



HARMAN Luxury Update - NOVEMBER 2022

Quality Connects Me

By David Tovissi

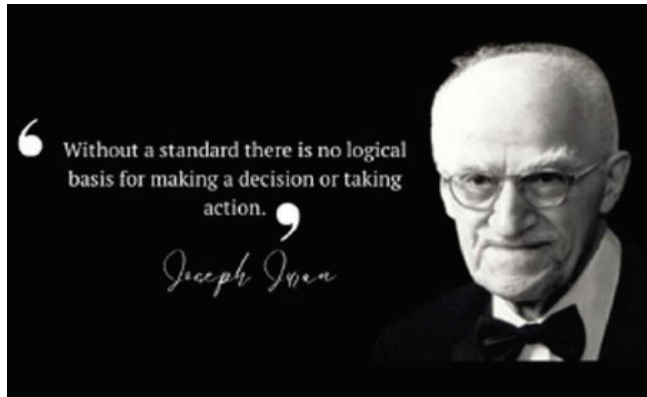
Vice President and General Manager
HARMAN Luxury Audio



November is Quality Month at HARMAN. Each year during World Quality

Month, we reflect on our ongoing commitment to customer satisfaction by reinforcing our focus on the quality of our products, services and business operations. This year's theme is "Quality Connects Me – Built-In Quality" and our activities will highlight the importance of reputation building, re-work elimination, and risk management. We celebrate this month by sharing the processes and the people that support our company's steadfast commitment to quality.

One of the pioneers of quality improvement plans was Joseph Juran, the famed author and quality improvement expert. Born in Romania in 1904, Juran immigrated to the United States when he was eight. His family settled in Minneapolis, Minnesota. He earned a bachelor's degree in electrical engineering from the University of Minnesota. He also earned a law degree from Loyola University Chicago School of Law, but never practiced.



Juran worked at Western Electric's Hawthorne Works, eventually moving into Bell Lab's statistic-driven quality control department. His job involved collaborating with a team that quantified quality improvement innovations. This early work set the course of his life. In the 1930s, he rose to the position of chief of industrial engineering.

His contributions came in many forms. He completely upended the traditional early 20th century approaches to making operations more efficient. One of his most notable contributions to quality was his publishing

of the Juran Trilogy which addressed the planning, control, and improvement of quality in products. Below are the three pillars of his trilogy which we also adhere to at HARMAN:

- Quality Planning – Identify and develop a process that ensures quality at the very beginning of product development.
- Quality Control – Create a process that can operate under minimal inspection.
- Quality Improvement – Develop a process to review quality often and then optimize that process for continual improvement.



While we celebrate the teachings of Joseph Juran this month, we are reminded just how important teamwork and a highly engaged upper management group is to deliver Flawless Execution and Quality. No matter our roles or titles, we all have a responsibility to provide exceptional experiences and deliver high-quality products to our customers. As part of our mission to drive culture at HARMAN, we are committed to educating and empowering all our people to lead change in improving quality by complex problem solving, self-management, incorporating predictive tools, and more -- during World Quality Month and throughout the full year. We know that satisfied customers grow our business and that our focus on quality improves our results.

Later in this newsletter you will hear from Dale Seidlitz, our Global Quality Manager of Luxury Audio products and learn how he describes the meaning of quality to those who ask him.

Tech Talk

Product Compliance

By Armando Martinex



Product Compliance has many facets and is an integral part of product development. HARMAN has a dedicated team of professionals whose main objective is to ensure products comply with internal and external requirements as defined by the applicable standards. This article shares some of the areas that the Engineers, PMs, QA and Compliance Team work on, which in turn, help to make better products.

As our level of awareness increases and more requirements are included by the various outside agencies, internal HARMAN requirements are updated on regular basis. Due to that perspective, there is always a continuous improvement applied to product development. Years ago, the applicable industry standards were mainly regarding Safety and EMC (radio emissions), however over time these standards have evolved, extending into materials, energy, environment and sustainability.



SAFETY

"Safety" is pertaining to making sure the product is 'safe' for the end-user to use; that the user will not get injured by exposure to mains voltage, electrical shock or burnt by exterior portions of the SKU getting very hot. Previous standards were technology-based creating segmentation between products, i.e., the type of product or segment it was used in caused the need for different standards and then making sure the proper one was applied. Now however, the latest standards have transformed into hazard-based, which is the case of the IEC-



62368 standard, by merging previous 950 and 60065 standards into one now applied to ITE and Audio products. The good news from the Engineering perspective is that requirements across the globe are being harmonized, meaning more and more regions/countries are following the same standards or at least trying to converge into the same standards or regulations. There are still some exceptions where minor deviations apply, and that is why we make sure to get compliance certifications for the various region markets the products will be selling in.

Product design from its conception must take into consideration all the applicable requirements. The design and engineering teams have a good understanding of what is needed to make products safe; internally making sure potentially hazardous areas are kept isolated, so the end-user is not exposed to any potential hazard, not only during normal use, but also under abnormal operating conditions. The current standards are designed with those cases in mind.

One example would be preventing the user from being exposed to high leakage current. Naturally you want to avoid lethal levels of exposure, but even a small leak of current could cause a user to react or pull back or fall, so the product must be designed so there is no interaction from the product to the user, whether it be voltage/current or even hot surfaces, acceptable levels in standards take these into account.

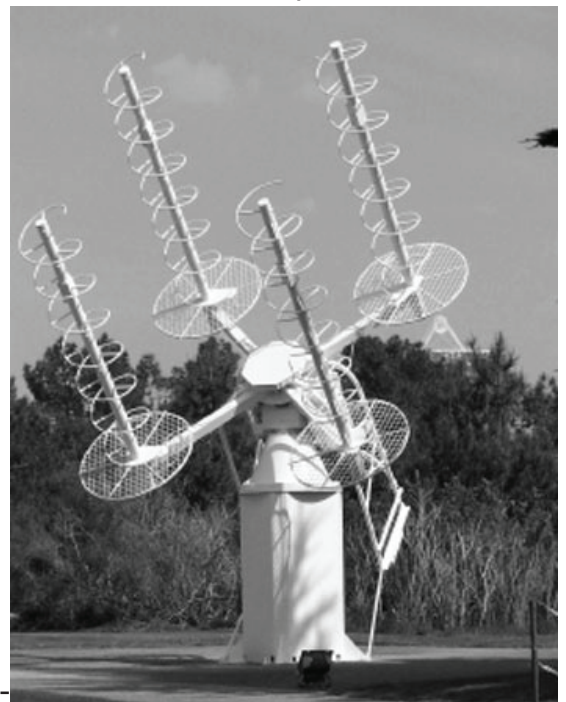
EMC

FAST AND FASTER

EMC (ElectroMagnetic Compatibility) is becoming far more predominant in our lives as we move forward with more and greater wireless technology, an environment which creates higher chances for interference (EMI or ElectroMagnetic Interference) between devices. Due to this, there is a lot of effort behind every product to meet the guidelines defined by the EMC standards.

With the advances in technology that provide connectivity and streaming services, our active speaker systems and Wi-Fi/Bluetooth enabled electronics products need to be able to perform in this environment. In the case of latest active speaker systems, they have at least two radios sharing the same spectrum, with also more and more household devices sharing parts of the same spectrum. Using the example of the basic principle of good neighbors, respecting the right to co-exist with minimum interference, the latest RF technologies are provided with better survival skills helping to avoid interference, e.g., frequency hopping. Unfortunately, some old radio technologies like AM and FM do not have the same agility, and since those technologies are still in use, rules of co-existence must be followed.

Faster devices mean higher clock rates, due to the digital nature of our systems. Fundamental frequencies are in the MHz band, but there is also harmonic content from the clocks that normally extend beyond the fundamental frequency that can have an interference effect. The applicable standards care how much of these signals leak in the form of radiated or conducted electro-magnetic energy to the surroundings, potentially affecting other systems in their vicinity. Our products need to be designed to minimize this radiated or conducted electro-magnetic energy.



An interesting fact from an EMC seminar is the story about a car in Florida experiencing issues that could not be duplicated at the dealer's service department. The owner was experiencing the same issue over and over. A more in-depth evaluation found that a pirate radio station was transmitting nearby, affecting the car when the owner was home but not at the dealership. In this instance, the car design was susceptible to interference. Similarly, a non-compliant device might lose signal or reception becomes degraded in the presence of "something". This illustrates the importance of having products comply to the latest industry regulations and standards.

SIGNALS

INTERFERENCE

There are many areas within a circuit that can become parasitic elements with unwanted paths for clocks and signals of a circuit finding their way to adjacent components or even moving outside the system through wires or other connections. Design Engineers do a great work minimizing these effects either by following EMI guidelines, or in the extreme case full containment by shielding, mainly to eliminate potential RF interference that might affect other products and sometimes the product itself.

For instance, let's assume that a device is operating at a very high frequency rate, and for this example, let's say device uses 100mW of power. Also assume that just a very small portion of that power, let's say one millionth of the total energy used by it, is dissipated in some sort of Electromagnetic Energy. Running a quick computation, the electric field strength derived from it at 1meter could reach easily $\approx 1.0\text{mV/m}$.

Even though the frequency is far away, harmonics derived from it could become close in level to a radio's sensitivity (which is lower as AM radios could be in the $1\mu\text{V/m}$ range), therefore if in proximity AM/FM receivers become targets for those potential "space invaders".

From the previous example, the difference in signal strength between radio sensitivity and the potential interference is like comparing the height of a 2meter tall person (radio signal sensitivity) with a peak that extends 2000meter from sea level (interference). Of course, is not only magnitude, but there are also other factors, but this gives a general idea of the potential issues that could be affecting a product during its "normal" use.

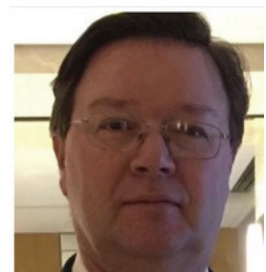
FINAL COMMENTS

Compliance, internal and external, is a critical component of new product development; requiring the involvement of the entire team, from Design to Qualification to Compliance Engineering, working together to verify that our products are safe and compliant to the latest industry standards. This ensures that we and our end-users can enjoy them in a very safe manner.

What's New

Quality Is An Attitude

By Dale Seidlitz





Senior Director, Product Strategy and Planning
HARMAN Luxury Audio

CEDIA Expo was a return-to-form this year in almost every sense of the phrase. Held at the end of September in Dallas, Texas at the Kay Bailey Hutchison Convention Center, this year's show felt a lot like 2019 when we last had a full-strength event prior to the global pandemic. According to show host Emerald Exhibitions, there were 11,946 industry professionals and 317 exhibitors on hand to see and hear the latest and greatest products in the custom installation space. Attendance spread beyond just the U.S. with attendees coming from Canada,



Central America, South America, Europe, Middle East, Korea and even as far away as Australia!

Our Luxury Audio 3,600 square foot exhibit was located at the crossroads of the two main aisles diagonally across from our partners at Samsung, with Crestron and LG occupying the other two corners. Our high-profile location helped ensure strong traffic from start to finish all three days of the show. We curated a collection of our most-exciting home theater and custom installation products from our industry-leading brands including JBL, JBL Synthesis, ARCAM and Revel. We specifically focused on our award-winning immersive audio products and our formidable portfolio of architectural loud-speaker solutions including the newly expanded JBL collection. The line for our JBL Synthesis theater demo stretched through the booth and out to the aisle from the moment the show opened on Thursday morning to when it closed on Saturday afternoon with some people waiting up to an hour to get a chance to listen to our system.

We had more than 15 press appointments during the show, and I did more than 10 video interviews in the booth with key media outlets. We were also a stop on the CEDIA Design + Connection Tour where members of the architecture and interior design community visited key manufacturers on the show floor to learn about how technologies are being integrated seamlessly into the home. Coverage was extensive from these appointments and interviews and helped to spread the word about our products. Additionally, we were featured in the VIP Edition and all three days of the CEDIA Expo daily magazine that is distributed throughout the show.

On the awards front, our ARCAM AV41 was a winner in the Residential Tech Today Innovation Awards, and it was a finalist for Best New Hardware in the 2022 CEDIA Awards.

Mark Levinson ML-50Ecovadis RaitingImage
For a detailed look at some of the highlights of our new ARCAM, The The





The success of the HARMAN brands is due to the quality that we embed in everything we do every day. What words or definitions of quality come to mind when you think of the term quality? Most people think of customer satisfaction, and they would be correct. Without a satisfied customer we do not have a returning customer or a customer that tells their friends and family how great our products are! The next most common response to quality is quality products = great products. If we do not engineer and build great products, customers will not keep buying them. They will tell their friends and family not to buy them. And

they might not tell us about their negative experience, they will simply move on.

Like a sports team, a Quality Team must understand the goals and direction, and quickly adjust as needed when changes occur. Our team must understand the strengths and weaknesses of all team members and utilize each member for the success of the team. At the same time building the individual weaknesses into strengths and utilizing the strengths for success. Teams that fail to do this will simply fail. Teams that learn to trust each team member are tremendously successful. This is true in sports and in business. It is important to get to know and understand the role of your colleagues and respect them. The HARMAN Luxury team has worked hard to create this level of success within our team and to support our customers at every level.

In my 35 years of inspecting and managing quality, I have been asked numerous times what my definition of quality is. I have quoted definitions from the great gurus of quality, Dr. Deming and Dr. Juran. Now, I have realized that successful people create successful companies. These successful people have one common trait. They have a positive attitude. A never give up and never give in attitude.

As I reflect on the past year and think about HARMAN Quality, I think back to the challenges and the successes we have had along the way. The HARMAN Luxury Audio team are one together, one team with a common purpose and goal. However, we are all unique and creative individuals that bring so much enthusiasm, knowledge and diversity to the team.

Now when I am asked for my definition of quality my response is: Quality is an Attitude. It is the attitude that we put into each and everything we do. How we start and finish our day and everything in between. This is also my approach to everything I do in my business and personal life. I have always believed that quality is an attitude, and that attitude is what sets us on our path to success each day.

From the Audio Files

Rolling Stone Essentials 2022: The Coolest Gear of the Year – JBL L75ms

It's certainly not a surprise that JBL's L75ms was named Best Sound System and included in Rolling Stone Essentials 2022: The Coolest Gear of the Year.

Here are highlights from the [article](#):

'JBL's L75ms fuses modern conveniences with retro design, offering one of the most beautiful sounding – and beautiful looking – music systems on the market right now.'

'Your favorite tracks are warm and vibrant, emanating from a rich walnut cabinet and black foam grille that makes the L75ms a true centerpiece for any room it's in.'



Training Tips

Advantages of Powered Subwoofers Training

By Dave Wright

A new training will be available soon that goes over the benefits of adding a powered subwoofer to any system. This training will cover topics from how subwoofers work to explaining the key benefits they provide for a wide variety of systems. This training will be available on the [Harman University](#) website in December 2023.



Overview

Many people think that subwoofers are only for home theater and that they are not needed for 2-channel listening. This could not be further from the truth. Powered subwoofers are an integral part of any system and provide multiple benefits and this training will show how powered subwoofers can improve the performance of any system.

Training Subjects

- Are Subwoofers Worth It
- How Subwoofers Work
- Benefits of Adding a Subwoofer to Any System
- Overview of JBL Powered Subwoofer Models

Training Tips

High Frequency Technology Part I & II

By Kevin Kent

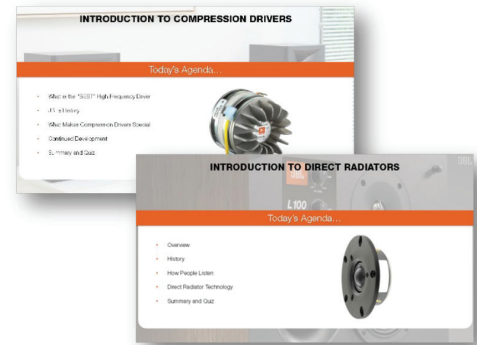
The complete two-part series on high frequency technology is now available. This series describes the various methods of reproducing high frequencies in loudspeaker systems. Any loudspeaker manufacturer must select a high frequency design and decipher ways to feature the benefits of that technology

while working around its inherent challenges.

HARMAN has refined these technologies over decades, resulting in tried-and-true designs loaded with innovative technology both inside and out. Our innovations in this field have provided us with high frequency devices bolstered by extraordinary performance in their class. We hope this training series can increase your understanding of HARMAN's expertise in this critical area of sound reproduction.

As always you may access all the training courses by clicking [here](#).

Once you sign in, if these courses are not populated on your home page, click "Go to Courses" to sign up. Stay tuned next month as more training becomes available.



Meet The Team

Meet the HARMAN Luxury Audio Team

Name: **Alex Soo**

Position/Job Title: **Program Manager**

With HARMAN Since 2017

With Meet The HARMAN Luxury Team, our goal is for you to get to know us better. In each edition we feature a different member of the team, and this month it's Alex Soo, Program Manager

How would you describe what you do in your current role?

My role is in Program Management that leads, plans, organizes and controls the implementation of overall projects. I coordinate activities with our Luxury Audio engineering teams as well as our HARMAN finance, quality and compliance team members to deliver quality products on time and on budget. I work closely with our suppliers in developing products and facilitating tasks with R&D in Northridge or Cambridge.

What did you study in school? Did you always imagine yourself doing something like what you're doing now or did the fates just take you in that direction?

I studied computer electronics and business. I always like and enjoy the work I have, all the time! Working in a well-known audio company is the most enjoyable time I have ever had.

How did your career path lead you to HARMAN?

I have always liked to listen to music since childhood. My family members were always playing musical instruments and we listened to music at home on turntables, cartridges, cassettes, CD, MP3 and now Wi-Fi streaming. I am very grateful to work at HARMAN.

What is the most important thing you have learned over your career?

Teamwork!

Any other advice you would share with people just starting out in this industry?

Always have passion for your work and enjoy the music.

What are you most proud of in your life?

When you start seeing the product you worked on start selling in the market.

What current technology impresses you the most?

Millions of transistors on a tiny chip.

Favorite music genre?

No musical boundaries.

The desert island question, of course. If you were marooned for eternity & could listen to only three albums, what would they be?

Teng Li-Chun – Polygram Records

Tsai Chin – Live and Golden Voice

Tracy Chapman - Can I hold you

You have the floor. In closing, tell us anything else you want us to know about yourself.

Experience your favorite music on a whole new level with our Lux-A specialty audio!

Dealer Profile

Minneapolis HiFi

Kurt Melancon, Chris Sain, Josh Ritenour

How long have you been in business?

We have been in business since 2011.

How many locations do you have?

We currently have one location in Minneapolis.

How did Minneapolis HiFi get its start?

We all have had a passion for audio our whole lives. When we took our favorite pastime and made it into a business it just made sense. May as well make money when you're going to be doing it anyway! We've always loved new clients getting hooked on HiFi.



Watching them smile and enjoy how amazing it can sound, and how a good system can enhance our daily lives.

How many people are on the Minneapolis HiFi team?

We have three people on our team.

Thoughts on the importance of training?

We've always believed in spending a lot of time with your gear. Experimenting with it and seeing how it all works best together. We've been doing the same thing for a long time before we opened. Now we just have a ton more toys to play with! It's so fun and interesting to see how different gear sounds and synergistically pairing it together to get the client's desired sound.



What do you like most about HARMAN Luxury Audio products and which lines do you feature?

Revel has always been our favorite. We've been using Revels in our home systems for over 20 years. They provide a great sound and dollar for dollar are some of the best products we have in our store. They represent a value to our customers.

How do you think the luxury audio industry is currently doing?

As a whole we believe that the industry has done incredible since COVID came around. Crossing our fingers that the economy holds up and we all keep it up. We think it's going to have a few dips coming up, but will continue up and ahead as more people spend more time at home in the future. We think there is a good market for a more custom experience - clients appreciate a dealer who can provide more than just selling a box at a discount. They want help with room design, room acoustics and professional set-up.

What is Minneapolis HiFi's mission?

Minneapolis HiFi is working to set itself up as a destination for the highest performance audio equipment available. We enjoy working with customers to help realize their goals and expectations, and the difference between a good system and a great one is attention to every last detail. We're looking forward to more travel and taking care of clients that truly want the best sound possible. We welcome other dealers to visit if they're in the area and believe we're all stronger if we work together rather than against one another.

You have the floor. Anything else you want to share with us about Stereotypes that you would like the world to know?

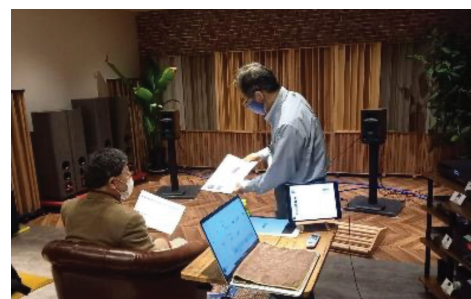
We are open on Saturdays and are appointment only the rest of the week. We focus almost exclusively on high-end 2-channel audio. We don't have any screens or home theater gear in the store, only art and acoustic treatments on our walls. We have created a comfortable and enjoyable space to enjoy music and bring you closer to your favorite artists.



From The Audio Files

HARMAN Scores Prestigious Stereo Sounds Grand Prix and Audio Excellence Awards for Mark Levinson and JBL Products

2022 marked the 39th Anniversary of the Tokyo International Audio Show that took place on October 28th through the 30th. There were 33 Exhibitors on hand representing 200+ brands. HARMAN Luxury featured a demo room with Mark Levinson, JBL and ARCAM products that included the Mark Levinson ML-50 Flagship System with JBL DD67000 loudspeakers. Five awards were given to HARMAN products from Stereo Sound and Hi-Vi that included the most prestigious Stereo Sound Grand Prix to the Mark Levinson ML-50, and the Hi-Vi Grand Prix for the JBL 4305P. The JBL 4305P also received the Audio Excellence Bronze Award. The JBL L75ms and the Mark Levinson No 5909 headphones rounded out the list winning the Audio Excellence Award Category Award.



Thanks to our HARMAN team in Japan for putting on a very successful show!