

# PC4-XLa™

## Software Upgrade Version of PC4-X and PC4-XL

In an effort to enhance our products with new features, Peavey Electronics introduces the PC4-XL digital electronic crossover. In addition to all the features found in the Peavey PC4-X, the PC4-XL has 2 additional types of equalization and limiters on each output. In order to accommodate these additional features, the "TEST" button has been redefined as the Limiter/EQ button. The DSP and memory test previously accessed using the TEST button is now performed automatically each time power is applied.

### CHANGES TO THE OWNER'S MANUAL:

#### Page 4/5

The TEST key (7) has been redefined as the LIM/EQ (limiter and equalization) key. The self-test that was accessed using the TEST key is now performed automatically when power is applied.

Overview and General Features Section says that "Stores up to 99 complete setups, each with its own 15 character label;" this is incorrect, it should be "Stores up to 50 complete setups, each with its own 15 character label."

#### Page 7 1-c Constant Directivity Horn EQ and Level

The horn EQ is no longer accessed using the "MASTER" key but is now one of three equalization types that can be selected using the LIM/EQ key. The CD Horn EQ still works as described in Diagram 1. For more information on how to use the Horn EQ, see the new PART 5 below.

#### Page 16 Part 5 SELF TEST

The "TEST" button had been redefined as the Limiter/EQ button. The DSP and memory test previously accessed using the TEST button is now performed automatically each time power is applied.

#### Page 16 Part 6 SECURITY LOCK

To activate the security lock, press and hold the LIM/EQ and MUTE keys while turning the power on until the lock display appears.

### NEW PART 5 LIM/EQ

#### A. LIMITERS

Limiters are available on each of the four outputs of the PC4-XL.

Press the LIM/EQ key until the following display appears.

```
←LIMITR1 Off    [ ---- ]  
→ LNK = N SEN = 0dBV
```

The limiters have three user selectable parameters that can be adjusted in the display shown above: Limiter On/Off, Link Y/N, and Sensitivity. To select a parameter to change, press either the top (←) or bottom (→) soft key.

#### LIMITER ON/OFF

Turning the limiter on activates the output limiter as long as the output is not muted. Turn limiter 1 on by moving the cursor below "Off" and then pressing either the up or down keys or using the data knob.

```
←LIMITR1 On    [ 1--- ]  
→ LNK = N SEN = 0dBV
```

Notice that in addition to Off changing to On, that a "1" appeared inside the brackets in the top right corner of the display. The area inside the brackets shows the status of the 4 limiters. The "1" that appeared in the first position indicates that the limiter for output 1 is on. The dashes in the second, third, and fourth positions indicate that those output limiters are off. When a limiter is on and when it goes into limiting, the display will change from the limiter's number to an asterisk (\*).

```
←LIMITR1 On    [ *--- ]  
→ LNK = N SEN = 0dBV
```

If a "1" did not appear in the display when the limiter was turned on, check to see if output 1 is muted.

#### LINK Y/N

The link control on the limiter allows 2 or more of the output limiters to work in tandem. For example, let's assume that the limiters on outputs 1 and 2 are "on" and that link is set to "Yes" on both limiters. If output 1 (the low frequency output) goes into limiting, then output 2 will also go into limiting by the same amount. Linking the limiters maintains the balance between the outputs. There are times, though, when it may be better not to link the output limiters. For example, you may not want the kick drum, which may cause the low frequency output limiter to limit, to also drop the volume of the mids and highs.

For linking to take place, 2 or more limiters must be "on." Normally, all of the limiters that are "on" and "linked," will limit simultaneously. However, a special case exists when all of the limiters are "on" and "linked," and when the system configuration is set to 2-way stereo or to Delay "A" into 1 and 2, "B" into 3 and 4. In this case, outputs 1 and 2 will be "linked" and outputs 3 and 4 will be "linked" separately.

#### SENSITIVITY

The sensitivity control on the limiter establishes the maximum output level of that output. So, if the sensitivity is set to 0 dBV (1 V RMS), then the maximum output signal from that output after the attack time will be equivalent in amplitude to a 1 V RMS sine wave. If the sensitivity was set to +6 dBV, the output would be equivalent to a 2 V RMS sine wave. If you set limiter sensitivity to the same level as the corresponding power amplifier input sensitivity, then the amplifier should be able to produce its maximum output power, but should be protected from sustained clipping.

#### OUTPUT EQUALIZATION

The PC4-XLa has three types of output equalization: CD horn EQ, parametric, and low and high frequency shelving tone controls. Each of these three types is available on every output. When 4th order filters are selected, three types of equalization are available on all four outputs. When 8th order filters are selected, equalization is available on output 4.

## LEVEL

When the output limiter is "on," the function of the output level control, accessed by pressing the LEVEL button, changes slightly. The level control functions as a prelimiter volume control with a  $\pm 12$  dB range. This allows for small adjustments of the output level without affecting the point where limiting occurs. The optimum setting for this control is at 0 dB.

## OUTPUT EQUALIZATION

The PC4-XL has 3 types of output equalization: CD horn EQ, parametric, and low and high frequency shelving tone controls. Each of these 3 types is available on every output.

Press the LIM/EQ button until the display shown below appears.

OUT1 EQ Off

## CD HORN EQ

Press either the up or down key or use the data knob to select the CD HORN EQ as shown below.

← OUT1 EQ Horn  
→ LEVEL = 0

The CD Horn EQ provides a 6 dB per octave high frequency emphasis useful with high frequency horns. As the level is increased, the top end of the band remains at the same level, and low and mid frequencies are reduced in level as shown in Diagram 1 in owner's manual. (See owner's manual)

To adjust the CD HORN EQ, press either of the side arrow softkeys to move the cursor to the level setting.

← OUT1 EQ Horn  
→ LEVEL = 0

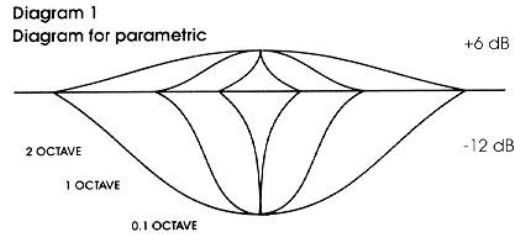
Now use either the up or down keys or the data knob to change the EQ setting.

## PARAMETRIC EQ

Use the side arrow softkeys to position the cursor below the current EQ type. Now select the Parametric EQ as shown below.

← OUT1 EQ Para -12.0  
→ FREQ = 60 Hz OCT = 1.0

The parametric EQ is a 1 band EQ with adjustable frequency, bandwidth, and level. The level has a range of +6 dB to -12 dB. The frequency is adjustable from 20 Hz to 20 kHz and the bandwidth is adjustable from .1 octave to 2 octaves. Use the side arrow softkeys to select the parameter to change, and the up or down key or the data knob to change the selected parameter. The diagram below shows the response of this filter.

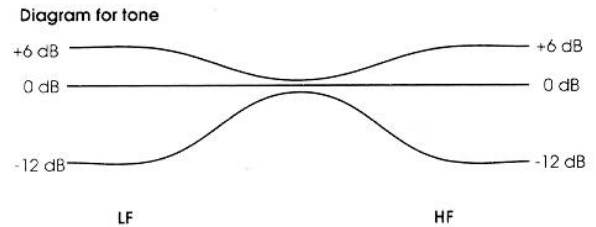


## TONE CONTROLS

The tone controls are traditional 1st order low and high frequency shelving controls with up to 6 dB of boost and 12 dB of cut. Select TONE EQ type by placing the cursor below the current EQ type and by using either the up or down key or the data knob. The display should appear as below.

← OUT1 EQ Tone  
→ LF = -12.0 HF = -12.0

Adjust the low or high frequency shelving controls by placing the cursor below the level to be changed. Change the level of that filter using either the up or down key or data knob. The response of the filter is shown below.



Features and specifications subject to change without notice.

