

# Introduction

Congratulations and thank you for purchasing W Box Technologies 0E-HDMIEXT4K.

0E-HDMIEXT4K is a slim transmitter receiver pair which is designed to extend HDMI 1080P@60Hz signals up to 70 m and 4K@60Hz (4:2:0) signals up to 40m via a single Cat 6a/7 cable. The transmitter can supply the power for the receiver. You can control the source from the display's location or control the display from source's location via IR pass-through function. The transmitter and receiver are easy to install. They are space saving and offer solutions for home, office, digital entertainment centers, control centers, conference rooms, school and corporate training environments.

Please follow the instructions in this manual to assure proper installation and to achieve the full performance and satisfaction you would expect from W Box Technologies.

# Features

- Slim appearance and space saving
- Bi-directional PoE, only one power adapter is needed.
- Via Cat 6a/7 cables, 4Kx2K@60Hz (4:2:0) output up to 130 feet (40m), 1080P@60Hz up to 230feet (70m).
- Via Cat 5e/6 cable, 4Kx2K@60Hz (4:2:0) output up to 115 feet (35m), 1080P@60Hz up to 198feet (60m).
- HDMI 1.4 with 4K and HDCP 2.2 compliant.
- Transfers bi-directional infrared control signal together with the HDMI signal.
- Use the transmitter and receiver pair to extend HDMI signals without additional settings.
- All connectors in one side for easy cabling.

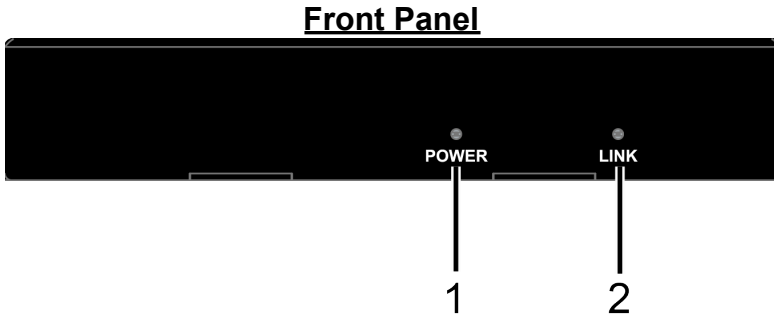
# Package Contents

Before you start the installation, please check the package contents:

- 1 x 0E-HDMIEXT4K
- 1 x Power Adapter (DC 18V 1A)
- 2 x IR Emitter
- 2 x IR Receiver (30-50KHz)
- 4 x Mounting Brackets
- 1 x User Manual
- 1 x Datasheet

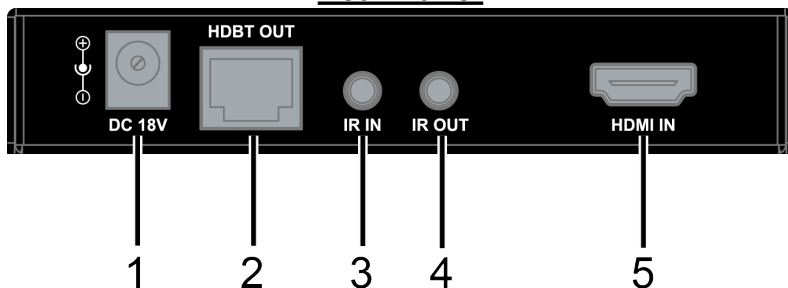
# Panel

## Transmitter



ID.	Name	Description
1	POWER LED	<b>Steady red:</b> Transmitter is powered on.
2	LINK LED	<b>Steady green:</b> Link to receiver has been established. <b>Blinking/Off:</b> Connection exceptions exist between the transmitter and the receiver.

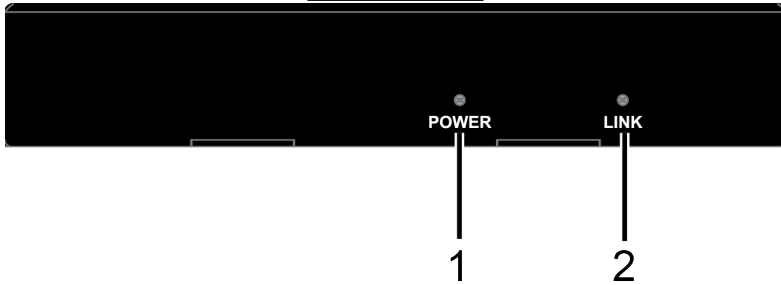
## Rear Panel



ID.	Name	Description
1	Power	Connects to DC 18V 1A power adapter. <b>Note:</b> Only one power adapter is needed at transmitter or receiver side.
2	HDBT OUT	Connects to the receiver via Cat5e/6/6a/7 cable.
3	IR IN	Connects to an IR receiver cable. Secure the IR receiver with adhesive. <b>Note:</b> The IR receiver enabled angle and distance: Enabled Angel 0° 30° (Horizontal) 15° (Vertical) Distance 8m(Max) 4.5m(Max) 3m(Max)
4	IR OUT	Connects to an IR emitter cable. Secure the IR emitter on the IR receiving sensor of display device with adhesive.
5	HDMI IN	Connects to a HDMI source device.

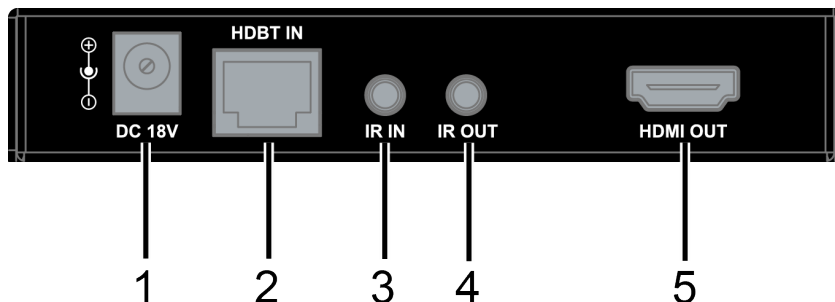
# Receiver

## Front Panel



ID.	Name	Description
1	P O W E R LED	<b>Steady red:</b> Receiver is powered on.
2	LINK LED	<b>Steady green:</b> Link to transmitter has been established. <b>Blinking/Off:</b> Connection exceptions exist between the transmitter and the receiver.

## Rear Panel



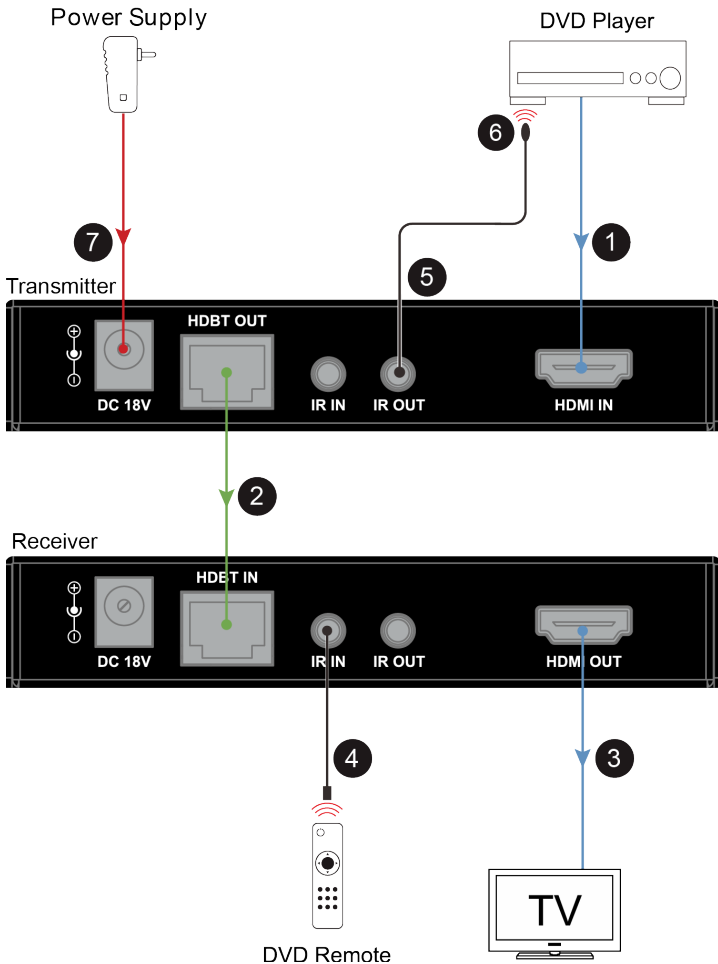
ID.	Name	Description												
1	Power	Connects to DC 18V 1A power adapter. <b>Note:</b> Only one power adapter is needed at transmitter or receiver side.												
2	HDBT IN	Connects to the transmitter via Cat5e/6/6a/7 cable.												
3	IR IN	Connects to an IR receiver cable. Secure the IR receiver with adhesive. <b>Note:</b> The IR receiver enabled angle and distance: <table style="margin-left: 20px; border: none;"> <tr> <td>Enabled Angel</td> <td>0°</td> <td>30°</td> </tr> <tr> <td>(Horizontal)</td> <td>15°</td> <td></td> </tr> <tr> <td>(Vertical)</td> <td></td> <td></td> </tr> <tr> <td>Distance</td> <td>8m(Max)</td> <td>4.5m(Max)      3m(Max)</td> </tr> </table>	Enabled Angel	0°	30°	(Horizontal)	15°		(Vertical)			Distance	8m(Max)	4.5m(Max)      3m(Max)
Enabled Angel	0°	30°												
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Distance	8m(Max)	4.5m(Max)      3m(Max)												
4	IR OUT	Connects to an IR emitter cable. Secure the IR emitter on the IR receiving sensor of display device with adhesive.												
5	HDMI OUT	Connects to a HDMI display device.												

# Installation

The product packaging includes two pairs of IR cables, please refer to the following two applied installations with different remote handsets.

## Applied installation 1

**Control the DVD at TV side by DVD remote:**

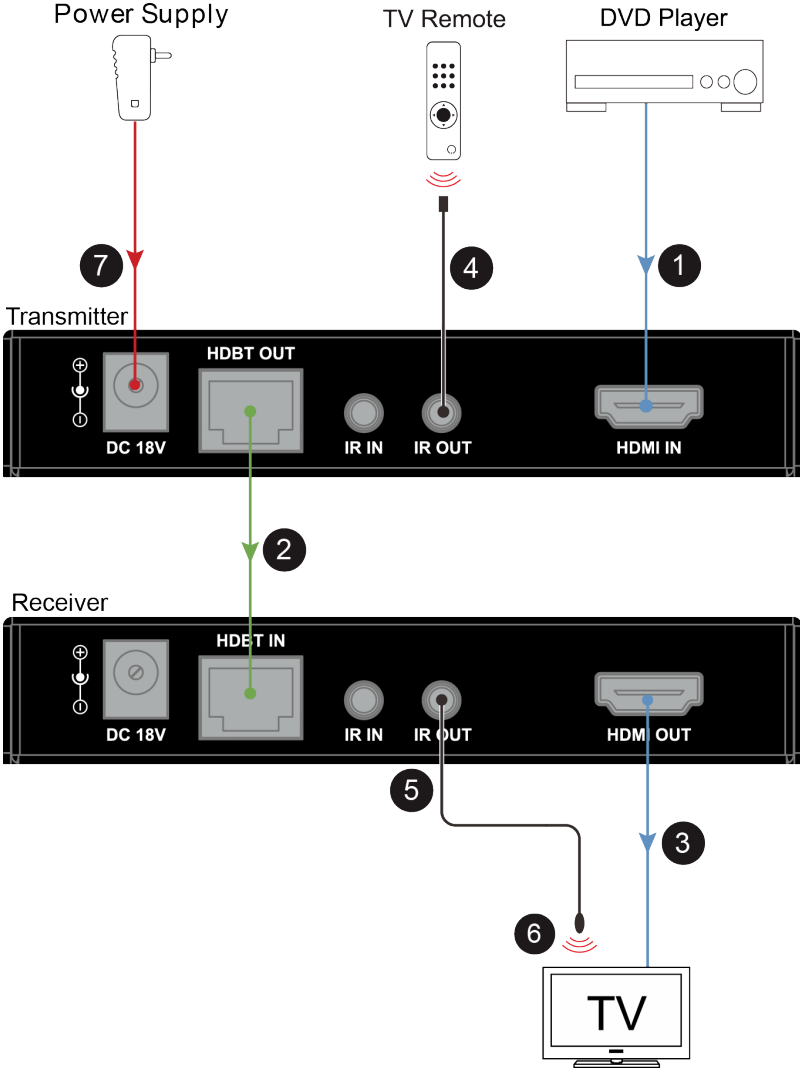




1. Connect an HDMI source (such as a DVD) to the transmitter. As show number 1 in figure.
2. Connect transmitter and receiver with a Cat5e/6/6a/7 cable.  
**Note:** make sure CatX cable is less than 230ft for 1080p. 130ft for 4K resolution. As show number 2 in figure.
3. Connect an HDMI display (such as a TV) to the receiver. As show number 3 in figure.
4. Connect the IR receiver cable to IR IN port of the receiver. As show number 4 in figure.
5. Connect the IR emitter cable to the IR OUT port of the transmitter, the IR emitter head should be secured over the center of the DVD IR window. As show number 5,6 in figure.
6. Connect the power adapter to DC 18V port. As show number 7 in figure.
7. Power on all the devices. Now you can enjoy the audio and video experience.

# Applied installation 2

Control the TV at DVD side by TV remote:



1. Connect an HDMI source (such as a DVD) to the transmitter. As show number 1 in figure.
2. Connect transmitter and receiver with a Cat5e/6/6a/7 cable.  
**Note:** make sure CatX cable is less than 230ft for 1080p. 130ft for 4K resolution. As show number 2 in figure.
3. Connect an HDMI display (such as a TV) to the receiver. As show number 3 in figure.
4. Connect the IR receiver cable to IR IN port of the transmitter. As show number 4 in figure.
5. Connect the IR emitter cable to the IR OUT port of the receiver, the IR emitter head should be secured over the center of the TV IR window. As show number 5, 6 in figure.
6. Connect the power adapter to DC 18V port. As show number 7 in figure.
7. Power on all the devices. Now you can enjoy the audio and video experience.

# Troubleshooting

W Box Technologies products are designed to function trouble-free. Most problems that occur are due to simple issues. If you have trouble, please check the list of simple fixes below.

## Six Steps of Regular Troubleshooting Routine.

1. **Power:** Make sure all devices are powered on. (source, extender, display device)
2. **Indicator:** Make sure LED indicators of extender are normal according to user manual.
3. **Devices:** Please make sure picture can be shown normally when connecting source to display devices directly.
4. **Cable:** Plug in and out HDMI/CatX cable or try another HDMI/CatX cable.
  - Cat 5e/6/6a/7 cable is recommended, do not use Cat 5 cable.
  - Please make sure CatX cable is less than 230ft for 1080p, 130ft for 4K resolution.
  - Please make sure the two connectors of one CatX cable are same standard (EIA/TIA 568B).
5. **Compatibility:**
  - Please test the source and display devices to determine whether there is compatibility issues.
  - HDMI extender supports 3G speed (4K@60Hz 4:2:0 8bit) maximum, when both HDMI source and display devices support 6G speed (4K@60Hz 4:4:4 8bit), display device will not output signal. (Even though all the LEDs of extender are normal.) Please set HDMI source resolution to 4K@60Hz 4:2:0 8bit or ask help from Source Device Supplier.
  - For Vizio TV, when every device is well connected and all the LEDs are normal. but Vizio TV can not display well, please ask help from Vizio TV and update the TV setting.

## Typical questions

## 1. How to deal with video flash or cut off during the installation?

- Power indicator should be solid on. If not, please check if the power adapter is well connected.
- Link indicator should be solid on, if it is blinking or off, it is likely a problem with your Ethernet cable, please change to a qualified cable (Cat5e/6/6a/7, EIA/TIA 568B) and make sure the cable length is within the maximum distance (230ft for 1080p, 130ft for 4K).

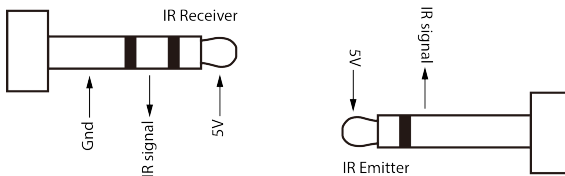
## 2. How to deal with a weak or not working IR signal?

- Make sure the IR cables are correctly installed according to the diagram above.
- Check if the IR emitter head is secured over the center of the device IR receiver window. The best position may vary depending on the device, please refer to the device user manual. If the signal is weak, please try adjusting the position.
- Pay attention to the control angle and distance as below: The control signal will be better when your controller is pointed at the IR receiver head directly.

Enabled Angle	0°	30°(Horizontal)	15°(Vertical)
Distance	8m(Max)	4.5m(Max)	3m(Max)

## 3. How can I make the IR work with third party control devices?

Please make sure the third party device follows our pin definition as below:



# Specification

<b>Technical</b>	
Input/Output Signal Type	HDMI 1.4 with HDCP 2.2
Audio Format	Stereo, PCM 2.1/5.1/7.1, DTS, Dolby, pass through
Input/Output Resolution Supported	<p>SMPTE:  1280x720P<sup>1,2,3,4,5,6,7,8</sup>,  1920x1080I<sup>6,8</sup>,  1920x1080P<sup>1,2,3,4,5,6,7,8</sup>,  3840x2160<sup>2,3,5</sup>, 4096x2160<sup>2,3,5</sup>;</p> <p>VESA:  800x600<sup>8</sup>, 1024x768<sup>8</sup>, 1280x768<sup>8</sup>,  1280x800<sup>8</sup>, 1280x960<sup>8</sup>,  1280x1024<sup>8</sup>, 1360x768<sup>8</sup>,  1366x768<sup>8</sup>, 1400x1050<sup>8</sup>,  1440x900<sup>8</sup>, 1600x900<sup>8</sup>,  1600x1200<sup>8</sup>, 1680x1050<sup>8</sup>,  1920x1200<sup>8</sup>,</p> <p>1 = at 23.98 Hz, 2 = at 24 Hz, 3 = at 25 Hz, 4 = at 29.97 Hz, 5 = at 30 Hz, 6 = at 50 Hz, 7 = at 59.94 Hz, 8 = at 60 Hz;</p>
Maximum Data Rate	10.2 Gpbs
Maximum Pixel Clock	340 MHz
<b>General</b>	
Operating Temperature	+32°F to +113°F (0°C to +45°C) 10% to 90%, non-condensing
Storage Temperature	-4°F to +158°F (-20°C to +70°C) 10% to 90%, non-condensing

ESD Protection	Human Body Model: ±8kV (air-gap discharge)/ ±4kV (contact discharge)
Power Consumption	8.8 W Max (Pair)
Dimensions	4.55" × 2.55" × 0.83" (115mm × 64.5mm × 21mm)
Weight	Transmitter: 0.48lb/0.22kg Receiver: 0.48lb/0.22kg
Certification	CE, FCC, RoHS

### Cable Specifications:

**Note:** We recommend the use of T568B straight-through Category cables.

Cable Type	Range	Supported Video
CAT5e/CAT6	60m	1080p, 60Hz 36 bpp
	35 m	1080p 60 Hz 48 bpp 1080p 60 Hz 3D 3840 x 2160@60Hz 4:2:0 8bit
CAT6a/CAT7	70 m	1080p, 60 Hz 36 bpp
	40 m	1080p 60 Hz 48 bpp 1080p 60 Hz 3D 3840 x 2160@60Hz 4:2:0 8bit



# Limited Warranty

## 1. Limited Warranty

### a. General

Subject to the terms and conditions of this Limited Warranty, from the date of sale through the period of time for product categories specified in Section 1(b), ADI warrants its W Box Technologies products to be free from defects in materials and workmanship under normal use and service, normal wear and tear excepted. Except as required by law, this Limited Warranty is only made to Buyer and may not be transferred to any third party.

ADI shall have no obligation under this Limited Warranty or otherwise if:

- (i) The product is improperly installed, applied or maintained;
- (ii) The product is installed outside of stated operating parameters, altered, or improperly serviced or repaired;
- (iii) Damage is caused by outside natural occurrences, such as lightning, power surges, fire, floods, acts of nature, or the like.
- (iv) Defects resulting from unauthorized modification, misuse, vandalism, or other causes
- (v) Unrelated to defective materials or workmanship, or failures related to batteries of any type used in connection with the products sold hereunder.

ADI only warrants those products branded as W Box Technologies products and sold by ADI. Any other products branded by third parties are warranted by the third party manufacturer for a period as defined by the third party manufacturer, and ADI assigns to Buyer those warranties and only those warranties extended by such third party manufacturers or vendors for non-ADI branded products. ADI does not itself warrant any non-ADI branded product and sells only on an as is basis in accordance with ADI's terms and conditions of sale.

**b. Specific Warranties for product categories are as follows:**

<b>Product Categories</b>	<b>Warranty Period</b>
Soundbars	12 months
Walk Through Metal Detectors	12 months
Intrusion Wireless Communication Accessories	12 months
Analog Cameras	24 months
HD TVI Cameras and HD TVI DVR's	24 months
Televisions	24 months
CCTV Power Supplies	24 months
In Ceiling Speakers	24 months
Amplifiers	24 months
Magnetic Locks	24 months
Request to Exit Devices	24 months
Surge Protection	24 months
UPS (uninterruptible power supplies)	24 months
Volume Controls	24 months
HDMI Distribution	24 months
Intrusion Audio Devices	30 months
Monitors	30 months
Power and Relays	30 months
Hold-up Buttons	30 months
Video Baluns	30 months
DVR's, NVR's	60 months

<b>Product Categories</b>	<b>Warranty Period</b>
IP Cameras	60 months
Racks	60 months
TV Mounts	60 months
PIR's	60 months
Analog Cables	Limited Lifetime
B Connectors	Limited Lifetime
Bus Terminals	Limited Lifetime
Extension Cords	Limited Lifetime
HDMI Cables	Limited Lifetime
Jacks, Cords and Intrusion Communication Accessories	Limited Lifetime
Patch Cables	Limited Lifetime
Patch Panels	Limited Lifetime
Raceway Conduit	Limited Lifetime
Wire Ties	Limited Lifetime
Magnetic Contacts	Limited Lifetime

## **2. EXCLUSION OF WARRANTIES, LIMITATION OF LIABILITY**

THERE ARE NO WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. TO THE FULLEST EXTENT PERMITTED BY LAW, IN NO CASE SHALL ADI BE LIABLE TO ANYONE FOR ANY (I) CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES ARISING OUT OF OR RELATING IN ANY WAY TO THE PRODUCT AND/OR FOR BREACH OF THIS OR ANY OTHER WARRANTY OR CONDITION, EXPRESS OR IMPLIED, OR UPON ANY OTHER BASIS OF LIABILITY WHATSOEVER, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY ADI'S OWN NEGLIGENCE OR FAULT AND EVEN IF ADI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES. Any product description (whether in writing or made orally by ADI or ADI's agents), specifications, samples, models, bulletin, drawings, diagrams, engineering sheets, or similar materials used in connection with the Buyer's order are for the sole purpose of identifying ADI's products and shall not be construed as an express warranty or condition. Any suggestions by ADI or ADI's agents regarding use, applications or suitability of the products shall not be construed as an express warranty or condition unless confirmed to be such in writing by ADI. ADI does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise, or that the products will in all cases provide adequate warning or protection. Buyer understands and will cause its customer to understand that a properly installed and maintained product is not insurance or guarantee that such will not cause or lead to personal injury or property loss. CONSEQUENTLY ADI SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON ANY CLAIM AT ALL INCLUDING A CLAIM THAT THE PRODUCT FAILED TO GIVE WARNING. However, if ADI is held liable whether directly or indirectly for any loss or damage with

respect to the products it sells, regardless of cause or origin, its maximum liability shall not in any case exceed the purchase price of the product, which shall be fixed as liquidated damages and not as a penalty and shall be the complete and exclusive remedy against ADI.

### **3. Limitation on Liability to Buyer's Customers.**

Buyer agrees to limit liability to its customers to the fullest extent permitted by law. Buyer acknowledges that ADI shall only be deemed to give consumers of its products such statutory warranties as may be required by law and at no time shall Buyer represent to its customers and/or users of ADI products that ADI provides any additional warranties. By accepting the products, to the fullest extent permitted by law, Buyer assumes all liability for, and agrees to indemnify and hold ADI harmless against and defend ADI from, any and all suits, claims, demands, causes of action and judgments relating to damages, whether for personal injury or to personal property, suffered by any person, firm, corporation or business association, including but not limited to, Buyer's customers and/or users of the products because of any failure of the products to detect and/or warn of the danger for which the goods were designed or any other failure of the products whether or not such damages are caused or contributed to by the sold or joint concurring negligence or fault of ADI.

## 4. Returns

Subject to the terms and conditions listed below, during the applicable warranty period, ADI will replace Product or provide a credit at purchase at its sole option free of charge any defective products returned prepaid. Any obligations of ADI to replace Limited Lifetime warranty products pursuant to this warranty which result from defect are limited to the availability of replacement product. ADI reserves the right to replace any such products with the then currently available products, or provide a credit in its sole discretion. In the event Buyer has a problem with any ADI product, please call your local ADI branch for return instructions:

For US call 1-800-233-6261

For Canada call 877-234-7378

For Puerto Rico call 787-793-8830

Be sure to have the model number and the nature of the problem available. In the event of replacement, the return product will be credited to Buyer's account and a new invoice issued for the replacement item. ADI reserves the right to issue a credit only in lieu of replacement.

If any W Box Technologies product is found to be in good working order or such product's inability to function properly is a result of user damage or abuse, the product will be returned to Buyer in the same condition as received and Buyer shall be responsible for any return freight changes.

## **5. Governing Law**

The laws of State of New York apply to this Limited Warranty.

## **6. Miscellaneous**

Where any term of this Limited Warranty is prohibited by such laws, it shall be null and void, but the remainder of the Limited Warranty shall remain in full force and effect.