Webinar: Choosing the Right Cinema Loudspeaker

1) Do passive crossovers adversely affect the benefits of Intrinsic Correction™?
Intrinsic Correction can work extremely well with passive crossovers. Intrinsic Correction is the process we use in the laboratory to optimize the crossovers, EQ settings, and time alignment of our loudspeakers using a very advanced measurement process consisting of over 1000 measurements. The high resolution filter created from this process, which is the inverse of what we measure in the lab, allows us to engineer the speaker to a basically flat, spatially averaged response of the audience area whether using active or passive crossovers. If a loudspeaker has very controlled directivity, and a flat, spatially-averaged response, when put behind a cinema screen we get very close to the X curve with very little correction right out of the box.

2) What's the best option for low profile needs for ceiling surrounds to prevent overhead surrounds from being in the projector light path?
Although we didn't cover this in our presentation, we do have a couple of options for this. Depending on room size and output needed, a great option might be our AD-S282H. It is a dual 8" with a high-powered compression driver similar in output to a 12" 2-way but using only 8" woofers. Because it is a vertically-oriented, molded cabinet with a rounded back to it, it can be mounted closer to the ceiling with a yoke. Also consider our AP Series loudspeakers. AP-5102 a 10" high-powered version that uses the same compression driver as a 3-way screen channel. It is limited in the bass range due to its size but these speakers can play incredibly loud and would work great especially if you are bass-managing to the surround LFE's. Due to their size, they can also be easily mounted very close to the ceiling using a yoke.

3) What is the difference in bass performance between the SC-2150's dual 15" drivers vs. the SC-413C and SC-414 with their single 15" drivers?
The SC-414 has a very premium high-quality, low distortion, 4" voice coil, 15" woofer and is dynamite for a single 15". At the end of the day, if you just want loud bass, even though the SC-2150 has a 3" voice coil and more cost-oriented woofer, two woofers will almost always give a single woofer a good run for the money. They get a 3 dB boost in sensitivity due to mutual coupling and they can take nearly twice as much power which could add another 3 dB. The big difference between the two is the midrange and high-frequency performance. The SC-2150 is compact and cost-effective, but it is hard to beat the big midrange horn and bigger, high-performance high-frequency driver that you get on the SC-413C. So I would say it's not so much about the bass between these, but more-so the mids and highs.

4) What are your thoughts on subwoofer clusters vs. arrays to get the best low frequency coverage in the auditorium?
When you spread subs apart you wind up with peaks and dips in coverage. You will get the best coverage in your room, the highest sensitivity, and the best mutual coupling when you put the subwoofers together. Minimizing the maximum dimensions of the array is the goal (2x2 rather that 1x4, for instance). When subs, or groups of subs, are spread apart (as in, one set on the right, and one on the left) you will have the loudest area in the middle and at the sides, and you will get cancellations in the areas in between creating uneven bass throughout your space. Keep them as tightly packed as possible.

5) In determining the correct amplifier for screen channel loudspeakers for a given power and distance, should we use the specification for "Max continuous SPL" or "Max peak SPL"?

If we are referring to the power ratings of our DPA-Q amplifiers, it is completely acceptable to use the max power specifications. The DPA-Q amps might have a power rating for sine waves with all channels driven, but in reality, the woofers use more power than the mid and high frequency drivers. So if you spread high powered and low powered channels on the same amplifier you can get a lot more power for the woofers because you are drawing so little for the horns - even with an amplifier as small as the DPA-2K4Q, which has a Max power rating of 800 watts. It is perfectly acceptable to use these specs in calculating amplifier power needs based on the room size.