PBC-6A
Startup Notes
V0102

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ACKNOWLEDGEMENT

Thanks for purchasing the PBC-6A! We appreciate the opportunity to join you in your musical quest...

BASIC CONCEPT

Overview

The PBC-6A differs from many other audio compressors in a couple of ways:

- **NO THRESHOLD —** There's no threshold in the PBC-6A. Unlike compressors with threshold controls, the signal passing through the PBC-6A is always being compressed rather than compressing only those parts of the signal that are above a set threshold. This makes the PBC-6A a non-linear, compression amplifier (CA).

- **LEVEL-DEPENDENT RATIO —** The PBC uses a feedback configuration to help achieve its function. Along with this, the PBC's detector allows higher output signals to compress more than lower-level ones. With the lack of thresholding, the change in ratio is smooth and gradual from low-level signals to higher-level.

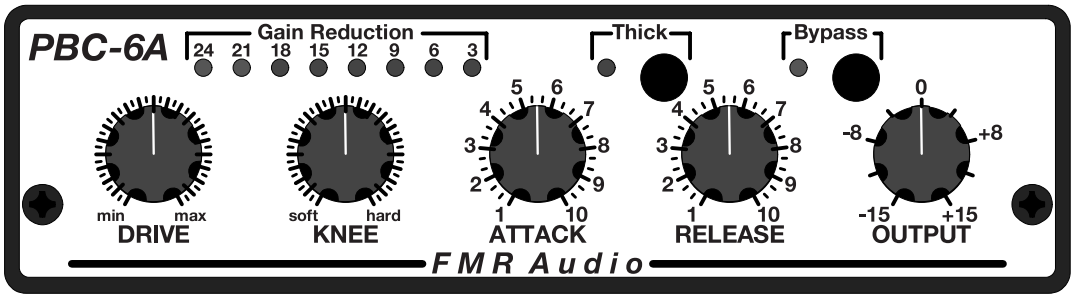
- **KNEE CONTROL —** This allows a transition from lower-to-higher ratios to occur over a smaller range than would "naturally" happen due to the PBC's feedback and detector configuration.

These main features help the PBC-6A achieve a wide-range of compression effects—from delicate to crushed!

Controls

There are five rotary controls and two push buttons on the PBC:

Figure 1: PBC-6A Front Panel Controls



- **DRIVE —** The PBC's feedback configuration makes it possible to vary both the amount of compression along with some intrinsic make-up gain in one control. This is it. The most compression is attained with the DRIVE control fully clockwise and at a minimum in the fully counterclockwise direction.

- **KNEE —** The more clockwise this control, the smaller the change in the input signal that is required to achieve higher compression ratios. Conversely, the more counterclockwise this control, the wider the change in the input signal that is required to achieve higher compression ratios.

- **ATTACK —** As with many other compressors, this controls how quickly the PBC will react to changes in the input signal. Subjectively, this control allows high frequencies to be more easily emphasized.

- **RELEASE —** This control determines how quickly the PBC will return to its previous gain levels as the signal level decreases.

- **OUTPUT —** This provides a convenient means to help match levels between the PBC and subsequent devices.

Two push button controls are present on the front panel as well:

- **BYPASS —** This push button alternatively allows the selection of the signal present at the input jack or the output of the PBC's balanced line driver.

- **THICK —** This alters the PBC's release characteristics in a way that is perceived as "thickening" the sound. This is subtle, but notable in its absence.

One thing you might notice is that these buttons respond differently than the ones on our other products, the RNC, RNLA and RNP. These buttons respond by activating their corresponding functions upon the release of the button rather than the initial button press. This is to allow a double-use for the buttons...

SPECIAL FEATURES

We wanted to keep the same front panel layout for both economy's sake and to remain compatible with the cool rack-mounting products from Funk Logic (www.funklogic.com). However, we also needed to add some functionality. We did this by introducing *an additional mode that is entered/exited by pressing both push buttons simultaneously.* To put a finer point on it:

******You must press both push buttons to enter and exit the NORMAL and SPECIAL modes******

and,

******SPECIAL mode is indicated by flashing LEDs******

This "special mode", contrasted to the normal mode allowing actuation of the THICK and BYPASS functions, allows the setup of both the sidechain filter and the MASTER/SLAVE configuration. The special mode is indicated by flashing any of the indicators that may be "on", while the normal mode is indicated by a non-flashing display. ***You must enter SPECIAL MODE to access the following features...***

Adjusting Sidechain Filter

In special mode, the current sidechain filter setting is indicated by the same meter used to show GAIN REDUCTION in the normal mode. These 8 light-emitting diodes (LEDs) indicate the following corner frequencies of the second-order sidechain high-pass filter:

Table 1: Indication of Sidechain Filter Frequencies

LED Marking	Corner Frequency (Hz)
3	30
6	42
9	60
12	85
15	120
18	170
21	240
24	340

The corner frequency selection is actuated by the push button marked "Thick". Each push on this switch moves the corner frequency by one position.

Stereo Linking

There are 3 ways to "link" for stereo operation:

- **NO DETECTOR, NO MASTER —** Because the PBC-6A is digitally-controlled--its characteristics from unit-to-unit are fairly consistent--it's not necessary to do any official linking. Using two mono units, run left and right audio as you would two seperate channels and dial up the same settings on both. You expect shifting of the common-mode (center) images with this configuration.

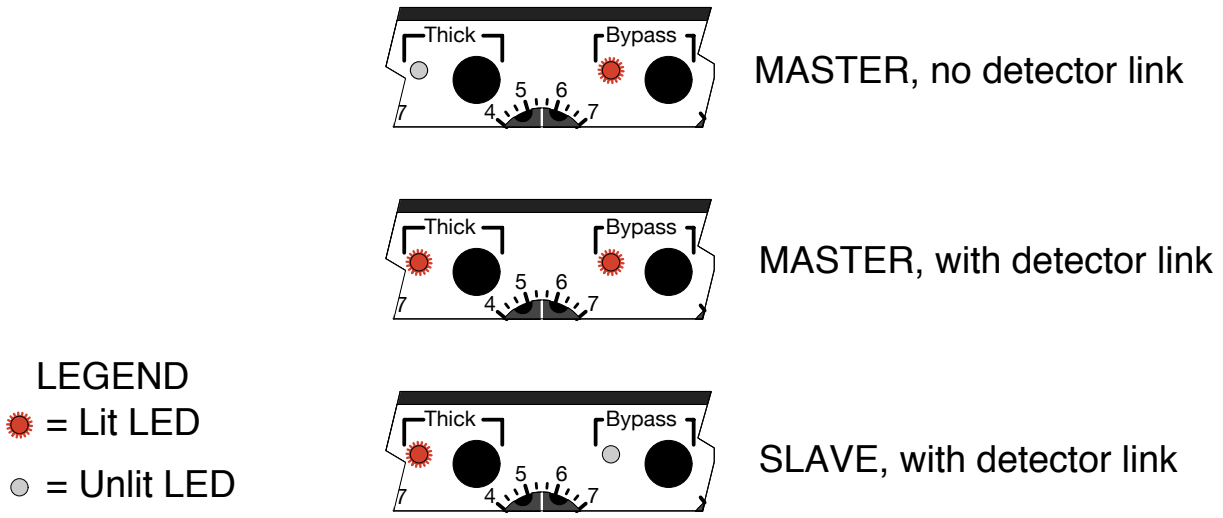
- **DETECTOR LINK, NO MASTER —** Using a TRS-to-TRS cable connecting two PBC link jacks, we can guarantee that the voltage-controlled amplifiers (VCAs) are controlled identically with this configuration. Even though the detector outputs are linked, each channel can have its own settings and may create some interesting results.

- **DETECTOR LINK, MASTER/SLAVE —** Once a link cable is installed, we can set up two PBC's so that not only are the detectors linked, but one can act as a MASTER and completely determines the parameter settings for both PBCs.

Setting these three possible modes is done through the BYPASS button while in SPECIAL MODE. In SPECIAL MODE, the LED next to the BYPASS button indicates the PBC's MASTER or SLAVE state. When the LED is on, that PBC is a MASTER. When this LED is off, the PBC is in the SLAVE state. The LED next to the THICK button indicates the PBC's detector link status.

The three possible states affecting the linking of PBCs is accessible by repeatedly pushing the BYPASS button while in SPECIAL MODE. Each push cycles through these three states, one state at a time.

Figure 2: Indication of MASTER/SLAVE mode



REMEMBER: if you want the detector's of two PBC's linked, you must connect a TRS-to-TRS cable between the PBC's LINK jacks!

SPECIAL NOTE: A PBC-6A that is configured for SLAVE MODE cannot be controlled from its own front panel. If, for some reason, your PBC is stuck in SLAVE MODE, you can reset it by:

1) Removing the LINK cable from the unit you wish to reset

2) Momentarily remove power from the unit

3) Restore power

This sequence will reset the unit to a "MASTER MODE, no detector link" state!