

Harman Luxury Update - June

Welcome to the Harman Luxury Newsletter

By Dave Tovissi, VP & GM - Luxury Audio

As Vice President and GM of the Luxury Audio Group for Harman, I want to do everything in my power to develop better relationships with our dealers going forward. I am aware that relationships take time to foster and I am committed to investing that time to build one with you and your teams.



Based on the ratings we received from some of you who completed the recent survey I sent out, I have prioritized the areas that we will need to improve. One of those areas is **COMMUNICATION**. That was the inspiration for creating this monthly newsletter. It is our intent to be transparent with you and also to inform and educate wherever possible.

We also want to profile some of our great partners and allow them to share best practices with our dealer community. We hope you will find this newsletter to be a bridge to better understanding how Harman stands ready to serve you and your customers with a commitment to innovation, quality, value and exceptional customer service. These are the pillars of building luxury brands and are the pillars of our group.

My passion and my experience have prepared me to lead the Luxury Audio Group at Harman. I do understand the needs of all types of dealers and the importance of structure and service. It is my intent to build upon the great products and solutions that Harman has introduced over the past 70+ years. I promise to work with all the dealers and distributors to create innovative products that represent quality workmanship and are backed by superior customer service. I do understand that this group has not always been first to market and at times did not represent the characteristics of a luxury brand. I can assure you that our team is 100% focused on being the best supplier partner to all of you.

If you have any feedback or want to schedule a meeting with me or any of my staff, please contact me at david.tovissi@harman.com.

What's New

Introducing the 5000 Series

New Integrated Amplifiers from Mark Levinson

The N°5805 and N°5802 were created to deliver all of the performance and quality expected from Mark Levinson while implementing state of the art features and efficiencies gained from decades of superlative audio engineering. With a brand new industrial design, fully discrete PurePath circuitry, Mark Levinson PrecisionLink II DAC, MainDrive headphone power, and potent dual monaural class AB amplification, the N°5805 and N°5802 deliver luxurious fidelity with premium features and flexibility. The N°5805 features analog and digital inputs, while the N°5802 has digital inputs only. The N°5805 and N°5802 are proudly designed, engineered, and precision-crafted in the USA.

<https://www.marklevinson.com/products/integrated-amplifiers/>



Dealer Profile

MusicDirect

Chicago, Illinois

President:	Jim Davis	Employees:	83
Vice President:	Josh Bizar	Harman Brands Supported:	JBL Synthesis, Mark Levinson, Revel, Arcam
Vice President, Marketing:	John Snyder	Buying Group Affiliation:	ProSource
Vice President, Operations:	Rocco Marra		
Brand Ambassador:	Besflores Nievera, Jr.		

Music Direct has been catering to the high-end audio lover community of Chicago since 1996. We spoke with Brand Ambassador, Besflores Nievera Jr. to learn more about what drives them as a company. “Our motto is It’s all about the music, and that visionary thought really comes to the heart of how we function as an organization,” Nievera says. “Our mission is to be the best purveyors of high end audiophile equipment and meet the needs of an excited community of music lovers. Make sure the customer is happy. I think it takes that kind of thought process to deliver.”

In terms of Music Direct’s relationship with Harman, Nievera speaks glowingly. “From the moment that Harman approached us to our current relationship, our respect for Harman and their expanding suite of products and brands continues to grow. We’ve seen our customers react positively and the possibilities are unlimited. We want everyone to know that Harman is a great partner and we look forward to a long-lasting relationship.”

One of the strongest bonds between Harman and Music Direct is a shared commitment to, and belief in the value of training. Nievera tells us, “If our sales team doesn’t maintain a fresh perspective and get regular updates, our job is meaningless. What we really love about training with Harman is that they deploy a high level of communication between retailer and organization in such a way that we are able to utilize our own thought processes, and become great storytellers of the brands and their histories.”

Harman recently hosted a Revel training session at Music Direct, and Nievera sat down with Harman Global Training Manager, Chris Robinson. [Check out the video.](#)

You can learn more about Music Direct on their website at www.musicdirect.com

Tech Talk

Subwoofers and Driver Size: Is Larger Better?



By Chris Hagen, Principal System Engineer

Over the years, the process of purchasing audio equipment has changed. Consumers used to visit audio shops and listen before purchase. Being able to research and shop on the internet and use readily available spreadsheet software has made a drastic change in the buyer's habits to more of one comparing tabulated numbers. System complexity has also changed the desire to do-it-yourself as well, resulting in the custom installer market.

The new approaches to deciding what equipment to buy have resulted largely in choosing the best subwoofer purely by driver size. The larger the integral woofer, the better the subwoofer. More is better after all, right?

SUBWOOFERS

A subwoofer is a specialized speaker system designed to work best at bass frequencies. It is used to give extra low bass to smaller speaker systems that are incapable of reproducing the notes that the subwoofer can. It uses an optimized driver, a resonant enclosure, and in some cases a custom eq in the design. We will discuss the enclosure and eq, or boost, in later articles.

The subwoofer is a very simple speaker compared to multi-way speaker systems. Without higher frequency drivers and the crossover to them, the subwoofer is designed with focus primarily on a few parameters that control its frequency response character and its ability to create bass. It is also a speaker system best designed at the edge of its limits – with looking at large signal capabilities of the woofer – rather than with small signal parameters.

SUBWOOFER DRIVERS

The subwoofer driver typically ends up performing best below 500 Hz. The cone assembly is usually heavy and straight-sided to lower resonance and withstand the force of the motor. The surround has a large diameter to allow large amounts of movement working with the spider. The voice coil and motor are designed to allow large excursions of the voice coil along the pole. The motor has to be strong to move the heavy cone assembly. All of these attributes tend to lessen and roughen the higher frequency output of a subwoofer driver.

The moving mass (cone assembly) of the woofer combined with the stiffness of the suspension produce a driver with a lower resonance. Designing this resonance to work with the resonant character of the cabinet allows the subwoofer to hit its lowest notes. Following good general design techniques allows the subwoofer driver to act like a piston and reproduce input properly up to its crossover to a satellite or mid-bass speaker, most commonly at 80 Hz to 100 Hz.

But, what is most important in a subwoofer is volume displacement of the woofer. A driver with more volume displacement can play louder and reach lower frequencies. Volume displacement is the radiating area multiplied by the excursion, and all three combine to predict maximum loudness at a given frequency for a transducer.

DRIVER SIZE AND EXCURSION

Driver size is important in that the efficiency of the woofer is directly proportional to the radiating area squared. The radiating area, which is close to the cone planar area, is somewhat tied to the driver size. The larger the radiating area, the efficiency goes up quite quickly.

Here's a chart of typical woofer radiating areas:

Nominal Woofer Size	Radiating Area – Sd, sq. in
18"	201.5 sq. in
15"	137.95 sq. in
12"	82.15 sq. in
10"	54.25 sq. in
8"	34.1 sq. in

Excursion capability is important because it helps a speaker play louder – doubling the driver excursion will increase the woofer output at a given frequency by 6 dB. Also, reproducing a frequency one octave below another frequency requires four times the excursion of the higher tone.

Excursion requirements relate inversely to the square of the frequency, so lower frequencies require much greater cone movement.

Note that the only limit to radiating area is the nominal driver size – the frame outside diameter, but it is possible and frequently true that other components of the transducer design – magnet system, spider, surround, voice coil, etc. – do not have enough clearance designed in and limit the excursion.

Because of this, there is no way to determine excursion capabilities from driver size. Excursion is a result of capability designed into the magnet system, spider, surround, voice coil, etc., and it is the interaction of all of these design components that results in how much capability for excursion the woofer actually has.

MULTIPLE DRIVERS

Using multiple smaller woofers is an easy way to increase radiating area. From the Sd chart above, you can see for example that two conventional 8" drivers will have more radiating area (68.2 sq. in. as opposed to 54.25 sq. in.) than a 10" woofer. The radiating area simply adds together, and since the excursion is the same for both drivers, you double the volume displacement.

Looking at the Sd chart, if excursion were all the same, then rankings from least volume displacement to most of single and dual drivers would be: 8", 10", 2 x 8", 12", 2 x 10", 15", 2 x 12", 18", 2 x 15", and 2 x 18". But this is only true if all excursion capabilities are the same.

RECONSIDERING THE SMALLER DRIVER

Because of these limitations of larger woofers, a door is opened for multiple smaller drivers to work better than the larger woofers.

Typical 18" woofers can have a maximum excursion of about $\frac{1}{2}$ ". So their volume displacement is about 101 cu. in. However, a 12" driver can have as much as 1" excursion or more. If two of this type of woofer is used, we see that we can get $2 \times 1" \times 82.15 = 164.3$ cu. in. total volume displacement. In this way we see that a special class of smaller driver can have better performance in multiples than a single larger driver.

CONCLUSION

So we see that knowing a bit more about the driver capability is more important than simple frame size. When selecting a woofer based on frame size alone, it is very easy to miss other aspects that play a huge factor in the performance of the subwoofer. A design that exploits these other parameters in multiple smaller woofers can easily equal or exceed the performance of a single larger driver.

A CASE IN POINT

The SSW-2 is just this type of a subwoofer. Its dual 12" woofers have a greater combined area than the S2S-EX 15" woofer.

Because of the smaller woofers' 4" voice coil motors, the SSW-2 is capable of playing louder with music and CTA 2034 tone burst testing (by 1-1/2 dB) as well as play a little deeper than the S2S-EX. The result is an obvious upgrade, with an added benefit of being able to lie on its side under a screen, something the roughly-square-faced S2S-EX could not do.

NOTE

The preceding is a discussion of volume displacement, radiating area and excursion. All side effects of changes in impedance, driver acoustic coupling, and other aspects are intentionally left out for simplicity.

REFERENCES

Harry F. Olson, "Audio Engineering".

Martin Colloms, "High Performance Loudspeakers"

Training Tips

The Luxury Audio Acoustics Academy

By Chris Robinson, Manager, Global Training



For over 10 years, the most well attended and “fun” training at Luxury Audio has been our two-day Luxury Audio academy at the Harman Center of Excellence for Speaker Development in Northridge, Ca. While Luxury Audio offers many opportunities for product training, the focus in the Acoustics Academy is to offer inspirational and substantive information on the Harman Luxury Audio brands combined with the science behind their acoustics, equipping attendees with the knowledge to enhance their sales professionalism.

The academy begins with a talk from our research science group, headed by Dr. Sean Olive and the legendary Dr. Floyd Toole, two of the most respected acoustic research scientists in our industry. Toole introduces the academy with the “Science of Sound” that forms the basis of all Harman speaker development with our proven scientific approach in speaker research. This introductory talk is followed by a tour of our Multi-channel Listening Lab and Reference Room where attendees actively experience our double-blind listening tests, reinforcing that “good sound” is something scientifically “proven,” and not an “opinion.”

Additionally, attendees will get to tour the Northridge Experience Center, meet our Revel and JBL loudspeaker research and design team, and check out the engineering center including state-of-the-art anechoic chambers. The day is punctuated with a demonstration of the 28 channel JBL Synthesis Everest 3D audio system in the Eargle Theater located on campus. Now that is fun!

Day two is held at the birthplace of the Revel brand, and hosted by one of it’s engineering founders, Kevin Voecks. Guests will experience the wide range of Revel systems, from Architectural to Ultima2, as well as additional presentations on home theater design, brand presentations and room acoustics. And since nothing makes you hungry quite like amazing sound, day two culminates with a magnificent feast created by Chef Eddie Morgado.

Our next Luxury Audio Academy is scheduled for late September 2019. Exact dates will be released in the near future.

To sign up and/or receive information on any of our academies, please email Tina Leitz tina.leitz@harman.com and Chris Robinson chris.robinson@harman.com.

Please come join us!

Solutions Center

Service and Support Goes Global



By Stefan Happe, Customer Service Manager

In July 2018, the decision was made to take the Harman Luxury Audio Service and Support department global. If we were going to live out our commitment to support our amazing Luxury Audio brands with service befitting top-of-the-market products, we'd have to do away with the fragmented regional approach of the past and substantially invest in the creation of a team of specialists, administrators and managers to bring our global vision to realization.

While the journey was not without challenges and bumps in the road, the result of our efforts is a dramatically more effective and efficient service and support team. Our metrics indicate a much improved customer service experience for our callers. Turn-around times are dramatically reduced. We've made additional investments into part availability and quality control that have further expedited our resolution times.

All of this brings us to our next endeavor to improve even further; the sharing of information with our dealer partners. Consumer trends and the explosive growth of the online retail sector have led to an increase of general questions and product recommendation calls that we feel are best and most professionally addressed at the dealer level. With that goal in mind, we'll be sharing in this newsletter each month the most popular topics we have received calls on, and our recommendations for addressing them. For example, such topics include room calibration, Crestron or Control4 setup, software and firmware updates, and yes, also troubleshooting.

Dirac is a currently a popular discussion point. Check out these links to learn more:

Dirac for Arcam:

http://www.arcamupdate.co.uk/fliers_notes_etc/Dirac%20Live%202.2%20Arcam%20Guide.pdf

Dirac for Lexicon:

http://www.arcamupdate.co.uk/fliers_notes_etc/Dirac%20Live%202.2%20Lexicon%20Guide.pdf

Dirac Webinar (Password: FtQsnEt6):

http://www.arcamupdate.co.uk/fliers_notes_etc/Dirac%20Live%202.2%20Lexicon%20Guide.pdf

From the Audio Files

Review: JBL L100 Classic – The 70s are back!

HIFI.NL

May 05, 2019

“That is also the point with this re-release of the legendary L100 from 1970: offering something that you will not find elsewhere. The L100 Classic is intended for anyone who wants to get away from the sleek, smooth lines of today, and craves the warm cosiness of former living rooms. You know, the time of your (grand) father, when not a 65-inch OLED television, but the music system was the biggest object in the living room. Vintage enthusiasts, here’s your speaker...”

Read Full Review:

<https://www.hifi.nl/artikel/27843/Review-JBL-L100-Classic-de-jaren-70-zijn-terug.html>



From the Audio Files

Revel PerformaBe Series F228Be Floorstanding Speaker Reviewed

From hometheaterreview.com

March 25, 2019

“During my time with the F228Be, I found myself getting lost in hours-long listening sessions. Room made it easy for me to find plenty of music to listen to and the Revels made me want to stay and listen. Whether it was the solid bass of an R&B track, the opening riff of Dire Straits’ “Money for Nothing,” or a mellow acoustic piece at the end of the day, the F228Bes were cohesive, neutral, fast, and dynamic. I was concerned that the Beryllium tweeters might be bright, but I found them to be open, with an extended top-end...”

Read review:

<https://hometheaterreview.com/revel-performabe-series-f228be-floorstanding-speaker-reviewed/>

