discoDSP Discovery Pro

Users Manual

Virtual Analog + Wave VSTi Synthesizer

http://www.discoDSP.com/

Installation

To install Discovery, simply run the provided installation application. When prompted select your existing VST Plug-in folder on your hard disk. Sound banks and Unison presets will be installed into a **Discovery_Pro_Data** subfolder.

Demo version is able to load presets and banks, but the VST host will be unable to store current synth state, or save banks and presets. There is also a noise burst every 2 minutes.

Description

Discovery Pro is a virtual analog synthesizer emulation for VST hosts featuring multi-layering, parameter morphing, high-quality sound, wave support and a straightforward interface.

Features

Discovery boasts the following powerful feature set:

- 128 Patch Memories per bank.
- Parameter Morphing using Modulation Wheel or MIDI velocity.
- 2x oversampling.
- 2x oversampled distortions.
- Bank browser (by clicking arrows in display led and bank name).
- More than 300 presets in 3 banks (including a percussion one).
- Nord Lead 2 and 2X patch import.
- 4 Layers per Patch, each with:
  - 2 Oscillators (Sine, Saw, Triangle, PWM, Square, Parabolic, White and Pink Noise) with Ring modulation, Sync and Frequency Modulation.
  - 1 Wave Oscillator. Can load WAV and SoundFont 2 (SF2) files. Using high quality interpolation. User banks are easily added using folders or .dwb files.
  - Resonant Filters (LowPass, HighPass, BandPass, BandReject, Formant, 8 taps phaser, X 12/24 dB and Y 12/24 dB are Moog modeled).
  - ADSR for Amp & Filter. Amplitude envelope can switch between linear and exponential curves.
  - 2 LFOs.
  - Modulation Envelope.
  - Graphical Modulation Envelope.
  - Arpeggiator.
  - Built-in Chorus, Phaser, Panning Delay and Gate effects.
  - Symmetric, Asymmetric and Asymmetric 2 Distortions.
  - Limiter.
  - Portamento.
  - Poly/Mono/Legato modes.
- MIDI CC control.
- MIDI Out.

Basic Concepts

Channel Limiting and Oversampling

You may now determine the number of channels used in the instrument by left-clicking the "voices" LED or at EDIT > Config.

A dialog box will appear with the number of voices you wish to enable. Select the desired voice number.

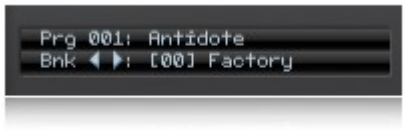
You can also select the oversampling mode. 2X will make Discovery work internally at 88 Khz when your host is set to 44.1 Khz. 2X oversampling is highly recommended. It will affect all active Discovery instances.

HQ Distortion will duplicate distortion's internal frequency rate, depending of the oversampling mode mode and resulting into 4X in case a global 2X has been configured.

Quick program select

Left-click program LCD panel to see a list of available patches.

Bank browser



You are able to browse all the .fxb banks by clicking the arrows in the status LCD or clicking the bank name to display a drop-down menu. Banks are located at **Discovery_Pro_data** folder in your VST folder. You can add your own banks by copying .fxb files there.

There is a subfolder called **User.dwb** where WAV files can be copied and recognised instantly after each menu drop-down click, providing better workflow.

Morphing state knob editing

In normal mode, holding **CTRL** while moving the knob will modify **morph sensibility**. The behavior in the knobs will be backwards when Morph mode is on. Use **Ctrl+Alt+Left** click to reset.

Fine tune knob editing

To have more detailed parameter adjustments, **hold your Shift key** while moving the knob to edit both states. Shift and Ctrl keys can be used at once too.

LFO Sync to host tempo

Discovery's LFO1, LFO2 / Arpeggiator, Delay and Panning LFO can be synced your host tempo. To enable it, just click the led located next to the LFO knob or Delay amount.

Edit operations

There are plenty of editing operations, just click EDIT button on your Discovery GUI and explore them.

Layers

Discovery Pro can hold 128 patches at any one time. Each patch may contain up to 4 layers. Combining layers can be used to create complex sounds that simple subtractive synthesis cannot achieve.

Discovery Pro supports up to 64 polyphonic voices. If all 4 layers are enabled, a single note will count as 4 individual voices, reducing the actual polyphony to 8 in these instances. Fortunately, these are 8 extremely powerful sounds.

To select a layer, simply left-click the A, B, C, D buttons below the Program and Voice number LEDs.

A is the default layer. When a layer is active the BUTTON directly above it turns **highlighted**. Select any layer (B, C, D) to activate it.

When a program includes 2 or more layers, the selected layer button turns **highlighted** and other active layers turn **BLUE**. If you wish to disable a layer simply left-click it twice, or left-click the blue LED directly.

Discovery Pro allows you to copy and paste between layers or programs by using EDIT menu.

The following documentation applies to a single layer unless otherwise noted. This means feature (LFO's, Envelopes, Oscillators) are potentially quadrupled for each Discovery patch.

Parameter Morphing

Each layer contains two internal states: morph **source** and morph **sensibility**. Each state contains a unique set of all values. **Morphing** allows you to easily glide between these values.

Morph sensibility state is seen using alpha blend, and can be modified by using **Ctrl** key while adjusting the knob. A 32-bit video mode is required to display this transparency.

You can easily toggle between both morph states by left-clicking the ASSIGN button, located in the top left of Discovery Pro under the "Morph" label. When the ASSIGN led is active, all parameter modifications are being made to the MORPH state.

Once both states have been defined, you can easily morph between them by assigning the Wheel MOD to MORPH mode. Once set, moving your mode wheel will morph between both states.

Edit > Reset > Layer Morphing sets MORPH sensibility state to zero.

TIPS

- Reset knob morph state by using **Ctrl+Alt+Left Click**.
- MIDI velocity to Morph can be disabled by clicking the led above modulation wheel or using **EDIT > Swap > Vel 2 Morph**.
- Knobs from four layers at once can be moved using **Alt+Mouse,** but if you don't want to apply maximum and minum value limits use **Shift+Alt+Mouse**
- Four layer edit shorcuts can be applied to Morph values by **enabling Morph Assign** button.

Global Layer Options

Oct Shift: Used to shift the pitch in octaves of the layer.

- **Pitch Bend -** The pitch bender allows you to drastically change the pitch of the current patch in real-time. You can modify the pitch bend range from 1 to 48 semitones by clicking the LCD arrows or clicking numbers for a drop-down menu.

- **Modulation Wheel**: Can be assigned to modulate the following parameters:

  - **FLTR** - Filter cutoff frequency.
  - **FM** - OSC2 to OSC1 frequency modulation amount.
  - **OSC2** - OSC2 pitch.
  - **LFO1** - LFO1 amount.
  - **MORPH** - Morph between source and destination morphing states.

- **CHR**: Left-click the **CHR** button to enable Chorus, Phaser or both modes at once.

- **Play Modes**:

  - **MONO**: Only 1 voice of the synthesizer is used for the layer. In this mode any note played will discontinue the previous note.

  - **LEGATO**: A monophonic mode in which envelopes are not restarted when new keys are played.

  - **POLY**: Polyphonic mode allows multiple notes to be played at once.

- **Portamento**: Portamento glides the pitch between the current note and a newly played note. The higher the value, the slower the transition progresses.

  - **Auto**: When enabled, glide/portamento will be only applied if overlapping notes are played (legato).

Oscillator Section

Oscillators are the basis of sound generation in subtractive synthesis. Discovery includes two primary oscillators, each with various modes and waveform types.

Waveforms available in Discovery Pro are:

Wave Type	Useful for creating...
Sine	FM, Leads, Percussion, Organs
Triangle	FM, Smooth Sounds, Bass, Flutes
Square	Smooth Basses, Leads, Synced Waves
Parabolic	Smooth Sounds, Pads
Noise	Ambient FX, Percussion
Saw	Rough Bass, Edgy Leads
Pulse	Vintage Synths, Pads

Oscillator 1 (OSC1)

OSC1 is the primary sound source in Discovery. This oscillator uses the pitch of the incoming note and plays it in the specified waveform type. OSC1 can be one any of the following waveform types (shown from the top down):

- Sine.
- Triangle.
- Saw tooth.
- Parabolic (Saw tooth with red led).
- PWM (Pulse Width Mod).
- Square.

You can quickly switch between any waveform by simply left-clicking the button below the waveform list. A **BLUE** LED indicates the currently enabled waveform.

Frequency Modulation: Discovery features a true frequency modulation (FM) engine, allowing the OSC1 carrier wave to be modulated by frequency of the OSC2 output.

FM Amount: Sets the amount of FM used to modulate OSC1 frequency.

Oscillator 2 (OSC2)

Discovery offers a second oscillator, which adds additional sound design capabilities to your patches.

The second oscillator may be used in various ways such as mixing with, or modulating the frequency of OSC1.

OSC2 can be set to any of the following waveforms:

- Triangle.
- Saw.
- Parabolic (when Saw led is red).
- PWM (Pulse).
- White Noise.
- Pink Noise (Noise with red led).
- Square.

Controls for oscillator 2 are:

- **Semitones**: This knob allows you to shift the pitch of OSC2 from -60 to +60 semitones. The following features apply:

    - When in use, a **BLUE** LED will activate at full scale values:

      -60, -48, -36, -24, -12, 0, 12, 24, 36, 48, 60

    - When OSC SYNC mode is active OSC2 will reset each time OSC1 finishes a cycle. (Explained below).

    - When noise wave is selected, this control is used to determine the frequency range of the noise (from low frequency to high frequency noise).

    If noise wave is selected and OSC SYNC mode is active, the semitones control is a digital noise wave selector, from a table of 8 different random sound shapes.

- **Fine Tune**: Fine-tuning of OSC2 from a range of -0.5 to +0.5 semitones.

- **KBD Track switch**: When on, the OSC2 will track pitch of incoming note.

Oscillator Modes

- **Pulse Width**: Determines the de-phasing amount between the two saw tooth waves that build up the Pulse wave. This results in the pulse width of BOTH oscillator pulse wave shapes (only works for PWM).

  Lesser values (turned left) result in a square formed PWM. Higher values result in a train of small pulses.

- **OSC SYNC**: OSC2 phase will reset each time OSC1 completes a cycle, giving harsh and fuzzy effects on the OSC2 sound. In this mode the OSC2 semitone control will not determine the pitch shift, but rather the harmonic content of the wave that will modify the pitch of the OSC1.

- **RING MOD**: OSC1 output will multiply the OSC2 output. When this mode is turned on, the FM control in the OSC1 will work as pitch tune (in the range of 0 to +12 semitones) for the OSC1. This mode can be used for special effects and ambience sound shapes.

- **OSC MIX**: Used to mix both oscillators output. Knob values follow:

  - **Left:** 100% OSC1 Signal
  - **Middle:** 50% OSC1 Signal, 50% OSC2 Signal
  - **Right:** 100% OSC2 Signal

Wave Oscillator (WAVE)

Discovery Pro offers a third oscillator, which adds dramatic sound design capabilities to your patches.

Wave oscillator can be edited by clicking the LED located at the right of WAVE label. Sound banks and waves can be selected by clicking < and > controls or clicking at the LED area to display a drop-down menu.

To add your own soundbanks just zip a set of WAV files and use .dwb extension, or select a SoundFont 2 (SF2) file. Then place it on Discovery_Pro_Data folder and they will appear next time Bank LCD is clicked.

Controls for Wave oscillator are:

- **Semitones**: This knob allows you to shift the pitch of Waveforms from a wide range of semitones. The following features apply:
  - When in use, a **BLUE** LED will activate at full scale values:

    -60, -48, -36, -24, -12, 0, 12, 24, 36, 48, 60

  - When **Keytrack** is selected, pitch changes will be applied across the keyboard.

- **Fine Tune**: Fine-tuning of loaded Waveforms from a range of semitones.

TIPS

- **OSC1** and **OSC2** can be disabled by clicking the blue led located at the left of OSCILLATORS label.

- Full octave switching can be easily performed by clicking + and – labels.

Filter Section

Once oscillators are mixed, sound is next routed through the Discovery filter section. This section will transform the frequency response of the signal.

A filter is a unit that changes the magnitude of a range of frequencies of the sound, boosting or cutting these frequency values.

Basic Filter controls

The two most common filter parameters are the Frequency and Resonance controls.

- **Frequency**: or 'cutoff' point. This value sets the frequency point affected by the filter response.
- **Resonance**: This value determines the amount of amplification of the range of frequencies surrounding the frequency (cutoff) point.

Filter Types

Discovery Pro has 12 filter types. You may toggle through these types using the buttons below the LCD Filter Type section or by clicking filter name LED to make a drop down menu appear. The active filter is also showed in the display.

Available filter types follow:

- **LowPass 12db**: This 2 pole Lowpass filter will cut all spectrum range above the Cutoff frequency, with a rolloff of -12dB per octave.

- **BndRjct 24**: The Notch filter will cut the frequency range surrounding the Cutoff point, and will be processed thru the 24dB Lowpass filter explained above, but using a slightly shifted Cutoff frequency. Using this with high Resonance amounts will result in interesting vocal formants effects.

- **LowPass 24db**: A 4 pole Lowpass Filter with -24dB per octave rolloff. This functions similar to the LP 12db, but with a steeper frequency curve response.

- **BndPass 24**: A Bandpass Filter, which allows only the frequency range surrounding cutoff point to pass through. Resonance controls the size of this bandwidth.

- **HghPass 24**: The opposite of the Lowpass filters, the Highpass will pass frequencies above the cutoff point and will cut all range below. This filter type has a rolloff of -24dB per octave.

- **HghPass 12**: Will pass frequencies above the cutoff point and will cut all range below. This filter type has a rolloff of -12dB per octave.

- **Formant**: 2 bandpass parallel filters tuned in vocal formant frequency range. Resonance modifies both filters resonance.

- **X 12**: A Moog modeled 2 pole Lowpass Filter with -12dB per octave rolloff.

- **X 24**: A Moog modeled 4 pole Lowpass Filter with -24 dB per octave rolloff. It functions similar to X 12db, but with a steeper frequency curve response..

- **Y 12**: Another Moog modeled 2 pole Lowpass Filter with -12dB per octave rolloff.

- **Y 24**: Another Moog modeled 4 pole Lowpass Filter with -24 dB per octave rolloff. It functions similar to Y 12db, but with a steeper frequency curve response.

Filter Envelope

The Filter Envelope allows easy ADSR (**A**ttack, **D**ecay, **S**ustain, **R**elease) envelope based modulation of the filter Cutoff control.

- **Attack**: Controls for the time in which the filter envelope moves from 0 (note play) to full filter (based on the Envelope Amount, below).
- **Decay**: Controls the time length between the end of attack and the sustain level.
- **Sustain**: Sets the filter point at which envelope stays while note is continually pressed, once attack and decay have completed.
- **Release**: Begins once the note is released, controlling the time the gain will fall from current envelope point (Sustain) until complete.
- **Env Amount:** The Envelope Amount option controls the amount of the Filter envelope applied to the Cutoff frequency.
- **Vel:** When enabled, the Envelope Amount will be scaled with the incoming note based on velocity. This results in more dramatic envelopes for harder hit notes.

Additional Filter Options

- **Keytrack**: When active, Keyboard Tracking will increase the filter cutoff frequency based on incoming note pitch. Higher notes will add higher frequencies to the current filter cutoff point.

  Tracking can be 1/2 (minor), 2/3, or Full (very drastic).

- **DIST**: Distortion effect with dual modes.
  - **Asymmetric Distortion:** This will apply saturation to the negative field of the signal. This will generate side harmonics, useful for tube distortion effects.
  - **Symmetric Distortion:** Saturation will be applied symmetrically, resulting in odd harmonics, useful for grunge or distortion effects.
  - **Asymmetric Distortion 2:** A variation of first asymmetric distortion.

2X oversampled distortion can be enabled at **Edit** > **Config** > **HQ Distortion**.

Modulation Section

Low Frequency Oscillator 1 (LFO1)

Discovery Pro includes two LFO's (**L**ow **F**requency **O**scillators), a Modulation Envelope (with 2 stages and state variable amount control) and a Graphic Envelope Generator. LFO oscillators operate much like the basic Discovery oscillators, only at much slower speeds

Rate: This control sets the speed (frequency) of LFO1. Smaller values result in slower oscillations, larger values in faster oscillations.

LFO1 can use various waveforms (from top to bottom):

- **Lowpass Random**: Like random waveform, but the value is a smooth curve.
- **Square**: If LFO1 phase is above the half of the period length, the LFO will take the highest value, otherwise the lowest.
- **Triangle**: Also a ramp, but moves down to up, then back to down in a single cycle. Primarily used for sweep effects.
- **Saw Tooth**: Ramp shape; will move up to down, then instantaneously up when cycle is completed.
- **Random**: Each time LFO1 completes a cycle, it will select a new random value.

Retriggered LFOs: By cycling through LFO waveform options a second time you can enable Retriggered LFO's. This means that the LFO will be restarted each time a note is played. Retriggered LFO's are indicated by **RED** LEDs.

Destination: To the left to the waveform selector is the LFO1 Destination selector. This feature allows you to choose which control(s) this LFO will modulate. The following LFO1 modulation destinations are available:

- **FM**: OSC2 → OSC1 FM (Frequency Modulation) amount.
- **FILTER**: Filter cutoff frequency.
- **OSC2**: OSC2 pitch.
- **OSC1+2**: Both OSC1 and OSC2 pitch.
- **PW**: Width of the pulse of PWM waveforms.

Amount: LFO1 Amount control determines the amount of LFO output to use on the destination control(s). Higher values will result in a more dramatic modulation.

Low Frequency Oscillator 2 (LFO2) and Arpeggiator (ARP)

The second LFO operates much like the first, yet without a selectable waveform. LFO2 is always a pure **sine** wave. In addition LFO2 has a powerful Arpeggiator (Explained below).

Rate: Controls the speed (frequency) of LFO2.

Destination: The following destinations are available to LFO2:

- **OSC1+2**: Both OSC1 and OSC2 pitch
- **AMP**: Amplitude **(**Creates a Tremolo effect)
- **FILTER**: Filter cutoff frequency

Amount: LFO2 Amount control determines the amount of LFO output to use on the destination control(s). Higher values will result in a more dramatic modulation.

LFO2 Arpeggiator

ARP: You can enable Discovery's Arpeggiator by left-clicking the **ARP** button in the LFO2 section. When active, LFO2 operates in ARP (Arpeggiator) mode.

An Arpeggiator is basically a simple sequencer which continually plays notes automatically as a note or notes are held. The notes played depend of the keys currently pressed and the arpeggiator range.

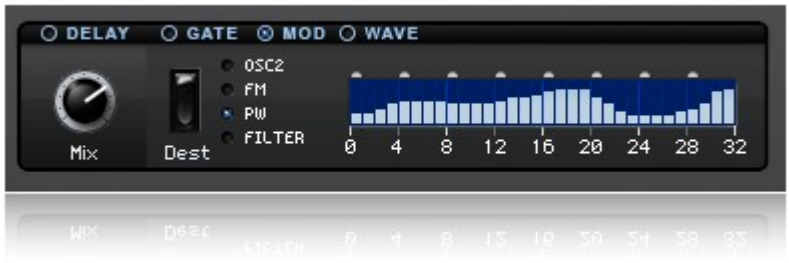
Rate: When in ARP mode, the Rate control sets the arpeggiator tempo. Faster values may be achieved with greater values (turning the knob to the right).

Destination: In Arp mode, direction in which the Arpeggiator will play notes.
They can be:

- **DWN**: Plays notes from highest to lowest, then restarts.
- **U&D**: Repeats playing highest lowest, then back from lowest to highest.
- **UP**: Plays lowest to highest, restarts.
- **RND**: Plays any random note from the arpeggiator range.
- **RND2**: Play to the next or the prior note in the arpeggiator range randomly.

Arp Rng: Sets range in octaves for the arpeggiator, from 1 to 5 octaves.

Graphic Envelope Modulation



Graphic Envelope modulation is located between GATE and WAVE sections. Just left-click the blue LED close to MOD label for easy panel access.

Configuration is done in the same fashion as Gate, left-clicking the bars with your mouse in order, with the only difference of being able to set individual amounts for each one. Clicking and holding your mouse button will allow to easily draw custom modulations.

Destination: This feature allows you to choose which control(s) this envelope will modulate. The following graphic envelope modulation destinations are available:

- **OSC2**: OSC2 pitch.
- **FM**: OSC2 → OSC1 FM (Frequency Modulation) amount.
- **PW**: Width of the pulse of PWM waveforms.
- **FILTER**: Filter cutoff frequency.

Modulation Envelope

Modulation envelope is a simple envelope which includes 2 stages, attack and decay.

Attack: Changes the value of the destination (based on the **Amount**) from the time a key is pressed until its highest point.

Decay: Changes the value of a destination (based on the **Amount**) from the highest point until the sustain level is reached.

Destination: The following destinations are available to the Mod Envelope:

- **FM**: Frequency Modulation Amount
- **PW**: Pulse Waveform Width
- **OSC2**: OSC2 Pitch
- **O2+W**: OSC2 and WAVE pitch.

Amount: Sets modulation. This modulation can be positive, negative, or anything in between. Three basic settings include:

- **Negative**: All the way to the left, reduces the destination
- **No Amount**: Center, disabled.
- **Positive**: All the way to the right, increases the destination.

Amplifier

Discovery's amplifier applies an envelope to the output gain of the current layer of sound. This is the final stage of synthesis. The following controls apply:

- **Attack**: Controls for the time that envelope moves from note press (0) to full volume. (Does not apply to legato mode).
- **Decay**: This knob controls the time length between envelope gain goes from upper point (end of Attack) to Sustain level.
- **Sustain**: Sets the point at which the envelope stays while note is held. This state is held until the note is release.
- **Release**: Once the note is released, this knob will control the time in which the gain will fall from current envelope point (Sustain) into complete silence, finishing the voice use.

  Longer releases can result in many simultaneous voices, resulting in high CPU usage.
- **Gain**: Adjusts the overall volume for the current layer. Use morphing to add dynamics.
- **Limiter**: Applies a compressor with –Inf:1 ratio for the current layer.

Discovery Pro can also switch from default **linear envelope** behavior to **exponential**, which is usually better for pads, by clicking the LED next to each knob.

Once LED is enabled, that particular envelope stage will use exponential values instead linear.

Panning, Delay/Echo and Gate

Discovery has built in stereo delay, panning and gate effect units.

Panning

This effect can be used to widen a sound or give it interesting panning effects per layer.
You can sync Mod Rate to host tempo by clicking the led located next to Mod Rate knob.

- **Position**: Position in the stereo field.
- **Mod Rate**: Controls the rate of the stereo modulation.
- **Mod Amount**: Controls the depth of the stereo modulation.

Delay/Echo

This effect can be used to add spacey echo effect, or widen a sound. You can sync Left/Right Delay to host tempo by clicking the led located between Left and Right knobs.

- **Level**: Controls the amount of the delay effect. No Level value (knob turned completely to the left) will disable the delay effect. This control is morphable as well.
- **Left / Right Delay**: Controls the delay time of the unit for each channel.
- **Left / Right Feedback**: Controls the time of the delay tail. Moving this knob to the right will increase the tail.
- **Cross switch**: Adds a cross-feed to the feedback output. This will result in a stereo bouncing delay, useful for 3d effects.

Gate

If you want to enable Gate page effect, you can do so by clicking the small blue led next to GATE.

NOTE: You can enable and disable multiple gate steps by left clicking and dragging the mouse while moving on the pattern.

- **Level**: Controls the amount of the gate floor effect. No Level value (knob turned completely to the right) will disable the gapper effect.

  This control is morphable and layer independent, suitable for complex sound textures.

- **Copy**: Copies the current gate pattern to memory.
- **Paste**: Dumps the gate pattern on memory to current gate.
- **Gate pattern**: Controls the gate triggering.

Midi CC table

CC#	Controller
001	Wheel Mod
007	Amp Gain
005	Portamento
008	Oscillator Mix
015	Playmode Mono/Legato/Poly
016	Unison On/Off
017	Oct Shift
018	Wheel Mod Mode
019	LFO1 Rate
020	LFO1 Waveform
021	LFO1 Destination parameter
022	LFO1 Amount
023	LFO2 Rate
024	LFO2 Arp/Dest switch
025	LFO2 Amount
026	MOD ENV Attack
027	MOD ENV Decay
028	MOD ENV Destination
029	MOD ENV Amount
030	OSC1 Waveform
031	OSC2 Waveform
033	OSC2 Fine Tune
034	OSC2 Kbd Track On/Off
035	OSC2 None/Sync/Ring/Both
036	Amplifier Decay
037	Amplifier Sustain

CC#	Controller
089	Filter Attack
039	Filter Decay
040	Filter Sustain
041	Filter Release
042	Filter Resonance
043	Filter Env amount
044	Filter Type
045	Filter Velocity
046	Filter Kbd Track
065	Portamento Auto On/Off
070	OSC FM Amount
072	Amplifier Release
073	Amplifier Attack
074	Filter Cutoff
078	OSC 2 Semitones
079	Pulse Width
080	Filter Distortion
081	Delay Level
082	Left Delay Amount
083	Right Delay Amount
084	Left Delay Feedback
085	Right Delay Feedback
086	Panning Position
087	Panning Mod Rate Amount
088	Panning Modulation Amount
120	All Sounds Off
123	All Notes Off

Importing SysEx

Discovery can import sysex patch dumps from using software able to record MIDI sysex data dumps.

A recommended tool for this purpose is MIDI-OX - http://www.midiox.com/.

1. Using MIDI-OX menu bar: View > SysEx.
2. SysEx window appears, then: SysEx > Receive Manual Dump
3. A small window labeled 'SysEx Receive' will appear.
4. On NordLead2, select Shift+Dump One or Shift+Dump All. It will start the dump of current patch or entire 40 patches of RAM sound bank.
5. Once finished, press done.
6. On MIDIOX SysEx view the menu again, go to 'Display Window' and select 'Save As.'
7. Select and save your file with .syx extension.
8. On Discovery GUI, press **EDIT > File > Import....** A popup menu appears, then press Import NL2 patch dump, and select your .syx or .ngf file (Both are MIDI unformatted Sysex data dump).

NOTES:

- Full bank patch dumps will be done into current selected layer.
- Performance and Percussion Kits dumps are not supported.

Editing Unison parameters

Unison is a editing tool to distribute and change Layer A settings across layers B, C or D. It works by taking the values from unison.cfg file located at Discovery_Pro_folder and applying them to layers.

This file can be easily opened by selectin Unison Editing from your discoDSP program group located in All Programs.

In the first preset we can see the following line:

Double 1 1 0 0 0.5 0.5 0 0 0.2 0.8 0 0 0 0 0 0 0.3 0.7 0 0

1 1 0 0 - First two layers will be enabled.
0.5 0.5 0 0 - Gain will be set to half in both layers.
0.2 0.8 0 0 - They will be slighty panned.
0 0 0 0 - There will not be any octave shift.
0.3 0.7 0 0 - Both will have OSC2 slighty detuned.

Version History

Release 3

- Polyphony increased to 64 voices.
- Industry standard SoundFont 2 support.
  SF2 files must be copied to Discovery_Pro_Data folder.
- User.dwb folder bank added to enhance custom WAV file load workflow.
- Revised PDF manual.

Release 2

- Added XPO sound set and Jeff sound banks (total of 128+ presets).
- New Mod Envelope destination: OSC2+Wave
- Minor GUI polish.
- Revised PDF manual.

Release 1

- Initial Release.

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