

ASP-CATX1

HDMI 1.3c over Single CAT Extender with Auto EDID Learning

User Manual



Manual Number: 090701





Safety and Notice

The ASP-CATX1 HDMI 1.3 has been tested for conformity to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the ASP-CATX1 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



The **ASP-CATX1 HDMI** boosts HDMI transmission distance up to 60m (200ft) in HDTV 1080i format, 40m (130ft) in HDTV 1080p format, and 20m (65ft) in HDTV 1080p with 36-bit color depth. With only one cost effective UTP cable, users can readily extend HDTV sources from DVD players, Blu-ray Disc player, PS3, PC, and any other kinds of sources compliant with TMDS standard to distant display monitors including HDMI/DVI supported TV sets or LCD PC monitors. With the state-of-the-art Silicon Image chipsets embedded, Deep Color video, DTS-HD or Dolby TrueHD audio, HDCP and HDMI compatibility are all further insured. This flexibility makes HDCP compliant DVD players or PS3 transmit utmost high quality video and audio over a great distance at the minimal cost.

The ASP-CATX1 includes two units: transmitting (ASP-CATX1-TX) and receiving (ASP-CATX1-RX) units. The transmitting unit is used to capture the input HDMI/DVI signals and carry the signals over one cost effective Cat-5/5e/6 cable. The receiving unit is responsible for equalizing the HDMI multimedia data. The transmission range between the sending and receiving units can be up to 60m (200ft) under HD (720p/1080i) or 40m (130ft) under Full HD (1080p). With an 8-level equalization rotary control switch for adjusting the strength of the HDMI signal level on the receiving unit, users can get the optimal audio/video quality accordingly, and therefore optimize the transmission range between HDMI source and display.

Features

- State-of-the-art Silicon Image (founder of HDMI) chipset embedded for upmost compatibility and reliability
- HDMI 1.3c compliant
- Extend the transmission length up to 60m (200ft) from the HDMI sources under HD resolution (1080i or 720p at 24-bit color depth)
- Extend the transmission length up to 40m (130ft) from the HDMI sources under Full HD resolution (1080p at 24-bit color depth)
- Extend the transmission length up to 20m (65ft) from the HDMI sources under Full HD resolution (1080p at 36-bit color depth)
- HDCP 1.1 compliant
- Minimize the cable skew by adjustable 8-level equalization control
- Pure unaltered uncompressed 7.1ch digital HDMI over LAN cable transmission
- DTS-HD and Dolby True HD high bit rate audio support
- Allows cascading
- Wall mounting housing design for easy and robust installation
- Perfectly integrated with other HDMI over CAT series products



The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

Specifications & Package Contents

Model Name		ASP-CATX1	
Technical		ASP-CATX1-TX	ASP-CATX1-RX
Role of usage		Transmitter [TX]	Receiver [RX]
HDMI compliance		HDMI 1.3c	
HDCP compliance		Yes	
Video bandwidth		Single-link 225MHz [6.75Gbps]	
Video support		480i / 480p / 720p / 1080i / 1080p60	
HDMI transmission over LAN cable [24-bit]		Full HD [1080p] - 40m (130ft) [Cat-5e] / 50m (165ft) [Cat-6]	
		HD [720p/1080i] - 50m (165ft) [Cat-5e] / 60m (200ft) [Cat-6]	
Audio support		Surround sound (up to 7.1ch) or stereo digital audio	
Signal level equalization		8-level digital control at RX	
Input TMDS signal		1.2 Volts [peak-to-peak]	
Input DDC signal		5 Volts [peak-to-peak, TTL]	
ESD protection		[1] Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input		1x HDMI	1x RJ-45
Output		1x RJ-45	1x HDMI
HDMI output		Up to HDMI 1.3	
HDMI connector		Type A [19-pin female]	
RJ-45 connector		WE/SS 8P8C with 2 LED indicators	
Rotary control switch		None	Signal level
Mechanical		ASP-CATX1	
		TX	RX
Housing		Metal enclosure	
Dimensions [L x W x H]	Model [TX/RX]	[TX/RX] 93 x 60 x 25mm [3.7"x2.4"x1"]	
	Package	270 x 175 x 80mm [10.6" x 6.9" x 3.1"]	
	Carton	450 x 370 x 300mm (1'6" x 1'3" x 11.8")	
Weight	Model		
	Package		
Fixedness		Wall-mounting case with screws	
Power supply		5V 2A DC	
Power consumption		1 Watt [max]	
Operation temperature		0~40°C [32~104°F]	
Storage temperature		-20~60°C [-4~140°F]	
Relative humidity		20~90% RH [no condensation]	
Package Contents		1x ASP-CATX1 [TX & RX] 2x 5V power adapter 1x User Manual	

Front View — Transmitting Unit ASP-CATX1-TX



HDMI IN: Connects to a HDMI source with a HDMI male-male cable here



Note for Auto EDID (Extended Display Identification Data) learning

1. The first time you connect the ASP-CATX1 to a HDMI display. The LED of RJ-45 connect will blink for up to 20 seconds to automatically learn the EDID of the HDMI display and dim when the learning procedure is done.
2. The next time when you turn on the ASP-CATX1 connected with the same HDMI display, the auto EDID learning process should be done within 5 seconds.
3. Whenever you use the ASP-CATX1 to connect to any other HDMI display different from previously connected one. The auto EDID learning procedure will take up to 20 seconds.

Rear View — Transmitting Unit ASP-CATX1-TX



+5V DC: Connect to 5V DC power supply.

HDMI Signal OUT: Plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the receiving unit ASP-CATX1-RX.

Front View — Receiving Unit ASP-CATX1-RX



HDMI OUT: Connect to a HDMI display with a HDMI male-male cable here.

Signal Level: Adjust the 8-level equalization control to the received HDMI signals. 0 – 7 = strongest – weakest for respective transmission length [long to short]. It is recommended to switch from 7 to 0 to find the optimal visual experience.

Rear View — Receiving Unit ASP-CATX1-RX



HDMI Signal IN: Plug in a Cat-5/5e/6 cable that needs to be linked to the RJ-45 connector of the transmitting unit ASP-CATX1-TX.

+5V DC: Connect to 5V DC power supply.

Hardware Installation

1. Connect the HDMI/DVI source (such as a Blu-ray Disc player) to the transmitting unit ASP-CATX1-TX.
2. Connect the HDMI/DVI display (such as a LCD TV) to the receiving unit ASP-CATX1-RX.
3. Connect one Cat-5/5e/6 cable between the transmitting and receiving units.
4. Make sure this Cat-5/5e/6 cable is tightly connected and not loose.
5. Plug in 5V DC power adapter to the power jack of the receiving unit ASP-CATX1-RX.
6. Plug in 5V DC power adapter to the power jack of the transmitting unit ASP-CATX1-TX.
7. Wait for up to 20 seconds for auto EDID learning procedure to be done. System setup is complete.
8. **If you see flickering or blinking image on the display, please adjust the rotary control switch to improve the cable skew. 0 stands for the strongest HDMI signal level for longest possible transmission length while 7 stands for the weakest HDMI signal level for short transmission length. Try adjusting the signal level from 7 to 0 to find the optimal setting for the HDMI over CAT transmission.**

1. All HDMI over CAT5 transmission distances are measured using Belden Cat-5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C. The transmission distance is defined as the distance between the transmitting unit (TX) and the receiving unit (RX).
2. The transmission length is largely affected by the type of LAN cables, the type of HDMI sources, and the type of HDMI display. The testing results show solid LAN cables (usually in bulk cable [300m/1000ft] style) can transmit signals a lot longer than stranded LAN cables (usually in patch cord style). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission range than stranded STP CAT6 cable. For long transmission applications, solid UTP cables are the only viable choice.
3. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
4. To reduce the interference among the unshielded twisted pairs of wires in UTP cable, one can use shielded STP cables to improve EMI problems, which is worsen in long transmission.
5. Because the quality of the Cat-5/5e/6 cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
6. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input #1] generally can produce better transmission performance among all HDMI inputs.



Performance Rating		Type of Category Cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination		Please use EIA/TIA-568-B termination (T568B) at any time		

Limited Warranty

Aurora Multimedia Corp. ("Manufacturer") warrants that this product is free of defects in both materials and workmanship for a period of 3 years as defined herein for parts and labor from date of purchase. Motorized mechanical parts (Hard Drives, DVD, etc), mechanical parts (buttons, doors, etc), remotes and cables are covered for a period of 1 year. Batteries are not covered by this warranty. During the warranty period, and upon proof of purchase, the product will be repaired or replaced (with same or similar model) at our option without charge for parts or labor for the specified product warranty period.

This warranty shall not apply if any of the following:

- A) The product has been damaged by negligence, accident, lightning, water, act-of-God or mishandling; or,
- B) The product has not been operated in accordance with procedures specified in operating instructions; or,
- C) The product has been repaired and or altered by other than manufacturer or authorized service center; or,
- D) The product's original serial number has been modified or removed; or,
- E) External equipment other than supplied by manufacturer, in determination of manufacturer, shall have affected the performance, safety or reliability of the product.
- F) Part(s) are no longer available for product.

In the event that the product needs repair or replacement during the specified warranty period, product should be shipped back to Manufacturer at Purchaser's expense. Repaired or replaced product shall be returned to Purchaser by standard shipping methods at Manufacturer's discretion. Express shipping will be at the expense of the Purchaser. If Purchaser resides outside the contiguous US, return shipping shall be at Purchaser's expense.

No other warranty, express or implied other than Manufacturer's shall apply.

Manufacturer does not assume any responsibility for consequential damages, expenses or loss of revenue or property, inconvenience or interruption in operation experienced by the customer due to a malfunction of the purchased equipment. No warranty service performed on any product shall extend the applicable warranty period.

This warranty does not cover damage to the equipment during shipping and Manufacturer assumes no responsibility for such damage.

This product warranty extends to the original purchaser only and will be null and void upon any assignment or transfer.

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