Velocity**kvm** T-Series

High Reliability, Rack-Space Saving, Video and Audio Extension Solutions

T-Series Modular Chassis KVM Extension Solutions

VTM-004200 and VTM-Q04200 Chassis

PRODUCT MANUAL

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Trust Our Proven Ingenuity

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Subject: VelocityKVM T-Series Chassis Product Manual
Revision: D, November, 2014

T-Series Chassis
& Modules

thinklogical ®

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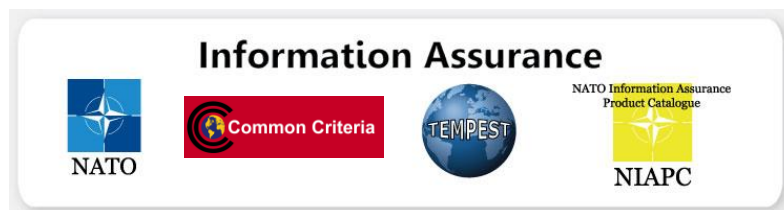
Thinklogical is headquartered in Milford, Connecticut and is privately held by Riverside Partners, LLC, Boston, MA (http://www.riversidepartners.com). For more information about Thinklogical products and services, please visit www.thinklogical.com.

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

Note and Warning Symbols

Throughout this manual you will notice certain symbols that bring your attention to important information. These are **Notes** and **Warnings**. Examples are shown below.

⚠️ <u>Note</u>**: Important Notes appear in blue text preceded by a yellow exclamation point symbol, as shown here.**

A **note** is meant to call the reader's attention to **helpful** information at a point in the text that is relevant to the subject being discussed.

🛑 **Warning! All Warnings appear in red text, followed by blue text, and preceded by a red stop sign, as shown here.**

A **warning** is meant to call the reader's attention to **critical** information at a point in the text that is relevant to the subject being discussed.

> **BEFORE STARTING ANY PROCEDURE, IT IS RECOMMENDED THAT YOU READ THE INSTRUCTIONS THOROUGHLY!**

Class 1 Laser Information

All Q-Series modules are designed and identified as **Class 1 LASER products.**

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

SFP Modules

Fiber-Optic Cables

Class 1 Lasers
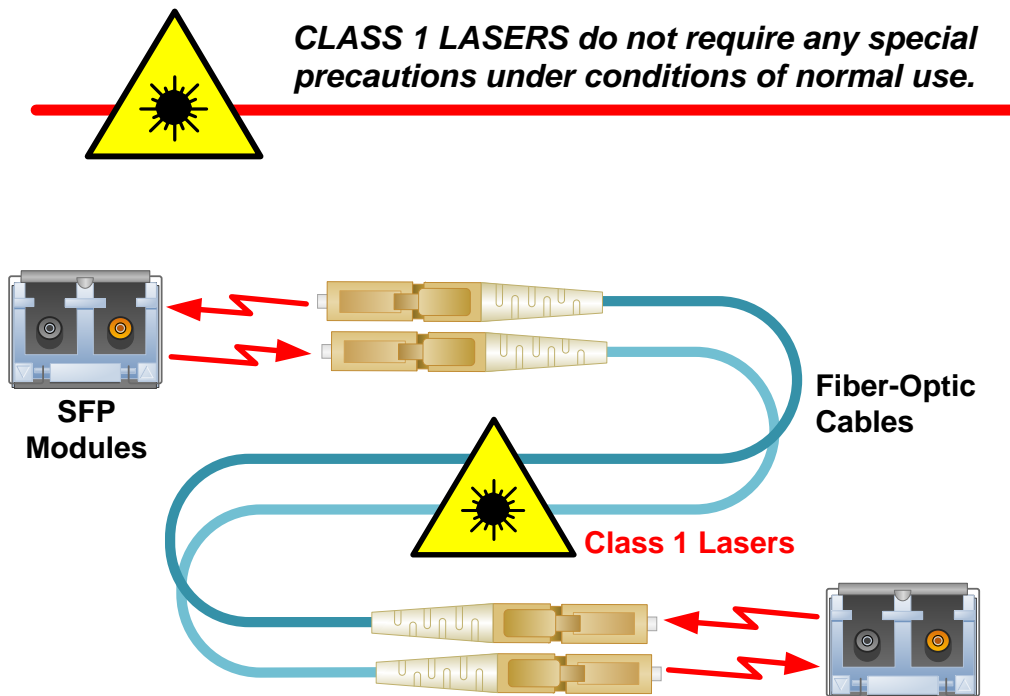
The VelocityKVM T-4200 Chassis

1. THE T-4200 MODULAR CHASSIS

The Logical Solution: *Modular KVM Extension / DVI and SDI Support in One Unit*

The VelocityKVM line of extenders continues to evolve and add value with exciting new capabilities. The **VelocityKVM T-4200 Chassis Line** is a high reliability, rack-space-saving solution housing the same extension capabilities in a 1U chassis that used to require 2U.

VTM-004200: Featuring a dual interface and current sharing power supplies, each 1U chassis supports two separate interface modules, allowing users to combine module options within one chassis. Install Transmitters, Receivers or one of each.

VTM-Q04200: A T-4200 chassis modified to accommodate a T-Series KVM module and up to 2 Q-Series modules* (or one double-size Q-Series module) for DVI and SDI support.

Available modules support a variety of video display options and **all T-Series modules support PS2, full duplex stereo audio, stereo emitter, serial (RS-232), USB 2.0** (up to 480 Mbps) **and/or USB 1.0 HID**. Q-Series modules support a variety of display and peripheral features. Contact Thinklogical for the full list of supported formats and features.

Using multi-mode or single-mode fiber, the system allows users to securely locate a display device and peripherals up to 40 kilometers away from the controlling computer without loss of resolution.

In addition, all high-speed peripherals function with no latency, making it ideally suited for a wide range of applications in the broadcast and post-production field, command and control centers, universities, air traffic control, energy production and exploration, and most other commercial KVM applications.

*Q-Series modules support DVI, SDI and KMASS. Visit our website to see the complete line of Q-Series products at **www.thinklogical.com**

1.1 Chassis Features

**Each *VTS-004200* Chassis includes the following features:**

- **Hot swappable, current sharing power supplies**
- **Supports two hot swappable interface modules. Features include:**
    - **one single-link DVI display**
    - **one single-link DVI or RGB display**
    - **one dual-link DVI display**
    - **two single-link DVI displays**
    - **four SD/HD/SDI signals**
    - **two 3G/SDI dual-link signals**
- **Display rocker selects which module controls the front panel LCD.**
- **Fully compatible with all of Thinklogical's VXRouter line of products.**
- **Simple plug and play**
- **DVI Modules use single-mode or multi-mode fiber optics, support PS2, full duplex stereo audio, stereo emitter, serial (RS-232), USB 2.0 and USB 1.0 HID**
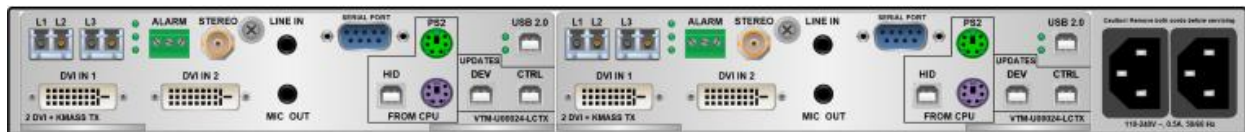
T-Series Chassis (VTS-004200) **with two VelocityKVM DVI 2 Display Transmitter Modules** (VTM-U00024-LCTX)

Each *VTS-Q04200* Chassis includes the following features:

- **Hot swappable, current sharing power supplies**
- **Supports one hot swappable T-Series Module**
- **Supports one or two hot swappable Q-Series Modules**
- **Display rocker selects which module controls the front panel LCD.**
- **Fully compatible with all of Thinklogical's VXRouter line of products**
- **Simple plug and play**
- **Modules use single-mode or multi-mode fiber optics and support a variety of display and peripheral functions**
- **Front Panel Update Port**
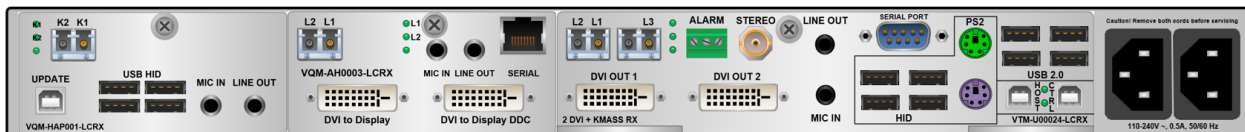
T-Series Chassis (VTS-Q04200) **with two Q-Series Receiver Modules** (VQM-HAP001-LCRX, VQM-AH0003-LCRX) **and one T-Series Receiver Module** (VTM-U00024-LCTX)

1.1.1. Additional System Features

- T-Series and Q-Series Modules sold separately
- DDC2B/EDID compliant
- MRTS technology's 6.25Gbps allows for full frame rate of transmission of uncompressed DVI with no RF interference
- Flawless image quality with no frame dropping
- A Dry Contact Annunciator on each module provides an alarm warning in case of power or fan failure, or an over-heating condition
- Front panel status monitoring and control
- Display rocker switch to select which module controls the LCD
- All models available with standard LC-type connectors

1.1.2. Technical Specifications

Each Thinklogical T-Series Chassis is designed to the following specifications:

Operating Temp and Humidity	**0° to 50°C (32° to 122 °F), 5% to 95% RH, non-condensing**
Dimensions	**Rack size: EIA 19"** **Height: 1.79" (4.5cm) ± .039"; .100cm** **Depth: 14.02" (35.6cm)* ± .039"; .100cm** **Width: 17.49" (44.4cm) ± .039"; .100cm**
Weights	**Weight: 11 lbs. (4.99kg) each** **Shipping Weight: 27 lbs (12.25 kg) Transmitter and Receiver**
Supply Voltage	**100-240 VAC, 47-63 Hz, Universal AC power supply**
Power Consumption	**<40 Watts per unit**
Compliance	**Approvals for US, Canada, and European Union**
Warranty	**12 onths from date of delivery. Extended warranties available.**

1.2. Applications

1.2.1. Application 1

T-4200 Transmitter Chassis, Dual Modules, Two Single-Link DVI/KVM Extenders through two VX160 Routers.
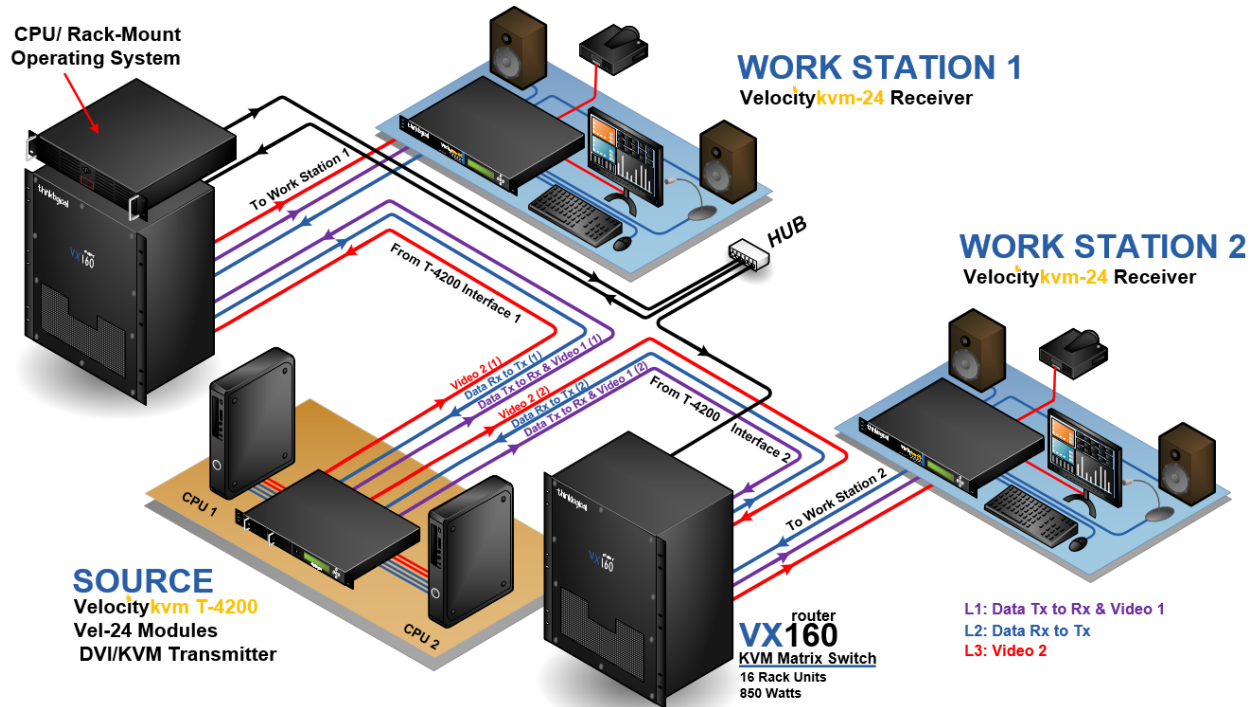
Two functional source computers connected to one VelocityKVM T-4200 Chassis equipped with dual VEL-24 interface modules, extending video and peripherals to two separate VelocityKVM-24 (stand-alone) Receiver destinations at separate workstations. Signals are routed through two Thinklogical VX160 Routers. The T-4200 unit connects to the CPU with supplied peripheral device cables.

1.2.2. Application 2

T-4200 Transmitter and Receiver Chassis, Dual Modules, each with 2 Single-Link DVI/KVM Extenders, using one VX160 Router.
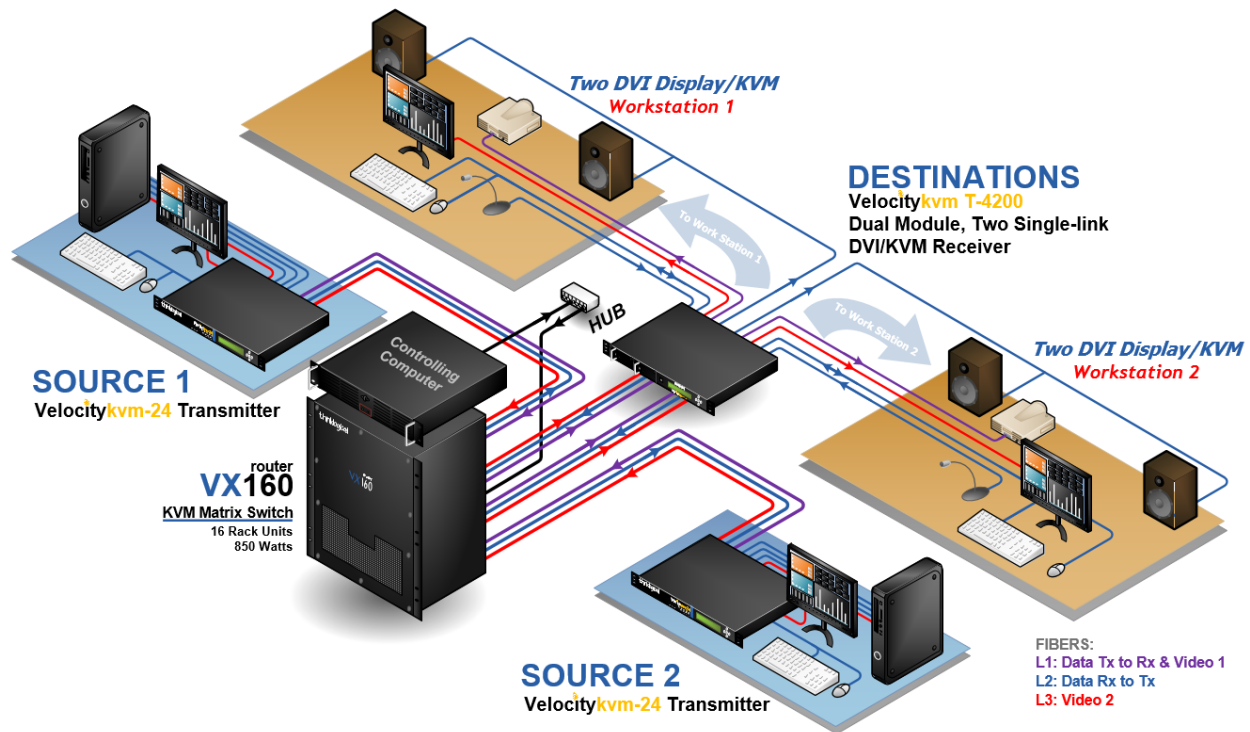
Two function source computers, located at separate workstations, each connected to one VelocityKVM T-4200 Transmitter Chassis equipped with VEL-24 interface components, extending video and peripheral signals to a VelocityKVM T-4200 Receiver Chassis with destinations at separate workstations. Signals are routed through a Thinklogical VX160 Router.

1.2.3. Application 3

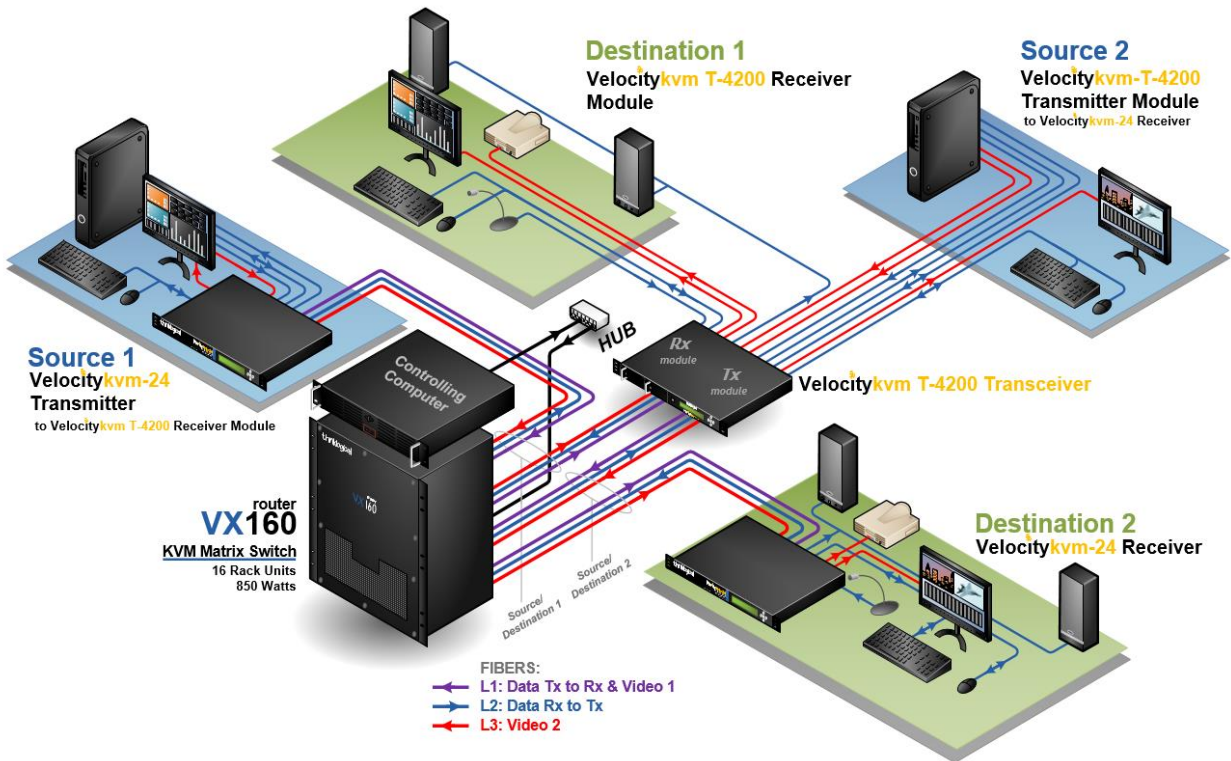**T-4200 Transceiver Chassis, Dual Modules, each with 2 Single-Link DVI/KVM Extenders, using one VX160 Router.**

One VelocityKVM T-4200 Transceiver Chassis equipped with VEL-24 TX and RX modules. One Source and one Destination are connected to the Transceiver. Signals are then routed through a Thinklogical VX160 Router to another Source and another Destination.

1.2.4. Application 4

T-4200 Transmitter and Receiver Chassis, Dual Modules, each with two SDI & DVI Extenders, connected directly together.
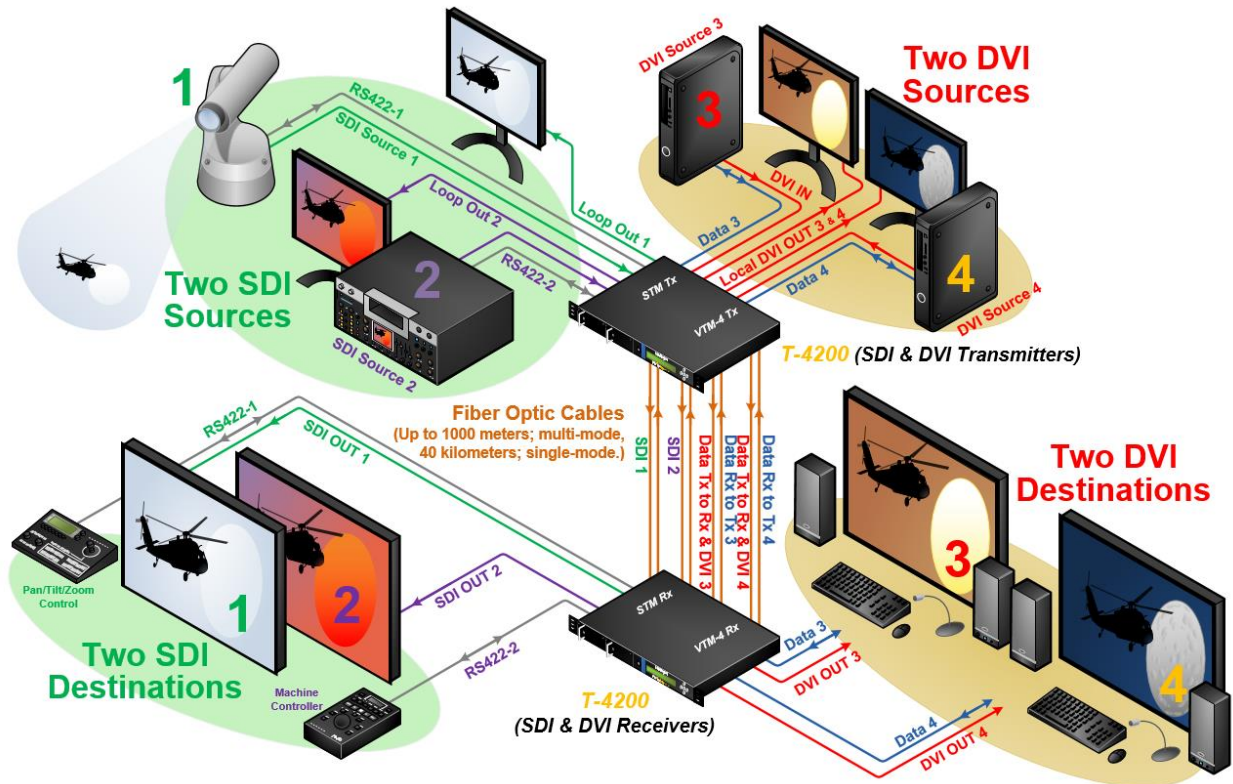
Two SDI and two DVI Sources connected to SDI and DVI Transmitt Modules in one T-4200 Chassis connected directly to another T-4200 Chassis with SDI and DVI Receive Modules going to two SDI Destinations and two DVI Destinations.

1.3. Hardware

1.3.1. Physical Connections

All physical connections to the product use industry-standard connectors. Non-supplied cables are commercially available. All connections are found on the rear of the unit.

1.3.2. Desktop or Rack Mount

You may choose to place your chassis on a shelf or desktop (rubber feet included), or rack-mount it using the supplied mounting brackets (EIA 19" rack mountable).

See Mounting Bracket Removal, next page*.*

- The front panel should be visible and unobstructed so that the front panel buttons and LCD display are accessible.
- All connections are made to the rear of the chassis.
- The T-4200 chassis does not need to be opened or accessed.

- The sturdy metal case allows units to be stacked as needed **(maximum of 4 units per stack, with a minimum of 2" clearance between stacks for adequate ventilation)**.

RACK-MOUNT OR DESK-TOP OPTIONS: All Thinklogical KVM extenders can be mounted in a standard EIA 19" rack or on a shelf or desk-top.

8 Mounting bracket screws

Each mounting bracket is secured by four screws and can be safely removed from the transmitter or receiver unit for desk-top mounting after power has been removed from the unit.

All screws should be reinstalled after the brackets have been removed.

2 Mounting bracket screws in four places.

Mounting Bracket Removal

1.3.3. Cooling

The Velocity T-4200 Extender System uses four DC fans to move air horizontally through the enclosure.

⚠️ **Note: Be sure to leave adequate ventilation space on both sides of the units (2" minimum), especially if the units are being stacked (maximum 4 units per stack).**

1.3.4. Hot Swappable Power Supplies

Each chassis is equipped with dual, hot-swappable, current-sharing power supply modules. Each module has an ON/OFF rocker power switch located on the chassis' front panel. When the power supply is ON, the LED on the front of the power supply will be lit.

If a power module fails, the replacement can be swapped with no interruption in unit functionality. To hot swap a power supply, simply unscrew the module and replace it with a new power supply module.

(Power Modules can be ordered from Thinklogical: part number VTM-000001).

Power Supply

● POWER OK

LED status

Power Rocker Switch
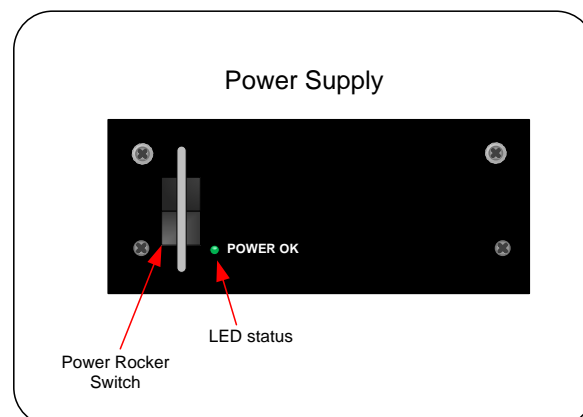
1.3.5. Dry Contact Alarm

Dry contact alarms are located on each of the individual modules. The relay is energized when there is an alarm condition, such as over temperature or power regulation.

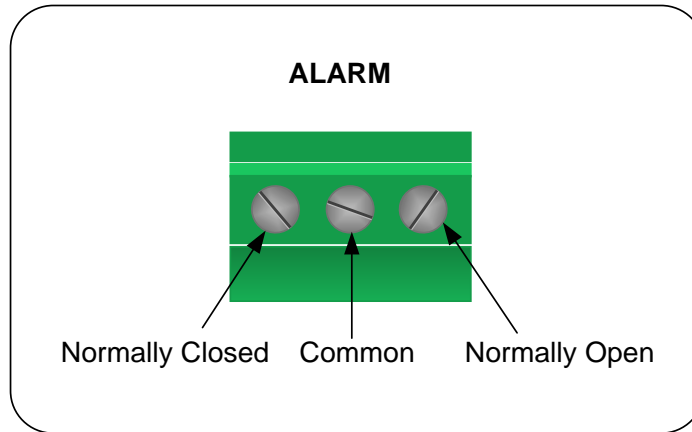**The dry contact alarm is a Form C contact with the following ratings:**

Nominal switching capacity: 1A, 30V DC
Max. switching power: 30W DC

Dry Contact Alarm Receptacle

1.3.6. Display Rocker Switch

The *Display* rocker switch located on the front of the chassis selects which module information is shown on the LCD. Switched to the right or left, it will show the information for the module located on that side of the chassis. If there is only one module installed, it will display that module's information in either rocker switch position.

## 1.3.7. Front Panel Display and Buttons

Note: When you receive your T-4200 Chassis, there will be a removable decal that identifies each module of your specific configuration located on the front panel display.

The front-panel LCD display should be visible and accessible for system setup. The front panel buttons are used to configure special video settings and to review existing VelocityKVM

Extender configurations. *See **Paragraph 3, Front Panel Usage** on the next page, for more information on using the buttons and LCD.*
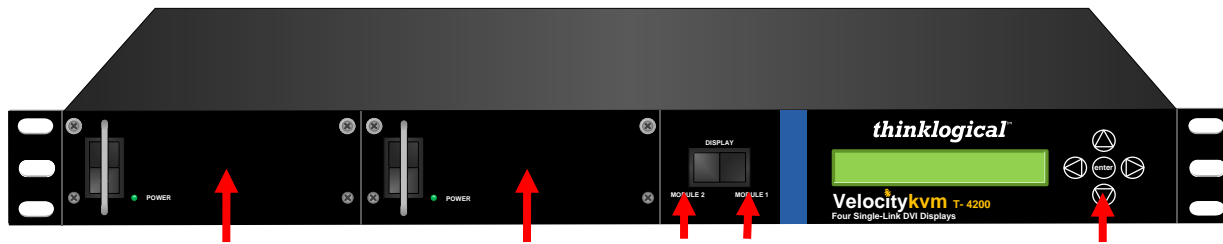
The T-4200 Chassis Front Panel

2. FIRMWARE UPGRADES

Firmware upgrades are available through Thinklogical. Please call us for technical assistance at **1-203-647-8700**.

3. FRONT PANEL USAGE

3.1. Initial Power-Up

Once the system is powered up, the initial LCD display is shown as follows:

> Thinklogical
> Velocity Tx   VXX.XX

The company name is listed on the first line of the display. The model and software version (VXX.XX) of the unit is displayed on the second line.

By pressing the down arrow 🔽 the VelocityKVM Extender allows you to enter into the main menu. **The main root menu items are displayed with an *.** They are as follows:

> *System

> *DDC

Once a * root menu item is displayed, you can then use the left arrow ◁ or right arrow ▷ to review settings or make changes, if allowed.

The VelocityKVM Extender menu functionality is as follows (some menu options may not be available on all models):

TRANSMITTER:

Display	Modifiable	Description
*System		
LS Connected	NO	Indication of the fiber status from the TX to RX.
Tx Ctrl Name	TX Only	Name entered on TX unit displayed on RX unit.
Load Defaults	YES	Loads factory default video configurations.
Store Values	YES	Store video configurations.
KM Device	NO	Revision of the Velocity portion that plugs into the CPU.
KM Remote Host	NO	Revision of the Velocity KM Host on RX unit.
KM Local Host	NO	Revision of the Velocity KM Host on TX unit.
TX Control	NO	Revision of TX unit laser & front panel control.
RX Control	NO	Revision of RX unit laser & front panel control.
FPGA Version	NO	Revision of FPGA used for video generation.
Serial Number	NO	MM-YY1234 (month-year, unit number)
Debug Values	YES	Factory Use.
SFP Loss of Signal	NO	Indicates loss of SFP signal
Temp in Celsius	NO	IN=PCB (max=70°) EX=FPGA (max=85°)
KMASS Card ID	NO	
Video Card ID	NO	
USB 2.0 Card ID	NO	

Display	Modifiable	Description
*DDC		
DDC PROM Emula. Mode	YES	Options are Dynamic, Static and Passthru.
		In **Dynamic mode**, the DDC of the monitor connected to the RX is read and stored on the TX. The CPU is informed of a change in DDC and the monitor is read. This is useful when the CPU can be turned on without a connection to the RX.
		Static mode is used to maintain the current DDC regardless of monitor changes at the RX.
		Passthru mode makes the DDC pins look like direct connections between the TX and RX, allowing the computer to talk directly to the monitor.

Display	Modifiable	Description
Load Default DDC	YES	Loads the default DDC stored in the application, allowing a range of resolutions (i.e. 1024x768, 1920x1200). This puts the TX into static mode.
Acquire DDC	YES	Gets the DDC table of the unit attached, stores the information and puts the TX in static mode.
Force DDC Mode	YES	Used to force the DDC of a monitor to appear as either digital or analog. Since Velocity products can convert between analog and digital, sometimes the DDC has to be modified to match the method of connecting the TX to CPU.

RECEIVER:

Display	Modifiable	Description
*System		
LS Connected	NO	An indication of the fiber status from the TX to RX.
Tx Ctrl Name	TX Only	Name entered on TX unit is displayed on RX unit.
KM Device	NO	Revision of the Velocity portion that plugs into CPU.
KM Remote Host	NO	Revision of the Velocity KM Host on the RX unit.
KM Local Host	NO	Revision of the Velocity KM Host on the TX unit.
TX Control	NO	Revision of the TX unit laser and front panel control.
RX Control	NO	Revision of the RX unit laser and front panel control.
FPGA Version	NO	Revision of the FPGA used for video generation.
Serial Number	NO	2 digits each for DDMMYY and 2 or 3 unique digits
Debug Values	YES	Factory Use.
SFP Loss of Signal	NO	Indicates loss of SFP signal
Temp in Celsius	NO	IN=PCB (max=70°) EX=FPGA (max=85°)
KMASS Card ID	NO	
Video Card ID	NO	
USB 2.0 Card ID	NO	

Display	Modifiable	Description
*PS2 Devices		
PS2 KB Scan	NO	Value of 1, 2 or 3 for the scan code. 0= not properly connected to the CPU.
PS2 Mouse Mode	NO	Value of 0, 3 or 4 for the mode. 255= mouse not properly connected to the CPU.

Display	Modifiable	Description
*USB Country Code		
USB Country	NO	The country code of the USB KB that the unit reports

itself as being. This is the last USB KB country applied to the remote host. Most hardware is not localized and thus this value would be zero (0), which is displayed as "Not Supported"

Display	Modifiable	Description
USB Device Enum	NO	A bit pattern that indicates which ports have been enumerated at the Velocity device side. The bits are laid out as Bit0=KB, Bit1=MS, Bit2=TBLT, Bit3=DWNLD, Bit4=Daughter Card_KB, Bit5=Daughter_MS, Bit6=Daughter_TBLT.

*DDC

Display	Modifiable	Description
DDC PROM Emula. Mode	YES	Options are Dynamic, Static and Passthru.
		In **Dynamic mode**, the DDC of the monitor connected to the RX is read and stored on the TX. The CPU is informed of a change in DDC and the monitor is read. This is useful when the CPU can be turned on without a connection to the RX.
		Static mode is used to maintain the current DDC regardless of monitor changes at the RX.
		Passthru mode makes the DDC pins look like direct connections between the TX and RX, allowing the computer to talk directly to the monitor.
Load Default DDC	YES	Loads the default DDC stored in the application, allowing a range of resolutions (i.e. 1024x768, 1920x1200). This puts the TX into static mode.
Acquire DDC	YES	Gets the DDC table of the unit attached, stores the information and puts the TX in static mode.
Force DDC Mode	YES	Used to force the DDC of a monitor to appear either digital or analog. Since Velocity products can convert between analog and digital, sometimes the DDC has to be modified to match the method of connecting the TX to CPU.

*Video

Display	Modifiable	Description
Video Tx 1 cnt.	NO	Video IN 1 pixel sample clock (TX)
Video Rx 1 cnt.	NO	Video IN 1 pixel sample clock (RX)
Video Tx 2 cnt.	NO	Video IN 2 pixel sample clock (TX)
Video Rx 2 cnt.	NO	Video IN 2 pixel sample clock (RX)
TX 1 Stream Info	NO	Video Channel 1 ID
TX 2 Stream Info	NO	Video Channel 2 ID
PropConst	YES	Factory default setting for debug
IntegConst	YES	Factory default setting for debug

3.2. Saving Changes

Save video configurations so that after powering up, the device can recall customer video settings.

```
Thinklogical
 Velocity Tx      VXX.XX
```
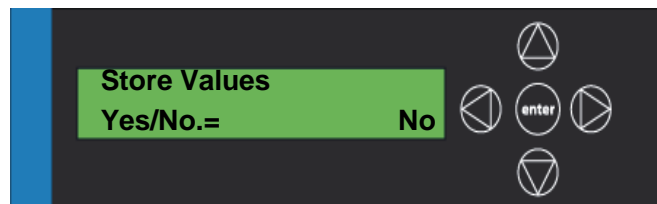
Using the down arrow, scroll down to ***System** as shown below.

```
*System
```

Using the right arrow, scroll right until **Store Values** is displayed as shown below, then press **enter**.

```
Store Values
Yes/No.=              No
```

Using the up arrow or down arrow scroll until **Yes** appears as shown below. Then press **enter**.

```
Store Values
Yes/No.=             Yes
```

Using the right arrow or left arrow scroll until you return to the ***System** menu option. Using up arrow or down arrow, scroll until you get to the **Thinklogical** screen as shown below.

```
Thinklogical
 Velocity Tx      VXX.XX
```

3.3. Restoring Factory Defaults

Load the factory default video configurations.

```
Thinklogical
  Velocity Tx      VXX.XX
```

Using the down arrow, scroll down to ***System** as shown below.

```
*System
```

Using the right arrow button, scroll right until **Load Defaults** is displayed as shown below. Then press **enter**.
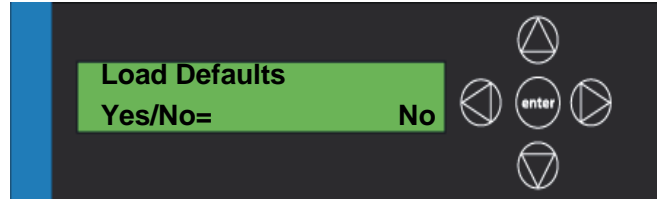
```
Load Defaults
Yes/No=            No
```

Using the up arrow or down arrow, scroll until **Yes** appears as shown below. Then press **enter**.

```
Load Defaults
Yes/No=            Yes
```
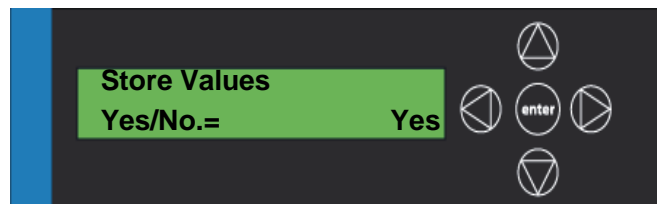
Follow these steps to save your changes:
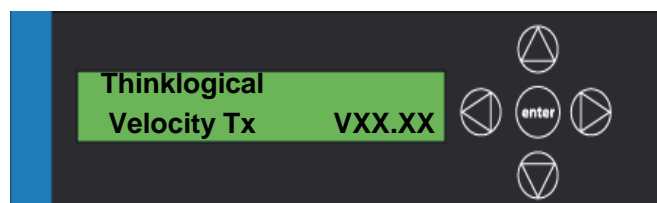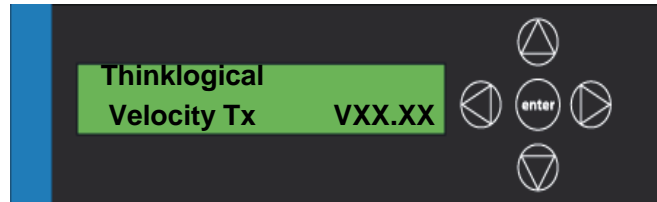1. Using the down arrow, scroll down to ***System**.
2. Using the right arrow, scroll right until **Store Values** is displayed. Then press **enter**.
3. Using the up or down arrow, scroll until **Yes** appears. Then press **enter**.
4. Using the right or left arrow, scroll to return to the ***System** menu option.
5. Using up or down arrow, scroll until you get to the **Thinklogical** screen.

3.4. Naming the Transmitter Unit

Modify the name of the unit through the Transmitter. The name entered on the Transmitter will display on the Receiver unit.
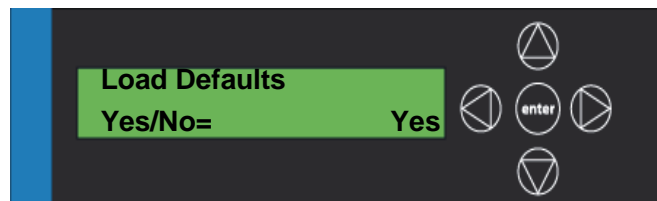

Using the arrow down button, scroll down to ***System** as shown below.

Using the right arrow, scroll right until **Tx Ctrl** is displayed as shown below. Then press **enter**.
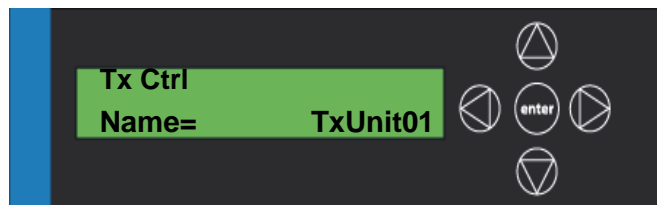
Using the right or left arrow, scroll until the blinking cursor is under the letter/number you want to change.
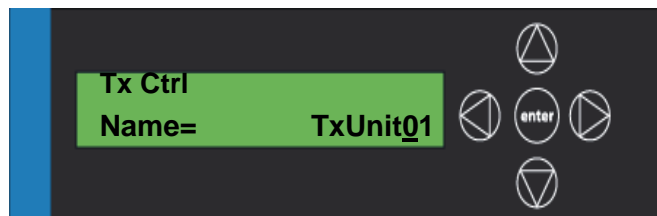
Using the up or down arrow, scroll (holding down the up or down arrow will scroll faster) until you find the appropriate letter/number. Then press **enter.**

Using the right or left arrow, scroll to return to the ***System** menu option.
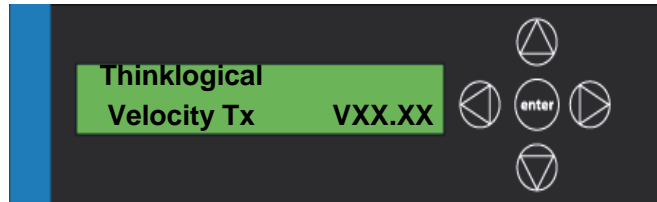

Follow the steps below to save your changes:
1. Using the down arrow, scroll down to ***System**.
2. Using the right arrow, scroll right until **Store Values** is displayed. Then press **enter**.
3. Using the up or down arrow, scroll until **Yes** appears. Then press **enter**.
4. Using the right or left arrow, scroll to return to the ***System** menu option.
5. Using up or down arrow, scroll until you get to the **Thinklogical** screen.

4. REGULATORY & SAFETY COMPLIANCE
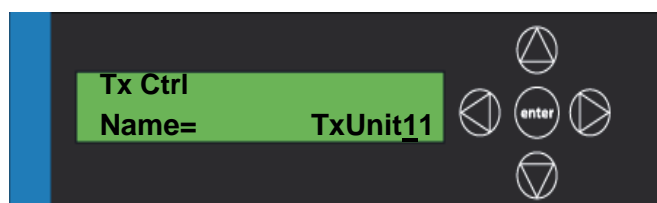
4.1. Safety Requirements

4.1.1. 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.

4.1.2. 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.

4.1.3. Standards with Which Our Products Comply

Safety

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

Electromagnetic Emissions

EN55022: 1994 (IEC/CSPIR22: 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

4.2. 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 exigencies 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 electro-magnetic fields.**

4.2.1. 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 **5**th month of 20**14**, and is unit number **125**.

4.2.2. 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.

5.0. HOW TO CONTACT US

5.1. 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.

5.2. 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.

5.2.1. 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, LLC® at **1-800-291-3211** (USA).

5.2.2. Return Authorization

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

Return **M**erchandise **A**uthorization 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 **R**eturn **M**erchandise **A**uthorization 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

Appendix A-
VelocityKVM T-Series Ordering Information

Part Numbers and Descriptions

Velocity T-4200 CHASSIS

VTS-004200 Velocity T-Series Chassis
VTS-Q04200 Velocity T-Series/Q-series Chassis

DVI MODULES

Velocity T-Series DVI Modules

VTM-U00004-LCRX VelocityKVM T-Series Rx, Single Head, Single Link DVI, USB 2.0, KMAS, LC
VTM-U00004-LCTX VelocityKVM T-Series Tx, Single Head, Single Link DVI, USB 2.0, KMAS, LC
VTM-U00005-LCRX VelocityKVM T-Series Rx, Single Head, Single Link RGB/DVI, USB 2.0, KMAS, LC
VTM-U00005-LCTX VelocityKVM T-Series Tx, Single Head, Single Link RGB/DVI, USB 2.0, KMAS, LC
VTM-U00008-LCRX VelocityKVM T-Series Rx, Single Head, Dual Link DVI, USB 2.0, KMAS, LC
VTM-U00008-LCTX VelocityKVM T-Series Tx, Single Head, Dual Link DVI, USB 2.0, KMAS, LC
VTM-U00024-LCRX VelocityKVM T-Series Rx, Dual Head, Single Link DVI, USB 2.0, KMAS, LC
VTM-U00024-LCTX VelocityKVM T-Series Tx, Dual Head, Single Link DVI, USB 2.0, KMAS, LC
VTM-H00004-LCRX VelocityKVM T-Series Rx, Single Head, Single Link DVI, KMAS, LC
VTM-H00004-LCTX VelocityKVM T-Series Tx, Single Head, Single Link DVI, KMAS, LC
VTM-H00005-LCRX VelocityKVM T-Series Rx, Single Head, Single Link RGB/DVI, KMAS, LC
VTM-H00005-LCTX VelocityKVM T-Series Tx, Single Head, Single Link RGB/DVI, KMAS, LC
VTM-H00008-LCRX VelocityKVM T-Series Rx, Single Head, Dual Link DVI, KMAS, LC
VTM-H00008-LCTX VelocityKVM T-Series Tx, Single Head, Dual Link DVI, KMAS, LC
VTM-H00024-LCRX VelocityKVM T-Series Rx, Dual Head, Single Link DVI, KMAS, LC
VTM-H00024-LCTX VelocityKVM T-Series Tx, Dual Head, Single Link DVI, KMAS, LC

Single Mode Optics Option (DVI Modules)

VOP-S04 Velocity 4/5 T-Series Optics Option for Tx or Rx, Single Mode, 3 Fibers, 40KM, LC
VOP-S06 Velocity 8/24 T-Series Optics Option for Tx or Rx, Single Mode, 3 Fibers, 40KM, LC

Multi-Mode Optics Option (DVI Modules)

VOP-M19 Velocity 4/5 T-Series Optics Option for Tx or Rx, Multi-Mode, 3 Fibers, 1000M, LC
VOP-M30 Velocity 8/24 T-Series Optics Option for Tx or Rx, Multi-Mode, 3 Fibers, 1000M, LC

SDI MODULES

Velocity T-Series SDI Modules

STM-C1C1X2-LCRX SDIXtreme 3G+ T-4200 Dual Rx Mod. with 2 SFPs & 2 Pairs of SDI Outputs, LC
STM-L1C1X2-LCTR SDIXtreme 3G+ T-4200 Transceiver Module:
    TX: 1 Input with Loop-out and 1 SFP, LC
    RX: 2 SDI Outputs and 1 SFP, LC
STM-L1L1X2-LCTX SDIXtreme 3G+ T-4200 Dual Tx Module with 2 Inputs, 2 Loop Outs & 2 SFPs, LC

Single Mode Optics Option (SDI Modules)

VOP-S29 SDIXtreme 3G+ Optics Option for Tx or Rx, Single Mode, 3 Fibers, 4KM, LC
VOP-S30 SDIXtreme 3G+ Optics Option for Tx or Rx, Single Mode, 3 Fibers, 10KM, LC
VOP-S58 SDIXtreme 3G+ Optics Option for Tx or Rx, Single-Mode, 3 Fibers, 30M, LC

Multi-Mode Optics Option (SDI Modules)

VOP-M21 SDIXtreme 3G+ Optics Option for Tx or Rx, Multi-Mode, 3 Fibers, 1000M, LC

Q-Series Modules

For specific information on each of the Q-Series modules, please refer to the most current revision of the following manuals, available on our website: **www.thinklogical.com**

- **Manual_Q-Series_KMASS_Modules**
- **Manual_Q-Series_SDI_Modules**
- **Manual_Q-Series_Video_Modules**

Appendix B- Thinklogical KVM Extenders

The Logical Solution

VelocityKVM Extension Systems are designed for high performance visual applications that require video as well as peripheral support. (VelocityKVM Extension System-5 supports DVI or RGB.) The system allows users, via optical fiber, to station and operate a digital monitor(s) and peripherals from just a few meters away to up to 40 kilometers away from the controlling computer securely and without loss of resolution. The VelocityKVM system is designed to support PS2, full duplex stereo audio, serial (RS-232), USB 1.0 (HID) and USB 2.0 (up to 480 Mbps).

VelocityKVM products are ideally suited for a wide range of applications in the broadcast and post-production field, as well as command and control centers, universities, large scale digital signage and other commercial KVM applications.

Theory of Operation

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, this KVM extension system transports every frame of a DVI video stream seamlessly, with no compression or dropped frames. In addition, all high speed peripherals function with no latency. Leveraging standard SFP+ transceivers, the system allows for the use of either multi-mode or single-mode fiber optic cable.

The System

The VelocityKVM Extension System has a simple transmitter/receiver design which allows for ease of installation and straight-forward deployment. Depending on the user's infrastructure, the transmitter and the receiver can be connected by a multi-mode or single-mode fiber optic cable. The transmitter unit connects to the CPU with the supplied peripheral cables. In addition, a local video, keyboard and mouse port is available on the transmitter. The receiver unit provides connections to the user interface devices.

Why Fiber?

The limit on how much bandwidth or data that can be carried across a copper line can become a bottleneck for enterprise access and ultimately, for revenue. This bottleneck often appears in heavy-volume, metropolitan area networks. Fiber Optic Cable alleviates this problem by offering substantially greater bandwidth.

The VelocityKVM Distance (up to 350m using 50/125µm fiber)

Multi-mode fiber is designed for transmission distances such as those found within a single building or facility and so is ideal for multi-channel television broadcast systems. Multi-mode fiber can be used to send video signals from room to room or floor to floor. The VelocityKVM allows for video and peripheral transmission distances up to 350 meters using 50/125µm fiber, making it an ideal solution for in-house applications.

Advanced Top Quality Video Transmission

Fiber Optic Cable has emerged as a logical solution for next-generation signal routing. The VelocityKVM product family harnesses this capability and ensures long distance, error-free transmission with no frame or bit dropping and complete immunity to interference. The end result is ***no degradation of the video or peripheral signals whatsoever.***