



**ATLONA**  
**1 x 4 HDMI 1.3 OVER SINGLE CAT5**  
**DISTRIBUTION AMPLIFIER**  
**AT-HD14SS**

**USER MANUAL**



## TABLE OF CONTENTS

1. Introduction	.....	1
2. Features	.....	1
3. Specification	.....	2
4. Package Contents	.....	3
5. Connection Diagram	.....	3
6. DIP Switch	.....	4
7. HDMI Pin Definition	.....	5
8. Hardware Installation	.....	5
9. Notice	.....	6
10. Safety Information	.....	7
11. Warranty	.....	8
12. Atlona Product Registration	.....	9

## INTRODUCTION

Atlona Technologies' AT-HD14SS 1x4 HDMI 1.3 over Single CAT5/6 Distribution Amplifier provides the most flexible solution in the Audio Video industry at which high definition video and high quality audio can be transmitted to different locations over a long distance. The splitter is cascadable, allowing you to daisy chain multiple units for extending HDMI displays almost anywhere at almost any distance. The input HDMI source can be duplicated and distributed to up to 4 HDMI enabled displays through cost effective Cat-5/6 cables and RJ-45 to HDMI mini-extendors (AT-HD15SRS) or long range receivers (AT-HDRS). The built-in re-clocking technology allows users to connect long distance cables up to 66ft to the input of the Atlona 1x4 splitter.

## FEATURES:

- State-of-the-art Silicon Image (founder of HDMI) chipset used for %99.99 compatibility and reliability
- HDMI 1.3c compliant
- HDCP compliant
- Regenerates HDMI signal
- Supports default HDMI EDID and has the ability to learn the EDID of displays
- Extends up to 20m (66ft) of input HDMI cable
- Extends up to 60m (200ft) of output CAT-5/5e/6 LAN cable under HD (720p / 1080i)
- Extends up to 40m (130ft) of output CAT-5/5e/6 LAN cable under Full HD (1080p)
- Uncompressed 7.1ch digital HDMI over LAN cable transmission
- Cascadable for longer extension
- Perfectly integrated with other HDMI over CAT5/6 series products including LYNX CAT Series
- Wall mountable

*Note: 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 also recommended.*

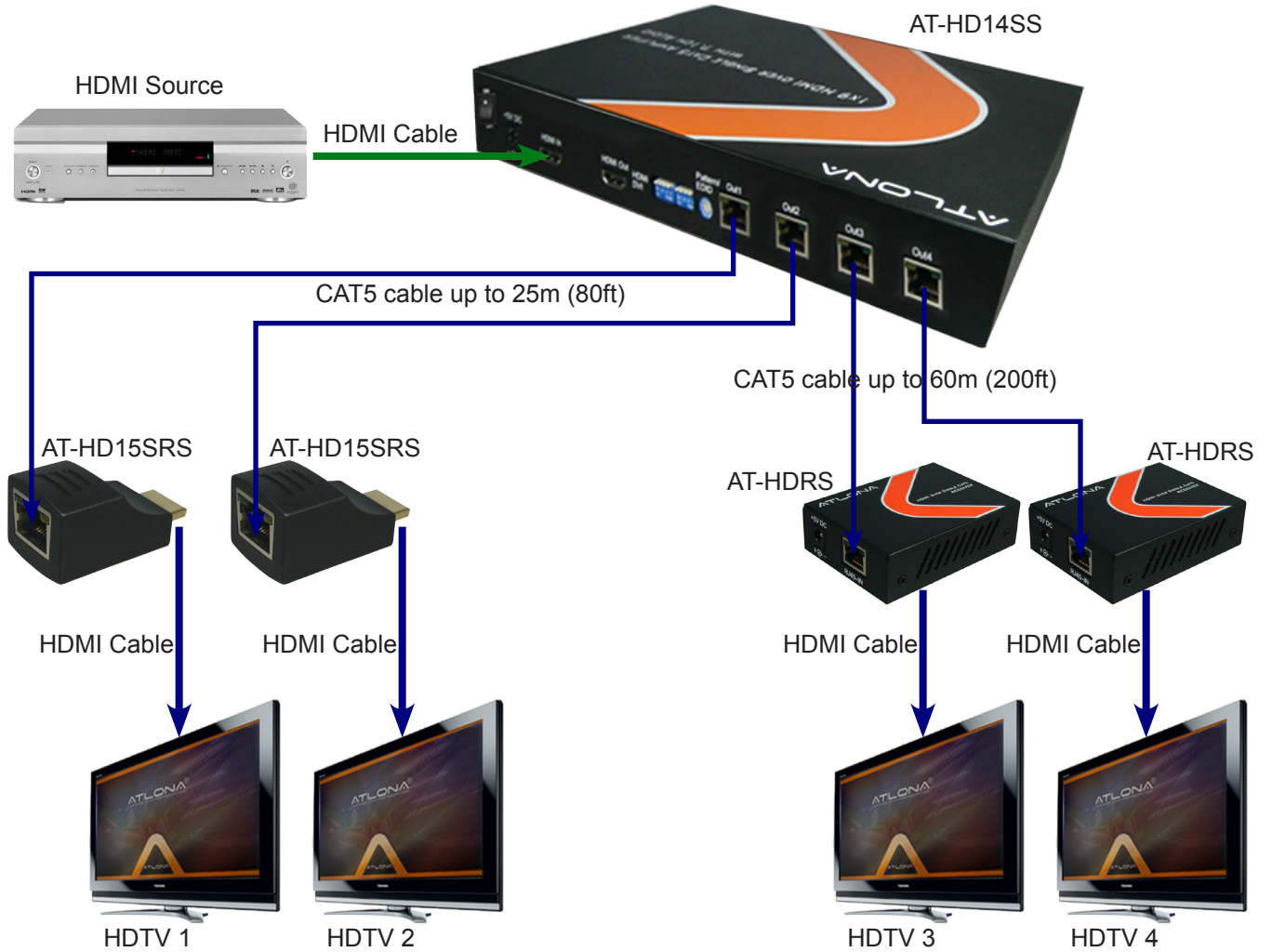
## SPECIFICATIONS

Model Name		AT-HD14SS	AT-HDRS	AT-HD15SRS
<b>Technical</b>				
Role of usage		1x4 Distribution Amplifier Transmitter	Receiver [long range]	Receiver [short range]
HDMI compliance		HDMI 1.3c		
HDCP compliance		Yes		
Video bandwidth		Single-link 225MHz [6.75Gbps]		
Video support		480i / 480p / 720p / 1080i / 1080p60		
Transmission		Full HD (1080p): 40m (130ft) [CAT5e] / 50m (165ft) [CAT6] HD (720p/1080i): 50m (165ft) [CAT5e] / 60m (200ft) [CAT6]		
Audio support		Surround sound (up to 7.1ch) or stereo digital audio		
Equalization		N/A	8-level digital	None
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	1x RJ-45
Output		4x RJ-45	1x HDMI	1x HDMI
HDMI connector		Type A [19-pin female]	Type A [19-pin female]	Type A [19-pin male]
RJ-45 connector		WE/SS 8P8C with 2 LED indicators		
<b>Mechanical</b>				
Housing		Metal case	Metal case	Plastic mold
Dimensions [L x W x H]	Model		80 x 60 x 25mm [3.2" x 2.4" x 1"]	45 x 25 x 20mm [1.8" x 1" x 0.8"]
	Package		270 x 175 x 80mm [10.6" x 6.9" x 3.2"]	170 x 115 x 40mm [6.7" x 4.5" x 1.6"]
	Carton		450 x 370 x 300mm [1'6" x 1'3" x 11.8"]	450 x 370 x 300mm [1'6" x 1'3" x 11.8"]
Weight	Model		154g [5.4oz]	22g [0.8oz]
	Package		453g [1 lb]	90g [3.2oz]
Fixedness		Wall-mount with ears	Wall-mount case upon request	N/A
Power supply		5V 4A DC	5V 2A DC	None
Power consumption		10 Watts [max]	1 Watts [max]	0.5 Watts [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:**

<b>AT-HD14SS</b>	<b>AT-HDRS</b>	<b>AT-HD15SRS</b>
1x AT-HD14SS 1x 5V power adapter 1x User Manual	1x AT-HDRS 1x 5V power adapter 1x User Manual	1x AT-HD15SRS 1x User Manual

**CONNECTION DIAGRAM**



**Mode for EDID/Audio setting**

DIP Switch Position		Video	Audio	Description
Pin#1	Pin#2			
OFF (↑)	OFF (↑)	Up to 1080p	Stereo <sup>1</sup>	Default Mode <sup>2</sup> – Up to 1080p & stereo audio output for most HDTVs
OFF (↑)	ON (↓)	Up to 720p / 1080i	Stereo	Safe Mode <sup>3</sup> – Enforce the system output at 720p/1080i video and stereo audio for basic compatibility among HDTVs
ON (↓)	OFF (↑)	Bypass <sup>4</sup>	Bypass	EDID Learning Mode <sup>5</sup> – for learning EDID from the display while playing any received HDMI audio format
ON (↓)	ON (↓)	Bypass	Stereo	EDID Learning & Stereo Mode – for learning EDID from the display while enforcing stereo output if any HDTV cannot play surround sound normally

Note:

<sup>1</sup> If the HDTV shows video but without audio, please try to set audio mode to stereo.

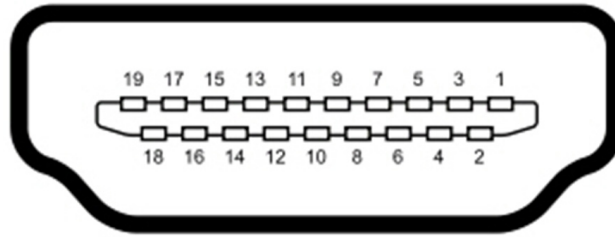
<sup>2</sup> Factory default setting of Mode is pin#1-OFF & pin#2-OFF for 1080p with stereo.

<sup>3</sup> If you encounter any unsolved audio/video output problem during system installation, please turn any Mode to pin#1-OFF & pin#2-ON for safe mode to enforce the most compatible 720p stereo output for system check. However, the safe mode cannot be initiated if your HDMI source is set to enforce 1080p output. In this case, please reconfigure your HDMI source to all resolution output for troubleshooting.

<sup>4</sup> Bypass means the matrix will maintain playing the original format of HDMI signals in video and perhaps audio. By setting at this mode, the users may encounter compatibility issue among different kinds of HDMI sources and displays. If you cannot get the audio and/or video output normally at the system installation, please change the DIP switch setting to default mode or even safe mode to verify the functionality of the device.

<sup>5</sup> To learn the EDID of HDMI display for respective HDMI source devices, please see the [EDID Learning] section in the next page for more detail information.

## HDMI PIN DEFINITION



**Type A (Receptacle) HDMI**

## HARDWARE INSTALLATION:

Pin 1	TMDS Data2+	Pin 8	TMDS Data0 Shield	Pin 15	SCL
Pin 2	TMDS Data2 Shield	Pin 9	TMDS Data0-	Pin 16	SDA
Pin 3	TMDS Data2-	Pin 10	TMDS Clock+	Pin 17	DDC/CEC Ground
Pin 4	TMDS Data1+	Pin 11	TMDS Clock Shield	Pin 18	+5 V Power
Pin 5	TMDS Data1 Shield	Pin 12	TMDS Clock-	Pin 19	Hot Plug Detect
Pin 6	TMDS Data1-	Pin 13	CEC		
Pin 7	TMDS Data0+	Pin 14	Reserved (N.C. on device)		

### **Broadcast HDMI signal to 4 remote HD displays from one video source**

1. Switch off each device, including displays devices.
2. Connect the HDMI source (such as a PS3, HDMI Compliant Set-top Box, Blu-ray player) to the HDMI In.
3. Connect to each receiver (AT-HDRS or AT-HD15SRS) via RJ-45 connector by CAT5e cable.
4. Plug in 5V 4A DC power supply.
5. Power on the HDMI displays.
6. Power on the HDMI source.

1. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI/HDMI EDID information.
2. All HDMI over CAT5/6 transmission distances are measured using Belden CAT5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C.
3. The length of transmission is largely affected by the type of LAN cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid LAN cables (usually in bulk cable 300m/1000ft form) can transmit a lot longer signals than stranded LAN cables (usually in patch cord form). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid LAN cables are your only choice.
4. EIA/TIA-568-B termination (T568B) for LAN cables is recommended for better performance.
5. To reduce the interference among the unshielded twisted pairs of wires in LAN cable, you can use shielded LAN cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the LAN cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your LAN cables. For resolution greater than 1080i or 1280x1024, a CAT6 cable is recommended.
7. 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 Guide for HDMI over LAN Cable Transmission**

Performance rating		Type of LAN cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	***	****	*****
	Shielded (STP)	***	***	****
Stranded	Unshielded (UTP)	*	**	**
	Shielded (STP)	*	*	**
Terminatio		Please use EIA/TIA-568-B termination (T568B) at all the time		



### Safeguards

To reduce the risk of electric shock, do not expose this product to rain or moisture.

If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.

Do not modify the wall plug. Doing so will void the warranty and safety features.

This equipment should be installed near the socket outlet and the device should be easily accessible in case it requires disconnection.

### Precautions

FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Operate this product using only the included external power supply. Use of other power supplies could impair performance, damage the product or cause fires.

In the event of an electrostatic discharge, this device may automatically turn off. If this occurs, unplug the device, and plug it back in.

Protect and route power cords so they will not be stepped on or pinched by anything placed on or against them. Be especially careful of plug-ins, or cord exit points from this product.

Avoid excessive humidity, sudden temperature changes or temperature extremes.

Keep this product away from wet locations such as bathtubs, sinks, laundries, wet basements and swimming pools.

Use only accessories recommended by ATLONA to avoid fire, shock or other hazards.

Unplug the product before cleaning. Use a damp cloth for cleaning. Do not use cleaning fluid or aerosols, which could enter the unit and cause damage, fire or electrical shock. Some substances may also mar the finish of the product.

Never open or remove unit panels or make any adjustments not described in this manual. Attempting to do so could expose you to dangerous electrical shock or other hazards. It may also cause damage to your AT-HD14SS. Opening the product will void the warranty.

Do not attempt to service the unit. Instead disconnect it and contact your Authorized ATLONA reseller or contact ATLONA directly.

## 1. LIMITED WARRANTY

Atlona Technologies warrants that (a) its products (the "Product") will perform substantially in accordance with the accompanying written materials for a period of 3 YEARS from the date of receipt and (b) that the Product will be free from defects in materials and workmanship under normal use and service for a period of 3 years. In the event applicable law imposes any implied warranties, the implied warranty period is limited to 3 years from the date of receipt. Some jurisdictions do not allow such limitations on duration of an implied warranty, so the above limitation may not apply to Customer.

## 2. CUSTOMER REMEDIES

Atlona Technologies and its suppliers' entire liability and Customer's exclusive remedy shall be, at Atlona Technologies' option, either return of the price paid for the Product, or repair or replacement of the Product that does not meet this Limited Warranty and which is returned to Atlona Technologies with a copy of Customer's receipt. This Limited Warranty is void if failure of the Product has resulted from accident, abuse, or misapplication. Any replacement Product will be warranted for the remainder of the original warranty period or 3 year, whichever is longer.

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