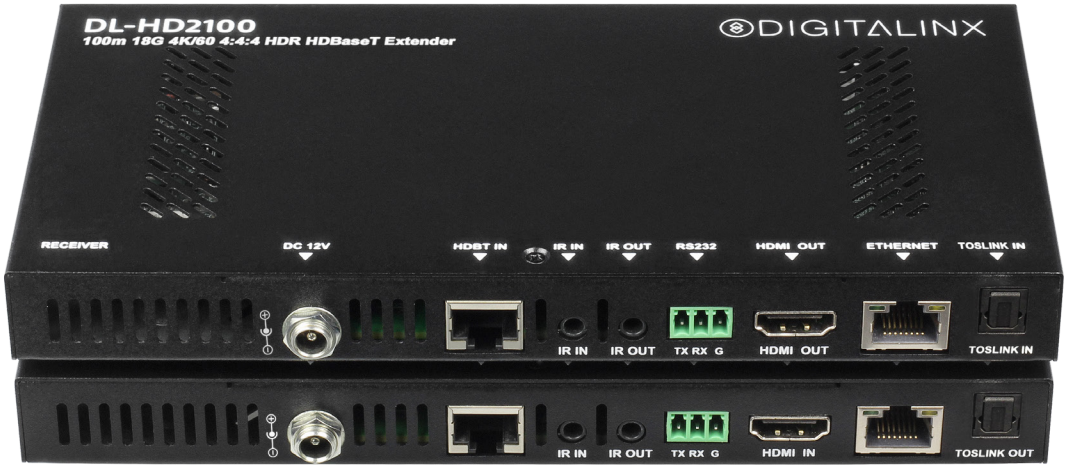
DIGITALINX
VALUE-ENGINEERED DIGITAL SOLUTIONS

DLHD2100 Owners Manual



LIBERTY AV SOLUTIONS
A SUBSIDIARY OF WESCO DISTRIBUTION, INC.

Rev 171212

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Important Safety Instructions

» Please completely read and verify you understand all instructions in this manual before operating this equipment.

» Keep these instructions in a safe, accessible place for future reference.

» Heed all warnings.

» Follow all instructions.

» Do not use this apparatus near water.

» Clean only with a dry cloth.

» Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

» Use only accessories specified or recommended by Intelix.

» Explanation of graphical symbols:

◊ Lightning bolt/flash symbol: the lightning bolt/flash and arrowhead within an equilateral triangle symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product enclosure which may be of sufficient magnitude to constitute a risk of shock to a person or persons.

◊ Exclamation point symbol: the exclamation point within an equilateral triangle symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

» **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.**

» Use the mains plug to disconnect the apparatus from the mains.

» **THE MAINS PLUG OF THE POWER CORD MUST REMAIN READILY ACCESSIBLE.**

» Do not defeat the safety purpose polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of your obsolete outlet. **Caution! To reduce the risk of electrical shock, grounding of the center pin of this plug must be maintained.**

» Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.

» Do not block the air ventilation openings. Only mount the equipment per Intelix’s instructions.

» Use only with the cart, stand, table, or rack specified by Intelix or sold with the equipment. When/if a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.

» Unplug this apparatus during lightning storms or when unused for long periods of time.

» **Caution!** Shock Hazard. Do not open the unit.

» Refer to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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Product Overview

The DigitaLinx DL-HD2100 HDBaseT extender set extends HDMI audio, video as well as control up to 100m / 330' using a single Category 6 cable. Supports HDMI 2.0b, HDR10 and HDCP 2.2 as well as Dolby Atmos and DTS:X audio formats. Control extension supports bidirectional IR, Ethernet, ARC and RS232.

The DigitaLinx DL-HD2100 can transport HDMI data rates up to 18Gbps up to 100 meters. The system enables high data rates by utilizing visual lossless compression at a 2:1 data compression rate when the signal surpasses 10Gbps, anything under 10Gbps will never be compressed.

Built-in surge protection and diagnostic LEDs ensure hassle-free and robust installations. Flexible power design allows the units to be powered at either the TX or RX end, and only one power supply is required to power the set. The 12 volt power supply is secured with a screw-on connector to prevent the power from being accidentally disconnected.

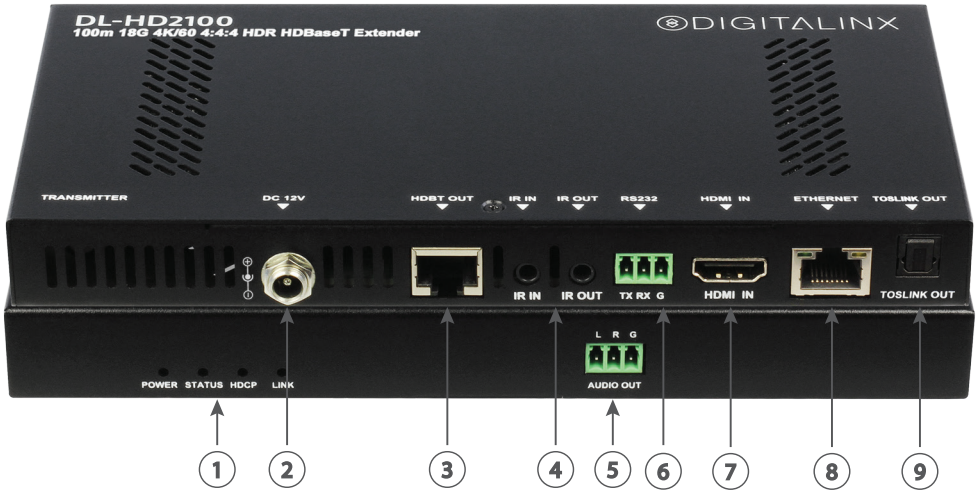
The DL-HD2100 is sold only as a set. The individual transmitter and receiver are not compatible with other HDBaseT devices due to proprietary PoE circuitry.

Package Contents

- (1) DL-HD2100 Transmitter and Receiver Set
- (2) IR Receivers (Eye)
- (2) IR Transmitters (Emitter)
- (1) IR-AC IR Coupler Cable
- (3) 3 pole Terminal Block (attached to extenders)
- (1) DC12v US Power Supply with US, UK, EU and AU adapters
- (4) Mounting Brackets with screws

Front and Rear Panels

Transmitter / Front and Back View



1. FRONT PANEL DIAGNOSTIC LEDs;
   - •POWER -Solid, the DL-HD2100 extender is receiving power from the power supply or from the remote extender via Category 6 cabling.
   - •STATUS- Flashes once per second, the HDBaseT processor is running.
   - •HDCP- Solid, HDCP signal is present in the HDMI stream. Flashes quickly, non-encrypted HDCP signal is present in the HDMI stream.
   - •LINK- Solid, the two DL-HD2100 components are communicating via Category cabling.
2. DC 12V
   - •Locking power port, connect DC12V power adapter to transmitter (either power port on transmitter and receiver can power entire set)
3. HDBT OUT
   - •RJ45 HDBaseT connection. Connect Cat6 cable to receiver
4. IR In / IR OUT
   - •3.5mm IR input port for connection to IR receiver or IR system
   - •3.5mm IR output port for connection to IR emitter
5. AUDIO OUT
   - •Analog audio de-embedding port for routing stereo audio to audio amplifier / mixer
6. RS232
   - •3 pin Phoenix connector port for connecting / passing RS232 control to receiver / display location
7. HDMI In
   - •HDMI input port for connections to video sources
8. Ethernet
   - •RJ45 port for passing Ethernet to receiver / display location
9. TOSLINK OUT
   - •Digital audio return channel output port for routing multi-channel from DL-HD2100 receiver to audio amplifier or mixer

Receiver / Front and Back View

1. FRONT PANEL DIAGNOSTIC LEDs;
   - *POWER* -Solid, the DL-HD2100 extender is receiving power from the power supply or from the remote extender via Category 6 cabling.
   - *STATUS* - Flashes once per second, the HDBaseT processor is running.
   - *HDCP*- Solid, HDCP signal is present in the HDMI stream. Flashes quickly, non-encrypted HDCP signal is present in the HDMI stream.
   - *LINK*- Solid, the two DL-HD2100 components are communicating via Category cabling.
2. DC 12V
   - Locking power port, connect DC12V power adapter to receiver (either power port on transmitter and receiver can power entire set)
3. HDBT IN
   - RJ45 HDBaseT connection. Connect Cat6 cable to transmitter
4. IR In / IR OUT
   - 3.5mm IR input port for connection to IR receiver or IR system
   - 3.5mm IR output port for connection to IR emitter
5. AUDIO CONTROL
   - ARC- When ARC mode is selected, an HDMI cable from the HDMI OUT should connect to an ARC compatible input on a display, digital audio will then de-embed from the TOSLINK OUT on the DL-HD2100 transmitter
   - TOSLINK- When TOSLINK mode is selected, a Toslink cable should be connected from the displays digital audio output to the TOSLINK IN on the DL-HD2100 receiver, digital audio will then de-embed from the TOSLINK OUT port of the DL-HD2100 transmitter
6. RS232
   - 3 pin Phoenix connector port for connecting / passing RS232 control from transmitter location
7. HDMI In
   - HDMI input port for connections to video sources
8. Ethernet
   - RJ45 port for passing Ethernet from transmitter
9. TOSLINK IN
   - Digital audio return channel input port for injecting digital audio signal from display (only in TOSLINK mode)

Installation Instructions

Quick Start

1. Connect video source to transmitter HDMI IN
2. Connect display technology to receiver HDMI OUT
3. Connect transmitter and receiver together with a shielded Category 6 cable
4. Connect control (optional)
5. Connect audio (optional)
6. Apply power to either transmitter OR receiver to power entire circuit

Connecting a Video Source

HDMI Input (Transmitter)

Connect an HDMI source device to the HDMI input on the DL-HD2100 transmitter labeled *HDMI IN* using an HDMI cable that is less than or equal to 5 meters in total length. For HDMI source devices that are further away, an active HDMI cable may be required to complete the connection.

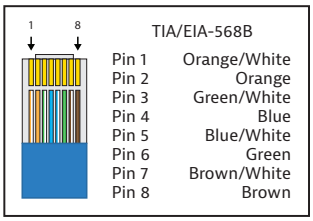
Connecting a Display

HDMI Output (Receiver)

Connect the display to the HDMI output on the DL-HD2100 receiver labeled *HDMI OUT* using an HDMI cable that is less than or equal to 5 meters in length. It is recommended to keep the DL-HD2100 receiver near the display input as it is not recommended that an active HDMI cable be used on the HDMI output on the DL-HD2100 receiver.

HDBaseT Connection

Connect one end of a Category cable to the DL-HD2100 transmitter labeled *TWISTED PAIR*, then connect the other end of the Category cable to the DL-HD2100 receiver labeled *TWISTED PAIR*



Twisted Pair Wiring
Use TIA/EIA-568B wiring for Category 6 connection between send and receive units.

To ensure proper performance of the DL-HD2100, it is recommended that you use solid core, shielded Category 6 F/UTP cabling at a minimum. Category 5e F/UTP may perform well up to a certain length but may not support power over HDBaseT reliably longer distances.

When using shielded category cabling *ALWAYS*...

....use shielded connectors
....properly ground the category cable

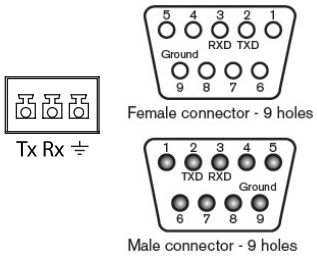
For optimized performance use the following Liberty Wire and Cable branded cabling;

Category 6 plenum; **24-4P-P-L6SH**
Category 6A plenum; **24-4P-P-L6ASH**

Category 6 NON-plenum; **24-4P-L6SH**
Category 6A NON -plenum; **24-4P-L6ASH**

Connecting RS232 Control

RS232 or serial control signals can be transmitted through the DL-HD2100 using the RS232 connection ports on he DL-HD2100 transmitter and receiver.



RS232 Wiring
Connect the controller or device RX signal to TX on the DL-HD2100 extender. Connect the controller or device TX signal to RX on the DL-HD2100 extender.

Connecting IR Control

The DL-HD2100 is capable of transmitting bi-directional IR signals through the HDBaseT circuit. The DL-HD2100 comes with 2 IR receivers (eye) and 2 IR emitters (flashers) so you can control devices from either end of the extender circuit.

Passing IR Signals:
The DL-HD2100 is capable of passing IR signals between 33 and 55 KHz. To prevent damage to any of the electronics, the extenders should be powered off while inserting or removing any IR components. Inserting an IR transmitter into the IR IN port may damage the IR circuit for that extender.

Source Device Control using IR

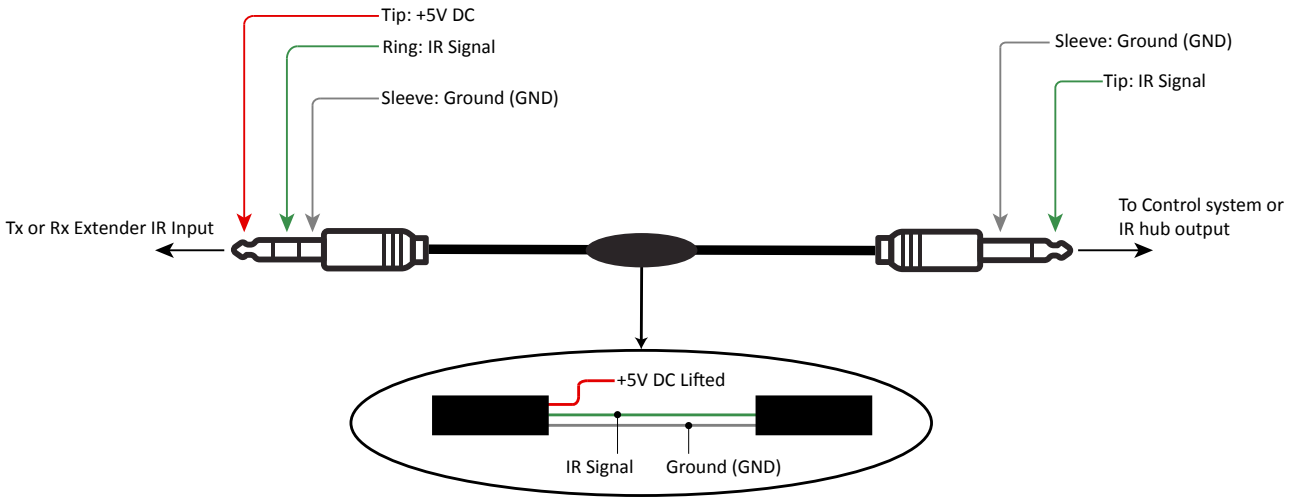
Attach the IR emitter to the IR receiver of the source device, insert the TS 3.5 mm plug of the emitter to the IR OUT port of the DL-HD2100 transmitter. Insert the TS 3.5 mm plug of the IR receiver (eye) to the IR IN port of the DL-HD2100 receiver. Point the source device IR remote at the display location where the IR receiver is located, IR signals will now travel through HDBaseT to the DL-UHDRC70 transmitter side where the IR emitter is attached to the source device.

Remote Display using IR

Attach the IR emitter to the IR receiver of the display device, insert the TS 3.5 mm plug of the emitter to the IR OUT port of the DL-HD2100 receiver. Insert the TS 3.5 mm plug of the IR receiver (eye) to the IR IN port of the DL-HD2100 transmitter. Point the source device IR remote at the source device location where the IR receiver is located, IR signals will now travel through HDBaseT to the DL-HD2100 receiver side where the IR emitter is attached to the display device.

Source / Display Control from Control System

To pass 3rd party IR system signals through the DL-HD2100, such as a control system, connect the TS connector of the IR-AC coupling cable (provided) to the IR output port of the control system and connect the TRS connector of the IR-AC cable to the IR IN to either transmitter or receiver of the DL-HD2100.



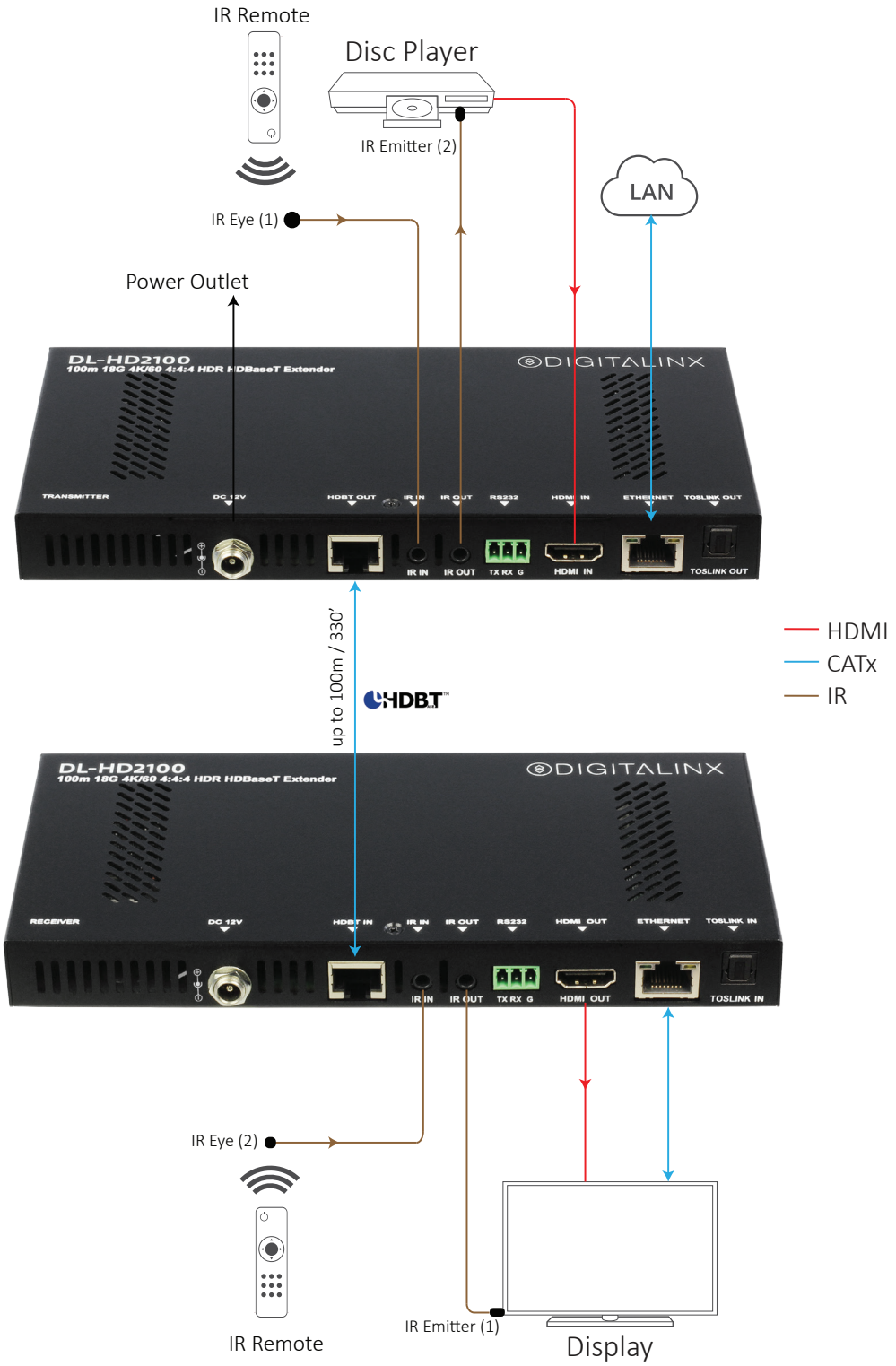
Note: Voltage on Tip from RX may be differnt for non Liberty Devices

Apply Power

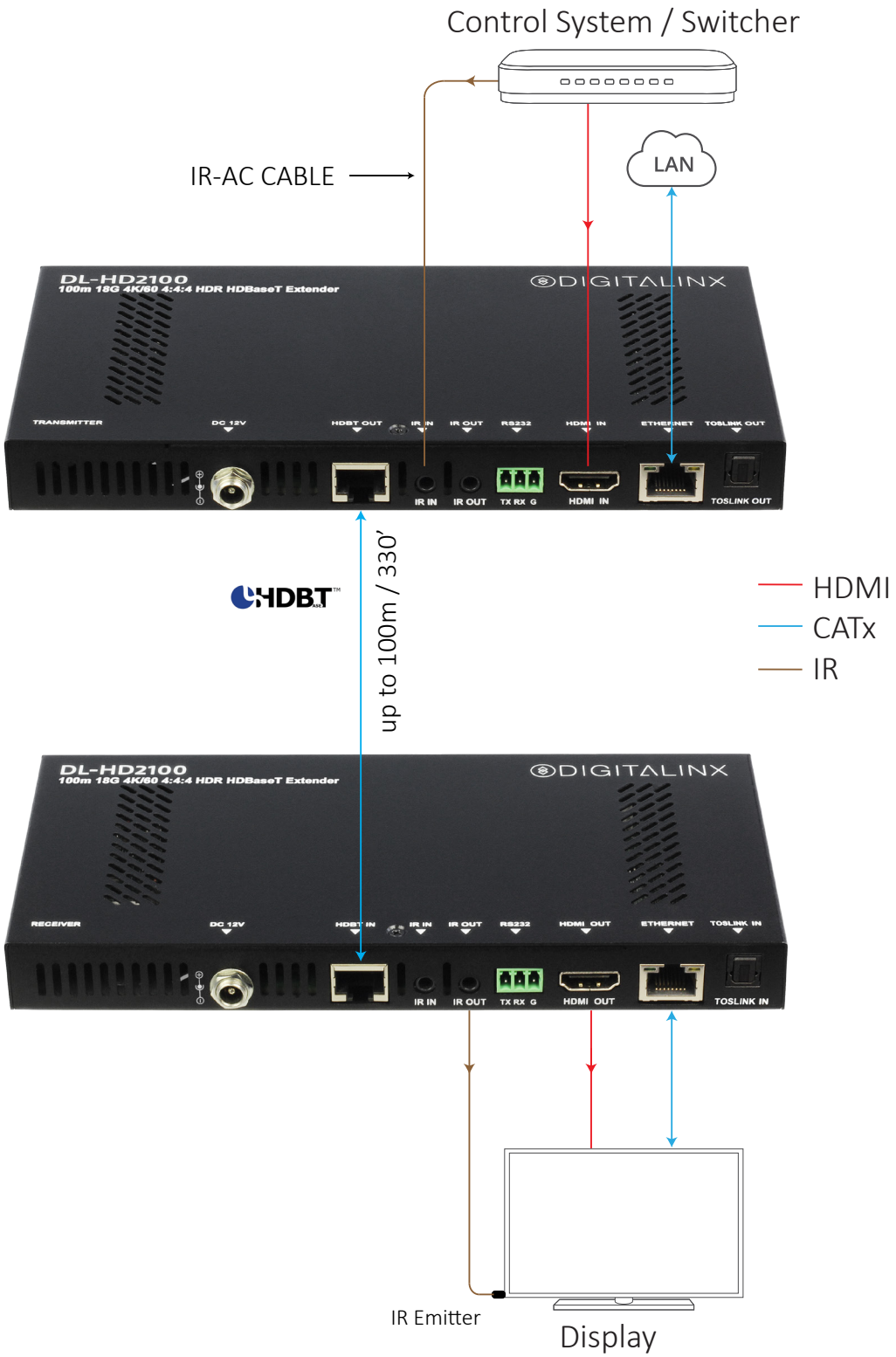
Connect the included power supply to the transmitter or receiver and lock the power supply to the power connector by twisting the locking collar clockwise. It is not required that both the transmitter and receiver be powered simultaneously.

Application Diagrams

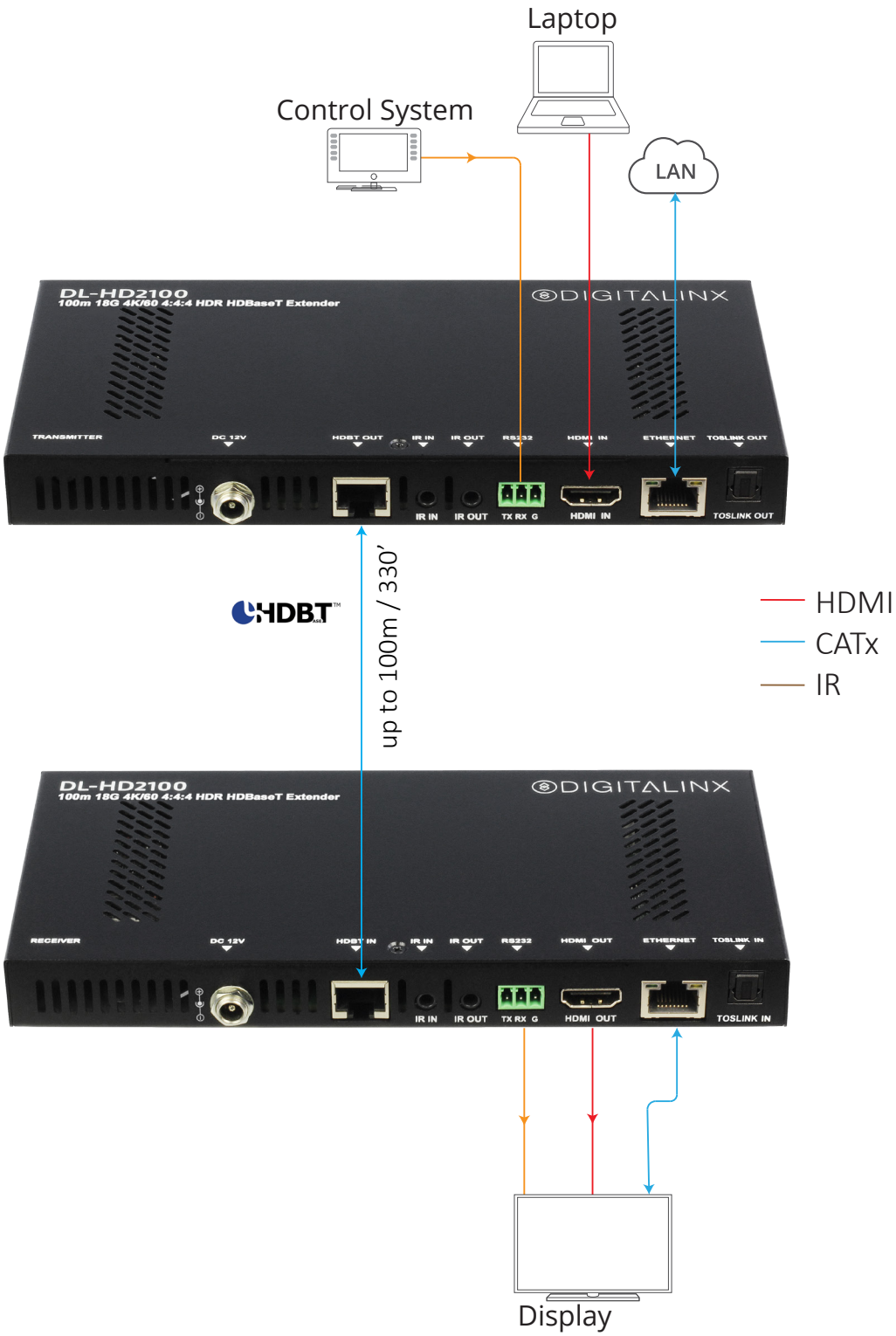
HDMI Extension / Bi-Directional IR Control



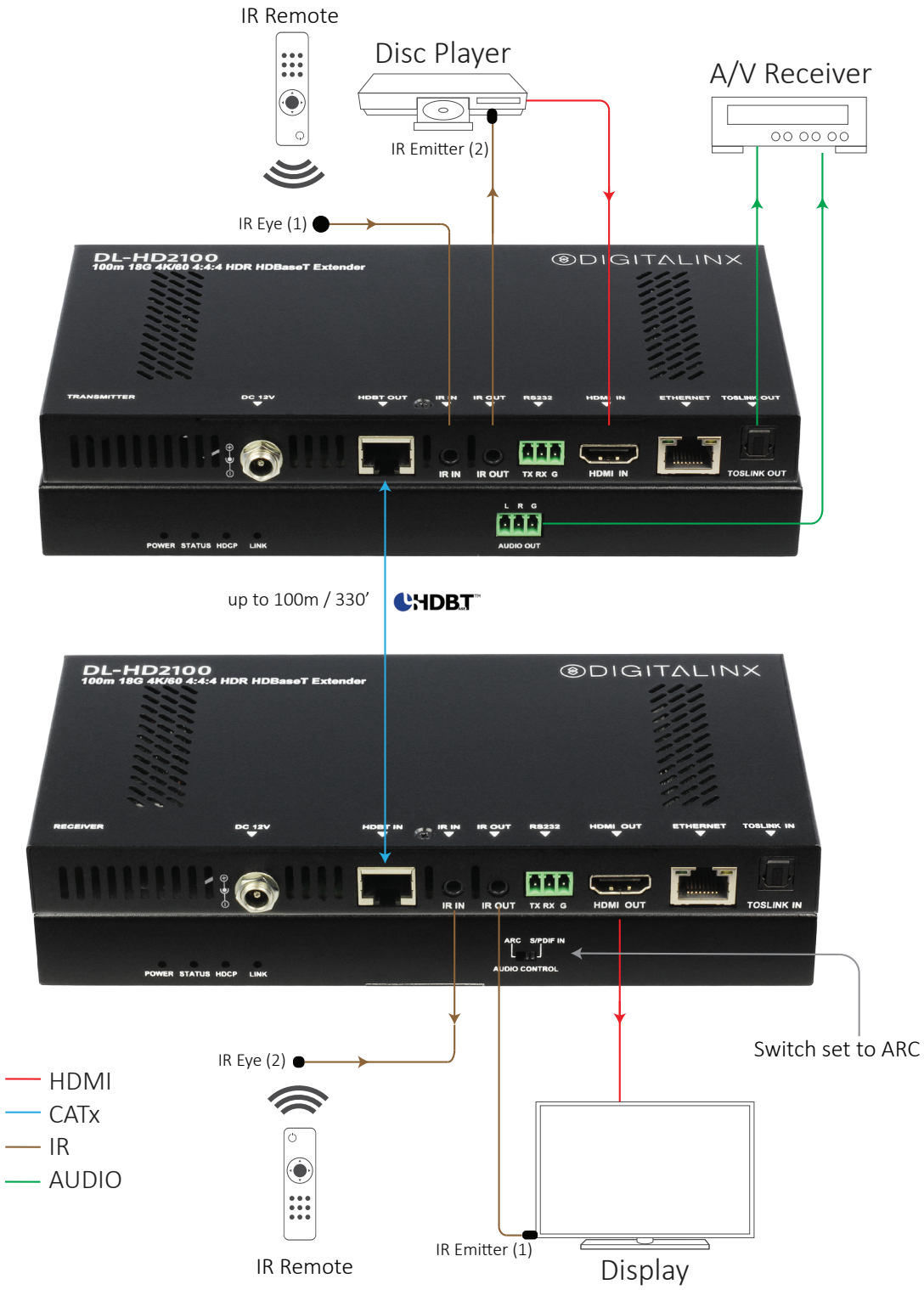
HDMI Extension / Control System IR Control



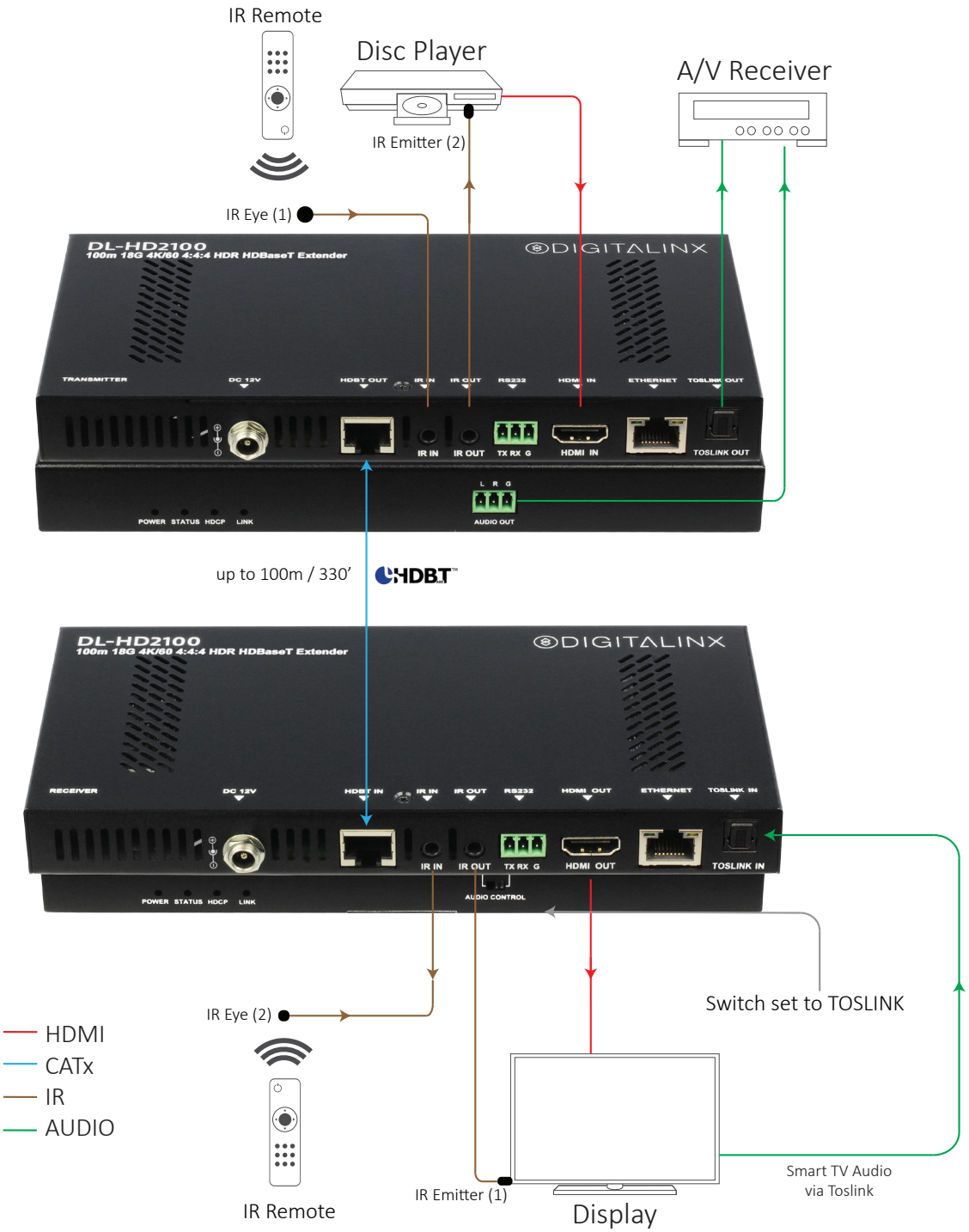
HDMI Extension / Control System RS232 Control



HDMI Extension / ARC AUDIO MODE



HDMI Extension / TOSLINK AUDIO MODE



Technical Specifications

Supported Audio and Video	
Video Compliance	HDMI 2.0b, HDCP 2.2, ARC (Audio Return Channel) and CEC (Consumer Electronics Control)
Input / Output Resolution Support	4096 x 2160 @24/25/30/60Hz, 3840 x 2160 @24/25/30/60Hz, 1920 x 1200 @60Hz, 1920 x 1080 @60Hz, 1680 x 1050 @60Hz, 1600 x 1200 @60Hz, 1600 x 900 @60Hz, 1440 x 900 @60Hz, 1366 x 768 @60Hz, 1360 x 768 @60Hz, 1280 x 1024 @60Hz, 1280 x 960 @60Hz, 1280 x 800 @60Hz, 1280 x 760 @60Hz, 1024 x 768 @60Hz, 800 x 600 @60Hz
Maximum Pixel Clock	594MHz
Embedded Audio	Up to PCM 8 channel, Dolby Atmos, DTS: X, Dolby TrueHD, DTS-HD Master Audio, Dolby Digital and DTS
IR Carrier Frequency Range	33-55kHz at 5 volts
RS232 Baud Rate	Up to 115200 baud
HDBaseT Signal Characteristics	
Maximum Distance	100 meters / 330 feet
Cable Requirements	Solid core F/UTP Category 6 cable or greater with TIA/EIA-568B crimp pattern
Bandwidth	18 Gbps
Chassis and Environmental	
Dimensions	TX- 195mm x 94.8mm x 21mm (7.7 in. x 3.7 in. x 0.8 in.) RX- 195mm x 94.8mm x 21mm (7.7 in. x 3.7 in. x 0.8 in.)
Operating Temperature (Environment)	TX/RX- 0° to +45° C (+32° to +113° F)
Operating Temperature (Chassis)	31° C (88° F) (TX); 38° C (100° F) (RX)
Operating Humidity (Environment)	10% to 90%, Non-condensing
Product Weight	0.4kg / 2.2 lbs
Power	
Maximum Power Consumption	27 watts (TX)- when receiver is powered by transmitter 27 watts (RX)- when transmitter is powered by receiver
Power Supply Input Voltage	100-240V AC at 50-60 Hz
Power Supply Output Voltage	DC 12V 3A
ESD Protection	±8kV(Air-gap discharge)/ ±4kV(Contact discharge)
Surge Protection	Voltage: ±1 kV
Regulatory	CE, FCC
Other	
Standard Warranty	2 Years
Included Items	(1) Transmitter, (1) Receiver, (1) Quick Install Guide, DC 12V Power Supply with US, UK, EU and AU adapters, (2) IR Transmitters, (2) IR Receivers, (1) IR-AC IR coupler cable, (4) Mounting Brackets, Mounting Screws

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