Subject: 4Pi for small sized live music venue?
Posted by Symphonimind on Tue, 25 Jun 2019 14:22:17 GMT
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Dear Wayne,
I am thinking about building a pair of 4Pis (Omega Pro 15A + DE250, the 2226H is 4 times more expensive in my place) for small live music venue. The music will be 60% rock, 40% pop. It is around 80 square meters (10 meters long & 7 meters wide). There will be around 40-80 people every night.

The subwoofer will be my vented box design using double 4018LF drivers. They sound extremely good for the money.

The 4Pis will serve as PA Top crossed at 90-100Hz. The 4Pis will be supported by a pair of 2x12 guitar cabs and a 4x10 bass cab. So they will only play vocals, miced drums (mixed with direct sound of drums kit) and keyboard and some backing track.

Do you think it is safe to use 4Pi as above condition? I am worry that the DE250 will be burned out if I play 4Pi at near rated power (~600-800W RMS) because its voice coil is only 1.7".

From the main PA Top, the farrest listening distance will be 8m. Assuming that we want to play 95dB SPL at 8m, so 4Pi must generate at least 113dB SPL @1m 80% time of the live show.

I modeled Omega 15A with LR4 crossover @85Hz and it takes all of the 800Wrms rated power without exceeding Xmax. So the final question will be:

Can DE250 with your crossover design withstand that usage circumstance?

Thank you very much.
Edwards.

Subject: Re: 4Pi for small sized live music venue?
Posted by Wayne Parham on Tue, 25 Jun 2019 14:29:03 GMT
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Yes, it will handle those power levels. The tweeter can actually handle much more than that. Remember that the crossover cuts the tweeter level about 10x, so even at maximum power, the tweeter is only dissipating about 60w. It will handle twice that.

Subject: Re: 4Pi for small sized live music venue?
Posted by Symphonimind on Tue, 25 Jun 2019 14:34:08 GMT
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Wayne Parham wrote on Tue, 25 June 2019 09:29
Yes, it will handle those power levels. The tweeter can actually handle much more than that. Remember that the crossover cuts the tweeter level about 10x, so even at maximum power, the tweeter is only dissipating about 60w. It will handle twice that.

Thank you a lot, Wayne. Now I can sleep tight and prepare for my next Pi sets (I have built and success with 3Pi).

Thank you.