

<b>Title:</b>	<b>HDMI's 1.3 Spec Is Announced Yet Big Questions Remain</b>
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If you were wondering how a format like Blu-ray can launch without a player from its leader Sony, the answer is likely that they were waiting for the HDMI 1.3 spec. While the difference between a version 1.2 and 1.3 of anything seems like no big deal to most consumers, it is important to understand just how powerful this change is in the digital media transmission format. It is so important that Sony made certain it was in the Playstation 3 platform, as well as its Blu-ray players. It is so important that some video industry executives suggest the increase in bandwidth not only allows impressive multi-channel audio on the same cable as video, but also that the video itself can make stunning HDTV look as much as twice as good. Reportedly, it is the difference between millions of colors and billions of colors to your HDTV. It's the difference between stereo audio and high-resolution surround sound from Dolby and DTS on the same cable as your improved video. But all isn't perfect in a world with one cable to connect your new player to your HDTV or receiver.

While the group behind HDMI says their format is "backwards compatible" (meaning an HDMI 1.2 device will function in an HDMI 1.3 system), the plugs are different sizes, creating the need for yet another adapter or even a cable change. I know the camcorder market is big, but is this ever bad planning on the part of the HDMI group. But things get worse – how many devices will be able to be upgraded via firmware updates? Many components, players and switcher devices have chip sets that can handle HDMI 1.2. It has been suggested to AVRev.com that the 1.2 performance is as far as many of these products will go, so early adopters will be investing in more gear again. Moreover, how many consumers will know to upgrade their gear, even assuming they have the technical chops to do so? Can you imagine the support calls or, worse yet, the trips to Big Box retailers who won't have a clue how to get your system up to the new standard without selling you all-new gear?

While video improvements are always championed by enthusiasts, almost no video monitor on the planet can accept the new connection and/or has chip sets designed for HDMI 1.3. 1080p video is great but, unless you spent a fortune on your projector or TV (think an upgraded \$30,000 Sony Qualia 004 video projector), you are out of luck with sending your HDTV pure 1080p video. Almost every set being sold to you today as a "1080p HDTV" doesn't have a true 1080p input. This means that your HD inputs are scaled inside your TV to 1080p. It isn't a tough job, like a 480i DVD to 1080p, but it isn't true 1080p unless you have the absolute newest HDTV at the highest prices. For example, plasmas finally can do 1080p, but they cost \$10,000 for the luxury (or necessity, depending on how hooked on video you are).

HDMI offers tremendous potential. The addition of better video output is going to have long-term benefits for all who get involved with it. HDMI getting high-resolution surround sound from both Dolby and DTS into the same cable also helps. The simple

idea that one cable from a source to a receiver to a TV can accomplish so much is truly a revolutionary idea that will make the world of high-performance audio and video available to people all over the world. But for now, the HDMI group has to make absolutely certain that HDMI 1.3 works and allow the millions upon millions upon millions of users with everything from satellite receivers to HD disc players (Blu-ray or HD DVD) to HDTVs to receivers with switching to get caught up. HDMI 1.3 needs to work and people need time to catch up with it or this cat and mouse game of firmware upgrades and pseudo-backwards compatibility will leave consumers saying “so what” to the improvements.

### **New HDMI 1.3 capabilities include:**

#### **Higher speed:**

- HDMI 1.3 increases its single-link bandwidth from 165MHz (4.95 gigabits per second) to 340 MHz (10.2 Gbps) to support the demands of future high-definition display devices, such as higher resolutions, deep color and high frame rates. In addition, built into the HDMI 1.3 specification is the technical foundation that will let future versions of HDMI reach significantly higher speeds.

#### **Deep color:**

- HDMI 1.3 supports 30-bit, 36-bit and 48-bit (RGB or YCbCr) color depths, up from the 24-bit depths in previous versions of the HDMI specification.
- Lets HDTVs and other displays go from millions of colors to billions of colors.
- Eliminates on-screen color banding, for smooth tonal transitions and subtle gradations between colors.
- Enables increased contrast ratio.
- Can represent many times more shades of gray between black and white. At 30-bit pixel depth, four times more shades of gray would be the minimum, and the typical improvement would be eight times or more.

#### **Broader color space:**

- HDMI 1.3 removes virtually all limits on color selection.
- Next-generation “xvYCC” color space supports 1.8 times as many colors as existing HDTV signals.
- Lets HDTVs display colors more accurately.
- Enables displays with more natural and vivid colors.

#### **New mini connector:**

- With small portable devices such as HD camcorders and still cameras demanding seamless connectivity to HDTVs, HDMI 1.3 offers a new, smaller form factor connector option.

#### **Lip Sync:**

- Because consumer electronics devices are using increasingly complex digital signal processing to enhance the clarity and detail of the content, synchronization of video and audio in user devices has become a greater challenge and could potentially require

complex end-user adjustments. HDMI 1.3 incorporates an automatic audio/video synching capability that allows devices to perform this synchronization automatically with accuracy.

**New lossless audio formats:**

- In addition to HDMI's current ability to support high-bandwidth uncompressed digital audio and currently available compressed formats (such as Dolby® Digital and DTS), HDMI 1.3 adds additional support for new lossless compressed digital audio formats Dolby® TrueHD and DTS-HD Master Audio™.