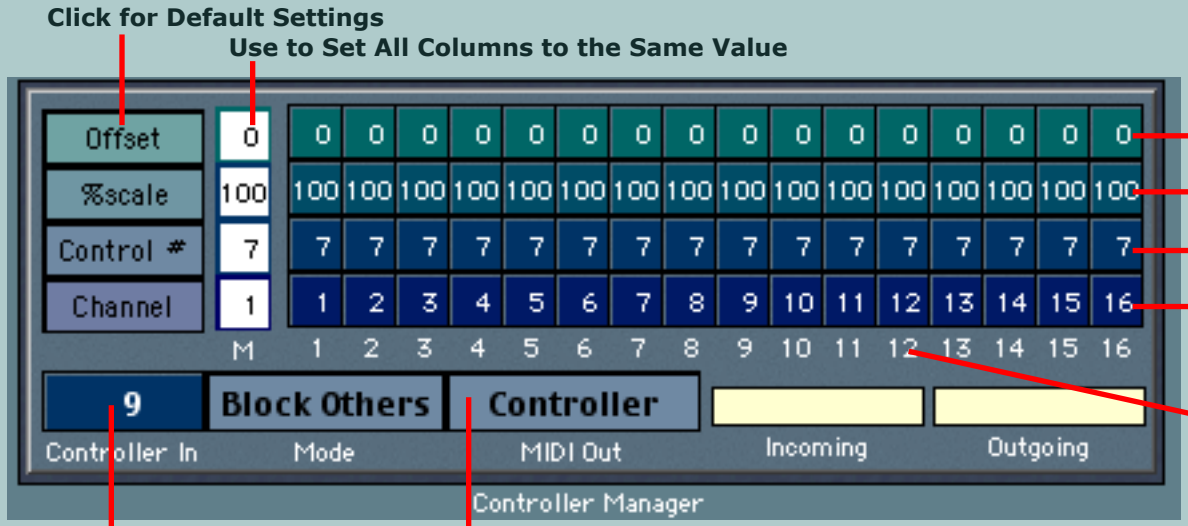


Hardware Controller Manager

'Controller Manager' is a mapper for incoming MIDI control messages. Its intended use is with a dedicated hardware controller surface such as the PC-1600. You can leave the hardware controller's sliders set to 16 channels of the same controller number (e.g. MIDI volume controller #7) and use Controller Manager to map these to any other controller configuration.

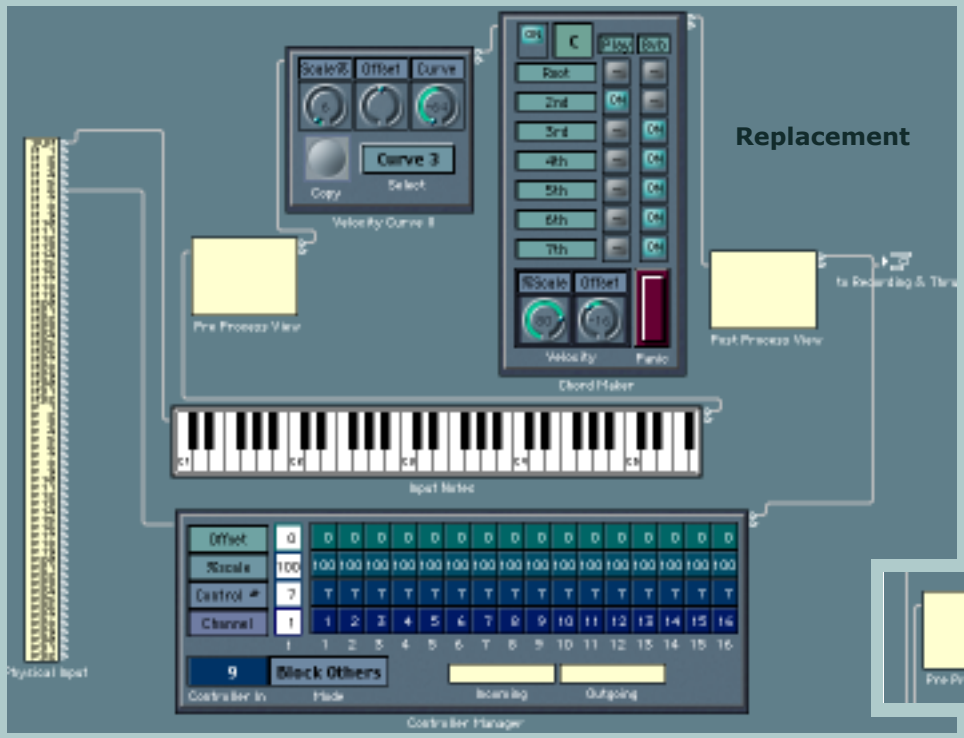
The columns represent the output for the incoming MIDI controller message on the indicated channel (i.e. the label for the bottom numerical). You have independent control of each outgoing MIDI message's channel, controller number and controller value %-scaling & offset. There are a global controls for the MIDI in controller number, the type of MIDI output message and whether other messages are passed through.

Typically you would cable Controller Manager between a single input port and the Sequencer Input object (see next page).

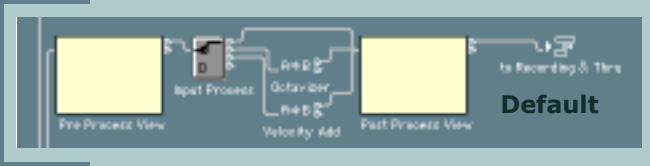


Modified Logic Default Input Processing

If you have started your Autoload song from Logic's default song you can easily replace the input processing as shown below. Simply remove the Cable Switcher and two Transformers and place Velocity Curve II and Chord Maker in series between the two monitors. To take the Velocity Curve out of action, use neutral knob settings (scale=100, offset=center, curve=center). To take the Chord Maker out of action, click the 'On' button at the upper-left to the '-' position.



Notice that the cabling for the 'Controller Manager' routes a single port (M6 in this example) through the Macro to the Sequencer Input. The idea here is to process only the MIDI data from the hardware controller surface and leave everything else to the SUM output. You could also cable the Controller Manager's output directly to the desired destination instruments in which case it would affect the output device without its data ever being recorded.



Output Processing

- Channel Hocket
- Channel Mapper
- Drum Mapper
- Drum Switcher
- MIDI Delay/Echo
- MIDI LFO
- Pan Dancer
- Pitch Randomizer
- Roll Your Own Scale Corrector

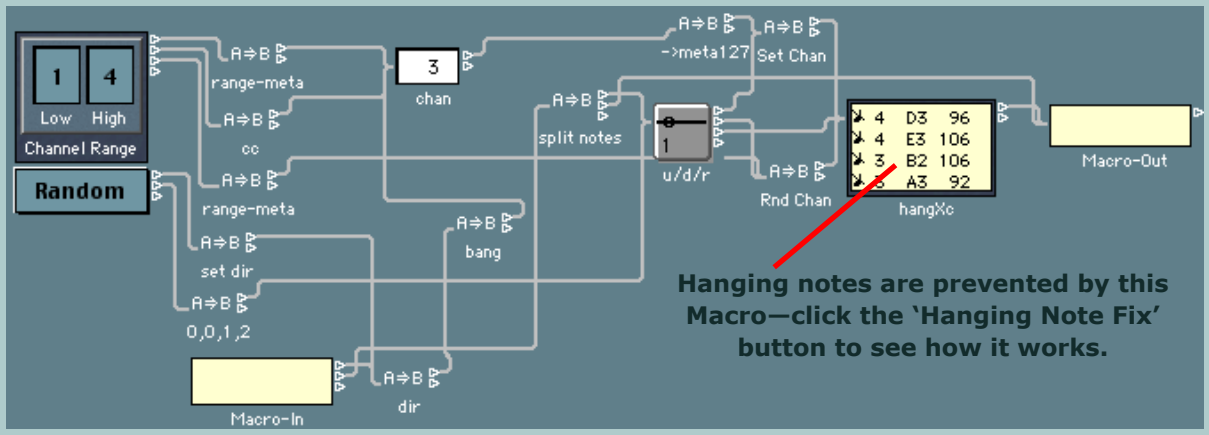
Channel Hocket

The Channel Hocket cycles incoming MIDI messages across several MIDI channels. The numericals at the top set the channel range (1 thru 4 in the illustration). Incoming MIDI messages will cycle up, down or at random through the channels in this range—the 'Off' position preserves the incoming channel.

The simplest way to use the Channel Hocket is to assign the Macro to an Arrange window Track and cable its output to a multi-instrument or to a Channel Splitter which is in turn cabled to various instruments.

When you record on a Channel Hocket Track, the incoming MIDI note messages will be recorded on their original channel but they will be played thru on the channels assigned by Channel Hocket. Every time you play back a sequence recorded in this way you will get different results (i.e. a different hocket). To lock in the results, cable the Channel Hocket's output back to the Sequencer Input object and record. Then move the resulting sequence to a Track assigned to the multi-instrument or Channel Split that the Channel Hocket was originally cabled to.

Try the Channel Hocket after the MIDI Delay/Echo for an interesting effect.



Channel Mapper

This Macro allows you to assign each incoming MIDI Note to its own MIDI Channel. It is useful for drum processing either live or recorded, when you want to use different MIDI devices for different drum notes. This feature is also built into Mapped Instruments.

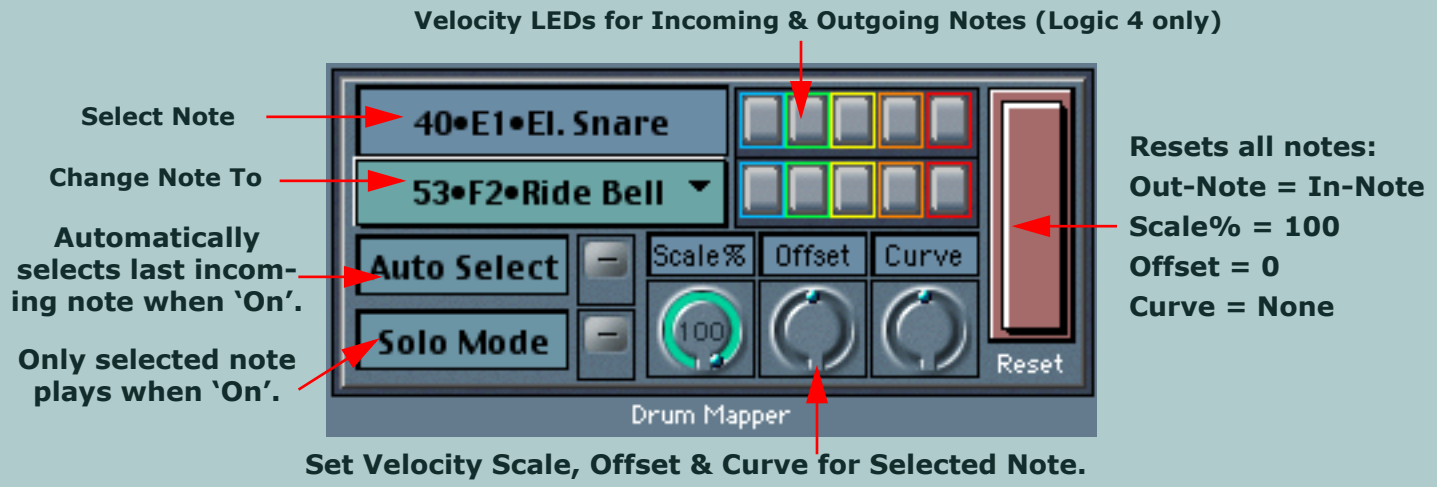
Drum Mapper

The Drum Mapper allows you to change the pitch (i.e. the drum in the case of drum sequences) and velocity characteristics (scaling, offset and curve) independently for each MIDI note number. You can do this on the fly as the sequence is playing. Think of it as a kind of 'real time' version of the Mapped Instrument object.

Solo Mode allows you to hear just the selected note (top menu). Auto Select causes the selected note to follow incoming MIDI. (Solo 'On' turns Auto Select off.) The Reset button resets *ALL* notes to 'no change'.

To use the Drum Mapper, assign it to an Arrange Track and cable its output to the desired playback Instrument object (typically a Mapped Instrument).

You can record the results by cabling the Drum Mapper back to the Sequencer Input object, but you can just as well leave it in line.



Drum Switcher

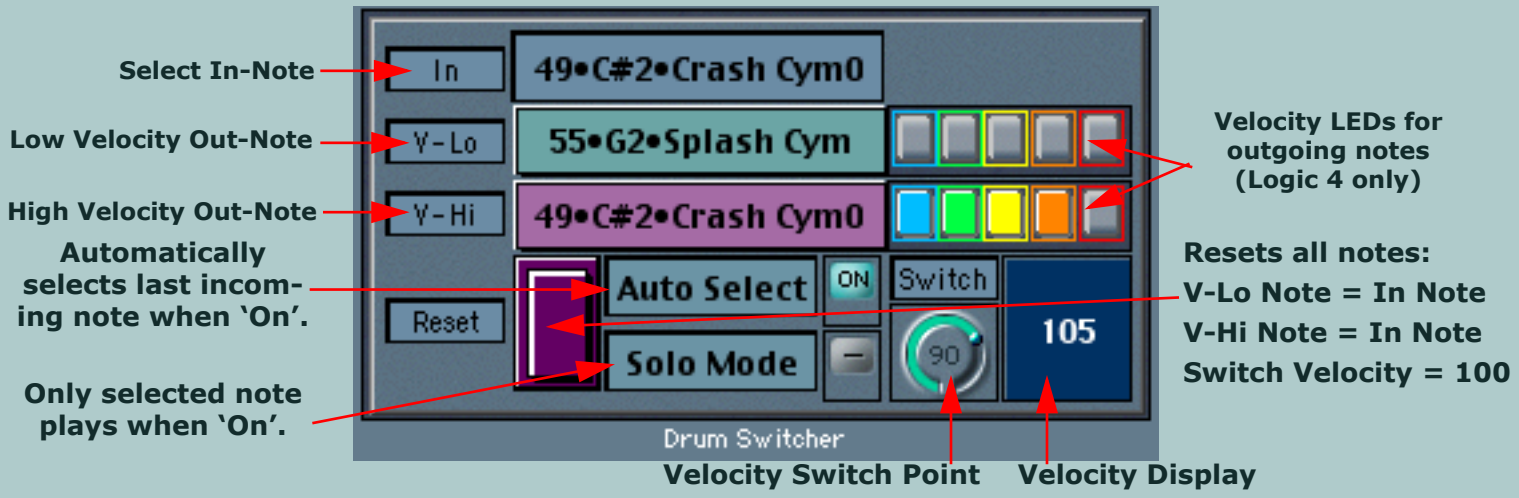
The Drum Switcher is a velocity switch for individual notes. Incoming notes are mapped to the 'V-Lo' or 'V-Hi' note depending on their velocity. The 'Switch' knob sets the switch points. Think of this as velocity switching for individual notes.

The Auto Select and Solo Modes work just as with the Drum Mapper. The LEDs show which note is played. The numerical shows the velocity of the last incoming note. It is for display only. It is helpful in setting the switch velocity when in solo mode.

To use the Drum Switcher, assign it to an Arrange Track and cable its output to the desired playback Instrument object (typically a Mapped Instrument).

To save a Drum Switcher set up or use it on another Track, just make a copy of the Macro.

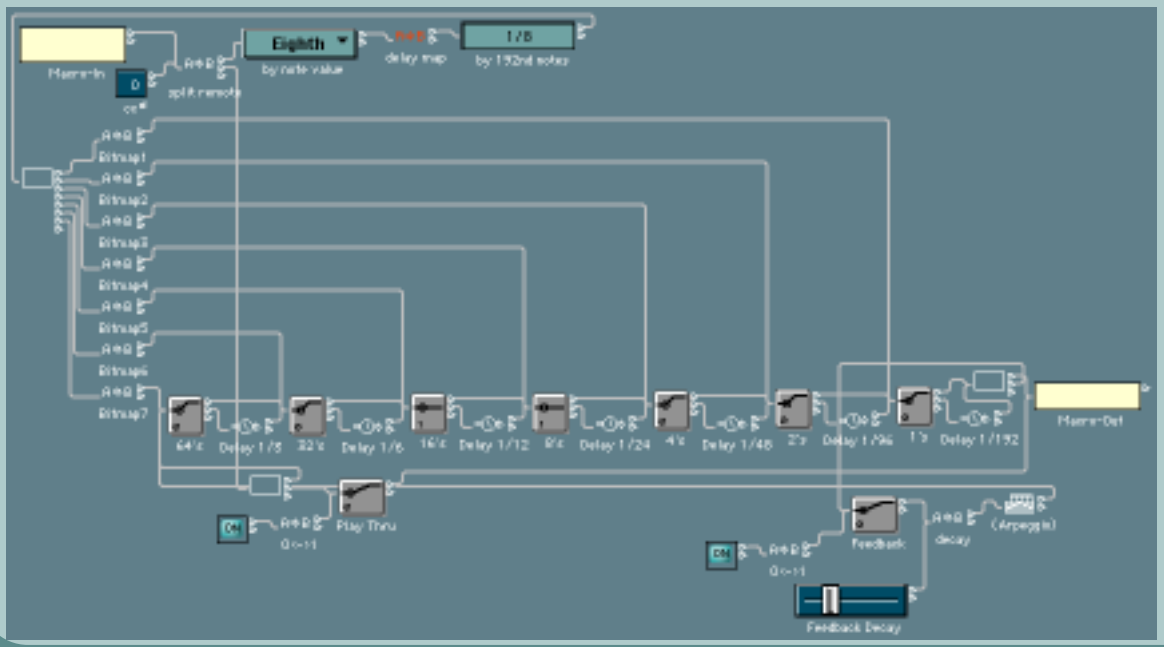
Remember, you can use a Drum Mapper and Drum Switcher in series—in either order.



MIDI Delay/Echo

The MIDI Delay/Echo provides remotely selectable delay times in 1/192 note increments. Two selectors are provided: one for all possible delays and one for convenient musical increments from a 64th note to a quarter note. See the Delay Line Tool for a description of how this works.

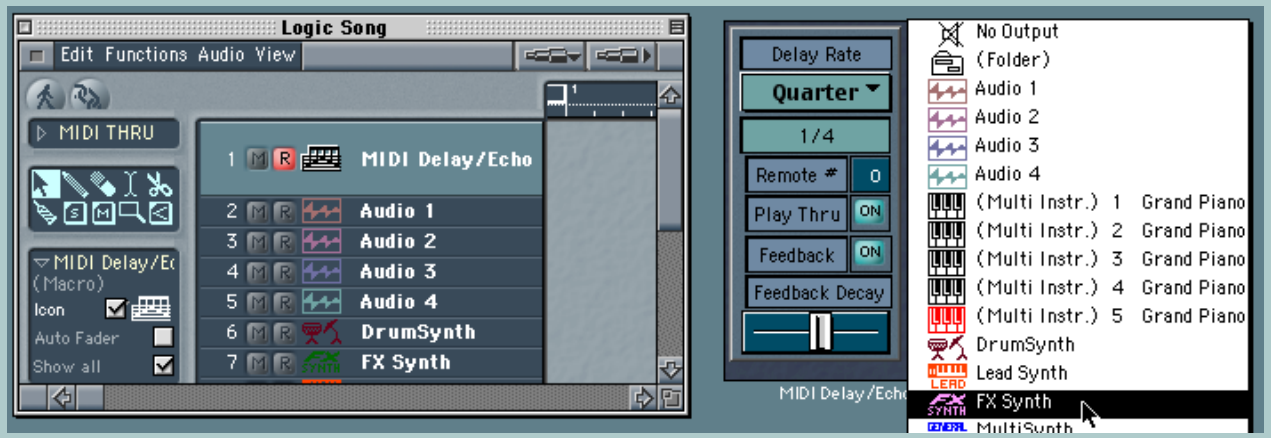
Besides the two delay rate selectors, there are four other controls: Play Thru, Remote #, Feedback and Feedback Decay. The Play Thru control determines whether the incoming notes are passed to the output—otherwise only the delayed notes appear at the outlet. You might want to turn this off when you want the original notes played by one instrument and the echoes played by one or more others. (You could use the Channel Hocket below to spread the echoes across several instruments.) The Remote # control sets which incoming MIDI controller can be used to change the delay time.



The Feedback and Feedback Decay controls work together to repeat the echo with decreasing velocities until it dies out. With Feedback on, each echo is fed back through the chain of delay lines. In this case the Feedback Decay slider sets the velocity decay rate (from 1 to 64) for each subsequent echo. Echoes with a velocity below 10 are not fed back so that each echo eventually dies out.

The simplest way to use MIDI Delay/Echo is to assign the Macro to an Arrange window Track and cable its output to the instrument object you want to use for output (e.g. with the instrument menu). When Logic is playing back, seqeunces on that Track will be processed. When Logic is recording and that Track is record-enabled, the incoming notes will be recorded but not the echoes. As long as Logic is running, you can select the MIDI Delay/Echo Track and process incoming MIDI in real time.

Be aware that MIDI Delay/Echo will actually echo any MIDI messages, not just notes. With Feedback & Decay, this can be used to create interesting MIDI effects (e.g. pan, volume, pitchbend, etc).



MIDI LFO

The MIDI LFO generates MIDI controller, pitch bend or after touch messages at selected note-division increments (all those provided by the Arpeggiator object). It can also be set to generate internal Logic tempo changes. It can be toggled or gated by MIDI sustain pedal (cc#64) messages and it can be set to re-trigger (i.e. start from the beginning of the LFO cycle) when incoming notes arrive.

Sine, sawtooth, variable width (invertible) pulse, random and 'random loop' waveforms are provided. Random loop differs from random in that each time it is chosen, a new random pattern is generated which then loops (instead of each step of each loop being random).

The output of the LFO can be scaled and offset using the controls at the bottom right (Logic 4 only).

The step size refers to the note increment between consecutive steps of the LFO. Since one cycle is 128 steps, small step sizes still result in relatively slow LFO speeds in the normal sense. The Acceleration slider compensates for this by dropping equally spaced steps—i.e. decreasing the number of steps per cycle. The Snap control (to the right of the step size) syncs the LFO start to the selected position (e.g. measure, quarter note, etc.)

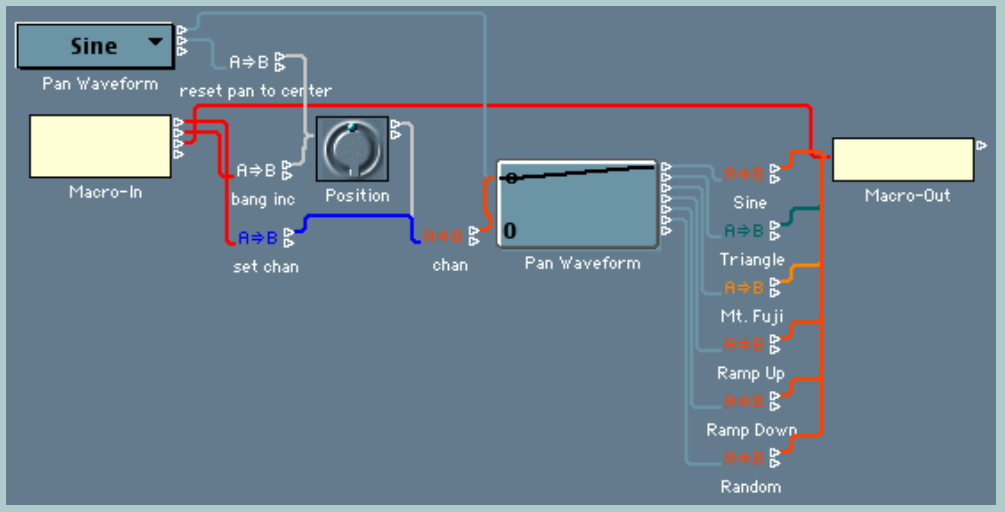
The 'Resolution' slider reduces the amount of MIDI data generated by the LFO (which can be huge) by quantizing the output. In general move the slider as far left as you can while still getting satisfactory results. (Far left settings can be interesting when the LFO is applied to pitch.)

If you just want to use the LFO, cable it into the desired instrument object. If you want to remote control it, use it as the Track object for this instrument (i.e. use it as an output process). If you want to record the LFO, cable it into the Sequencer Input object (i.e. use it as an input process).

Pan Dancer

Pan Dancer provides a simple but effective MIDI panning effect—it is a pan LFO whose clock is the incoming MIDI note messages. You can select from several different panning patterns using the 'Pan Waveform' selector. Each incoming MIDI note message is then converted to a pan message (MIDI controller #10) whose value is the next step in the chosen pattern. The pan messages are generated first then the notes are sent out afterward.

The simplest way to use the Pan Dancer is to assign the Macro to an Arrange window Track and cable its output to the desired output instrument.

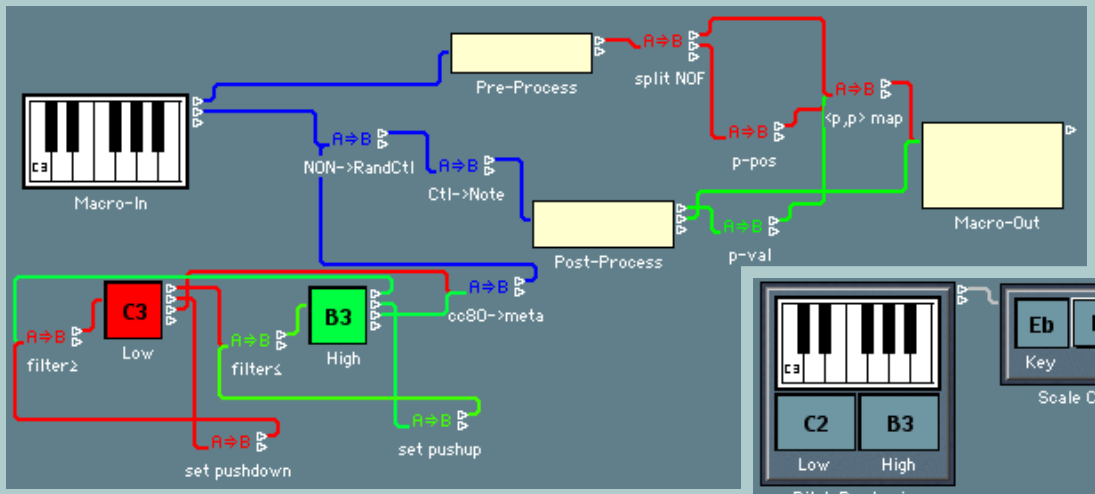


Pitch Randomizer

The Pitch Randomizer assigns new pitches to incoming notes or notes played on the Keyboard object. The new pitches are chosen randomly from the range set by the 'Low' and 'High' numericals. Hanging notes are avoided by keeping a map of the new pitches assigned to the incoming Note-Ons and using the map to assign the same pitches to the corresponding Note-Offs. (See the buttons below for the tools used to do this.)

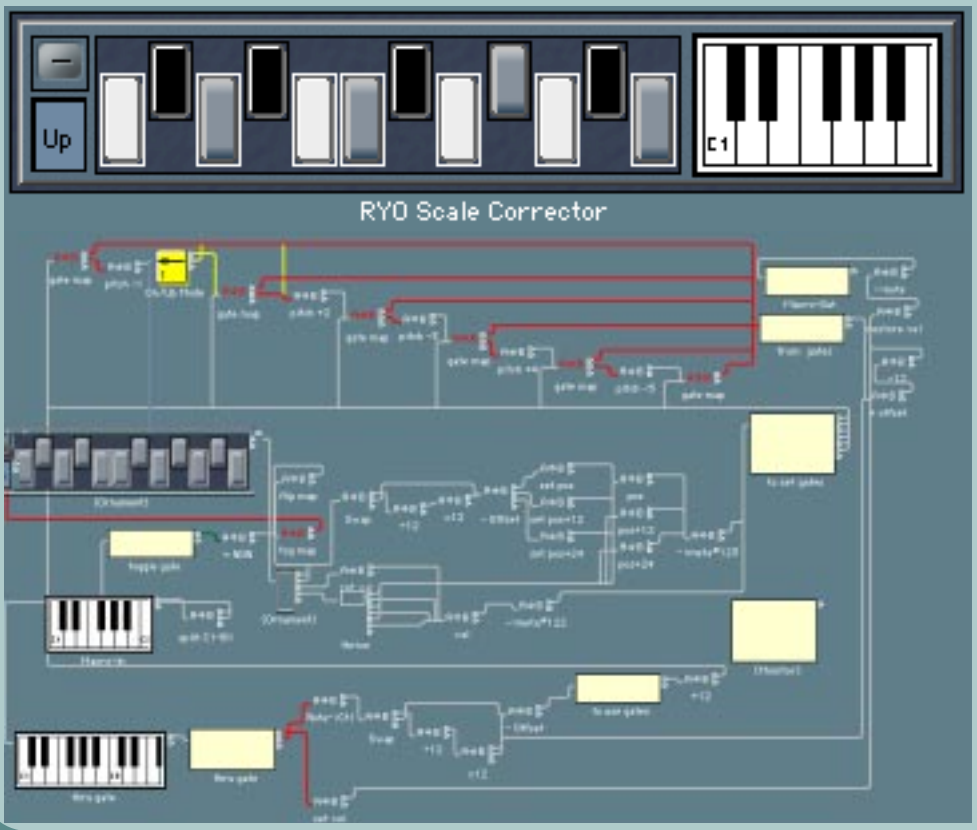
As with the previous output processes, assign the Pitch Randomizer to an Arrange Track and cable its output to whatever instrument you want to play the notes. Simply using random pitches can get old very fast. One way to make the results more musical is to scale correct the output as shown in the insert.

When you record on a Pitch Ransomizer Track, the incoming pitches will be recorded and will be randomized in a different way each time the Track is played. To lock in the results, cable the Pitch Randomizer back to the Sequencer Input object, record on a different Track then either erase or mute the original Pitch Randomizer Track (or the sequences on it).



Roll Your Own Scale Corrector

This Macro differs from the Scale Correcting & Filtering tool in allowing you to create your own scales. You do so by either clicking the buttons, using the one-octave keyboard or playing notes on your MIDI keyboard between C1 and B1 (i.e. two octaves below middle C). There is a button for setting whether notes are corrected by transposing up or down and a button (top left) for toggling all notes on and off.



The Hanging Note Fixer tool is incorporated into this module so you can use it as an input or output process, but output is more typical.

For output processing assign RYO Scale Corrector to an Arrange Track and cable its output to the desired playback instrument.

For input processing, cable it between the Physical Input object and the Sequencer Input object on the 'Clicks & Ports' Layer.

The circuitry here is obviously rather complex. The basic idea is to keep the 'allowed' notes in a map then successively try to correct incoming notes up and down by increasing numbers of semitones until this results in an allowed note. The maximum correction is 5 semitones so if there are no allowed notes, nothing gets through.

Scale Correct Tool | Hanging Note Fix | Input Processing | Continued | Output Processing

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examples.lso—RYO

Roll Your Own Scale Corrector (Continued)

This version of the Macro adds two features: scale filtering and range controls. Notes outside of the selected range are blocked and in filter mode (when the direction control at the left is set to "Flt") all not-included notes are also blocked.

The purpose of the range feature is to allow you to setup complex scales that span more than one octave (bottom right illustration). You can do this by using several of these Macros in parallel set to different ranges.

In this version of the Macro, the only way to select the scale is with the on-screen buttons.

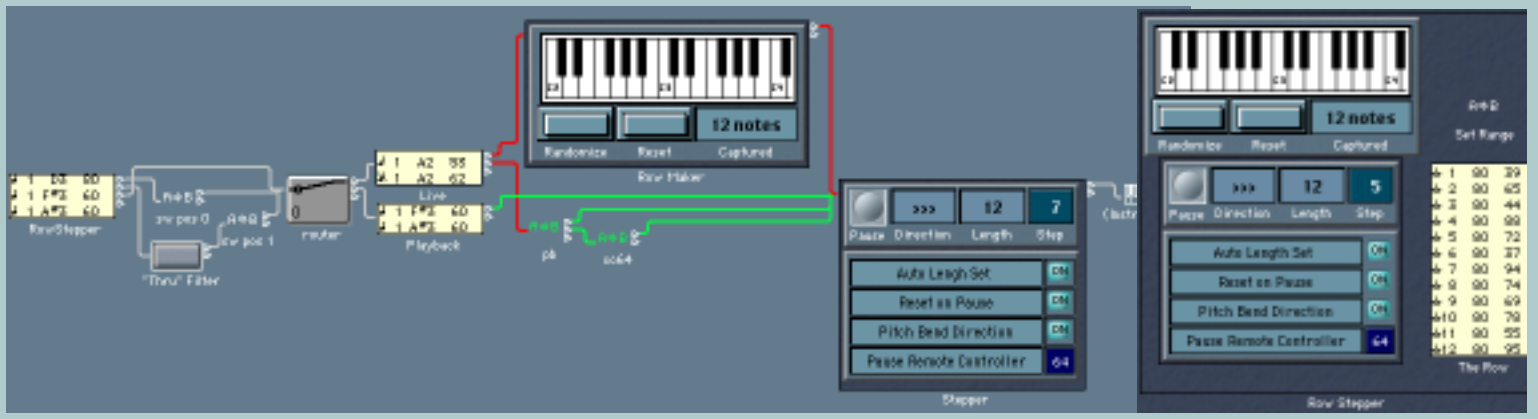
Step Sequencing

- Row Stepper
- Step Sequencer (Keyboard Model)
- Step Sequencer (Analog Style Model)
- Step Sequencer (Totus Porcus)
- Step Sequencer with Velocity Clock
- Step Sequencer Enhancements

Row Stepper

Row Stepper is a step sequencer for 12 tone rows. It combines three tools—Row Maker, Stepper & MIDI Thru Splitter—to make a step sequencer for 12 tone rows. The Row Maker tool is used to set the step sequencer pitches in the Stepper tool. The Stepper tool is used to play back the sequence. The MIDI Thru Splitter tool is used to separate live incoming MIDI from Logic's playback. Once you've assigned Row Stepper to an Arrange Track and selected the Track, notes you play will be used to set the row-sequence pitches and notes played back on that Track will step the sequencer causing the row-sequence to play. Notice that live pitch bend and controller 64 are also passed to the Stepper to allow remote direction change and pause.

The Row Stepper Macro (shown on the right and available for Logic 4 only) combines the two Macros and the MIDI Thru Splitter circuitry into a new Macro. To use the Macro, assign it to an Arrange Track and cable its output to the desired playback instrument object. You can restrict the range of the generated row by double-clicking the Transformer named 'Set Range' in the Macro and setting its Operation -2- range parameters.



Row Maker | Stepper | MIDI Thru Splitter | More Examples

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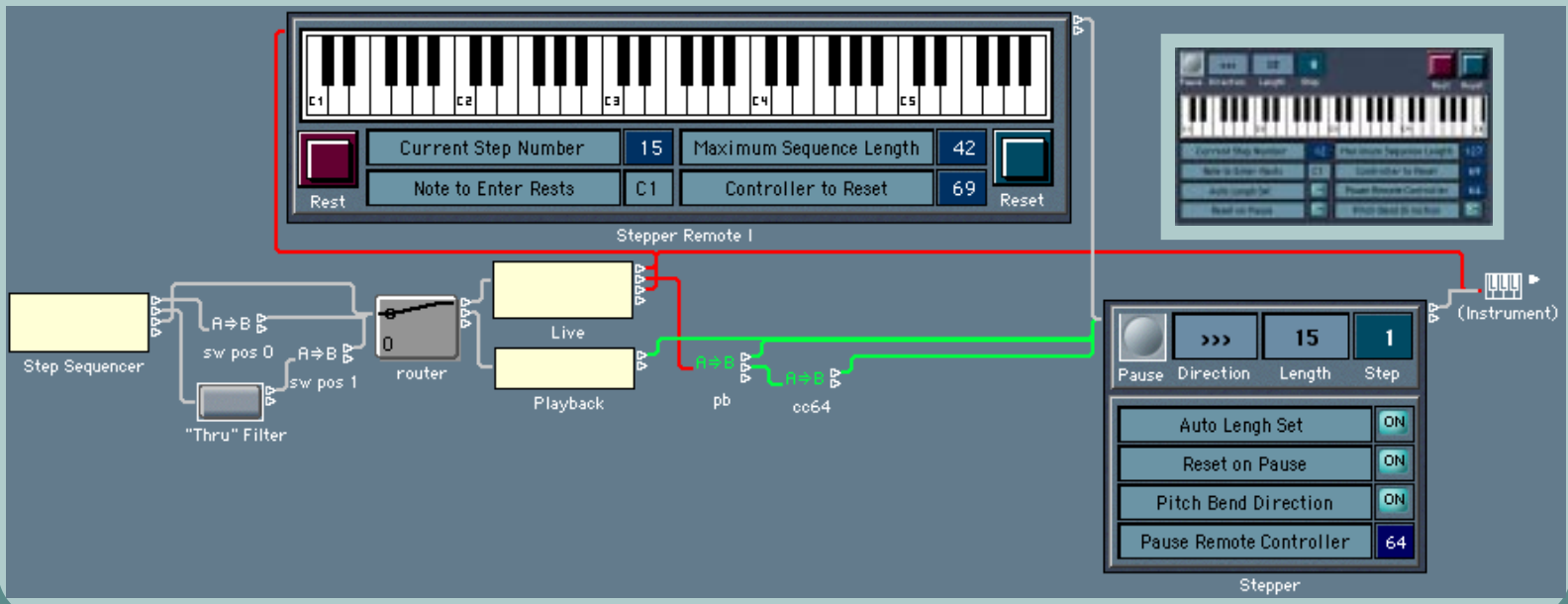
examples.lso—Row Stepper

Step Sequencer (Keyboard Model)

This is a 128 note step sequencer with keyboard entry reminiscent of the early hardware digital sequencers. It is made by substituting Stepper Remote I for Row Maker in the previous example.

Notes you play live will program the step sequencer and played back notes will play the step sequence. Note that different controllers are assigned to reset Stepper Remote and to pause Stepper. Notice also that the 'Live' input is cabled to the output instrument. This allows you to hear the pitch sequence as you create it.

This combination is a bit too large to be made into a Macro, but unpacking the constituents and doing some judicious pruning of unnecessary objects gets it just under the limit (Logic 4 only). As with the Row Stepper, assign it to an Arrange Track and cable its output to the desired playback instrument.



Stepper Remote I | Stepper | MIDI Thru Splitter | | More Examples

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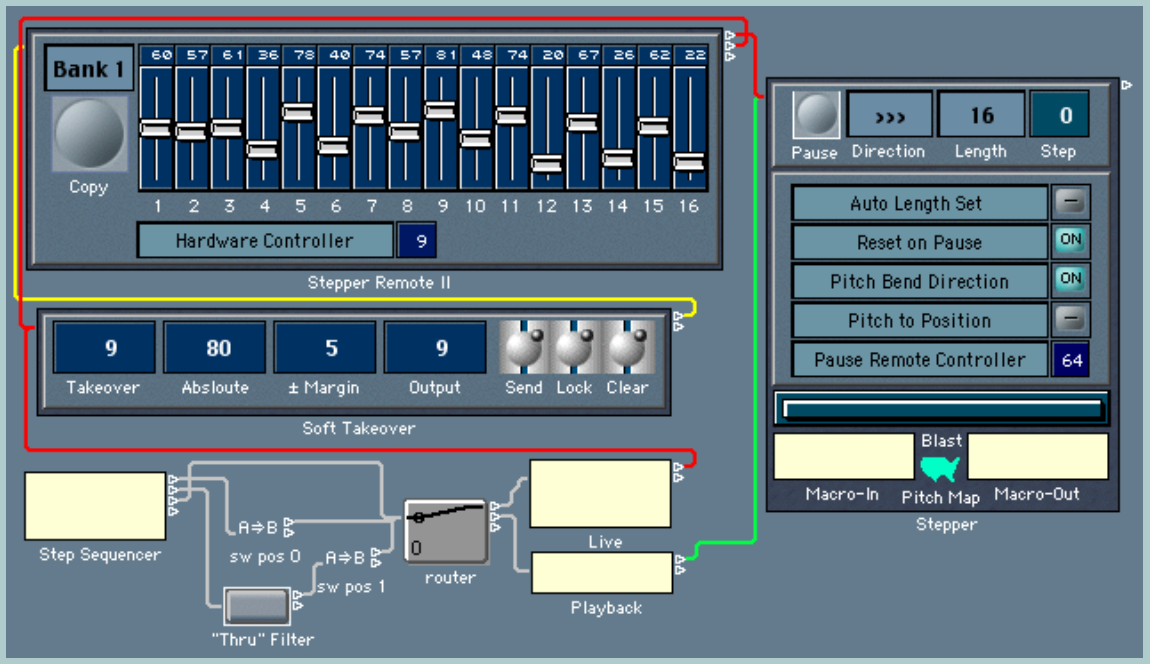
examples.lso—Step Seq I

Step Sequencer (Analog Style Model)

This is a 128 note step sequencer with sliders reminiscent of the analog sequencers found in classic modular synths. It is made by substituting Stepper Remote II for Stepper Remote I in the previous example. The Soft Takeover tool is also added to allow use of a hardware remote controller without having the pitches jump each time a new slider is moved. This combo is just too big to squeeze into a Macro object but it is still easy to use.

Assign the Monitor object named 'Step Sequencer' to an Arrange Track and cable the output of Stepper to the desired playback instrument object. Then use it just like the previous two examples.

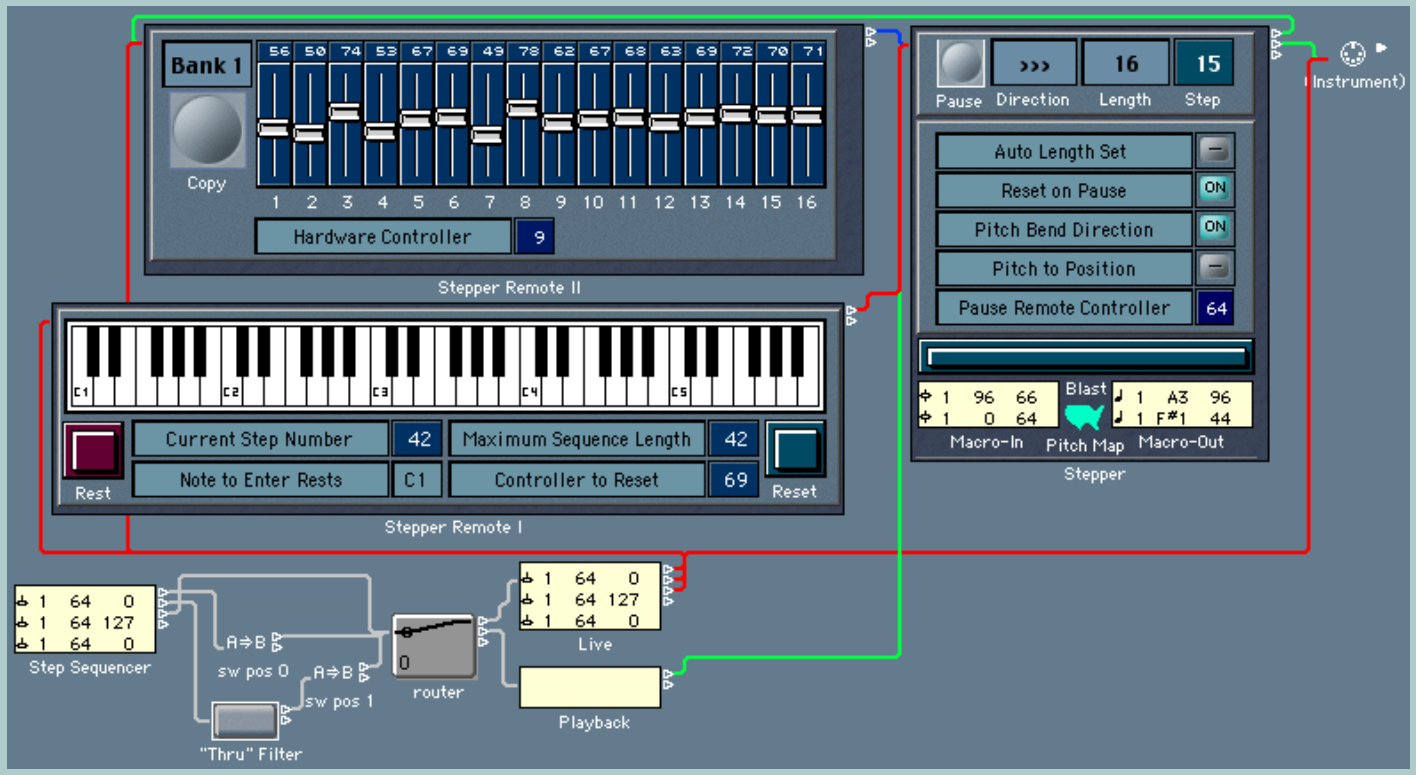
For an analog style sequencer with velocity control, see the 'Velocity Example'.



One advantage of soft takeover is that you can change Stepper Remote II banks and continue using the same hardware sliders without getting jumping pitches. The trick is to always set Soft Takeover's 'Absolute' control cc# before the bank change. Use cc #80 for bank 1, cc #81 for bank 2, etc.

Step Sequencer (Totus Porcus)

If you can't make up your mind between the previous two models, try this. Notice the loop back from Stepper to Remote II—after using Remote I to enter pitches, you can click Stepper's 'Blast' button to move the sequence to Remote II. (Click the 'Bank' button to display the changed pitches on the sliders.) Also notice the direct connection from the 'Live' input to the output instrument. This allows you to hear pitches as you enter them from a MIDI keyboard.



Stepper Remote I | Stepper Remote II | Stepper | MIDI Thru Splitter | More Examples

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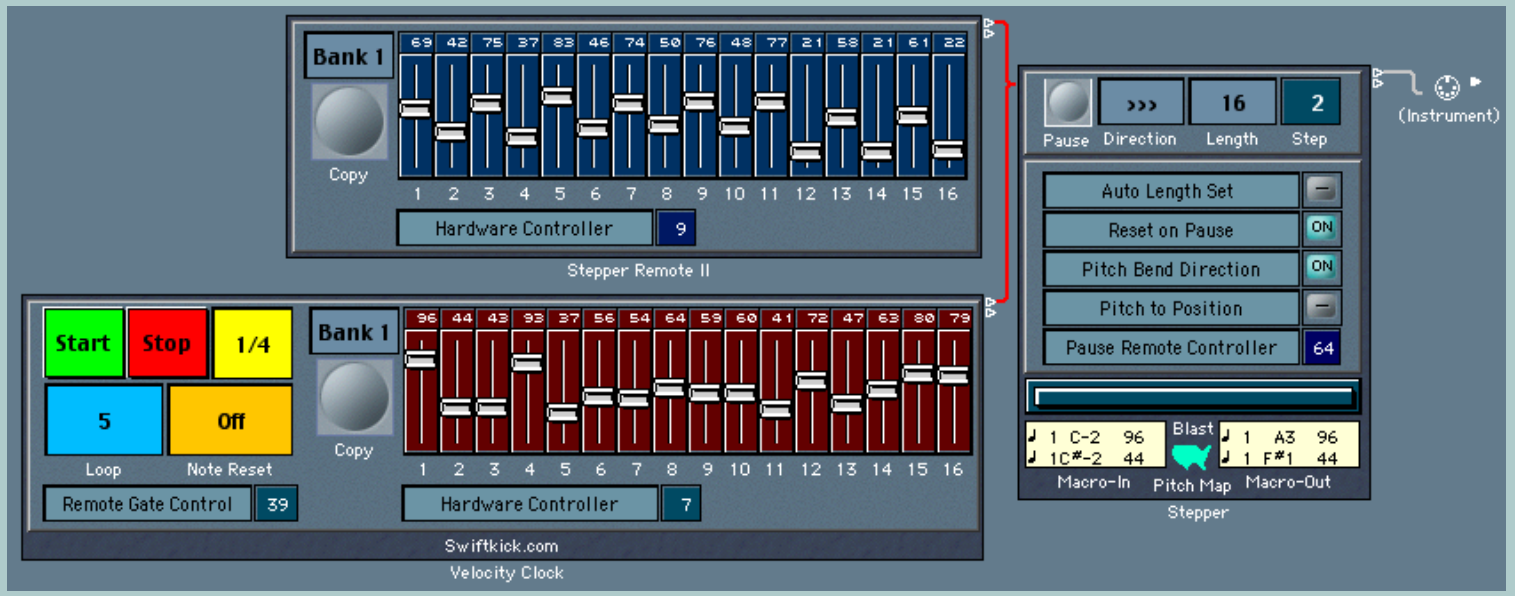
examples.lso—Step Seq Ex1

Step Sequencer with Velocity Clock

You can combine the Velocity Clock with any of the Stepper remote modules (Stepper Remote I is shown here). If you want to synchronize the Velocity Clock and Stepper loops, turn Stepper's 'Pitch to Position' option on. When you want an independent Velocity Clock loop turn Pitch to Position off. (You might want an independent velocity loop for example in order to apply a 16 step groove to a longer pitch sequence.)

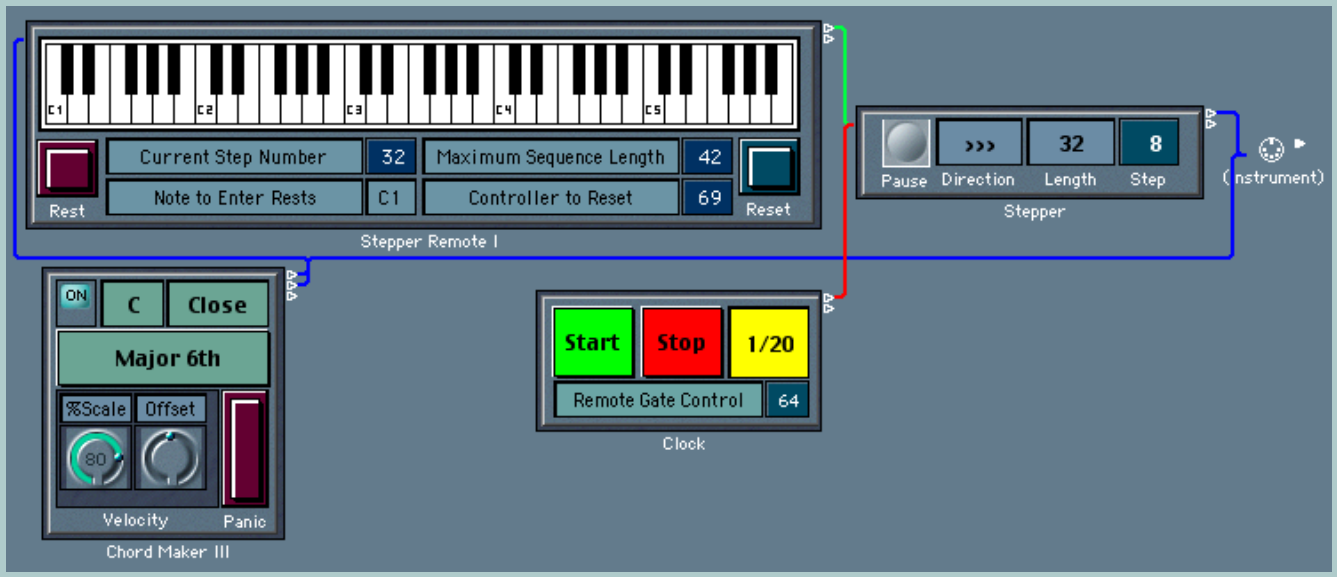


Stepper Enhancements

Keep in mind that you can use the output of Stepper or one of the Stepper combos with other pre-cesses. In the illustration, the output of Row Stepper is harmonized using Chord Maker.

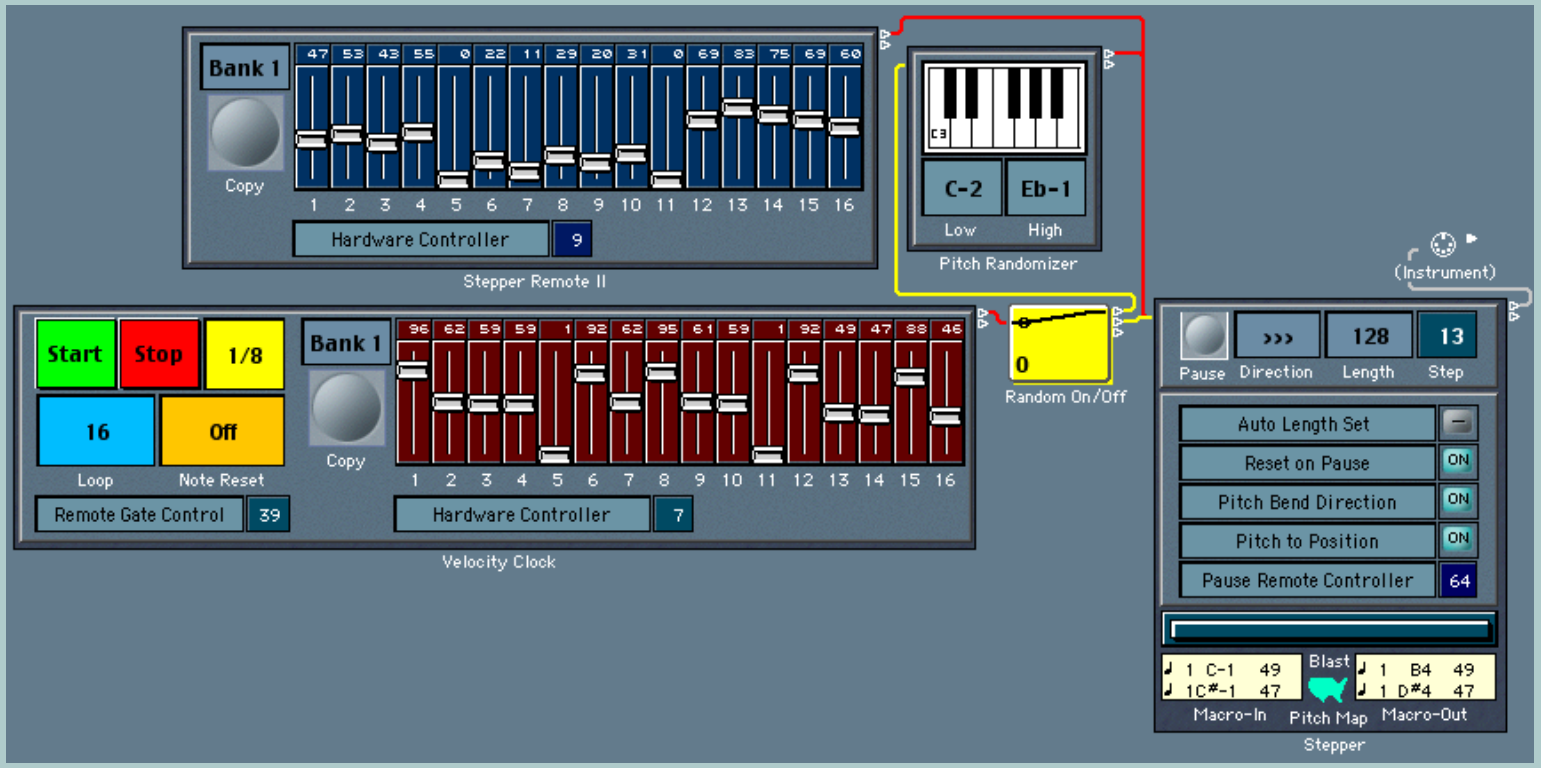
Stepper Enhancements (Continued)

In this example, Chord Maker III chords are used to set the Stepper pitches. Stepper Remote I is used to convert the chords to program the Stepper pitches. Stepper then arpeggiates the chords with the timing of the Clock.



Stepper Enhancements (Continued)

Here the Velocity Clock sequencer is combined with the Pitch Randomizer. Stepper's Pitch to Position option is on so the pitches of the clock notes control the Stepper position. These pitches correspond to Velocity Clock loop position. Randomizing them results in a random order for the pitch sequence (not random pitches) with the normal velocity order. The yellow Cable Switcher toggles the randomization on and off—off makes it easier to set the pitches using Stepper Remote II.



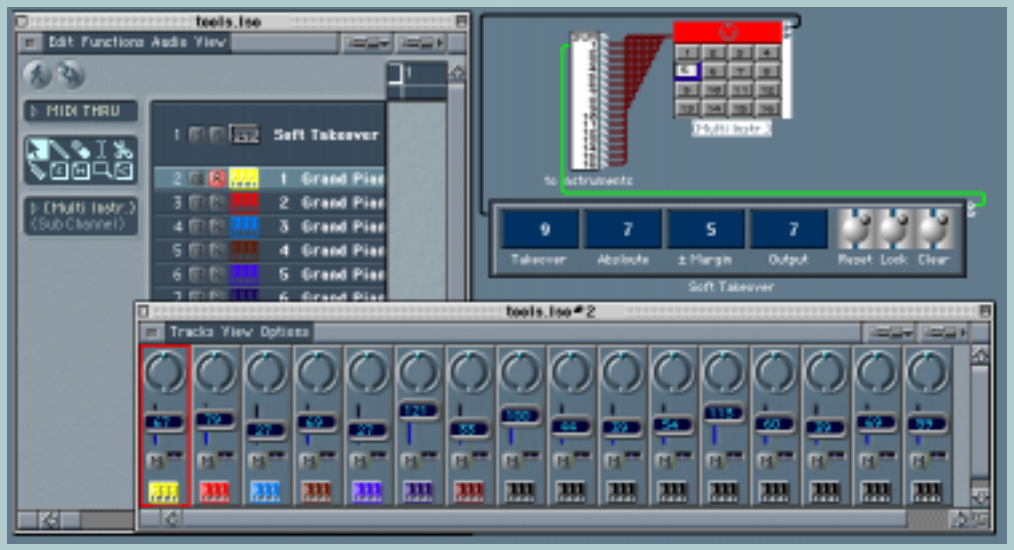
Mixing

- Adaptive Add-Ons
- Single-Solo Buttons for Audio Objects

Adaptive Add-Ons

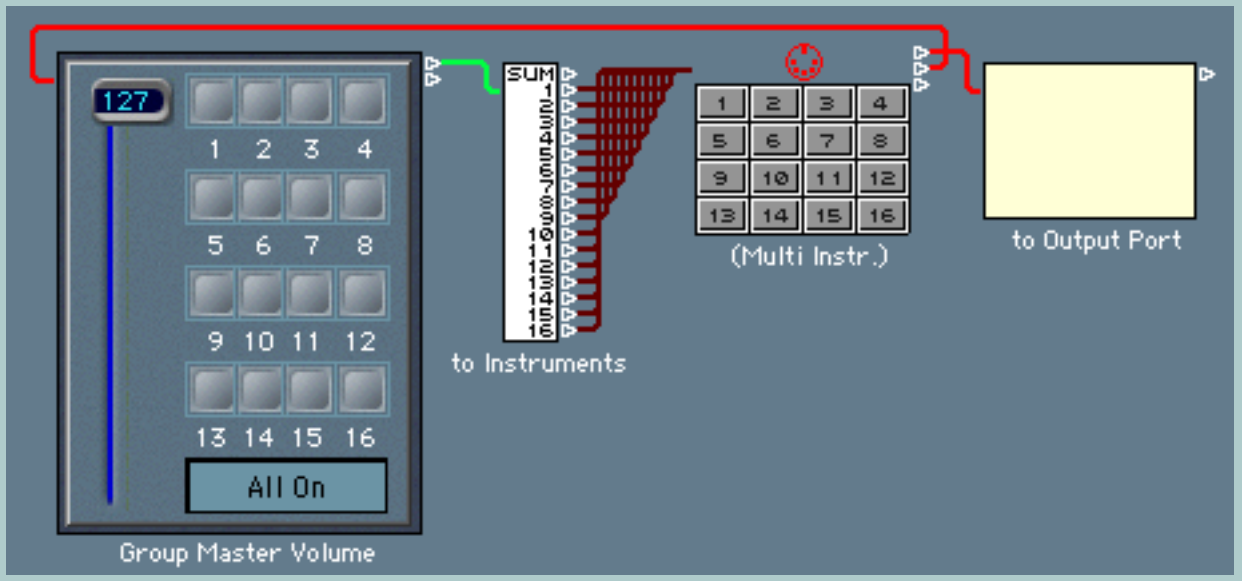
Logic's Adaptive Mixer is not part of the Environment—it is a separate window containing audio and MIDI mixing modules for each Arrange Track. (You can use folders to create separate Adaptive Mixers for various MIDI/audio combinations.) You can however, interact with the Adaptive Mixer in the Environment. The trick is to use the instrument & Audio objects assigned to the Arrange Tracks. When you mouse the Adaptive Mixer, MIDI events emerge from these objects. When these objects receive MIDI messages those messages affect the appropriate controls on the Adaptive Mixer. This means you can use Mixing tools like Soft Takeover & Master Volume with the Adaptive Mixer.

This is how to use a hardware controller with Soft Takeover to control the Adaptive Mixer for the 16 Sub-Channels of a multi-instrument.



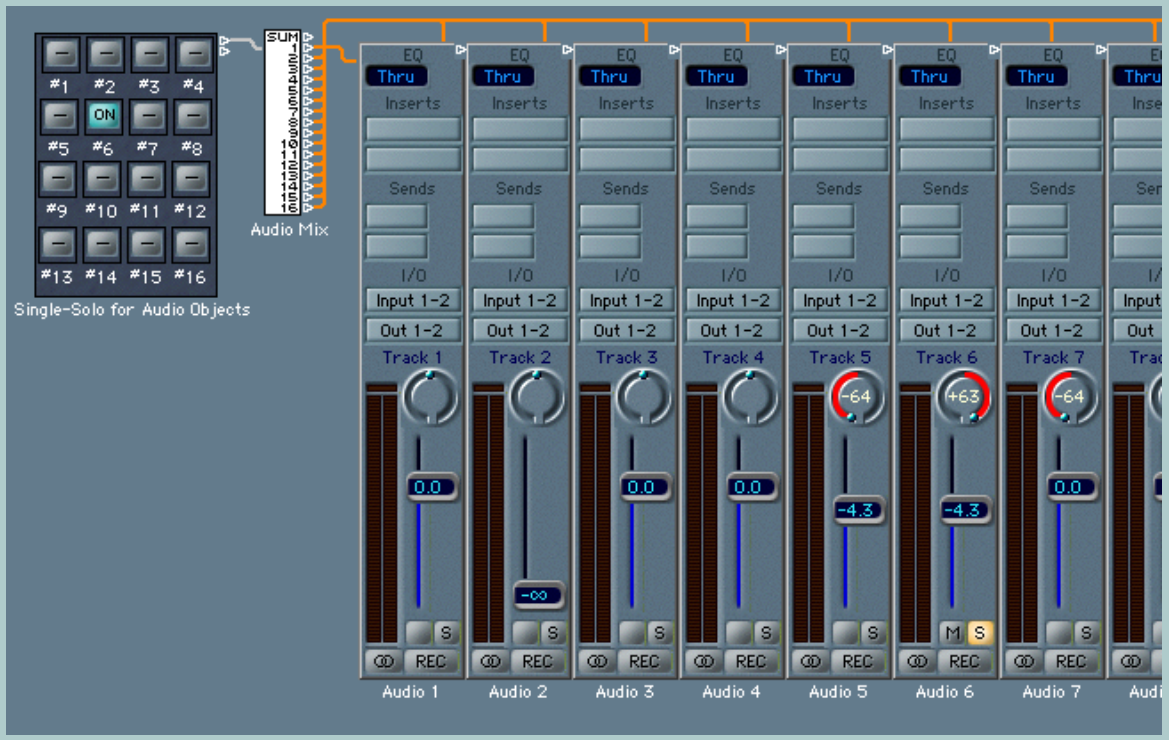
Adaptive Add-Ons (Continued)

To reach the individual multi-instrument channel modules of the Adaptive Mixer, you need to send MIDI data separately to each of the Sub-Channels. (If you simply cable into the Mutli-instrument, the Adaptive Mixer won't see the MIDI messages.) To do this, first activate each of the Sub-Channels by selecting its numbered square in the Multi-Instrument and checking it's 'Icon' parameter to put it on the Instrument List. Then create a Channel Splitter and cable each of its channel outlets to the corresponding Sub-Channel. Do this by Option-clicking (PC: Control-clicking) the Channel Splitter outlet and selecting the Sub-Channel from the Instrument menu when it pops up. (Be aware that if you make copies of the Channel Splitter/Multi-Instrument combination, these cablings to the Sub-Channels will be lost—making this tedious process one that needs to be repeated each time you need it.)



Single-Solo Buttons for Audio Objects

The Solo buttons on Logic's Audio objects do not toggle each other on and off (i.e. you can solo more than one track at a time). However, you can use the Radio Buttons from the Environment Tools section to create solo buttons which will toggle each other. Use the version named "Single-Solo for Audio Objects" which has been modified to send out MIDI controller #3 as used by the Audio objects' Solo buttons. (Note that the Channel Splitter) is needed to route the buttons to the individual Audio objects.



The Mad Scientist

- Permulator
- Chord Revolver
- Sequenced Revolver

Permulator

Permulator turns chords into mini sequences following a drum rhythm. Each time it receives a new chord (live or recorded) it rearranges the notes into a sequence which it plays back in the rhythm of incoming trigger notes (live or recorded). You can specify which channel and note will trigger the sequence and one of the trigger note choices is 'All'.

Permulator uses a version of the 'Permutation Maps' tool in the Tools section to turn the chords into sequences. This tool ensures that each note in the chord is used exactly once in the sequence.

To use Permulator, assign it to one or two Arrange Tracks. Cable its output to the Instrument object you wish to play the sequences. (If the object is not channelized, each sequence note will be on a different MIDI channel.)

Put trigger and/or chord sequences on Permulator Tracks or alternately, select a Permulator Track and play in triggers or chords.

NOTE: The Perumlator has been known to leave hanging notes when Logic's new Unified MIDI Engine (UME) is enabled (Communication Preferences).

NOTE: The Permulator is available in Macro form only in Logic 4. In Logic 5, it has been unpacked.

Permutation Maps | Mad Scientist

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Chord Revolver (Macro in Logic 4, unpacked in Logic 5)

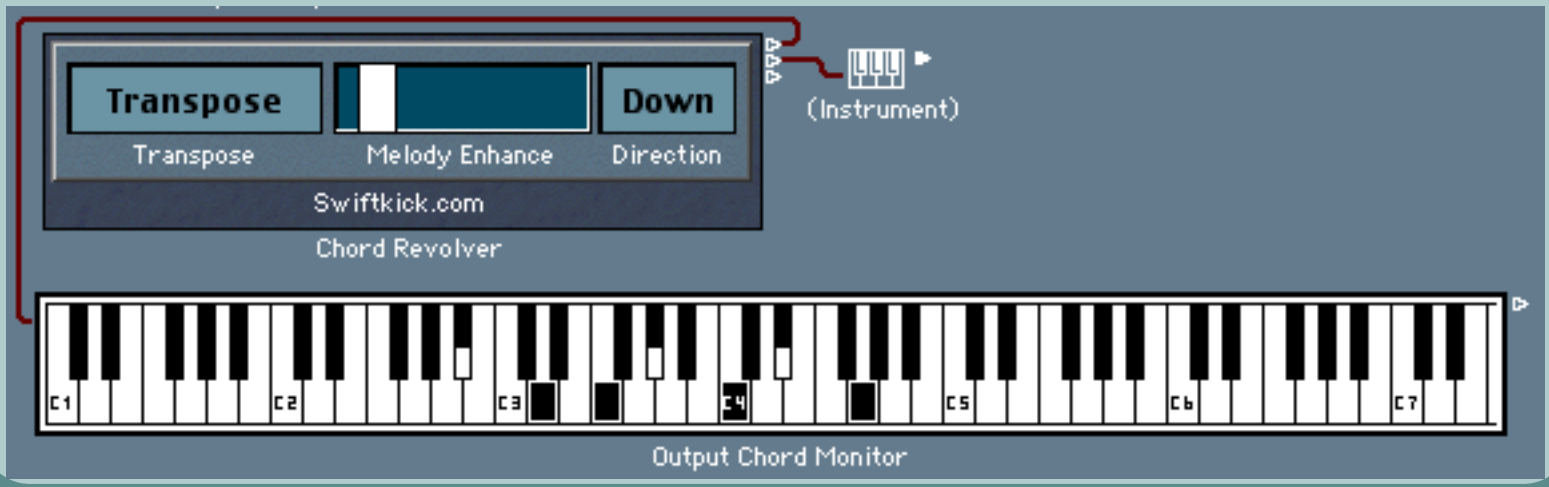
This device is based on an idea of Jürgen Schmitt (www.juergen-schmitt-komponist.de). It modifies chords by first transposing the bottom note by octaves until it is on top, then transposing the whole chord down until the top pitch is the same as before. This amounts to the same thing as keeping the top note the same and rotating the intervals between notes and that is how this environment actually works.

To use it, hook it up as shown (the Monitor Keyboard is just for display) then assign Chord Revolver to an Arrange Track. Select the Track; play a chord (up to 32 notes); and step on the sustain pedal. Any notes you play while the sustain pedal is down will trigger the next revolution of the chord.

The Transpose button controls whether the whole chord is transposed by the trigger notes. When in Transpose mode, the top note will always match the trigger note. The Melody Enhance slider is a velocity offset for the top note.

When using this with recorded notes, the chord notes must be full length.

Try this out with some simple chords and you'll quickly see how mind-bending it can be.



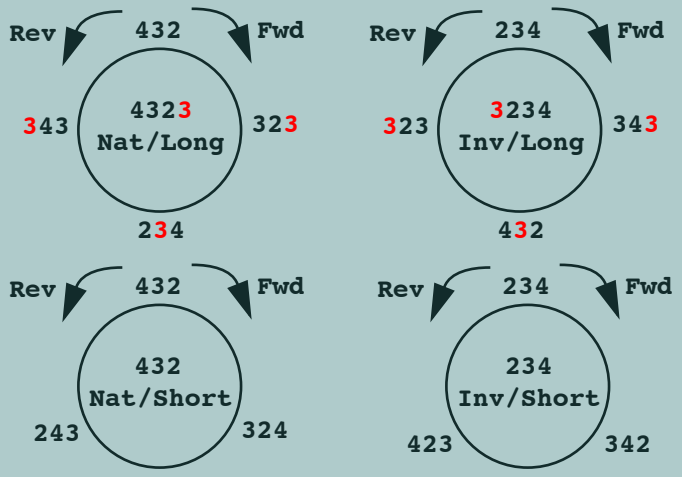
Chord Revolver Extended (Macro in Logic 4, unpacked in Logic 5)

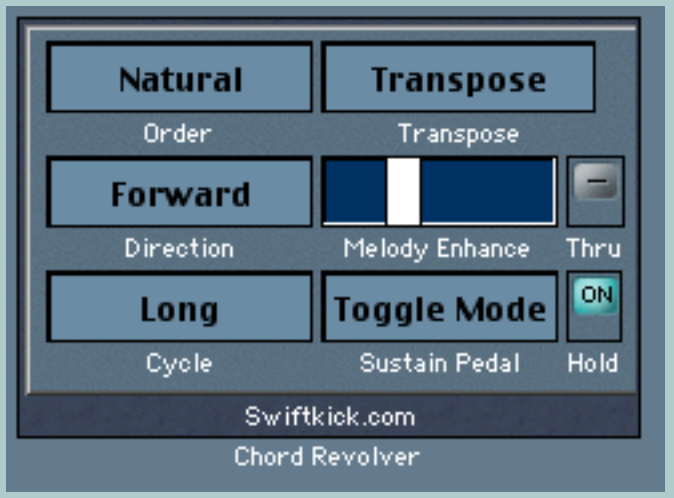
Here's an extended version which adds a few options. As an example, start with the chord CEGA in the same octave. The intervals in this chord from the bottom up are 4, 3, and 2 semitones. The interval between A and the C above it is 3 semitones. In the illustration the "Long" version is represented as 4323 and the "Short" version is represented as 432.

Forward rotation moves the bottom interval to the top and takes the lower three intervals to form the next chord. Reverse rotation moves the top interval to the bottom and takes the lower three intervals to form the next chord.

Inverted order reverses the order of the intervals and takes the top three intervals instead of the bottom three to form each chord.

The procedure is the same regardless of the number of notes in the original chord. Fortunately, you only have to click the buttons and play notes while Chord Revolver does the math.





Sequenced Revolver (Logic 4 only)

This environment combines the Chord Revolver with a Step Sequencer and Channel Hocket. Simply assign the Moniter named 'Clocked Revolver' to an Arrange Track; start Logic running; play a chord and step on the sustain pedal.

If the output Instrument is not channelized, the chord notes will be spread across the channels indicated in the Channel Hocket. The sliders in the Velocity Clock control the velocity of each step—use a setting of '1' for a silent step. Note that you can have up 128 steps arranged in 8 banks of 16 steps.

The sliders in the Stepper Remote II Macro control the pitches which transpose the Chord Revolver. The Stepper controls the length and direction of the looped sequence.

If you want the step numbers of the pitches to match the step numbers of the velocity sequence, turn "Pitch to Position" in the Stepper. With this turned off, each new clock step will simply play the next pitch—e.g. skipped steps will not result in skipped pitches.