

SEGMENT: Multiplatform Audio Tour Stop 3  
COMPANY NAME: Sony  
CATEGORY: High Impact Formats  
HALL: Central Hall (Back )  
BOOTH NUMBER: C11001

For the last several NAB shows we've talked about 4K resolution. Last year, we started talking about High Dynamic Range or HDR. This year, we can go way beyond talking about these technologies. They are here and they are shipping to both the film and television industry and to the home on a wide variety of products ranging from a solid six figures all the way down to a few hundred dollars. There are few places here on the NAB show floor better equipped to show off that entire range, than here at the Sony booth.

Before we get too deep into the product descriptions, let's go over some brief definitions for 4K and HDR. Typically 4K refers to video that is about 4000 pixels wide by 2000 lines high. This represents about 4 times the resolution of a HD 1080p signal. While true 4K (particularly as a recording format) has over 4,000 pixels of horizontal resolution, typical display versions of 4K (often referred to as UHD) have a horizontal resolution of 3840 pixels. Don't cry too hard over that missing 160 pixels. We don't think you'll be able to see the difference.

High Dynamic Range or HDR refers to the amount of contrast found in an image as well as the way color is represented. HDR displays typically are brighter than standard dynamic range ones allowing the contrast or the difference between the brightest brights and the darkest darks to be greater. HDR typically also embraces a wider array of possible colors (known as Wide Color Gamut or WCG). The net result of brighter

images with more contrast and a wider array of colors is that they are more true to life. HDR images just look more real than SDR. In fact HDR video content can look so real, you may find yourself shading your eyes during certain demo scenes. For example, if an HDR sequence cuts from a very dark scene to a very bright outdoor one, you may feel a bit of discomfort as your eyes adjust to the contrast--very similar to the discomfort you might feel in walking from a darkened room into sunlight in the real world.

Sony has embraced both 4K and HDR technologies in a very big way on both the capture side and the display side. Sony has been at the forefront of HDR and 4K recording and capture from the beginning. This year, Sony continued the tradition, testing out a number of its 4K and HDR recording technologies at an open camera test at Waialae Golf Course in Honolulu. The folks at Sony understand if you're going to host an open camera test, it might as well be somewhere awesome. In previous tournaments, the Sony production team took nascent HD and stereoscopic technologies for a spin. This year it was all about testing 4K and HDR from end to end. The test included 4K and HDR shooting, switching, recording, and postproduction. Cameras utilized included three HDC-4300 4K/HD camera systems with  $\frac{2}{3}$ -in. 4K image sensors and three Sony F55 cameras recording in 4K RAW format. Sony is utilizing the footage shot with these two cameras to demonstrate the power of 4K and HDR right here in their booth at NAB. Golf is actually a great way to showcase HDR. You'll see bright colored clothing on the golfers (because while golf announcers are quiet, the clothing on the golf pros is usually quite loud), white clothing on the caddies, a bright green fairway, bright blue skies and white fluffy clouds. Take a look at the HDR demos here in the booth and we think you'll agree

it almost looks like a window into the real world rather than a display for your living room.

Speaking of your living room, Sony is also deeply entrenched in the display side of 4K and HDR and shipping high impact formats to the home. Fueled by a desire to get these technologies shipping to the public, the UHD Alliance released a new spec called UHD Ultra Premium. Ultra HD Alliance is a multi-industry association of consumer electronics hardware manufacturers, content producers, distributors and others dedicated to smoothing the way for widespread distribution of 4K in the consumer marketplace. In order for a hardware or software product to carry the UHD Ultra Premium logo it must minimally support 3840 pixels of horizontal resolution, be able to handle HDR contrast levels, and Wide Color Gamut (at least up to SMPTE 10 levels). Sony is currently shipping 3 Android TV-powered 4K HDR sets that meet these requirements. Of particular note is their flagship X850D smart TV featuring onboard support for PlayStation Now, Sony's cloud gaming service, Netflix, HuluPlus and YouTube. All of these online video-streaming companies carry content in 4K and HDR. The Sony set is also powered by Android and features a wide variety of apps, games and other features including Google Cast and voice search.

Android is also available on Sony's flagship smartphone the Xperia Z5 Premium, which also features 4K technology. The phone is one of several on the market capable of recording in 4K. (Whole 4K feature films have been recorded using the iPhone 6 for example.) Sony recently put the Xperia Z5 Premium to the test as a 360-recording tool as

well. They ganged 12 of the cameras together in a custom-designed 3D printed rig to shoot a 48K 360-degree video at the Rise Ski & Snowboard Festival in Les Deux Alpes. These guys sure know how to find fun places to test their camera technology!

While several phones feature 4K recording, the Xperia Z5 Premium is the first smart phone on the market to feature a 4K display. Some question the reasoning behind a phone with a 4K display. After all, that much screen resolution eats away at battery life like nobody's business. It's also difficult to tell the difference between HD and 4K resolution on a display that small. You couldn't be expected to see the difference unless the screen was just an inch or two from your eyes. But that's exactly what happens when you put a smart phone into a Virtual Reality Head Mounted Display (otherwise known as a VR HMD for those more acronym minded.) Sony hasn't yet announced whether they will be releasing another 4K phone this year, but if they do, VR may have been a driving factor.

Speaking of VR, if there's one other area of major excitement here in the Sony booth, it's probably the Sony PlayStation VR headset—set to launch sometime in the first half of 2016. Sony's PlayStation VR is a Virtual Reality Headset (or Head Mounted Display) that will work with both the Sony PS4 and the PlayStation Vista. It will utilize the PlayStation camera to track what the user is doing and help give them a true VR experience. The headset will likely feature a 5.7-inch full HD OLED display which should enable low persistence and reduce motion blur. It is also expected to boast a 120Hz refresh rate allowing the headset to render at 120fps—noticeably higher than the

90 Hz refresh rate offered by Oculus and the HTC Vive HMDs. (A higher refresh rate helps to make users more comfortable inside the experience.) It's also interesting to note that Sony's HMD is expected to attach to the game console utilizing a special outrigger box that will not only drive these powerful specs, but also connect up to the TV so people without a headset can still follow the action as if you were playing a normal videogame. Look for these and a variety of other exciting VR features here at the Sony booth. Sony PlayStation VR will launch with plenty of games including multiplayer VR games.

Now that we've immersed you in amazing 4K, HDR, WCG images, it's time to immerse you in the world of sound as well as our trend towards greater immersive technology. We'll do that at our next stop Dolby. It can be found in the Front of South Hall Upper. To get there, cross over to South Hall and take the escalator to the Upper Level. You can find Dolby in booth SU1702.