CrystalView HDMI 4K60

4K60 HDBase-T Extender

ROSE.COM

Installation
and
Operation Manual

ROSE ELECTRONICS

LIMITED WARRANTY

Rose Electronics® warrants the CrystalView HDMI 4K60 extender to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTIED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

DECLARATIONS OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, the units listed and described here are shielded against the generation of radio interferences in accordance with the application of Council Directives 2014/30/EU and 2014/30/EU.
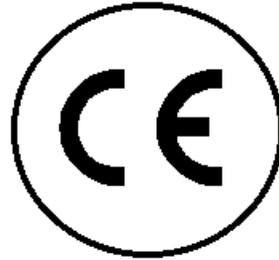
This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

The manufacturer complies with the EU Directive 2012/19/EU on the prevention of waste electrical and electronic equipment (WEEE). The device labels carry a respective marking.

These devices comply with Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2, RoHS II). The device labels carry a respective marking.

TABLE OF CONTENTS

Contents

Figures

Appendices

INTRODUCTION

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product (See limited warranty).

System Introduction

Thank you for choosing the Rose Electronics CrystalView HDMI 4K60 extender for your ultra high-resolution video extension needs. This product boosts digital video and audio transmission distance for 1080p signals up to 330ft (100 m) over a single CATx cable. HDR 4K signals can be extended up to 230ft (70 m).

HDCP support enables uncompressed video from a computer, DVD player, Blu-ray player, or a set-top box to be displayed on remote monitors, HDTV's, or video projectors, with full support for high definition 7.1ch audio. The CrystalView HDMI 4K60 features bidirectional IR remote control extension, as well as full duplex RS-232 extension at baud rates up to 115,200 bps. The system utilizes PoC (Power over Cable), so a single power supply connected to either the Transmitter or Receiver can power the device at the other end.

The instructions in this manual assume a general knowledge of computer installation procedures, familiarity with cabling requirements, and some familiarity with HDMI device operation.

Features

- HDMI 2.0a compliant
- Supports 4K2K@60Hz (4:4:4, 8 bits) and HDR 4K2K@60Hz (4:2:0, 10 bits)
- Extends full HD 1080p signal up to 330ft (100 m) and 4K2K@60Hz signal up to 230ft (70 meters)
- PoC (Power over Cable) feature provides for both transmitter and receiver units to be powered by a single power supply on either end
- Terminal block connectors support full-duplex RS-232 extension at rates to 115,200 bps
- Supports bidirectional IR remote controls at frequencies from 20 KHz to 60 KHz
- Video latency less than 20µs
- Supports HDCP 2.2 and EDID pass through
- HDMI-CEC support
- Supports uncompressed HDMI 7.1 channel digital audio, DTS-HD Master Audio and Dolby TrueHD high bit rate audio
- Firmware updates provided
- Wall mounted housing design for sturdy installation

Package Contents

The package contents consist of the following items:

- CrystalView HDMI 4K60 transmitter and receiver units
- 1 x IR transmitter
- 1 x IR receiver
- 1 x 12VDC 2A power adapter with power cord
- Installation and operations manual.

Compatibility

- HDMI 2.0a
- HDCP 2.2
- All 3D formats and deep color video
- DTS-HD, Dolby TrueHD, and 7.1 channel digital audio
- Full Duplex RS-232 to 115,200 baud

All references to HDMI cables in this document refer to the maximum recommended distances for each cable type. Maximum recommended cable distances should not be exceeded.

MODELS

CrystalView HDMI 4K60 Units

The CrystalView HDMI 4K60 comes in a single model. The front and rear views of the transmitter and receiver units are shown below.
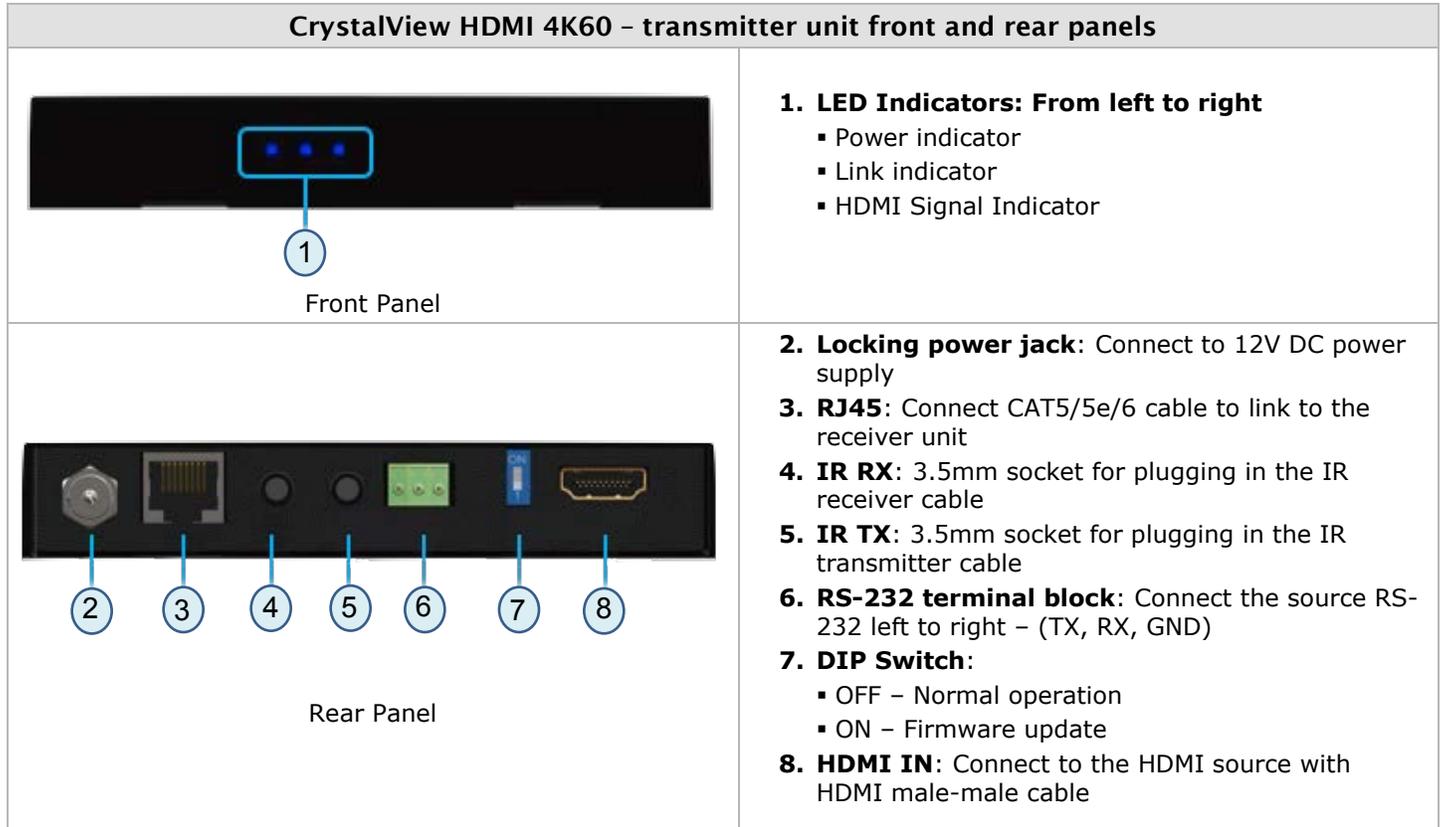
CrystalView HDMI 4K60 Transmitter

CrystalView HDMI 4K60 – transmitter unit front and rear panels	
 Front Panel	**1. LED Indicators: From left to right** ▪ Power indicator ▪ Link indicator ▪ HDMI Signal Indicator
 Rear Panel	**2. Locking power jack**: Connect to 12V DC power supply **3. RJ45**: Connect CAT5/5e/6 cable to link to the receiver unit **4. IR RX**: 3.5mm socket for plugging in the IR receiver cable **5. IR TX**: 3.5mm socket for plugging in the IR transmitter cable **6. RS-232 terminal block**: Connect the source RS-232 left to right – (TX, RX, GND) **7. DIP Switch**: ▪ OFF – Normal operation ▪ ON – Firmware update **8. HDMI IN**: Connect to the HDMI source with HDMI male-male cable

Figure 1. Transmitter front and rear panels

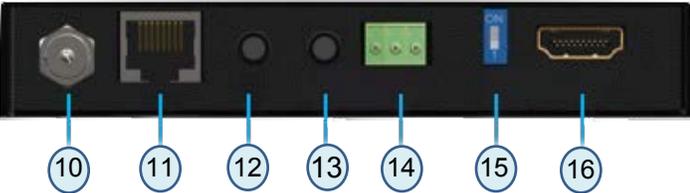# CrystalView HDMI 4K60 Receiver

CrystalView HDMI 4K60 – receiver unit front and rear panels	
 Front Panel	**9. LED Indicators: From left to right** • Power indicator • Link indicator • HDMI Signal Indicator
 Rear Panel	**10. Locking power jack**: Connect to 12V DC power supply **11. RJ45**: Connect CAT5/5e/6 cable to link to the transmitter unit **12. IR RX**: 3.5mm socket for plugging in the IR receiver cable **13. IR TX**: 3.5mm socket for plugging in the IR transmitter cable **14. RS-232 terminal block**: Connect the source RS-232 left to right – (TX, RX, GND) **15. DIP Switch**: • OFF – Normal operation • ON – Firmware update **16. HDMI OUT**: Connect to the HDMI display with HDMI male-male cable

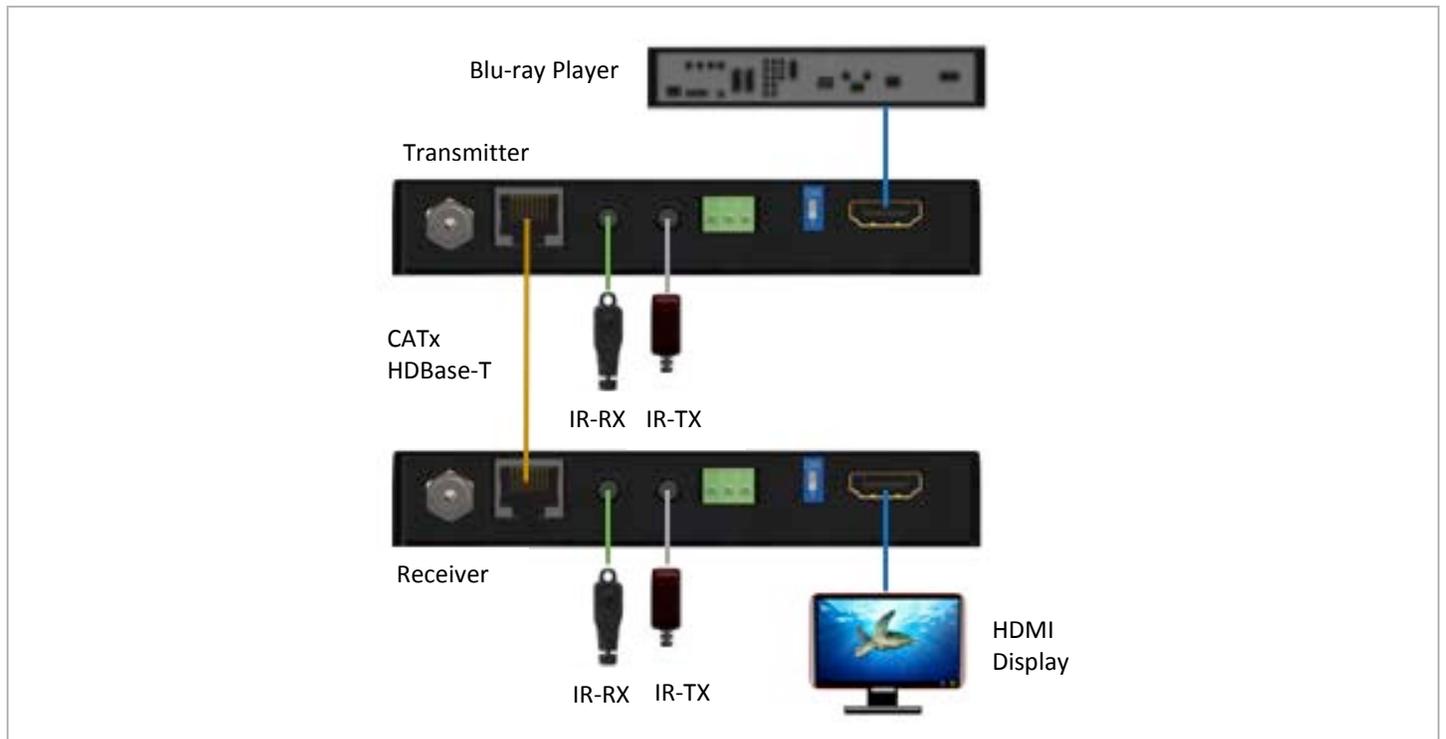**Figure 2. Receiver front and rear panels**

Figure 3. CrystalView HDMI 4K60 – installation diagram

INSTALLATION and OPERATION

Installing the CrystalView HDMI 4K60 Extender

Installing the CrystalView HDMI 4K60 is a very simple and straightforward process. It is recommended that all equipment be powered off prior to beginning the installation. The installation steps are given below.

1. Connect the HDMI video source (PC, Set-Top Box, DVD Player) to the HDMI IN connector on the rear panel of the transmitter.
2. Connect the HDMI display cables to the HDMI OUT connectors on the rear panel of the receiver.
3. Connect the IR receiver to the IR RX connector on the rear panel of the receiver.
4. Connect the IR transmitter to the IR TX connector on the rear panel of the transmitter.
5. Connect a CAT5/5e/6 cable between the transmitter and receiver.
6. Connect the 12VDC power adapter to the power jack of the receiver, or the transmitter.
7. Apply power to the display and the HDMI video source.

Installing the IR Components

IR transmitter Cable

Plug the IR transmitter cable into the 3.5 mm connector on the transmitter unit. The IR transmitter will emit all IR command signals transmitted by an IR receiver connected to the receiver unit.
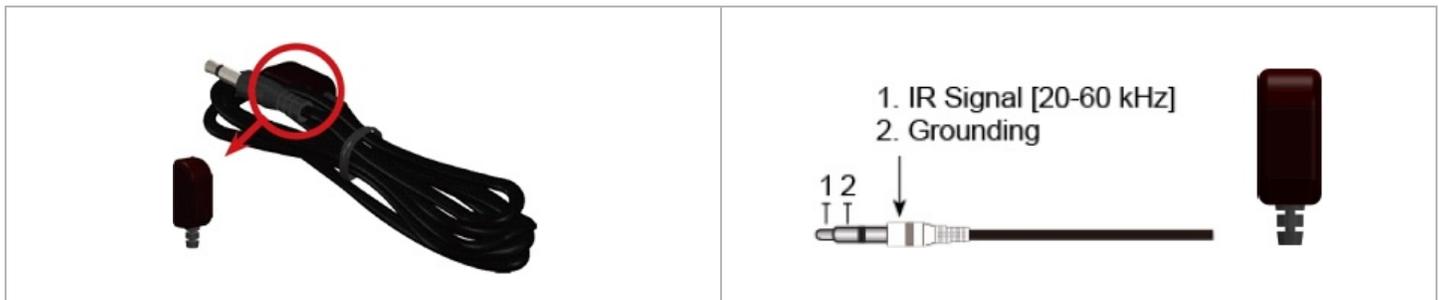

1. IR Signal [20-60 kHz]
2. Grounding

Figure 4. IR transmitter cable kit

IR receiver Cable

Plug the IR receiver cable into the 3.5 mm connector on the Receiver unit to receive and transmit the IR control signals of the remote control device.
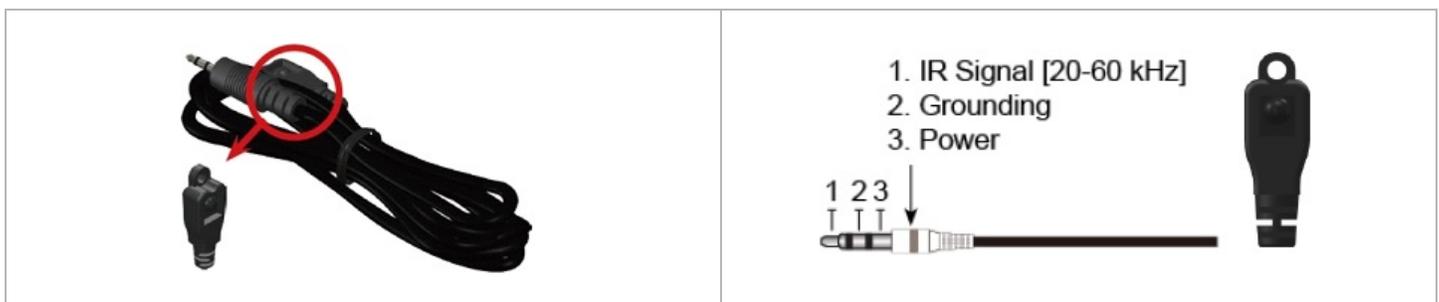

1. IR Signal [20-60 kHz]
2. Grounding
3. Power

Figure 5. IR receiver cable kit

⚠ **CAUTION!** Plugging the IR transmitter or receiver cable into the wrong connector can result in failure of the IR Extenders. Please ensure that the IR transmitter is only plugged into the connector labeled IR TX the IR receiver into the connector labeled IR Rx.

SAFETY

Safety

The CrystalView HDMI 4K60 Extender, like all electronic equipment, should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface.
- Provide proper ventilation and air circulation.
- Keep connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapter and connection cables designed for this Unit.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from the power source before cleaning.

Remove power from the unit and refer servicing to a qualified service center if any of the following conditions occur:

- The connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

SERVICE AND MAINTENANCE

Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

> Rose Electronics
>
> Attn: RA _____
>
> 10707 Stancliff Road
>
> Houston, Texas 77099 USA

Technical Support

If you are experiencing problems, or need assistance installing your product, consult the appropriate section of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

> Phone: (281) 933-7673
>
> E-mail: TechSupport@rose.com
>
> Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

APPENDICES

Appendix A — Specifications

Chassis Dimensions (W x D x H) and Weight	
Dimensions	4.7 × 2.9 × 0.8-inch, (121 × 74 × 20 mm)
Weight	0.27lb (121g) (per unit)
Power Requirements	
Power Source	Transmitter: 5VDC, 2A (or PoC), 3W (max) Receiver: 5VDC, 2A (or PoC), 7W (max)
Video	
Input Format	1 x HDMI 2.0a
Output Format	1 x HDMI 2.0a
Color Support	Deep color
Video Bandwidth	600MHz (18Gbps)
Maximum Resolution	HDR 4K2K@60Hz (4:2:0, 10 bits), 4K2K@60Hz (4:4:4, 8 bits)
HDCP Compliance	HDCP 2.2
EDID Management	Pass through
Audio	
Supported Protocols	Surround sound 7.1 channel LPCM, Dolby True HD and DTS-HD Master Audio
RS-232	
Terminal Block	Full duplex transmission up to 115,200 baud
Connectors	
HDMI	Type A (19-pin female)
RJ45	WE/SS 8P8C (Reverse Mode) for CAT5/5e/6 cable
3.5mm IR extender	Dedicated Transmitter and Receiver connectors
RS-232	Terminal Block connectors: TX, RX, GND
Source Control	
IR Remote Control	Bi-directional command signal pass through using IR transmitter and receiver
ESD Protection	Human body model ±15kV (air-gap discharge) and ±8kV (contact discharge)
Environmental	
Operating Temp	32°F to 104°F (0°C to 40°C)
Storage Temp	-4°F to 140°F (-20°C to 60°C)
Operating Humidity	20-90% relative, non-condensing
Approvals	FCC and CE certified, WEEE, RoHS compliant

Appendix B — Part Numbers

Part Numbers	Description
CRK-1DTX0H1-ASR/P	CrystalView HDMI 4K60 Kit with Transmitter and Receiver
CRK-SLDTX0H1-ASR/P	CrystalView HDMI 4K60 Transmitter
CRK-SRDTX0H1-ASR/P	CrystalView HDMI 4K60 Receiver
CAB-HDMIMM006	HDMI extension cable M/M, 6ft (2 m)
CAB-HDMIMM010	HDMI extension cable M/M, 10ft (3 m)
ACC-DVIFHDMIM	HDMI(M) to DVID(F) adapter cable