

# PureLink

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## BEYOND 4K

### HT-140U

4K60 1x HDBaseT Distribution System



PureLink™

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## Features

- HDMI 2.0b, HDCP 2.2, and HDCP 1.x Compliant
- Supports 18Gbps video bandwidth
- Supports video resolutions up to 4k2k@60Hz 4:4:4
- Supports HDR, HDR10+, HLG, and Dolby Vision
- Supports up to 7.1CH HD audio pass-through
- Supports digital and analog audio de-embedded sound
- Extend the signal transmission distance up to 120 meters at resolution of 4k2k @60Hz, 150 meters at 1080p@60Hz via a single CAT6/6a/7 cable
- Supports 1 HDMI input, 1 HDMI loop output, and 4 HDBaseT outputs
- IR, RS-232 routed to HDBaseT output
- Advanced EDID management
- Supports one-way POC function (only from transmitter to receiver)
- Compact design for easy and flexible installation

## What's in the Box

- 1x 18Gbps HDMI 1x4 HDBaseT Splitter
- 4x HDBaseT Receiver
- 5x IR Blaster Cable (1.5 meters)
- 5x 20K~60KHz IR Receiver Cable (1.5 meters)
- 5x 3-pin Phoenix Connector
- 1x 5-pin Phoenix Connector
- 10x Mounting Ear
- 1x 24/2.7A DC Locking Power Adapter

## Product Description

The HT-140U 4K60 HDBaseT distribution system makes signal distribution simple and effective. Compatibility with virtually every video and audio format means hassle free installation and operation. Our EDID management system makes it easy to select from over 30 EDID tables, alleviating issues of handshaking in all applications.

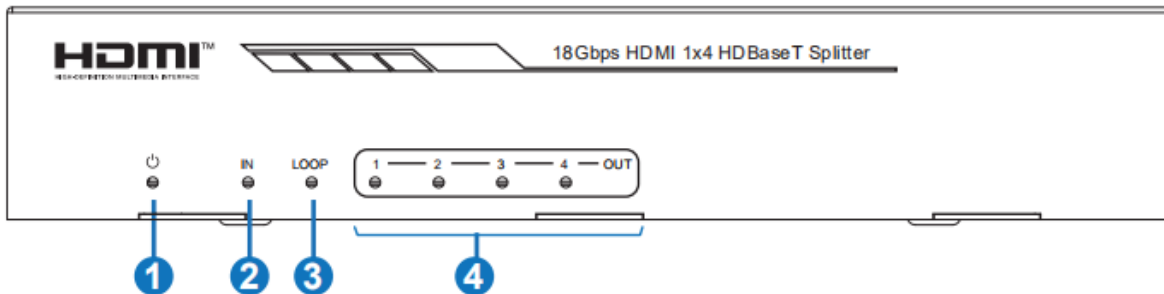
## Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2/1.x
Video Bandwidth	594MHz/18Gbps
Video Resolution	Up to 4k2k@60Hz 4:4:4
Color Depth	8-bit, 10-bit, 12-bit(1080p@60Hz) 8-bit (4K2K@60Hz YUV4:4:4) 8-bit, 10-bit, 12-bit(4K2K@60Hz YCbCr 4:2:2/4:2:0)
Color Space	RGB 4:4:4, YCbCr 4:4:4 / 4:2:2 / 4:2:0
HDR	Support HDR, HDR10+, HLG, Dolby vision
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
Coaxial Audio Formats	PCM2.0, Dolby Digital / Plus, DTS 2.0/5.1
Analog Audio Formats	PCM 2.0CH
ESD Protection	Human body model—±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Input	1×HDMI Type A (19-pin female) 1×HDMI Type A (19-pin female)
Output	4x HDBaseT OUT [RJ45] 1x Coaxial Audio OUT [RCA] 1x L/R Audio OUT [5-pin phoenix connector]
Control	1×RS-232 (3-pin phoenix connector) 1x EDID DIP switch [5-pin] 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack]
Mechanical	
Housing	Metal Enclosure
Silkscreen Color	Black
Dimensions	Transmitter: 220mm (W) × 130mm (D) × 40mm (H) Receiver: 140mm (W) × 65mm (D) × 18mm (H)
Weight	Transmitter: 853g Receiver: 246g
Power Supply	Input: AC100 - 240V 50/60Hz, Output: DC 24V/2.7A (US/EU standards, CE/FCC/UL certified)

## Operation Controls & Functions

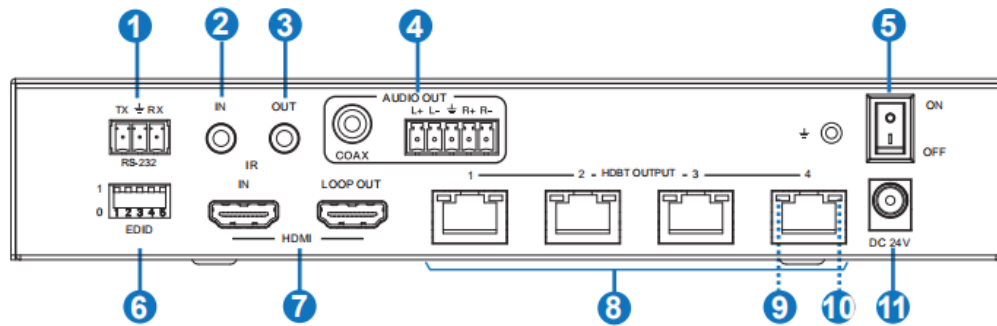
### Transmitter

#### Front Panel



- 1. POWER LED:**
  - When the device is powered on, the red power LED will be on.
- 2. IN LED:**
  - When the HDMI IN port connects an active source device, the green LED will be on.
- 3. LOOP-LED:**
  - When the HDMI LOOP OUT port connects an active display device, the green LED will be on.
- 4. OUT(1~4) LED:**
  - When the HDBT OUTPUT port connects an HDBaseT Receiver, the corresponding green OUT LED will be on.

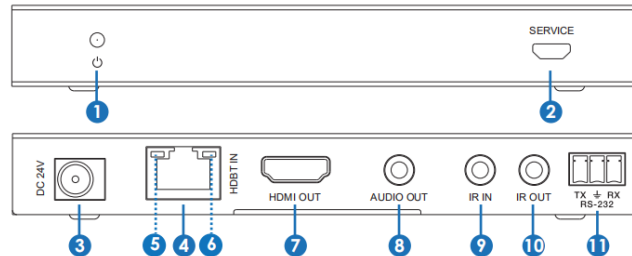
## Rear Panel



- 1. RS-232:**
  - a. Connect to a PC or control system via a 3-pin phoenix connector cable for three functions:
  - b. Firmware update;
  - c. Control the Splitter via RS-232 commands;
  - d. RS-232 signal pass-through (from transmitter to receiver or from receiver to transmitter).
- 2. IR-IN:**
  - Connect to IR receiver cable, the IR receive signal will emit to “IR OUT” port of the HDBaseT Receiver.
- 3. IR-OUT:**
  - Connect to IR blaster cable, the IR emit signal is from “IR IN” port of the HDBaseT Receiver.
- 4. Audio Out (COAX, L/R):**
  - Coaxial/balanced audio output port, connect to amplifier or speaker.
- 5. POWER Switch:**
  - Press this switch to power on/off the device.
- 6. EDID DIP Switch:**
  - Used to set EDID mode. Please refer to Section “6. EDID Mode” for details.
- 7. HDMI Port:**
  - IN: HDMI input port, connect to HDMI source device such as DVD or set-top box with an HDMI cable.
  - LOOP OUT: HDMI loop output port, connect to the HDMI display device such as TV or Monitor with an HDMI cable.
- 8. HDBT OUTPUT Port (1~4):**
  - Connect to the HDBT IN port of the HDBaseT receiver with a CAT cable.
- 9. Connection Signal Indicator Lamp (Green):**
  - Illuminating: Transmitter and Receiver are in good connection status.
  - Flashing: Transmitter and Receiver are in poor connection status
  - Dark: Transmitter and Receiver are not connected.
- 10. Data Signal Indicator Lamp (Orange):**
  - Illuminating: HDMI signal with HDCP.
  - Flashing: HDMI signal without HDCP.
  - Dark: No HDMI signal.
- 11. DC 24V:**

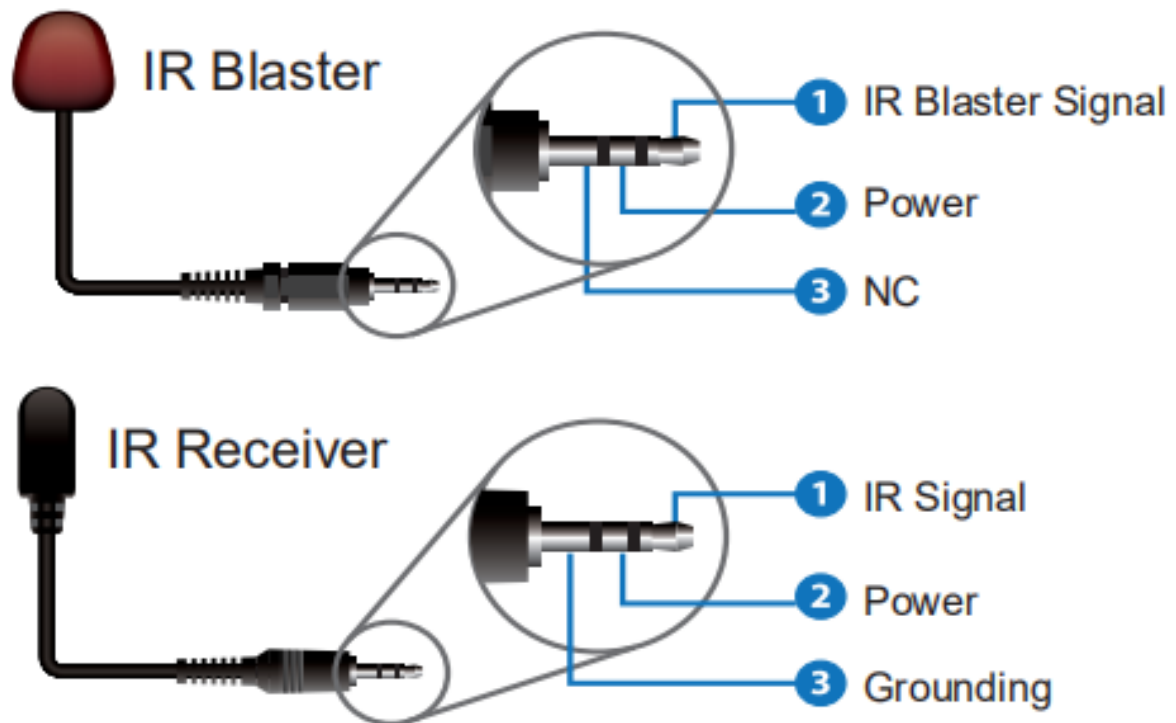
- Plug the DC 24V power supply into the unit and connect the adaptor to an AC outlet. (Note: The transmitter can power the receiver via a CAT cable.)

## HDBaseT Receiver



- Power Indicator:**
  - When the receiver is powered on, the power indicator will be on.
- SERVICE Port:**
  - Used for firmware update.
- DC 24V:**
  - Plug DC 24V/1A power supply into the unit and connect the adapter to an AC outlet. (Note: The HDBaseT receiver also can be powered by the transmitter via a CAT cable.)
- HDBT IN:**
  - Connect to the HDBT OUTPUT port on the transmitter with a CAT cable.
- Connection Signal Indicator (Green):**
  - Illuminating: Transmitter and Receiver are in good connection status.
  - Flashing: Transmitter and Receiver are in poor connection status.
  - Dark: Transmitter and Receiver are not connected.
- Data Signal Indicator Lamp (Orange):**
  - Illuminating: HDMI signal with HDCP.
  - Flashing: HDMI signal without HDCP.
  - Dark: No HDMI signal.
- HDMI Out:**
  - HDMI output port, connect to HDMI display device such as TV or Projector with an HDMI cable.
- Audio OUT:**
  - Audio output port, connect to amplifier or speaker.
- IR IN:**
  - Connect to the IR Receiver cable. The IR signal will send to the IR OUT port of the transmitter.
- IR OUT:**
  - Connect to the IR blaster cable, the IR signal is from IR IN port of the transmitter.
- RS-232:**
  - 3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or from receiver to transmitter

## IR Blaster/Receiver Definition



**Note:** When the angle between the IR receiver and the remote control is  $\pm 45^\circ$ , the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is  $\pm 90^\circ$ , the transmission distance is 0-8 meters.

## EDID Mode

The defined EDID setting list of the product is shown as below:

EDID Mode	EDID Description
11111	1080P, Stereo Audio 2.0
11110	1080P, Dolby/DTS 5.1
11101	1080P, HD Audio 7.1
11100	1080I, Stereo Audio 2.0
11011	1080I, Dolby/DTS 5.1
11010	1080I, HD Audio 7.1
11001	1080P 3D, Stereo Audio 2.0
11000	1080P 3D, Dolby/DTS 5.1
10111	1080P 3D, HD Audio 7.1
10110	4K2K30Hz_444, Stereo Audio 2.0
10101	4K2K30Hz_444, Dolby/DTS 5.1
10100	4K2K30Hz_444, HD Audio 7.1
10011	4K2K60Hz_420, Stereo Audio 2.0
10010	4K2K60Hz_420, Dolby/DTS 5.1
10001	4K2K60Hz_420, HD Audio 7.1
10000	4K2K60Hz_444, Stereo Audio 2.0
01111	4K2K60Hz_444, Dolby/DTS 5.1
01110	4K2K60Hz_444, HD Audio 7.1
01101	4K2K60Hz_444, Stereo Audio 2.0 HDR
01100	4K2K60Hz_444, Dolby/DTS 5.1 HDR
01011	4K2K60Hz_444, HD Audio 7.1HDR
01010	COPY_FROM_LOOP OUT
01001	COPY_FROM_HDBT OUT1
01000	COPY_FROM_HDBT OUT2
00111	COPY_FROM_HDBT OUT3
00110	COPY_FROM_HDBT OUT4
00101	1080P, Stereo Audio 2.0
00100	1080P, Stereo Audio 2.0
00011	1080P, Stereo Audio 2.0
00010	1080P, Stereo Audio 2.0
00001	1080P, Stereo Audio 2.0
00000	PC control mode

## ASCII Commands

The product also supports ASCII command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable. Then, open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list about the product is shown as below.

ASCII Commands				
Serial port protocol. Baud rate: 115200, Data bits: 8bit, Stop bits:1, Check bit: 0				
x - Parameter 1 y - Parameter 2				
! - Delimiter				
Command Code	Function Description	Example	Feedback	Default Setting
<b>Power</b>				
s power z!	Power on/off the device,z=0~1 (z=0 power off, z=1 power on)	s power 1!	Power on  System Initializing... Initialization Finished! FW version x.xx.xx	power on
r power!	Get current power state	r power!	power on/power off	
s reboot!	Reboot the device	s reboot!	Reboot...  System Initializing... Initialization Finished! FW version x.xx.xx	
<b>System Setup</b>				
help!	List all commands	help!		
r type!	Get device model	r type!	HT-140U	
r status!	Get device current status	r status!	Get the unit all status: power, in/out connection, edid mode	
r fw version!	Get Firmware version	r fw version!	MCU BOOT: Vx.xx.xx MCU APP: Vx.xx.xx	
r link in!	Get the connection status of the input port	r link in!	HDMI IN: connect	
r link out y!	Get the connection status of the y output port, y=0~5(0=all, 1~4=HDBT 1~4, 5 = loop out)		hdmi loop out: connect	

r link out hdbt output 1: connect  
1!

s reset!      Reset to factory defaults      s reset!      Reset to factory defaults  
System Initializing... Initialization  
Finished! FW version x.xx.xx

Command Code	Function Description	Example	Feedback	Default Setting
Output Setting				
s hdmi stream z!	Set hdmi loop output stream on/off z=0~1(0:disable,1:enable)	s hdmi stream 1 !	Enable hdmi loop out stream Disable hdmi loop out stream	enable
s hdmi hdcp z!	Set hdmi loop output hdcp on/ off z=0~1(0:disable,1:enable)	s hdmi hdcp 1!	Enable hdmi loop out hdcp Disable hdmi loop out hdcp	enable
s hdbt y hdcp z!	Set hdbt output y hdcp on/off, y=0~4(0=all) z=0~1(0:disable, 1:enable)	s hdbt 1 hdcp 1 ! s hdbt 0 hdcp 1 !	Disable hdbt output 1 hdcp Enable hdbt all outputs hdcp Disable hdbt all outputs hdcp	enable
s hdbt y stream z!	Set hdbt output y stream on/ off, y=0~4(0=all) z=0~1 (0:disable,1:enable)	s hdbt 1 stream 1 ! s hdbt 0 stream 1 !	Disable hdbt output 1 stream Enable hdbt all outputs stream Disable hdbt all outputs stream	enable
r hdmi stream!	Get hdmi loop out stream status	r hdmi stream!	Enable hdmi output stream	
r hdmi hdcp!	Get hdmi loop out hdcp status	r hdmi hdcp!	Enable hdmi output hdcp	
r hdbt y hdcp!	Get hdbt output y hdcp status, y=0~4(0=all)	r hdbt 1 hdcp!	Enable hdbt output 1 hdcp	
r hdbt stream!	Get hdbt output y stream status, y=0~4(0=all)	r hdbt 1 stream!	Enable hdbt output 1 stream	

Command Code	Function Description	Example	Feedback	Default Setting
EDID Setting				
	Set input EDID from default			
	EDID z, z=1~27			
	1, 1080p,Stereo Audio 2.0			
	2, 1080p,Dolby/DTS 5.1			
	3, 1080p,HD Audio 7.1			
	4, 1080i,Stereo Audio 2.0			
	5, 1080i,Dolby/DTS 5.1			
	6, 1080i,HD Audio 7.1			
	7, 3D,Stereo Audio 2.0			
	8, 3D,Dolby/DTS 5.1			
	9, 3D,HD Audio 7.1			
	10, 4K2K30_444, Stereo Audio 2.0			
	11, 4K2K30_444,Dolby/DTS 5.1			
	12, 4K2K30_444,HD Audio 7.1		input EDID:1080p,	
	13, 4K2K60_420, Stereo Audio 2.0		Stereo Audio 2.0	
s edid in from z!	14, 4K2K60_420, Dolby/DTS 5.1	s edid in from 1!		1080p,Stere o Audio 2.0
	15, 4K2K60_420,HD Audio 7.1			
	16, 4K2K60_444, Stereo Audio 2.0		Please toggle EDID dip switch to 00000!	
	17, 4K2K60_444, Dolby/DTS 5.1			
	18, 4K2K60_444,HD Audio 7.1			

19, 4K2K60\_444,

Stereo Audio 2.0 HDR

20, 4K2K60\_444,

Dolby/DTS 5.1 HDR

21, 4K2K60\_444,

HD Audio 7.1 HDR

22, copy from hdmi loop out

23, copy from hdbt output 1

24, copy from hdbt output 2

25, copy from hdbt output 3

26, copy from hdbt output 4

27, use user1 EDID

s edid user1 00

Set user1 EDID data

s edid user1 00

user1 EDID data: 00

FF FF FF FF ...!

ff ff ff ff .... !

FF FF ....

user1 EDID data : 00 FF FF  
FF FF FF FF

r edid user1!

Get user1 EDID data

r edid user1!

00 .....

r edid in!

Get EDID status of the input

r edid in!

input EDID: 4K2K60\_  
444,Stereo Audio 2.0

r edid in data!

Get the EDID data of the hdmi input

r edid in data!

EDID data : 00 FF FF

FF FF FF FF 00 .....

s rs232 bypass hdbt y!

Set RS-232 port connect to HDBT out1  
Reciever RS-232 port y=0-5 (0=all,  
1-4=hdbt out 1-4, 5=NC)

s rs232 bypass hdbt

RS-232 connect to HDBT  
OUT1 RS-232 not connect  
to HDBT OUT

y=0

s device baud w size x  
stop y parity z!

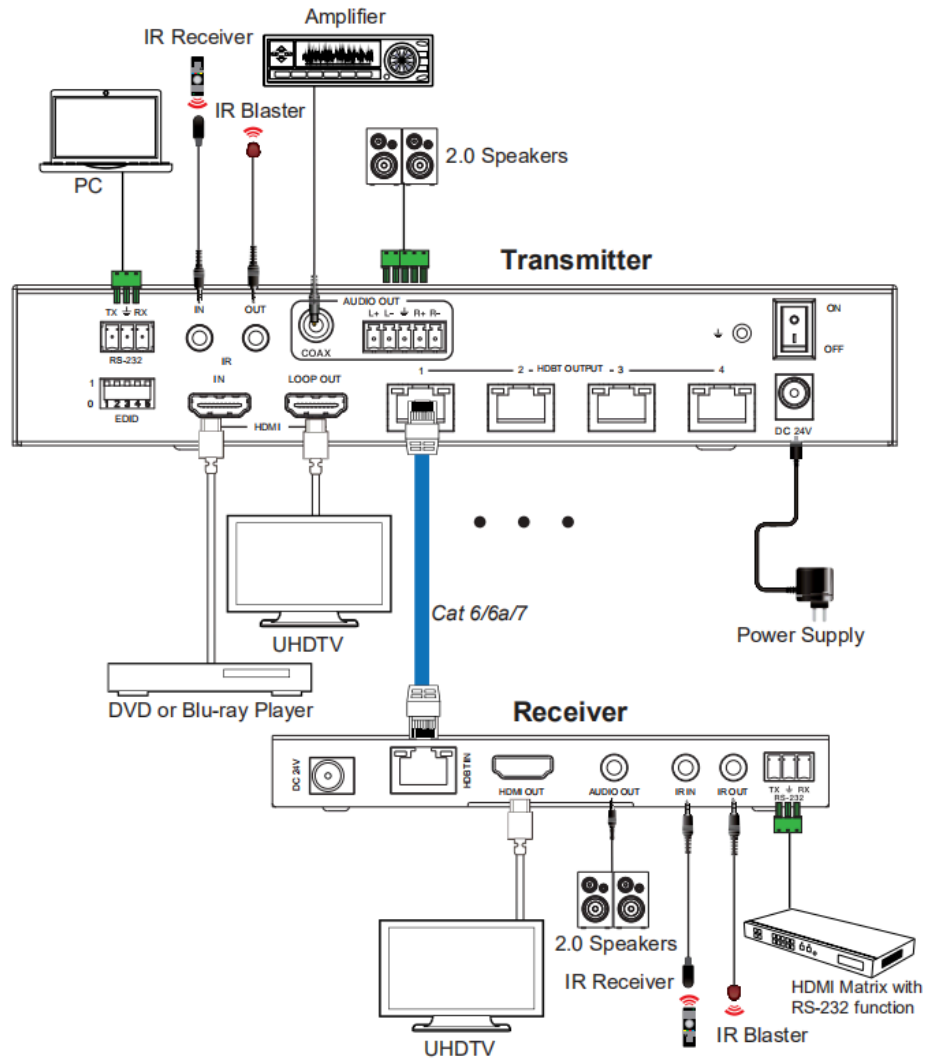
Set receiver control device COM port  
setting  
w=2400,4800,9600,19200,38400,57600,1  
15200, x=7,8 y=1,2 z=none, even, odd

s device baud

57600 size 8 stop 1  
parity none!

receiver device COM port  
setting baudrate: 57600  
data size:8, stop:1  
Parity:none

## Application Example



The terms HDMI and HDMI High-Definition Multimedia interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

## Warranty

### **PureLink Five (5) Year Limited Warranty for PureStream™ Branded Products Only**

Dtrovision, LLC. (hereinafter “PureLink”) warrants its HDTools and PureStream™ branded products (hereinafter “Product”) purchased directly from PureLink or Dealer shall be free from defects in workmanship and materials, under normal use and service, for a period of five (5) years on parts and five (5) years on labor. Any repaired or replaced equipment related to Product shall be covered only under the remaining portion of the warranty. This warranty has no relationship to and exists independently of any warranty offered by Dealer. This warranty is a limited warranty and gives you specific legal rights. You may also have other rights which vary from state to state.

#### **TERMS & CONDITIONS**

PureLink shall repair or replace the Product if it develops a material fault during the period of warranty, on condition that i) the Product has only been subject to normal use in a domestic or commercial environment in a manner consistent with its specification and functionality, ii) the Product has been cared for reasonably and only subjected to reasonable wear and tear, iii) the defect has not been caused by willful or negligent abuse or neglect, or any accident or improper installation procedure, iv) the serial number of the Product has not been altered or removed.

This warranty only applies to the original purchaser, and shall be the exclusive remedy to the original purchaser. PureLink shall not be liable for any damages whatsoever caused by Product or the failure of Product to perform, including incidental or consequential damages. PureLink shall not be liable for any claim made by a third party or made by the purchaser for a third party.

Except as expressly set forth in this warranty, PureLink makes no other warranties, expressed or implied, including any implied warranties of merchantability and fitness for a particular purpose. PureLink expressly disclaims all warranties not satisfied in this limited warranty. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

#### **WARRANTY RETURNS/REPAIRS/EXCHANGES**

No merchandise may be returned without prior authorization from PureLink, and a Return Materials Authorization (RMA) number. Failure to comply with these conditions will result in rejection of the returned merchandise.

Any warranty service on Products must be arranged through Dealer. Authorized returns must be shipped freight prepaid and fully insured to PureLink, Fair Lawn, NJ USA, with the RMA number clearly marked on the outside of all shipping boxes and containers. PureLink reserves the right at its sole discretion to refuse any shipments arriving freight collect or without an RMA number. Any authorized returned merchandise must be accompanied by a note describing the reason for return, along with contact information including name, phone number, return mailing and shipping addresses, e-mail address, and RMA number.

On any products returned and accepted with an RMA number, return freight charges following repair of items under warranty shall be paid by PureLink, shipping by the standard ground carrier of its choice.

#### **ADVANCE WARRANTY REPLACEMENTS**

PureLink’s advance replacement service offers a Replacement Unit upon request - free of charge for eligible products purchased less than one (1) year of the warranty claim. Products purchased more than one (1) year prior to the warranty claim do not qualify for advance replacement services.

Advance replacement requests must be validated by a member of PureLink’s Technical Support Team. Replacement units may be new or refurbished and are subject to availability. PureLink is responsible for shipping the Replacement Unit to your designated location by standard ground service. All other shipping methods will be the responsibility of the Dealer.

**Original Unit Return** – the Original Unit must be returned within thirty (30) calendar days of the return authorization date. Failure to return the Original Unit within this period will be subject to a minimum 15% re-stocking fee. Dealer is solely responsible for the shipping of the Original Unit to PureLink.

#### **TO MAKE A WARRANTY CLAIM**

To make a warranty claim, promptly notify PureLink within the warranty periods described above by calling PureLink's Technical Support Department at 1-201-488-3232. PureLink, in its sole discretion, will determine what action, if any, is required under this warranty.

Most problems can be corrected over the phone through close cooperation between Customer and a PureLink technician. To better enable PureLink to address a warranty claim, please have the Product's serial and model numbers. If PureLink, in its sole discretion, determines that an on-site visit or other remedial action is necessary, PureLink may send a representative to the customer's site.

#### **CUSTOMER SERVICE**

Technical support inquiries can be submitted electronically through the PureLink website at [www.purelinkav.com](http://www.purelinkav.com). For immediate assistance please contact PureLink's Customer Care Team at

+1 (201) 488-3232