Information for Setting Up the Versarray 112 for Maximum Reliability

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WHAT CROSSOVER SETTINGS TO USE WITH THE VERSARRAY 112 RIBBONS:
Most problems with damaging the ribbon tweeters on the Versarray 112 can be traced to use of crossover settings or EQ other than those supplied by Peavey.

The ribbons ABSOULUTELY should not be crossed over lower than 2.0 kHz, LR 24 dB/oct. They should not use a gentler slope than 24 dB/oct., and it is recommended that they not use a higher slope than 24 dB/oct. due to excessive transient overshoot with higher slopes. Did you know that a 48 dB/oct. LR crossover slope has almost 6 dB of transient overshoot right at the crossover frequency? This exposes the ribbon to excessive excursion right where it needs help the most.
This is one reason Peavey uses the Bessel filter function for the tweeter low pass, less transient overshoot than even a LR function.

For use in situations where the system may be abused or exposed to overloads, run by inexperienced personnel, etc., we recommend the same crossover settings used on the Jagermeister Mobile Stage used for Ozzfest, what we are calling the Maximum Reliability crossover settings.

WHICH AMP TO USE WITH THE VERSARRAY 112 RIBBONS:
I looked at the CS-4000, and this is really too large to be using on the tweeter section, it has the capability to take out the ribbons in a heartbeat if an error occurs. It is certainly NOT an ideal choice for use with rental or church systems!

RENTAL (or Permanent Install/Church Use)
I recommend the following amps for VR112 ribbon tweeter use:
One or Two VR112's in 16 ohm mode - CS-800 (series), GPS-900 {Crest CA-2}
Four 16 ohm wired units in parallel - The previous amps, plus CS-1400, GPS-1500 {Crest Pro 5200, CA-4}
For rental/church use, I would not recommend anything larger than these last ones.

TOTALLY PROFESSIONAL OPERATION
One or Two VR112's in 16 ohm mode - CS-1400, GPS-1500 {Crest Pro 5200, CA-4}
Four 16 ohm wired units in parallel - CS-2000, GPS-2600*

* Only for use with High Reliability VR112 Crossover Settings.

Anything larger than a CS-3000 risks easy and rapid damage to the ribbons, but provides no more SAFE acoustic output, you are already capable of going beyond rated power input (and rated acoustic output) to the ribbons with this size amp.
It is more what the voltage output capability of the power amp is, and not so much the total wattage divided by the number of cabinets/tweeters connected as a load.

A single VR112 wired in 16 ohm mode has a maximum input voltage rating for the tweeters of approx. 67 volts RMS peak, and approx. 34 volts RMS continuous. This is also the limit for four units in 16 ohm mode wired in parallel.
Unfortunately, the larger amps with "more watts" get the additional wattage by increasing the rails voltage.

Some folks might be concerned that there are not enough "watts" for two cabinets when using the CS-800 (series) or GPS-900, etc., but they both have the voltage output capability to exceed the continuous power rating of the ribbons, and are within a dB or two of maximum output capability for peaks, so very little actual system output capability is lost.

For 4 ohm wiring mode of the VR112, these three amps (CS-800 series, GPS-900 and Crest CA-2) are the only safe choices, and this mode of wiring with these amps should ONLY be used by Professionals.

I would NOT recommend going to a 2 ohm total load for the Versarray 112 tweeters (either 2 units wired in 4 ohm mode, or 8 units wired in 16 ohm mode), most amps do not sound their best when driving such a low impedance, and the ribbons WILL project that less-than-optimal sound to your ears.

Of course, for all Peavey amps, the DDT should be engaged, and for Crest amps the ACL.

Maximum Input Voltages
Versarray™ 218 Subwoofer: 89 VRMS continuous, 178 VRMS peak or momentary
(with proper infrasonic and low pass filters engaged)
Versarray™ 118 Subwoofer: 89 VRMS continuous, 178 VRMS peak or momentary
(with proper infrasonic and low pass filters engaged)
Versarray™ 112 Woofer: 57 VRMS continuous, 114 VRMS peak or momentary
(with proper band pass crossover filters used)
Versarray™ 112 Tweeters:
16 ohm impedance configuration: 33.5 VRMS continuous, 67 VRMS peak or momentary
4 ohm impedance configuration: 17 VRMS continuous, 34 VRMS peak or momentary
(with proper high pass crossover filter used)

We strongly recommend that a power amp be used with a peak voltage rating that is not substantially higher than the peak voltage rating of the driver it is connected to. There will be no further significant increase in SPL, and a much higher chance that an accident or mistake will damage the speaker system.

PEAVEY Power Amp Peak Output Voltages
CS 4080 Maximum RMS Voltage Output – 115 volts
CS 4000 Maximum RMS Voltage Output – 93 volts
CS 3000 Maximum RMS Voltage Output – 86 volts
CS 2000 Maximum RMS Voltage Output – 72 volts
CS 1400 Maximum RMS Voltage Output – 61 volts

CREST Power Amp Peak Output Voltages
Pro 9200 Maximum RMS Voltage Output – 113 volts
Pro 8200 Maximum RMS Voltage Output – 90 volts
Pro 7200 Maximum RMS Voltage Output – 75 volts
Pro 5200 Maximum RMS Voltage Output – 52 volts