The Loopcracker Suite

Version 2.0.0

Operation Manual

ENLIGHTENSPEED

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Introduction

Hello and welcome to The Loopcracker Suite by Enlightenspeed.

Our collection now consists of 4 separate plugins for Propellerhead's Rack Extension plugin format, following the addition of our new timing manipulator device Note Humanizer, to the existing set of Note Filter, Note Alter and Chordbank.

For this round of the Loopcracker Suite product cycle, Chordbank has also had some substantial feature additions, along with a new GUI look for all the plugins, some performance optimizations in our code base and the addition of pass/reject modes for the Note Filter.

When used on their own, or in conjunction with other player devices, each of these rack extensions provides powerful functionality for musicians and producers alike.

This manual will explore the basics of operation for each device.

Note Filter

The intention of the Note Filter Rack Extension is to remove note events from an incoming source be it MIDI from a keyboard, other Player devices, generated by Reason's main sequencer or taken from CV input sources such as the Matrix Pattern Sequencer.

Note removal is based on any of 3 criteria which can be used separately or in conjunction with each other – Probability, Note Range and Velocity Range.

The new version 1.2 has also introduced a pass/reject mode system which is analogous to the traditional audio filtering methods.
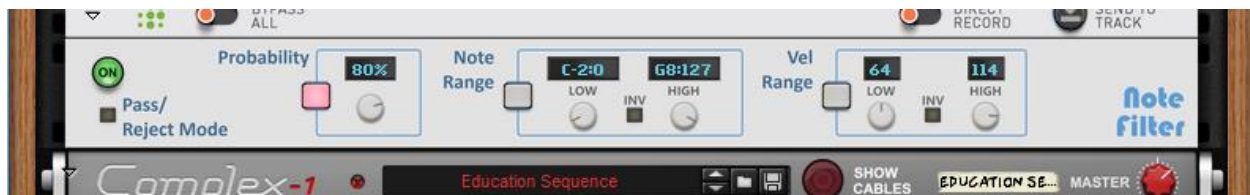
Probability

In Note Filter, Probability is its own mode which dictates filtering. When the mode is active, filtering is determined by a simple randomizing algorithm, where the likelihood of passing is determined by the percentage set by the rotary control.

When the amount is 100% all notes pass, and at 0% nothing will pass. Any value in between is then an approximation of what will get through, so if it's 50% then on average half will pass, at 33% a third will pass and so on.

We note that this is always an average as the result is randomly determined and therefore balances itself out over an undefined period of time. Technically, it is possible for the value to be set to 50% and for the entire loop to pass through unfiltered, or be completely silenced, although it is extremely unlikely; this is simply the nature of randomizing variables.

Pass/Reject Modes
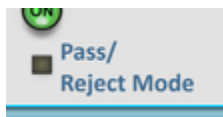
Some of our users asked about this a while back, so we implemented it. It was in before version 2.0.0 of Loopcracker but this is the first time it has made it as far as a manual.

The default mode, when the button is not illuminated is the pass mode, i.e. the original mode. When the button is switched on, the Probability Dial works in Reject mode, but note that the behaviour of the Probability mode itself stays the same, it needs to have either or both of the Note Range and/or Velocity Range modes active to make a difference.

So, if we assume that both Probability and Note Range modes are active, and an incoming note passes the probability test, then this time the note goes through regardless of the Note Range parameters. If a note event fails the Probability test, however, then the event may still pass through dependant on the settings of the Note Range – and as this is a reject function, much like a traditional band reject filter then notes outside of the range will automatically pass. Again, the Invert button will invert the range.

We are pleased to say that we think we have a great many bases covered with this set-up now.

Note Range

The Note Range controls add a separate method of filtering which can be activated by the button on the left of the section, which defaults to Off. When activated, the notes which pass are determined by the Low and High values, set by the rotaries. The events which pass are those with Note number values that sit inside of the specified range, inclusive of the values shown. The note names are also shown for convenience.
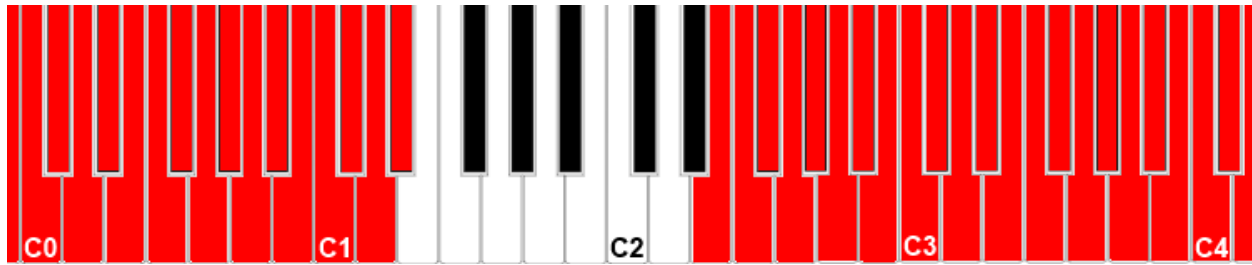
In this example, if the rotaries are set to E1 for Low and D#2 for High (MIDI note numbers 40 and 55 respectively), then, as we can see in the diagram, everything which is outside of the range is excluded.

Using Invert -

When using the Invert switch (labelled as INV), the same idea applies, but very simply the range is inverted, as shown below. Notice that when inverted the values that are set on the High and Low rotaries are included in the set of notes that will pass through.
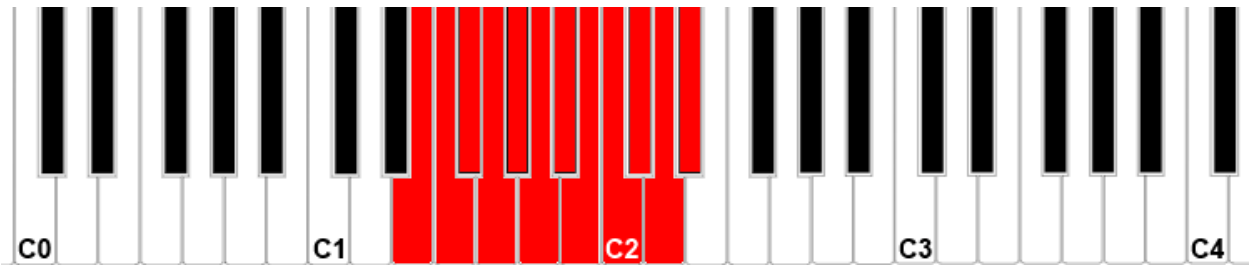
Velocity Range

The Velocity Range controls are similar to the Note Range controls but effect velocities, as the name suggests. Sonically though, the effect is very different indeed.
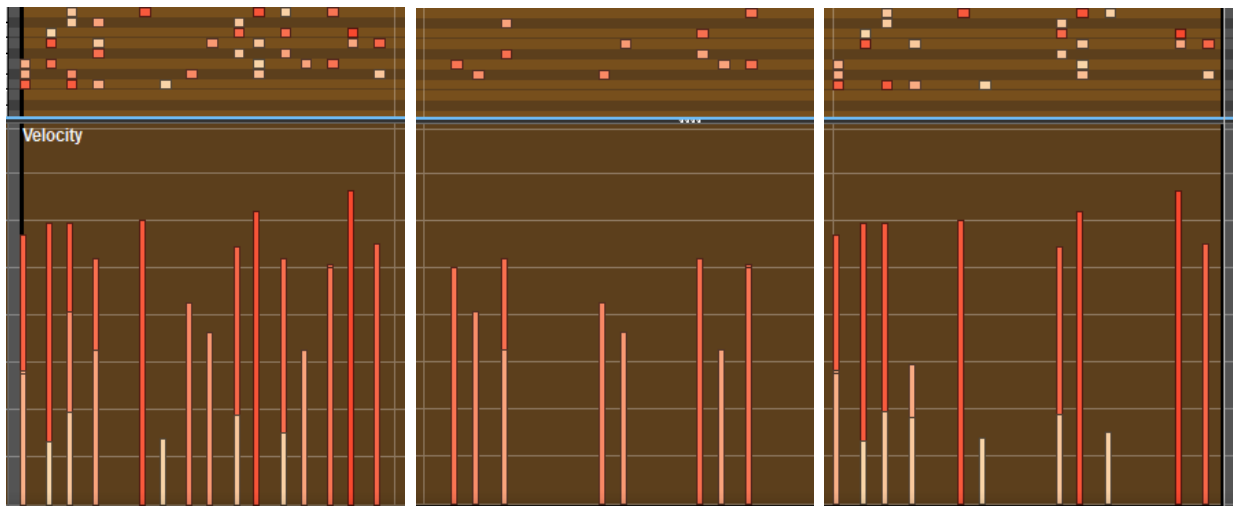
Velocity Range Off   **Velocity On – Normal**   **Velocity On - Inverted**

As we can see above, the responses to the operational types are very different. What is happening is that the Low value in the Velocity Range is set to 50 and the High is set to 85. We have then passed the exact same

loop through the Velocity Range filter. The note numbers are not affected, and the first image actually shows the sum of notes from the second two images.

Note -

When multiple modes are used, there are then multiple opportunities for a note event to be filtered out. This tends to mean that when using either or both of the Note Range and Velocity Range sections along with the Probability, best results are achieved when the Probability is set a little higher than what you would normally expect to work. Otherwise very little will get through – but this may be your intention, of course.

CV Connections

The rear panel, shown above, features control voltage connectability for all front panel parameters. In addition to this, there is also a standard Note & Gate set to allow input from devices such as the Matrix or RPG-8.

Note Alter

The purpose of Note Alter is to give variation to note events passing through the Players stack. This is an invaluable tool that can really add a lot of power with very little effort or even much knowledge of how to use it; simply put, it changes some of the information sent through it on the basis of probability.

For applications such as Round-Robin triggering this is perfection, but it's random nature can also be tempered to produce very fine musical results when used in conjunction with Player devices that can deal with scales such as Chordbank, should more exotic flexibility be required.

Probability

Unlike Note Filter, Probability is not a mode by itself, it is always on and determines the likelihood of an event being altered, as per the parameters in the Note and Velocity Range settings.

When set to 100%, all note events are altered, and 0% means no events will be altered.

Note and Velocity Range

These controls are identical to the controls in the Note Filter device, with the exception of one new control: Spread.

Spread

The Spread controls (located between the Low and High value displays) determine how far away from an original note number or velocity value that an altered value can be. The lowest setting is 1, meaning that the value can always move up or down by 1. At 127 the note or velocity can become anything on the keyboard.

CV Connections

The rear panel, shown above, features control voltage connectability for all front panel parameters. In addition to this, there is also a standard Note & Gate set to allow input from devices such as the Matrix or RPG-8.

Note Humanizer

This new device, added for the first time in Loopcracker Suite 2.0 is our first foray into messing around with the time domain, and we're glad to report that to date, no universe ripping paradoxes have been observed.

Joking aside, Note Humanizer is a tremendously powerful realtime processor despite its rather humble appearance. Our drums have never sounded more realistic, with even more dance-centric and electronic styles having greater expression. It's not just drums though, all manner of digital instruments can be made to sound all the more interesting, from synths to guitar samplers and far beyond.

This is achieved by simply adding micro-variations in the timing of incoming MIDI. Crucially, this is implemented and fully controllable in real time.

Probability, Note and Velocity Range

The controls for Note Humanizer are near identical to what you get for Note Filter, in that Probability IS a mode by itself, and the note and velocity ranges are the same controls working the same way. There are two new control sections though, Max Delay and Release Type.

Max Delay

The Maximum Delay control is set in unit measurements of standard increments, rather than using milliseconds etc. This is because the values themselves would always be inaccurate when measured, given that this is a maximum level of a random property. So, we felt that the integer magnitude was a better choice – effectively to distinguish this from traditional delay.

In a typical traditional digital audio delay, there is a clocking interface against which audio "batches" are sent, and these then line up to be retransmitted after a certain period of time. However, in a modern high-quality audio delay you can usually modulate the delay's replay time. This is the best analogy to what the Note Humanizer actually does, it delays the note with a random modulated replay time. When you do this with the MIDI triggering, though you get much more usable and reliable results than if you were to try doing this with even the very best audio delays.

So, what to expect from which values?

Well, it's your music, you can do what you want with it, but we recommend aiming your drums to use anywhere from 1-5, depending on how loose you want it, with 5 being looser. Using higher values will begin to sound like a bad drummer, but these higher values work much better with different instruments; anywhere from 6-20 works well for guitar samplers and synths, once again dependent on taste and the music itself.

Release Types

Release Type is another interesting area of the plugin, and again it is best set depending on what you want to achieve musically.

There are three different types to choose from, Match, Random and Kill, indicated as M, R and K respectively on the front panel.

Match – The note will end relative to the position which it started, so in other words, the note length will always be the same. This is typically best for natural sounding hypersampled drum kits such as the new RDK RE and an expansive plethora of VST kits etc.
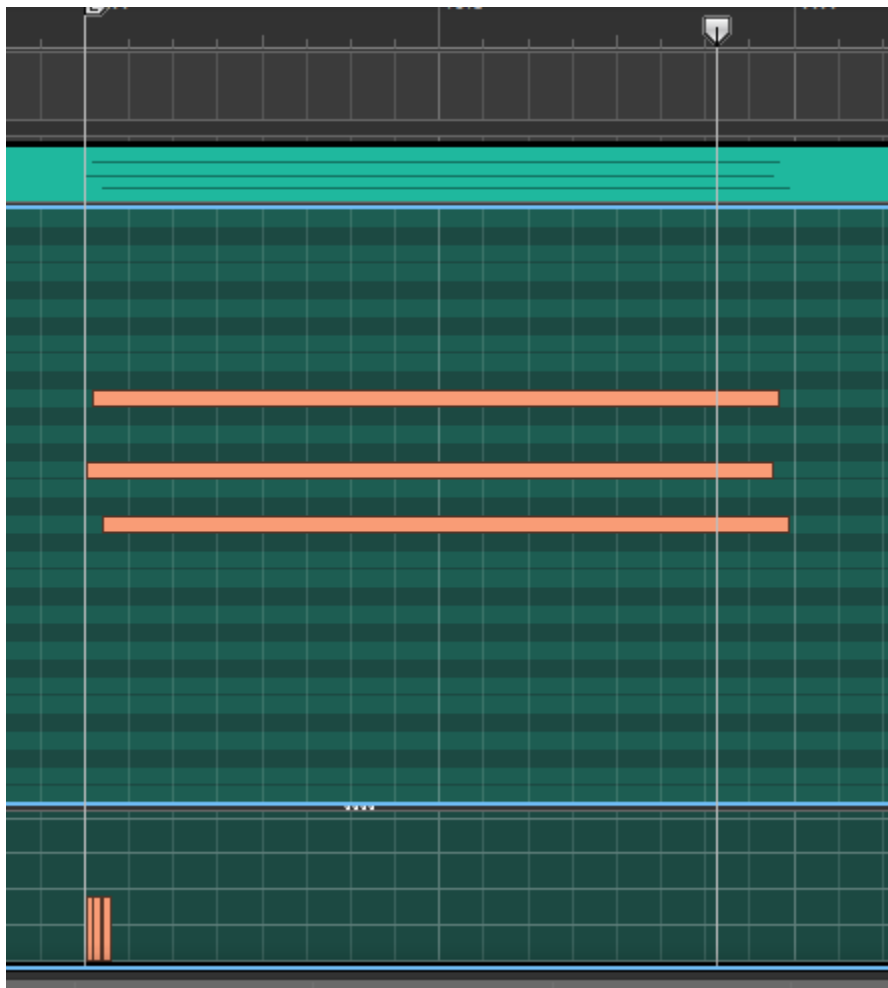
Random – Random mode will give actually humanize the note release as well. This works fantastically well for lazy jazzy keys etc, and notes will both trigger and release at times not related to when they were played.
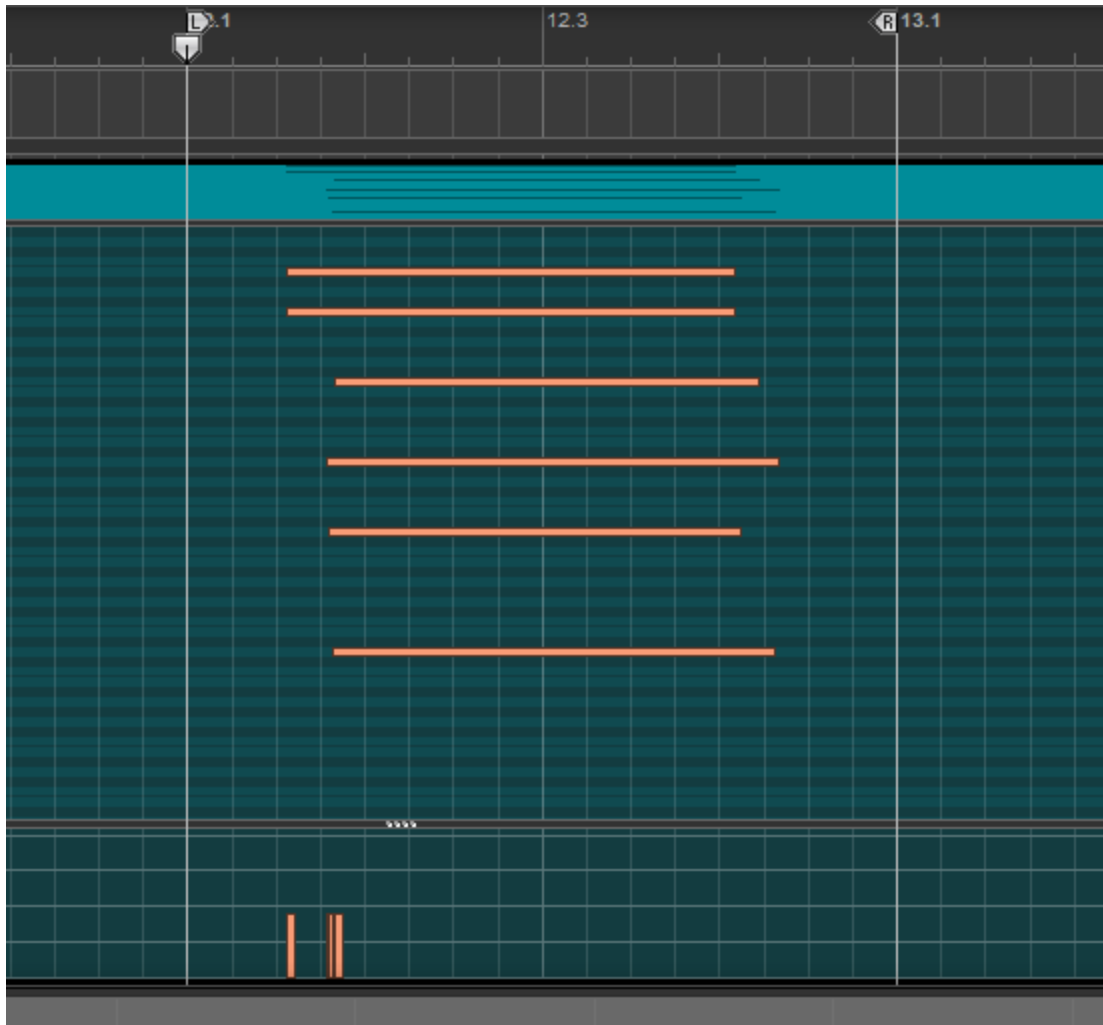
Kill – This mode is tight, and works well with sampled beat drums as found in house and hip-hop etc. With this mode, every note off that is received will switch off all notes. This mode can also be used to create a kind of MIDI gating effect – so users of high-powered modern samplers such as NI Maschine or Serato Sample can all sorts of fun with it, but most of all it can keep things nice and clean prior to using audio gating or envelope shaping effects.
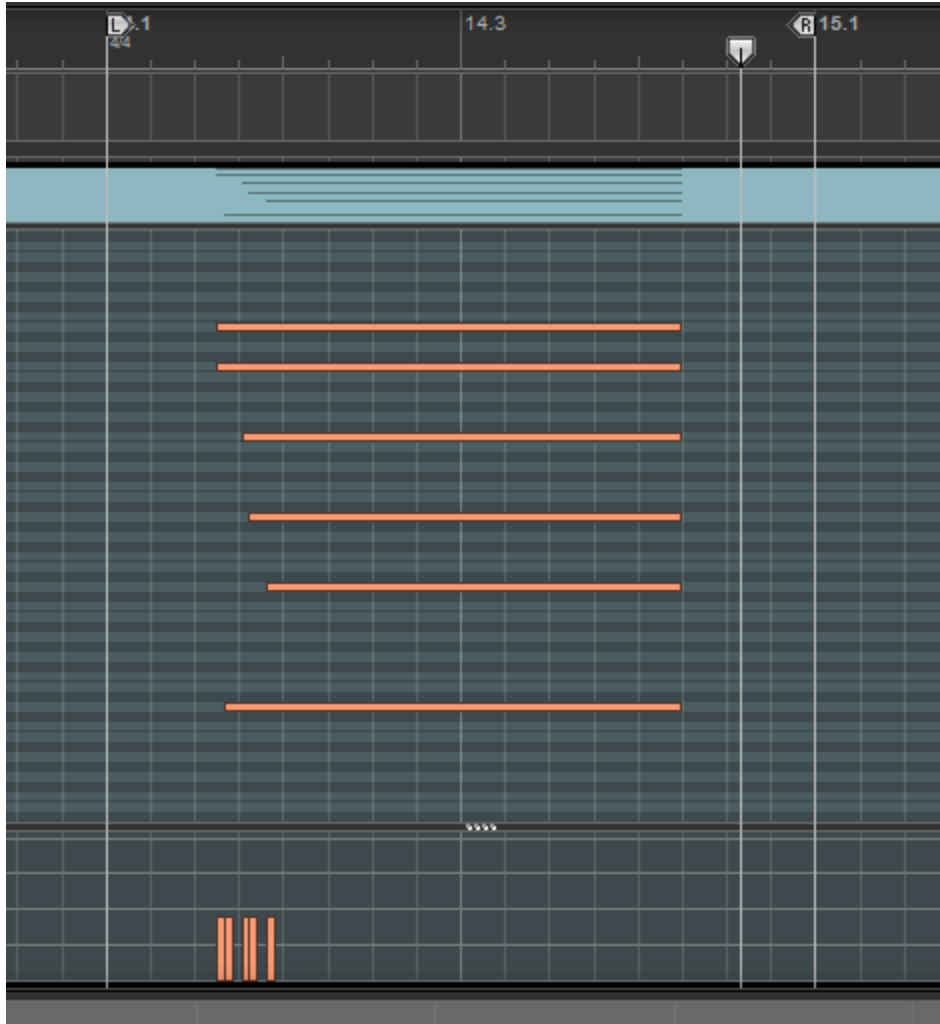
Note: Because of the way that Random and Kill release types work it is possible for the note off event to trigger before the note on events trigger. This will only happen when the note event is very short from beginning to end.

This means that it is possible for these notes to be stuck/hung. This is not acceptable within Player devices, so the note on event will be supressed if this happens, meaning that the affected note is cancelled. We dabbled with the possibility of having a deliberate "drone mode" that doesn't cancel the notes, so please rest assured that it was highly nauseating and not worth the effort.

CV Connections

We have kept the same CV connections set as what is available in the previous Loopcracker versions.

Chordbank

Chordbank is the most complex of our plugins released to date by many orders of magnitude. There is no reason to fear though, it is simpler than it may look at first. However, some time with this manual or watching tutorials on our YouTube channel is strongly recommended for yielding the maximum benefits of this power note event processor.

Introduction

The simplest explanation of Chordbank's function is that it records chords which are played into it (including the velocity values), generates a scale automatically which is based on that chord, and then makes the chords and scales available for recall by the user. There is a maximum of 24 chords and scales available in the device, although with some trickery using Note Filter and Note Alter this can be significantly higher.

There are many more intricacies to discuss, but all features of the device are ultimately variations on this theme. The many possibilities are designed to give the user maximum flexibility in how they use the device.

Input Mode

Normal Input

There are 2 general modes of input within Chordbank, normal and Quick Learn. Each instance of Chordbank has a maximum number of 24 chords/ scales – and these are controlled by the "Chord Focus" Indicator in the Editor Screen. This is a number anywhere between 1 and 24, matching the chord or scale that is held in the bank.

When the Quick Learn button is not activated, each slot in the chord/scale memory area will fill sequentially up to a maximum of 8 entries per chord, each including their own velocity. In order to change to the next chord, and start entering notes, change the Chord Focus either by dragging the display area itself up/down or by setting a Remote Override assignment to the Chord Focus target.

Using Quick Learn

The above method suits a lot of work flows, but a primary design goal of Chordbank has always been to speed things up. A lot.

Chordbank is also meant to be an addition to existing theory devices rather than a replacement for them, and in fact was designed specifically to partner Scales and Chords, which Propellerhead have included as part of the standard bundle with all Player compatible versions of Reason. So, it was always going to be the case that if you had Chordbank, you already had Scales and Chords. Quick Learn was one of the features which was implemented as a way of maximizing the relationship between Chordbank and existing devices.

When Quick Learn is active, then each time a note of a chord is released the Chord Focus is increased by 1, so that the bank is immediately ready for you to put the next chord in. So, if you set up a Scales and Chords device, or other working chords setup via third party Rack Extensions, and wish to transfer a patch from that device, then you can quickly get the data from one device to the other. In fact, with the general set-up already in place, the largest known external bank takes slightly less than 3 seconds to transfer manually. Technically, it can be much faster, but most workflows are a small number of seconds.

As a quick example of this, let's show how to do it using Scales and Chords with the default C Major scale.
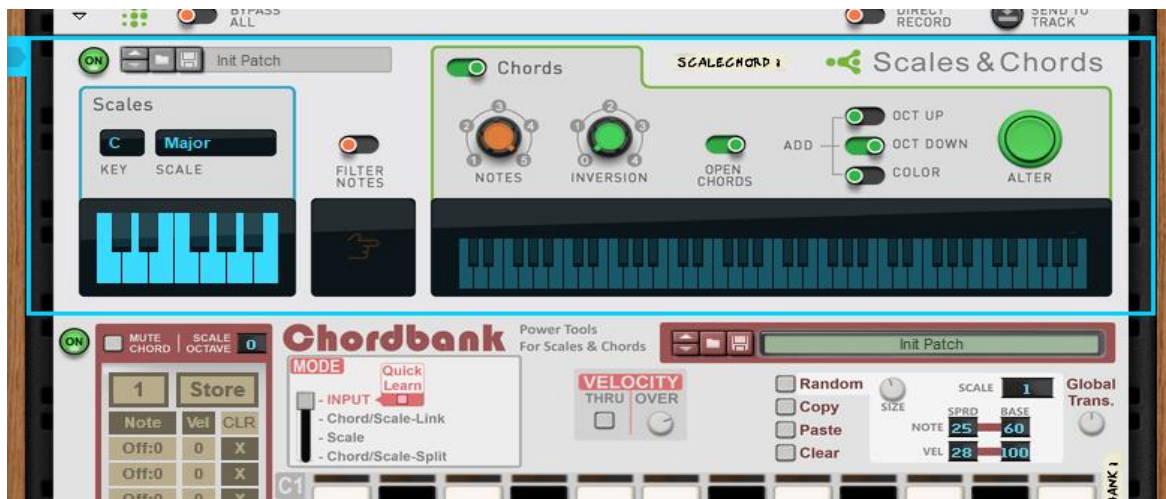
Above we can see that this is an initialized Chordbank patch, and that the Quick Learn button is active.

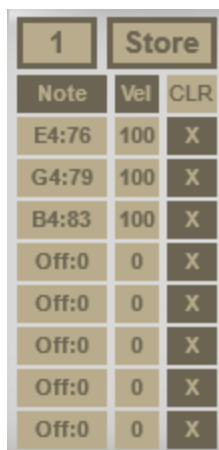From this starting point to get all the chords in from Scales and Chords (in this case 3 notes with no inversions), then on your MIDI device or the onscreen keyboard you simply run through the natural notes (C, D, E, F, G, A, B) in whatever octave you desire. The Store button will illuminate in an unmissable red, click it on the GUI (or Remote trigger it). Job done. It really is that easy.

Automatic Scale Generation

When each chord is committed to the bank, the scale for that chord is automatically generated based on the notes of the chord. The above example would generate a batch of tritonic scales; that is each of the three notes covering all octaves.

This is serviceable enough but usually being that limited isn't what is really desired. More complex chords give more detailed scales. Using 5 note chords will tend to give you either a 4 tone or pentatonic scale, if programmed from Scales and Chords. So, the more complex the chords the more complex the scale. The eight notes per chord maximum leaves a bit or room for handling more complex heptatonic or octatonic scales, so we'll discuss tactics for this more during the Scale Assignment section.

The Editor Screen

1	Store	
Note	Vel	CLR
E4:76	100	X
G4:79	100	X
B4:83	100	X
Off:0	0	X
Off:0	0	X
Off:0	0	X
Off:0	0	X
Off:0	0	X

The Editor Screen is quite simple for the first release of Chordbank, and there are only 5 aspects to be aware of. The first in the top left is the Chord Focus number which we have already met.

Notes and Velocities

These areas allow you to edit the individual note numbers and velocity values. Once you have an entry that you wish to edit, simply drag the values up and down as you would with, for example, the Combinator Programmer.

Clear

The Clear buttons are per note resets for each entry in the chord.

The Store Button

The Store Button is of vital importance!

When a new chord (or batch of chords) is entered into the bank, before the song file or patch can be saved, the Store must be triggered, or some loss of data will occur. To highlight the importance of this, any time there is information that could be lost, the Store will illuminate in a very intrusive shade of red, as shown below. This should make the user less likely to accidentally erase data.

Unfortunately, until there is an update within the Propellerhead Rack Extension platform this is the best design possible. We make our plugins for ourselves first and foremost, so please rest assured that as soon as a fix becomes possible this will be dealt with as the utmost priority.

Output Modes

Once the chords or scales are stored, we have a very flexible set of options for playback. There are 3 basic output modes with further options for velocity handling. Scales can also be reassigned to different chord slots, which greatly increases flexibility of playing.
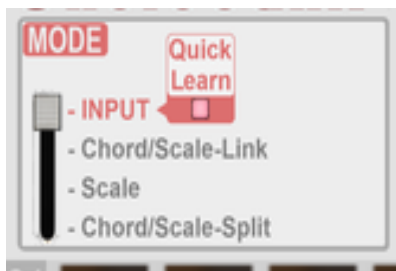
Chords & Scales - Linked

This mode allows the user to play both chords and scales from the bank. The key range C1-B2 triggers the chords in order of mapping, so C1 = Chord 1, C#1 = Chord 2, D1 = Chord 3 and so on. The scale is then mapped with no redundant keys from C3 onwards.
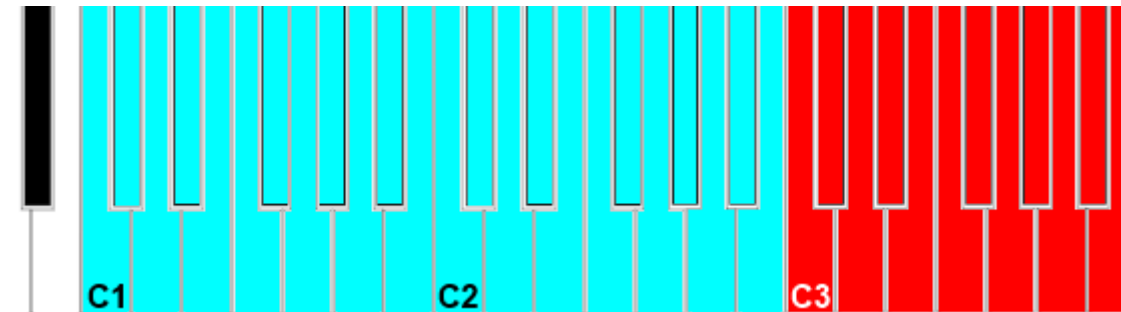

Scale Only

Some users will find the no redundant keys version a little confusing, particularly if you are a seasoned piano player. The scale only mode allows for a flawless performance but without the requirement for relearning the positions. This is done by simply using the redundant keys method which is typically used in most (but not all) other devices, such as Scales and Chords. To change the scale, you have two options - either Remote map the Chord Focus, or use the GUI pads. This way you have a similar method to how Scales and Chords works but with more scales available inside of a single gesture. The chords themselves can still be triggered from the GUI if required.

Mute Chord

(formerly Mute Chord Triggers & MIDI)

This is an appropriate juncture for discussing the trigger muting function, which is activated by the button above the Editor Screen.
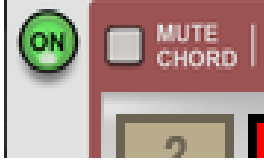
What this function does, is silence the triggering of chords in order to allow the switching of scales without the chord triggering every time you change. This works irrespectively of the output mode so can be used in all settings.

Chords & Scales – Split

This mode is almost identical to the Chords & Scales - Linked mode, so let us now discuss the difference. When Chords are triggered in the linked mode, they automatically change the Chord Focus, and thus the scale which is assigned. As the majority of chords are only producing smaller scales (tritonic etc.) then this isn't always preferred, on many if not most occasions the desire will be to have at least a pentatonic scale available. The split mode **does not change** the Chord Focus when different chords are triggered; so you can set the Chord Focus to a slot containing a full scale and then play both chords and scales without changing the scale upon every trigger.

Individual Note Preview

As an extra utility function, the keyboard range from C0-G0 has been set to play the individual notes in each slot. This is of particular usage when editing a chord (particularly if had been generated randomly).
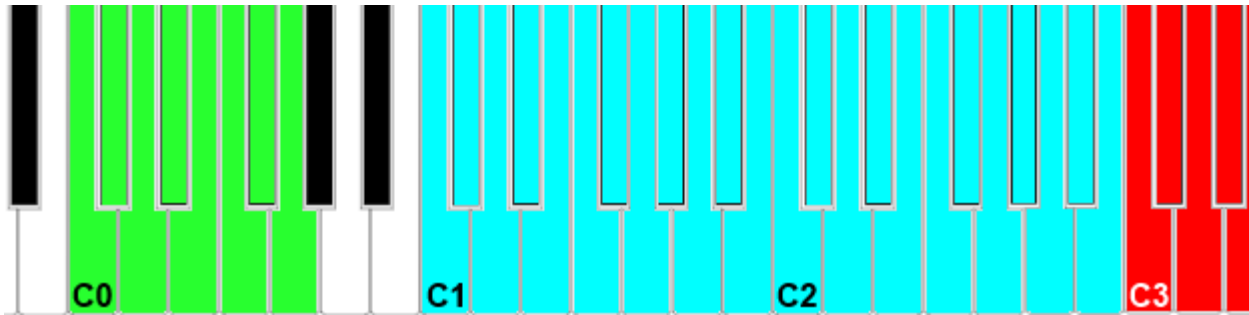
Key Adjust

(Formerly called Range Split C3 & above)
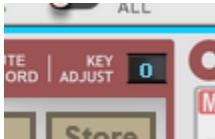
This is a further utility function to allow the user to assign where the scale actually starts from in the C3 and above range. This is to assist players who are using keyboards with far fewer keys, such as the popular 25-key controllers.

To understand this properly, here is how it actually works.

When playing in either of the combined chord and scale modes, the range of keys designated to the scale is from C3 upwards, so assuming that note 0 is in the Scale then C-2 will be the first note after the chords,and if you only have an octave to play with in terms of physical keys then this is very limiting. The key adjust simply allows you to change where in the start of the scale range is, up to 24 scale entries, which in heptatonic terms would mean it is about three and a half octaves up.

The Chord Pads

The bank of Chord Pads simply triggers chords when not muted. They were given the piano roll look of traditional "groovebox" hardware simply for ease of navigation.

Scale Assignment

Just below the pads, we can see the Scale Assignment numbers. When you drag these little displays up and down they change the scale which the connected chord is assigned to. This means that in Linked mode, when you trigger Pad 5 (or MIDI note E1 from either a keyboard or the onscreen keys), for example, and the default Scale Assignment of 5 has been changed to say, 24; the result is that the scale that C3 and above will now host is the scale stored in slot 24. In Split or Scale Only mode it works in the same way, but only triggering the GUI Pad or using a Remote Override assignment to the Chord Focus will change the scale.

An important note here is that if you change the Chord Focus to 5, it is still set to scale 24 while the reassignment is there.

This feature allows for a lot of flexibility when designing patches to store particular songs. One tactic, used in part of our patch bank is to set all the scale assigns to 24, and then set the full scale up inside slot 24, with as many chords as pleases you in the first 23 slots.

Another potentially good strategy is to set 1, 7, 13, and 19 as different full scales, then set all the desired chords within those scales in slots 2-6 for scale 1, 8-12 for scale 2 etc. Once this is done set all the scale assignments to 1, 7, 13, and 19 as appropriate, and you then will have a

very powerful keyboard patch with multiple perfect scales and chords that it's actually quite difficult to go wrong with.

Scale Presets

You will notice that since the 1.5 upgrade, and as shown in the image, we are no longer limited to just the 24 "user preset" banks.

There are now 42 scales built into the assignment section, making patch building considerably faster than before. These scales include many heptatonic and pentatonic options and can be set into key individually for each bank using the Scale Key control at the bottom of the editor screen for the bank.
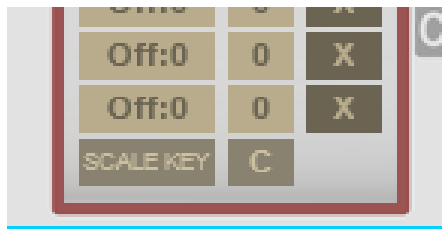
A full appendix of the scales is included at the end of this document.

Velocity Options

Velocities are another area where Chordbank really does excel in terms of flexibility. There are three basic ways you can use velocities when outputting notes, and two when inputting.

As stored

This is the standard mode when inputting from the keyboard straight to the bank. You play the chord in, and the velocity is stored as expressed. This is stored polyphonically to give the maximum expressive playback capability. Note that if you play straight through from Scales and Chords or another input device to get your chords, then this will lose velocity polyphony – all notes in the chord will end up the same regardless of the input velocity.

A useful trick to get around this issue, without the need for explicitly editing the values, is to insert an instance of Note Alter between the input device, and Chordbank with just the Velocity Range enabled and the Low, High and Spread values to taste. This will add more life to the velocity performance at the point of input, and of course store it as such in Chordbank.

Two further velocity options are available: Override and Through

Velocity Override

Velocity Override simply sets a discrete value to which both input and output values are quantized. So, in Input Mode, this works as a preset value you can store in the bank for each chord. In any of the output modes, the Override value will limit any velocity to the value of the Override control.

Velocity Through

When the Through button is active, it only affects the output modes, and simply means that the input velocity coming from the keyboard or sequencer etc. will be the output velocity of the chord or note regardless of what is stored in the bank.

Operations
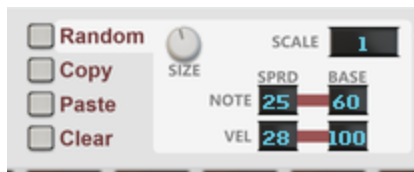
Copy, Paste and Clear

Standard functions for copying and pasting, and in this context the Clear button removes the entire chord. A useful feature with the Paste function is that with Quick Learn engaged you can fill multiple successive slots by just repetitively clicking on Paste.

Random

For the 1.5 version of Chordbank, the Random section has been completely reimagined, and is now one of the most sophisticated tools of its type that you will find anywhere in the industry.

The Basics and Random Size

The Random button generates a randomized chord as per the current value of the Random Size parameter; if the Random Size is 3 then a 3 note random chord is placed in the first 3 slots of the chord. A very useful trick is available with the Random section in that if you wish to have preset values that the random notes are appended to, then you can do this by having the notes after the first 3 (in this example) being set to those preset values.

Random Scale Preset

The random chord that is generated is now linked to whichever scale is selected. This can be any of the user presets or indeed the new Scale Presets.

To control the key, you simply use the Scale Key control for the applicable bank in the editor area.

The power added by this addition alone gives users the ability to have rich exotic chord structures within a single device that gives backbone to the whole song not just for performance but very much for the writing and

experimentation aspects as well. You can also have them generated in just a few moments, and with only the most minimal understanding of music theory.

We're going to be running a small series of blogs on the basics of music theory on our website www.enlightenspeed.net, so if you feel that the above noted minimal understanding eludes you, well come and have a look. These blogs will start to become available in late December 2019.

Random Base and Spread

These controls are further parameters for controlling the random generated chords. The spread simply determines how far from the base the randomized notes or velocities can go. We have set the default values for the velocity base to 100 and the note base to 60 (Middle C) and the Spread values to 28 and 25 respectively. Of course, you can alter these to suit your requirements, but in most cases you should find that these values suffice.

Global Transpose

Gives a full 6 octaves of range, 3 up and 3 down, in semitones.

CV Connections

Chordbank, at this stage, has CV inputs for Note and Gate which can trigger all possible output modes, along with inputs for Velocity Override, and the Chordbank Scale Chain which is designed so that you can link multiple Chordbank instances together and have them all keeping the same Chord Focus (but of course you could always reassign the Scale so that the scales change in different ways, if that's your thing).

The Included Patches

Chordbank comes preloaded with a small set of "song chords" patches, and 42 scale patches which come in two different formats (84 in total). After a lot of research this was about as many as we could reasonably find names for and add in.

There are many more scales in the world of course, but most can't be reproduced for MIDI with any great accuracy. It is not impossible that Enlightenspeed will develop something in future to redress the balance with this.

Using Global Transpose to change the key allows for a total of just over 500 different scale possibilities.

Should you feel that we have missed something in this regard, please contact us and we will investigate the possibilities of further patches.

Using Loopcracker Suite with other Players

All Player devices in the Propellerhead Shop are standards compliant with The Rack Extension SDK version 3.0 and onwards. This means that a certain set of behaviours are enforced, ensuring interoperability between all Player devices and how they receive and transmit data to other devices, including those which may comply with different standards.

As boring as the above paragraph may sound, it is hugely important when it comes to having fun musically using these devices. Effectively, it means that you are safe to assume that any Player is compatible with Note Filter, Note Alter and Chordbank. Good results are easily and safely obtained when using Loopcracker devices alongside Note Echo, Scales and Chords, Dual Arp, and an ever-growing collection of third-party devices.

There are only two details which really need to be given consideration: Routing and Direct Record.

Routing

Players will always work in a top to bottom order as presented on the rack screen. This starts at the main control unit at the top, which hosts the Direct Record switch and the Bypass All, along with the Send to Track button.

The routing of the Players is then in order from top to bottom unless something is done with CV if applicable connections are present on the device, or a special device is used to break the routing; there are currently 2 such devices in the Propellerhead Shop at the time of writing.

Finally, the note events reach the instrument at the bottom of the stack and **ONLY** that instrument. Should you have multiple instruments that you wish

to send the Player notes to, then all the instruments will need to be present in a Combinator and the Players need to be external to that Combinator. Should you wish separate FX processing for each of these you then need to send the audio outputs to separate Mix Channels.

The Loopcracker devices do not alter the note event routing at all, but they can have CV note entries enter them from a point which is not the beginning of the stack. Outside of this extra feature none of these devices will add this type of behaviour.

Direct Record

The Direct Record switch is arguably the most important standard feature of the Player stack. When it is engaged the Player will transmit the output results of whatever manipulations have been set up to the applicable sequencer track. This is all fairly simple if using a Player or CV device as the sole source of note generation, you just record straight into an empty instrument track.

If using data from the sequencer track itself though, another issue arises; a sequencer track cannot act as both source and target for Player notes, it is one or the other.

The solution to this is again to place the instruments in a Combinator, which means you then have two sequencer tracks to play with. From this point you use one as the source and one as the target – the exact nature of this is dependent on what has been setup, and with what intent.

There are multiple possibilities, of course, but no seasoned user should struggle with it. If you are a novice then it's worth visiting one of the Reason user websites such as ReasonTalk and asking for advice, or one of the many social media platforms such as Facebook. We all start somewhere, and with the exception of one or two individuals who have social issues, you tend to find that the majority of the people in these groups are very friendly and wish to help.

Our own Facebook page will be fairly well monitored so if there is any specifics that you need covered then this is one of the best places to do it. Simply like the page, add yourself to the group and send us a message. Our response time will be "reasonable", and we will endeavour to give you the info you need.

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Thanks to all the good folks on the various Reason-centric Facebook pages as well for giving moments to laugh, cry and feel inspired about.

APPENDIX A – Scale Presets Chart

Each of the scales in the table is listed in alphabetical order as their shortened form, matching their presentation within the Scale Assignment and Random Scale areas.

Each Scale is presented in C. Although it is possible to transpose each scale using Chordbank's Global Transpose dial it is worth noting that each version of the scale isn't always authentic when doing so. A perfect example of this is that because we transpose all patches to C as a starting point, our Western temperament interpretation of the Japanese Min Yo scale is immediately wrong, as this scale should not incorporate any minor notes, so strictly speaking it is only correct when not transposed from D. Ultimately, for authenticity in reproduction of traditional styles, it is important to find strong, reliable information sources in order to familiarise yourself with the finer points of any style before sitting down to compose.

Note: As a convention, this appendix only uses sharps and not flats, because this is the de facto standard in most MIDI devices and in Reason itself. Chordbank, of course, follows this convention and it would be confusing to switch to the true definitions at this point, and with exceptionally little merit in doing so.

Listed Name	Real Name	Chord Notes	MIDI Numbers (-2 Octave)	Scale Type
Acous	Acoustic	C, D, E, F#, G, A, A#	0, 2, 4, 6, 7, 9, 10	Heptatonic
Alter	Altered	C, C#, D#, E, F#, G#, A#	0, 1, 3, 4, 6, 8, 10	Heptatonic
Augm	Augmented	C, D#, E, G, G#, B	0, 3, 4, 7, 8, 11	Hexatonic
Bebop	Bebop Dominant	C, D, E, F, G, A, A#, B	0, 2, 4, 5, 7, 9, 10, 11	Octatonic (Adapted)
Bhar	Bhairav	C, C#, E, F, G, A, A#	0, 1, 4, 5, 7, 9, 10	Heptatonic (Adapted)

Listed Name	Real Name	Chord Notes	MIDI Numbers (-2 Octave)	Scale Type
Blues	Blues	C, D#, F, F#, G, A#	0, 3, 5, 6, 7, 10	Hexatonic
Dori	Dorian	C, D, D#, F, G, A, A#	0, 2, 3, 5, 7, 9, 10	Heptatonic (2nd Major Mode)
DblHm	Double Harmonic	C, C#, E, F, G, G#, B	0, 1, 4, 5, 7, 8, 11	Heptatonic
Enigm	Enigmatic	C, C#, E, F#, G#, A#, B	0, 1, 4, 6, 8, 10, 11	Heptatonic
Flamc	Flamenco	C, C#, E, F, G, G#, B	0, 1, 4, 5, 7, 8, 11	Heptatonic
HlfWh	Half-Whole	C, C#, D#, E, F#, G, A, A#	0, 1, 3, 4, 6, 7, 9, 10	Octatonic
HlfDm	Half Diminished	C, D, D#, F, F#, G#, A#	0, 2, 3, 5, 6, 8, 10	Heptatonic
HmMj	Harmonic Major	C, D, E, F, G, G#, B	0, 2, 4, 5, 7, 8, 11	Heptatonic
HmMn	Harmonic Minor	C, D, D#, F, G, G#, B	0, 2, 3, 5, 7, 8, 11	Heptatonic
Hjshi	Hirajoshi	C, E, F#, G, B	0, 4, 6, 7, 11	Pentatonic
HngGp	Hungarian/ Gypsy	C, D, D#, F#, G, G#, B	0, 2, 3, 6, 7, 8, 11	Heptatonic
Insen	Insen	C, C#, F, G, A#	0, 1, 5, 7, 10	Pentatonic
Iwato	Iwato	C, C#, F, F#, A#	0, 1, 5, 6, 10	Pentatonic
Kumoi	Kumoi	C, D, D#, G, A	0, 2, 3, 7, 9	Pentatonic
Locri	Locrian	C, C#, D#, F, F#, G#, A#,	0, 1, 3, 5, 6, 8, 10	Heptatonic (7th Major Mode)
LydAu	Lydian Augmented	C, D, E, F#, G#, A, B	0, 2, 4, 6, 8, 9, 11	Heptatonic
Lydi	Lydian	C, D, E, F#, G, A, B	0, 2, 4, 6, 7, 9, 11	Heptatonic (4th Major Mode)
Major	Major	C, D, E, F, G, A, B,	0, 2, 4, 5, 7, 9, 11	Heptatonic (1st Major Mode)

Listed Name	Real Name	Chord Notes	MIDI Numbers (-2 Octave)	Scale Type
MjLoc	Major Locrian	C, D, E, F, F#, G#, A#	0, 2, 4, 5, 6, 8, 10	Heptatonic
MjPen	Major Pentatonic	C, D, E, G, A	0, 2, 4, 7, 9	Pentatonic
MelMn	Melodic Minor	C, D, D#, F, G, A, B	0, 2, 3, 5, 7, 9, 11	Heptatonic
Minor	Minor	C, D, D#, F, G, G#, A#	0, 2, 3, 5, 7, 8, 10	Heptatonic (6th Major Mode)
MinYo	Min Yo (in C)	C, D#, F, G, A#	0, 3, 5, 7, 10	Pentatonic (Adapted)
MnPen	Minor Pentatonic	C, D#, F, G, A#	0, 3, 5, 7, 10	Pentatonic
MxLyd	Mixolydian	C, D, E, F, G, A, A#	0, 2, 4, 5, 7, 9, 10	Heptatonic (5th Major Mode)
MyBus	Miyako-*** Bushi (in C)	C, C#, F, G, G# ***	0, 1, 5, 7, 8 ***	Hexatonic (Adapted)
NeaMj	Neapolitan Major	C, C#, D#, F, G, A, B	0, 1, 3, 5, 7, 9, 11	Heptatonic
NeaMn	Neapolitan Minor	C, C#, D#, F, G, G#, B	0, 1, 3, 5, 7, 8, 11	Heptatonic
Persi	Persian	C, C#, E, F, F#, G#, B	0, 1, 4, 5, 6, 8, 11	Heptatonic
PhrDm	Phrygian Dominant	C, C#, E, F, G, G#, A#	0, 1, 4, 5, 7, 8, 10	Heptatonic
Phry	Phrygian	C, C#, D#, F, G, G#, A#	0, 1, 3, 5, 7, 8, 10	Heptatonic (3rd Major Mode)
Promt	Prometheus	C, D, E, F#, A, A#	0, 2, 4, 6, 9, 10	Hexatonic
Spani	Spanish	C, C#, E, F, G, G#, A#	0, 1, 4, 5, 7, 8, 10	Heptatonic
TriTn	Tri-Tone	C, C#, E, F#, G, B	0, 1, 4, 6, 7, 11	Hexatonic
UkrDr	Ukrainian Dorian	C, D, D#, F#, G, A, A#,	0, 2, 3, 6, 7, 9, 10	Heptatonic
WhHlf	Whole-Half	C, D, D#, F, F#, G#, A, B	0, 2, 3, 5, 6, 8, 9, 11	Octatonic
WhlTn	Whole Tone	C, D, E, F#, G#, A#	0, 2, 4, 6, 8, 10	Hexatonic

*** A minor bug was found in our interpreted Miyako-Bushi patch; an extra note found its way into the scale while being transcribed from the source, so we have added a new patch "Miyako-Bushi in C (Correction)" to both scale patch sets. The original patch is thus a new scale that we don't know the name of, but as some could already be using it and might need the ability to revert, we thought it best to leave the original in.

We don't know the name for this new scale yet that is saved in the original errant Miyako-Bushi patches, so if you know it then please tell us – in the meantime we shall call it "Steve".

Any questions? As in, reasonable ones not answered by this document?

We might not answer at all, if you send us a line to enlightenspeed@gmail.com

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