avgear

USER MANUAL

AVG-HD300

HDBaseT
Extender Set

Version: HD300_2015V1.1

The AVG-HD300 is an HDMI/IR/RS232 over twisted pair including a transmitter (AVG-HD300T) and receiver (AVG-HD300R).

Features

- Supports Full HD: Delivers resolutions including 800x600@60Hz, 1024x768@Hz, 1280x720@60Hz, 1280x1024@60Hz, 1366x768@60Hz, 1600x1200@60Hz, 1920x1080@60Hz, 1920x1200@60Hz, 3D, 4K×2K
- Max transmission distance is up to 60 meters over single CAT5e/CAT6 cable.
- High Bandwidth: 10.2Gps.
- HDTV Compatible, HDMI 1.4 and HDCP compliant.
- Supports PoC & CEC.
- HDBaseT technology.

PLEASE READ THIS PRODUCT MANUAL CAREFULLY BEFORE USING THIS PRODUCT.

This manual is only for operation instruction only, and not to be used in a maintenance capacity. The functions described in this version are current as at March 2015. Any changes of functions and operational parameters will be updated in future manual versions. Please refer to your dealer for the latest product details.

Version 1.1 1/12/15

SAFETY OPERATION GUIDE 

In order to guarantee the reliable operation of the equipment and safety of the user, please abide by the following procedures in installation, use and maintenance:

1. The system must be earthed properly. Please do not use two blade plugs and ensure the alternating power supply ranges from 100v to 240v and from 50Hz to 60Hz.
2. Do not install the switcher in an environment where it will be exposed extreme to hot or cold temperatures.
3. This unit will generate heat during operation, please ensure that you allow adequate ventilation to ensure reliable operation.
4. Please disconnect the unit from mains power if it will be left unused for a long time.
5. Please DO NOT try to open the casing of the equipment, DO NOT attempt to repair the unit. Opening the unit will void the warranty. There are high voltage components in the unit and attempting to repair the unit could result in serious injury.
6. Do not allow the unit to come into contact with any liquid as that could result in personal injury and product failure.

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1. Introduction

1.1 Introduction to AVG-HD300

AVG-HD300 is an HDMI/IR/RS232 Extender operating over twisted pair and includes a transmitter (AVG-HD300T) and receiver (AVG-HD300R). The AVG-HD300 uses HDBaseT technology to deliver HDMI signals, max transmission distance up to 60 meters with CAT5e/CAT6 cable. CEC, bi-directional RS232&IR control, and PoC (Power over Cable) are supported by the AVG-HD300.

1.2 Features

- Supports Full HD: Delivers resolutions including 800x600@60Hz, 1024x768@Hz, 1280x720@60Hz, 1280x1024@60Hz, 1366x768@60Hz, 1600x1200@60Hz, 1920x1080@60Hz, 1920x1200@60Hz, 3D, 4K×2K
- Max transmission distance is up to 60 meters over single CAT5e/CAT6 cable.
- High Bandwidth: 10.2Gps.
- HDTV Compatible, use HDMI 1.4 and HDCP compliant.
- Supports PoC & CEC.
- Connect with a displayer to transmit EDID and HPD signals constantly by using a CAT5e cable.
- Uses HDBaseT technology.
- Bi-directional RS232/IR control.
- LED indicators show work status.
- Wall/table-mountable aluminum enclosure, PT case design.

Note: Please use a CAT5e cable with low impedance (Shielded twisted pair will be better and should be well grounded) for good transmission characteristics.

2. What's in the Box

- 1 x AVG-HD300T
- 1 x AVG-HD300R
- 4 x Mounting brackets (Separated from AVG-HD300)
- 8 x Plastic cushions
- 2 x RS232 cables
- 8 x Screws
- 1 x Power adapter (DC 24V)
- 1 x User manual

Note: Please confirm that the product and the accessories are all included, if not, please contact your dealer.

3. Product Appearance

3.1 Appearance of AVG-HD300T

1) ON: Working status indicator, blink green when the device works fine, turn off when the device stops working.
2) LINK: Twisted Pair link status indicator, illuminate green when the connection is successful.
3) IN: HDCP compliance indicator, illuminate green when the connected device supports HDCP and work normally; blink green when the connected device does not support HDCP.
4) POWER LED: Illuminate red when power on.
5) HDBT OUT: Connect to the HDBT IN port of AVG-HD300R with a CAT5e cable.
6) HDMI IN: Connect to HDMI source.
7) IR IN: Connect with IR receiver, the IR signal received from this port can only send out via AVG-HD300R.
8) IR OUT: Connect with IR transmitter, the sent IR signals are received by AVG-HD300R.
9) RS232: Serial port, 3-pin captive screw connector, connects with the control terminal, supports bi-directional RS232 control.
10) DC 24V: Connect with power supply (Not necessary if AVG-HD300R connects with power).

Note: Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

3.2 Appearance of AVG-HD300R

1) ON: Working status indicator, blink green when the device works fine, turn off when the device stops working.
2) LINK: Twisted Pair link status indicator, illuminate green when the connection is successful.
3) IN: HDCP compliance indicator, illuminate green when the connected device supports HDCP and work normally; blink green when the connected device does not support HDCP.
4) POWER LED: Illuminate red when power on.
5) HDBT IN: Connect to the HDBT OUT port of AVG-HD300T with a CAT5e cable.
6) HDMI OUT: Connect to HDMI display device.
7) IR IN: Connect with IR receiver, the IR signal received from this port can only send out via AVG-HD300T.
8) IR OUT: Connect with IR transmitter, the sent IR signal are received by AVG-HD300T.
9) RS232: Serial port, 3-pin captive screw connector, connects with the control terminal, supports bi-directional RS232 control.
10) DC 24V: Connect with power supply (Not necessary if AVG-HD300T connects with power).

Note: Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

4. System Connection

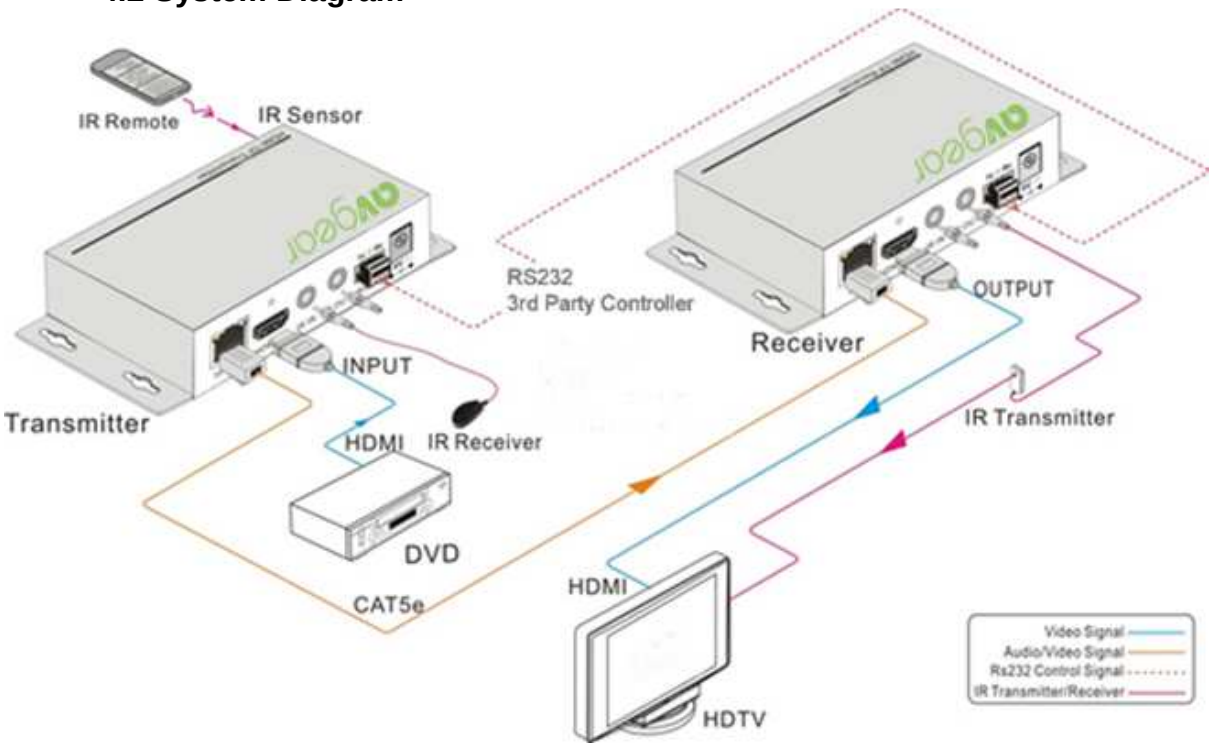
4.1 Usage Precautions

1) System should be installed in a clean environment and has a prop temperature and humidity.

2) All of the power switches, plugs, sockets and power cords should be insulated and safety.

3) All devices should be connected before power on.

4.2 System Diagram



4.3 Connection Procedure

Step1. Connect HDMI source (such as Blue-ray DVD) to HDMI IN port of AVG-HD300T
with HDMI cable.

Step2. Connect HDBT OUT port of AVG-HD300-T to HDBT IN port of AVG-HD300R
through a CAT5e/CAT6 cable.

Step3. Connect a HDMI displayer (such as HDTV) to HDMI OUT port of AVG-HD300R
with HDMI cable.

Step4. Both AVG-HD300T and AVG-HD300R have IR IN and OUT. When one end is used as an IR receiver, the other end will be used as an IR transmitter.

For example: When “IR IN” of AVG-HD300T connects with an IR receiver, the IR
transmitter must be connected to “IR OUT” of AVG-HD300R.

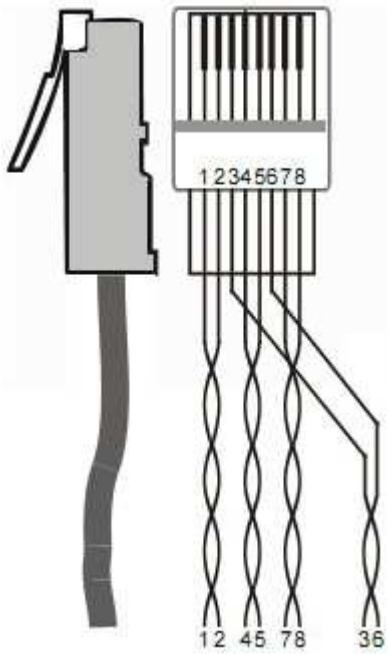
Step5. Connect the RS232 port of the devices to be controlled and the receiver or the transmitter.

Step6. Connect with DC 24V power adaptor(s) (One is sufficient as the other end can be powered with the PoC function).

4.4 Application

AVG-HD300 has ideal and suited for use in the IT realm, monitoring, large screen displays, meeting rooms, education, bank & security institutions etc.

4.5 Twisted Pair Cable Connection



TIA/EIA T568A			TIA/EIA T568B	
Pin	Cable color		Pin	Cable color
1	green white		1	orange white
2	green		2	orange
3	orange white		3	green white
4	blue		4	blue
5	blue white		5	blue white
6	orange		6	green
7	brown white		7	brown white
8	brown		8	brown
1st Ground	4--5		1st Ground	4--5
2nd Ground	3--6		2nd Ground	1--2
3rd Group	1--2		3rd Group	3--6
4th Group	7--8		4th Group	7--8

Notice: Cable connectors MUST be use a shield. The shielded layer of cable MUST be connected to the connector's metal shell for proper grounding

5. Associated Products

AVG-HD300 usually works together with other devices to extend the transmission distance of HDMI/IR/RS232 signal. Here are the most common products used in conjunction with the AVG-HD300.

Description:

1) DSS52T (mini scaler switcher)

- Bi-directional IR & RS232 control.
- Compliant with HDCP.
- Supports CEC, with commands to enable/disable this function.
- Supports video source auto-switching function.
- Output resolutions selectable to assure preferred output, and supports various output resolutions, such as 1920x1200, 1920x1080, 1600x1200, 1360x768, 1280x800, 1280x720, 1024x768.
- VGA video supports C-video, YPbPr and VGA.
- MIC port supports balance/unbalance signal, suppress the external noise effectively.
- 3-level MIC input, supports condenser microphone, dynamic microphone and wireless microphone.
- Powerful OSD function.

2) MA1 (mini digital amplifier)

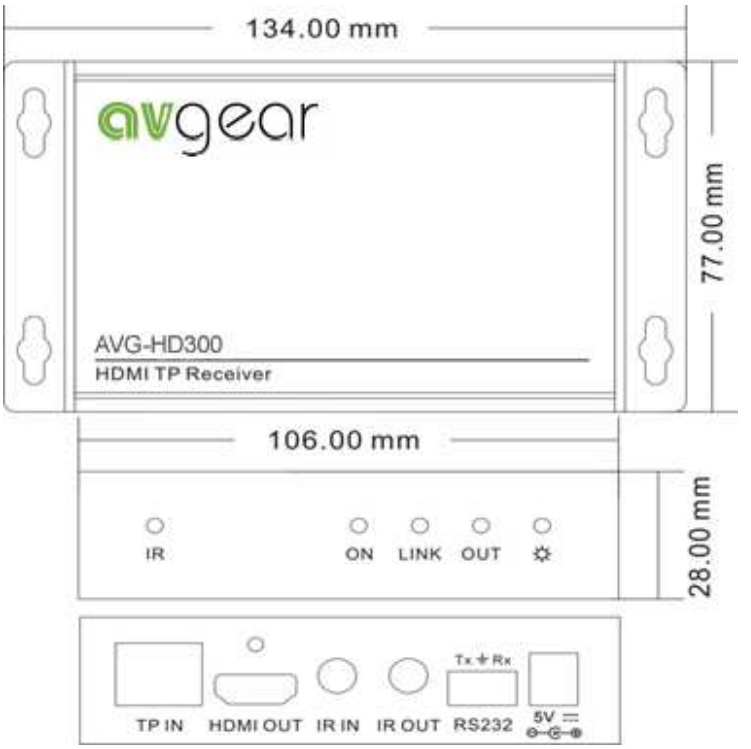
- 2x20Watt@4Ω as the default amplifier output.
- Bridge connection function. User can switch the MA1 to be 1x40Watt@8Ω by bridge connection.
- 48V phantom power to support condenser microphone.
- MIC port can support balance/unbalance signal, suppress the external noise effectively.

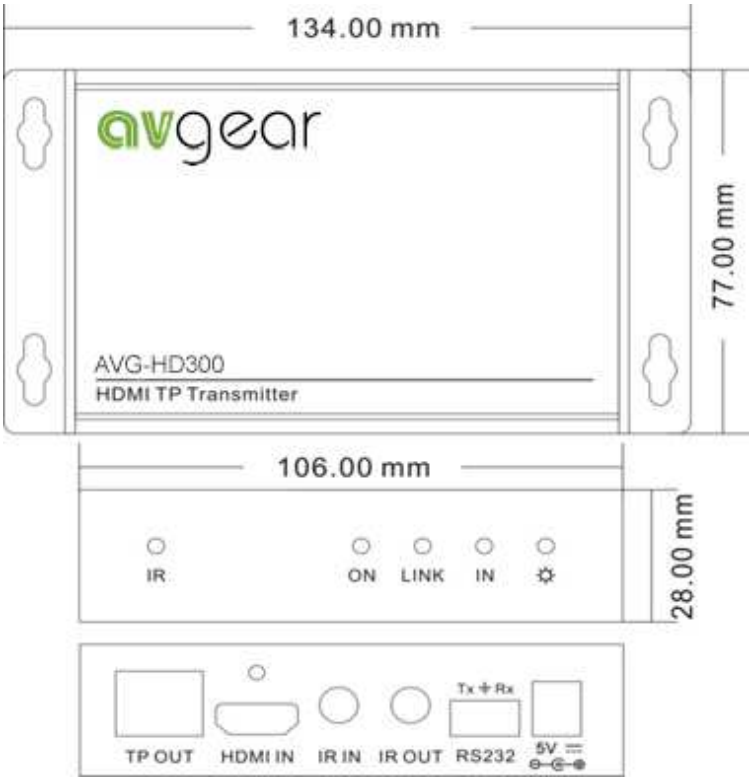
6. Specification

Model / Spec	AVG-HD300T	AVG-HD300R
Input		
Input Signal	1 HDMI,1 IR & 1 RS232	1 IR, 1 RJ-45 & 1 RS232
Input Connector	HDMI female, 3.5mm mini jack	3.5mm mini jack, RJ-45
Video Signal	HDMI1.4	HDMI1.4
Audio	Digital audio, transmits through HDMI audio	Digital audio, transmits through HDMI audio
Output		
Output	1 RJ-45, 1 IR	1 HDMI, 1 IR
Output Connector	RJ-45, 3.5mm mini jack	HDMI female, 3.5mm mini jack
Video signal	HDMI1.4	HDMI1.4
Transmission Mode	HD Base T	
General		
Resolution Range	800x600 ~ 1920x1200	
Transmission Distance	Max distance 70M	
Gain	0dB ~ 10dB@100MHz	
Differential Phasic Error	±10°@ 135MHz_100M	
SNR	>70dB@ 100MHz-100M	
Bandwidth	10.2Gbps	
Return Lost	＜-30dB@5KHz	
THD	＜0.005%@1KHz	
HDMI Standard	Support HDMI1.4 and HDCP	
Min. ～Max. Level	＜0.3V ~ 1.45Vp-p	
Impedance	75Ω	
Temperature	-20 ~ +60℃	
Humidity	10% ~ 90%	
Power Supply	100VAC ~ 240VAC, 50/60Hz	
Power Consumption	6.5W	
Case Dimension	L134xW77xH30mm	L134xW77xH30mm
Net Weight	0.8Kg	0.8Kg

NOTE: All nominal levels are at ±10%.

7. Panel Diagram





8. Troubleshooting & Maintenance

Problems	Causes	Solutions
Output images in display ghosting	Incorrect setting on the display	Check the display's setting
Poor Quality Cable		Replace Cable
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input / output end.
Failed or loose connection		Make sure the connection is firm
The extender is broken		Return to authorized dealer for repairing.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are correct.
The device has a previous problem		Send it to authorized dealer for repairing.
Static becomes stronger when connecting the video connectors	Poor grounding	Check the grounding and make sure it is connected securely
Cannot control the device by RS232 / IR	The device has a previous problem	Send it to authorized dealer for repairing.

If your problem persists after following the above troubleshooting steps, seek further help from your authorized dealer.