IP KVM Matrix Extender
(KFH188S)

User Manual

www.kinankvm.com

Date: 2024 /10
Version: V1.0

Call us for support

Telephone: +86 (755) 2665 4426
Office Time: 8:30am ~12:00am, 1:30pm~6:00pm (Monday to Friday) ,
GMT+8 Standard Time

User Notice

This manual contains important safety instructions as well as instructions for setting up the product and operating it. If the equipment is damaged due to inappropriate operation, the buyer (instead of the manufacturer, its distributor or dealer) will assume the entire cost of all necessary repairs. Please do read “Safety Instructions” carefully (see chapter 1.3, page 5) before you switch on the product.

The manufacturer reserves the right to change specifications, functions or circuitry of the series described here without notice. Information in this manual can be changed, expanded, or deleted without notice. You can find the current version of the manual in the download area of our website.

Make sure that the voltage setting is correct before use.

Table of Contents

1. Introduction

IP HD Digital KVM Matrix Extender is a highly optimized KVM extender. The transmission distance can reach 150m for point-to-point connection with an Ethernet cable, and the resolution is up to 3840x2160@30Hz. This series of extenders can be connected to a Gigabit network switch to form a matrix switching system, which can be networked independently without using a centralized management platform, supporting up to 40 nodes; when using a centralized management platform, it can support up to 9999 nodes according to the network bandwidth. It supports fast non-black screen switching. The matrix switching system can connect various kinds of signal sources, such as servers, workstations, cameras, video TV walls, etc.

With the matrix switching system, computers and servers can be located in a central server room away from the workbench to improve safety, reduce the temperature and noise of the working environment, and achieve a quiet and friendly human-computer interaction environment.

The video compression algorithm of the IP HD digital KVM matrix extender is a perfect combination of high image quality and low latency (8ms/1080P@60Hz). USB and video signals are transmitted via CAT5e/6/7 network cables or optical fibers.

USB2.0 supports USB devices such as touch screens, USB sound cards, printers, and also USB storage devices.

UI managing system initial administrator account**: admin** Password**: admin**

1.1 Function

This product is designed to extend and switch USB peripherals such as keyboards, mice, U disks, and video signals. As a professional product, this product should not be used in any occasion with potential explosion risks.

Please use this product in accordance with the instructions in this manual. Any use not in accordance with the instructions in this manual is considered abnormal use. The device connected to the source input end is called the transmitter (TX), and the device connected to the display end is called the receiver (RX).

1.2 Product Features

1. HDMI / Audio/USB2.0 / Serial Port IP KVM Matrix Extender
2. Supports hot backup function with master and backup connections (dual optical or dual network connections or 1 optical /1 network connections)
3. Supports local (TX) HDMI interface loop-out
4. Visual lossless compression transmission, ultra-low latency (≈8ms@60Hz). Typical transmission bandwidth: 50~450Mbps
5. Graphical UI interface, intuitive and convenient port switching and other operations
6. Supports seamless switching between hosts without any black screen
7. USB transmission rate up to 480Mbit/s
8. Supports analog audio and microphone, supports digital audio
9. Maximum resolution 3840x2160@30Hz (YCbCr 4:4:4）
10. Supports optical fiber transmission in single-mode or multi-model; the maximum transmission distance depends on the SFP type.

    Supports CAT5e/6/7 transmission, and the maximum point-to-point extension distance is 150m
11. Up to 9999 devices networked with a centralized management platform for a matrix switching system :
12. Supports screen lock.
13. Supports one Administrator account and one User account.
14. Supports collaborative sharing Push & Get.
15. Supports remotely turn on/off the computers.

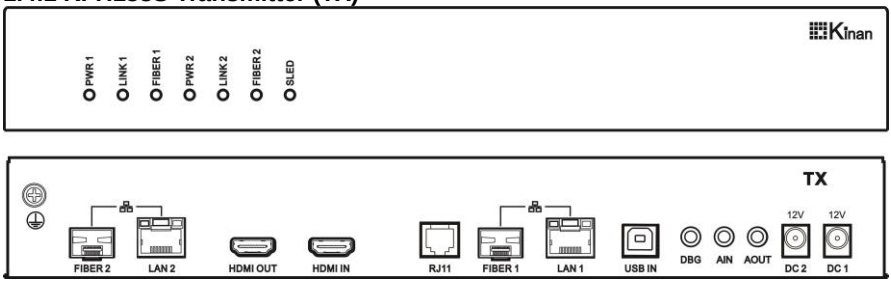
1.3 Safety Instructions

Warning! Please read and understand all safety instructions.

1. Please follow all instructions, including preventing serious accidents such as fire and explosion. Please ensure that users who use this product have read and will follow these warnings and safety instructions.
2. Retain all safety information and guidelines for future reference and pass them on when delivering this product to a third party.
3. The manufacturer is not responsible for property and personal damage caused by users' not following safety guidelines and abnormal use of this product. And in this case, the product warranty does not apply.
4. This product is not allowed to be used in environments with potential explosion risks.
5. Before use, please check whether this product and cables are damaged. If any visible damage, strong odor or overheating of components is found, please disconnect all connections immediately and stop using this product.
6. If this product is not installed and used in accordance with the instructions in the manual, it may cause interruptive interference to the radio environment or other electromagnetic devices in the surrounding area. Use shielded cables to connect components to avoid the above interference.
7. Please use the power adapter that comes with this product as the power source, and do not use other adapters.
8. Before powering on the product, make sure that the supply voltage meets the nominal specifications of the product.
9. This product must be connected to a fixed and grounded AC wall outlet.
10. Avoid squeezing or bending the cable, and the cable layout should avoid being tripped by people.
11. Avoid any damage to the power adapter
12. This product should be equipped with a suitable power socket that is easy to install and easy to reach, ensuring that the product can be powered off at any time.
13. When this product is not in use, it should be disconnected from the socket.
14. Do not touch the power adapter with wet hands.
15. Please use this product within the performance range specified by this manual..
16. Please keep this product away from any flammable substances, such as curtains, etc.
17. Please avoid the power adapter being touched by any third party (such as children).
18. Do not place this product next to a heater.
19. Do not throw or hit this product.

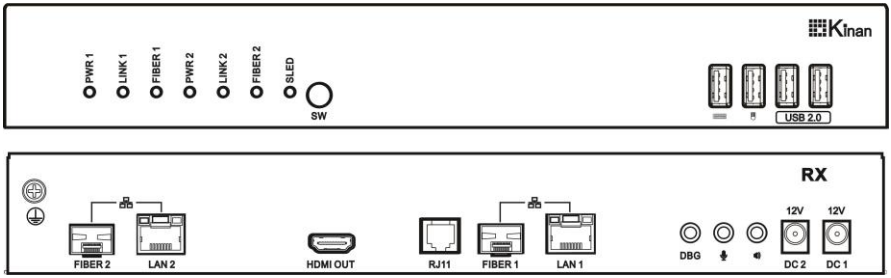
1.4 Product Overview

1.4.1 KFH188S Transmitter (TX)



No	Interface		Description
1	LED	PWR1, PWR2	Power indicator
		LINK1, LINK2	Connection indicator
		FIBER1, FIBER2	Connection indicator of FIBER
		SLED	System indicator
2	⏚		Ground the device
3	FIBER2, FIBER1		Fiber interfaces
4	LAN2, LAN1		LAN interfaces
5	HDMI OUT		HDMI video loop out
6	HDMI IN		HDMI video input
7	RJ11		Serial Port
8	USB IN		USB-B, connect to PC or server
9	DBG		Debug interface
10	AIN		Audio input
11	AOUT		MIC output
12	DC2, DC1		Connect to the 12V power supply

1.4.2 KFH188S Receiver (RX)



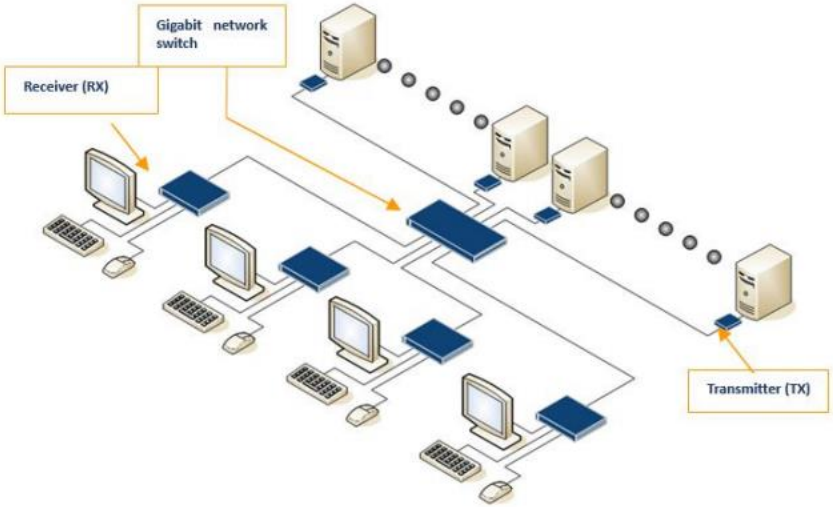
No.	Interface		Description
1	LED	PWR1, PWR2	Power indicator
		LINK1, LINK2	Connection indicator
		FIBER1, FIBER2	Connection indicator of FIBER
		SLED	System indicator
2	SW		Button
3			Connect to a USB keyboard
4			Connect to a USB mouse
5	USB2.0		Connect to USB2.0 peripherals
6			Ground the device
7	FIBER2, FIBER1		Fiber interfaces
8	LAN2, LAN1		LAN interfaces
9	HDMI OUT		HDMI video output
10	RJ11		Serial Port
11	DBG		Debug interface
12			MIC input
13			Audio output
14	DC2，DC1		Connect to the 12V power supply

2. Installation

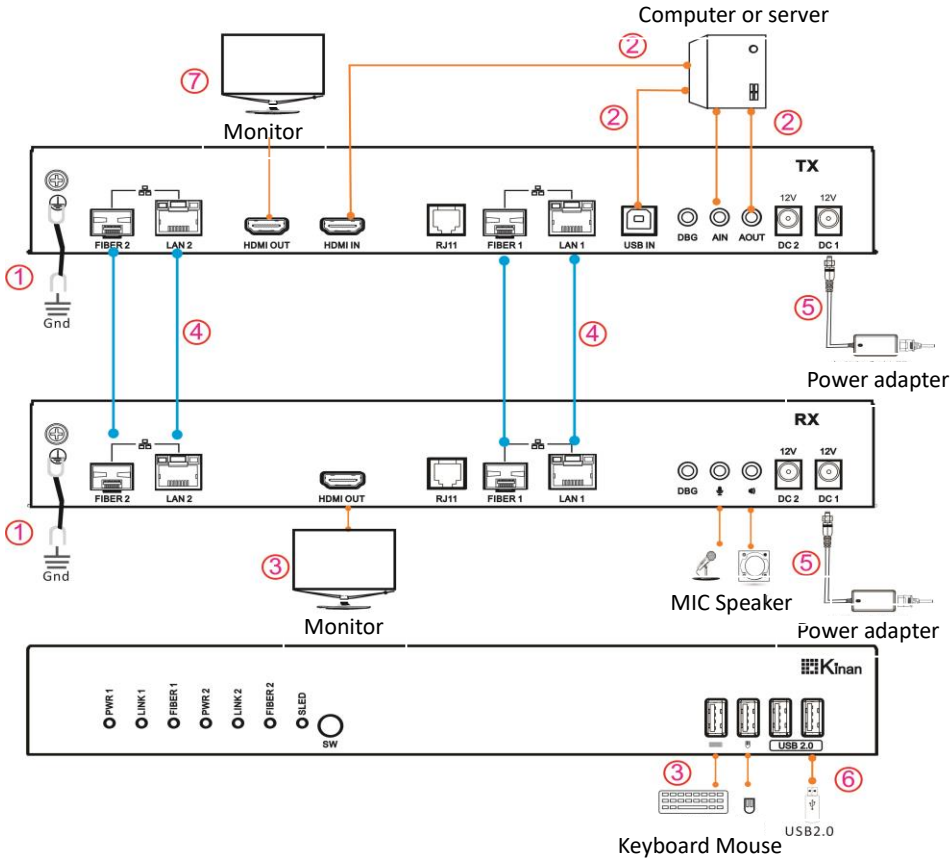
2.1 Install the extenders

Warning! Please read and understand all safety instructions before installing the equipment. The extender can access a single PC at a point-and-point mode, and also can form a matrix switching system to access multiple PCs.

Matrix switching system



Connection Diagram of KFH188S



1. Make sure the KVM extenders (TX and RX) are grounded (Figure ①)

2. Connect the transmitter (KFH188S_TX) to the host video interface, USB, and audio microphone interface (Figure ②).

3. Connect the receiver (KFH188S _RX) to the monitor, audio, USB keyboard, and USB mouse (Figure ③).

4. Connect the transmitter TX and receiver RX interfaces respectively through optical fiber or network cable (Figure ④).

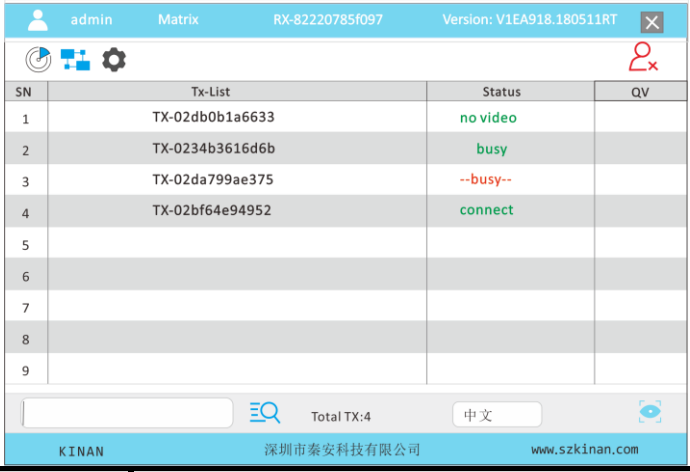
5. Power on the transmitter TX and receiver RX respectively (Figure ⑤).

6. Connect the USB peripherals to the receiver (KFH188S _RX) (Figure ⑥)

3. Extender Configuration

3.1 How to use UI interface

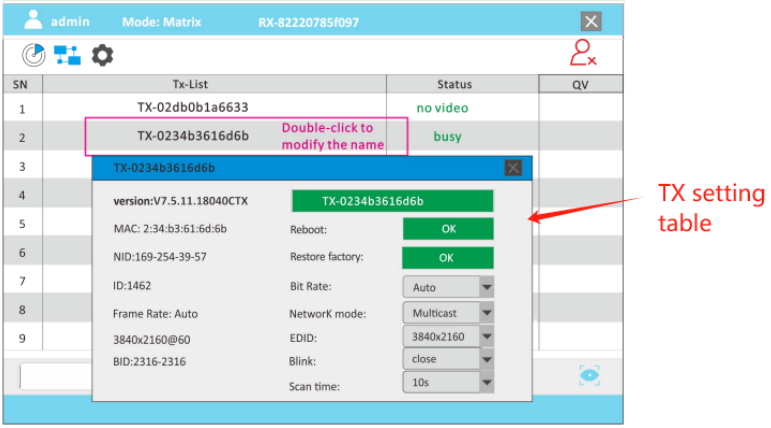
Press the left [Ctrl] key on the keyboard three times in a row to display the UI main interface.



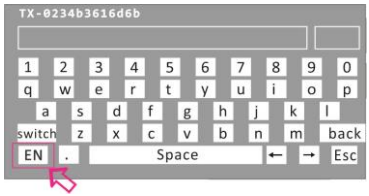
Toolbar	Description
Mode	Node Matrix P2P
	Scan devices in the list
	TX and RX matching list
	Setting
	Click【Equipment setting】-【User Setting Pass】to logout user account
SN	Number of connected devices
TX-List	List of transmitters
Status	busy: Being accessed by someone else --busy-- : Being accessed by me no video: No video input from the host connect : Accessible
QV	Select devices for scanning
	Find the devices in the list
	Auto Scan

【TXs settings】

Double-click an item on the TX-List, and then the following TX setting table appears.

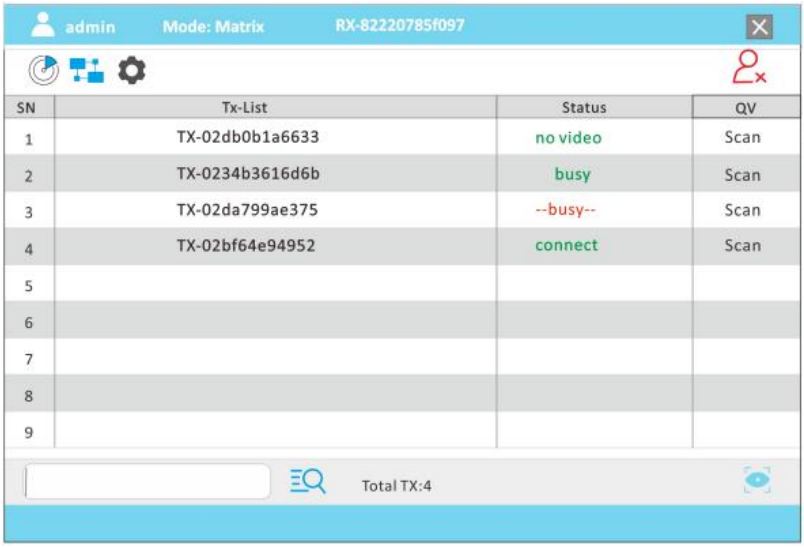


TX setting table:

Toolbar	Description
Rename TX devices. Take TX-0234b3616d6b as an example	Click “TX-0234b3616d6b” in the Name setting window to modify the TX name and then click ESC button to confirm your modification.  EN: English CN: Chinese Switch: Switch between upper and lower cases
Reboot	Reboot the device
Restore factory settings	Restore Factory Defaults
Bit Rate	Auto , 10M ,50M, 100M, 150M, 200M
Network mode	Multicast mode Unicast mode
Scan time	10s, 20s, 30s, 60s , 90s ,120s, 150s, 180s ,210s,255s
Blink	Enable PWR led to blink to locate the TX device.
EDID	AUTO, 1024x768, 1280x1024, 1366x768, 1600x900 , 1920x1080,1920x1200,2560x1440, 3840x2160, 1152x864, 2048x2048,1600x1200,1920x1920,2160x2160,2560x1600, 3840 x1080, 4096 x1080, 2560 x2880

【Settings of Auto-scan】

Select TX devices, click the QV icon, and then click to automatically scan the selected devices (default scan time: 10s).



Scan time optional: 10s, 20s, 30s, 60s, 90s, 120s, 150s, 180s, 210s ,255s

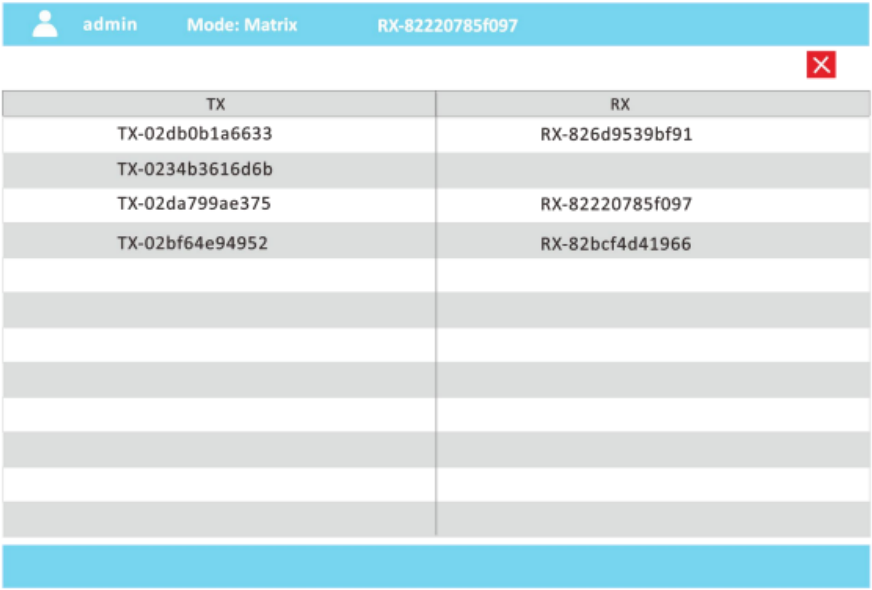
【User Login Interface】

The default setting mode is password mode:  （See User Account Setting page 17）, the login interface will only appear after clicking the icon 

User Name：	admin
Password:	admin

【TX/RX Devices List】

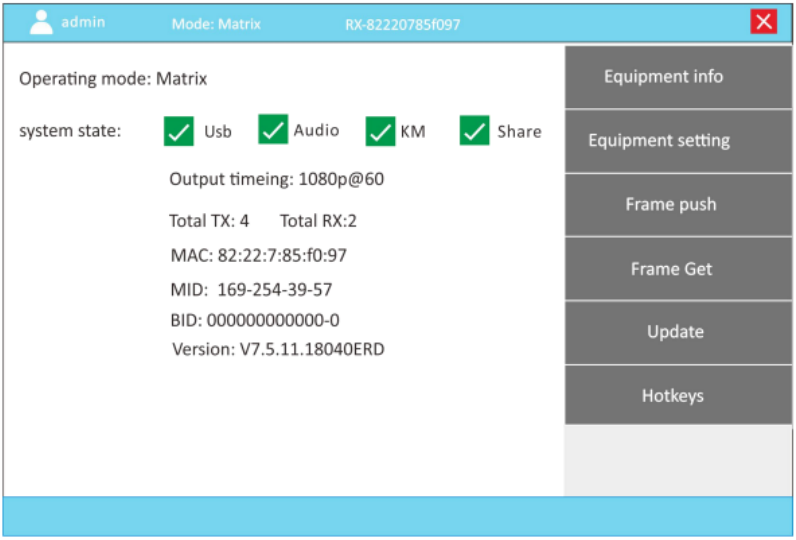
Click  , then the below menu appears, and al the connected TX and RX devices show on this menu.



TX	RX
TX-02db0b1a6633	RX-826d9539bf91
TX-0234b3616d6b	
TX-02da799ae375	RX-82220785f097
TX-02bf64e94952	RX-82bcf4d41966

3.2 System Settings

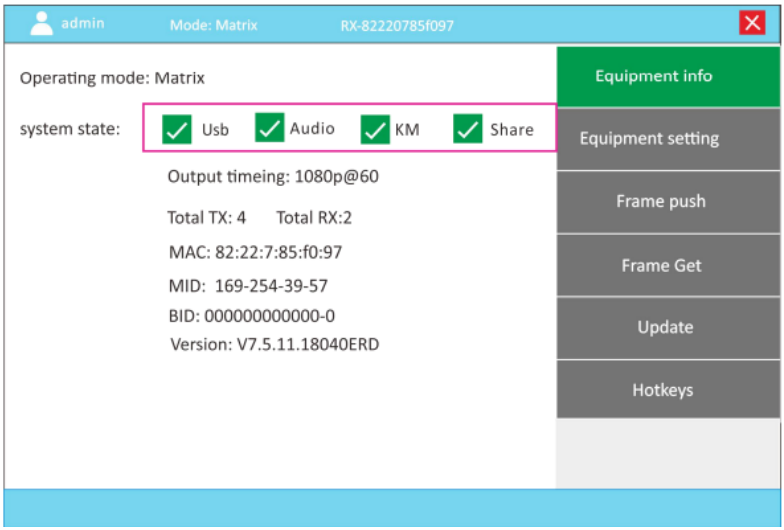
Click , then the below table appears.



Toolbar	Description
Equipment Info	To switch on/off USB, Audio, KM, Get & Push
Equipment Setting	System and RX Settings
Frame Push	Push the video and USB signals from current receiver to the chosen receiver in the list
Frame Get	Get the video and USB signals from any receiver in the list to the current receiver
Update	Update device
Hotkeys	Hotkeys Info

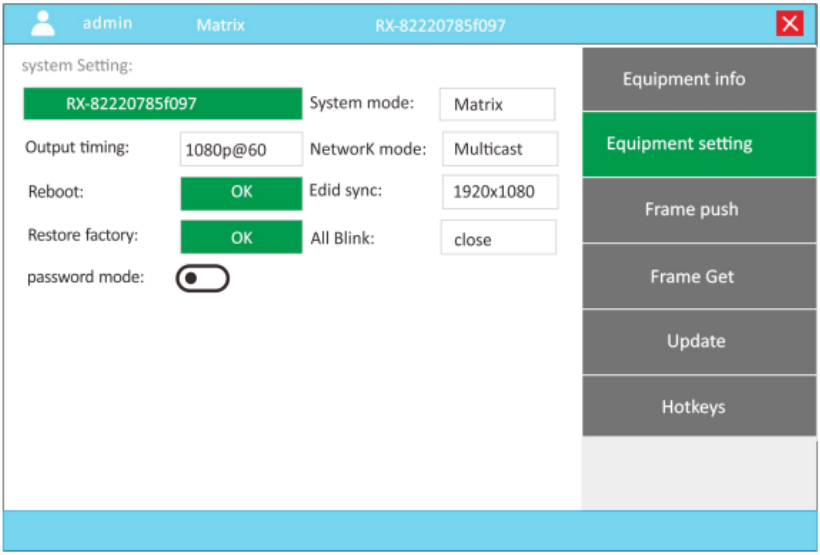
【Equipment info】

Select【☑】to switch on/off the system state.



Toolbar	Description
Usb2.0	USB2.0 functions
Audio	Audio function
KM	Keyboard and Mouse
Share	Push video & Get video

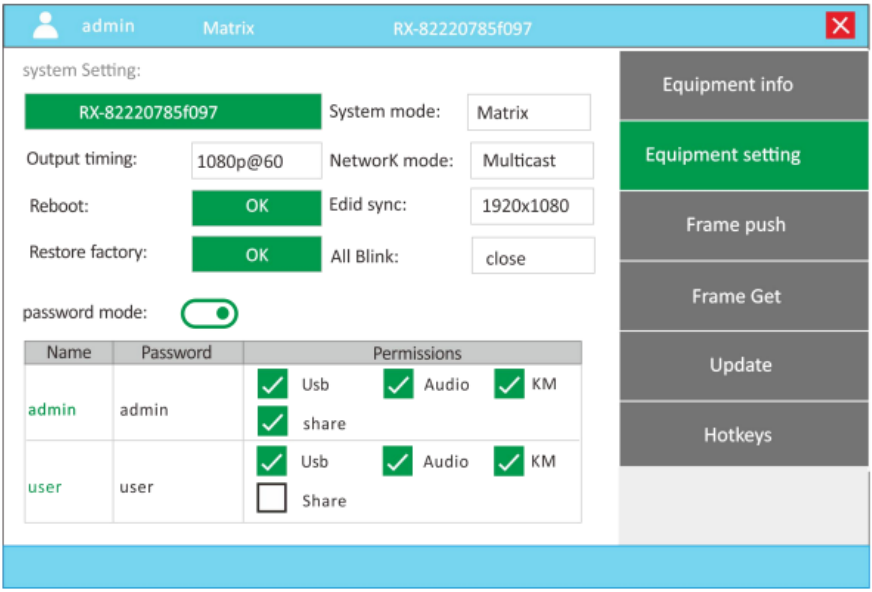
【RX Settings】



Toolbar	Description
Rename RX	Click “RX-8220785f097” to change the name of RX, and then click ESC confirm your modification.
All blink	Enable PWR led to blink on all TX devices.
Reboot	Reboot device
Restore factory	Restore factory defaults
System mode	Matrix mode P2P mode Node mode
Network mode	Multicast Unicast
Edid Sync	AUTO, 1024x768, 1280x1024, 1366x768, 1600x900 , 1920x1080,1920x1200,2560x1440,3840x2160, 1152x864,2048x2048,1600x1200,1920x1920, 2160x2160, 2560x1600, 3840 x1080, 4096 x1080, 2560 x2880
Output timing	1080P@60,2160P@60,640x480P@60, 800x600P@60, 1024x768P@60,1280x1024P@60,1366x768,1440x900, 1920x1200, STRICT PASS, AUTO PASS
Password mode	Modify user account and set permissions

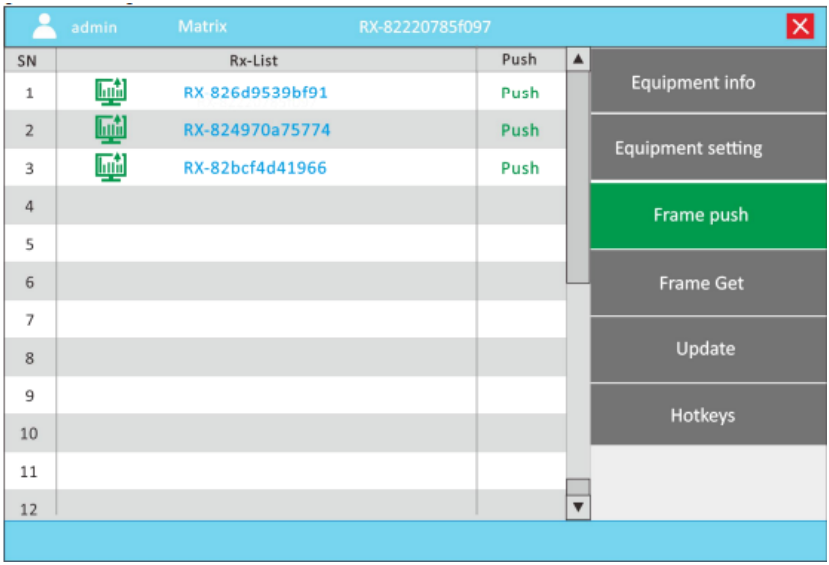
User Account Setting:

Click then the button turns green , then can modify account password and set permissions. * *You can't set the accounts info in Node mode. It can only be set on the management control unit.*



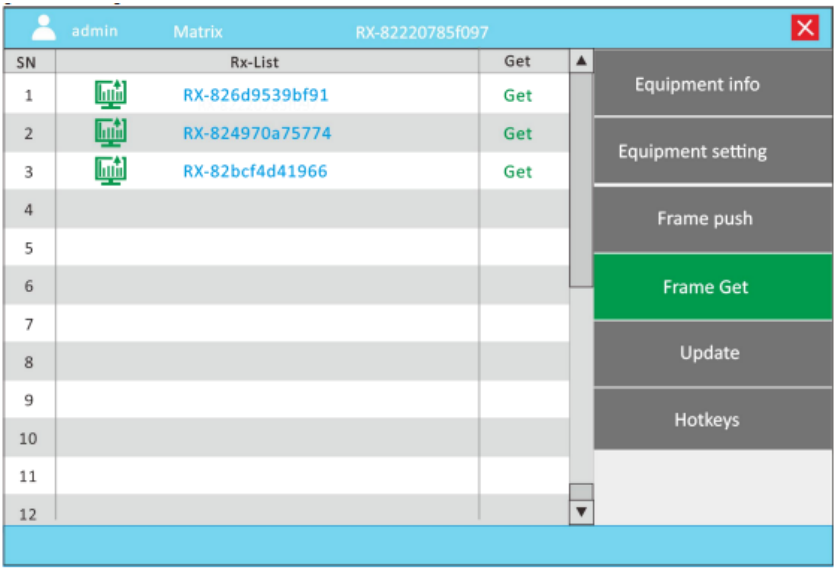
Toolbar	Description
Password	Double click to change the password respectively
Permissions	Set permissions on USB2.0, Audio, KM, Get &Push

【Frame Push】



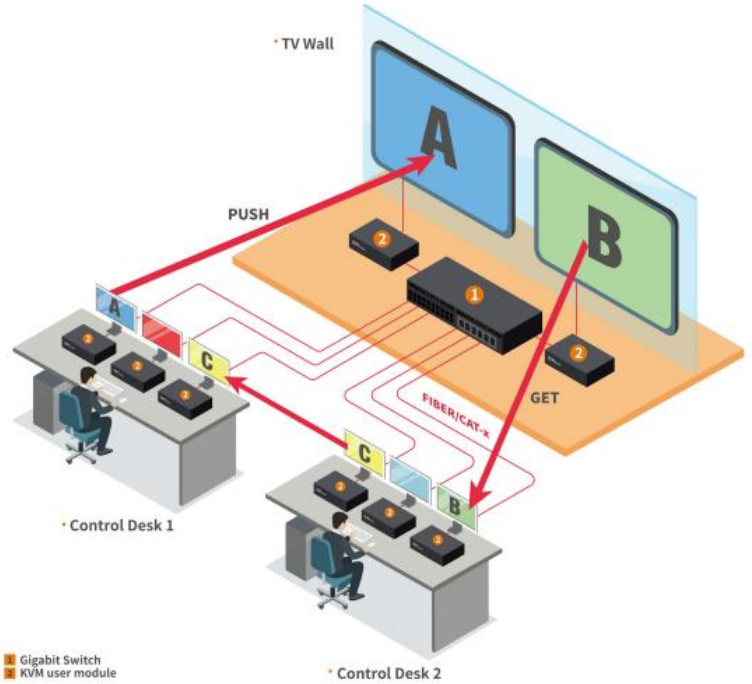
Click “Push” to push the video and USB signals from current receiver to the chosen receiver in the list.

【Frame Get】

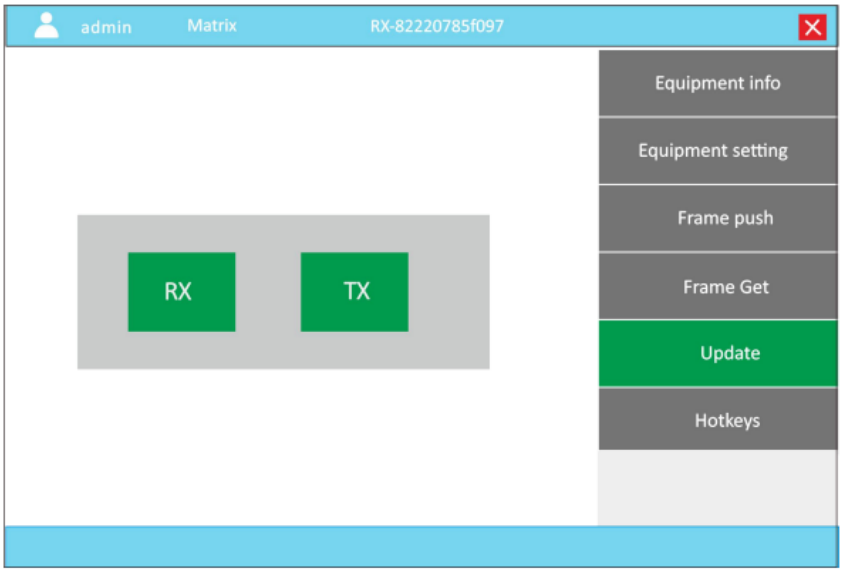


Click “Get” to get the video and USB signals from any receiver in the list to the current receiver.

Connection Diagram of Collaborative Sharing Push & Get

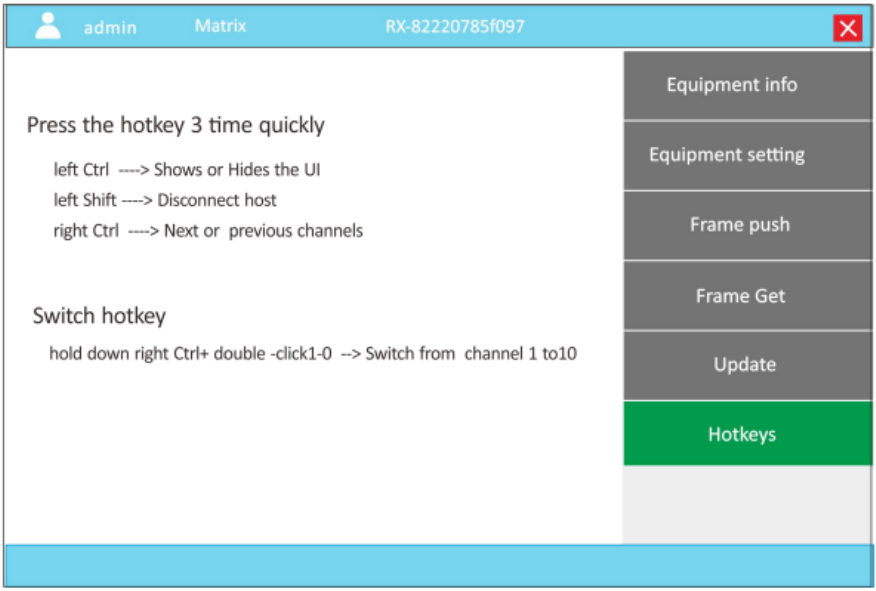


【Update】



Click “RX” to update RX
Click “TX” to update TX

【Hotkeys】



Toolbar	Description
Left _Ctrl	Show or hide the UI interface
Left_ Shift	Stop accessing the current TX
Right_ Ctrl	Access the next TX
Right_ Ctrl+ Double【1-0】	Switch among the Txs

4. Specifications

Specifications		KFH188S_TX	KFH188S_RX
Connections	HDMI input	1	N/A
	HDMI output	1	1
	Power	12V x 2	12V x 2
	LAN port	RJ45 x 2	RJ45 x 2
	Optical Module port	SFP+ x 2	SFP+ x 2
	Mic	3.5MM Stereo Jack (Green)	3.5MMStereoJack(Pink)
	Speaker	3.5MM Stereo Jack (Pink)	3.5MMStereoJack(Green)
	USB type B	1	N/A
	USB	N/A	4
Max resolution		3840*2160@30Hz	
Connection cable		CAT5e/6/7 or Optical Fiber Cable	
Input Power Supply		DC12V / 3A	DC12V / 3A
Power consumption		15W	15W
Operating temperature range		0—50 ℃	
Storage temperature range		-20—60 ℃	
Humidity range		0—80% RH, non-condensing	
Material		Metal	
Net weight (kg)		1.78 kg	1.8kg
Device dimension (W×D×H)		317mm x 216.1 mm x 44mm	
Package dimension (W×D×H)		395mm x 274 mm x110 mm	395mm x 274 mm x110 mm