thinklogical®

A BELDEN BRAND

# Q-Series KMASS Modules

**Conveniently and cost-effectively extend audio and USB over fiber**

**For use in the Q-4300, Q-2300 & Q-1300 Chassis**


# PRODUCT MANUAL

Revision E, March 2020

Thinklogical, A BELDEN BRAND • 100 Washington Street • Milford, Connecticut 06460 U.S.A.

thinklogical®

A BELDEN BRAND

# Copyright Notice



**Thinklogical,** A **BELDEN** BRAND
**100 Washington Street**
**Milford, Connecticut 06460 U.S.A.**
**Telephone: 1-203-647-8700**



**Subject:** Q-Series KMASS Modules Product Manual (Q-Series Fiber Extension)
**Revision:** E, March 2020

Thinklogical®

Website: www.thinklogical.com
Facebook: www.facebook.com/ThinklogicalUSA
LinkedIn: www.linkedin.com/company/thinklogical
Google+: http://plus.google.com/u/0/109273605590791763795/about
YouTube: www.youtube.com/user/thinklogicalNA
Twitter: @thinklogical

# Table of Contents

# Table of Contents (cont.)



**MADE IN USA**

# PREFACE

## About Thinklogical

TOP WORK PLACES 2013 | TOP WORK PLACES 2014 | TOP WORK PLACES 2016 | TOP WORK PLACES 2017 | TOP WORK PLACES 2018

HEARST media services
CONNECTICUT POST
GREENWICH TIME
THE NEWS-TIMES
THE ADVOCATE

**Thinklogical, A BELDEN BRAND**
**100 Washington St.**
**Milford, CT 06460**

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

**Thinklogical offers the only fiber-optic KVM Matrix Switches in the world that are accredited to the Common Criteria EAL4, TEMPEST SDIP 24 Level B, and NATO NIAPC Evaluation Scheme: GREEN and the U.S. DoD DISA JITC UCR 2013 APL information assurance standards. And Thinklogical Velocity products are the first system with both KVM and video matrix switching capabilities to be placed on the Unified Capabilities Approved Product List (UC APL) under the Video Distribution System (VDS) category.**

**Thinklogical products are designed and manufactured in the USA and are certified to the ISO 9001:2015 standard.**

ANAB ACCREDITED MANAGEMENT SYSTEMS CERTIFICATION BODY | Certified to ISO 9001:2015 | TÜVRheinland Precisely Right.

Information Assurance

Common Criteria | TEMPEST | NATO Information Assurance Product Catalogue NIAPC

Thinklogical is headquartered in Milford, Connecticut and is owned by Belden, Inc., St. Louis, MO (http://www.belden.com). For more information about Thinklogical products and services, please visit https://www.thinklogical.com.

## Conventions Used in this Manual

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

**Note: 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.

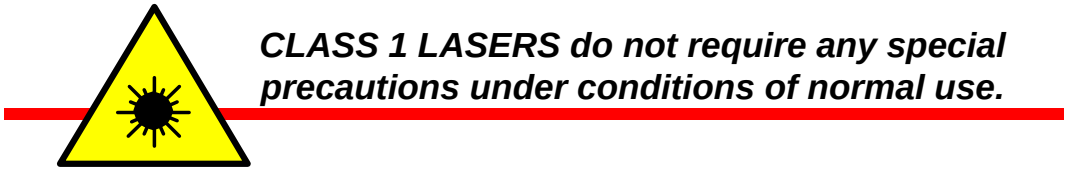
**Warning! All Warnings appear in red text, followed by blue text, and preceded by a red stop sign, as shown here.**

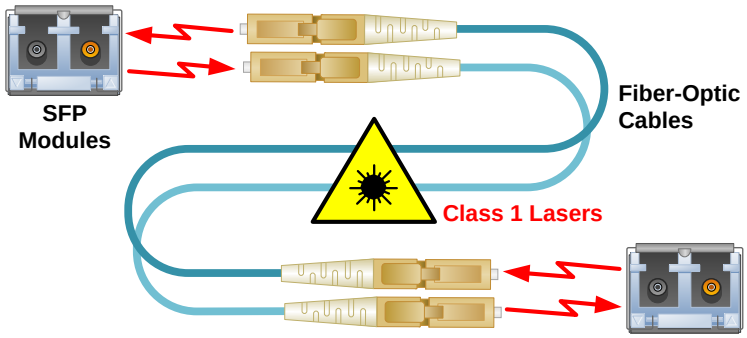
A warning is meant to call the reader's attention to **critical** information at a point in the text that is relevant to the subject being discussed.

**READ THE INSTRUCTIONS THOROUGHLY BEFORE STARTING ANY PROCEDURE!**

## Class 1 Laser Information

Thinklogical's Fiber-optic Extenders and Matrix Switches are designed and identified as **Class 1 LASER products.** This means the maximum permissible exposure (MPE) cannot be exceeded when viewing the laser with the naked eye or with the aid of typical magnifying optics (e.g. telescope or microscope).



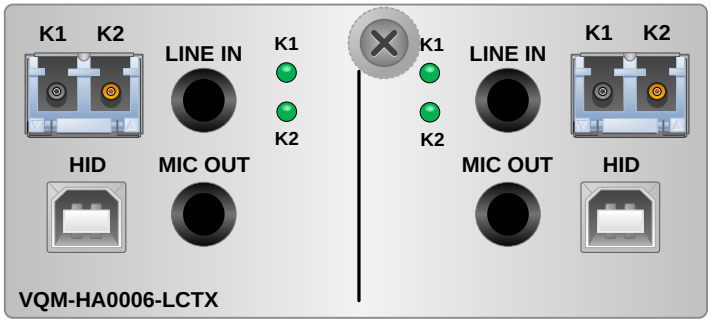
# 1. *Thinklogical's*® Q-Series KMASS Modules

## 1.1. Product Overview

***Thinklogical's* Q-Series KMASS Modules provide users with a convenient, cost-effective and space-saving way to extend audio and USB over fiber.** Up to four modules can be housed in a single, one rack unit Q-4300 Chassis, making the Q-Series an ideal solution where space, security and economy are vital. And if one module is all you need do the job, Thinklogical also offers a single-module Q-1300 chassis for desktop applications.


Incorporating standard SFP+ transceivers, the system uses fiber-optic cables to allow the placement of audio and USB devices up to 1000 meters (3280 feet) away from the controlling computer without loss of signal or resolution. Installation is plug-and-play and no adjustments are necessary.

All Q-Series KMASS modules are connected by fiber-optic cables to provide communications between the transmitters and receivers. The transmitter module connects to a CPU with supplied audio (unbalanced), USB and PS2 cables. The receiver module provides an interface to the destination audio and USB devices.




*Q-Series Dual Transmitter with USB HID and Audio Ports*

**H:** 1.592” (4.04cm) x **D:** 6.366” (16.17cm) x **W:** 3.693” (93.8cm)

## 1.2. System Features

**Thinklogical's Q-Series line of KMASS (Keyboard, Mouse, Audio, Serial, Stereo 3D) Modules includes a variety of TX and RX models, designed to meet almost any data extension applications. Each module can be used in our stand-alone Q-1300 Chassis or, for more extensive applications, our two-module Q-2300 chassis or our four-module Q-4300 chassis, each of which will support any combination of transmitters and receivers.**

The Q-4300's chassis allows up to four hot-swappable interface modules to be used in a variety of applications, as either transmitters, receivers, or as transceivers. Q-Series KMASS modules support two-way, unbalanced audio, high speed USB 2.0 (480 Mbps) and low speed USB HID (1.5 Mbps).

Installation possibilities are expanded with built-in support for either multi-mode or single mode fiber, making this a convenient and cost-effective solution to transmit quality data signals over long distances. Each module is hot swappable, and in addition, the standard SFP+ optics (with LC connectors) are hot swappable/pluggable.

**Every Q-Series module is fully compatible with *Thinklogical's* TLX, VX and MX Matrix Switch® product lines.**

### 1.2.1. The Q-Series Chassis

**Each Q-Series Chassis provides a framework for mounting, powering, upgrading and interfacing with a variety of modules that perform the functions of a KVM and video distribution system.** The Q-4300 chassis supports up to 4 modules, features redundant power supplies, an LCD/button interface and provides convenient upgrade ports for the chassis and modules. Fans mounted inside the chassis provide cooling and all modules and power supplies are hot swappable. The chassis may be rack or desktop mounted. Other installable modules include our DVI and SDI lines of extenders. (**See pg. 22 to contact a Thinklogical® sales representative for more details.**)


**Q-4300 Chassis:** (VQS-004300) Supports up to four KMASS, DVI, RGB/DVI or SDI Q-Series modules. Dual interface and current sharing power supplies. Desktop or 19" rack-mount.


**Q-2300 Chassis:** (VQS-002300) Supports up to two KMASS, DVI, RGB/DVI or SDI Q-Series modules. Desktop or 19" rack-mount.


| CHASSIS | H | D | W |
|---|---|---|---|
| CHS-000004 | 1.72" | 14.00" | 17.47" |
| CHS-000002 | 1.72" | 10.66" | 10.74" |
| CHS-000001 | 1.72" | 10.66" | 4.31" |

**Q-1300 Chassis:** (VQS-001300) Supports one KMASS, DVI, RGB/DVI or SDI Q-Series module. Desktop only.

## 1.2.2. Mixing Q-Series Modules and TLX Modules in a single Chassis

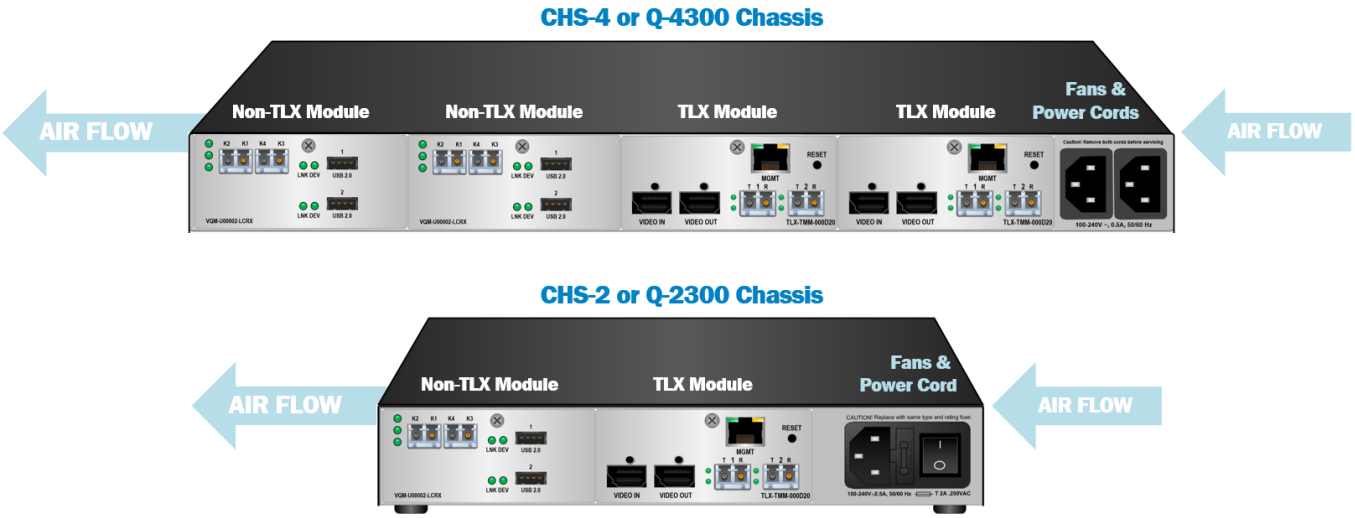
Besides Q-Series products, Thinklogical also carries the TLX line of 10G extension products in a modular format. **Non-Q-Series modules, such as TLX, are compatible with the Q-4300, Q-2300 and Q-1300 chassis as well as their own CHS-4, CHS-2 and CHS-1 chassis.** However, because VQM modules generate less heat than TLX modules, they were not deigned to allow air-flow through their enclosures as in TLX modules.

### 1.2.2.1. Air-Flow through VQM Modules

**To avoid over-heating of TLX modules when mixed with non-TLX modules, the simple solution is to always install all non-TLX modules on the left side of the chassis** (as looking from the back where the modules are loaded) **and install all TLX modules on the right side, next to the cooling-air intake fans** (The side next to the power cord receptacles). This will allow proper air-flow over the warmer TLX modules and will prevent over-heating. *This is true for both the Q-4300 and Q-2300 Chassis and for both the CHS-4 and CHS-2 Chassis.*

**Warning! To avoid over-heating of TLX modules, always install all non-TLX modules on the left side of the chassis (as looking from the back where the modules are loaded) and install all TLX modules on the right side, next to the cooling-air intake fans (The side next to the power cord receptacles) .**

**Note: Non-TLX modules, such as Thinklogical's Q-Series (VQM), were not deigned to allow air-flow through their enclosures as in TLX modules.**




*To avoid over-heating, always install all non-TLX modules on the left side of the chassis and install all TLX modules on the right*

# 1.3. Q-Series KMASS Modules

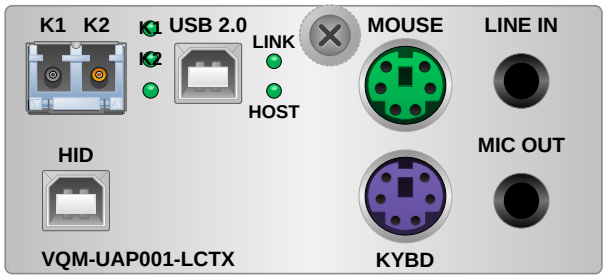
There are nine varieties of Q-Series KMASS Modules, each featuring a combination of one or more USB HID, PS2 to USB HID, USB 2.0 and two-way, unbalanced Audio ports, including models with dual ports and redundant fibers. (See pg. 22 to contact a Thinklogical® sales representative for more details.)

## 1.3.1. USB 2.0, USB HID, Audio and PS2 Modules

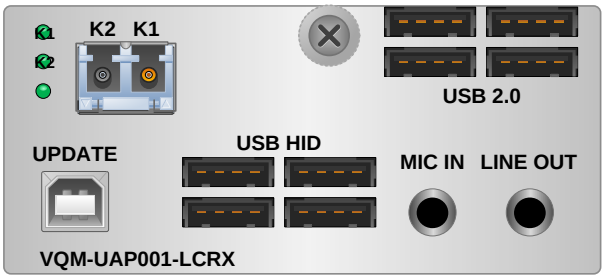
Each **Transmitter** (TX) **Module** features a USB HID port, a USB 2.0 port, two PS2 ports* (for local keyboard & mouse) and a LINE IN and MIC OUT port. The **Receiver** (RX) **Module** features four USB HID ports (including keyboard & mouse), four USB 2.0 ports and a LINE OUT and MIC IN port. Each module also has a pair of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.

*Use either the USB HID or the PS2 transmitter ports for keyboard and mouse. If both are used simultaneously, the HID port will over-ride the PS2 ports.

**VQM-UAP001-LCTX (Transmitter)**




**VQM-UAP001-LCRX (Receiver)**




**VQM-UAP001 LED functions:**

**TX:** K 1; **SFP Output Ready** LINK; **USB2.0 Extension Connected to Rx**
K 2; **Fiber Input Valid** HOST; **USB2.0 Link Connected CPU to Rx Ports**

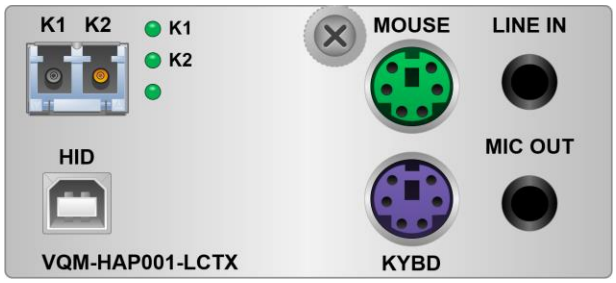
**RX:** K 2; **SFP Output Ready** K 1; **Fiber Input Valid** (Unmarked LEDs are AUX)

## 1.3.2. USB HID, Audio and PS2 Modules

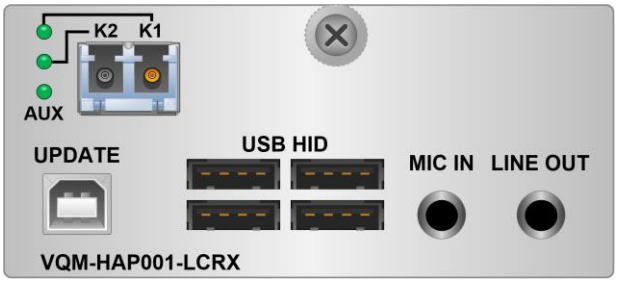
Each **Transmitter** (TX) **Module** features two PS2 ports* (for local keyboard & mouse) and a LINE IN and MIC OUT port. The **Receiver** (RX) **Module** features four USB HID ports and a LINE OUT and MIC IN port. Each module also has a pair of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.

*Use either the USB HID or the PS2 transmitter ports for keyboard and mouse. If both are used simultaneously, the HID port will over-ride the PS2 ports.

**VQM-HAP001-LCTX (Transmitter)**



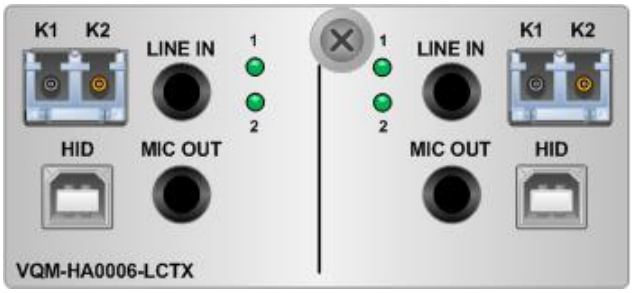

**VQM-HAP001-LCRX (Receiver)**



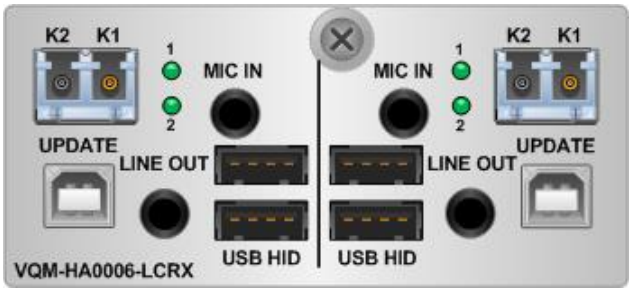
## 1.3.3. Dual USB HID and Audio Modules (6 Gbps)

Each **Dual Transmitter** (TX) **Module** features a pair of USB HID ports and a pair of LINE IN and MIC OUT ports. The **Dual Receiver** (Rx) **Module** features two pairs of USB HID ports and a pair of LINE OUT and MIC IN ports. Each module also has two pairs of fiber connectors used for transferring data between the Transmitters and Receivers at a data rate of 6 Gbps. Status LEDS provide system information.

**VQM-HA0006-LCTX (Transmitter)**



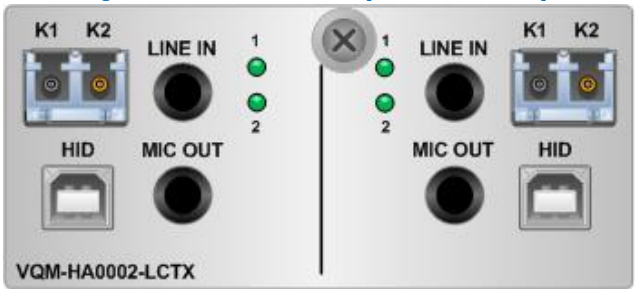

**VQM-HA0006-LCRX (Receiver)**



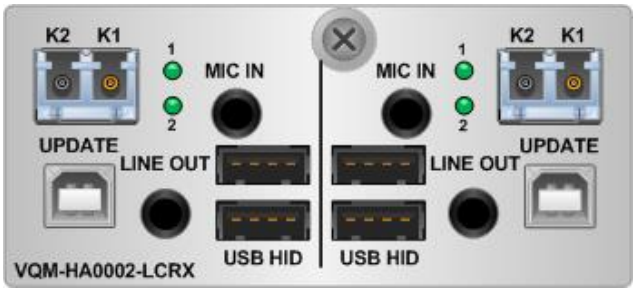

## 1.3.4. Dual USB HID and Audio Modules (2 Gbps)

Each **Dual Transmitter** (TX) **Module** features a pair of USB HID ports and a pair of LINE IN and MIC OUT ports. The **Dual Receiver** (Rx) **Module** features two pairs of USB HID ports and a pair of LINE OUT and MIC IN ports. Each module also has two pairs of fiber connectors used for transferring data between the Transmitters and Receivers at a data rate of 2 Gbps. Status LEDS provide system information.

**VQM-HA0002-LCTX (Transmitter)**




**VQM-HA0002-LCRX (Receiver)**



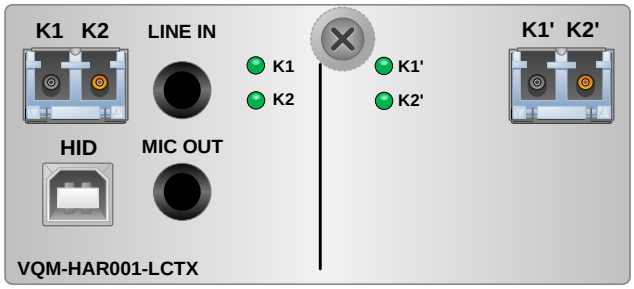

**VQM-HAP001, VQM-HA0002 and VQM-HA0006 LED functions:**

**TX:** LED 1; **SFP Output Ready** LED 2; **Fiber Input Valid**
**RX:** LED 1; **Fiber Input Valid** LED 2; **SFP Output Ready**

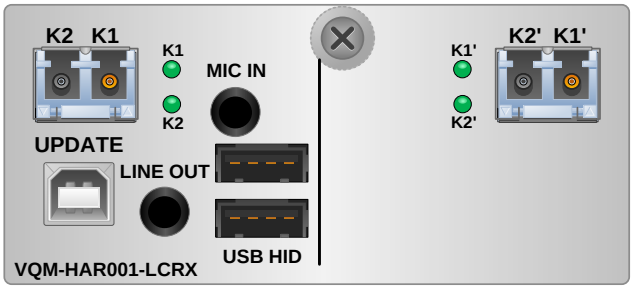
## 1.3.5. Redundant USB HID and Audio Modules

Each **Redundant Transmitter** (TX) **Module** features a USB HID port and a LINE IN and MIC OUT port. Each **Redundant Receiver** (RX) **Module** features a pair of USB HID ports and a LINE OUT and MIC IN port. Each module also has two pairs of fiber connectors (Primary and Redundant) used for transferring redundant data between the Transmitters and Receivers. Status LEDS provide system information.

**VQM-HAR001-LCTX (Transmitter)**




**VQM-HAR001-LCRX (Receiver)**




**VQM-HAR001 LED functions:**

**TX:** LED 1; **SFP Output Ready** LED 2; **Fiber Input Valid**
**RX:** LED 1; **Fiber Input Valid** LED 2; **SFP Output Ready**

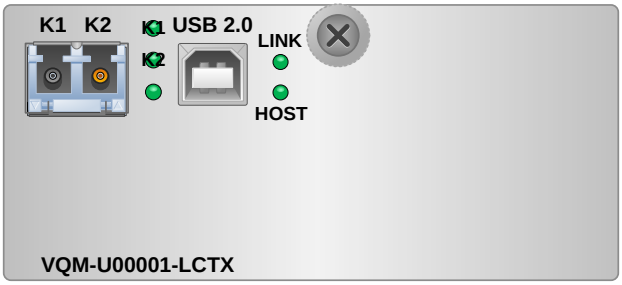
### 1.3.5.1. Unbalanced Audio Specifications

| | |
|---|---|
| **Audio Sampling Rate** | **46.875 kHz** |
| **Transmitter** | Line Input Impedance: **10KΩ**<br>Maximum Line Input: **2.5 volts peak to peak**<br>Microphone Output Impedance: **300Ω**<br>Maximum Microphone Output: **0.45 volts peak to peak** |
| **Receiver** | Line Output Impedance: **560Ω**<br>Maximum Output: **3 volts peak to peak**<br>Microphone Input Impedance: **5KΩ**<br>Maximum Microphone Input: **0.24 volts peak to peak** |

## 1.3.6. USB 2.0 Modules

Each **Transmitter** (TX) **Module** features a USB 2.0 B port. Each **Receiver** (RX) **Module** features a USB 2.0 A port. Each module also has a pair of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.

**VQM-U00001-LCTX (Transmitter)**

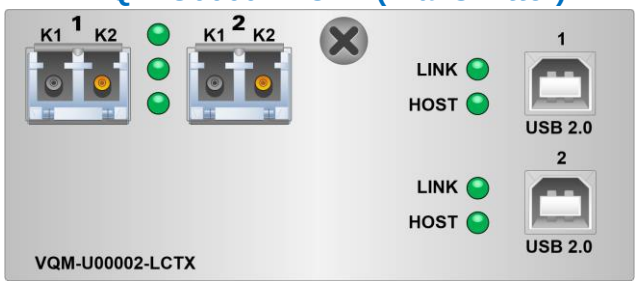



**VQM-U00001-LCRX (Receiver)**

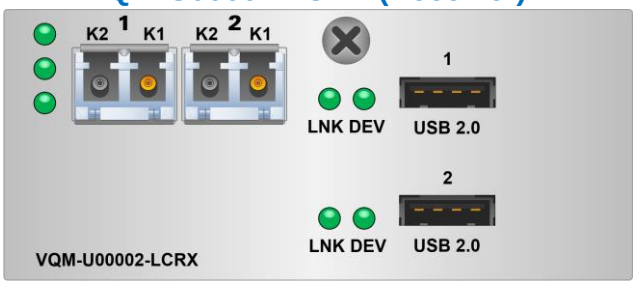

## 1.3.7. Dual USB 2.0 Modules

Each **Transmitter** (TX) **Module** features *two* USB 2.0 B ports. Each **Receiver** (RX) **Module** features *two* USB 2.0 A ports. Each module also has two pairs of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.

**VQM-U00002-LCTX (Transmitter)**



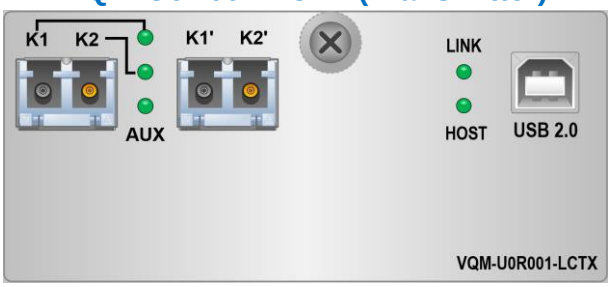

**VQM-U00002-LCRX (Receiver)**



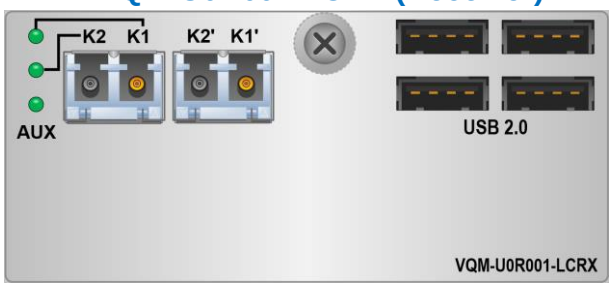

## 1.3.8. Redundant USB 2.0 Modules

Each **Redundant Transmitter** (TX) **Module** features a USB 2.0. Each **Redundant Receiver** (RX) **Module** features a pair of USB 2.0 ports. Each module also has two pairs of fiber connectors (Primary and Redundant) used for transferring redundant data between the Transmitters and Receivers. Status LEDS provide system information.

**VQM-U0R001-LCTX (Transmitter)**




**VQM-U0R001-LCRX (Receiver)**




**VQM-U0R001 LED functions:**

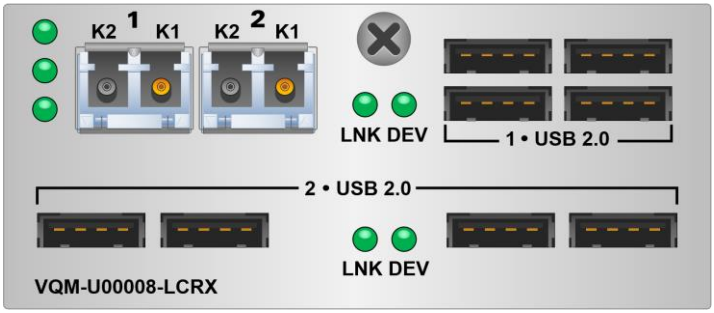
**TX:** K 1; **SFP Output Ready** — LINK; **USB2.0 Extension Connected to Rx**
K 2; **Fiber Input Valid** — HOST; **USB2.0 Link Connected CPU to Rx Ports**

**RX:** K 2; **SFP Output Ready** — K 1; **Fiber Input Valid**

## 1.3.9. Dual 4-Port USB 2.0 Receiver Module

Each **Receiver** (RX) **Module** features two 4-Port sets of USB 2.0 A outputs. Each module also has two pairs of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.

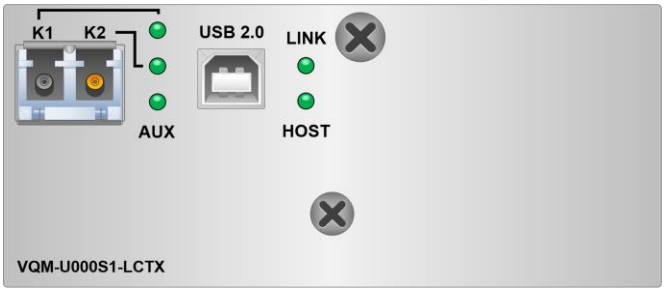
**VQM-U00008-LCRX (Receiver)**



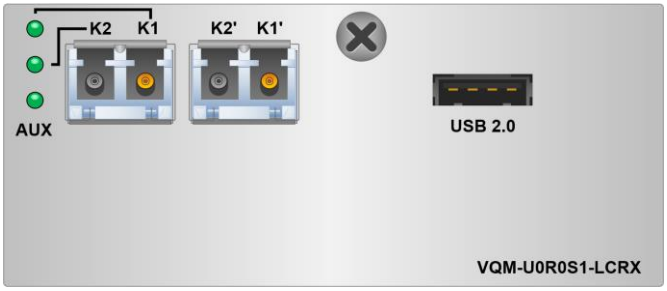

## 1.3.10. Secure USB 2.0 Transmitter and Receiver Modules

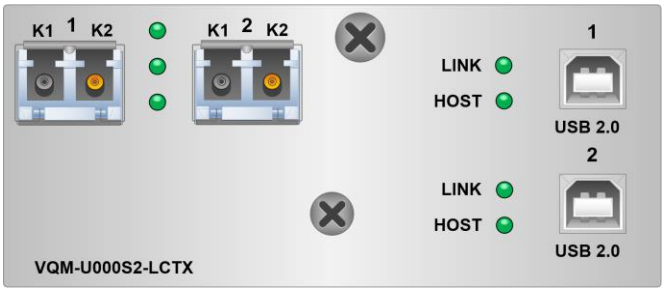
**Thinklogical's Secure Q-Series Modules communicate only with other Secure Q-Series Modules.** Direct fiber-optic links prevent unauthorized signal access. Each Transmitter (Tx) and Receiver (RX) Module features either one or two USB 2.0 ports and one or two pairs of fiber connectors used for transferring data between the Transmitters and Receivers. Status LEDS provide system information.*

**VQM-U000S1-LCTX (Transmitter)**

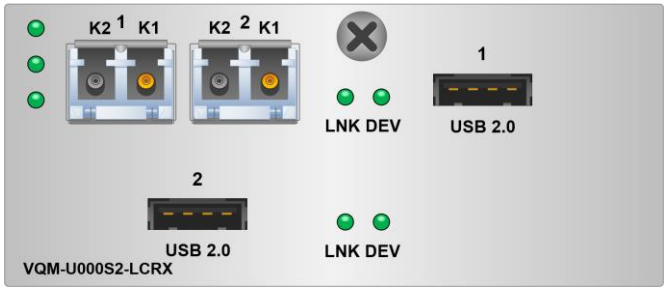



**VQM-U0R0S1-LCRX (Receiver)**




**VQM-U000S2-LCTX (Transmitter)**




**VQM-U000S2-LCRX (Receiver)**

*On the VQM-U0000S2-LCRX, the DEV LED does not function.

## 1.4. Q-Series KMASS Modules Technical Specifications

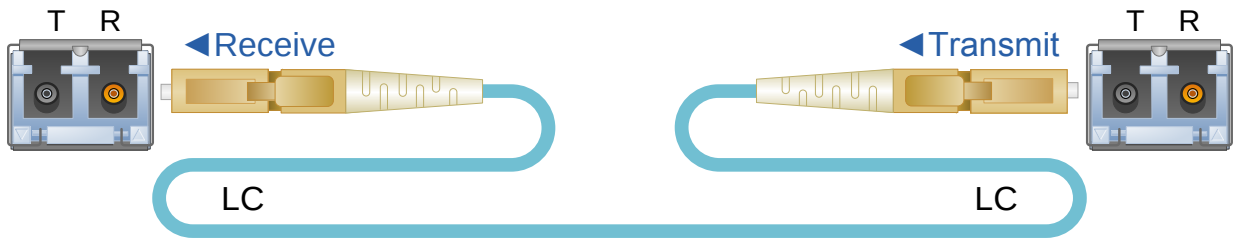
| | |
|---|---|
| **KMASS Modules** | **Dimensions:**<br>Height: **1.592”** (40.43 mm)<br>Depth: **6.366"** (161.69 mm)<br>Width: **3.513"** (89.92 mm) |
| **Electrical Cables Supplied with Transmitters** [Quantity] | **VQM-UAP001-LCTX:**<br>CBL000006-006FR PS2 (6-pin MINI DIN) Cable, 6FT [2]<br>CBL000015-006FR USB A-B Cable, 6FT [2]<br>CBL000016-006FR 3.5mm Male to 3.5mm Male Plug, 6FT [2]<br>**VQM-HAP001-LCTX:**<br>CBL000006-006FR PS2 (6-pin MINI DIN) Cable, 6FT [2]<br>CBL000015-006FR USB A-B Cable, 6FT [1]<br>CBL000016-006FR 3.5mm Male to 3.5mm Male Plug, 6FT [2]<br>**VQM-HA0002-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [2]<br>CBL000016-006FR 3.5mm Male to 3.5mm Male Plug, 6FT [4]<br>**VQM-HA0006-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [2]<br>CBL000016-006FR 3.5mm Male to 3.5mm Male Plug, 6FT [4]<br>**VQM-HAR001-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [1]<br>CBL000016-006FR 3.5mm Male to 3.5mm Male Plug, 6FT [2]<br>**VQM-U00001-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [1]<br>**VQM-U00002-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [2]<br>**VQM-U0R001-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [1]<br>**VQM-U000S2-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [2]<br>**VQM-U0R0S1-LCTX:**<br>CBL000015-006FR USB A-B Cable, 6FT [1] |
| **Optical Distance** | **Multi-Mode:**<br>Up to 65 meters with Type OM1<br>Up to 350 meters with Type OM2<br>Up to 650 meters with Type OM3<br>Up to 1000 meters with Type OM4<br>**Single-Mode:**<br>Up to 80km with Type OS2 9/125 for all distances |
| **Input Rating** | **100-240VAC, 50-60Hz** |
| **Max. DC Power Consumption** | Tx Modules: **5W** (1 amp @ 5VDC)<br>Rx Modules: **25W** (5 amps @ 5VDC with 4 keyboard/mouse load) |
| **Operating Temp and Humidity** | **0° to 50°C (32° to 122 °F), 5% to 95% RH, non-condensing** |
| **Thermal** | Heat load (BTU/HR): *Equal to DC Power consumption x 3.412*<br>**Tx: 17.1 BTU/HR**<br>**Rx: 85.3 BTU/HR** (with 4 keyboard/mouse load) |
| **Regulatory** | **US / Canada EN 90650, FCC 47 CFR Part 15, ICES, CE** |
| **Warranty** | **12 months from date of purchase. Extended warranties available.** |

# 2. Connecting Q-Series KMASS Modules

**All physical connections to the product use industry-standard connectors. Non-supplied cables that may be needed are commercially available. All connections are found on the rear of the chassis.**

## 2.1. Fiber Optic Cables

**All KMASS TX modules are connected to RX modules through fiber optic cables, either directly or through a KVM Matrix Switch to provide communication between the transmitter and the receiver.** The standard multi-mode fiber optic cables must be 50 or 62.5 microns, up to 1000 meters (3280') long and terminated with LC-type fiber optic connectors.

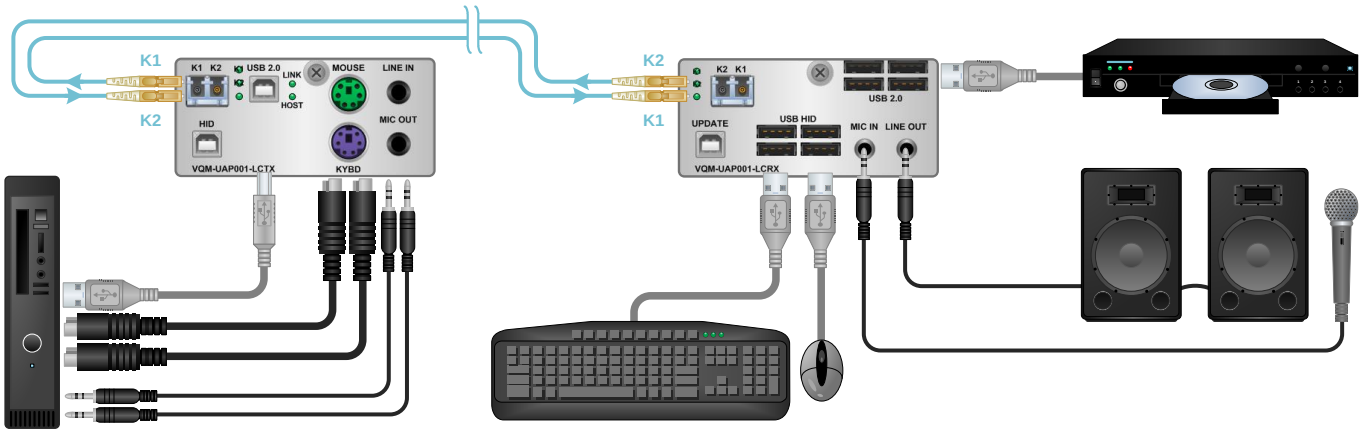



## 2.2. Transmitter Connections

A TX module connects to a source CPU and peripheral device sources through provided copper cables. **The connector configurations of the Q-Series Transmitters can be viewed in detail on pg. 9-13.**

## 2.3. Receiver Connections

An RX module connects to the destination USB and audio devices with their own standard cables. **The connector configurations of the Q-Series Receivers can be viewed in detail on pg. 9-13.**

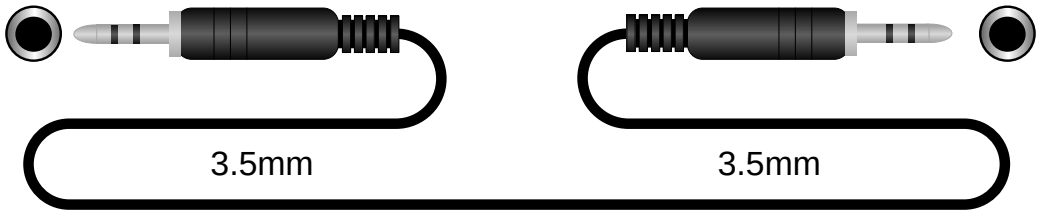



**Transmitter Connections** **Receiver Connections**

## 2.4. Supplied Cables

Depending on the customer-specified system configuration, **peripheral device cables will be supplied by Thinklogical in quantities specific to each configuration:**

### 3.5mm to 3.5mm Audio Cable, 6 Feet (CBL000016-006FR)



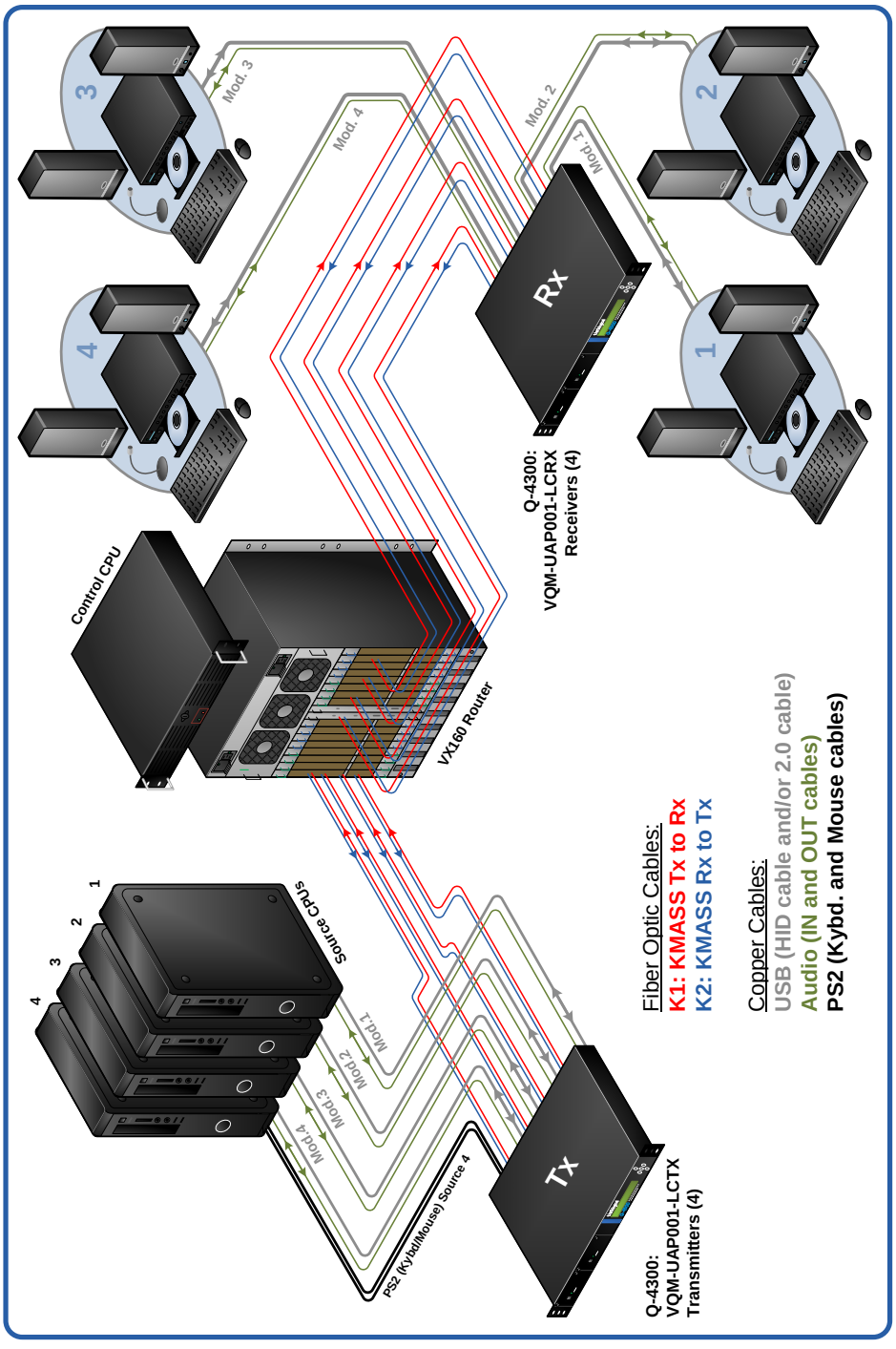

### USB A-B Cable, 6 Feet (CBL000015-006FR)


### PS2 Keyboard & Mouse, 6 Feet (CBL000006-006FR)

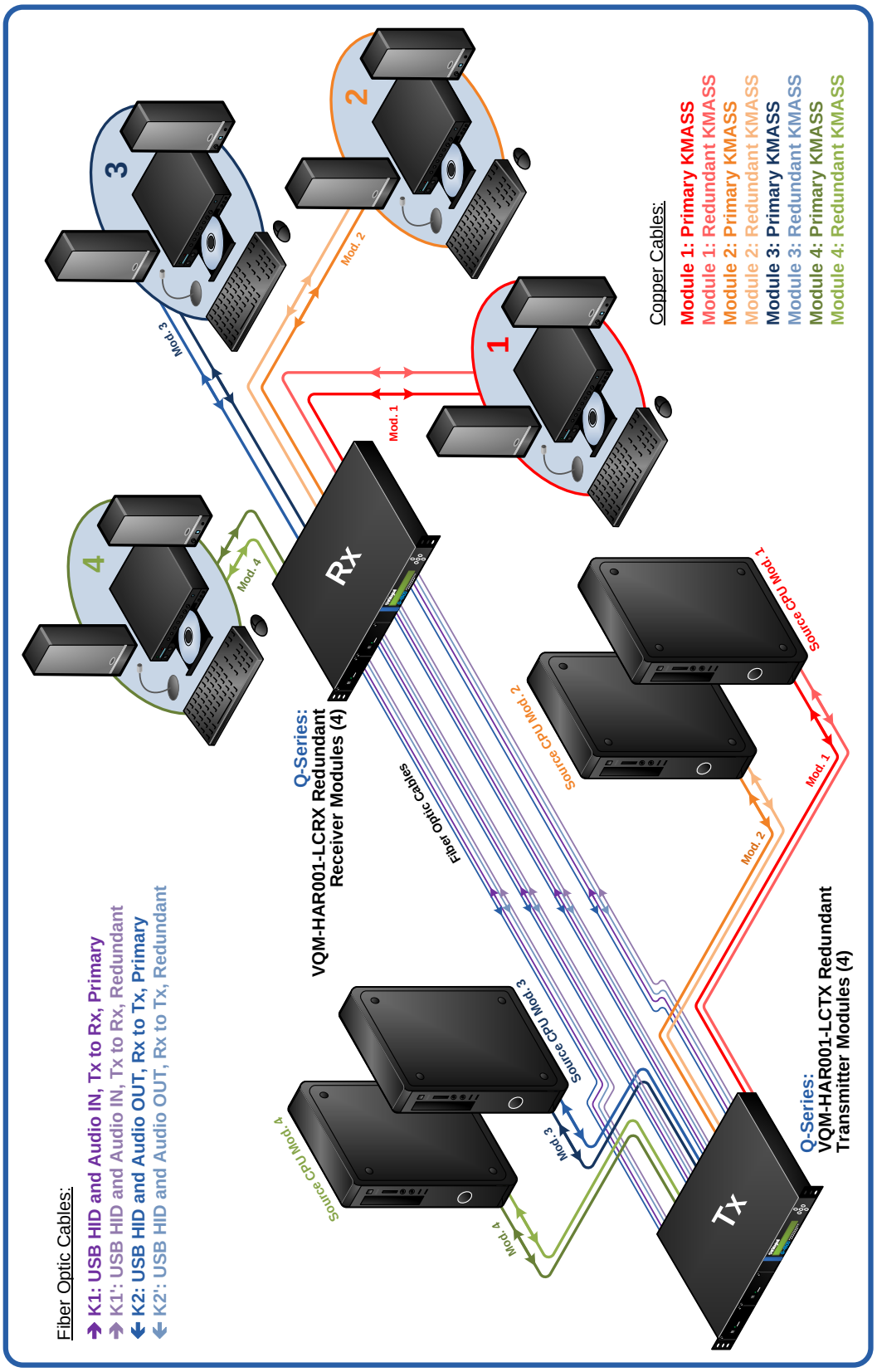
## 2.5. Q-Series System Connections

**The Q-4300's chassis allows up to four hot-swappable interface modules to be used in a variety of applications, as either transmitters, receivers, or as transceivers. Q-Series KMASS modules support audio, high speed USB 2.0 (480 Mbps) and low speed USB HID (1.5 Mbps). Transmitters can be connected directly to receivers or through a KVM Matrix Switch.**

**Also see the *Quick Start Guide* in Appendix A, pg. 23.**



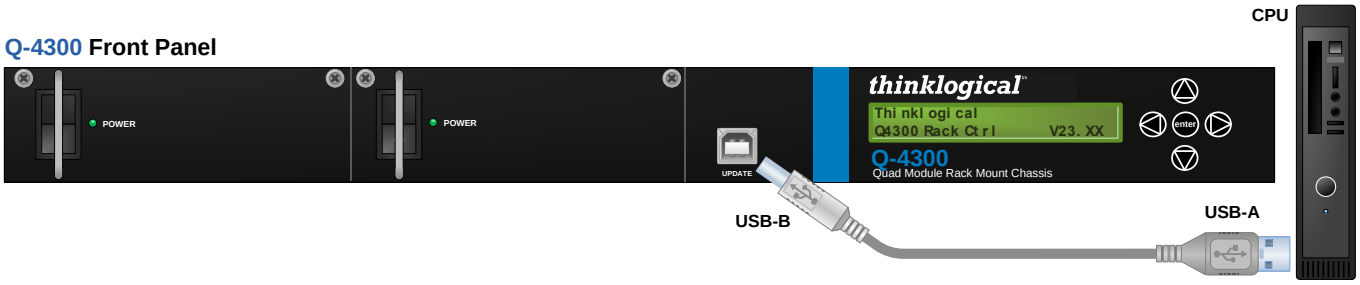

**The Q-4300 Fiber Extension System-VQM-UAP001:** Extend up to 4 sets of USB HID, USB 2.0 and Audio signals over 8 fibers in a 1 Rack Unit chassis using four VQM-UAP001 Tx and Rx Modules. In this example, all transmitters are connected to the receivers through a KVM Matrix Switch (Thinklogical's VX160®).




**The Q-4300 Redundant Fiber Extension System, VQM-HAR001-** Extend up to 4 redundant sets of USB HID and Audio signals over 16 fibers in a 1 Rack Unit chassis using four VQM-HAR001 Tx and Rx Modules. In this example, transmitters are connected directly to the receivers.

# 3. Updating Q-Series KMASS Modules

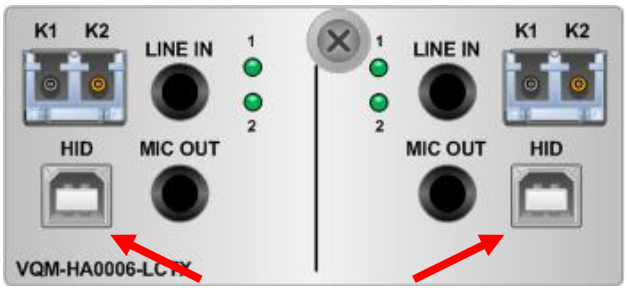
***FPGA and Firmware Upgrade Applications are available through Thinklogical's® Technical Assistance Department. Please call us at 1-203-647-8700 and we'll be happy to provide you with all the assistance you'll need to keep your system up and running at its optimum performance level.***



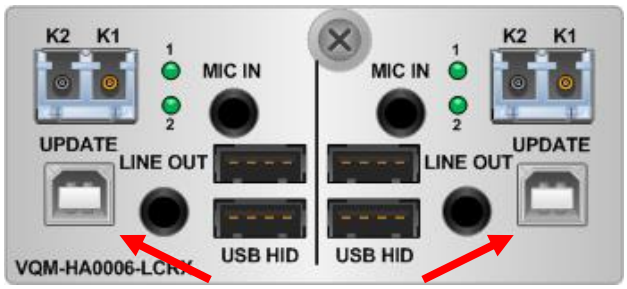

## 3.1. HID Microprocessor Programming

Each Q-Series KMASS **Transmitter Module** with USB HID has an HID PORT that serves as both an HID Microprocessor Programming port and as a USB HID source. Each Q-Series KMASS **Receiver Module** with USB HID has an UPDATE PORT that serves as an HID Microprocessor Programming port.

**A transmitter's USB HID port is to update DEVICE firmware. A receiver's USB UPDATE port is to update HOST firmware.**




DEVICE



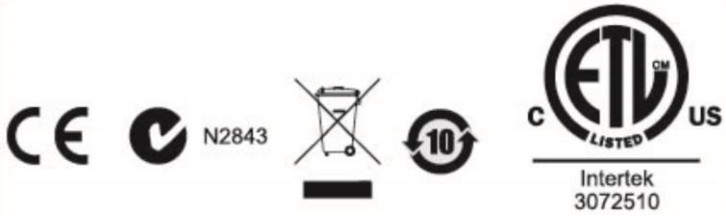

HOST

***When updating the transmitter device port, the USB cable must be removed from the HID port while the chassis power is off in order to reboot the module.***

# 4. Regulatory & Safety Compliance

## Symbols Found on Our Products

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




## 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 compliant with the following standards for both domestic USA and many international locations:

### North America

**Safety**
UL 62368-1:2014Ed.2
CSA C22.2#62368-1:2014Ed.2

**LASER Safety**
CDRH 21 CFR 1040.10
Class 1 LASER Product
Canadian Radiation Emitting Devices Act, REDR C1370
IEC 60825:2001 Parts 1 and 2
Class 1 LASER Product

**Electromagnetic Interference**
FCC 47CFR Part 15 Subpart B: 2013 Class A
Industry Canada ICES-003: 2016 Ed. 6

### Australia & New Zealand

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

### European Union

#### Declaration of Conformity

Manufacturer's Name & Address: **Thinklogical,** A **BELDEN** BRAND
**100 Washington Street**
**Milford, Connecticut 06460 USA**

Thinklogical's products comply with the requirements of the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU, the WEEE Directive 2012/19/EU and carry the CE marking accordingly.

## Standards to Which Our Products Comply

**Safety**

IEC 62368-1:2014Ed.2+C1
CB Scheme Certificate

**Electromagnetic Emissions**

CENELEC EN 55022:2010 +AC:2011

**Electromagnetic Immunity**

EN 55024:2011+A1
CENELEC EN 55032:2015
EN 61000-3-2:2000 Harmonics
EN 61000-3-3:2008 Flicker
EN 61000-4-2:2009 Electro-Static Discharge Test
EN 61000-4-3:2006 A1:2008, A2:2010 Radiated Immunity Field Test
EN 61000-4-4:2004 Electrical Fast Transient Test
EN 61000-4-5:2006 Power Supply Surge Test
EN 61000-4-6:2009 Conducted Immunity Test
EN 61000-4-11:2004 Voltage Dips & Interrupts Test

## 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 matérial brouilleur du Canada*.
- 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 action.
- This equipment has been tested and found compliant 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 make adequate corrective measures at their own expense.
- This Class A digital apparatus complies with Canadian ICES-003 and has been verified as compliant within the Class A limits of the FCC Radio Frequency Device Rules (FCC Title 47, Part 15, Subpart B CLASS A), measured to CISPR 22:1993 limits and methods of measurement of Radio Disturbance Characteristics of Information Technology Equipment.
- The user may notice degraded audio performance in the presence of electro-magnetic 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: **11-190425** indicates the unit was built in the **11**th month of **2019** and is unit number **425**.

## 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. Thinklogical Support

## Customer Support

**Website: https://www.thinklogical.com**

Check out our website for current products, support documents and useful information about all the products and services we offer, including:

- **Technical Specification Sheets**
- **Quick-Start Guides**
- **Product Manuals** (for viewing online or for download)
- **Chat live with a Technical Service Representative**

**Email: mailto:support@thinklogical.com**

For product support, technical issues or questions, product repairs and request for Return Merchandise Authorization.

**Telephone: 1-203-647-8700**

Please contact our expert sales staff in Milford, CT **Monday - Friday from 8:30am to 5:00pm**, Eastern Time Zone. If leaving a voice message, please provide a preferred time to call back.

**Fax: 1-203-783-9949**

Please indicate the nature of the fax on your cover sheet and provide contact information.

## Product Support

### Warranty

Thinklogical warrants this product against defects in materials and workmanship for a period of one year from the date of delivery, with longer terms available at time of purchase on most products. Thinklogical and its suppliers disclaim all other warranties. Please refer to your product invoice for the 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 authorized dealer where you purchased the device, or if you purchased directly, call Thinklogical at **1-800-647-8700**.

### Return Authorization

If you must return a product to Thinklogical directly, please contact us at **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. **DO NOT return a product to Thinklogical without a *Return Merchandise Authorization*.**

### Our Address

If you have any product issues or questions or need technical assistance with your Thinklogical system, please call us at **1-203-647-8700** and let us help. If you need to write us or return a product, please use the following address:

*Please include the Return Merchandise Authorization number:*

**Thinklogical,** A **BELDEN** BRAND
**100 Washington Street**
**Milford, CT 06460 USA**
**Attn:** *RMA#*

# Appendix A - Q-Series KMASS Module Quick Start Guide