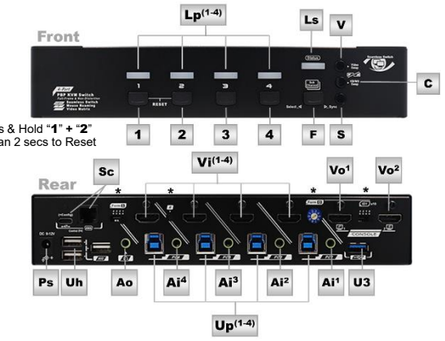
Product Description



Label		Description (Front)
1 - 4	PC Buttons	Click to select PC for the **Active-Video**
Ls	Status LED	**Green:** Power On
Lp	PC LEDs (1-4)	**Red: Active-Video** PC Selection **Blue: Sub-Video** PC Selection **Green:** PC Ready
F	Function Button	Hold "**F**" then Press "**1-4**" to select a PC for the **Sub-Video** (Exit Sync Mode when Sub-Video being switched) (PC LEDs show Sub-Video when "**F**" Held)
S	Sync Button	Hold "**F**" then Click "**S**" to Enable Sync Mode (Both Consoles always select the same PC)
C	Console Swap Button	Click to Swap Control (**Active-Video** ↔ **Sub-Video**)
V	Video Swap Button	Click to Swap Video (**Active-Video** ↔ **Sub-Video**)
Label		**Description (Rear)**
Vi	Video Inputs (1-4)	Connect to Computers' Main Video Outputs (PC 1-4)
Ai	Audio Inputs (1-4)	Connect to Computers' Main Audio Outputs (PC 1-4)
Up	USB 3.2 Gen 1 (1-4)	Connect to Computers' USB 3.2 Gen 1 Ports (PC 1-4)
Vo	Video Outputs (1-2)	Connect to 2 Monitors (MbM) or 1 PbP-Ready Monitor
Ao	Audio Output	Connect to an Active Speaker or a Stereo Amplifier
Uh	USB HID	Connect to a Keyboard/Mouse/Touch Panel
U3	USB 3.2 Gen 1	Connect to an USB 3.2 Gen 1 Device (USB storage, etc)
Ps	Power Supply	Connect to a DC 9 ~ 12V Power Adapter
Sc	Serial Control	Connect to a Serial Host PC (see "Serial Control" section)
*	Reserved	Reserved for future upgrade

Specification

Model Number		KMX-4KH42-U30R	
Maximum Resolution (4K@60Hz, 4:4:4)	16:9	3840x2160, 2560x1440, 1920x1080	
	21:9	3840x1600, 3440x1440, 2560x1080	
	32:9 (PbP)	7680x2160, 5120x1440, 3840x1080	
Features		**PC Side**	**Console Side**
Video Switching		HDMI 2.0 x 4 (In)	HDMI 2.0 x 2 (Out)
USB 3.2 Switching (5Gbps)		USB 3.2-B x 4	USB 3.2-A x 1 USB HID-A x 3
Audio Switching		SPK x 4 (In)	SPK x 1 (Out)
Control Methods		Hotkey Control, Serial Control, Mouse Roaming	
Video Matrix Modes		MbM Mode (Monitor-by-Monitor)	
		PbP Mode (w/ Built-In PbP Enabled Monitor)	
Seamless Switching		Zero Latency	
Serial Control**		RJ-11 x 1 (19200bps, 8-Step: 9600 ~ 115200bps) USB-C x 1	
Hot Plug-and-Play		Yes	
HDCP Compliance		HDCP 2.2 & HDCP 1.4	
H x W x D (mm)		44 x 240 x 160	
Weight (g)		965	
Material		Metal & Aluminium (Color : Black)	

Video Modes

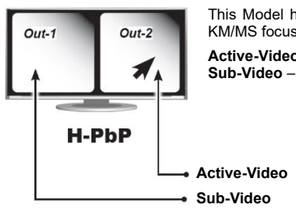
MbM Modes (Monitor-by-Monitor)

PbP Modes (Picture-by-Picture)

* Enable the PbP Function of the Monitor first

* Enable the PbP Function of the Monitor first

Active-Video & Sub-Video



This Model has Mouse Roaming Function, and the KM/MS focus can move between the 2 videos:

Active-Video – Video Output with Active KB/MS
Sub-Video – Video Output without Active KB/MS

Installation

- Prior to installation, ensure that all devices that will be connected to this system are powered off.
- Ensure that all devices you will connect are properly grounded.
- Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

Console Connection

1. Connect Video Output 1 to the left (or top) monitor and Video Output 2 to the right (or bottom) monitor; plug USB KB/MS into the corresponding USB HID ports on the Console.
2. Plug audio jack from the speaker to the Console's audio port.

Computer Connection

1. Use HDMI cables to connect video ports on the computer and the unit's PC side.
2. Use USB 3.2 Gen 1 A-B cables to connect the unit's USB ports (B connector, square connector) and the USB ports on the corresponding computers (A connector, flat connector).
3. Use audio cables to connect the audio ports between the computer side of the unit and the corresponding computer.
4. Plug the DC power adapter to the Switch's power port.

* All PCs Must Have Identical HDCP and HDR Settings i.e. (All On or All Off).

Configuration

1. Configure video mode (MbM / PbP), and resolution.
   (Default is H-MbM, Resolution = 1080P)
2. Enable the PbP function of the monitor, if PbP mode is setup.
3. Configure mouse roaming, and mouse speed.
   (Default is off, mouse speed is personal preference.)

Note: Limited by O.S, in most cases, only the first desktop can apply Mouse Roaming function. If dual monitor computer is applied, turn off Mouse Roaming before you move the cursor to the extended desktop. (And only by doing so can you move the cursor to the extended desktop)

Features

- Allows 4 computers to share 1 set of KVM Console
- Seamless switch maximizes work efficiency
- Supports most popular resolutions via HDMI 2.0, up to 4K@60Hz (4:4:4), & aspect ratios of 16:9 / 21:9 / 32:9
- 4x2 Video Matrix allows free routing of any 4 PCs to 2 video outputs
  1. MbM Mode shows on 2 monitors
  2. PbP Mode shows on a monitor with built-in PbP Enabled
- Full-Frame PbP Technology ensures undistorted vision and maximized view areas by feeding precisely engineered EDID to the PCs
- HDCP 2.2 & 1.4 compliance ensures uninterrupted video playback
- Mouse Roaming* allows switching among PCs by moving the mouse cursor across the screen borders
- Serial Control facilitates industrial control with adjustable baud rate (9600 – 115200bps)
- USB 3.2 Gen 1 supports sharing of USB 3.0 and 2.0 devices among the PCs
- Independent switching of USB 3.2 and audio allow either switching with the video or stay at a certain PC Port
- Plug-and-Play without software or driver requirements

* Certain Operating System (or version) may not support Mouse Roaming

Package Contents

- 1 x KVM Matrix Switch
- 1 x Power Adapter
- 1 x Serial Adapter
- 1 x User Manual
- 1 x Foot Pad Set

System Requirements

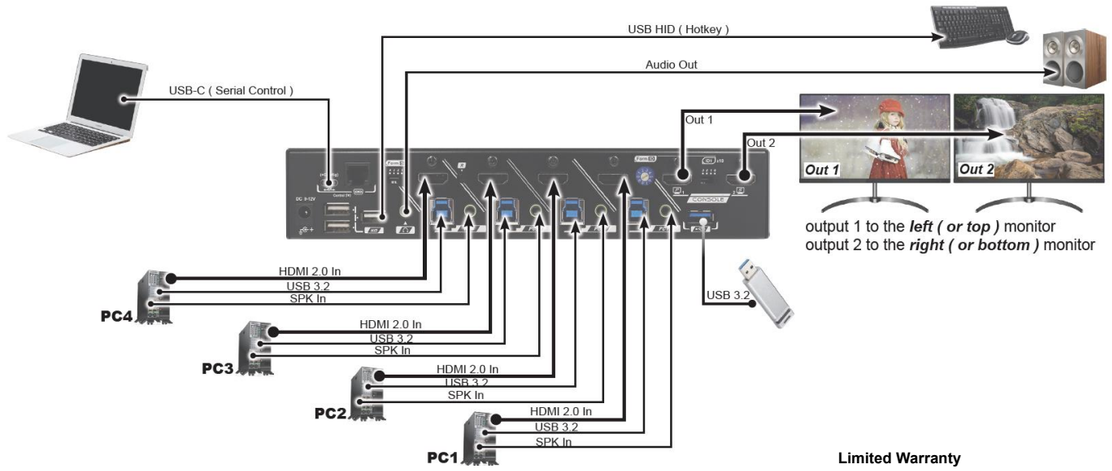
Console Side

✓ HDMI Monitor(s) (*Using PbP Mode requires a Monitor with built-in PbP Function) ✓ USB Keyboard ✓ USB Mouse
✓ Speaker (if required) ✓ Serial Host & USB-C Cable (if required)

Computer Side

✓ USB-Enabled Computers ✓ USB 3.2 Gen 1 A-B Cables
✓ HDMI 2.0 Cables ✓ Audio Cables (if required)

Connection Diagram – MbM Mode (Default)



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User Manual

4x2 4K60 HDMI KVM Matrix Switch

Seamless Switching, Scaler, USB 3.0,
Mouse Roaming, Button/Hotkey/Serial Ctrl

KMX-4KH42-U30R

Ordering Information

Model	Video	Video Modes	Functions
KMX-4KH42-U30R	HDMI 2.0	PbP (H/V) MbM (H/V)	Serial Control Hotkey Control Mouse Roaming

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Singapore 348741

- The final specification is based on the actual product.
- Features and functions may be added or changed after the manual was written. Please visit our website to download the latest version of manual for reference.

RXN-KMX-R01.1

Operation – Hotkey Control

Hotkey Leading Codes (HK_LCode)

1. There are 3 Hotkey Leading Codes
2. Apply the Hotkey Leading Code allows the Unit to intercept following Key Inputs and to interpret to Control Signals
   - Hotkey Accepted: One / Two High-Pitched Beeps
   - Hotkey Failed: Two Low-Pitched Beeps

3 Programmed HK_LCodes Available

HK_LCode 1L: (Default) L-Ctrl Double Click

The Hotkey is based on QWERTY Layout (US), other Keyboards should make relative adjustments to Hotkey Commands (Location).

HK_LCode 2: L-Shift + Num Lock + L-Shift
Hold Double Click Release

HK_LCode 3: Scroll Lock Double Click

Optional: Hotkey Conflict Solution	
Change Hotkey HK_LCode 1L to HK_LCode 1R (L-Ctrl -> R-Ctrl)	"HK_LCode" + " L-Alt " (Hold) + "R-Ctrl" + Release "R-Ctrl" then "L-Alt"
Change Back to L-Ctrl	"HK_LCode" + "R-Alt" (Hold) + "L-Ctrl" + Release "L-Ctrl" then "L-Alt"
Disable / Enable HK_LCode 1L*	"Scroll Lock " + "Scroll Lock" + "L-Ctrl"
Disable / Enable HK_LCode 1R*	"Scroll Lock " + "Scroll Lock" + "R-Ctrl"

* Or Use HK_LCode 3 to Replace "Scroll Lock" + "Scroll Lock"

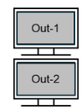
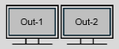
Hotkey List (General)

Key Sequence		Function
L-Ctrl + Double Click (HK_LCode)	"1"-"4"	**Active-Video** Select PC 1-4
	"0"	**Active-Video** Select Previous Selection
	"S" + "1"-"4"	**Sub-Video** Select PC 1-4*
	"F1"-"F4"	
	"0"	**Sub-Video** Select Previous Selection
	"TAB"	**Swap Video** (Active-Video ↔ Sub-Video)
	"S" + "A"	
	"9"	**Swap Control** (Active-Video ↔ Sub-Video)
	"S" + "C"	
	"S" + "V"	**Swap Control & Video** (Active-Video ↔ Sub-Video)
	"S" + "B"	**Enable Sync Mode** (Sub-Video Follows Active-Video's Selection) (Select a Different PC for the Sub-Video to Exit Sync Mode)
	"F5"	**Audio Follows** Video Output 1 (Off / On) (Default Is On)**
	"A"	**Force Audio Follows to Video Output 1**
	"F7"	**USB 3.2 Follows** Video Output 1 (Off / On) (Default Is On)***
	"U"	**Force USB 3.2 Follows to Video Output 1**
	"L-Alt" (Hold) + "G"	Enable/Disable **Buzzer Sound** (Default Is On)
HK_LCode + "L-Win" (Hold) + "L-Alt" (Hold) + "Del" (Num Pad)		**Reset****
HK_LCode + "L-Alt" (Hold) + "F"+ "A" + "C"		Return to **Factory Default**

* Hotkey Leading Code + "**L-Alt**" (Hold) + "**F1**" to Disable the Hotkey Leading Code "F1" - "F4".
** The default Audio Follows status is on, and the Audio Follows port switching. User may turn it off so that the audio stays at original port after port switching.
*** The default USB Follows status is on. User may turn off USB 3.2 Follows to prevent damaging USB drive or other USB devices while operating.
**** Apply this hotkey when image anomaly happens.

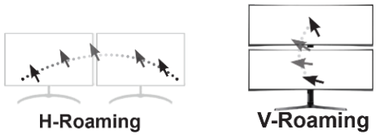
Hotkey (Video Mode & Resolution)

L-Ctrl (Double Click, Hotkey Leading Code) + L-Win (Hold) + ßß (Video Variable) + Release "**L-Win**"

ßß	Video Mode	Aspect Ratio	Native Resolution of Monitor(s)
1U	**V-PbP*** 	16:9	3840x2160 (Dual 3840x1080)
1Q			2560x1440 (Dual 2560x720)
1F			1920x1080 (Dual 1920x540)
EQ		16:18	2560x2880 (Dual 2560x1440)
2U	**H-PbP*** 	16:9	3840x2160 (Dual 1920x2160)
2Q			2560x1440 (Dual 1280x1440)
2F			1920x1080 (Dual 960x1080)
2T		21:9	5120x2160 (Dual 2560x2160)
2P			3840x1600 (Dual 1920x1600)
2N			3440x1440 (Dual 1720x1440)
2M			2560x1080 (Dual 1280x1080)
WU		32:9	7680x2160 (Dual 3840x2160)
WQ			5120x1440 (Dual 2560x1440)
WF			3840x1080 (Dual 1920x1080)
EU	**V-MbM** 	16:9	3840x2160
EQ			2560x1440
EF			1920x1080
EP		21:9	3840x1600
EN			3440x1440
EM			2560x1080
EZ		Monitor	Follow Monitor of Output 1**
WU	**H-MbM** 	16:9	3840x2160
WQ			2560x1440
WF			1920x1080 **(Default)**
WP		21:9	3840x1600
WN			3440x1440
WM			2560x1080
WZ		Monitor	Follow Monitor of Output 1**

* Enable the PbP function of the Monitor if PbP mode is setup.
** The 2 monitors should be identical for the best performance. If not, Output 1 should be connected to the lower-resolution monitor. Unexpected compatibility issue may happen if both outputs connect to different monitors of varying specifications (e.g. 10/12 bit, different and high refresh rate, special resolution, ...).

Hotkey (Mouse Roaming)



Key Sequence		Function
L-Ctrl + L-Alt + Double Click (Hotkey Leading Code) Hold	"Q1"	Enable **V-Roaming**
	"Q2"	Enable **H-Roaming**
	"Q0"	**Disable Roaming (Default)** (Access to the Extended Desktop in Windows)
	"Q9"	**Enable Roaming** (Previous Setting)
	"R"	Enable/Disable **Borderless Circulation**
	"Caps Lock"	**Find Mouse Cursor** (Move to Screen Center)

To use Mouse Roaming Function or not is Personal Preference.
- Currently, Windows Do Not Support Mouse Roaming to the Extended Desktop. Only Roaming among the Main Desktops Is Allowed by the Operating System.
- Disable the Mouse Roaming when You Need Access to the Extended Desktop.

Hotkey (Mouse Speed for Mouse Roaming)

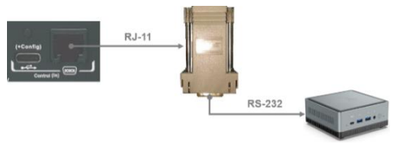
Key Sequence		Function
L-Ctrl + L-Alt + Double Click (Hotkey Leading Code) Hold	"↑"	Speed Up
	"↓"	Speed Down
	"S"	Change Speed (Beep x1 = Slow, x2 = Normal, x3 = Fast)
	"01" - "48"	Set Speed (Larger Number = Slower)

Operation – Serial Control

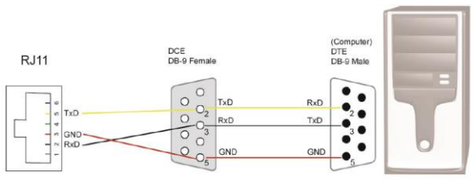
Physical Connection:

1. USB-C (Virtual COM, Recommended)
If the KVM Matrix Switch is to be controlled by a computer (Host), user can use a USB-C cable and connect directly to access the Switch from the terminal software.

2. RJ-11 with DB9 Adapter
User may use the RJ11-to-DB9 adapter to convert the RJ-11 connector to standard RS-232 (DB9) connector. In this way, user can apply serial control with either a computer or a central control unit. In addition, user can purchase a RS-232-to-USB converter to connect to the computer that has no COM port.



3. RJ-11 Hard-Wiring
Experience user may connect the switch to a central control unit by hard-wiring the RJ-11 cable and follows the pin definition of the RJ-11 connector below:



Configuration

User should apply the following serial configurations to allow communication with the serial host.

Baud Rate	19,200bps (Default, Adjustable)
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

Note :
1. Windows users may download 3rd party terminal software such as "Hyper Terminal".
2. Enable "Local Echo" so that the input command can be seen on the terminal software.
3. Commands are case-sensitive, only upper case is accepted.
4. 19200bps is the default baud rate. Use the default baud rate if there is no requirement to set a different baud rate.
5. USB-C (Virtual COM) requires the terminal software to reconnect if the video engine is reset or the unit is restarted.

Serial Commands

Command	Function
V=1-4	Active-Video Select PC 1 - 4
V=<	Active-Video Select the Previous Active PC
V=>	Active-Video Select the Next Active PC
S=1-4	Sub-Video Select PC 1 - 4
U=1-4	USB 3.2 Select PC 1 - 4
U=*	USB 3.2 Follows Video Output 1
U=$	USB 3.2 Independent Switching (Non-Follow)
A=1-4	Analog Audio Select PC 1- 4
A=*	Analog Audio Follows Video Output 1
A=$	Analog Audio Independent Switching (Non-Follow)
H=R	Reset*

* There are 3 ways to reset:
1. By Serial Command mentioned above.
2. By Pressing & Holding "Button Panel 1 + Button Panel 2" for more than 2 secs.
3. By Hotkey: HK_LCode + "**Win**" (Hold) + "**Alt**" (Hold) + "**Del**" (Numpad).

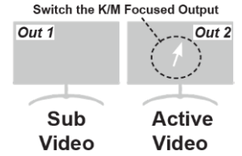
Change Baud Rate Setting of The Serial Port

There are 8 bands of baud rates available (9600 – 115200 bps).
User may combine keyboard hotkey and front push button to change the baud rate.
3 is the 3rd button port on the front panel.

Key Sequence		Set Baud Rate
L-Ctrl + L-Alt + 3 + Double Click (Hotkey Leading Code) Hold	"A1"	9600bps
	"B1"	14400bps
	"A2"	19200bps
	"B2"	28800bps
	"A3"	38400bps
	"B3"	57600bps
	"A4"	76800bps
	"B4"	115200bps

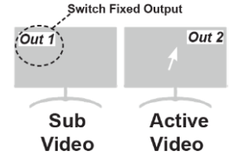
KM-Oriented / Non-KM-Oriented Switching (Optional)

KM-Oriented Switching
(Mouse Roaming On)



The **Switching Follows KB/MS** Movement:
L-Ctrl (Double Click) + "**1**"–"**4**" switch the **Active-Video**
+ "**S**" + "**1**"–"**4**" switch the **Sub-Video**

Non-KM-Oriented Switching
(Optional)



Regardless of where the Active KB/MS move:
L-Ctrl (Double Click) + "**1**"–"**4**" always switch **Output 1**
+ "**S**" + "**1**"–"**4**" always switch **Output 2**

Key Sequence		Function
L-Ctrl + S + Double Click (Hotkey Leading Code) Click	"Home"	**Toggle Switching Method** (Non-KM-Focused / KM-Focused)