

RATTLE YOUR PLANET™



kosmos™
SUB HARMONIC GENERATOR

Techno-Speak:

The kosmos™ is a low-frequency energy and stereo image enhancement system. It can provide planet rattling bass while simultaneously causing the vocals to stand out in a mix and spread the stereo image. In operation, its sub-harmonic (QUAKE) processor watches the source material, analyzes the bass, then generates additional low frequencies an octave below it. It tracks the original bass without the mud of other bass processors, and is tuned to your speaker size for best performance. The QUAKE's activity is seismically monitored

and indicated by an LED. Its output level is fully adjustable.

In addition to the QUAKE process, there is an additional bass boost circuit (THUD) tuned an octave above the sub-harmonic range, which can be used to fill in and fatten out the low end. The left-right stereo image can also be intensified with the XPANSE control, which gives improved separation and clarity (atmosphere).

All inputs and outputs are balanced. To guarantee proper levels, an input gain con-

trol is provided. A 0dBu green signal LED and a +10dBu red signal LED assist in input level setting. The sub-woofer output has its own crossover and level control which supplies an equalized bass signal for systems with subs. The effects (including the added QUAKE and THUD signals sent to the sub woofer) can be bypassed for the occasional reality check, but once you've been to Emerald City, Kansas will never be the same again. Ditch the ruby slippers, Dorothy.

CONTROL IDENTIFICATION AND FUNCTION



1. GLOBAL BYPASS: This switch disables all functions except the input gain control and the sub woofer level control. When bypassed, the input circuitry still functions so that proper levels are passed through. This is especially necessary if the unit is used to level shift signals from -10dBV to +4 dBu to match outboard equipment. The sub woofer cross-over circuit still operates (but without the kosmos bass effects) when bypassed. The status is indicated by glowing ruby slippers, oops, I mean a red LED. (Illuminated means bypassed)

2. INPUT LEVEL: This control sets the input gain and output level of the unit. For optimum signal to noise and performance, it should be set so that the 0 dBu LED is flickering most of the time and the +10dBu LED does not blink. (The +10 dBu LED corresponds to the point where heavy bass content in the source material will cause possible output clipping or sanity damage.) The detented center position is the unity gain point.

3. CUT SUB BASS FROM MAIN: This switch removes the QUAKE sub-harmonics and the THUD bass from the main left and right outputs. This allows all the added bass to be sent only to the sub woofer output when a three speaker system is used. When the left and right speakers can not handle the additional bass produced, this is the best way to route low frequency enhancements. The XPANSE is always sent to the mains and is not affected by this switch's setting.

4. SUB-TERRANEAN SHIFT: This switch changes the sub-harmonic tuning between two speaker size settings. The out position has a higher center frequency, which is more suitable for small speakers. The difference is subtle; listen for it's action on bass guitar frequencies. Deeper bass sounds like it is coming from the floor instead of at your chest.

5. QUAKE: This control adds a synthesized bass signal one octave lower than what is present in the source. The yellow LED next to it indicates tectonic activity

in the sub bass range. It generates bass sub-harmonics pleasing to the ear, and does no processing when the input signal is outside of its defined range. It will thicken and deepen the bass of most program material and is especially effective on bass drums. Since it boosts the low frequency portion significantly, care must be taken to prevent amplifier clipping and speaker damage by excessive bass levels. It's louder than you think.

6. THUD: This control adds a specific band of bass frequencies (natural, not synthesized) to the sub-harmonics generated by the QUAKE process. It is tuned roughly an octave above the sub-harmonics, and is used to even out the low end balance.

7. XPANSE: This is a combination control. It simultaneously adjusts high frequency boost and stereo width. The minimum position is the flat setting; as it is advanced, the left-right image becomes wider and clarity is increased. It has been designed to pull vocals more to the front of the mix while giving them a three dimensional quality. Power guitars benefit as well.

8. SUB WOOFER: Built into the kosmos™ is a 90 Hz sub woofer cross-over. The sub woofer signal is the sum of the QUAKE output, the THUD output, and the low frequencies from the 90 Hz cross-over network. This control sets the output level. When the bypass switch is engaged, the added QUAKE and THUD components are removed, leaving only the low frequency cross-over material. In this mode, the control behaves as a normal sub-woofer level control.

9. POWER: Applies AC mains power to the internal power supply. When the unit is functioning, the blue power LED will light. AC power is required even in bypass mode, since the unit has built-in active level shifting capabilities.

REAR PANEL



1. IEC MAINS: Connect the supplied AC mains cord here. Make sure that the correct voltage is applied, or damage to the unit could result. (See markings on unit.)

2. SUB WOOFER OUTPUT: This is a 1/4" TRS electronically balanced output, that can be used either in balanced mode (with a 1/4" TRS jack) or unbalanced (standard 1/4" jack). The levels will automatically change to match the configuration. This output supplies the signal for the sub woofer amplifier (line level).

3. LEFT AND RIGHT OUTPUTS: The left and right outputs are electronically balanced, with pin 2 (and tip) positive. The XLR and 1/4" TRS phone jacks are directly wired in parallel. They should not be used at the same time (on the same channel) since the output balance would not necessarily be maintained, especially if a balanced and an unbalanced connector were used.

4. INPUTS: The left and right input jacks are balanced with pin 2 (and tip) positive. The XLR and 1/4" TRS jacks are directly wired in parallel.

ELECTRICAL SPECIFICATIONS:

FREQUENCY RESPONSE:

PROCESS MODE: Program controlled
BYPASSED: <10Hz to 40Khz +0/-1 dB

THD+N (10Hz -80K Hz BW):

PROCESS MODE: ≤ .003%
BYPASSED: ≤ .002%

SIGNAL TO NOISE: -107 dBu

CROSSTALK: <-75 dB @ 1KHz

CMRR: -60 dB

NOMINAL INPUT LEVEL: 0 dBu (.775 VRMS)

MAX OUTPUT: +22 dBu

MAX INPUT: +22 dBu

INPUT IMPEDANCE:

20K ohms balanced
(Pin 2 positive), 10K ohms unbalanced.

OUTPUT IMPEDANCE:

200 ohms balanced
Pin 2 positive), 100 ohms unbalanced.

POWER REQUIREMENTS:

8 Watts @ 120VRMS 50/60 Hz
8 Watts @ 230VRMS 50/60 Hz

DIMENSIONS: 19" W x 1.75" H x 9" D

NET WEIGHT: 7.1 lbs.

SHIPPING WEIGHT: 8.7 lbs.

Features and specifications subject to change without notice.

Peavey Electronics Corp. 711 A Street / Meridian MS 39301 / U.S.A. (601) 483-5365 FAX (601) 486-1278

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www.peavey.com