

# STUDIO DEVIL VIRTUAL TUBE PREAMP – USER’S GUIDE

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# THANKS FROM STUDIO DEVIL

Thank you for purchasing Virtual Tube Preamp from Studio Devil.

You have invested in the best vacuum tube modeling technology available. This software faithfully emulates the dynamic and expressive nature of real vacuum tube preamplifiers using Studio Devil's proprietary vacuum tube modeling technologies.

By purchasing this product, you have expressed your love for vacuum tube technology and true analog sound. Once you fire up this product, you will instantly recognize that your desire for analog sound is shared by all of us here at Studio Devil. We've taken the time and effort to not only make this product sound as authentic as possible, but also to make the interface intuitive, expressive, and fun.

This product marks a new advancement in non-linear circuit modeling. We have created new algorithms and techniques to improve the accuracy and authenticity of vacuum tube and analog circuit modeling that we like to call "second-generation" Studio Devil technology. By focusing on modeling a single-stage tube preamp, we have been able to place a larger amount of CPU resources on this one task. The result is the most advanced and highly accurate digital reproduction of tube preamp analog circuitry.

At Studio Devil, we have the slogan: "Desire Analog...Embrace Digital." I am proud that this product enables us to continue to live up to this mission. And, I am equally proud that you have chosen to invest in us to create your tone.

I want to personally thank you for recognizing us as a leader in analog circuit modeling, and for supporting my work in this product. From me and all of those who have contributed to this plugin...thank you!

Marc Gallo, Ph.D.  
CEO and Founder

## TECHNOLOGY

Studio Devil's Virtual Tube Amplification is a breakthrough in vacuum-tube amplifier modeling technology. Our patented tube-modeling process is based on the dynamic characteristics of real 12AX7A vacuum tube preamplifier stages, the building blocks of the world's most coveted tube amplifiers. By accurately mimicking these preamp tube stages, virtually any tube amp can be built through unique configurations and combinations of them. Virtual Tube Preamp represents just a few of the infinite number of virtual amplifiers that can be built with this technology.

Studio Devil Virtual Tube Preamplifier faithfully emulates the analog circuitry of a discrete class-A biased vacuum tube preamplifier. All of the associated analog circuitry, including the vacuum tube itself and the effects of biasing resistors and capacitors, are simulated in amazing detail. Just about any audio source or track can benefit from the natural soft limiting and dynamic warmth that tube preamplifiers provide.

When you use Studio Devil Virtual Tube Preamp, you will notice that it responds just like a real tube preamp. The tone is rich, simple, and inspiring. And, the dynamic gain structure reacts to your musical tracks, allowing expressive signal processing, just like the real thing! You'll be amazed at how good your tone sounds playing through Studio Devil's virtual tube amplifiers. Until now, digital never sounded so...analog!

So...enjoy the newly found warmth of digital...enjoy Studio Devil!

# INSTALLING AND ACTIVATING YOUR PLUG-IN

## INSTALLING YOUR STUDIO DEVIL PLUG-IN

If you purchased your Studio Devil plug-in as a download, then you will first need to open and extract the downloaded .ZIP file (for Windows users) or .DMG file (for Mac OSX users). If you purchased your Studio Devil plug-in on DVD/CD-ROM, just insert the disc into your CD/DVD drive and open its folder to access the installation files.

After opening your CD/DVD drive folder (or unzipping your download), you will see two installers. For Windows, double-click "Setup.exe" to begin the installation. On Mac systems, double-click the Mac installer ".mpkg" to begin the installation.

Installation of your Studio Devil plug-in is pretty straightforward. The only key point is that in some cases you will need to know or specify where your Studio Devil plug-in will be installed. Your Studio Devil plug-in is installed into the following default folders...

### WINDOWS INSTALLATION FOLDERS:

WINDOWS (VST 32-bit)	C:\Program Files (x86)\VSTPlugins\Studio Devil\Virtual Tube Preamp\
WINDOWS (VST 64-bit)	C:\Program Files\VSTPlugins\Studio Devil\Virtual Tube Preamp\
WINDOWS (RTAS)	C:\Program Files (x86)\Common Files\DigiDesign\DAE\Plug-Ins\

### MAC INSTALLATION FOLDERS:

Mac (VST)	/Library/Audio/Plug-Ins/VST/
Mac (Audio Units)	/Library/Audio/Plug-Ins/Components/
Mac (RTAS)	/Library/Application Support/Digidesign/Plug-Ins/
Mac (RTAS Presets)	/Library/Application Support/Digidesign/Plug-In Settings/

In most cases, these folders will automatically be recognized by your host application. But, in some cases, you will need to add the appropriate folder to your host application's list of plug-in folders. Consult your host application's documentation for instructions on how to do this, if necessary.

## ACTIVATING YOUR STUDIO DEVIL PLUG-IN

Before you can use your Studio Devil plug-in, you need to activate it by getting a **LICENSE KEY** from our web server. Only YOU are entitled to activate your product. You are entitled to install and activate this software as many times as needed, but you are limited to using it on four machines at a time. If you plan on using this software on more machines in the future, you will need to contact Studio Devil to have your activation limits reset. Contact customer support at [support@studiodevil.com](mailto:support@studiodevil.com) if you need to request additional license keys or if your activation fails.

The following are step-by-step instructions on how to activate your plug-in and get you up and running quickly:

1. Insert your Studio Devil plug-in into your host application and open it. If you are running the plug-in for the first time, you will see the following screen:



If you do not have a serial number, you may run the demo-mode version of the plug-in by clicking **CONTINUE TRIAL**. In DEMO MODE, the plugin is fully operational but will periodically mute and remind you to register your product. When you choose to activate your product, you can return to this activation screen by closing and reopening the plugin, or just waiting for the **ACTIVATE** screen reminder to reappear.

When you are ready to begin, enter your serial number and click **NEXT**.

Remember to write down and keep your serial number in a safe place! You will need it if you ever wish to re-install your Studio Devil plug-in in the future.

2. Your Studio Devil plug-in will now display your **INSTALL CODE**:

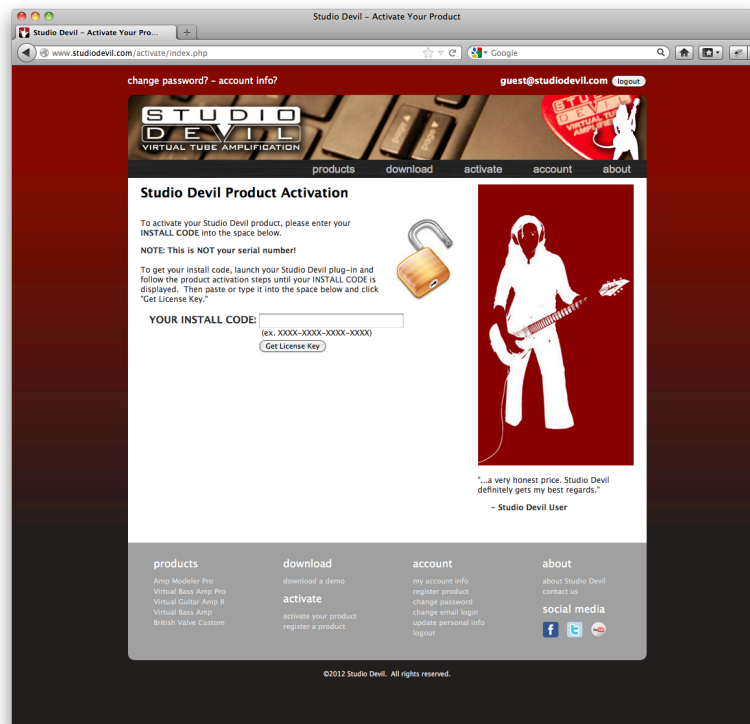


Write down this code or copy it to the clipboard by clicking **COPY**. You will need it for the next step. When you are ready, click **NEXT**.

3. Your Studio Devil plug-in will now display instructions on how to bring your **INSTALL CODE** to our web server for product activation:



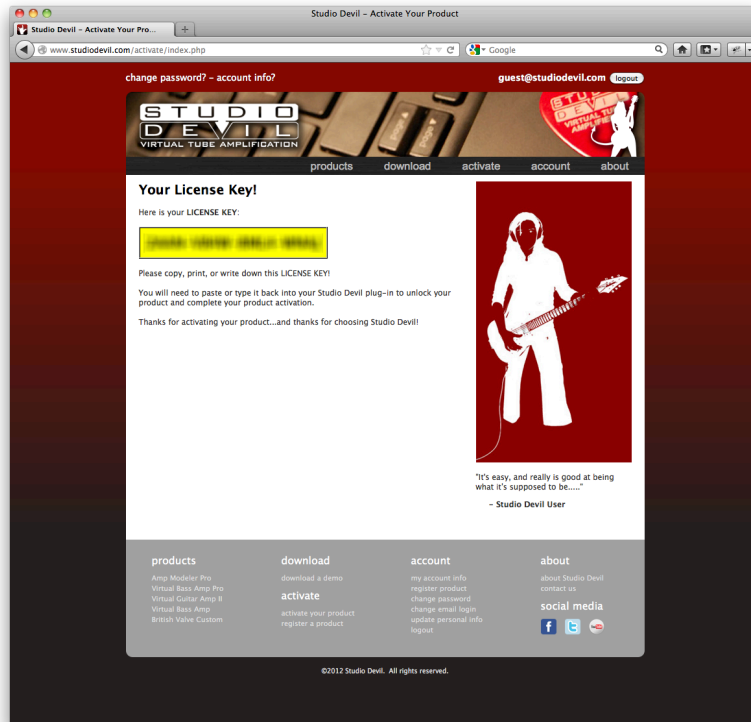
4. Launch your web browser and go to <http://www.studiodevil.com/activate> to display our product activation web page:



You will need to log in to your STUDIODEVIL.COM account to access this activation page. If you don't have a login, you can create one for free by going to [http://www.studiodevil.com/user/create\\_new\\_account.php](http://www.studiodevil.com/user/create_new_account.php)

Enter or **PASTE** the **INSTALL CODE** you just obtained into the space provided on the web form and click **GET LICENSE KEY**.

5. The Studio Devil web server will now respond with your **LICENSE KEY**:



Write down or **COPY** your **LICENSE KEY**. You will need it for the next step.

6. Return to your Studio Devil plug-in and click **NEXT**:



7. Your Studio Devil plug-in will now ask you to enter the **LICENSE KEY** you just obtained from our web server:



Enter or **PASTE** your **LICENSE KEY** in the space provided. When you are finished, click **NEXT**.

8. That's it! Your Studio Devil plug-in is now activated!



Click **BACK TO MUSIC** to begin using your Studio Devil plug-in!



## ABOUT SCREEN

If you ever need to contact customer support, you will need your serial number. You can always get this by clicking **MORE** on the top of the front panel of your licensed Studio Devil plug-in. This brings up the “About” screen that displays your serial number and software version number:



License keys change every time you install your Studio Devil plug-in onto a different computer, or when you re-install your Studio Devil plug-in onto the same computer after a fresh operating system installation. In these cases, you will have to re-activate your Studio Devil plug-in as described above.

You are entitled to unlimited activations per purchase. But, you may only use this software on four machines at a time. If you need to run this software on more machines in the future, you may contact Studio Devil to have your activation limits reset.

## CONTROLS



The controls of Studio Devil Virtual Tube Preamp are pretty easy to understand. We designed them to be intuitive, simple, and easy so you can get the tone you want quickly...and without having to flip through menus, hidden screens, or dragging effects around. If you've used a tube preamplifier before, then you already have a good idea of how to operate Studio Devil Virtual Tube Preamp. But just in case you want to know more, here's a description of the controls, what they do, and how to use them to sculpt your tone:

### ***INPUT DRIVE***

Adjusts the strength of the signal fed to the input grid of the virtual tube preamplifier. Increasing this control drives the preamplifier tube closer to and deeper into clipping and saturation. Increasing this control near maximum begins to push additional grid current into the tube, resulting in further saturation and clamping due to the asymmetry of the preamp tube grid characteristics. This control permits you to adjust the amount of non-linear saturation and gain. Turn it up for more distortion and fast-attack soft limiting, or roll it back for a cleaner, more transparent sound.

## **OUTPUT BOOST**

Adjusts the boost level of the final output signal. Use this control in conjunction with the **INPUT DRIVE** control to achieve the desired output signal strength and to compensate for low **INPUT DRIVE** settings. Turn this control up when the **INPUT DRIVE** control is in a low setting, or roll this control back down when the **INPUT DRIVE** control is turned up into saturation.

The range of this control is set by the **OUTPUT SWITCH** (see **OUTPUT SWITCH** below).

## **BASS CONTOUR**

Adjusts the value of the cathode bypass capacitor, a critical component of the simulated vacuum tube preamp. This is not simply a post-EQ. In a tube preamp, the cathode bypass capacitor controls the amount of low-frequency gain as well as its dynamic response. The effect is a control of bottom end, as well as the natural attack and recovery. This control permits you to adjust the value of this influential component to taste. Turn it up for more low end and slower dynamics, or roll it down for faster attack and less bottom. This control has a greater effect when the **BIAS SWITCH** (see **BIAS SWITCH** description below) is set to the “low” setting. When the **BIAS SWITCH** is in the “high” setting, the **BASS CONTOUR** control is subtler.

## **TREBLE ROLLOFF**

Adjusts the value of intrinsic and parasitic capacitances in the simulated vacuum tube preamp. This is not simply a post-EQ. In a tube preamp, various capacitances have a profound effect on the high-frequency roll-off at the output. Use this control to adjust the amount of high-frequency content, just like you would a familiar treble control. Much of the warmth and softness that we cherish from tube preamps can be adjusted here. Roll down this control for more warmth, or turn it up for a brighter experience.

Turning the **TREBLE ROLLOFF** control past the mid point enables a special, but subtle, high-shelf boost filter designed to compensate for the natural treble attenuation in real tube preamplifiers. This filter blends in smoothly in the upper portions of this control so that it can be adjusted to taste.

## **BIAS SWITCH**

Selects from two preset tube bias levels. In a tube preamplifier, the bias is set by selecting specific values for the plate and cathode resistors which control the symmetry of the vacuum tube clipping, as well as the inherent gain of the preamplifier. It also affects the way the **BASS CONTOUR** control works.

This switch allows you to choose from two preset bias configurations. Flip it down to the “low” position for a lower-gain, slightly asymmetrical bias with greater **BASS CONTOUR** control, or flip it up to the “high” position for a higher gain and more symmetrical clip with less **BASS CONTOUR** interaction.

## **CPU SWITCH**

Adjusts the modeling algorithm to balance the tradeoff between accuracy and CPU load.

The tube modeling algorithm is a state-of-the-art, “no-compromise” approach and as such can be quite CPU intensive on slower machines. If you have many instances of this preamp in your project, you may want to conserve CPU utilization. This switch permits you to reduce the algorithm complexity and CPU load in exchange for lower authenticity in the preamp modeling. However, do not allow the desire for ideal authenticity to dictate the right solution. The low CPU setting sounds very good, and might be suitable as the final sound. It really is a matter of taste, and so both settings should be tested before making a final decision.

Flip this switch down to the “low” position for lower CPU usage and lower authenticity, or flip the switch up to the “high” position for the highest model accuracy and maximum CPU load.

## **INVERT SWITCH**

Inverts the input signal to the preamplifier. Because all class-A preamplifiers are inherently asymmetrical, there will be subtle differences in how the positive and negative peaks enter saturation and are clipped. It may be desirable to control this aspect, especially in percussive instruments such as drums and directly recorded string instruments such as bass guitar. In this case, the invert switch permits controlling the phase of the preamplifier.

When selecting the two-stage preamp design (see STAGES SWITCH below), the signal polarity is different from the one-stage design. Not to worry...VTP automatically figures this out, and only inverts the output when you have the INVERT SWITCH selected.

To invert the output of the preamp, flip this switch up. To retain the original phase of the signal, flip this switch down.

## **STAGES SWITCH**

Selects between one or two triode preamplifier stages. Originally, VTP had one preamplifier stage. We decided to upgrade the preamplifier to allow the user to switch between this original design, and a newer two-preamplifier stage design.

The original, one triode preamplifier stage has a classic sound, with milder gain and more gentle response. Adding a second preamplifier stage adds more gain, grittier tone, and a plate to grid interaction between stages that adds unique non-linear dynamics to the response. The choice really depends on taste. In general, you should use the original one stage design for more traditional and subtle tones, and use the newer two stage design for more aggressive and bolder processing. Keep in mind, though, that even the single stage mode can get aggressive as well with the gain turned up. Also, the BASS CONTOUR and TREBLE ROLLOFF controls will have a greater effect in the two stage design, since they modify the parameters of both stages...so, you will just need to experiment with both designs to get familiar with them...it's a lot like having two completely different preamps in one! See which works best for your track and your tone.

To select the newer, two stage preamplifier design, flip this switch up. To retain the original single triode preamplifier, flip this switch down.

## **OUTPUT SWITCH**

Selects between two output signal ranges for the **OUTPUT BOOST** control knob.

The normal mode is LOW, which is used most of the time. The LOW range permits better control to balance the effected signal with the input signal to allow easier A/B comparison when mixing. The LOW range is designed to work best with most settings of the preamplifier.

The HIGH mode adds a signal boost to the output. The HIGH range should only be used when the input drive is set very low, and you need to compensate with some output level boost. This is common when using VTP as a clean or near-clean preamplifier.

To select HIGH range, flip this switch up. To select LOW (normal) range, flip this switch down.

## **OVERLOAD LIGHTS**

Indicate when the input and output signals are overloading. When the input signal overloads, this is usually GOOD. It means the tube is "doing its thing". When the output signal overloads, this is usually BAD. It means the

output is hard clipping and the **OUTPUT BOOST** needs to be turned down.

The “in” **OVERLOAD LIGHT** blinks on when the input signal drives either tube stage of the preamplifier to within 15% of its maximum dynamic range. This is not necessarily a bad thing, since overdriving the tube is part of what makes a tube preamplifier sound good. It just serves as an indication that a tube is being overdriven, to help in cases where it is difficult to tell by just listening for it. That’s why the “in” **OVERLOAD LIGHT** is green...you want to light it up to get that tube sound going.

The “out” **OVERLOAD LIGHT** blinks on when the output signal exceeds 0dBFS. Unlike the input overload indicator, the output overload indicator should be used as a warning light. When the output overload indicator blinks, you are in danger of hard clipping the signal in successive plugins or final output. That’s why the “out” **OVERLOAD LIGHT** is red...turn down the **OUTPUT BOOST** control to avoid these output clips!

Well, that’s it for the controls of Studio Devil’s Virtual Tube Preamp...pretty straightforward and simple. But the main thing to remember is this is all about tone and getting a great sound. Experiment with the controls until you find what you like. And take your time to listen and play a while through your changes. You will find that Studio Devil reacts just like real amps, small changes in your settings add up to a very different feel and texture of your sound.

Keep tweaking until it’s just right!

## DON’T FORGET TO VISIT

We’re here for you, your tone, and your music. We love what we do, and we know you love what you do...let’s do it together! Visit often!!!



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