The HDC-RH221UHD and HDC-RH421UHD are two-input receivers with EDID emulator for sending HDMI, DVI, and HDBaseT input signals up to 4K@60 over a Category cable without compression or processing.

Input video signals are converted to HDBaseT format and can be transmitted up to 100 m (328 ft.); 1080p (24 bit) video signals can be sent up to 150 m (492 ft.) in Long reach mode.

The HDC-RH221UHD/HDC-RH421UHD includes two/four HDMI outputs and one HDBaseT output. The HDMI OUT1 enables down conversion outputting 4K video at 1080p automatically or manually depending on sink device status. The two video inputs can be controlled by the front panel or an external controller.

For video signal that is distributed to an HDMI/DVI and HDBaseT simultaneously, video/audio can be off for each output.

The HDC-RH221UHD/HDC-RH421UHD also features Daisy chain for extending and distributing video, audio, and control signals. In addition, digital audio signals can be de-embedded onto the analog output signals. It supports bidirectional RS-232C communication and LAN transmission.

Internal Web pages provide system status for troubleshooting and device monitoring using a browser.

### Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td></td>
</tr>
<tr>
<td>HDMI/DVI</td>
<td>1 input&lt;br&gt;HDMI (*1)/DVI 1.0&lt;br&gt;TMDs single link, HDCP 1.4/2.2&lt;br&gt;HDR (*2), 3D (*3), x.v.Color&lt;br&gt;EDID emulation, CEC (Pass-through)&lt;br&gt;Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>HDBaseT</td>
<td>1 input&lt;br&gt;HDIDeT (*4)&lt;br&gt;HDCP 1.4/2.2, HDR (*2), 3D (*3), x.v.Color&lt;br&gt;EDID emulation, RS-232C, LAN&lt;br&gt;Connector: RJ-45 (*5)</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td></td>
</tr>
<tr>
<td>HDMI/DVI</td>
<td>1 output&lt;br&gt;Video can be distributed to HDMI/DVI outputs and an HDBaseT output simultaneously.&lt;br&gt;HDMI (*1)/DVI 1.0&lt;br&gt;TMDs single link, HDCP 1.4/2.2&lt;br&gt;HDR (*2), 3D (*3), x.v.Color, Only OUT1 supports CEC (Pass-through)&lt;br&gt;Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>HDBaseT</td>
<td>1 x 4 outputs&lt;br&gt;Video can be distributed to HDMI/DVI outputs and an HDBaseT output simultaneously.&lt;br&gt;HDMI (*1)/DVI 1.0&lt;br&gt;TMDs single link, HDCP 1.4/2.2&lt;br&gt;HDR (*2), 3D (*3), x.v.Color, Only OUT1 supports CEC (Pass-through)&lt;br&gt;Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td></td>
</tr>
<tr>
<td>HDMI/DVI (*6)</td>
<td>VGA to 4K&lt;br&gt;480i / 480p / 576i / 576p / 720p / 1080i / 1080p (4K up to 4K@60 (4:4:4))</td>
</tr>
<tr>
<td>HDBaseT (*)</td>
<td>VGA to 4K&lt;br&gt;For WQHD/WQXGA, only Reduced Blanking is supported.&lt;br&gt;480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K up to 4K@60 (4:2:0))</td>
</tr>
<tr>
<td><strong>Color depth</strong></td>
<td>HDMI 24 bit, 30 bit, 36 bit Deep Color (*6)</td>
</tr>
<tr>
<td>HDBaseT</td>
<td>24 bit, 30 bit, 36 bit Deep Color (*7)</td>
</tr>
<tr>
<td><strong>Dot clock</strong></td>
<td>25 MHz to 600 MHz</td>
</tr>
<tr>
<td><strong>TMDS clock</strong></td>
<td>25 MHz to 300 MHz</td>
</tr>
<tr>
<td><strong>TMDS data rate</strong></td>
<td>0.75 Gbps to 16 Gbps</td>
</tr>
<tr>
<td><strong>Digital audio input</strong></td>
<td>2 inputs&lt;br&gt;Multi-channel LPCM up to 8 channels&lt;br&gt;Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit, Reference level: -20 dBFS, Max. input level: 0 dBFS&lt;br&gt;Connector: Female HDMI Type A (19-pin), RJ-45</td>
</tr>
<tr>
<td><strong>Digital audio output</strong></td>
<td>1 x 3 outputs&lt;br&gt;Audio can be distributed to HDMI outputs and an HDBaseT output simultaneously.&lt;br&gt;Multi-channel LPCM up to 8 channels&lt;br&gt;Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit, Reference level: -20 dBFS, Max. output level: 0 dBFS&lt;br&gt;Connector: Female HDMI Type A (19-pin), 2 RJ-45s</td>
</tr>
<tr>
<td><strong>Analog audio output</strong></td>
<td>1 output&lt;br&gt;Unbalanced Stereo LR&lt;br&gt;Output impedance: 50 Ω, Reference level: -10 dBu, Max. output level: +10 dBu&lt;br&gt;Connector: Captive screw (3-pin)</td>
</tr>
</tbody>
</table>

- All specifications and drawings are subject to change without notice. 
- Please do not use the supplied AC adapter and power supply cable for other products. 
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<table>
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<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td><strong>AC adapter</strong>&lt;br&gt;Input : 100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz&lt;br&gt;Output : DC 12 V 3 A (A dedicated AC adapter is provided)</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>About 20 Watts</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>8.3 (W) × 1.7 (H) × 7.9 (D) (210 (W) × 44 (H) × 200 (D) mm) (Half rack wide, 1U high) (Excluding connectors and the like)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>3.5 lbs. (1.6 kg)</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>Operating : 32°F to 104°F (0°C to +40°C)&lt;br&gt;Storage : -4°F to +176°F (-20°C to +80°C)</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>Operating/Storage: 20% to 90% (Non Condensing)</td>
</tr>
</tbody>
</table>

*1 ARC and HEC are not supported.
*2 HDR is supported if external EDID is selected while an HDR-supported sink device is connected for EDID setting or if copied EDID of an HDR-supported sink device is selected for EDID setting. Input HDR signal is output from all output connectors.
*3 3D is supported if external EDID is selected while a 3D-supported sink device is connected for EDID setting or if copied EDID of a 3D-supported sink device is selected for EDID setting. Input 3D signal is output from all output connectors.
*4 ARC, HEC and CEC are not supported.
*5 RJ-45 (HDBaseT connector) is only for extending digital video and audio signals over a Cat5e/Cat6 cable. Use it with IDK’s HDBaseT Products. Do not use for LAN devices.
*6 For 4K format, the following color depths are supported:<br>24 Hz/25 Hz/30 Hz : 24 bit, 30 bit, 36 bit (RGB, YCbCr 4:4:4, YCbCr 4:2:2)<br>50 Hz/59.94 Hz/60 Hz : 24 bit, 30 bit, 36 bit (YCbCr 4:2:2, YCbCr 4:2:0) |
*7 For 4K format, the following color depths are supported:<br>24 Hz/25 Hz/30 Hz : 24 bit (RGB, YCbCr 4:4:4, YCbCr 4:2:2)<br>50 Hz/59.94 Hz/60 Hz : only 24 bit (YCbCr 4:2:0) and CEA-861 |
*8 The maximum cable distance varies depending on the connected devices and was measured under following conditions:<br>- 1080p@60 : When IDK’s 24 AWG cable was used and signals of 1080p@60 24 bit/pixel (8 bit/component) was input or output.<br>- 4K@60 : When IDK’s 18 Gbps supported cable was used and signals of 4K@60 24 bit/pixel (8 bit/component) was input or output. The maximum cable distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer’s cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.
*9 The maximum transmission distance was obtained when IDK’s CAT.5E HDC cable was used. The distance may not be extended with some device combinations, cabling method, or other manufacturer’s cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.
*10 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the HDC’s output. If other devices are connected between the HDC’s output and sink device, this feature may be invalid.

IDK Corporation

HDC-RH221UHD/HDC-RH421UHD
[Features]

■ Video
  - Up to 4K@60 (4:4:4)
  - HDCP 1.4/2.2
  - HDR
  - 3D
  - x.v.Color
  - Up to 328 ft. (100 m) 4K@60 over CAT.5E HDC/Cat5e STP/Cat6 STP cable
  - Transmission over Cat5e UTP cable\(^1\)
  - Up to 328 ft. (100 m) over Cat6 UTP cable\(^2\)
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^3\)
  - HDMI Transmission distances:
    - Up to 98 ft. (30 m): 1080p/60
    - Up to 39 ft. (12 m): 4K@60 (when cable supporting 18 Gbps transmission is used)
  - No virtual delay (10 μs or less/328 ft. (100 m))
  - OUT1 supports down conversion (4K to 1080p)
  - Each video output OFF
  - Daisy chain connection
  - Anti-snow

■ Audio
  - De-embedding

■ Control input
  - Point-to-point (bidirectional) and point-to-multipoint (unidirectional) RS-232C communication
  - LAN
  - HDBaseT: RS-232C and LAN are supported

■ Others
  - WEB browser control
  - Status notification
  - HDBaseT status display
  - I/O signal status display
  - Input channel automatic switching
  - EDID emulation
  - CEC (Pass-through)
  - Connection Reset
  - Button security lockout
  - AC adapter with locking mechanism

\(^1\) If exceeding 164 ft. (50 m), CAT.5E HDC, Cat5e STP, and Cat6 UTP/STP cables are recommended.
\(^2\) If the 4K format exceeds 230 ft. (70 m), CAT.5E HDC, Cat5e STP, and Cat6 STP cables are recommended.
\(^3\) If exceeding 328 ft. (100 m) in Long reach mode, CAT.5E HDC, Cat5e STP, and Cat6 STP cables are recommended.
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