

# SPL Analog Code® Plug-in Manual



## EQ Rangers

# Manual

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## **EQ Rangers**

### **Analog Code® Plug-ins**

Model Number 2890

Manual Version 2.0 – 12 /2011

This user's guide contains a description of the product. It in no way represents a guarantee of particular characteristics or results of use. The information in this document has been carefully compiled and verified and, unless otherwise stated or agreed upon, correctly describes the product at the time of packaging with this document.

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# Installation

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## Plugin Alliance Activation

Your Analog Code plug-in must be activated in your Plugin Alliance account. You can set it up and log into your account anytime at <http://www.plugin-alliance.com>

For details about the activation process, read the Plugin Alliance Activation Manual. The PDF file is stored in the same folder of your computer like this product manual file.

Alternatively, the following web page provides the same information: <http://www.plugin-alliance.com/activation>

## System Requirements and Compatibility

For details about system requirements and supported platforms or formats visit <http://www.plugin-alliance.com/compatibility>

## MAC and Windows Installation

1. Check for the latest plug-in software version before installation:  
<http://software.spl.info/download>
2. Execute the installer file and follow the instructions.



## The Analog Code®

For more than two decades, SPL of Germany is well-known as manufacturer of handmade analog hardware processors. Innovations like the Vitalizer™ and Transient Designer™ are accompanied by a complete analog range from frontend to backend and culminate in the Mastering Series with exemplary specs thanks to SPL's proprietary 120 V rails technology.

While SPL's hardware has been fascinating audio professionals from home studio owners to mastering engineers in the world's most famous facilities, there has been a continuing and ever growing demand for digital (DAW) users to be able to enjoy this technology.

Our software design team has managed to transfer the class and excellence of our analog processors into the digital domain. Latest methods for high-precision modeling of our analog circuit designs now give us results beyond a pure mathematical approach. The digital products are so amazingly close to their analog equivalents that we call them the Analog Code plug-ins.

## EQ Rangers

The EQ Rangers plug-in is modeled from the SPL RackPack Ranger EQ modules. These EQ modules are specialized to specific frequency ranges and combine the unique sound results of passive filters with a graphic EQ interface.

The concept of the SPL EQ Rangers plug-ins is characterized by two decisive features that separate them from traditional designs:

First there is the basic idea of specialized modules for typical instrument or vocal ranges. In contrast to static graphical EQs with always the same center frequencies in repeating octave distances, the Ranger EQ modules are much better suited to work with specific instruments and their peculiarities—and only different frequency ranges do allow to effectively separate instruments in a mix. →

# Introduction

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The second main aspect follows the idea of a modular design and affects both the filter technology and the user interface. Why did we chose a graphic EQ design? For a fully parametric EQ with all necessary controls there would have been space for one frequency band on the module front. However, our graphic EQs offer eight bands—and therefore a flexible and direct access to a large scale of frequency controls without the need for additional bandwidth controls etc. which would make access less direct again.

Each SPL plug-in provides the A, B, C, D settings feature to save four different sets of adjustments. Much faster than the usual saving and recalling of presets, the settings can be stored and recalled by just one click. The settings can also be included into the automation of an audio software to apply different sets of parameters to specific parts of a song.



## Mouse Wheel Control

All SPL Analog Code plug-ins support mouse wheel control for rotary controls and faders. Place the mouse cursor over a rotary control or fader and move the wheel or scroll ball of your mouse to adjust the control or fader. Hold the CTRL (Windows) or APPLE/COMMAND key while moving the wheel or scroll ball for fine adjustments with higher control resolution.

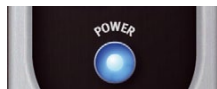
## On

With the ON button you can turn an EQ Ranger plug-in on or off. The ON button is illuminated when the plug-in is activated. You can also click on the Power-LED to activate or bypass the plug-in.



## Power LED

With a click on the POWER LED you can turn an EQ Ranger plug-in on or off. The POWER LED is illuminated when the plug-in is activated. You can also click the ON button to activate or bypass an EQ Ranger plug-in.



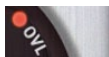
## Signal LED

The SIG. LED indicates that an audio signal reaches the input. In the analog world this LED helps the operator especially in complex setups to determine immediately whether the unit actually receives any signal. In the digital domain it simply tells you that the channel where you inserted the plug contains a signal that is loud enough to ensure correct processing.



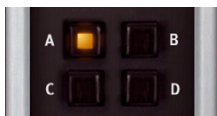
## Overload LED

The OVL LED indicates internal clipping. Whether the clipping is audible or not depends on the kind of audio material you are processing. Nevertheless it should be avoided that the OVL LED illuminates. Use the Output Gain control to reduce the output level if the OVL-LEDs keeps flashing.



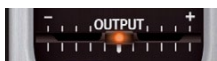
# Control Elements

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## Settings A, B, C, D

The settings feature allows to store four different sets of adjustments (A, B, C, D). Much faster than with the usual save and recall preset dialogs, the respective current setting is stored automatically when you switch to another setting—to recall previous settings by just one click. For example, leaving setting A (by calling another setting) stores the current parameter setting under A, calling B restores the last adjustment made under B. Settings A, B, C, D can also be included into the automation of host applications to apply different sets of parameters to different parts of a song.



## Output

With the OUTPUT fader control you can readjust levels that were changed by previous EQ settings. For example, if you have by and large applied cut values to the signal, the overall output level can be lifted again to meet the input level's value. The same of course applies vice versa: simply lower the output to compensate for boosts.



## Faders

Each EQ Ranger plug-in provides nine fader controls (also refer to “Mouse Wheel Control” on page 6). The upper eight faders control the eight frequency bands, the lowest fader controls the output stage. The bell filters have individually optimized bandwidths and boost/cut values. The frequency range around the center frequency can be boosted (fader into direction “+”) or can be cut (fader into direction “-”). On the following pages we give examples for setting the bands of each EQ ranger plug-in. This is of course not a complete list—we just want to give some orientation to start from.





### Bass Ranger: Fader Settings

**Band 1:** 2kHz Center Frequency

Boost: Improves attack; metal strings and slap becomes clearer

**Band 2:** 800 Hz Center Frequency

Boost: Accentuates the bass sound that can be localized, good alternative to more volume. Can intensify the material sound of an instrument (wood).

**Band 3:** 500 Hz Center Frequency

Boost: accentuates bass lines, in general clearer sounds  
Cut: makes room for vocals

**Band 4:** 230 Hz Center Frequency

Boost: more warmth

Cut: reduces pulpy sounds

**Band 5:** 170 Hz Center Frequency

Boost & Cut: this is the area where a bass has its main impact. Boost produces harder bass sounds with all deep instruments.

**Band 6:** 95 Hz Center Frequency

Cut: makes room for the tonal area of a kick drum

**Band 7:** 65 Hz Center Frequency

Boost: fuller sound, more body

Cut: reduces boomy sounds of all instruments. Implicit emphasizing of overtones improves assertion of bass lines, reduction usually in favour of a kick drum, especially makes room for the deep bass punch of a kick drum.

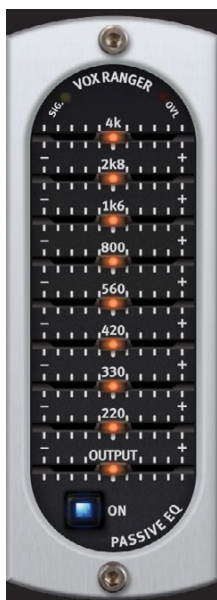
**Band 8:** 30 Hz Center Frequency

Boost: fuller sounds for all deep sounding instruments, Cut reduces boominess and improves assertion.



# Control Elements

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## Vox Ranger: Fader Settings

**Band 1:** 4kHz Center Frequency

Boost: improves intelligibility for (singing) vocals.

Cut: reduces risk of feedback (live).

**Band 2:** 2.8 Hz Center Frequency

Boost: gets vocals up front, intensifies presence, improved intelligibility for voices (speech).

Cut: masks wrong intonation, more air in backings.

**Band 3:** 1,6 kHz Center Frequency

**Band 4:** 800Hz Center Frequency

**Band 5:** 560Hz Center Frequency

**Band 6:** 420 Hz Center Frequency

The main vocal area from about 500 to 2000 Hertz is covered from these four bands. Particular fundamentals can be processed here. Band 3 reaches up into the presence area, Band 6 processes the foundation.

**Band 7:** 330 Hz Center Frequency

Boost: more warmth, full sound.

Cut can bring more clarity.

**Band 8:** 220 Hz Center Frequency

Boost: Emphasizes the “belly“ of singing voices.

Cut can reduce pulpy sounds/improves clarity.

## Full Ranger: Fader Settings

**Band 1:** 16 kHz Center Frequency

Boost: Glitter, brilliance, air.

**Band 2:** 10 kHz Center Frequency

Boost: Brightens up, intensifies presence.

Cut: can reduce sibilance.

**Band 3:** 4,7 kHz Center Frequency

Boost: Improves intelligibility of singing voices, more attack for ac. and e-guitars or deep toms.

**Band 4:** 1,8 kHz Center Frequency

Boost: more bass definition and presence

Cut reduces metal for brass

**Band 5:** 500 Hz Center Frequency

Boost: more profound vocals, clearer basses

Cut: softens snares and toms

**Band 6:** 150 Hz Center Frequency

Boost: more warmth for everything,

main impact of bass instruments; full snare sounds

Cut for vocals: avoids collisions with bass sounds

**Band 7:** 90 Hz Center Frequency

Boost: fills bass area of ac. guitars, fuller floor toms, saturated depth for piano.

Cut for kick drum: makes room for bass; generally reduces booming sounds.

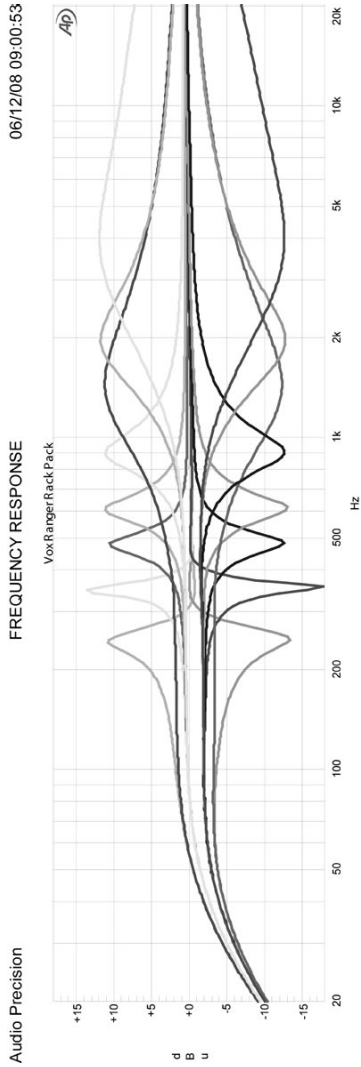
**Band 8:** 40 Hz Center Frequency

Boost: in general fuller sounds, deep bass punch (kick drum).

Cut: reduces booming sounds and sub harmonic interferences.



### Vox Ranger: filter curves

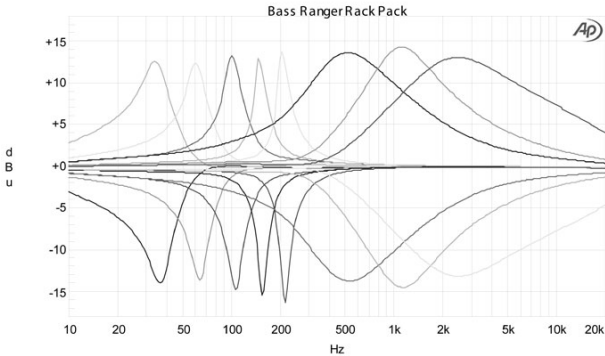


## Bass Ranger: filter curves

Audio Precision

Frequency Response

06/18/08 15:31:19



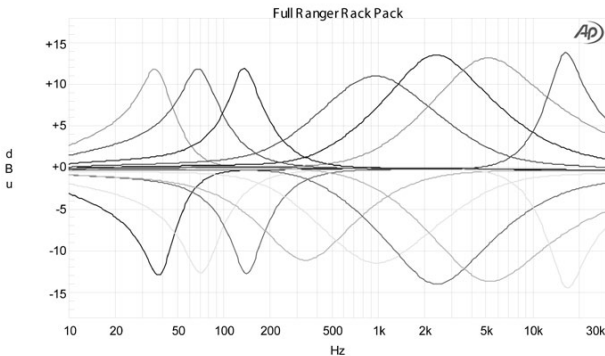
All diagrams on this double page show the filter characteristics of the analog RackPack Ranger modules. The lower bands have relatively narrow bandwidths for fundamental tones, the upper bands have broader bandwidths to process groups of overtones in common.

## Full Ranger: filter curves

Audio Precision

FREQUENCY RESPONSE

06/18/08 17:23:46



# Applications

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## EQ Principles

**First cut, then boost:** The hearing system is more used to energy reductions in a frequency range, thus boosts attract more attention. That is, a 6 dB boost is perceived to be similar in amount to a 9 dB cut. Therefore when wishing to emphasize one frequency, it is typically better first to consider a reduction in others. The result will bring more transparency and clarity as well as reduce possible unwanted coloration of the signal.

**Boost harmonics:** Harmonic enhancement is one of the foremost techniques for increasing the clarity and definition of an instrument. Examples for bass instruments: 400 Hz—bass lines will be accented, 1500 Hz—more clarity and attack sounds. Note that each instrument will have at least two frequencies where EQ can achieve a greater clarity or brilliance.

**Cutting fundamental levels:** Cutting fundamental frequencies provides for a perceived increase in harmonics and is therefore an effective alternative to boosting harmonic levels. This is a common practice in Rock/Pop productions that can be effective in all musical recording genre. An example for the bass: reduction at 40 Hz may limit boominess and increase presence.

**Boosting fundamental levels:** Inexperienced audio engineers will often first try to make corrections by boosting fundamentals, something which in fact should be the last thing one considers. Boosting fundamentals typically lowers clarity and produces a muddy sound. If two instruments are playing the same part and thereby produce the same fundamental, raising these levels will lead to a decrease in the sonic difference between them. This is also true when two instruments play similar parts in the same key.

Exception: When an instrument sounds thin or small, boosting the fundamental can help. Or perhaps a microphone was poorly placed or the harmonics had been raised excessively through EQ. Finally, increasing fundamental levels can also play a constructive role when instruments play alone or as soloists with others in the background.

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## **Manual**

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