

VSX-48 Processor Settings for the VersArray VR-112 Neo and VR-218 Subs

SAFE MODE SETTINGS Single VR-112 Neo Enclosure

SETUP Button:

VSX-48 Configuration: Make sure firmware version is: 1.0.5 or higher

Input A routed to Outputs: 1, 2, & 3 +4 dBu

Stereo

Input B routed to Outputs: 4, 5, & 6 +4 dBu

Setup Config: CFGO No Crossovers

X-OVER Button:

Outputs 1 & 4: VR-218 SUB

X-Over High Pass / Low Cut – Type: L-R 24 Freq: 34 Hz

Level: *See Chart Below*

Low Pass / High Cut - Type: L-R 24 Freq: 140 Hz

Level Changes w/# of VR-112 Enclosures:

#	1	2	3	4	6	8
(1) VR-218 Sub						
Level	-4.0 dB	-2.5 dB	-0.5 dB	+1.5 dB	+4.0 dB	+5.5 dB

When doubling the number of Subs, subtract –6 dB for each doubling of Subs.

Outputs 2 & 5: VR-112 Woofer

X-Over High Pass / Low Cut – Type: BESS 24 Freq: 200 Hz

Level: 0 dB (Woofer level is 0 dB will any # enclosures)

Low Pass / High Cut - Type: L-R 24 Freq: 3800 Hz

Outputs 3 & 6: VR-112 Ribbons

X-Over High Pass / Low Cut – Type: BESS 24 Freq: 5200 Hz

Level: *See Chart below*

Low Pass / High Cut - Type: BESS 12 Freq: 16000 Hz

Level Changes w/# of VR-112 Enclosures:

VR-112 Ribbon	1	2	3	4	6	8
Level	+1.0 dB	+2.0 dB	+4.0 dB	+5.5 dB	+6.5 dB	+7.0 dB

EQ Button:

Front End PEQ:

of VR-112 Enclosures

	1	2	3	4	6	8
@ 1.8 kHz	-2.0 dB	-3.0 dB	-3.5 dB	-3.5 dB	-4.0 dB	-4.5 dB
	BW 0.6	BW 0.6	BW 0.6	BW 0.6	BW 0.6	BW 0.6

EQ Button:

Outputs 1 & 4: VR-218 SUB

Filter 1 - Type: PEQ, Freq: 50 Hz, BW (oct): 0.7, Level: +4.0 dB [IN]
Filter 2 - Type: PEQ, Freq: 200 Hz, BW (oct): 0.5, Level: -4.0 dB [IN]
Filters 3, 4, 5: Level: 0.00 dB [OUT]

Outputs 2 & 5: VR-112 Woofer

Filter 1 - Type: PEQ, Freq: 115 Hz, BW (oct): 2.0, Level: +3.0 dB [IN]
Filter 2 - Type: PEQ, Freq: 310 Hz, BW (oct): 0.6, Level: +3.0 dB [IN]
Filter 3 - Type: PEQ, Freq: 700 Hz, BW (oct): 3.0, Level: -1.5 dB [IN]
Filter 4 - Type: PEQ, Freq: 850 Hz, BW (oct): 0.7, Level: -3.5 dB [IN]
Filter 5 - Type: PEQ, Freq: 2200 Hz, BW (oct): 0.6, Level: -5.0 dB [IN]

Outputs 3 & 6: VR-112 Ribbon

Filter 1 - Type: PEQ, Freq: 2700 Hz, BW (oct): 0.7, Level: -3.0 dB [IN]
Filter 2 - Type: PEQ, Freq: 4600 Hz, BW (oct): 1.0, Level: +2.0 dB [IN]
Filter 3 - Type: PEQ, Freq: 16500 Hz, BW (oct): 1.0, Level: +2.0 dB [IN]
Filter 4 & 5: Level: 0.00 [OUT]

DYNAMICS Button (Limiters):

Input A & B Limiters:

Threshold: +20.0 dBv Gain:
Ratio: 20 : 1 0.00 dB
Attack: 50.000
Release: 500 mS [IN]

Outputs 1 & 4:

VR-218 (Each 18" BW): 89 Volts @ x40 gain = 2.225 Volts = +9.2 dBu = +7.0 dBV
@ x20 gain = 4.45 Volts = +15.2 dBu = +13.0 dBV

Threshold: +9.0 dB Gain:
Ratio: 20:1 0.00 dB
Attack: 100.000
Release: 1000 mS [IN]

Outputs 2 & 5:

VR-112 Woofer: 57 Volts @ x40 gain = 1.425 Volts = +5.2 dBu = +3.0 dBV
@ x20 gain = 2.85 Volts = +11.3 dBu = +9.0 dBV

Threshold: +4.0 dB Gain:
Ratio: 20:1 0.00 dB
Attack: 60.000
Release: 600 mS [IN]

Outputs 3 & 6: (Dynamics)

**VR-112 Ribbon: 36 Volts @ x40 gain = 0.9 Volts = +1.3 dBu = -0.9 dBV
@ x20 gain = 1.8 Volts = +7.3 dBu = +5.1 dBV**

**Threshold: -2.0 dB Gain: 0.00 dB
Ratio: 20:1
Attack: 10.000
Release: 100 mS [IN]**

Delay Button:

No delay settings are necessary for a VR-112 system. However you may want to add delay to the Inputs, to align the FOH loudspeakers to the backline of amplifiers. Usually the delay setting is the distance between loudspeakers and the front head of the Kick drum.

**Digitool MX - Infrasonic filtering: Filter/Gate = High Pass 12 dB per Octave at 20 Hz Q = 0.58
EQ = High Pass 12 dB per Octave at 10 Hz Q = 0.50**

SPECIAL NOTE: These settings have been carefully selected to provide the best performance the Versarray™ 112 system is capable of, and provide maximum sound quality with high reliability. Bessel filters have a non-intuitive frequency setting compared to Linkwitz-Riley or Butterworth filters, and may give the impression that there is a severe under-lap at the crossover frequency. This is not the case, and all factors have been taken into account, including the acoustic behavior of the drivers into the waveguide load. If you have ANY concerns or questions about crossover and EQ settings, please contact Peavey Transducer Engineering.

All settings are based on all power amplifiers having the same Voltage gain. All current Peavey amplifier models have a x40 Voltage gain, or +32 dB. Some amplifiers will have a x20 Voltage gain, or +26 dB. It is recommended that power amplifiers that do not have fixed Voltage gain, should NOT be used for a VR-112 system. Amplifiers that are sensitive to 0.775 Volts to reach full power are not fixed in Voltage gain.

Ribbons are wired in Series for a 16 Ohm impedance. If wired in Parallel (4 Ohms) then the HF level is to be reduced by -6 dB.

Other Notes:

VersArray VR-218 Subs are in 4 Ohm mode (woofers paralleled). There is an internal jumper that can be changed to allow individual access via a 4 Pole Neutrik Speakon and 4 Conductor cable.

If the VR-218 Subs are driven to be driven separately, use an amplifier with the same gain as the other amps, the drive level to the separate woofer is the same.

To convert the above drive levels for a single VersArray VR-118 Sub enclosure; add +6 dB gain.

Line curvature or splay between enclosures:

Splaying the line will tend to require more level increase from the Ribbons, and some more cut in EQ at 1.8 kHz.

A uniform splay of 2.5 degrees between enclosures of an 8-Hang array would need approximately +2.0 dB of boost to the Ribbons and +0.5 dB to the Woofers.

A uniform splay of 5 degrees between enclosures of an 8-Hang array would need approximately +5 dB of boost to the Ribbons and +1.0 dB to the Woofers.

The application of ‘J’ Legging of the bottom enclosures in an array, can detract from the rest of the arrays’ summing, while offering little performance gain in the near field. At Peavey we believe this practice to be of little value, unless the array is comprised of more than 8 VR-112 elements. If the user decides on the ‘J’ leg approach, then it is recommended to turn the level down to these enclosures by -6 to -10 dB, to minimize the negative impact to the summing of the rest of the system.

AUX fed Subs

When using AUX fed Subs, or boosting the level of the normally crossed over Subs more than 4-6 dB above a truly flat level, the high pass crossover point needs to be adjusted down. For the Maximum Reliability Settings, this would mean crossing the Subs over at 125 Hz (or less) instead of 140 Hz, using a 24 dB/oct. LR crossover. If running the Subs at 10 dB or more above a truly flat level (not uncommon for concert or DJ venues), the high pass crossover point of the Subs needs to be adjusted down to 100 Hz, and some EQ pull-back may be required around 200 –250 Hz.