

EDS 16i

Virtual Analog Drum Synthesizer

Overview

Instruments

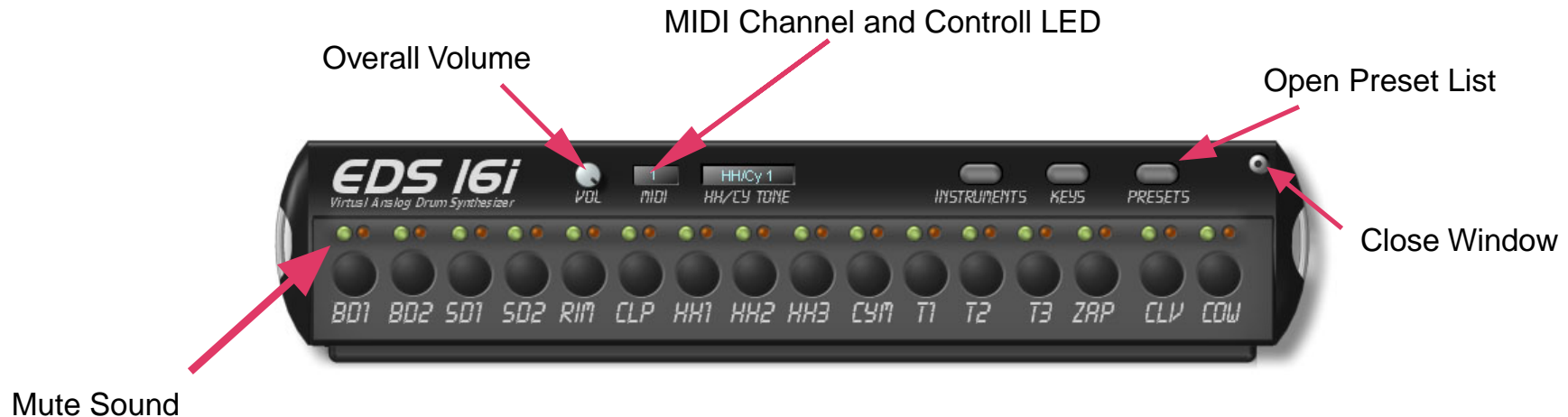
Bass Drum
Snare Drum
Rimshot
Handclaps
Hihats/Cymbal
Tom Toms
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Overview



The EDS16i Electronic Drum Synthesizer is a highly flexible virtual analog drum synthesizer. The EDS16i gives you control over all the important parameters for 16 independent percussion instruments.

The instruments can be mixed to stereo outputs, so no additional mixing is necessary, or routed through individual outputs for additional processing. Faders in the EDS16i can be assigned MIDI controller numbers so sequencer control of all parameters is possible.

The following instruments are available:

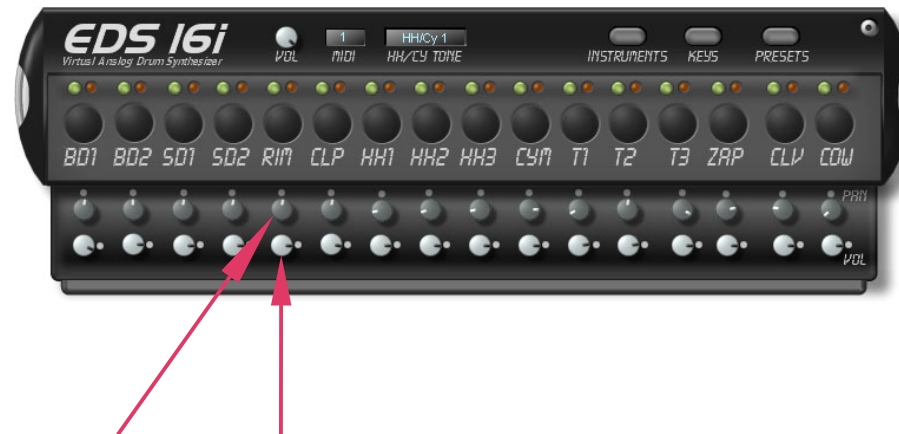
Bass Drum:	BD1 & BD2
Snare Drum:	SD1 & SD2
Rimshot:	RIM
Claps:	CLP
Hihats:	HH1, HH2 & HH3
Cymbal:	CYM
Tom Toms:	T1, T2 & T3
Electronic Zap:	ZAP
Claves:	CLV
Cowbell:	COW

Each instrument has its own parameters to adjust tonal color, pitch and/or envelope characteristics. The controls for these parameters - sliders, buttons etc. - are accessed from the floating control panel that appears when you click on the **INSTRUMENTS** button. The 'Sound and Trigger' buttons are the large round ones located just above the instrument's name on the front panel. The first click of the button plays the sound and brings up the corresponding instrument page. Additional clicks trigger the sound only - useful for testing purposes. Each instrument also has its own orange LED to indicate when it is being triggered. Individual instrument parameters are described below in the section for that instrument.

Each instrument is assigned its own MIDI note number. To change an instrument's MIDI note number, open the Key Settings dialog by clicking on the 'Keys' button. The settings here are global to the Project - that is, they are not saved with Presets; they are saved when the Project is saved.

Further details are found in the 'Key Settings' section.

The drawer under the EDS16i opens to reveal the mixer section. Here you will find volume and pan controls for each instrument.



The pan and volume controls affect the mix at the stereo outputs. In addition to the stereo outputs, each instrument has its own dedicated output. The pan and volume controls have no effect at these outputs, however. Likewise, the round, green Mute buttons have an effect only over the stereo outputs.

Instruments

Bass Drum

Although BD1 and BD2 offer identical sound parameters, their tone qualities are quite different. BD1 has a softer attack than BD2, and is suitable for deep bass parts, as in the Hip-Hop style. BD2 has a much sharper attack, and is ideal for any Techno style tracks.

Tune: Adjusts the basic tone, or pitch, of the bass drum.

Decay: Determines the length from the start to the end of the sound. This should be different for BD1 and BD2.

PMod: Sets the intensity of the pitch modulation.

PDec: Pitch Decay - how quickly the pitch modulation fades. By adjusting the PMod and PDec parameters the character of the sound can range from 'boomy' to 'scratchy'.

Snap: This adds a 'click' to the attack, therefore defining the sound a little more.

Drive: Adds or reduces the amount of distortion in the sound. The central position is 'neutral'. Move it to the right to increase the distortion, and to the left to reduce it.

IMPORTANT NOTE: As the Drive parameter increases, so too does the resulting volume. Always reduce the volume level in the mix before increasing the Drive value. If you don't, you could damage your speakers, or worse - your hearing (especially if you are wearing headphones.)



Snare Drum

The sounds of the two snares, SD1 and SD2, are composed of the same two basic components, even though they sound quite different from one another. Basically each drum has a sine (pitch) component and a noise component which you can adjust separately. The Shape parameter controls the envelope of the noise component. With SD1 it controls both the attack and the decay, and with SD2 the decay only. Also, the overall amplitude envelopes are different in SD2 from those in SD1.

Tune: Sets the basic tone, or pitch, of the instrument.

Decay: Adjusts the duration of the sound, from beginning to end. The values should be different for SD1 and SD2.

NoiseC: Adjusts the degree of random noise to be introduced to the basic sound. NoiseC simulates the effect of the snare wires.

Shape: The Shape parameter affects both the attack and the decay of SD1. This parameter affects only the decay in SD2.

Sine: Adjusts the degree of the sine component of the sound (the part with identifiable pitch). Instruments like brushes on a snare, or shakers can be simulated by reducing the sine component.

NoiseL: This parameter sets the overall level of the noise component.

NOTE: When you adjust the Sine and/or Noise parameters beyond the central, or neutral position, additional distortion or volume may result. See the important note above.



Rimshot

Although this instrument has few parameters to adjust, they are more than usually found in a 'real' analog drum machine!

Tune: Adjusts the tone, or pitch, of the sound.

Decay: The overall length of the sound. The duration of a rimshot is far less than with a bass or snare drum. This is normal.

Color: This controls the overall brightness, or color of the sound.



Handclaps

Handclaps have only three parameters to adjust:

Times: Controls the length of the sound. 'Times' is a little different than a Decay parameter, in that it determines the timewise expansion of the sound, rather than its fade-out duration.

Color: The tone, or brightness of the sound.

Noise: With handclaps, the Noise parameter simulates the effect of a larger or smaller number of people clapping. A high value sounds like group applause, while a low value sounds like two hands clapping (we haven't gotten to 'one hand clapping' yet).



Hihats/Cymbal

The Hihats (HH1/HH2/HH3) and the ride cymbal are synthetically produced from the same basic algorithm. Use the HH/ CY Tone text fader on the front panel of the EDS16i to control the basic tone quality.

The following parameters offer independent control of individual instrument sounds:

Decay: Controls the length of time it takes after the cymbal or hihats are triggered for the sound to fade to silence.

Color: Adjusts the color, or tone quality.

Mute: Determines how an individual hihat behaves with respect to the other hihats. To have the three hihats behave as a single instrument, leave Mute on (the default). The sound of a hihat will be interrupted when a new hihat is triggered. To use hihat sounds as independent instruments, turn Mute off. A hihat will continue to sound even when another is triggered.

Res: This parameter adds resonance to the cymbal filter.



Rev: This button engages the Reverse effect for the cymbal. Although the cymbal sounds as if it is playing in reverse, the effect is achieved by exchanging the Attack and Decay curves. Note that in this mode, the Decay parameter will control the Attack portion of the sound.

By varying the Decay and Color parameters of the hihats you can simulate the different hihat states - open, closed, and half open.

Tom Toms

The three tom toms, T1/T2/T3, are identically implemented in the EDS16i. In addition to the adjustable parameters found on a typical analog drum synth (Tune, Decay, PMod, PDec and Drive) two parameters to control Frequency Modulation (Mfreq and Mod) are also provided. Although Frequency Modulation (FM) programming is often considered to be complicated, this is not the case here. By experimenting with these two parameters you will find it is very easy to achieve useful FM percussion effects in the EDS16i.

Tune: Sets the basic tone or pitch of the drum. Tuning can be adjusted to create Hi, Mid and Low toms, or even other membrane-type percussion instruments such as conga or bongo.

Decay: Adjusts the overall duration of the sound after it has been triggered.

PMod: Controls the degree of pitch modulation.

PDec: Controls the pitch modulation decay rate.



MFreq: Frequency Modulation lets you enhance your drum sounds beyond what is normally possible in an analog drum synth. The Mfreq parameter adjusts the frequency of the modulation signal. (Note that to hear the effect you must also adjust the Mod parameter). The resulting tonal characteristics depend on the relationship of the Mfreq parameter to the Tune setting, so both must be adjusted when going after a particular FM sound.

Mod: Controls the intensity of the modulation and therefore the depth of the FM effect. Move the controller all the way to the left if you do not want FM modulation.

Drive: Adds or reduces the amount of distortion in the sound. The central position is 'neutral'. Move it to the right to increase the distortion, and to the left to reduce it. **Please note the warning regarding the use of the Drive parameter under the 'Bass Drum' section, above.**

Tips: 1) You can adjust the tom toms to provide additional bass drums; 2) Adding a small amount of FM to a good analog tom tom can add little extra life and realism to the sound.

Zap

Zap uses noise, a filter, and an envelope to create electronic 'snaps'. You can also use it to produce simulated bass drums, shakers and maracas.

Attack: Attack controls the transient behaviour of the sound. With longer attacks the sound is slower to reach maximum volume. The Decay part of the envelope is engaged only after the Attack portion has completed (when maximum volume has been reached.)

Decay: Controls the overall duration of the sound.

Color: Alters the overall tonal color. Use the resonance parameter (Res, below) to determine the basic tone quality (e.g. to adjust the sound to a bass drum 'pitch').

Res: This parameter adds resonance to the noise filter permitting the sound to be adjusted ranging from 'filter snaps' to simulated bass drums!

Env: Env determines the strength of the filter frequency curve.



Claves

The Clv is adjustable through four parameters:

Tune: Sets the basic pitch of the instrument.

Decay: Sets the overall duration of the sound. With claves, the duration is much shorter than with the bass drum or snare, for example. This is normal, and is the nature of the instrument

Color: Adjusts the brightness of the clave sound.

Snap: This adds a 'click' to the attack, therefore defining it a little more.



Cowbell

COW uses only two parameters:

Tune: Adjusts the pitch of the instrument.

Decay: Sets the overall duration of the sound. With the cowbell, the duration is much shorter than with the bass drum or snare, for example. This is normal, and is the nature of the instrument.



Key Settings

In this window, MIDI note numbers can be assigned to individual sounds. Click on the number, enter a new value in the range 0 - 127, and confirm by hitting <Enter>.

Tip: Two or more instruments can share the same MIDI note number. In this way you can build a complex percussion sound from multiple instruments while economizing on MIDI events!

Active

You can disable an instrument altogether in order to save DSP resources. For example, if you know you will not be using a bass drum and snare you should disable them (uncheck the Active checkbox) to free up some DSP.



Presets

Adjustments made to the settings in the Key settings dialog are not saved with the presets. Key settings are saved globally with the Project. Therefore, if a song uses a particular Drum Map, the assignments will be saved when the song's Project is saved. Calling different presets during the arrangement will not alter the MIDI mapping.



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