Subject: Questions about H290C horn and 3Pi Subwoofer
Posted by Symphonimind on Thu, 14 Feb 2019 08:25:39 GMT
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Dear Wayne,

I am preparing for my first 3Pi with 4012HO and DE250. I decided to flushmount 3x 3Pi (LCR) in my studio and use with 4x 3Pi subwoofers, so I want to build optimized cabinet for 4012HO. The cabinet will be all 25mm MDF with 4mm bitum layer damping.

My questions are:

1. What is the volume displacement for H290C Waveguide?
2. Will 3Pi Subwoofer suffer from chuffing sound at almost maximum SPL (with highpass filter at 18Hz)? Should I make the port flared?

The studio is for post production built to meet Dolby Atmos specifications. The subwoofers need to produce 115dB at listening position. So I am a little bit worry about the port noise at maximum SPL the sub can produce.

The last question, can you share with me the plan for One Pi? I think I will use One Pi for surround speaker.

Thank you very much.

Subject: Re: Questions about H290C horn and 3Pi Subwoofer
Posted by Wayne Parham on Thu, 14 Feb 2019 16:01:28 GMT
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The volume displacement of the H290C is 125 cubic inches sans driver. But the internal volume offsets are taken into account already, so don't "grow" the box to account for internal offsets again. More information about the H290C Horn/Waveguide is available at the link below:
H290C Horn/Waveguide
The three Pi subwoofer is designed with enough port to prevent chuffing even at maximum SPL. The subwoofer is too small to offer high SPL though, so I suggest running multiple subs both for smoothing and SPL. That was always the intention of this design: It was made to be used in multiples.

I'm glad to see you already understand that and plan to run four subs. That will be perfect. But for others reading this thread, I'll provide "Multisub" links for reference below:
Multisubs

Subject: Re: Questions about H290C horn and 3Pi Subwoofer

Posted by Symphonimind on Thu, 14 Feb 2019 16:20:21 GMT
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Dear Wayne,
Thank you for answering and send the One Pi Plan.

Regarding the "potential port noise" at maxSPL, I feel much more confident now. I will use four subs in Single Bass Array configuration, all flush-mounted in baffle wall together with the 3Pis.

Thank you once again.

Regards,
Edwards.

Subject: Re: Questions about H290C horn and 3Pi Subwoofer
Posted by johnnycamp5 on Fri, 15 Feb 2019 14:43:52 GMT
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It's impressive (for me) to see that you're building the "single bass array" design in your studio.

To generalize, it necessitates having to install a medium density Roxul or Ultra Touch type insulation (at a thickness/depth no less than 3 feet) across the entirity of the back wall.
This obviously uses a lot of space (cubic feet) in a room.

In most multi-use residential spaces, the "DBA" is usually not as practical as using distributed subs ..

Edit: I meant the "SBA" is not ass practical as distributed subs.
A "Double bass array" can take up much less space than a "SBA", at the expense of more equipment.

Subject: Re: Questions about H290C horn and 3Pi Subwoofer
Posted by Symphonimind on Sat, 16 Feb 2019 01:07:04 GMT
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Dear JohnyCamp,
Thank you for your kind words and suggestions.

I was impressed by logical approach of SBA concept and want to try that setup first time.

I will install basstrap wall for all surface of ceiling, backwall, sidewall.

The basstrap system I use is 700mm thick with multi-layers of different materials. It proved its ability to handle 25-30Hz with just its thinner version.

I want to make this room pass as many critical specs of ITU, Dolby, THX as possible with

reasonable budget.

My previous rooms have passed many critical specs of ITU 2-ch listening room. But this is the first time I do surround sound.

I'm really excited to start on detailed design phase.

Bests,
Edwards