®

SIMPLE, EASY

ATLONA

ATLONA
HDMI over Single CAT5 Distribution Series

AT-HD50SS

AT-HD50RSL

AT-HDRS

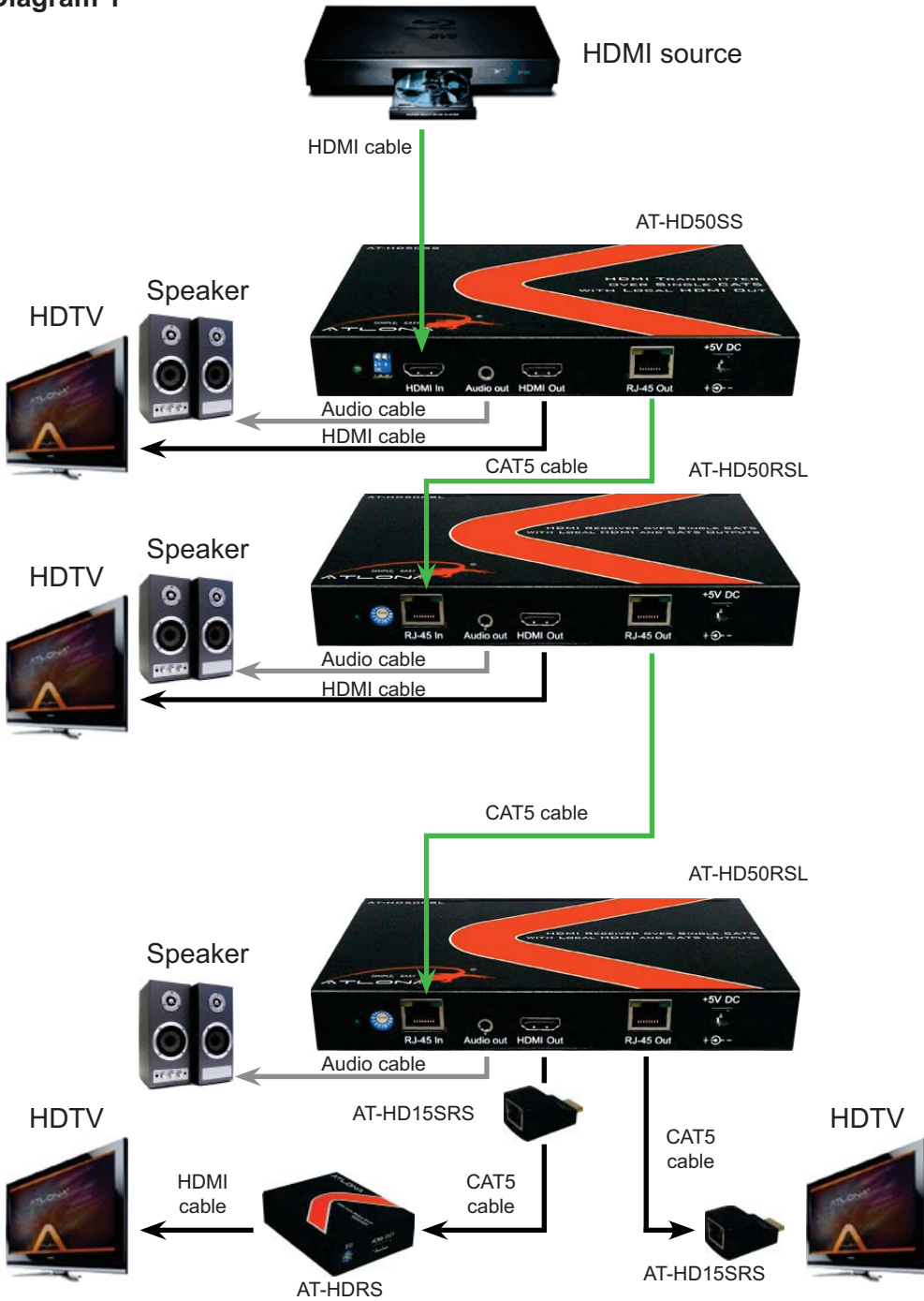AT-HD15SRS

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The Atlona HDMI over Single CAT5 Distribution Series provides the most flexible solution by which the high definition video and high quality audio can be transmitted to different locations over a long distance. The devices are cascadable, allowing you to extend HDMI/DVI compliant displays almost anywhere.

Diagram 1

HDMI source

HDMI cable

AT-HD50SS

HDTV Speaker

Audio cable
HDMI cable

CAT5 cable AT-HD50RSL

HDTV Speaker

Audio cable
HDMI cable

CAT5 cable

AT-HD50RSL

Speaker

Audio cable

HDTV AT-HD15SRS HDTV

HDMI cable CAT5 cable CAT5 cable

AT-HDRS AT-HD15SRS

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- State-of-the-art Silicon Image (founder of HDMI) chipset embedded for upmost compatibility and reliability

- HDMI 1.2a compliant

- HDCP compliant

- Regenerates the HDMI signal

- Supports audio output

- Supports default HDMI EDID and has the ability to learn the EDID of displays

- Extends up to 15m (50ft) of input HDMI cable

- Extends up to 15m (50ft) of output HDMI cable

- Extends up to 60m (200ft) (720p / 1080i) of output CAT5 cable

- Extends up to 40m (130ft) (1080p) of output CAT5 cable

- Minimize the cable skew by adjustable 8-level equalization control

- Pure unaltered uncompressed 7.1ch digital HDMI over LAN cable transmission

- Allows cascading

- Perfectly integrated with other HDMI over CAT5 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 are recommended.
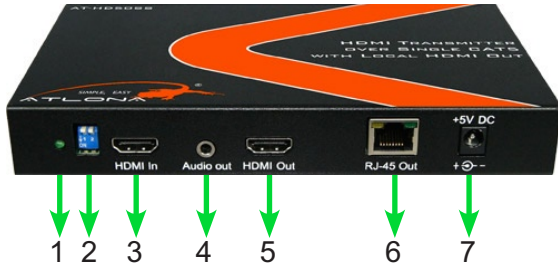
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Model Name	AT-HD50SS	AT-HD50RSL
Technical		
Role of usage	1x2 distribution amplifier	
	Sender	Sender/Receiver
HDMI compliance	HDMI 1.2a	
HDCP compliance	Yes	
Video bandwidth	Single-link 165MHz [4.95Gbps]	
Video support	480i / 480p / 720p / 1080i / 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	None	8-level digital control
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 HDMI 1x RJ-45 1x 3.5mm audio socket	1x HDMI 1x RJ-45 1x 3.5mm audio socket
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators	
3.5mm connector	Earphone jack for stereo audio	
DIP switch	EDID/audio mode	None
Mechanical		
Housing	Metal case	
Dimensions [L x W x H] — Model	180 x 108 x 27mm [7"x4.3"x1.1"]	
Dimensions [L x W x H] — Package	330 x 200 x 95mm [1'1"x7.9"x3.7"]	
Dimensions [L x W x H] — Carton	495 x 440 x 380mm [1'7.5"x1'5.3"x1'3"]	
Weight — Model	430g [15.2oz]	430g [15.2oz]
Weight — Package		
Mounting	Wall-mounting case	
Power supply	5V 4A DC	
Power consumption	3 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	1x AT-HD50SS or AT-HD50RSL 1x 5V power adapter 1x User Manual	

Model Name		AT-HDRS	AT-HD15SRS
Technical			
Role of usage		Receiver [long range]	Receiver [short range]
HDMI compliance		HDMI 1.2a	
HDCP compliance		Yes	
Video bandwidth		Single-link 165MHz [4.95Gbps]	
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		8-level digital control	None
Input TMDS signal		1.2 Volts [peak-to-peak]	
Input DDC signal		5 Volts [peak-to-peak, TTL]	
ESD protection [CV-715]		[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 RJ-45	1x RJ-45
Output		1x HDMI	1x HDMI
HDMI connector		Type A [19-pin female]	Type A [19-pin male]
RJ-45 connector		WE/SS 8P8C with 2 LED indicators	
Mechanical			
Housing		Metal case	Plastic mold
Dimensions [L x W x H]	Model	85 x 60 x 25mm [3.3"x2.4"x1"]	45 x 25 x 20mm [1.8"x1"x0.8"]
	Package	270 x 175 x 80mm [10.6"x6.9"x3.2"]	170 x 115 x 40mm [6.7"x4.5"x1.6"]
	Carton	450 x 370 x 300mm [1'5.7"x1'2.6"x11.8"]	
Weight	Model	154g [5.4oz]	22g [0.8oz]
	Package	453g [1 lb]	90g [3.2oz]
Mounting		Wall-mount case upon request	Direct plug-in
Power supply		5V 2A DC	None
Power consumption		1 Watt [max]	0.5 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 AT-HDRS 1x 5V power adapter 1x User Manual	1x AT-HD15SRS 1x User Manual

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AT-HD50SS HDMI Transmitter over Single CAT5 with Local HDMI Out

1. Power indicator

2. DIP switch [see table below]

3. HDMI In: Connect a HDMI source with a HDMI M-M cable here

4. Audio out: Plug in a local speaker here

5. HDMI Out: Connect to a HDMI display with a HDMI M-M cable here

6. RJ-45 Out: Link to AT-HD50RSL for cascading; or link to AT-HDRS or AT-HD15SRS to another HDMI display with a CAT5e/6 LAN cable

7. +5V DC: Connect to 5V 4A DC power supply

1 2 3   4   5   6   7

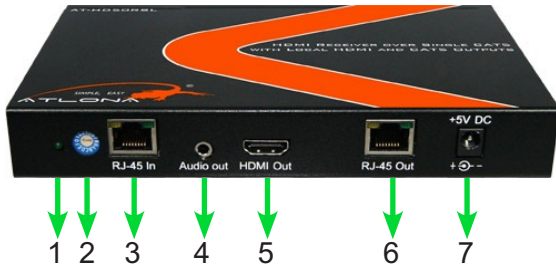| DIP Switch Position		Video	Audio	Description
Pin#1	Pin#2			
OFF [↑]	OFF [↑]	1080p	Stereo[1]	**Default Mode**[2] – 1080p & stereo audio output for most HDTVs
OFF [↑]	ON [↓]	720p 1080i	Stereo	**Safe Mode**[3] – Enforce the system output at 720p/1080i video and stereo audio for basic compatibility among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

Note for EDID (Extended Display Identification Data) learning

1. Don't plug in HDMI cable to [HDMI In] when you want to restore default EDID or learn the display's EDID.

2. Please connect the display which you want to read EDID to HDMI Out so the AT-HD50SS can learn the EDID information from the connected HDTV.

3. To learn EDID from HDMI display, pull the DIP #1 up and down from OFF to ON, the green light will dim and light to indicate the EDID learning process is complete. You DON'T NEED to pull up the DIP switch again unless you want to learn another EDID by pulling DIP switch 1 up and down.

Note

1. If the HDTV shows video without audio, please try to set audio mode to stereo.

2. Factory default: Pin#1-OFF[↑], Pin#2- OFF[↑] for 1080p with stereo.

3. If you encounter any unsolved audio/video output problem during system installation, please turn to Safe Mode (Pin#1-OFF[↑] & Pin#2-ON[↓]) to enforce the most compatible 720p stereo output for system check.

4. 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.

5 Set Pin#1 at ON[↓] first then connect the HDMI Input to HDTV through a HDMI cable. Wait for 20 seconds. The EDID learning procedure will be finished. If you want to learn the EDID from another HDTV, you must set Pin#1 at OFF first and repeat this procedure.

AT-HD50RSL HDMI Receiver over Single CAT5 with Local HDMI and CAT5 Outputs

1. Power indicator

2. 16-level rotary control: Adjust the 16-level equalization control corresponding to the transmission distance of receiving HDMI signals. For surround sound audio output, please adjust from 0-to-7 (longest-to-shortest transmission length). For stereo audio output, please adjust from 8-to-F (longest-to-shortest transmission length). It is recommended to adjust from 7-to-0 or from F-to-8 to find the optimal visual experience.

3. RJ-45 In: Link to AT-HD50RSL, or AT-HD50SS with a CAT-5e/6 cable

4. Audio out: Plug in a local speaker here

5. HDMI Out: Connect to a HDMI display with a HDMI M-M cable here

6. RJ-45 Out: Link to another AT-HD50RSL for cascading; or link to AT-HDRS or AT-HD15SRS to another HDMI display with a CAT5e/6 cable

7. +5V DC: Connect to 5V 4A DC power supply
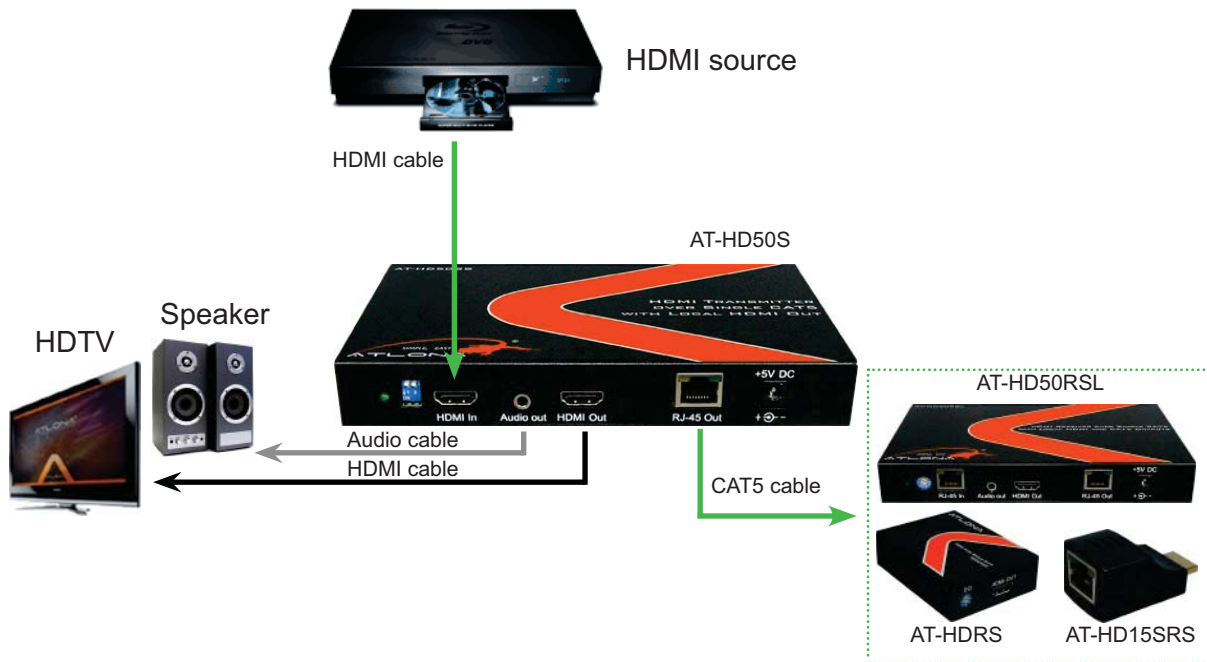
AT-HDRS HDMI over Single CAT5 Receiver

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

EQ: Adjust the 8-level equalization control knob to the received HDMI signals. 0 – 7 = strongest – weakest. It is recommended to switch from 7 to 0 to find the optimal visual experience.

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AT-HD50SS

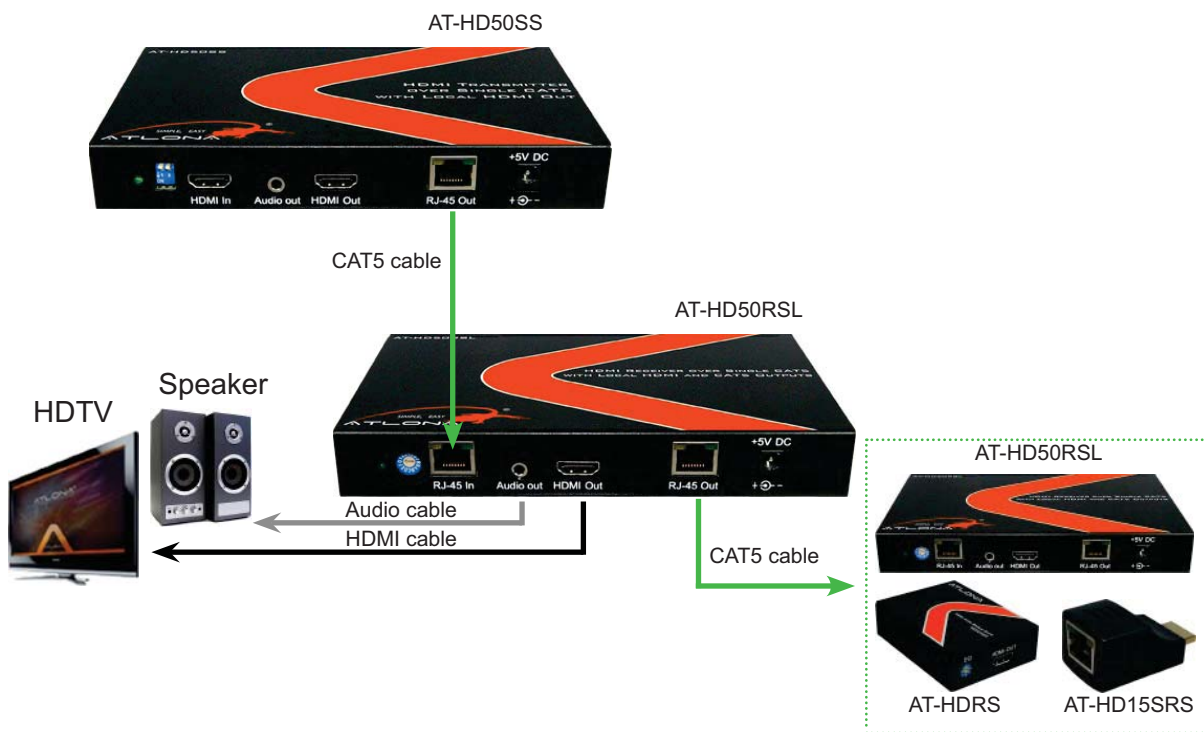**Extends HDMI signals to next cascading device with one local display**

1. Switch off all devices, including monitors.

2. Connect a local HDMI display to the HDMI out of the AT-HD50SS and then connect a speaker to the 3.5mm audio socket.

3. Connect to a HDMI source (such as a Blu-Ray Disc player)

4. Connect AT-HD50SS to AT-HD50RSL (for cascading), to AT-HDRS (to HDTV at long range), or AT-HD15SRS (to HDTV at mid range) via RJ-45 Out by a CAT5 cable.

5. Plug in 5V 4A DC power supply.

6. Power on the HDTV.
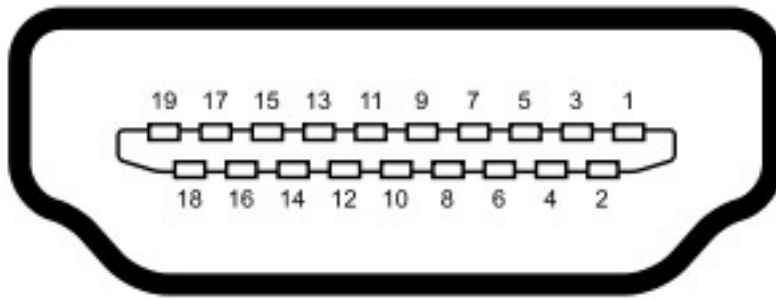
7. Power on the HDMI source.

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AT-HD50RSL

Relays HDMI signals to next cascading device with one local display

1. Switch off all devices, including monitors.

2. Connect a local HDMI display to the HDMI Out of the AT-HD50RSL and then connect a speaker to the 3.5mm audio socket.

3. Connect to AT-HD50RSL via RJ-45 in by a CAT5 cable.

4. Connect to next AT-HD50RSL (for cascading), to AT-HDRS (to HDTV at long range), or AT-HD15SRS (to HDTV at mid range) via RJ-45 out by a CAT5 cable.

5. Plug in 5V 4A DC power supply.

6. Power on the HDTV.

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Type A (Receptacle) HDMI

Notice

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)		

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 transmission distances are measured using Belden 1583A CAT5e 125MHz LAN cable and ASTRODESIGN Video Signal Generator VG-859C.

3. 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 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 a better suit 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 can 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.

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Performance rating		Type of LAN cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
Solid	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
Stranded	Shielded (STP)	★	★	★★
Termination		Please use **EIA/TIA-568-B** termination (**T568B**) at any 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-HD50SS, AT-HD50RSL, AT-HDRS, AT-HD15SRS. Opening the product will void the warranty.

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

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LIMITED ONE-YEAR WARRANTY
ATLONA by Lenexpo Electronics warrants only to the initial purchaser of this product for a period of one year from the date of purchase from an Authorized ATLONA Reseller, the product will be free of electrical and mechanical defects that materially affect the products operation as described in this users manual. Within this period, ATLONA will, at it's sole option, repair or replace any components, which fail of normal use or refund the net original price.

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