

# slate pro audio



## DRAGON

### REFERENCE GUIDE

DYNAMIC AUDIO

PROCESSOR

The **DRAGON** is the result of two years of extensive research in analog processing. Its circuit was designed so that it could represent the ultimate achievement in versatility, sound, and ease of use.

At the heart of the **DRAGON** is an extremely hi-fi transformer balanced CLASS A signal path with FET based dynamic reduction. In order to make the **DRAGON** a true chameleon in analog hardware, numerous features were added to customize the **DRAGON's** sound to any source.

During shipping, the **DRAGONS** VU meter needle may have shifted. To adjust the VU meter, use a 1/8" flat head screwdriver to rotate the trim pot located in the hole under the meter.

## **DRAGON BASICS**

### **INPUT and RATIO**

The **DRAGON's** custom transformer balanced input dictates how much compression will be produced in relation to the ratio control. In other words, the higher the input level that enters the unit, the more the signal will cross the given ratio's threshold, resulting in more compression. There are 5 ratios on the **DRAGON** ranging from a gentle 2:1 to a limiter style 20:1. Consult the presets section for a good reference on where to use certain ratios.

### **SQUASH**

By selecting the 20:1 ratio and then engaging the "squash" selector, the unit goes into the classic 'all four buttons in' overdrive made famous by a *well known* vintage FET compressor. This setting is useful on any source that needs a larger than life sound with lots of excitement. It is especially useful on drum room ambient mics.

Unique to the **DRAGON**, the "squash" control works on any compression ratio, with the 20:1 emulating the classic sound.

\*NOTE: The "squash" setting is still affected by the "attack" and "release" controls.

### **ATTACK and RELEASE**

The **DRAGON's** "attack" and "release" controls affect how quickly the compression circuit moves in and out of gain reduction. These controls are a major determining factor of how the unit sounds on a given source. Consult the preset section for some starting points.

## **HI-PASS FILTER**

The Hi-Pass Filter removes low end frequencies from FET detection so that the compressor does not react to low end energy. It is selectable in 5 different frequencies. Use this setting when you want the low end of your source to be unaffected by the compression. For instance, by engaging the hi-pass filter at its 200Hz setting using two stereo linked **DRAGONS** on a drum sub mix (commonly called a drum buss), the low frequencies of the kick drum will not be compressed. The hi-pass filter can also affect how the compressor sounds when using it in stereo on a full mix. By engaging the hi-pass at 80Hz, the compressor reacts less to low end energy, which in some cases is desired for a more transparent sound.

## **LINK**

The "Link" switch sums the audio of two **DRAGONS** so that the compression detection works in stereo. This eliminates imaging drift and allows the units to work well on drum sub-mixes and full mixes. All panel settings must be duplicated manually on both units. Use your ears as well as your eyes, there may be slight variance from unit to unit in the position of knob settings.

To link two units:

Attach a ¼" cable from each unit's output to the other unit's input. Two cables will be needed to achieve this.

\*NOTE: When the units are NOT linked via ¼" cables, engaging the link switch will divide the ratios in half! This is actually a useful effect and can make the **DRAGON** even more versatile while being used in mono.

## **DRAGON TONE CONTROLS**

### **CHARACTER SWITCHES**

The Character Switches change the way the **DRAGON** sounds by affecting specific frequencies of the FET detection in a very musical way. Using a sophisticated filter design, the Character Switches can enhance a musical source giving just the right essence to a track during the recording or mixing process. When the compression ratio is set to 0, the Character Switches can still impart sound in the signal path, giving them the ability to act as general tone shapers. There are three Character Switches.

- 1. Sheen** - This setting emulates classic photo optical cell compressors and adds a sparkle and sheen to the signal which is

preserved even when adding drastic amounts of compression. It is extremely smooth and airy, and sounds good on vocals, acoustics, drums, cymbals, full mixes, and more.

**2. Bite** - This setting adds a 'forward' character to the **DRAGON**, making the source sound more immediate and in some cases, aggressive. It is great on guitars, vocals, kick, snare, drum buss, bass guitar, and full mixes.

**3. Boom** - Emulates a classic sub harmonic synthesizer, adding a subtle chest thumping sonic texture to the sub bass. It sounds great on bass guitar and kick drum and even full mixes when more low end impact is necessary. The Boom setting is much more apparent on full range systems with a subwoofer.

**\*\*Be careful with the Boom setting if you do not have a system that extends down to 40Hz.**

## **VINTAGE**

The "Vintage" switch puts the **DRAGON** into Vintage mode. This mode emulates a classic sound that is much more aggressive and rich in harmonics. Switch to vintage mode when you need more 'attitude' from the compressor. It can sound great on kicks, snares, toms, bass, and vocals for certain effects. Often the Vintage mode works well when using the "MIX" knob to control the wet/dry ratio (Mix knob described on page 4).

\*NOTE: The Vintage mode is extremely dependent on the "attack" and "release" controls. The sound of the compression in Vintage mode changes rapidly depending on their settings.

## **SATURATE**

The "Saturate" switch engages a circuit which adds three levels of saturation to the signal path.

Setting 1: Adds a subtle amount of saturation and can gently increase the harmonics and 'life' of your source. This setting works well on almost any source, including full mixes.

\*NOTE: Upon engaging saturate setting 1, it is not uncommon to experience a minor click noise. Therefore, we recommend that you not engage Saturate 1 during loud playback.

Setting 2: This setting is stronger and adds more harmonics, a bit of edge, and is great on bass, drums, and some vocals.

Setting 3: This setting is the strongest setting and in most cases, will add a thick distortion that can be a great effect on drums, bass,

guitars, and vocals. Setting 3 is well mated with the "MIX wet/dry" controls, described in the next section.

\*NOTE: The level of saturation in all settings is affected by the "output level" knob. You can customize the amount of saturation at each setting by adjusting the output level.

## **DRAGON MIX CONTROL**

One of the most unique features of the **DRAGON** is its ability to mix the wet compressed signal with the unaffected dry signal using the "MIX wet/dry" knob. By using this function, you can create many effects that until now were unachievable within a single compressor.

For example: You can compress a vocal with a high amount of gain reduction, and then use the wet/dry control to customize the mix of compressed signal with dry signal. This creates a more 'in your face' vocal sound without sounding like the vocal is over-compressed. The wet/dry mix control is extremely useful on many sources including vocals, drums, bass, guitars, drum busses, and full mixes.

## **CONCLUSION**

Using the many unique combinations of settings on the **DRAGON**, you will find that it can take your music to new levels of sonic excellence.

We hope you have as much fun using the **DRAGON** as we did making it!

## **PRESETS**

The following presets will help you get to know the **DRAGON's** sound on numerous mono and stereo sources. Adjust the "INPUT" of the **DRAGON** so it produces the gain reduction indicated in the preset description, and compensate for the gain reduction via the "OUTPUT" control. For "ATTACK" and "RELEASE", the presets are listed in clock form and in the terms *fastest* and *slowest*.

### EXAMPLE:

Release: Fastest means the release is fully counter clockwise at its fastest setting.

Attack: 12 o'clock means the attack knob is positioned straight up the middle, pointing at 12 o'clock.

To HEAR all of these presets, please visit [www.slateproaudio.com](http://www.slateproaudio.com) and click on AUDIO DEMOS.

### **DRUM BUSS SETTINGS:**

These settings can be applied directly to a stereo grouped mix of drums.

#### Gentle Drums:

Ratio: 2:1    Attack: Slowest    Release: Fastest    Gain Reduction: 3-6db

#### Rock star Drums:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Character: Sheen, Bite, Boom  
Gain Reduction: 4- 6db

#### Cracky Drums:

Ratio: 12:1    Attack: Slowest    Release: 10 o'clock    Character: Sheen, Bite  
Gain Reduction: 4-6db

#### Deep Drums:

Ratio: 2:1    Attack: Slowest    Release: 12 o'clock    Character: Boom  
Saturation: 1  
Gain Reduction: 4-6db

#### Hitting Tape Drums:

Ratio: 4:1    Attack: Slowest    Release: 12 o'clock    Saturation: 2  
Gain Reduction: 5-10db

### Sizzly Tape Drums:

Ratio: 20:1    Attack: Slowest    Release: 12 o'clock    Character: Sheen  
Saturation: 2  
Gain Reduction: 6-10db    Note: For this preset, keep the input low and the output high

### Vintage Smacky Drums:

Ratio: 8:1    Attack: Slowest    Release: 1 o'clock    Vintage: ON  
Saturation: 1  
Gain Reduction: 5-10db

### Modern Smack Drums:

Ratio: 8:1    Attack: Slowest    Release: 1 o'clock    Vintage: OFF  
Saturation: 1  
Gain Reduction: 5-10db

### Super Smash Drums:

Ratio: 12:1    Attack: Fastest    Release: Fastest    Squash: ON  
Character: Sheen, Bite  
Note: Use an input of 5. This preset is meant for an over the top effect, perfect for using the mix knob to balance wet/dry.

### Super Smash Mix Drums:

Use Super Smash Preset, but engage MIX knob at 1 o'clock

### Super Squash Drums:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Gain Reduction: 10-20db

### Super Squash Mix Drums:

Use Super Squash Preset, but engage MIX knob at 2 o'clock.

## **Vocal Presets:**

### Easy Vox:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Gain Reduction: 10-20db

### Pop Vox:

Ratio: 12:1    Attack: 12 o'clock    Release: Fastest    Character: Sheen  
Gain Reduction: 10-20db

### Modern Radio Vox:

Ratio: 4:1    Attack: 12 o'clock    Release: Fastest    Character: Sheen, Bite  
Saturation: 1  
Gain Reduction: 10-20db

### Rich Tape Vox:

Ratio: 4:1 Attack: Slowest Release: Fastest Character: Sheen,  
Bite Saturation: 2  
Gain Reduction: 10-20db

### Dance Club Smashed Vox:

Ratio: 4:1 Attack: Fastest Release: Fastest Vintage: ON  
Character: Sheen, Bite, Boom Saturation: 3 Gain Reduction: 5-  
12db Note: This is a great distorted vocal setting for pop and dance  
music

### Slate's Lead Vox:

Ratio: 20:1 Attack: Slowest Release: Fastest Character: Sheen,  
Bite  
Gain Reduction: 12-20db MIX Knob: 12 o'clock Note: Turn the Input  
all the way up for this preset. Be aware that the noise floor will be  
high between vocal passages.

## **Full Mix Presets:**

### Easy Mix Compressor:

Ratio: 2:1 Attack: Slowest Release: Fastest Gain Reduction: 1-  
2db

### Hi-fi Mix Compressor:

Ratio: 2:1 Attack: Slowest Release: Fastest Character: Boom,  
Sheen  
Gain Reduction: 1-2db

### Radio Rock Mix Compressor:

Ratio: 2:1 Attack: Slowest Release: 12 o'clock Character:  
Sheen, Boom, Bite Saturation: 1 Gain Reduction: 2db

### Transparent Mix Compressor:

Ratio: 2:1 Attack: Slowest Release: 12 o'clock Hi Pass: 100Hz  
Gain Reduction: 1db

### Glue Mix Compressor:

Ratio: 12:1 Attack: Slowest Release: 12 o'clock Character:  
Boom Saturation: 1  
Gain Reduction: 1-2db

### Parallel Mix Compressor:

Ratio: 8:1 Attack: 3 o'clock Release: 9 o'clock Character: Sheen  
Gain Reduction: 10db MIX Knob: 3 o'clock

## **Guitars:**

### Huge Electric Guitars:

Ratio: 2:1    Attack: Slowest    Release: Fastest    Gain Reduction: 3-5db

### Warm and Crisp Electric Guitars:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Character: Boom, Bite  
Gain Reduction: 2-3db

### Smooth Acoustic:

Ratio: 2:1    Attack: 3 o'clock    Release: Fastest    Gain Reduction: 3-5db

### Bright Acoustic:

Ratio: 2:1    Attack: Slowest    Release: Fastest    Character: Bite, Sheen  
Gain Reduction: 3-5db

## **Bass:**

### Rock Bass:

Ratio: 4:1    Attack: 3 o'clock    Release: 9 o'clock    Character: Bite  
Gain Reduction: 5-8db

### Full Bass:

Ratio: 8:1    Attack: 3 o'clock    Release: 9 o'clock    Character: Boom  
Gain Reduction: 5-7db

### Big Bass:

Ratio: 20:1    Attack: 3 o'clock    Release: 9 o'clock    Character: Boom  
Gain Reduction: 5db

## **Snare:**

### Fat Snare:

Ratio: 4:1    Attack: Slowest    Release: 9 o'clock    Gain Reduction: 4db

### Cracky Snare:

Ratio: 2:1    Attack: Slowest    Release: 12 o'clock    Character: Bite  
Gain Reduction: 3db

Tapey Snare:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Character: Sheen,  
Bite    Saturation: 1    Gain Reduction: 5db

Parallel Smash Snare:

Ratio: 8:1    Attack: 12 o'clock    Release: 12 o'clock    Character: Bite  
Gain Reduction: 20db    MIX knob: 3 o'clock

Super Rock Snare:

Ratio: 8:1    Attack: Slowest    Release: Fastest    Character: Bite  
Gain Reduction: 3db

Aggro Snare:

Ratio: 4:1    Attack: Slowest    Release: Fastest    Character: Bite  
Vintage: ON    Gain Reduction: 4db

**Kick:**

Fat Kick:

Ratio: 2:1    Attack: Slowest    Release: 12 o'clock    Character: Boom  
Gain Reduction: 3db

Aggro Kick:

Ratio: 4:1    Attack: 3 o'clock    Release: 9 o'clock    Character: Bite  
Gain Reduction: 3-5db

Smacky Kick:

Ratio: 8:1    Attack: Slowest    Release: 9 o'clock    Character: Bite  
Saturation: 1    Gain Reduction: 3-5db

# **Dragon Specifications**

Input Impedance	15K Bridged T-control (floating)
Output Load Impedance	15K Transformer balanced (floating)
Frequency Response	20 Hz to 20 kHz $\pm$ 1 dB
Gain	45 dB, $\pm$ 1 dB
Distortion	> 0.5% T.H.D. from 50 Hz – 15 kHz with limiting, at 1.1 seconds release setting
Signal-to-Noise Ratio	Output of +22 dBm with no greater than 0.5% T.H.D. > 81 dB with input signal at threshold of limiting over a bandwidth of 30 Hz to 18 kHz
Attack Time	Adjustable, from 20 to 800 microseconds
Release Time seconds	Adjustable, from 50 milliseconds to 1.1
External Connections	XLR / ¼" TRS (balanced)
Stereo Interconnection	¼" Phone
Power Requirements	110V/220V
Power Connector	Detachable IEC power cable
Fuse	500 mA time delay (slow blow) / 110 V 250 mA time delay (slow blow) / 220 V
Dimensions	19" W x 3.5" H x 8.5" D (two rack spaces)
Weight	12 lbs (14 lbs in box)

## **Important Safety Information**

Thank you for purchasing the SLATE PRO AUDIO DRAGON dynamic audio processor.

How to take care of your DRAGON:

**Water:** Do not use the unit near any source of water or in excessively moist environments.

**Ventilation:** Dragons like to keep it cool. When installing the unit in a rack or any other location, the Dragon should be located so that its position does not interfere with its proper ventilation. It is normal for this unit to generate a degree of heat. Improper ventilation will cause overheating, and can damage the unit. The unit should be situated away from heat sources, or other equipment that produce heat.

**Placement:** Placing your Dragon in close proximity to power amplifiers or equipment containing large transformers is likely to induce hum. If the unit is operated near TV or radio receivers, some type of interference might be noticeable. In such cases, move the unit out of proximity with the entertainment devices.

**Power Sources:** AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Never take hold of the plug or cord if your hand is wet. Do not pull the cord -- always grasp the plug body when connecting or disconnecting it. Use a separate power outlet for this unit -- sharing one with distortion producing devices (such as motors, variable lighting devices) is unwise. The AC power supply cord of the unit should be unplugged from the AC outlet when left unused for a long period of time.

***\*\*\*BEFORE PLUGGING IN YOUR DRAGON, MAKE SURE THE VOLTAGE SELECTOR SWITCH ON THE REAR PANEL IS SET CORRECTLY FOR THE VOLTAGE IN YOUR AREA!***

***\*\*\*THE DRAGON POWER SWITCH MUST BE IN THE OFF POSITION BEFORE CONNECTING THE AC POWER SUPPLY. THIS WILL HELP TO PREVENT MALFUNCTION AND SPEAKER DAMAGE.***

**Grounding:** This unit must be grounded. If it should malfunction, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This unit's cord has an equipment grounding conductor and a grounding plug, which must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local

codes and ordinances. Do not modify the plug provided with the unit – if it will not fit the outlet; have a proper outlet installed by a qualified electrician.

***DANGER*** – *Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the unit is properly grounded.*

**Other Precautions:** Protect your Dragon from strong jolts and vibration. Never apply strong pressure to the front, back or sides, or strike your Dragon in any manner whatsoever. A stern scolding of your Dragon, however, is certainly permissible and quite cathartic.

This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at high volume levels or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

**Cleaning:** Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. Avoid using the product where it may be affected by dust.

In hopes that you might keep the visuals of your treasured analog Dragon in tip top shape, follow these general rules when cleaning your Dragon:

- Turn the power OFF and unplug the unit
- Gently wipe with a clean lint-free soft cloth
- If necessary, slightly dampen the cloth using lukewarm distilled water (making sure not to over saturate as liquid could drip inside the unit and cause damage)
- Use a dry lint-free soft cloth to remove any remaining moisture
- Do not use aerosol sprays, solvents, or abrasives

**Damage Requiring Service:** Do not attempt to service your Dragon. The unit should be serviced by qualified service technicians when:

- The AC power supply cord or the plug has been damaged
- Objects have fallen or liquid has been spilled into the unit
- The unit has been dropped, or the enclosure damaged
- The unit does not operate normally or exhibits a marked change in performance

## **Warranty / Legal**

**Warranty:** If your Dragon requires professional help please contact [support@stevenslate.com](mailto:support@stevenslate.com). The warranty for the Dragon is one year from date of purchase, parts and labor. You are responsible for shipping the unit to us and we will handle shipping back to you. If you cause damage to your Dragon, that damage is not covered by the warranty, but we'll still try to fix your Dragon for \$75/hour plus parts, in which case you are responsible for shipping costs to us and back to you.

**Register:** Please take a moment to register your new Dragon by visiting our website: <http://www.slateproaudio.com>

Our website also contains additional instructions and tips for how to handle your Dragon!

Slate Pro Audio Customer Service: (323) 656-2050.

Slate Pro Audio and Slate Pro Audio DRAGON are trademarks of Slate Pro Audio LLC.

DRAGON Co-designed and manufactured by STUDIO ELECTRONICS: <http://www.studioelectronics.com> and Analogia Inc. in the U. S. of A.

**Legal Notice:** Slate Pro Audio and Studio Electronics / Analogia inc. shall not be liable for direct, indirect, special, incidental, or consequential damages in connection with the furnishing, performance, or use of this safety information.

Copyright © 2011 Slate Pro Audio LLC. All rights reserved.