SIMPLE, EASY

ATLONA

HDMI v1.3 Extender over Single CAT5E/6 up to 200ft

MODEL: AT-HD-V40SRS

User's Manual

Rev.0912

TABLE OF CONTENTS

INTRODUCTION

Atlona Technologies Atlona's AT-HD-V40SRS HDMI 1.3 over Single CAT5 Extender boosts up your video/audio 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 solid Cat-5/5e/6 UTP/STP 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 to distant display monitors including HDMI or DVI enabled TV sets or LCD PC monitors.

With the state-of-the-art Silicon Image HDMI 1.3 chipsets equipped, deep color video, DTS-HD or Dolby TrueHD audio, and HDCP supports and compatibility are all further insured. This flexibility makes HDCP compliant BD players or PS3 transmit utmost high quality video and audio with a greater distance at the minimal cost, when integrating several components apart.

The AT-HD-V40SRS includes two units: Sender (AT-HD-V40SS) and Receiver (AT-HD-V40RS) units. The Sender unit is used to capture the input HDMI/DVI signals and carry the signals through one RJ-45 connector into one cost effective solid Cat-5/5e/6 UTP/STP cable. The Receiver unit is responsible for equalizing the sent TMDS multimedia data. The transmission distance between the sender and receiver units can be up to 60m (200ft) under HD (720p/1080i) or 40m (130ft) under Full HD (1080p). With an 8-level equalization control switch on the receiving unit, users can adjust the equalization strength to the received TMDS signals accordingly, and therefore optimize the transmission distance between source and destination.

FEATURES

- ★ State-of-the-art Silicon Image (founder of HDMI) chipset embedded for utmost 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 rotary control
- ★ Pure unaltered uncompressed 7.1ch digital HDMI over CAT5/6 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 CAT5 series products

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 recommended

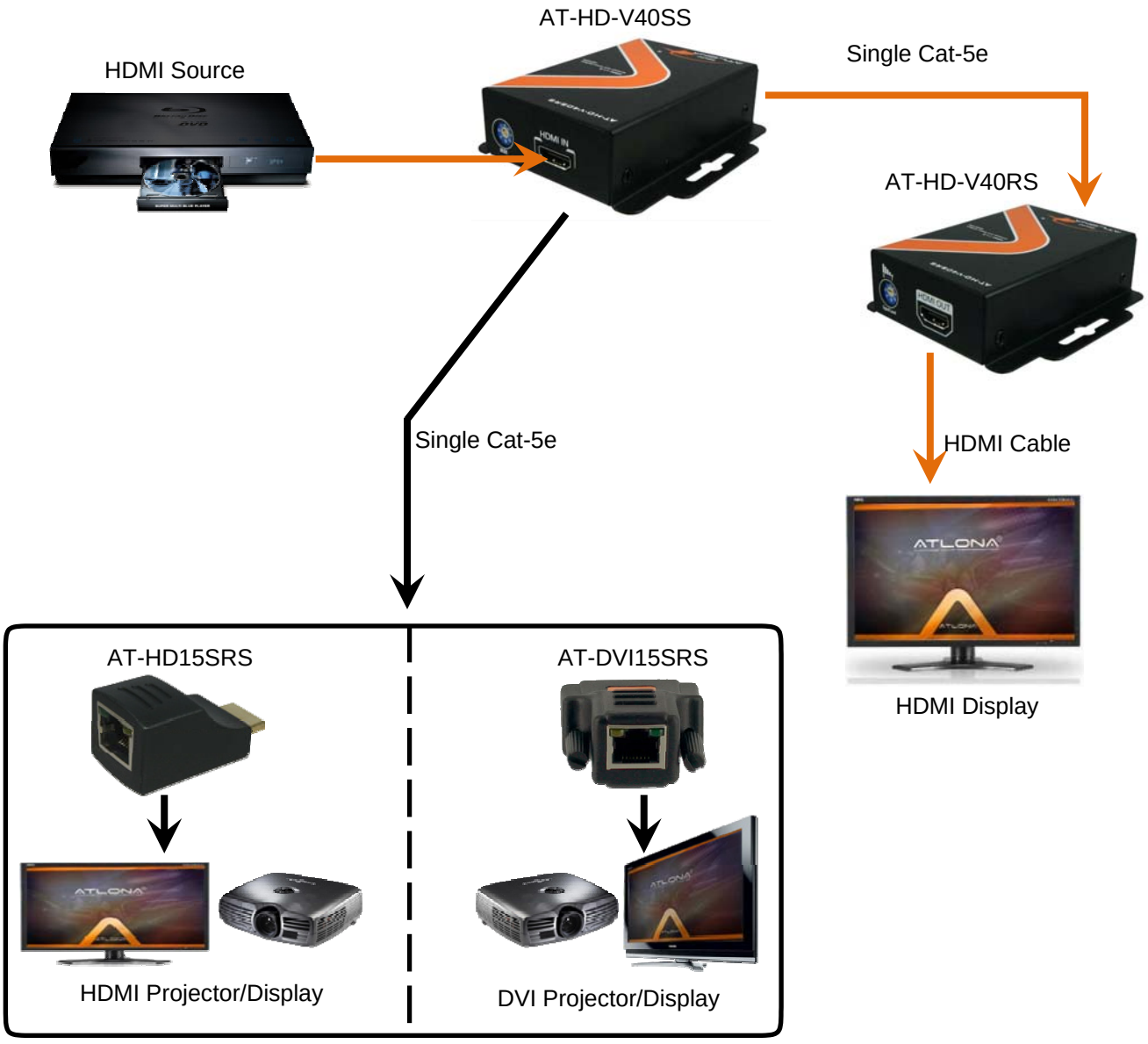
SPECIFICATIONS

Model Name		AT-HD-V40SRS	
Technical		TX	RX
Role of usage		Sender (AT-HD-V40SS)	Receiver (AT-HD-V40RS)
HDMI compliance		HDMI 1.3c	
HDCP compliance		Yes	
Video bandwidth		Single-link 225MHz (6.75Gbps)	
Video support		480i / 480p / 720p / 1080i / 1080p60 24/30/36-bit color	
HDMI transmission [24-bit]		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 at receiver	
Input TMDS signal		1.2 Volts [peak-to-peak]	
Input DDC signal		5 Volts [peak-to-peak, TTL]	
ESD protection		[1] Human body — ±19kV (air-gap discharge) & ±12kV (contact discharge) [2] Core chipset — ±8kV	
Input		1x HDMI	1x RJ-45
Output		1x RJ-45	1x HDMI
HDMI connector		Type A [19-pin female]	
RJ-45 connector		WE/SS 8P8C with 2 LED indicators	
Rotary control switch		Mode selection	Signal level equalization
Mechanical			
Housing		Metal enclosure	
Dimensions [L x W x H]	Model	93 x 60 x 25mm [3.7” x 2.4” x 1”] for sender/receiver	
	Package	270 x 175 x 80mm (10.6” x 6.9” x 3.1”)	
Weight	Model	405g (14 oz)	
	Package	815g (1.8 lbs)	
Fixedness		Wall-mounting case with screws	
Power supply		5V 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

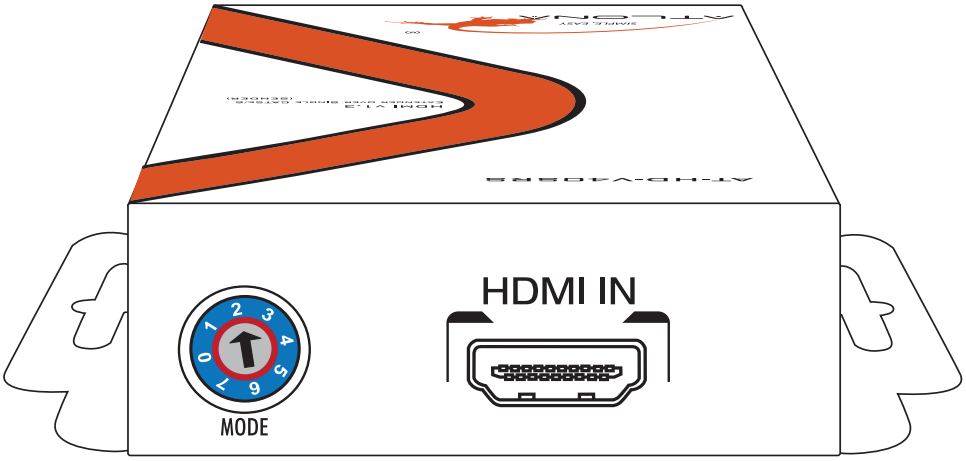
- ★ 1x AT-HD-V40SRS (sender and receiver unit)
- ★ 2x 5V DC power supply unit
- ★ 1x User's manual

CONNECTION DIAGRAM



Sender Unit: AT-HD-V40SS

Input Panel



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

MODE: 0 = [Video] – supports up to HDMI 1.3 output. [Audio] – supports up to 7.1ch output

1 = [Video] – supports up to HDMI 1.3 output. [Audio] – locks to stereo audio output

2 = [Video] – locks to HDMI 1.2 output. [Audio] – supports up to 7.1ch output

3 = [Video] – locks to HDMI 1.2 output. [Audio] – locks to stereo audio output

4 = [Video] – DVI display mode. [Audio] – no audio output

5 = [Safe Mode] – uses default EDID**1** with video supported up to 720p/1080i

6 = [Default Mode] – uses default EDID**2** with video supported up to 1080p

7 = [EDID Learning Mode] – learns EDID**3** from the display

Note for EDID (Extended Display Identification Data) learning

1. ***If you cannot get the audio/video output from the connected display from the first time setup. Please follow the instructions below to check if the extender is OK:***

   Step 1 – Please set the rotary arrow on TX at "Mode 5" for Safe Mode, and wait for the LED of the RJ-45 connector blinks for a couple seconds.

   Step 2 – Please turn the rotary arrow counterclockwise [↺] from Mode 5 to Mode 3. If you can get audio/video from the display, you can stay tune at this setting for 720p or 1080i and stereo audio. If you need to get 720p/1080i with 7.1ch audio output, please turn the rotary arrow counterclockwise [↺] from Mode 3 to Mode 2. For better audio/video output, please check Note#2. If you still cannot get the audio/video out normally, please go on the next step.

   Step 3 – Please turn the rotary arrow counterclockwise [↺] from Mode 3 to Mode 7. Wait a few seconds until the LED of the RJ-45 connector dims and then lights again.

   Step 4 – Please turn the rotary arrow clockwise [↻] from Mode 7 to Mode 1. You should have normal audio/video output. If not, please contact technical support.

2. ***For desirable 1080p video output, please follow the instructions below:***

   Step 1 – Please set the rotary arrow on TX at "Mode 6" for Default Mode, and wait for the LED of the RJ-45 connector blinks for a couple seconds.

   Step 2 – Please turn the rotary arrow clockwise [↻] from Mode 6 to Mode 1. If you can get audio/video from the display, you can stay tune at this setting for 1080p and stereo audio. If you need to get 1080p with 7.1ch audio output, please turn the rotary arrow counterclockwise [↺] from Mode 1 to Mode 0. If you cannot get the audio/video out normally, please go on the next step.

Step 3 –Please turn the rotary arrow counterclockwise [↺] from Mode 0/1 to Mode 7. Wait a few seconds until the LED of the RJ-45 connector dims and then lights again.

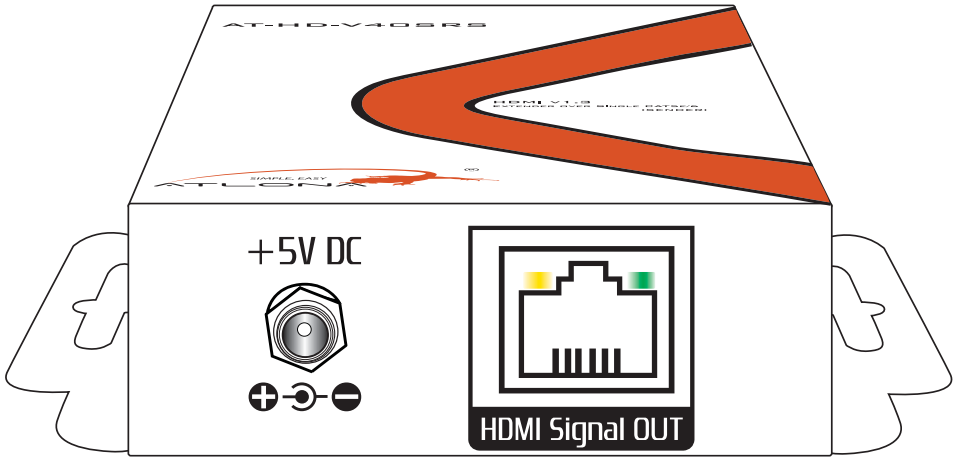
Step 4 –Please turn the rotary arrow clockwise [↻] from Mode 7 to Mode 0/1. You should have your desirable audio/video output. If not, please follow the instruction in Note#1.

3. To learn EDID from the HDMI display, please follow the instruction below:

Step 1 –Please connect the display which you want to read EDID with a HDMI cable to the transmitter's HDMI IN and set the rotary arrow at Mode 7 so the TX can learn the EDID information from the connected display. The LED on the RJ45 connector of TX will dim and light again in a few seconds, which indicates the EDID learning procedure is complete.

Step 2 –Please turn the rotary arrow clockwise [↻] from Mode 7 to Mode 0 or Mode 1 for desirable audio setting and enjoy the experience. DO NOT let the rotary arrow pass by Mode 5 and Mode 6 which will erase the EDID just learned and restore the default EDID.

Output Panel

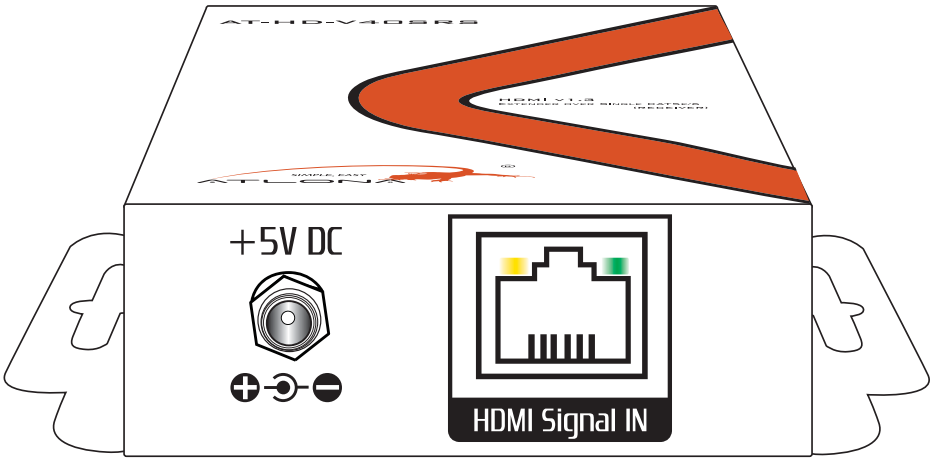


+5V DC: Connect to 5V DC power supply unit.

HDMI Signal OUT: Connect to the **HDMI Signal IN** on the receiver unit AT-HD-V40RS with a solid Cat-5/5e/6 UTP/STP cable

Receiver Unit: AT-HD-V40RS

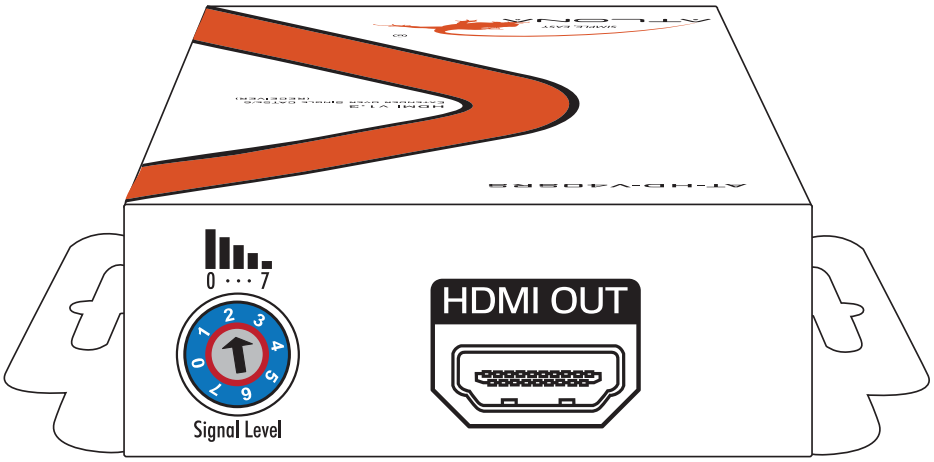
Input Panel



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

HDMI Signal IN: Connect to the **HDMI Signal OUT** on the sender unit AT-HD-V40SS with a solid Cat-5/5e/6 UTP/STP cable

Output Panel



Signal Level: Adjust the 8-level signal equalization control to the received HDMI signals. The HDMI signal level varies from 0 (strongest) to 7 (weakest) for respective transmission length from longest possible range to short distance. Dial the **Signal Level** from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issues that would shorten the product's life significantly!

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

HARDWARE INSTALLATION

1. Connect the HDMI or DVI source (such as a Blu-ray Disc player) to the Sender Unit AT-HD-V40SS.
2. Connect the HDMI or DVI display (such as a LCD HDTV) to the Receiver Unit AT-HD-V40RS.
3. Connect a solid Cat-5/5e/6 UTP/STP cable between the Sender and Receiver units.
4. Make sure this solid Cat-5/5e/6 UTP/STP cable is tightly connected and not loose.
5. Plug in 5V DC power supply unit to the interlocking power jack of the Receiver Unit AT-HD-V40RS.
6. Plug in 5V DC power supply unit to the interlocking power jack of the Sender Unit AT-HD-V40SS.
7. If you see flickering or blinking image on the display, 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 CAT5 transmission.

EDID LEARNING

1. Turn on Sender unit AT-HD-V40SS.
2. Turn the **MODE** of AT-HD-V40SS to **7**.
3. Connect the HDMI display to the **HDMI IN** of AT-HD-V40SS with a HDMI cable. The LED on the RJ-45 connector of AT-HD-V40SS will dim and light again, which indicates the EDID learning procedure is complete.
4. Turn the **MODE** of AT-HD-V40SS clockwise **[↻]** from **7** to **0** (for surround sound) or **1** (for stereo). **The most important thing is don't let the rotary arrow pass through MODE 5 and MODE 6 which will erase the EDID just learned and restore to default EDID.**
5. Unplug the HDMI cable from the display and follow the instruction in [Hardware Installation] to set up the AT-HD-V40SRS and enjoy the experience.

NOTICE

1. When adjusting the signal level on the receiver unit, dial the rotary control switch from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issues that would shorten the product's life significantly!
2. If the DVI or HDMI device requires the EDID information, please use AT-DVISync EDID Reader/Writer to retrieve and provide EDID information of the DVI or HDMI display or AV receiver.
3. All HDMI over CAT5 transmission distances are measured using Belden CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
4. The transmission length is largely affected by the type of category cables, the type of HDMI sources, and the type of HDMI displays. The testing result shows solid UTP cables (usually in the form of 300m or 1,000ft bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). A solid UTP Cat-5e cable shows longer transmission range than a stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
5. EIA/TIA-568-B termination (T568B) for category cables is recommended for better performance.
6. To reduce the interference among the unshielded twisted pairs of wires in a category cable, shielded STP cables are better suited than unshielded UTP cables to improve EMI problems, which is worse in long transmission.
7. Because the quality of the category 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.
8. 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.

PERFORMACE GUIDE

Performance rating		**Type of category cable**		
Wiring	**Shielding**	**CAT5**	**CAT5e**	**CAT6**
Solid	Unshielded (UTP)	★★★	★★★★	★★★★★
	Shielded (STP)	★★★	★★★	★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination		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-HD-V40SRS. 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.

3. NO OTHER WARRANTIES

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, ATLONA TECHNOLOGIES AND ITS SUPPLIERS DISCLAIM ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE PRODUCT AND ANY RELATED WRITTEN MATERIALS. THIS LIMITED WARRANTY GIVES CUSTOMER SPECIFIC LEGAL RIGHTS. CUSTOMER MAY HAVE OTHER RIGHTS DEPENDING ON THE JURISDICTION.

4. NO LIABILITY FOR DAMAGES

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL ATLONA TECHNOLOGIES OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUEN-TIAL, OR INDIRECT DAMAGES FOR PERSONAL INJURY, LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT, EVEN IF ATLONA TECHNOLOGIES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN ANY CASE, ATLONA TECHNOLOGIES’ AND ITS SUPPLIERS’ ENTIRE LIABILITY UNDER ANY PROVISION OF THIS AGREEMENT SHALL BE LIMITED TO THE AMOUNT ACTUALLY PAID BY YOU FOR THE PRODUCT. BECAUSE SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

ATLONA
1293 Mountain View Alviso Rd. Suite A
Sunnyvale, CA 94089
Toll Free: 1-877-536-3976
International: 408-962-0515
FAX: 408-743-5622
Website: www.atlona.com
E-MAIL: info@atlona.com

SIMPLE, EASY
ATLONA®

ATLONA PRODUCT REGISTRATION

Thank you for purchasing this Atlona product — we hope you'll enjoy it.

We also hope that you'll take a few moments to register your new purchase. Registration creates an ownership record if your product is lost or stolen and helps ensure you'll receive notification of performance issues and firm- ware updates.

At Atlona, we respect and protect your privacy and assure you that your registration information is completely secure. Of course, Atlona product registration is totally voluntary and failure to register will not diminish your limited warranty rights.

To register go to **www.atlona.com/registration**