Slayer Virtual
E-Guitar Manual

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About Slayer

Slayer is an electric-guitar-simulation plug-in for Steinberg's VST platform. It uses a hybrid synthesis similar to physical modelling. Especially guitar sounds are very hard to simulate because of the sonic complexity of the signal. We tried to tweak out the most important parameters, which are relevant for guitar and keep the synthesizer as simple as possible. Slayer comes together with an amp simulation and an effect rack. You get complete electric guitar equipment in a single plug-in!

A few highlights:

- ✓ Advanced physical modelling
- ✓ Simulates electric guitar, e-bass and clean guitar
- ✓ 4 different AMP and 4 different cabinet simulations
- ✓ Real string feedback
- ✓ 7 different pluck model simulations
- ✓ 15 high quality guitar effects before or behind AMP
- ✓ Automated playing-aids with shuffle and strumming
- ✓ 100% alias-free

About Slayer Demo Version

If you are using the demo version of Slayer please note the following limitations of the demo version:

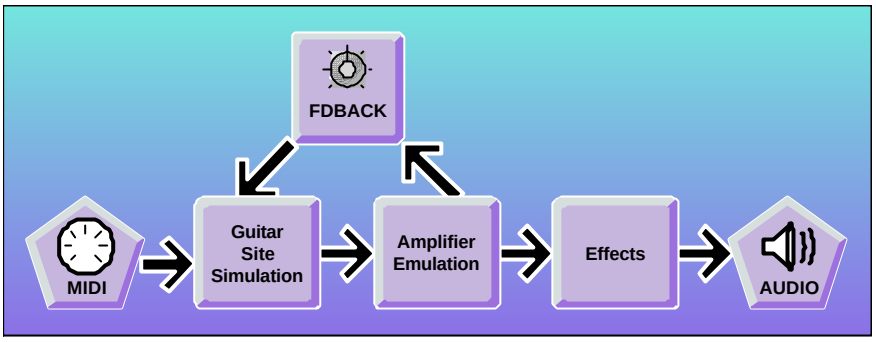
- **Demo version works only 10 minutes! After this you'll have to restart your VST host to be able to use Slayer again.**
- **Demo version also plays a reminder sample ever 2 minutes.**

The full version of Slayer can be ordered at:

http://www.reFX.net/

Signal Generation

Slayer is a hybrid synthesizer that works similar to physical modelling. Slayer tries to shape the sound in a way like it happens in reality. All this means that you'll get a more lifelike electric guitar sound.



Guitar String Simulation

Just think about what happens if you pluck the string of your electric guitar. You move your finger (or whatever) to the string and make it vibrate. Depending on how you make the string vibrate (how you pluck it) the resulting sound is different. Harder plucks will result in a harder sound. A specific characteristic for electric guitars is that the pluck sound that made the string vibrate is kept over time. This means that the plucking style is the key to achieving the different guitar type characteristics.

The guitar simulation part is controlled by the following parameters:

Playing-aids parameters

- Mode: AutoChords / PwrChords / Strumming / SoloFixed / SoloDynamic
- Speed
- Glissando: On / Off
- Hold: On / Off

Guitar parameters

- String Type: Noise / 6string1 / 6string2 / 6string3 / Slap / EBass / Fretless
- Coil Type: None / Single / Double
- Pickup Location
- Tone
- Slap
- Fret
- Harmonic
- Filter-Velocity Control
- Damp
- Damp-Velocity Control

Amplifier Simulation

When the sound has passed the output jack of your guitar it goes into the amplifier. The amplifier shapes the signal. This means it attenuates or de-attenuates sonic information, passes it through a non-linear shaper (the overdrive), reaches the EQ and a speaker-simulation. The typical distorted guitar sound you know from the rock or heavy metal CDs is know as “inter-modulation distortion”. The mathematical theory behind this is very complex. Basically you can say: Distortion on strictly harmonical content sounds static. Distortion on disharmonical content sounds awesome. Distortion on slightly disharmonical content sounds fat. There is a special algorithm integrated into Slayer that creates a slight detune on chords. It always finds the optimal detune setting no matter what you play. So don’t care about string tuning - you always hear something modulate.

When speakers a placed near the guitar and the gain is high it can happen that the swinging air molecules start to move the strings of the guitar. This is simply called feedback – that high-pitched screech. Slayer is the first and only VST-instrument, which simulates feedback in the correct way. Feedback in Slayer is, like in reality, always harmonic. The tune depends on which string you pluck and which you don’t pluck.

Amp Simulation Parameters

- Amp Type: Dry / Tube / EQ / Bandpass
- Cabinet Type: Dry / British / Combo / StaX
- Drive
- Presence
- Feedback
- Low Frequency EQ
- Mid Frequency EQ
- High Frequency EQ

Effects

The effect section is designed to give you fast access to preset-ready effects with low CPU cost. There are lots of different effect types on offer covering the most common effects used on guitar sounds.

Effect Unit Parameters

- Effect Type: Dry / AMP:Phaser / AMP:Tremolo / AMP:WahWah / AMP:WahWah LFO / AMP:Ringmod / AMP:FuzzBox / AMP:Harmonizer / AMP:Talkbox / MST:Chorus / MST:Flanger / MST:Phaser / MST:Leslie / MST:Tremolo / MST:DubDelay / MST:Multitap
- Effect Dependant Parameter 1
- Effect Dependant Parameter 2

User Interface

As you can see, the user interface layout is quite close to the functional diagram in chapter “Signal Generation”. MIDI events “arrive from the top” and audio is “generated beneath the bottom” of the GUI.

Playing Aid Controls

Because it is rather difficult to play keyboard in the same way as a guitar is played we've included several playing-aids to help you achieve the guitar like playing style.

Mode
Controls which playing aid style is used.

None	Slayer handles notes like you are used to with any other synthesizer.
Autochords	Slayer creates guitar style chords automatically. The chord harmonic depends on the last played note. You can control the strum speed with the Speed knob.
Powerchords	Slayer creates power chords automatically. The pitch depends on the last played note. The keyboard is split into two sections. The upper keyboard range is reserved for C1-G1-C2 style chords; the lower range is for C1-F1-C2 style chords. You can control the strum speed with the Speed knob.
Strumming	This mode is designed for individual guitar chords on live playing. Every key you hit on the keyboard is also played as a single note. Chords are automatically strummed. You can control the strum speed with the Speed knob. The first note is played immediately, but all notes that follow are delayed according to the strumming speed.
SoloFixed	Switches Slayer to monophonic glide mode - only one voice is played. Hit a key, hold it down and press a second one - you will hear Slayer slide to the next note smoothly. When you release the second one again, Slayer slides back to the starting key. In solo fixed mode the glide speed is always constant, no matter which notes you press. You can control the glide speed with the Speed knob and the speed is automatically synced with the Beats-Per-Minute (BPM) rate of your VST host.
SoloDynamic	Switches Slayer to monophonic glide mode - only one voice is played. Hit a key, hold it down and press a second one - you will hear Slayer slide to the next note smoothly. When you release the second one again, Slayer slides back to the starting key. In solo dynamic mode the glide speed depends on the difference between the note values. A glide from C3 to E6 will take longer than a glide from D6 to E6. You can control the glide speed with the Speed knob and the speed is automatically synced with the Beats-Per-Minute (BPM) rate of your VST host.

Speed
Affects the strumming or gliding speeds used in some of the Playing Aid modes.

Hold
If the hold button is on, notes are not muted after releasing a key (like when you use a sustain-pedal). If hold button is off, notes are muted immediately after releasing the key. If you want to use the sustain-pedal instead of the hold button, simply switch the hold button to “off” and now you can use the sustain-pedal to keep the strings vibrating.

Glissando
Selects the glissando control source. Glissando is a playing technique where you pluck a string and then move your left hand over the fret board without letting go of the string. This generates a kind of stepped glide sound.

PB	Pitch-bender controls the glissando and mod-wheel can be used to do soft-glides.
MW	Mod-wheel controls the glissando and pitch-bender can be used to do soft-glides.

String Simulation Controls

String
Chooses what type of advanced string simulation is used.

Noise	The classic Karplus Strong algorithm.
6String1 -6String3	These are used to simulate electric guitar string sounds.
Slap	Used to simulate the string sounds of a slap bass.
EBass	Used to simulate the string sounds of a hard played E-bass.
Fretless	Used to simulate the string sounds of a fretless bass.

Coils
Chooses what type of coil simulation is used.

None	No pickup simulation is used. The sound is taken “as is” directly from the string simulation.
Single	Simulates the sound of a single coil pickup. You can additionally control how the pickup simulation sounds by moving the pickup (with mouse) to different positions.
Double	Simulates the sound of a double coil pickup. You can additionally control how the pickup simulation sounds by moving the pickup (with mouse) to different positions.

Tone
This control sets the pitch of the formant filters which changes the overall tone of the instrument.

Slap
Controls the “slap level” of the signal. The higher the note velocity is the more “slap“ will occur. If Slap knob is set to “0“ slapping will not happen no matter how high the velocity of the incoming notes is.

Fret
Controls how much fret noise is mixed together with the guitar sound. You can use high settings for more aggressive pluck sounds in basses.

Harmonic
Used to simulate the different pickup types used in electric guitars. High settings are for bright sounding pickups, low settings for darker sounding pickups.

Vel
Tells Slayer how velocity sensitive the preset is. Use high settings for very dynamic sounds like slap basses. Use low settings for non-velocity sensitive sounds like power chords.

Dampening
Controls the decay time of the sound. Muted guitars use a high dampening amount.

Velocity Control of Dampening
Defines how the damping reacts to velocity. High settings allow you to control the dampening amount with the velocity.

AMP Controls

AMP
Chooses the type of amplifier that is simulated.

Dry	Signal is passed through EQ. No feedback, no presence. Drive knob is used for gain of the signal. Use this setting for Unplugged sounds.
Tube	Simulation of a three-stage valve amplifier with soft saturation. Signal is passed through presence, distortion, EQ, Speaker simulation.
EQ	This is a special amplifier. Signal is passed through EQ before it goes through 3-stage distortion. Especially on critical effects like the Talkbox this amplifier setting can be the best choice.
Bandpass	This is a special AMP. Signal is passed through band passes and soft saturators in 3-stages. Presence controls band pass cut-off. Finally it goes through EQ. Try boosting low and high band of EQ for fatter sounds!

Cabinet
Chooses the cabinet type of cabinet that is simulated.

Dry	This is the sound you would get if you connected a HIFI system to your guitar. It is absolutely linear. Use this setting for unplugged sounds.
British	A simulation of a British Cabinet. Use this for aggressive sounds.
Combo	A combo box simulation. Use this for softer sounds.
StaX	Very aggressive Cabinet with a big boost on high frequencies. Use it for heavy metal style sounds.

Drive
Controls the level of distortion.

Presence
A simple high–shelf filter that adds or removes brightness to the sound.

Feedback
Amount of feedback that is returned from the output of AMP simulation back to the site simulation.

Low
Controls the bass level below 200 Hz.

Mid
Controls the mid level around 1000 Hz.

High
Controls high frequencies above 2.5 KHz.

Effect Controls

Effect Mode
Chooses the effect that is used. Note that

AMP	Is a pedal effect that is applied before the amplifier.
MST	Is a master effect that is applied after the amplifier.
Dry	No effect is applied.
AMP: Phaser	Signal is passed through an all-pass filter and mixed with dry signal. The first parameter controls the LFO speed for modulation. The second one is feedback level.
AMP: Tremolo	A tremolo that is connected before the AMP. It automatically re-triggers on new notes and syncs with host BPM rate. First parameter controls LFO speed. Second one controls modulation depth.
AMP: WahWah	A low-pass filter with resonance and envelope follower. The first parameter controls the attack speed, the second the modulation depth.
AMP: WahWah LFO	A WahWah with LFO. The first parameter controls the LFO speed, the second the modulation depth. The LFO automatically syncs with the last played note.
AMP: Ringmod	Ring-modulation that automatically tunes harmonic with the last played note! Parameter 1 controls the harmonic for the modulator.
AMP: Fuzz Box	Signal-shaper for adding some grunge to the signal. Use this effect VERY carefully since it adds a high amount of harmonics to the signal, which can destroy your equipment! Parameter 1 controls Fuzz Box drive. The second parameter adds some digital crap.
AMP: Harmonizer	This effect adds harmonics one octave below and one octave above the current played note. Parameter 1 controls the mix level for the upper harmonics, parameter 2 the mix level for the lower harmonics. This effect only works well on single notes. The frequency tracker will jam up on chords.
AMP: Talkbox	Simulates human-voice formants. Parameter 1 selects the LFO modulation speed; parameter 2 selects the formant pitch. We suggest switching pickup simulation to “none“ because the achieved results are often better.
MST: Chorus	Smooth stereo chorus. The first parameter controls LFO modulation speed, the second parameter modulation depth.
MST: Flanger	Flanger with feedback. The first parameter controls LFO modulation speed, the second parameter modulation depth.

MST: Phaser	Stereo phaser. The first parameter controls the LFO speed for modulation, the second parameter controls feedback level.
MST: Leslie	Leslie effect known from the Hammond Organs. Originally it was built with a speaker rotating around a microphone. The first parameter controls rotation speed, the second one controls modulation depth.
MST: Tremolo	First parameter controls LFO speed. Second one controls modulation depth. It automatically re-triggers on new notes and syncs with host BPM rate – this makes it a lot easier to play!
MST: DubDelay	A simple left-right delay for adding some spatial to the sound. Parameter 1 controls delay time.
MST: Multitap	A stereo-tap-delay with filter. The first parameter controls delay time, the second one controls feedback. It automatically syncs with host BPM rate.

Contact and Support

We have tried to keep **Slayer** as bug-free as possible, but you never can be 100% certain things work as they should in the world of software. So if you should encounter any problems or if you have suggestions for future revisions, don't hesitate to contact our technical support at:

support@refx.net

Or come and visit us at:

http://www.reFX.net/

Thank you.

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