Agnostik

Version 1.0.0

Operation Manual

Re
Rack Extension

ENLIGHTENSPEED
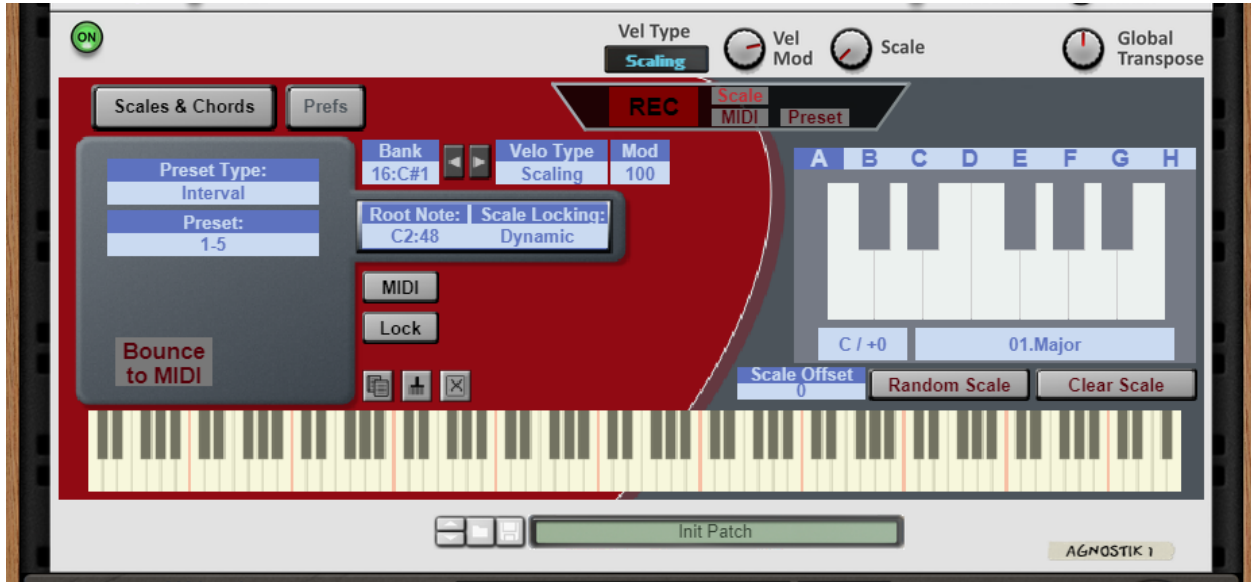
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Introduction

Hello and welcome to the latest plug-in from Enlightenspeed: Agnostik!

This is designed to one of the most powerful and most versatile scales and chords plug-ins in any musical environment, as will become increasingly evident as the roadmap for the device is revealed.

So, why "Agnostik"? Ultimately, this is because the purpose of the device is to allow you to use the business end of advanced music theory, but without necessarily having to understand or revere the underlying musical principles – you can basically say "I don't know" but still benefit from the added strength of musical theory within your compositions. The preset selection system is built on the principle of finding the best chords within the scale quickly and intuitively and adding them to your composition. You don't need to know the theory that underpins the music but using Agnostik you can move from simple children's pop to the most convoluted nightmare jazz and back again within a couple of interface gestures – please note that your audience may get headaches if you use this particular sharp turn too often. :D

At this stage we are unveiling Part 1; and what this really means is that we are providing the sections of the device which are responsible for replacing our very first plugin design: Chordbank.

At the end of May 2021, we discontinued the Chordbank design, and started proper work on Agnostik. There are many reasons behind this decision, but first and foremost was the desire to be able to expand the feature set in a manner which was most appropriate for Chordbank (and not MeloDramatik or Inspiral etc) but which was no longer possible with Chordbank itself. In the time that has elapsed since design work began on Chordbank in mid-2017, Enlightenspeed has grown immeasurably as a company, expanding our capabilities in both design and coding, but also a number of SDK upgrades have been released, making more features possible for the first time. Fun fact – Chordbank was originally designed as a CV device, prior to the implementation of the Players protocol in the SDK;

this should maybe give you a better idea of how different the original design was to a modern Player device. Some restrictions which are sewn into the SDK also mandate that our "Chordbank 2" device would not have been backwards compatible with the original, and thus the decision to rebrand the device was made alongside the necessity to start again from the beginning.

If you are a Chordbank user from version 1, you will recognise many of the baseline features, but even just the first release of Agnostik should be noticeably more powerful than Chordbank with a raft of new features and workflow enhancements, and as a result of the code redesign, everything is also more stable when working with live MIDI. The headline feature addition in Part 1 is almost certainly the addition of multiple ways to add preset chords to the device, but there are also new recording methods for scales and a special preset recording method designed to utilise Reason Studios' remote technology and allow an entirely new method of building up strings of chord progressions. Add to this that almost all features of Chordbank are already present in Agnostik, but redesigned for greater code efficiency and stability, and we have a very powerful new device.

…and then there is the roadmap for Agnostik going forward. We shall not discuss this yet, but suffice it to say that within just a few months of this release, Agnostik will take on new capabilities which will far exceed the original design, and along with a sister device which will appear at the same time as "Part 2", we firmly believe that Agnostik will be the most powerful chording/scaling device anywhere in the musical world be it hardware, or any plugin platform including VST… and in fact, a whole lot more than just that.

But enough about the bright future, let's dive into the depth of detail with our new device. Let's take a thorough look at Agnostik- Part 1!

The Main Concepts

Agnostik is at its simplest a method for reprogramming your MIDI keyboard within the Reason musical platform. The basic setup with Agnostik is that you can play any standard 12 tone even temperament scale on the white keys of the keyboard, and all of the black keys on the keyboard play host to predefined chords. Only when recording would you use the whole MIDI range for single notes; this is the only way to program the chords accurately, of course.

There is storage space within Agnostik to allow for up to 8 different scales within any single patch, and as there are a maximum of 53 black keys within the MIDI note number range, we are thus allowed a maximum of 53 chords per patch.

To illustrate this briefly, supposing we are recording while the receiving chord is set to C#2. We enter the following notes:

The notes play normally in this mode so you can hear which notes are becoming constituent parts of the chord you are storing. If the black keys already have chords stored in them, this is safely ignored by the device.

This chord is now stored in C#2 (chord bank no.21):

Once the Record mode is released, the original notes which are on white keys go back to representing whichever scale is selected. The black keys will play the chord which is stored within them, if there is one.

The preset recording mode works in an intuitive but completely different way, by necessity. Refer to that section for more details.

Each chord can be either of three different types of chord that Agnostik supports:

- A set of recorded **MIDI** notes, as seen below. This is the style of chord that will be recognised by users of Chordbank. The chord is simply recorded into the device as a set of note numbers and velocities. Agnostik also allows for Probability settings on a per voice basis, which is a new feature. The chord can also be edited or even instantiated just by clicking and dragging the note number and velocity editing areas.
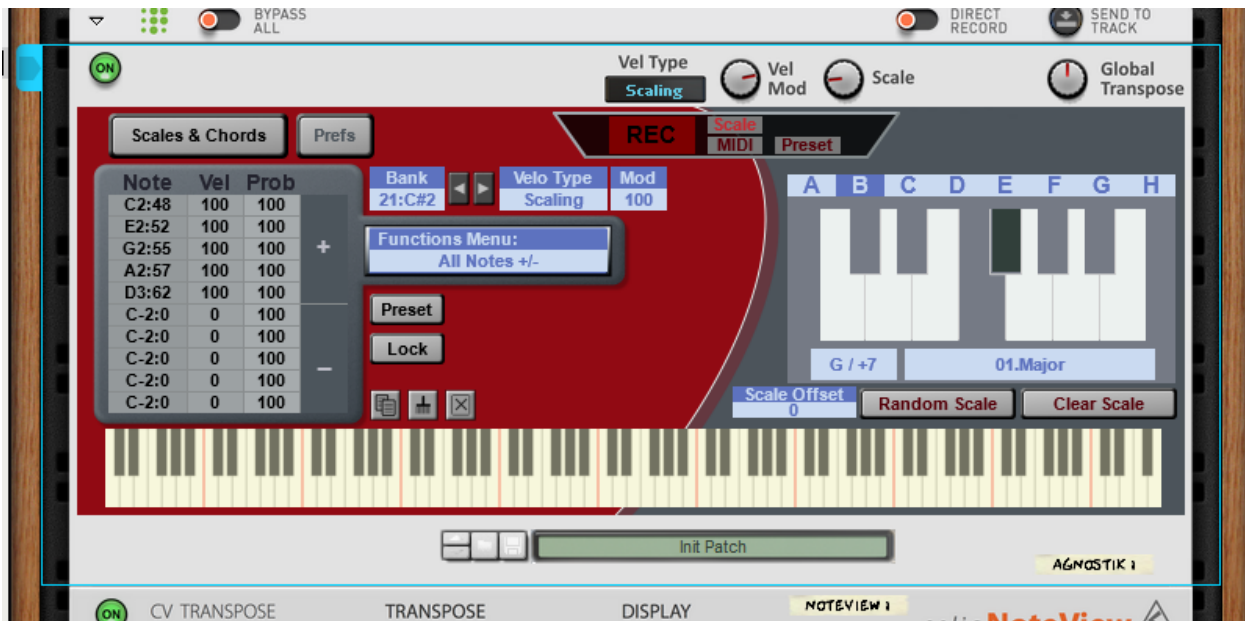
- Either of two preset types, the first being **Interval**.
  Interval is short for harmonic interval and refers to the intervals which can then be used across multiple scales, simply by taking the explicitly numbered member of the scale.
  What in the wide, wide world of sports does that mean?
  Ok, the most basic example would be the 1-5 chord which we use as our default.
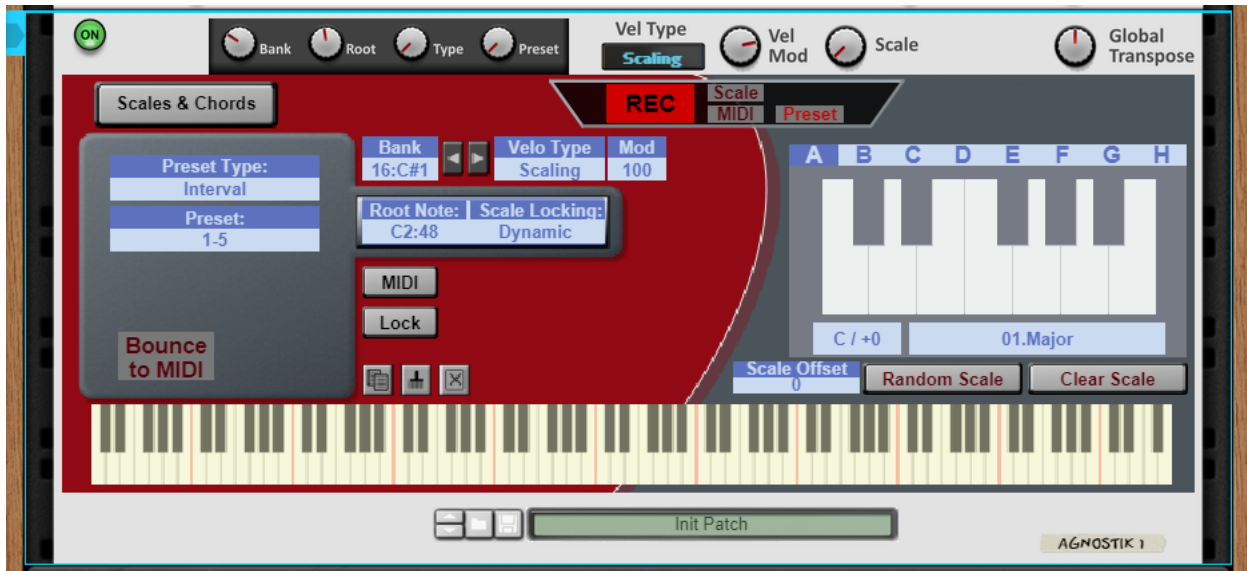
If used as a chord pertaining to the C Major scale, then the first and fifth members of the scale will give us a perfect fifth. If we transpose this to any member of the C Major scale (excluding B, which falls a semitone short of a perfect 5th), then we will get a perfect 5th output with the relevant root. Also, should we take the first and 5th members of any mode of the Major scale then we get the same result, again with the exception of whichever degree relates to B, and thus Locrian is the only Major Mode scale that doesn't have the first chord as a perfect fifth.

Moving on, this relationship will of course break down once we get into more and more interesting scales, but it breaks down even faster with more challenging intervals.

The next obvious example is 1-3-5. This is a Major chord in C Major, but moving it up through the starting members will give us the classic triads:

C Major, D Minor, E Minor, F Major, G Major, A Minor, B Diminished.

Ok, so much more interesting this time, now that the interval is a little more complex.

If we change the scale to C Minor we get the following triads:

C Minor, D Diminished, Eb Major, F Minor, G Minor, Ab Major, Bb Major.

If the above seems like complete gobbledygook, then it's a worthwhile exercise to use the output monitoring display so that you can see the MIDI numbers as they are output, but on the piano roll, and this should make it a little simpler to understand what is happening when you change scale etc. The most important take away here though is that Intervals will produce different results in different keys and scales, but

Finally, let's consider the rough end of using harmonic intervals. This is one of the areas where Agnostik really begins to excel because the hard musical calculations are all done for you automatically, and you can just like the chord, or use something else.
Let's suppose we pick out a few random intervals from higher up in the bank. A good example pair is 1-3-5-7-8-10-12-14, and 1-4-5-6-8-10-12-13. When you listen these together, with both on the C Major scale and using C as the root note, the complexities involved determine that these are still different enough to be used together simply by switching back and forth, and it won't get boring too quickly either. If you change the key or the scale when switching between these intervals then typically this will result in a radical difference between the outputs. You won't need to go too far into this to see the differences.

- The second preset type, which is explicitly defined. This type is again subdivided into two types, '**Piano/General**' and '**Guitar Shapes**'. Each of these chords will play the same output notes regardless of the selected scale. The Piano/General type is very much what you would expect to find within most different chord playback devices and MIDI packs, these are effectively the most common chords, and they reach from the simple Major/Dominant chords right through to some more bizarre and theoretical chords, such as Mystic and Farben. The Guitar Shapes move you out of the standard chord library and into the 6-string world. Perhaps the most important difference

between piano chords and guitar chords is the pitch range that they inhabit. Practically all 6 string chords for guitar will cover a pitch range of at least two octaves, which would require both hands on a piano, so would rarely be used in a composition. So, guitar chords are typically larger and more complex, but still resolve to being more or less the same chords as their piano counterparts, only richer in tone. These are implemented here as Guitar Shapes, so each chord pattern is available raw, in other words it is not locked to a strict position on the guitar. To clarify – let's take as an example the E Major chord on the guitar, which is also the classic 6-string Major Barre chord, of course. The fret numbers running Low-E to High-E are 0,2,2,1,0,0. This particular shape is then slid up by using the index finger to act as the "open" nut. So if we move up to the 3rd fret with the index finger and apply the same shape, then the fret numbers are 3,5,5,4,3,3. Most modern rock guitar playing is based around this simple arrangement, with only small variations needed for minor etc.

Our Guitar Shapes bank uses this same idea, and will transpose any of the included shapes to the desired root note. So should you wish to have the lush vibrant Major G chord from the guitar, but you wish to have it in D#, well in Agnostik, you simply select the G shape, and then set the root to D#.

It's probable that you would already expect them to work this way, and if this is indeed the case, then it can be considered as a simple way to know where the boundary is between simple-ish standard chords and "complex-as-standard" chords.

So, to summarize, we have 3 (sort of 4) chord types, and these are then editable in a fashion that allows the user maximum flexibility. Given the complexity we already have with the chord types, we shall now go into depth to discuss how to customize devices within song files or patches. Most importantly though, before moving on, just note that the theory stuff works without you needing to know anything about it – you just pick the sounds and let Agnostik do the work.

The Global Areas

The introduction sections may have felt a little daunting at first, but don't worry. The purpose of Agnostik is to allow you to create interesting and satisfying musical progressions but without having to know all of the stuff we went into above.

The global controls area only needs four permanent controls:

- Velocity Type
- Velocity Modulation
- Scale
- Global Transpose

Further controls also appear during the recording process if you are in Presets Mode. More on that later in the recording section.

Velocity Type

There are 4 different velocity types available in Agnostik, and these can be accessed as a global option for all scales, but also within each chord where these can set up differently for each individual chord.

The available velocity types are:

- Scaling :: This mode takes the incoming values and scales them either up or down; at 100 this is exactly the incoming values, with lower settings scaling down and higher settings scaling up (to a maximum of 127%)
- Incoming :: This mode simply ignores the modulation amount.
- Specified :: This mode uses the Velocity Modulation control as an explicit command that sets all velocities to the amount shown.

- Modulation :: A classic modulation mode which will work on all chord types. To get the exact readings from stored chords, you must set the Modulation amount to 0%, but for useful variations we recommend setting this to about 10%, unless there is something very clinical being controlled.

Velocity Modulation

This is the control which gives the Velocity Type it's necessary argument.

Scale

This control is placed here in order for the user to be able to get Remote control over which scale is in use. This is absolutely crucial for live usage of the device.

Global Transpose

The global transpose will shift the entire device up or down by the number of semitones specified.

Panel Controls

To control the organisation of all the different parameters of the plugin, we split the interface responsibilities between our main panel the Scales & Chords panel, and the complimentary Preferences panel. There are two simple buttons for switching between them, as seen below:
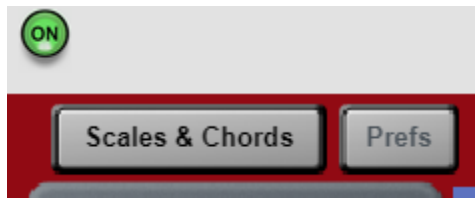
We shall now discuss the plethora of control options that are available within each section of these panels, starting with the Scales & Chords panel, where most of the controls for the device reside.

The Scales & Chords Panel

There are three general areas of the Scales & Chords panel which need to be discussed:

- The Recording Panel
- The Scales area
- The Chords area
  Let's discuss these individually…

The Recording Panel

There is a total of 4 different buttons in the recording area panel. We have the Record button itself, which when engaged will make the device operate in one of the three currently available record modes. This is simple enough, so next our recording modes are:

- Scale :: When recording in Scale mode, any keys which are not already present in the scale will be added. All keys are available.
- MIDI :: When recording in MIDI mode, the currently targeted Chord Bank will record up to 10 unique notes. All keys are available, but the MIDI record mode will not allow duplicates, so if a duplicated note is played then the highest of the two velocity values will be stored.
- Preset :: When recording in Preset mode, all keys are available, but only the black keys will make any difference, as they will change the bank which is being configured. The Preset recording mode actually uses the Preset recorder controls which will only show when Record is active and in preset Mode.

The Preset Recording Mode

Whereas the Scale and MIDI modes behave pretty much exactly as you would imagine, should you happen to be giving it a bit of thought, the

Preset Recording mode is a unique new method for recording long strings of chord progression goodness. It is therefore a bit less obvious what it is doing until you get the hang of it.

There are four controls to consider, and they will only be visible when the Record button is engaged, and the recording mode is Preset. They are hidden at all other times.

The controls in this section are:

- Bank :: Decides which Chord Bank number we are on, remembering that these correspond to the black key MIDI numbers. Changing this control will not record anything.
- Root :: Changes the root note of the preset chord that is stored in the applicable bank.
- Type :: Changes the type of chord that is stored in the applicable bank, at this time there are three settings: Interval, Piano/General & Guitar Shape.
- Preset :: Changes the stored preset in the chord bank.

Note that changes to the preset number or type will also automatically change the Chord Type from MIDI to Preset if it is set to that.

There are many ways to go about recording into the Preset recorder and therefore into the chord banks, but perhaps the most sensible tactic is to get an idea of what the root notes should be in an isolated melodic setting, and then program these into a contiguous series of banks. Once this is done you can then just concentrate on the Type and Preset controls, and this will really allow you to go at it from this point onwards.

Another rewarding method is to then double up each bank into another contiguous set (remember, you have 53 banks in Agnostik, so you might as well go wild :D), and then tweak each Preset by one or two spaces – the idea being to get something very similar to the previous run but with just enough subtle differences to make it interesting.
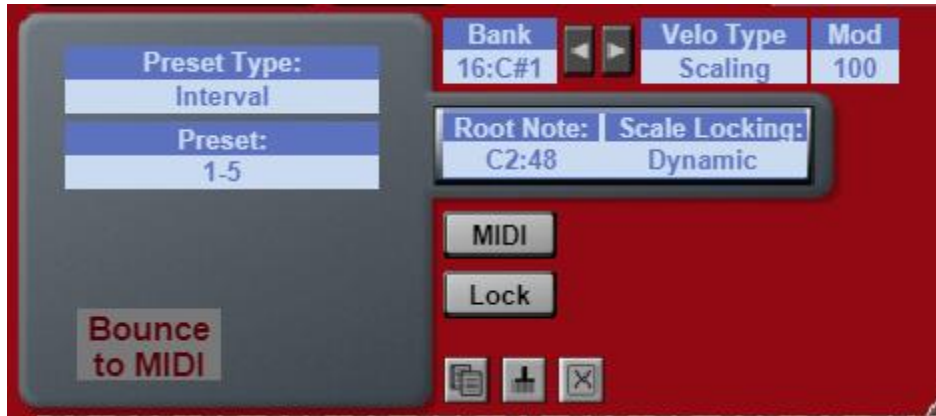
The Scales Area
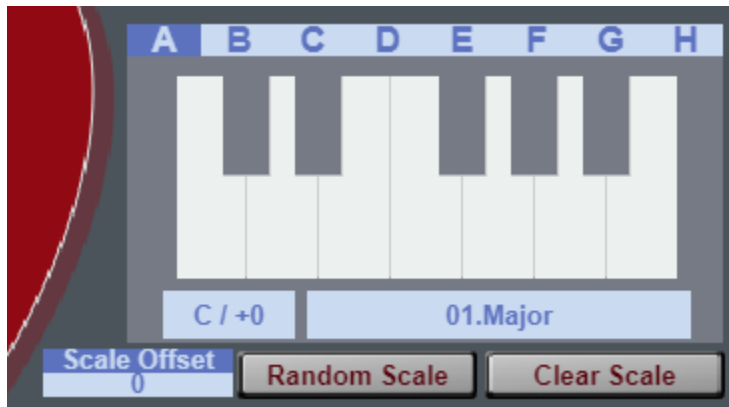
Users of MeloDramatik and Inspiral should immediately recognise the format that we are using for the Scales area.

With the exception that there are 8 scale banks in Agnostik, and only 4 in the older devices, the scales section is identical – there are 12 keys for building your own custom scales (should you not already be recording them); each scale can be shifted to any key, and there is a small library of 32 of the most useful scales you can find including all the obvious modes etc.

For Agnostik however, we have also added a few supplementary functions to make life easier. These functions are:

- Scale Offset :: Changes the starting position of the scale on the MIDI keyboard. This is particularly useful for users with smaller keyboards etc, or anyone using a pad control surface. This can also help with aligning scales of different sizes; a heptatonic scale has many more notes than a pentatonic scale, so it can help when improvising to have the musical focal points in the same area of the keyboard.
- Random Scale :: Creates a new random scale, this can be good for experimenting.
- Clear Scale :: Resets the scale to empty, which is usually a good move before recording a new fresh scale.

The Chords Area

Without any doubt the most important area of the device is the Chord editing area, and all efforts have been made to make this as simple as possible while still providing as much functionality as possible.

There are two general modes for the chords, and these determine how the interface is presented for the chord. The modes are MIDI:

, and Preset:

Users of Chordbank should recognise the format of the MIDI section, as the individual note and velocity editing area is loosely similar to the old design as far as the user presentation side is concerned. In Agnostik we now have the availability of 10 notes per chord, and there is also the ability to store a probability value for each note in the chord.

You can also see to the right of the Probabilities section, that there is a set of trigger buttons. These are contextual depending on the function that has been selected for usage. More on this in the function section.

Editing the notes, velocities and probabilities is a simple matter of dragging up or down in the appropriate area.

If you wish to edit on screen and need to shift the bank, there is a dedicated section for doing so, you can either scroll or use the arrow buttons.
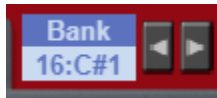
As stated in the global section, each chord can in fact have its own velocity settings that are independent from the global controls. If you wish to use the Global controls for the chord, then just set the chord velocity type to Global. Other than that, each chord can have any of the settings available to the global controls, and they will work in exactly the same way.

The Functions Menu
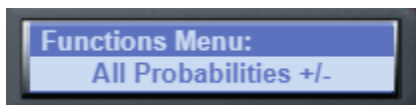
The Agnostik chord section is furnished with a strong set of operational functions to help with all sorts of tasks. The "LCD" screen on the device selects which function you wish to use and then there are contextual triggers which engage the function appropriately – this is because while some triggers are universal, some need further details, such as which particular note to work on, or whether to use the '+' or '–' version of the function.

This list will continue to grow as requirements unfold, but at the time of writing the manual for v1.0 the list of functions is:

- All Notes +/- :: Adds or subtracts 1 from each note.
- All Notes Octave +/- :: Adds/Subtracts one octave from all notes, while no notes breach the upper limit.
- All Notes Randomize :: Randomizes all Note numbers.
- All Velocities +/- :: Adds or subtracts 1 from each velocity.
- All Velocities +10/-10 :: Adds/Subtracts 10 from all velocities, while no notes breach the upper limit.
- All Velocities Randomize :: Randomizes all Velocities.
- All Velocities to 'x' :: Sets all Velocities to the selected velocity, i.e. if Note 1 has a velocity of 50, then all notes will be set to 50 if Note 1 is triggered.
- All Probabilities +/- :: Adds or subtracts 1 from each probability.
- All Probabilities +10/-10 :: Adds/Subtracts 10 from all probabilities, while no notes breach the upper limit.
- All Probabilities Randomize :: Randomizes all Probabilities.
- All Probabilities to 'x' :: Sets all Probabilities to the selected velocity, i.e. if Note 1 has a velocity of 50, then all notes will be set to 50 if Note 1 is triggered.
- Optimize Chord :: Removes incomplete notes and sorts the running order for the notes. This may also remove any duplicates, depending on the Preferences setting.
- Quantize to Scale :: Moves the individual notes of MIDI chords into the selected scale.
- Randomize All :: Randomizes all chord numbers, velocities and probabilities, with the results being determined by the Preferences settings.
- Clear Note :: Resets the selected note to 0-0-100.
- Inversion +/- :: Performs a pseudo inversion on any MIDI chord.

The Mode and the Lock

The mode button toggles between the MIDI and Preset editors, but also changes the chord type upon switching between the editor screens. As all the data is saved anyway you will not lose it.

The Lock toggle switch provides an extra layer of protection for existing work – when the lock is active none of the editors or functions can change anything about the chord.

The Presets Editor

For now, the editing of individual presets is quite simple on the interface. You simply drag the Type and the Preset until you find a setting that you are satisfied with.

You also have an additional Bounce To MIDI function for converting the Preset chords to MIDI chords.
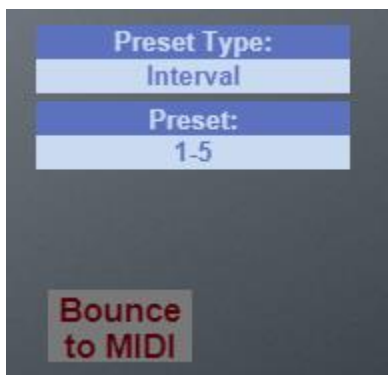

The Preset chords do not have the functions list available to them that is present in the LCD screen when editing MIDI chords. This is mainly because that list of functions doesn't make much sense in the context of the presets. In the same LCD area, we instead have two functions that are vital to the Presets.

Firstly, we have the Root Note, which the Presets need to be able to function, and the second is the Scale Locking, which is important for the intervals.

If the Scale Locking is set to Dynamic, then changes to the current Scale will affect the notes that each harmonic interval of the preset relates to. While this is excellent for improvisation and for experimentation while writing songs, should you be using Agnostik in a live environment this can become quite risky as MIDI controllers can often send chunks of garbage data.

So, to stabilise things for live usage, and also for larger and longer project builds, you can set the Scale Locking to any scale from 1-8, and the chord will now be locked to that scale only.
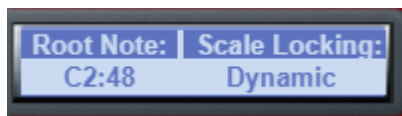
Copy, Paste, Clear

The final functions of the Chord Area are the Copy, Paste and Clear functions. These work on all aspects of the Chords they are applied to, but note that when the Lock is applied to a chord, then the Paste and Clear will have no effect on that Chord.

The Preferences Panel

Agnostik starts off with a small preferences set which is expected to grow as the main feature set is enriched.

For now, all the preferences we have included are connected to controlling the Function Menu operations.

The list of preferences is as follows:

- Optimize - Remove Duplicate Notes :: When engaged, if the Optimize is activated, any duplicate notes are removed.
- Randomize - Ignore 0 Notes :: When engaged, the Randomize functions will not generate random notes where there is currently a 0 note number event.
- Randomize - Ignore 0 Velocities :: When engaged, the Randomize functions will not generate random notes where there is currently a 0 velocity entry in the table.
- To 'x' - Ignore 0 Velocities :: when engaged, the "To 'x'" function will not operate on the 0 velocities, either as sources or as targets.
- To 'x' - Ignore 100 Probabilities :: When engaged, the "To 'x'" function will not operate on Probabilities set to 100 (the default), either as sources or as targets.

The list of modifiable ranges is as follows:

- Randomize All - Chord Size :: Sets the maximum size of the generated chord when the Randomize All operation is used.
- Randomize - Note Range :: Sets the range of available note values for the applicable Randomize functions.

- Randomize - Velocity Range :: Sets the range of available velocity values for the applicable Randomize functions.
- Randomize - Probability Range :: Sets the range of available probability values for the applicable Randomize functions.

The Key Display Panel

We wanted a nice simple display panel, at least to start off with. The panel, at present simply displays the output notes from the device. Watching the outputs is also a great way of actually learning the underlying theory, but without the names etc.

Using Agnostik with other Players

All Player devices in the Propellerhead Shop are standards compliant with The Rack Extension SDK version 4.0 and onwards – Agnostik is compliant with SDK version 4.2. 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 Agnostik. Good results are easily and safely obtained when using Agnostik alongside Note Echo, Scales and Chords, Dual Arp, and an ever-growing collection of third-party devices, including our own Loopcracker Suite devices, of course.

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.

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.

Acknowledgements

The following people made this possible, without them it wouldn't have happened...

All family and close friends

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Bes

Loque

Burningtoken

Diminished

Boombastix

MrFigg

Olive

Challism

All other testers and content providers have our massive gratitude.

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.

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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