PEACOCK

An AAX Plug-in

OPERATOR'S MANUAL

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CRANE SONG LTD.

Peacock can be used on a stereo bus to create the classic vinyl sound. On individual tracks it is also very useful in creating large fat sounds, smoothing of the harmonic content and making a nice smooth vintage sound on vocals and other instruments.

There are three main controls; Harmonic, Dynamic and Color. The Harmonic and Dynamic controls interact and control the level of the harmonic distortion. The Color switch changes the character / interaction of the controls and sets the maximum amount of midrange / LF color and the HF compression characteristic. The Dynamic control is the tricky one, what is does is time modulate the distortion components which are very frequency dependent due to the RIAA curve.

There are two main components that cause time modulation in a vinyl record. The first is due to the cutter and the playback stylus not having the same shape, this is called tracing distortion the other is tracking distortion due to the playback systems miss-alignment and the inability to perfectly follow the grove in the record.

The Dither control adds noise that is the spectrum of record noise. It modulates some of the internal functions an adds dither to the audio path at a level for 16 bit dithering

Color = Gold is an extremely close match to the test material which is a record and the original wave file. It has been optimized at 96K but will work fine at other sample rates.

The Silver seting is lighter setting and coloring increases in the order of the settings; Silver, Gold, Rich, Fat, Deep. Silver is also the brightest setting.

The amount of time modulation with the Dynamic control is level dependent and has a maximum range. It is more of a matter of finding the control position that is optimum. Pushing it to higher levels creates ugly sounds. The code prevents this.

The plug-in can introduce large amounts of second harmonic distortion resulting in a large fat smooth sound.

Useage

The user must be aware that vinyl records will not record high level HF signals; the signal must be 20 db down from the maximum level in order to record tones going up to 20 KHz. A full level signal at 10 KHz will result in lots of distortion. Peacock will do the same thing, 0 dbfs at 10 KHz is a mass of ugly distortion and not proper operation.

When working with sources that have large HF content one must keep in mind that there is a maximum HF signal level. HF compression will happen first, and then if it is pushed to far there will be some distortion. This is normally not a problem with program material. However vocal sibilance can be a problem and may require de'ssing or a reduction of the input signal level. Something like a tambourine that has a level of -3 dbfs can also end up with large amounts of HF distortion if one is not careful. Load the Tambourine pre-set to look at the control settings. Harmonic = 17, Dynamic = 16, Color = Silver. If the level is low it is possible to turn up the Harmonic control, but if the signal it hot, turning up the control will quickly result in distortion due to the HF compression. Another solution for HF distortion is to back off the level of the HARMONIC control if it is not possible to change other factors.

The Harmonic control changes the level of the non time modulated harmonic effects and the HF compression. As the Color control setting increases from Silver to Deep the level for HF compression reduces in amplitude and the amount of the low midrange color increases. The LF cutoff of the midrange color also reduces in frequency as the Color control setting increases from Silver to Deep. The how much of these effects are determined by the Harmonic control.

The Dynamic control does two main things. The first is it time or phase modulatates the harmonic content. There is a maximum amount of time modulation so turning the control to max does not always result in more of this effect, is it more a matter of finding an optimum level. The time modulation does what the tracing and tracking distortions in vinyl record playback does. On a sine wave test signal it will bring the second harmonic content forward in time with respect to the main part of the signal. The second thing the control does is it adds some midrange second harmonic color. As the Color control is advanced from Silver to Deep the maximum amount of the harmonic color increases and the LF cutoff is reduced in frequency. The harmonic distortions in the Dynamic control are different then that of the Harmonic control. As with the Harmonic control the midrange color increases as the Dynamic control it turned up with the Color switch setting determining the maximum amount. The Dynamic control determines the level of the combined midrange color and time modulation. The Dynamic control will soften transits due to the time modulation

There are several presets that can be used as staring places in selecting a sound.
Take the time to play with them; it is a helpful learning tool.

The three vinyl presets were made by careful matching to reference disks. For better understanding the Shibata stylus has less tracing distortion and other advantages due to its shape as compared to the Elliptical stylus. This is especially true on the inner record diameter where the HF distortion can become ugly.   The other presets were arrived at during the mixing of rock songs
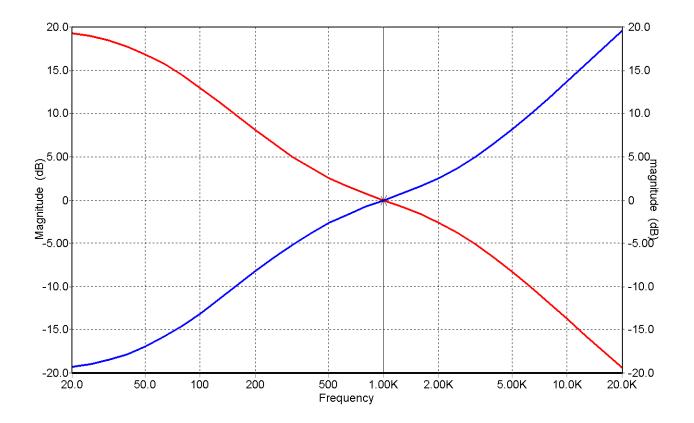
Use it on tracks, stripes and the mix output, and on stereo vocal stripes. Something very interesting happens when used with HEAT. Peacock will soften a sound but it can also act is a way that makes things sound like they were done together, not overdubed.

CLICKING ON THE TEXT WILL CAUSE THE SWITCH TO UPDATE.
SILVER is the least colored, DEEP is the most colored

RA with Peacock

A useful sound using two plug-ins on a snare drum is use the RA plug-in with the Low Level = 95, Peak = 80, Hardness = 100. Follow this with Peacock; Color = Fat, Harmonic = 60, Dynamic = 67 for a starting place.

If one looks at the RIAA eq curves; the blue graph is the eq for the disk cutter and the red graph is the record play back equalization. Part of the reason for the lack of high frequency headroom in vinyl records has do to the large HF boost on the cutter side and it's mating HF reduction on play back. The 2 eq curves result in flat frequency response. At 10 KHz the boost with respect to 1 KHz is 13.7db and around 27 db with respect to 100Hz. The resulting distortions and HF compression are part of what creates the sound. There are additional mechanisms that affect the HF headroom, limitations in what the cutter can physically do and what the play back stylus can do are examples. The graphs help explain in a simple manor the change in HF headroom. In music, a full amplitude 10 KHz signal does not happen so the system works as it has for tens of years.

System Requirements

You must have the following to run Peacock

Pro Tools version 10, 11, Windows or MAC
It requires PT10.3.5 or later

It does not run on any other system.
It will run native on PT10, PT11 and it will also run on the HDX card

An **ILok2** USB Smart Key and an Ilok.com account

If you do not currently own an iLok, you must purchase one in order to authorize and run Crane Song plug-ins for both authorized and demonstration mode.

An iLok can be purchased from a variety of sources, including the online store operated by Avid.

An iLok.com account. Creating an account is simple and free. Visit iLok.com for details. If you do not have one, proceed to ilok.com and set up an account

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