The Next Generation Wireless Digital Interface for Consumer Electronics

WirelessHD, LLC
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Consumers Want Wireless Entertainment!

- Fewer wires means thinner TVs on the wall
- Flexible placement of home theatre components
- Universal control of all wireless home theatre components
- Superior, lossless image quality delivered wirelessly
Requirements for Wireless Connectivity in the HDTV Household

- Streaming lossless, uncompressed HD video with audio and data
- Highly reliable viewing experience
- Low cost products available to consumers
- Low power solutions for portable devices

* 2005-2006 Industry poll of 50 CE and PC/IT companies and content providers
The WirelessHD Advantage

• 60Ghz millimeter wave technology with beam-steering

• Massive bandwidth of up to 28 Gbps to wirelessly stream uncompressed video and audio

• Eliminates need to re-encode content for transmission from source to display
  - Eliminates encoder cost
  - Avoids encoding generated latency
  - Preserves and delivers best possible image and audio quality

• Support for both DTCP and HDCP2.0 content protection systems
Robust and Flexible Audio/Video Streams

- **Video**
  - Up to 4K resolution / 120 Hz refresh, 3D ready, $10^{-9}$ pixel error rate
  - Supports all EIA-861 video formats
  - Multiple video streams for picture-in-picture (PIP) and single source to multiple displays

- **Audio**
  - 2 channels of 192 KHz 2 channel LPCM
  - 5.1 channels of 24-bit 96 KHz multi-channel LPCM audio
  - 13.1 channels of 24-bit 192 KHz compressed Dolby TrueHD or DTS-HD audio

- Low latency mode with direct communication links of < 1ms and max 15ms latency (5ms typical) between multi-channel links

- Control and monitoring of multiple sources and displays or speakers

- Multiple color management & gamma control profiles linked to individual source/display pairs
Multimedia Streaming Capability

- Portable device support for low power operation, including both A/V streaming and multi-gigabit data for file transfers
- Support for Digital Still Camera (DSC), Digital Video Camera (DVC), and Digital Video Recorder (DVR)
- Multi-way, copy-managed communication in both compressed (MPEG2, MPEG4, H.264, et. al.) & uncompressed (EIA-861) formats
- Multi-device video recording and editing control capability
### Wireless Technologies Comparison

<table>
<thead>
<tr>
<th></th>
<th>WirelessHD</th>
<th>WHDI</th>
<th>Wi-Fi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Standard</td>
<td>V1.1 (Jan 2010)</td>
<td>1.0 (Dec 2009)</td>
<td>802.11n (Sep 2009)</td>
</tr>
<tr>
<td>Data rate</td>
<td>10 - 28 Gbps</td>
<td>400 – 800 Mbps</td>
<td>250 Mbps</td>
</tr>
<tr>
<td>Image Quality</td>
<td>Full 1080p up to 4K, 120Hz, 3D</td>
<td>Full 1080p/60 Requires dropping bits</td>
<td>Requires compression</td>
</tr>
<tr>
<td>Low cost architecture</td>
<td>No encode or decode</td>
<td>4-5 RF required</td>
<td>Requires encode / decode</td>
</tr>
<tr>
<td>Low Latency</td>
<td>&lt; 1ms</td>
<td>&lt;1ms</td>
<td>&gt;15ms</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>&lt;4W</td>
<td>5W</td>
<td>&lt;2W</td>
</tr>
<tr>
<td>Interference Free</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>HDMI v1.4 Compatibility*</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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</table>

* HDMI v1.4 support includes Audio Return Channel, 3D video, 4K resolution, bi-directional data
Rapid Technology Development and Ready to Implement

WirelessHD leads in technology and application advancements and is the only wireless video solution based on an existing IEEE standard.
Join WirelessHD Today!

• Access to …
  - WiHD 1.1 specification
  - Compliance Test Specification
  - Access to Compliance Testing Services
  - WiHD logo for compliant products

• To Join …
  - Visit www.wirelesshd.org or contact info@wirelesshd.org to request the WirelessHD Adopter Agreement via email
  - Return the signed Adopter Agreement and pay the US$5k annual fee
  - The WirelessHD 1.0 specification will be emailed to you
Thank You

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