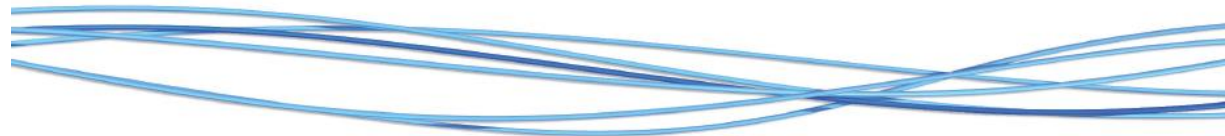


Velocitydvi

Digital Video Extension System



Velocitydvi-3, Velocitydvi-33

Velocitydvi-6, Velocitydvi-63

Single-Link and Dual-Link Fiber Extension Systems

PRODUCT MANUAL

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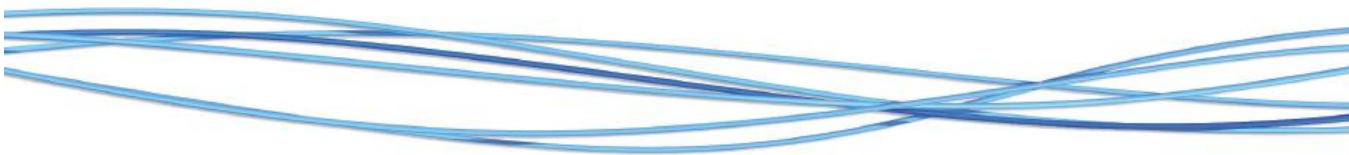
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**VelocityDVI
Extenders**



thinklogical®

Subject: VelocityDVI-3, VelocityDVI-6, VelocityDVI-33 and VelocityDVI-63 Extender Product Manual
Revision: H (December, 2014)



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

www.thinklogical.com



Preface

About Thinklogical



Thinklogical, LLC®
100 Washington St.
Milford, CT 06460

We, the Thinklogical team, are committed to understanding and exceeding our customers' requirements, the first time and every time.

Thinklogical is the leading manufacturer and provider of fiber optic KVM, video, audio, and peripheral extension and switching solutions used in video-rich, big-data computing environments.

Thinklogical offers the only fiber optic KVM matrix routers in the world that are accredited to The Common Criteria, EAL4 and TEMPEST.

Governments, entertainment, scientific and industrial customers worldwide rely on Thinklogical's products and solutions for security, high performance, continuous operation and ease of integration. Thinklogical products are designed and manufactured in the USA and are certified to the ISO 9001-2008 standard.



Information Assurance

NATO Information Assurance Product Catalogue
NIAPC

Thinklogical is headquartered in Milford, Connecticut and is privately held by Riverside Partners, LLC, Boston, MA (<http://www.riversidepartners.com>). For more information about Thinklogical products and services, please visit www.thinklogical.com.

Follow Thinklogical on LinkedIn at <http://www.linkedin.com/company/thinklogical> and on Facebook at <http://www.facebook.com/ThinklogicalUSA>



1. Introduction

1.1. Contents

Upon receiving your **Thinklogical VelocityDVI Extension System®** you should find the following items:

- DVI Extender Transmitter
- DVI Extender Receiver
- DVI-D Male to Male Cable, 2 Meter (CBL-000009-002MR)¹
- DVI-D Male to Male Dual-Link Cable, 2 Meters (CBL-000023-002MR)²
- Universal AC Power Adapters (PWR-000022-R) – Quantity 2 (Vel-3, -6)
- AC Power Cord (PWR-000006-R) – Quantity 2 (Vel-33, -63)
- CAT5 Cable Assembly (CBL000001-002MR)³
- 3.5mm Audio Cable, M-M – Quantity 2 (CBL000016-006FR)³
- DB9F Adapter (ADP-000025-R) and DB9M Adapter (ADP-000019-R)⁴
- CD Product Manual

¹ For VelocityDVI-3, Qty = 1 each. For VelocityDVI-33, Qty = 3 each

² For VelocityDVI-6, Qty = 1 each. For VelocityDVI-63, Qty = 3 each

³ With A/V+ and A/N+ models

⁴ With A/V+ models only

1.2. Product Overview

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. In addition, all high speed peripherals function with no latency. 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 computer without loss of resolution. Thinklogical® also offers optics that use **single-mode fiber optic cables** to allow the placement of video devices up to 10, 40 or 80 km (6.2/24.8/49.7 miles) away from the controlling computer without loss of resolution. Installation is plug-and-play and no adjustments are necessary.

Each VEL-3 (single-link) and VEL-6 (dual-link) system consists of one transmitter per chassis and one receiver per chassis. The rack-mountable VEL-33 system (single-link) and the rack-mountable VEL-63 system (dual-link) each feature three transmitters per chassis and three receivers per chassis. All models support **Data Display Channel (DDC)**, with a variety of modes to meet each unique requirement. All models are connected by fiber optic cable(s), the count of which varies depending upon the DDC mode to provide communications to and from the transmitter. The transmitter unit connects to the CPU with supplied DVI-D cables (and audio, serial & network cables in A/V+ and A/N+ models). The receiver unit provides an interface to the monitor(s) (and audio, serial & network devices in A/V+ and A/N+ models).

Each Transmitter (TX) features a video input and local video output which can be used for DDC modification and for displaying video at the source. The TX also has fiber connectors used for transferring video and data to the Receiver. (For an **Automatic Fail-Over option**, see **Appendix D**, on page 47 for more details.) Status LEDs and DDC Mode buttons are provided for system configuration.

Each Receiver (RX) features two video outputs. *DVI to Display DDC* is the primary output and *DVI to Display* is an auxiliary output. The RX has fiber connectors used for transferring data to the TX and for receiving video and data from the TX. Status LEDs and DDC Mode buttons are provided for system configuration.

Velocitydvi Digital Video Extender-3



Transmitter: VEL-000M03-LCTX



Receiver: VEL-000M03-LCRX

Velocitydvi Digital Video Extender-6

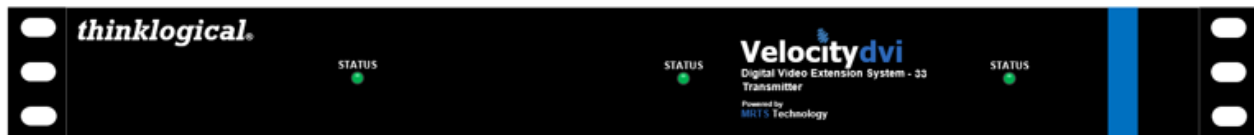


Transmitter: VEL-000M06-LCTX



Receiver: VEL-000M06-LCRX

Velocitydvi Digital Video Extender-33 VEL-000M33-LCTX/RX



Velocitydvi Digital Video Extender-63 VEL-000M63-LCTX/RX



1.3. The VelocityDVI-3 and -6 Extender Models

VEL-000S03-SCRX	VELOCITY 3 DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SINGLE MODE, SC/APC
VEL-000S03-SCTX	VELOCITY 3 DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI OUTPUT, DDC, SINGLE MODE, SC/APC
VOP-S05	VELOCITY 3 optics option for TX or RX, SINGLEMODE, DUAL FIBERS, 10KM
VEL-000S06-SCRX	VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DUAL DVI OUTPUT, DDC, SINGLE MODE, SC/APC
VEL-000S06-SCTX	VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DUAL DVI OUTPUT, DDC, SINGLE MODE, SC/APC
VOP-S08	VELOCITY 6 optics option for TX or RX, SINGLE MODE, 3 FIBERS, 10KM
VEL-000M03-LCRX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, LC
VEL-000M03-LCTX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, LC
VEL-000M03-SCRX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, SC
VEL-000M03-SCTX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, SC
VEL-000M03-STRX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, ST
VEL-000M03-STTX	VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, ST
VEL-000M33-LCRX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, LC
VEL-000M33-LCTX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, LC
VEL-000M33-SCRX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, SC
VEL-000M33-SCTX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, SC
VEL-000M33-STRX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, RX, ST
VEL-000M33-STTX	3-in-1 VELOCITY 3, SINGLE LINK DVI, DDC, MULTIMODE, TX, ST
VEL-AV0S03-SCRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, SC/APC
VEL-AV0S03-SCTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE. TX, SC/APC
VEL-AV0S03-NKRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, NEUTRIK LC
VEL-AV0S03-NKTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE. TX, NEUTRIK LC
VOP-S05	VELOCITY 3 AV+ optics option for TX or RX, SINGLE MODE, DUAL FIBER, 10KM, SC/APC
VOP-S11	VELOCITY 3 AV+ optics option for TX or RX, SINGLE MODE, DUAL FIBER, 10KM, NEUTRIK LC
VEL-AV0M03-LCRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, LC
VEL-AV0M03-LCTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, LC
VEL-AV0M03-SCRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, SC
VEL-AV0M03-SCTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, SC
VEL-AV0M03-STRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, ST
VEL-AV0M03-STTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, ST
VEL-AV0M03-NKRX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, NEUTRIK

VEL-AV0M03-NKTX	VELOCITY 3 A/V+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI MODE, TX, NEUTRIK
VOP-M04	VELOCITY 3 AV+ optics option for TX or RX, MULTI MODE, DUAL FIBER, 50M, or 350M or 1000M, LC or NEUTIK LC
VOP-M01	VELOCITY 3 AV+ optics option for TX or RX, MULTI MODE, DUAL FIBER, 50M or 350M or 1000M, SC or ST
VEL-AN0S03-SCRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, SC/APC
VEL-AN0S03-SCTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE. TX, SC/APC
VEL-AN0S03-NKRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, NEUTRIK LC
VEL-AN0S03-NKTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE. TX, NEUTRIK LC
VOP-S05	VELOCITY 3 A/N+ optics option for TX or RX, SINGLE MODE, DUAL FIBER, 10KM, SC/APC
VOP-S11	VELOCITY 3 A/N+ optics option for TX or RX, SINGLE MODE, DUAL FIBER, 10KM, NEUTRIK LC
VEL-AN0M03-LCRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, LC
VEL-AN0M03-LCTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, LC
VEL-AN0M03-SCRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, SC
VEL-AN0M03-SCTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, SC
VEL-AN0M03-STRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, ST
VEL-AN0M03-STTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, ST
VEL-AN0M03-NKRX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, NEUTRIK
VEL-AN0M03-NKTX	VELOCITY 3 A/N+ DVI VIDEO EXTENDER, SINGLE LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, NEUTRIK
VOP-M04	VELOCITY 3 A/N+ optics option for TX or RX, MULTI MODE, DUAL FIBER, 50M, or 350M or 1000M, LC or NEUTIK LC
VOP-M01	VELOCITY 3 A/N+ optics option for TX or RX, MULTI MODE, DUAL FIBER, 50M or 350M or 1000M, SC or ST
VEL-000M06-LCRX	VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, LC
VEL-000M06-LCTX	VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, LC
VEL-000M06-SCRX	VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, SC
VEL-000M06-SCTX	VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, SC
VEL-000M06-STRX	VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, ST
VEL-000M06-STTX	VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, ST
VEL-000M63-LCRX	3-in-1 VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, LC

VEL-000M63-LCTX	3-in-1 VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, LC
VEL-000M63-SCRX	3-in-1 VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, SC
VEL-000M63-SCTX	3-in-1 VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, SC
VEL-000M63-STRX	3-in-1 VELOCITY 6 DVI VIDEO EXTENDER, DUAL LINK DVI AUX DUAL DVI OUTPUT, DDC, MULTI-MODE, RX, ST
VEL-000M63-STTX	3-in-1 VELOCITY 6, DVI VIDEO EXTENDER, LOCAL DUAL DVI PORT, DDC, MULTI-MODE, TX, ST
VEL-AV0S06-SCRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DUAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, SC/APC
VEL-AV0S06-SCTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DUAL DVI PORT, DDC, SERIAL, AUDIO, SINGLE MODE, TX, SC/APC
VEL-AV0S06-NKRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DUAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE MODE, RX, NEUTRIK LC
VEL-AV0S06-NKTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DUAL DVI PORT, DDC, SERIAL, AUDIO, SINGLE MODE, TX, NEUTRIK LC
VOP-S08	VELOCITY 6 AV+ optics option for TX or RX, SINGLE MODE, 3 FIBERS, 10KM, SC/APC
VOP-S12	VELOCITY 6 AV+ optics option for TX or RX, SINGLE MODE, 3 FIBERS, 10KM, NEURTIK LC/APC
VEL-AV0M06-LCRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, LC
VEL-AV0M06-LCTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, LC
VEL-AV0M06-SCRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, SC
VEL-AV0M06-SCTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, SC
VEL-AV0M06-STRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, ST
VEL-AV0M06-STTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, ST
VEL-AV0M06-NKRX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, NEUTRIK
VEL-AV0M06-NKTX	VELOCITY 6 A/V+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, NEUTRIK
VOP-M05	VELOCITY 6 AV+ optics option for TX or RX, MULTIMODE, 3 FIBERS, 50M, or 350M or 1000M, LC or NEUTRIK LC
VOP-M02	VELOCITY 6 AV+ optics option for TX or RX, MULTIMODE, 3 FIBERS, 50M or 350M or 1000M, SC or ST
VEL-AN0S06-SCRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DUAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE-MODE, RX, SC/APC
VEL-AN0S06-SCTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DUAL DVI PORT, DDC, SERIAL, AUDIO, SINGLE-MODE, TX, SC/APC
VEL-AN0S06-NKRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DUAL DVI OUTPUT, DDC, SERIAL, AUDIO, SINGLE-MODE, RX, NEUTRIK LC
VEL-AN0S06-NKTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DUAL DVI PORT, DDC, SERIAL, AUDIO, SINGLE-MODE, TX, NEUTRIK LC
VOP-S08	VELOCITY 6 A/N+ optics option for TX or RX, SINGLE-MODE, 3 FIBERS, 10KM, SC/APC
VOP-S12	VELOCITY 6 A/N+ optics option for TX or RX, SINGLE-MODE, 3 FIBERS, 10KM, NEURTIK LC/APC

VEL-AN0M06-LCRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, LC
VEL-AN0M06-LCTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, LC
VEL-AN0M06-SCRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, SC
VEL-AN0M06-SCTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, SC
VEL-AN0M06-STRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, ST
VEL-AN0M06-STTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, ST
VEL-AN0M06-NKRX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, AUX DVI OUTPUT, DDC, SERIAL, AUDIO, MULTI-MODE, RX, NEUTRIK
VEL-AN0M06-NKTX	VELOCITY 6 A/N+ DVI VIDEO EXTENDER, DUAL LINK DVI, LOCAL DVI PORT, DDC, SERIAL, AUDIO, MULTI-MODE, TX, NEUTRIK
VOP-M05	VELOCITY 6 A/N+ optics option for TX or RX, MULTI-MODE, 3 FIBERS, 50M, or 350M or 1000M, LC or NEUTRIK LC
VOP-M02	VELOCITY 6 A/N+ optics option for TX or RX, MULTI-MODE, 3 FIBERS, 50M or 350M or 1000M, SC or ST

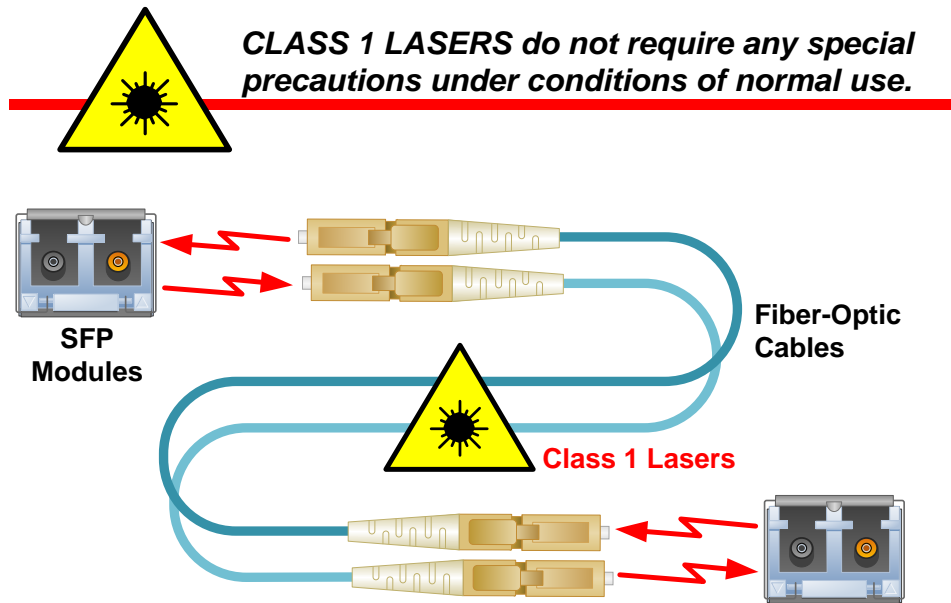


Thinklogical Innovation Leads the Way.
Performance • Security • Continuous Operation • Ease of Integration

www.thinklogical.com

1.4. Laser Information

The DVI Extender models **Velocity-3, -6, -33** and **-63** are designed and identified as **Class 1 LASER** products.



2. System Features

2.1. General System Features

Thinklogical's VelocityDVI Extender Systems® are designed for high resolution video extension applications, such as remote projection centers, theaters and assembly halls, and for secure computer installations. The ability to remotely locate the CPU away from the monitor allows more control of your computer environment. It is now possible to position your monitor or projector in any setting from office to lecture hall to boardroom while keeping the computer secure in a remote, controlled location.

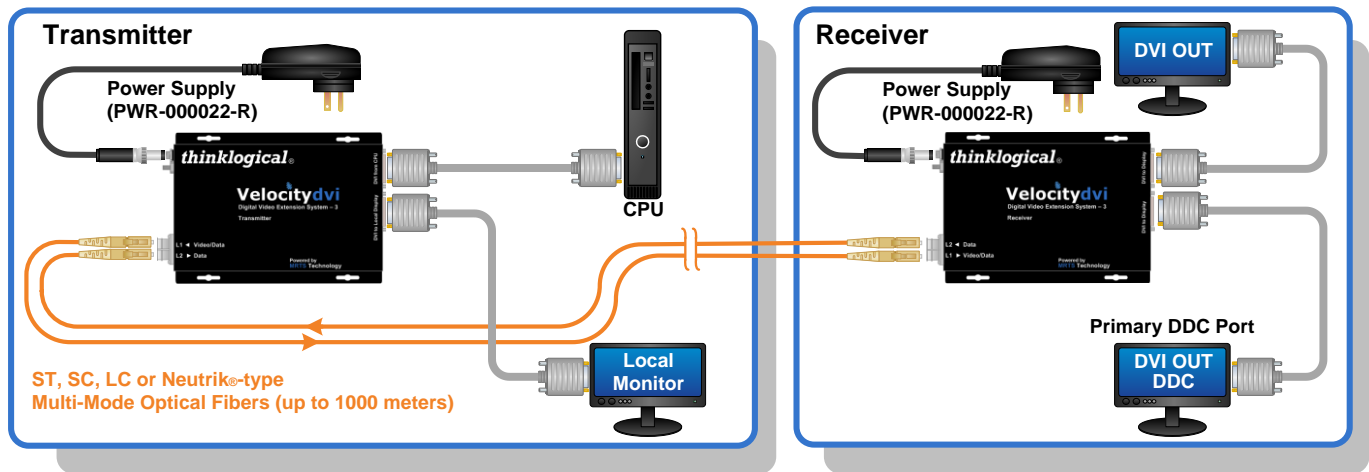
Each DVI Extender system includes the following features:

- Supports one Single-Link (System-3) or one Dual-Link (System-6) video signal.
- Supports three Single-Link (System-33) or three Dual-Link (System-63) video signals.
- DDC2B compliant
- Extends DVI up to 1000 meters (3280 feet) using OM4 multi-mode fiber
- Built-in Status LEDs
- Signal transmission via fiber optic cable; no RF interference
- Flawless image quality with no frame dropping
- Class 1 laser product
- Simple plug and play
- Small form factor

2.2. Basic operation

The system transmits video and data information from the Transmitter to the Receiver through fiber L1. The data return path from the Receiver to the Transmitter is fiber L2.

Velocitydvi Digital Video Extender-3 Installation Overview



VelocityDVI Extender Overview

2.3 Single Fiber operation, System-3

The unit will operate with a single fiber from the TX to the RX. In this mode of operation the TX can transmit video and status LED information to the RX. The RX cannot send any information to the TX. In this mode the RX buttons are inoperative. Also, DDC information can only be gathered from the TX local port or the Thinklogical default EDID table.

2.4 Dual Fiber Operation, System-3

In this mode video information is transmitted from the TX to the RX over fiber L1. Fiber L2 is used as a data return path from the RX to the TX. Providing a back channel from the RX to the TX allows the RX to modify DDC configuration via the Acquire and Select buttons and allows the RX to send DDC information to the TX. DDC information exchange allows the PC to gather information about the connected monitor to determine the display properties.

2.5 Fiber Operation, System-6

System-6 operates in Dual-fiber or Triple-fiber operation. In dual-fiber operation, fibers L1 and L3 are used to transmit data and video from the TX to the RX and in three-fiber mode, fiber L2 transmits data from the RX back to the TX.

2. 6. Technical Specifications (Systems-3, -6, -33 and -63)

Technical Specifications (Systems-3, -6, -33, -63)	
Video Resolution	Vel-3: Any single-link DVI resolution Vel-6: Any single-link or dual-link DVI resolution
Panel Connections	Transmitter Video DVI-D (2) Power 2.5 mm power connector Fiber Connections ST, SC, LC or Neutrik® Receiver Video DVI-D (2) Power 2.5 mm power connector Fiber Connections ST, SC, LC or Neutrik®
Operating Temperature and Humidity	0-50 °C (32-122° F, 5-95% RH, non-condensing)
Storage Temperature	-20 to 70° C (-4 to 158° F)
Indicators	<i>LEDs on each DVI Extender unit:</i> Front: Power, Connection Status Rear: DDC Modes - Local, Remote
Weight	<1 lb. (0.45 kg) each (Vel-3, Vel-6) 4 lb. (1.81 kg) each (Vel-33, Vel-63)
Dimensions	See page 30.
Shipping Weight	4 lb. (1.81 kg) pair (Vel-3, Vel-6) 13 lb. (5.89 kg) pair (Vel-33, Vel-63)
Optical Cable	Sys-3 = 2 fibers, Sys-33 = 6 fibers Sys-6 = 3 fibers, Sys-63 = 9 fibers (available, not supplied)
Optical Distance	Up to 350 meters using 50/125um, type OM2 Up to 1000 meters using 50/125um, type OM4 Up to 10/40/80 kilometers using 9/125um (Optics available)
Supply Voltage	+5.0 VDC (Vel-3, Vel-6) 90-264 VAC (Vel-33, Vel-63)
Power Consumption	6 watts per unit (Vel-3, Vel-6) 20 watts per unit (Vel-33, Vel-63)
DC Adapter	AC/DC adapter, universal input 90-264 VAC (supplied, Vel-3, -6)
DB9 to RJ45 Adapters	<i>With AV+ models only:</i> DB9M to RJ45 (ADP-000019-R) DB9F to RJ45 (ADP-000025-R)
Copper Video Cables	CBL000009-002MR Single-link DVI-D Male to Male, 2 meters <i>1 each, Vel-3 3 each, Vel-33</i> CBL000023-002MR Dual-link DVI-D Male to Male, 2 meters <i>1 each, Vel-6 3 each, Vel-63</i>
Compliance	Approvals for US, Canada, and European Union
Warranty	12 months from date of shipment. <i>Extended warranties available at time of purchase.</i>

2.7. Velocity Unbalanced Audio Specifications

VELOCITY UNBALANCED AUDIO SPECIFICATIONS

AUDIO SAMPLING RATE: 46.875kHz

TRANSMITTER:

Line In Impedance: 10kΩ

Line In (max): 2.5V p/p (0.884Vrms, 1.15dBu)

Mic Out Impedance: 300Ω

Mic Out (max): 0.45V p/p (0.159Vrms, -13.75dBu)

RECEIVER:

Line Out Impedance: 560Ω

Line Out (max) into 1K ohms: 3V p/p (1.06Vrms, 2.72dBu)

Mic In Impedance: 5kΩ

Mic In (max) : 0.24V p/p (0.085Vrms, -19.2dBu)

3. Installing DVI Extenders

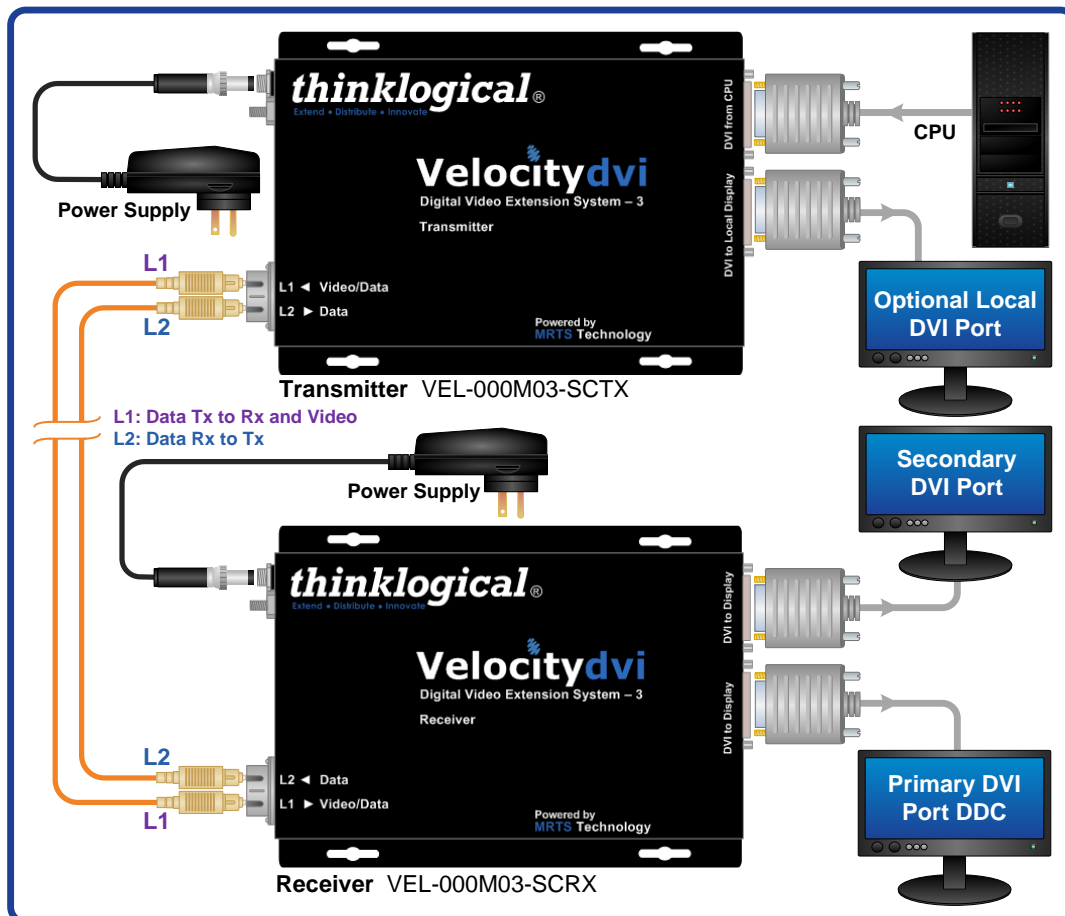
All physical connections to these products use industry-standard connectors.

It is recommended that you securely mount each VelocityDVI chassis before installing the cabling and power sources. Please refer to the following appendices at the back of this manual:

Appendix A: Installation Overview on pages 39-44

Appendix B: DVI Extender Mounting on page 45

Appendix C: RJ-45 Adapter Pin-outs on page 46



3.1. AC Power

Two wall pack AC/DC adapters (PWR-000022-R) are included with the VelocityDVI-3 and VelocityDVI-6 models. The AC wall pack has a universal power rating of 100-240VAC, 50-60Hz and also has interchangeable wall plug adapters for various international AC power receptacles (below).



- ✓ +5VDC
- ✓ Continuous Short Circuit Protection
- ✓ Over Voltage Protection
- ✓ Conductive EMI Meets CISPR/FCC Class B high efficiency, 75% Typical
- ✓ International Receptacle Adapters

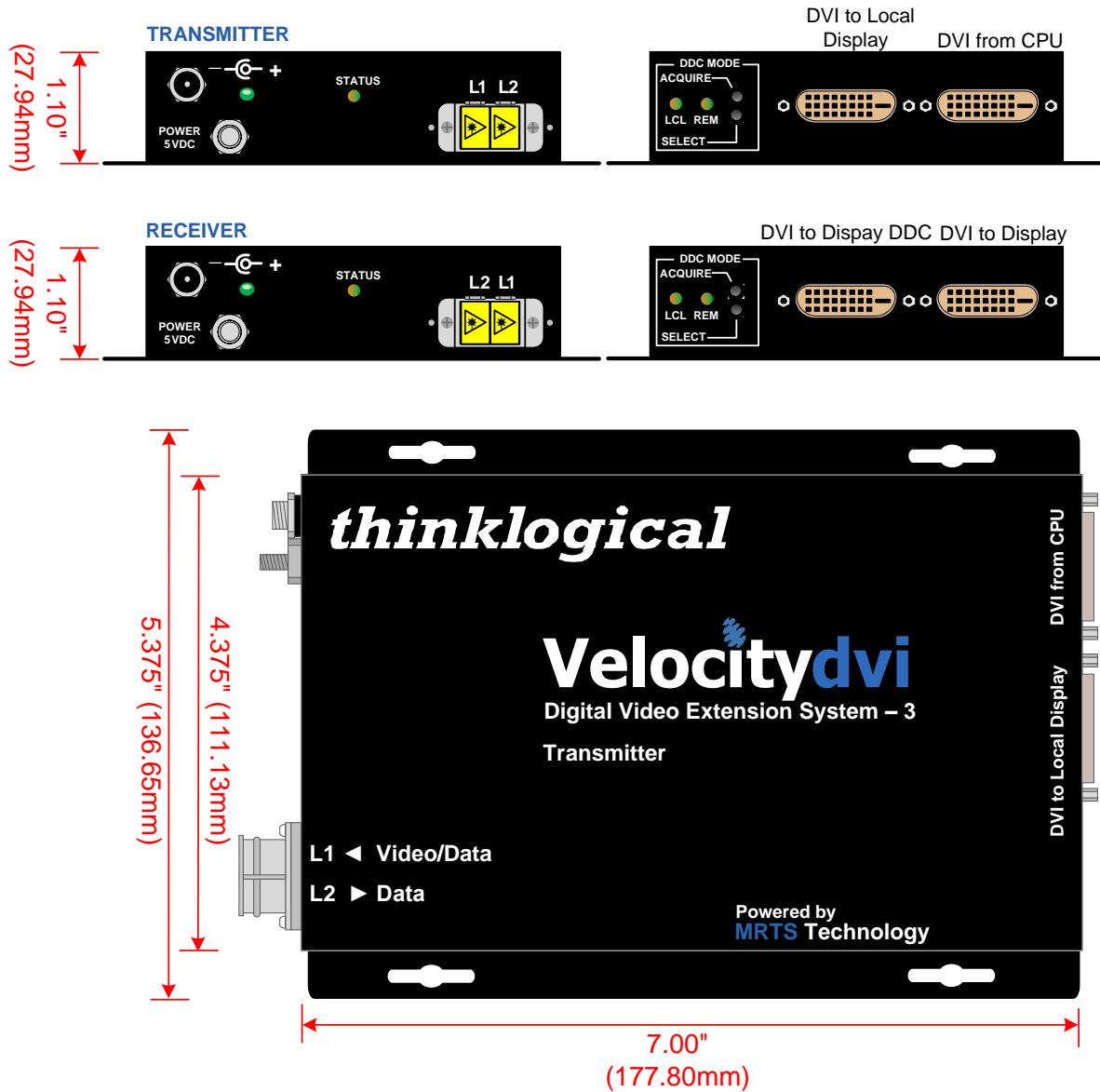


International Receptacle Adapters for the PWR-000022-R +5VDC Power Supply

3.2. The VelocityDVI-3, -6, -33 and -63 Chassis Configurations

The models depicted on pages 14-30 provide an overview of the various dimensions, connectors and features available on Thinklogical's VelocityDVI-3 and -6 chassis. The VelocityDVI-33 and -63 back panels are shown on page 30.

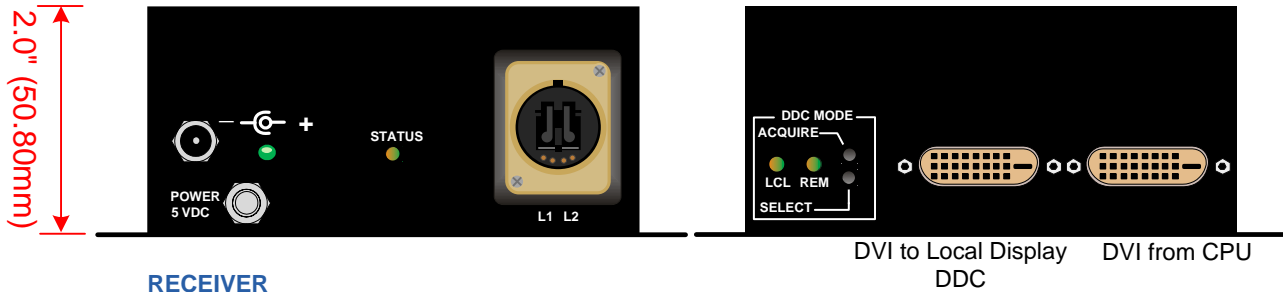
VelocityDVI-3



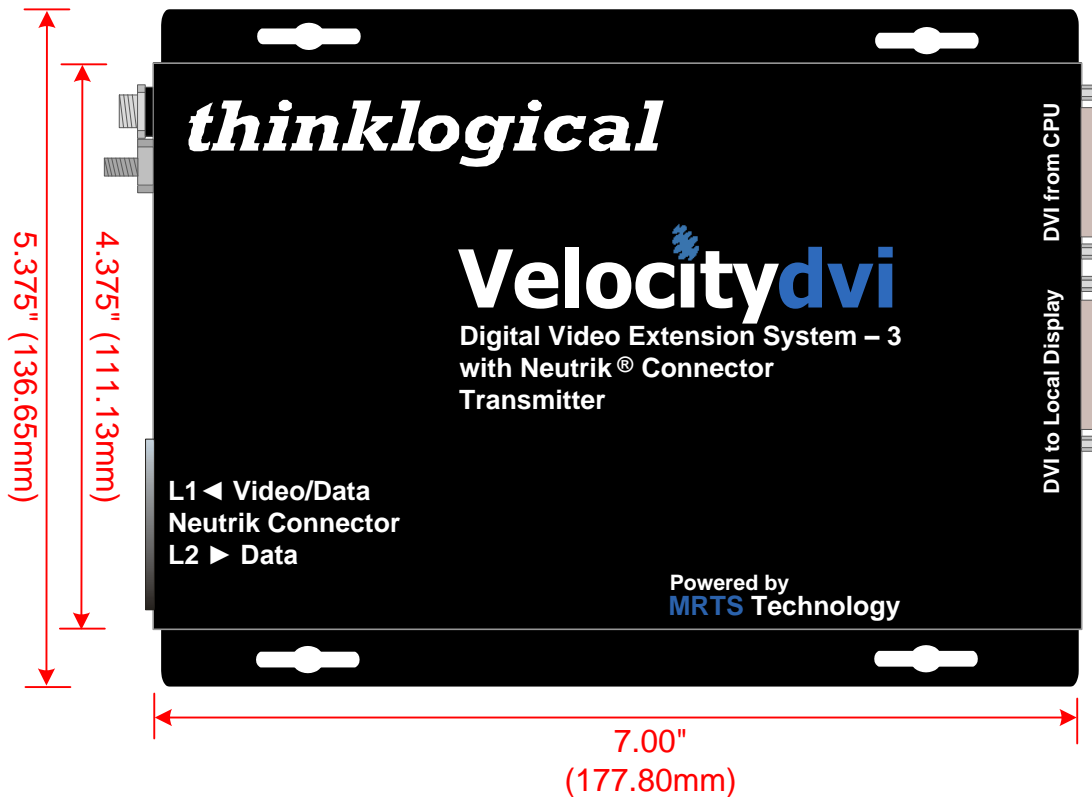
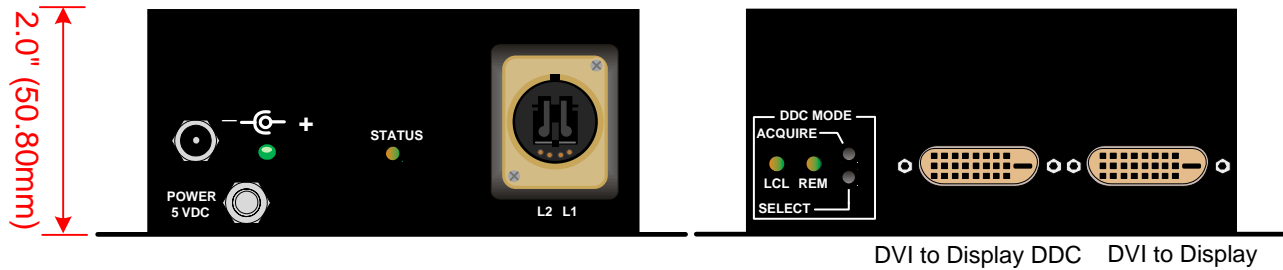
Physical dimensions are the same for both the Transmitter and Receiver chassis.

VelocityDVI-3 with Neutrik® OpticalCon DUO Connector

TRANSMITTER

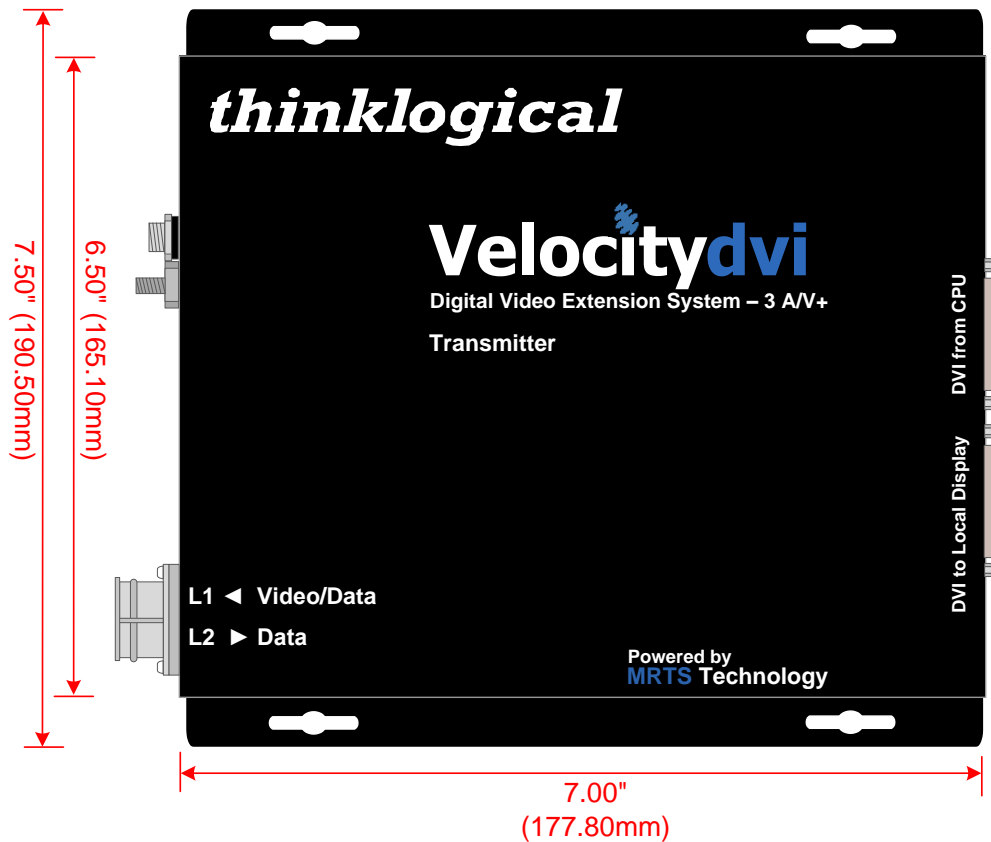
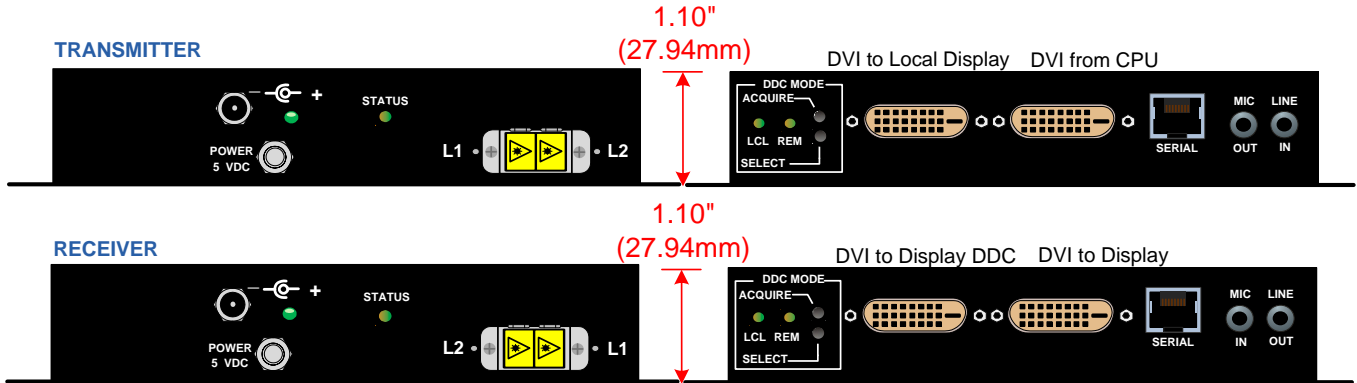


RECEIVER



Physical dimensions are the same for both the Transmitter and Receiver chassis.

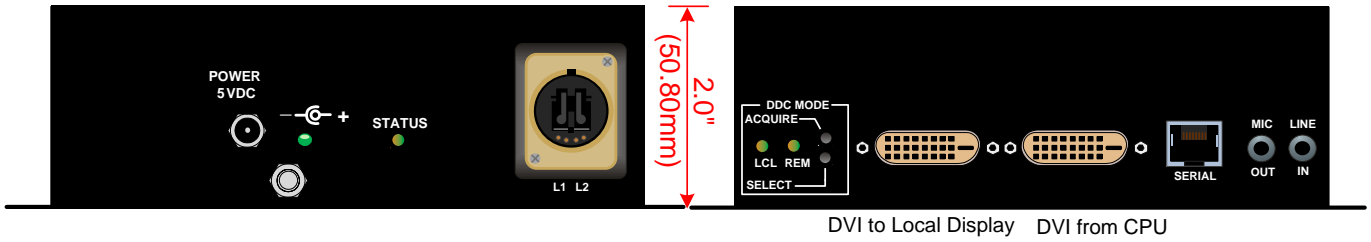
VelocityDVI-3 AV+



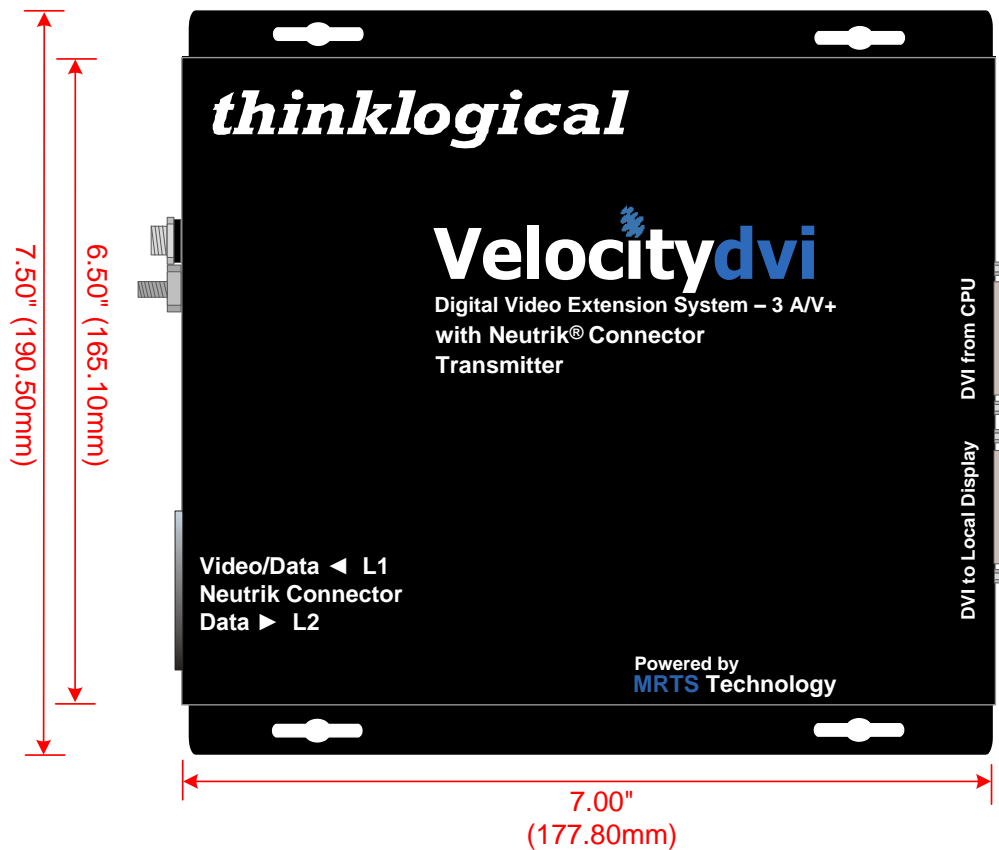
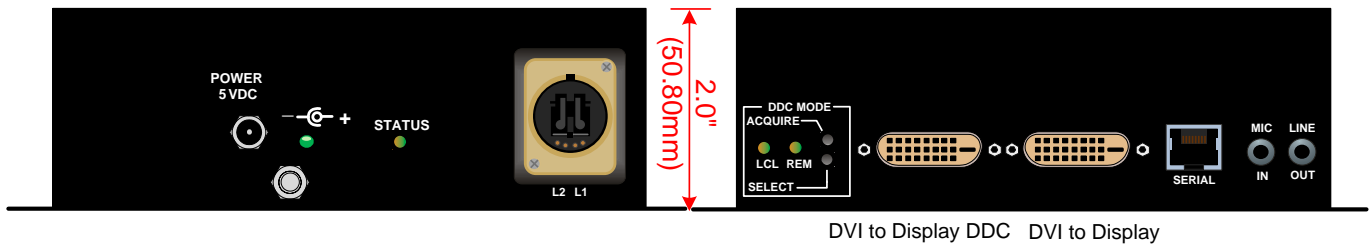
Physical dimensions are the same for both the Transmitter and Receiver chassis.

**VelocityDVI-3 A/V+ with Neutrik®
OpticalCon DUO Connector**

TRANSMITTER

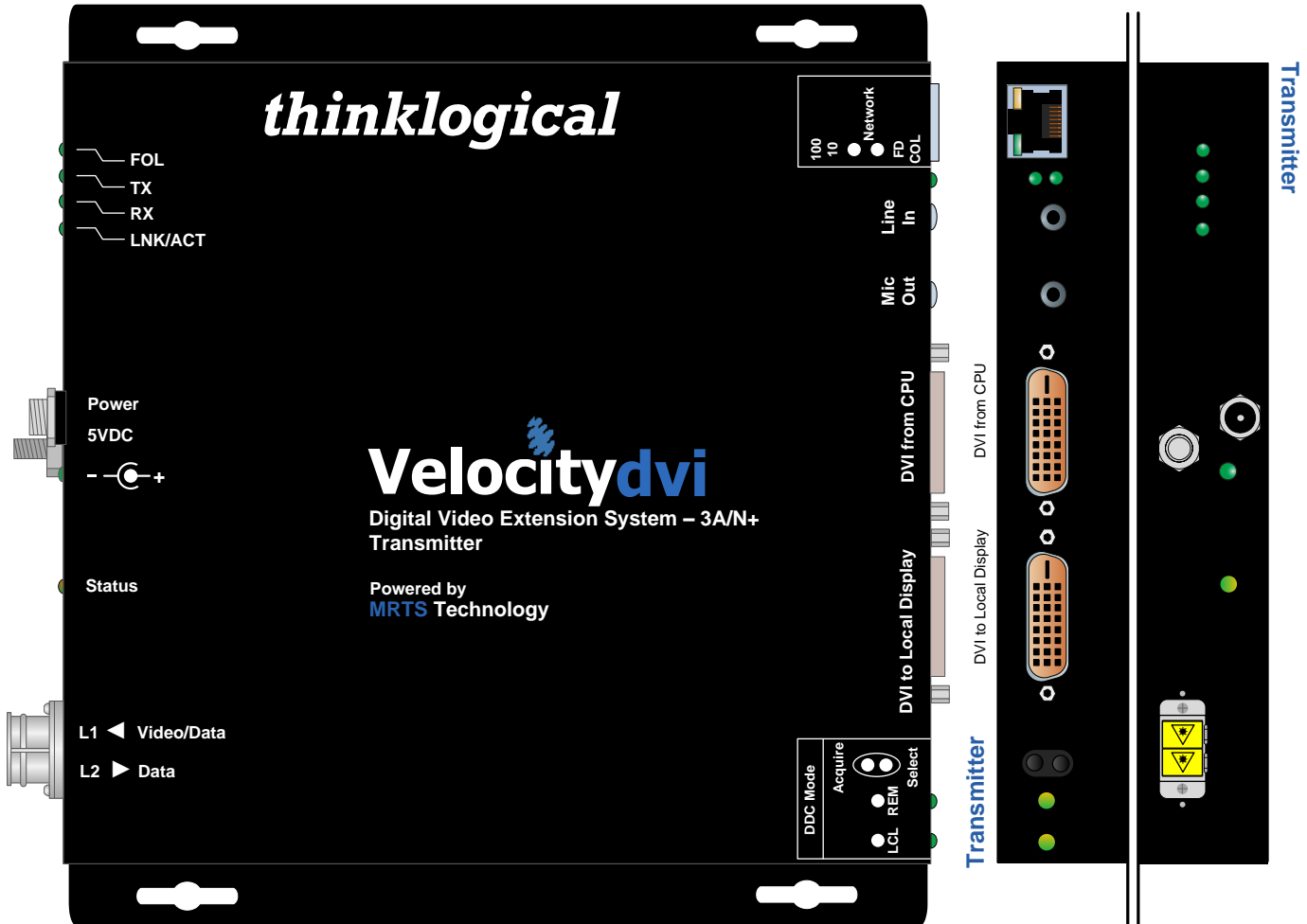


RECEIVER



Physical dimensions are the same for both the Transmitter and Receiver chassis.

VelocityDVI-3 A/N+ Transmitter (Audio Network)



7.00" (177.80mm) L x 7.49" (190.25mm) W x 1.10" (27.94mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is ON when link is established. **Flashes** when actively transferring data.

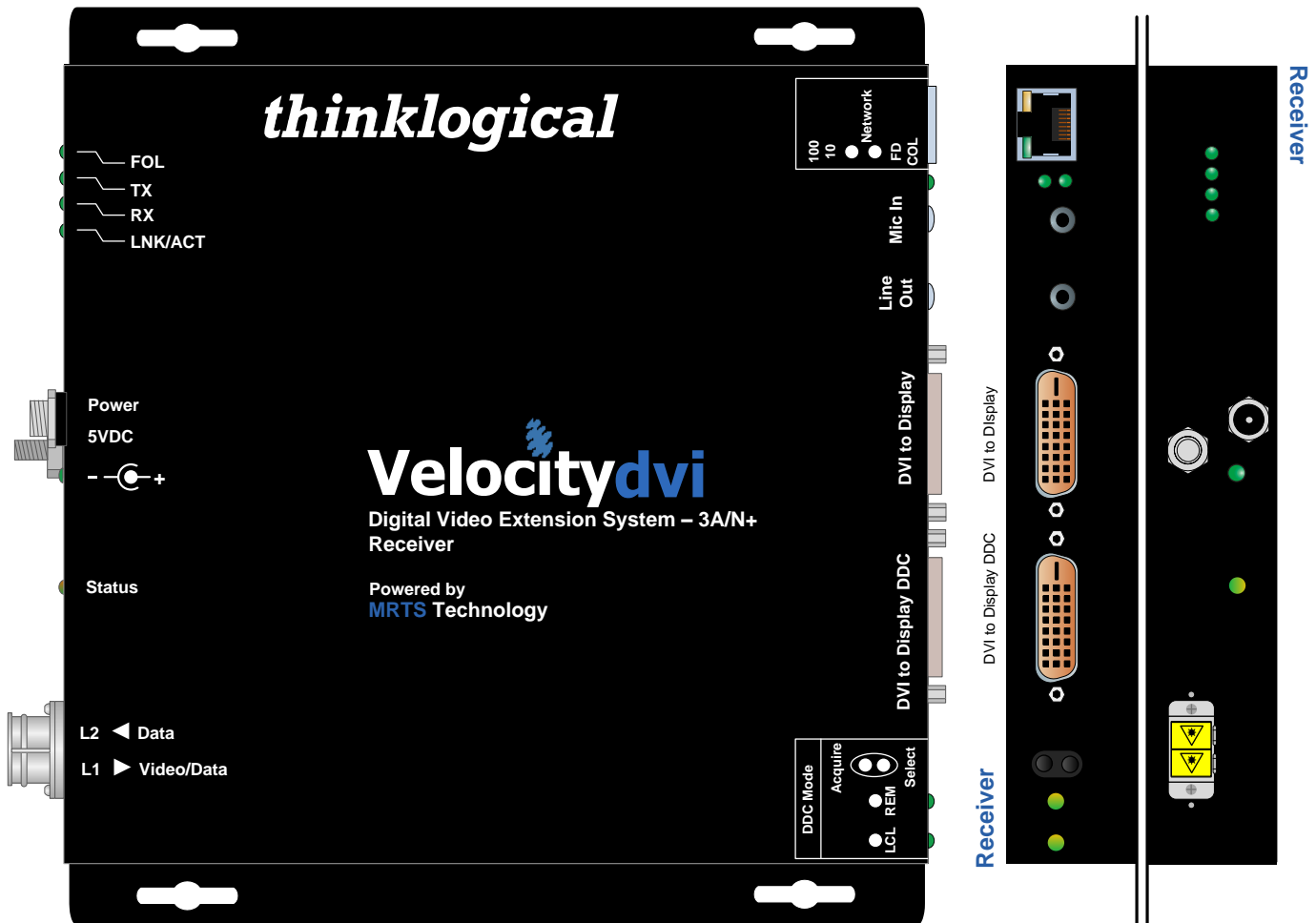
Rear Panel Network Status LEDs:

10/100:
 When **lit**, speed of link is 100 Mb/sec.
 When **off**, speed of link is 10 Mb/sec.
FD/COL:
 When **lit**, indicates operation in Full Duplex.
 When **off**, indicates operation in Half Duplex.
 When **blinking**, indicates Collision.

On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

VelocityDVI-3 A/N+ Receiver (Audio Network)



7.00" (177.80mm) L x 7.49" (190.25mm) W x 1.10" (27.94mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is **ON** when link is established. **Flashes** when actively transferring data.

Rear Panel Network Status LEDs:

10/100:

When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.

FD/COL:

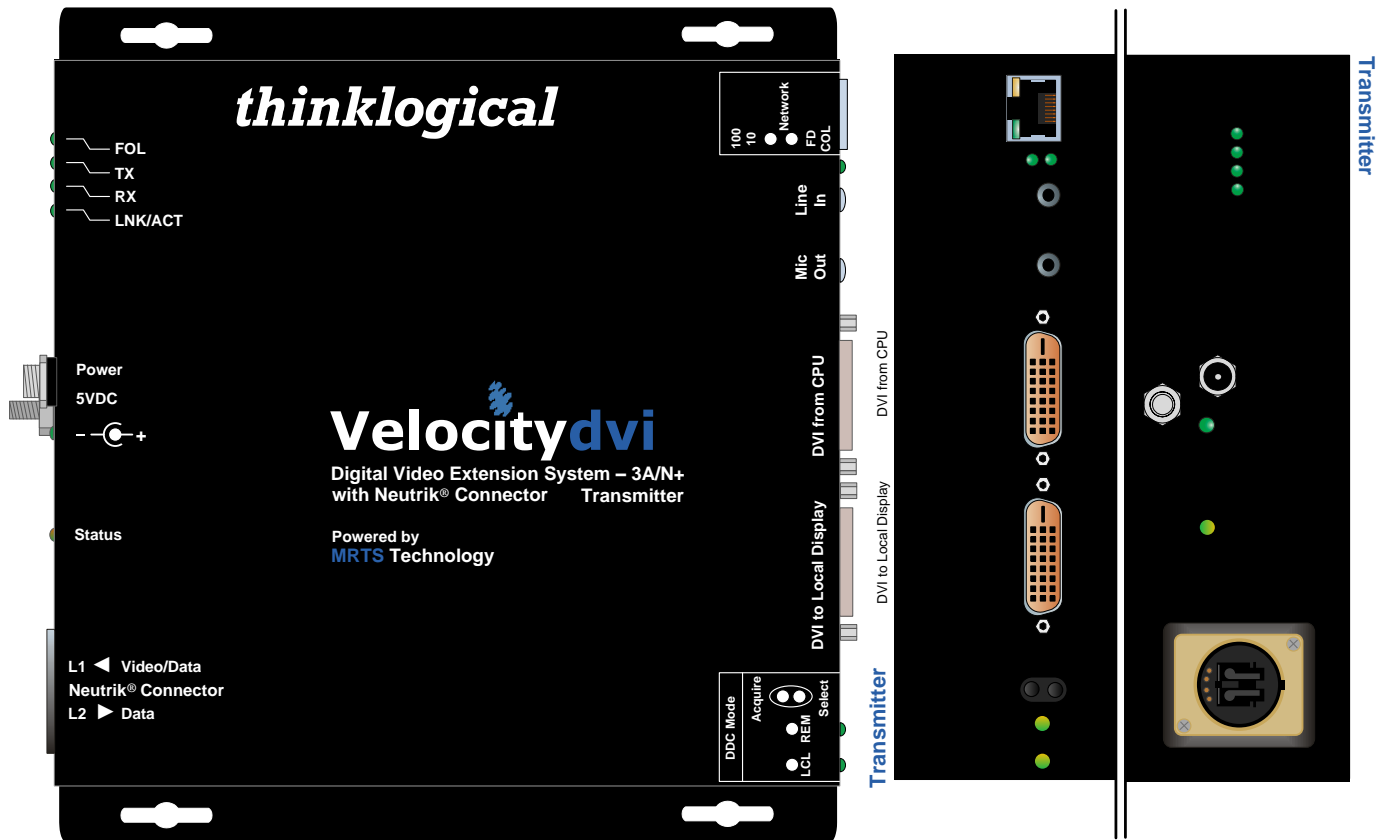
When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

On the RJ45 Connector:

Green LED = Link

Yellow LED (blinking) = Activity

VelocityDVI-3 A/N+ Transmitter with Neutrik® OpticalCon DUO Connector



7.00" (177.80mm) L x 7.49" (190.25mm) W x 2.00" (50.80mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is ON when link is established. **Flashes** when actively transferring data.

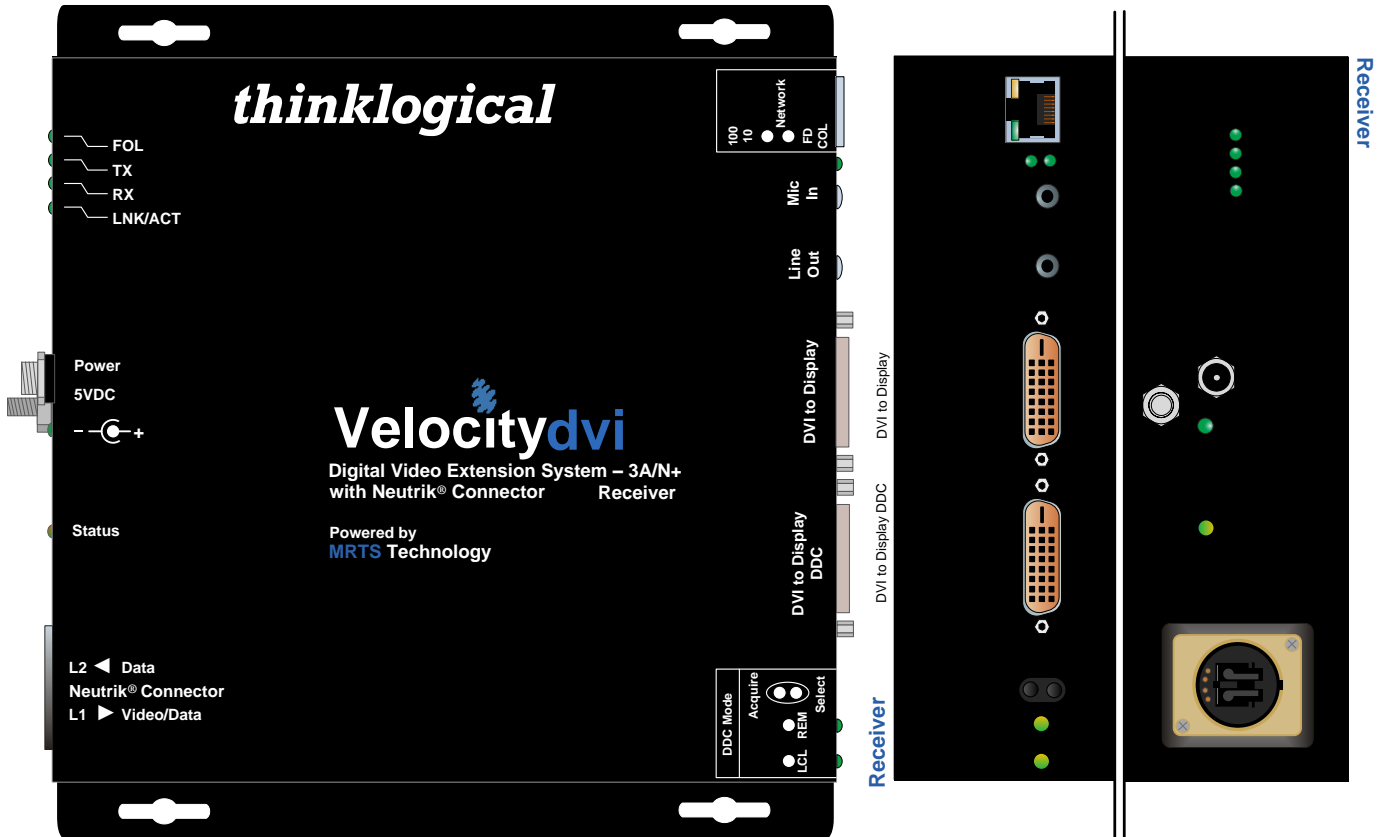
Rear Panel Network Status LEDs:

10/100:
 When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.
FD/COL:
 When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

VelocityDVI-3 A/N+ Receiver with Neutrik® OpticalCon DUO Connector



7.00" (177.80mm) L x 6.50" (165.10mm) W x 1.10" (27.94mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is ON when link is established. **Flashes** when actively transferring data.

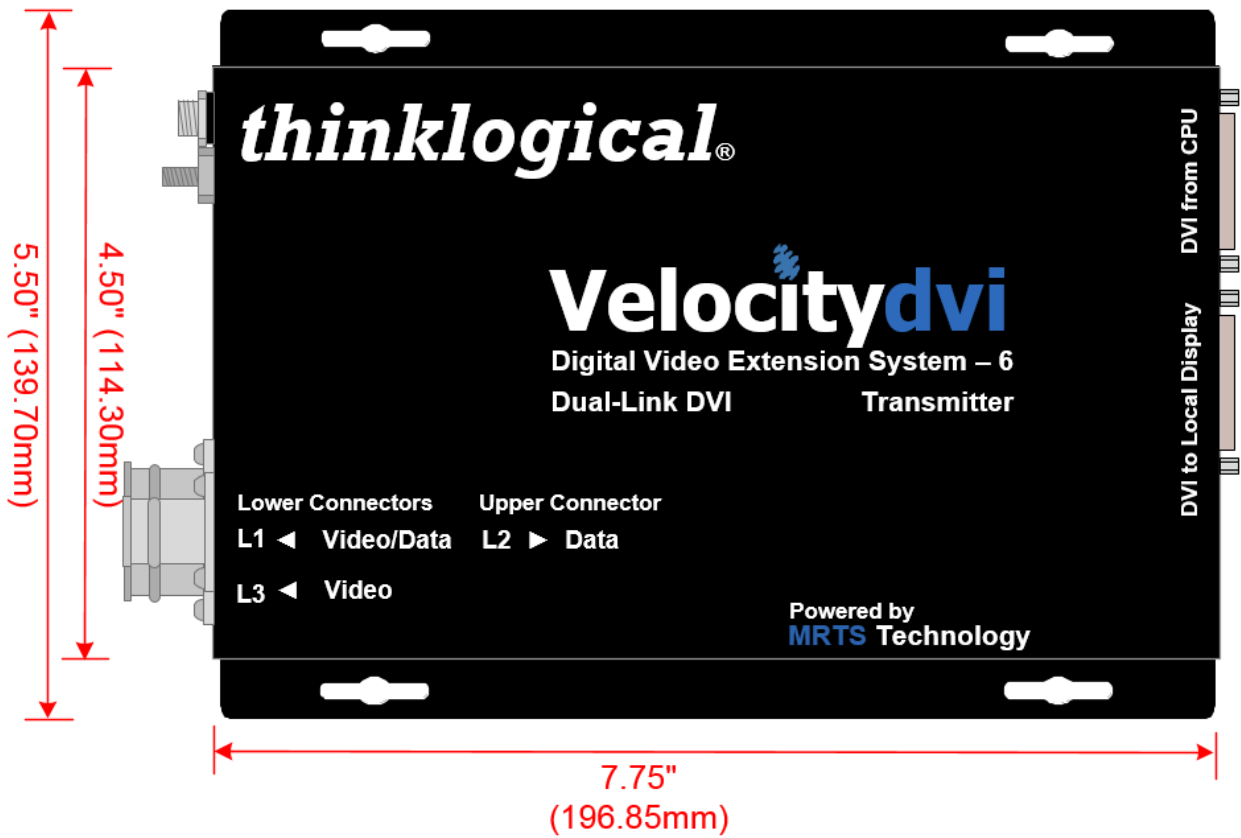
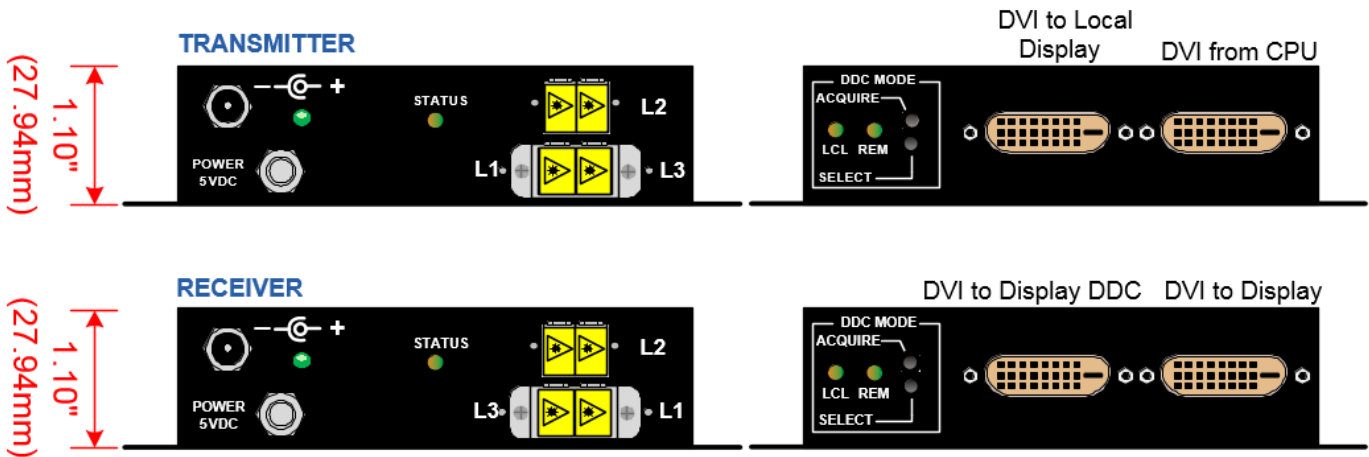
Rear Panel Network Status LEDs:

10/100:
 When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.
FD/COL:
 When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

On the RJ45 Connector:

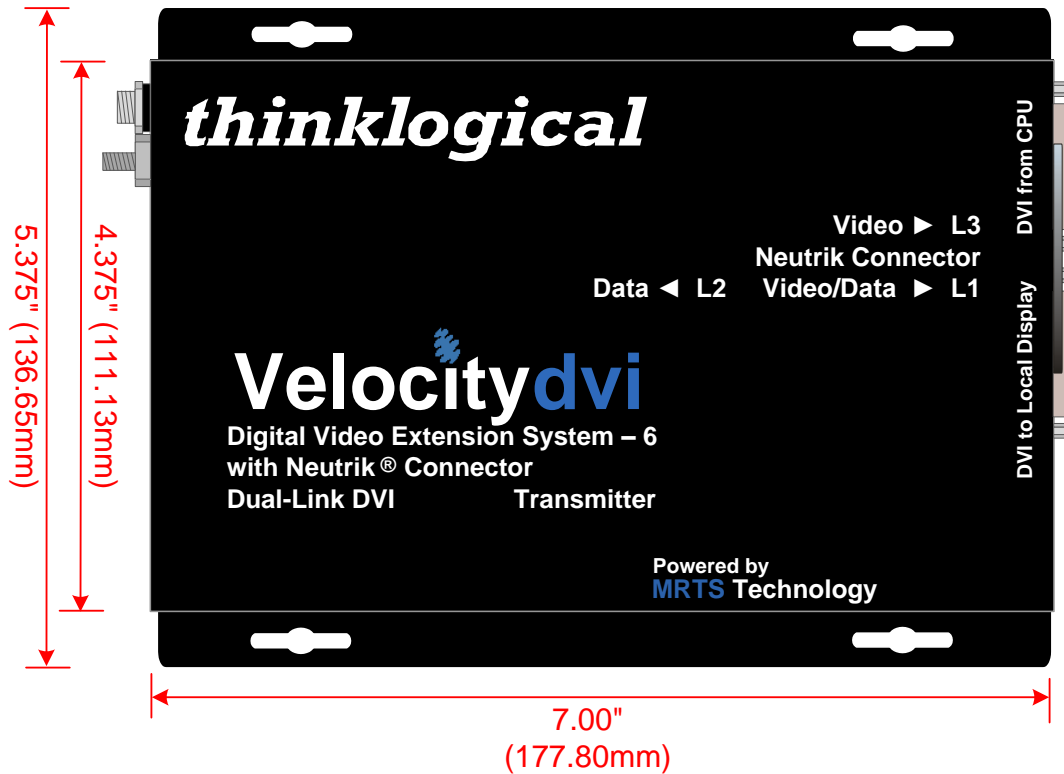
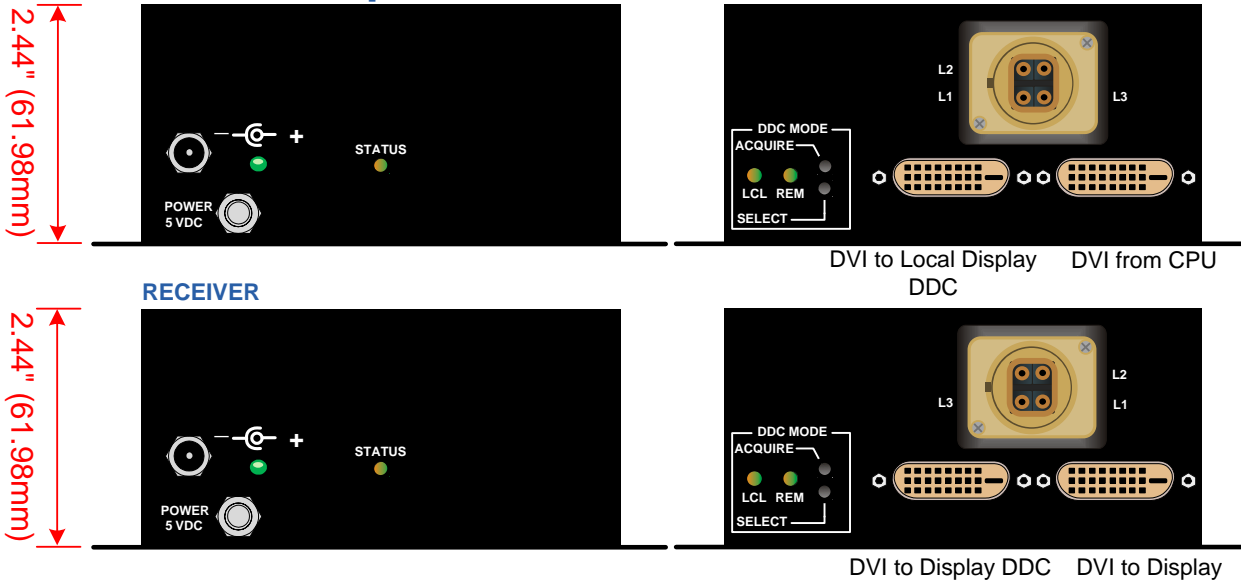
Green LED = Link
Yellow LED (blinking) = Activity

Velocity-6



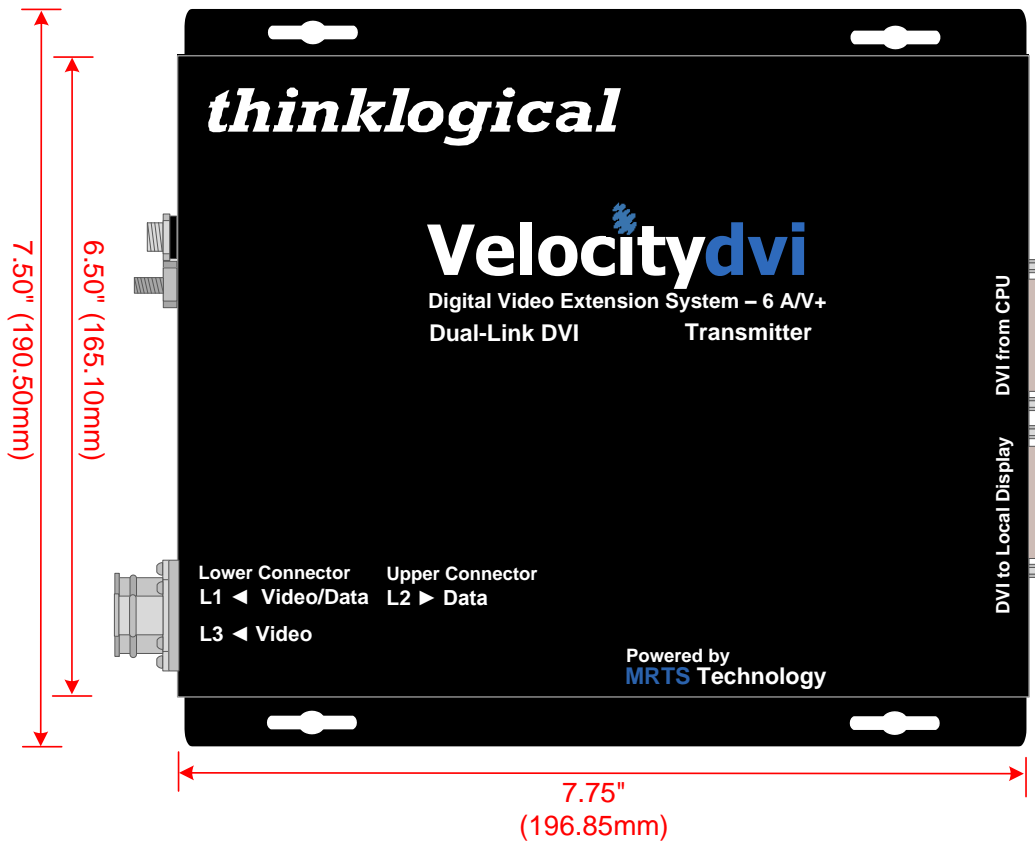
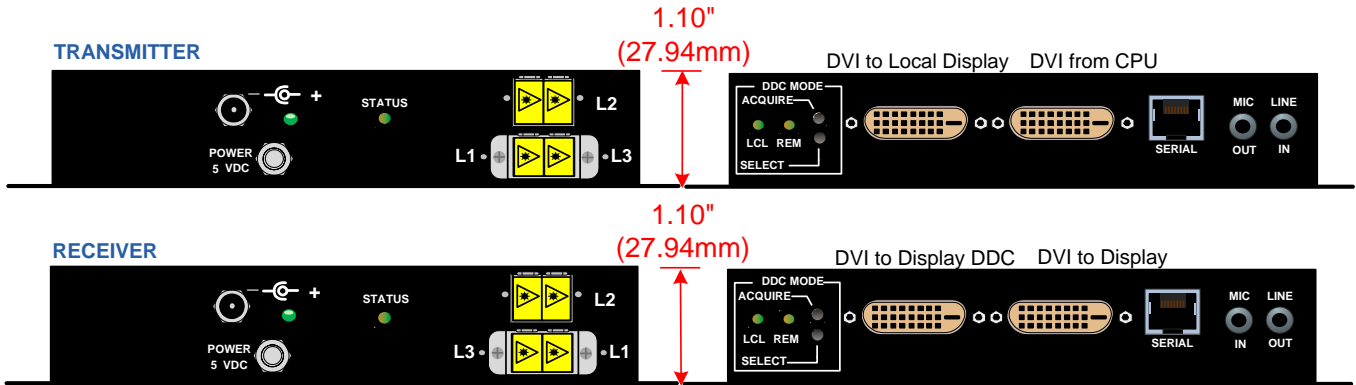
Physical dimensions are the same for both the Transmitter and Receiver chassis.

**VelocityDVI-6 with Neutrik®
OpticalCon QUAD Connector**



Physical dimensions are the same for both the Transmitter and Receiver chassis.

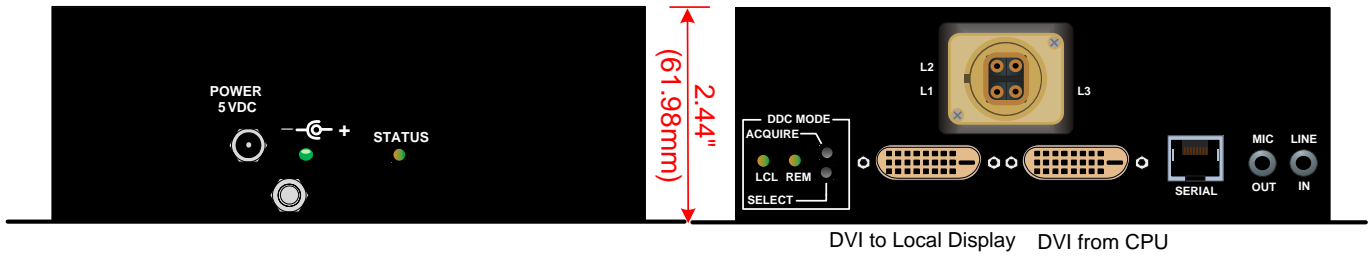
VelocityDVI-6 A/V+



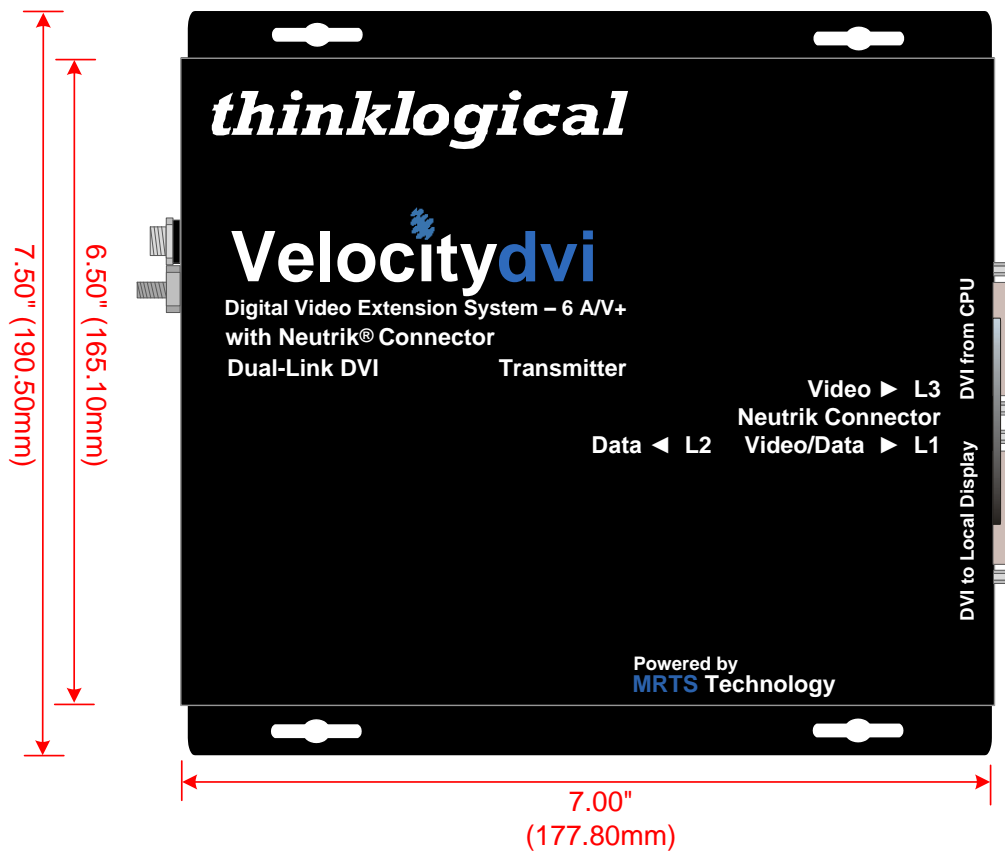
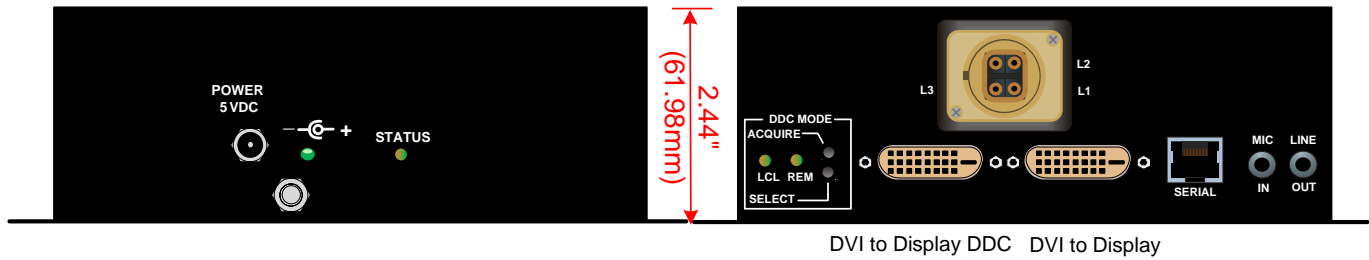
Physical dimensions are the same for both the Transmitter and Receiver chassis.

**VelocityDVI-6 A/V+ with Neutrik®
OpticalCon QUAD Connector**

TRANSMITTER

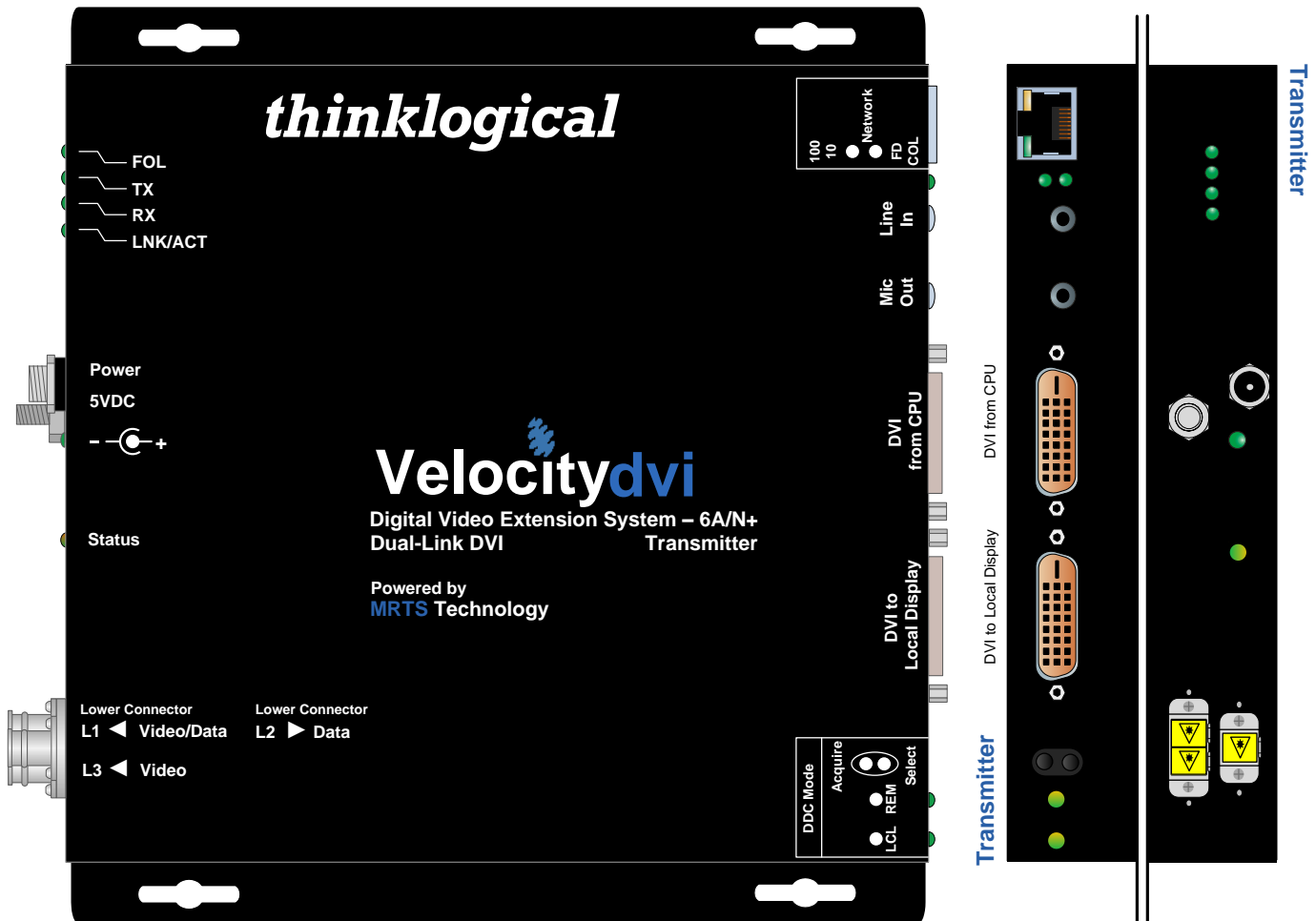


RECEIVER



Physical dimensions are the same for both the Transmitter and Receiver chassis.

VelocityDVI-6 A/N+ Transmitter



7.00" (177.80mm) L x 7.49" (190.25mm) W x 1.10" (27.94mm) H

Front Panel Network Status LEDs:

FOL is ON when **Fiber Optic Link** is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is **ON** when link is established. **Flashes** when actively transferring data.

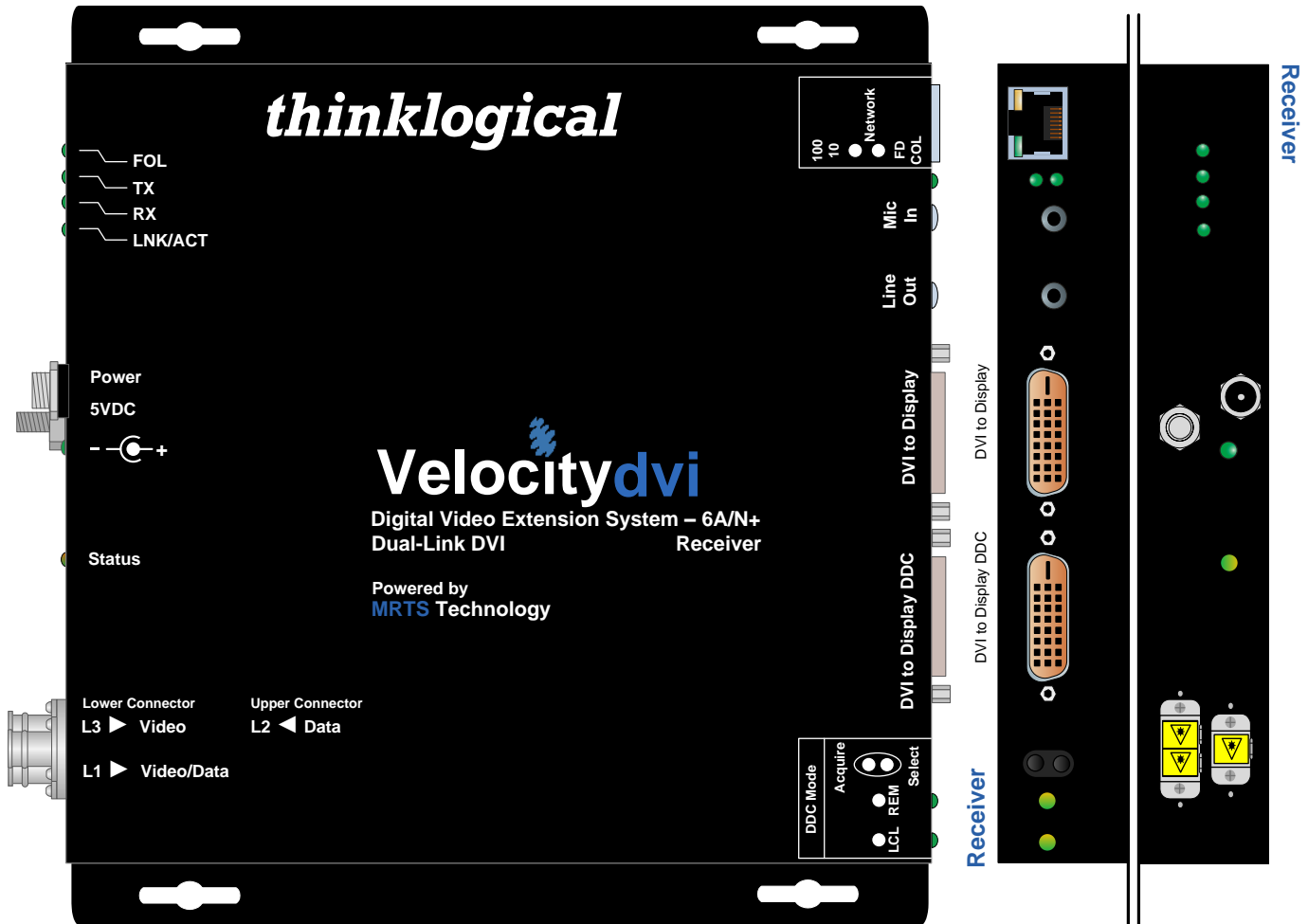
Rear Panel Network Status LEDs:

10/100:
 When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.
FD/COL:
 When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

VelocityDVI-6 A/N+ Receiver



7.00" (177.80mm) L x 7.49" (190.25mm) W x 1.10" (27.94mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is ON when link is established. **Flashes** when actively transferring data.

Rear Panel Network Status LEDs:

10/100:

When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.

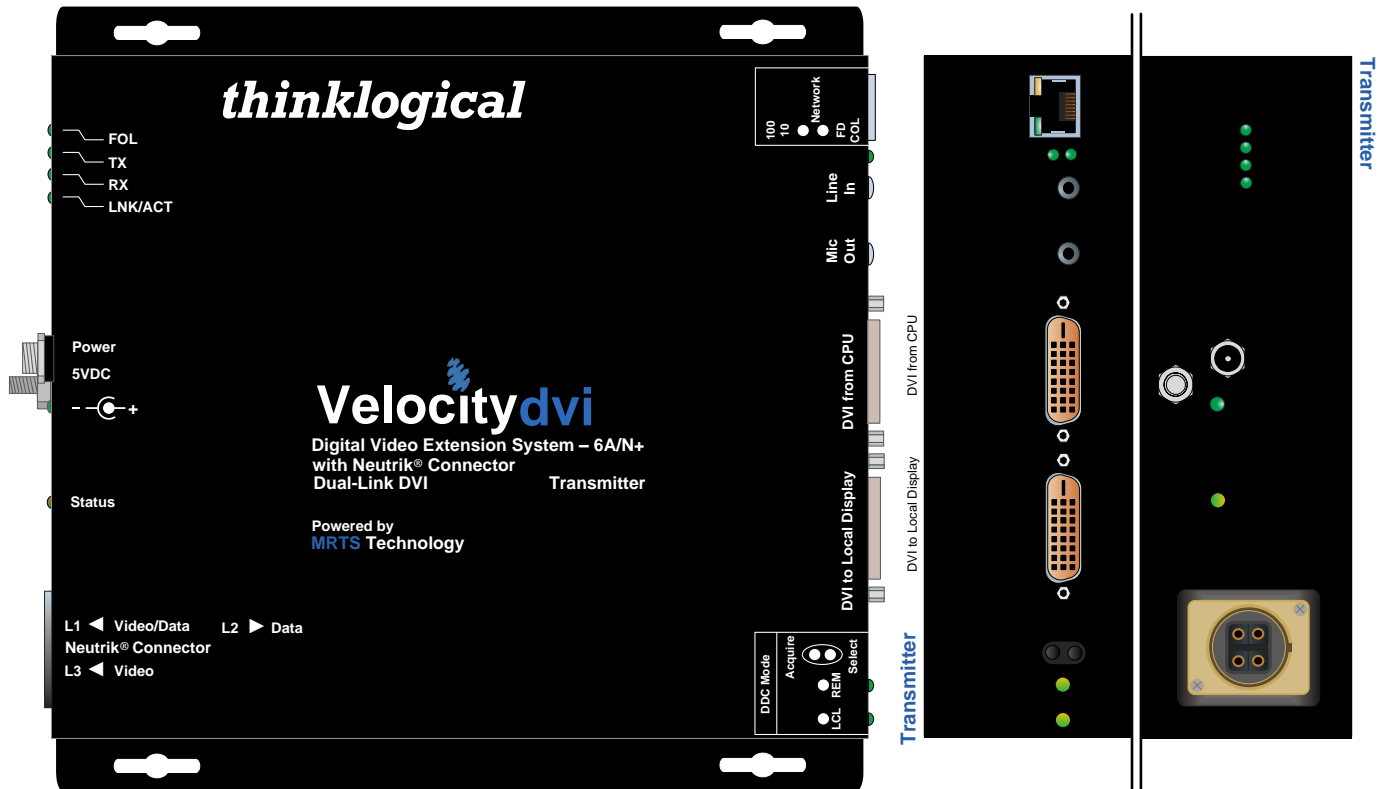
FD/COL:

When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

VelocityDVI-6 A/N+ Transmitter with Neutrik® QUAD OpticalCon Connector



7.75" (196.85mm) L x 7.49" (190.25mm) W x 2.00" (50.80mm) H

Front Panel Network Status LEDs:

FOL is ON when Fiber Optic Link is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is ON when link is established. Flashes when actively transferring data.

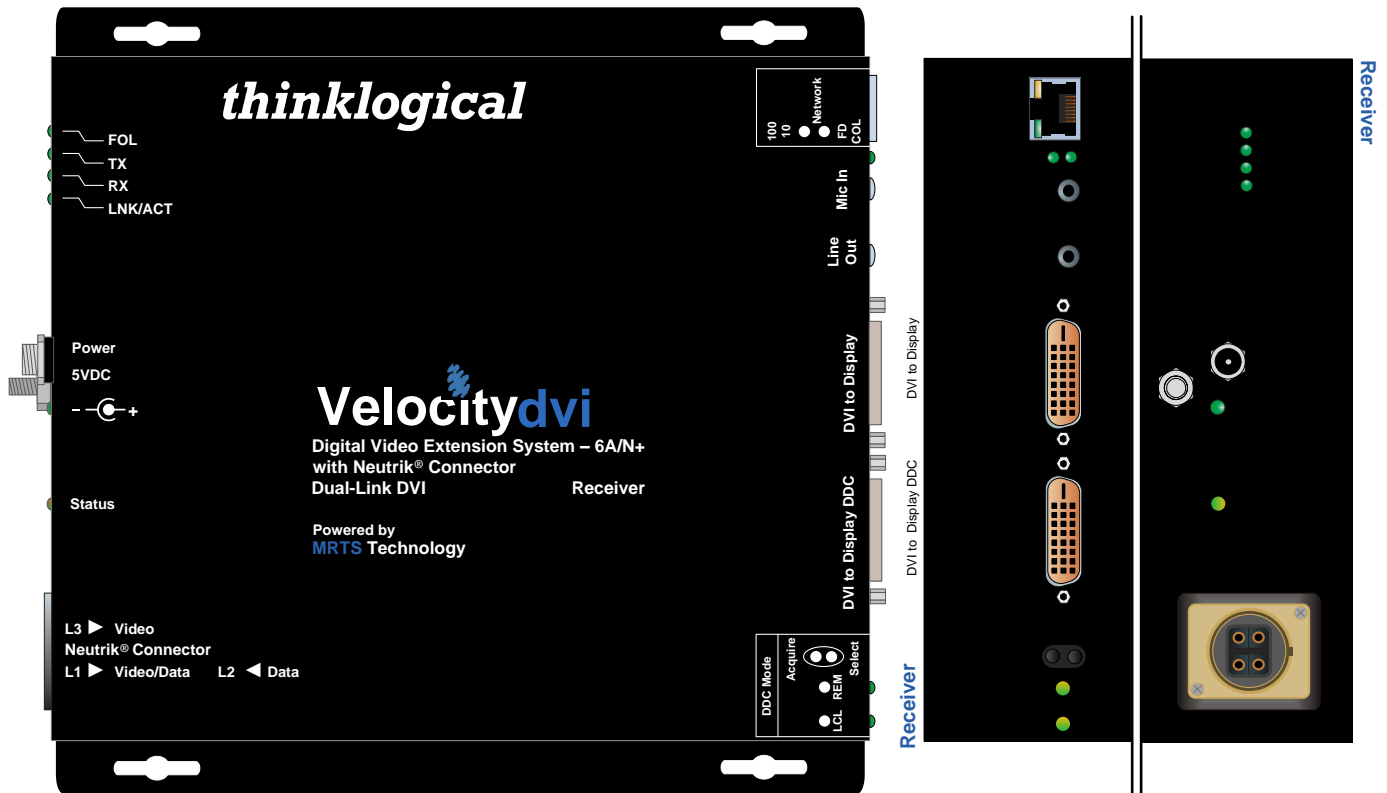
Rear Panel Network Status LEDs:

10/100:
 When *lit*, speed of link is **100 Mb/sec**.
 When *off*, speed of link is **10 Mb/sec**.
FD/COL:
 When *lit*, indicates operation in **Full Duplex**.
 When *off*, indicates operation in **Half Duplex**.
 When *blinking*, indicates **Collision**.

On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

Velocity-6 A/N+ Receiver with Neutrik® QUAD OpticalCon Connector



7.75" (196.85mm) L x 7.49" (190.25mm) W x 2.00" (50.80mm) H

Front Panel Network Status LEDs:

FOL is ON when **Fiber Optic Link** is OK.
TX is ON when data is transferring from TX to RX.
RX is ON when data is transferring from RX to TX.
LNK/ACT is **ON** when link is established. **Flashes** when actively transferring data.

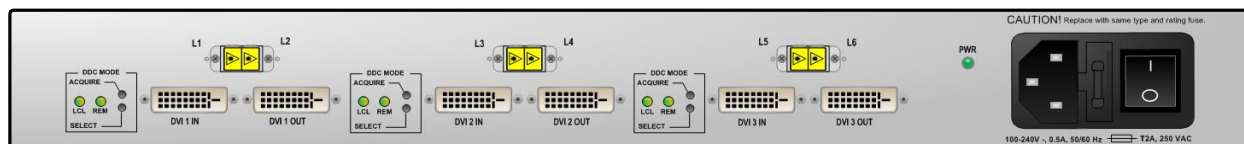
Rear Panel Network Status LEDs:

10/100:
 When **lit**, speed of link is **100 Mb/sec**.
 When **off**, speed of link is **10 Mb/sec**.
FD/COL:
 When **lit**, indicates operation in **Full Duplex**.
 When **off**, indicates operation in **Half Duplex**.
 When **blinking**, indicates **Collision**.

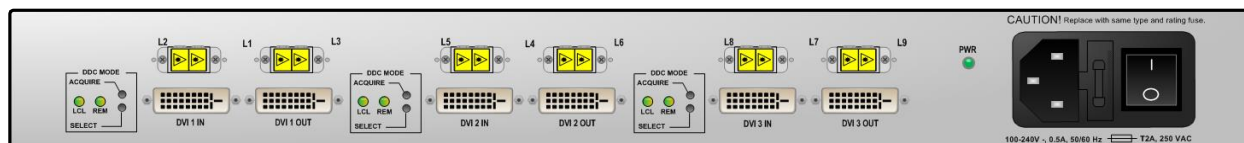
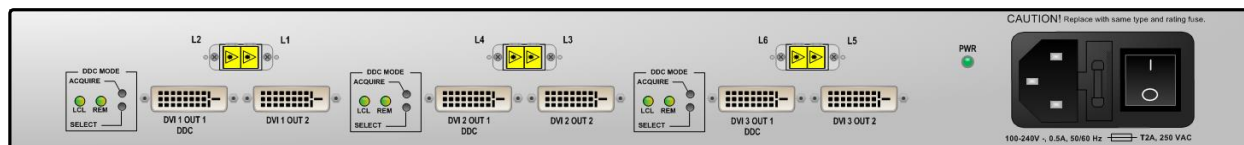
On the RJ45 Connector:

Green LED = Link
Yellow LED (blinking) = Activity

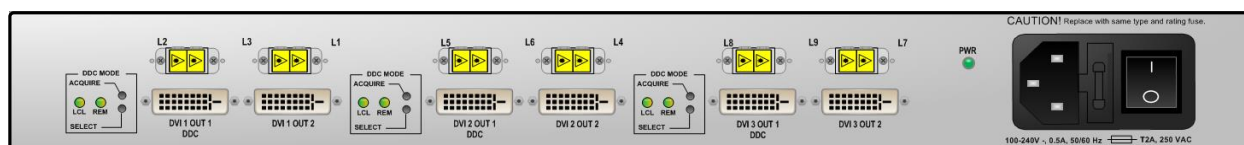
Velocitydvi-33 and -63 Transmitter and Receiver Back Panels



Velocitydvi-33 Transmitter ▲ Receiver ▼



Velocitydvi-63 Transmitter ▲ Receiver ▼



3.2.1. Table of VelocityDVI Chassis Dimensions

VelocityDVI Model	DIMENSIONS (inches)	DIMENSIONS (metric)
VEL-3	5.375"W x 7.0"D x 1.1"H	136.65mm x 177.80mm x 27.94mm
VEL-3 with Neutrik®	5.375"W x 7.0"D x 2.0"H	136.65mm x 177.80mm x 50.80mm
VEL-3 AV+	7.5"W x 7.0"D x 1.1"H	190.50mm x 177.80mm x 27.94mm
VEL-3 AV+ w/ Neutrik®	7.5"W x 7.0"D x 2.0"H	190.50mm x 177.80mm x 50.80mm
VEL-3 AN+	7.5"W x 7.0"D x 1.1"H	190.50mm x 254.00mm x 27.94mm
VEL-3 AN+ w/ Neutrik®	7.5"W x 7.0"D x 2.0"H	190.50mm x 177.80mm x 50.80mm
VEL-6	5.5"W x 7.75"D x 1.1"H	139.65mm x 196.85mm x 27.94mm
VEL-6 with Neutrik®	5.375"W x 7.0"D x 2.44"H	136.65mm x 177.80mm x 61.98mm
VEL-6 AV+	7.5"W x 7.75"D x 1.1"H	190.50mm x 196.85mm x 27.94mm
VEL-6 AV+ w/ Neutrik®	7.5"W x 7.0"D x 2.44"H	190.50mm x 177.80mm x 61.98mm
VEL-6 AN+	7.5"W x 7.75" D x 1.1"H	190.50mm x 196.85mm x 27.94mm
VEL-6 AN+ w/ Neutrik®	7.5"W x 7.75" D x 2.0"H	190.50mm x 196.85mm x 50.80mm
VEL-33 (rack-mount)	19.0"W x 10.0"D x 1.72"H	482.60mm x 254.00mm x 43.69mm
VEL-63 (rack-mount)	19.0"W x 7.84"D x 1.72"H	482.60mm x 199.14mm x 43.69mm

Refer to Paragraph 1.3 beginning on page 5 for the complete line of VelocityDVI-3 & -6 Extenders.

4. DDC and EDID

DDC (Display Data Channel) is a VESA standard transport medium between a CPU's graphics adapter and monitor. The DDC is used to pass **EDID (Extended Display Identification Data)**, which is stored in the monitor and describes its characteristics (vendor name, serial number, frequency range, etc.). With this information the CPU and video card can determine what resolutions the monitor is capable of.

The DDC bus can be unidirectional or bidirectional. A bidirectional bus supports content protection (HDCP) and display calibration software. (*High-bandwidth Digital Content Protection* is a specification used to encrypt and protect digital video and audio signals transmitted between two HDCP-enabled devices.)



NOTE: Most DVI-D graphics adapters will not boot if a valid EDID table is not received at power up.

4.1. Default DDC Modes

4.1.1. Remote Dynamic Mode

System-3: 2 fibers required, System-6: 3 fibers required

The unit acts as a direct connection between the RX and TX. In this mode DDC data is read at the RX and sent to the TX. Once verified at the TX the information is written into a PROM on the TX and provided to the CPU video card. The RX will not send DDC data to the TX unless a different display is connected to the RX.

Advantages: Allows CPU video card to boot when there is no fiber connection to the RX.

Limitations: No communication link from the CPU to the display. Prevents the use of HDCP or monitor configuration /color tuning.



NOTE: When switching between DDC modes (except Pass-Thru), you will need to press the **ACQUIRE** button to activate the new mode.

4.1.2. Remote Static Mode

Sys-3: 2 fibers required to acquire DDC data, 1 fiber thereafter

Sys-6: 3 fibers required to acquire DDC data, 2 fibers thereafter

Remote Static Mode is a subset of Dynamic Mode in that once a transfer from the RX to the TX is completed successfully no other transfer will be made unless specifically requested by using the **ACQUIRE** Button. The DDC data stored in the TX PROM will not change regardless of display changes.

Advantages: Allows the user to acquire and use an EDID table regardless of changes in connection at the RX.

Limitations: No communication link from the CPU to the display. Prevents the use of HDCP or monitor configuration/color tuning. May not produce video if a display with lower resolution capability is subsequently connected.

4.1.3. Pass-Thru Mode

Sys-3: 2 fibers required, Sys-6: 3 fibers required

The units act as a direct connection between the TX and RX. This mode allows the CPU to communicate directly with the monitor.

Advantages: Allows monitor color tuning and HDCP.

Limitations: If a monitor is not connected to the RX most video cards will not boot.

4.1.4. Local Static Mode

Sys-3: 1 fiber required, Sys-6: 2 fibers required

Local Static mode operates in the same manner as Remote Static mode except that the EDID table is read from a monitor plugged into the local port of the TX. Once the **ACQUIRE** button is pressed

the TX will begin reading the DDC from the locally connected monitor until a valid EDID table is read. The table will then be stored on the TX and presented to the CPU.

Advantages: The TX does not need to be connected to the video card or RX.

The EDID table can be loaded before the TX is installed.

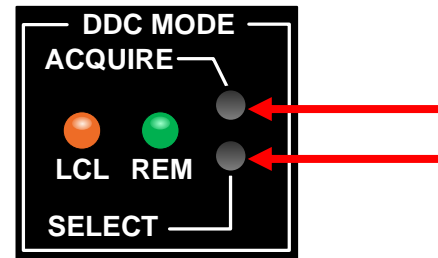
Limitations: No communication link from the CPU to the display. This prevents the use of HDCP or monitor configuration /color tuning and may result in loss of remote video if a display with lower resolution capability is connected to the RX.

4.2. Load Default EDID Table

Holding the **ACQUIRE** and **SELECT** buttons for 5 seconds will reload the default DDC table into the TX, and switch the DDC mode to Remote Static. The TX Status LED will turn Orange while the default table is loaded and then change to Green.

Advantages: Sends a valid EDID table to the CPU in order for the graphics adapter to boot.

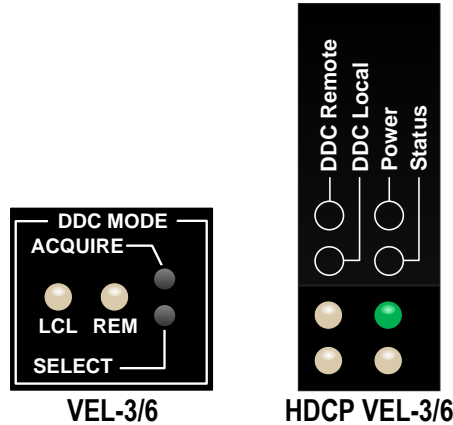
Limitations: Default EDID table may not support required resolutions.



Feature	Remote Dynamic	Remote Static	Pass-Thru	Local Static	Load Default
Supports HDCP	No	No	Yes	No	No
Supports monitor calibration	No	No	Yes	No	No
Monitor on RX side required to boot video	No	No	Yes	No	No
EDID table loaded from Rx	Yes	Yes	Yes	No	No
EDID table loaded from Tx	No	No	No	Yes	No
EDID table stored in non-volatile memory	Yes	Yes	No	Yes	Yes
Fibers required System-3	2	2 initially, then L1 only	2	1	1
Fibers required System-6	3	3 initially, then L1 and L3 only	3	2	2

EDID Capability Summary

4.2.1. DDC LEDs and Mode Button Operation



- **Acquire Button**

The upper button is the Acquire Button. This button is used to initiate DDC collection. This button works with all modes except Pass-Thru.

- **Select Button**

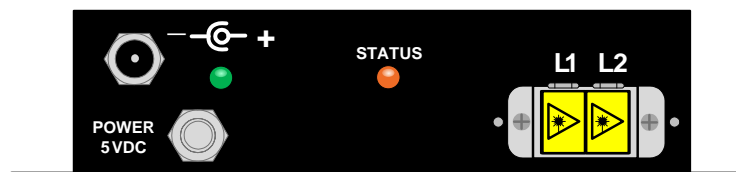
The lower button is used to select the DDC Mode of operation. The modes will cycle through Remote Dynamic, Remote Static, PassThru and Local Static.

- **Both Buttons Held 5 seconds**

Holding both buttons for 5 seconds will reload the default DDC table into the TX and switch to Remote Static mode.

- **Local and Remote LED Mode Indication**

LCL	REM	DDC MODE	DESCRIPTION
OFF	GREEN	REMOTE DYNAMIC	EDID READ FROM REMOTE DISPLAY AND UPDATED EACH TIME REMOTE DISPLAY CHANGES.
ORANGE	GREEN	REMOTE STATIC	EDID READ FROM REMOTE DISPLAY WHEN ACQUIRE BUTTON IS PRESSED.
GREEN	GREEN	PASS-THRU	ACTS AS A DIRECT CONNECTION BETWEEN CPU AND DISPLAY. NO EMULATION IS PERFORMED.
GREEN	ORANGE	LOCAL STATIC	EDID READ FROM LOCAL DISPLAY WHEN ACQUIRE BUTTON IS PRESSED.



- **TX Status LED**

The status LED indicates the connection status of the TX Extender.

Green = Fiber L2 is connected and a good link is established.

Orange = Local Static Mode selected and no fiber link from RX to TX (L2 is not connected), or both buttons are held down and the unit is waiting to reload the default DDC table.

Red Flashing = No Fiber Link from RX to TX (Not available in Local Static mode).

For **VEL-6 models**, there is no LED indication for Fiber L3. In single-link mode, video is not affected if L3 is not connected. In dual-link mode, there will be no video if L3 is not connected.

- **RX Status LED**

The status LED indicates the connection status of the RX Extender.

Green = Good Link and DVI monitor connected to primary port (port on left looking at DVI connectors).

Orange = No DVI monitor connected to primary port.

Red Flashing = No Fiber Link from TX to RX (L1 is not connected).

- **Power LED**

When lit, the **Green LED** near the power jack indicates that +5VDC power is applied to the unit.

- **Grounding Stud**

A grounding stud located below the power jack allows the unit to be hard-wired to electrical ground if required.

5.0. Regulatory & Safety Compliance

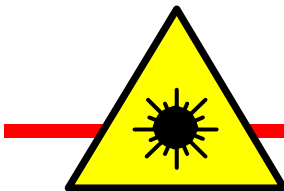
5.1. Safety Requirements

Symbols found on the product

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

5.1.1. Class 1 Laser Labeling

The DVI Extender models **VEL-3, -6, -33 and -63** are designed and identified as Class 1 LASER products.



CLASS 1 LASERS do not require any special precautions under conditions of normal use.

Regulatory Compliance

Thinklogical's® products are designed and made in the U.S.A. These products have been tested by a certified testing laboratory and found to be compliant with the following standards (both domestic USA and many international locations):

North America

Safety

ANSI/UL60950-1: 1st Edition (2003)

CAN/CSA C22.2 No. 60950-1-03

Electromagnetic Interference

FCC CFR47, Part 15, Class A

Industry Canada ICES-003 Issue 2, Revision 1

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 adequate measures.

European Union

Declaration of Conformity

Manufacturer's Name & Address: **Thinklogical, LLC®**
100 Washington Street
Milford, Connecticut 06460 USA

These products comply with the requirements of the Low Voltage Directive 72/23/EEC and the EMC Directive 89/336/EEC.

Standards Compliance

Safety

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

Electromagnetic Emissions

EN55022: 1994 (IEC/CSP1R22: 1993)

EN61000-3-2/A14: 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

5.2. Supplementary Information

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

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

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.



Warning! 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.



Note: This equipment has been tested and 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 in which case the user may be required to take adequate corrective measures at their own expense.



Note: This Class A digital apparatus complies with Canadian ICES-003 and has been verified as being 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.



Note: The user may notice degraded audio performance in the presence of electromagnetic fields.

Product Serial Number

Thinklogical products have a unique serial number, which includes a date-code, printed on an adhesive label that is affixed to the unit. The format for the date-code is 2 digits for the month, dash, 2 digits for the year, plus at least four digits for a unique unit number. For example, **05-140125** indicates the unit was built in the 5th month of 2014, and is unit number 125.

Connection to the Product

Connections and installation hardware for our products use industry-standard devices and methods. All wiring connections to the customer equipment are designed to minimize proprietary or customized connectors and cabling. Power connections are made with regionally appropriate power cords and approved methods.

6.0. How to Contact Us

6.1. Customer Support

Thinklogical® is an engineering company and you will receive the information you require directly from our most knowledgeable engineers.

We believe that the first line of support comes from the design engineers that developed each particular product.

Therefore, your questions or issues 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 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.

6.2. Product Support

Thinklogical's® support personnel are available **Monday through Friday from 8:30am to 5:00pm**, Eastern Time Zone. If your application requires 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.

6.2.1. Warranty

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



Note: Thinklogical, LLC® 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 the 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, LLC® authorized dealer where you purchased the device, or if you purchased directly, call Thinklogical at **1-800-291-3211** (USA).

6.2.2. Return Authorization

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.

In the event you must return a product to Thinklogical directly, please contact **Customer Support** at **1-800-291-3211** or **1-203-647-8700**. Customer Support will ask you to describe the problem and will issue you a **Return Merchandise Authorization number (RMA#)**. Pack the device in its original box, if possible, and return it with the RMA# printed on the outside of the box.



Note: **DO NOT** return a product to Thinklogical® without a **Return Material Authorization**.

Our Address

If you have any product issues or questions or need technical assistance with your Thinklogical® system, please call us at **1-800-291-3211 (USA only)** or **1-203-647-8700** and let us help. If you need to write us or return a product, please use the following address: Return address for products with Return Material Authorization: **Thinklogical, LLC®**

Attn: RMA#

**100 Washington Street
Milford, CT 06460 USA**



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

www.thinklogical.com



**VelocityDVI
Extenders**



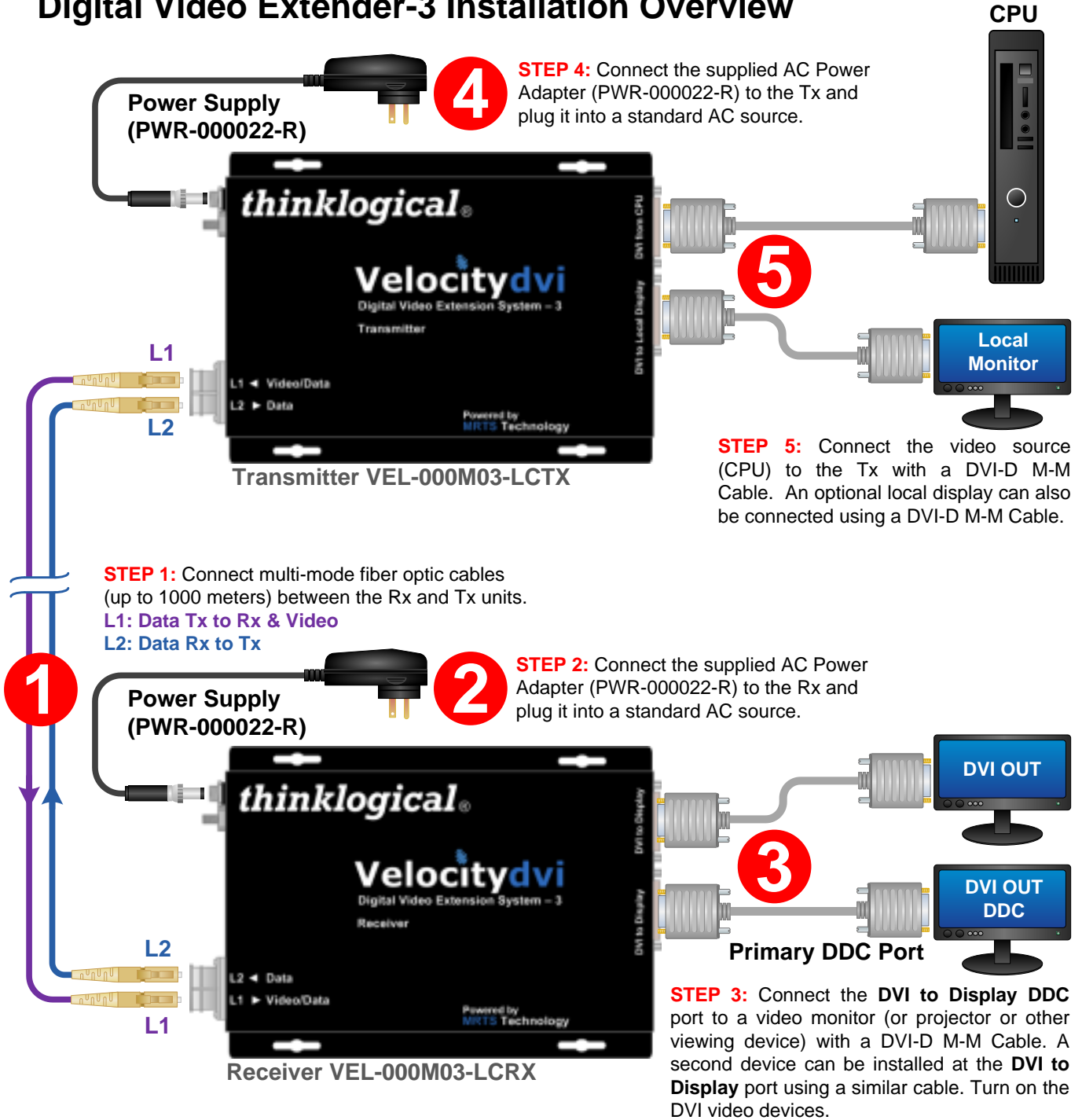
thinklogical®

Appendix A: Installation Overview

A.1. VEL-3

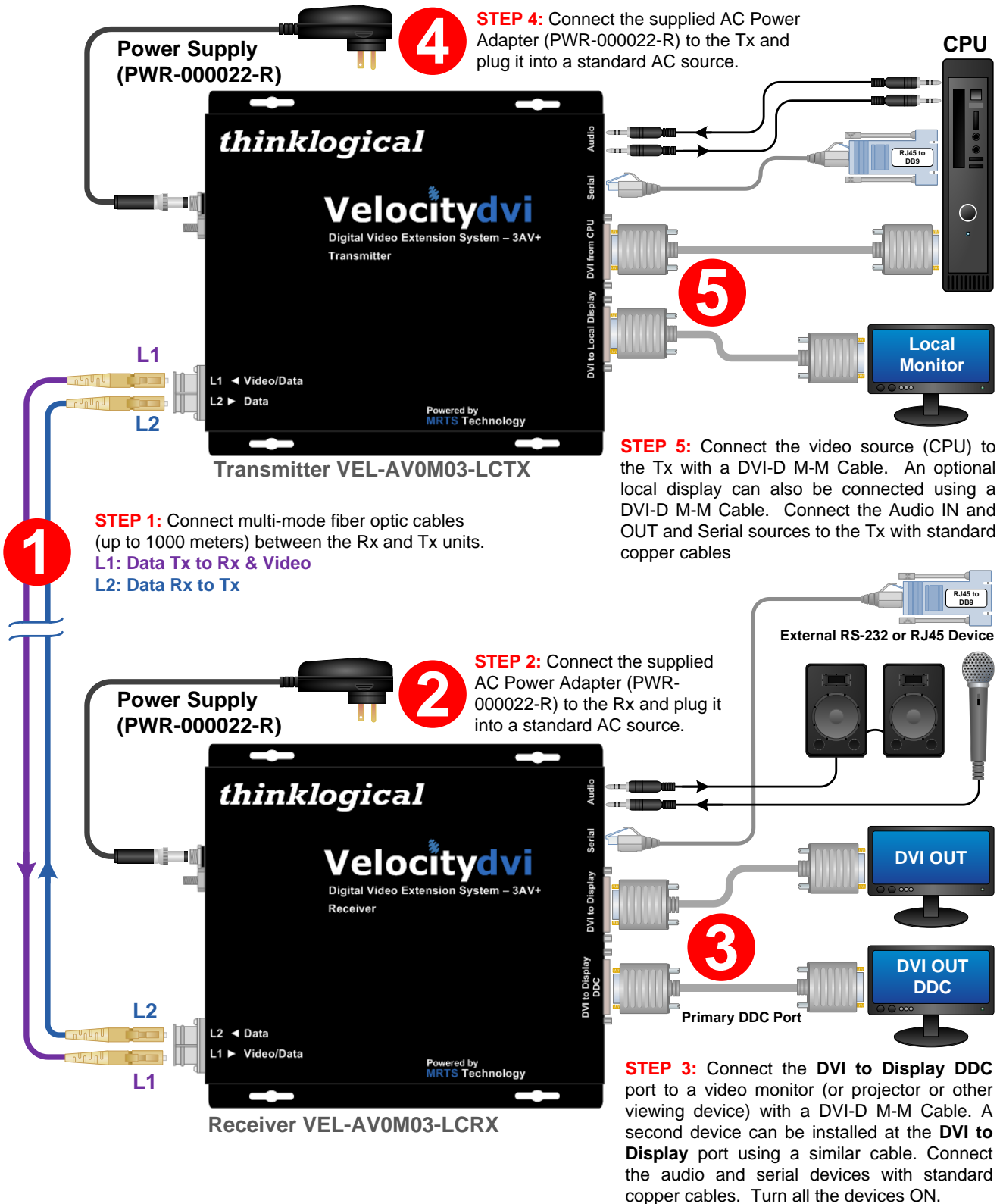
Velocitydvi

Digital Video Extender-3 Installation Overview



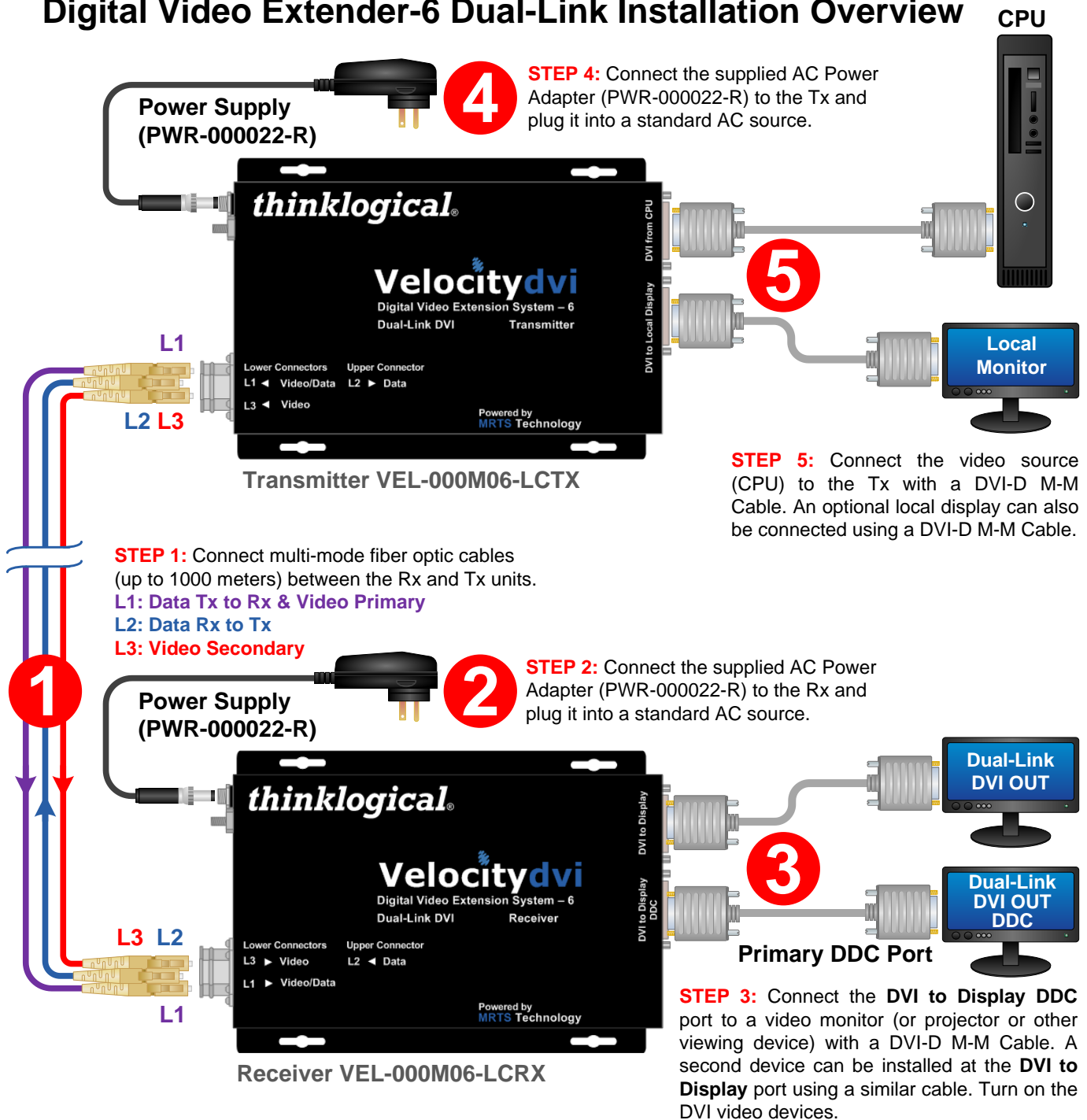
A.2. VEL- 3 A/V+

Velocitydvi
Digital Video Extender-3AV+ Installation Overview



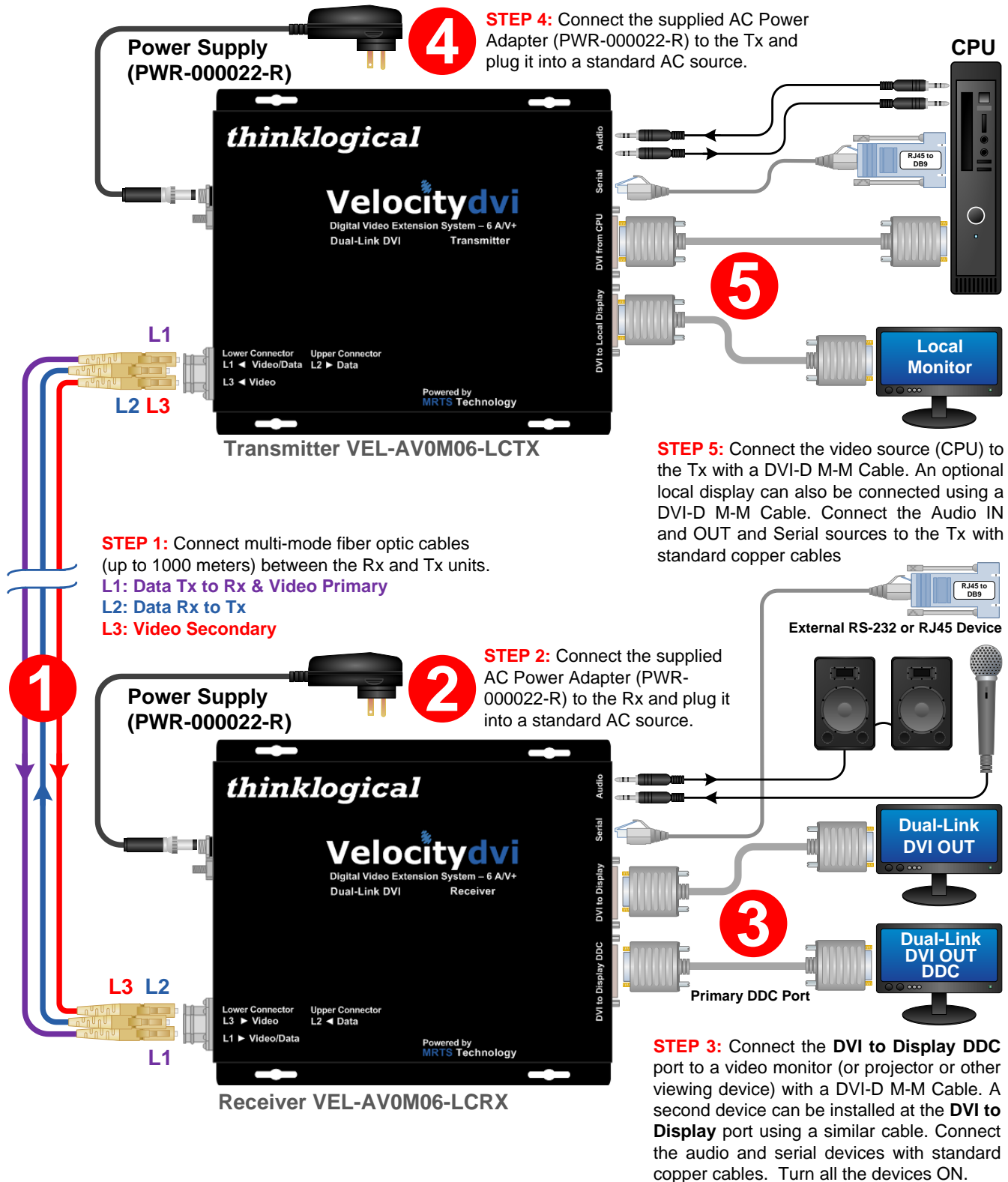
A.3. VEL-6

Velocitydvi
Digital Video Extender-6 Dual-Link Installation Overview

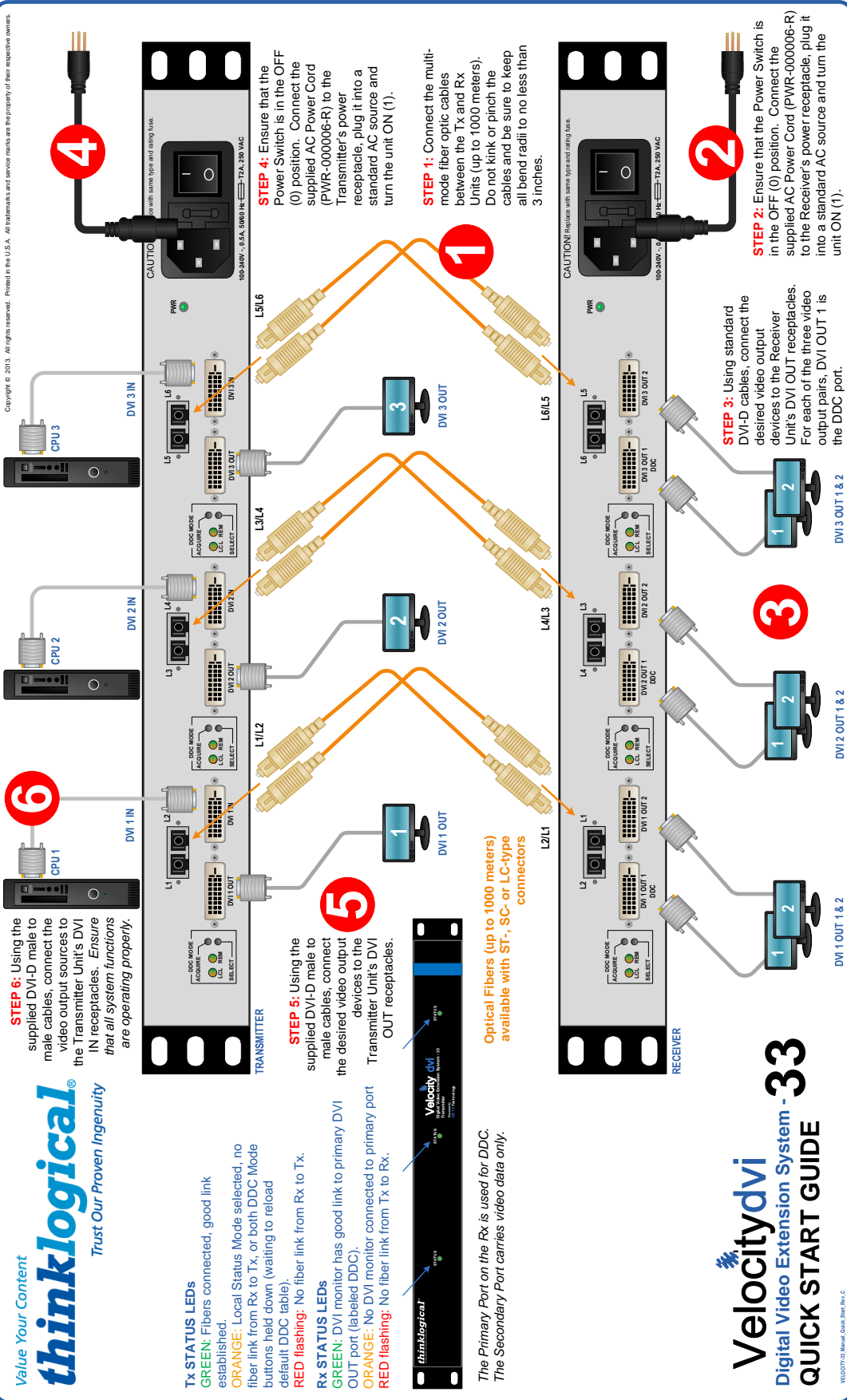


A.4. VEL-6 A/V+

Velocitydvi
Digital Video Extender-6AV+ Installation Overview



A.5 VEL-33

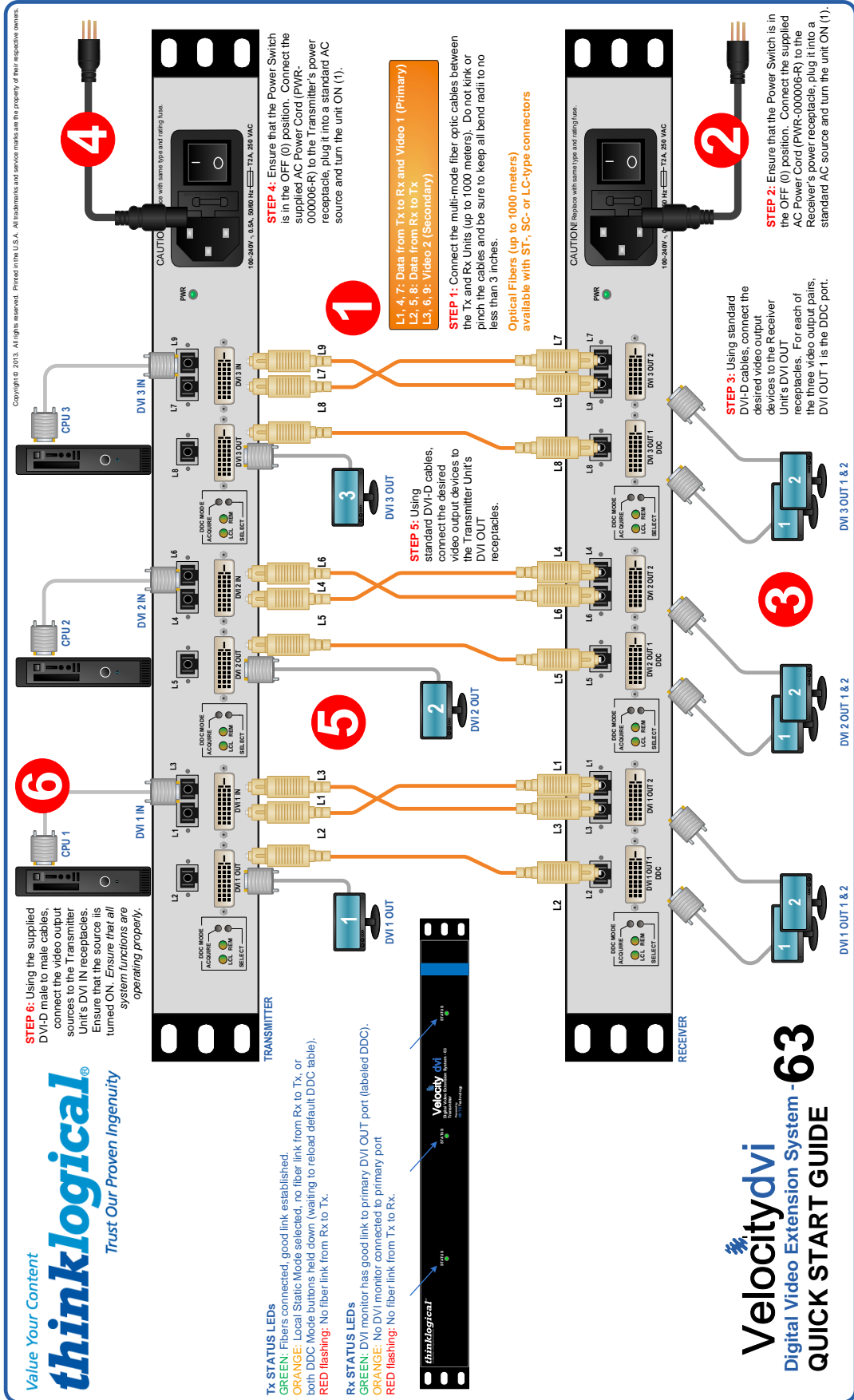


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Velocitydvi
 Digital Video Extension System - 33
QUICK START GUIDE

VELOCITY-33 Manual, Quick Start, Rev. C

A.6 VEL-63



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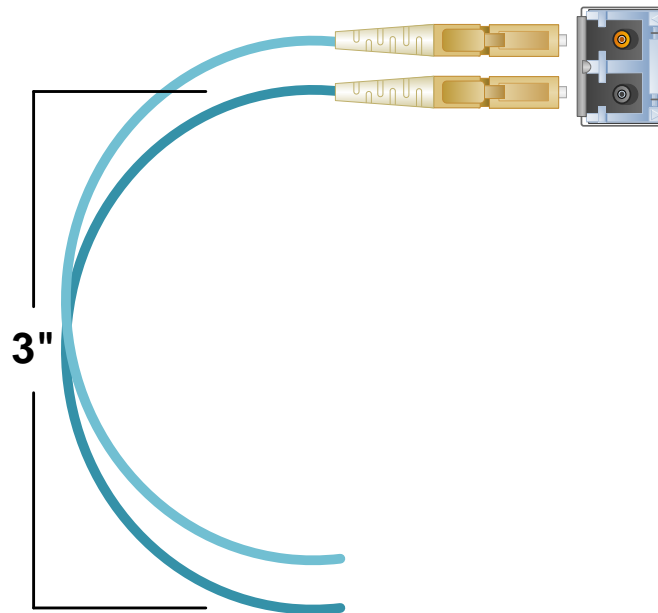
Velocitydvi
 Digital Video Extension System - 63
QUICK START GUIDE

Appendix B: DVI Extender Mounting

Each **VelocityDVI Extender-3** and **-6** can be used as a desk top or wall-mounted device. Mounting centers are provided with keyhole slots. Users may choose the most appropriate fasteners and anchors to mount each unit according to the requirements of each application. **VelocityDVI-33** and **-63** chassis can be desk-top (feet provided) or standard EIA 19" rack-mounted.



Note: Be sure to leave adequate clearance (3 inch minimum bend radius) for your Fiber Cable.

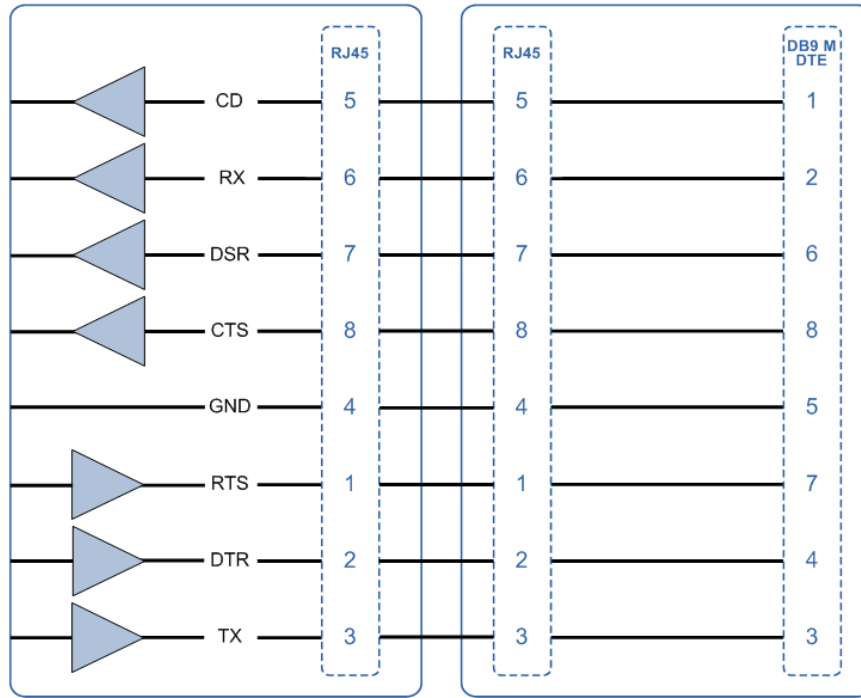


UNIT	DIMENSIONS (inches)	DIMENSIONS (metric)
Vel-3	5.375"W x 7.0"D x 1.1"H	136.65mm x 177.80mm x 27.94mm
Vel-3 with Neutrik®	5.375"W x 7.0"D x 2.0"H	136.65mm x 177.80mm x 50.80mm
Vel-3 AV+	7.5"W x 7.0"D x 1.1"H	190.50mm x 177.80mm x 27.94mm
Vel-3 AV+ w/ Neutrik®	7.5"W x 7.0"D x 2.0"H	190.50mm x 177.80mm x 50.80mm
Vel-3 AN+	7.5"W x 7.0"D x 1.1"H	190.50mm x 254.00mm x 27.94mm
Vel-3 AN+ w/ Neutrik®	7.5"W x 7.0"D x 2.0"H	190.50mm x 177.80mm x 50.80mm
Vel-6	5.5"W x 7.75"D x 1.1"H	139.65mm x 196.85mm x 27.94mm
Vel-6 with Neutrik®	5.375"W x 7.0"D x 2.44"H	136.65mm x 177.80mm x 61.98mm
Vel-6 AV+	7.5"W x 7.75"D x 1.1"H	190.50mm x 196.85mm x 27.94mm
Vel-6 AV+ w/ Neutrik®	7.5"W x 7.0"D x 2.44"H	190.50mm x 177.80mm x 61.98mm
Vel-6 AN+	7.5"W x 7.75" D x 1.1"H	190.50mm x 196.85mm x 27.94mm
Vel-6 AN+ w/ Neutrik®	7.5"W x 7.75" D x 2.0"H	190.50mm x 196.85mm x 50.80mm
Vel-33 (rack-mount)	19.0"W x 10.0"D x 1.72"H	482.60mm x 254.00mm x 43.69mm
Vel-63 (rack-mount)	19.0"W x 7.84"D x 1.72"H	482.60mm x 199.14mm x 43.69mm

Appendix C: RJ-45 Adapter Pin-outs

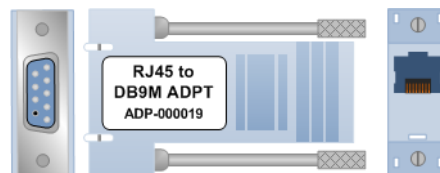
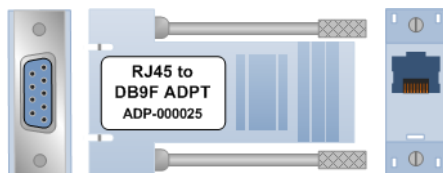
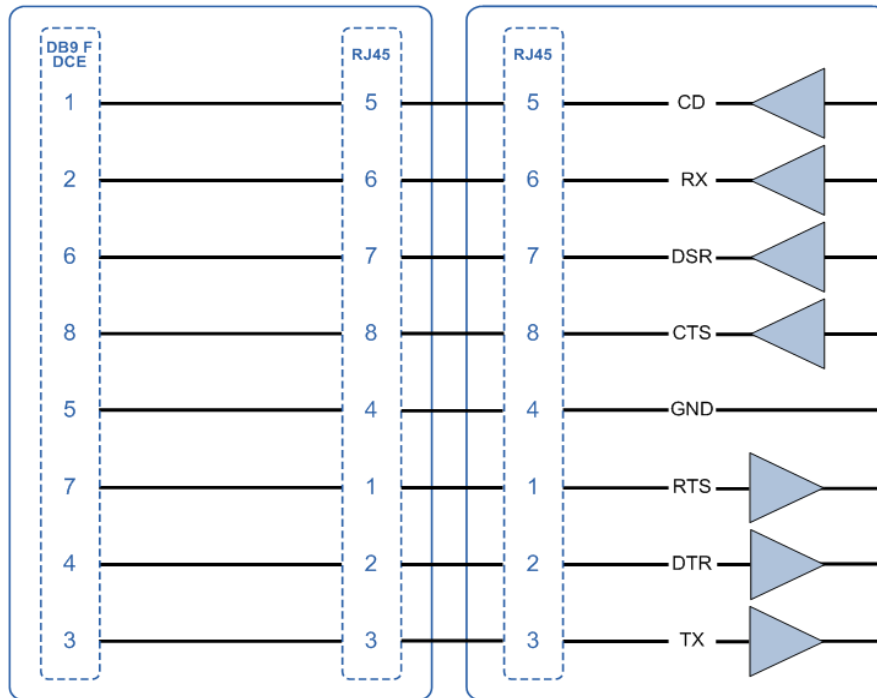
Velocity-3/6 Rx

**ADP-000019-R
DB9M**



**ADP-000025-R
DB9F**

Velocity-3/6 Tx



Appendix D: Automatic Fail-Over Option

For applications in need of an **Automatic Fail-Over** system, Thinklogical offers a solution to meet this need. This option allows for two separate fiber paths and the ability to select which of the two paths is the viable path. **This feature is available on the transmitter unit only.**

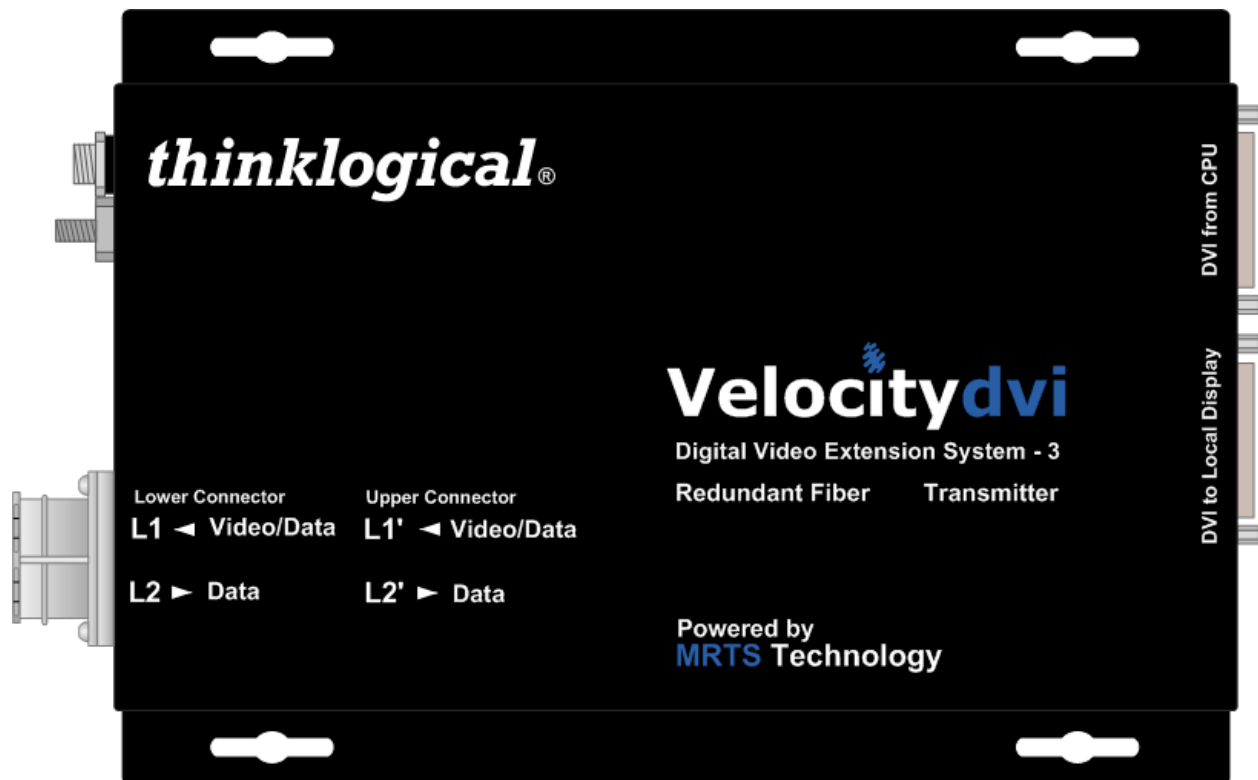
The transmitter contains all the same features as the standard Velocity products in addition to offering a redundant fiber connector (L1') for each standard fiber connector (L1). All other features function as described previously in the manual.

Velocity 3 TX with Automatic Fail-Over

Fiber Connections

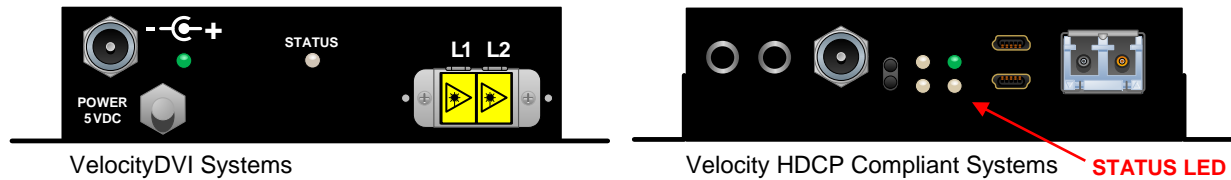
L1 and L1' are redundant outputs, outputting the same video and KMASS data.

L2 and L2' are redundant back-channel KMASS data inputs. There is an internal MUX which selects L2 or L2' data. When the unit is powered on, it will select L2 first (if L2 is active). Otherwise, it will select L2' (if L2' is active). It will only switch from L2 to L2' if L2 is inactive and L2' is active. It will only switch from L2' to L2 if L2' is inactive and L2 is active.



Velocitydvi-3 Transmitter with Automatic Fail-Over

Appendix E: Velocity Systems 3 & 6 Enhanced LED Status Information*



*Applies to modules shipped after March, 2013.

Velocity System-3 TX STATUS LEDs				
DDC MODE	DVI SOURCE	L2 ACTIVE	STATUS LED	NEW ENHANCEMENT
NOT LOCAL STATIC	YES	NO	RED FLASH	
DON'T CARE	YES	YES	GREEN	
LOCAL STATIC	YES	NO	ORANGE	
DON'T CARE	NO	DON'T CARE	RED FLASH	✓

Velocity System-3 RX STATUS LEDs			
MONITOR	L1 ACTIVE	STATUS LED	NEW ENHANCEMENT
DON'T CARE	NO	RED FLASH	
NOT IN DDC PORT	YES	ORANGE	
INSTALLED DDC PORT	YES	GREEN	

Velocity System-6 TX STATUS LEDs					
DDC MODE	DVI PRIMARY SOURCE (SINGLE LINK)	DVI SECONDARY SOURCE (DUAL LINK)	L2 ACTIVE	STATUS LED	NEW ENHANCEMENT
NOT LOCAL STATIC	YES	DON'T CARE	NO	RED FLASH	
DON'T CARE	YES	YES	YES	GREEN	
LOCAL STATIC	YES	YES	NO	ORANGE	
DON'T CARE	YES	NO	YES	GREEN FLASH	✓
LOCAL STATIC	YES	NO	NO	ORANGE FLASH	✓
DON'T CARE	NO	DON'T CARE	DON'T CARE	RED FLASH	✓

Velocity System-6 RX STATUS LEDs				
MONITOR	L1 ACTIVE	L3 ACTIVE	STATUS LED	NEW ENHANCEMENT
DON'T CARE	NO	DON'T CARE	RED FLASH	
NOT IN DDC PORT	YES	YES	ORANGE	
INSTALLED DDC PORT	YES	YES	GREEN	
DON'T CARE	YES	NO	GREEN FLASH	✓

Velocity System-3 TX SEPARATE AUDIO STATUS LEDs					
DDC MODE	DVI SOURCE	L2 ACTIVE	A2 ACTIVE	STATUS LED	NEW ENHANCEMENT
NOT LOCAL STATIC	YES	NO	NO	RED FLASH	
DON'T CARE	YES	NO	YES	GREEN FLASH	✓
DON'T CARE	YES	YES	NO	ORANGE FLASH	✓
DON'T CARE	YES	YES	YES	GREEN	
LOCAL STATIC	YES	NO	NO	ORANGE	
DON'T CARE	NO	DON'T CARE	DON'T CARE	RED FLASH	✓

Velocity System-3 RX SEPARATE AUDIO STATUS LEDs				
MONITOR	L1 ACTIVE	A1 ACTIVE	STATUS LED	NEW ENHANCEMENT
DON'T CARE	NO	NO	RED FLASH	
NOT IN DDC PORT	NO	YES	GREEN FLASH / ORANGE	✓
NOT IN DDC PORT	YES	NO	ORANGE FLASH / GREEN	✓
NOT IN DDC PORT	YES	YES	ORANGE	
INSTALLED DDC PORT	NO	YES	GREEN FLASH	✓
INSTALLED DDC PORT	YES	NO	ORANGE FLASH	✓
INSTALLED DDC PORT	YES	YES	GREEN	

Velocity System-3 TX SEPARATE DATA STATUS LEDs				
DDC MODE	DVI SOURCE	L2 ACTIVE	STATUS LED	NEW ENHANCEMENT
NOT LOCAL STATIC	YES	NO	RED FLASH	
DON'T CARE	YES	YES	GREEN	
LOCAL STATIC	YES	NO	ORANGE	
DON'T CARE	NO	DON'T CARE	RED FLASH	✓

Velocity System-3 RX SEPARATE DATA STATUS LEDs				
MONITOR	L1 ACTIVE	K1 ACTIVE	STATUS LED	NEW ENHANCEMENT
DON'T CARE	NO	NO	RED FLASH	
NOT IN DDC PORT	NO	YES	GREEN FLASH /ORANGE	✓
NOT IN DDC PORT	YES	NO	ORANGE FLASH / GREEN	✓
NOT IN DDC PORT	YES	YES	ORANGE	
INSTALLED DDC PORT	NO	YES	GREEN FLASH	✓
INSTALLED DDC PORT	YES	NO	ORANGE FLASH	✓
INSTALLED DDC PORT	YES	YES	GREEN	

HDCP Compliant

Velocity System-3 HDCP Compliant TX STATUS LEDs				
DDC MODE	DVI SOURCE	L2 ACTIVE	STATUS LED	NEW ENHANCEMENT
NOT LOCAL STATIC	YES	NO	RED FLASH	
DON'T CARE	YES	YES	GREEN	
LOCAL STATIC	YES	NO	ORANGE	
DON'T CARE	NO	DON'T CARE	RED FLASH	✓

Velocity System-3 HDCP Compliant RX STATUS LEDs				
MONITOR	L1 ACTIVE		STATUS LED	NEW ENHANCEMENT
DON'T CARE	NO		RED FLASH	
NOT IN DDC PORT	YES		ORANGE	
INSTALLED DDC PORT	YES		GREEN	