

**Molex's Category 2<sup>†</sup>, full-duplex Micro HDMI-to-HDMI cable assemblies with Ethernet Channel and Audio Return Channel functions provide the one-cable connectivity required for IP-based, networked home-entertainment devices, eliminating the need for separate Ethernet and audio upstream processing and playback cables**

With the release of the HDMI 1.4 Revision Specification, a new feature known as the HDMI Ethernet Channel and Audio Return Channel has been added to the features of the HDMI cable to allow bi-directional, high-bandwidth, high-audio throughput communication between HDMI-enabled home theater and consumer electronics devices.

The Ethernet Channel is a data channel in the HDMI cable that allows connected devices such as notebooks or netbooks to send and receive data at Ethernet speeds of up to 100Mbps across HDMI-enabled home entertainment devices such as HDTVs, gaming consoles, Blu-ray<sup>‡</sup> Disc players, digital TVs and hand-held video recorders.

This functionality allows internet-enabled HDMI devices to share an internet connection via the cable as well as exchange digital content in their native formats, making recording, storage and playback across these networked devices possible without the need for a separate Ethernet cable.

Originally, the HDMI cable was a 'uni-directional' audio/ video data interface from the HDMI source device – DVD players, set-top boxes - to the TV sink device – a digital TV, for example. In broadcast applications, audio received by a digital TV tuner must be transmitted back to the A/V receiver – a home theater system, say - for decoding and playback of sounds using a separate S/PDIF (audio) cable. With the Audio Return Channel added to the Specification, the cable that sent audio signals from an A/V receiver to the TV now allows audio signals to be sent back to the source device thereby eliminating the need for a separate audio cable.

Molex's series 68786 Category 2-speed HDMI Ethernet Channel and Audio Return Channel cable assemblies provide the 'upstream' audio processing and playback capability needed for an enhanced digital video and audio experience of networked home-theater systems, with reduced hardware (cabling) costs.

Visit our website at: [www.molex.com/product/hdmi\\_type\\_d.html](http://www.molex.com/product/hdmi_type_d.html)

## HDMI\* Micro Connectors

### 68786 Micro HDMI-to-HDMI Cable Assemblies with HDMI Ethernet Channel and Audio Return Channel functions



*Micro HDMI-to-HDMI Cable Assembly with HDMI Ethernet Channel and Audio Return Channel functions*

## FEATURES AND BENEFITS

### HDMI Ethernet Channel

- Combines video, audio and data streams into a single HDMI cable to provide unmatched signal quality, convenience and control for home-entertainment networking; and supports high screen-resolutions of 1080p/60Hz and above at 340MHz clock rate
- Enables high-speed, two-way communication between HDMI-enabled devices up to 100Mbps Ethernet speed, making them instantly ready for any IP-based application such as UPnP<sup>§</sup>, IPTV<sup>\*\*</sup>, LiquidHD<sup>††</sup>, DLNA<sup>‡‡</sup> and others
- Allows internet-enabled HDMI entertainment devices such as gaming consoles, Blu-ray Disc players, digital TVs, and others, to share an internet connection via this high-speed cable without the need for a separate Ethernet cable (Remark: An integral router device is required in the network)

### Audio Return Channel

- Enables a maximum audio throughput of 36.86 Mbps while supporting all audio formats that can be sent through traditional S/PDIF audio connection including Dolby Digital<sup>§§</sup>, DTS<sup>\*\*\*</sup> and PCM<sup>†††</sup> audio
- Provides audio transport from HD TV, recorders and other source devices (set-top-boxes for example) to A/V receivers by combining upstream audio capability into a single HDMI cable without the need for a separate (S/PDIF) audio cable for 'upstream' processing and playback (Remark: HDMI 1.4 Specification incorporates S/PDIF capability into the cable)
- Contributes to a 'greener' environment and delivers aesthetic advantages to the networked home-entertainment systems with less cables used

<sup>\*</sup>HDMI, the HDMI Logo, and High Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries

<sup>†</sup>CAT2 (short form for Category 2) speed supports cable transmission rates of up to 340 MHz cable transmission; compared with Category 1 speed of 74.25 MHz

<sup>‡</sup> Blu-ray, §UPnP, \*\*IPTV, ††LiquidHD, ‡‡DLNA, §§Dolby Digital, \*\*\*DTS, †††PCM Audio are trademarks, registered trademarks or service marks are properties of their respective owners in the United States and/or other countries.

## SPECIFICATIONS

### Reference Information

Packaging: Bag  
UL File No.: E72548  
CSA File No.: 152154  
Mates With : Series 46765 HDMI Connectors  
Designed In: mm  
RoHS: Yes  
Halogen free : No but customizable according to the requirements of the customer if needed  
Glow Wire Compliant: No

### Electrical

Voltage (max.): 30V  
Current (max.): 0.8A  
Intra-skew pair (max.): 111ps  
\*Differential impedance: 100ohms  
± 15% (connection point and transition area: up to 1ns): 100ohms  
± 10% (cable area 1–2.5ns)  
Common Mode Impedance : 30ohms ± 20%  
(cable area 1– 2.5ns)

### Mechanical

Cable Flex : 100 cycles in each of two planes  
Wrenching Strength (Mated connectors) : 0-20N (Plug or Receptacle)  
: 20-40N (Receptacle)  
Cable Pull-out Force (1 minute) : 49N (HDMI Plug)  
: 40N (Micro HDMI Plug)

### Physical

Shielding: Fully-shielded  
Cable Plug Dimensions (Type D) : 10.0(W) by 7.0(H) by 24.27(L) mm  
Operating Temperature: -20 to +80°C

\*A single excursion is permitted out to a max/min of 100ohm ± 25% and of a duration less than 250ps

## HDMI\* Micro Connectors

### 68786 Micro HDMI-to-HDMI Cable Assemblies with HDMI Ethernet Channel and Audio Return Channel functions



Digital Recorder



HDTV



Gaming Console



Camcorder



Netbook



Notetbook

## MARKETS AND APPLICATIONS

- Networked home-entertainment systems
- HD TVs
- Gaming consoles
- Digital recorders
- Blu-ray disc players
- Set-top-boxes
- Internet-enabled electronic devices
- Notebooks
- Netbooks

## ORDERING INFORMATION

Order No.	AWG	Cable Length (m / ft)	Product Description
68786-0014	32		
68786-0015	34	1.0m (3.28')	
68786-0016	36		
68786-0017	32	1.5m (4.92')	Micro HDMI*-to-HDMI Cable Assembly with HDMI* Ethernet and Audio Return Channel functions, Category 2, Lead-free
68786-0018		2.0m (6.56')	
68786-0019	34	1.5m (4.92')	
68786-0020		2.0m (6.56')	
68786-0021	36	1.5m (4.92')	
68786-0022		2.0m (6.56')	