SubGen User Guide

Introduction

SSL SubGen is a high-quality sub-bass harmonic synthesizer that supports up to 4 independently configurable bands, generating frequencies an octave lower than the source signal - perfect for adding power and thump to snares, kicks and bass. Whether you're looking to rebuild bass frequencies in thin-sounding or poorly recorded kick and bass guitar tracks or generate LFE content for a film mix or sound design project, SubGen provides an intuitive interface to quickly generate rumble and sub-bass.

Aside from sounding super musical – with a sub-bass generation algorithm that blends naturally with your source instrument – SubGen provides an incredibly easy-to-use interactive interface for controlling the gain, width and frequency for each band as well as workflow enhancements such as per-band solo-ing options, mix lock, and built-in contextual help.

Use the 3 tailored saturation modes ("pre", "kick" and "bass") alongside the gain-compensated drive control to easily dial in harmonic character for different sources. Control your sub-bass dynamics using the compressor module. The intuitive all-in-one mix allows you to blend any combination of your wet and dry signals from a single parameter, as well as dial in parallel compression and punch.

Need to tame your sub-bass? Dial in the gentle low- and high-pass filters to control the generated bass or cut unwanted high frequencies and tidy up your mix.

Key Features

- Global filter control with gentle low-pass and high-pass filters

- Interactive graph for configuring band gain, center frequency and width

- Per-band soloing options for auditioning the generated sub-bass

- Dial in harmonics it in with a single, gain-compensated drive control

- Choose from three types of tailored saturation characters ("pre", "bass" and "kick")

  - Bass - 70s transistor-style drive and grit with strong harmonics, mild overtones, med-high wet/dry blend with aggressive overtones for adding bite to bass

  - Kick - 60/70s transistor-style drive with lighter harmonics and subtle overtones for adding distortion to kicks

  - Pre - 50s valve-style overdrive, with smooth and subtle overtones, emulating a valve pre-amp and ideal for sources other than bass and kick

- Quicky A/B the effect of drive and compression using each section's bypass controls

- Use the intuitive all-in-one mix control to blend any combination of wet/dry signal from a single control

- Lock your desired mix setting when switching between presets

- Built-on the SSL Plug-in Engine
  - Built-in help – simply click the '?' and mouseover the GUI to find out more
  - Cross-platform preset management

  - A/B for quickly switching between presets

  - Optimised for low CPU-usage and fast workflow
  - Undo/redo

Supported Platforms and Hosts

For compatibility information about plug-ins, visit the Plug-in Operating System and DAW Compatibility FAQ.

When we release an SSL plug-in, we test it on all Windows and macOS operating systems that aren't End-of-Life (EOL) at the time of release.

The versions listed below are the latest on which we have officially tested the the product.

It is possible for our products to work on platforms outside of this list. However, if your host, host version or operating system is not listed here, we recommend you demo the product before purchase to confirm that it works correctly.

macOS silicon (M1/ARM) Support

This plug-in is provided as a universal binary for macOS and features native support for Apple silicon.

Operating Systems

macOS	Big Sur, Monterey, Ventura
Windows	Windows 10, Windows 11, 12th Gen Intel

Hosts/DAWs

- FL Studio

- Ableton Live

- Logic Pro

- Reaper

- Pro Tools

- Cubase & Nuendo

- Studio One

Demo/Trial

To demo this plug-in, you can simply download it from the product page and run it up in your host - the software will guide you through the rest of the process.

1. Download and install the plug-in.
2. Open your DAW/host.
3. Insert the plug-in to commence activation (sometimes this will happen when the plug-in is scanned on startup, depending on your DAW/host).
4. When you see 'Activation is required', click 'Try'.
5. Log into your iLok account and click 'Next'.
6. Select a location to activate the license to, and click 'Next'.

Installation and Download

You can download installers for a plug-in from the website's Download page, or by visiting a plug-in product page via the Web Store.

All SSL plug-ins are supplied in VST, VST3, AU (macOS only) and AAX (Pro Tools) formats.

The installers provided (macOS Intel .dmg and Windows .exe) copy the plug-in binaries to the common VST, VST3, AU and AAX directories. After this, the host DAW should recognise the plug-in automatically in most cases.

Simply run the installer and you should be good to go. You can find more information about how to authorise your plug-ins below.

Licensing

Visit iLok, Licensing and Activation for guidance in activating your SSL plug-in.

Bypass and I/O

BYPASS ( )

Bypasses all plug-in processing.

INPUT GAIN

Applies a gain to the input signal.

OUTPUT GAIN

Applies a gain to the output signal.

Input and Output Meters

The input and output meters displays the instantaneous level (in dBFS) of the input to and output from the plug-in.

The meter has a peak-hold segment.

If your signal is clipping at the input, a red segment will light up above the meter. You can click this indicator to clear clipping.

MIX

Sets the blend between the wet and dry signals.

At -100% (fully anti-clockwise) then the output will only include the dry, unprocessed signal.

At 0 (central) then the output will include equal amounts of the dry, unprocessed signal, and the generated sub-bass.

At 100% (fully clockwise) then the output will only include the generated sub-bass.

MIX LOCK ( )

When MIX LOCK is enabled, the MIX control value will be frozen when switching between presets.
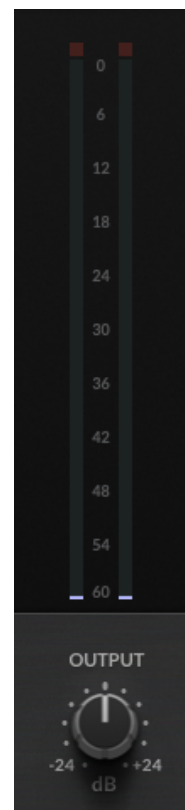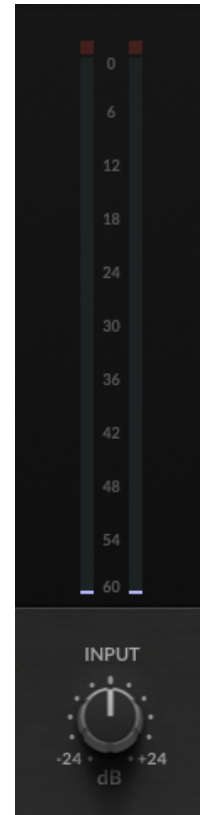
Filters

The plug-in provides additional, global filters on the output that are applied at the output.

FILTERS GRAPH and FFT

This graph displays the output signal before and after being filtered. Drag the filter flags to set the cutoff frequencies. Toggle the filters in or out with the button at the bottom of each flag.

The signal in the background shows the input to the filters. The signal in the foreground shows the output. This allows you to visualise what is being removed.

LOW FILTER CUT-OFF

The LOW FILTER CUT-OFF sets the cut-off frequency for the high-pass filter, which removes low frequency content. You can use this parameters to control or naturally dial back your sub-bass after you've generated it.

HIGH FILTER CUT-OFF

The HIGH FILTER CUT-OFF sets the cut-off frequency for the low-pass filter, which removes high frequency content. This is useful when using SubGen on bass tracks, since you can quickly dial out high-frequency content and clean up your mix without reaching for a separate EQ.

Sub-harmonic Generators

SubGen comes with 4 sub-harmonic generators, each with a configurable frequency, bandwidth and amount. Each band defines the frequency range in which to generate sub-harmonics, and the level of sub-harmonics to introduce.

For example: to generate frequency content between 20 and 40 Hz, you should create and enable a band in this range.

How does the algorithm work?

Simply set a band to cover the frequency range where you would like to generate sub-bass frequencies.

Bass frequencies are then generated in this band by inspecting the frequency content of the signal an octave above. This content is then filtered to isolate the fundamental frequency, and use this to generate a new signal at half the frequency.

The resulting sub-bass generated by our algorithm is a sine-shape, but inspired by the original signal - making for an effect that blends naturally with the original.

Per-band parameters

Each band has multiple configurable parameters. The BAND GAIN, FREQUENCY and WIDTH are controllable both from the graph above, and the controls below.

BAND IN ( )

Toggles the sub-bass generator band in or out.

BAND AMOUNT

The gain of the signal generated by the sub-bass generator band.

BAND FREQUENCY

The center frequency at which to generate sub-bass content.

BAND BANDWIDTH

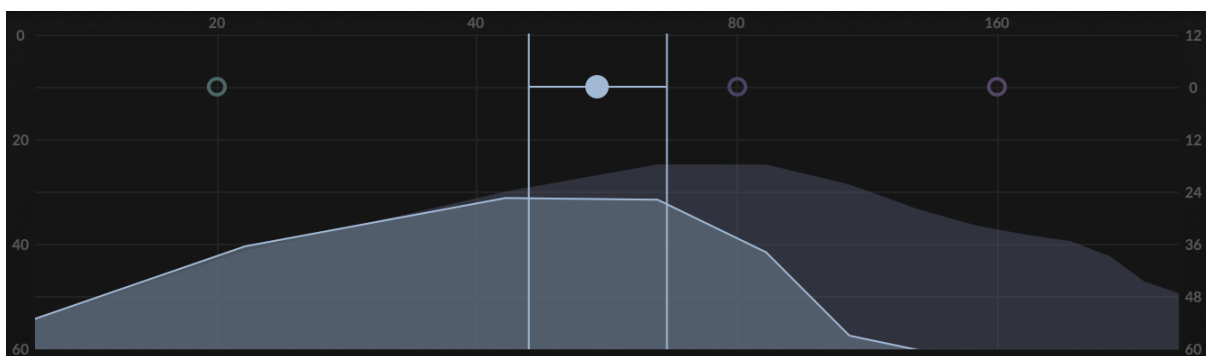The width (in octaves) of the band in which to generate sub-bass content.

BAND LISTEN (🎧)

Solos the generated sub-bass signal for this band.

Graph

The graph displays the generated sub-bass signal for all of the bands. Each band is colour-coded.

The left axis shows level (dBFS), the right axis shows gain (dB) and the top axis shows frequency (Hz).

Band nodes

The node (○ or ●) indicated the center frequency and gain of the band.

When you mouse over a band or any of its corresponding controls, it will become focused. This is indicated by the node becoming filled (●) and the corresponding band name will become highlighted below.

Interacting with the graph

To change the band's gain and frequency, grab a node and drag it around.

To change the band's gain only, drag the horizontal line up/down.

To change the band's center frequency only, drag any area between the two vertical lines.

To change the band's witch, drag the either of the vertical lines.

FFT

The signal in the foreground (with the faint outline) shows the FFT of the generated sub-bass frequencies in that band. The signal in the background shows the FFT of the original signal.

The example above shows band 2 generating sub-bass frequencies around 40 Hz, where the original signal only contains frequencies above and around 100 Hz.

Shaping (Drive and Compress)
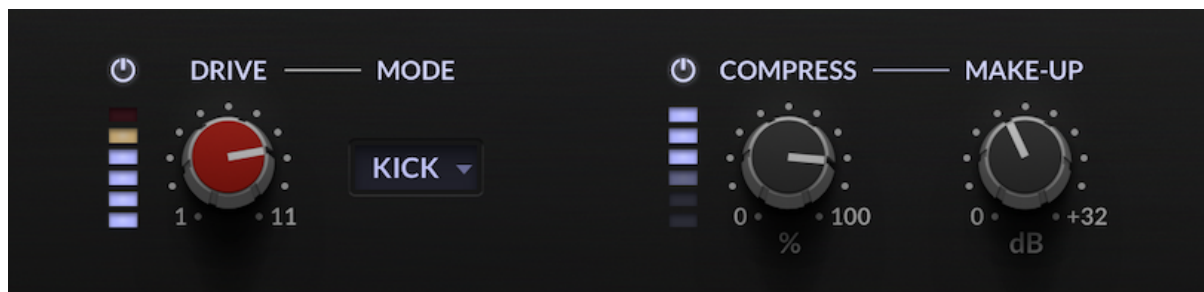
The bottom section of the GUI features several simplified controls for shaping the final output, pre-mix.

DRIVE ON

Bypasses the drive stage in/out.

DRIVE AMOUNT

Adds harmonics to the generated signal, to add 'glue'.

DRIVE MODE

The drive stage features 3 tailored saturation characters:

- 'Bass' - 70s transistor-style (mostly 3nd order) drive and grit with strong harmonic depth, mild overtones, med-high wet/dry blend with aggressive overtones for adding bite to bass
- 'Kick' - 60/70s transistor-style drive (blend of 2nd and 3rd order) with lighter harmonics and subtle overtones for adding distortion to kicks

- 'Pre' - 50s valve-style overdrive, with smooth and subtle overtones, emulating a valve pre-amp (mostly 2nd order) and ideal for sources other than bass and kick

COMPRESS ON

Toggles the compressor in or out.

GAIN REDUCTION METER

Displays the current amount of gain reduction being applied to the signal.

COMPRESS AMOUNT

Applies compression to the generated sub-bass signal. For example, you can use this to let transients through by compress or level-out the generated harmonic content.

The COMPRESS AMOUNT is a compound control that sets both the threshold and ratio: as you dial in the amount, the threshold reduces from 0 to to a maximum of -40 dBFS, and the ratio increases from 1 to 8.

The compressor has a relatively short fixed attack of 5 ms and release of 20 ms (for tightening the signal with the attack, while retaining excitement and aggression on the release).

The knee of the compressor is fixed at 6 dB for a transparent transition between pass-through and compression.

MAKE-UP GAIN

Applies a make-up gain post-compression.

Presets

All of our plug-ins ship with carefully designed presets to aid your workflow.

Factory presets are included in the plug-in installation, installed in the following locations:

macOS: /Library/Application Support/Solid State Logic/PlugIns/Presets/[Plug-in Name]

Windows: C:\ProgramData\Solid State Logic\PlugIns\Presets\[Plug-in Name]

| UNDO | REDO | | A | B | ◁ | Default Preset | ▶ |

Switching between presets can be achieved by clicking the left/right arrows in the preset management section of the plug-in GUI, and by clicking on the preset name which will open the preset management display.

The Preset Management menu reflects the folder structure of the preset folder.

Revert Changes and Delete

- **Revert Changes** discards any changes to the current preset.
- **Delete** removes the current preset from the filesystem. Factory and Producer presets cannot be deleted from the plug-in GUI, although they can be manually deleted using the filesystem (Windows Explorer or Finder).

A/B and Copy

- **A/B** allows you to toggle quickly between two presets. This is useful for comparing between two parameter settings.
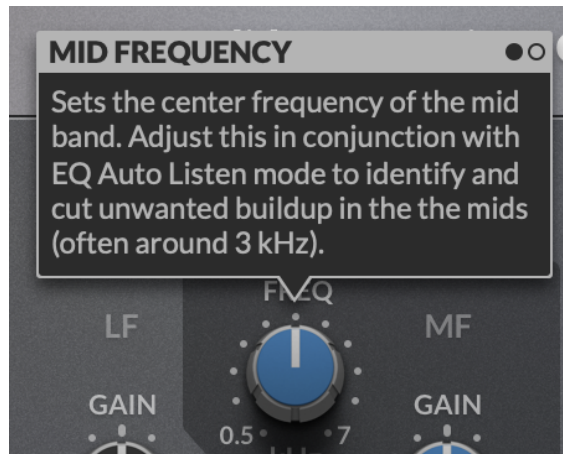- **COPY X TO Y** is used to copy presets between A/B.

UNDO/REDO

SSL plug-ins come with a built-in UNDO/REDO stack, in case your DAW doesn't handle this.

- **UNDO** undoes the current action in the history stack.
- **REDO** re-does the next action in the history stack.

Built-in Help

This plug-in features built-in contextual help. To turn this feature on, click the '?' in the bottom right-hand corner. Mouse over elements of the GUI to see some information about the feature.

Click the tooltip to cycle through the pages.