Bandecho 1.0 Manual

Introduction

About the manual

The manual was written by Bjarte Ludvigsen and edited by Matthias Kahlmann.

Welcome

Hello

Thank you for purchasing Bandecho 1.0!

This particular plugin is modeled after vintage tape echoes like Roland Space Echo and Watkins Copicat, but with several extra features making it one of the best sounding echo machines available. We believe that the sounds you can get from this beauty are far more versatile than any external tape echo on the marked.

Good luck with you music!

Bluenoise Plugins

What's new

Well, everything is new! This is version 1.0 and the first released version of Bandecho.

Getting Started

System requirements

Windows operating system:
Windows XP SP2, Vista 32/64 or Windows 7

Machine:
Intel/AMD processor 1,6 Ghz minimum
1 GB ram (2 GB recommended)

Other:
Internet connection to download updates if available

DAW:
Any DAW that can handle VSTplugins such as Cubase, Nuendo, Samplitude, Reaper, Sonar, Vegas etc.

Soundcard:
Any soundcard that can be used in a DAW.

Registration

Help - Click this button to bring up this manual. The manual is located at C:\Bluenoise Plugins\Bandecho. If you delete or move this folder this button will not work.
About - Click this button to display the register system.

Enter your registration information and authorization code.

User ID: This is the name you registered the plugin to when you purchased it through Share-it.
License Key: This is the activation code you got on the email from Share-it.

Hit **Enter Key.**

If you want to use this as a demo for the 7-day time trial, please press **Try demo.**

If you want to purchase the plugin, press **Get License Key** and you will be sent to www.bluenoiseplugins.com. Please go to shop and purchase the plugin.

The interface

Tape echo rack

The tape echo rack is the key to the whole plugin. This is the base echo where it all starts and what drives the other function in the plugin.

Input - Sets the input signal level that should pass through the plugin.
Signal – Shows the mono or stereo input signal level.

Feedback - Sets the feedback loop length. **WARNING!** When set to full the echo will self-oscillate and become louder and loader until the plugin distorts. This is a very cool feature similar to a vintage tape echo. You can use this to create wild echo landscapes, but be careful with your ears and your system.

Filter: The first filter is a variable state filter, which is basically controlled by the Cutoff and the Resonance. The output of the filter is divided into a Lowpass and a Highpass output. The Lowpass output is then sent to a new 1 pole Lowpass filter and the Highpass output is sent to a new 1 pole Highpass filter. That way the section is basically several filters in one, making it very easy to tweak and providing loads of possibilities.

Cutoff – Controls the cutoff frequency of the first filter and how much of high and low frequencies should be sent out to the next filters.
Resonance - Boosts the frequency where the Cutoff starts to cut. Set to full will oscillate a new frequency. **WARNING!** This could damage your system/ears if you play back on a high level. It is one of the best features of the echo, but be sure to start off at a safe level. The knob becomes redder the more you turn it. It is to make you aware that it could accidentally produce loud noise. (Bluenoise Plugins is not responsible for damage to your system or ears.)
Lowpass - Sets how much of the low frequencies should pass / works together with Cutoff and Resonance.
Highpass - Sets how much of the high frequencies should pass / works together with Cutoff and Resonance.

Adjust time left – The long slider sets the time of the echo. When the Stereo button is not pushed, this works as a mono slider. Both sliders are moved at the same time. If pushed, the slider adjusts the timing of the left echo. When the Sync button is pushed this slider sets notes, otherwise it sets milliseconds. NB: When set to ms, there might be numbers that are impossible to set because of the nature of the slider. You have to settle with the closest number up or down. This happens with both left and right slider.
Adjust time right – This slider only works when the Stereo button is pushed. If pushed, the slider adjusts the timing of the right echo. When the Sync button is pushed this slider sets notes, otherwise it sets milliseconds for the right channel.
Sync – Synchronizes the echo to the host DAW tempo. When pushed, the readout changes to show notes instead of milliseconds.
Note value – Changes the timing between normal, dotted and triplet quarter notes. The left controls the left side and the right controls the right side.
Readout left and right– The top readouts display the time of the echo either in milliseconds or in notes depending on the Sync button being pushed or not. The bottom readouts display whether the note is normal, dotted or triplet.

LFO

LFO speed – LFO stands for Low Frequency Oscillator. Basically it is something that generates very slow waveforms that you can use to make something change in dynamic or tone according to the speed of this waveform. This particular knob sets the speed of the LFO.
Send to – Decide what the LFO should control. Set to the OFF symbol, sends the signal nowhere and it's the same as bypass. Set to Cutoff 1 will make the LFO control the cutoff for the tape echo. Set to Cutoff 2 and the LFO controls the cutoff for the drive. Set to Drive Pan and the LFO controls the panning of the drive.
NB: Cutoff 2 and Drive Pan only work when the drive is set to position on.
Waveform – Sets the different waveforms the LFO should use to process the Cutoffs/pan. It switches between saw, squ (square), pul (pulse), sine, spul (saw pulse), reso1, reso2 and reso3. All these create different types of swing to the Cutoffs/pan. Experiment!
Depth – Sets the amount of the LFO. Basically the more you turn the knob, the more extreme variations of cutoff or the wider the panning.

Drive rack

All echo plugins should have a distortion part and the drive is something special.

Drive on - Activates the distortion.
Meter – Shows how much gain is used in the drive rack.
Dry/Wet - Dry makes the distortion a send effect and adds distortion to the signal. Wet makes the whole signal pass through the distortion like an insert. This is the normal way to add distortion since using dry-mode will add phasing and cancellation.
Gain - Brings more gain into the distortion to create a stronger distorted sound.
Shape - Controls the shape of the distortion. The more you crank it, the more aggressive the distortion.
Cutoff - A lowpass filter is introduced to the delay and this cuts off high frequencies.
Resonance - Boosts the cutoff frequency, which makes the sound oscillate. This is also nice way to bring out more harmonics in the delay. **WARNING!** This could damage your system/ears if you play back on a high level. It is one of the best features of the echo, but be sure to start off at a safe level. The knob becomes redder the more you turn it. This is to make you aware that it could accidentally produce loud noise. (Bluenoise Plugins is not responsible for damage to your system or ears.)
Pan - This sends the signal to right or left speaker. Hint: If the Dry/Wet is set to more dry than wet it is possible to send the dry signal straight downwards and the distorted to one side. If the Dry/Wet is set to wet the whole signal is sent to either side.

Effect rack

This rack has some interesting features not seen in any external tape echo.

OLD TAPE
This section can change the speed of the tape head. Think of it as an analogue tape that occasionally speeds up or down or both.
On – Puts on Old Tape.
Speed – Sets the speed and how quick the variations should happen. The more you turn the more and faster variations of speed.
Depth - Sets the amount of changes in speed. The more you turn the more extreme variations will happen.
Pan – Turning this knob will send the tape variations to one side. The variations will be sent to the side you choose, making the echo sound stereo, as the other side will have the unchanged signal. This is not possible in a physical vintage tape echo, but is a nice feature on a plugin!
Dry/Wet - This knob mixes in the variations to the signal. Full clockwise will send the whole signal through Old Tape.

GRANULATOR
A granulator buffers the input audio and releases it in discrete grains of a specified duration, at a specified rate.
Dry/Wet – This sets how much of the grained sound should be heard. Full clockwise will send the whole signal through the Granulator.
Size - Sets the duration of each grain, in milliseconds.
Rate - Interval between the start of one grain and the start of the next grain in the stream, in milliseconds. Hint: This should be set at least as long as the Grain Size.
Pitch - Amount of random variation to apply to Pitch Shift. Basically you can pitch the signal up or down.

CHORUS
A chorus is an effect that splits the signal, delays it and adds speed variations to the delayed signal.
Dry/Wet – This sets how much of the chorused sound should be heard. Full clockwise will send the whole signal through the Chorus.
Speed - Sets the speed of the Chorus.
Pan - Pans the signal to a side.
Spread - Sets how wide the Chorus signal should be.

LESLIE
The effect creates a swirly organ-like tone.
Leslie - This knob adds a leslie effect to the signal when turned clockwise. There are basically three stages. Off (being counter clockwise), slow and fast speed.

COMB FILTER
This is a short echo that brings comb filtering to the echo. Lets say you have three feedback taps before this stage:
Ding Ding Ding

By adding an echo on each echo tap the signal will change to something like this:
DingDing DingDing DingDing

When the echoes are very quick (2 – 20 ms) and the feedback is set to very long it produces the feeling of a tonal reverb on each echo. This is the typical comb filtering effect.

DingDingDinDing DingDingDinDing DingDingDinDing

Time - Sets the time of the echo
Feedback - Sets the feedback loop length
Pan – Pans the combing to either side.
Volume – Sets the amount of comb filtering you should add to the signal.

Multi echo rack

The last part is six new echo machines that are added to the signal. It makes Bandecho eight echoes in one!

The green bottom part:
This part consists of two echoes that are taken from the input of the plugin making it bypass all the other functions. They are basically the same as the first echo but with much shorter echo time (0.5 seconds) and without the filter stuff.

The blue bottom part:
This part consists of two echoes taken from the signal just after the distortion. The cool thing about this is that you can then spread distorted echo signal toward each side of the spectrum. **NB:** If you haven't activated the distorted signal the two echoes will not work since they depend on getting a signal from the output of the distortion.

The red bottom part:
This part consists of two echoes taken from the signal after the Comb Filter meaning that all the previous processes will go through the echoes. If you haven't activated anything at all, the echoes will behave like the two echoes on the green part.

The following applies to all parts:
Time - Sets the time of the echo.
Feedback - Sets the feedback loop length.
Pan - Sets the placement in the spectrum.
Volume - Sets the volume for this particular echo.

Output rack

The last rack is the output rack where you where you can set the plugin up to be a send effect or an insert effect. It also shows the outputs for all the different delays.

Dry/Wet – Sets how much of the dry or wet signal that should be heard. Used as a send FX, it is normal to set it to 100 percent wet (full clockwise). When used as an insert FX it is normal to use these knobs to decide how much of the delay that should be heard.
Link – Syncs the two knobs so they always will stay the same.

Meters – The six meters show how much delay signal can be heard from echo 3 to 8.
Signal out – Shows the total output signal level.
Output - Sets the total output volume for the plugin.

Buttons

These three buttons change the view of the different racks.

Tape echo – Press this to view the first main tape echo and the drive.
Effects – Press this to view the effect rack where you'll find Old Tape, Granulator, Chorus and Comb Filter.
Multi echo – Press this to view all six additional echos.

Presets

We have provided you with 100 preset to start with. These consist of everything from basic 16th notes echoes to advanced rhythms. It is important to understand the setup to take the full advantages of the preset.

Bpm-Channels-Name

Example 1:

95-M-Dirty Rhodes

This means that the bpm (tempo in beats per minute) is 95, the echo is mono and the name is Dirty Rhodes.

Example 2

All-S-Insane

This means this preset could be used for all tempos (or it's impossible to set a tempo!), the echo is stereo and the name is Insane.

Hints

1. To create echoes that go from one side to the other, create delays that have short time and pan them to one of the sides. Then create new echoes that have longer delay times and pan them to the opposite side. This creates the illusion of the echo going from one side to the other.

2. To create different stereo delays, try to make the first echo mono, and then add more echoes at the bottom that you send to either side.

3. The Granulator might be too radical for most, but a subtle version might add the low-fi feeling you are looking for. Set the rate at least as long as the size.

4. To use Bandecho as a Distortion, Granulator, Leslie, Chorus or Combfilter without the first main echo rack, simply set the echo sliders to zero. The sound will go straight through without the main echo.

What's echo?

Echo (phenomenon)
From Wikipedia, the free encyclopedia

In audio signal processing and acoustics, an **echo** (plural **echoes**) is a reflection of sound, arriving at the listener some time after the direct sound. Typical examples are the echo produced by the bottom of a well, by a building, or by the walls of an enclosed room. A true echo is a single reflection of the sound source. The time delay is the extra distance divided by the speed of sound.

Acoustic phenomenon
If so many reflections arrive at a listener that they are unable to distinguish between them, the proper term is reverberation. An echo can be explained as a wave that has been reflected by a discontinuity in the propagation medium, and returns with sufficient magnitude and delay to be perceived. Echoes are reflected off walls or hard surfaces like mountains and privacy fences.

When dealing with audible frequencies, the human ear cannot distinguish an echo from the original sound if the delay is less than 1/10 of a second. Thus, since the velocity of sound is approximately 343 m/s at a normal room temperature of about 20°C, the reflecting object must be more than 17.15 m from the sound source at this temperature for an echo to be heard by a person at the source.

Sound travels approximately 343 metres/s (1100 ft/s). If a sound produces an echo in 2 seconds, the object producing the echo would be half that distance away (the sound takes half the time to get to the object and half the time to return). The distance for an object with a 2-second echo return would be 1 sec X 343 metres/s or 343 metres (1100 ft). In most situations with human hearing, echoes are about one-half second or about half this distance, since sounds grow fainter with distance. In nature, canyon walls or rock cliffs facing water are the most common natural settings for hearing echoes.The strength of an echo is frequently measured in dB sound pressure level SPL relative to the directly transmitted wave. Echoes may be desirable (as in sonar) or undesirable (as in telephone systems).

In music
In music performance and recording, electric echo effects have been used since the 1950s. The Echoplex is a tape delay effect, first made in 1959 that recreates the sound of an acoustic echo. Designed by Mike Battle, the Echoplex set a standard for the effect in the 1960s and was used by most of the notable guitar players of the era; original Echoplexes are highly sought after. While Echoplexes were used heavily by guitar players (and the occasional bass player, such as Chuck Rainey, or trumpeter, such as Don Ellis), many recording studios also used the Echoplex. Beginning in the 1970s, Market built the solid-state Echoplex for Maestro. In the 2000s, most echo effects units use electronic or digital circuitry to recreate the echo effect.

Troubleshoot

You might experience a feedback sound coming from the plugin when all buttons and knobs are set to zero except the resonance knobs. This is normal and will happen since you oscillate a new signal that will continue on forever. Just turn the resonance filter knobs counter clockwise to make it stop.