Avocent HMXCC1-G2

用户手册

User's Manual

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HMXCC1-G2

用户手册

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第一章 产品简介

Avocent™ 第二代高性能 IP 矩阵 KVM 中央控制器 HMXCC1-G2(以下简称为 HMXCC1)和其平台可以设置主机及从机数据库复制故障转移，用来管理选配之 HMX 系列 IP KVM 延伸器组成的 IP 矩阵 KVM 系统，可满足不同应用场景的需要。HMXCC1 IP 矩阵 KVM 控制器为软硬件集成的一款设备，采用网页管理界面控管注册之 IP KVM 延伸器。HMXCC1 控制器具有两个独立的网络界面(用户网络/设备网络)，HMXCC1 控制器和已注册的 HMX1080/HMX2080/HMX3080/HMX4080 以相同的千兆(1000Mbps)以太局域设备网络相连接。不同的计算机都可以通过发射器设备与此 IP 矩阵 KVM 系统连接。HMXCC1 控制器更支持 LDAP/RADIUS 外部远程认证、提供 3 层级别权限的用户账户、SSL 128 位传输加密、用户组/发射器 TX/接收器 RX 群组设定、网页平台预览已注册发射器讯源、接收器所有输入/出端口启用/禁用管理及事件日志记录等功能。

系统网络应用场景

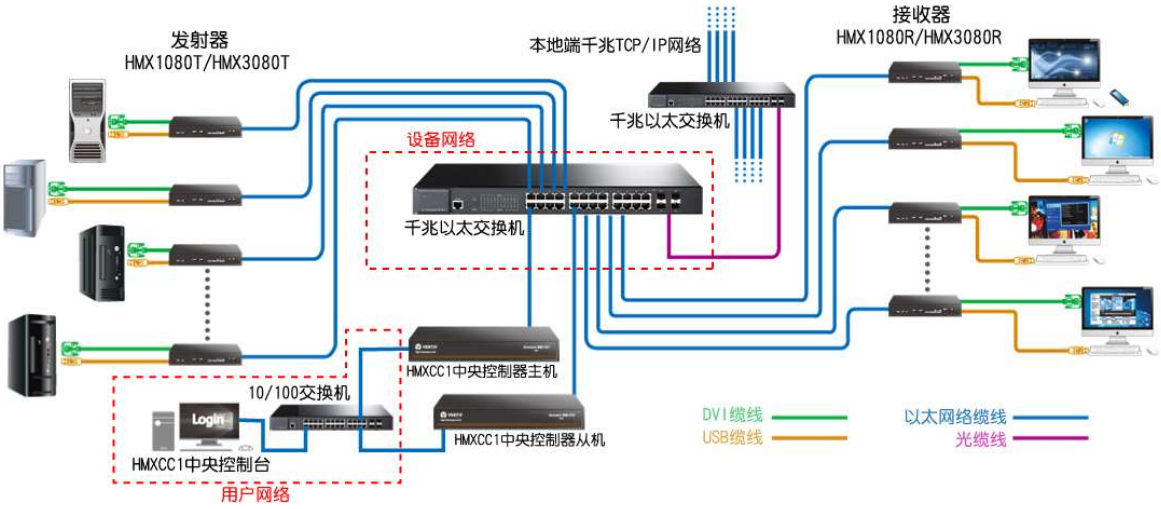


图1-1 系统网络应用场景

第二章 产品功能特性

1、允许启用自动故障排除、备用机器数据库备份主机和单一机器手动备份/还原。

2、用于加入与管理兼容的 TX/RX 延伸器设备(HMX1080/HMX2080/HMX3080/HMX4080 系列)。

3、支持两组独立网络端口分别连接用户端局域网与设备端局域网，提供最高等级信息安全性。

4、支持千兆以太网络管理发射器与接收器设备之间的通信。

5、支持于中央控制台浏览器操作网页管理界面。

6、支持 LDAP 和 RADIUS 远程用户认证通信协议。

7、支持记录所有事件日志、登入历史及删除/分类事件列表。

8、使用 3 种应用级别的用户账户登入：管理员、超级用户及一般用户。

管理员—授权所有权限设置控制器主机与控制器从机、设置接收器、发射器及设置用户账户。

超级用户—授权部份管理员账户权限，但不包含用户账户管理。

一般用户—授权使用开放远程控制台的基本功能。

9、预览已注册的所有发射器讯源缩图。

10、接收器设备的 I/O (DVI-I, USB, RS232, 音讯, 红外)端口的存取，皆可独立设置为启用或停用。

HMXCC1 控制器及 IP KVM 延伸器(发射器/接收器)连接示意图

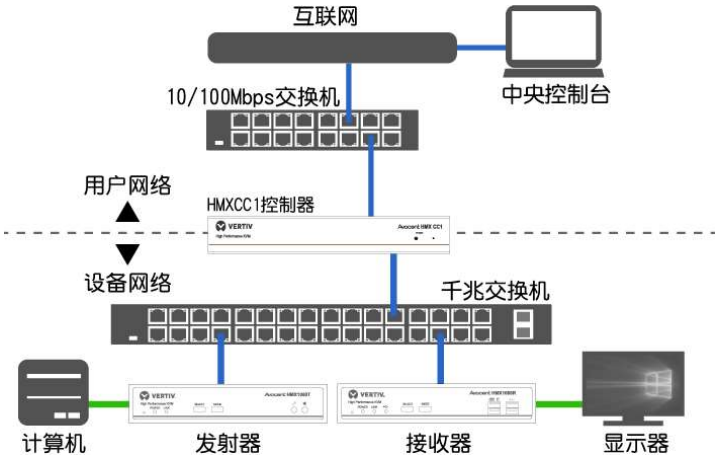


图2-1 连接示意图

2.1 产品规格

表2-1 规格表

项目	产品规格	描述
机型	HMXCC1-G2	IP 矩阵 KVM 中央控制器 (第二代)
IP KVM 延伸器 (选购)	发射器(TX)型号	HMX1080T/HMX2080T/HMX3080T/HMX3080TP/HMX4080T/HMX4080TP
	接收器(RX)型号	HMX1080R/HMX2080R/HMX3080R/HMX3080RP/HMX4080R/HMX4080RP
接口/按键	电源开关 x 1	开启关闭机器电源
	电源端口 x 1	连接到电源适配器
	设备局域网络端口 x 1	连接到千兆局域网端口
	用户局域网络端口 x 1	连接到 10/100Mbps 局域网端口
	复位键 x 1	重置系统回出厂默认值
LED 灯号	电源 LED x 1	电源状态指示
	网络端口 LED x 2	网络连接状态指示(绿色)
		网络连接速度指示(橘色)
电源	电源电压	DC 12V
	电源最大电流	2A
	电源功耗率	3.5W
其它规格	温度限制	工作温度：0°C ~ 40°C
		储存温度：-40°C ~ 70°C
	湿度限制	储存湿度：0% ~ 90% RH 未凝结
	尺寸 (长 x 宽 x 高)	300 x 164 x 44 mm (11.81 x 6.45 x 1.73 inches)
	重量	1215g (2.67lb)
	外壳材质	金属
	颜色	黑
	安规认证	CE、FCC、RoHS、WEEE

*产品规格如有更新不另行通知

第三章 包装内容

- HMXCC1-G2 IP 矩阵 KVM 控制器 x1
- 电源适配器(12V/2A) x1
- 网络缆线 x 2
- 系统快速安装指南 x 1
- 发射器设备(选购)

HMX1080T

HMX2080T

HMX3080T

HMX3080TP

HMX4080T

HMX4080TP

- 接收器设备(选购)

HMX1080R

HMX2080R

HMX3080R

HMX3080RP

HMX4080R

HMX4080RP

第四章 系统概述及启用

4.1 硬件外观

4.1.1 控制器正面面板

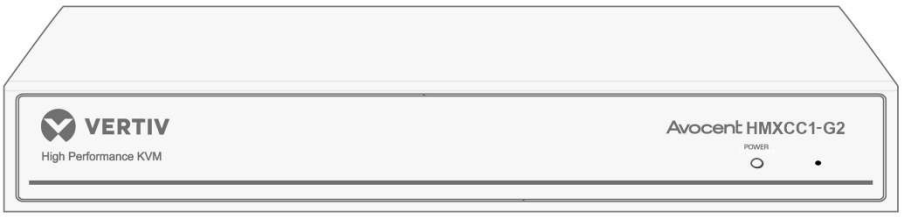


图4-1 控制器正面面板

4.1.2 控制器背面面板

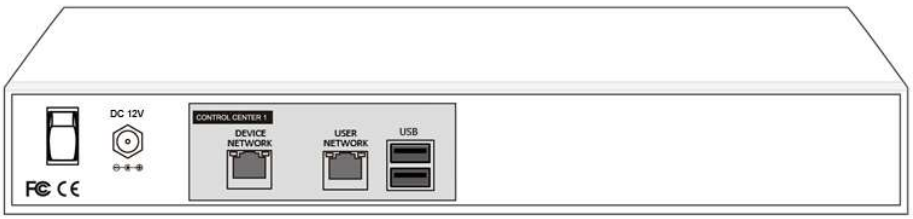


图4-2 控制器背面面板

4.2 硬件概览

4.2.1 控制器硬件界面及接口

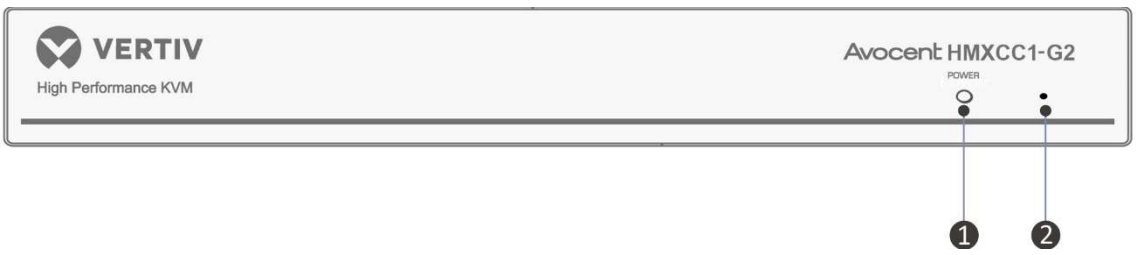


图4-3 正面面板

表4-1 正面面板说明

项目	规格叙述
❶ 电源 LED 灯(绿/橘双色灯)	不亮：电源适配器未连接或电源开关未被按下并放开。
	绿色闪烁：控制器已开机备妥，其＜复制模式＞设置为＜不复制＞。
	绿色恒亮：控制器已开机备妥，其＜复制模式＞设置为＜主机＞。
	橘色恒亮：控制器已开机备妥，其＜复制模式＞设置为＜从机＞。
❷ 重置键	按下后保持 8 秒再放开，可自动重设机器回出厂默认值。

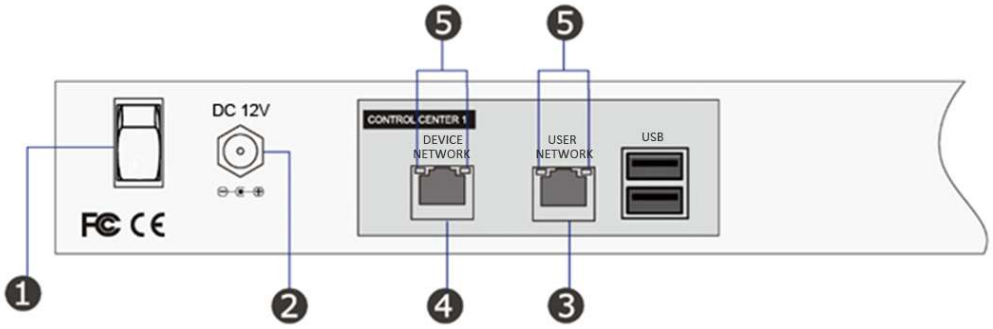


图4-4 背面面板及接口

表4-2 背面面板及接口说明

项目	规格叙述
❶ 电源开关	自复式电源开关，按下并放开可对 HMXCC1 控制器开机或关机
❷ 电源输入	连接 DC12V/2A 电源适配器
❸ 用户网络端口	连接到 10/100Mbps 交换机的 RJ-45 网络端口 透过计算机浏览器存取网页管理界面
❹ 设备网络端口	连接到千兆交换机的 RJ-45 网络端口
❺ 网络端口 LED	<左边绿色 LED>
	不亮：网络未连接 闪烁：数据传输中
	<右边橘色 LED>
	恒亮：控制器正以 1000Mbps 模式运行
	不亮：控制器正以 10/100Mbps 模式运行

*产品规格如有更新不另行通知。

单台 HMXCC1 控制器系统配置

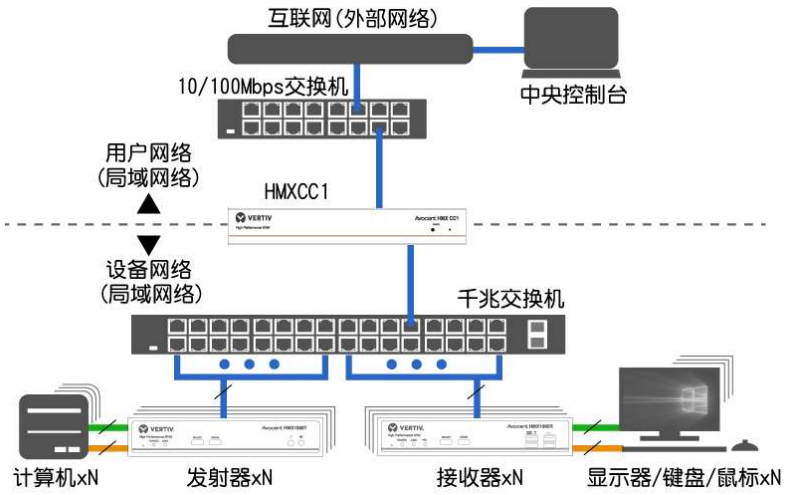


图4-5 单台 HMXCC1 控制器系统配置

双台 HMXCC1 控制器系统配置

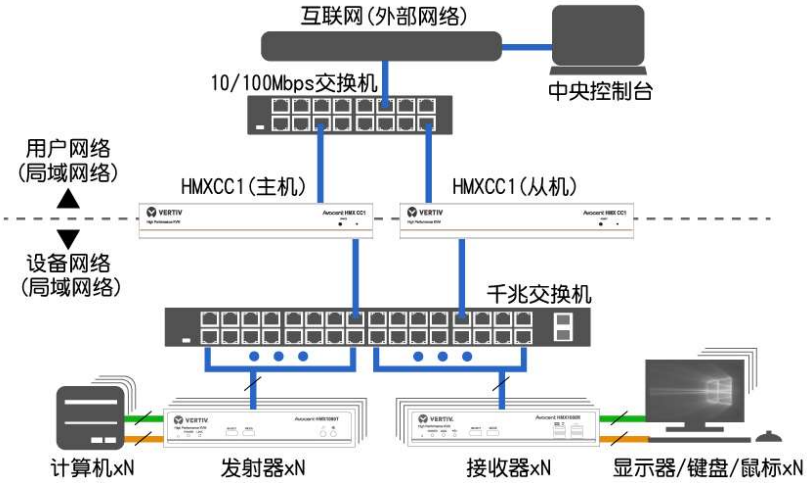


图4-6 双台 HMXCC1 控制器系统配置

4.2.2 兼容的 IP KVM 延伸器设备系列 (选购)

兼容的 IP KVM 延伸器设备系列为选购，不包含在 HMXCC1 控制器出货包装中。以下为兼容延伸器规格概览，延伸器设备包含发射器及接收器。详细细节请参阅 HMX1080/HMX2080/HMX3080/HMX4080 系列手册。

兼容发射器(千兆端口)：HMX1080T / HMX2080T

兼容发射器(千兆端口+光端口)：HMX3080T / HMX4080T

兼容发射器(千兆端口+光端口+网络缆线供电)：HMX3080TP / HMX4080TP

兼容接收器(千兆端口)：HMX1080R / HMX2080R

兼容接收器(千兆端口+光端口)：HMX3080R / HMX4080R

兼容接收器(千兆端口+光端口+网络缆线供电)：HMX3080RP / HMX4080RP

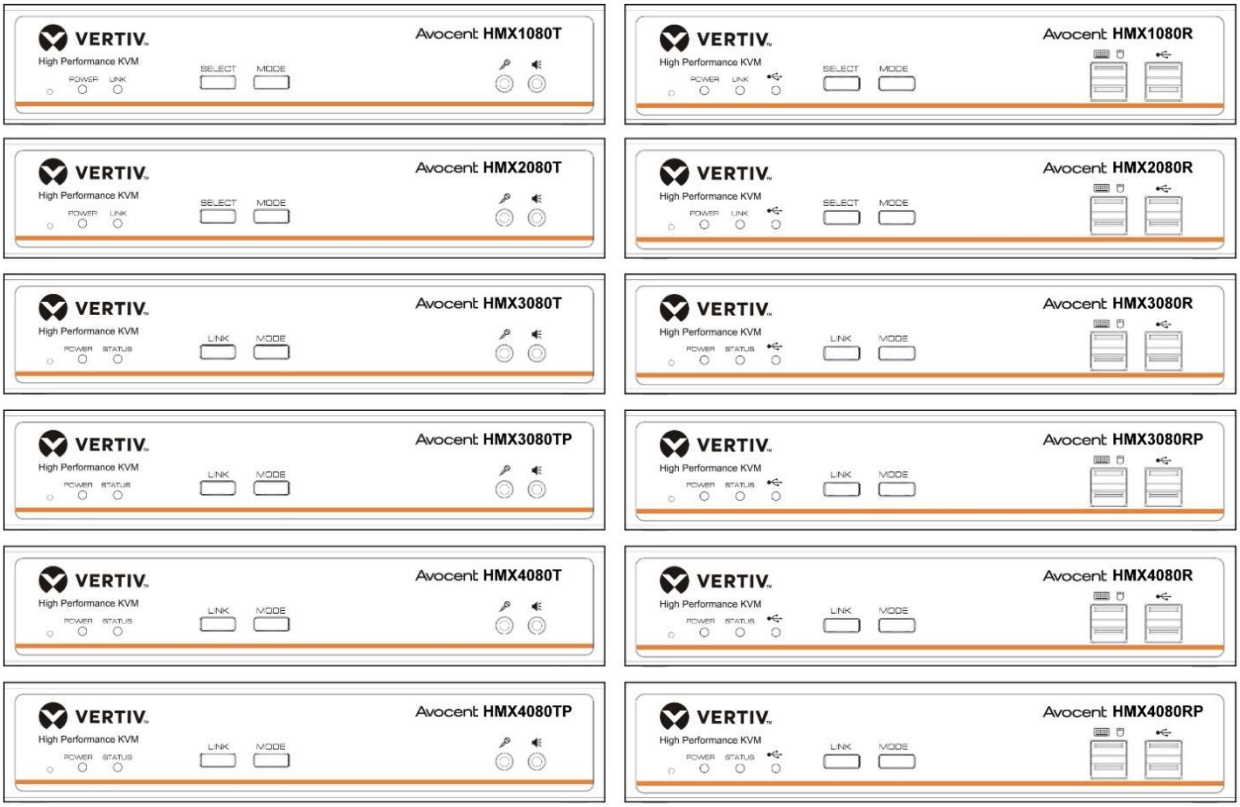


图4-7 HMX1080/HMX2080/HMX3080/HMX4080 IP KVM 延伸器系列 (选购)

HMX1080T/HMX1080R(选购)规格表

表4-3 HMX1080T/HMX1080R(选购)规格表

机型	HMX1080T	HMX1080R
系统组件类型	发射器 (TX)	接收器 (RX)
端口	USB-B 母头 x 2	USB-A 母头 x 2 (键盘/鼠标)
	DVI 输入端口 x 1	USB-A 母头 x 2 (USB 装置)
	DVI 输出端口(环回) x 1	DVI 输出端口 x 1
	IR 红外线输出孔 x 1	IR 红外线输入孔 x 1
	麦克风孔(前面板/后背板) x 2	麦克风孔(后背板) x 1
	喇叭孔(前面板/后背板) x 2	喇叭孔(后背板) x 1
	RJ45 网络端口 x 2	RJ45 网络端口 x 2
	RS-232 母头 x 1	RS-232 公头 x 1
	电源连接孔 x 1	电源连接孔 x 1
按键类	功能键(SELECT/MODE) x 2	功能键(SELECT/MODE)x 2
LED 指示灯	红灯 x 1	红灯 x 1
	绿灯 x 1	绿灯 x 1
		黄灯 x 1
尺寸 (长 x 宽 x 高)	222 x 137 x 44 mm	222 x 137 x 44 mm
重量	670g	660g
分辨率	1920 x 1200@60Hz	

机型	HMX1080T	HMX1080R
电源适配器	DC 5V/3A	
操作温度	0℃ ~ 40℃	
储存温度	-40℃ ~ 70℃	
工作湿度	10% ~ 90% 相对湿度 未凝结	
储存湿度	0% ~ 90% 相对湿度 未凝结	
外壳材质	金属	
安规认证	CE、FCC	

*产品规格如有更新不另行通知。

HMX2080T/HMX2080R(选购)规格表

表4-4 HMX2080T/HMX2080R(选购)规格表

机型	HMX2080T	HMX2080R
系统组件类型	发射器 (TX)	接收器 (RX)
端口	USB-B 母头 x 2	USB-A 母头 x 2 (键盘/鼠标)
	DVI 输入端口 x 2	USB-A 母头 x 2 (USB 装置)
	DVI 输出端口(环回) x 2	DVI 输出端口 x 2
	IR 红外线输出孔 x 1	IR 红外线输入孔 x 1
	麦克风孔(前面板/后背板) x 2	麦克风孔(后背板) x 1
	喇叭孔(前面板/后背板) x 2	喇叭孔(后背板) x 1
	RJ45 网络端口 x 2	RJ45 网络端口 x 2
	RS-232 母头 x 1	RS-232 公头 x 1
	电源连接孔 x 1	电源连接孔 x 1
按键类	功能键(SELECT/MODE) x 2	功能键(SELECT/MODE)x 2
LED 指示灯	红灯 x 1	红灯 x 1
	绿灯 x 1	绿灯 x 1
		黄灯 x 1
尺寸 (长 x 宽 x 高)	222 x 137 x 44 mm	222 x 137 x 44 mm
重量	760g	750g
分辨率	1920 x 1200@60Hz	
电源适配器	DC 5V/3A	
操作温度	0℃ ~ 40℃	
储存温度	-40℃ ~ 70℃	
工作湿度	10% ~ 90% 相对湿度 未凝结	
储存湿度	0% ~ 90% 相对湿度 未凝结	
外壳材质	金属	
安规认证	CE、FCC	

*产品规格如有更新不另行通知。

HMX3080T/HMX3080TP/HMX3080R/HMX3080RP(选购)规格表

表4-5 HMX3080T/HMX3080TP/HMX3080R/HMX3080RP(选购)规格表

机型	HMX3080T / HMX3080TP	HMX3080R / HMX3080RP
系统组件类型	发射器 (TX)	接收器 (RX)
端口	USB-B 母头 x 2	USB-A 母头 x 2 (键盘/鼠标)
	DVI 输入端口 x 1	USB-A 母头 x 2 (USB 装置)
	DVI 输出端口(环回) x 1	DVI 输出端口 x 1
	IR 红外线输出孔 x 1	IR 红外线输入孔 x 1
	麦克风孔(前面板/后背板) x 2	麦克风孔(后背板) x 1
	喇叭孔(前面板/后背板) x 2	喇叭孔(后背板) x 1
	RJ45 网络端口 x 2; (TP 机型其中一 RJ45 网络端口带 PoE 功能)	RJ45 网络端口 x 2; (RP 机型其中一 RJ45 网络端口带 PoE 功能)
	SFP 光模块插槽 x 2	SFP 光模块插槽 x 2
	RS-232 母头 x 1	RS-232 公头 x 1
	电源连接孔 x 1	电源连接孔 x 1
按键类	功能键(LINK/MODE) x 2	功能键(LINK/MODE)x 2
LED 指示灯	红灯 x 1	红灯 x 1
	绿灯 x 1	绿灯 x 1
		黄灯 x 1
尺寸 (长 x 宽 x 高)	222 x 137 x 44 mm	222 x 137 x 44 mm
重量	870g	862g
分辨率	1920 x 1200@60Hz	
电源适配器	DC 5V/3A	
操作温度	0℃ ~ 40℃	
储存温度	-40℃ ~ 70℃	
工作湿度	10% ~ 90% 相对湿度 未凝结	
储存湿度	0% ~ 90% 相对湿度 未凝结	
外壳材质	金属	
安规认证	CE、FCC	

*产品规格如有更新不另行通知。

HMX4080T/HMX4080TP/HMX4080R/HMX4080RP(选购)规格表

表4-6 HMX4080T/HMX4080TP/HMX4080R/HMX4080RP(选购)规格表

机型	HMX4080T / HMX4080TP	HMX4080R / HMX4080RP
系统组件类型	发射器 (TX)	接收器 (RX)
端口	USB-B 母头 x 2	USB-A 母头 x 2 (键盘/鼠标)
	DVI 输入端口 x 2	USB-A 母头 x 2 (USB 装置)
	DVI 输出端口(环回) x 2	DVI 输出端口 x 2

机型	HMX4080T / HMX4080TP	HMX4080R / HMX4080RP
	IR 红外线输出孔 x 1	IR 红外线输入孔 x 1
端口	麦克风孔(前面板/后背板) x 2	麦克风孔(后背板) x 1
	喇叭孔(前面板/后背板) x 2	喇叭孔(后背板) x 1
	RJ45 网络端口 x 2; (TP 机型其中一 RJ45 网络端口带 PoE 功能)	RJ45 网络端口 x 2; (RP 机型其中一 RJ45 网络端口带 PoE 功能)
	SFP 光模块插槽 x 2	SFP 光模块插槽 x 2
	RS-232 母头 x 1	RS-232 公头 x 1
	电源连接孔 x 1	电源连接孔 x 1
按键类	功能键(LINK/MODE) x 2	功能键(LINK/MODE) x 2
LED 指示灯	红灯 x 1	红灯 x 1
	绿灯 x 1	绿灯 x 1
		黄灯 x 1
尺寸 (长 x 宽 x 高)	222 x 137 x 44 mm	222 x 137 x 44 mm
重量	937g	918g
分辨率	1920 x 1200@60Hz	
电源适配器	DC 5V/3A	
操作温度	0℃ ~ 40℃	
储存温度	-40℃ ~ 70℃	
工作湿度	10% ~ 90% 相对湿度 未凝结	
储存湿度	0% ~ 90% 相对湿度 未凝结	
外壳材质	金属	
安规认证	CE、FCC	

*产品规格如有更新不另行通知。

HMX1080T/HMX1080R 面板图

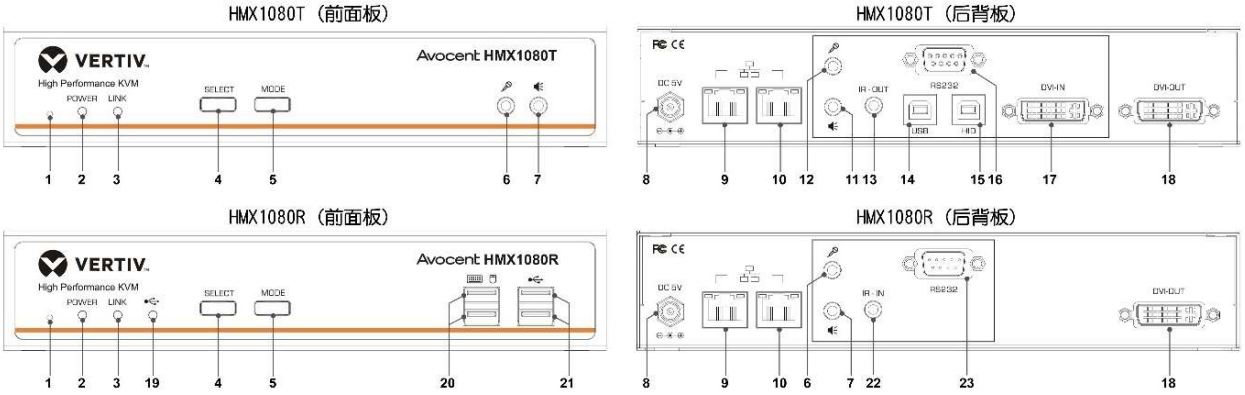


图4-8 HMX1080T/HMX1080R 面板图

表4-7 HMX1080T/HMX1080R 面板图说明

编号	项目	描述
1	重置按钮	系统重设。
2	电源(POWER)指示灯	当有电源供应时，指示灯亮起。
3	联机(LINK)指示灯	当发射器和接收器已经联机，指示灯亮起。
4	选择(SELECT)按钮	按压进行发射器和接收器之间的联机或断线。
5	模式(MODE)按钮	利用 SELECT 按钮将发射器/接收器断线后，以本按钮设置巨型帧。
6	麦克风输入孔	连接麦克风。
7	声音输出孔	连接喇叭。
8	电源连接孔	连接电源适配器。
9	LAN 端口 1	连接到发射器、接收器或千兆以太交换机。
10	LAN 端口 2	连接到发射器、接收器或千兆以太交换机。
11	声音输入孔	连接到计算机的声音输出孔。
12	麦克风输出孔	连接到计算机的麦克风输入孔。
13	IR 输出孔	连接到 IR 红外发射器。
14	USB Type-B 端口	连接到计算机。
15	HID 端口	此功能保留。
16	RS-232 端口	连接计算机的 RS-232 端口。
17	DVI 输入端口	连接计算机的 DVI 输出端口(视频内容：DVI-I(模拟+数字))。
18	DVI 输出端口	连接到 DVI 屏幕(视频内容：DVI-I(模拟+数字))。
19	USB 指示灯	当有 USB 装置连接至此接收器时，指示灯亮起。
20	USB Type-A 端口	连接 USB 键盘和鼠标。
21	USB Type-A 端口	接 USB 周边装置。
22	IR 输入孔	连接到 IR 接收器。
23	RS-232 端口	连接 RS-232 装置。

HM2080T/HMX2080R 面板图

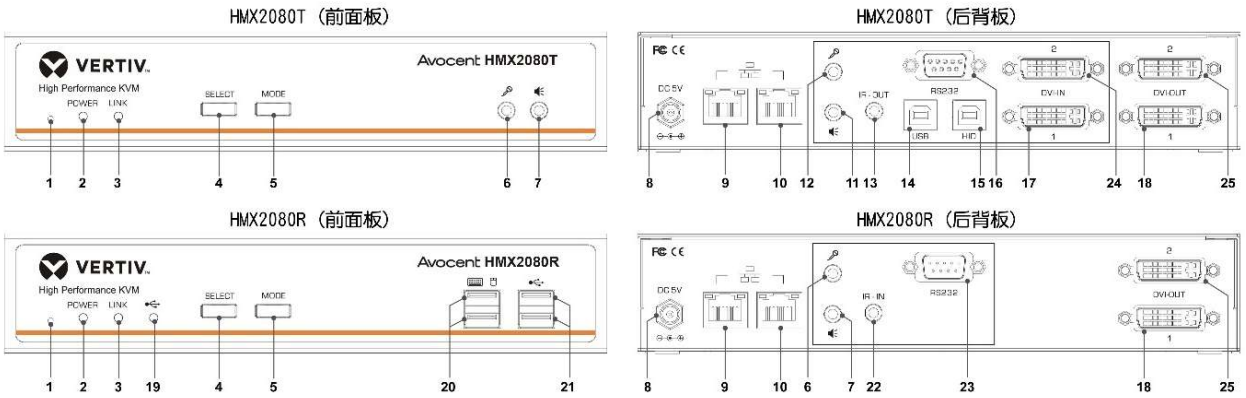
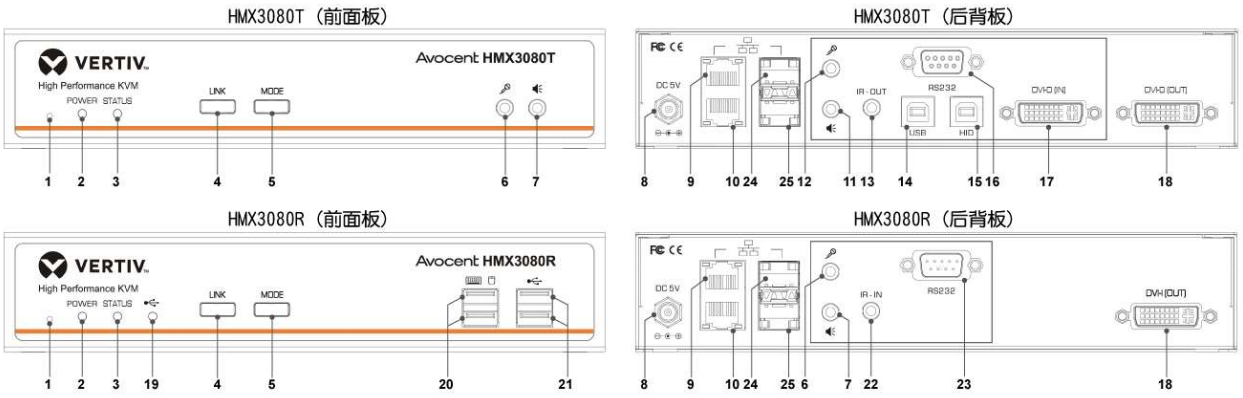


图4-9 HM2080T/HMX2080R 面板图

表4-8 HM2080T/HMX2080R 面板图说明

编号	项目	描述
1	重置按钮	系统重设。
2	电源(POWER)指示灯	当有电源供应时，指示灯亮起。
3	联机(LINK)指示灯	当发射器和接收器已经联机，指示灯亮起。
4	选择(SELECT)按钮	按压进行发射器和接收器之间的联机或断线。
5	模式(MODE)按钮	利用 SELECT 按钮将发射器/接收器断线后，以本按钮设置巨型帧。
6	麦克风输入孔	连接麦克风。
7	声音输出孔	连接喇叭。
8	电源连接孔	连接电源适配器。
9	LAN 端口 1	连接到发射器、接收器或千兆以太交换机。
10	LAN 端口 2	连接到发射器、接收器或千兆以太交换机。
11	声音输入孔	连接到计算机的声音输出孔。
12	麦克风输出孔	连接到计算机的麦克风输入孔。
13	IR 输出孔	连接到 IR 红外发射器。
14	USB Type-B 端口	连接到计算机。
15	HID 端口	此功能保留。
16	RS-232 端口	连接计算机的 RS-232 端口。
17	DVI 输入端口 1	连接计算机的 DVI 输出端口(视频内容：DVI-I(模拟+数字))。
18	DVI 输出端口 1	连接到 DVI 屏幕(视频内容：DVI-I(模拟+数字))。
19	USB 指示灯	当有 USB 装置连接至此接收器时，指示灯亮起。
20	USB Type-A 端口	连接 USB 键盘和鼠标。
21	USB Type-A 端口	接 USB 周边装置。
22	IR 输入孔	连接到 IR 接收器。
23	RS-232 端口	连接 RS-232 装置。
24	DVI 输入端口 2	连接计算机的 DVI 输出端口。
25	DVI 输出端口 2	连接到 DVI 屏幕。

HMX3080T/HMX3080R/HMX3080TP/HMX3080RP 面板图



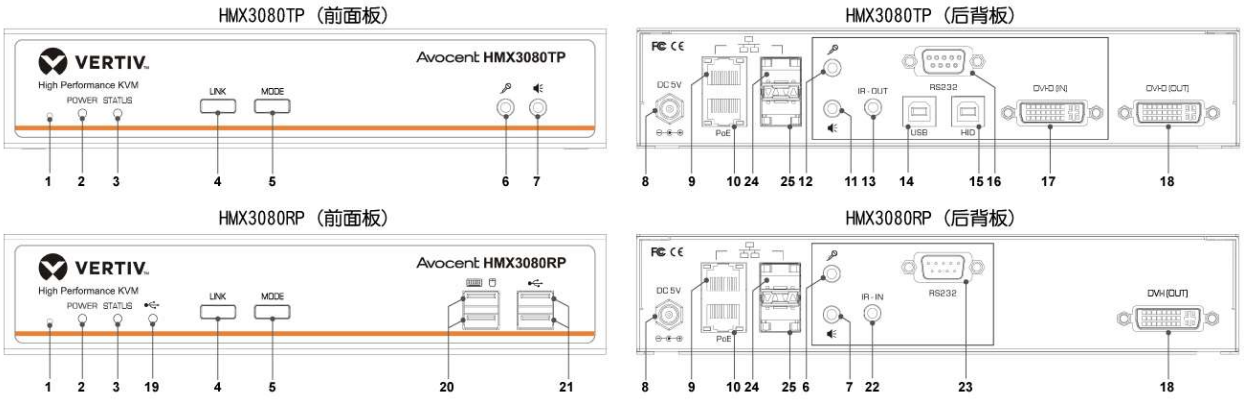


图4-10 HMX3080T/HMX3080R/HMX3080TP/HMX3080RP 面板图

表4-9 HMX3080T/HMX3080R/HMX3080TP/HMX3080RP 面板图

编号	项目	描述
1	重置按钮	系统重设。
2	电源(POWER)指示灯	当有电源供应时，指示灯亮起。
3	状态(STATUS)指示灯	当发射器和接收器已经联机，指示灯亮起。
4	联机(LINK)按钮	按压进行发射器和接收器之间的联机或断线。
5	模式(MODE)按钮	利用 LINK 按钮将发射器/接收器断线后，以本按钮设置巨型帧。
6	麦克风输入孔	连接麦克风。
7	声音输出孔	连接喇叭。
8	电源连接孔	连接电源适配器。
9	LAN 端口 1	连接到发射器、接收器或千兆以太交换机。
10	LAN 端口 2	连接到发射器、接收器或千兆以太交换机。(HMX3080TP/HMX3080RP 机型带 PoE 功能)
11	声音输入孔	连接到计算机的声音输出孔。
12	麦克风输出孔	连接到计算机的麦克风输入孔。
13	IR 输出孔	连接到 IR 红外发射器。
14	USB Type-B 端口	连接到计算机。
15	HID 端口	此功能保留。
16	RS-232 端口	连接计算机的 RS-232 端口。
17	DVI 输入端口	连接计算机的 DVI 输出端口(视频内容：DVI-D 数字)。
18	DVI 输出端口	连接到 DVI 屏幕(视频内容：DVI-D 数字)。
19	USB 指示灯	当有 USB 装置连接至此接收器时，指示灯亮起。
20	USB Type-A 端口	连接 USB 键盘和鼠标。
21	USB Type-A 端口	接 USB 周边装置。
22	IR 输入孔	连接到 IR 接收器。
23	RS-232 端口	连接 RS-232 装置。
24	光模块插槽 1	透过选购之光模块连接光缆线。
25	光模块插槽 2	透过选购之光模块连接光缆线。

HMX4080T/HMX4080R/HMX4080TP/HMX4080RP 面板图

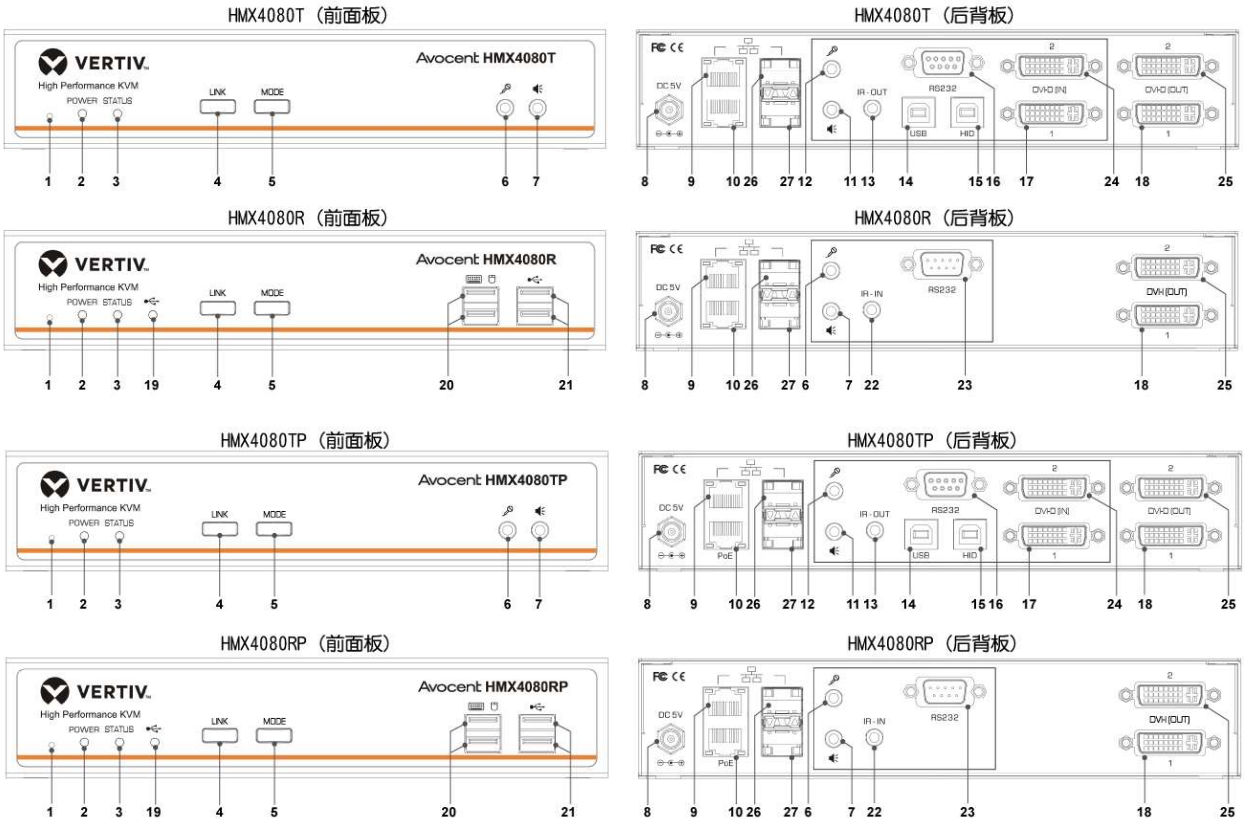


图4-11 HMX4080T/HMX4080R/HMX4080TP/HMX4080RP 面板图

表4-10 HMX4080T/HMX4080R/HMX4080TP/HMX4080RP 面板图说明

编号	项目	描述
1	重置按钮	系统重设。
2	电源(POWER)指示灯	当有电源供应时，指示灯亮起。
3	状态(STATUS)指示灯	当发射器和接收器已经联机，指示灯亮起。
4	联机(LINK)按钮	按压进行发射器和接收器之间的联机或断线。
5	模式(MODE)按钮	利用 LINK 按钮将发射器/接收器断线后，以本按钮设置巨型帧。
6	麦克风输入孔	连接麦克风。
7	声音输出孔	连接喇叭。
8	电源连接孔	连接电源适配器。
9	LAN 端口 1	连接到发射器、接收器或千兆以太交换机 *。
10	LAN 端口 2	连接到发射器、接收器或千兆以太交换机 *。(HMX4080TP/HMX4080RP 机型带 PoE 功能)
11	声音输入孔	连接到计算机的声音输出孔。
12	麦克风输出孔	连接到计算机的麦克风输入孔。
13	IR 输出孔	连接到 IR 发射器。
14	USB Type-B 端口	连接到计算机。
15	HID 端口	此功能保留。
16	RS-232 端口	连接计算机的 RS-232 端口。
17	DVI 输入端口 1	连接计算机的 DVI 输出端口(视频内容：DVI-D 数字)。

编号	项目	描述
18	DVI 输出端口 1	连接到 DVI 屏幕(视频内容：DVI-D 数字)。
19	USB 指示灯	当有 USB 装置连接至此接收器时，指示灯亮起。
20	USB Type-A 端口	连接 USB 键盘和鼠标。
21	USB Type-A 端口	接 USB 周边装置。
22	IR 输入孔	连接到 IR 接收器。
23	RS-232 端口	连接 RS-232 装置。
24	DVI 输入端口 2	连接计算机的 DVI 输出端口(视频内容：DVI-D 数字)。
25	DVI 输入端口 2	连接到 DVI 屏幕(视频内容：DVI-D 数字)。
26	光模块插槽 1	透过选购之光模块连接光缆线。
27	光模块插槽 2	透过选购之光模块连接光缆线。

4.3 系统连接

本手册的应用连接图仅为应用案例，实际应用请依实际操作为主。在应用图上所有举例的计算机、网络交换机、接收器、发射器、配件和监视器仅供参考，不包含在产品内。在开始使用 HMXCC1 控制器前，请务必确认所有的装置是否连接妥当。HMXCC1 控制器提供两个独立的网络端口，分别接到 10/100Mbps 用户局域网以及 IP 矩阵 KVM 延伸器所连接的 1000Mbps 设备局域网。其中用户可透过连接到用户局域网的计算机(作为中央控制台)，以浏览器进行接收器/发射器设备管理。请注意，由于 TX/RX 设备所在的千兆设备网络与用户网络两者属于不同网段彼此独立，因此设备网络的信息安全得以有效确保。

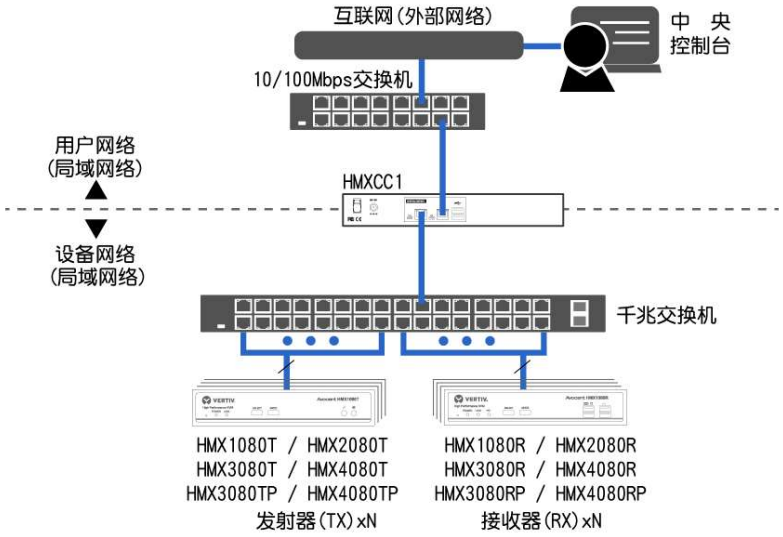


图4-12 单 HMXCC1 控制器系统配置

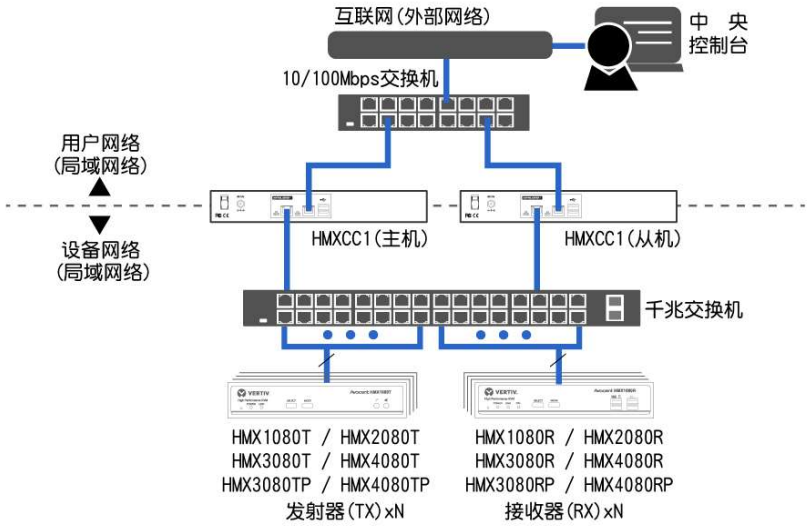


图4-13 双 HMXCC1 控制器系统配置

4.4 快速安装步骤

请依照以下步骤完成安装:

4.4.1 HMXCC1 硬件安装步骤

1、将电源连接头插入 HMXCC1 的电源端口，请将接头插到底并锁紧螺帽固定。

2、按下并放开 HMXCC1 的电源开关。约 30 秒后前面板上的电源灯开始闪烁绿色，即表示 HMXCC1 已备妥。

3、连接 HMXCC1 后背板上的右侧 USER NETWORK 端口至 10/100Mbps 交换机，该 10/100Mbps 交换机亦与执行用户网页管理界面的计算机连接。

4、连接 HMXCC1 后背板上的左侧 DEVICE NETWORK 端口至千兆交换机，该千兆交换机亦与所有受管理的 TX/RX 设备连接。

5、将第二台 HMXCC1 从机以相同方式连接至用户网络与设备网络。须注意用户网络网段(192.168.1.**x**)与设备网络网段(169.254.3.**x**)彼此独立(参考下图)。

6、开始使用 HMXCC1 控制器。

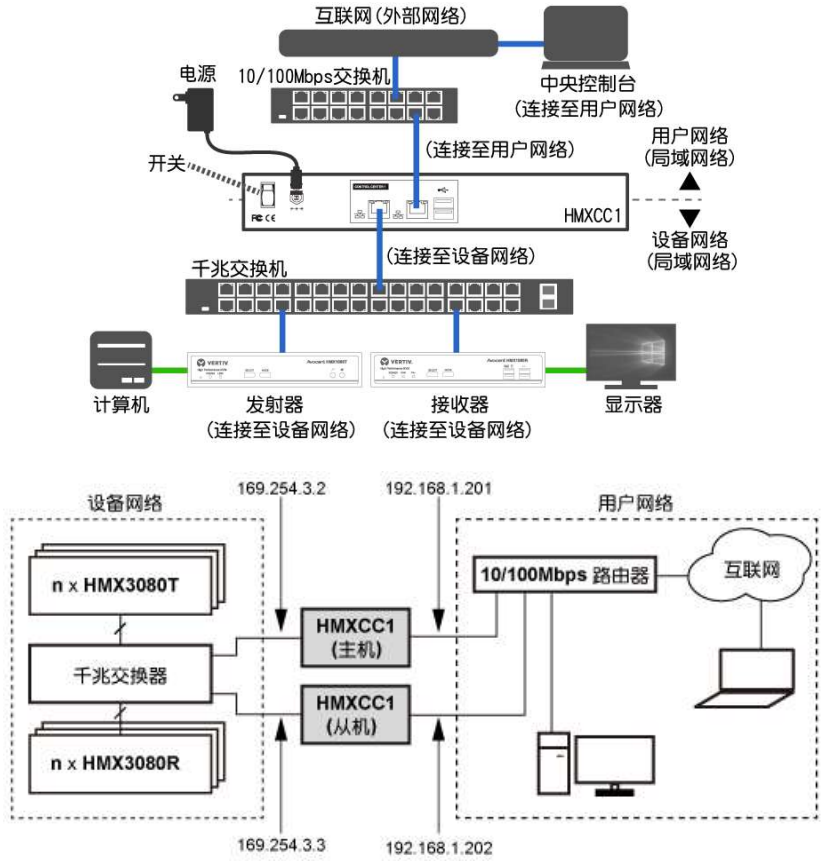


图4-14 硬件连线示意图

4.4.2 TX/RX 硬件安装步骤

1、将电源连接头插入 TX/RX 的电源端口，请将接头插到底并锁紧螺帽固定。前面板上的红色 POWER 电源灯开始闪烁，之后变恒亮，表示本机已备妥。

2、发射器、接收器接上千兆交换机/USB 周边或监视器及其它设备。

3、长按发射器或接收器前面板的 SELECT 按钮(HMX1080/HMX2080 机型)/LINK 按钮(HMX3080/HMX4080 机型)进行联机。

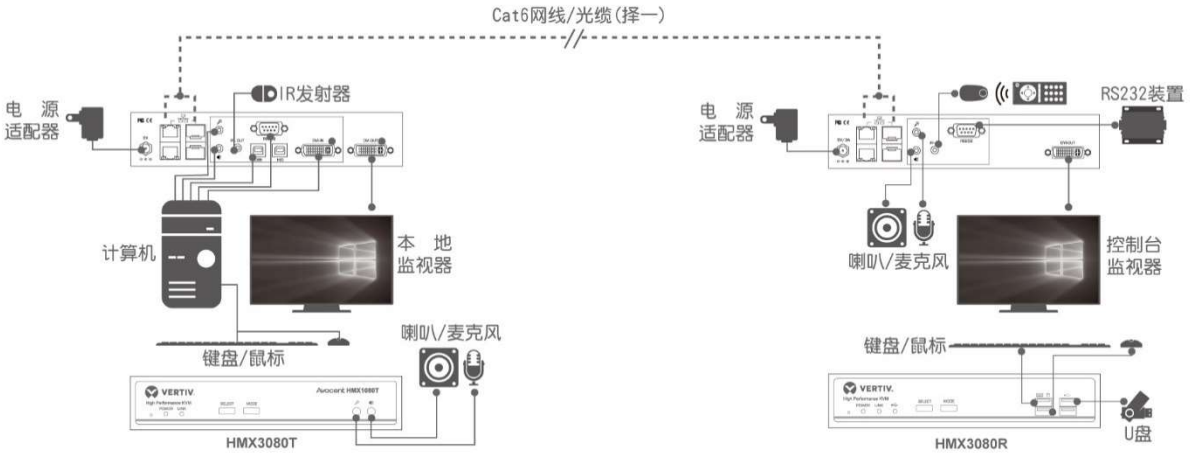


图4-15 硬件连线示意图(以 HMX3080T/HMX3080R 为例)

4.4.3 HMXCC1 界面设定步骤

1、使用连接到用户网络的 PC(作为中央控制台)上的浏览器(例如: Chrome、Firefox、Internet Explorer、 Safari ），在浏览器输入产品出厂默认管理界面登入 IP 地址: (https://192.168.1.200:5008)进入网页管理界面。

2、等浏览器跳出 HMXCC1 网页管理页面时，使用产品默认管理员用户名(admin)、密码(adminpass) 登入 HMXCC1 管理界面。(注：强烈建议立即修改管理员账号与密码，以强化系统安全。)

3、用管理员(Administrator)身分，设置超级用户(Super User)和一般用户(Simple User)账户。

4、用管理员(Administrator)身分，设置超级用户群组(Super-user Group)和一般用户群组(Simple-user Group)。

5、到**仪表盘**>**检测到的装置**，找到在设备网络的 HMX1080/2080/3080/4080 的发射器及接收器，依需求注册 TX/RX 装置并设置 TX 群组与 RX 群组。

6、设置允许超级用户组(Super-user Groups)/一般用户组(Simple-user Group)使用的 TX 群组与 RX 群组。

7、于接收器 HMX1080R/HMX2080R/HMX3080R/HMX4080R 控制台上，用默认热键(**Scroll Lock, Scroll Lock, Space**)，弹出 OSD 菜单，输入用户名及密码登入后，即可在 OSD 菜单上显示依照用户权限可连接的发射器装置清单。

8、在发射器 TX 装置 (HMX1080T/HMX2080T/HMX3080T/HMX4080T) 清单中，双击任意一个发射器装置名称以将其连接到目前操作中的接收器。

9、TX/RX 设备成功连接后，即可从远程接收器控制台访问连接至该发射器的计算机。

进阶的设定细节，如用户群组、TX/ RX 的群组等，请参照每个 HMXCC1 管理界面网页右上方的<**帮助**>标签。

4.4.4 进入 HMXCC1 网络管理界面

出厂默认网络界面设定如下：

- IPv4 地址 (IPv4 Address)：192.168.1.200:5008
- 子网掩码 (Subnet Mask)：255.255.255.0
- 默认网关 (Default Gateway)：192.168.1.254
- DNS 服务器 (DNS Server)：192.168.1.254

默认的管理员帐户用户名及密码如下：

- 用户名：admin
- 密码：adminpass

1、连接一台 PC 到与 HMXCC1 主机同一网段的用户网络上。使用 PC 的浏览器(例如: Chrome、Firefox、Internet Explorer、 Safari)，进入 HMXCC1 网页管理界面。

2、在 PC 浏览器的网址列输入默认的管理界面登入 IP 地址 (https://192.168.1.200:5008)，以弹出以下窗口，接着输入出厂默认的管理员用户名(admin) 和密码(adminpass)，如下图:

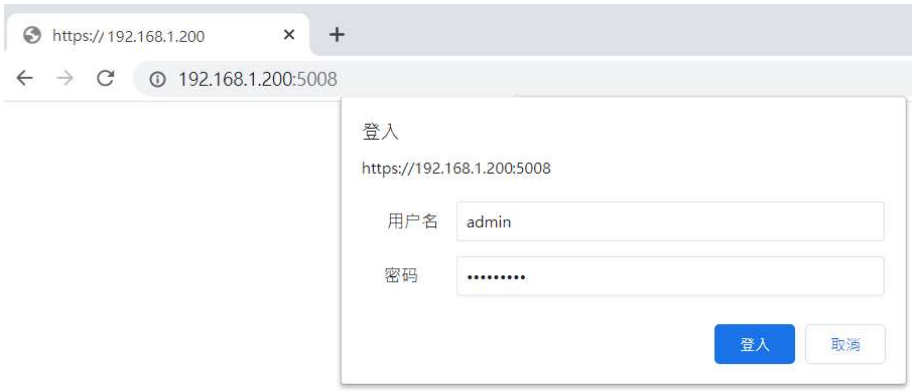


图4-16

3、将主机IP地址更改为192.168.1.**201**，设备IP更改为169.254.3.**2**。到**系统**>**复制**下，设定<**复制模式**>为<**主机**>。

4、连接一台 HMXCC1 从机到 HMXCC1 主机的各自相同网段的用户网络/设备网络上。在同一 PC 浏览器输入默认管理界面登入 IP 地址 (https://192.168.1.200:5008)，及管理员用户名(admin)、密码(adminpass)进入 HMXCC1 网页管理界面。将从机 IP 地址更改为 192.168.1.**202**，设备 IP 更改为 169.254.3.**3**。

5、到**仪表盘**>**检测到的设备**，注册发射器及接收器。

6、到**设备**>**发射器组/接收器组**设置发射器组与接收器组。到**用户**>**组**，设置允许用户组使用的发射器组与接收器组。

4.4.5 进入接收器 OSD 菜单

当非管理员(一般用户身份)用户欲将当前操作中的接收器连接至一发射器时，请使用热键序列(**Scroll Lock**, **Scroll Lock**, **Space**) 开启 OSD 菜单或按下左 Ctrl 键 2 次(**Ctrl**, **Ctrl**)快速开启 OSD 菜单。在用户输入其用户名称与密码登入后，将显示一发射器列表页面, 列出所有此接收器可以连接的发射器。

图4-17 接收器 OSD 菜单登入页面

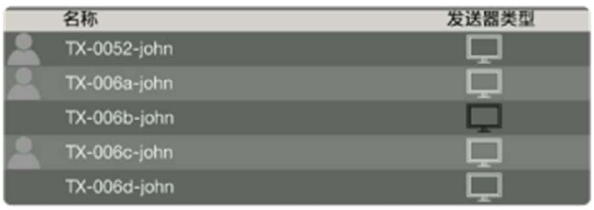


图4-18 接收器 OSD 菜单之发射器列表页面

第五章 HMXCC1 IP 矩阵 KVM 控制中心

HMXCC1 控制器支持网页管理界面。管理员可通过与 HMXCC1 控制器所连接的同一用户局域网的 PC 使用其浏览器配置系统。请输入出厂默认的管理界面登入 IP 地址 (https://192.168.1.200:5008)。输入默认的管理员用户名(admin)及密码(adminpass)登入。**[警语]:为了系统安全性考虑，我们强烈建议您于成功登入后，立即修改此具有管理员权限的用户名与密码再继续其他操作，并请严密保管此组重要的登入信息防止未经授权的访问**(用户名称异动请参考 5.4.1 章节说明)。在欢迎页面中，可直接于下拉式<**语言**>选单中选择喜爱的语系。或是在稍后的操作中随时点击左上角 HMXCC1 图标亦可作界面语系的切换。

图5-1 HMXCC1 图标>界面首页/语系切换页

5.1 主选单界面

网页上方的下拉式主选单为控制中心界面的主要功能，包括<**仪表盘**>、<**设备**>、<**用户**>、<**系统**>，按下任一选项进入操作。

图5-2 首页>下拉式主选单

注销按钮

按下网页的右上角注销按钮 进入离开系统确认页面。

图5-3 注销按钮

线上帮助界面

要得到进一步详细的界面说明，用鼠标点选<**仪表盘**>、<**设备**>、<**用户**>、<**系统**>目录中的选项，按下右上方<**帮助**>标签可以即时获得目前页面设定线上帮助资料、更进一步的使用操作说明。

图5-4 主选单及线上帮助

用户设置按钮

用户设置按钮位于每个功能页面的底部，按下以开启相对应的设置窗口。

图5-5

表5-2

编号	图示	按钮名称	定义
1		配置/编辑组/编辑用户	进入配置框，设定或更改细节。
2		保存文件到 PC	压缩文本文件会自动生成特定格式文件，储存日志。
3		清除记录	删除日志记录。
4		显示过滤器	缩小列表范围。
5		刷新	手动刷新状态信息。
6		记录选项	指定必须记录那些事件。
7		全局动作	设定同样指令到全部设备上。如注册所有尚未注册的设备，或取消注册所有已注册的设备。
8		新增组/新用户/注册	新增新的用户或群组。注册并将其切换到托管模式。
9		删除组/删除用户/取消注册	设备被管理时，取消注册。删除选定的组或用户。
10		重新命名	更改设备名称
11		更新 EDID 数据	更新接收器所接屏幕之 EDID 数据至发射器
12		设备信息	获取有关所选设备的信息
13		连接	连接设备及群组
14		断开连接	取消连接状况
15		下载	下载数据或日志
16		重新启动	重启设备
17		自我显示	要求接收器显示报告。

5.2 仪表盘 | Dashboard

按下界面上方主选单<**仪表盘**>取得下拉选单选项如下图: <**检测到的设备**>、<**用户连接**>、<**组连接**>、<**发射器预览**>。

图5-6 主选单>仪表盘

5.2.1 检测到的设备 | Detected Devices

图5-7 仪表盘>检测到的设备

本<**检测到的设备**>页面列出 HMXCC1 在设备网络(Device Network)上看得到所有联机的设备（接收器和发射器)。这些联机的设备包括受管理或未受管理者，受管理的设备是在 HMXCC1 数据库中注册的设备。而未受管理的设备则为未注册者。这些设备可依照用户需求随时进行注册或注销注册。该清单还显示先前检测到且已注册，但因目前离机或断电而在局域网中暂时无法使用的设备。

全局动作

图5-8 仪表盘>检测到的设备>全局动作

<**全局动作**>按钮 仅在未选择任一设备时出现，一旦选择了任一设备，此按钮不会出现。用户可使用<**全局动作**>按钮注册所有尚未注册的设备，或取消注册所有已注册的设备。

取得所有设备之全局信息

未选任何设备时，点击<**全局信息**>按键 获取所有设备的信息清单。

图5-9 仪表盘>检测到的设备>全局信息

取得特定设备之设备信息

当选择一个设备时，点击<**设备信息**>按键 获取关于所选设备的信息。

图5-10 仪表盘>检测到的设备>设备信息

注册与注销注册

要选择一个设备，只需按下清单中设备名称的该行。再次按下该行便可取消选择设备。当只选择一个设备时，你可以按下<**设备信息**>按钮 获取有关所选设备的信息。如果选择的设备是尚未管理(未被注册)，可以按下<**注册**>按键 将其注册为受管理模式。当设备已受管理，也可以点击<**取消注册**>按钮 来注销设备注册。

5.2.2 用户连接 | User Connections

图5-11 仪表盘>用户连接

本<**用户连接**>页面实时提供用户登入使用的接收器与发射器间连接的清单。该清单每 5 秒刷新一次。端口列显示此连接所涉及的接口。接收器和发射器有 5 个 I/O 接口(V/A/U/R/I)，可以彼此独立互连。

图5-12

点击一行选择一个连接。再点击一次可取消选择。当需要连接时，按下<**连接**>按钮。当需要断开连接时按下<**断开用户连接**>按钮，当用户在未注销的情况下离开座位，管理员则可在远程强制断开该连接。

图5-13

5.2.3 组连接 | Group Connections

图5-14 仪表盘>组连接

本<**组连接**>页面可查看所有活动中的组连接，以及建立或关闭组连接。组连接有两种类型：接收器组到单一发射器，或接收器组到发射器组。点击选择一个接收器组。再点一次可以取消选择。当选择接收器组后，按下<**连接**>按钮以连接该接收器组至一发射器或一发射器组，当选择一已连接接收器组后，按下<**断开连接**>按钮，以断开该接收器组当前的连接。

图5-15 组连接>断开连接

5.2.4 发射器预览 | TX Preview

本<**发射器预览**>页面提供用户查看所有发射器讯源的缩图。

图5-16 主选单>仪表盘>发射器预览

在线<**帮助**>界面

IP 矩阵 KVM 网络管理界面进入<**仪表盘**>下拉式选单任一功能，再点选右上角的<**帮助**>标签，进入线上帮助页以获取技术帮助。

图5-17 仪表盘>检测到的设备>在线帮助

5.3 设备 | Devices

按下界面上方主选单<**设备**>取得下拉选单选项如下图：<**接收器**>、<**发射器**>、<**接收器组**>、<**发射器组**>、<**显示器**>、<**固件**>、<**升级**>。

图5-18 主选单>设备

5.3.1 接收器 | Receivers

图5-19 设备>接收器

本<**接收器**>页面提供了在 HMXCC1 数据库中所有已注册的接收器清单。该清单的每一行都显示单台接收器名称与其唯一的 MAC 地址和描述。

全局动作

当未选任一接收器时，<**全局动作**>按钮 为可用。点击以开启<**全局接收器设置**>框。同步设定清单内所有接收器。

图5-20 设备>接收器>全局动作

图5-21 设备>已注册接收器>全局接收器设置

设定单一接收器

点选任一接收器，按下<**配置接收器**>按钮，可设定接收器的群组归属。

图5-22 设备>已注册接收器>设置接收器>组设置

5.3.2 发射器 | Transmitters

图5-23 设备>发射器

本<**发射器**>页面提供了在 HMXCC1 数据库中所有已注册的发射器清单。该清单的每一行都显示单台发射器名称与其唯一的 MAC 地址和描述。

全局动作

当未选任一发射器时，<**全局动作**>按钮 为可用。点击以开启<**全局发射器设置**>框。同步设定清单内所有发射器。

图5-24

设定单一发射器

点选任一发射器，按下<**配置发射器**>按钮 ，可设定发射器的群组归属。

图5-25 设备>已注册发射器>设置发射器>组设置

抗抖动

1.本功能设置使用时机为当接收器所连接之屏幕内容显示异常，可透过调整其所连接之发射器<**抗抖动**>设置选项至**模式 1** 或**模式 2** 加以排除。

2.如下图所示，到**设备**>**发射器**，选择 TX-1(假定此发射器发生讯源异常)，按下<**配置发射器**>按钮，于<**高级设置**>中选用**模式 1** 或**模式 2** 后，按下<**提交**>按钮。

图5-26

3.系统将重启 TX-1 设备，如讯源经调整过抗抖动模式后还是异常，请重复上述相同步骤选择另一种模式解决讯源异常。

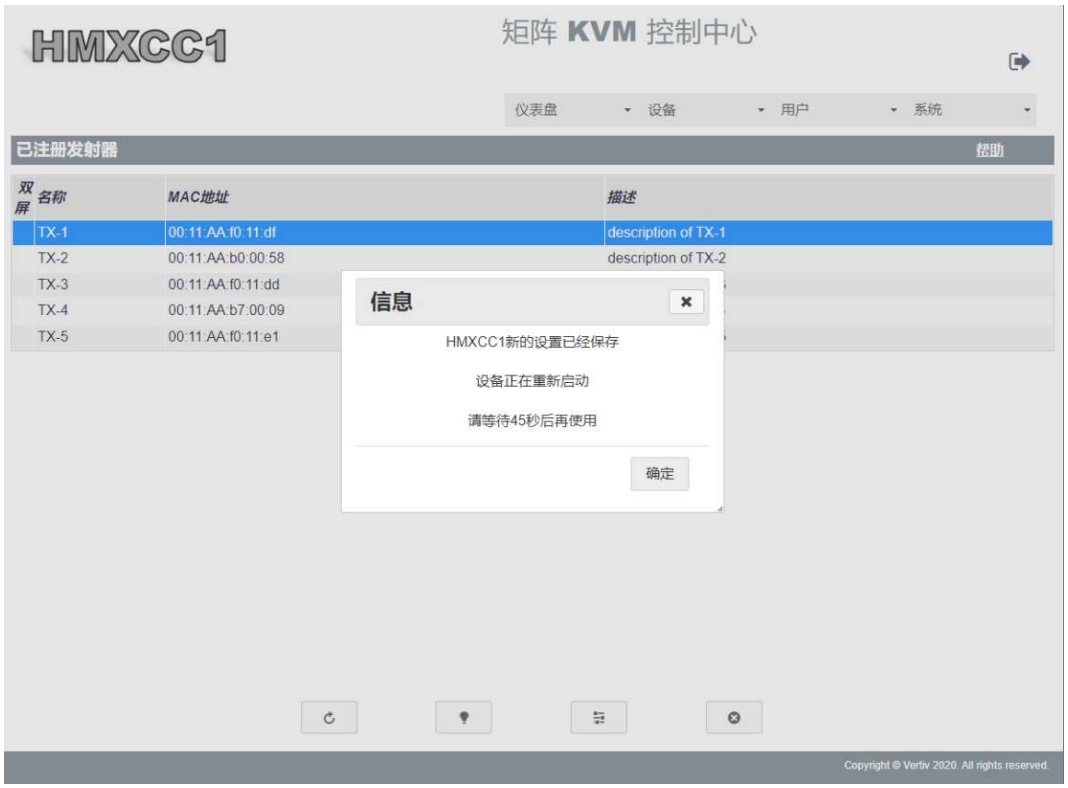


图5-27

5.3.3 接收器组 | RX Groups

本<**接收器组**>页面提供了在 HMXCC1 数据库中已设置的接收器组清单。该清单的每一行都显示一个接收器组名称、描述和组态属性。

点选<**新增组**>按钮 后，接收器组之<**组态**>设置包含：<**一般**(群组)>、<**硬组**>、<**鼠标漫游**>与<**视频墙**>，分别说明如后：

图5-28

(1) 一般(群组)

本范例系统中包含已注册接收器设备 5 台(RX-A/RX-B/RX-C/RX-D/RX-E)与已注册发射器设备 5 台(TX-1/TX-2/TX-3/TX-4/TX-5)，用户计划将接收器 RX-A，RX-B，RX-C 规划为接收器第一一般群组(名称：SG-RX1)，RX-C，RX-D 与 RX-E 规划为接收器第二一般群组(名称：SG-RX2); TX-1，TX-2，TX-3 规划为发射器第一一般群组 (名称：SG-TX1)，TX-3，TX-4 与 TX-5 规划为发射器第二一般群组(名称：SG-TX2)。

a. 以管理员用户名(admin)/密码(adminpass)陆续分别登入五台 RX 设备，并分别点选连接的 TX 讯源如下所示。

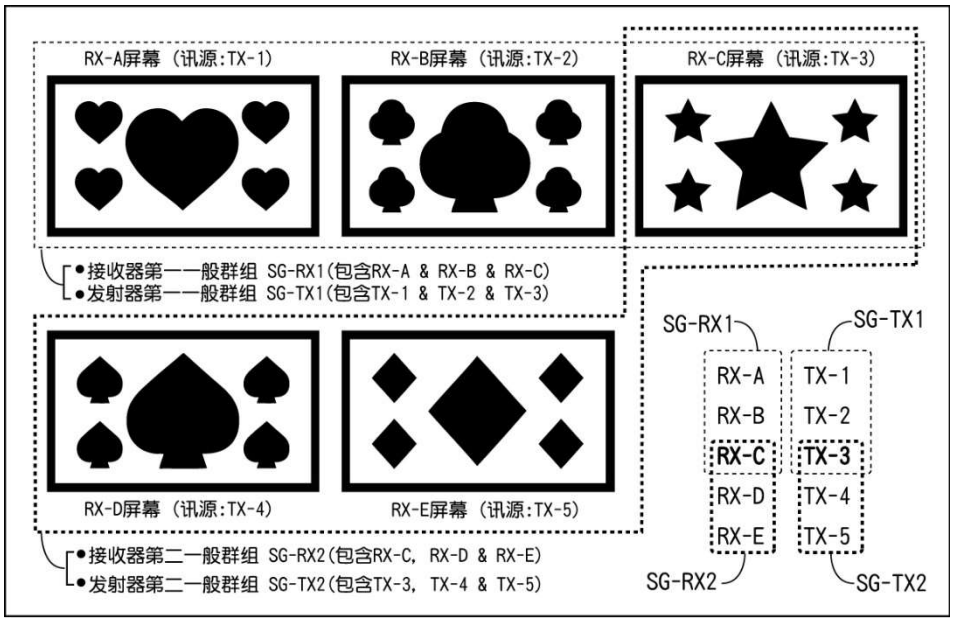


图5-29

b. 到**设备**>**接收器组**，点击<**新增组**>按钮 ，<**组态**>选单选择<**一般**>，输入名称 (SG-RX1)后，点击<**提交**>按钮。

图5-30

c. 鼠标点选 SG-RX1 项目，单击<**编辑组**>按钮 进入并切换至<**接收器**>设置页面，将 RX-A，RX-B 与 RX-C 拖拉进<**群组成员**>栏，最后按下<**提交**>按钮，即可将 RX-A，RX-B，RX-C 三台设备定义为 SG-RX1 群组的成员。

图5-31

d. 依据上述相同步骤创建接收器第二<**一般**>群组 SG-RX2 (包含 RX-C， RX-D，RX-E 设备)。

e. 到**设备**>**发射器组**，点击<**新增组**>按钮 ，<**组态**>选单选择<**一般**>，输入名称(SG-TX1)，点击<**提交**>按钮。

图5-32

f. 鼠标点选 SG-TX1 项目，单击<**编辑组**>按钮 进入并切换至<**发射器**>设置页面，将 TX-1，TX-2，TX-3 拖拉进<**群组成员**>栏，最后按下<**提交**>按钮，即可将 TX-1，TX-2，TX-3 三台设备定义为 SG-TX1 群组的成员。

图5-33

g. 依据上述相同步骤创建发射器第二<**一般**>群组 SG-TX2(包含 TX-3，TX-4，TX-5 发射器)。

h. 请注意，于<**一般**>群组设定中，所有的 RX 或 TX 设备可允许被重复规划在不同<**一般**>群组内 (如本范例中的 RX-C 与 TX-3)。

(2) 硬组 (本功能仅适用于 HMX3080/HMX4080 延伸器系列)

本范例计划将接收器 RX-A，RX-B，RX-C 绑定为接收器第一硬组(名称：HG-RX1)，RX-D 与 RX-E 绑定为接收器第二硬组(名称：HG-RX2); TX-1，TX-2，TX-3 绑定为发射器第一硬组(名称：HG-TX1)，TX-4 与 TX-5 绑定为发射器第二硬组(名称：HG-TX2) 。

a. 以管理员用户名(admin)/密码(adminpass)陆续分别登入五台 RX 设备，并分别点选连接的 TX 讯源如下所示。

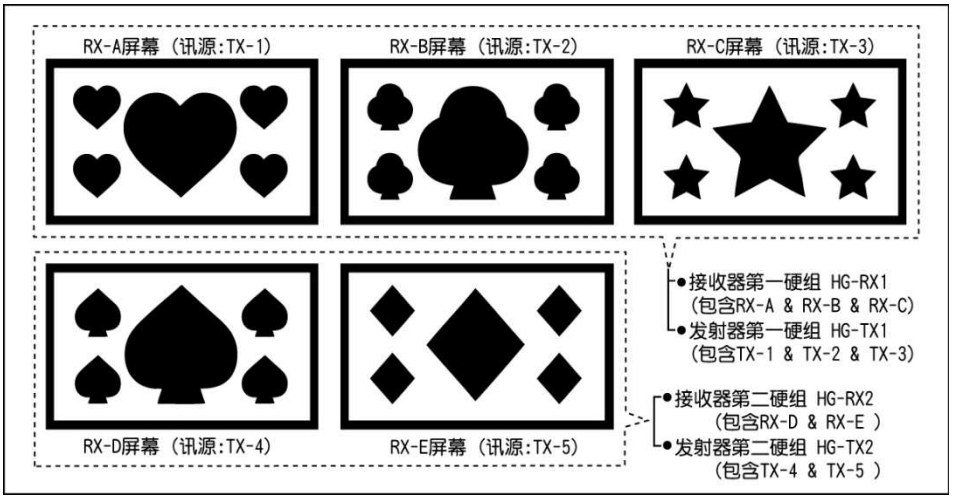


图5-34

b. 于<**设备**>选单中选择<**接收器组**>项目，点击<**新增组**>按钮 ，<**组态**>选单选择<**硬组**>，输入名称 (HG-RX1) 后，点击<**提交**>按钮。

图5-35

c. 鼠标点选 HG-RX1 项目，单击<**编辑组**>按钮 进入并切换至<**接收器**>设置页面，先将 RX-A 拖拉进<**群组成员**>栏，接续拖拉 RX-B 与 RX-C，按下<**提交**>按钮后，依照排列顺序第一台 RX-A 将被定义为此硬组的主机，其余 RX-B 与 RX-C 则为 RX-A 的从机。

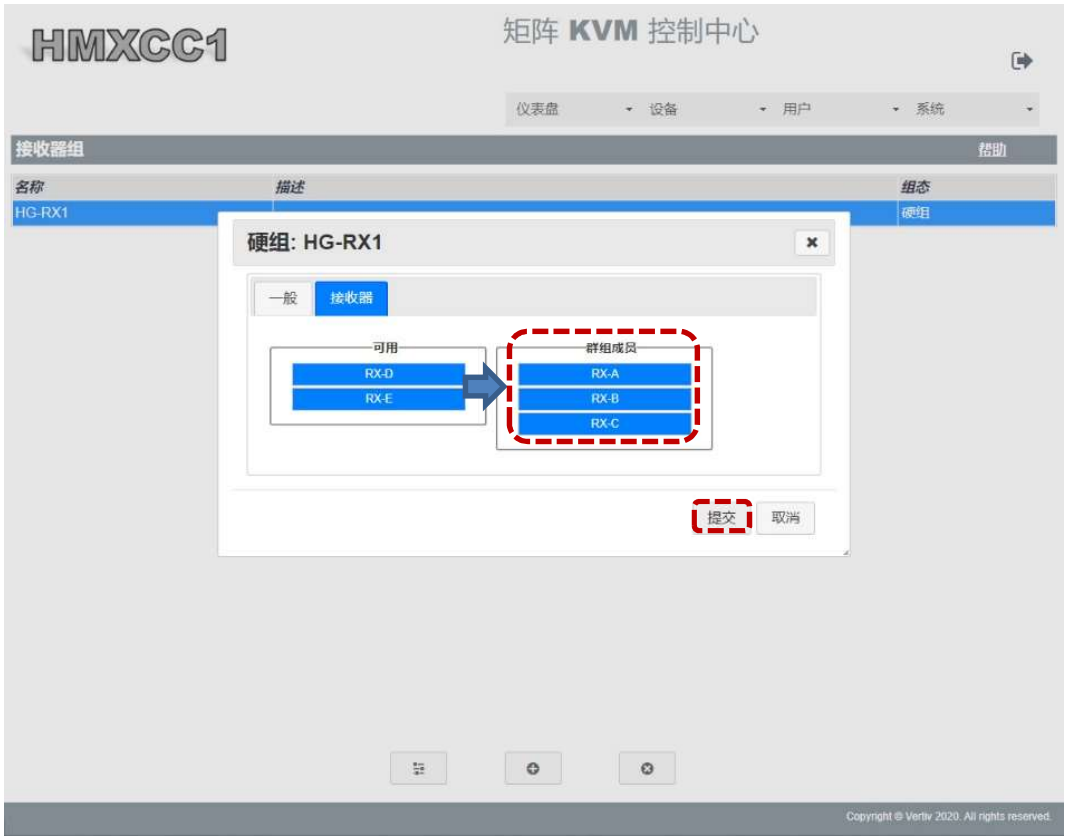


图5-36

d. 依据上述相同步骤创建接收器第二硬组 HG-RX2(包含 RX-D 与 RX-E 接收器)，(注： 在<**硬组**>设置中，系统将仅显示尚未被规划的可用 RX 设备，不像<**一般**>群组设置可允许重复规划同一台 RX 设备于不同 RX 群组组别中。)

e. 于<**设备**>选单中选择<**发射器组**>项目，点击<**新增组**>  按钮，<**组态**>选单选择<**硬组**>，输入名称(HG-TX1)后，点击<**提交**>按钮。

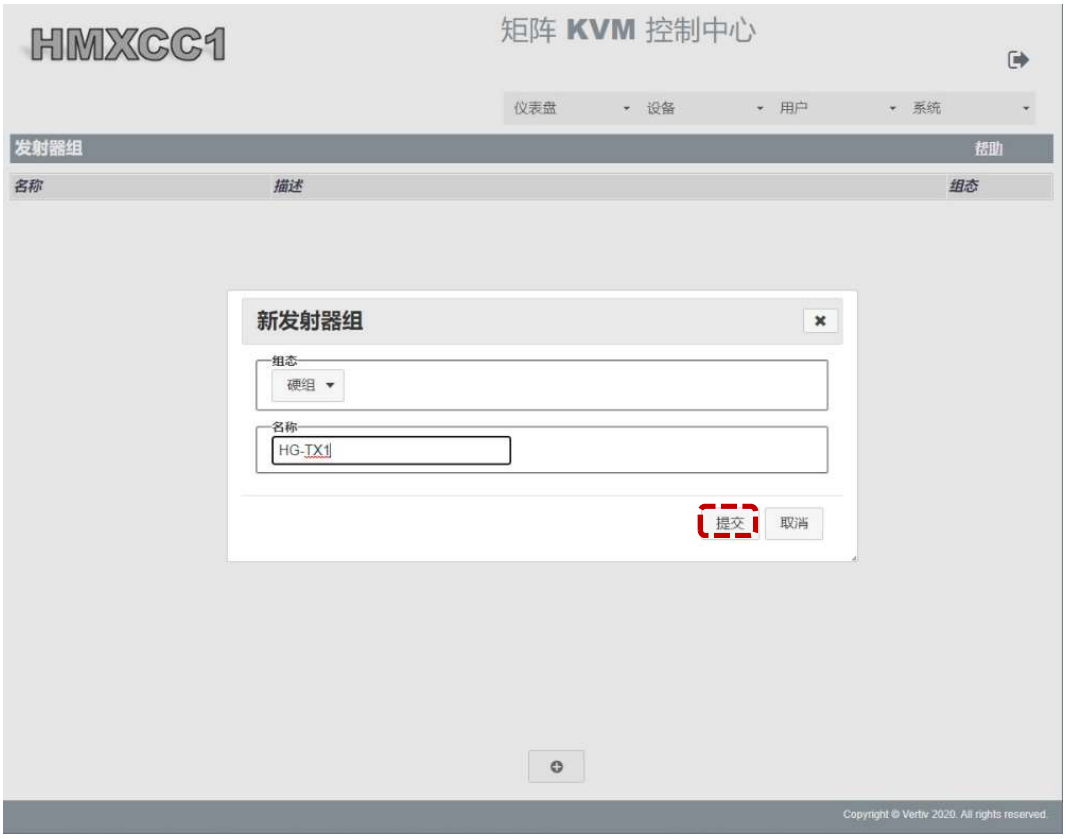


图5-37

f. 鼠标点选 HG-TX1 项目，单击<**编辑组**>按钮 进入并切换至<**发射器**>设置页面，先将 TX-1 拖拉进<**群组成员**>栏，接续拖拉 TX-2 与 TX-3，按下<**提交**>按钮后，依照排列顺序第一位 TX-1 定义为此硬组的主机，其余 TX-2 与 TX-3 为 TX-1 的从机。

图5-38

g. 依据上述相同步骤创建发射器第二硬组 HG-TX2(包含 TX-4 与 TX-5 发射器)的设置。(注：在<**硬组**>设置中，系统将仅显示尚未被规划的可用 TX 设备，不像<**一般**>群组设置可允许重复规划同一台 TX 设备于不同 TX 群组组别中。)

h. 以管理员用户名(admin)/密码(adminpass)陆续分别登入五台 RX 设备的 OSD 登入画面，并分别点选欲连接的 TX 讯源同前范例所示。此时因 RX-A，RX-B，RX-C 三台接收器已被绑定为接收器第一硬组 HG-RX1，如下图所示，双击 ⊞ 图标可查看该发射器硬组所包含之发射器名称。如于 RX-A 硬组主机的 OSD 画面中双击发射器第一硬组 HG-TX1 字样时， 系统将会把此硬组里的 TX-1，TX-2，TX-3 三台发射器之讯源依照用户设置时的发射器排列顺序整批连接至 RX-A 所属的第一接收器硬组 HG-RX1(同样依照用户设置的接收器排列顺序)，因而实现了一键整批切换三台发射器的讯源至三台接收器用以显示三个 TX 讯源至三台屏幕上。[注]：本硬组功能最多可实现一键切换 8 组 TX 讯源至 8 台 RX 屏幕，然而，当单屏机型 HMX3080 与双屏机型 HMX4080 混用时，讯源端的 TX 设备排列顺序需与屏幕端的 RX 设备排列顺序完全一致，以避免讯源传送出现错误。

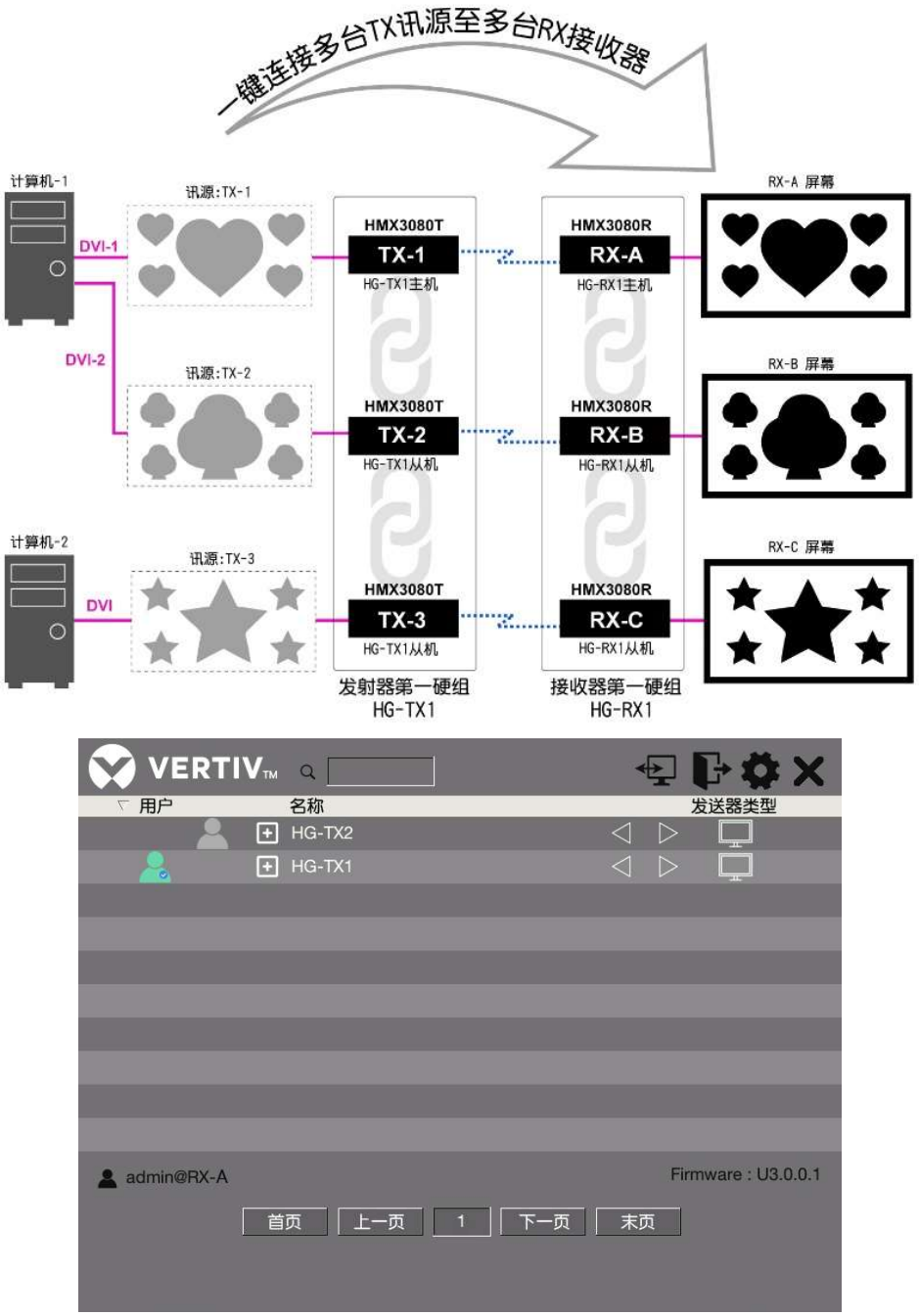


图5-39

i. 下图为用户登入 RX-D 硬组主机 OSD，因 RX-D 所属的第二接收器硬组 HG-RX2 仅包含 RX-D 与 RX-E 两台接收器，当用户双击发射器第一硬组 HG-TX1 字样后，此时因为所连接的发射器数量为三台(TX-1，TX-2，TX-3)，接收器数量仅为两台 (RX-D，RX-E)，系统会依照用户先前设置硬组时接收器与发射器的排列顺序，同步将 TX-1 发射器讯源连接至 RX-D 接收器，TX-2 发射器讯源连接至 RX-E 接收器，因为接收器的数量少于发射器数量，TX-3 发射器的讯源并无可用的 RX 接收器进行显示，此时用户可透过双击 OSD 画面中 HG-TX1 的图标▷将 TX-3 讯源向左移入 RX-E 所连接的屏幕内，此举亦会同时将 TX-1 讯源向左移出 RX-D 所连接的屏幕外，用户可利用两个图标◁ ▷在 RX 屏幕数量低于 TX 讯源数量时，以轮播方式达到用较少的 RX 设备连接检视较多 TX 讯源的功能，其示意画面如下：

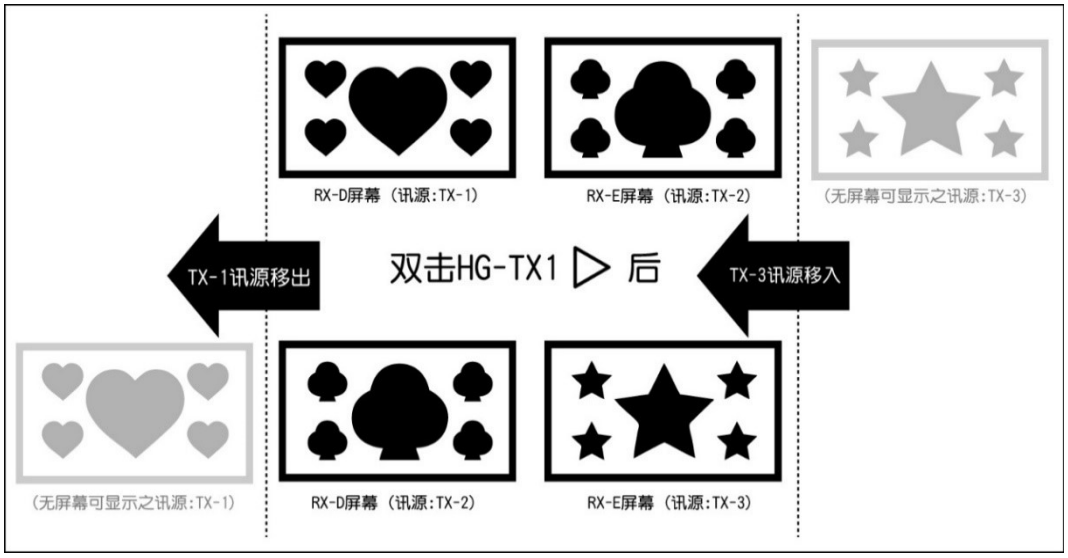


图5-40

(3)座席推送 (本功能仅适用于 HMX3080/HMX4080 延伸器系列)

本范例将演示利用座席推送功能将一 RX 连接之 TX 讯源内容与另一 RX 设备分享。

a. 以管理员用户名(admin)/密码(adminpass)陆续分别登入五台 RX 设备的 OSD 登入画面，并分别点选欲连接的 TX 讯源如下所示：

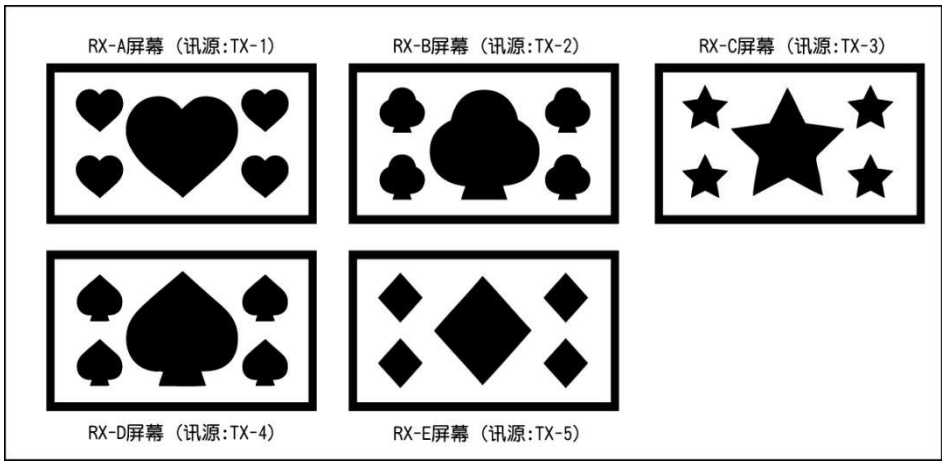


图5-41

b. 于 RX-D 接收器上启用 OSD 菜单，单击 OSD 菜单上方之<**座席推送**>图标后，将显示画面如下：

图5-42

c. 系统以<**推送**>图标显示可将当前 RX-D 接收器所连接之 TX-4 讯源推送至可用 RX 目标设备(包含 RX-C，RX-B，RX-E，RX-A)，另以<**拉回**>图标显示可将 TX-3，TX-2，TX-5，TX-1 等讯源拉回至当前使用的 RX-D 接收器中，以于 RX-D 接收器所连接的屏幕上观看并操作所拉进的讯源计算机，此即为座席推送功能，以下分别介绍推送与拉回两种操作情境：

d. (**推送情境**)：于 RX-D 接收器的 OSD 画面中，点选 RX-E 列的<**推送**>图标，将 RX-D 所连接的 TX-4 讯源推送至 RX-E 以使 RX-E 显示相同的 TX-4 讯源，在 RX-D 发出推送请求给 RX-E 时，在 RX-E 的屏幕上会跳出一请求窗口询问 RX-E 的用户是否接受 RX-D 用户将其 TX-4 讯源推送进来，此时 RX-E 用户可视工作情况接受或拒绝。

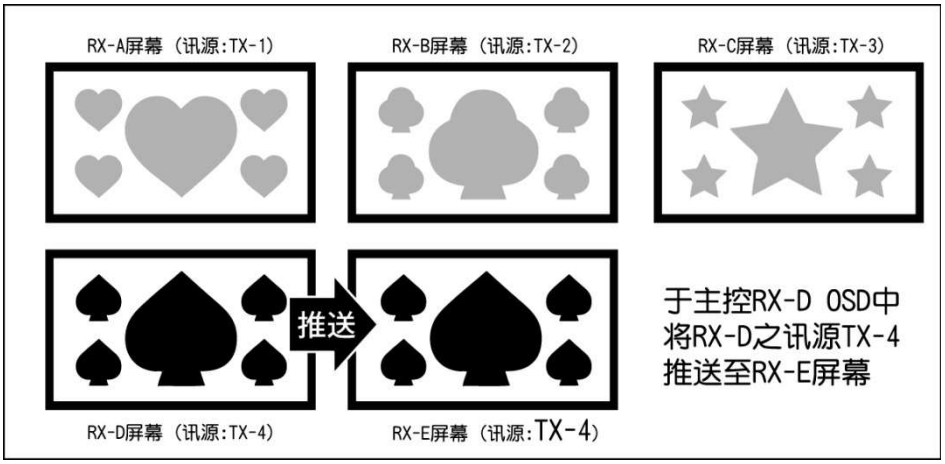


图5-43

e. (**拉回情境**)：于 RX-D 接收器的 OSD 画面中，点选 RX-B 列的<**拉回**>图标，将 RX-B 所连接的 TX-2 讯源拉回 RX-D 以使 RX-D 显示与 RX-B 相同的 TX-2 讯源，须注意与推送情境不同的是，将 TX-2 讯源拉回 RX-D 时，系统并不会发出询问窗口询问 RX-B 的用户是否接受 RX-D 对 TX-2 讯源的拉回操作。

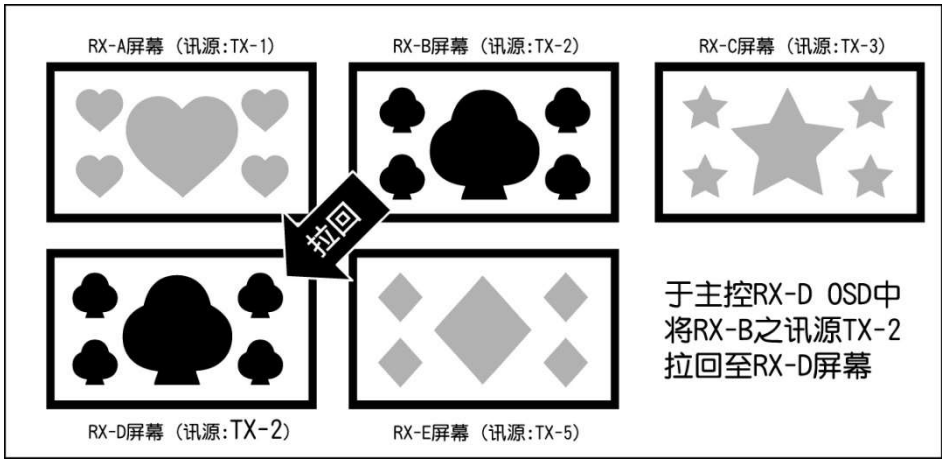


图5-44

(4) 鼠标漫游(本功能仅适用于 HMX3080/HMX4080 延伸器系列)

鼠标漫游功能主要是让用户可以透过连接于执行鼠标漫游任务接收器主机(Mouse-roaming Master unit)上的一组键盘鼠标，直觉自由地移动鼠标的光标于所有共同执行鼠标漫游任务的接收器主/从机屏幕范围内，以达到一人同步监看/控制多台接收器所连接的发射器(计算机)之目的，本功能最大的漫游范围设置为 8(水平)x8(垂直)，合计 64 台屏幕。

本范例将演示在五台屏幕上实现鼠标漫游功能：

a. 以管理员用户名(admin)/密码(adminpass)陆续分别登入五台 RX 设备的 OSD 登入画面，并以鼠标点击选择其欲连接的 TX 讯源，以下范例为五台 RX 连接五台不同的 TX 讯源：

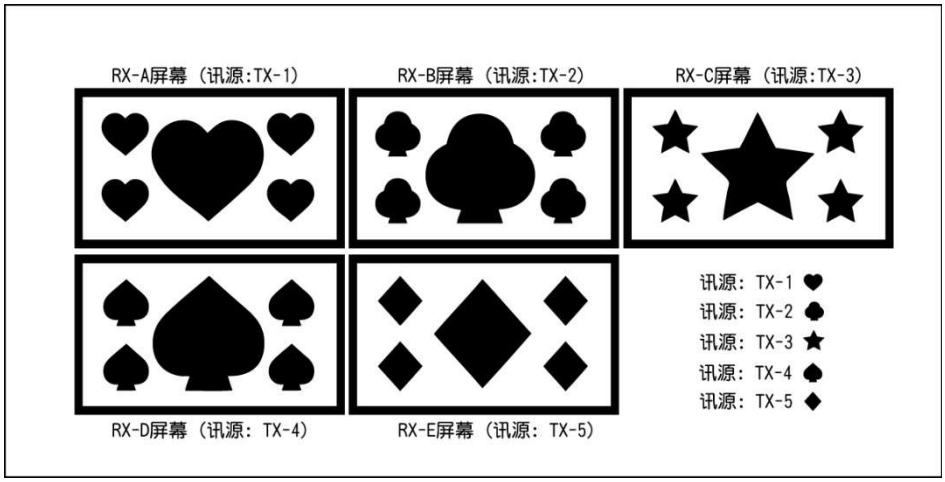


图5-45

b. 到**设备**>**接收器组**，点击<**新增组**>按钮，<**组态**>下拉式选单选择<**鼠标漫游**>，输入名称 (MR-DEMO)后，点击<**提交**>按钮。

图5-46

c. 鼠标点选 MR-DEMO 项目，单击<**编辑组**>按钮 进入设置页面，先将 RX-A 拖拉至<**组布局**>栏中，第一个被拖拉进<**组布局**>栏的 RX 设备将被定义为鼠标漫游任务主机，其坐标为(0，0)，接续拖拉 RX-B (坐标 1，0)，RX-C (坐标 2，0)，RX-D (坐标 0，-1)，RX-E (坐标 1，-1)四台设备至下方<**组布局**>栏，最后按下<**提交**>按钮。

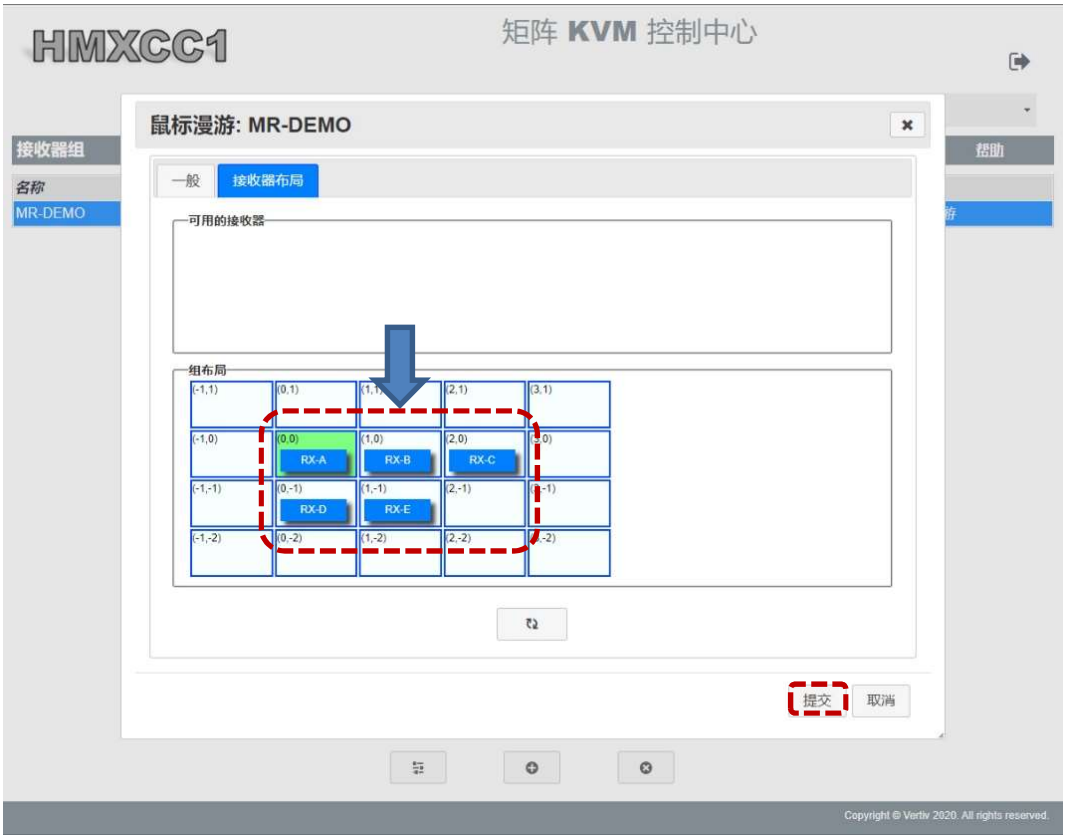


图5-47

[注]：如下图所示，设置鼠标漫游区间时，系统将禁止有接收器设备的组布局被设置为孤立状态(无与其相邻之其他接收器设备)。

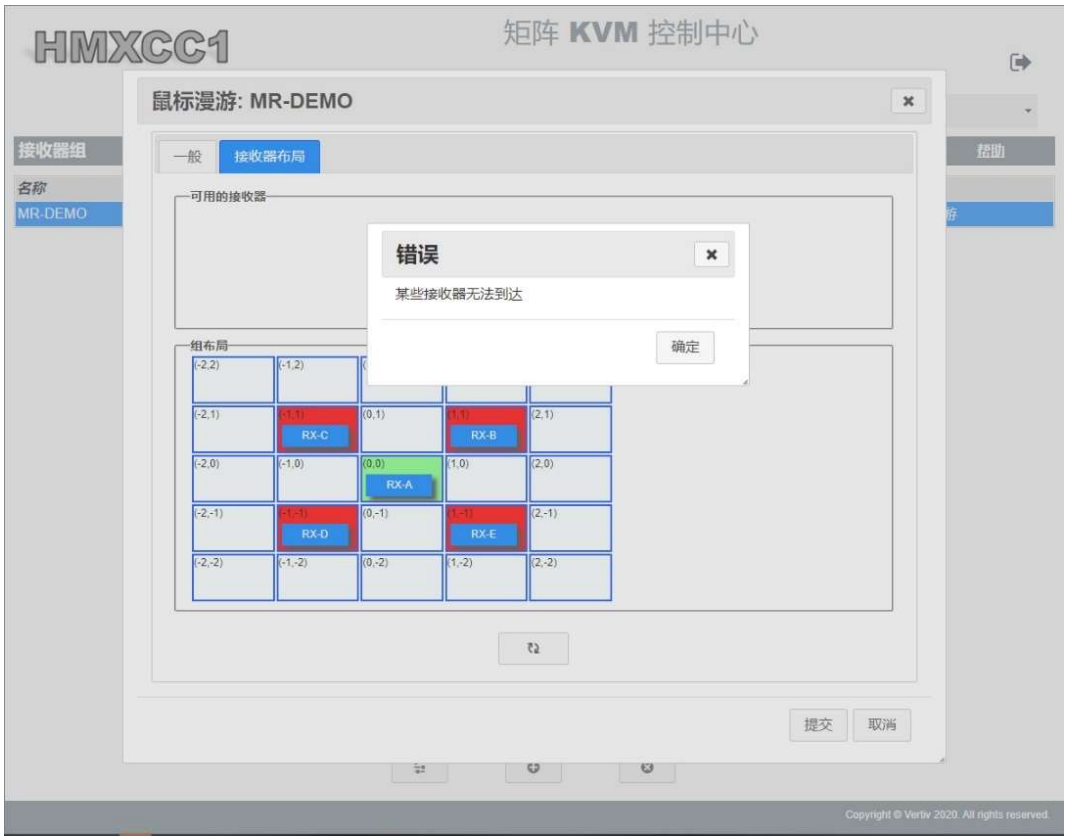


图5-48

d. 确定鼠标漫游功能的接收器配置无孤立情形并按下<**提交**>按钮后，系统将重启鼠标漫游主机 RX-A 。

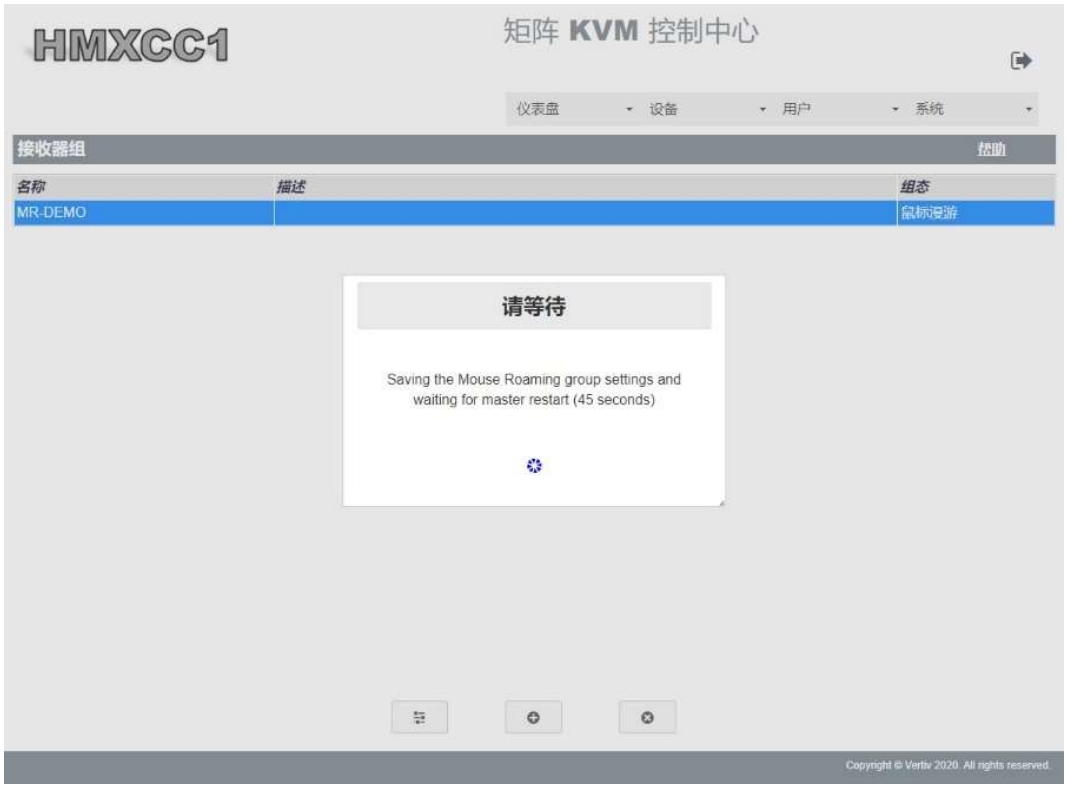


图5-49

e. 鼠标漫游接收器主机 RX-A 重新启动完成后，以管理员用户名(admin)/密码(adminpass)登入 RX-A 接收器，选择 RX-A 欲连接的 TX 讯源(例如 TX-1)，此时移动鼠标的光标，其漫游范围即可扩展涵盖至 RX-A，RX-B，RX-C，RX-D 与 RX-E 所组成的五台屏幕显示区域内，当鼠标的光标漫游至特定 RX 设备屏幕显示区域时，不仅可透过鼠标直接操作该 RX 设备对应之 TX 设备所连接的计算机，亦可以键盘热键弹出该鼠标当下停留之 RX 设备远程 OSD 菜单将之显示于 RX-A 主机屏幕上。

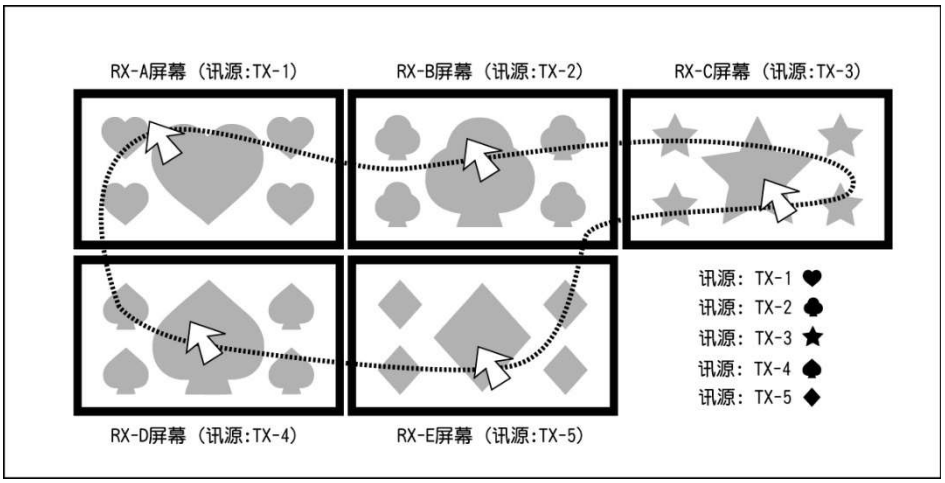


图5-50

[注]：已被规划为鼠标漫游任务的所有 RX 从机设备，如果曾经被指派连接到某台 TX 设备执行鼠标漫游任务，则当鼠标漫游主机重启后，其将会自动与上一次连接过的 TX 设备重新连接，不需再输入用户名称与密码登入 RX 设备与重新指派要连接的 TX 设备。

- 鼠标漫游之远程 OSD 控制

当执行鼠标漫游时，于鼠标漫游从机设备(RX-B，RX-C，RX-D，RX-E)所连接的键盘进行热键呼叫 OSD 菜单时，系统将于其连接之屏幕上显示 Slave Mode，拒绝用户于直接于 RX 从机设备上启用 OSD 菜单，此时用户如要设定 RX 从机连接的 TX 讯源，可透过远程 OSD 控制来进行设置。远程 OSD 菜单呼叫的方式包含以下两种情境：

(情境一) 鼠标的光标停留在鼠标漫游接收器主机对应的屏幕范围内,对某接收器从机进行远程 OSD 控制：

下图演示于鼠标漫游主机 RX-A 上，按下 OSD 热键(**Scroll Lock**, **Scroll Lock**, **Space**)弹出 OSD 菜单，直接利用菜单之下拉选单选择从机设备(例如 RX-C)，OSD 菜单下方即出现红色字体之 Remote OSD：RX-C，表示当下显示于 RX-A 所接屏幕上的 OSD 菜单为 RX-C 设备的 OSD 菜单。此时如用户计划将 RX-C 设备连接至 TX-4 设备讯源，可于画面上双击 TX-4 字样，RX-C 所连接的屏幕即可立即切换并显示 TX-4 的讯源。

[注]：用户亦可使用发射器直接切换热键(**Scroll Lock**，**Scroll Lock**，**两码数字键**)对 RX-C 设备直接进行 TX 讯源之连接，数字键与 TX 讯源的对应关系为用户自行定义于 RX-C 的 OSD 菜单内的<**进阶设置**>中，设置方式请参照 HMX3080/HMX4080 使用手册相关章节。

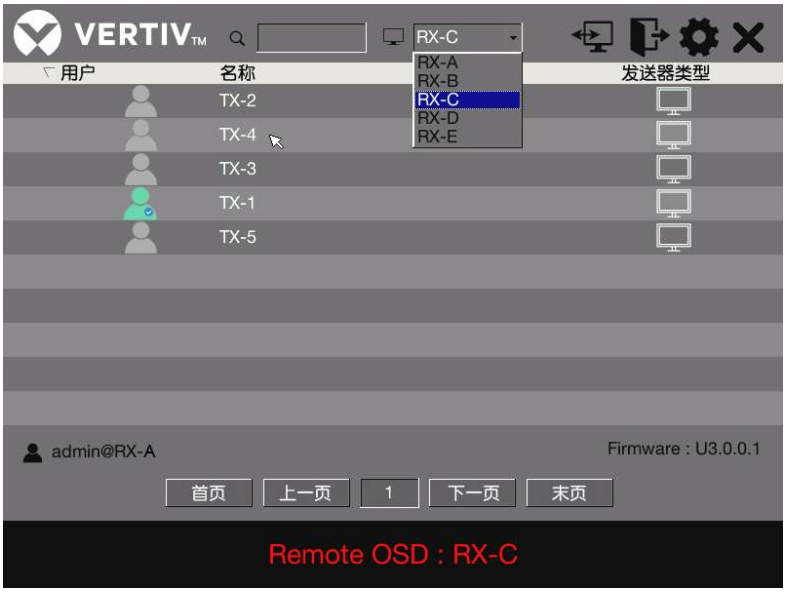


图5-51

(情境二) 鼠标的光标漫游至欲变更所连接发射器之某接收器从机对应屏幕范围内,进行该接收器从机远程 OSD 控制:

用户将鼠标的光标移动至欲变更连接发射器之某接收器从机(例如 RX-C)对应的屏幕显示范围,于鼠标漫游任务接收器主机 RX-A 连接之键盘按下 OSD 热键(**Scroll Lock**, **Scroll Lock**, **Space**)后,将于接收器主机 RX-A 所接屏幕上弹出 OSD 菜单, OSD 菜单下方以红色字体显示 Remote OSD: RX-C,表示当下可供用户操作的接收器设备为因鼠标的光标停留而生效的 RX-C。此时如用户计划将 RX-C 设备连接至 TX-4 设备讯源,即可于画面上双击 TX-4 字样, RX-C 接收器所连接的屏幕即可立即切换并显示 TX-4 的讯源。

[注]:用户亦可使用发射器直接切换热键(**Scroll Lock**,**Scroll Lock**,**两码数字键**)对 RX-C 设备直接进行 TX 讯源之连接,数字键与 TX 讯源的对应关系为用户自行定义于 RX-C 的 OSD 菜单内的<**进阶设置**>中,设置方式请参照 HMX3080/HMX4080 使用手册相关章节。在此情境中,仅有鼠标的光标停留在其显示范围内的接收器设备才是可供用户操作的活动接收器。

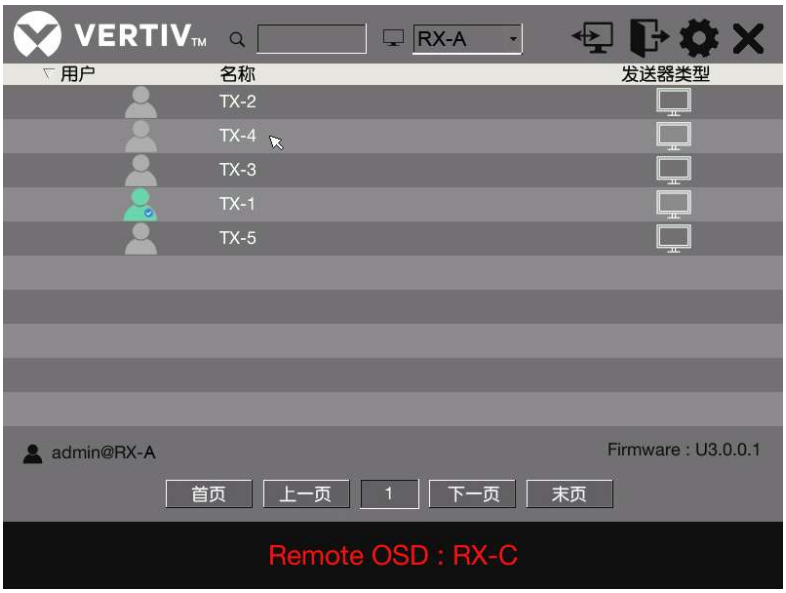


图5-52

- 鼠标漫游之光标跳跃(Cursor Hopping)功能

当所有执行鼠标漫游任务的接收器与发射器正常运行时,用户可自由地移动光标于所规划的接收器屏幕可视范围内,然而,若有接收器或发射器发生断线或故障(如下图布局(4)之 07 号位置),将导致光标进入该台故障发射器/接收器对应的屏幕

范围后,无法将光标重新移出该屏幕范围外而丢失光标控制权。欲解决此问题,可透过光标跳跃热键(**右 Ctrl**, **右 Ctrl**, **两码数字键**)将光标瞬间跳跃到欲指定任一正常运行中的接收器对应屏幕范围,重新取回光标控制权,同时用户应尽速通知技术人员进行故障设备更换,以维持系统顺畅运行。本光标跳跃功能亦可应用在所有发射器/接收器正常运行时,将光标瞬间跳跃到欲控制之接收器对应的屏幕范围,藉以提升工作效率。光标跳跃热键之两码数字键对应之接收器屏幕排列顺序请参照以下鼠标漫游布局范例(由左至右,从上至下):

图5-53

(5)视频墙(本功能仅适用于 HMX3080/HMX4080 延伸器系列)

视频墙的功能主要是让用户可以透过任何一组连接于视频墙任务接收器上的键盘/鼠标，于其 OSD 菜单中选取单一发射器讯源，达到多屏幕协同显示任一发射器讯源之目的。视频墙尺寸最大设置为 8(水平)x8(垂直)，合计 64 台屏幕。

本范例将演示以四台屏幕构建一个视频墙功能:

a. 以管理员用户名(admin)/密码(adminpass)陆续分别登入四台 RX 设备的 OSD 登入画面，并分别点选欲连接的 TX 讯源如下所示:

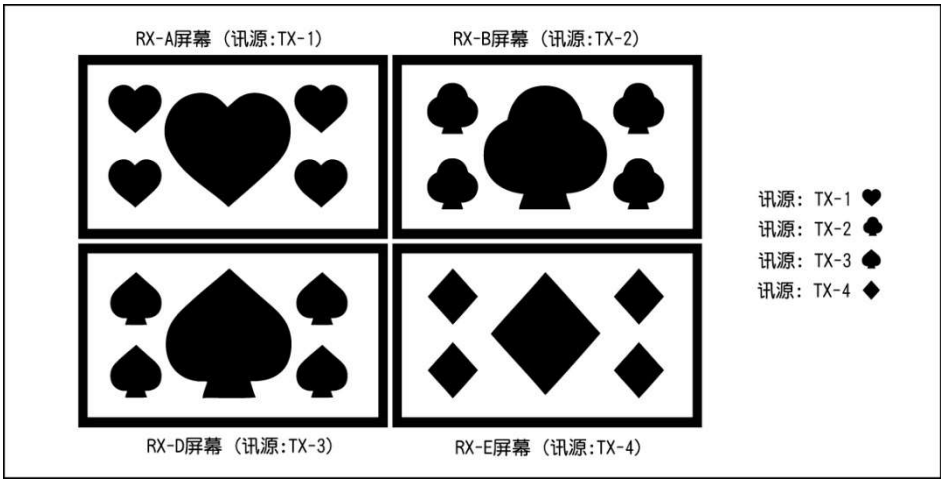


图5-54

b. 到**设备**>**接收器组**，点击<**新增组**>按钮 ，<**组态**>下拉式选单选择<**视频墙**>，输入名称(VW-DEMO)后，点击<**提交**>按钮。

图5-55

c. 鼠标点选 VW-DEMO 项目，点选<**编辑组**>按钮，在<**一般**>设置选项中将视频墙配置为水平=2，垂直=2 的组态。

图5-56

d. 在<**接收器布局**>选项中先将 RX-A 接收器拖拉进<**组布局**>栏后，依序拖入 RX-B，RX-D 与 RX-E 接收器如下图所示，最后按下<**提交**>按钮。

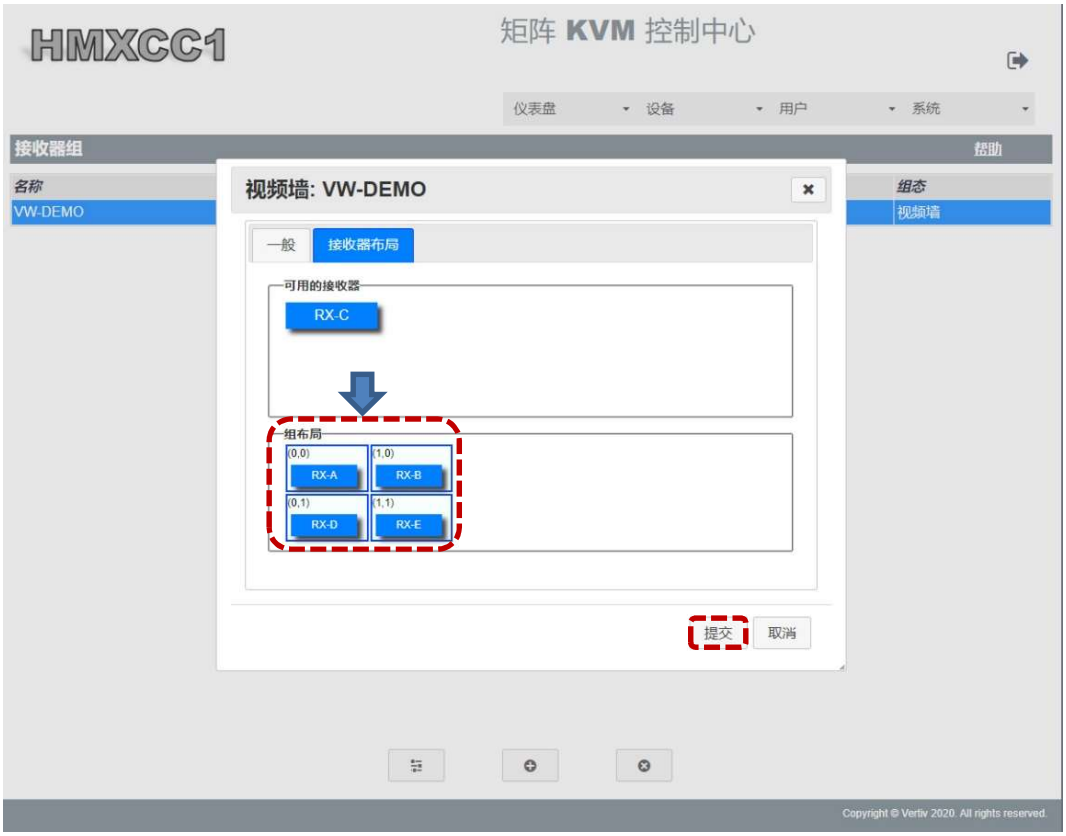


图5-57

e. 与鼠标漫游功能不同，在视频墙设置完毕后，系统将不会对 RX-A 设备进行重启，此时用户于任意一台被指派执行视频墙任务的接收器(例如 RX-B)的 OSD 菜单中选择欲连接的 TX 讯源(例如 TX-1)后，按下键盘 Esc 键离开 RX-B 的 OSD 菜单，将可看到 RX-A，RX-D，RX-E 协同 RX-B 一起显示完整的 TX-1 讯源，此即为视频墙功能 (注：视频墙任务中，接收器间并无主从关系，用户可在任意一台被赋予视频墙任务的接收器所连接的键盘按下 OSD 热键，选择视频墙欲指派连接的 TX 讯源)。

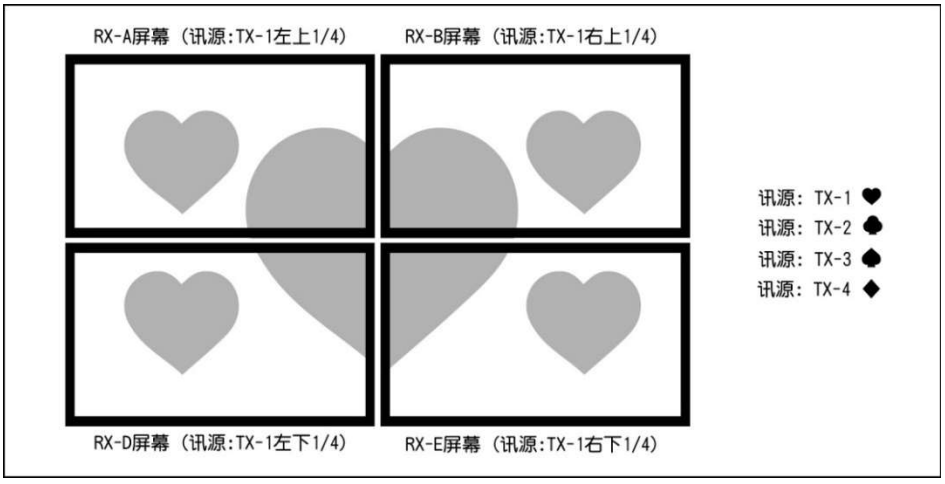


图5-58

f. 依据上述的基本功能介绍，用户可以在一个大型显示器矩阵设施(以下范例为 6 x 6, 共连接至 36 台 RX 设备) 中指派不同任务，同时实现鼠标漫游与视频墙功能，如下图所示：

鼠标漫游任务 MR-DEMO-1 (定义鼠标漫游区为 3x3 屏幕范围)。

鼠标漫游任务 MR-DEMO-2 (定义鼠标漫游区为 3x1 屏幕范围)。

鼠标漫游任务 MR-DEMO-3 (定义鼠标漫游区为 1x2 屏幕范围)。

视频墙任务 VW-DEMO-1 (定义视频墙由 3x3 屏幕构成)。

视频墙任务 VW-DEMO-2 (定义视频墙由 3x3 屏幕构成)。

视频墙任务 VW-DEMO-3 (定义视频墙由 2x2 屏幕构成)。

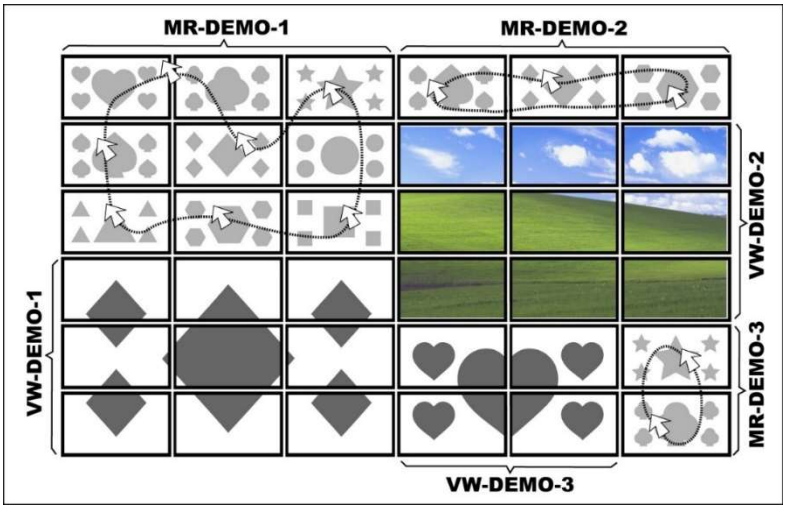


图5-59

5.3.4 发射器组 | TX Groups

图5-60 设备>发射器组

本<**发射器组**>页面提供了在 HMXCC1 数据库中已设置的发射器组清单，并以管理模式运行。该清单的每一行都显示一个发射器组名称、描述和启用属性。

新增发射器组

<**新增组**>按钮 ，允许定义新的发射器组。

图5-61 设备>发射器组>新增组

编辑发射器组

选一发射器组，按下<**编辑组**>按钮，可设置该发射器组之发射器成员设备。

图5-62 设备>发射器组>编辑组

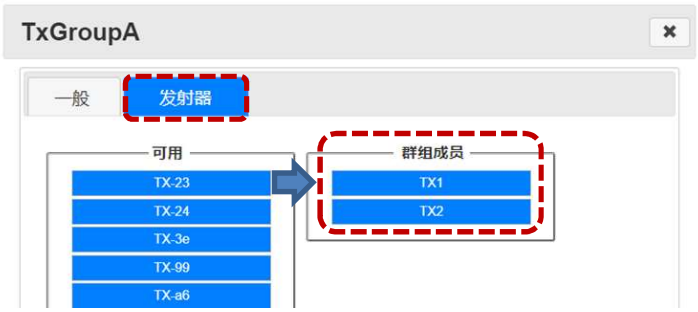


图5-63

5.3.5 显示器 | Monitors

图5-64 设备>显示器

本<**显示器**>页面提供了在 HMXCC1 内存中所有已注册的显示器 EDID 清单。每行显示存储在 HMXCC1 内存中的 EDID 文件的名称、供货商 ID 和型号。HMXCC1 可以从连接到接收器的显示器上读取 EDID,并将 EDID 发送到发射器,使发射器能够提供适切的显示器模拟。

新增显示器

按下<**将新显示器添加到列表中**>按钮 ,于下拉式选单选择欲读取显示器 EDID 的接收器,于<**显示器名称**>栏输入显示器名称,最后按下<**取得显示器**>按钮。

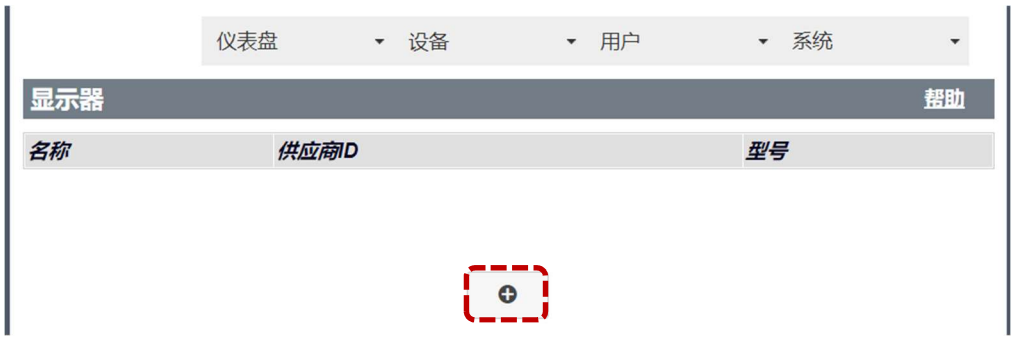


图5-65 设备>显示器>添加

图5-66 设备>显示器>添加>取得显示器

编辑所选监视器的名称

点选任一显示器设备，按下<**重命名选定的显示器**>按钮 ，输入新名称后按下<**重命名显示器**>按钮生效。

图5-67

显示器与发射器配对

按下<**将选定的显示器发送到发射器**>按钮，选择欲指定的发射器后，按下<**设为显示器**>按钮送出将显示器的 EDID 传送至指定的发射器。或使用键盘热键 (**Scroll Lock**, **Scroll Lock**, **M**)将此接收器所连接的显示器 EDID 传送至当前接收器所连接的发射器上。

图5-68

5.3.6 固件 | Firmware

图5-69 设备>固件

本<**固件**>页面可添加/删除已被 HMXCC1 管理的 TX/RX 设备的固件文件，储存在此的*.bin 固件文件可以在稍后用于升级。要在 HMXCC1 内存中添加固件文件，请按下<**选择档案**>按钮，选择新的固件文件后，按下<**添加文件**>按钮。要删除一个或多个旧的固件文件时，请先勾选要删除的固件文件，然后按下<**删除已选定的文件**>按钮。

5.3.7 升级 | Upgrade

图5-70 设备>升级

本<**升级**>页面用以升级发射器和接收器固件。本页显示所有被管理设备的类型、名称、当前固件版本和升级状态。选择特定设备或所有设备后，按下 <**升级选定的设备**>按钮即可开始升级过程。

图5-71

开始 TX/RX 固件升级程序

首先，确认已经上传最新版的 TX-RX 设备固件，到**设备**>**固件**>**选择档案**，添加文件到固件清单，并从<**删除固件文件**>中删掉所有旧的固件档。

到**设备**>**升级**。升级设备清单下<**勾选所有**>设备，按下 <**升级选定的设备**> 开始固件升级程序。您可以在<**主/从状态**>列中追踪每个设备的状态。

大约需要 15 分钟完成(注意: 跟网络系统的繁忙程度有关，强烈建议在网络系统不忙碌下进行升级固件的作业)，按下<**是**>继续完成升级。按下<**取消**>在这步骤退出。

按照步骤操作并等待<**写进 Flash**>和<**正在重新启动**>完成后，至所选设备重新启动完回到<**预备**>状态。

图5-72 设备>固件

图5-73 设备>升级>升级选定的设备

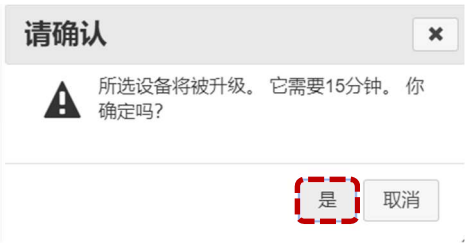


图5-74 设备>升级>升级确认

图5-75 设备>升级>固件升级中

图5-76

图5-77 设备>升级>固件升级完成

图5-78 设备>升级>预备状态

在线帮助界面

IP 矩阵 KVM 网络管理界面进入<**设备**>下拉式选单任一功能，再点选右上角的<**帮助**>标签，进入线上帮助页以获取技术帮助。

图5-79

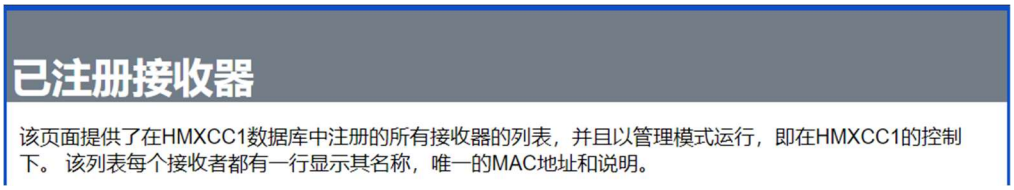


图5-80 设备>已注册接收器>在线帮助

5.4 用户 | Users

按下界面上方主选单<**用户**>取得下拉选单选项如下图: <**列表**>、 <**组**>、 <**远程验证**>。

图5-81 主选单>用户

5.4.1 (用户)列表 | List

图5-82 主选单>用户>(用户)列表

本<**列表**>页面显示数据库中的用户列表。每行显示用户名、描述、角色及启用属性。

执行全局动作

当未选用户时，可按下<**全局动作**>按钮  打开<**全局用户设置**>窗口。一次将同一设定套用至所有用户。

图5-83 用户>(用户)列表>全局动作

图5-84 用户>(用户)列表>全局动作>全局用户设置

新增用户

无论用户有无被选中，皆可以按下<**新用户**>按钮 新增用户，打开设置框。设置用户角色、用户群组及发射器切换热键等，其中发射器切换热键经设置后，可供用户在登入接收器 OSD 菜单后查看参考。

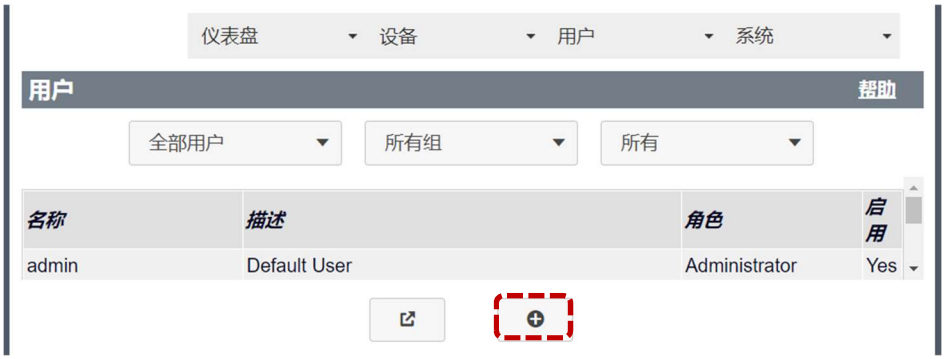


图5-85 用户>(用户)列表>新用户

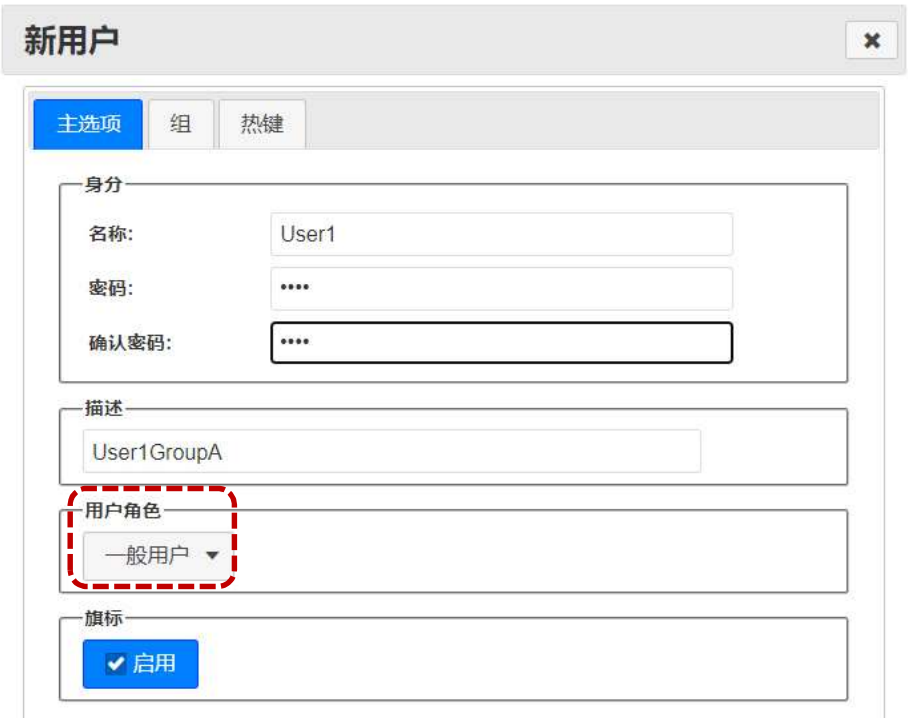


图5-86 用户>(用户)列表>新增用户>主选项

设定用户群组

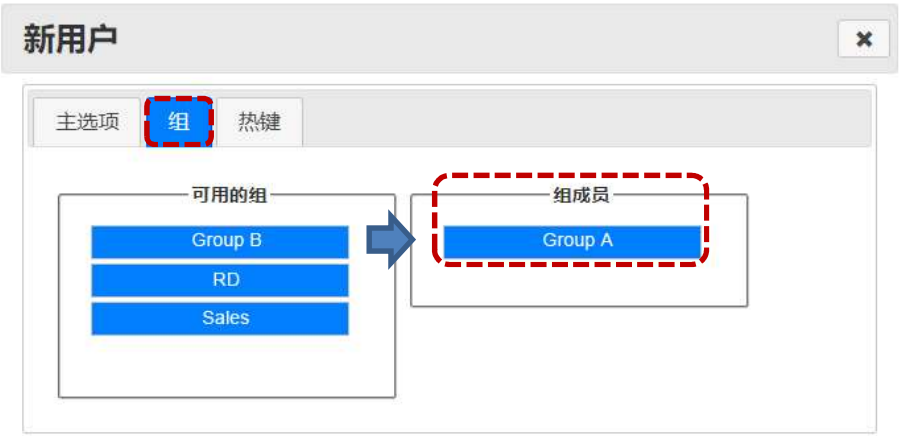


图5-87 用户>(用户)列表>新用户>组成员

编辑用户

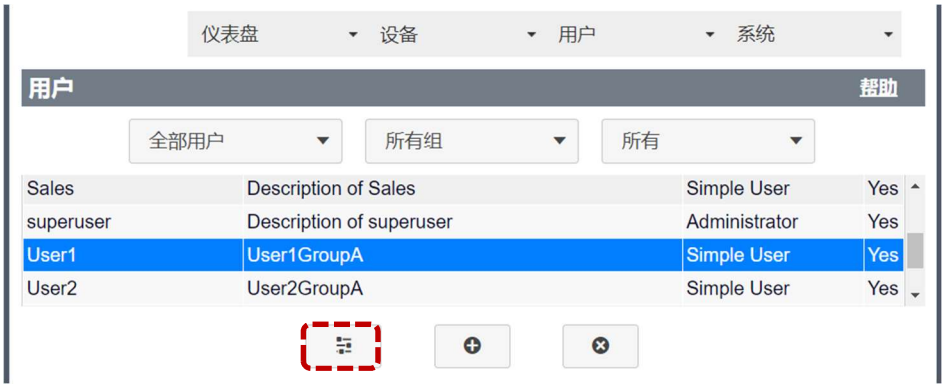


图5-88 用户>用户列表>编辑用户

5.4.2 用户组 | Groups

图5-89 主选单>用户>用户组

本<**用户组**>页面显示数据库中的用户组清单。用户组是具有相同设备访问权限的用户集合。每行显示用户组名称、描述及启用属性。启用属性显示为否的用户组,代表其登入接收器与访问发射器的权限已被管理员关闭。

新增用户群组

无论用户组有无被选中，皆可按下<**新增组**>按钮 ，新增用户组，设置用户组名称、成员、TX/RX 设备群组等，最后按下<**提交**>完成。其中 TX/RX 设备群组可稍后再设置。

图5-90 用户>用户组>新增组

图5-91 用户>用户组>新增用户组>用户组名称设置

新加成员到用户群组

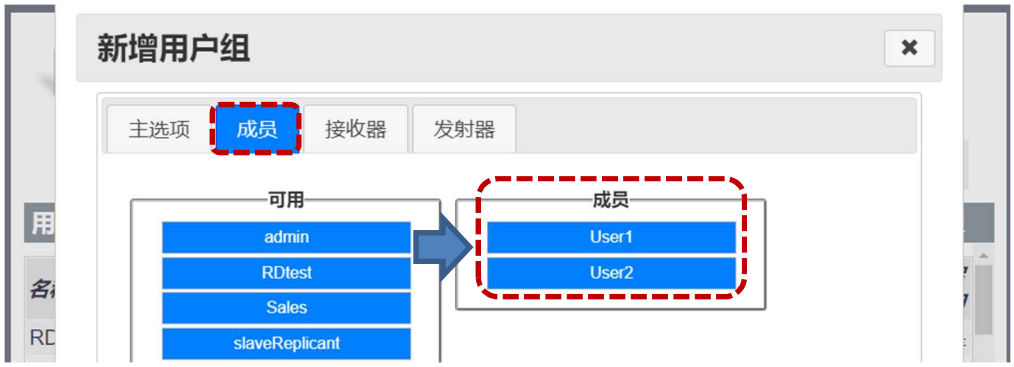


图5-92 用户>用户组>新增用户组>用户成员设置

配置接收器群组到用户群组

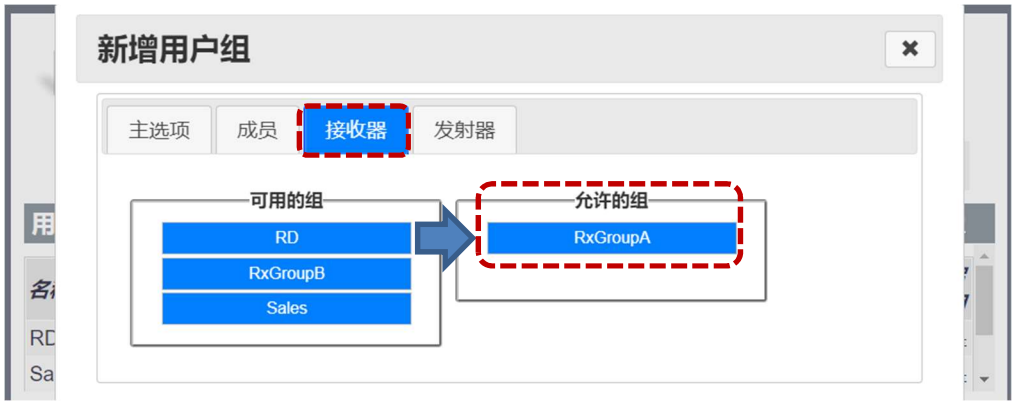


图5-93 用户>用户组>新增用户组>接收器组成员设置

配置发射器群组到用户群组

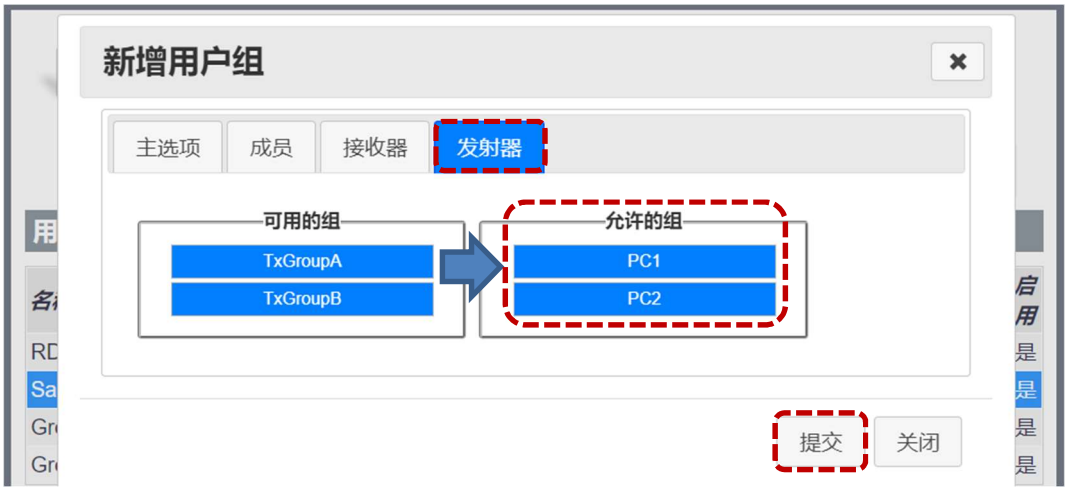


图5-94 用户>用户组>新增用户组>发射器组成员设置

编辑用户群组

选择一现存用户组，按下<**编辑组**>按钮，即可针对用户组名称、成员、TX/RX 设备群组等重新配置。

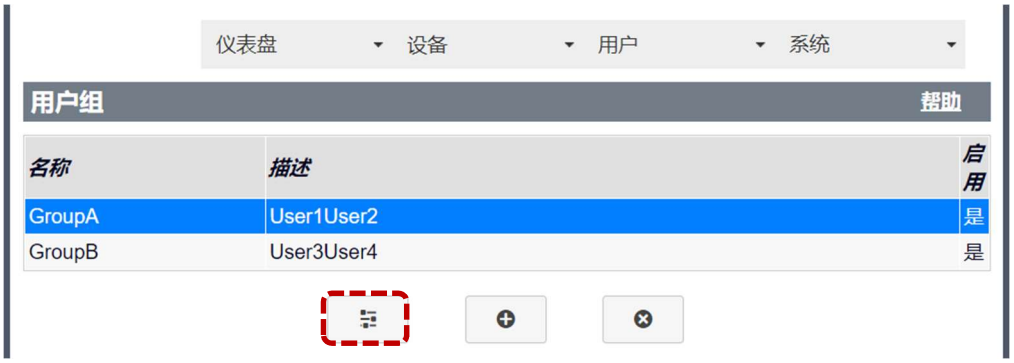


图5-95 用户>用户组>编辑组

图5-96 用户>用户组>编辑组>设置

5.4.3 远程验证 | Remote Authentication

图5-97 主选单>用户>远程验证>无/LDAP/RADIUS

本<**远程验证**>页面允许您选择和配置 HMXCC1 用户的验证模式。用户验证是指确保用户是本人并且信息正确的过程。验证过程可以在 HMXCC1 本地端进行，或使用 LDAP 或 RADIUS 企业认证服务器于远程进行。至于 HMXCC1 之用户授权则是参照 HMXCC1 的数据库用户数据于本地端执行。

设定 LDAP 或 RADIUS 服务器配置

在选取远程认证服务器类型(NONE/LDAP/RADIUS)后,按下<**配置服务器访问**>按钮,保存所选远程服务器访问的设置。

图5-98 用户>远程验证>LDAP

图5-99 用户>远程验证>LDAP 服务器访问

在线帮助界面

IP 矩阵 KVM 网络管理界面进入<**用户**>下拉式选单任一功能，再点选右上角的<**帮助**>标签，进入线上帮助页以获取技术帮助。

图5-100 用户>(用户)列表>在线帮助

5.5 系统 | System

按下界面上方主选单<**系统**>取得下拉选单选项如下图：<**其他选项**>、<**事件日志**>、<**日期和时间**>、<**网络**>、<**配置备份**>、<**升级**>、<**复制**>、<**电源**>。

图5-101 主选单>系统

5.5.1 其他选项 | Miscellaneous

图5-102 系统>其他选项

本<**其他选项**>页面系用以设置 HMXCC1 机器的名称，设定后将在 HMXCC1 标志下方显示此名称。在<**中控装置名称**>栏中输入机器名称，按下<**提交设置**>按钮生效，以便于多套控制系统中识别此 HMXCC1 的身份。

5.5.2 事件日志 | Log

图5-103 系统>事件日志

本<**事件日志**>页面所储存的事件包括 用户/设备/系统的信息与错误纪录，它还记录每次的登入尝试，包括失败的登入记录。

图5-104

选择要记录的事件

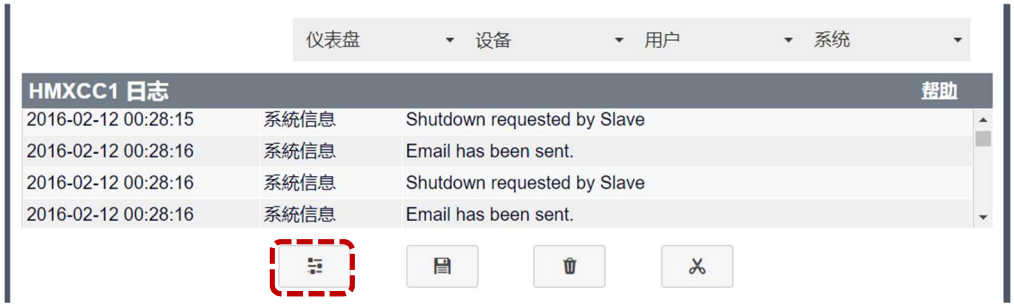


图5-105

图5-106 系统>事件日志>要记录的事件

5.5.3 日期和时间 | Date & Time

图5-107 系统>日期和时间

本页面可设置 HMXCC1 的时钟，按下<**设置**>按钮 后，勾选<**使用互联网时间**>选项启用以与 NTP 网络时间协议服务器同步。或是在尚未勾选<**使用互联网时间**>选项时，页面出现在设置按钮旁的<**设置日期和时间**>按钮 进行设置。日志事件所附加的时间信息系以本页面设定的时间为依据，当修改时区或是重设<**使用互联网时间**>勾选状态后，按下<**提交**>按钮，系统将立即重启以生效时间设定。

图5-108 系统>日期和时间>设置

5.5.4 网络 | Networks

图5-109 系统>网络

HMXCC1 架构支持 1000Mbps 速率的以太网络运作，专用于超高速设备端的数据传输。用户界面则采用 TCP/IP 协议，并提供了 HTTPS 网络服务器，用户可通过浏览器于局域网络上访问设备。HMXCC1 可以不使用 HTTPS 的默认端口（443），而以 5008 到 5025 的可配置端口取代。因 HMXCC1 使用非 CA 的自签署凭证，所以浏览器将显示不安全网站之警告，实际上外部并无从得知 HMXCC1 是一台硬件控制设备而不是一个网站，HMXCC1 与 TX/RX 设备需使用专用的局域网络(如前述的 1000Mbps 以太网络)相连接。即，HMXCC1 无法安装于设备网络以外的网络(包含互联网)进行 TX/RX 设备的访问，且 HMXCC1 和 TX/RX 设备间的所有通信都是 TLS 加密的。因此 HMXCC1 架构可提供最高的信息安全性。

本<**网络**>页面显示两个 HMXCC1 网络界面的当前状态。按下<**刷新**>按钮 来刷新信息。按下<**设置**>按钮来配置网络界面。

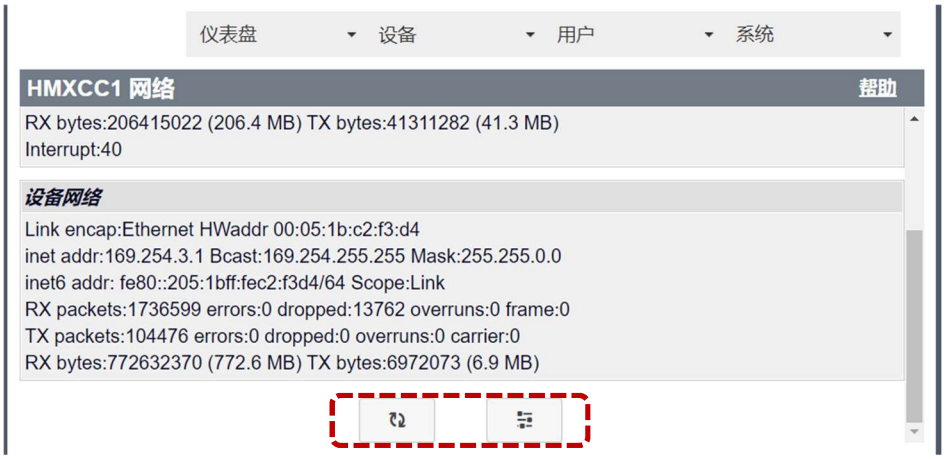


图5-110 系统>网络>刷新/设置

到**系统**>**网络**，进入后按下<**设置**>按钮，进入网络设定窗口。更改用户 IP 及设备 IP(改为与出厂默认不同)。最后按下<**提交**>按钮后，重新启动控制器。

图5-111 系统>网络>设置

设定控制器的用户 IP 及设备 IP

图5-112 系统>网络>设置>网络设置

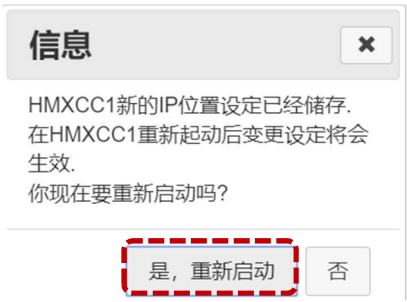


图5-113

5.5.5 配置备份 | Backups

图5-114 系统>配置备份

本<**配置备份**>页面允许备份和恢复 HMXCC1 数据库的内容，以提高系统的可转移性和可用性。建议在任何更改后，将所有设定备份至计算机中，以方便日后在其他 HMXCC1 设备上用计算机中的备份文件再配置一台相同设定的机器作为备援使用。

备份文件的名称系自动生成。它的格式为“hmxcc-backup-yymmdd.sql.gz”。其中“yymmdd”是时间序号，例如 hmxcc-backup-180215.sql.gz。备份文件仅供回存 HMXCC1 机器使用，请勿将其解压缩。

从主机手动备份 HMXCC1 数据库

当使用单台 HMXCC1 控制器，或使用两台 HMXCC1 控制器但未勾选从机设定的<**故障转移**>功能时，到**系统**>**配置备份**，于**<备份当前配置>**栏按下<**保存设置**>按钮，定期备份控制器之数据库文件。

图5-115 系统>配置备份>备份当前配置

回复 HMXCC1 数据库备份至控制器新机

在<**HMXCC1 备份还原**>页中，选择最近一次备份的备份文件，按下<**还原设置**>按钮将备份文件回存到 HMXCC1 新机。在重启新机前需要再次提交 IP 设置才能生效。

图5-116 系统>配置备份

到**系统**>**网络**，按下<**设置**>按钮，设置用户 IP 及设备 IP，最后按下<**提交**>按钮重新启动机器，网络设置才会生效。

图5-117

注意：重开机前需重新提交 IP 设置才能生效。

恢复日志

到**系统**>**事件日志**，按下<**保存**>按钮，下载当前日志备份文件(格式：hmxcc-log.txt.gz)至计算机中。

图5-118 系统>事件日志

接着，到**系统**>**备份还原**，按下<**选择档案**>按钮，选取计算机中的日志备份文件，按下<**恢复日志**>按钮，将日志备份文件回存至 HMXCC1 控制器。

图5-119 系统>配置备份

自从机管理界面下载主机备份

在从机管理界面首页按下<**下载主备份**>按钮 。按下<**保存数据库备份**>按钮以下载数据库备份至计算机中，按下<**保存日志备份**>按钮以下载日志备份至计算机中。

图5-120 系统>配置备份

图5-121 从机管理界面首页>下载主备份

主机设定数据备份文件格式: hmxcc-backup-master-xxxxxx.sql.gz。

主机日志备份文件格式: hmxcc-log-master-xxxxxx.txt.gz。

5.5.6 升级 | Upgrade

图5-122 系统>升级

本<**升级**>页面显示当前版本并允许您升级 HMXCC1 软件应用程序。要升级 HMXCC1，请按下<**选择档案**>按钮，选择一适用升级文件。然后按下<**上传软件**>按钮重新启动 HMXCC1。如果新版本升级发生异常，请先到**系统**>**备份还原**先将 HMXCC1 恢复出厂设置，再重新进行升级程序。

5.5.7 复制 | Replication

本<**数据库复制**>页面系用来设定 HMXCC1 控制器为<**主机**>(Master)模式或<**从机**>(Slave)模式以支持故障转移之备援运作。在<**复制模式**>窗口，经设置后可方便管理员进行 1 台机器的手动数据复制或 2 台机器的自动故障转移管理。

系统出厂默认为<**不复制**>模式，当用户在环境中只架设一台控制器，或未设定第二台控制器作为从机时，请使用<**不复制**>模式。在选用不复制(No replication)模式，管理员需要定期手动备份 HMXCC1 控制器数据配置及日志至计算机中。

在主-从机模式运行时，主机控制器的功用等于 HMXCC1 系统的控制中心，其监视从机的平稳运行及正常活动。从机控制器会定期轮询主机控制器并备份主机控制器当前的数据库设置和日志。当从机故障转移功能为启用时，一旦主机控制器发生故障，从机控制器便可立刻自动替换掉故障的主机并以新主机的角色继续运行。

图5-123 系统>复制

设置复制模式

到**系统**>**复制设置**，按下<**设置复制模式**>按钮 。

图5-124 系统>复制>设置复制模式

复制模式模式为<**不复制**>时

<**复制模式**>出厂默认为<**不复制**>。只安装单台 HMXCC1 控制器时，到**系统**>**复制**，按下<**设置复制模式**>按钮 。设定机器<**复制模式**>为<**不复制**>。按下<**提交**>按钮后，此时先不重启控制器，继续下面设定 IP 程序。

到**系统**>**网络**，按下<**设置**>按钮 ，输入一个不同于出厂默认值与其他网上设备使用之 IP 地址(例如用户 IP: 192.168.1.**201**; 设备 IP:169.254.3.**2**)。最后按下<**提交**>按钮重新启动控制器并生效新设置。

图5-125 系统>复制设置>复制模式>不复制

复制模式设为<**主机**>时

到**系统**>**复制**，设置<**复制模式**>为<**主机**>。最后按下<**提交**>按钮重新启动控制器。如果未启用从机故障转移功能，需手动定期备份主机的数据库设置和日志。勾选<**设置邮件提醒**>选项以便通知管理员各种控制器的异动状态(如开机/故障/关机)，以便管理员进行后续的处理。

图5-126 系统>复制设置>复制模式>主机

到**系统**>**网络**，按下<**设置**>按钮，输入一个不同于出厂默认值与其他网上设备使用之 IP 地址 (例如用户 IP 地址：192.168.1.**201**，设备 IP 地址：169.254.3.**2**)，最后按下<**提交**>按钮重启控制器。

图5-127 系统>网络>设置>网络设置

复制模式设为<**从机**>并启用<**故障移转**>功能

设定第 2 台 HMXCC1 为从机并启用<**故障转移**>功能，到**系统**>**复制**，按下<**设置复制模式**>按钮 。勾选<**从机**>模式，勾选<**故障转移功能启用**>选项。填入主机的 IP(例如 192.168.1.**201**)。再按下<**提交**>按钮，此时先跳过重启系统。再到**系统**>**网络**，按下<**设置**>按钮 ，更改从机 IP(例如用户 IP：192.168.1.**202**，设备 IP：169.254.3.**3**。最后按下<**提交**>按钮重新启动控制器。

图5-128 系统>复制设置>复制模式>从机

复制模式: 勾选<**从机**>。

电子邮件提醒: 勾选以当从机发生故障通知管理员立即更换。

主机透过用户网络访问: 需填入从机对应的主机 IP。

故障转移:勾选<**故障转移功能启用**>选项，从机才能自动执行故障转移的备援程序。

图5-129 系统>网络>设置>网络设置

重启从机控制器后，从新的管理界面登入 IP 地址 (https://192.168.1.**202**:5008)登入，进入从机主页，如未启用故障转移功能，需手动定期备份 HMXCC1 之数据库，并勾选<**设置邮件提醒**>选项以便通知管理员各种从机控制器的异动状态(如开机/故障/关机)，以便管理员进行后续的处理。

5.5.8 电源 | Power

图5-130 系统>电源>重启/关机

本<**电源**>页面可用来重新启动或关闭 HMXCC1 控制器。

- 重新启动 HMXCC1 控制器：

按下<**重新启动 HMXCC1**>按钮以重启 HMXCC1 控制器。在大多数情况下，重新启动是一项维护操作。

- HMXCC1 控制器关机：

按下<**HMXCC1 关机**>按钮以关闭 HMXCC1 控制器。在关闭实体电源开关之前，建议先使用此按钮将 HMXCC1 控制器关机。

在线帮助界面

IP 矩阵 KVM 网络管理界面进入<**系统**>下拉式选单任一功能，再点选右上角的<**帮助**>标签，进入线上帮助页以获取技术帮助。

图5-131 系统>事件日志>在线帮助

第六章 网页应用程序与管理

6.1 数据库复制应用程序

请参考以下步骤设定一台新的主机及一台新的从机。

(1) 主从机<数据库复制>页面

于主机与从机管理界面点选**系统**>**复制**，进入<**数据库复制**>页面，从机的<**数据库复制**>页面中不包含主机<**数据库复制**>画面中的<**仪表盘**>、<**设备**>、<**用户**> 等功能菜单，并以红色字体显示<**复制模式从机**>提醒用户此机器为从机角色。

图6-1 主机的<数据库复制>页面

图6-2 从机的<数据库复制>页面

(2) 自从机下载主机的数据库备份与日志备份

点选从机<**数据库复制**>页面中<**下载主备份**>按钮 ，将主机的数据库与日志备份下载至计算机中，当主机故障时，可将下载之设定数据备份文件回存至从机，令原本的从机取代故障主机变成新主机。

图6-3

点击<**保存数据库备份**>按钮，将主机设定数据备份文件下载到计算机，格式: hmxcc-backup-master-xxxxxx.sql.gz。

点击<**保存日志备份**>按钮，将主机日志文件下载到计算机，格式: hmxcc-log-master-xxxxxx.txt.gz。

请勿解压缩以上两种文件。

(3) 自当前控制器(主机/从机/单机)下载自身数据库备份文件与回存数据库备份文件至新控制器

图6-4

a. 当为单控制器系统时，可手动定期至**系统**>**备份配置**，按下<**保存设置**>将设定数据备份文件(格式 hmxcc-backup-xxxxxx.sql.gz)存到计算机中。

b. 当为主从式双控制器系统时，若欲取代故障主机的机器非为新购置机，则请先按下<**恢复出厂设置**>将其恢复为出厂状态，再使用<**恢复以前的配置**>，选择先前储存于计算机中的设定数据备份文件，将其回存至此控制器。

c. 当单控制器系统时，亦可将故障控制器先恢复为出厂状态，依据相同步骤回存计算机中的设定数据备份文件至此机器。

(4) 自主机或单机下载日志备份文件与回存日志备份文件至新控制器

a.到**系统**>**事件日志**，点击<**保存到文件**>按钮  ，将日志文件(格式: hmxcc-log-xxxxxx.txt.gz) 下载至计算机中。

图6-5

b.到**系统**>**配置备份**，点击<**恢复日志**>按钮，将先前储存于计算机中的日志文件回存至控制器。

图6-6

[注]:日志备份文件不影响控制器实体运行，仅提供各种事件之记录，用户可视需求决定是否回存至控制器。

(5) 于<**复制设置**>中设定新添加的控制器为主机或从机

a.将新添加的控制器设置为主机

图6-7

到**系统**>**复制**，设定<**复制模式**>为从机，按下<**提交**>重启控制器。

b.将新添加的控制器设置为从机

图6-8

到**系统**>**复制**，设定<**复制模式**>为从机。

需填入主机 IP。

故障转移选项可视用户需求勾选启用，勾选后当主机故障时，从机才会执行自动取代故障主机程序。

按下<**提交**>重启控制器。

6.2 用户群组及设备群组派任应用

此应用示范添加 TX/RX 设备至系统、注册 TX/RX 设备、添加 TX/RX 群组、添加用户帐户、添加用户群组、TX/RX 群组连接与用户群组连接。

设置 4 个用户账户 : User1、User2、User3、User4 (用户角色：一般用户)。

IP 矩阵 KVM 延伸器包含: 4 台发射器 HMX1080T, 4 台接收器 HMX1080R。

群组规划: 2 个用户群组(GroupA/GroupB)

2 个发射器群组(TxGroupA/TxGroupB)

2 个接收器群组(RxGroupA/RxGroupB)

其中 GroupA 用户群组包括 User1 与 User2。GroupB 用户群组包括 User3 与 User4。

TxGroupA/RxGroupA 的设备分别包含 TX1/TX2、RX1/RX2，由 GroupA 用户群组所管理。

TxGroupB/RxGroupB 的设备分别包含 TX3/TX4、RX3/RX4，由 GroupB 用户群组所管理。

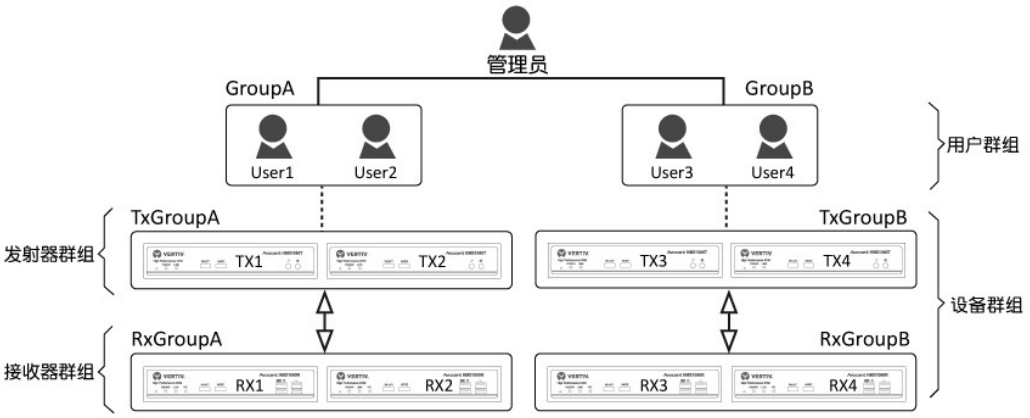


图6-9 用户群组/设备群组规划与派任应用

在 HMXCC1 主机管理界面登入网页 (https://192.168.1.**201**:5008)，以出厂默认的管理员用户名(admin)和密码(adminpass)登入。

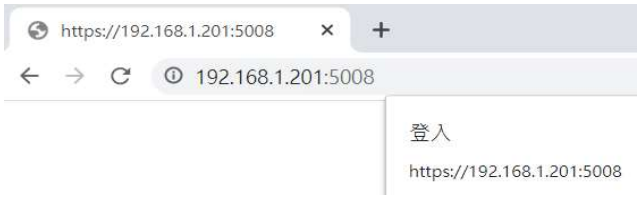


图6-10 登入主机管理界面

加入发射器 TX1/TX2/TX3/TX4 及接收器 RX1/RX2/RX3/RX4

连接 4 台发射器及 4 台接收器到系统上。进入**设备**>**接收器**选项或**设备**>**发射器**选项，已被注册的接收器与发射器将被显示在清单中，当需要注册新连接的 TX/RX 装置，到<**接收器**>或<**发射器**>选项页面，按下<**全局动作**>按钮 注册所有 TX 与 RX，欲更改已注册的 TX/RX 名称，点选一台设备后，按下<**设置**>按钮 以编辑其名称，连接完这 4 台发射器与 4 台接收器到系统后，将名称分别改为 TX1/TX2/TX3/TX4 及 RX1/RX2/RX3/RX4。

图6-11 设备>接收器/发射器

图6-12 加入 TX1/TX2/TX3/TX4，并全部注册

图6-13 加入 RX1/RX2/RX3/RX4，并全部注册

注册发射器及接收器

到**仪表盘**>**检测到的设备**或到**设备**>**发射器/接收器**页面，使用<**全局动作**>按钮 来注册/注销所有装置。或找出未注册的设备，依序选择要注册的设备，分别按下其<**注册**>按钮 来注册。取消设备注册时，点选欲取消注册的设备，按下<**取消注册**>按钮 即可。

图6-14 到仪表板>检测到的设备，按下<全局动作>按钮，选择注册全部/注消全部设备

图6-15 到仪表板>检测到的设备，选择任一未注册的设备，按下<注册>按钮

建立新的接收器组 RxGroupA/RxGroupB

到**设备**>**接收器组**，按下底部的<**新增组**>按钮，新增接收器设备群组。

建立一 RxGroupA 接收器设备群组，并指派其成员为 RX1/RX2 接收器。

建立一 RxGroupB 接收器设备群组，并指派其成员为 RX3/RX4 接收器。

图6-16 到设备>接收器组

按下<**新增组**>按钮新增接收器群组 RxGroupA 与 RxGroupB

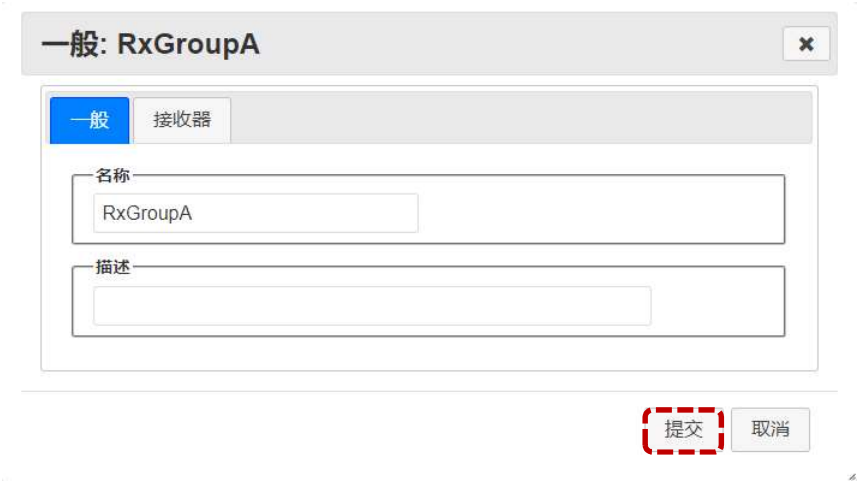


图6-17

设置 RxGroupA 的接收器群组成员，将 RX1 与 RX2 拖曳至右边<**群组成员**>框内。按下<**提交**>确认并离开。

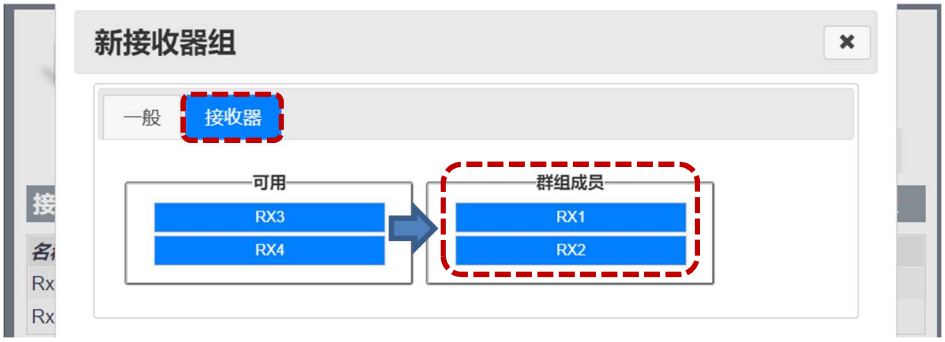


图6-18

以相同方式建立 RxGroupB 设备群组，其成员为 RX3 与 RX4。

图6-19 已新增接收器组 RxGroupA/RxGroupB

建立新的发射器组 TxGroupA/TxGroupB

依前述相同方式，选**设备**>**发射器组**，按下<**新增组**>按钮 新增发射器设备群组。

建立发射器设备群组 TxGroupA，其成员为 TX1 与 TX2 发射器。

建立发射器设备群组 TxGroupB，其成员为 TX3 与 TX4 发射器。

图6-20 已新增发射器组 TxGroupA/TxGroupB

建立新的用户账户 User1/User2/User3/User4

以一般用户角色建立 4 个用户账户 User1、User2、User3、User4。到**用户**>**列表**，按<**新用户**>按钮 新增四个用户帐户。于<**新用户**>页面的<**主选项**>中设置用户角色为<**一般用户**>，勾选旗标为<**启用**>。最后按下<**提交**>按钮。

图6-21 到用户>列表，按下<新用户>按钮

图6-22 到用户>列表>新用户，设置用户角色为一般用户，旗标勾选为启用

图6-23 已新增一般用户 User1/User2/User3/User4

建立新的用户组 GroupA/GroupB

到**用户**>**组**，按下<**新增组**>按钮  ，建立用户组并指派其成员。

建立一 GroupA 用户组，并指派其成员为 User1 与 User2 用户账户。

建立一 GroupB 用户组，并指派其成员为 User3 与 User4 用户账户。

于<**主选项**>页面输入名称 GroupA 并将旗标勾选为启用状态。

图6-24

在<**成员**>选项中设置 GroupA 用户组成员，将 User1、User2 拖进右边<**成员**>框内。

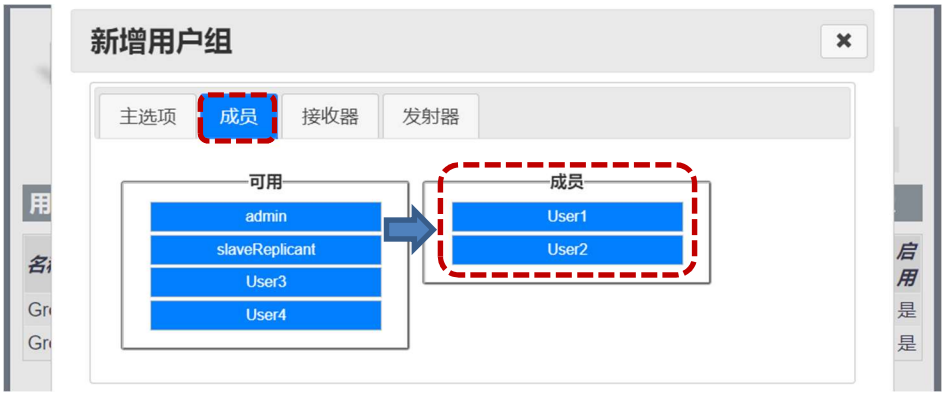


图6-25

在<**接收器**>选项中设置 GroupA 用户组管理的接收器群组，将 RxGroupA 拖进右边<**允许的组**>框内。

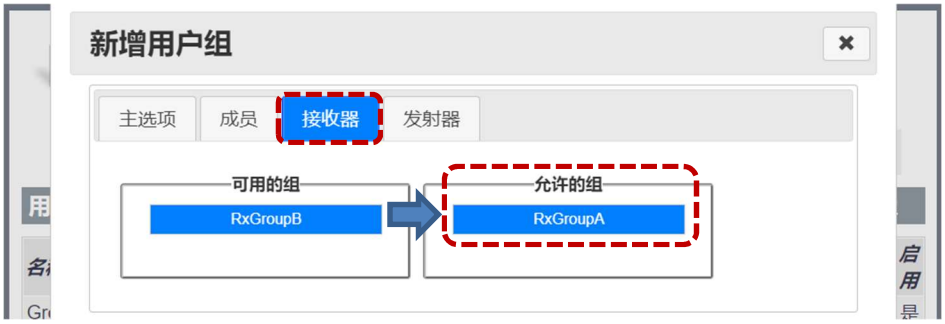


图6-26

在<**发射器**>选项中设置 GroupA 用户组管理的发射器群组，将 TxGroupA 拖进右边<**允许的组**>框内。按下<**提交**>按钮。

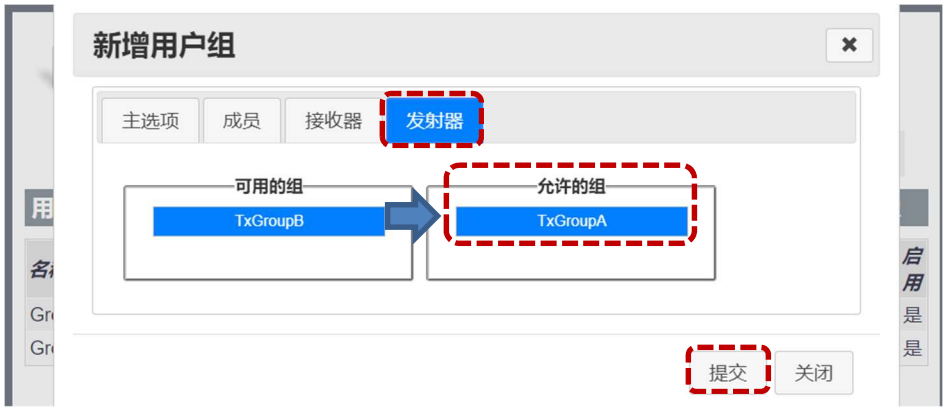


图6-27

如同设置用户组 GroupA 一样，以相同方式设置 GroupB 用户组，其成员为 User3 与 User4，管理的发射器群组与接收器群组分别为 TxGroupB 与 RxGroupB。

图6-28

发射器群组与接收器群组之组连接

到**仪表盘**>**组连接**，选择 RxGroupA 或 RxGroupB 选取后按下<**连接**>按钮 。

图6-29 仪表盘>组连接, 按下<连接>按钮

当<**连接**>按钮 可用，按下以开启下列窗口。将<**发射器组**>选项设置为 TxGroupB，如此一来接收器群组 RxGroupB 便可以连接至 TxGroupB，因此登入 RX3 或 RX4(RxGroupB 群组)的 User3 与 User4 用户便可以管理发射器群组 TxGroupB 里的 TX3/TX4 设备。

图6-30 选择可用的单一发射器或发射器组。

将 RxGroupA/RxGroupB 接收器组分别连线到 TxGroupA/TxGroupB 发射器组。

图6-31

设备群组派任应用

目前接收器组 RxGroupA 经设置连接到发射器组 TxGroupA。TxGroupA 及 RxGroupA 这两组设备群组属于用户组 GroupA 所管理，而用户组 GroupA 成员仅包含 User1、User2，连接建立完成后，只有 User1/User2 可以管理 GroupA 下的所有 TX 及 RX，不能管理另一用户组 GroupB(User3/User4)下的 TX 及 RX。

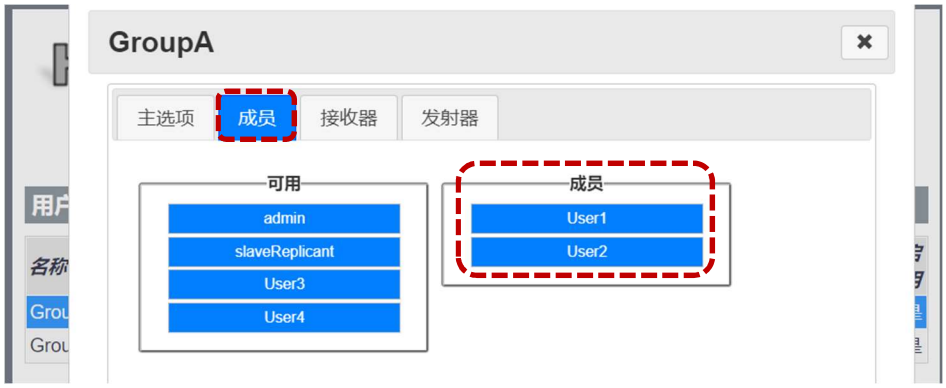


图6-32

接收器组 RxGroupA 经设置连接到发射器组 TxGroupA 所属的发射器成员。

接收器组 RxGroupB 经设置连接到发射器组 TxGroupB 所属的发射器成员。

用户组 GroupA 的成员(User1/User2)只可以管理设备群组 TxGroupA 和 RxGroupA 所属的设备，不能管理用户组 GroupB 成员(User3/User4)所管理的设备群组 TxGroupB 及 RxGroupB 所属的设备。

同样地，用户组 GroupB 的成员(User3/User4)只可以管理设备群组 TxGroupB 和 RxGroupB 所属的设备，不能管理用户组 GroupA 成员(User1/User2)所管理的设备群组 TxGroupA 及 RxGroupA 所属的设备。

图6-33 仪表盘>组连接

用户连接

到**仪表盘**>**用户连接**，当用户在未注销的情况离开座位时，管理员便可用<**断开用户连接**>按钮 以远程方式强制断开该用户之接收器-发射器连接。

图6-34 仪表盘>用户连接

以一般用户角色登入接收器

在 HMXCC1 上完成设定 TX/RX 设备群组后，输入常规热键(**Scroll Lock**，**Scroll Lock**，**Space**)或快速开启热键(**Ctrl**，**Ctrl)**以开启接收器的 OSD 菜单登入页面，输入用户帐户(一般用户角色)名称与密码进入接收器的 OSD 菜单。

[注]：当 RX 设备未被 HMXCC 控制器管理(未注册或是 TX/RX 二者采缆线直接连接时)，于所操作的接收器的键盘上按下 OSD 菜单热键后，无须登入程序即可直接操作 OSD 菜单内容。

图6-35 一般用户 OSD 菜单页面

以管理员角色登入接收器

到**仪表盘**>**检测到的设备**，选取<**未注册**>，按下底下的注册按钮加入新增的接收器。欲更改接收器 OSD 语言操作界面需到 HMXCC1 控制中心的**设备**>**接收器**，选择一接收器,按下<**设置接收器**>按钮并于其<**高级设置**>选项中更改语言设置。

图6-36 注册接收器/更改语言

设定完成 HMXCC1 的用户群组及设备群组后，管理员可开始使用 HMX 系列接收器 OSD 界面。

输入管理员用户名(admin)/密码(adminpass)登入接收器 OSD 界面。

图6-37 管理员登入页面

OSD 菜单

一旦所有装置连上局域网络后，用户便可开始使用 HMX 系列接收器。

图6-38 非管理员账号用户(一般用户)之 OSD 菜单

上图为以非管理员帐户登入之接收器 OSD 菜单,将说明如后：

所有连上网络并被指派为当前一般用户可用的发射器会呈现在此表格内，此一般用户可以按页面查看。

1)双击任一发射器名称将当前接收器连接至该发射器。

2)显示目前在线用户操作的接收器与发射器连接的状况。

a. 绿色用户图标显示当前接收器与当列所显示的发射器(例如：TX-0052-john)之连接。

b. 灰色用户图标显示另一在线接收器与当列所显示的发射器(例如：TX-0052-john)之连接。

3)白色屏幕图标表示该发射器在线，黑色则表示脱机。

4)点击以注销 OSD 菜单。

5) 点击进入检视此接收器登入用户在 HMXCC1 网页管理界面由管理员所设置的发射器切换热键号。

此发射器切换热键由三颗按键所组成，例如 **Scroll Lock**，**Scroll Lock**，**数字键**。除了系统默认值外，用户也可以在此选单中指定 **Scroll Lock** 外的指令键。

6)点击以关闭 OSD 菜单。

7)逐页查找所列出可用的所有发射器设备。

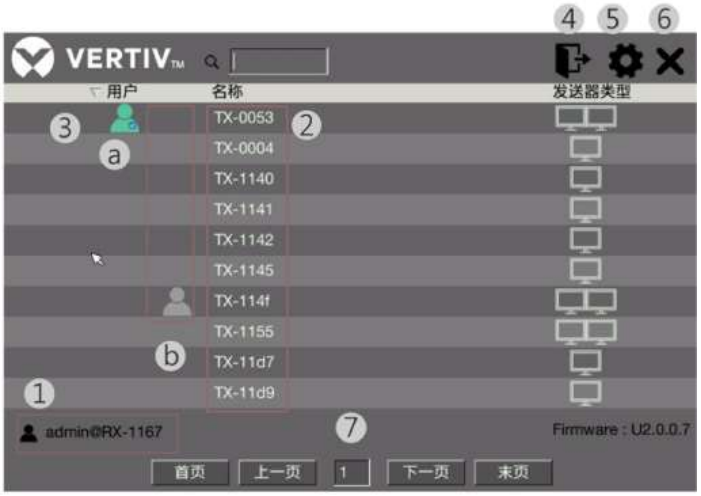


图6-39 管理员账号之 OSD 菜单

上图为以管理员帐户登入之接收器 OSD 菜单,将说明如后:

所有连上网络的发射器会呈现在此表格内，管理员可以按页面查看。

1)显示管理员目前正在操作的当前接收器(RX-1167)。

2) 双击任一发射器名称以将当前的接收器连接至该发射器。

3)显示目前在线用户操作的接收器与发射器连接的状况。

a. 绿色用户图标显示当前接收器与当列所显示的发射器(例如：TX-0053)之连接。

b. 灰色用户图标显示另一在线接收器与当列所显示的发射器(例如：TX-114f)之连接。

4)点击以注销 OSD 菜单。

5) 点击进入检视此接收器登入用户在 HMXCC1 网页管理界面由管理员所设置的发射器切换热键号。

此发射器切换热键由三颗按键所组成，例如 **Scroll Lock**，**Scroll Lock**，**数字键。**除了系统默认值外，用户也可以在此选单中指定 **Scroll Lock** 外的指令键。

6)点击以关闭 OSD 菜单。

7)逐页查找列出可用的发射器设备。

第七章 自动故障转移解决方案

设置一冗余备援故障转移服务器系统，主机及从机共同运作后，数据库都是同步，以确保它们是几乎是相同的 HMXCC1。要建立服务器备份单位及自动故障排除功能，需架设一台主机及一台从机到系统中。当运作中的 HMXCC1 主机突然故障或断线时，可藉由管理员手动方式设置或是系统自动故障转移排除故障。

7.1 HMXCC1 主机从机布建架构

要设置一个有备援用故障转移的系统，请先在环境中创建一台 HMXCC1 作为主机，再创建一台 HMXCC1 从机作为备份故障转移服务器。在系统正常运作时，HMXCC1 主机与从机协同运作，从机将每分钟定期轮询主机以备份主机设置和日志当前的最新版本。当从机故障转移功能启用时，一旦从机侦测到主机发生故障或断线时，不需手动操作，便可自动替换故障主机而成为新主机。并通过电子邮件通知管理员，以后续手动移除故障主机并替换一台新的从机。通过从属的管理，如果主机不再接受来自从机的轮询，其亦能通过电子邮件通知管理员从机发生故障，管理员再以手动方式从主机下载备份文件，将之回存至新机器中使其成为新从机。

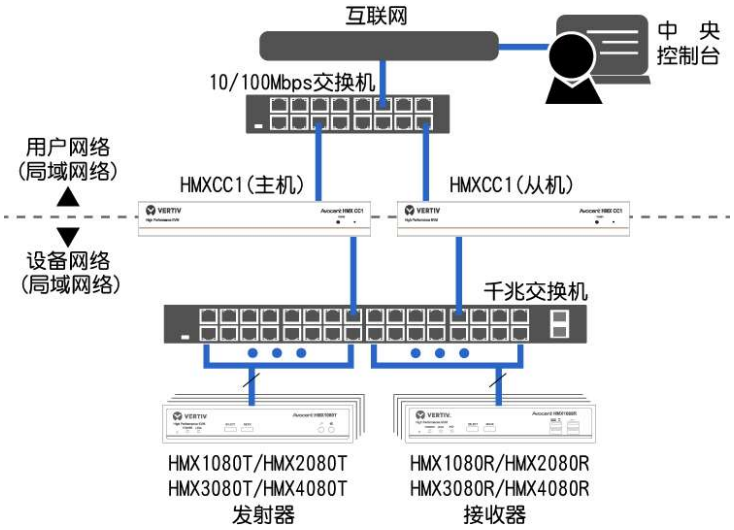


图7-1 主机从机硬件连接图

7.1.1 如何架设 HMXCC1 控制器主机与从机

控制器的数据库复制程序包含两台 HMXCC1 控制器，其中一台作 HMXCC1 主机，一台作 HMXCC1 从机。管理员根据产品连接图，先完成主机及从机硬件连接(控制器上电顺序请参考以下设定步骤)。从计算机登入控制中心管理界面，设定 2 台 HMXCC1 有不同的用户 IP 及设备 IP。并设定此两台控制器的设备 IP 位于发射器及接收器设备所连接的设备网络同一网段。使用不同的用户 IP 加上端口号 5008 登入主机及从机的网页管理界面。在 HMXCC1 控制中心数据复制模式中，设定一台为主机，另一台为从机。在从机的复制模式中勾选启用故障移转功能，自动故障转移程序才会运作。

主从式故障转移环境设定步骤：

请参照下列的步骤，安装一台 HMXCC1 主机及一台 HMXCC1 从机到系统上。

● 安装注意事项

1)完成第一台 HMXCC1 主机的硬件安装与软件设定后再进行第二台 HMXCC1 从机的硬件安装与软件设定。

2)HMXCC1 主机及 HMXCC1 从机必须分别连接到同一网段的用户网络以及同一网段的设备网络，其中用户网络与设备网络各自独立。

● 安装设定步骤

1)连接 HMXCC1 主机到系统上，开启电源。打开与此两台控制器所在同一用户网络之计算机上的浏览器，输入控制器出厂默认的管理界面登入 IP 地址 (https://192.168.1.200:5008)，输入出厂默认的管理员用户名(admin)和密码(adminpass)登入管理界面。

2)登入后，更改这台主机的网络设定，到管理界面的**系统**>**网络**，按下底部的<**配置**>按钮开启网络设定，更改用户端 IP 及设备端 IP，主机用户 IP 设为 192.168.1.**201**、设备端 IP 设为 169.254.3.**2**。其余设置使用默认设置。按下<**提交**>按钮，暂时略过重新开机，继续以下步骤。

3)到**系统**>**复制**。按下底部的<**设置复制模式**>按钮开启复制设定，勾选主机模式，将此 HMXCC1 控制器设置为主机，按下<**提交**>重启主机。

4)HMXCC1 主机重启完成，用新的管理界面登入 IP 地址 (https://192.168.1.**201**:5008) 登入主机管理界面。

5)连接 HMXCC1 从机到系统上，开启电源。打开 PC 浏览器，输入默认管理界面登入 IP 地址 (https://192.168.1.200:5008)，使用管理员用户名(admin)、密码(adminpass)登入管理界面。

6)到**系统**>**网络**，将从机用户 IP 设为 192.168.1.**202**，设备 IP 设为 169.254.3.**3**。

7)到**系统**>**复制**。按下底部的<**设置复制模式**>按钮开启复制设定，勾选从机模式，将此 HMXCC1 控制器设置为从机，并填上主机的 IP(192.168.1.**201**)。重启 HMXCC1 从机，并用新的管理界面登入 IP 地址 (https://192.168.1.**202**:5008) 登入从机管理界面。

● 设置主机 IP 地址步骤

a.以出厂默认管理界面登入 IP 地址 (https://192.168.1.200:5008)登入主机管理界面。

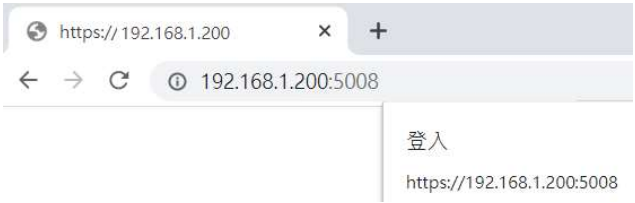


图7-2

b.登入到首页切换语系为中文。

图7-3

c.到**系统**>**网络**，按下<**设置**>按钮。

图7-4

d.设定主机用户 IP 为 192.168.1.**201** 及设备 IP 为 169.254.3.**2**，按下<**提交**>按钮后，先略过重启，继续下列步骤。

图7-5

e.到**系统**>**复制**，按下<**设置**>按钮，选择<**复制设置**>为<**主机**>，按下<**提交**>按钮重启主机。

图7-6

f.于浏览器网址列使用新的主机管理界面登入 IP 地址 (https://192.168.1.**201**:5008)登入主机管理界面。

图7-7

- 设置从机 IP 地址步骤

a.以出厂默认管理界面登入 IP 地址 (https://192.168.1.200:5008)登入从机。

图7-8

b.到**系统**>**网络**，按下<**设置**>按钮。

图7-9

c.设定从机用户 IP 为 192.168.1.**202** 及设备 IP 为 169.254.3.**3**，按下<**提交**>按钮，此时先略过重新启动，先继续后续的步骤。

图7-10

d.到**系统**>**复制**，复制模式选择<**从机**>，输入主机用户 IP 为 192.168.1.**201** 并视需求勾选设置电子邮件提醒与故障转移功能，最后按下<**提交**>重启从机。

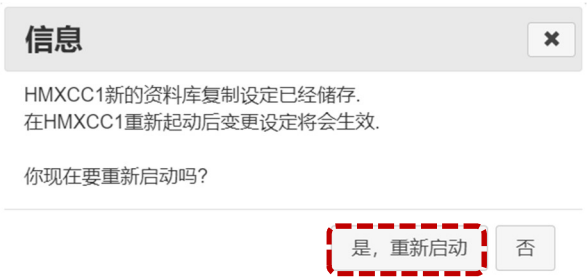


图7-11

e.于浏览器网址列使用新的从机管理界面登入 IP 地址 (https://192.168.1.**202**:5008)登入从机管理界面。

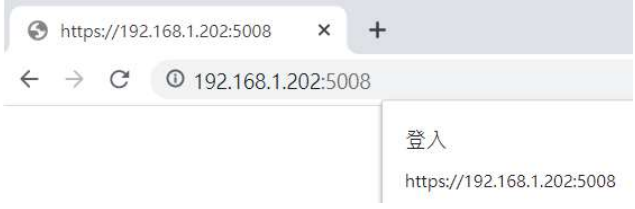


图7-12

7.1.2 如何重设控制器为出厂默认设置

重设控制器为出厂默认设置分为两种方式:

(1) 硬件方式: 长按 HMXCC1 控制器前面板右方内嵌式重置键 8 秒后放开，控制器前面板上之 LED 灯将先熄灭，开始恢复出厂默认设置重启程序，等 LED 灯显示绿色闪烁灯号，表示控制器已备妥。

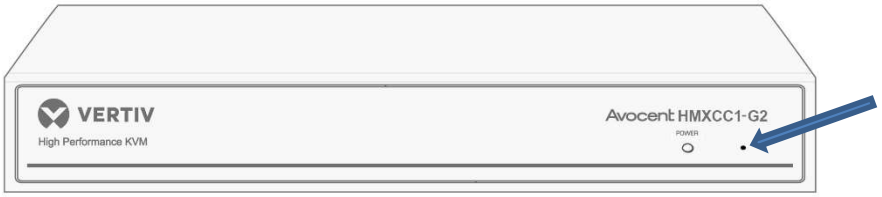


图7-13

[注]:控制器前面板上之 LED 灯号显示方式与该控制器于系统中担任的角色有关，如下表所示:

表7-1

数据库复制状态	不复制 (出厂默认值)	主机 (经用户设置)	从机 (经用户设置)
前面板 LED 灯号	绿灯闪烁	绿灯恒亮	黄灯恒亮

(2) 软件方式: 点选**系统**>**配置备份**，点选<**恢复出厂设置**>按钮后，控制器前面板上之 LED 将灯熄灭后开始恢复出厂默认设置重启程序，等 LED 灯显示绿色闪烁灯号，表示控制器已完成备妥。

图7-14

7.2 HMXCC1 的主从式数据库复制功能

当系统中仅单台 HMXCC1 运行时，管理员必须定期以手动方式将此单机控制器之设定数据及日志备份于计算机中，一旦运作中的 HMXCC1 控制器发生故障或断线时，管理员可以手动方式将最近一次储存于计算机中的备份文件回存到新的 HMXCC1 机器以取代故障主机，成为新主机，进行故障排除。

而当系统中以一台 HMXCC1 主机与一台 HMXCC1 从机协同运行时，则从机将会定期轮询主机并自动备份主机的设定数据及日志，一旦从机未定时获得轮询主机的响应或主机未收到从机的轮询请求，将判定为机器发生故障或断线，此时仍正常运行的一方将透过用户设置之电子邮件，提醒管理员发生主机故障或从机故障事件。

用户可勾选以启用数据库复制功能中从机的故障转移功能，当 HMXCC1 主机发生故障时，从机将会自动取代故障的主机并以新主机的身分继续运作，故障的主机与新的从机则须由管理员后续手动进行移除与新增。本系统无论以手动或自动方式，皆能快速排除故障，令系统回复正常运行。

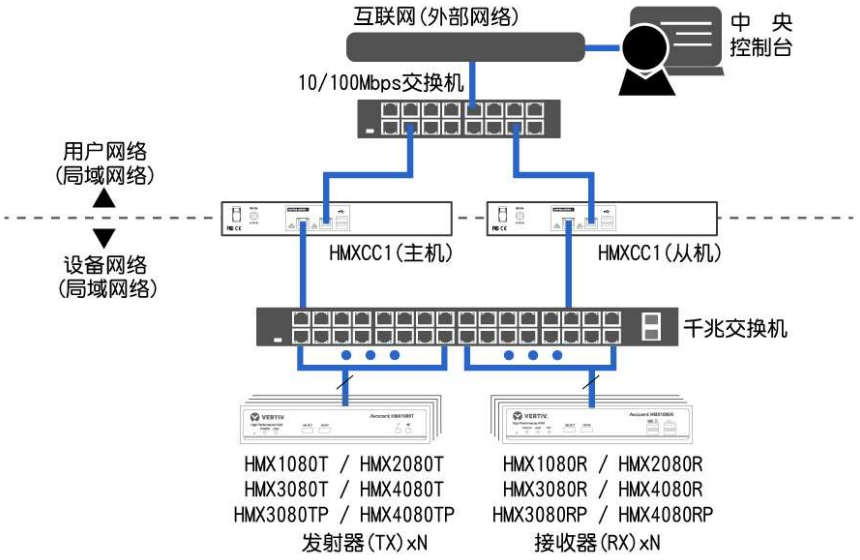


图7-15

7.2.1 HMXCC1 数据库复制故障转移功能未启用 (手动还原模式)

在<**复制**>选单中，请参考以下示范过程替换故障主机或故障从机。

(1)系统中仅单台控制器运行，无从机加入时。

在平日单机正常运行时，管理员需定期手动下载控制器内的设定数据与日志至计算机内，一旦控制器发生故障，管理员经人员通报系统故障后，将计算机内之设定数据与日志回存至新控制器内，移除故障机器后，将新的机器替换到故障机器相同的网络位置，开机后即可令系统恢复运行。

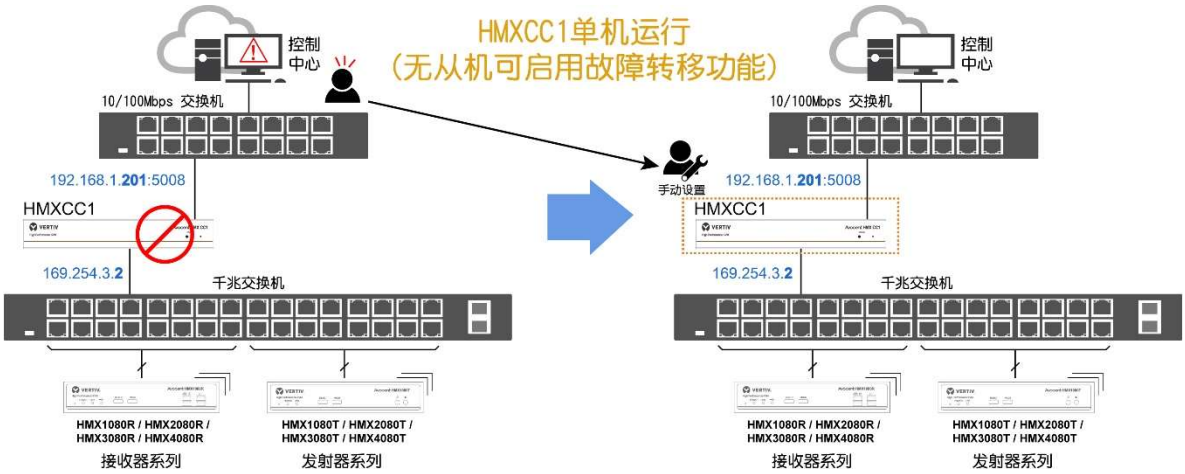


图7-16

(2)系统中主机与从机共同运行，从机未启用故障转移功能时。

当复制模式中用户不启用从机的故障转移功能时，在主机发生故障时从机将不会自动取代故障的主机，而仍需要管理员手动下载正常从机内的设定数据与日志至计算机内，再将计算机内之设定数据与日志回存至新的控制器内，移除故障主机后，将新的主机置回至与故障主机相同的网络环境，更改其用户/设备 IP, 重启新主机后即可令系统恢复运行。

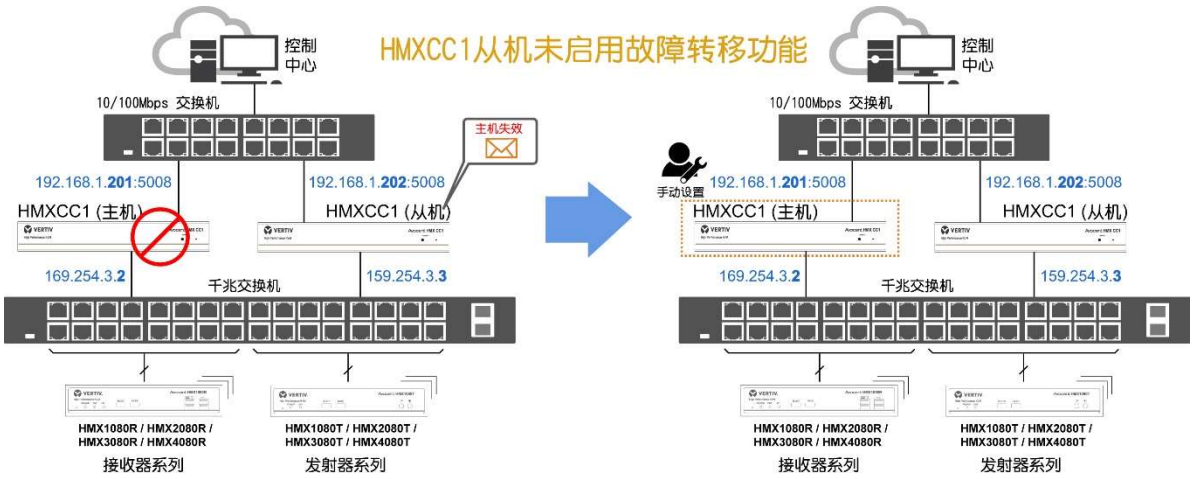


图7-17

如上，未启用故障转移功能时，当系统发生故障的第一时间皆须仰赖管理员进行手动设置与更换故障机器，用户可自行斟酌启用或不启用该功能。[注]：系统中一旦设定好主机与从机，从机便会定期自动备份主机上的设定数据与日志至本身，故障转移功能启用与否仅决定当主机故障时，从机需不需要立刻替代故障主机令系统回复运行。

下载机器设定数据备份至计算机与回存计算机的备份文件至机器

图7-18

1.进入**系统**>**配置备份**，从正常运行的 HMXCC1 机器上备份，并储存设定数据到 PC 上。

2.移除故障机器后，重新登入新的机器。进入**系统**>**配置备份**

3.恢复以前的配置时，需从 PC 上找到机器设定数据的备份文件(文件格式: hmxcc-backup-xxxxxx.sql.gz)，按下<**选择档案**>按钮选择想要的备份文件，再按下<**还原设置**>按钮即可完成故障排除。

a. 主机从机共同运行，主机发生故障时

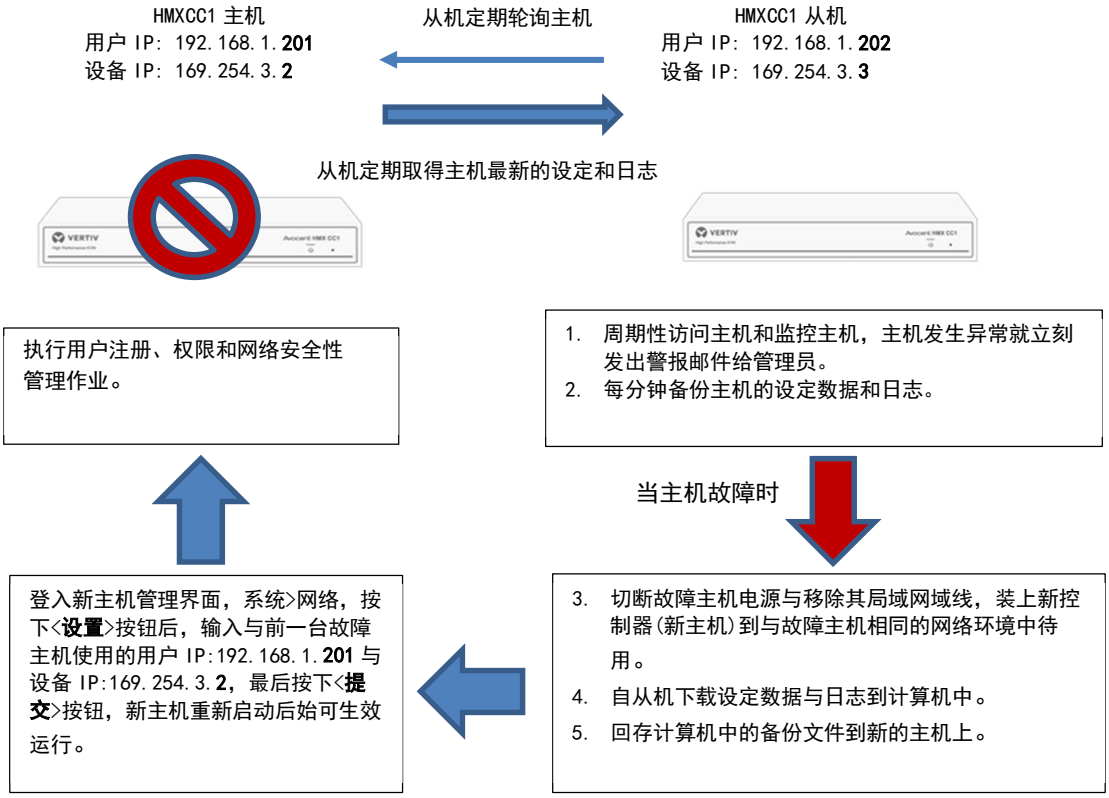
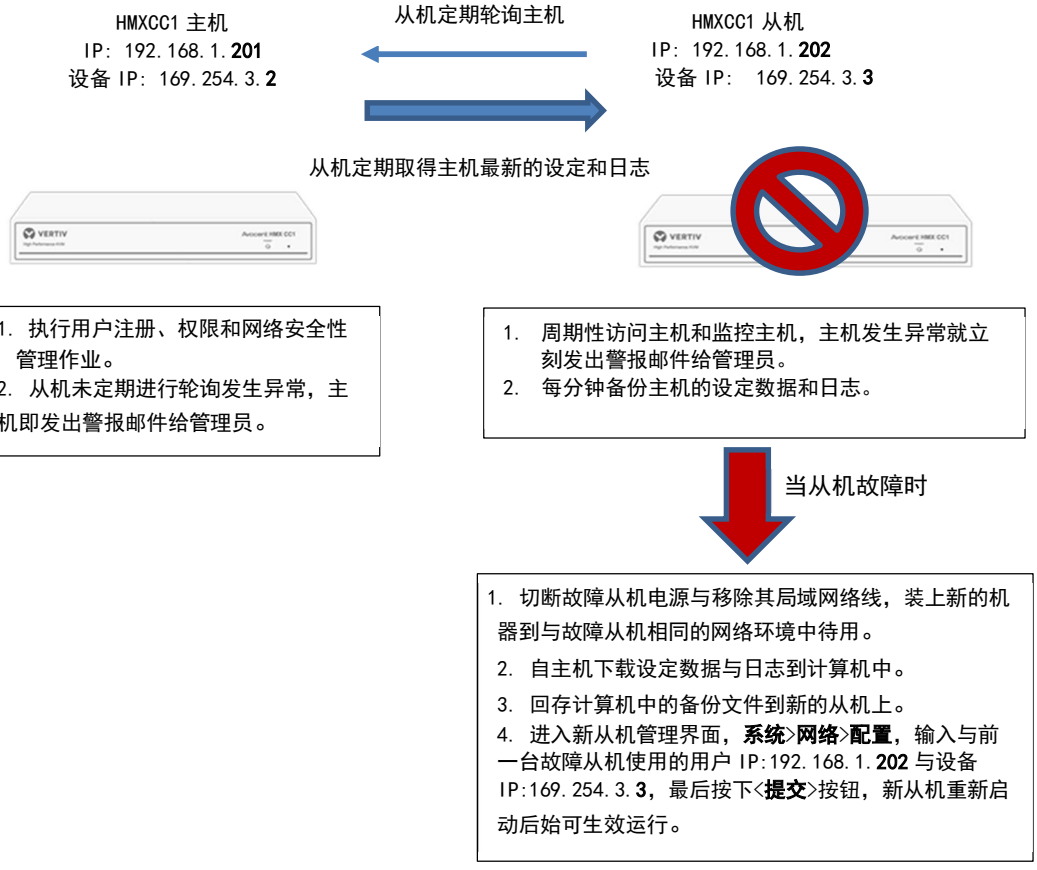


图7-19

b. 主机从机共同运行，从机发生故障时



7.2.2 HMXCC1 数据库复制故障转移功能启用 (自动还原模式)

在<**复制**>选单中，请参考以下示范过程替换故障主机或故障从机。

当主机发生故障时，从机启动故障排除程序，不需要额外的操作与确认，便可自动取代故障的主机成为新的主机。同时并以电子邮件通知管理员，以手动方式移除故障的主机并安装新的从机。

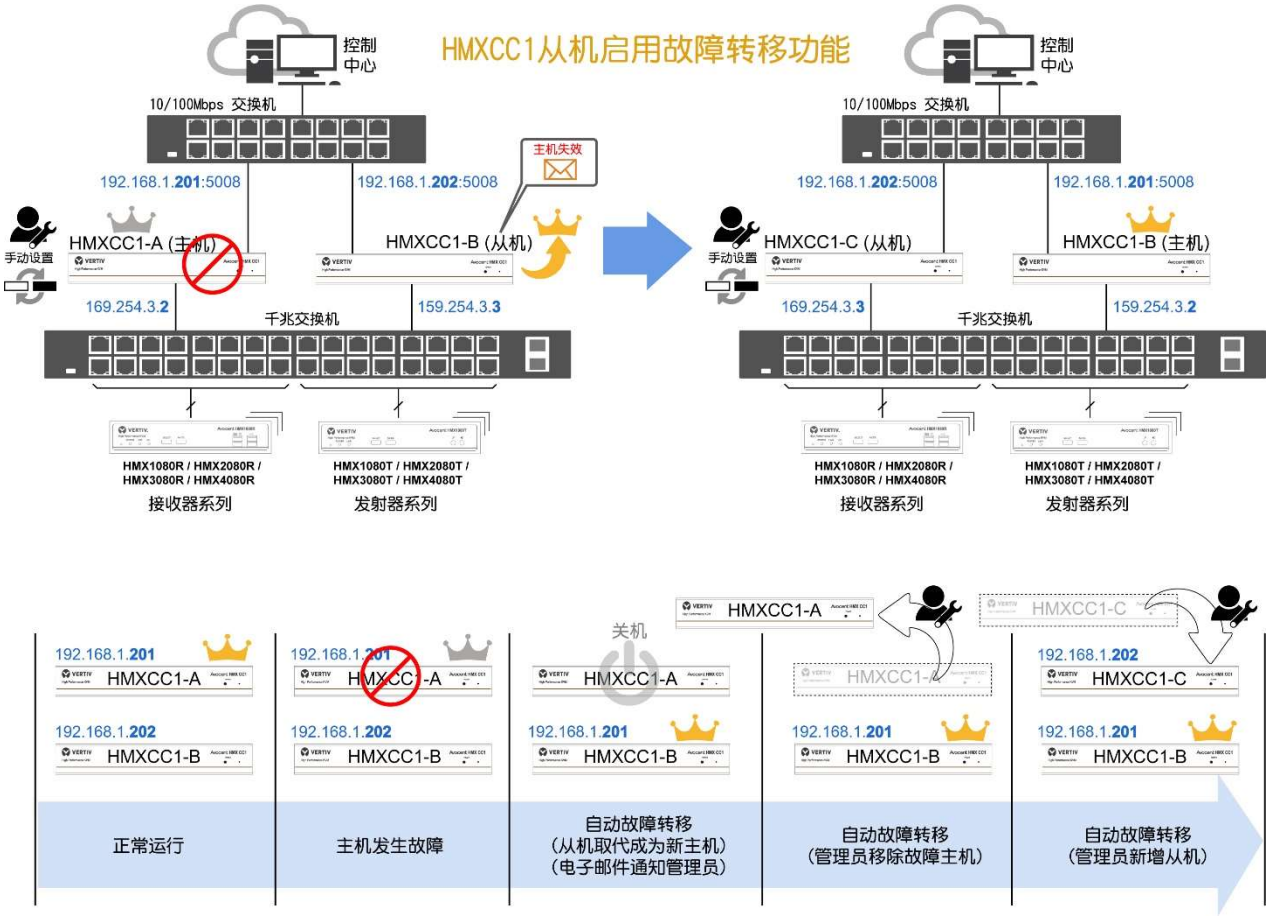


图7-21

将从机的<**复制设置**>故障转移功能设定为<**启用**>

图7-22

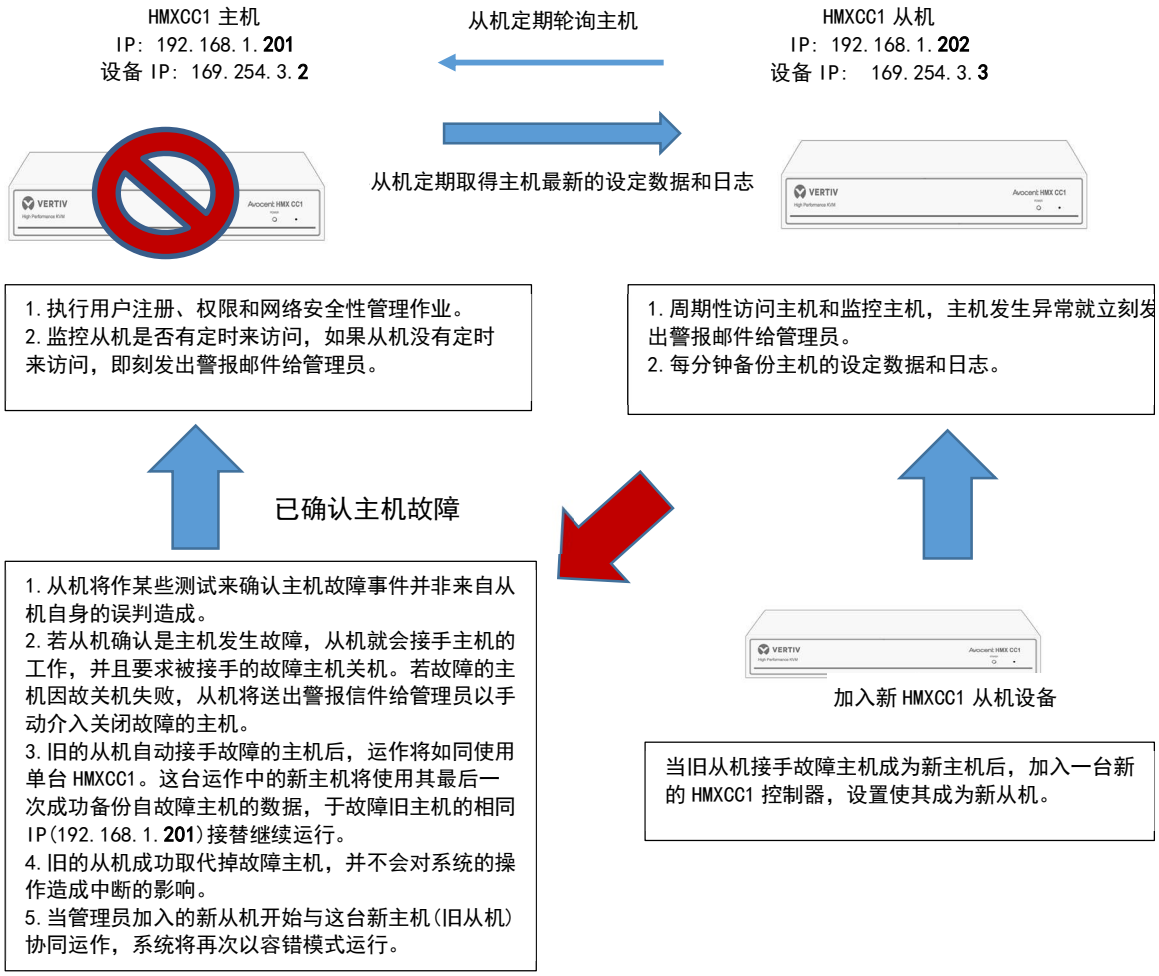
1.将新添加的控制器配置为从机。

2.到**系统**>**网络**，按下<**设置**>按钮，更改用户 IP(192.168.1.**202**)与设备 IP(169.254.3.**3**)设置。

3.到系统>复制，按下<**设置复制模式**>按钮，设定新的机器复制模式为从机，并填入主机的 IP(192.168.1.**201**)。

4.勾选<**故障转移功能启用**>选项，按下<**提交**>按钮，重新启动 HMXCC1 从机。

a.主机从机共同运行，主机发生故障时

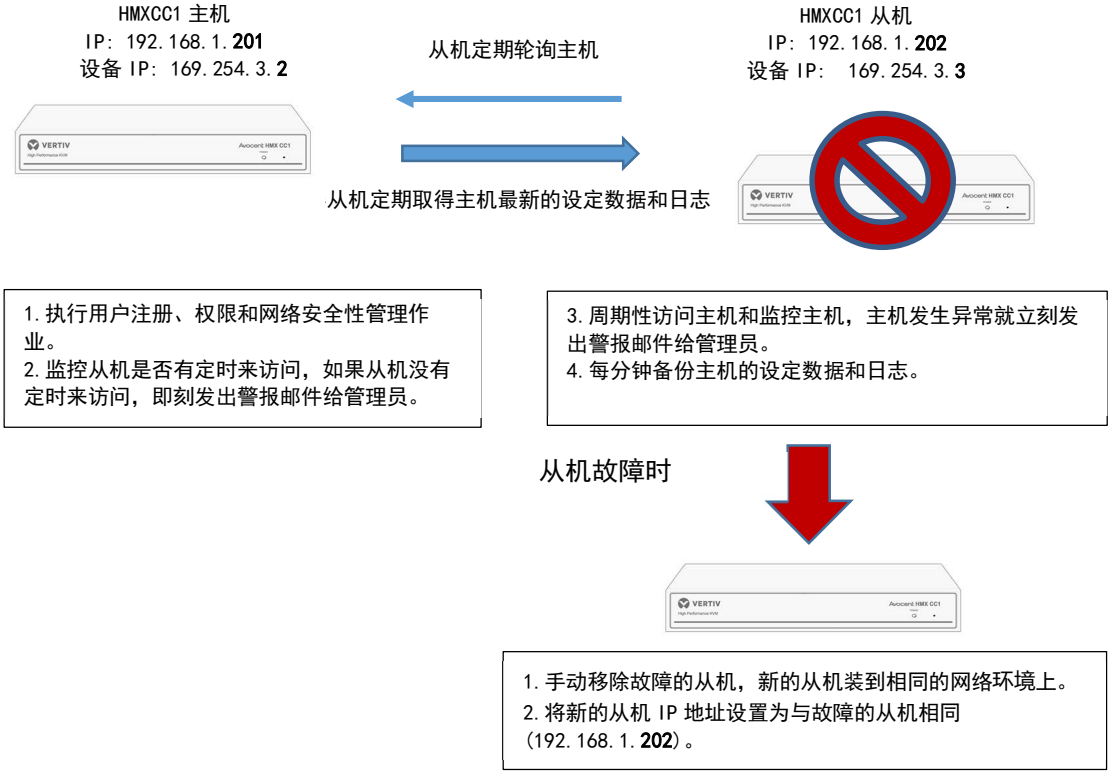


主机故障时，旧从机自动取代故障主机。管理员以手动移除故障主机后，加入一台新 HMXCC1 控制器成为新从机。

- 新 HMXCC1 控制器先以出厂默认管理界面登入 IP 地址(https://192.168.1.200:5008)登入，到**系统**>**网络**，按下<**设置**>按钮，更改用户端 IP(192.168.1.**202**)及设备端 IP(169.254.3.**3**)，与旧从机原先设置相同。
- 再到新 HMXCC1 控制器的<**复制模式**>中，设定其为<**从机**>，并填入主机的用户 IP(192.168.1.**201**)，最后按下<**提交**>按钮重启新 HMXCC1 控制器使其生效成为新从机。

图7-23

b.主机从机共同运行，从机发生故障时



从机故障时，管理员以手动移除故障从机，加入一台新的 HMXCC1 控制器成为新从机。

- 新 HMXCC1 控制器以出厂默认管理界面登入 IP 地址(https://192.168.1.200:5008)登入，到**系统**>**网络**，按下<**设置**>按钮，更改用户端 IP(192.168.1.**202**)及设备端 IP(169.254.3.**3**)，与旧从机原先设置相同。
- 再到<**复制模式**>中，设置为<**从机**>模式，并填入主机的用户 IP(192.168.1.**201**)，按下<**提交**>按钮重启新 HMXCC1 控制器使其生效成为新从机。

图7-24

第八章 声明及注意事项

8.1 FCC 声明

本设备经测试证明符合 FCC 规范第 15 节中关于 B 类数字设备的规定。这些限制旨在于商业环境中，可提供操作此设备时有害干扰之合理防护。本设备会产生、使用并辐射射频能量，如果未按照用户手册进行安装和使用，可能会对无线电通信造成有害干扰。当在住宅区内使用本设备造成可能的有害干扰时，用户需自费负改善干扰之责。

8.2 CE 声明

这是室内环境中的 B 类产品，此产品可能会引起无线电干扰，在这种情况下，用户需采取适当的对策因应。

8.3 版权声明

8.4 免责声明

本文件之产品信息内容如有修改或删除恕不另行通知。手册中产品的规格、程序与截图将视指导与解释需求随时修改或更新。

8.5 注意事项

(1) 请将本产品安装在最佳位置操作。

(2) 安装前，需断开所有连接至本产品的电源。

(3) 为避免电击，请勿打开本产品外壳。

(4) 运行前检查电源是否正常。

(5) 未经授权，不得擅自拆卸产品。

(6) 请务必使用包装随附的电源适配器。

8.6 技术支持

如对本产品需要进一步服务，请与您的本地供货商联系，或联系原厂维谛技术有限公司，取得更多的技术支持。

Vertiv.service@vertiv.com / Overseas.support@vertiv.com

*本手册内容如有更新恕不另行通知。

PN: 30-191-HMXCC1G2-04-VTV-20

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Content

Chapter 1 Product Overview

Avocent™ generation-II high-performance IP matrix KVM controller HMXCC1-G2 (hereinafter also referred to as HMXCC1 for short) and its platform enable setting up a Master-Slave Replication Failover Configuration. It manages an IP matrix KVM system built by the optional IP KVM HMX extender series which have satisfied various requirements in different application scenarios. HMXCC1 IP matrix KVM controller is a software-hardware integrated unit for managing and controlling registered IP KVM extenders via a web-based management interface. HMXCC1 has two independent network interfaces (User Network/Device Network). HMXCC1 and the registered HMX1080/HMX2080/HMX3080/HMX4080 devices are configured in the same Gigabit (1000Mbps) Ethernet device network. Computers can be connected to this IP matrix KVM system via transmitter units. HMXCC1 controller further supports LDAP, RADIUS remote authentication, 3-tier security levels for user accounts, 128-bit SSL for encrypted data transmission, User/TX/RX groups setup, thumbnail video source preview of all registered transmitters on web-based platform, RX I/O ports enabled and disabled management, log history records, etc.

System Network Topology Diagram

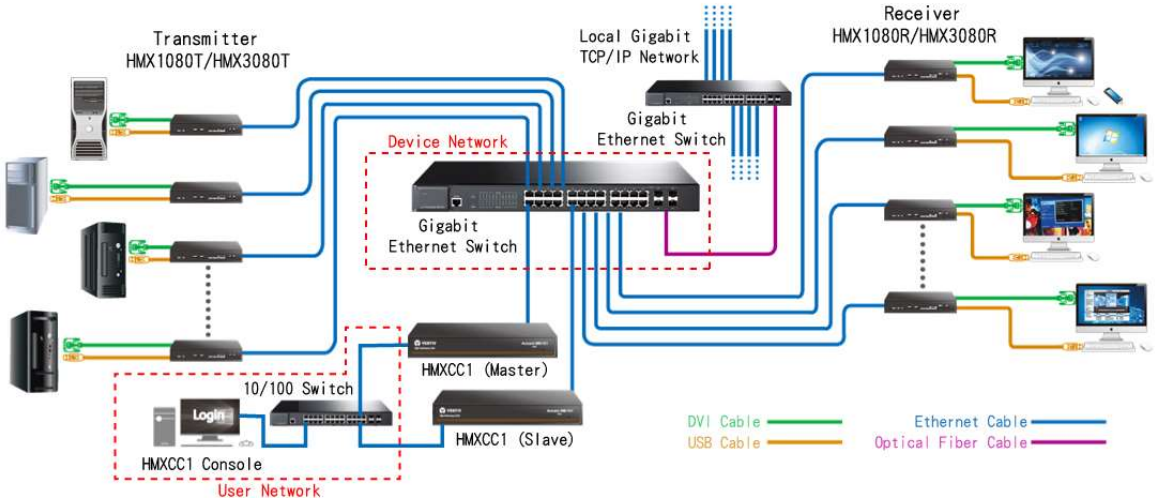


Figure 1-1

Chapter 2 Product Features

1. Allow to enable automatic failover recovery, redundant unit database backup and single unit manual backup/restoring.
2. Add and configure compatible IP KVM extender TX/RX unit series (HMX1080/HMX2080/HMX3080/HMX4080).
3. Support two independent network interfaces for respectively connecting to a User LAN and a Device LAN which guarantees highest level of information security.
4. Support managing communication between transmitter and receiver devices over Gigabit Ethernet.
5. Support web-based management interface with the browser at the control center console.
6. Support LDAP and RADIUS remote authentication protocols.
7. Record all logs of all events, login history and delete/sort event list.
8. Enable three application levels of user accounts – Administrator, Super User, and Simple User.

Administrator – Authorized with full rights to configure master controller unit and slave controller unit, configure the TX/RX devices, and configure users accounts.

Super User – Authorized with partial rights to change configuration apart from configuring users accounts.

Simple User – Authorized with permissions to access basic functions of open Remote Consoles.

9. Preview the video source thumbnails from the registered transmitter units.
10. Access to the receiver unit I/O ports (DVI-I, USB, RS232, Audio, Infrared) can be enabled/disabled separately.

Configuration Diagram of HMXCC1 controller and IP KVM extenders (transmitter/receiver)

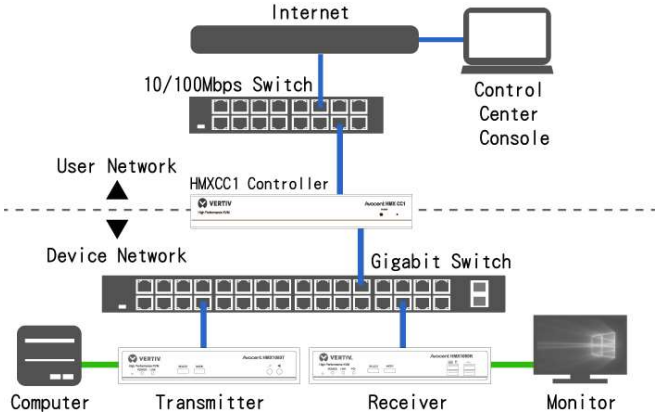


Figure 2-1

2.1 Product Specification

Table 2-1 Specification Table

Item	Specifications	Description
Model	HMXCC1-G2	IP Matrix KVM Centralized Controller (Generation-II)
IP KVM Extender (Optional)	Transmitter Models (TX)	HMX1080T/HMX2080T/HMX3080T/HMX3080TP/HMX4080T/HMX4080TP
	Receiver Models (RX)	HMX1080R/HMX2080R/HMX3080R/HMX3080RP/HMX4080R/HMX4080RP
Connector/Button	Power Switch x 1	Turn On/Off the Controller
	Power Socket x 1	Connect to Power Adapter
	Device Network Port x 1	Connect to the Gigabit LAN port
	User Network Port x 1	Connect to the 10/100Mbps LAN port
	Reset x 1	Reset the System to Factory Default
LED Indicator	Power LED x 1	Power Supply Status Indication
	Network Port LED x 2	Network Linkage Status Indication (Green)
		Network Speed Status Indication (Orange)
Power	Power Adapter Voltage	DC 12V
	Power Adapter Maximum Current	2A
	Power Consumption	3.5W
General	Temperature Limit	Operating Temperature: 0°C ~ 40°C
		Storage Temperature: -40°C ~ 70°C
	Humidity Limit	Storage Humidity: 0%~90% RH, non-condensing
	Dimensions (L x W x H)	300 x 164 x 44 mm (11.81 x 6.45 x 1.73 inches)
	Weight	1215g (2.67lb)
	Housing Material	Metal
	Color	Black
	Safety Certification	CE, FCC, RoHS, WEEE

*This specification is subject to change without prior notice.

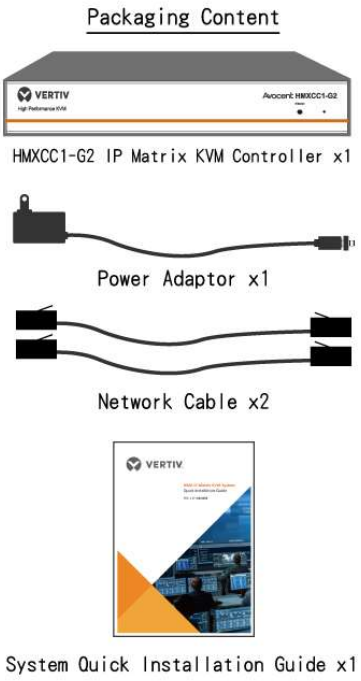
Chapter 3 Package Content

- ●HMXCC1-G2 Controller x 1
- ●Power Adapter (12V/2A) x 1
- ●Network Cable x 2
- ●System Quick Installation Guide x 1
- ●Transmitter Units (Optional)

HMX1080T
HMX2080T
HMX3080T
HMX3080TP
HMX4080T
HMX4080TP

- ●Receiver Units (Optional)

HMX1080R
HMX2080R
HMX3080R
HMX3080RP
HMX4080R
HMX4080RP



Chapter 4 System Overview and Getting Started

4.1 Hardware Appearance

4.1.1 Controller Front Panel

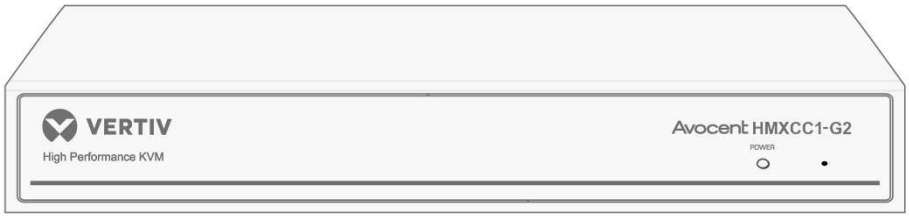


Figure 4-1

4.1.2 Controller Rear Panel

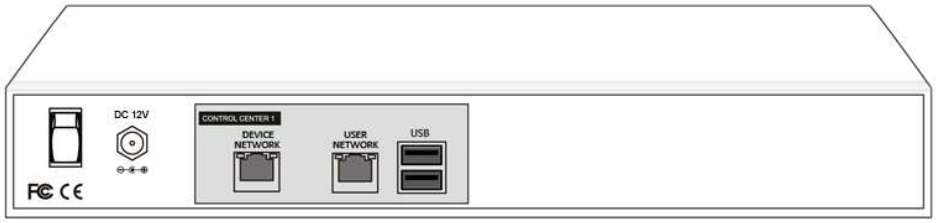


Figure 4-2

4.2 Hardware Overview

4.2.1 Hardware Interface and Connectors

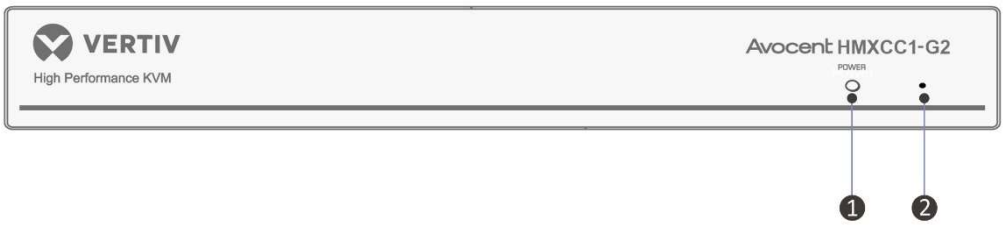


Figure 4-3 Front Panel

Table 4-1

Item	Specification Description
❶ Power LED Indicator (Green/Orange Dual Color LEDs)	Off: Power Adaptor not plugged-in or Power Switch not pressed and released.
	Green LED Flashing: Controller is ready, with <Replication Mode> set as <No Replication>.
	Green LED constantly ON: Controller is ready, with <Replication Mode> set as <Master>.
	Orange LED constantly ON: Controller is ready, with <Replication Mode> set as <Slave>.
❷ Reset Button	Press and hold it for 5 seconds then release it, to reset the controller to factory default.

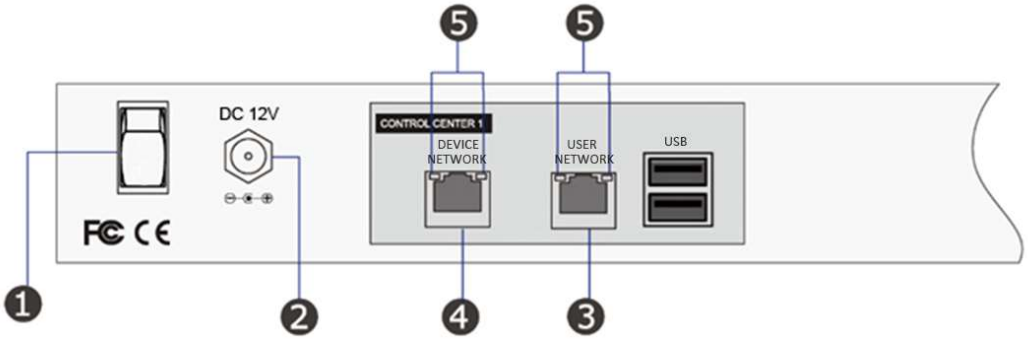


Figure 4-4 Rear Interface

Table 4-2

Item	Specification Description
❶ Power Switch	Momentary-type Power Switch. Press and release to turn on or turn off the HMXCC1 controller.
❷ Power Input	Attach with a DC 12V/2A Power Adaptor
❸ User Network Port	Connect to a RJ-45 Network Port of a 10/100Mbps Switch. Use the PC browser to access the Web-based Management Interface.
❹ Device Network Port	Connect to a RJ-45 Network Port of a Gigabit Switch.
❺ Network Port LED	<Left Green LED>
	Off: No Network Connection Flashing: Data transmission Proceeding
	<Right Orange LED>
	Constantly ON: The controller is operating at 1000Mbps Mode Off: The controller is operating at 10/100Mbps Mode

*The specification is subject to change without notice.

Single HMXCC1 Controller System Configuration

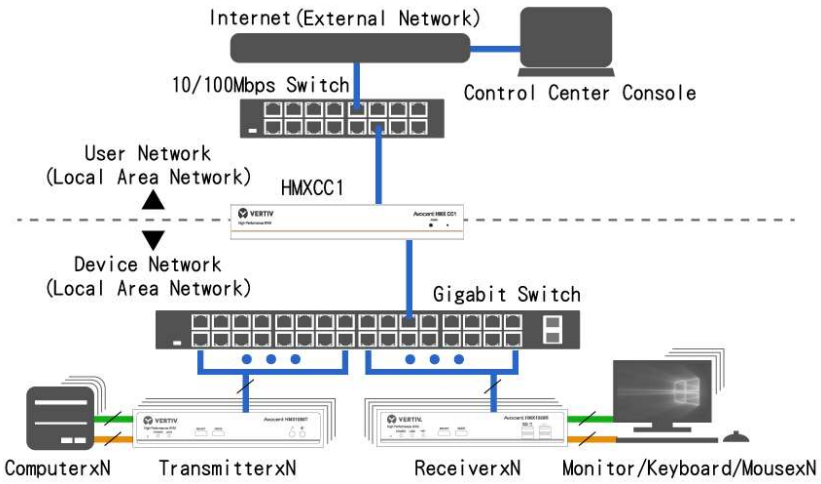


Figure 4-5

Dual HMXCC1 Controller System Configuration

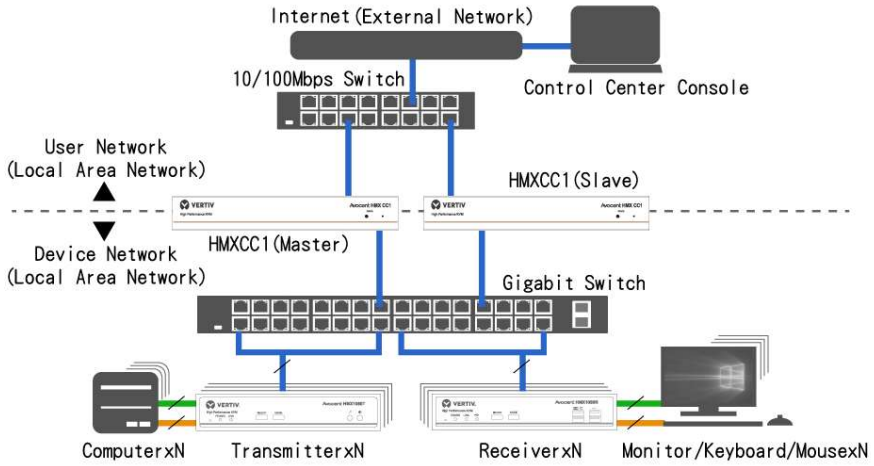


Figure 4-6

4.2.2 Compatible IP KVM Extender Devices (Optional)

The compatible IP KVM Extender units are optional, not included in the HMXCC1 shipping package. Followings are the specification overview of all compatible extender models. The

extender units include transmitters and receivers. For more details, please check the manuals

of HMX1080/HMX2080/HMX3080/HMX4080 series.

Compatible Transmitter Units (Gigabit ports): HMX1080T / HMX2080T

Compatible Transmitters Units (Gigabit ports + Optical ports): HMX3080T / HMX4080T

Compatible Transmitters Units (Gigabit ports + Optical ports + PoE): HMX3080TP / HMX4080TP

Compatible Receivers Units (Gigabit ports): HMX1080R / HMX2080R

Compatible Receivers Units (Gigabit ports + Optical ports): HMX3080R / HMX4080R

Compatible Receivers Units (Gigabit ports + Optical ports + PoE): HMX3080RP / HMX4080RP

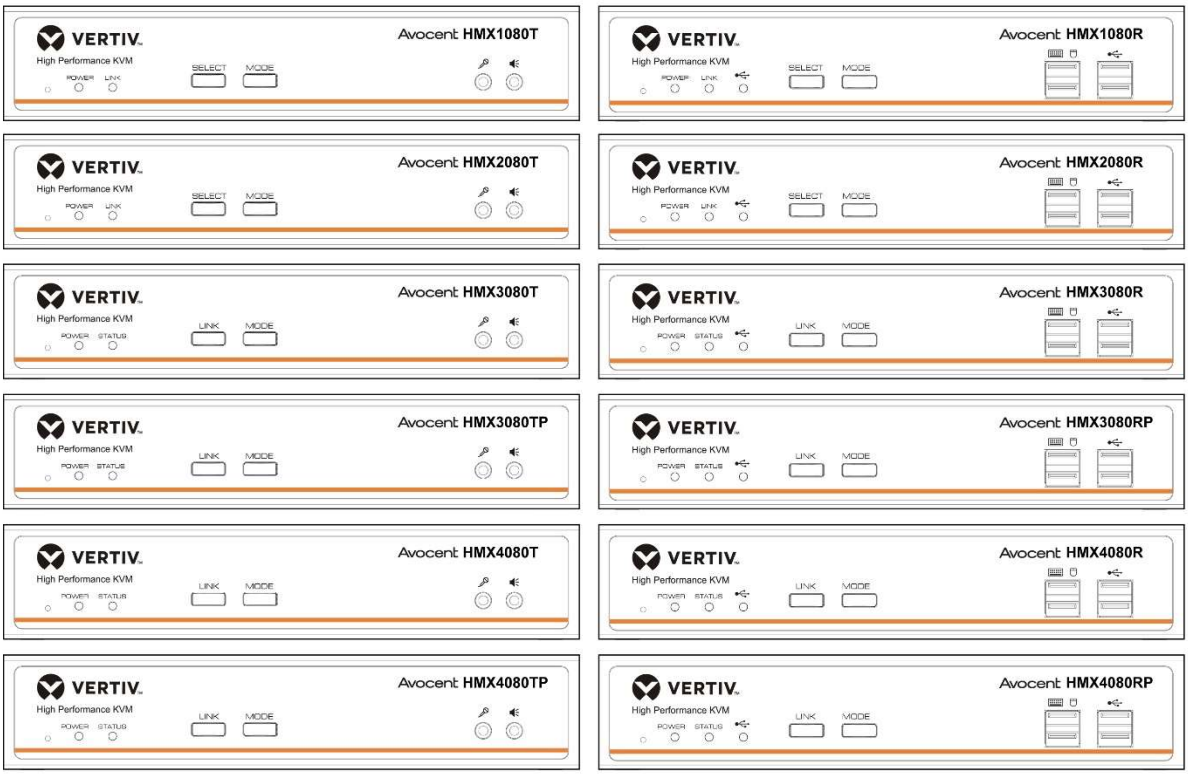


Figure 4-7 HMX1080/HMX2080/HMX3080/HMX4080 IP KVM Extender Series (Optional)

HMX1080T/HMX1080R Specifications (Optional)

Table 4-3 HMX1080T/HMX1080R Specifications (Optional)

Model	HMX1080T	HMX1080R
Component Type	Transmitter (TX)	Receiver (RX)
Connector	USB-B Female x 2	USB-A Female x 2 (Keyboard/Mouse)
	DVI In Port x 1	USB-A Female x 2 (USB Devices)
	DVI Out Port (Loop-back) x 1	DVI Out Port x 1
	IR Out Jack x 1	IR In Jack x 1
	Mic. Jack (Front/Rear Panels) x 2	Mic. Jack (Rear Panels) x 1
	Speaker Jack (Front/Rear Panels) x 2	Speaker Jack (Rear Panels) x 1
	RJ45 LAN Ports x 2	RJ45 LAN Ports x 2
	RS-232 Female x 1	RS-232 Male x 1
	Power Jack x 1	Power Jack x 1
Push Button	Function Key x 2	Function Key x 2
LED Indicator	Red (POWER) x 1	Red (POWER) x 1
	Green (LINK) x 1	Green (LINK) x 1
		Yellow (USB) x 1
Dimension (L x W x H)	222 x 137 x 44 mm	222 x 137 x 44 mm
Weight	670g	660g
Resolution	1920 x 1200@60Hz	
Power Adapter	DC 5V	
Operating Temperature	0°C ~ 40°C	
Storage Temperature	-40°C ~ 70°C	
Operating Humidity	10% ~ 90% RH, non-condensing	
Storage Temperature	0% ~ 90% RH, non-condensing	
Enclosure Material	Metal	
Safety Certification	CE、FCC	

*This specification is subject to change without prior notice.

HMX2080T/HMX2080R Specifications (Optional)

Table 4-4 HMX2080T/HMX2080R Specifications (Optional)

Model	HMX2080T	HMX2080R
Component Type	Transmitter (TX)	Receiver (RX)
Connector	USB-B Female x 2	USB-A Female x 2 (Keyboard/Mouse)
	DVI In Port x 2	USB-A Female x 2 (USB Devices)
	DVI Out Port (Loop-back) x 2	DVI Out Port x 2
	IR Out Jack x 1	IR In Jack x 1
	Mic. Jack (Front/Rear Panels) x 2	Mic. Jack (Rear Panels) x 1
	Speaker Jack (Front/Rear Panels) x 2	Speaker Jack (Rear Panels) x 1
	RJ45 LAN Ports x 2	RJ45 LAN Ports x 2
	RS-232 Female x 1	RS-232 Male x 1
	Power Jack x 1	Power Jack x 1
Push Button	Function Key x 2	Function Key x 2
LED Indicator	Red (POWER) x 1	Red (POWER) x 1
	Green (LINK) x 1	Green (LINK) x 1
		Yellow (USB) x 1
Dimension (L x W x H)	222 x 137 x 44 mm	222 x 137 x 44 mm
Weight	760g	750g
Resolution	1920 x 1200@60Hz	
Power Adapter	DC 5V	
Operating Temperature	0°C ~ 40°C	
Storage Temperature	-40°C ~ 70°C	
Operating Humidity	10% ~ 90% RH, non-condensing	
Storage Temperature	0% ~ 90% RH, non-condensing	
Enclosure Material	Metal	
Safety Certification	CE、FCC	

*This specification is subject to change without prior notice.

HMX3080T/HMX3080TP/HMX3080R/HMX3080RP Specifications (Optional)

Table 4-5 HMX3080T/HMX3080TP/HMX3080R/HMX3080RP Specifications (Optional)

Model	HMX3080T / HMX3080TP	HMX3080R / HMX3080RP
Component Type	Transmitter (TX)	Receiver (RX)
Connector	USB-B Female x 2	USB-A Female x 2 (Keyboard/Mouse)
	DVI In Port x 1	USB-A Female x 2 (USB Devices)
	DVI Out Port (Loop-back) x 1	DVI Out Port x 1
	IR Out Jack x 1	IR In Jack x 1
	Mic. Jack (Front/Rear Panels) x 2	Mic. Jack (Rear Panels) x 1
	Speaker Jack (Front/Rear Panels) x 2	Speaker Jack (Rear Panels) x 1
	RJ45 LAN Ports x 2; (TP Model: One of the RJ45 LAN Ports is with PoE function)	RJ45 LAN Ports x 2; (RP Model: One of the RJ45 LAN Ports is with PoE function)
	SFP Optical Module Socket x 2	SFP Optical Module Socket x 2
	RS-232 Female x 1	RS-232 Male x 1
	Power Jack x 1	Power Jack x 1
Push Button	Function Key x 2	Function Key x 2
LED Indicator	Red (POWER) x 1	Red (POWER) x 1
	Green (STATUS) x 1	Green (STATUS) x 1
		Yellow (USB) x 1
Dimension (L x W x H)	222 x 137 x 44 mm	222 x 137 x 44 mm
Weight	870g	862g
Resolution	1920 x 1200@60Hz	
Power Adapter	DC 5V	
Operating Temperature	0°C ~ 40°C	
Storage Temperature	-40°C ~ 70°C	
Operating Humidity	10% ~ 90% RH, non-condensing	
Storage Temperature	0% ~ 90% RH, non-condensing	
Enclosure Material	Metal	
Safety Certification	CE、FCC	

*This specification is subject to change without prior notice.

HMX4080T/HMX4080TP/HMX4080R/HMX4080RP Specifications (Optional)

Table 4-6 HMX4080T/HMX4080TP/HMX4080R/HMX4080RP Specifications (Optional)

Model	HMX4080T / HMX4080TP	HMX4080R / HMX4080RP
Component Type	Transmitter (TX)	Receiver (RX)
Connector	USB-B Female x 2	USB-A Female x 2 (Keyboard/Mouse)
	DVI In Port x 2	USB-A Female x 2 (USB Devices)
	DVI Out Port (Loop-back) x 2	DVI Out Port x 2
	IR Out Jack x 1	IR In Jack x 1
	Mic. Jack (Front/Rear Panels) x 2	Mic. Jack (Rear Panels) x 1
	Speaker Jack (Front/Rear Panels) x 2	Speaker Jack (Rear Panels) x 1
	RJ45 LAN Ports x 2; (TP Model: One of the RJ45 LAN Ports is with PoE function)	RJ45 LAN Ports x 2; (RP Model: One of the RJ45 LAN Ports is with PoE function)
	SFP Optical Module Socket x 2	SFP Optical Module Socket x 2
	RS-232 Female x 1	RS-232 Male x 1
	Power Jack x 1	Power Jack x 1
Push Button	Function Key x 2	Function Key x 2
LED Indicator	Red (POWER) x 1	Red (POWER) x 1
	Green (STATUS) x 1	Green (STATUS) x 1
		Yellow (USB) x 1
Dimension (L x W x H)	222 x 137 x 44 mm	222 x 137 x 44 mm
Weight	937g	918g
Resolution	1920 x 1200@60Hz	
Power Adapter	DC 5V	
Operating Temperature	0°C ~ 40°C	
Storage Temperature	-40°C ~ 70°C	
Operating Humidity	10% ~ 90% RH, non-condensing	
Storage Temperature	0% ~ 90% RH, non-condensing	
Enclosure Material	Metal	
Safety Certification	CE、FCC	

*This specification is subject to change without prior notice.

HMX1080T/HMX1080R (optional) Overview

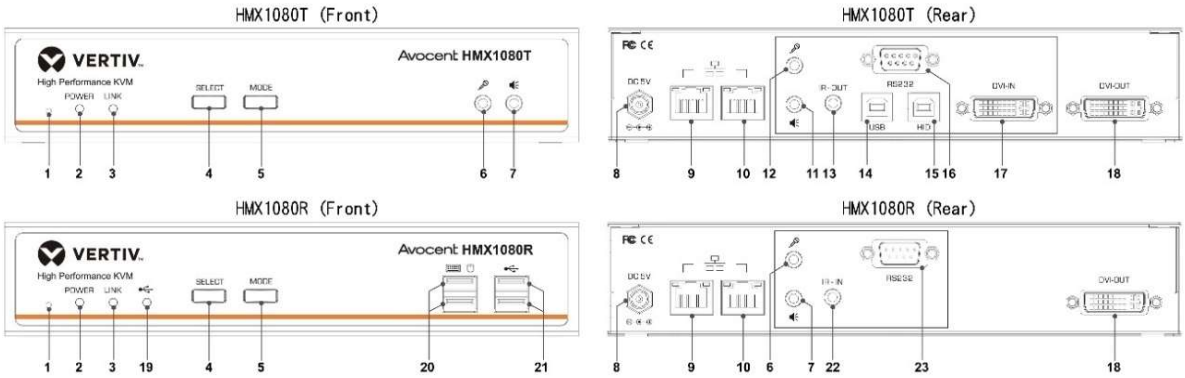


Figure 4-8

Table 4-7

No.	Item	Description
1	Reset button	Reset the unit.
2	POWER indicator	Lights up when power is on.
3	LINK indicator	Lights up when the connection between transmitter and receiver is active.

No.	Item	Description
4	SELECT button	Press to connect or disconnect between the transmitter and receiver.
5	MODE button	After using SELECT button to disconnect TX/RX, use this button to set Jumbo Frames.
6	Mic. input jack	Connect to a microphone.
7	Audio output jack	Connect to a speaker.
8	Power jack	Connect to the power adapter.
9	LAN port 1	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
10	LAN port 2	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
11	Audio input jack	Connect to the audio output jack of PC.
12	Mic. output jack	Connect to the mic. input jack of PC.
13	IR output jack	Connect to the IR emitter.
14	USB Type-B connector	Connect to the host PC.
15	HID connector	Reserved.
16	RS-232 connector	Connect to the RS-232 port of PC.
17	DVI input connector	Connect to the DVI output of PC (Video Content: DVI-I (Analog + Digital)).
18	DVI output connector	Connect to a DVI monitor (Video Content: DVI-I (Analog + Digital)).
19	USB indicator	Lights up when a USB peripheral is connected.
20	USB Type-A connector	Connect to a USB keyboard and mouse.
21	USB Type-A connector	Connect to USB peripherals.
22	IR input jack	Connect to the IR receiver.
23	RS-232 connector	Connect to a RS-232 device.

HMX2080T/HMX2080R (optional) Overview

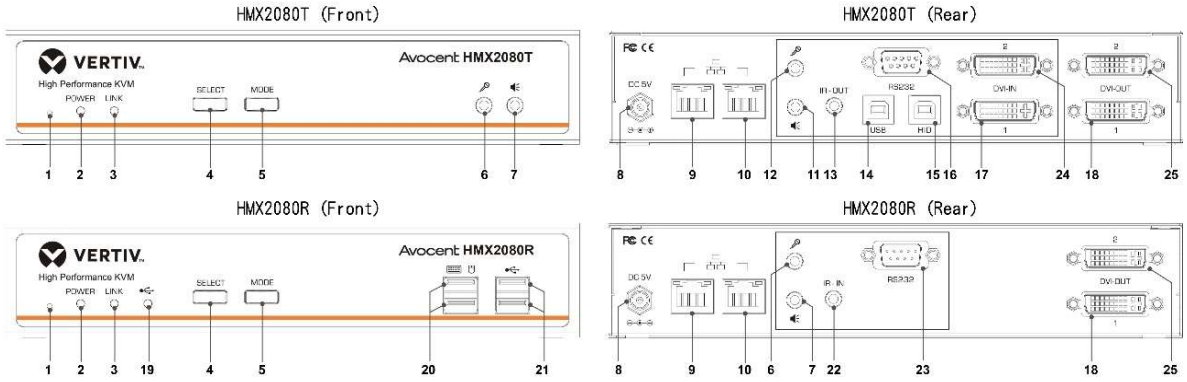


Figure 4-9

Table 4-8

No.	Item	Description
1	Reset button	Reset the unit.
2	POWER indicator	Lights up when power is on.
3	LINK indicator	Lights up when the connection between transmitter and receiver is active.
4	SELECT button	Press to connect or disconnect between the transmitter and receiver.
5	MODE button	After using SELECT button to disconnect TX/RX, use this button to set Jumbo Frames.
6	Mic. input jack	Connect to a microphone.
7	Audio output jack	Connect to a speaker.
8	Power jack	Connect to the power adapter.
9	LAN port 1	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
10	LAN port 2	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
11	Audio input jack	Connect to the audio output jack of PC.
12	Mic. output jack	Connect to the mic. input jack of PC.
13	IR output jack	Connect to the IR emitter.
14	USB Type-B connector	Connect to the host PC.
15	HID connector	Reserved.
16	RS-232 connector	Connect to the RS-232 port of PC.
17	DVI input connector 1	Connect to the DVI output of PC (Video Content: DVI-I (Analog + Digital)).

18	DVI output connector 1	Connect to a DVI monitor (Video Content: DVI-I (Analog + Digital)).
19	USB indicator	Lights up when a USB peripheral is connected.
20	USB Type-A connector	Connect to a USB keyboard and mouse.
21	USB Type-A connector	Connect to USB peripherals.
22	IR input jack	Connect to the IR receiver.
23	RS-232 connector	Connect to a RS-232 device.
24	DVI input connector 2	Connect to the DVI output of PC (Video Content: DVI-I (Analog + Digital)).
25	DVI output connector 2	Connect to a DVI monitor (Video Content: DVI-I (Analog + Digital)).

HMX3080T/HMX3080R/HMX3080TP/HMX3080RP (optional) Overview

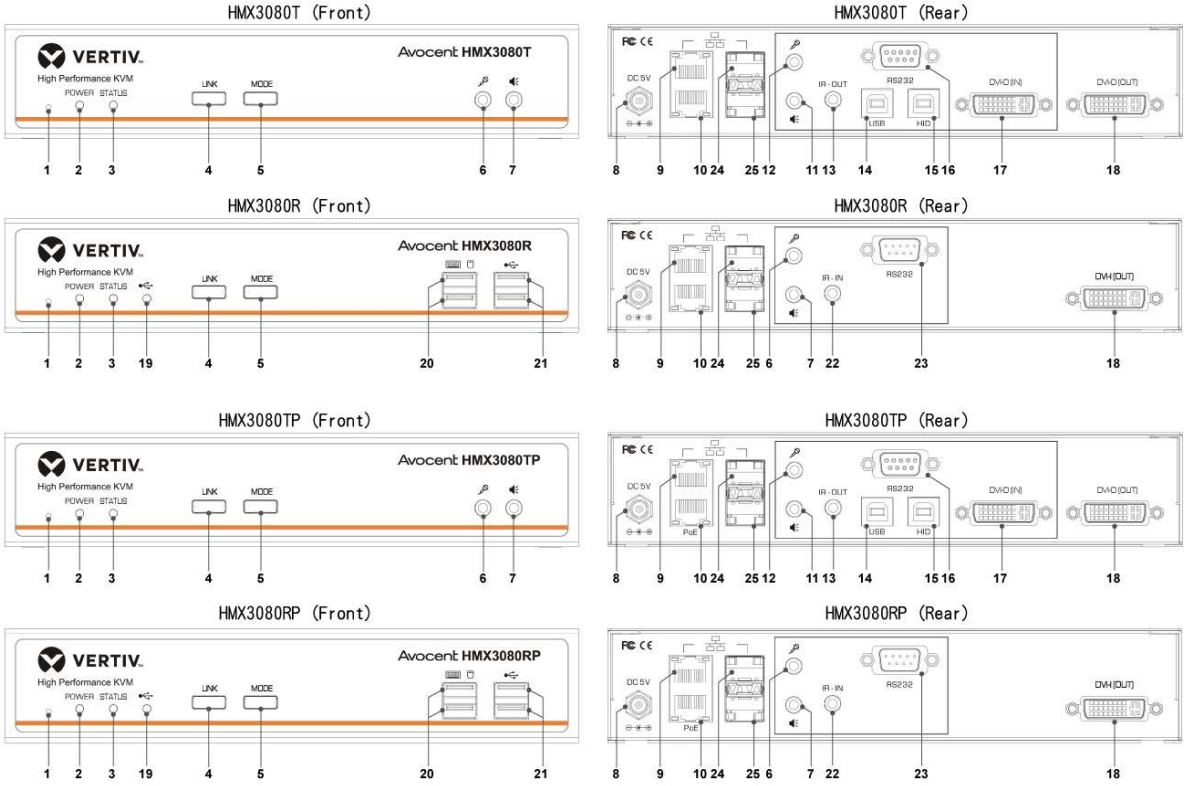


Figure 4-10

Table 4-9

No.	Item	Description
1	Reset button	Reset the unit.
2	POWER indicator	Lights up when power is on.
3	STATUS indicator	Lights up when the connection between transmitter and receiver is active.
4	LINK button	Press to connect or disconnect between the transmitter and receiver.
5	MODE button	After using LINK button to disconnect TX/RX, use this button to set Jumbo Frames.
6	Mic. input jack	Connect to a microphone.
7	Audio output jack	Connect to a speaker.
8	Power jack	Connect to the power adapter.
9	LAN port 1	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
10	LAN port 2	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch. (*HMX3080TP/HMX3080RP Models are with PoE)
11	Audio input jack	Connect to the audio output jack of PC.
12	Mic. output jack	Connect to the mic. input jack of PC.
13	IR output jack	Connect to the IR emitter.
14	USB Type-B connector	Connect to the host PC.
15	HID connector	Reserved.
16	RS-232 connector	Connect to the RS-232 port of PC.
17	DVI input connector	Connect to the DVI output of PC (Video Content: DVI-D Digital).

18	DVI output connector	Connect to a DVI monitor (Video Content: DVI-D Digital).
19	USB indicator	Lights up when a USB peripheral is connected.
20	USB Type-A connector	Connect to a USB keyboard and mouse.
21	USB Type-A connector	Connect to USB peripherals.
22	IR input jack	Connect to the IR receiver.
23	RS-232 connector	Connect to a RS-232 device.
24	SFP Optical Module Socket 1	Connect to a Fiber Cable via an optional Optical Module
25	SFP Optical Module Socket 2	Connect to a Fiber Cable via an optional Optical Module

HMX4080T/HMX4080R/HMX4080TP/HMX4080RP (optional) Overview

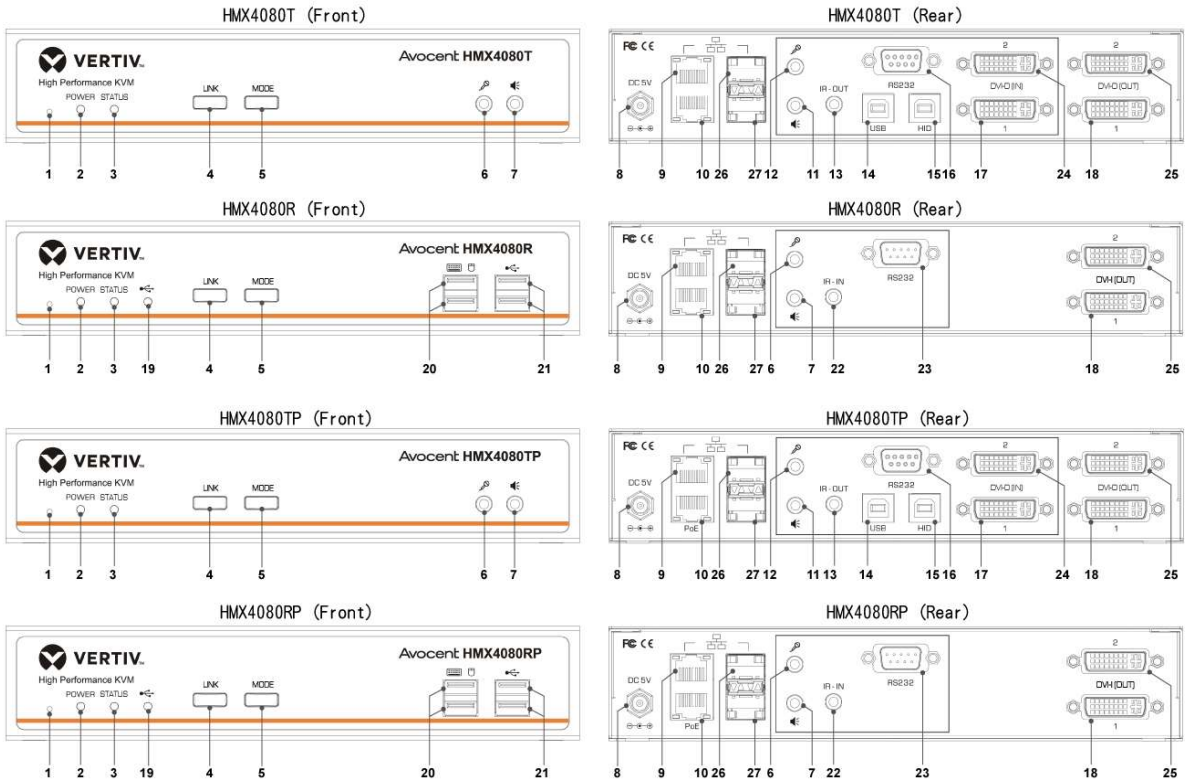


Figure 4-11

Table 4-10

No.	Item	Description
1	Reset button	Reset the unit.
2	POWER indicator	Lights up when power is on.
3	STATUS indicator	Lights up when the connection between transmitter and receiver is active.
4	LINK button	Press to connect or disconnect between the transmitter and receiver.
5	MODE button	After using LINK button to disconnect TX/RX, use this button to set Jumbo Frames.
6	Mic. input jack	Connect to a microphone.
7	Audio output jack	Connect to a speaker.
8	Power jack	Connect to the power adapter.
9	LAN port 1	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch.
10	LAN port 2	Connect to the LAN port of TX, RX, or a Gigabit Ethernet Switch. (*HMX4080TP/HMX4080RP Models are with PoE)
11	Audio input jack	Connect to the audio output jack of PC.
12	Mic. output jack	Connect to the mic. input jack of PC.
13	IR output jack	Connect to the IR emitter.
14	USB Type-B connector	Connect to the host PC.
15	HID connector	Reserved.

16	RS-232 connector	Connect to the RS-232 port of PC.
17	DVI input connector 1	Connect to the DVI output of PC (Video Content: DVI-D Digital).
18	DVI output connector 1	Connect to a DVI monitor (Video Content: DVI-D Digital).
19	USB indicator	Lights up when a USB peripheral is connected.
20	USB Type-A connector	Connect to a USB keyboard and mouse.
21	USB Type-A connector	Connect to USB peripherals.
22	IR input jack	Connect to the IR receiver.
23	RS-232 connector	Connect to a RS-232 device.
24	DVI input connector 2	Connect to the DVI output of PC (Video Content: DVI-D Digital).
25	DVI output connector 2	Connect to a DVI monitor (Video Content: DVI-D Digital).
26	SFP Optical Module Socket 1	Connect to a Fiber Cable via an optional Optical Module
27	SFP Optical Module Socket 2	Connect to a Fiber Cable via an optional Optical Module

4.3 System Deployment

The diagram illustrated here is only an example, the actual applications may vary. All illustrated computers, switches, transmitters, receivers, accessories, and monitors are for reference only and not included in the package. Make sure all the devices and peripherals are connected appropriately before using the HMXCC1 controller.

HMXCC1 controller provides two independent network interfaces, respectively connected to the 1000Mbps device network and the 10/100Mbps user network. The device network is where the IP matrix KVM extenders connect. The user can use the browser on the computer (as a control center console) connected to the user network to manage the TX/RX devices.

Note that the Gigabit device network that TX/RX devices connected to, and the user network are in different network segment, thus information safety of the device network is effectively secured.

Following diagrams respectively shows Systems deployed by single controller and two controllers.

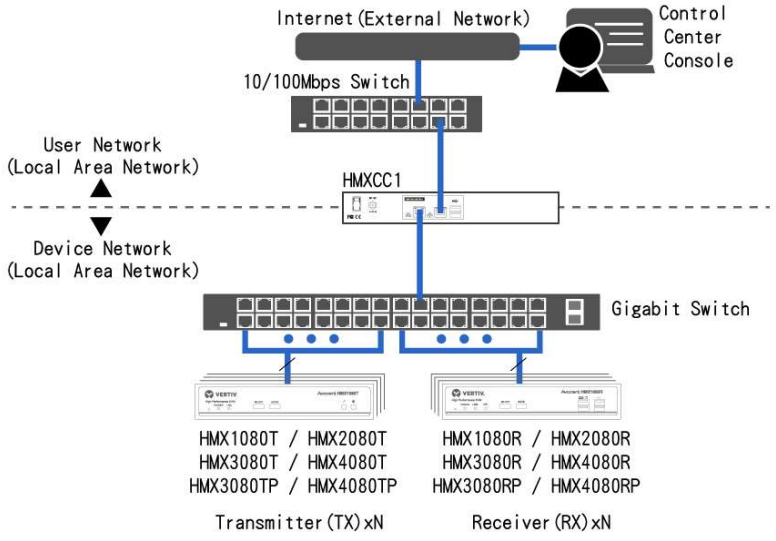


Figure 4-12 Single-Controller System Configuration

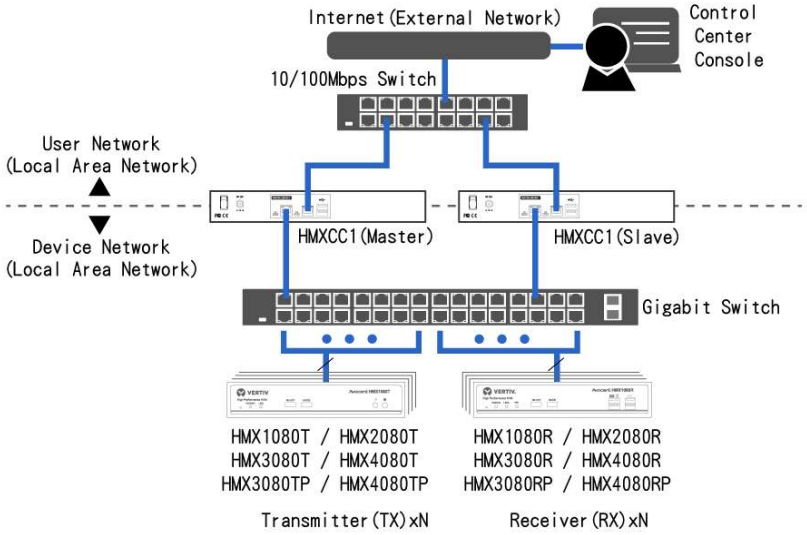


Figure 4-13 Dual-Controller System Configuration

4.4 Quick Installation Guide

Please follow the steps below to complete installation.

4.4.1 HMXCC1 Hardware Installation

1. Connect the power adaptor to the power jack of the HMXCC1. Check if the power jack is well inserted and the nut is locked.
2. Press and release its power switch to turn on the HMXCC1. After 30 seconds, the green Power LED will start flashing indicating the HMXCC1 is ready.
3. Connect the right-side USER NETWORK port on the rear panel of HMXCC1 to a 10/100Mbps switch which also connects with the computer running the Web-based Management Interface.
4. Connect the left-side DEVICE NETWORK port on the rear panel of HMXCC1 to a Gigabit switch which also connects to all managed TX/RX devices.
5. Connect a second HMXCC1 slave to the user network and the device network according to the same procedure as described. Please note that the user network segment (192.168.1.**x**) and the device network segment (169.254.3.**x**) are independent to each other.
6. Start to use the HMXCC1 controller.

Hardware Configuration

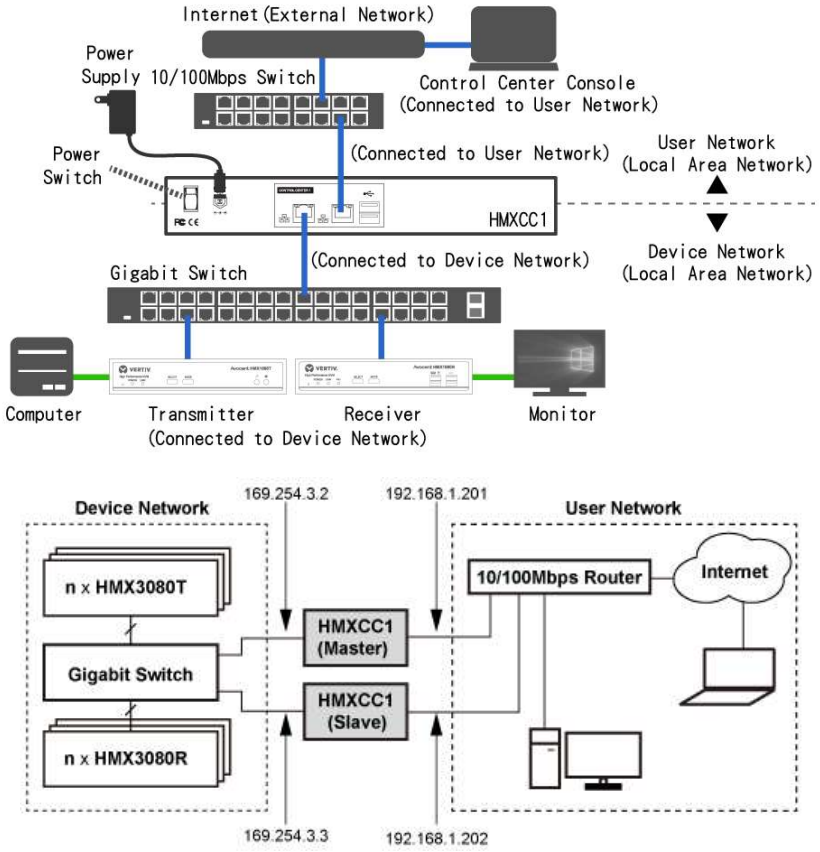


Figure 4-14

4.4.2 TX/RX Hardware Installation

1. Connect the power adaptor power jack to the power sockets of TX/RX units. Check if the power jacks are well inserted and the nuts are locked. The red POWER LED will start flashing then turn constantly ON indicating the unit is ready.

2. Connect the TX/RX units to the Gigabit switch, USB peripherals, monitors, and other devices.

3. Long press the SELECT button (for HMX1080/HMX2080 models)/LINK button (for HMX3080/HMX4080 models) at the front panel of the TX/RX units to connect them to the device network.

Hardware Configuration (e.g. Take HMX3080T/HMX3080R as an example)

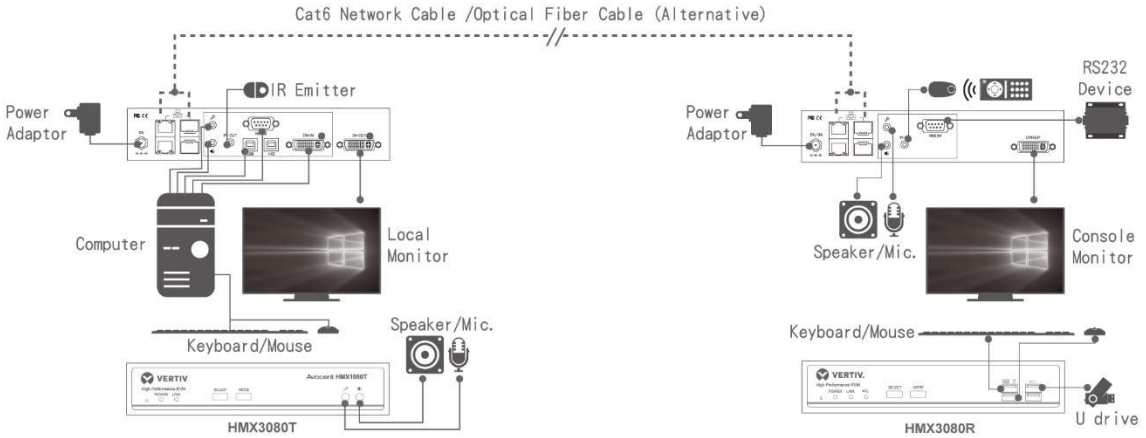


Figure 4-15

4.4.3 HMXCC1 Web-based Management Interface Setup

1. Run the browser (e.g. Chrome, Firefox, Internet Explorer, Safari) of a PC (as a control center console) connected to the user network. Input factory default management interface login IP address: (https://192.168.1.200:5008) at the browser to enter the web-based management interface.

2. After prompting the login page, input default Administrator username (admin), password (adminpass) to log in as an Administrator role. (Note: It is highly recommended immediately change the username/password of the administrator to enhance system safety.)

3. Set up Super-user and Simple-user user accounts.

4. Set up Super-user groups and Simple-user groups.

5. Go to **Dashboard**>**Detected Devices**, find the HMX1080/2080/3080/4080 TX/RX units on the device network. Register them and set up TX groups and RX groups, according to your needs.

6. Set up the allowed TX groups and RX groups for the Super-user groups and Simple-user groups.

7. At HMX1080R/HMX2080R/HMX3080R/HMX4080R consoles, use default hotkey (**Scroll Lock**, **Scroll Lock**, **Space**) to prompt the receiver OSD menu. After inputting the username and password at the login page, receiver OSD menu will display a TX list page including all connectable TX units according to user's authority.

8. From the TX (HMX1080T/2080T/3080T/4080T) list, double click any desired transmitter name to connect it to the currently operated receiver.

9. When the connection between any transmitter unit and receiver unit is successful, you could start to use the remote receiver console to access the PC connected to the transmitter.

For more details, such as User group, TX/RX group settings, please refer to online <**Help**> tab on the upper-right corner of each webpage of the HMXCC1 management interface.

4.4.4 Access HMXCC1 Web-based Management Interface

The factory default network settings for HMXCC1 are as follows:

IPv4 Address: 192.168.1.200:5008

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.254

DNS Server: 192.168.1.254

The default administrator account username and password:

Username: admin

Password: adminpass

1. Connect a PC to the user network having the same network segment as the HMXCC1 master unit. Use the PC browser (e.g. Chrome, Firefox, Internet Explorer, Safari) to enter the HMXCC1 web-based management interface.

2. Input default management interface login IP address (https://192.168.1.200:5008) at the address bar of the browser to prompt the following window. Next, input the default Administrator username (admin) and password (adminpass) as below.

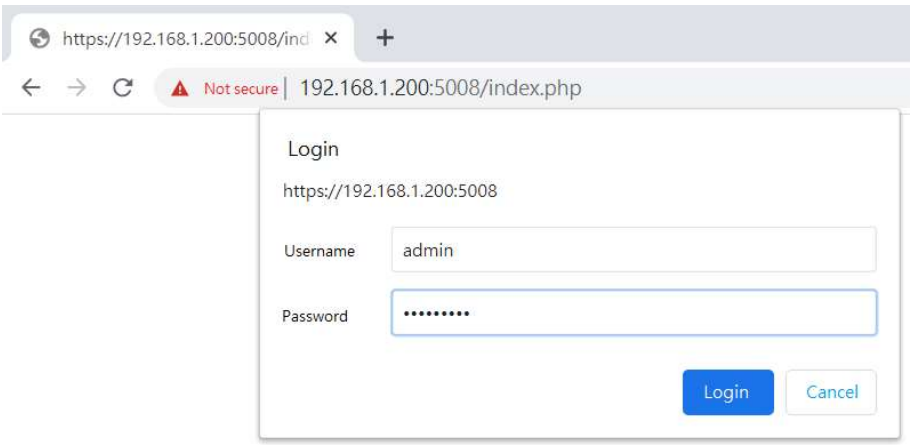


Figure 4-16

3. Change the HMXCC1 master unit User IP to 192.168.1.**201** and the device IP to 169.254.3.**2**. Go to **System**>**Replication**, set <**Replication Mode**> as <**Master**>.

4. Connect a HMXCC1 slave to user network/device network respectively having same network segments as the HMXCC1 master unit. Use the browser of the same PC to input the default management interface login IP address (https://192.168.1.200:5008). Next, input Administrator username (admin) and password (adminpass) to enter the HMXCC1 web-based management interface. Change the HMXCC1 slave unit User IP to 192.168.1.**202** and the device IP to 169.254.3.**3**.

5. Go to **Dashboard**>**Detected Devices**, register transmitters and receivers.

6. Go to **Devices**>**TX Groups**/**RX Groups** to set up TX groups and RX groups. Go to **Users**>**Group** to set up allowed TX groups and RX groups for User groups.

4.4.5 Access the Receiver OSD Menu

As a non-administrator (simple-user role) user wants to connect the currently operated receiver to a transmitter at the console, please use hotkey sequence: (**Scroll Lock**, **Scroll Lock**, **Space**) to prompt the OSD menu. Or double hit the left Ctrl key (**Ctrl, Ctrl**) to quickly prompt the OSD menu. After the user inputs his username and password, a TX list page will display all available TX units this RX unit can connect.

Figure 4-17 RX OSD Menu Login Page

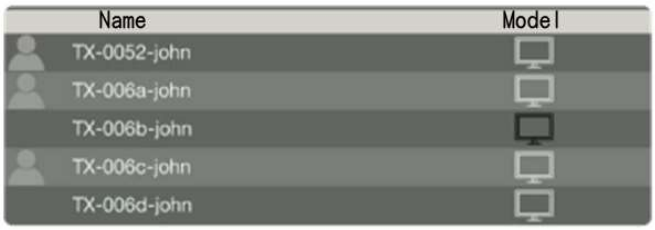


Figure 4-18 TX List Page on RX's OSD Menu

Chapter 5 Web-Management IP Matrix KVM Control Center

The HMXCC1 controller supports Web-based Management Interface. Its administrator can use the browser of a PC connected to the same user LAN that HMXCC1 controller is connecting, to deploy the system. Please input factory default management interface login IP address (https://192.168.1.200:5008) and login with default Administrator username (admin) and password (adminpass) as below. **[WARNING]: To secure the system safety, before you go on any operations, we highly recommend you change the default username and password of this administrator-level account immediately and keep this critical information safe and private to prevent unauthorized access** (Refer to section 5.4.1 for the user information change.) After logging into the control center interface successfully, user can select a preferred interface language (Mandarin/English/French) with the drop-down <**language**> menu. The default interface language is English. User can click on the HMXCC1 icon at the upper-left of any page anytime later to change the interface language as below.

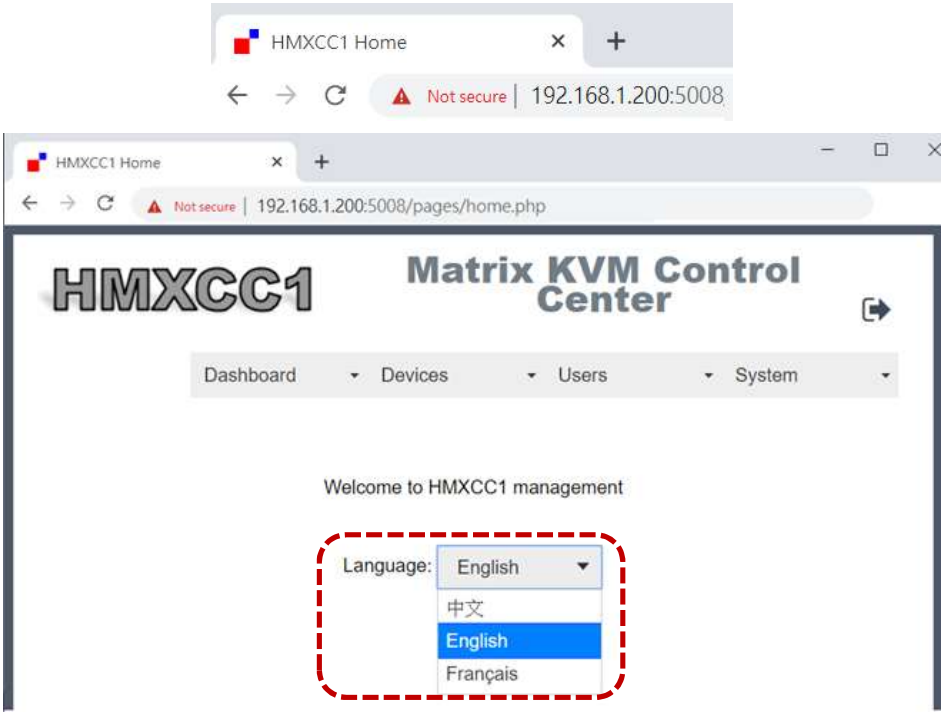


Figure 5-1 HMXCC1 logo>Interface Homepage>Language Selection

5.1 Main Menu

The drop-down main menu on the top lists the main functions of the control center interface including: <**Dashboard**>, <**Devices**>, <**Users**> and <**System**>. Select any of them to continue operation.

Figure 5-2 Interface Homepage>Drop-down Main Menu

Logout Button

To exit system, click the upper-right logout icon to enter the system logout confirmation page.

Figure 5-3 Logout Button

Online <**Help**> Tab

When entering any main functions <**Dashboard**>, <**Devices**>, <**Users**>, <**System**>, click <**Help**> tab to read online instructions.

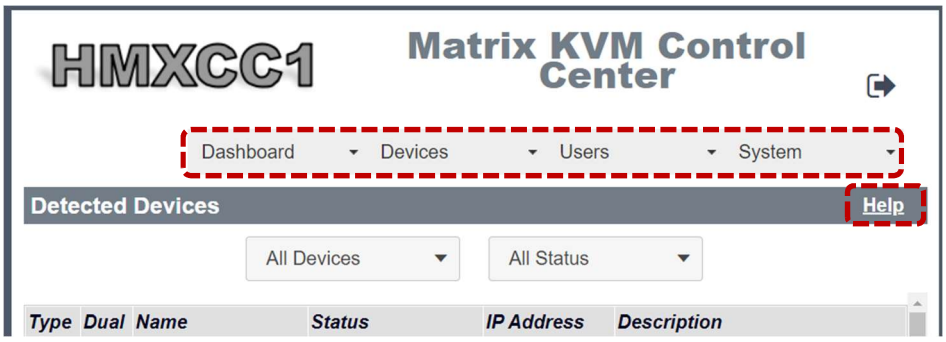


Figure 5-4 Main Menu and Online Help

User Configuration Buttons

User configuration buttons are located at the bottom of each functional page. Click them to open corresponding configuration windows.

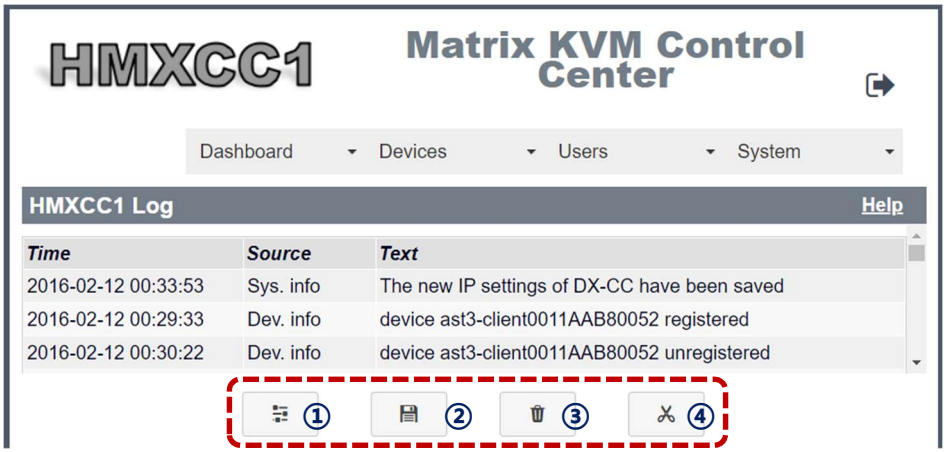


Figure 5-5

Table 5-2

No	Button	Name	Definition
1		Configure/Edit Group/Edit User	Confirm or edit items on the list
2		Save to File	Save to a specific format of file
3		Clear Records	Delete past logs
4		Display Filter	Display logs based on specific conditions
5		Refresh	Renew the page and status
6		Record option	Assign events to be recorded
7		Global Actions	Apply the settings for the interface globally

No	Button	Name	Definition
8		Add New	Add new one to the list
9		Delete	Delete the selected one in the list or unregistered a device
10		Rename	Change the name of a device
11		Update EDID data	Update the EDID data of the monitor attached to the receiver to the transmitter
12		About	Get the information
13		Connection	Connect a device to a group
14		Disconnection	Disconnect with a group
15		Download	Save and backup data for restoring to a new unit
16		Reboot	Restart a device
17		Report	Make a device to report

5.2 Dashboard

Click the drop-down menu <**Dashboard**> at the top of the interface to get the options as shown below: <**Detected Devices**>, <**User Connections**>, <**Group Connections**>, and <**TX Preview**>.

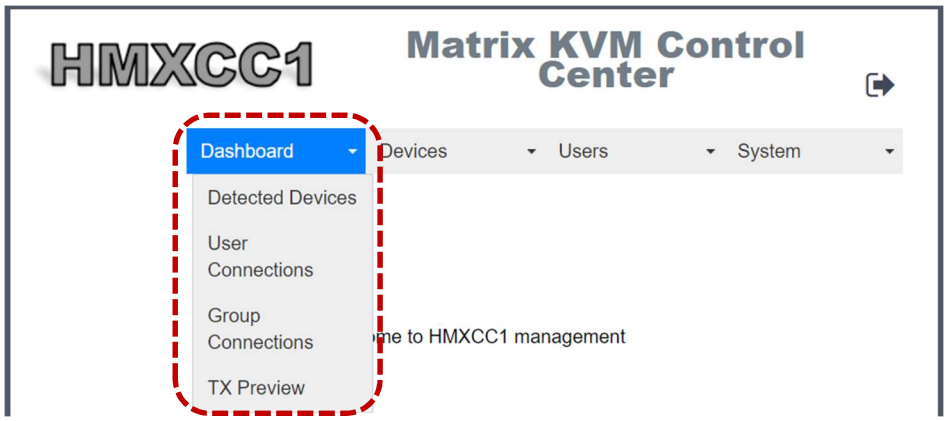


Figure 5-6 Main Menu>Dashboard

5.2.1 Detected Devices

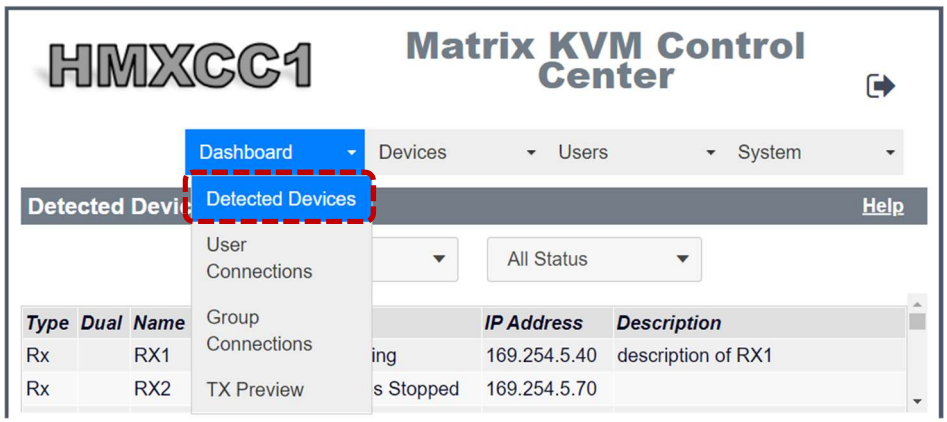


Figure 5-7 Dashboard>Detected Devices

This <**Detected Devices**> page lists all connected devices (receivers and transmitters) that HMXCC1 can see on the Device Network. These devices can be managed or unmanaged. Managed devices are those that are registered in the HMXCC1 database. Unmanaged devices are not yet registered ones. Those devices can be registered or unregistered anytime on user's demand. The list also shows the devices that were previously detected and registered but now temporarily not available on the LAN because they were being disconnected or powered off.

Global Actions:

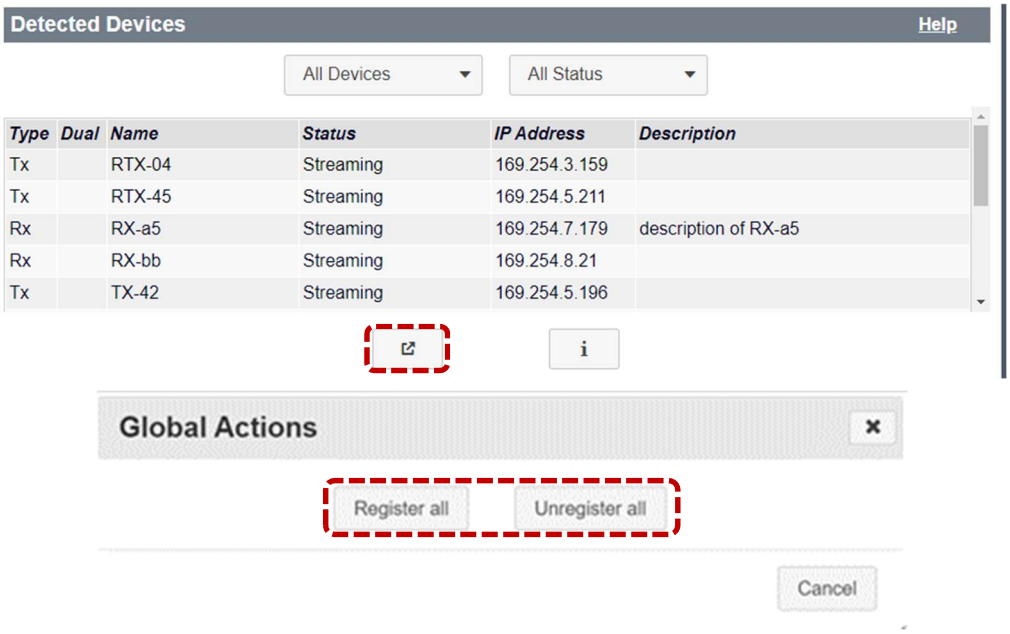


Figure 5-8 Dashboard>Detected Devices>Global Actions

The <**Global Actions**> button will only appear when no device is selected and will be disappear when a device is selected.

With the <**Global Actions**> button user can register all the devices that haven't been registered yet or unregister all the devices that have been registered.

Get Global Information of all devices

As no device is selected, click the <**Global Information**> button to get global information of all devices.

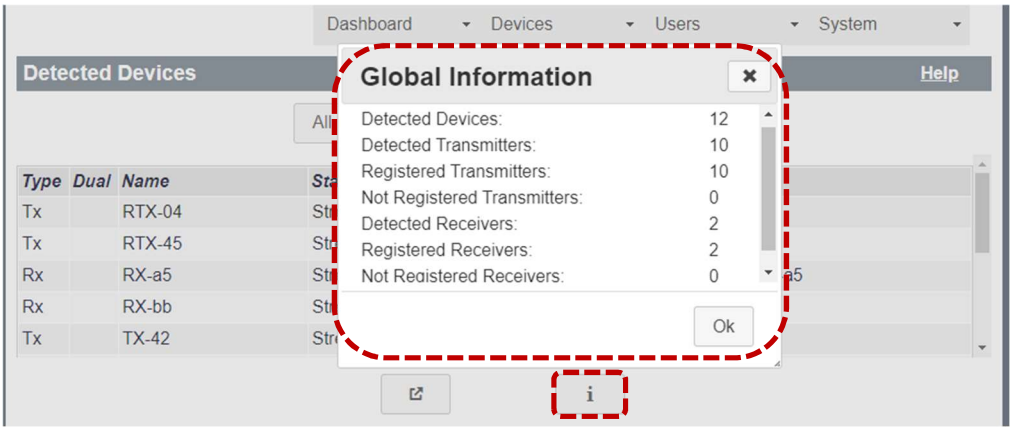


Figure 5-9 Dashboard>Detected Devices>Global Information

Get Device Information of a specific device

Click the <**Device Information**> button to get a specific device information.

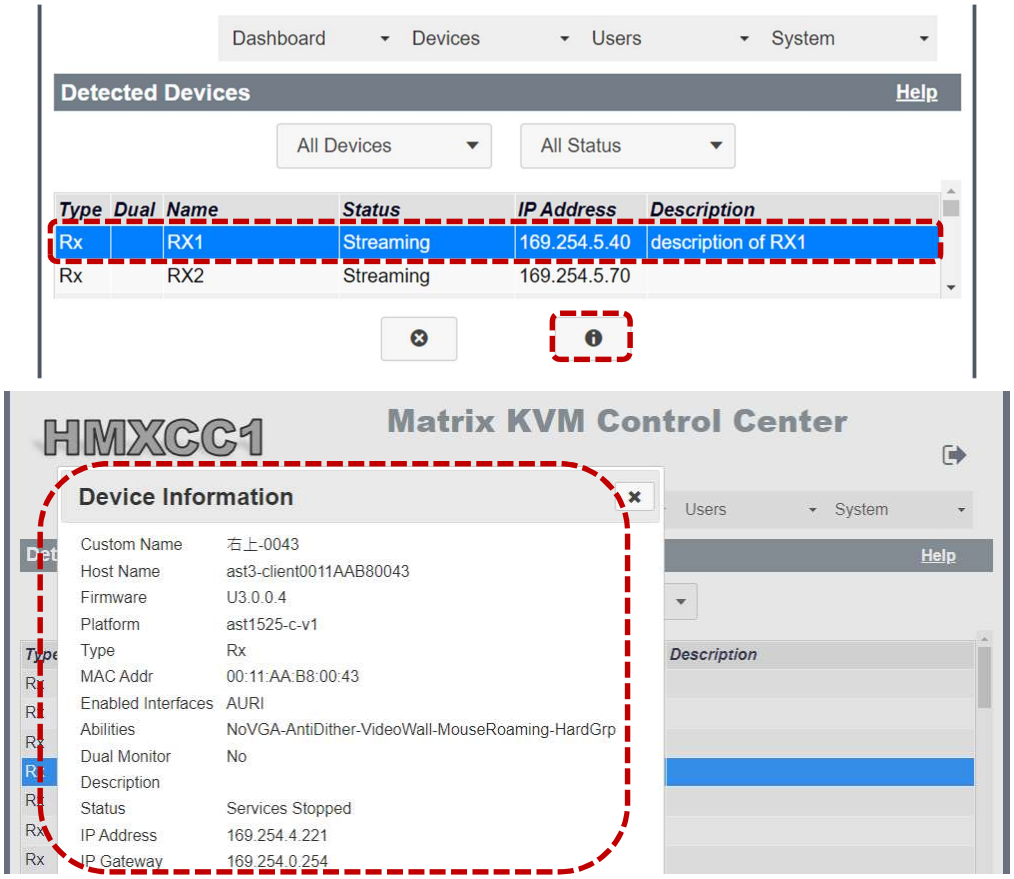


Figure 5-10 Dashboard>Detected Devices>Device Information

Registration and Unregistration

To select a device, simply click on the row of the device name on the list. Click again the same row to deselect it. When a device is selected you can click the <**device information**> button to get information about the selected device. If the selected device is unmanaged (unregistered), you may click the <**register**> button to register it, toggling its state to managed mode. If the device is managed, you may click the <**unregister**> button to unregister it.

5.2.2 User Connections

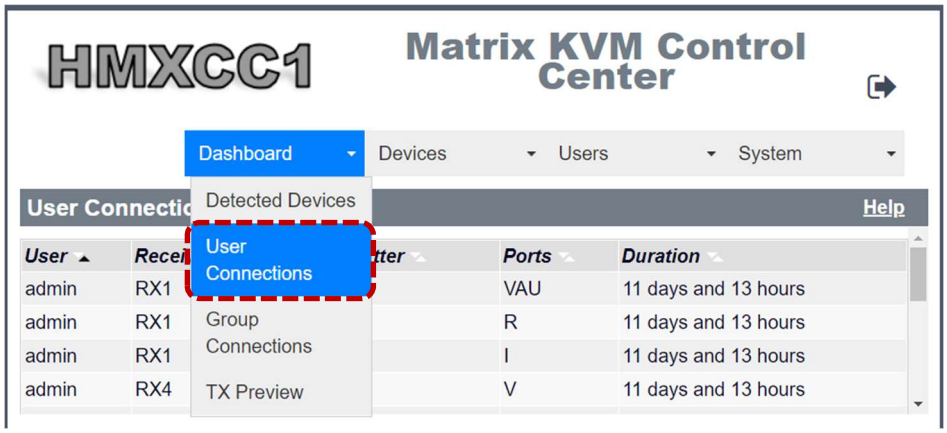


Figure 5-11 Dashboard>User Connections

This <**User Connections**> page lists all the connections between transmitters and user-logged-in receivers in real time. The list is refreshed every 5 seconds. The Ports column displays the ports involved in their corresponding connections. There are five I/O ports (V/A/U/R/I) for receivers and transmitters to interconnect separately.

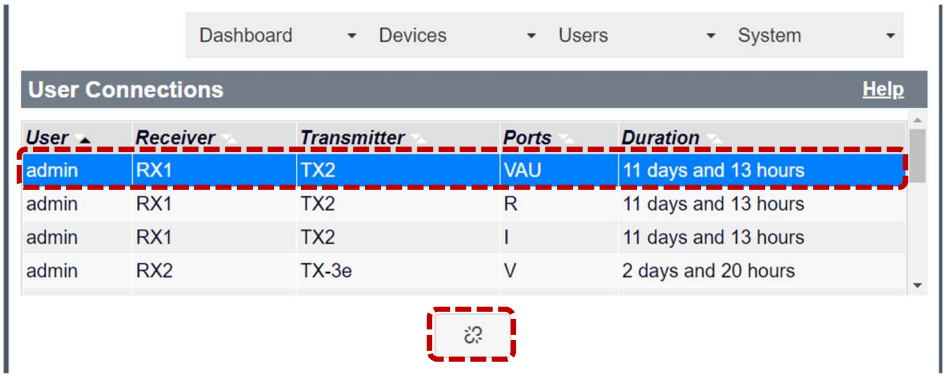


Figure 5-12

Select by clicking a row of a connection. Unselect it by clicking it again. Click the <**Connect**> button as you need to establish a physical connection and click the <**Disconnect**> button to disconnect a physical connection. As a user left his desk without logging out, the administrator can use this <**Disconnect** > button to terminate user's physical connection remotely.

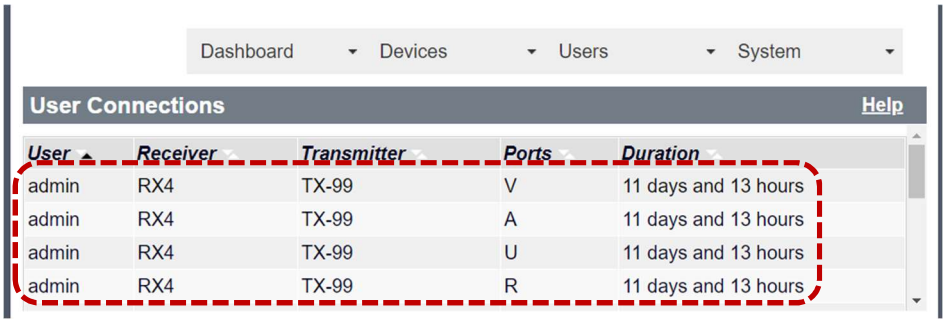


Figure 5-13

5.2.3 Group Connections

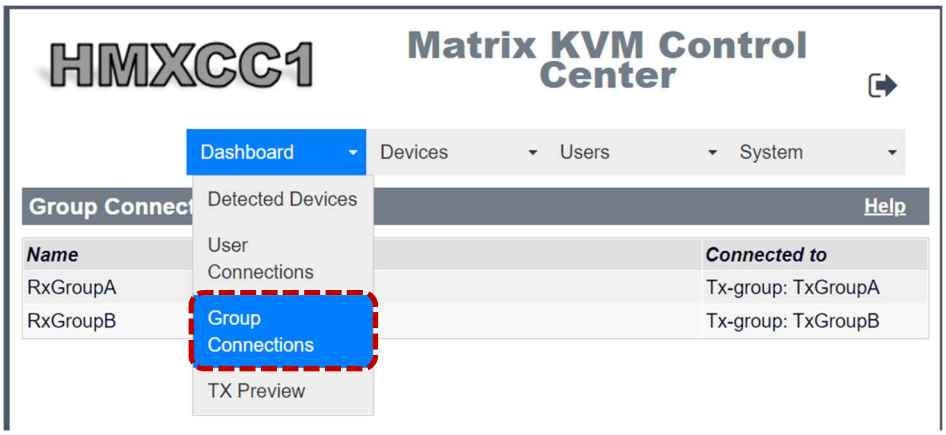


Figure 5-14 Dashboard>Group Connections

This <**Group Connections**> page is where you can see all active group connections and establish or terminate group connections. The group connections come in two types: receiver-group to single transmitter, or receiver-group to transmitter group. Select by clicking a specific receiver group and deselect it by clicking the receiver group again. As the receiver group is selected, click the <**Connect**> button to connect the receiver group to a specified transmitter or a transmitter group). As the connected receiver group is selected, click the <**Disconnect**> button to terminate its current connection.

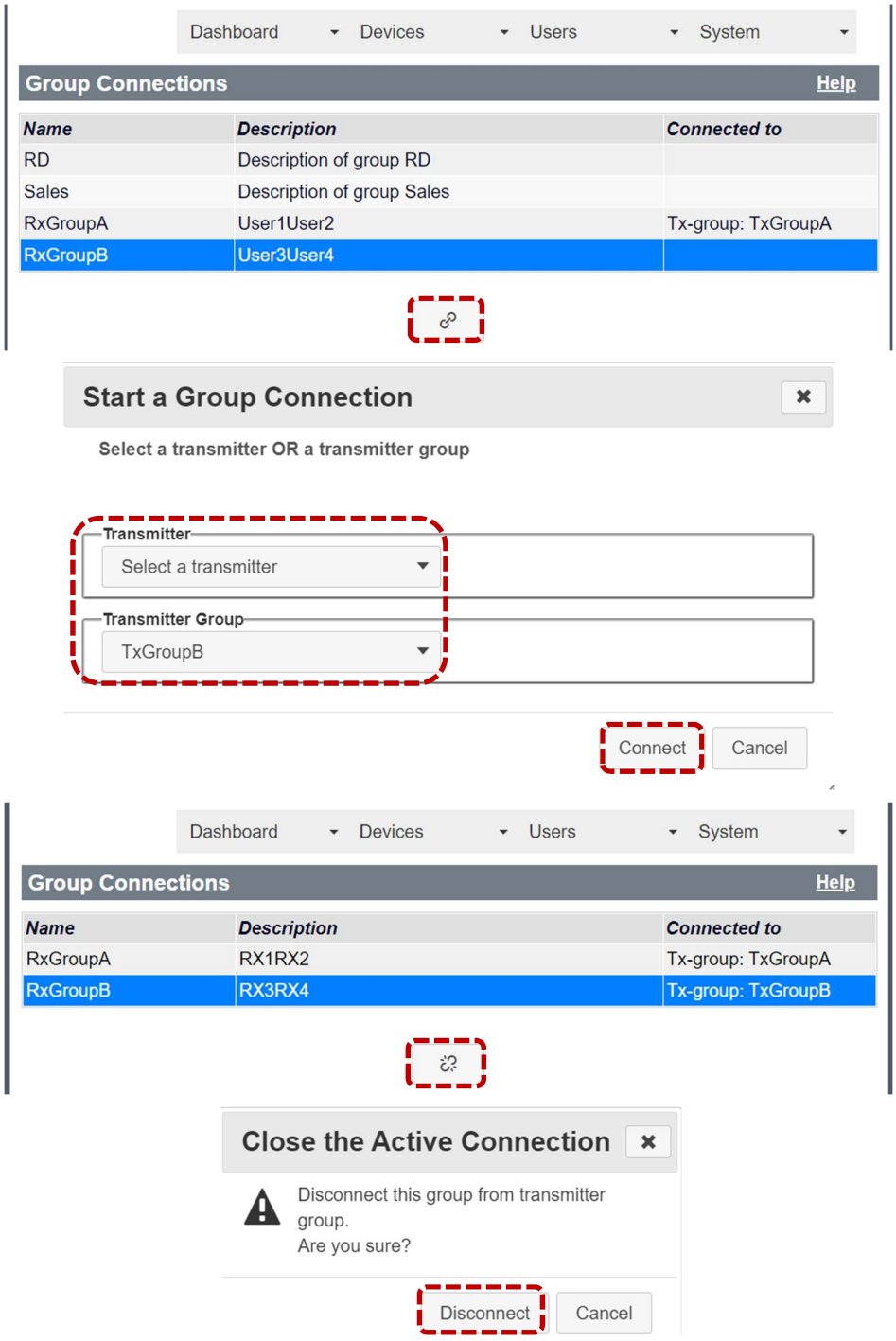


Figure 5-15 Group Connections>Disconnection

5.2.4 TX (Transmitter) Preview

This <**TX Preview**> page provides the video source thumbnails of all transmitters for user's preview.

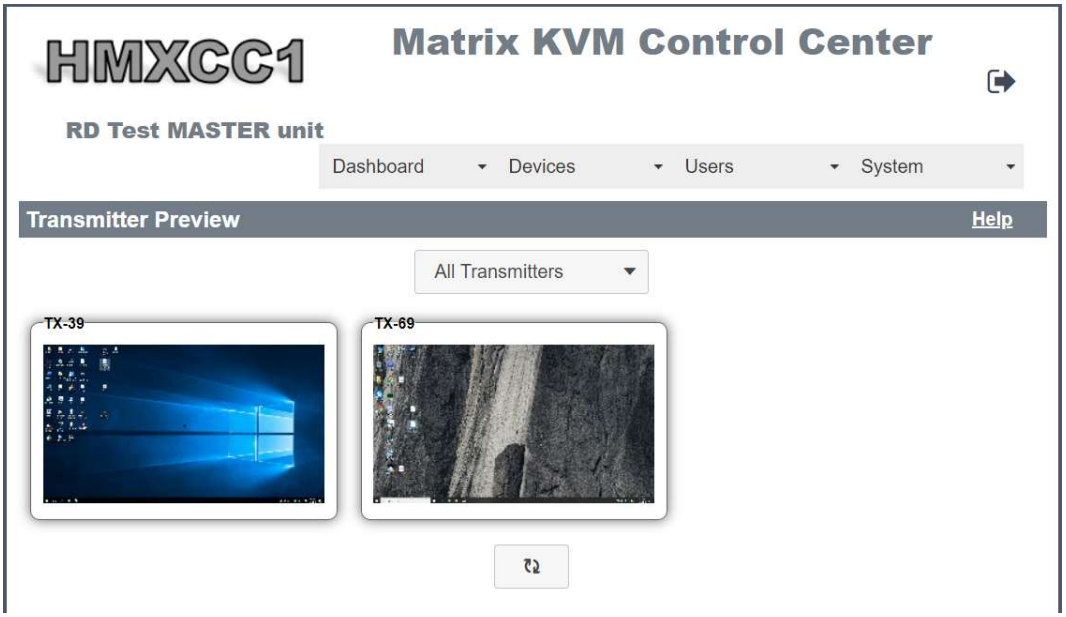


Figure 5-16 Main Menu>Dashboard>TX Preview

Online <**Help**> Tab

For Online help of <**Dashboard**> sections, please go to **Main Menu**>**Dashboard**, selecting any items and click the <**Help**> tab at the upper-right corner to get detailed instructions.

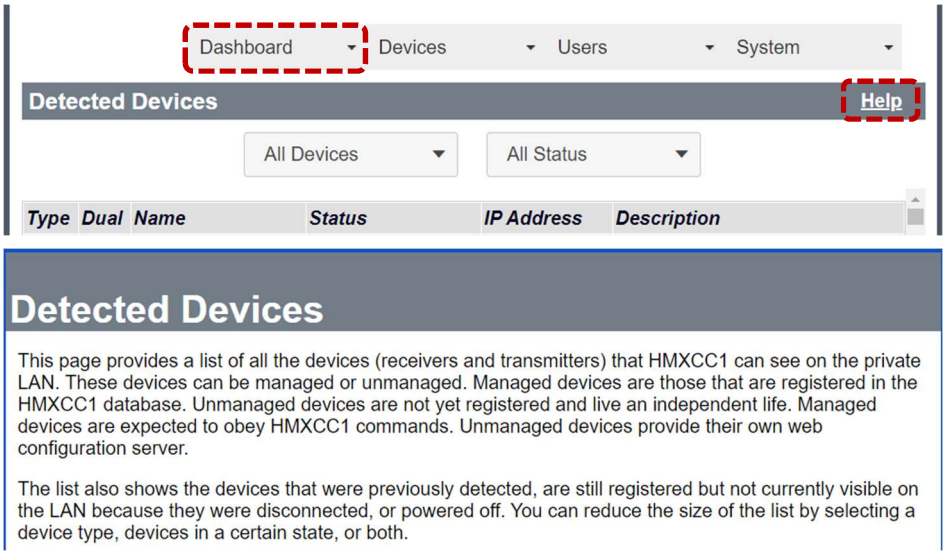


Figure 5-17 Dashboard>Detected Device>Help

5.3 Devices

Click the drop-down menu <**Devices**> at the top of the interface to get options as below: <**Receivers**>, <**Transmitters**>, <**RX Groups**>, <**TX Groups**>, <**Monitors**>, <**Firmware**>, and <**Upgrade**>.

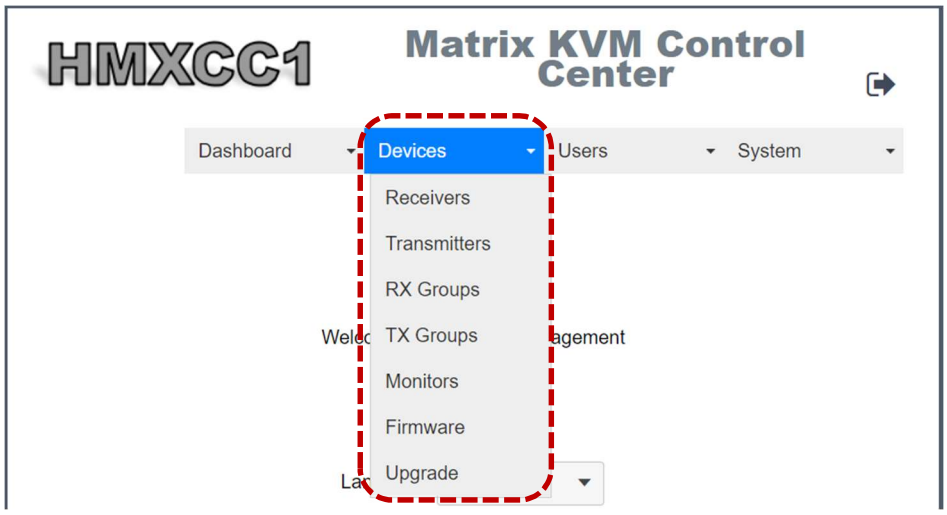


Figure 5-18 Main Menu>Devices

5.3.1 Receivers

Figure 5-19 Devices>Receivers

This <**Receivers**> page lists all registered receivers in the HMXCC1 database. Each row corresponds a receiver showing its name, unique MAC address, and description.

Global Actions

When no receiver is selected the <**Global Actions**> button is available. Click it to open <**Global Receiver Settings**> window to set up all listed receivers simultaneously.

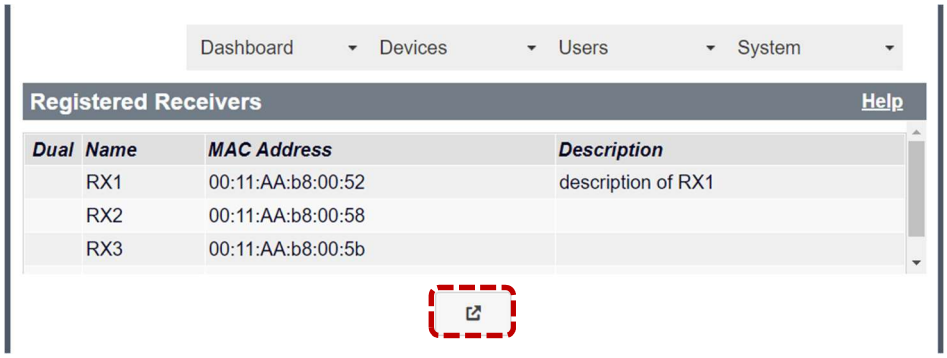


Figure 5-20 Devices>Receivers>Global Actions

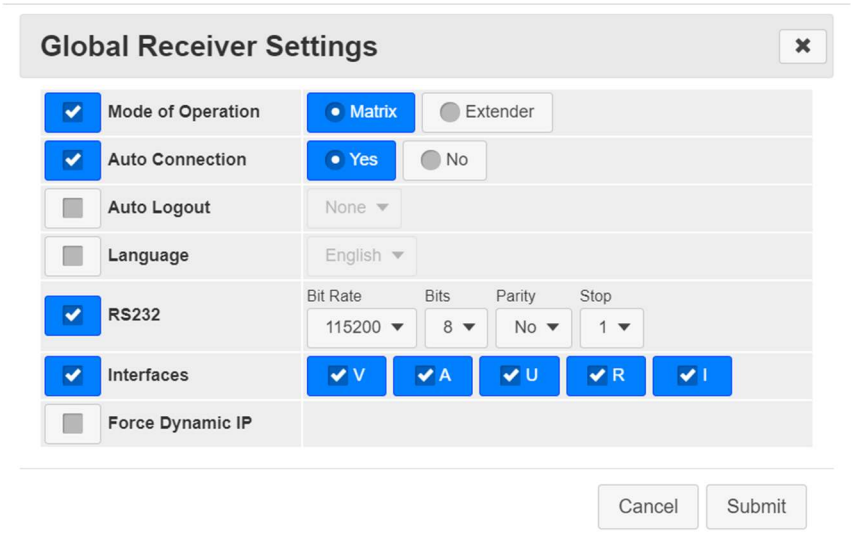


Figure 5-21 Devices>Registered Receivers>Global Receiver Settings

Set up a Receiver

Select a receiver. Click the <**Set up Receiver**> button . Set up its receiver group belonging.

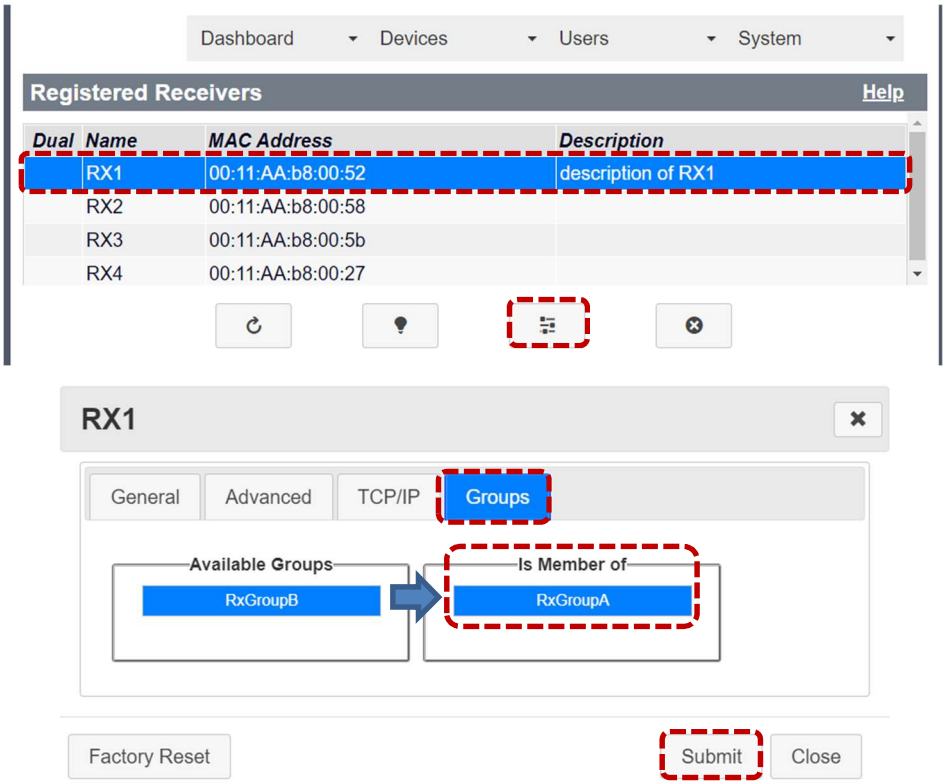


Figure 5-22 Devices>Registered Receivers>Set up Receiver>Groups

5.3.2 Transmitters

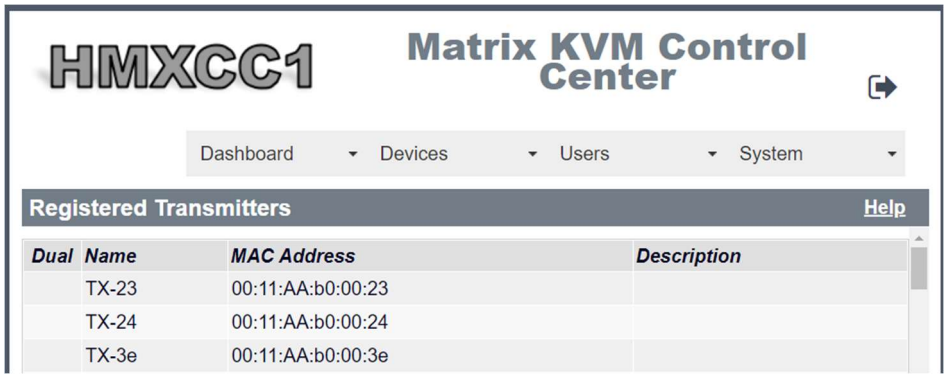


Figure 5-23 Devices>Transmitters

This <**Transmitters**> page lists all registered transmitters in the HMXCC1 database. Each row corresponds a transmitter showing its name, unique MAC address, and description.

Global Actions

When no transmitter is selected the <**Global Actions**> button is available. Click it to open <**Global Transmitter Settings**> window to set up all listed transmitters simultaneously.

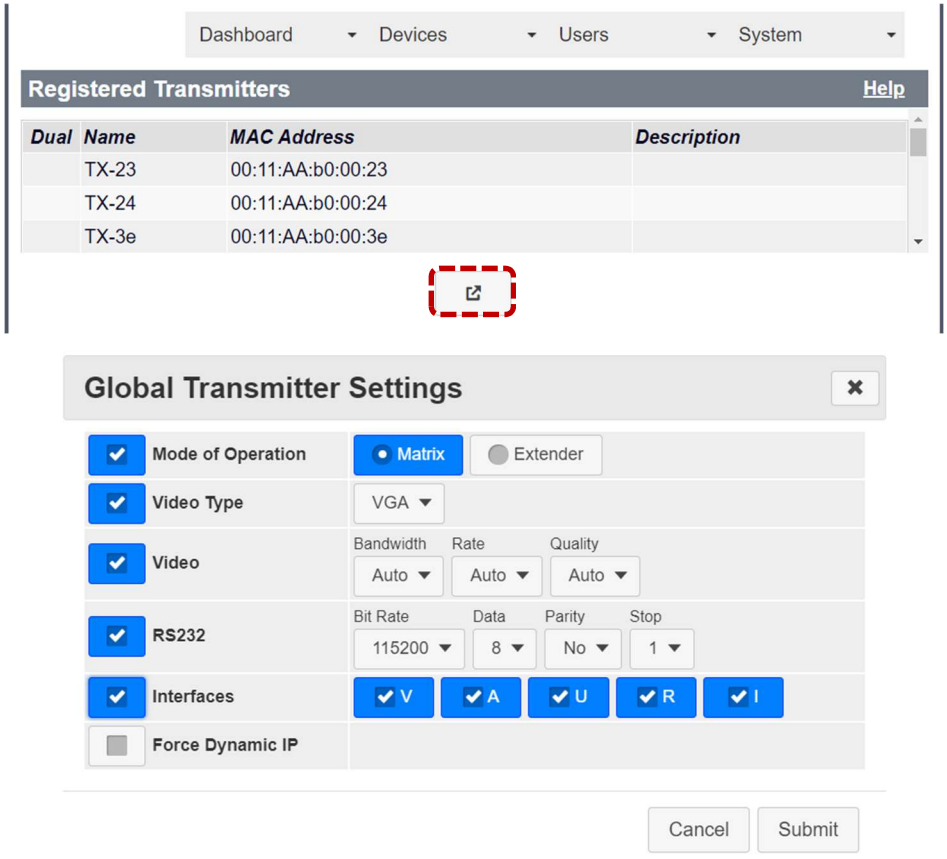


Figure 5-24

Set up a Transmitter

Select a transmitter. Click the <**Set up Transmitter**> button . Set up its transmitter group belonging.

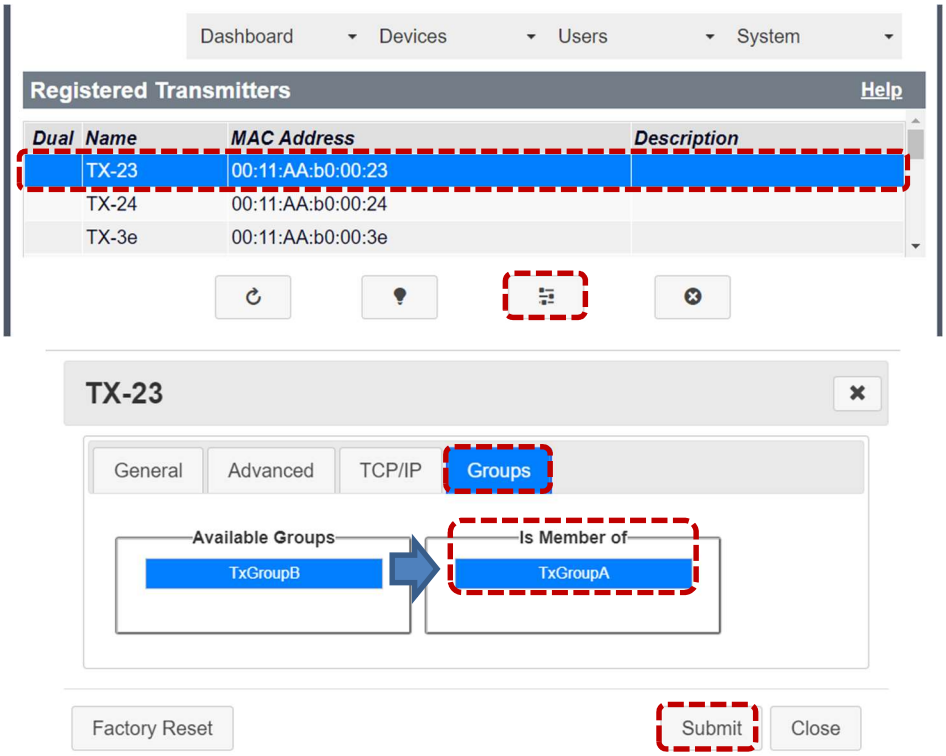


Figure 5-25 Devices>Registered Transmitters>Set up Transmitter>Groups

Anti-dithering

1. As there is any abnormal display on the monitor connected to the receiver, please adjust the Anti-dithering option to Mode 1 or Mode 2 to fix the display issue.

2. As shown below, go to **Devices**>**Transmitters**, select TX1 (assume it the abnormal unit) and click <**Set up Transmitter**> button  . In the <**Advanced**> tab, set the Anti-dithering option to **Mode 1** or **Mode 2**, then click the <**Submit**> button.

Figure 5-26

3. The TX-1 unit will reboot. If the video display is still abnormal, repeat the same process to apply another mode.

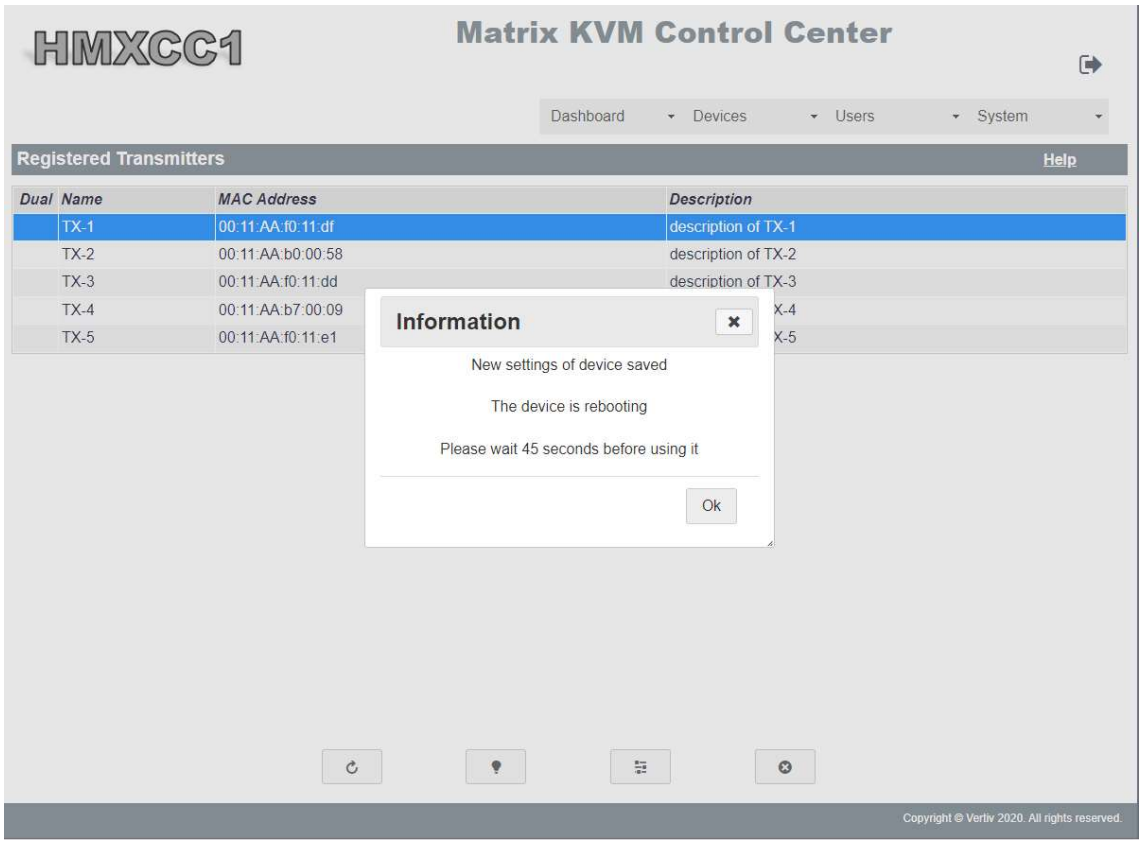


Figure 5-27

5.3.3 RX Groups

This <**RX Groups**> page lists all receiver groups in the HMXCC1 database. Each row corresponds a receiver group showing its Name, Description, and Group Type.

Click the <**New Group**> button , The <**Group Type**> including <**Simple Group**>, <**Hard Group**>, <**Mouse Roaming**>, and <**Video Wall**> will be introduced as follows:

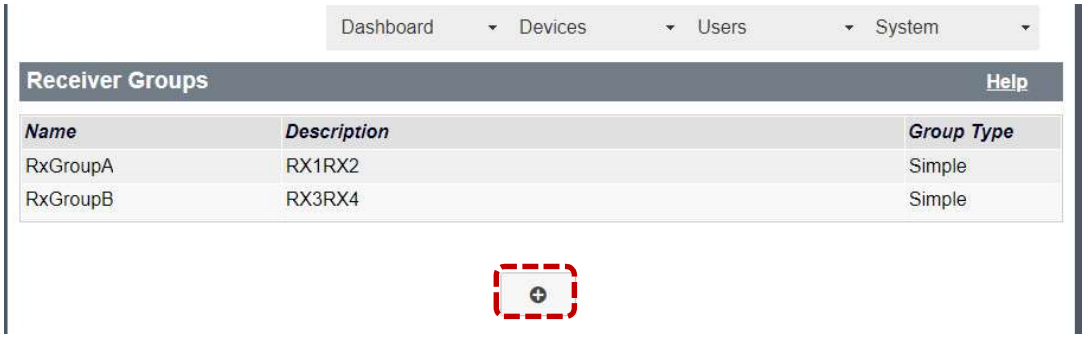


Figure 5-28

(1) Simple Group

The following exemplary system includes 5 registered receivers (RX-A/RX-B/RX-C/RX-D/ RX-E) and 5 registered transmitters (TX-1/TX-2/ TX-3/TX-4/TX-5). This example will assign receivers RX-A, RX-B, RX-C to be the first RX simple group (Name: SG-RX1). RX-C, RX-D, RX-E will be assigned to be the second RX simple group (Name: SG-RX-2). TX-1, TX-2, TX-3 will be assigned to be the first TX simple group (SG-TX1). TX-3, TX-4, TX-5 will be assigned to be the second TX simple group (Name: SG-TX2).

a. Input Administrator username (admin)/password (adminpass) to log into 5 RX units respectively. Then click the TXs respectively to create connections as below:

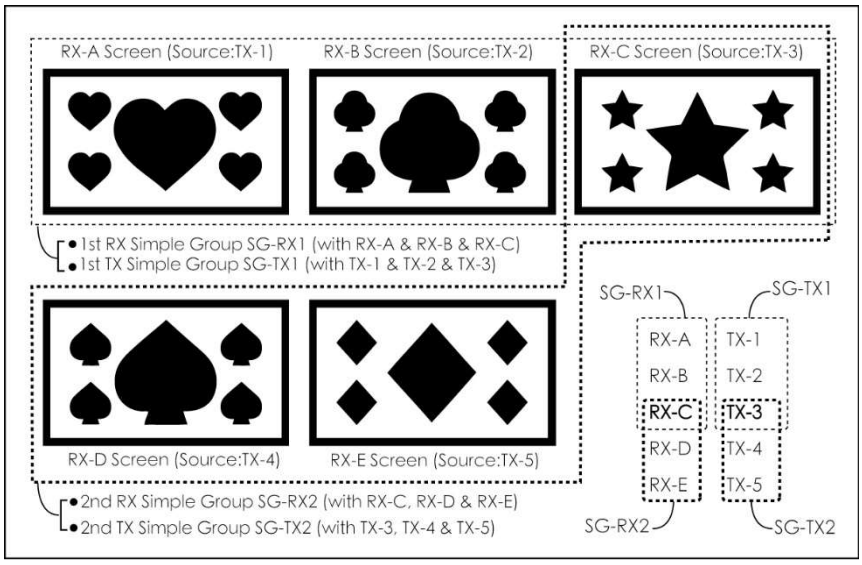


Figure 5-29

b. Go to **Devices**>**RX Groups**, click <**New Group**> button , select <**Simple Group**> in <**Group Type**> menu, Input the name (SG-RX1), then click the <**Submit**> button.

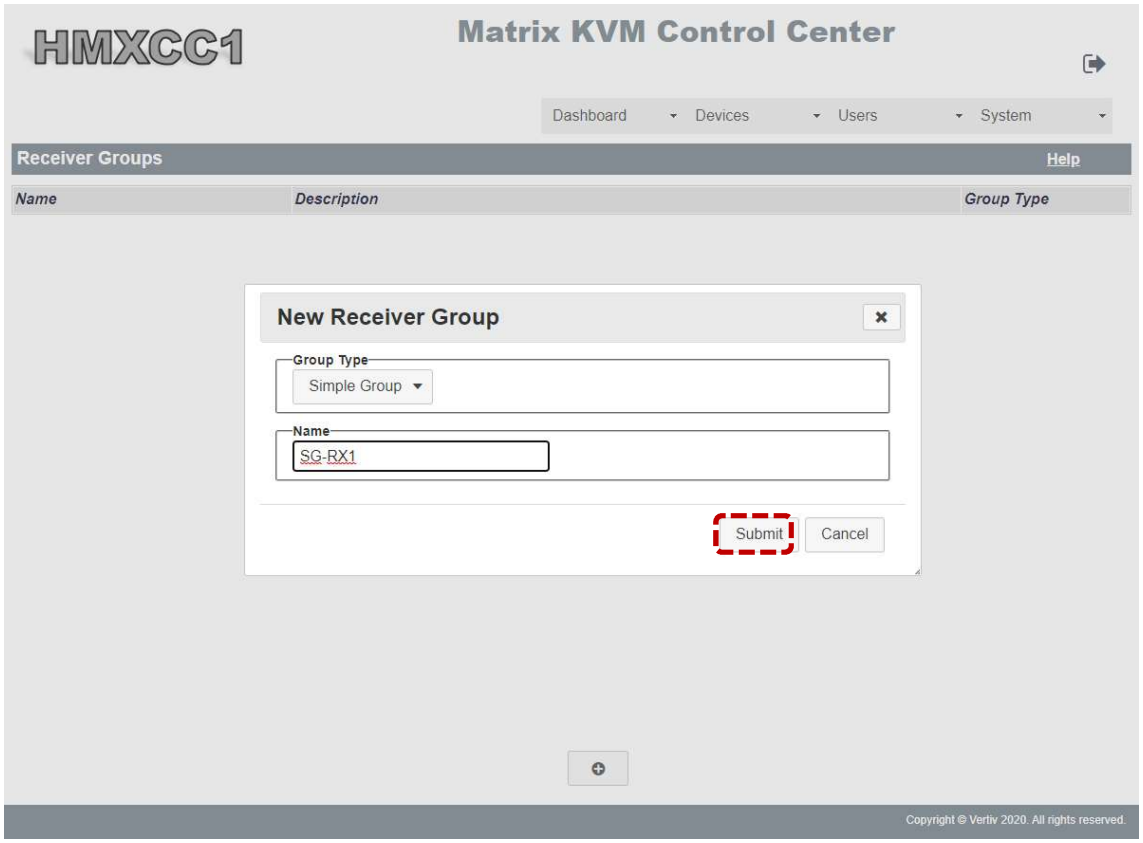


Figure 5-30

c. Select the SG-RX1 item, click <**Edit Group**> button . In <**Receivers**> tab, drag RX-A, RX-B, RX-C into the <**Group Members**> column, then click the <**Submit**> button. Now RX-A, RX-B, RX-C have been assigned as members of the SG-RX1 Group.

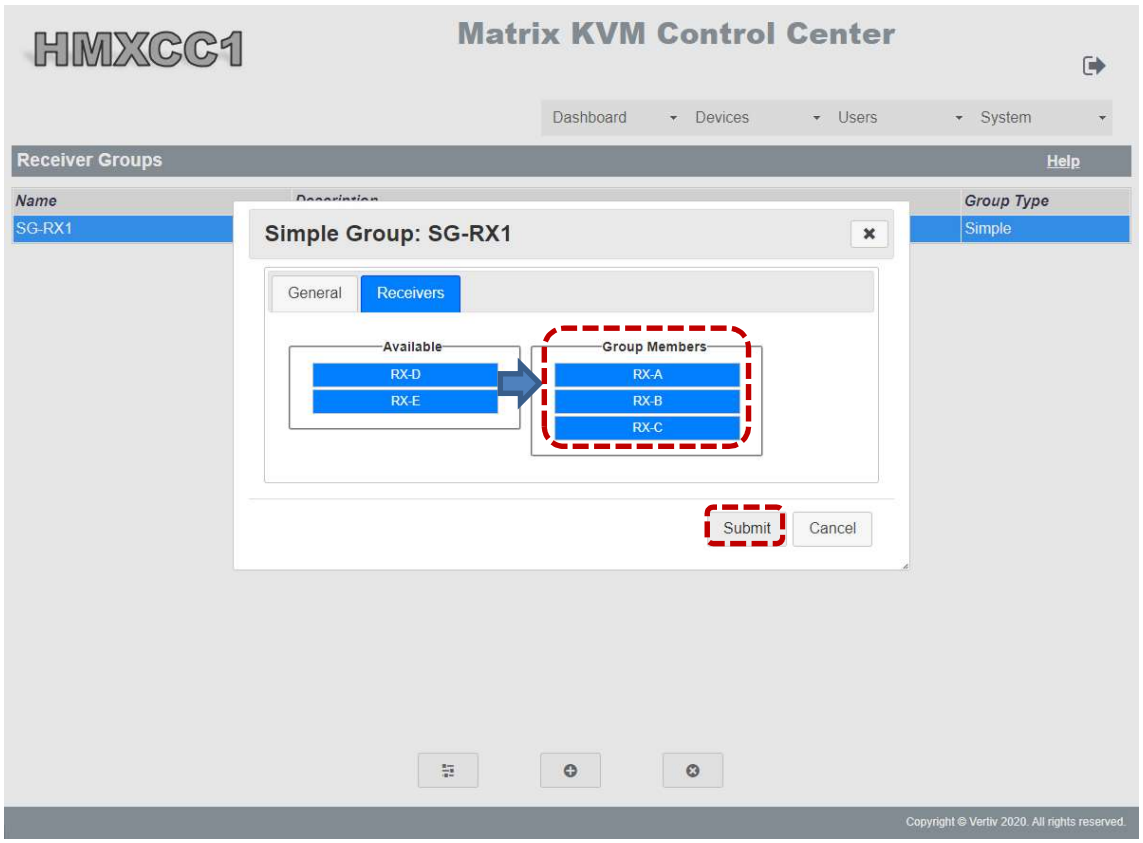


Figure 5-31

d. Repeat the same process to create the second RX simple group SG-RX2 which includes RX-C,

RX-D, RX-E units.

e. Go to **Devices**>**TX Groups** item in menu, click <**New group**> button , select <**Simple Group**> in <**Group Type**> menu. Input the name (SG-TX1), then click the <**Submit**> button.

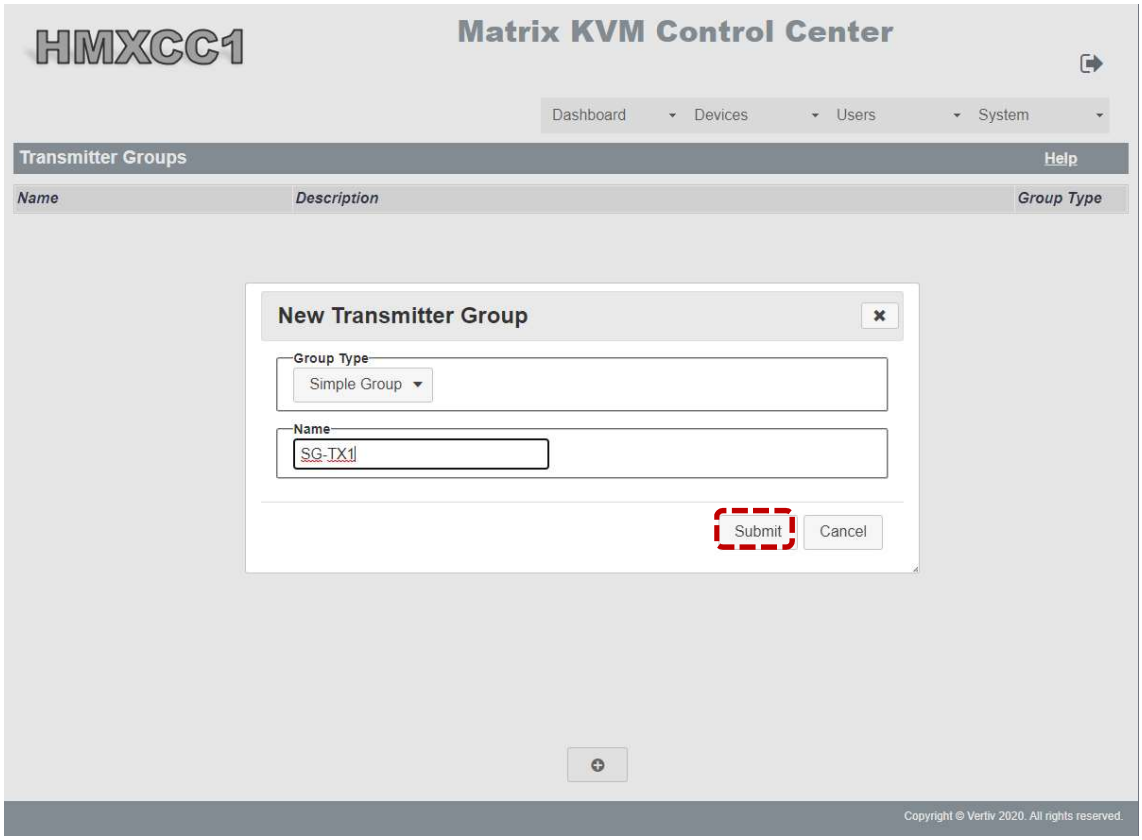


Figure 5-32

f. Select the SG-TX1 item, click <**Edit Group**> button . In <**Transmitters>** tab, drag TX-1, TX-2, TX-3 into the <**Group Members**> column, then click the <**Submit**> button. Now TX-1, TX-2, TX-3 have been assigned as members of the SG-TX1 Group.

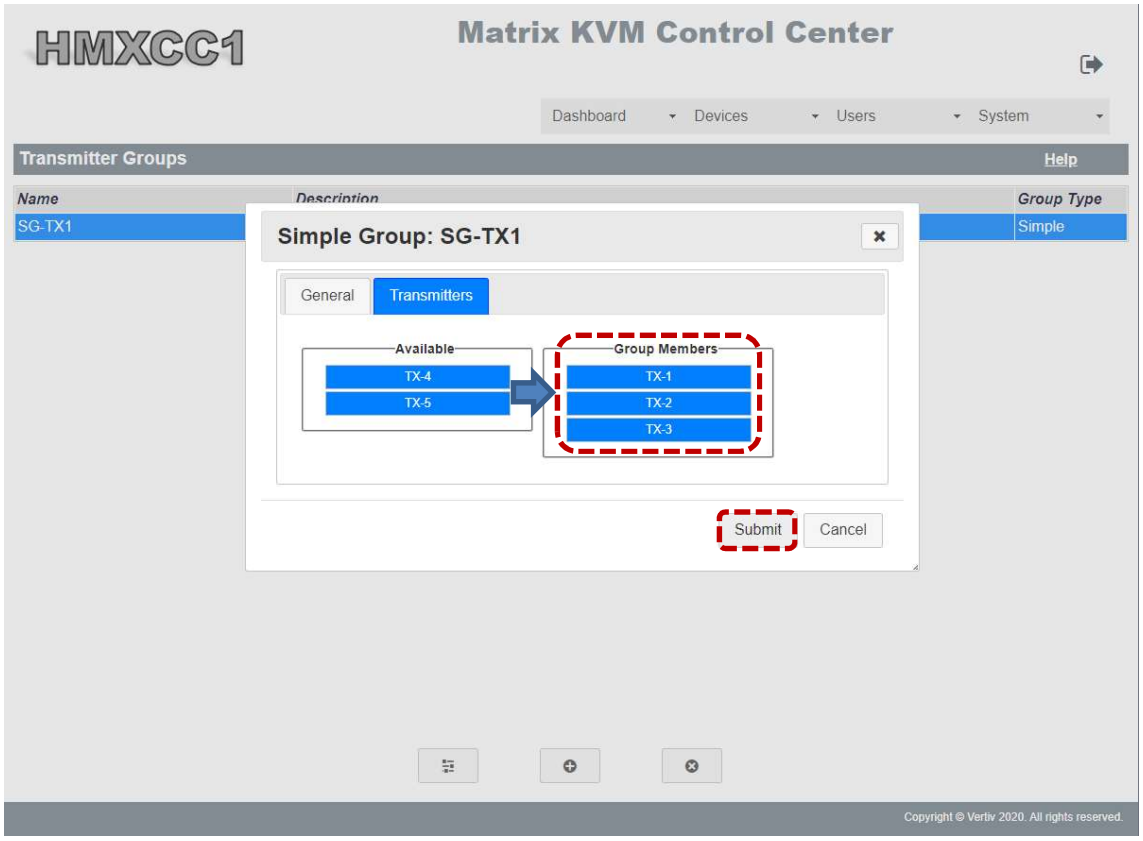


Figure 5-33

g. Repeat the same process to create the second TX simple group SG-TX2 which includes TX-3, TX-4, TX-5 units.

h. Please note that in <**Simple Group**> setting, all the available RX and TX units can be assigned in different groups. (e.g. RX-C and TX-3 in this example)

(2) Hard Group (Only Applicable for HMX3080/HMX4080 series)

This example will assign receivers RX-A, RX-B, RX-C to be the first RX hard group (Name: HG-RX1). RX-D and RX-E will be assigned to be the second RX hard group (Name: HG-RX2). TX-1, TX-2, TX-3 will be assigned to be the first TX hard group (Name: HG-TX1). TX-4, TX-5 will be assigned to be the second TX hard group (Name: HG-TX2).

a. Input Administrator username (admin)/password (adminpass) to log into 5 RX units respectively. Then click the TXs respectively to create connections as below:

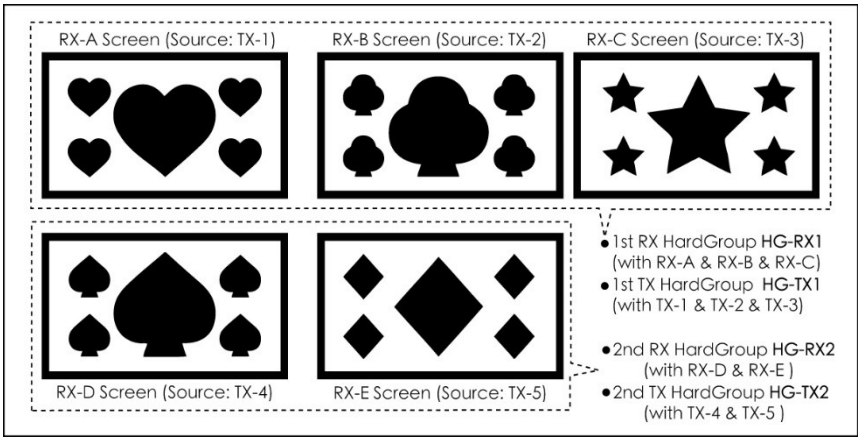


Figure 5-34

b. Go to **Devices**>**RX Groups**, click <**New group**> button , select <**Hard Group**> in <**Group Type>** menu, Input the name (HG-RX1), then click the <**Submit**> button.

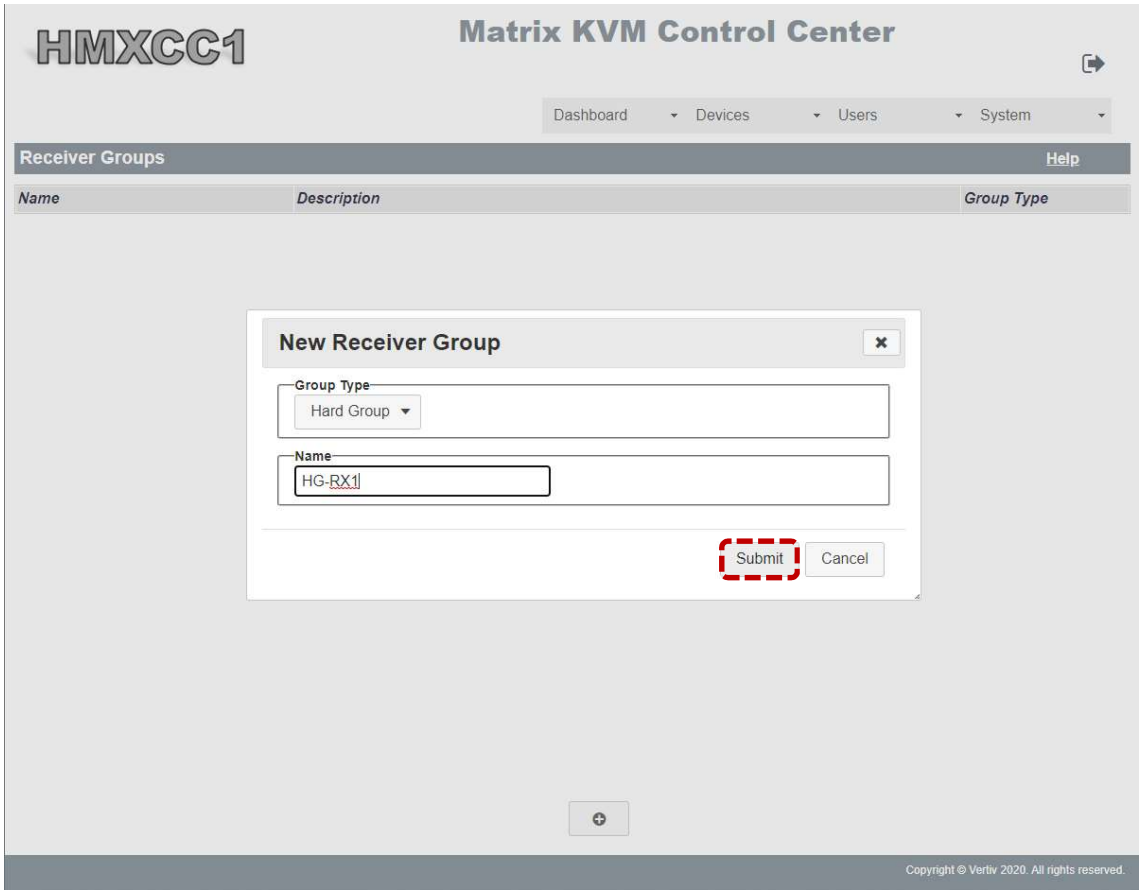


Figure 5-35

c. Select the HG-RX1 item, click <**Edit Group**> button . In <**Receivers>** tab, drag RX-A, RX-B, RX-C into the <**Group Members**> column in sequence, then click the <**Submit**> button. Now RX-A will be defined as the Master unit of this hard group. RX-B and RX-C will be the slave units of RX-A.

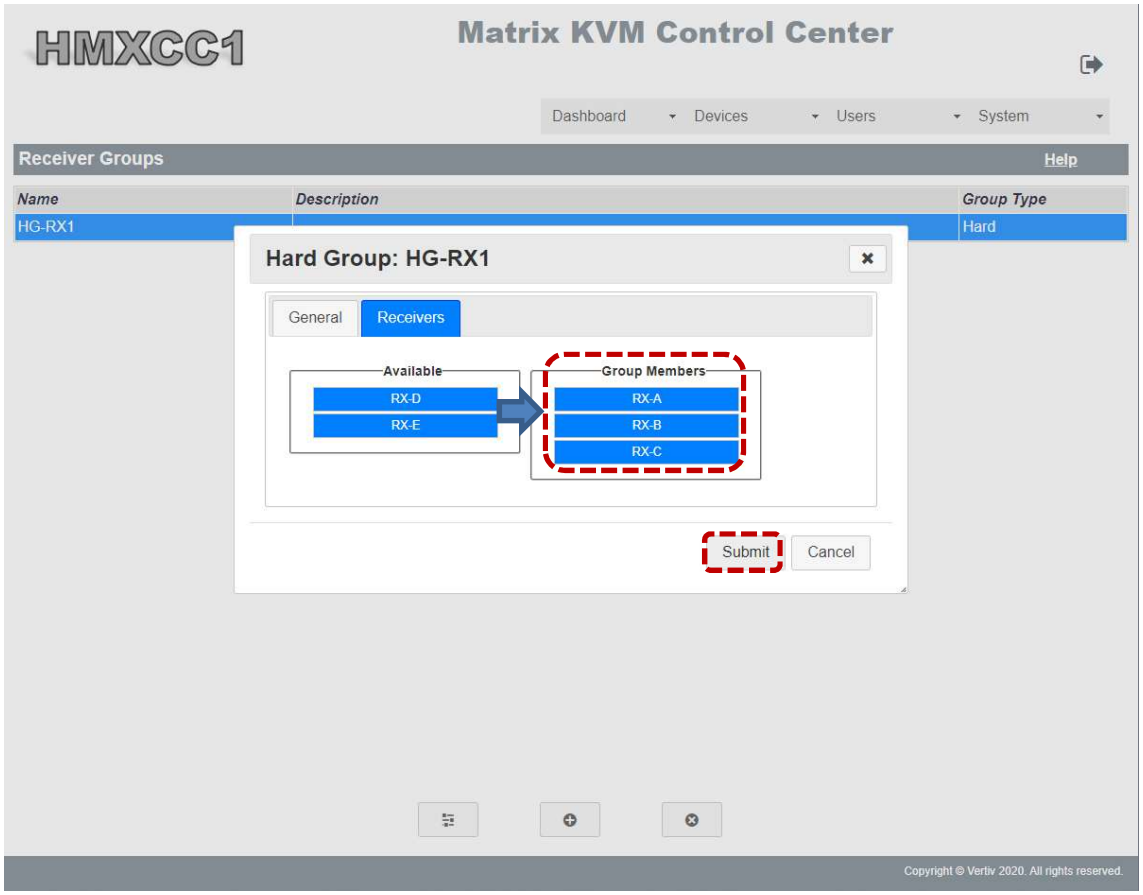


Figure 5-36

d. Repeat the same process to create the second RX hard group HG-RX2 which includes RX-D and RX-E units. (Note: In Hard Group setting, system will only display available RX units which haven't been assigned yet. Unlike the Simple Group setting, any RX unit can be assigned to different RX groups).

e. Go to **Devices**>**TX Groups**, click <**New Group**> button  , select <**Hard Group**> in <**Group Type**> menu. Input the name (HG-TX1), then click the <**Submit**> button.

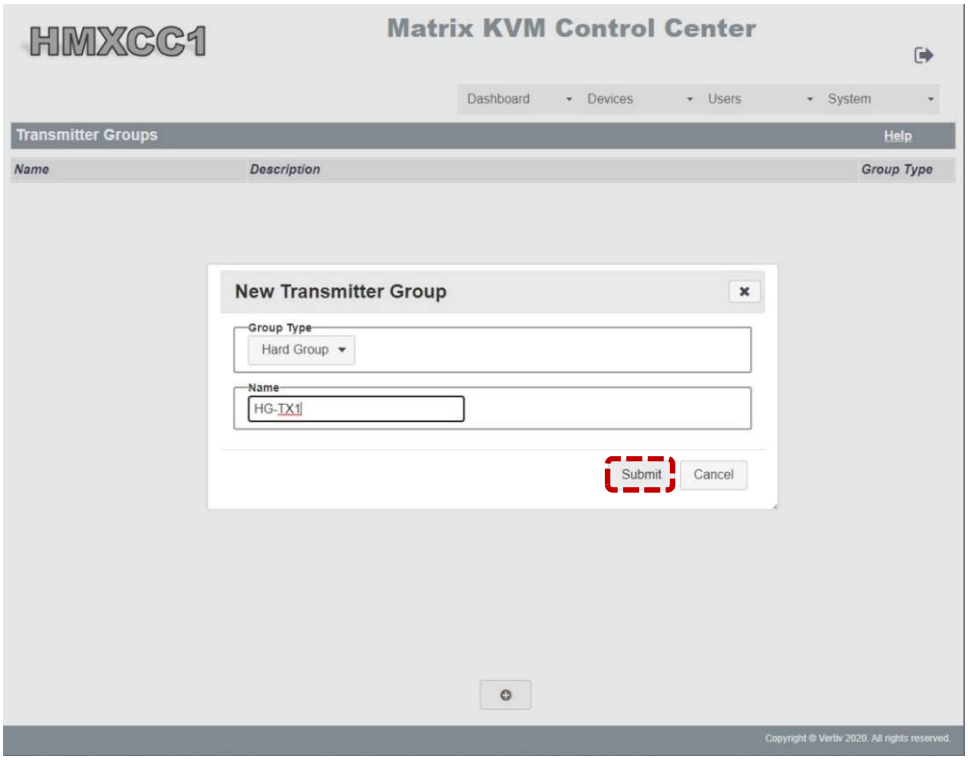


Figure 5-37

f. Select the HG-TX1 item, click <**Edit Group**> button . In <**Transmitters**> tab, drag TX-1, TX-2, TX-3 into the <**Group Members**> column in sequence, then click the <**Submit button**>. Now TX-1 will be defined as the Master unit of this hard group. TX-2 and TX-3 will be the slave units of TX-1. [Note]: Hard Group function supports up to 8-TX-source to 8-monitor switching at a time. However, if the configuration includes single video port model HMX3080 and dual video port model HMX4080, please ensure the device arrangement sequence for both TX and RX sides should be totally identical to avoid display disorder.

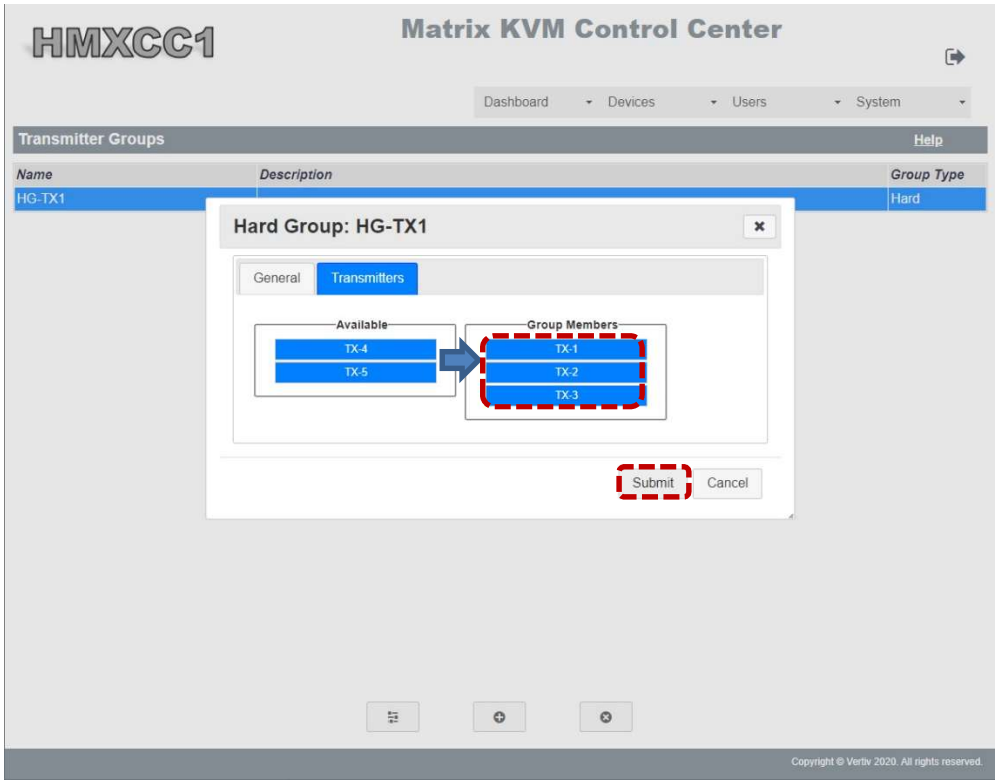


Figure 5-38

g. Repeat the same process to create the second TX hard group HG-TX2 which includes TX-4 and TX-5 units. (Note: In Hard Group setting, system will only display available TX units which haven't been assigned yet. Unlike the Simple Group setting, any TX unit can be assigned to different TX groups).

h. Input Administrator username (admin)/password (adminpass) to log into 5 RX units respectively. Then click the TXs respectively to create connections as previous examples. Since RX-A, RX-B, RX-C have been assigned to be the first RX hard group HG-RX1. As the following screenshot shows, double clicking the icon ⊞ will expand a list showing the transmitter units in the selected hard group. When the user double clicks the HG-TX1 characters in RX-A OSD menu, system will connect the sources of TX-1, TX-2, TX-3 in a batch to the hard group HG-RX1 that RX-A (Master) leads. This realizes a batch connection from 3 TX units to 3 RX units.

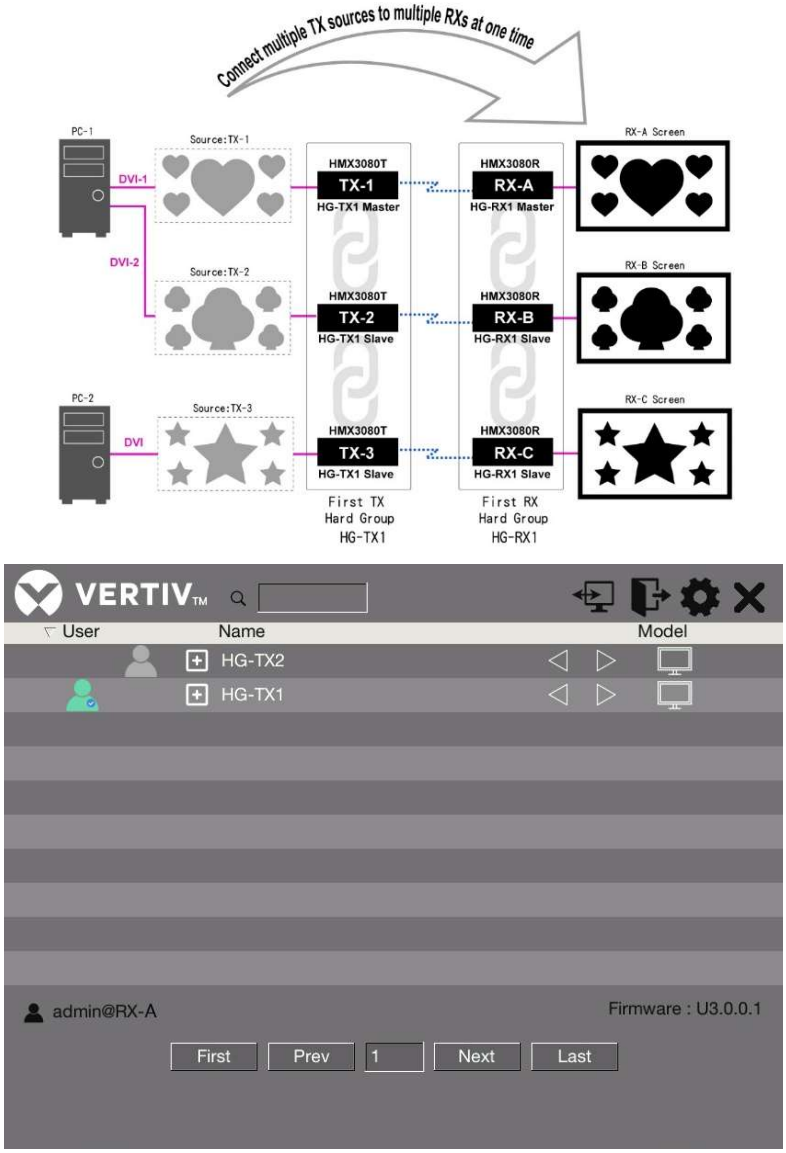


Figure 5-39

i. The following screenshot is the OSD menu in RX-D unit. Since the second RX hard group HG-RX2 only includes RX-D and RX-E units, when the user double clicks the HG-TX1 characters in RX-D OSD menu, system will connect the source of TX-1 to RX-D and connect source TX-2 to RX-E at the same time. The current receiver numbers are less than the transmitter numbers, therefore, the source TX-3 cannot be connected to any available receivers. However, the user can click the icon ▷ to move the TX-3 source into the RX-E screen. At the same time the TX-1 source will also be move out of the RX-D screen. By using 2 icons ◁ ▷, user can review all the TX sources when the RX units are insufficient. Please refer to the following illustration.

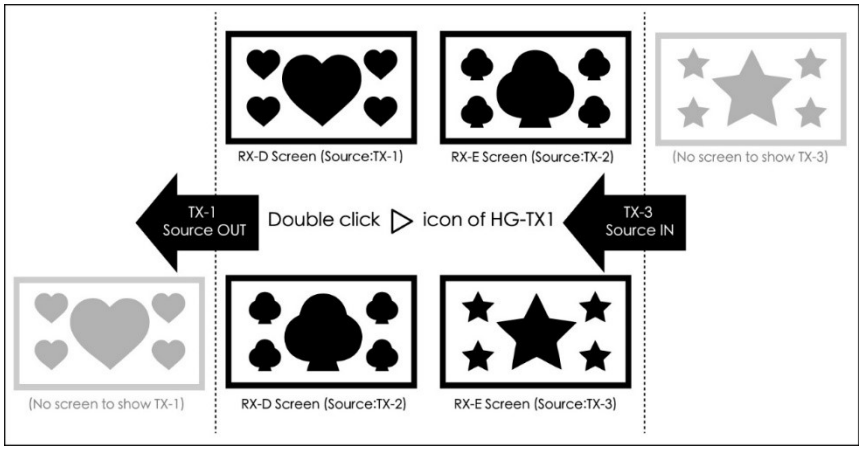


Figure 5-40

(3) Console Collaboration (Only applicable for HMX3080/HMX4080 series)

This example demonstrates how to use Console Collaboration function to share a TX source of a RX unit to another RX unit.

a. Input Administrator username (admin)/password (adminpass) to log into five RX units respectively. Then click the TXs respectively to create connections as below:

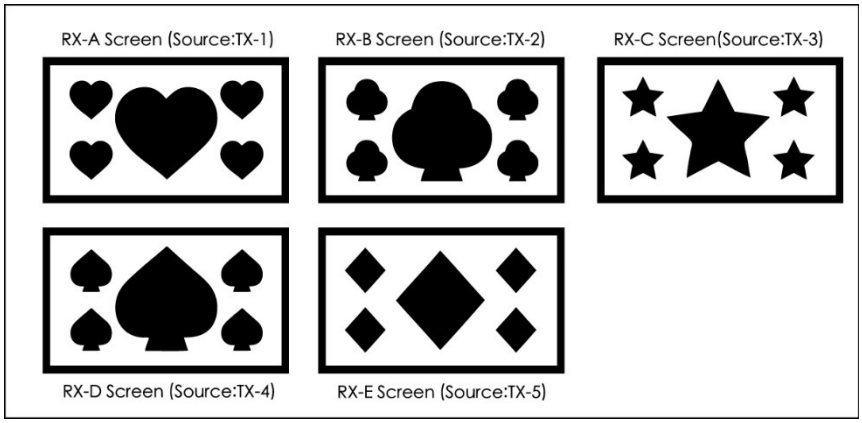


Figure 5-41

b. In the OSD menu of RX-D receiver, click the <**Collaborative Console Sharing**> icon to enter the following page:

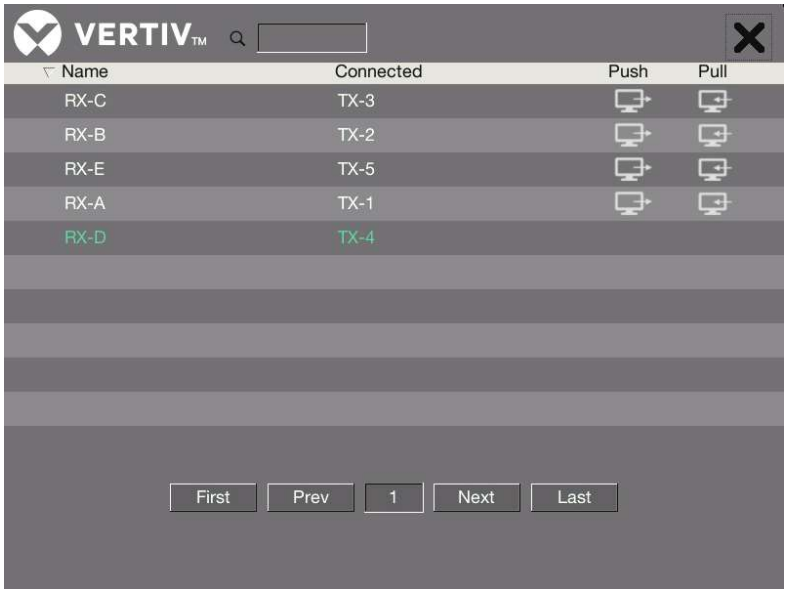


Figure 5-42

c. User can use the <**Push-sharing**> icon to push the TX-4 source that the RX-D receiver is connecting to any other available RX target units (e.g. RX-C, RX-B, RX-E, RX-A). Or use the <**Pull-sharing**> icon to pull any sources of TX-3, TX-2, TX-5, TX-1 to the currently used RX-D unit. Such that the RX-D user can remotely control the PC which provides the TX source. Following examples will respectively introduce two scenarios of push sharing and pull sharing.

d. (Push-sharing Scenario)

Click the <**Push-sharing**> icon of RX-E row in RX-D's OSD menu, the TX-4 source connected to RX-D will be pushed to display on RX-E's monitor. Please note that as RX-D sends out the push-sharing request to RX-E, a confirmation window will prompt to get RX-E user's approval. RX-E user can accept or decline it depending on his working condition.

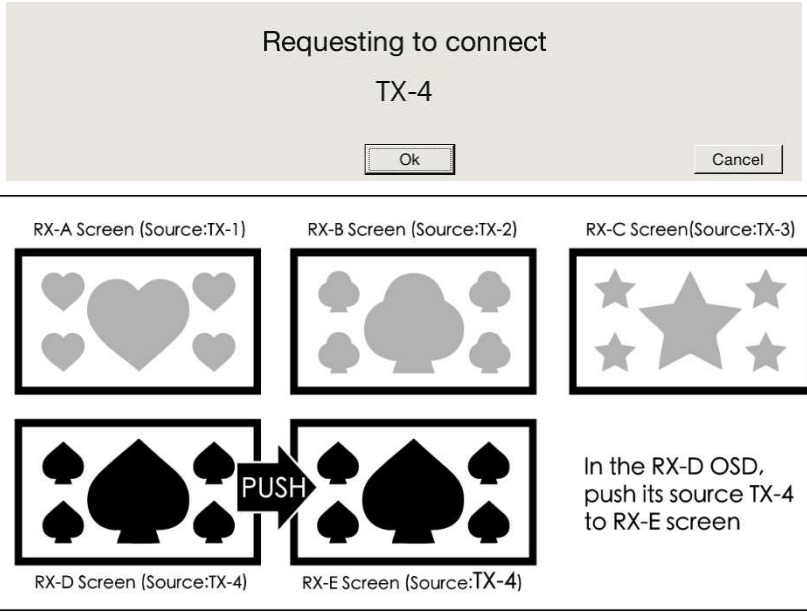


Figure 5-43

e. (Pull-sharing Scenario)

Click the <**Pull-sharing**> icon of RX-B row in RX-D's OSD menu, the TX-2 source connected to RX-B will be pulled back to display on RX-D's screen. Also note that, different from push-sharing scenario, system will not prompt any request window to ask RX-B user's approval.

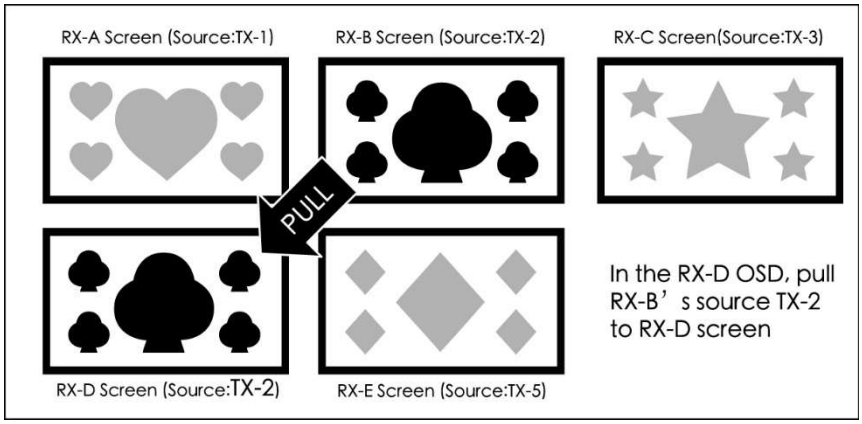


Figure 5-44

(4) Mouse Roaming (Only applicable for HMX3080/HMX4080 series)

The main goal of the Mouse Roaming function is to enable a user simply to use one set of mouse and keyboard attached to the mouse roaming receiver master unit, freely moving the mouse cursor around all viewable screen areas of all RX units performing the mouse roaming task. With this function, one user can monitor/control multiple PCs that are connected to those receivers via transmitters. The maximum mouse roaming area setting is 8 (horizontal) x 8 (Vertical), 64 monitors in total.

This example will demonstrate implementing mouse roaming function in 5 monitors.

a. Input Administrator username (admin)/password (adminpass) to log into five RX units respectively. Then click the TXs respectively to create connections as below:

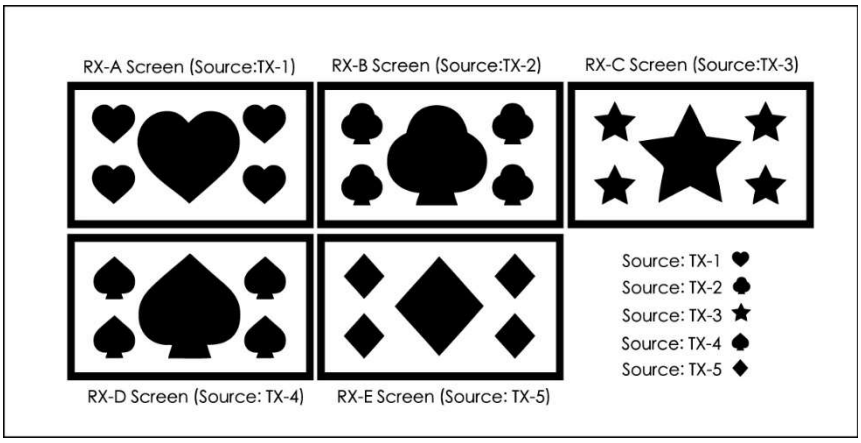


Figure 5-45

b. Go to **Devices**>**RX Groups**, click the <**New Group**> button , select <**Mouse Roaming Group**> in <**Group Type**> menu. Input the name (MR-DEMO), then click the <**Submit**> button.

Figure 5-46

c. Select the MR-DEMO item then click the <**Edit Group**> button to enter its setting page. Drag RX-A into the <**Group Layout**> column first. RX-A will be defined as the Master unit for Mouse Roaming task since it is the first RX unit being pulled into the <**Group Layout**> column. Continue dragging into other RX units according to the following coordinate plan: RX-A (0, 0); RX-B (1, 0); RX-C (2, 0); RX-D (0, -1), RX-E (1, -1). At last, click the <**Submit**> button.

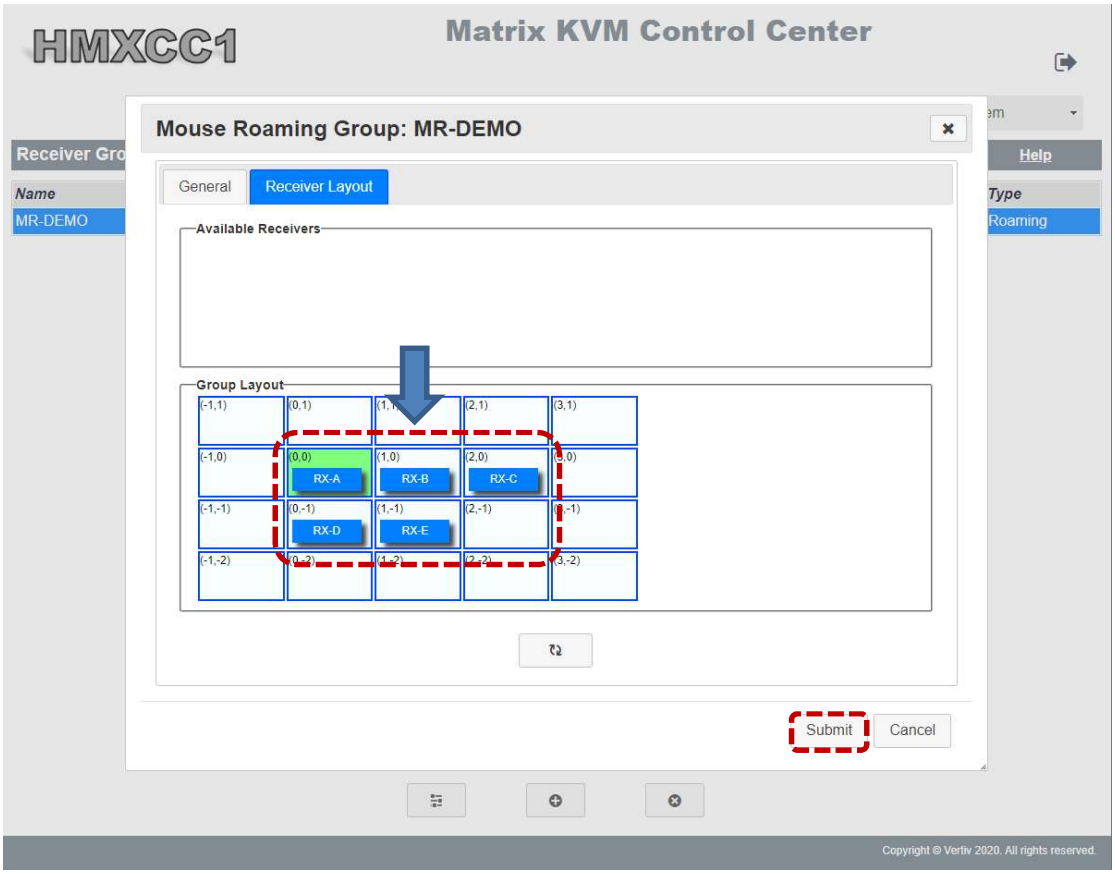


Figure 5-47

[Note]: As shown below, system will not allow a group layout with any isolated RX unit arrangement (not adjacent to any other RX units) for mouse roaming task.

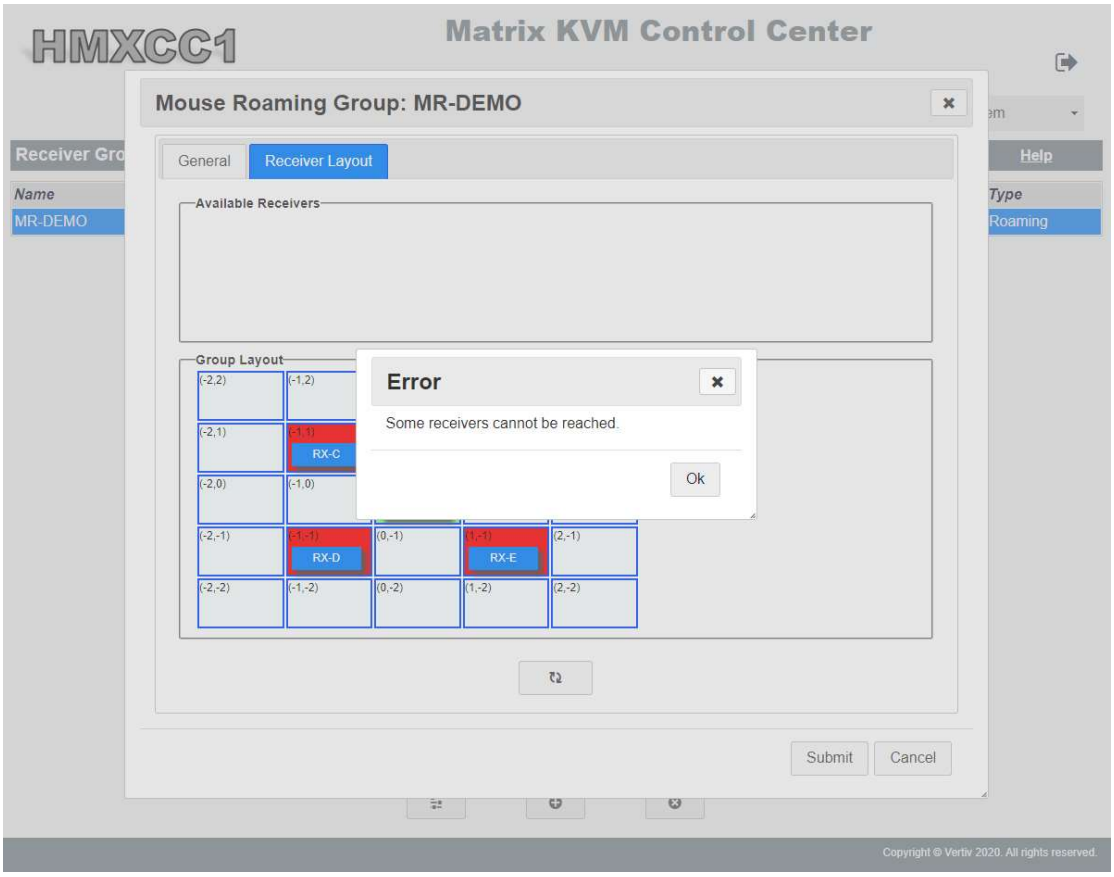


Figure 5-48

d. When there is no isolated RX unit arrangement, after clicking the <**Submit**> button, system will reboot the Mouse Roaming Master unit RX-A.

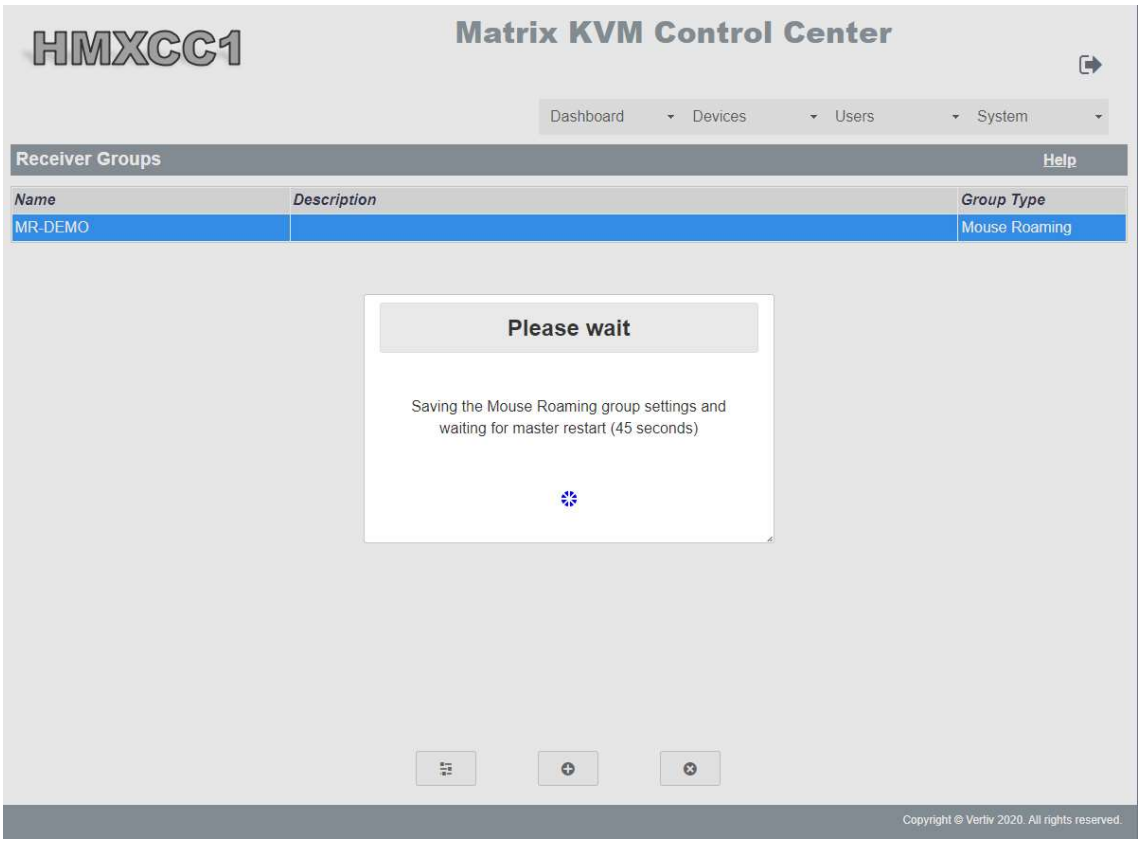


Figure 5-49

e. After the Mouse Roaming Master unit RX-A reboots to be in service again, input Administrator username (admin)/password (adminpass) to log in RX-A. Then select the desired transmitter source (e.g. TX-1) to connect to. When the user moves the mouse cursor, it can now roam across all viewable screen areas of 5 monitors. As the mouse cursor stays at a specific slave RX unit viewable screen area, the user can not only directly control the PC via the corresponding TX unit but also use the keyboard hotkey to prompt the remote OSD menu of that slave RX unit on the monitor attached to the Master unit RX-A.

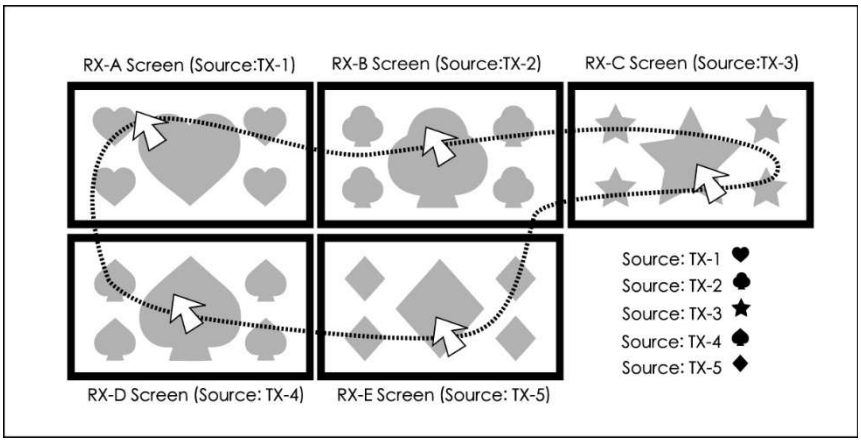


Figure 5-50

[Note] For those slave RX units which were previously assigned to perform mouse roaming task and had been connected to specific TX units, after the Mouse Roaming Master unit RX-A reboots, those slave RX units will automatically reconnect to the TX units that were previously connected without logging in these slave RX units again.

- Remote OSD control of Mouse Roaming Function

When Mouse Roaming task is in progress, if the user hits the OSD hotkey on the slave RX units, system will prompt "Slave Mode" to reject the OSD request from the slave RX units. Therefore, if the user wants to setup the TX unit connection on slave RX units, a remote OSD control is applicable. Two scenarios of applying remote OSD control will be introduced as follows:

Scenario (1): Use Remote OSD Control on a specific slave RX unit as the mouse cursor stays within the viewable screen area of the Mouse Roaming RX Master unit.

As the following screenshot shows, prompt the OSD menu on the Mouse Roaming RX Master unit RX-A with the OSD hotkey (**Scroll Lock**, **Scroll Lock**, **Space**). Select a slave RX unit (e.g. RX-C) in the drop-down menu and the bottom of the OSD menu will show "Remote OSD: RX-C" in red. This indicates the user is viewing RX-C receiver's OSD menu on the monitor that the master unit RX-A is connecting. At this moment if the user plans to connect the RX-C receiver to the TX-4 transmitter, he can double click the TX-4 characters on the OSD menu then the screen of RX-C will be instantly switched to display the TX-4 transmitter source.

[Note]: The user can also simply use the transmitter direct switch hotkey (**Scroll Lock**, **Scroll Lock**, **2-digit number**) to make an instant connection between RX-C receiver and any other TX sources. The correspondence between the 2-digit number and the TX sources is defined in <**Advanced Settings**> in RX-C's OSD menu by the user. Please refer to the related chapters in the HMX3080/HMX4080 User Manual.

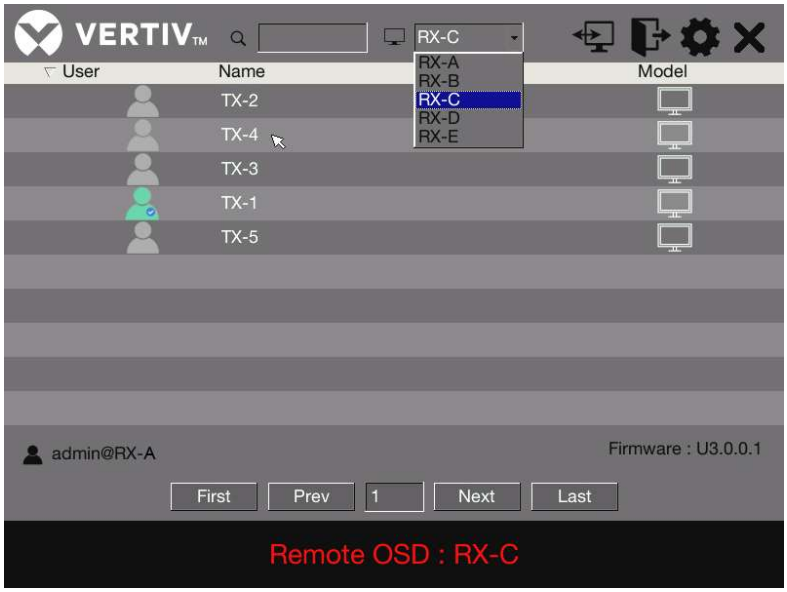


Figure 5-51

Scenario (2): Use Remote OSD Control on a specific slave RX unit as the mouse cursor stays within the viewable screen area of the specific Mouse Roaming RX Slave unit.

As the user moves the cursor into a specific slave RX (e.g. RX-C) viewable screen area to change its connected TX source, prompt the OSD menu on the Mouse Roaming RX Master unit RX-A with the OSD hotkey (**Scroll Lock**, **Scroll Lock**, **Space**), the OSD menu shows "Remote OSD: RX-C" in red, indicating that the user is operating the active receiver unit RX-C receiver where the cursor is staying. At this moment if the user plans to connect the RX-C receiver to the TX-4 transmitter, he can double click the TX-4 characters on the OSD menu then the screen of RX-C will be instantly switched to display the TX-4 transmitter source.

[Note]: The user can also simply use the transmitter direct switch hotkey (**Scroll Lock**, **Scroll Lock**, **2-digit number**) to make an instant connection between RX-C receiver and any other TX sources. The correspondence between the 2-digit number and the TX sources is defined in <**Advanced Settings**> in RX-C's OSD menu by the user. Please refer to the related chapters in the HMX3080/HMX4080 User Manual. In this scenario, as the mouse cursor roams across all receiver units, only the receiver unit which the mouse cursor is staying at its viewable screen area will be active for user's operation.

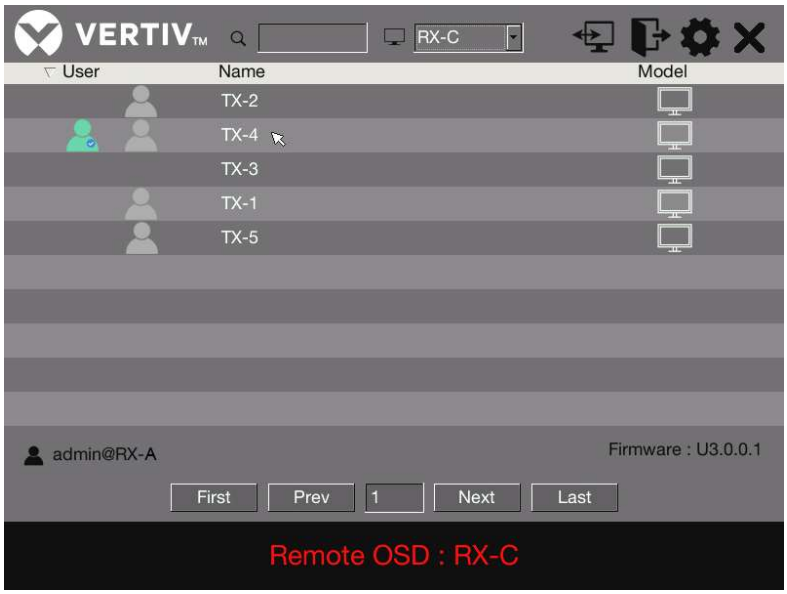


Figure 5-52

●Cursor Hopping Function of Mouse Roaming

As all receivers/transmitters carrying out Mouse Roaming task operate normally, the user can freely move the cursor across all viewable screen areas of all receivers. However, if any of the receivers/transmitters becomes offline or failed, as shown at the position 07 of Mouse Roaming layout (4), the user will not be able to get the cursor out of the corresponding viewable screen

area of the failed receiver/transmitter once it goes in the same, thus loses the cursor control. To resolve this problem, the user can use the cursor hopping hotkey (Right **Ctrl,** Right **Ctrl**, **2-digit number**) to instantly hop the cursor to the corresponding viewable screen area of any other receiver in normal operation to retrieve the cursor control. In the meanwhile, the user should notify the technician to replace the failed TX/RX units asap to keep the system running smoothly. The cursor hopping function can also be applied to increase working efficiency by instantly hopping the cursor to a desired corresponding viewable screen area of the receiver. The definition of the 2-digit number for cursor hopping hotkey is as shown by following mouse roaming layout examples. (Going from Left to Right and from Top to Bottom.)

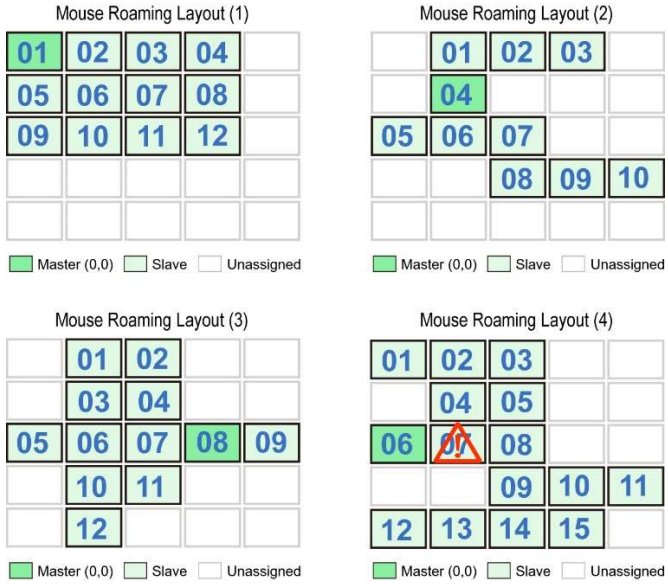


Figure 5-53

(5) Video Wall (Only applicable for HMX3080/HMX4080 series)

The Video Wall function enables the user to use a set of keyboard/mouse attached to any video wall task receiver prompting its OSD menu. Then jointly display any single transmitter video source on collective monitors attached to video wall task receivers. The maximum size setting of the video wall is 8(horizontal) x 8(Vertical), 64 monitors in total.

This example will demonstrate building up a video wall with four monitors.

a. Input Administrator username (admin)/password (adminpass) to log into 4 RX units respectively. Then click the TXs respectively to create connections as below:

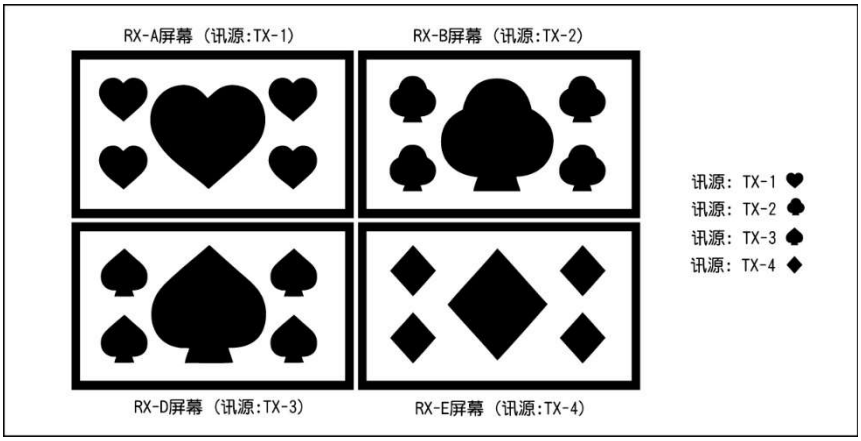


Figure 5-54

b. Go to **Devices**>**RX Groups**, click <**New Group**> button  , select <**Video Wall Group**> in <**Group Type**> menu. Input the name (VW-DEMO), then click the <**Submit**> button.

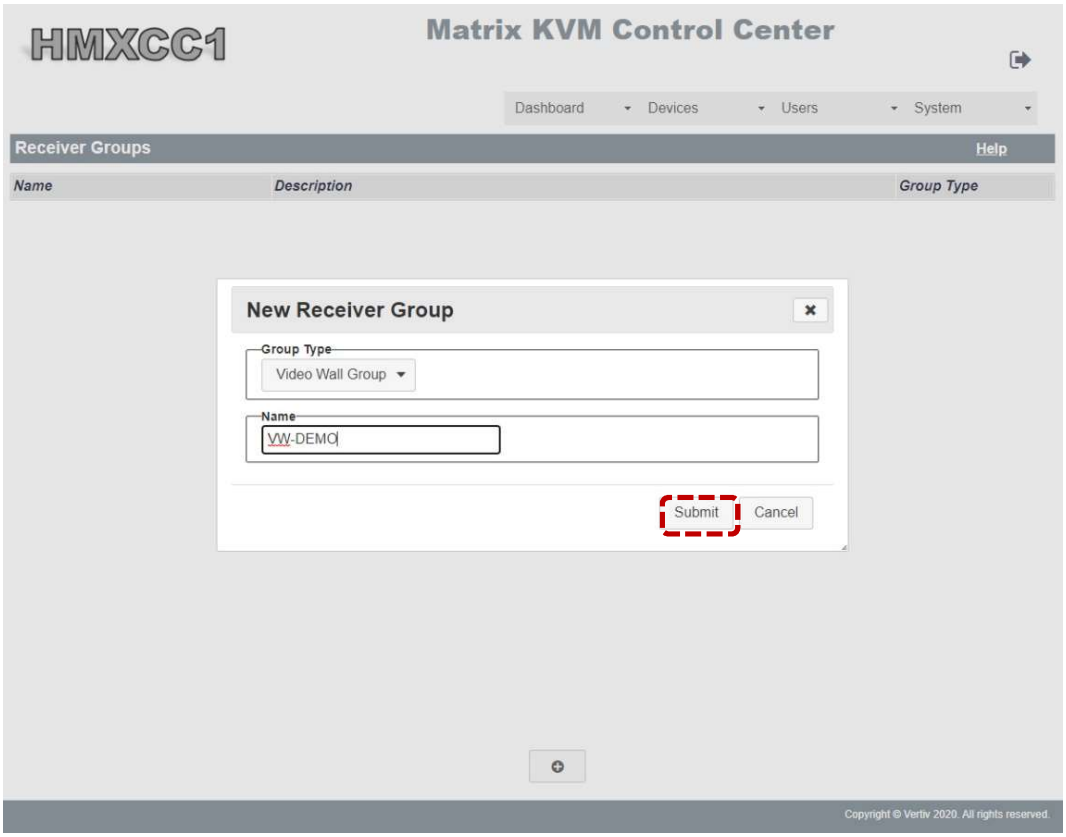


Figure 5-55

c. Click the VW-DEMO item, click the <**Edit Group**> button  to enter its setting page. In <**General**> tab, set the Group Size as Horizontal=2 and Vertical=2. (Note: Video Wall maximum configuration: Horizontal=16; Vertical=16).

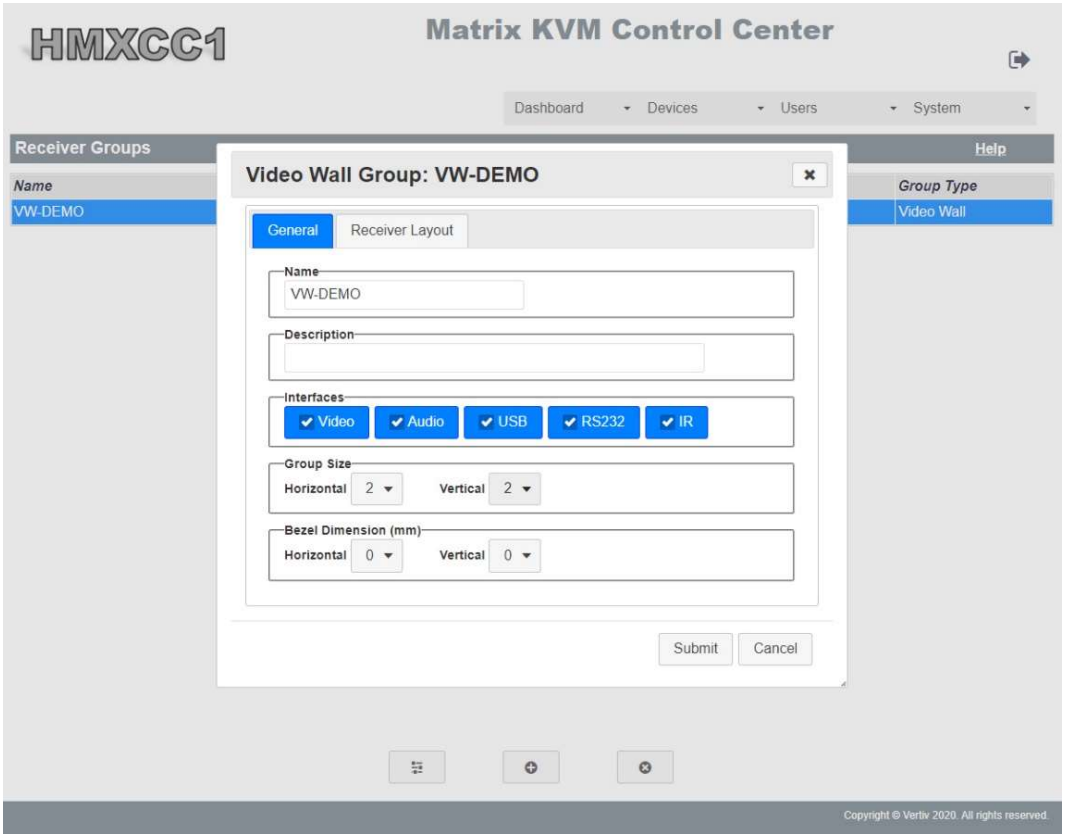


Figure 5-56

d. At <**Receiver Layout>** tab, drag RX-A receiver first into the <**Group Layout**> column then RX-B, RX-D and RX-E as shown below. At last, click the <**Submit**> button.

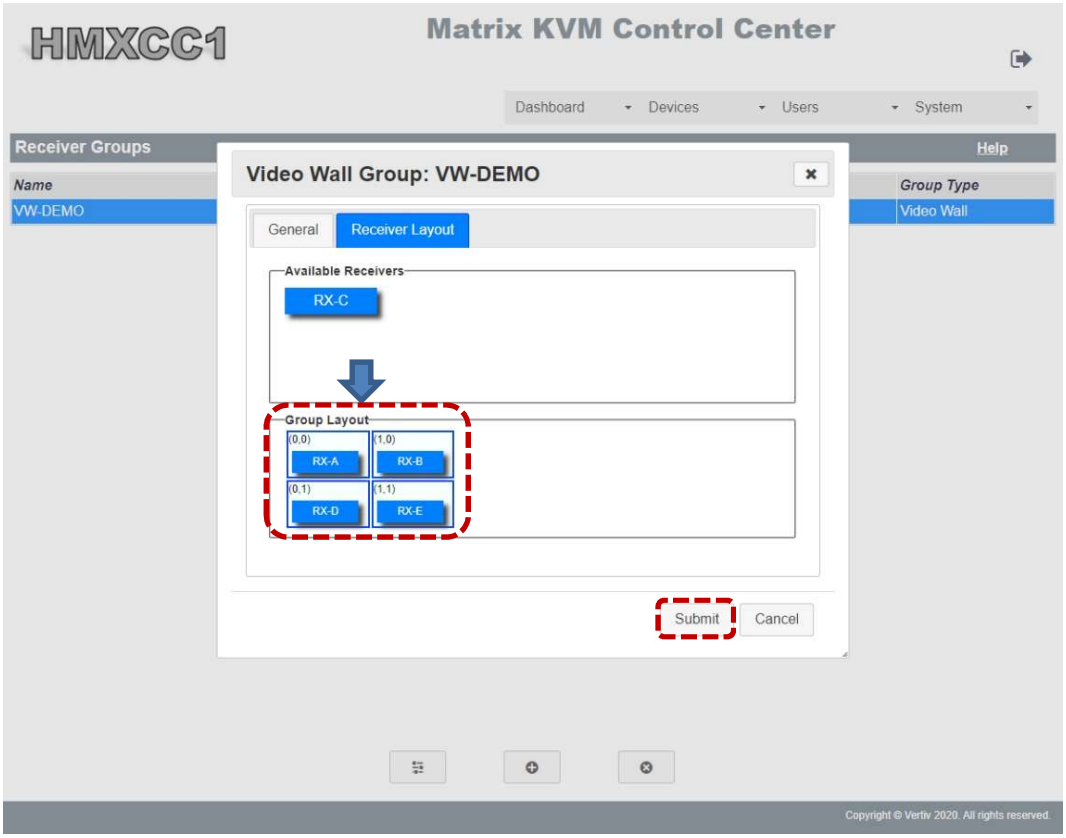


Figure 5-57

e. Unlike the Mouse Roaming function, after the Video Wall settings are done, the system will not reboot the RX-A unit. User can hit the OSD hotkey in any receivers (e.g. RX-B) that were assigned to perform Video-wall task. Then connect it to any desired transmitter source (e.g. TX-1). After user press the Esc key of the keyboard to leave the OSD menu of RX-B, RX-A, RX-D and RX-E will collaborate with RX-B to show a complete TX-1 source, which is the video wall function. (Note: In Video-wall task, master-slave hierarchy doesn't exist therefore the user can hit the OSD hotkey on any keyboards attached to the video-wall task receivers then assign any desired TX sources).

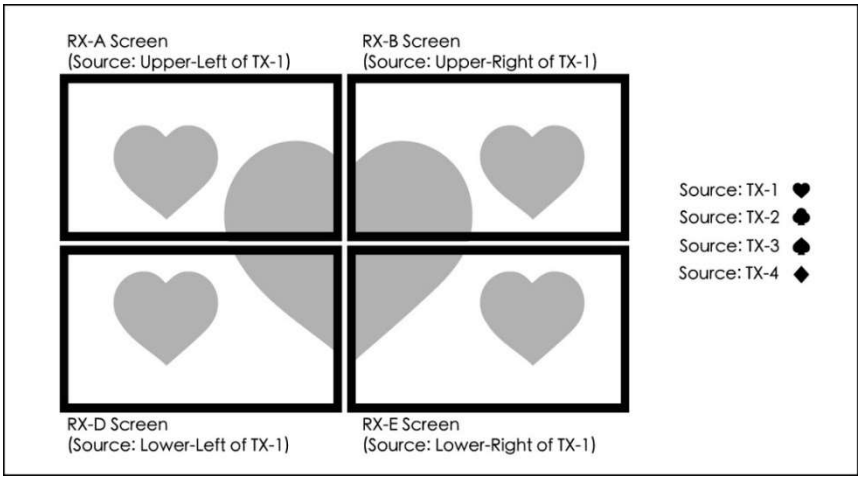


Figure 5-58

f. As introduced as above, user can assign with different mouse roaming tasks and video wall tasks in a large monitor matrix facility (this example shows a 6 x 6 screen matrix connected to 36 RX units).

Mouse Roaming Task MR-DEMO-1 (Define a 3x3 mouse roaming area)

Mouse Roaming Task MR-DEMO-2 (Define a 3x1 mouse roaming area)

Mouse Roaming Task MR-DEMO-3 (Define a 1x2 mouse roaming area)

Video Wall Task VW-DEMO-1 (Define a 3x3 Video Wall)

Video Wall Task VW-DEMO-2 (Define a 3x3 Video Wall)

Video Wall Task VW-DEMO-3 (Define a 2x2 Video Wall)

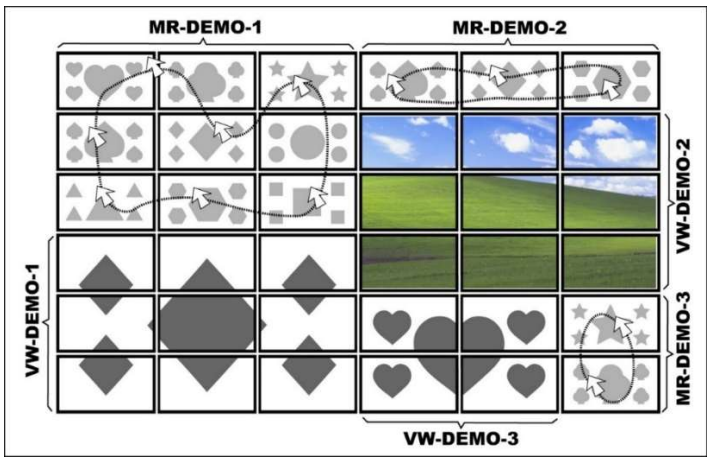


Figure 5-59

5.3.4 TX Groups

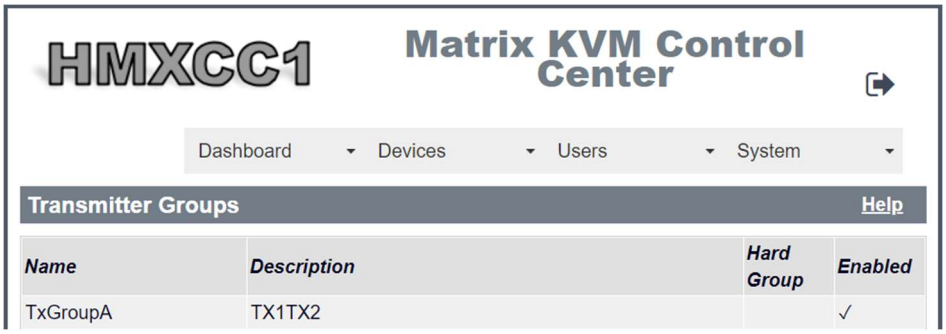


Figure 5-60 Devices>TX Groups

This <**TX Groups**> page lists all transmitter groups in the HMXCC1 database. Each row corresponds a transmitter group showing its Name, Description, and Enable property.

Add a New Transmitter Group

The <**New Group**> button, allows to define new transmitter groups.

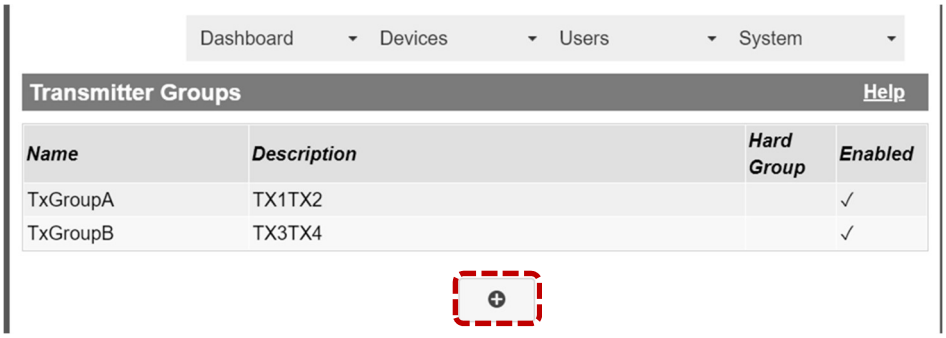


Figure 5-61 Devices>TX Groups>New Group

Edit a Transmitter Group

Select a transmitter group and clicking the <**Edit Group**> button to setup transmitter unit members in this transmitter group.

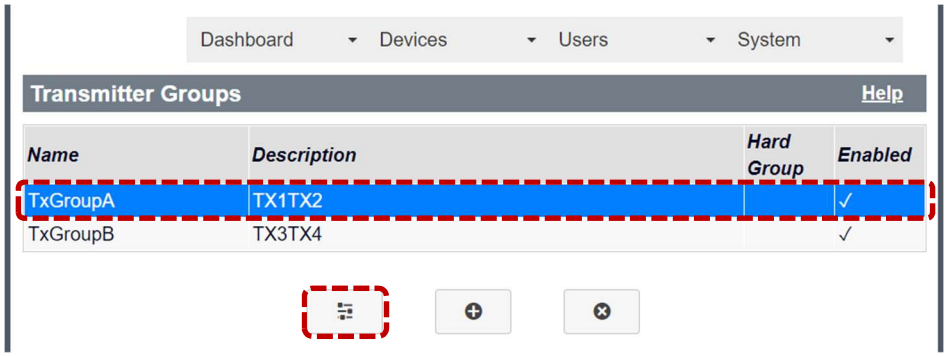


Figure 5-62 Devices>TX Groups>Edit Group

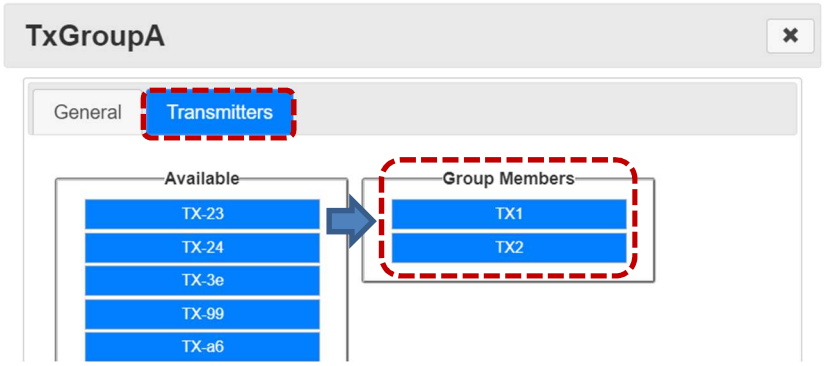


Figure 5-63

5.3.5 Monitors

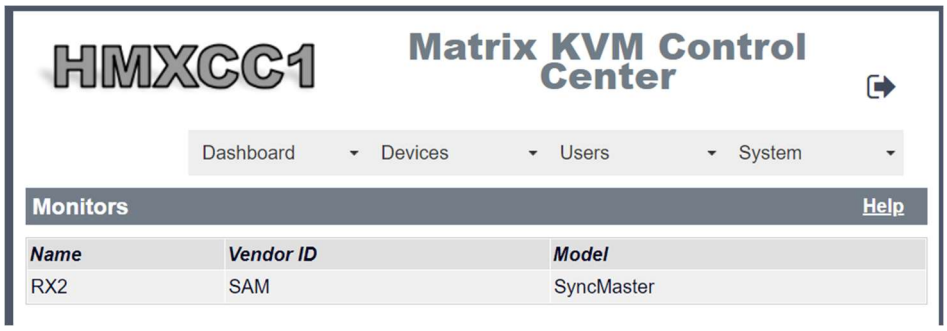


Figure 5-64 Devices>Monitors

This <**Monitors**> page lists all registered monitor EDIDs in HMXCC1 memory. Each row corresponds an EDID file showing its Name, Vender ID, and Model. HMXCC1 can read the EDIDs from the monitors attached to the receivers and send the EDIDs to transmitters so that they can provide proper monitor emulations.

Add a New Monitor to List

Click the <**Add New Monitor to List**> button . Specify a receiver to read its monitor EDID. Give a name to the monitor and click the <**Get Monitor**> button.

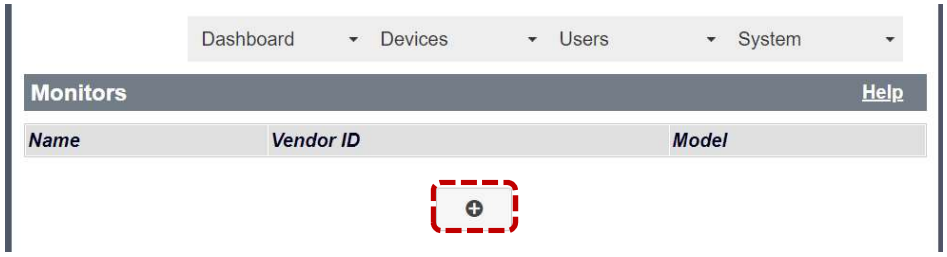


Figure 5-65 Devices>Monitors>Add New Monitor to List

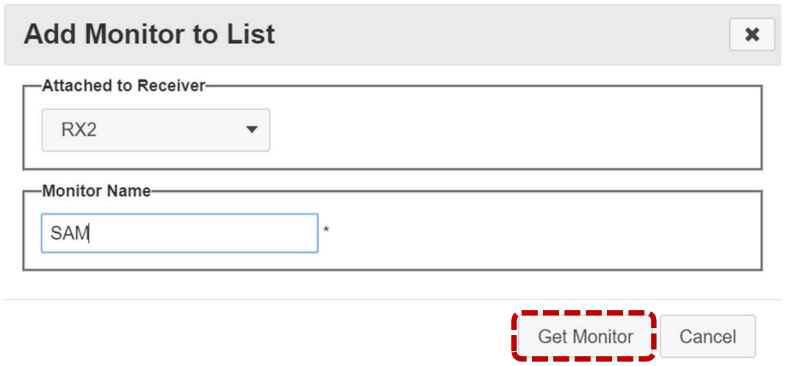


Figure 5-66 Devices>Monitors>Add New Monitor to List>Get Monitor

Edit the Name of a Selected Monitor

Select a monitor and click the <**Rename Selected Monitor**> button . Input a new name and click the <**Rename Monitor**> button to take effect.

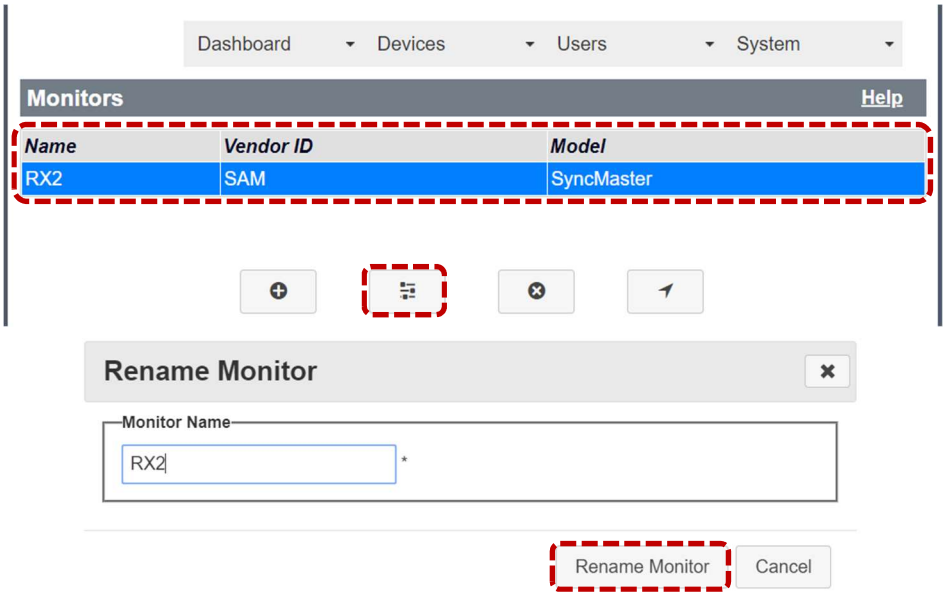


Figure 5-67

Match a Monitor to a Transmitter

Click the <**Put Selected Monitor to Transmitter**> button . Select a desired transmitter and click <**Put Monitor**> to transfer an EDID of the selected monitor to the desired transmitter. Or use the keyboard hotkey (**Scroll Lock**, **Scroll Lock**, **M**) to send the EDID of the monitor that attaches with the receiver to the transmitter being connected to the receiver.

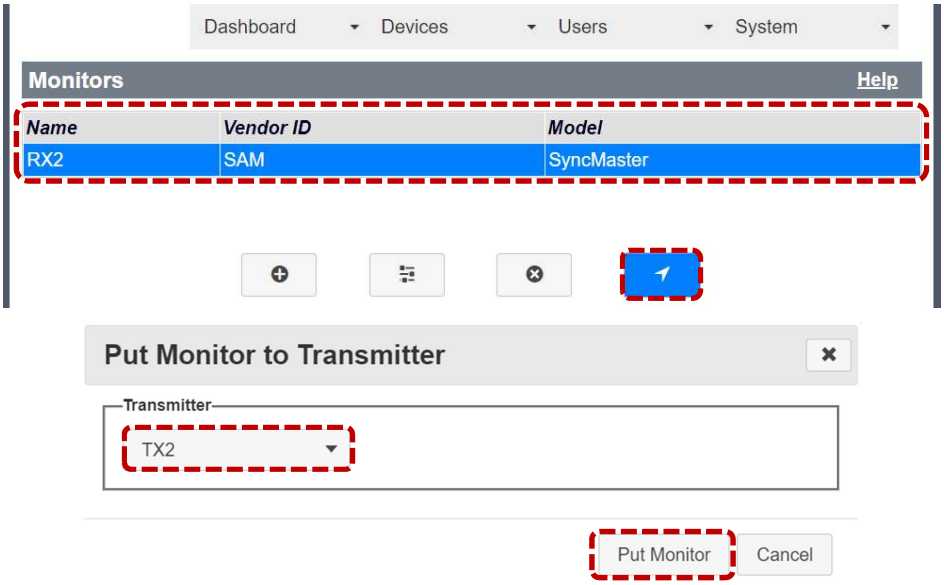


Figure 5-68

5.3.6 Firmware

Figure 5-69 Devices>Firmware

This <**Firmware**> page adds/deletes the firmware files of those TX/RX units already managed by the HMXCC1. These *.bin firmware files stored here can be used for later upgrading procedures. To add a firmware file in HMXCC1 memory, click <**Choose File**> button to select a firmware file then click <**Add New File**> button. To delete one or multiple firmware files, please check the firmware files to be deleted first, then click <**Delete Selected Files**> button.

5.3.7 Upgrade

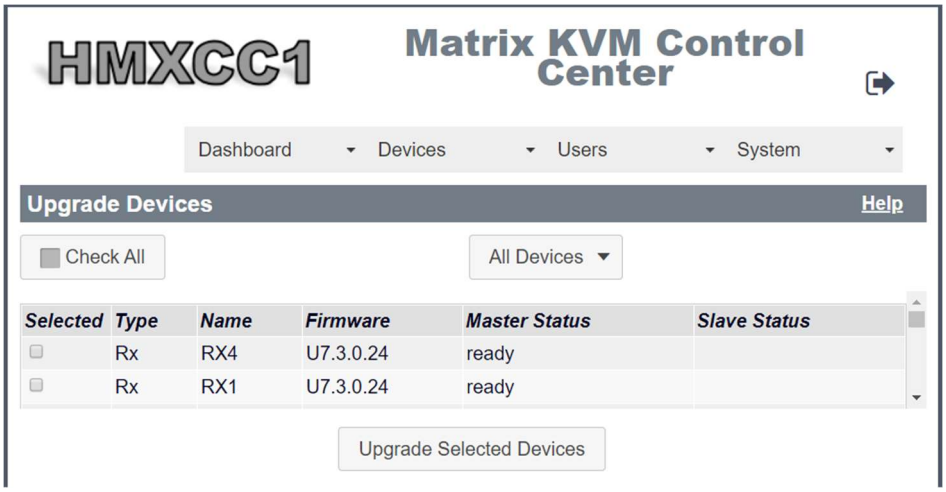


Figure 5-70 Devices>Upgrade

This <**Upgrade**> page is where you can upgrade the firmware of transmitters and receivers. It lists information of all managed devices, including type, name, firmware version and upgrade status. After selecting specific or all devices, click <**Upgrade Selected Devices**> button to start the upgrade process.

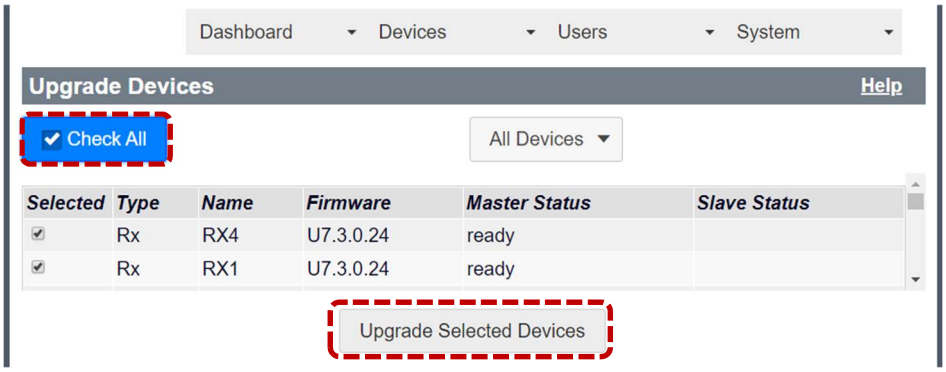


Figure 5-71

Start TX/RX Firmware Upgrade Process

Firstly, ensure the latest uploaded TX/RX firmware files are the most updated. Go to **Devices**>**Firmware,** choose a firmware file and click the <**Add New File**> button to add latest firmware files in the firmware file list and remove all old firmware files from the list.

Go to **Devices**>**Upgrade**. Select all devices and click <**Upgrade Selected Devices**> button to start the upgrade process. You can follow the update status of each device in the <**Master Status**/**Slave status**> columns.

It will take about 15 minutes to finish the upgrade process (Note: The time highly depends on how busy the network environment is. We recommend user upgrade the firmware of TX/RX during the network off-peak time). Click <**Yes**> button to continue or click <**Cancel**> button to abort upgrade process.

Follow the steps and waiting the process <**writing to Flash**> and <**rebooting**> until the selected devices finish rebooting and become <**ready**>.

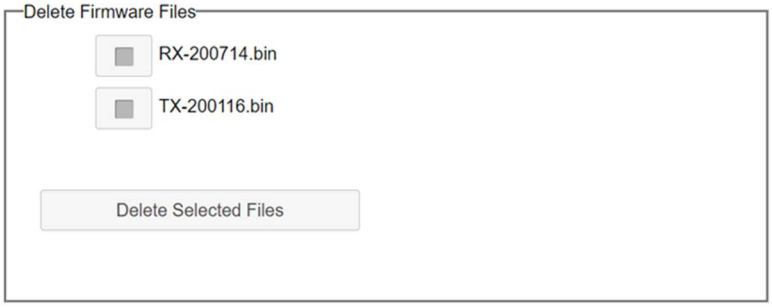


Figure 5-72 Devices>Firmware

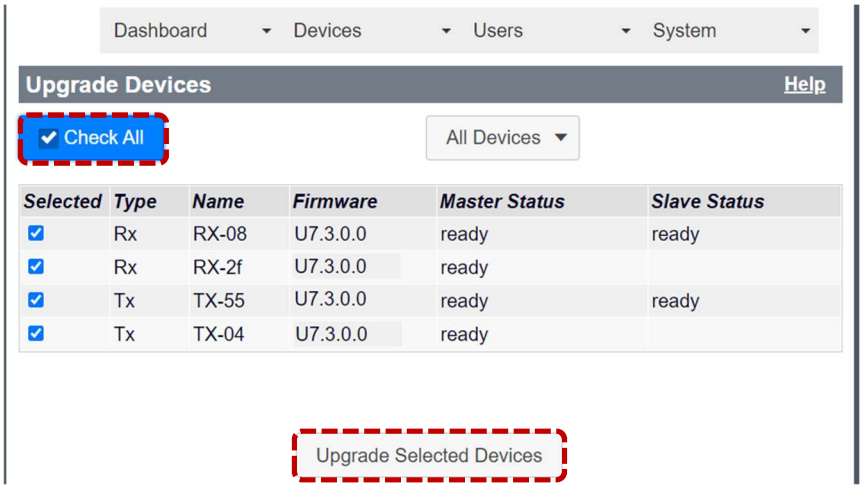


Figure 5-73 Devices>Upgrade>Select Devices to be upgraded

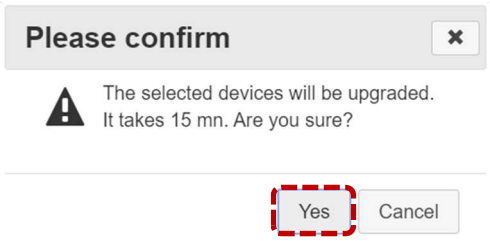


Figure 5-74 Devices>Upgrade>Upgrade Confirmation

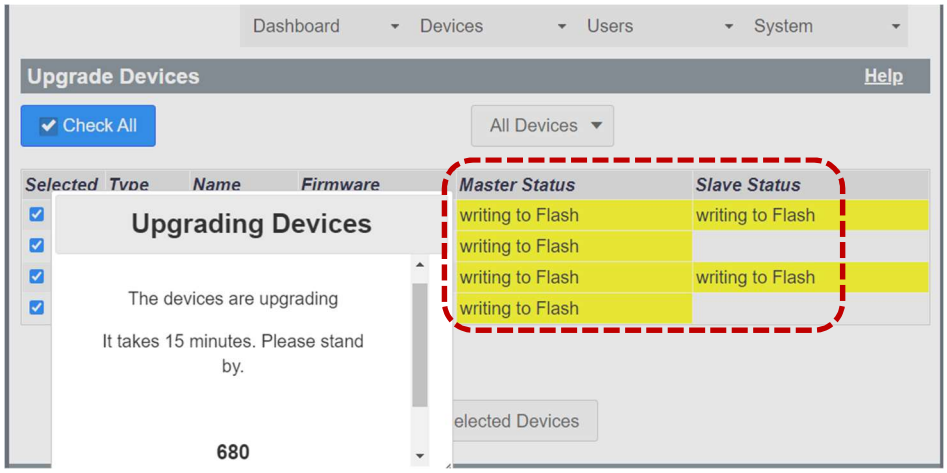


Figure 5-75 Devices>Upgrades>Upgrade Processing

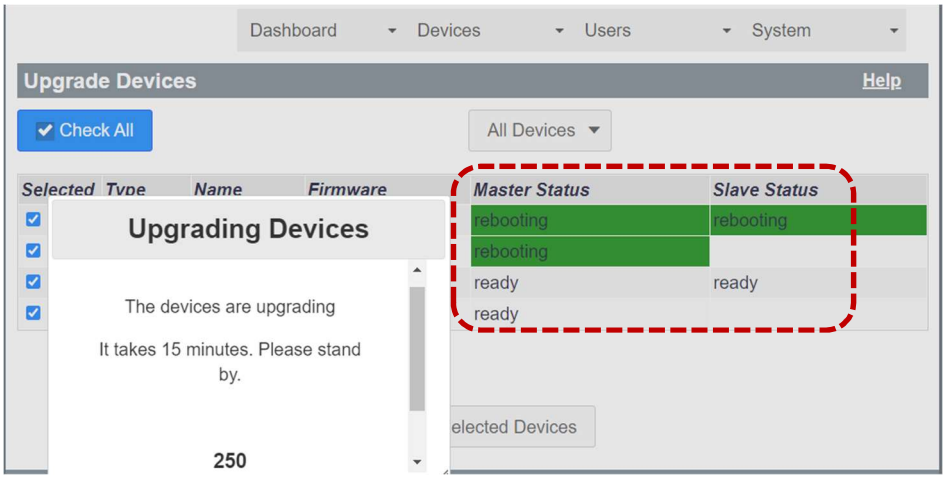


Figure 5-76 Devices>Upgrade>Upgrade Processing

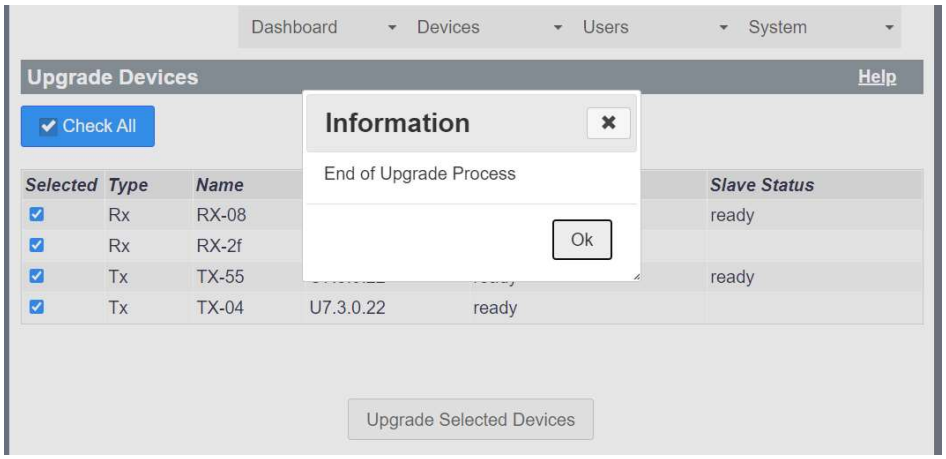


Figure 5-77 Devices>Upgrade>Upgrade Finished

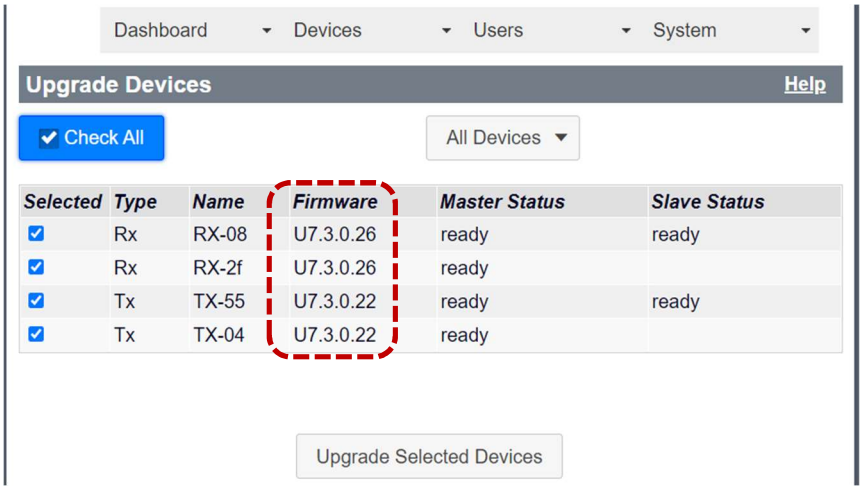


Figure 5-78 Devices>Upgrade>Ready

Online <**Help**> Tab

For Online help of <**Devices**> sections, please go to **Main Menu**>**Devices**, selecting any items and click the <**Help**> tab at the upper-right corner to get detailed instructions.

Figure 5-79

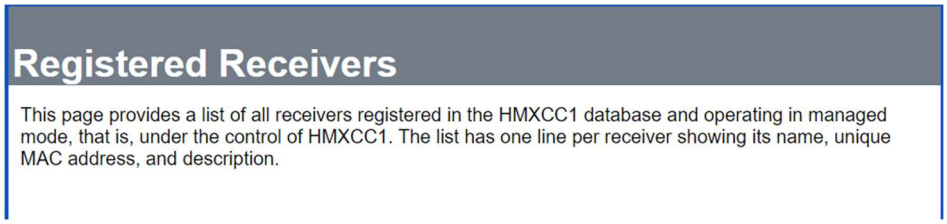


Figure 5-80 Devices>Registered Receivers>Online Help

5.4 Users

Click the drop-down menu <**Users**> at the top of the interface to get the options as shown below: <**List**>, <**Groups**>, and <**Remote Authentication**>.

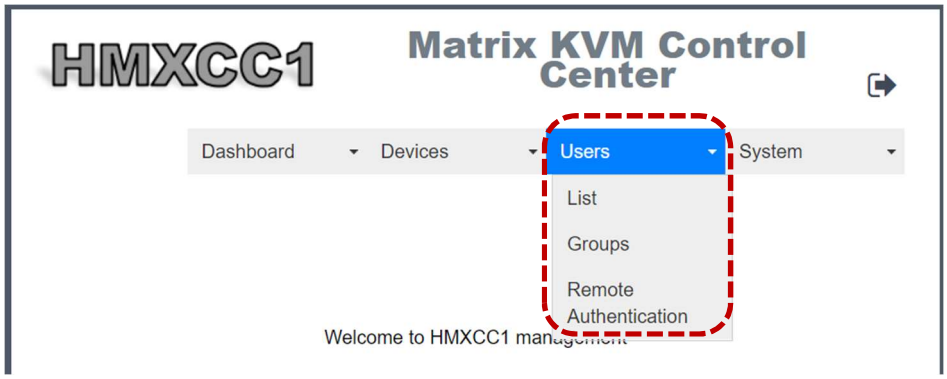


Figure 5-81 Main Menu>Users

5.4.1 (User) List

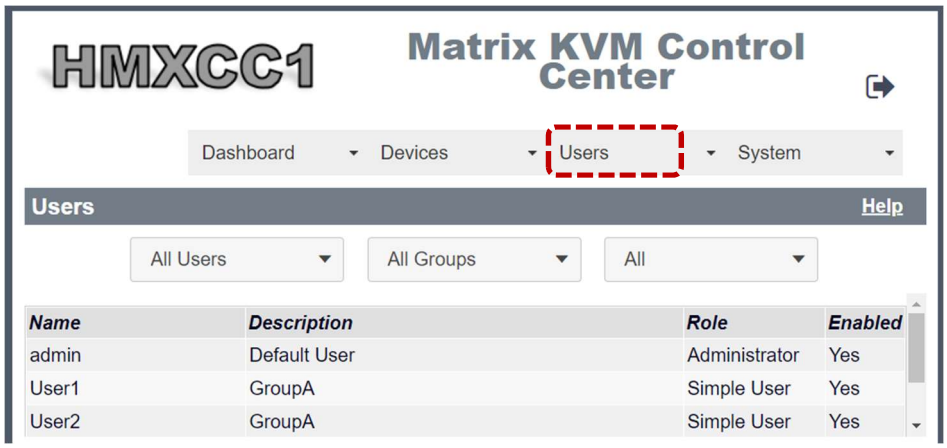


Figure 5-82 Main Menu>Users>(User) List

This <**List**> page displays a user list in the database. Each row displays the Name, Description, Role, and Enabled Property.

Global Actions Settings

When No user is selected, click the available <**Global Actions**> button to open the <**Global User Settings**> window. The <**Global User Settings**> window allows applying one set of settings to all registered users in a single operation.

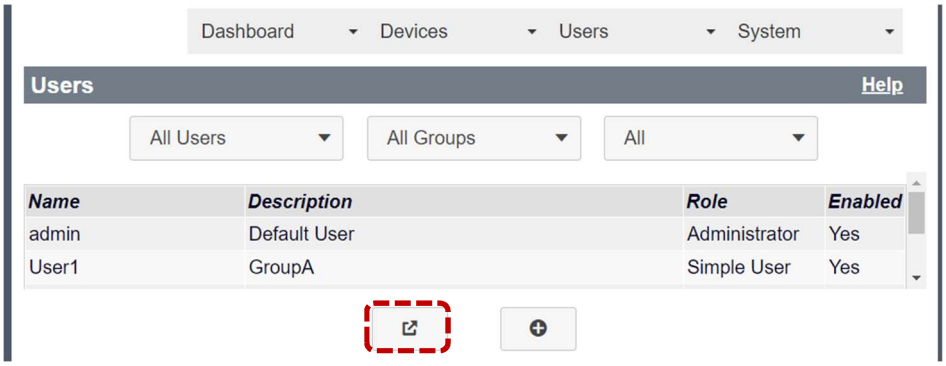


Figure 5-83 Users>(User) List>Global Actions

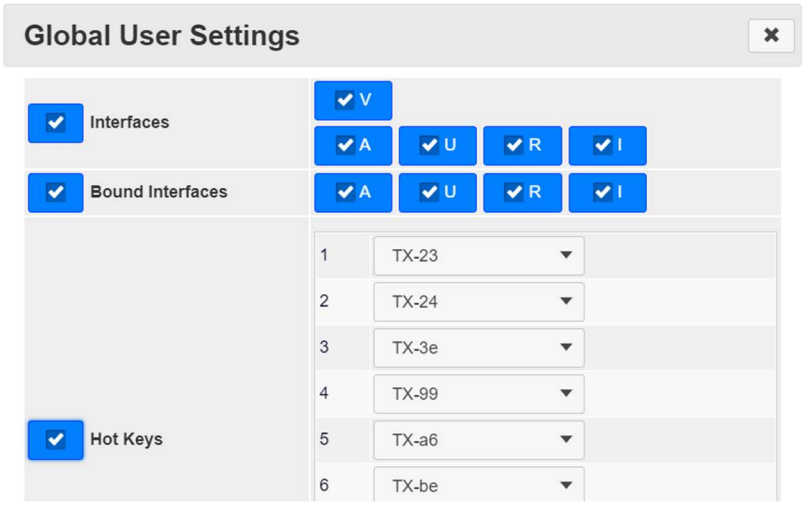


Figure 5-84 Users>(User) List>Global Actions>Global User Settings

Add a New User

Whether any user row is selected or not, click the available <**New User**>button to add a new user. In the configuration window, set up the User role, User groups, and Transmitter hotkeys, etc. The transmitter hotkeys set here can be taken for reference after the user logged in the receiver OSD menu.

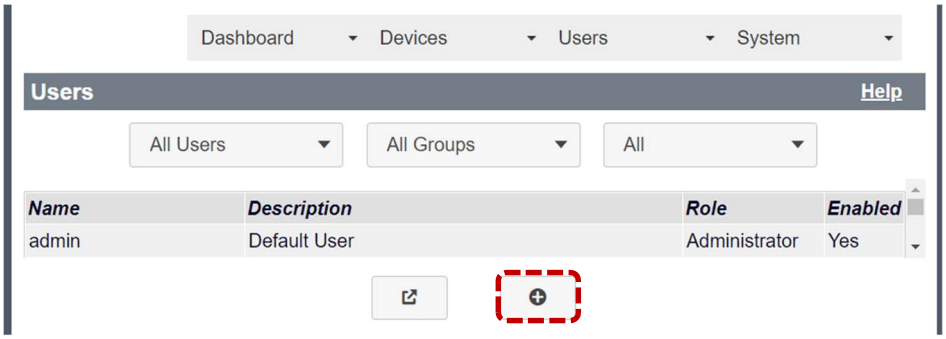


Figure 5-85 Users>(User) List>New User

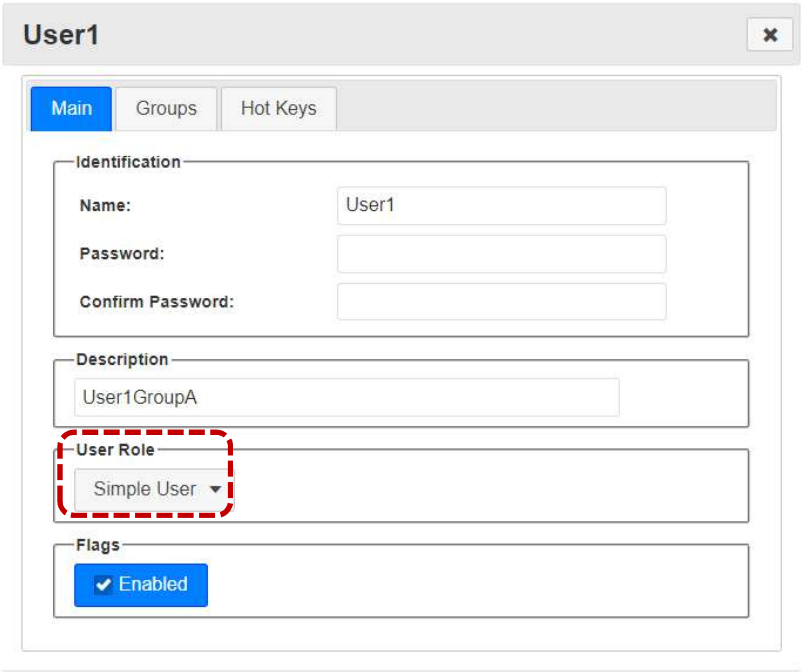


Figure 5-86 Users>(User) List>New User>Main Tab

Set Up New Group

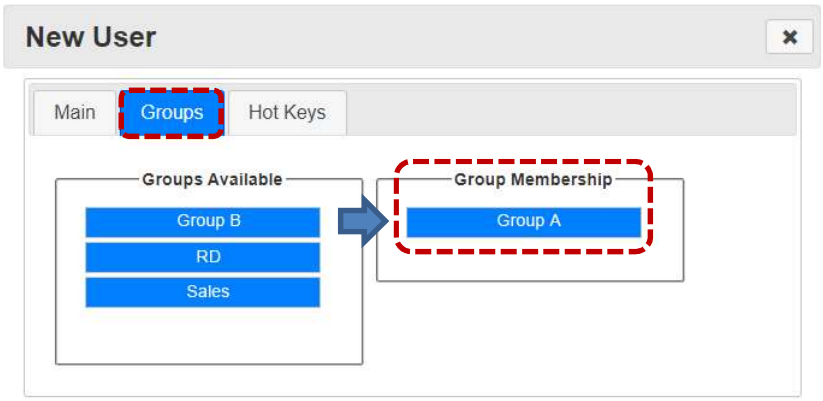


Figure 5-87 Users>List>New User>Group Membership

Edit New User

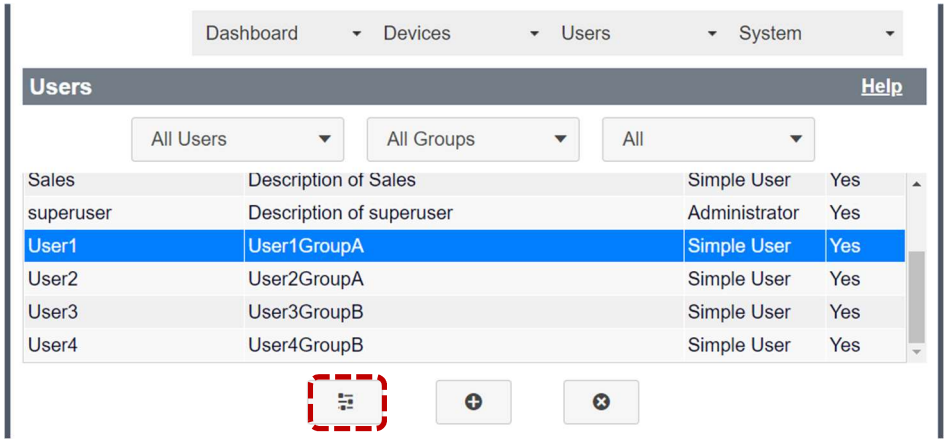


Figure 5-88 Users>(User) List>Edit User

5.4.2 (User) Groups

Figure 5-89 Main Menu>Users>(User) Groups

This <**Groups**> page lists the user groups in the database. The User Groups are sets of users having same device access rights. Each row displays Name, Description, and the Enabled Property. When the Enabled Property of a user group is set disabled, it means that the administrator has terminated its access right for logging in receivers and accessing transmitters.

Add New User Group

Whether any user group row is selected or not, click the available <**New Group**> button  to add a new user group. In the configuration window, set up Name of the new group, User members, Transmitter members, and Receiver members. The assignment of RX/TX members can be skipped currently and decided later.

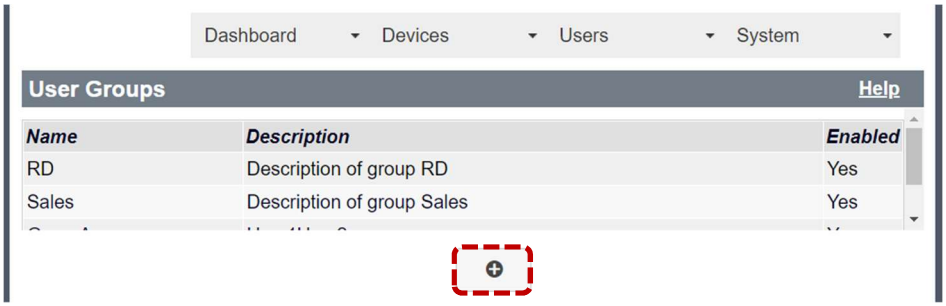


Figure 5-90 Users>(User) Groups>New Group

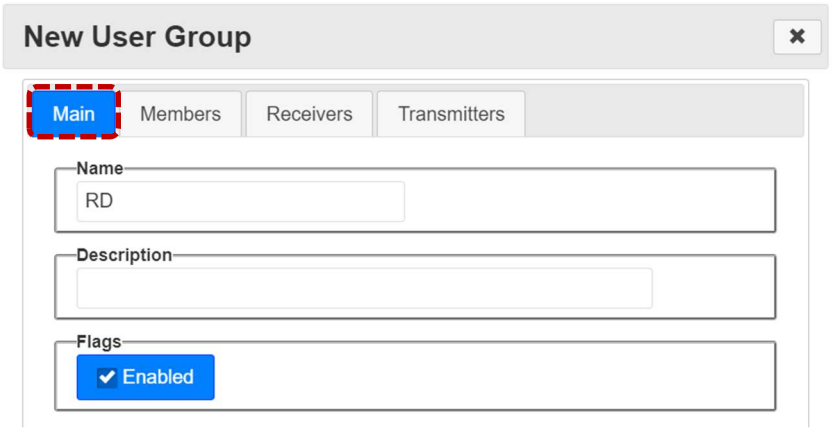


Figure 5-91 Users>(User) Groups>New Group>Setting New User Group Name

Assign Members to User Group

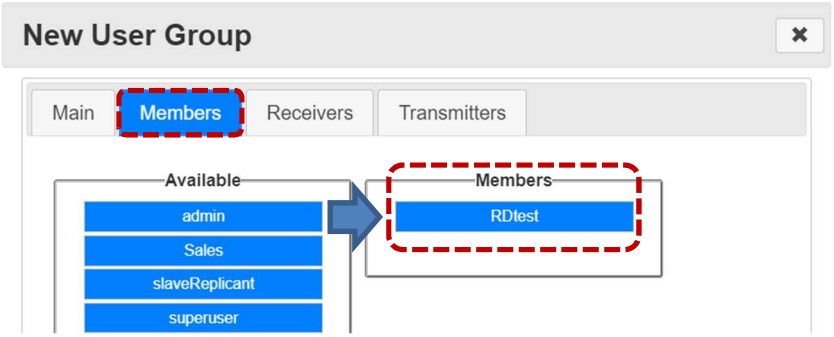


Figure 5-92 Users>(User) Groups>New Group>Setting User Group Members

Assign Receivers to New Group

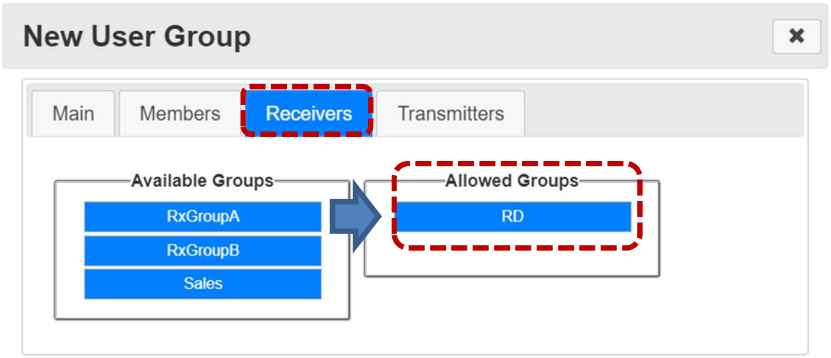


Figure 5-93 Users>(User) Groups>New Group>Setting Allowed Receiver Groups

Assign Transmitters to New Group

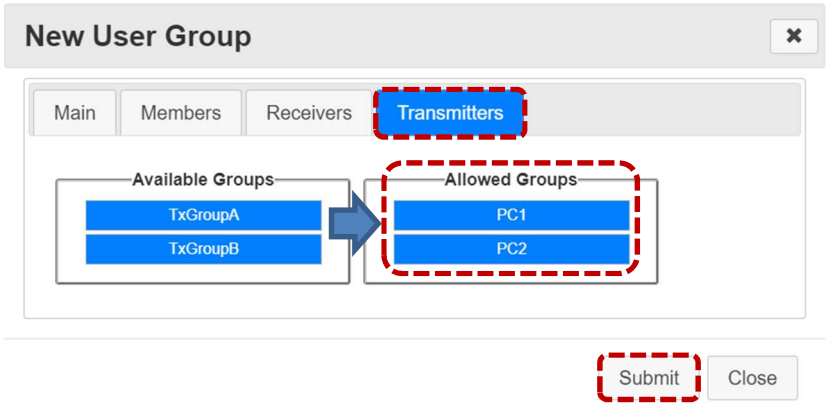


Figure 5-94 Users>(User) Groups>New Group>Setting Allowed Transmitter Groups

Edit User Group

Select an existing User Group and click <**Edit Group**> button  to re-configure the Name of the user group, User members, Transmitter members, and Receiver members.

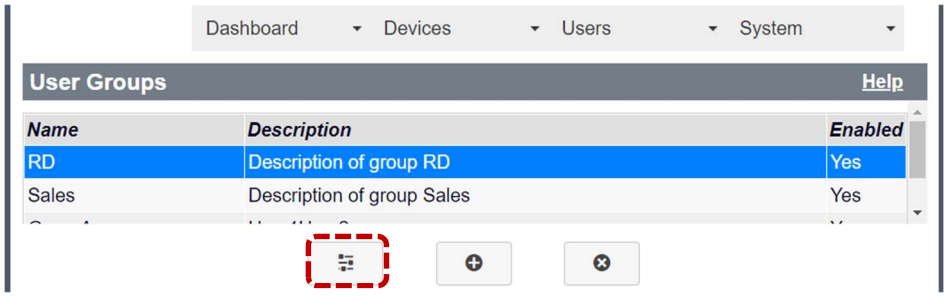


Figure 5-95 Users>(User) Groups>Edit Group

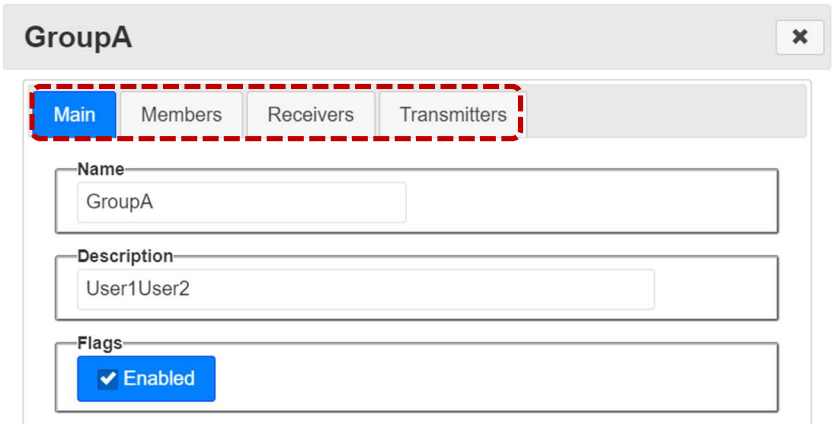


Figure 5-96 Users>Groups>Edit Group>Settings

5.4.3 Remote Authentication

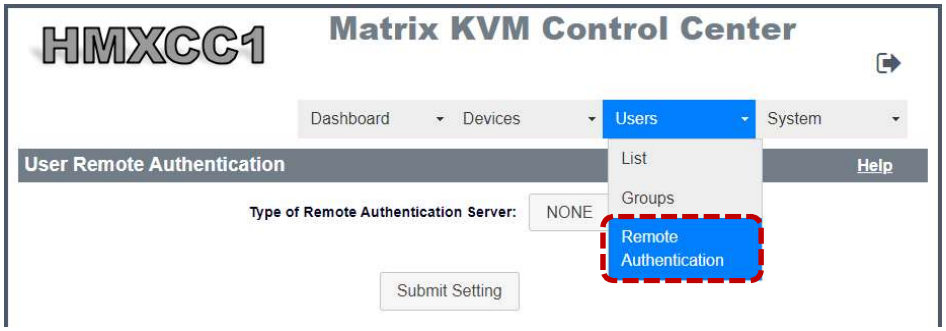


Figure 5-97 Users>Remote Authentication>NONE/LDAP/RADIUS

In this <**Remote Authentication**> page, user can select and configure the User Authentication Mode for HMXCC1. The Authentication is the process of making sure that someone is really who he claims to be. The Authentication process can take place in HMXCC1 locally or use LDAP or RADIUS enterprise authentication servers remotely. The User authorization is implemented locally by HMXCC1 with reference to the user data in the HMXCC1 database.

Configure LDAP or RADIUS Server Access

After specifying a type of remote authentication server (NONE/LDAP/RADIUS), click the <**Configure Server Access**> button to save the settings for the selected remote server access.

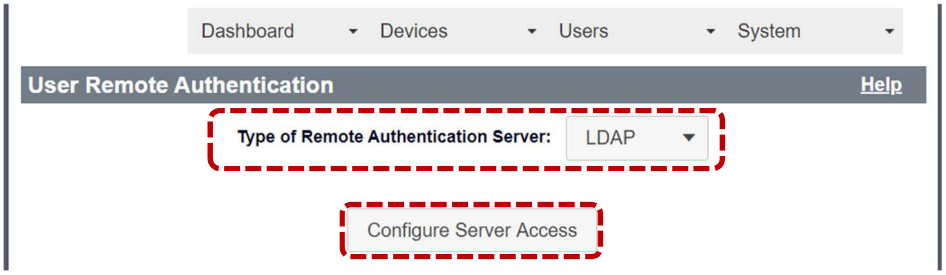


Figure 5-98 Users>Remote Authentication>LDAP

Figure 5-99 Users>Remote Authentication>LDAP Server Access

Online <**Help**> Tab

For Online help of <Users> sections, please go to **Main Menu**>**Users**, selecting any items and click the <**Help**> tab at the upper-right corner to get detailed instructions.

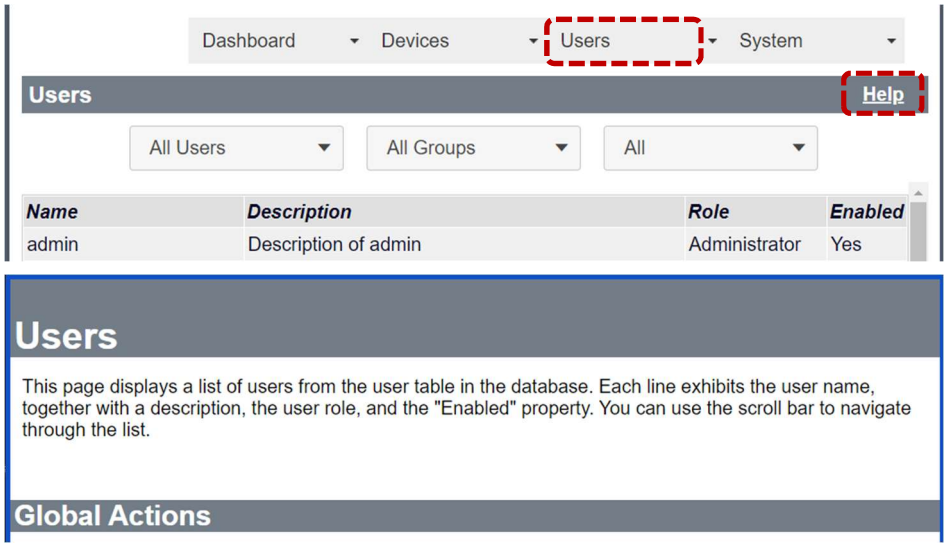


Figure 5-100 Users>(User) List>Online Help

5.5 System

Click the drop-down menu <**System**> at the top of the interface to get the options as shown below: <**Miscellaneous**>, <**Log**>, <**Date & Time**>, <**Networks**>, <**Backups**>, <**Upgrade**>, <**Replication**>, and <**Power**>.

Figure 5-101 Main Menu>System

5.5.1 Miscellaneous

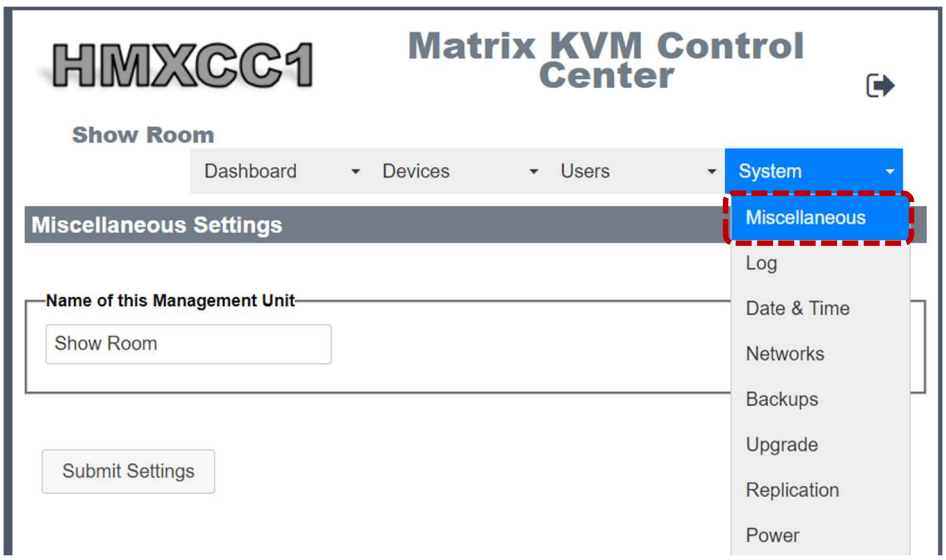


Figure 5-102 System>Miscellaneous

This <**Miscellaneous**> page is used to setup the name of the HMXCC1 unit which will be displayed right below the HMXCC1 logo. Input a name in the <**Name of this Management Unit**> column then click <**Submit Settings**> button to take effect to distinguish this HMXCC1 identification from multiple control systems.

5.5.2 Log

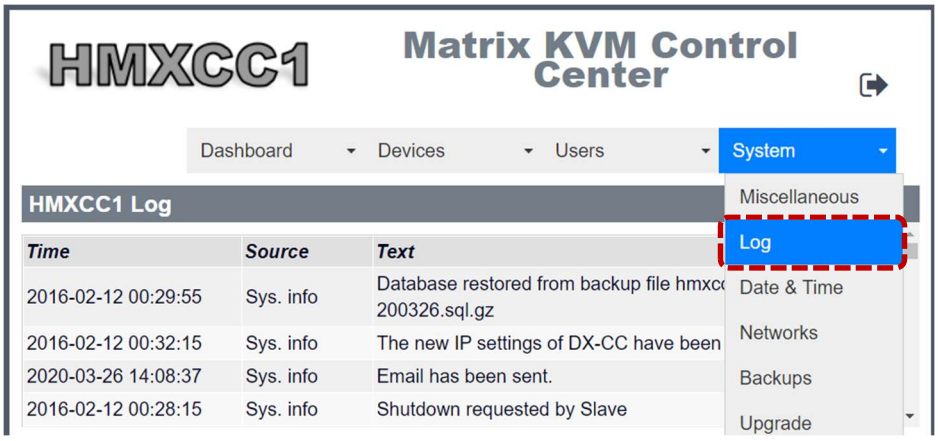


Figure 5-103 System>Log

This <**Log**> page records events of HMXCC1including Information and Errors of User, Device, and System. It also records each login attempt, even for unsuccessful ones.

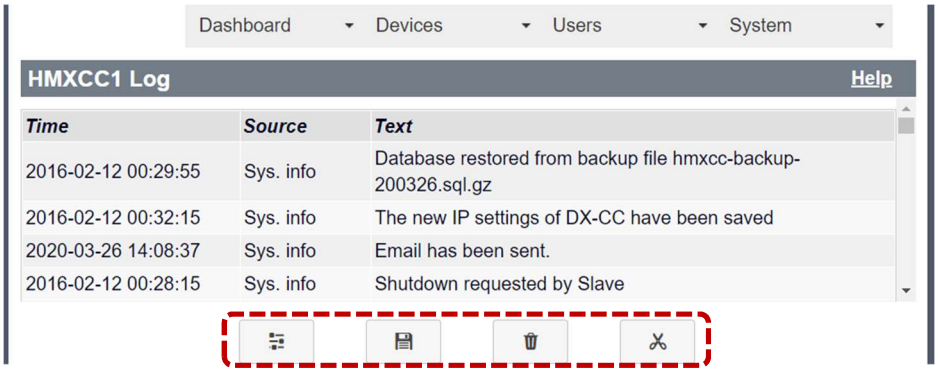


Figure 5-104

Specify Events to be Logged

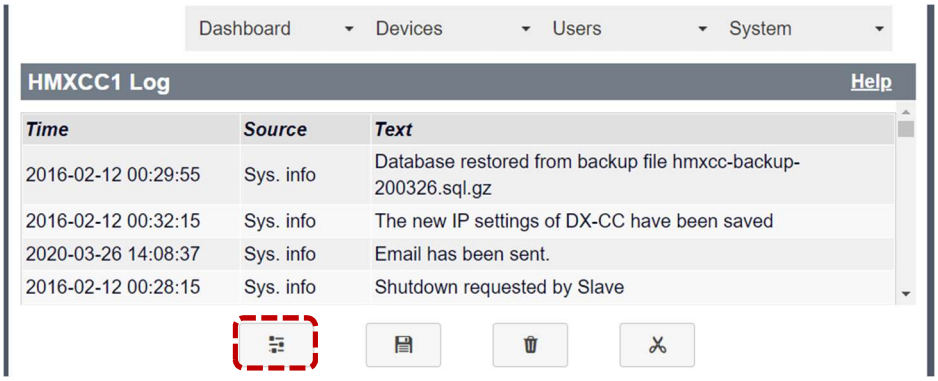


Figure 5-105

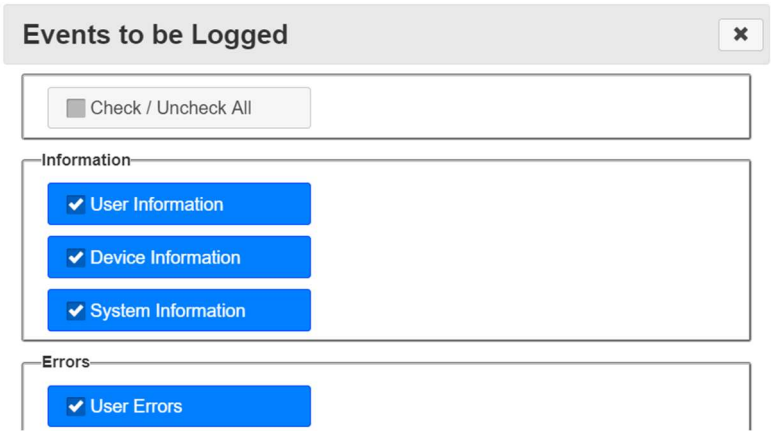


Figure 5-106 System>Log>Events to be Logged

5.5.3 Date & Time

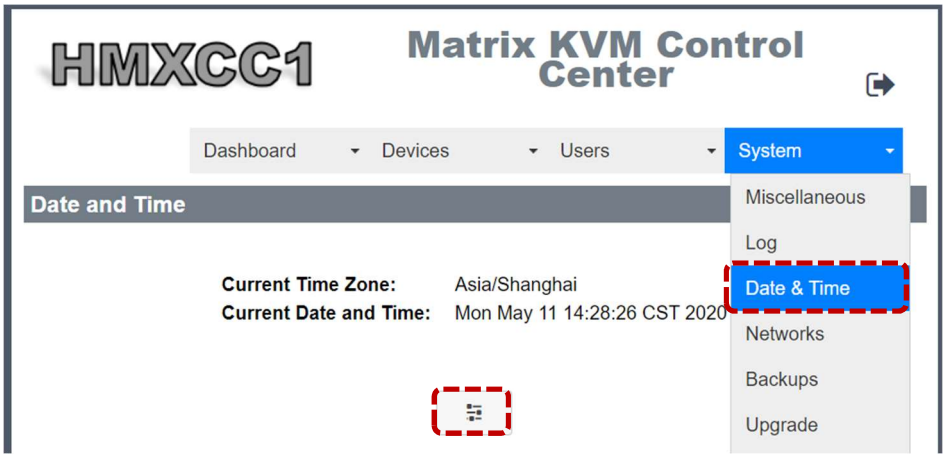


Figure 5-107 System>Date & Time

This <**Date & Time**> page is used to set up the HMXCC clock. The HMXCC1 clock can be synchronized by Internet NTP servers by clicking the <**Configure**> button and check the <**Use Internet Time**> box. The clock can also be set by clicking the available <**Set Date and Time**> button while the <**Use Internet Time**> box is in unchecked status. The attached time information of the logged events is based on the clock information. After the Time Zone or the <**Use Internet Time**> box status is modified, click the <**Submit**> button to valid the time settings.

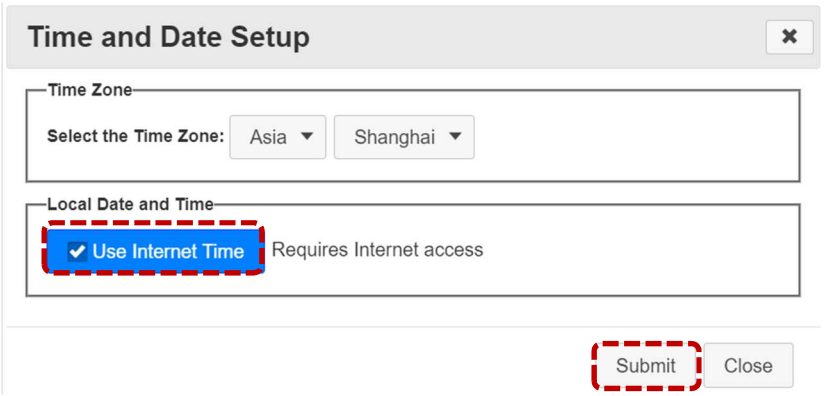


Figure 5-108 System>Date & Time>Configure

5.5.4 Networks

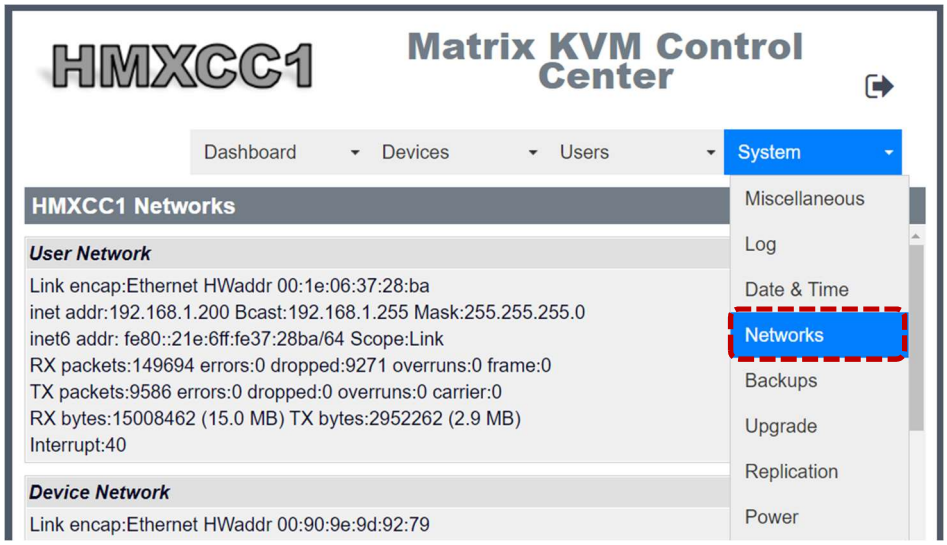


Figure 5-109 System>Networks

HMXCC1 configuration supports 1000Mbps ethernet networking for ultra-high speed device data transmission. The user interface is based on TCP/IP protocol, providing HTTPS network server to enable the users accessing the devices on the local network via the web browser. HMXCC1 can leave the default HTTPS port (443) unused and use configurable ports from 5008 to 5025 instead. Since HMXCC1 uses a non-CA self-signed certificate. As a result, the web browser will display a warning of an unsafe connection. There is no way to find out externally that HMXCC1 is a hardware controller, not a website. HMXCC1 needs to connect with TX/RX devices via a dedicate LAN (as said 1000Mbps ethernet networking). That is, HMXCC1 can not be installed in a network environment other than the device local LAN (including Internet) to access the TX/RX devices. Since the communication between HMXCC1 and TX/RX devices are all TLS encrypted, HMXCC1 meets the highest-standard information security requirements.

This <**Networks**> page displays the current statuses of two HMXCC1 network interfaces. Click the <**Refresh**> button to refresh the information. Click the <**Configure**> button to configure the network interfaces.

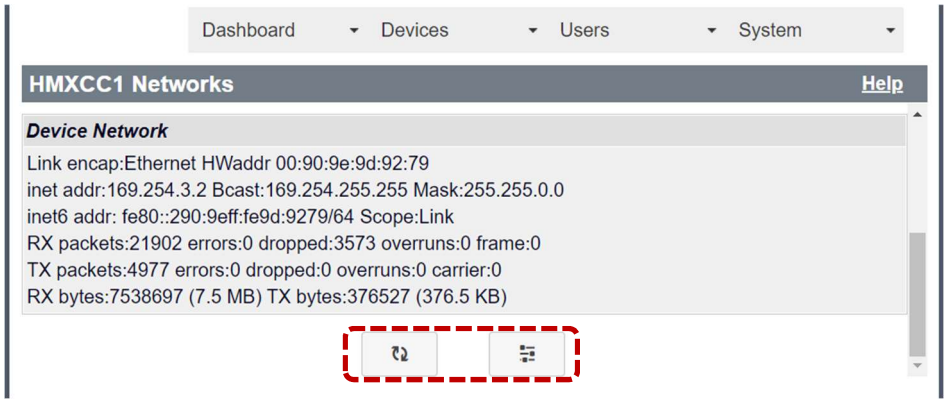


Figure 5-110 System>Networks>Refresh/Configure

Go to **System**>**Networks**, click the <**Configure**> button to enter <**Network Settings**> window. Modify the User-Network IP and Device-Network IP, specifying them to be different from the factory defaults. As last, click the <**Submit**> button to reboot the HMXCC1 controller.

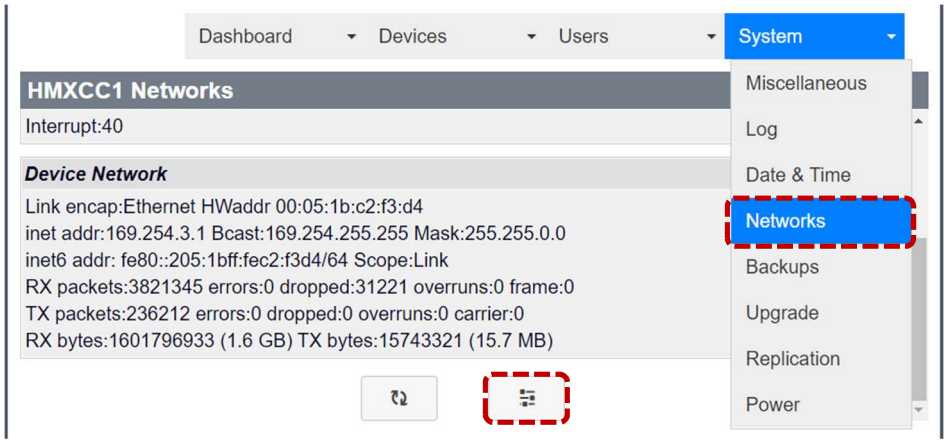


Figure 5-111 System>Networks>Configure

Set User Network IP and Device Network IP

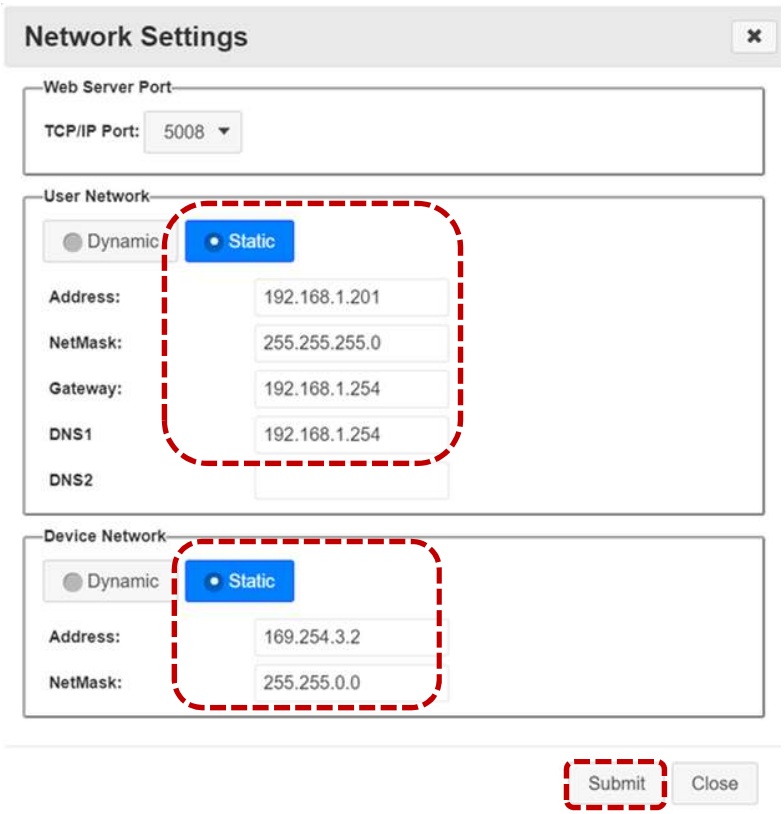


Figure 5-112 System>Networks>Configure>Network Settings

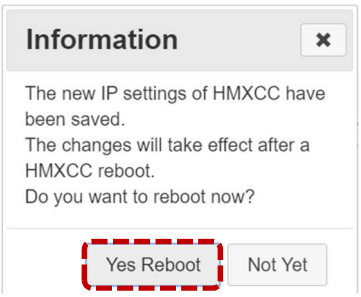


Figure 5-113

5.5.5 Backups

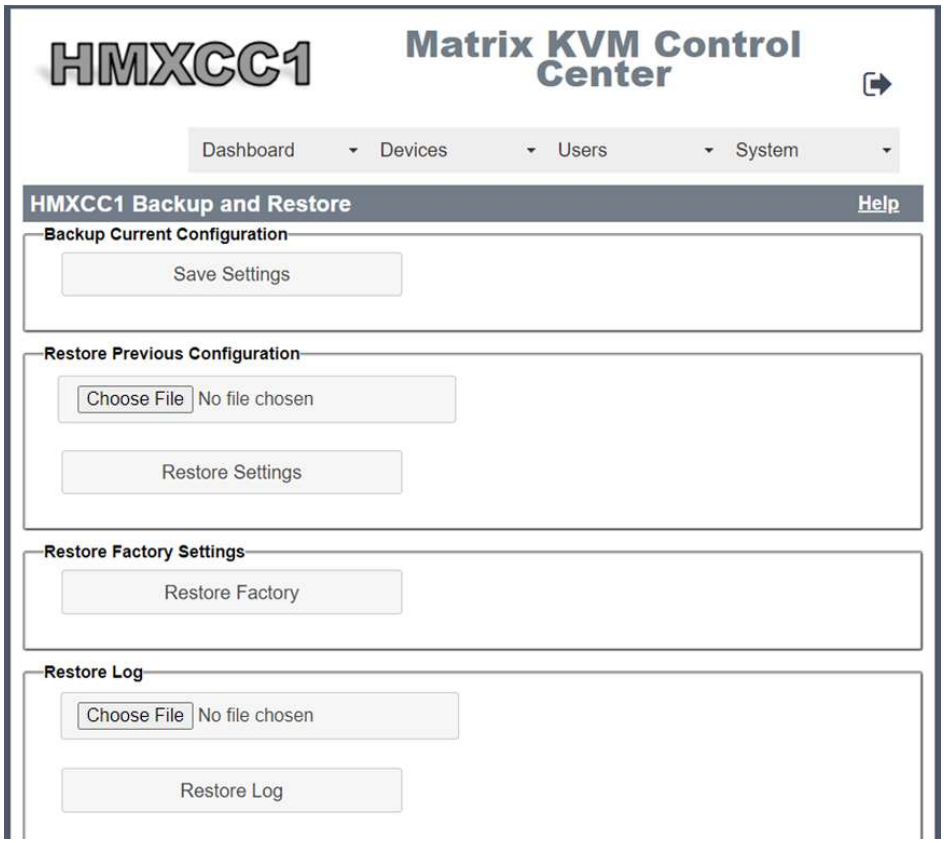


Figure 5-114 System>Backups

This <**Backups**> page allows you to back up and restore the contents of the HMXCC1 database for more portability and usability. It is always recommended back up your configuration to the computer after any change was made. With the backup files saved in the computer, the user may restore it to another HMXCC1 unit with identical settings as the redundant backup server.

The name of the backup file is generated automatically. Its format is "hmxcc-backup-yymmdd.sql.gz" with "yymmdd" being a timestamp, for example hmxcc-backup-180215.sql.gz. The backup file is only for restoring to HMXCC1 unit. Do not decompress it for other use.

Manually Back up HMXCC1 Database from the Master Unit

Manually backing up the HMXCC1 unit database only applies when single HMXCC1 unit is deployed or two HMXCC1 units are deployed but the failover function of the slave unit is disabled. Go to **System**>**Backups**, in the <**Backup Current Configuration**> column click <**Save Settings**> button to save *.gz compressed file periodically to PCs.

Figure 5-115 System>Backups>Backup Current Configuration

Resubmit IP Settings after HMXCC1 Database Restoring Process is Done

Restore HMXCC1 Database Backup to a New HMXCC1 Controller

In <**HMXCC1 Backup and Restore**> page, select the latest backup file then click the <**Restore Settings**> button to restore it to the new HMXCC1 unit. After restoring process is done, its IP settings should be resubmitted again to take effect before the new HMXCC1 unit reboots.

Figure 5-116 System>Backups>Restore Previous Configuration

Go to **System**>**Networks**, click the <**Configure**> button to set up the User IP and Device IP. At last, click the <**Submit**> button to reboot the new HMXCC1 unit so that the network settings will take effect then.

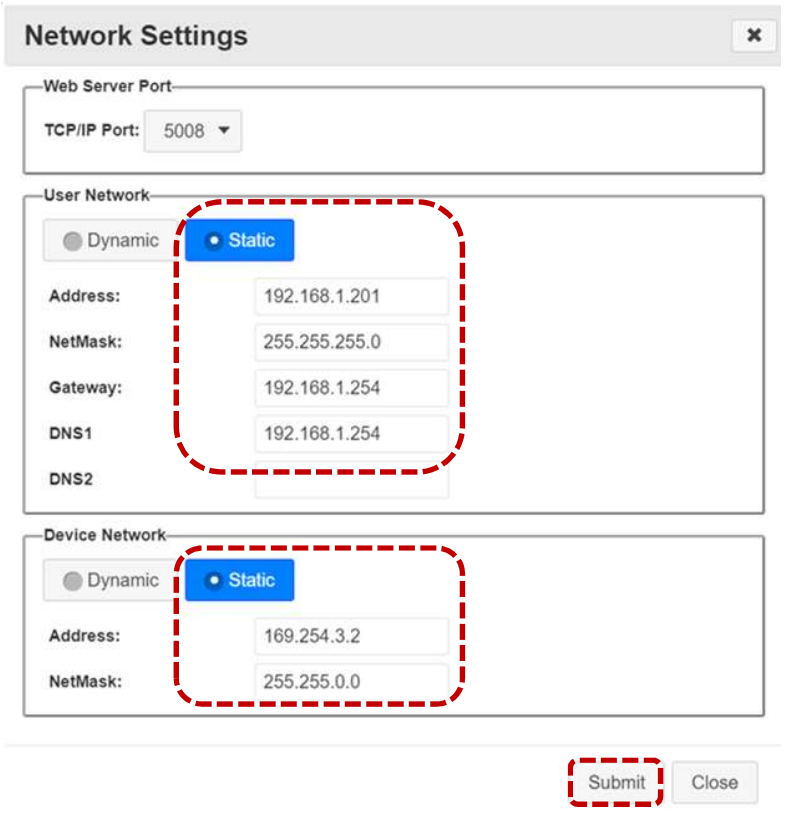


Figure 5-117

Note: Resubmit the IP settings before rebooting the new HMXCC1 unit.

Restore Log

Go to **System**>**Log**, click the <**Save to File**> button to download the current log backup file (format: hmxcc-log.txt.gz) to the computer.

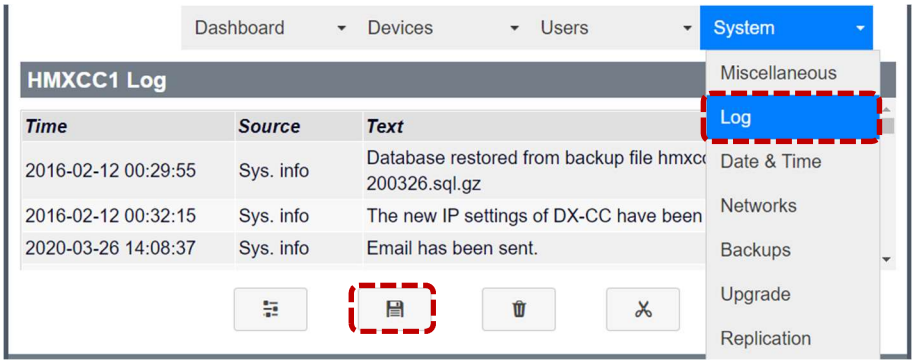


Figure 5-118 System>Log

Next, go to **System**>**Backups**, click the <**Select File**> button to select a log backup file in the computer. Click the <**Restore Log**> button to restore the log backup file to the HMXCC1 controller.

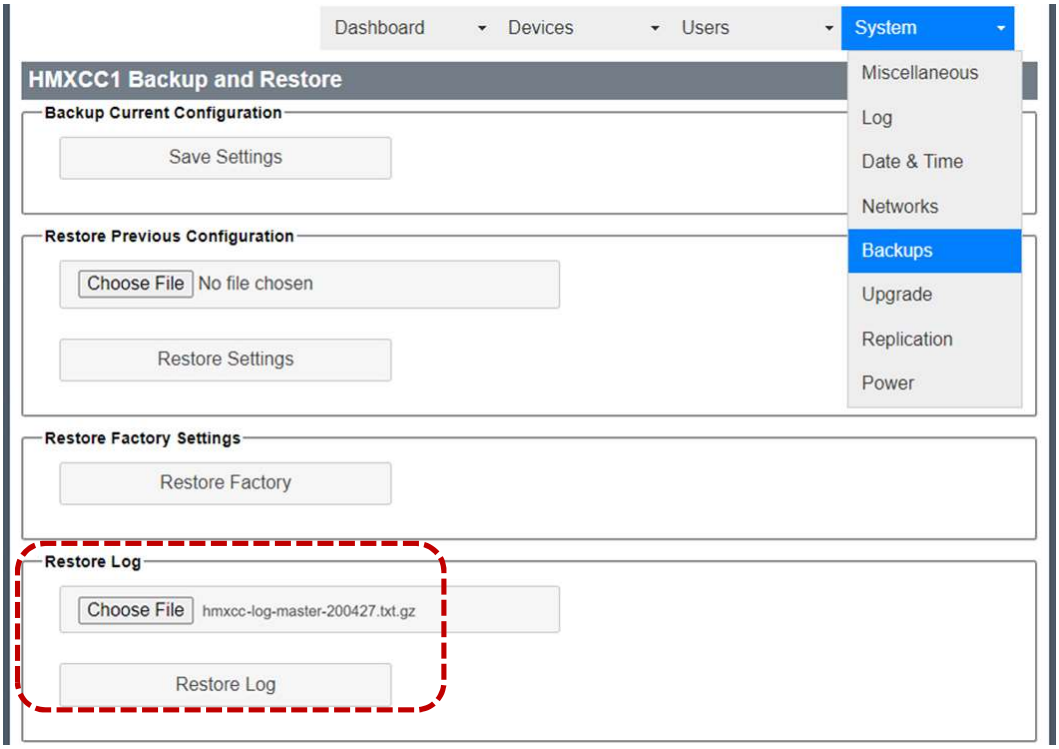


Figure 5-119 System>Backups>Restore Log

Download the Master Backup Files from the Slave Unit Management Interface

At the slave unit management interface homepage, click the <**Download Master Backup**> button . Click the <**Save Database Backup**> to save database backup file to the computer. Click the <**Save Log Backup**> button to save log backup file to the computer.

Figure 5-120 Slave Unit Management Interface Homepage>Download Master Backup

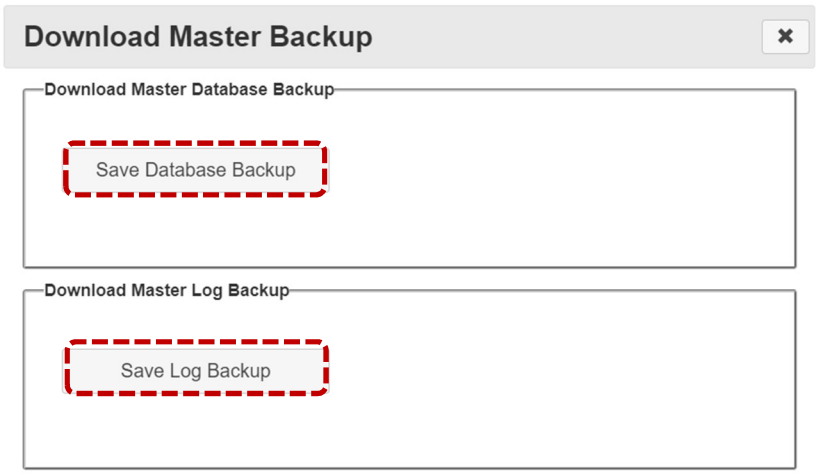


Figure 5-121 Slave Unit Management Interface Homepage>Download Master Backup

Master Unit Database setting backup file format: hmxcc-backup-master-xxxxxx.sql.gz。

Master Unit Log History backup file format: hmxcc-log-master-xxxxxx.sql.gz。

5.5.6 Upgrade

Figure 5-122 System>Upgrade

This <**Upgrade**> page displays the current version of HMXCC1 software and allows you to upgrade it. To upgrade HMXCC1, click <**Choose File**> button and select an applicable backup file, then click the <**Upload Software**> button. Once any exception occurs during the upgrade process, go to **System**>**Backups** and resume the HMXCC1 unit to factory default settings first. Then repeat the upgrade process again.

5.5.7 Replication

This <**Replication**> page is to set up HMXCC1 controller operated in <**Master**> mode or <**Slave**> mode to support Failover Redundant Backup operation. After setting is determined in the <**Replication Mode**> window, the administrator can proceed with manual database replication or automatic failover management.

The factory default is <**No Replication**> mode which is applicable when user only deploy single HMXCC1 controller in the system or the second HMXCC1 controller is not set as the slave unit. As the user select <**No Replication**> mode, the administrator needs to manually back up the database and log to the computer regularly.

In Master-Salve mode operation, the master controller unit is the control center of the HMXCC1 system. It monitors if the slave controller unit is operating and activating normally. The slave controller unit will regularly pool the master controller unit and

backup the current database and log from it. As the failover function is enabled, once the master controller unit fails, the slave controller unit can replace the failed master controller unit and operate with the role of new master controller unit.

Figure 5-123 System>Replication

Configure the Replication Mode

Go to **System**>**Replication**, click the <**Configure the Replication Mode**>.

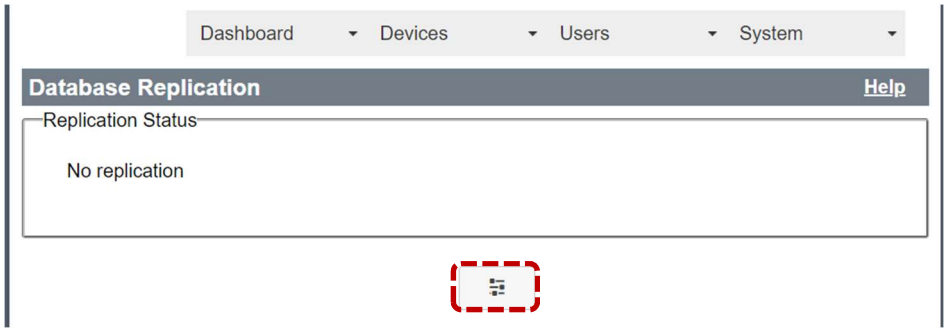


Figure 5-124 System>Replication>Configure the Replication Mode

<**No Replication**> Mode

The default setting is <**No Replication**> when only one unit is installed in the environment. Go to **System**> **Networks**, click the <**Configure the Replication Mode**> button . Set the <**Replication Mode**> as <**No Replication**>. Click the <**Submit**> button, skip rebooting the controller unit and go on the following IP setting procedure.

Go to **System**>**Networks**, click the <**Configure**> button . Specify IP addresses (e.g. User IP: 192.168.1.**201**; Device IP: 169.254.3.**2**) which is different from the factory default and other connected devices. At last, click the <**Submit**> button to reboot the controller unit and take effect all new settings.

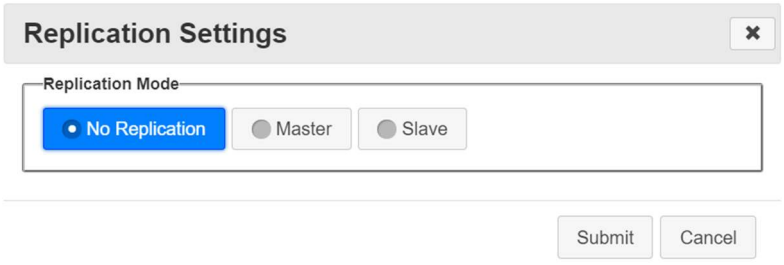


Figure 5-125 System>Replication>Replication Mode>No Replication

Set the Replication Mode to Master

Go to **System**>**Replication**, set <**Replication Mode**> as <**Master**>. At last, click the <**Submit**> button to reboot the controller unit. Check the <**Set Email Alarm**> box to notify the administrator to take following remedy procedure when there is any controller major change (e.g. Start up, Fail, or Shut down).

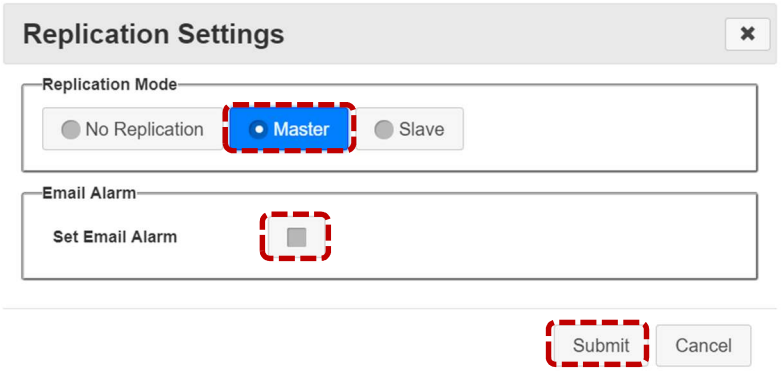


Figure 5-126 System>Replication>Replication Mode>Master

Go to **System**>**Networks**, click the <**Configure**> button . Specify IP addresses (e.g. User IP: 192.168.1.**201**; Device IP: 169.254.3.**2**) which is different from the factory default and other connected devices. At last, click the <**Submit**> button to reboot the controller unit and take effect all new settings.

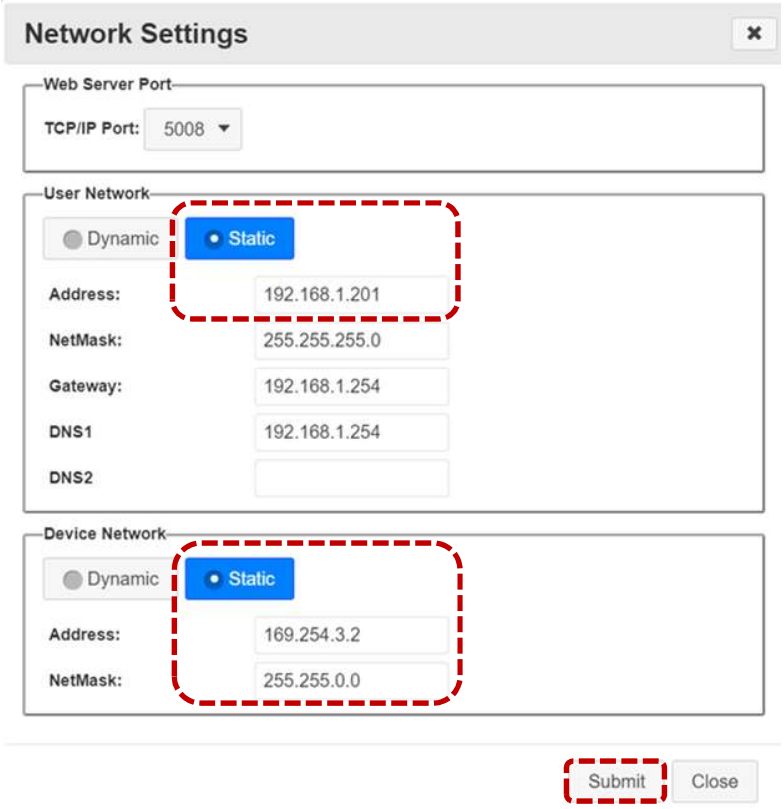


Figure 5-127 System>Networks>Network Settings

Set the Replication Mode to Slave and Enable Failover

Set the <**Replication Mode**> of the second unit as <**Slave**> and enable <Failover> function. Go to **System**>**Replication**, click the <**Configuration Replication Mode**> button . Check <**Slave**> mode and <**Failover Enabled**> box. Fill in the IP address of the Master unit (e.g. 192.168.1.**201**) then click the <**Submit**> button. Skip rebooting the system and continue going to **System**>**Networks**. Click the <**Configure**> button to change the IP addresses of the slave unit (e.g. User IP: 192.168.1.**202**; Device IP: 169.254.3.**3**). At last, click the <**Submit**> button to reboot the controller unit and take effect all new settings.

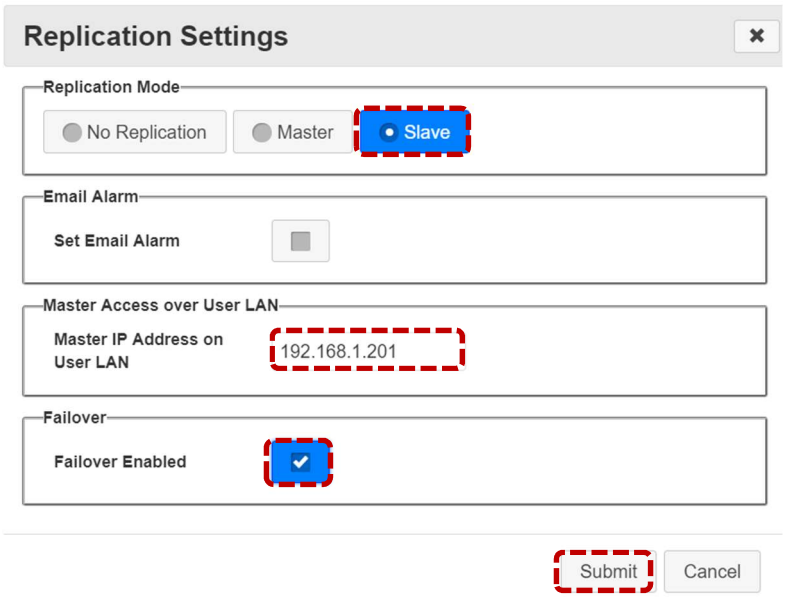


Figure 5-128 System>Replication>Replication Mode>Slave

Replication Mode: click <**Slave**> mode.

Email Alarm: Check this box so that the administrator can be notified to replace the slave unit immediately as it fails.

Master Access over User LAN: Fill in the corresponding User IP address of the master unit.

Failover: Check this <**Failover Enabled**> box so that the slave unit can automatically start the failover redundant backup procedure.

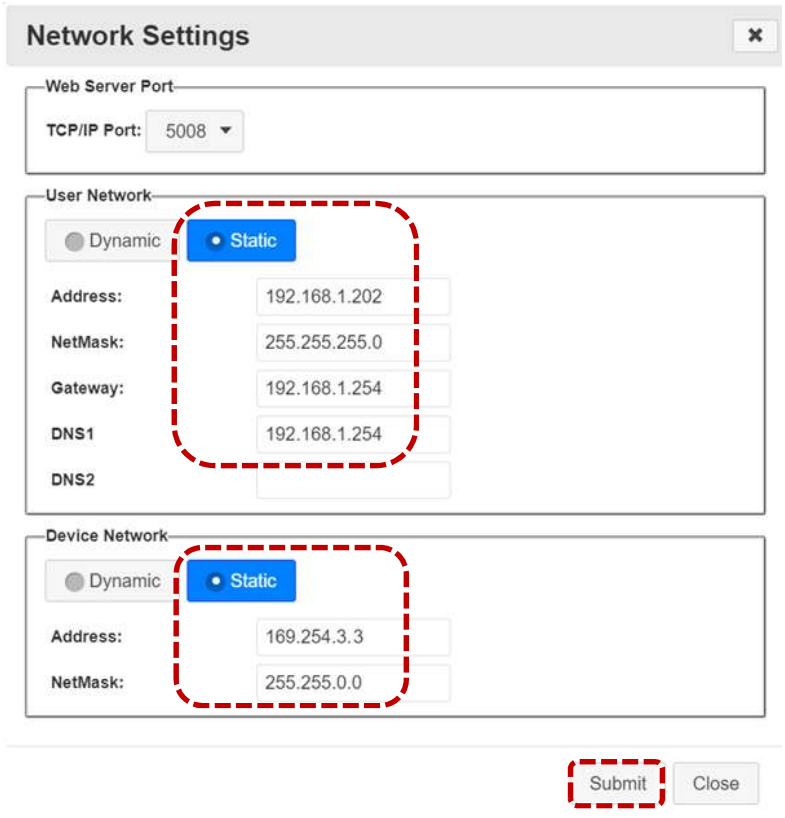


Figure 5-129 System>Networks>Configure>Network Settings

After the slave controller reboots, use the new management interface login IP address (https://192.168.1.**202**:5008) to log in the homepage of the slave unit. If the Failover function is not enabled, the user must manually back up the HMXCC1 database regularly and check the <**Set Email Alarm**> box to notify various changes of the slave unit (e.g. Start up, Fail, Shut down) to proceed corresponding remedy procedures.

5.5.8 Power

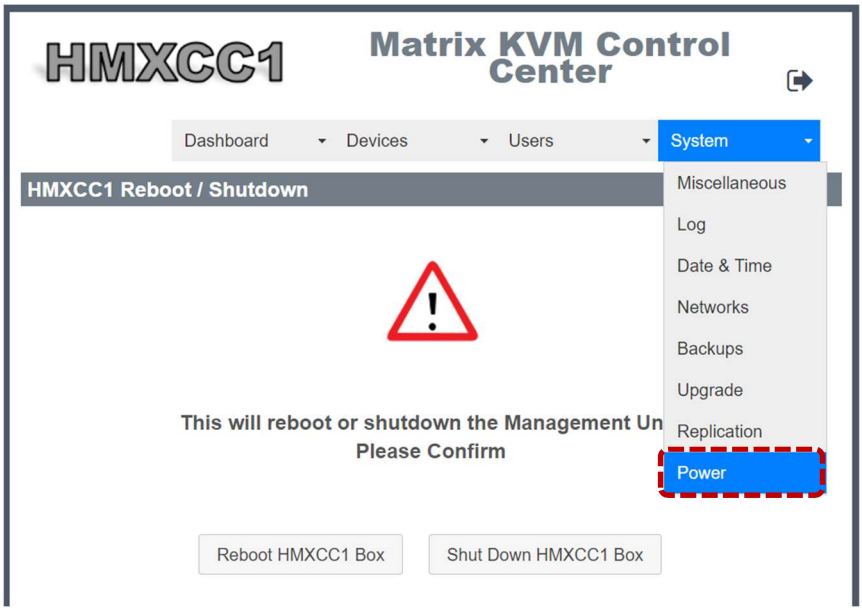


Figure 5-130 System>Power>Reboot/Shut Down

This <**Power**> page is used to reboot or shutdown the HMXCC1 controller.

●Reboot HMXCC1 controller:

Click the <**Reboot HMXCC1 Box**> button to reboot the HMXCC1 controller. In most cases, rebooting is a maintenance operation.

●Shut Down HMXCC1 controller:

Click the <**Shut Down HMXCC1 Box**> button to turn off the HMXCC1 controller. Before turning off the physical power switch, it is recommended use this button to shut down the HMXCC1 controller.

Online <**Help**> Tab

For Online help of <**System**> sections, please go to **Main Menu**>**System**, selecting any items and click the <**Help**> tab at the upper-right corner to get detailed instructions.

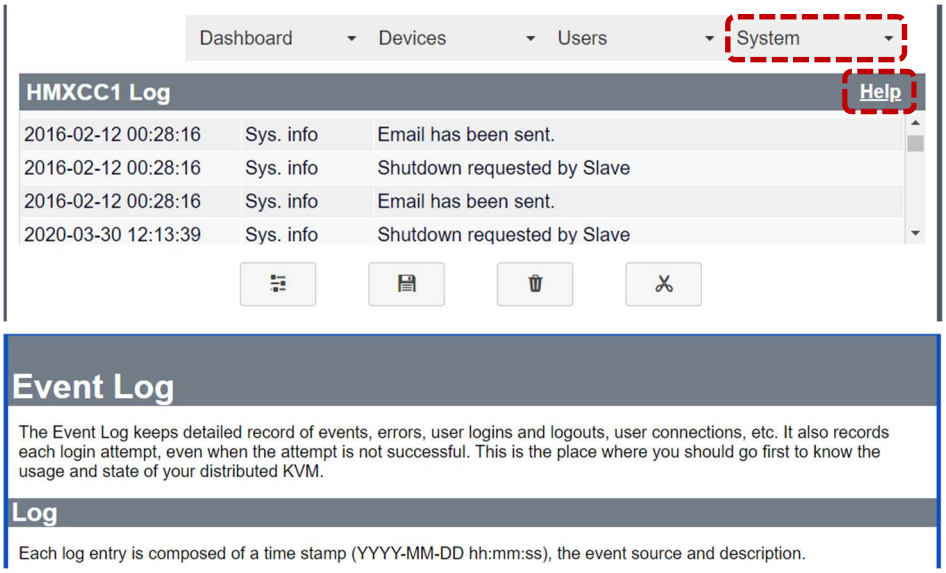


Figure 5-131 System>Log>Online Help

Chapter 6 Web-Based Applications and Management

6.1 Database Replication Applications

Please refer to the following steps to set up a master unit and a slave unit.

(1) Database replication pages of master and slave units

Go to **System**>**Replication** at the Management Interfaces of the Master and Slave units. At <**Database Replication**> page, some function menus such as <**Dashboard**>, <**Device**>, and <**User**> are not available in slave unit's management interface. The slave unit management interface also reminds the user the current controller unit is a slave with <**Replication Slave Mode**> in red.

Figure 6-1 Database Replication page of Master Unit

Figure 6-2 Database Replication page of Slave Unit

(2) Download the setting database backup and Log backup from the slave unit

At the <**Database Replication**> page, click the <**download master backup**> button  to save Master unit's database and log backup files in the computer. As the master unit fails, the user can restore the backup files back to the current slave unit. The slave unit will replace the role of the failed master unit and become new master unit.

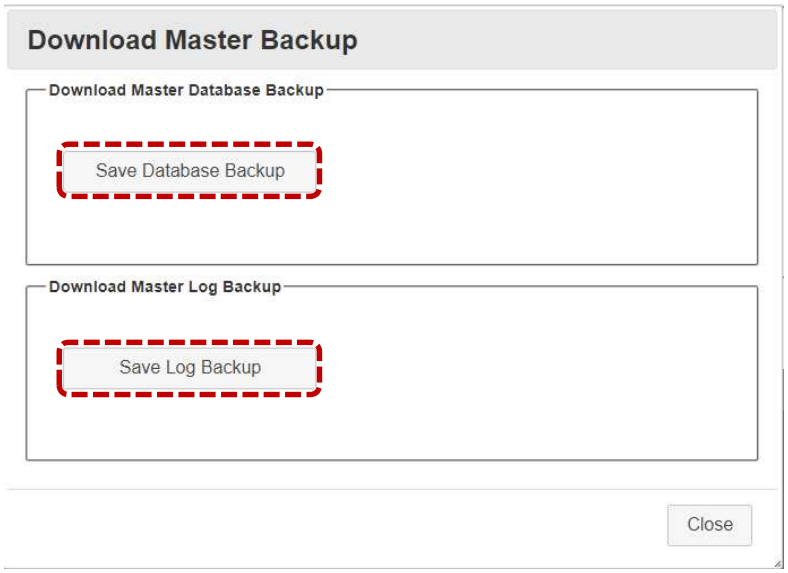


Figure 6-3

Click <**Save Database Backup**> button to save the setting data backup file to the computer. The file format is "hmxcc-backup-master-xxxxxx.sql.gz",

Click <**Save Log Backup**> button to save the log backup file to the computer. The file format is "hmxcc-log-master-xxxxxx.txt.gz". Do not decompress those two files.

(3) Download local database backup file from the current controller (Master/Slave/Single unit) and restore it back to the new controller

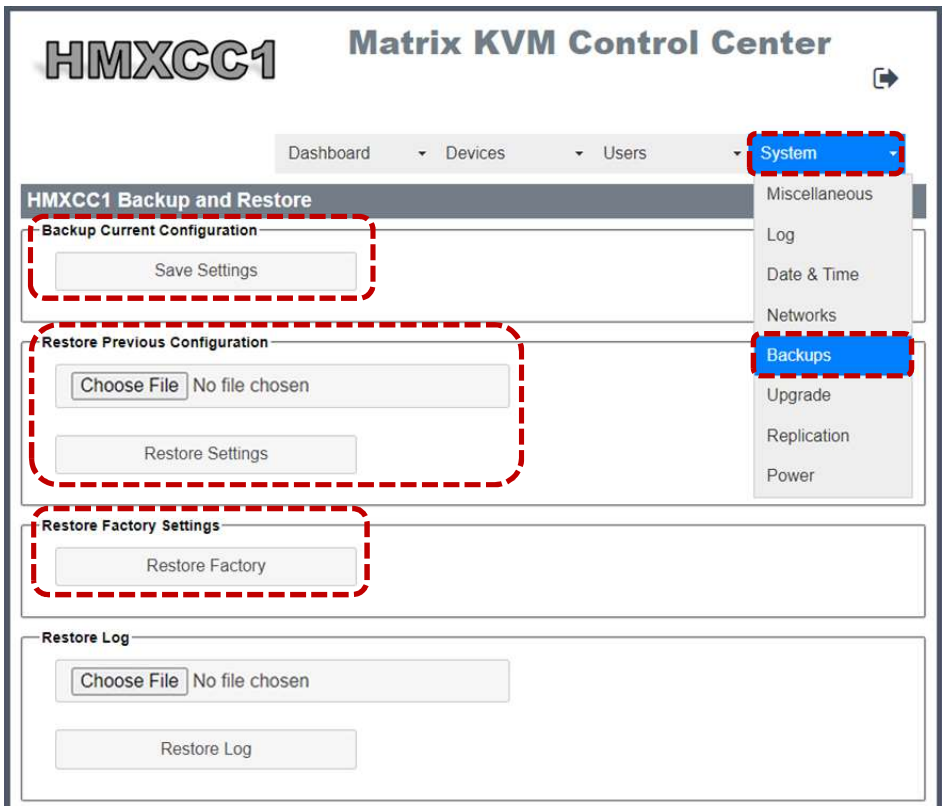


Figure 6-4

a. In single controller system, the user can manually go to **System**>**Backups**, click <**Save Settings**> button to save the setting data backup file to the computer.

b. In master-slave dual-controller system, if the current controller unit to replace the failed master unit is not newly purchased, please click the <**Restore Factory**> button to resume it back to factory default status. Then, go to <**Restore Previous Configuration**>, select a previously saved database backup file in the computer to restore it back to the current controller unit.

c. In single controller system, the user can resume the failed controller back to factory default status and restore the database backup file back to it according to the same steps as above.

(4) Download the log backup file from the master unit or single controller unit and restore it back to the new controller

a. Go to **System**>**Log**, click the <**Save to File**> button to download the log backup file (format: hmxcc-log-xxxxxx.txt.gz) from the current controller unit to the computer.

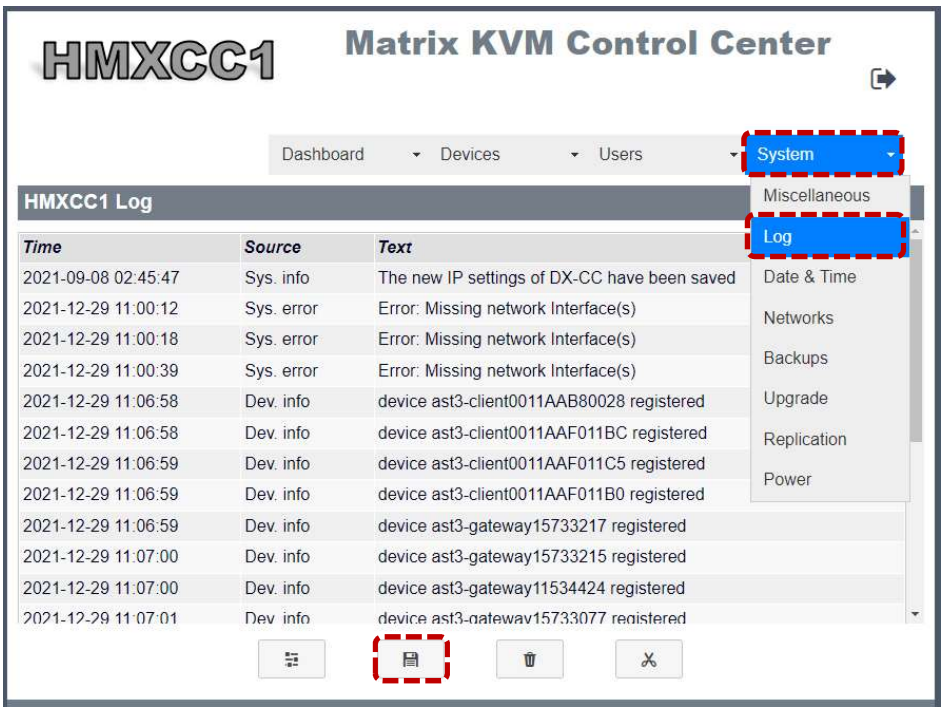


Figure 6-5

b. Go to **System**>**Backups**, click the <**Restore Log**> button to restore the log backup file previously save in the computer to the current controller unit.

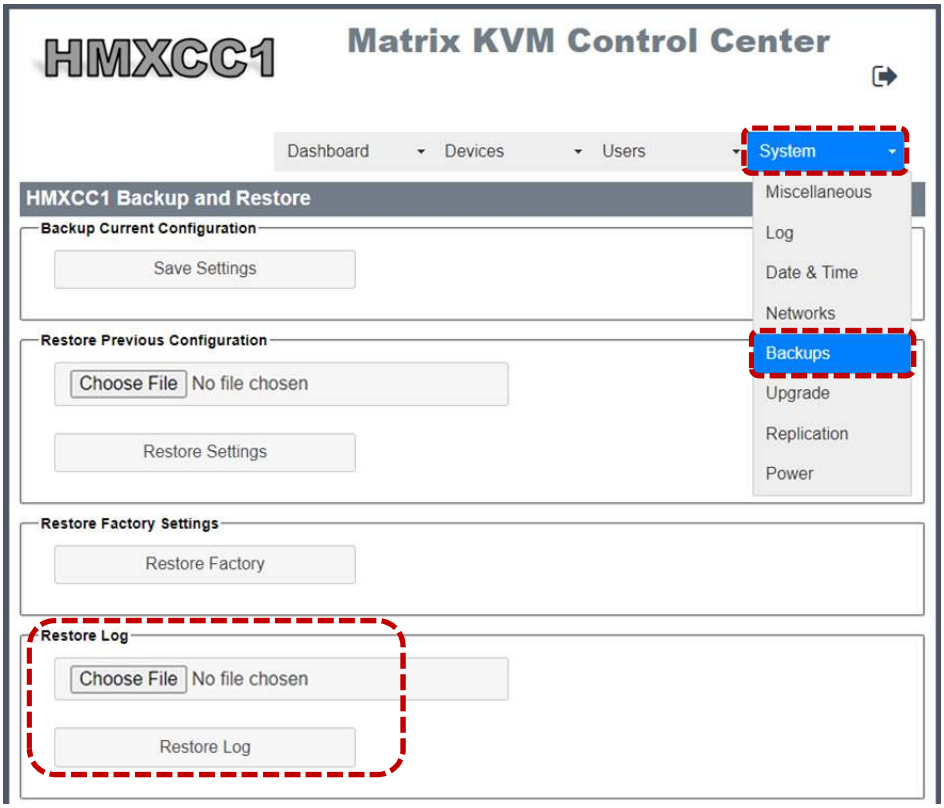


Figure 6-6

[Note]: The log backup file only records various system events and doesn't involve any substantial operation of the controller. The log restoration is on user's demand.

(5) Set up the new controller unit as master or slave

a. Set up the newly added controller as a master unit

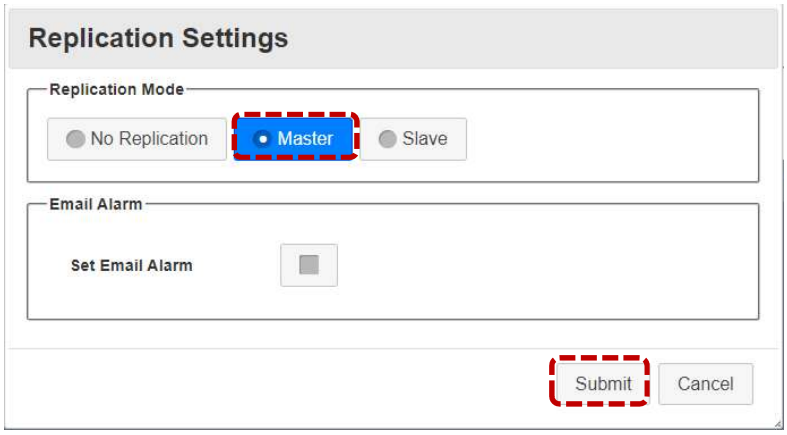


Figure 6-7

Go to **System**>**Replication**, set <**Replication Mode**> as <**Master**>.

Click the <**Submit**> button to reboot the controller.

b. Set up the newly added controller as a slave unit

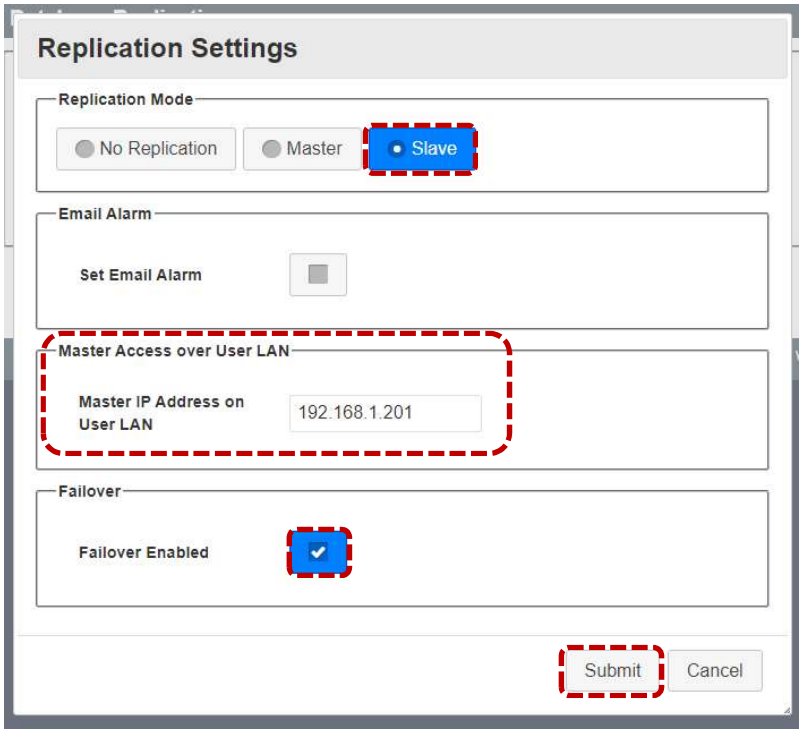


Figure 6-8

Go to **System**>**Replication**, set <**Replication Mode**> as <**Slave**>.

Input the IP address of the master unit.

The Failover function can be enabled on user's demand. When it is checked, the slave unit will automatically replace the failed master unit and become the new master unit.

Click the <**Submit**> button to reboot the controller.

6.2 User Group and Device Group Assignment Application

The application demonstrates adding TX/RX devices to the system, registering TX/RX devices, adding TX/RX groups, adding user accounts, adding user groups, TX/RX group connections and user group connections.

Setup 4 user accounts: User1, User2, User3 and User4 (User Role: Simple User).

IP Matrix KVM Extenders contain: 4 transmitters (HMX1080T) and 4 receivers (HMX1080R.)

Grouping Plans: 2 User Groups (GroupA/GroupB)

2 TX Groups (TxGroupA/TxGroupB)

2 RX Groups (RxGroupA/RxGroupB)

GroupA contains User1 and User2. GroupB contains User3 and User4.

TxGroupA/RxGroupA respectively contains TX1/TX2 and RX1/RX2 which are managed by GroupA.

TxGroupB/RxGroupB respectively contains TX3/TX4 and RX3/RX4 which are managed by GroupB.

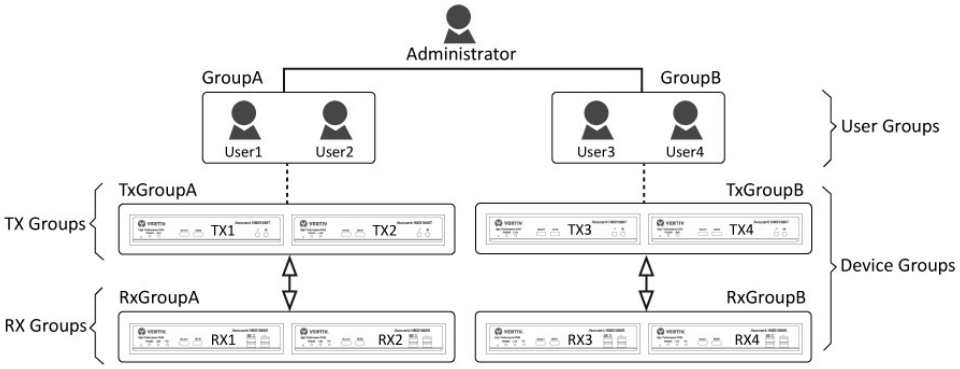


Figure 6-9 User Group/Device Group Assignment Application

At HMXCC1 master unit management interface login page (https://192.168.1.**201**:5008), input factory default Administrator username (admin) and password (adminpass).

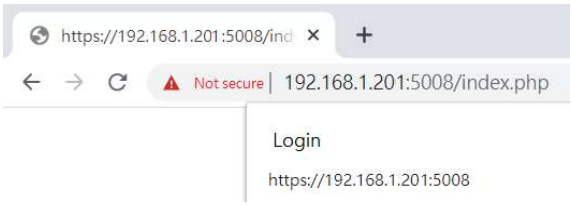


Figure 6-10 Login to the master unit's management interface

Add Transmitters TX1/TX2/TX3/TX4 and Receivers RX1/RX2/RX3/RX4

Connect 4 transmitters and 4 Receivers to the system. When entering Device>Receivers, or Device>Transmitters, the registered receivers or transmitters will appear on the list. To register newly added TX/RX devices, go to <**Transmitters**> and <**Receivers**> pages, click <**Global Actions**> button to register all TX/RX devices. To rename the TX/RX devices that have been registered, select one and click its <**Setup**> buttons to edit its names.

After connecting these 4 transmitters and 4 receivers to the system, respectively rename them as: TX1/TX2/TX3/TX4 and RX1/RX2/RX3/RX4.

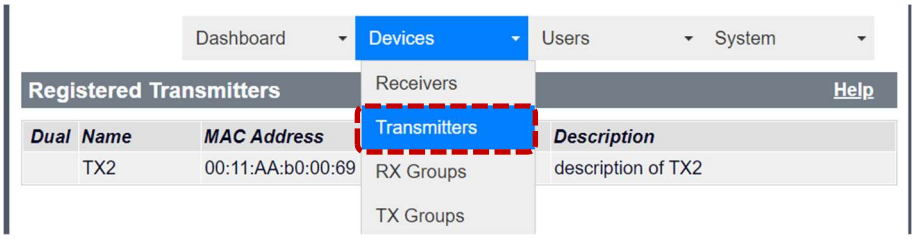


Figure 6-11 Devices>Receivers/Transmitters

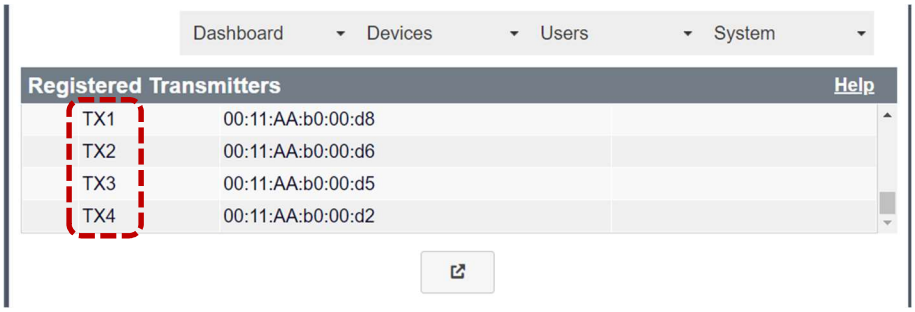


Figure 6-12 Add 4 transmitters TX1/TX2/TX3/TX4 and register them all

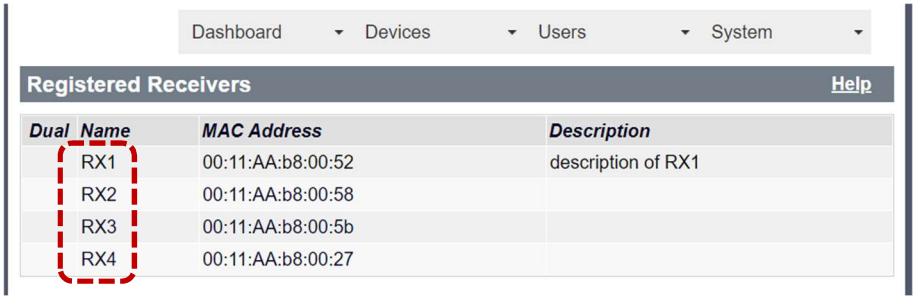


Figure 6-13 Add 4 receivers RX1/RX2/RX3/RX4 and register them all

Register Transmitters and Receivers

Go to **Dashboard**>**Detected Devices** or Go to **Devices**> **Receivers/Transmitters**. Use <**Global Actions**> button to register/unregister all devices. Or select an unregistered device one after another, then respectively click the <**Register**> button to register it. To cancel the registration of a device, select the desired device and click the <**Unregister**> button to unregister it.

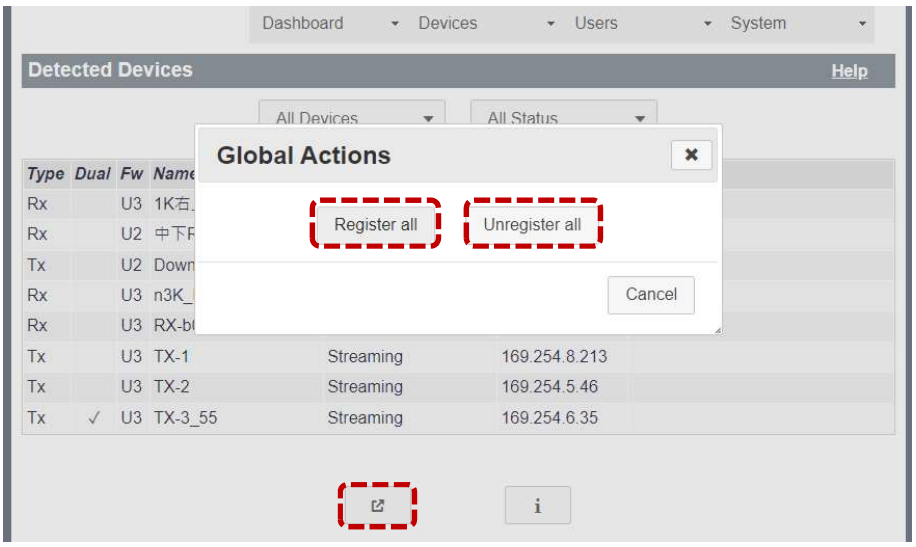


Figure 6-14

Go to **Dashboard**>**Detected Devices**, click the <**Global Actions**> button to register/unregister all.

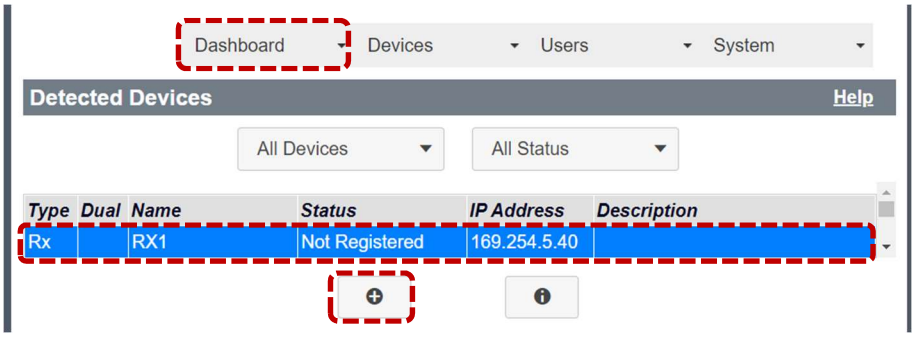


Figure 6-15

Go to **Dashboard**>**Detected Devices**, select an unregistered device and click the <**Register**> button .

Create New RX Groups: RxGroupA and RxGroupB

Go to **Devices**>**RX Groups**, click the <**New Group**> button to create receiver device groups.

Create a receiver device group RxGroupA and assign RX1 and RX2 receivers as its members.

Create a receiver device group RxGroupB and assign RX3 and RX4 receivers as its members.

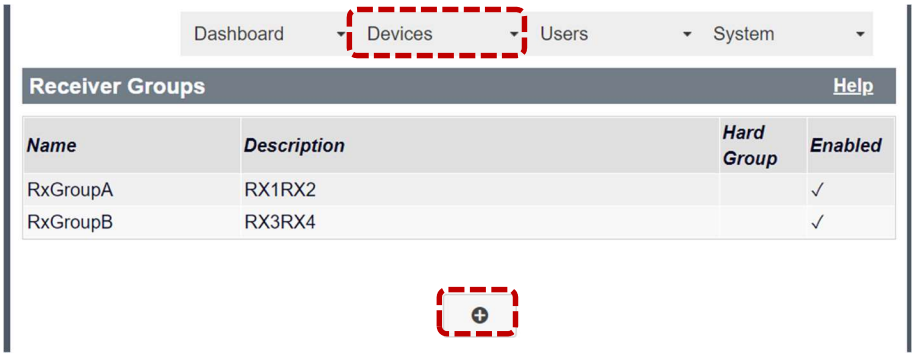


Figure 6-16 Go to Devices>RX Groups

Click the <**New Group**> button to create new RX groups

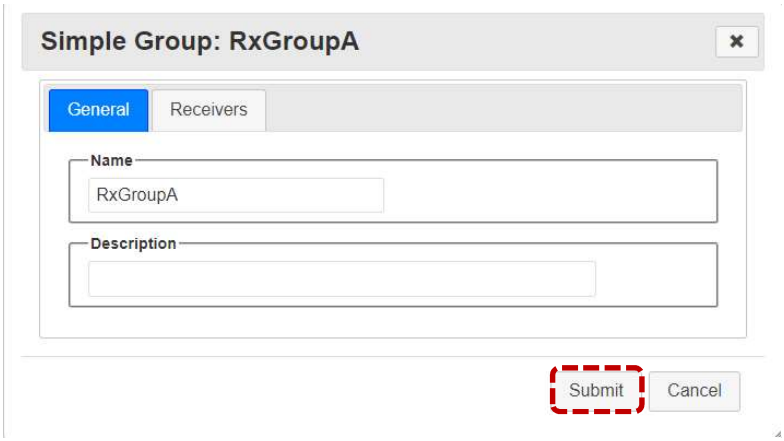


Figure 6-17

Setup the group members of the RxGroupA receiver group. Drag the RX1/RX2 to the right <**Group Members**> column. Then click the <**Submit**> button to confirm and exit.

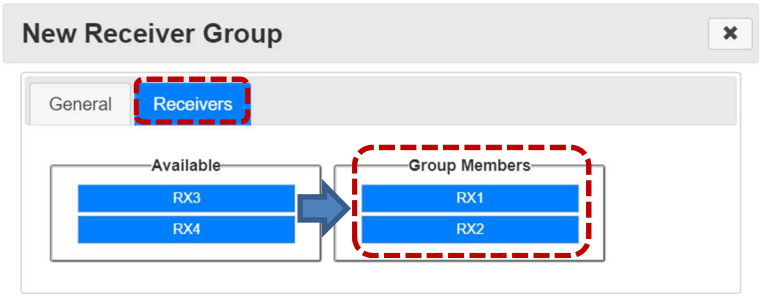


Figure 6-18

In the same manner, add another new receiver group RxGroupB which contains RX3 and RX4.

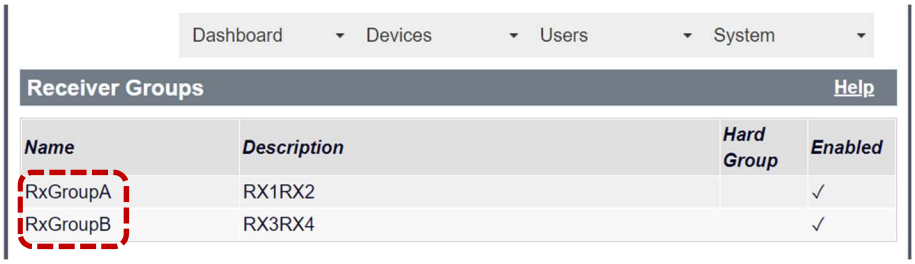


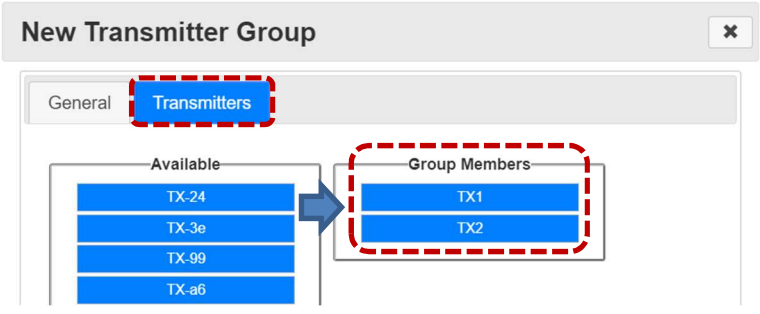
Figure 6-19 Receiver groups RxGroupA and RxGroupB have been created.

Create New TX Groups: TxGroupA and TxGroupB

Repeat as previous steps. Go to **Devices**>**TX Groups**, click the <**New Group**> button  to create transmitter device groups.

Create a transmitter device group TxGroupA and assign TX1 and TX2 transmitters as its members.

Create a transmitter device group TxGroupB and assign TX3 and TX4 transmitters as its members.



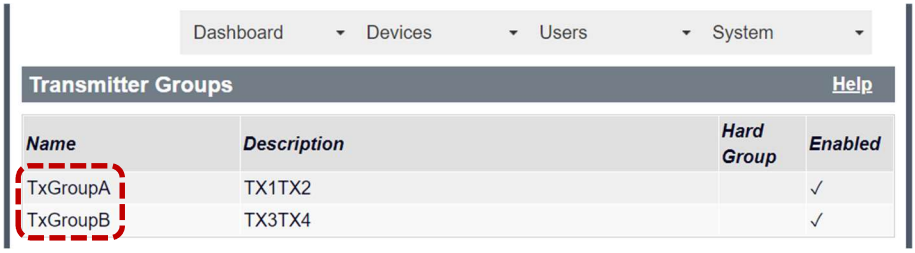


Figure 6-20 Transmitter groups TxGroupA and TxGroupB have been created.

Create New User Accounts User1/User2/User3/User4

To create new user accounts with simple-user roles: User1, User2, User3 and User4.

Go to **Users**>**List**, click <**New User**> button  to create 4 user accounts.

Under the <**Main**> tab of the <**New User**> box, set the User Role to <**Simple User**>, enable the flags then click the <**Submit**> button.

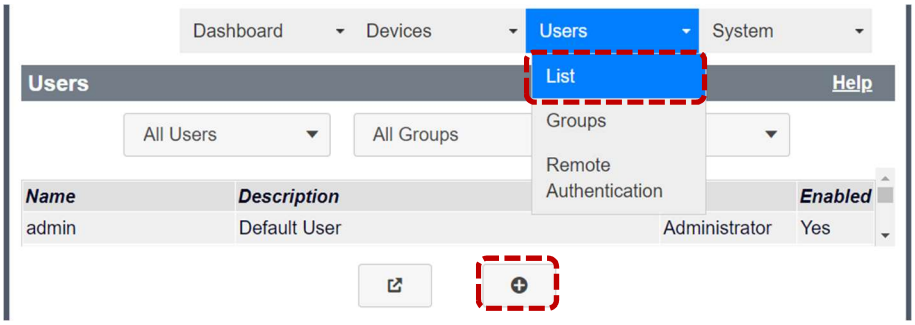


Figure 6-21 Go to Users>List, click <New User> button  .

Figure 6-22 Go to Users>List>New User, set User Role as Simple User and enable the flags

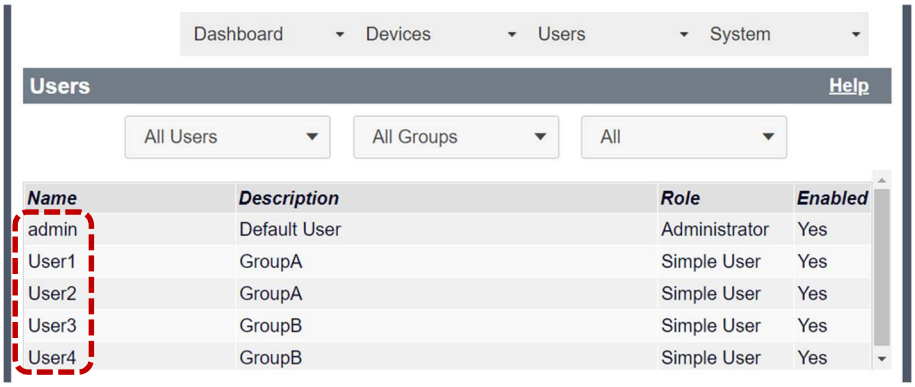


Figure 6-23 Simple Users User1/User2/User3/User4 have been created.

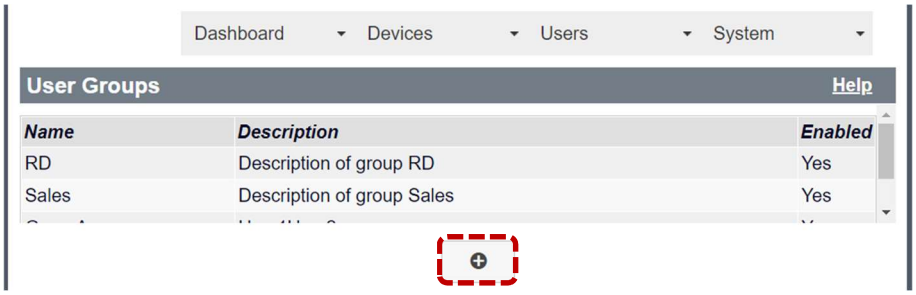
Create New User Groups: GroupA/GroupB

Go to **Users**>**Groups**, click <**New Group**> button  to add user groups and assign their members.

Create a user group GroupA and assign User1 and User2 as its members.

Create a user group GroupB and assign User3 and User4 as its members.

Input the name GroupA under the <**Main**> tab and set the Flags enabled.



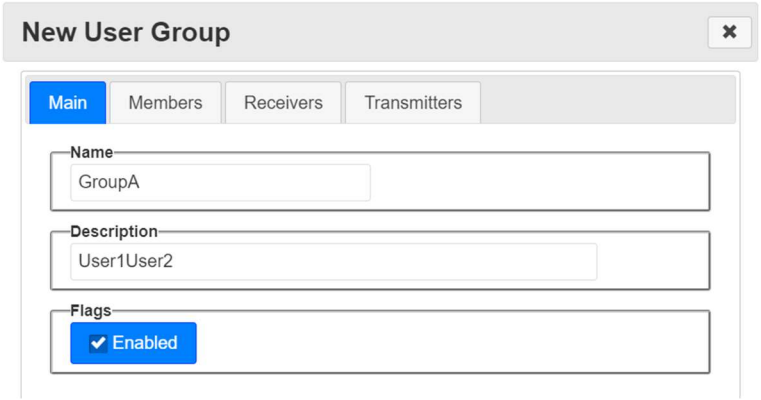


Figure 6-24

Under <**Members**> tab, drag User1 and User2 to the right <**Members**> column.

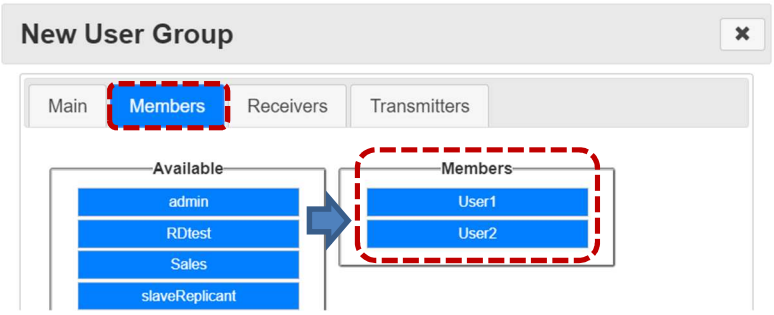


Figure 6-25

Under <**Receivers**> tab, drag RxGroupA to <**Allowed Groups**> column, in which RxGroupA only contains RX1 and RX2.

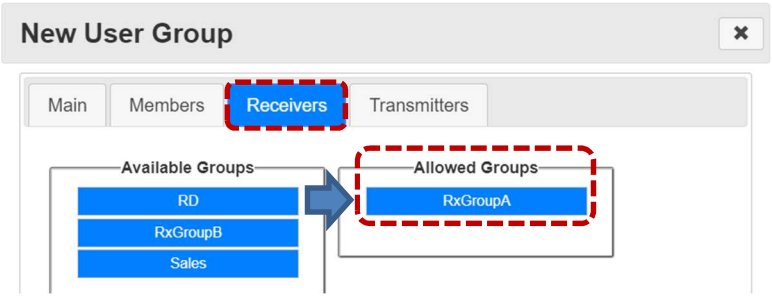


Figure 6-26

Under <**Transmitters**> tab, drag TxGroupA to <**Allowed Groups**> column, in which TxGroupA only contains TX1 and TX2. Click the <**Submit**> button to finish and exit.

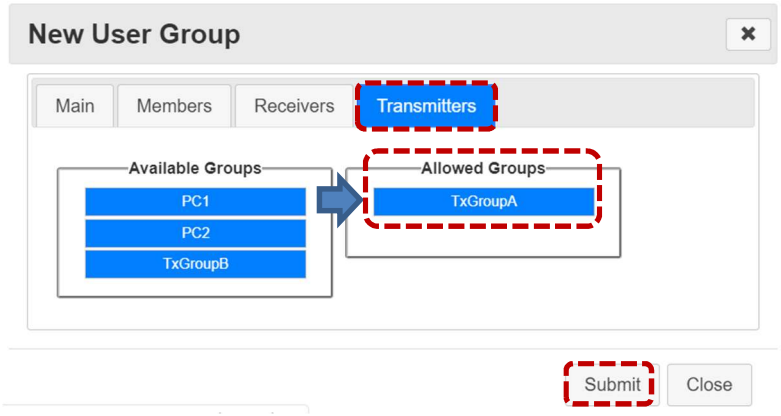


Figure 6-27

Repeat similar steps of creating user group GroupA to create user group GroupB, in which GroupB only contains User3 and User4 which manage the TX group TxGroupB and RX group RxGroupB.

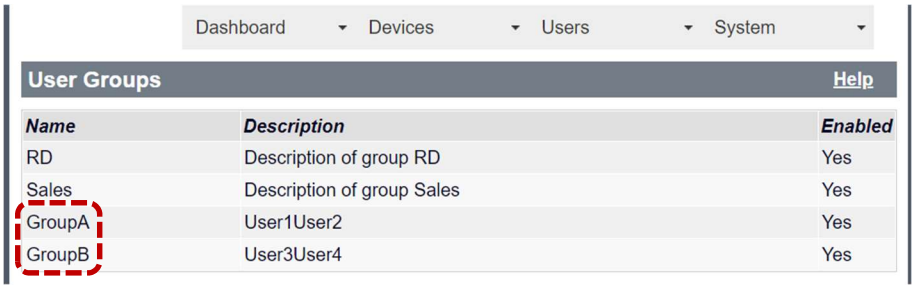


Figure 6-28 Simple-User groups GroupA/GroupB have been created.

Group Connections between TX Groups and RX Groups

Go to **Dashboard**>**Group Connections**, select RxGroupA or RxGroupB, then click the <**Connect**> button .

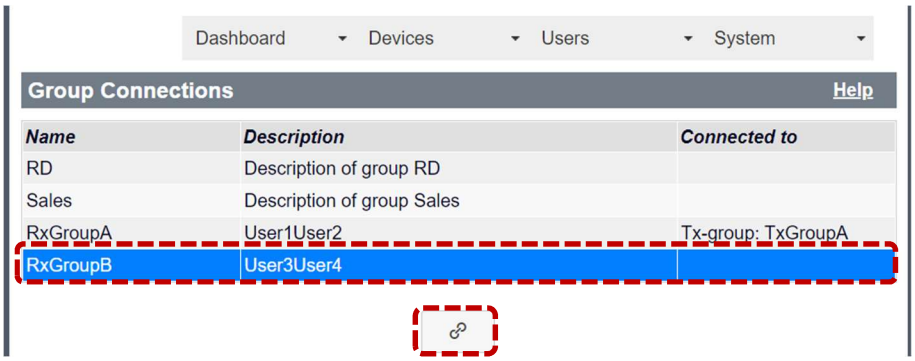


Figure 6-29 Dashboard>Group Connections, click <Connect> button

When the <**Connect**> button is available, click it to open the following window. Select the <**Transmitters Group**> as TxGroupB so that RxGroupB can have a group connection with TxGroupB. Therefore, users (User3/User4) logged in to RX3 or RX4 (RxGroupB) can manage the transmitter group TxGroupB, containing TX3 and TX4.

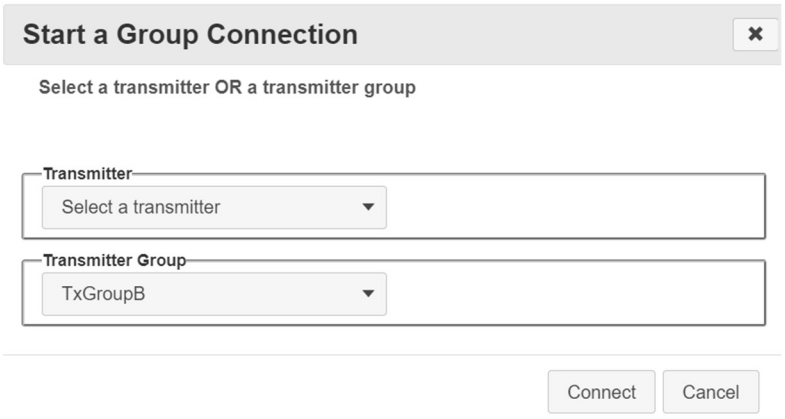


Figure 6-30 Select a single transmitter or a transmitter group to connect to.

Connect RxGroupA/RxGroupB receiver groups respectively to TxGroupA/TxGroupB transmitter groups.

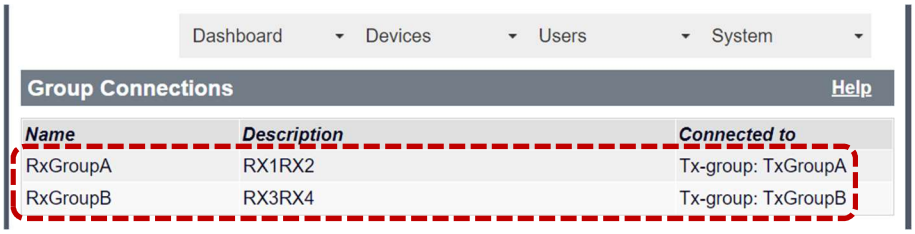


Figure 6-31

Device Groups Assignment Application

Currently, the receiver group RxGroupA is set to connect with the transmitter group TxGroupA. The transmitter group TxGroupA and receiver group RxGroupA belong to the user group GroupA whose members are User1 and User2. After group connection is established, User1 and User2 can only manage transmitters (TX1/TX2) and receivers (RX1/RX2) belonging to GroupA. User1 and User2 cannot manage the transmitters (TX3/TX4) and receivers (RX3/RX4) belonging to GroupB.

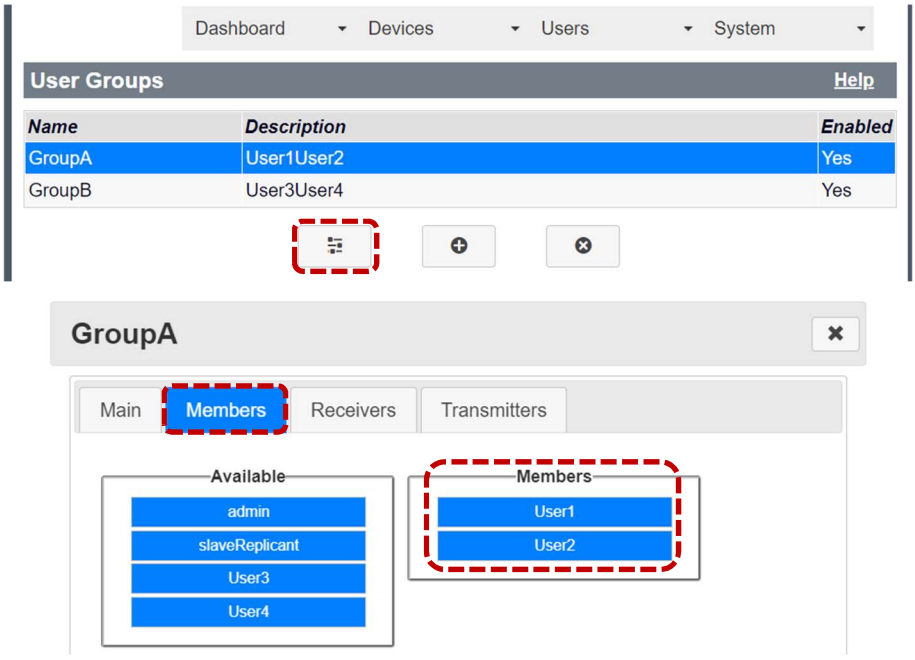


Figure 6-32

The receiver group RxGroupA is set to connect to the transmitter group TxGroupA which contains its transmitter members.

The receiver group RxGroupB is set to connect to the transmitter group TxGroupB which contains its transmitter members.

The members User1/User2 of the user group GroupA can only manage devices belonging to device groups TxGroupA and RxGroupA. They cannot manage devices belonging to device groups TxGroupB and RxGroupB managed by the members (User3/User4) of the user group GroupB.

Likewise, the members (User3/User4) of the user group GroupB can only manage devices belonging to device groups TxGroupB and RxGroupB. They cannot manage devices belonging to device groups TxGroupA and RxGroupA managed by the members (User1/User2) of the user group GroupA.

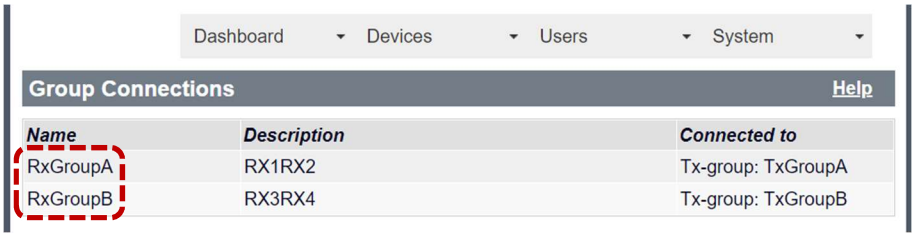


Figure 6-33 Dashboard>Group Connections

User Connections

Go to **Dashboard**>**User Connections**. As users left their seats without logging out, the administrator can remotely terminate any receiver-transmitter connections created by those users with the <**Disconnect User**> button  .

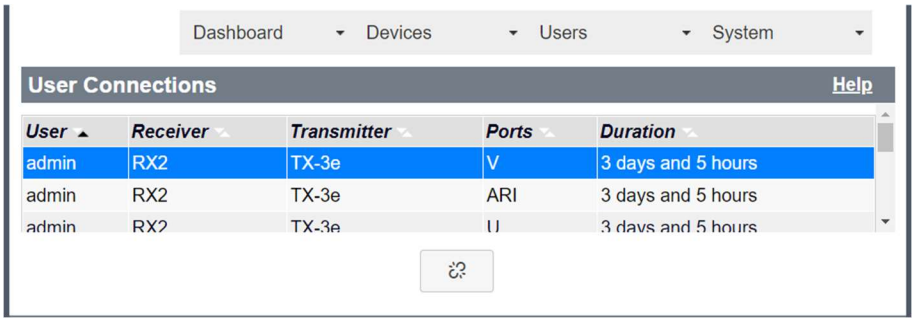


Figure 6-34 Dashboard>User Connections

Log in the Receiver as a Simple-User role

After completing TX/RX device group setup, prompt the receiver OSD menu by hitting the default hotkey (**Scroll Lock**, **Scroll Lock**, **Space**) or quick-launch hotkey (left **Ctrl**, Left **Ctrl**) to launch the login page of the OSD menu. Input the username (simple-user role) and password to enter the OSD menu.

[Note]: As RX devices are not managed by the HMXCC1 controller (unregistered or TX/RX are in direct cable connection), hit the OSD menu hotkey on the keyboard attached to the operated receiver to directly operate the OSD menu without login process.

Figure 6-35

Log in the Receiver as an Administrator role

Go to **Dashboard**>**Detected Devices**, select <**Not registered**> status and click the <**register**> button to add a new receiver unit. To change the language of the OSD menu of the receiver, go to **Devices**>**Receivers** in the HMXCC1 management interface and select a receiver. Then click the <**Set up Receiver**> button to change the language setting in <**Advanced**> tab.

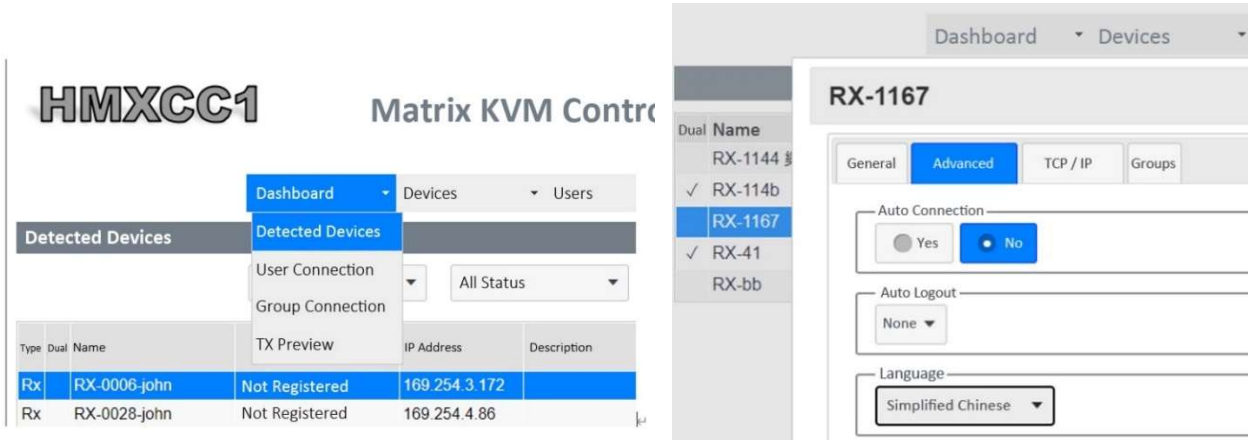


Figure 6-36 Register Receiver/Change OSD language

After completing the setup for user groups and device groups in HMXCC1, the administrator can start to use the OSD interface of the HMX receiver series. Use Administrator username: (admin) and password: (adminpass) to login the receiver OSD interface.

Figure 6-37 Login pages of Administrator

OSD Menu

Once all devices have been linked to the local area network, users can start to use the HMX receiver series.

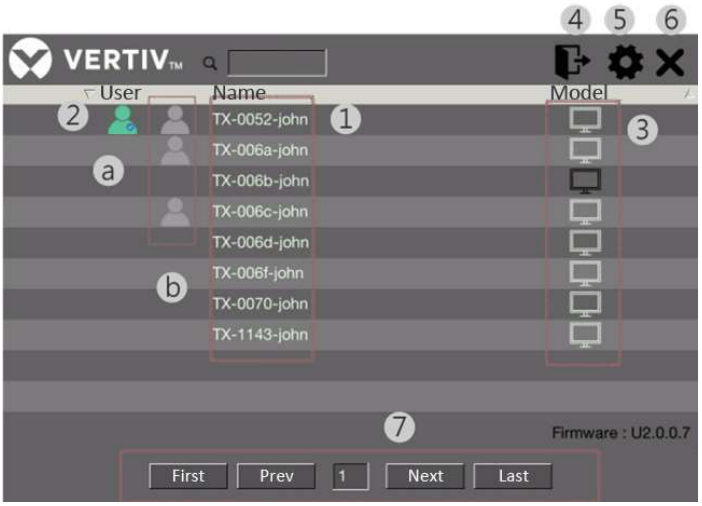


Figure 6-38 Receiver OSD menu of Non-administrator Account (Simple User)

The receiver OSD menu of the non-administrator account as shown above will be described as follows:

All the transmitters connected to the network and assigned for the current simple user will be displayed in this list. This simple user can search them page-by-page.

1. Double click on any transmitter name to connect the current receiver to it.

2. Display the transmitter connection status of the receiver that the users are using.

a. Green user icon shows the connection between the current receiver and the transmitter shown in the same row (e.g. TX-0052-john).

b. Grey user icon shows the connection between another receiver and the transmitter shown in the same row (e.g. TX-0052-john).

3. White Screen icon represents the transmitter is online; Black represents offline.

4. Click to log out the OSD menu.

5. Click to review the transmitter switching hotkeys that the administrator had set at HMXCC1 web-based management interface. Each switching hotkey includes 3 keystrokes such as **Scroll Lock**, **Scroll Lock**, **Number Key**. Beside the default **Scroll Lock** key, the user can also assign any other preferred command key at this page.

6. Click to close the OSD menu.

7. Search all available transmitters page-by-page.

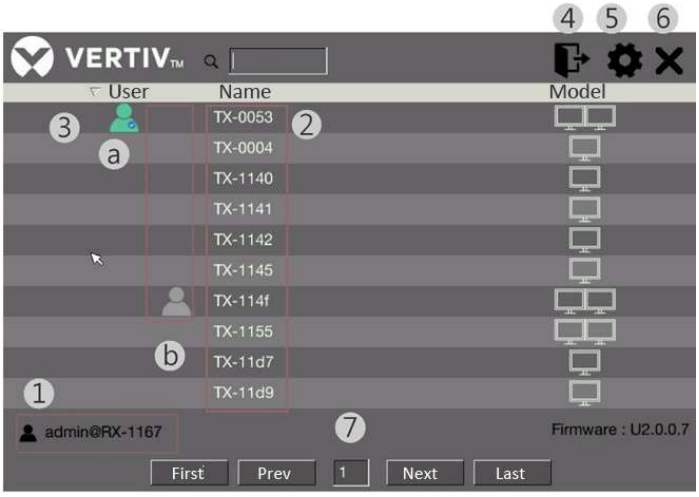


Figure 6-39 Receiver OSD menu of Administrator Account

The receiver OSD menu of the administrator account as shown above will be described as follows:

All the transmitters connected to the network will be displayed in this list. The administrator can search them page-by-page.

1. Display the administrator is now using the current receiver (RX-1167).

2. Double click on any transmitter name to connect the current receiver to it.

3. Display the transmitter connection status of the receiver that the users are using.

a. Green user icon shows the connection between the current receiver and the transmitter shown in the same row (e.g. TX-0053).

b. Grey user icon shows the connection between another receiver and the transmitter shown in the same row (e.g. TX-0114f).

4. Click to log out the OSD menu.

5. Click to review the transmitter switching hotkeys that the administrator had set at HMXCC1 web-based management interface. Each switching hotkey includes 3 keystrokes such as **Scroll Lock**, **Scroll Lock**, **Number Key**. Beside the default **Scroll Lock** key, the user can also assign any other preferred command key at this page.

6. Click to close the OSD menu.

7. Search all available transmitters page-by-page.

Chapter 7 Failover for Database Replication

In the redundant failover server system setup, after the master and the slave units work in parallel their databases are synchronized to ensure being almost identical. To create a server solution of redundancy and failover, a master unit and a slave unit should be both added into the system. When the master unit failed or became offline, the system failure can immediately be resolved by administrator's manual setup or system's automatic failover procedure.

7.1 HMXCC1 Master-Slave Deployment and Configuration

To setup a redundant failover system, please create a HMXCC1 master unit first next create a HMXCC1 slave unit as a failover redundant server. In normal operation, the HMXCC1 master unit works with the HMXCC1 slave unit in parallel. The slave unit will poll the master unit in every minute and backup the latest settings and logs from the master unit. As the Failover function of the slave unit is enabled, once the slave unit detects the failure or offline of the master unit, the slave unit can automatically replace the failed master unit to serve as a new master unit. It can also send out an email to notify the administrator to remove the failed master unit and add a new slave one. With the master-slave management, if the master no longer receives the polling from the slave unit, it can also send out an email to notify the administrator that the slave unit fails. The administrator will download the database backup files from the master unit to the PC, then restore them back to the newly added controller unit to be the new slave unit.

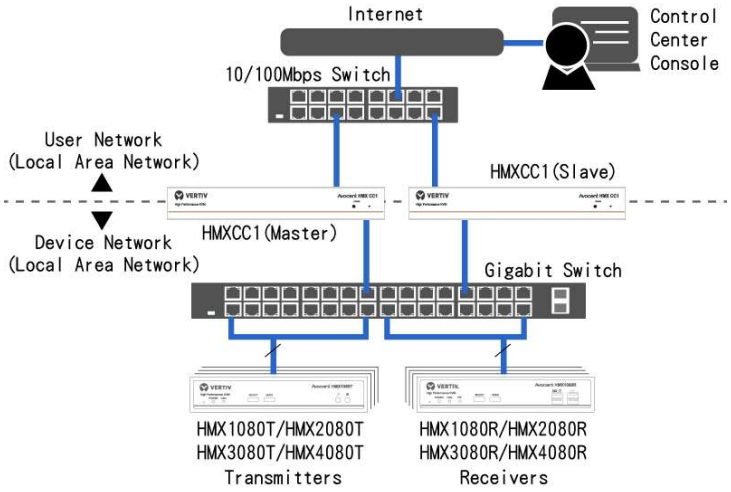


Figure 7-1 Hardware Connection Diagram for Master and Slave Units

7.1.1 How to Setup HMXCC1 Master-Slave Units

The database replication procedure involves two controller units, a HMXCC1 master unit and a HMXCC1 slave unit. The administrator should complete hardware connection of the master and slave units according to the configuration diagram (Please see the following steps to determine the power-on sequence.) Log in the web-based management interface and set up two units with different user IP addresses and different device IP addresses. And set up the two controller units to be located within the same device network segment where the transmitter and receiver devices are installed. Use different user IP addresses with the port number 5008 to respectively log in the web-based management interfaces for master and slave units. In HMXCC1 database replication mode, configure one as the master unit and another one as the slave unit. The automatic failover procedure will only take effect when the Failover function option is checked in the replication mode of the slave unit.

Steps of Creating Master-Slave Failover Environment

Please follow the installation steps below to deploy one master unit and one slave unit to the system.

- *Installation Notes

1) Complete the hardware installation and software configuration for HMXCC1 master unit first then the HMXCC1 slave unit.

2) The HMXCC1 master unit and slave unit must be connected to same network segment of the same user network and the same network segment of the same device network in which the user network and the device network are independent to each other.

●Installation Steps

1) Connect the HMXCC1 master unit to the system and power it on. Open a browser of a PC connected to the same user network as the two HMXCC1 units. In the browser of the PC, input the factory default management interface login IP address (https://192.168.1.200:5008). Input the factory default Administrator username (admin) and password (adminpass) to log in the management interface.

2) After login, change the network settings of the master unit. In the management interface, go to **System**>**Networks**, clicking <**Configure**> button at the page bottom to open Network Settings page. Input the user network IP as 192.168.1.**201** for the master unit. Input the device network IP as 169.254.3.**2**. The rest settings use the default. Click the <**Submit**> button and skip rebooting. Continue the following steps.

3) Go to **System**>**Replication**. On the page bottom, click the <**Configure the Replication Mode**> button to open the Replication Settings and set this unit as Master. Click the <**Submit**> button and reboot the master unit.

4) After the HMXCC1 master reboots successfully, input the new management interface login IP address (https://192.168.1.**201**:5008) to log in the master unit management interface.

5) Connect the HMXCC1 slave unit to the system and power it on. Open a browser and key in the factory default management interface login IP address (https://192.168.1.200:5008). Log in the management interface with Administrator username (admin) and password (adminpass).

6) Go to **System**>**Networks**, click the <**Configure**> button. Change the slave unit user IP address to 192.168.1.**202** and its device IP to 169.254.3.**3**.

7) Go to **System**>**Replication**. On the bottom, click the <**Configure the Replication Mode**> button to open the Replication Settings and set this unit as Slave. Fill in the Master IP Address on User LAN as 192.168.1.**201**. Reboot the slave unit and input the new management interface login IP address (https://192.168.1.**202**:5008) to log in slave unit management interface.

●Steps to set up IP Address of the Master Unit

a. Log in the master unit management interface with factory default management interface login IP address (https://192.168.1.200:5008).

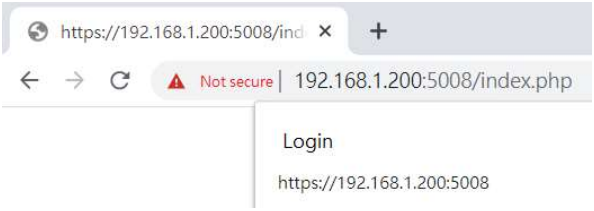


Figure 7-2

b. Go to **System**>**Networks**, click the <**Configure**> button.

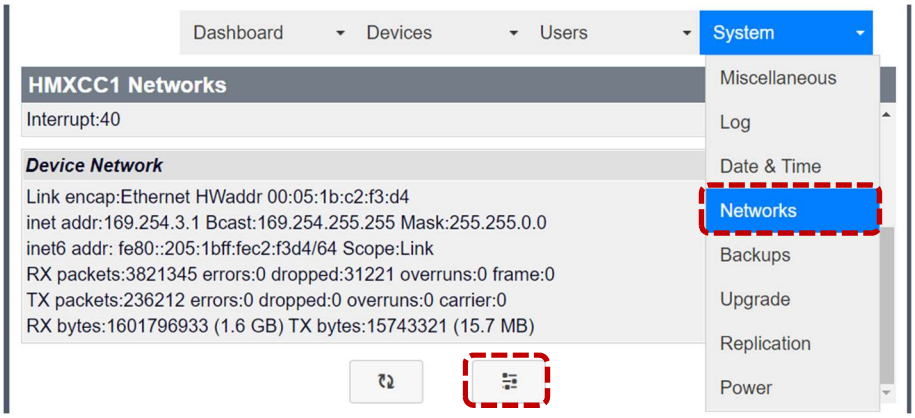


Figure 7-3

c. Input Master unit User IP as 192.168.1.**201** and Device IP as 169.254.3.**2**. Click the <**Submit**> button, skip rebooting and continue the following steps.

Figure 7-4

d. Go to **System**>**Replication**, click the <**Configure**> button, set Replication Mode as Master, then click the <**Submit**> button to reboot the master unit.

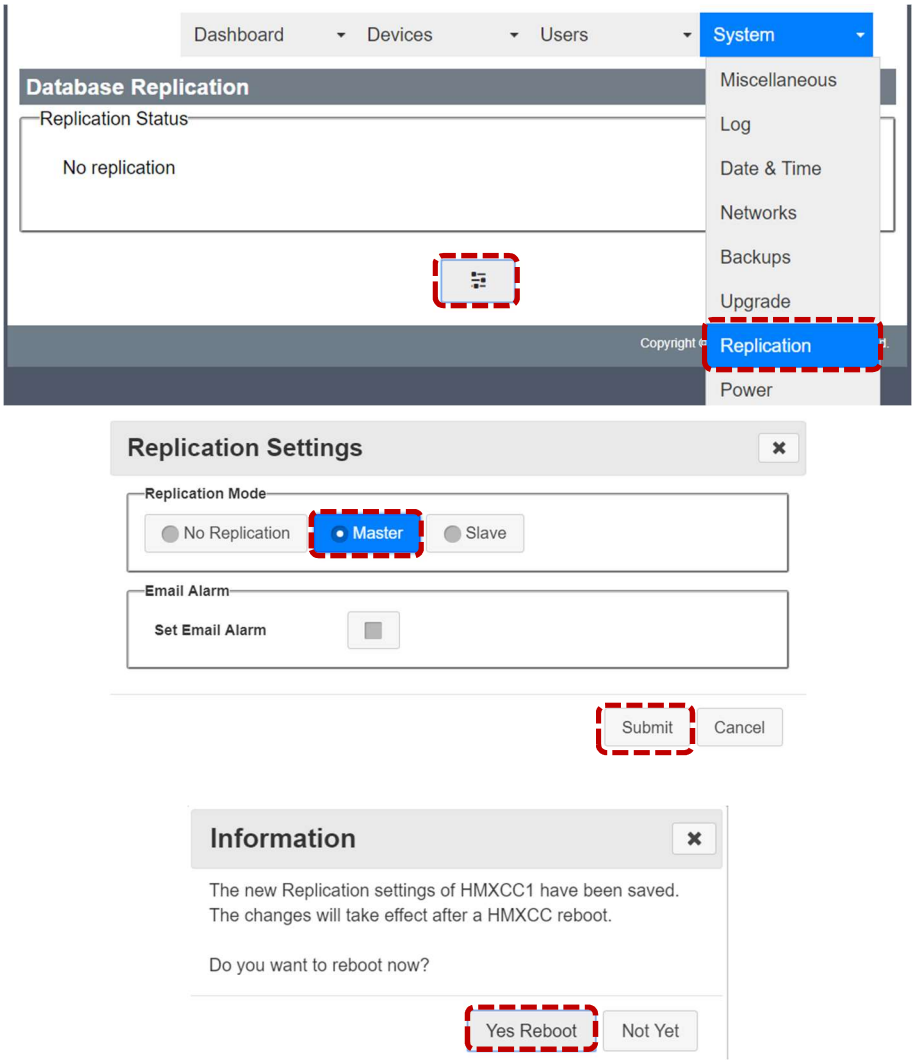


Figure 7-5

e. Input the new management interface login IP address (https://192.168.1.**201**:5008) at the browser address bar to log in the management interface of the Master unit.

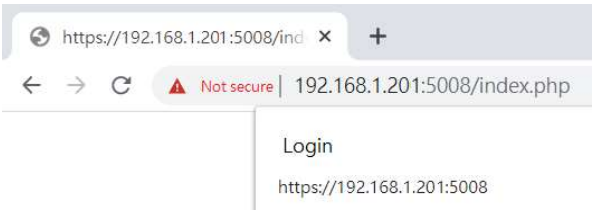


Figure 7-6

●Steps to set up IP Address of the Slave Unit

a. Log in the slave unit management interface with factory default management interface login IP address (https://192.168.1.200:5008).

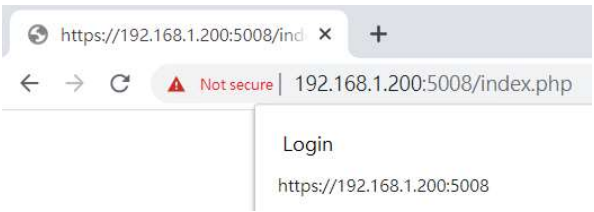


Figure 7-7

b. Go to **System**>**Networks**, click the <**Configure**> button.

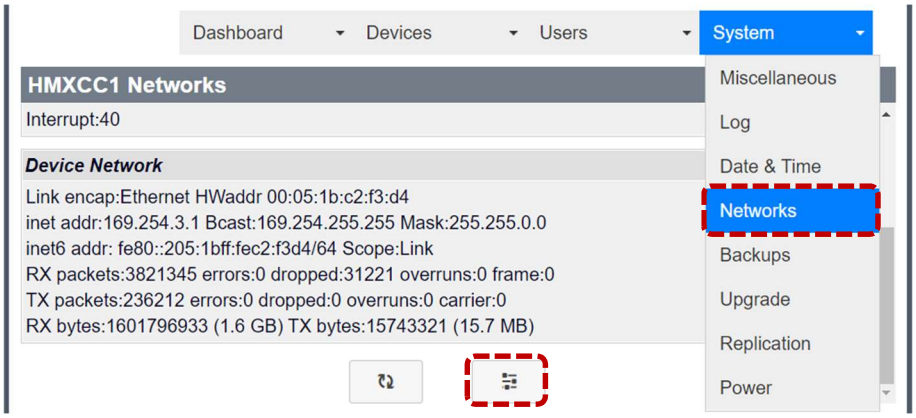


Figure 7-8

c. Input Slave unit User IP address as 192.168.1.**202** and Device IP as 169.254.3.**3**. Click the <**Submit**> button, skip rebooting and continue the following steps.

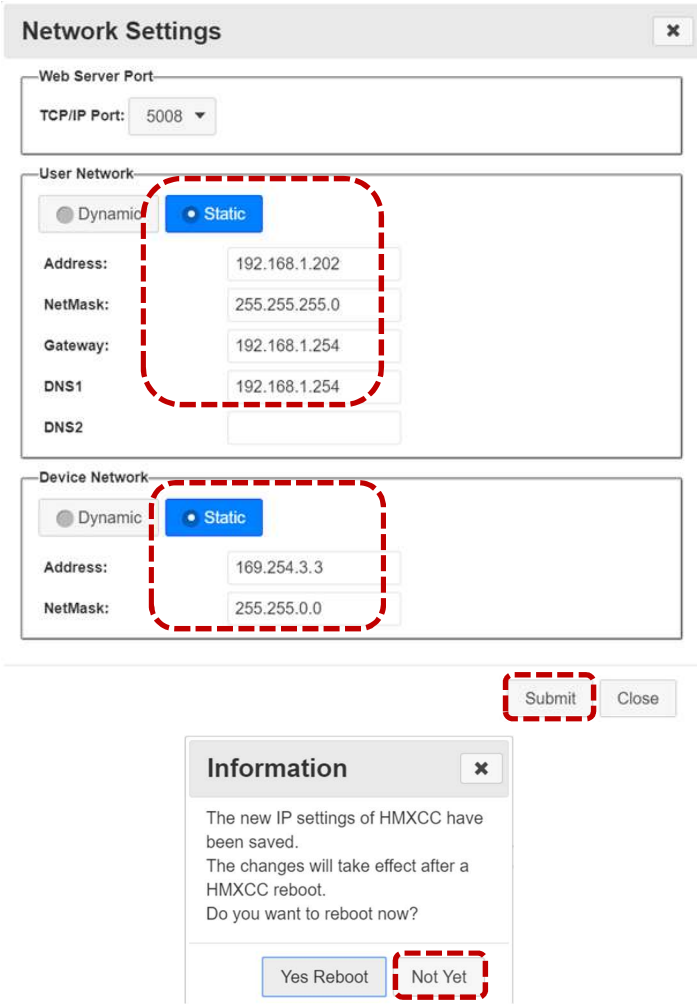


Figure 7-9

d. Go to **System**>**Replication**, click the <**Configure**> button, set Replication Mode as Slave, input the Master unit User IP address (192.168.1.**201**), check the Email Alarm and the Failover according to user's needs, at last click the <**Submit**> button to reboot the slave unit.

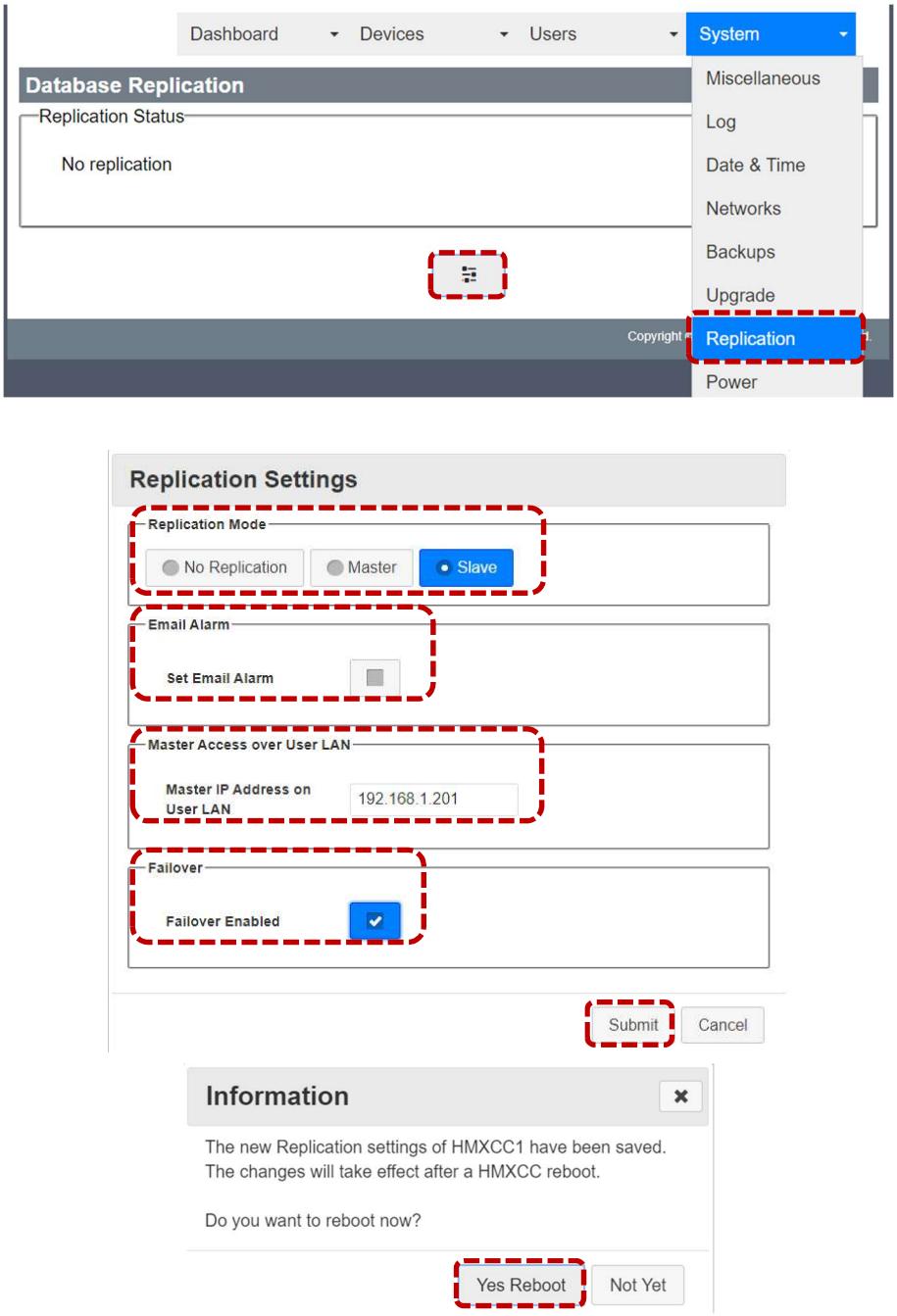


Figure 7-10

e. Input the new management interface login IP address (https://192.168.1.**202**:5008) at the browser address bar to log in the management interface of the slave unit.

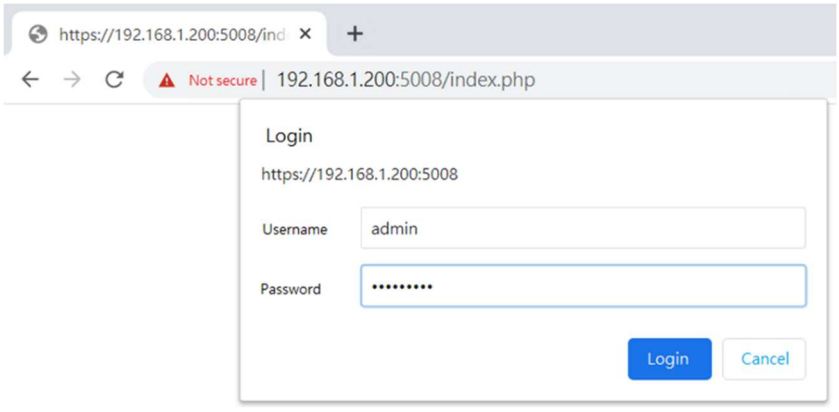


Figure 7-11

7.1.2 How to Resume the HMXCC1 Controller to Factory Default

There are two approaches to resume the controller to factory default settings:

(1) Hardware Approach: Long press the hidden reset key on the front panel of the HMXCC1 controller at least for 8 seconds. The LED on the front panel will distinguish to start rebooting procedure. As the LED turns on and blinks with green, it indicates that the controller has been in service.

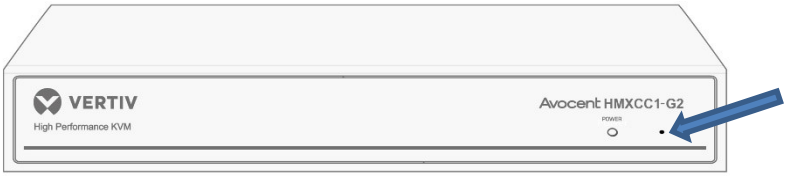


Figure 7-12

[Note]: The LED on the front panel of the controller also represents the current role of the controller, as the table shown below:

Table 7-1

Database Replication Status	No Replication (Factory Default)	Master (User's Setting)	Slave (User's Setting)
LED signal	Blinking (Green)	Constantly on (Green)	Constantly on (Yellow)

(2) Software Approach: Go to **System**>**Backups**, click the <**Restore Factory**> button. The LED on the front panel will distinguish to start rebooting procedure. As the LED turns on and blinks with green, it indicates that the controller has been in service.

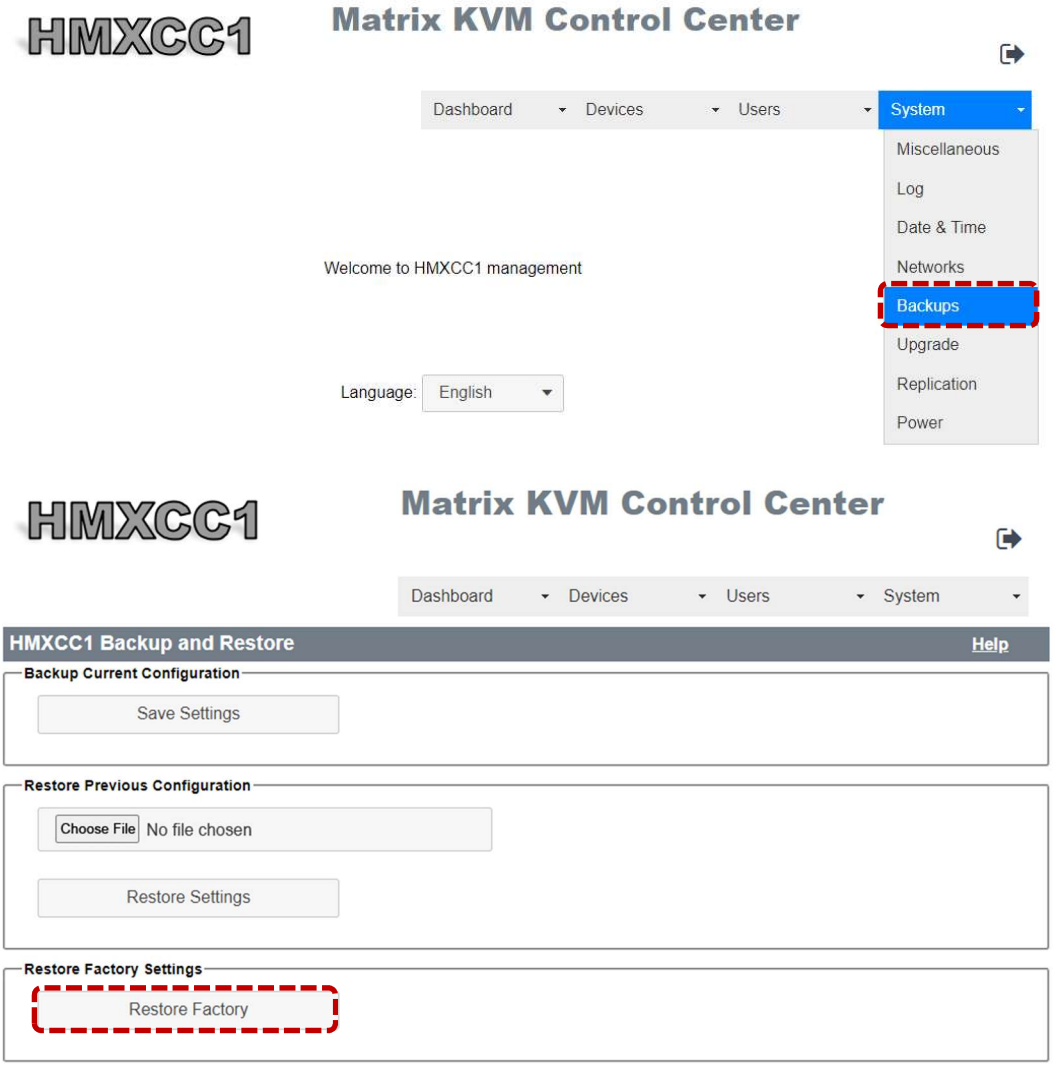


Figure 7-13

7.2 HMXCC1 Master-Slave Database Replication Failover

As there is single HMXCC1 controller unit operating in the system, the administrator must regularly backup the setting data and logs of this controller unit to the computer manually. Once this single controller unit failed or became offline, the administrator can restore the latest backup files back to a new controller unit to replace the failed controller unit manually.

While there are one HMXCC1 master unit and one HMXCC1 slave unit operating in parallel in the system, the slave unit will regularly poll the master unit and replicate setting data and logs from the master unit. Once the slave unit is not responded by the master unit or the master unit no longer receives the polling from the slave unit, it would be determined as controller failure or offline events. The controller unit which is still in normal operation will send out a notification to the email address set by the user. The email letter will notify the administrator the failure event of the master unit or the slave unit.

The user can enable the Failover function by checking it in the database replication setting of the slave unit. As the HMXCC1 master unit fails, the salve unit will automatically replace the failed master unit and serve in the role of new master unit. The administrator will later remove the failed master unit and add a new slave unit manually.

Either manually or automatically to remove the failure, the system can resume normal operation quickly.

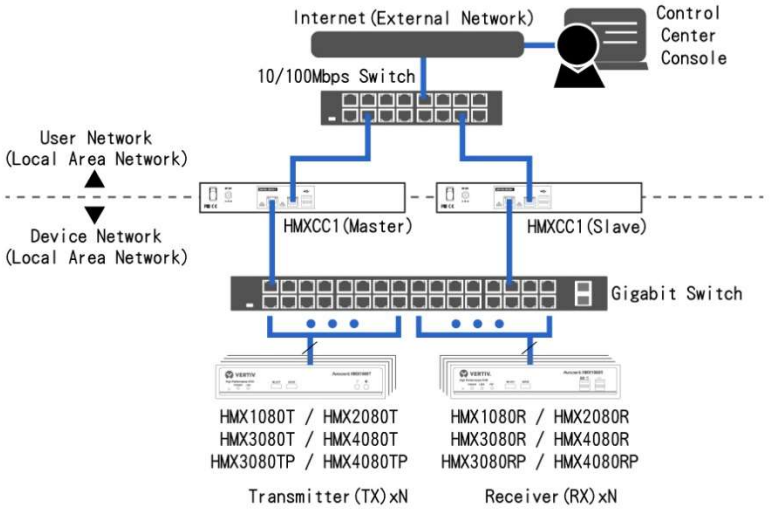


Figure 7-14

7.2.1 HMXCC1 Database Replication Failover not Enabled (Manual Recovery Mode)

In <**Replication**> menu， please refer to the following examples to replace the failed master or slave units.

(1) Single controller system operates without controller slave unit

As the single controller unit operates normally, the administrator needs to regularly backup the setting data and log to the PC from the single controller unit manually. Once the controller fails, the administrator will restore the backup files back to a new controller unit after he is reported the system failure event. The administrator will remove the failed controller unit then put the mew controller unit back to the same network environment as the failed master unit. After the new controller reboots successfully, the system will resume operation again.

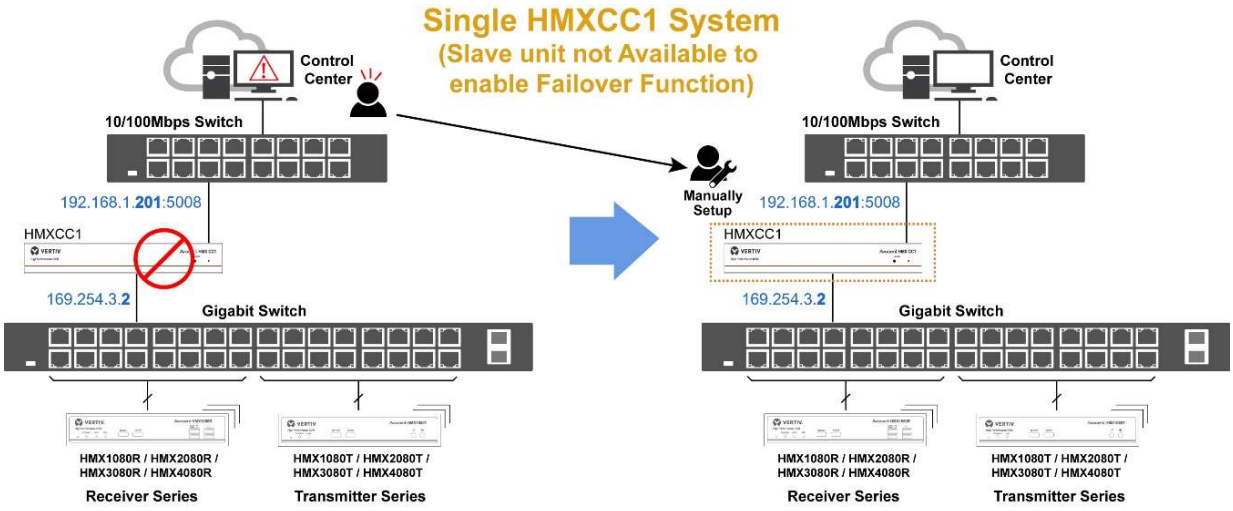


Figure 7-15

(2) Master/Slave controller units operate in parallel in the system; the Failover is not enabled by the slave unit.

In Replication Mode, the failover function for the slave unit is not enabled by the user. Once the master unit fails, the slave unit will not automatically replace the failed master unit. The administrator needs to manually download the setting data and logs from the salve unit to the PC. Next, restore the backup files in the PC back to a new controller unit. Remove the failed master unit and put the new master unit back to the same network environment as the failure master unit. Change its User/Device IP settings as the failure master unit and reboot the new master unit to resume the system operation.

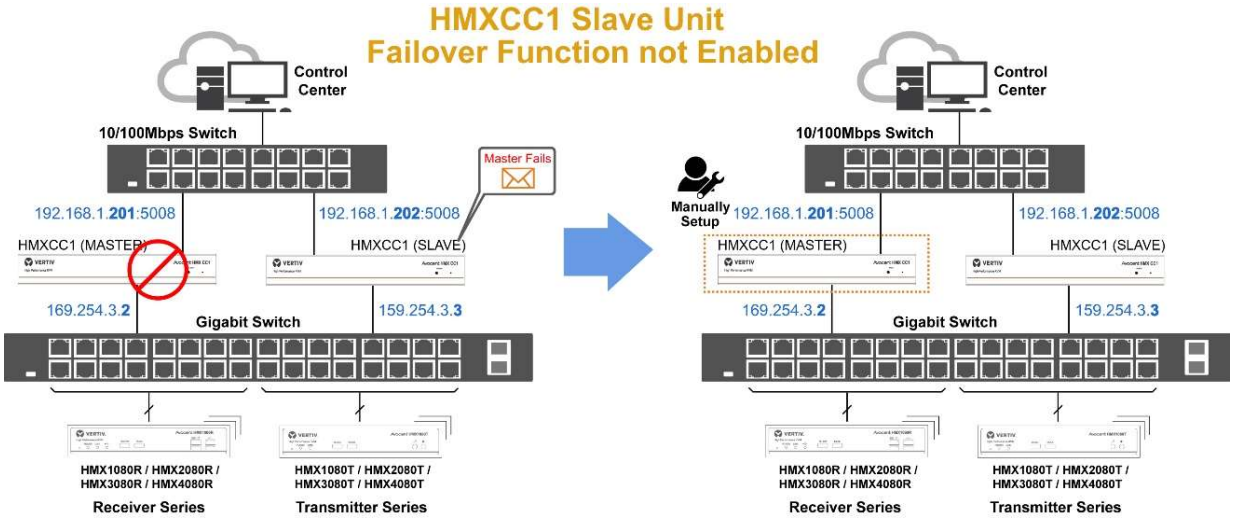


Figure 7-16

As above mentioned， as the Failover function is not enabled, it still needs the administrator to manually setup and replace the failed controller units at the first moment the system failed. The user can determine to enable it or not according to his application. [Note]: Once the system operates with a master unit and a slave unit in parallel， the slave unit will regularly backup the setting data and logs from the master unit to itself. The Failover function checkbox only correlates to the decision of letting the slave unit automatically replace the failed master unit to resume the system.

Download the setting data of the controller unit to the PC and Restore the backup files in the PC back to the controller unit

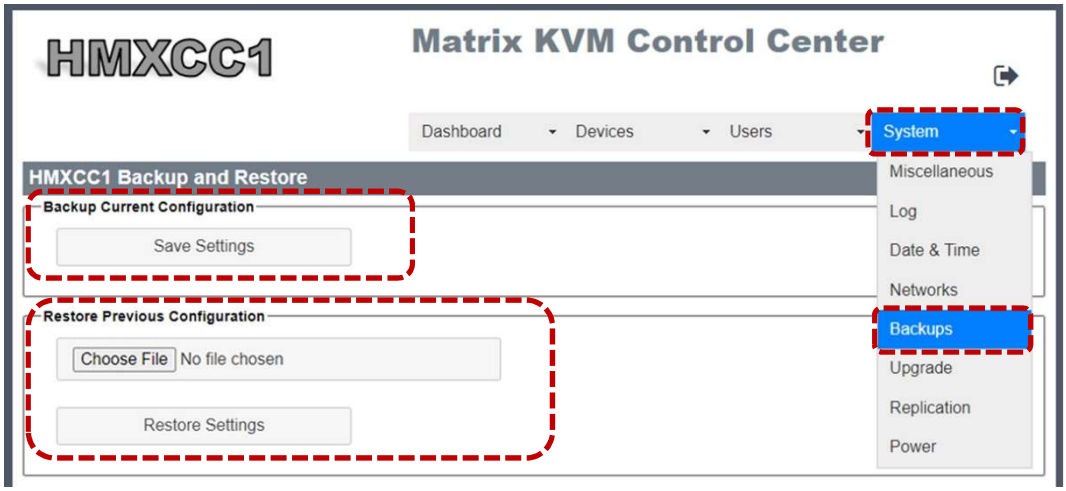


Figure 7-17

Go to **System**>**Backups**， download the setting data from the HMXCC1 controller unit in normal operation and save it to the PC.

Remove the failed controller unit. Go to **System**>**Backups**.

To restore previous configuration, find the database backup files (file format: hmxcc-backup-xxxxxx.sql.gz) and click <**Select File**> button to load a desired database backup file. Next, click the <**Restore Settings**> button to resolve the fault condition.

a. The master unit and slave unit operate in parallel, and the master unit fails

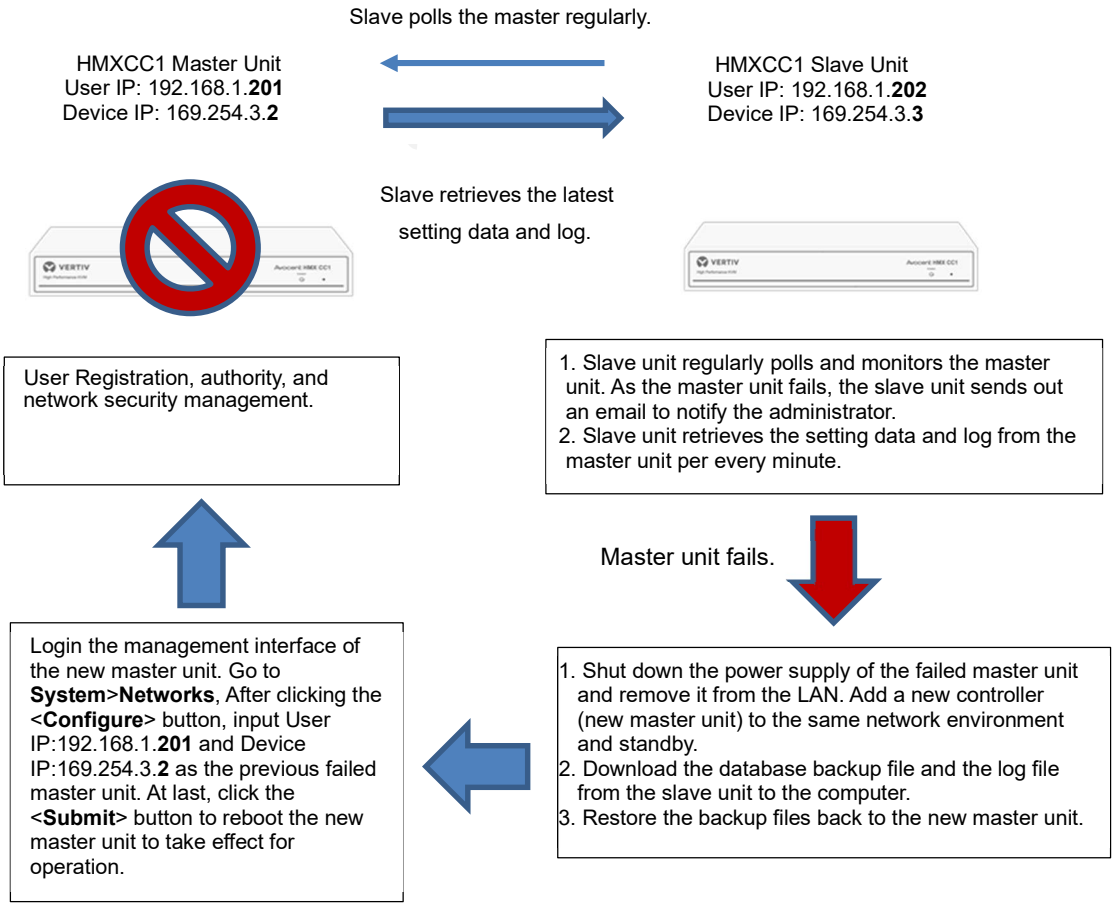


Figure 7-18

b. The master unit and slave unit operate in parallel, and the slave unit fails

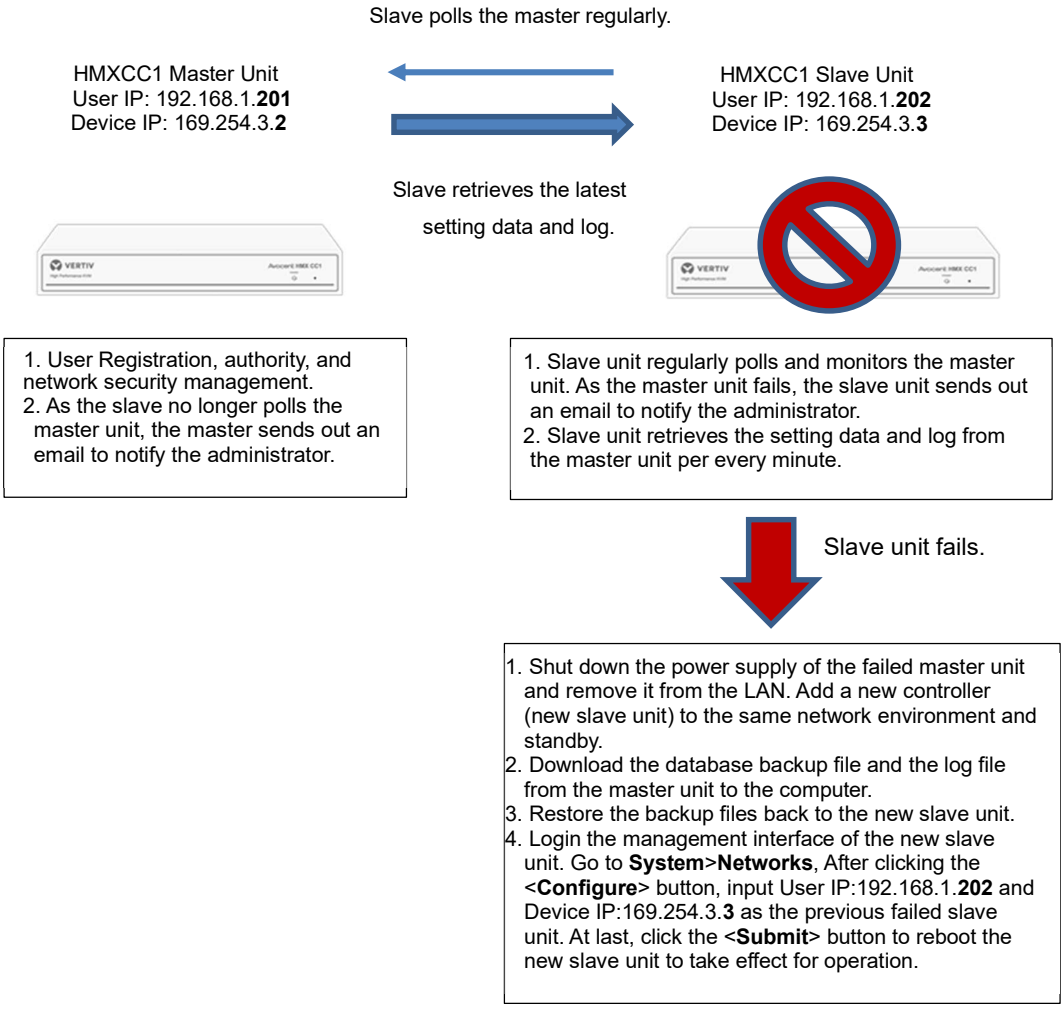


Figure 7-19

7.2.2 HMXCC1 Database Replication Failover Enabled (Automatic Recovery Mode)

In <**Replication**> menu， please refer to the following examples to replace the failed master or slave units.

As the master unit fails, the slave unit will automatically start Failover procedure without any manually operation and confirmation. The slave unit not only replaces the failed master unit, but also send out an email to notify the administrator this fault event. The administrator will later remove the failed master unit and setup a new slave unit manually.

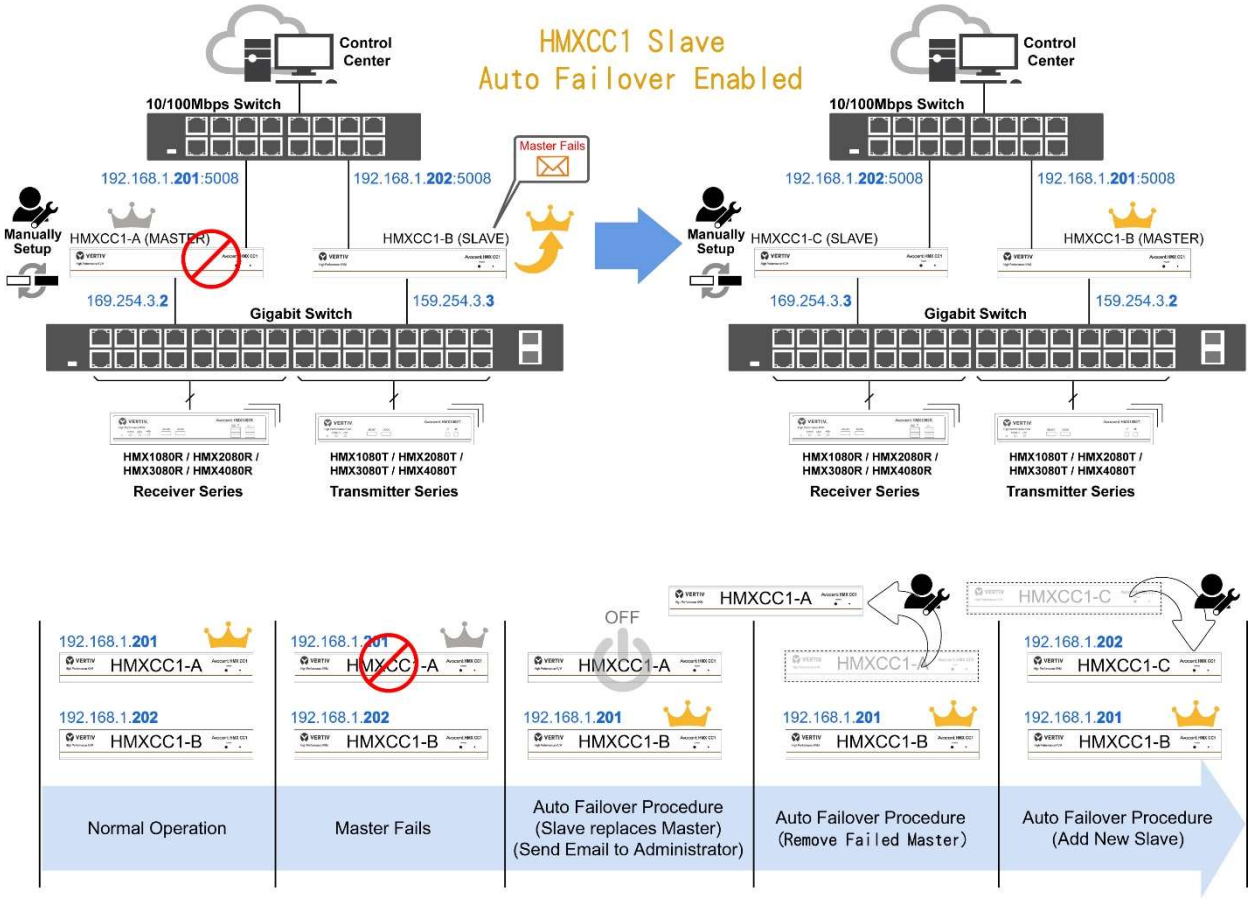


Figure 7-20

Check the <**Failover Enable**> box at the <**Replication Settings**> for the slave unit

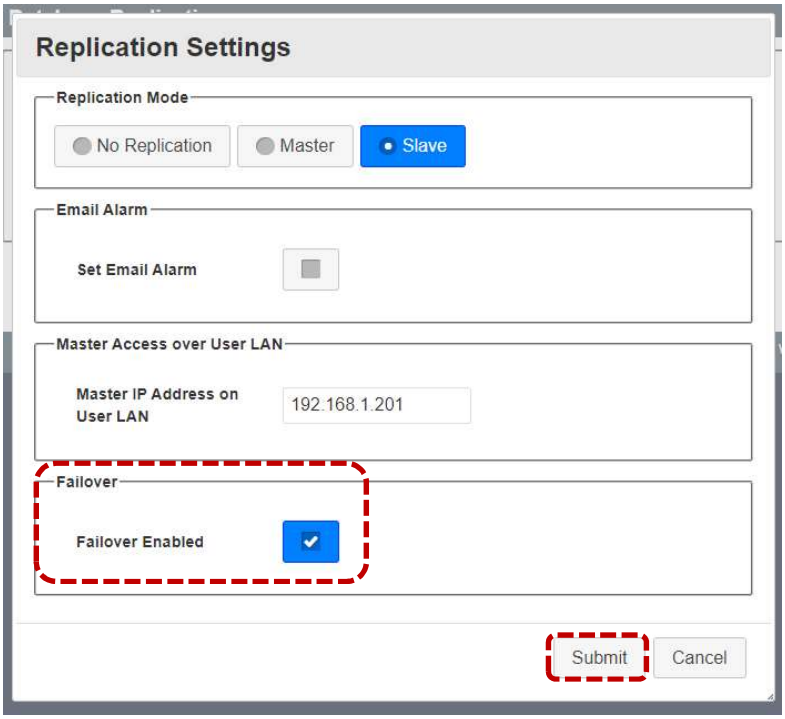


Figure 7-21

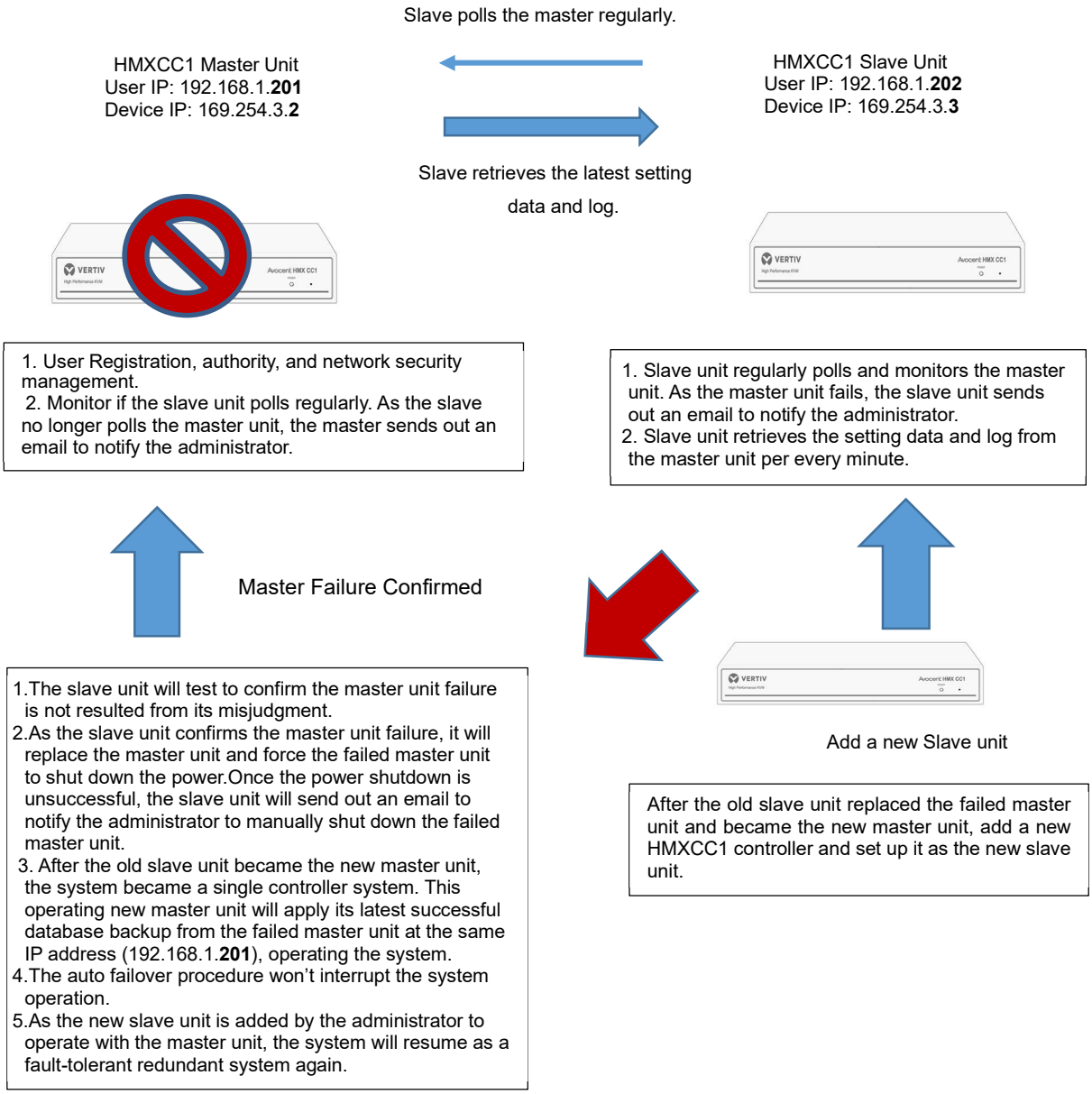
Set the newly added controller unit as Slave.

Go to **System**>**Networks**, click the <**Configure**> button to set User IP (192.168.1.**202**) and device IP (169.254.3.**3**).

Go to **System**>**Replication**, click the <**Configure the Replication Mode**> button and input the User IP address of the master unit (192.168.1.**201**).

Check the <**Failover Enabled**> box and click the <**Submit**> button to reboot the HMXCC1 slave unit.

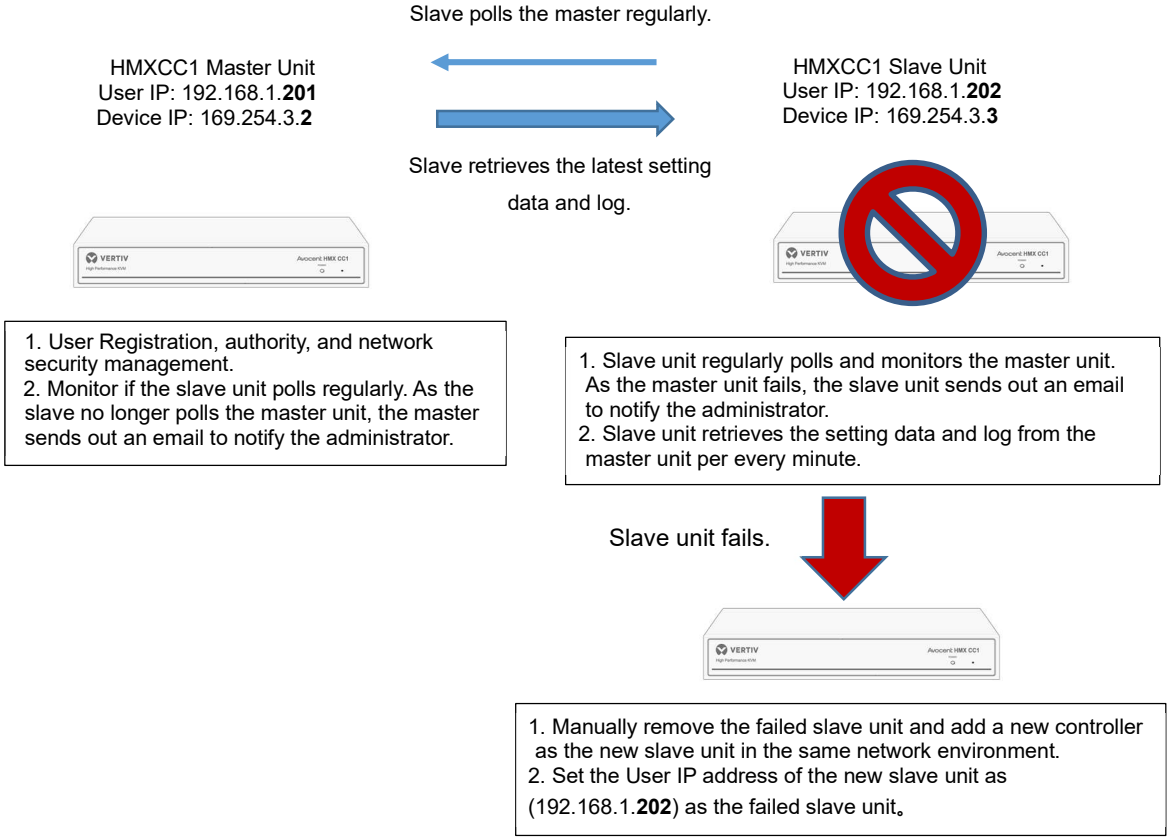
a. The master unit and slave unit operate in parallel, and the master unit fails



- As the master unit fails, the old slave unit replaced the failed master unit. The administrator manually removes the failed master unit and add a new HMXCC1 controller to be a new slave unit.
- Login the new HMXCC1 controller with the factory default management interface login IP address (https://192.168.1.200:5008). Go to **System**>**Networks**, and click the <**Configure**> button to set the User IP(192.168.1.**202**) and Device IP(169.254.3.**3**) as the old slave unit.
- Go to the <**Replication Mode>** page of the new HMXCC1 controller.Set it as <**Slave**> and input the User IP

Figure 7-22

b. The master unit and slave unit operate in parallel, and the slave unit fails



- As the slave unit fails, the administrator manually removes the failed slave unit and adds a new HMXCC1 controller to be the new slave unit.
- Login the new HMXCC1 controller with the factory default management interface login IP address (https://192.168.1.200:5008). Go to **System**>**Networks**, and click the <**Configure**> button to set the User IP (192.168.1.**202**) and Device IP (169.254.3.**3**) as the old slave unit.
- Go to the <**Replication Mode**> page of the new HMXCC1 controller.Set it as <**Slave**> and input the User IP

Figure 7-23

Chapter 8 Statements and Precautions

8.1 FCC Statement

This equipment has been tested and found to comply with the regulations for a Class B 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 this User Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case, the user will be required to correct the interference at his/her own expense.

8.2 CE Statement

This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

8.3 Copyright Notice

8.4 Disclaimer Notice

The information in this document is subject to possible changes or cancelation without prior notice.
Specifications, procedures, and screenshots described in the manual may be changed or updated for indications and explanations.

8.5 Precautions

(1)Place and operate the product at the best location.
(2)Before installation, disconnect all power sources connected to the product.
(3)To avoid electric shocks, do no open the enclosure of the product.
(4)Check if the power supply works normally before operation.
(5)Do not disassemble the product without authorization.
(6)Please only use the power adaptor in the package.

8.6 Technical Support

Please contact with your local distributor for more information. Or contact the original manufacturer Vertiv Tech Co., Ltd. for more technical supports.
Vertiv.service@vertiv.com / Overseas.support@vertiv.com

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PN: 30-191-HMXCC1G2-01-VTV-20