

## Velocity Audio & Peripherals

Thinklogical's Velocity Audio & Peripheral systems offer best-in-class fiber optic performance with advanced audio and peripheral capabilities. Velocity Audio & Peripheral extenders offer 6.25Gbps bandwidth, to provide high-speed audio and peripheral data *with no latency or jitter*. Systems are simple plug and play designs, utilizing either multi-mode or single mode fiber. For routing applications, Velocity Audio & Peripheral systems are compatible with Thinklogical's MX and VX Series Routers, scalable from 5 to 640 ports.

Powered by

### MRTS Technology

Velocity Audio & Peripheral systems are powered by **Thinklogical's patented Multi-Rate Transmission System (MRTS) technology**, which enables multiple data streams (audio and peripheral) to be transmitted up to 80km, over a single data stream. MRTS completely reconstructs the data clock at the destination, to offer perfect synchronization with each transmitted stream.

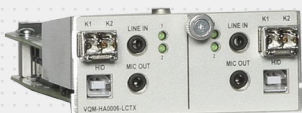
### Modular Chassis

#### Q-Series 1300 Chassis & Q-Series 2300 Chassis

##### Space Saving at the Desktop & Wall

The compact design of the ¼RU Q-1300 Chassis is ideal for surface mounting applications. The modular design is **configurable with a single Q-Series transmitter or receiver module**. The ½RU Q-2300 Chassis is **configurable with up to two Q-Series transmitter or receiver modules**, in any combination.

#### Modular Extenders enhance system



*flexibility, customization, scalability, and space-savings.*

#### Q-Series 4300 Chassis

##### Space Saving at the Rack & Desktop

The rack mountable Q-4300 chassis is ideal for high density applications, where space may be limited. The 1RU, modular design is **configurable with up to four Q-Series transmitter or receiver modules**, in any combination - as a dual transmitter, dual receiver or transceiver.

##### Redundant Power Supplies

The Q-4300 and T-Q4200 Chassis are ideal for 24/7 environments, where minimal downtime is critical. The system is designed with redundant, current-sharing and hot-swappable power supplies. In the unlikely event that one power module fails, the second automatically switches over to power the unit with no delay or data loss. The failed module may be swapped out, without ever powering down the unit or interrupting operations.

#### Velocity Audio & Peripheral systems offer support for:

##### Audio Signals

- Bidirectional unbalanced analog stereo audio

##### Peripheral Signals

- USB HID
- USB 2.0
- USB 3.0
- PS/2
- Serial (RS-232 or RS-422)
- 10/100 Network

**Velocity Audio & Peripheral systems enable users to send audio and peripheral signals independently of the video, for enhanced system flexibility. Systems are also compatible with any VelocityDVI and VelocityKVM system, offering breakout audio and peripheral signals at the destination.**

#### T-Series Q-4200 Chassis

##### T- and Q-Series in a Single Chassis

The rack mountable T-Q4200 chassis offers increased flexibility, for systems utilizing both T-Series and Q-Series extender modules. The 1RU, modular design is **configurable with a single T-Series transmitter or receiver module and up to two Q-Series modules**, in any combination.





Q-Series 1300 Chassis



Q-Series 2300 Chassis



Q-Series 4300 Chassis



T-Series Q-4200 Chassis



Hot-Swappable Extender Modules  
complete with  
Hot-Swappable Optical Modules



Specifications	Q-1300	Q-2300	Q-4300	T-Q4200
Environmental	Operating Temperature: 0°C-50°C; Humidity: 5-95% RH, non-condensing			
Compliance	Approvals for United States of America, Canada, and European Union			
Warranty	12 months from date of shipment · Extended warranties available for purchase			
Mounting Brackets	Surface Mounting Brackets Included Call for Rack Mounting Brackets and Chassis	Surface Mounting Brackets Included 19" Rack Mounting Hardware, order (2) ENC-001541-R	19" Rack Mounting Brackets Included Surface Mounting Hardware, order (2) ENC-001598-R	19" Rack Mounting Brackets Included Surface Mounting Hardware, order (2) ENC-001598-R
Power Consumption	0 Watts (10 Watts Loaded)	5 Watts (25 Watts Loaded)	5 Watts (45 Watts Loaded)	5 Watts (40 Watts Loaded)
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz (1)		Universal AC Power Supply, 100-240VAC, 47-63Hz (2)	
Weight	1.00lb (0.45kg) 1.50lbs (0.68kg) Loaded	3.00lbs (1.36kg) 4.00lbs (1.81kg) Loaded	10.00lbs (4.54kg) 12.00lbs (5.44kg) Loaded	8.00lbs (3.63kg) 10.00lbs (4.54kg) Loaded
<b>Dimensions</b>				
Rack Size (w/ mounting hardware)	5.48" (139.17mm)	11.98" (304.24mm)	EIA 19" (483.36mm)	EIA 19" (483.36mm)
Width (w/o mounting hardware)	4.31" (109.50mm)	10.74" (272.75mm)	17.49" (444.25mm)	17.49" (444.25mm)
Height	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)	1RU · 1.72" (43.69mm)
Depth	11.44" (290.64mm)	11.11" (282.27mm)	14.62" (371.37mm)	15.56" (395.22mm)
Tolerance	± 0.039" (1.00mm)	± 0.039" (1.00mm)	± 0.039" (1.00mm)	± 0.039" (1.00mm)
<b>Connectors</b>				
Software Updates	See Extender Module	See Extender Module	See Extender Module	See Extender Module
<b>Cables Included</b>				
	AC Power Cable (1)	AC Power Cable (1)	AC Power Cable (2)	AC Power Cable (2)

For use with Q-Series Modules.  
Modules will not operate without a chassis.

## Ordering Information

Part Number	VQS-001300	VQS-002300	VQS-004300	VTS-Q04200
Description	Q-Series 1300 Modular Chassis Configure with a single Q-Series Module	Q-Series 2300 Modular Chassis Configure with up to two Q-Series Modules	Q-Series 4300 Modular Chassis Configure with up to four Q-Series Modules Redundant power supplies	T-Series Q-4200 Modular Chassis Configure with a single T-Series Module and up to two Q-Series Modules Redundant power supplies

## VelocityAudio&Peripheral · USB HID, Analog Audio and PS/2



**HAP**  
Transmitter & Receiver



**HAR**  
Transmitter & Receiver



**HA6**  
Transmitter & Receiver



### The System

Velocity Audio & Peripheral systems have a simple transmit and receive design. The Velocity Audio & Peripheral Transmitter connects to the source to receive audio and peripheral data. The data is multiplexed with Thinklogical's patented MRTS Technology, and transmitted over 6.25Gbps SFP+ technology for up to 80 kilometers. Fiber provides a secure connection from the transmitter to the receiver, where MRTS Technology demultiplexes the data stream to deliver uncompromised audio and peripheral data to the destination.

A Velocity Audio & Peripheral system requires two or four fibers, depending on the configuration. The forward

channels are dedicated to transmitting audio and peripheral data from the source to the destination. The return channels are dedicated to transmitting DDC/EDID and peripheral data from the destination to the source. All Thinklogical Velocity Audio & Peripheral systems are configurable with multi-mode or single mode fiber.

The Velocity**HAP** extension systems are designed to support **USB HID, full duplex stereo audio and PS/2**, requiring two fibers.

The Velocity**HAR** extension systems are designed to support **redundant USB HID and full duplex stereo audio**, requiring four fibers.

The Velocity**HA6** extension systems are designed to support **dual USB HID and dual full duplex stereo audio**, requiring four fibers.

### FORM FACTOR

Velocity Audio & Peripheral systems are available in a modular form factor. The modular extenders are compact and hot-swappable, enabling users to field configure any modular chassis. Additionally, the optical modules within the modular extenders are hot-swappable. The modular systems promote system flexibility, scalability and a reduced maintenance effort. For additional information, please see Modular Chassis specifications.

### PRODUCT FEATURES

Standard

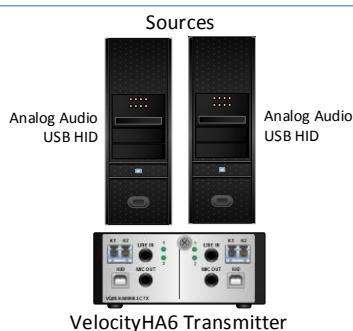


Configurable



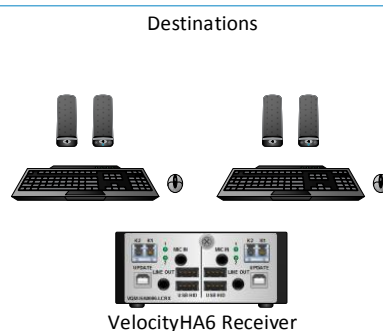
MRTS Technology provides full bandwidth connectivity over a fiber connection of up to 80km

Audio and peripheral data  
Audio and peripheral data



MRTS Technology provides full bandwidth connectivity over a fiber connection of up to 80km

Audio and peripheral data  
Audio and peripheral data



## VelocityAudio&Peripheral · USB HID, Analog Audio and PS/2

Specifications	Q-Series Extender Modules (VQM)
Optical Cable	Two (2:HAP) or four (4:HAR&HA6) multi-mode or single mode fiber optic cables, for fewer fibers contact Thinklogical (fiber not supplied, available for purchase)
Optical Distance	Multi-Mode up to 1000m 65m: OM1 (62.5/125); 350m: OM2 (50/125); 750m: OM3 (50/125 SX+); 1000m: OM4 (50/125eSX+) Single Mode up to 80km All Distances: OS2 (9/125)
Optical Wavelength	Multi-Mode: 850nm; Single Mode: 1310nm (CWDM and DWDM wavelengths available, contact Thinklogical for further information)
Data Rate	Forward channel(s): 6.25Gbps; Back Channel(s): 2Gbps
Environmental	Operating Temperature: 0°C-50°C; Humidity: 5-95% RH, non-condensing
Compliance	Approvals for United States of America, Canada, and European Union
Warranty	One year · Extended warranties available for purchase
Mounting Brackets	See Modular Chassis Specifications
Power Consumption	10 Watts
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz
Weight	0.50lb (0.23kg)
<b>Dimensions</b>	
Rack Size	See Modular Chassis Specifications
Height x Width x Depth	1.59" (40.42mm) x 3.69" (93.80mm) x 7.25" (184.04mm)
Tolerance	± 0.039" (1.00mm)
<b>Connectors</b>	
USB HID	HAP · TX: USB B (1); RX: USB A (4) HAR · TX: USB B (1); RX: USB A (2) HA6 · TX: USB B (2); RX: USB A (4)
Audio MIC/LINE	HAP · 3.5mm Jack (2) HAR · 3.5mm Jack (2) HA6 · 3.5mm Jack (4)
PS/2 Keyboard/Mouse	HAP · TX: DB9 Female (1)
Software Updates	HAP · RX: USB B (1) HAR · RX: USB B (1) HA6 · RX: USB B (2)
Fiber Connectors	HAP · LC (1) HAR · LC (2) HA6 · LC (2)
<b>Cables Included</b>	
Transmitter	(1) Power Cable [See Modular Chassis Specifications] HAP & HAR: (2) 3.5mm Male to 3.5mm Male Plug, 1.8 Meters (CBL000016-006FR) HA6: (4) 3.5mm Male to 3.5mm Male Plug, 1.8 Meters (CBL000016-006FR)
Receiver	(1) Power Cable [See Modular Chassis Specifications]
Contact Thinklogical for additional specifications.	

## Ordering Information

**V** **Q** **M** — **H** **A**    **0** **0**    — **L** **C**      

**P 1** USB HID, Analog Audio & PS/2  
**R 1** Redundant USB HID & Analog Audio

**0 6** Dual USB HID & Analog Audio

**TX** Transmitter Module  
**RX** Receiver Module

For additional customization, Thinklogical utilizes a single **Optics Package (VOP)** per extender, available in Multi-Mode or Single Mode, allowing extension of up to 1000m, 10km, 40km or 80km.

Please consult Thinklogical for VOP Ordering Information.

When ordering a VelocityHAP, select from the following VOP's:

**VOP-M19** for Multi-Mode Extension up to 1000m  
**VOP-S04** for Single Mode Extension up to 10km  
**VOP-S101** for Single Mode Extension up to 40km

When ordering a VelocityHAR or HA6, select from the following VOP's:

**VOP-M30** for Multi-Mode Extension up to 1000m  
**VOP-S06** for Single Mode Extension up to 10km  
**VOP-S89** for Single Mode Extension up to 40km



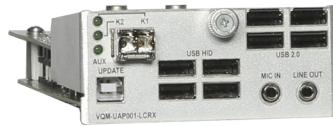
## VelocityAudio&Peripheral · Analog Audio, PS/2, USB HID & USB 2.0



**UAP**  
Transmitter & Receiver



**U1**  
Transmitter & Receiver



### The System

Velocity Audio & Peripheral systems have a simple transmit and receive design. The Velocity Audio & Peripheral Transmitter connects to the source to receive audio and peripheral data. The data is multiplexed with Thinklogical's patented MRTS Technology, and transmitted over 6.25Gbps SFP+ technology for up to 80 kilometers. Fiber provides a secure connection from the transmitter to the receiver, where MRTS Technology demultiplexes the data stream to deliver uncompromised audio and peripheral data to the destination.

A Velocity Audio & Peripheral system requires two fibers. The forward

channel is dedicated to transmitting audio and peripheral data from the source to the destination. The return channel is dedicated to transmitting audio and peripheral data from the destination to the source. All Thinklogical Velocity Audio & Peripheral systems are configurable with multi-mode or single mode fiber.

The Velocity **UAP** extension systems are designed to support **USB HID, USB 2.0 (480Mbps, four outputs included on receiver), full duplex stereo audio and PS/2**.

The Velocity **U1** extension systems are designed to support **USB 2.0**

**(480Mbps), with only a single output on the Receiver**, for secure applications.

### FORM FACTOR

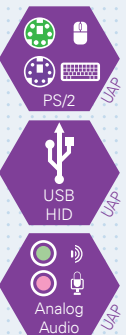
Velocity Audio & Peripheral systems are available in a modular form factor. The modular extenders are compact and hot-swappable, enabling users to field configure any modular chassis. Additionally, the optical modules within the modular extenders are hot-swappable. The modular systems promote system flexibility, scalability and a reduced maintenance effort. For additional information, please see Modular Chassis specifications.

### PRODUCT FEATURES

Standard



Configurable



MRTS Technology provides full bandwidth connectivity over a fiber connection of up to 80km

Audio and peripheral data  
Audio and peripheral data



MRTS Technology provides full bandwidth connectivity over a fiber connection of up to 80km

Peripheral data  
Peripheral data



## VelocityAudio&Peripheral · Analog Audio, PS/2, USB HID & USB 2.0

### Specifications

#### Q-Series Extender Modules (VQM)

Optical Cable	Two (2) multi-mode or single mode fiber optic cables, for fewer fibers contact Thinklogical (fiber not supplied, available for purchase)
Optical Distance	Multi-Mode up to 1000m 65m: OM1 (62.5/125); 350m: OM2 (50/125); 750m: OM3 (50/125 SX+); 1000m: OM4 (50/125eSX+) Single Mode up to 80km All Distances: OS2 (9/125)
Optical Wavelength	Multi-Mode: 850nm; Single Mode: 1310nm (CWDM and DWDM wavelengths available, contact Thinklogical for further information)
Data Rate	Forward channel: 6.25Gbps; Back Channel: 2Gbps
Environmental	Operating Temperature: 0°C-50°C; Humidity: 5-95% RH, non-condensing
Compliance	Approvals for United States of America, Canada, and European Union
Warranty	One year · Extended warranties available for purchase
Mounting Brackets	See Modular Chassis Specifications
Power Consumption	10 Watts
Supply Voltage	Universal AC Power Supply, 100-240VAC, 47-63Hz
Weight	0.50lb (0.23kg)
<b>Dimensions</b>	
Rack Size	See Modular Chassis Specifications
Height x Width x Depth	1.59" (40.42mm) x 3.69" (93.80mm) x 7.25" (184.04mm)
Tolerance	± 0.039" (1.00mm)

### Connectors

USB 2.0	UAP · TX: USB B (1); RX: USB A (4) U1 · TX: USB B (1); RX: USB A (1)
USB HID (UAP Only)	TX: USB B (1); RX: USB A (4)
Audio MIC/LINE (UAP Only)	3.5mm Jack (2)
PS/2 Keyboard/Mouse (UAP Only)	TX: DB9 Female (1)
Software Updates (UAP Only)	RX: USB B (1)
Fiber Connectors	LC (1)

### Cables Included

Transmitter	(1) Power Cable [See Modular Chassis Specifications] UAP: (2) 3.5mm Male to 3.5mm Male Plug, 1.8 Meters (CBL000016-006FR); (1) USB A-B, 1.8 Meters (CBL000015-006FR) U1: (1) USB A-B, 1.8 Meters (CBL000015-006FR)
Receiver	(1) Power Cable [See Modular Chassis Specifications]

Contact Thinklogical for additional specifications.

## Ordering Information

**V** **Q** **M** — **0** **0** **1** — **L** **C**

**UAP** USB HID, USB 2.0, Analog Audio and PS/2  
**U00** USB 2.0 (Single Port on the Receiver)

**TX** Transmitter Module  
**RX** Receiver Module

Each Extender Module requires a Modular Chassis;  
for further information, see Modular Chassis Specifications.

VQS-001300 1300 Chassis, Supports single module  
VQS-002300 2300 Chassis, Supports two modules  
VQS-004300 4300 Chassis, Supports four modules  
VTS-Q04200 Q-4200 Chassis, two modules & T-Mod

For additional customization, Thinklogical utilizes a single **Optics Package (VOP)** per extender, available in Multi-Mode or Single Mode, allowing extension of up to 1000m, 10km, 40km or 80km.

Please consult Thinklogical for VOP Ordering Information.

When ordering a VelocityUAP or U1 select from the following VOP's:

**VOP-M19** for Multi-Mode Extension up to 1000m  
**VOP-S04** for Single Mode Extension up to 10km  
**VOP-S101** for Single Mode Extension up to 40km

# USB 2.0 Extender



The USB 2.0 Extender is a fiber-optic extender designed to extend USB 2.0 interface signals up to 1000 meters (3280 feet) over a standard duplex multimode fiber. With the USB Extender, peripherals can be conveniently located away from the computer without any loss of performance. The USB 2.0 Extender effectively supports not only USB 2.0 peripherals, but USB 1.1 low speed and full speed devices as well.

## The System

Each system consists of two compact units, a transmitter and a receiver. The USB Extender transmitter connects to the host computer with a standard USB cable and the receiver provides four ports for connection of peripheral devices. External power is required for both the transmitter and receiver units and two universal power supplies are included. Plug-and-play with no adjustments makes setting up the USB Extender fast and easy. As an added bonus, LEDs provide link performance at a glance. The USB Extender successfully and effectively delivers USB peripherals when and where you need them.

The USB 2.0 Model enables users to connect and extend high performance, hi-speed USB peripherals up to 1000 meters (3280 feet) over standard duplex multi-mode fiber.

All models are available with SC-, ST-, or LC-type fiber connectors.

## Key Features

- Model USB 2.0: Supports USB 1.1 (low-speed, full-speed) and USB 2.0 high-speed devices operating up to 480 Mbps
- Extends connections up to 1000 meters (3280 feet) using standard duplex multi-mode fiber
- Simple plug and play
- LEDs provide link performance status
- Supports all major operating systems including Windows, Mac-OS, Linux, and Sun
- Number of devices can be increased using standard USB hubs

### Specifications

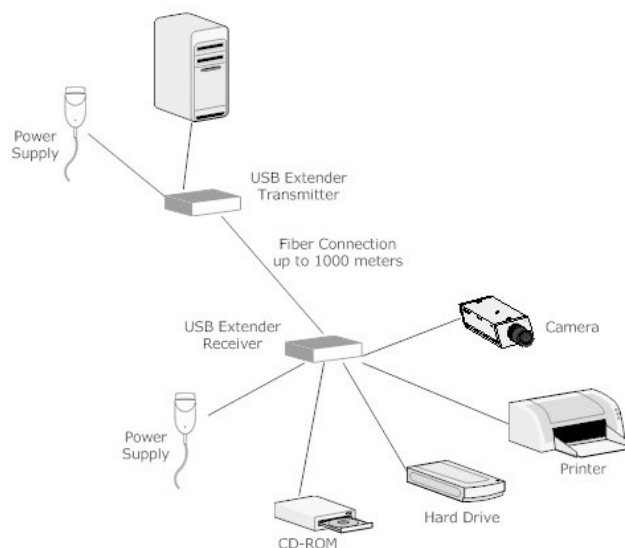
DC Power Adapter	AC universal input; 90-264 volts (2 supplied)
Supply Voltage	+ 5.0 VDC
Operating Temp.	0°-50°C; (32°-122°F)
Humidity	5-95% RH, non-condensing
Dimensions	Height 1.125" (2.85cm)
And Weights	Depth: 4.625" (11.75cm)
	Width: 6.625" (16.82cm)
	Weight: 2lbs (0.90kg)
	Shipping Weight: 4lbs (1.81kg)
Optical Cable Duplex	Multi-mode fiber 50 or 62.5 micron (available, not supplied)
Optical Distance	Up to 1000 meters (3280 feet)
Power Consumption	5 watts per unit (with no devices connected)
Compliance	Approvals for US, Canada and European Union
Warranty	12 months from date of shipment.

Extended warranties available

### Typical Application

### Ordering Information

Part Number	Description
USB-000002-LC	USB 2.0 Extender Pair, LC
USB-000002-LCTX	USB 2.0 Extender TX, LC
USB-000002-LCRX	USB 2.0 Extender RX, LC
USB-000002-SCTX	USB 2.0 Extender TX, SC
USB-000002-SCRX	USB 2.0 Extender RX, SC
USB-000002-STTX	USB 2.0 Extender TX, ST
USB-000002-STRX	USB 2.0 Extender RX, ST



*Ability to extend USB devices (USB printers, cameras, web cams, etc) to a host computer up to 1000 meters over standard duplex multi-mode fiber.*