Velocitydvi

Fiber-Optic Extension System

Direct Fiber Input Card for Christie® Entero™ HB Video Wall Cubes

Velocitydvi - Single-Link DVI Extender

PRODUCT MANUAL

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Powered by
MRTS Technology

VelocityDVI Extenders

thinklogical®

CHRISTIE
Christie Digital Entero HB

Subject: Direct Fiber Input Card for Christie Digital Entero™ HB Wall Cubes Product Manual
Revision: Initial Release (January, 2014)

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MADE IN USA

1. Introduction

1.1. Product Overview

Direct Fiber Input Card for Christie Digital Entero HB Video Wall Displays
VelocityDVI – Single-Link DVI Extender

Thinklogical and Christie have partnered to provide a highly secure and easy-to-integrate fiber optic extension solution for Christie Digital Entero HB Video Wall Cubes. The co-developed **VelocityDVI-3 Direct Fiber Optic Input Card** installs directly into Christie Entero HB Video Wall Cubes, eliminating additional copper cabling between the video source and the cube.

The VelocityDVI-3 Direct Fiber Input Card supports one single-link DVI signal for extension up to 80km without any loss of resolution. **Powered by Thinklogical's patented Multi-Rate Transmission System (MRTS) technology, every frame of a video stream is transported seamlessly, with no compression or dropped frames.**

This solution provides simple installation, eliminating the need for an external receiver, an additional external power supply or a DVI cable typically used to connect the receiver to the display. Christie Entero HB Video Wall Cubes utilize LEDs and are ideal for 24/7 environments. Combined with Thinklogical's MTBF of over 100,000 hours and the ability to hot-swap the module in the unlikely event of a failure, this direct input card solution provides users with continuous operation. As a fiber based solution, users increase their security, eliminating the electromagnetic interference found in copper cabling.

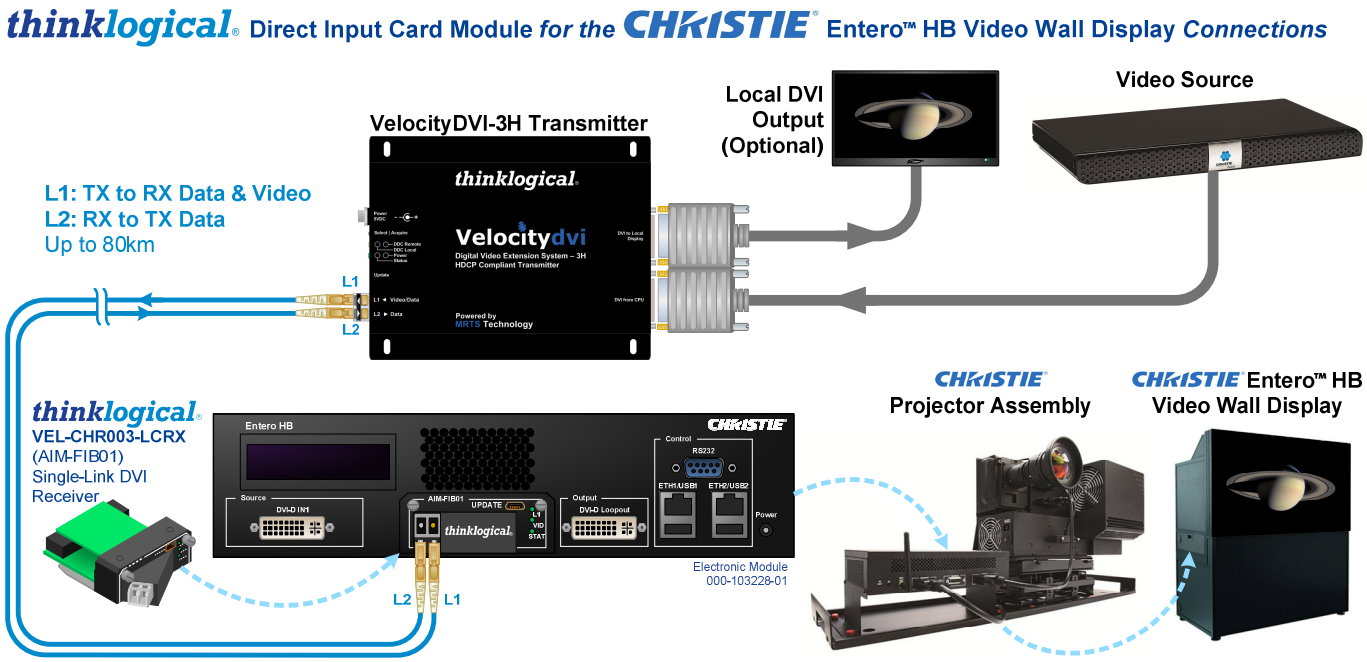
MRTS Technology 6.25 Gbps. allows for Full Frame Rate Transmission of uncompressed DVI.

Powered by Thinklogical's cutting edge, patent-pending MRTS (**M**ulti **R**ate **T**ransmission **S**ystem) Technology, our DVI Extension Systems transport every frame of a DVI video stream seamlessly with no compression or dropped frames. Incorporating standard SFP+ transceivers, the system uses **multi-mode fiber optic cable** to permit the placement of a digital monitor or projector up to 1000 meters (3280 feet) away from the controlling source without loss of resolution. Thinklogical also offers optics that use **single-mode fiber optic cables** to allow the placement of video devices up to 80 km (49.7 miles) away from the controlling source without loss of resolution. Installation is plug-and-play and no adjustments are necessary.

Powered by
MRTS Technology

1.2. The Christie Digital Entero HB Video Wall Display

The Christie Digital Entero HB Video Wall Display system includes a VelocityDVI 3 Transmitter (or any Single-Link Velocity DVI or KVM Transmitter) which connects to the source. The Transmitter converts the DVI signal from the source into optical data for fiber optic transmission. Depending on the application, the Transmitter connects to the Thinklogical Direct Input Card over multi-mode or single mode fiber optic cable. The Input Card, or receiver, is installed directly into a Christie Entero HB Video Wall Cube. The Input Card receives the signal from the transmitter, delivering content to the cube. The system requires only a single fiber connection for video transmission, with an optional second return fiber connection for EDID table support. Single fiber applications require that the Christie EDID table be manually loaded into Thinklogical's Transmitter for support of Christie resolutions. For routing applications, the direct input card is compatible with all Thinklogical MX and VX Routers.



For simple plug-and-play, the system requires two fibers; one for video transmission (L1) and one for EDID table support (L2). Single fiber applications (fiber L1, TX to RX only) require that the Christie EDID table be manually loaded into Thinklogical's transmitter for support of the Christie resolutions.

1.2.1. Loading the EDID Table

To load the EDID Table from a Christie Digital unit to a Thinklogical AIM-FIB01 module:

- Connect the network to the ETH2/USB2 port and turn the unit on.
- When the unit goes to *standby*, the IP address will be displayed. Put this in a browser and log into the Entero HB or equivilent. *User Name/Pass Word* is *service/service*.
- Go to '**Display Configuration/EDID**'.
- Click the '**select all**' option.
- In the EDID box select '**Reset to EDID Defaults**'
- Select '**Submit**'

NOTE: The Thinklogical Direct Input Card Module is shipped with the default Christie EDID Table already loaded.

1.3 Product Features

- Supports One Single-Link DVI signal (All single-link DVI signals)
- 6.25Gbps allows for full frame rate transmission of uncompressed DVI
- Patented MRTS Technology provides flawless image quality with no frame dropping
- HDCP Compliant (with HDCP Compliant Transmitter)
- DDC/EDID Compliant
- Mini-USB port for software program updates
- LC fiber connectors
- Hot-swappable optical module (SFP+)
- Simple plug and play design
- MX and VX Router Compatibility, Scalable from 5 to 640 ports
- Multi-Mode or Single Mode Compatibility
  - *Multi-Mode Extension up to 1000 meters*
  - *Single-Mode Extension up to 80 kilometers*
- L1 LED Status Indicator:
  - **Software Revision:** *At power-up, L1* ***blinks once*** *for each software revision (1 blink = rev. 1, 2 blinks = rev. 2, etc.)*
  - **Fiber Input Link:** *L1 is* ***ON*** *when a fiber is detected and a valid signal is received*
- VID LED Status Indicator:
  - **Hardware Code Revision:** *At power-up, VID* ***blinks once*** *for each hardware code revision (1 blink = rev. 1, 2 blinks = rev. 2, etc.)*
  - **Video Receiving:** *VID is* ***ON*** *when a valid video signal is received*
- STATUS LED Indicator:
  - **Temperature:** *STATUS* ***blinks*** *for over-temperature conditions*
  - **Active Back Channel Output:** *STATUS is* ***ON*** *when transmitting 2G back channel*
  - **SFP Status:** *STATUS is* ***ON*** *when there is no SFP transmit fault*
  - **Valid EDID Table:** *STATUS is* ***ON*** *when a valid EDID table has been received*

For use with Christie Entero HB Video Wall Cube models:

- **50”, 67”, 70” and 80” High Brightness SXGA+**
- **70” High Brightness HD**
- **72” High Brightness WUXGA**

Provides easy integration with fewer points of failure, requiring just a single strand of fiber.

- **No external receiver**
- **No additional external power supply**
- **No DVI cabling from receiver to cube**

1.4 Technical Specifications

Technical Specifications	
Video Resolution	All single-link DVI resolutions
Panel Connections	**LC** (Fiber Connectors) **Mini USB B** (Software Updates)
Operating Temperature	0-50 °C (32-122° F)
Humidity	5-95% RH, non-condensing)
3 LED Indicators	**L1**: Status (Receiver 6G locked) **L2:** Video (Video sync detect) **L3:** Status (FLASHES for over-temperature. ON when Transmitter's 2G is active, no SFP transmit fault, EDID OK)
Weight	.448 lb. (0.203 kg)
Shipping Weight	3 lb. (1.36 kg)
Dimensions	**Height:** *1.090" (27.69mm)* **Depth:** *3.772" (95.81mm)* **Width:** *2.795" (70.99mm)* **Tolerance:** *+/- .039" (0.99mm)*
Optical Cable	Up to two Multi-Mode or Single-Mode Fiber Optic Cables (available, not supplied)
Optical Distance	**Multi-Mode:** Up to 50 meters using 62.5/125um, type OM1 Up to 350 meters using 50/125um, type OM2 Up to 750 meters using 50/125 SX+, type OM3 Up to 1000 meters using 50/125eSX+, type OM3e **Single-Mode:** For all distances up to 80 kilometers using 9/125um (OS2)
Power Consumption	5 Watts
Compliance	Approvals for US, Canada, and European Union
Warranty	12 months from date of shipment. *Extended warranties available for purchase. Please contact your sales representative.*

1.4.1 Ordering Information

Part Number	***Description***
VEL-CHR003-LCRX	VelocityDVI-3 Direct Fiber Input Card for Christie Digital Entero HB Video Wall Cubes, Single-Link DVI Receiver, HDCP, DDC, LC

To configure as a Single-Mode extender, include either:

VOP-S04	Single-Mode Optics Package for extension up to 10km
VOP-S101	Single-Mode Optics Package for extension up to 40km
VOP-STBD	Single-Mode Optics Package for extension up to 80km

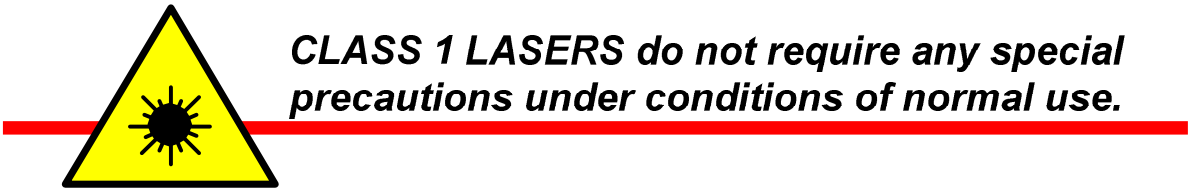
2. Regulatory and Safety Compliance

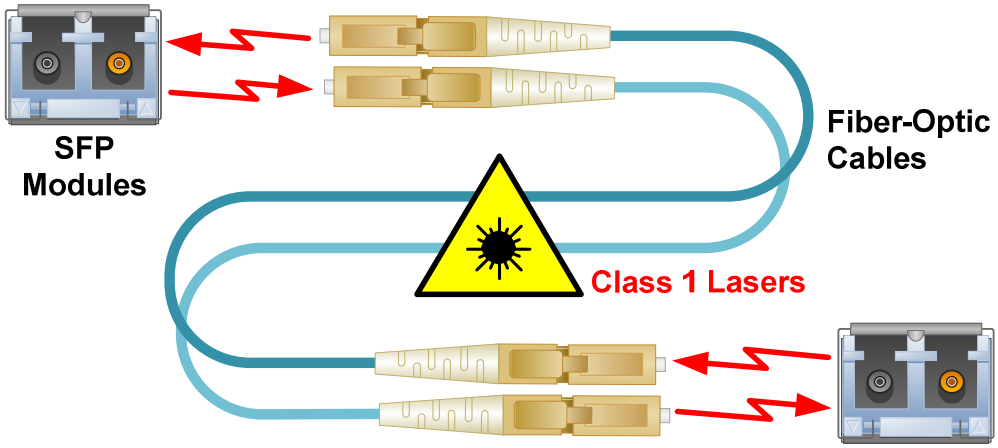
2.1. Symbols Found on Our Products

Markings and labels on our products follow industry-standard conventions. Regulatory markings found on our products comply with all domestic and many international requirements.

2.1.1. Class 1 Laser

VelocityDVI-3 extenders are designed and identified as Class 1 LASER products.





2.2. Regulatory Compliance

Thinklogical VelocityDVI Extender products are designed and made in the USA. VelocityDVI Extender products have been tested by a nationally recognized testing laboratory and found to be compliant with the following standards (both domestic USA and many international locations).

2.2.1. North America

These products comply with the following standards:

Safety

- ANSI/UL60950-1: 1st Edition (2003)
- CAN/CSA C22.2 No. 60950-1-03

Laser Safety

- CDRH 21 CFR 1040.10
- Class 1 Laser Product: VEL-3, VEL-6, VEL-33, VEL-63
- Accession Number TBD

Electromagnetic Interference

- FCC CFR47, Part 15, Class A
- Industry Canada ICES-003 Issue 2, Revision 1

2.2.2. Australia & New Zealand

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take corrective measures.

2.2.3. European Union

2.2.3.1. Declaration of Conformity

Product name

Direct Fiber Input Card for Christie Digital Entero HB Wall Cubes

This product complies with the requirements of Low Voltage Directive 72/23/EEC and EMC Directive 89/336/EEC.

2.2.3.2. Standards Compliance

Safety

- CENELEC EN 60950-1, 1st Edition (2001)

Laser Safety

- IEC60825:2001 Parts 1 and 2
- Class 1 Laser Product

Electromagnetic Emissions

- EN55022: 1994 (IEC/CSPIR22:1993)
- EN61000-3-2/A1 4:2000
- EN61000-3-3:1994

Electromagnetic Immunity

- EN55024:1998 Information Technology Equipment-Immunity Characteristics
- EN61000-4-2:1995 Electro-Static Discharge Test
- EN61000-4-3:1996 Radiated Immunity Field Test
- EN61000-4-4:1995 Electrical Fast Transient Test
- EN61000-4-5:1995 Power Supply Surge Test
- EN61000-4-6:1996 Conducted Immunity Test
- EN61000-4-8:1993 Magnetic Field Test
- EN61000-4-11:1994 Voltage Dips & Interrupts Test

2.2.4. Supplementary Information

The following statements may be appropriate for certain geographical regions but might not apply to your location.

NOTE: This equipment has been tested and found to comply with the limits for a Class 1 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 uses, generates 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, in which case the user may be required to correct the interference.

NOTE: This Class 1 digital apparatus complies with Canadian ICES-003 and has been verified as compliant within the Class A limits of the FCC Radio Frequency Device Rules (FCC Title 47, Part 15, Subpart B Class A), measured to CISPR 22: 1993 limits and methods of measurement of Radio Disturbance Characteristics of Information Technology Equipment.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe A respecte toutes les exigencies du Reglement sur le material brouilleur du Canada.

NOTE: The user may notice degraded audio performance in the presence of electro-magnetic fields.

2.2.5. Product Serial Number

Thinklogical products have a unique serial number printed on an adhesive label that is fixed, typically, to the underside of the unit. The serial number includes a date-code formatted as 2 digits for the week and 2 digits for the year, plus two to three digits for a unique unit number.

Example: Serial number **381322** indicates that the unit was built in the **38**th week of the year **2013** and is unit number **22**.

3. How to Contact Us

3.1. Customer Support

Thinklogical is an engineering company and you will receive any information you require directly from our most knowledgeable engineers. We believe that the first lines of support are the design engineers that developed each particular product. Therefore, your questions will be handled promptly by our in-house engineers who are most familiar with your products.

Thank you for choosing Thinklogical products for your application.

We appreciate your business and are dedicated to helping you successfully use our products.

thinklogical® is always here to help you.

To contact us, please use the following telephone numbers and internet-based methods:

Website

Check out our website for current product offerings, support information and general information about all of the products we offer.

Our internet website offers product information on all current systems, including technical specification sheets and installation guides (for viewing online or for download), product diagrams showing physical connections and other information you might need.

Internet: **www.thinklogical.com**

Note: Most online documents are stored as Adobe Acrobat "PDF" files. If you do not have the Adobe Acrobat reader needed to view PDF files, visit www.adobe.com for a download.

Email

Thinklogical is staffed Monday through Friday from **8:30am to 5:00pm**, Eastern Time Zone. We will do our best to respond to your email inquiries promptly. Please use one of the following email addresses:

info@thinklogical.com – Information on Thinklogical and our products

sales@thinklogical.com – Sales Department - orders, questions or issues

support@thinklogical.com – Product support, technical issues or questions, product repairs and request for Return Authorization

Telephone

Product & Customer Support:	**1-203-647-8700**
US Commercial & Canada Sales:	**1-203-647-8769**
US Federal Government Sales:	**1-203-647-8716**
Toll Free in the Continental US:	**1-800-291-3211**
International Sales (Europe, Middle East, Africa)**:**	**1-203-647-8704**
International Sales (Asia Pacific, Central & Latin America)**:**	**1-203-647-8734**
Fax:	**1-203-783-9949**

Please contact our expert sales staff in Milford, CT. We are here Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. We'll provide a representative's direct dial phone number when you call.

If leaving a voice message, please provide a preferred time to call back so we may reach you at your convenience.

Our switchboard attendant will direct your call during regular business hours. We have an automated attendant answering our main telephone switchboard after regular business hours and holidays. You can leave voice messages for individuals at any time.

Fax

Our company facsimile number is **1-203-783-9949**. Please indicate the nature of the fax on your cover sheet and provide return contact information.

3.2. Product Support

Thinklogical's support personnel are available Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. If your application might require assistance at some time outside of our normal business hours, please contact us beforehand and we will do our best to make arrangements to help you with your Thinklogical products.

3.2.1 Warranty

Thinklogical warrants this product against defects in materials and workmanship for a period of one year from the date of delivery. Thinklogical and its suppliers disclaim any and all other warranties.

Note: Thinklogical Inc. products carry a one year warranty, with longer term available at time of purchase on most products. Please refer to your product invoice for your products Warranty Terms & Conditions.

Defect remedy shall be, repair or replacement of the product, provided that the defective product is returned to the authorized dealer within a year from the date of delivery.

If you wish to return your device, contact the Thinklogical authorized dealer where you purchased the device, or if you purchased directly, call Thinklogical at **1-800-291-3211 (Toll free in USA).**

3.2.2 Return Merchandize Authorization

If you have any issue with any Thinklogical product, have product questions or need technical assistance with your Thinklogical system, please contact **Customer Support** at:

1-800-291-3211 (USA only) or **1-203-647-8700** and let us help.

If you need to return your Thinklogical® product to us for any reason, please get a

Return Merchandise Authorization Number (RMA#)

from Thinklogical's Product Support Department (1-203-647-8700) before sending the unit in.

Customer Support will ask you to describe the problem and will issue you a **R**eturn **M**erchandise **A**uthorization number (RMA#). Pack the device in its original box, if possible, and return it with the RMA# displayed clearly on the box.

Note: Do not return a product to Thinklogical without an approved *Return Material Authorization Number.*

Return address for products with Return Material Authorization:

Thinklogical, LLC
Attn: RMA#
100 Washington Street
Milford, CT 06460 USA

PH: 1-800-291-3211 (USA only)
1-203-647-8700

Thinklogical Innovation Leads the Way.
Performance • Security • Continuous Operation • Ease of Integration

www.thinklogical.com

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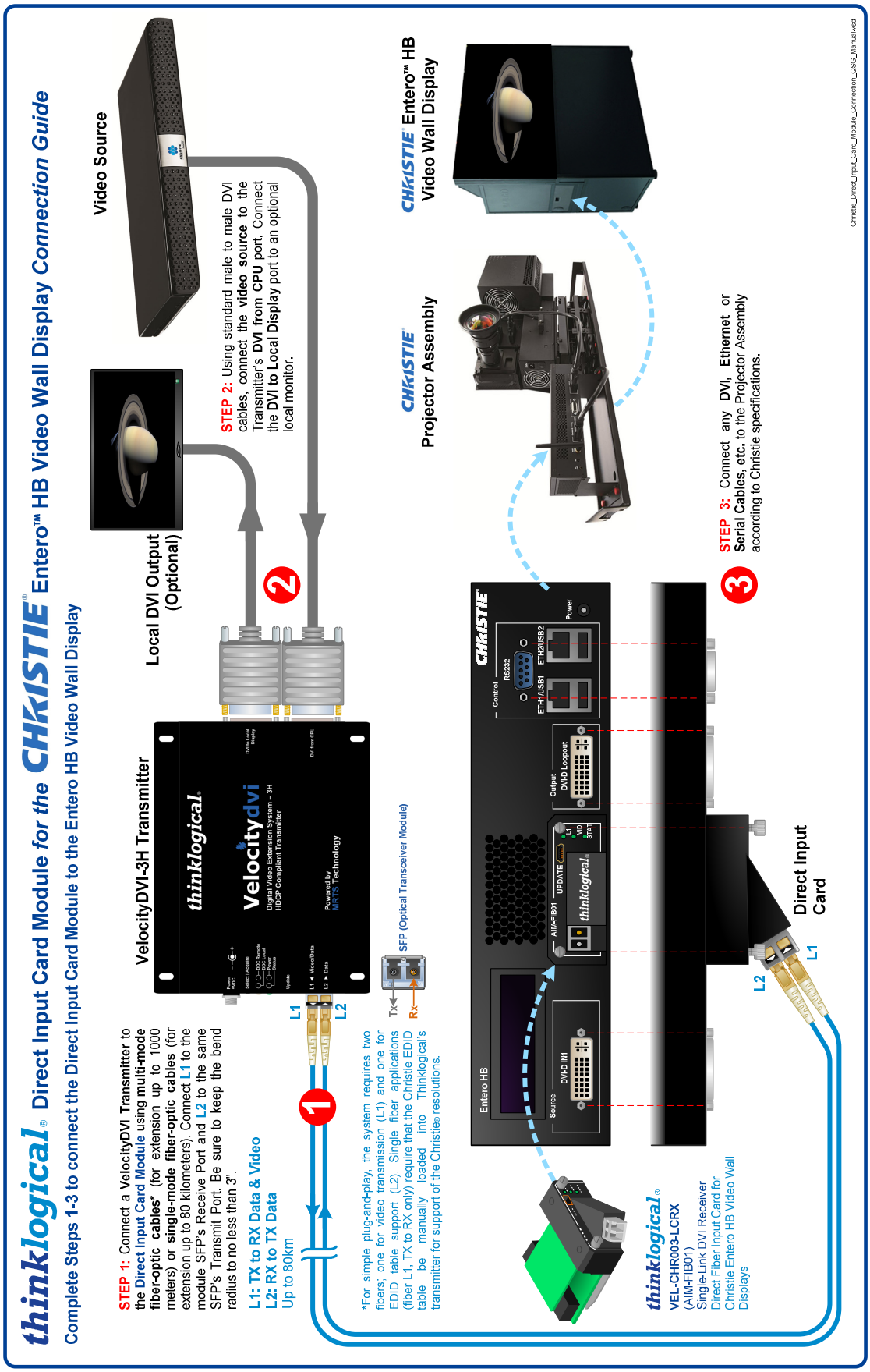
CHRISTIE Christie Digital Entero HB

Appendix A: Quick Start Guide