# **USER MANUAL**

# **Multi-Signal Modular Matrix Switcher Series**

GMS0909 / 1818 / 3636



Version: V2.0.1

## **Preface**

We are honored for your purchasing of our products. In order to have the best performance of the products, please read the user manual carefully before using them. Hope this user manual can bring more convenience, and please don't hesitate to get in touch with us or your local dealer if you have any issue during your usage.

Note: This user manual is for 9x9 matrix switch, 18x18 and 36x36 also can reference this user manual.





To protect the device and operating personnel from electrostatic discharge, you need to check and ensure that the device is grounding well before the device is powered on. Please observe the following when you install, use, maintain this equipment.



Attention the equipment needs good earth grounded

- Please use single-phase three wire system AC 220V power supply, and ensure all transmission system is grounding well.
- To protect operating personnel and the device, please turn off all power supplies and pull the plug before moving the device or doing some specific works which need to be done when the electricity is turned off. Please turn off the main power switch on rainy days or when not in use for a long time.
- Please do not put anything upon the cables, or tread the cables.
- To avoid damaging the device, please turn off power supply before plugging cable into the device or pulling cable from device. The damage caused by plugging/ pulling cables without turning off power supply is outside the scope of the warranty.
- The power of the device gives out heat when it works, so it's necessary to keep the work environment ventilated to protect the device from the damage caused by over temperature.
- > Do not place the device in very cold or very hot places. Do not sprinkle any corrosive chemicals or liquid on or around the device.
- > To avoid accident or any further damage ,non-professionals please do not dismantle or maintain the device without permission.

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#### 1. Product Introduction

The GMS modular matrix switcher series have 3 models: GMS0909 (9x9), GMS1818(18x18) and GMS3636(36x36). All the signal input and output cards using 1-card 1-port, wide range selections of the input and output cards, it provides users the most flexible configuration ability to meet with the real applications. And the 1080P and 4K60 I/O cards can reach any switching, converting, extension, resolution adjustment. Supports seamless or fast switching function, electromagnetic protection function, it can efficiently shield the electromagnetic interference for the surrounding environment to make sure the equipment running more stable.

The single channel signal switching speed can reach 12.5Gbps, and the main board is using Four core four links processing technology, the switching ability speed can reach 32Gbps. With uncompressed transmission technology for the digital signal to make sure the image High fidelity output. Unique signal links shielding designing technology to make sure the signal completeness, the internal data switch has super strong capacity of resisting disturbance and long continuous and stable working ability. Supports 7\*24 continuously working and with dual LAN and RS232 backup control, it's convenient for users to control via PC, iPad, APP and the 3<sup>rd</sup> parties central control by the the RS232 control commands.

With the dual RS232 and LAN control, users also can simply set up and control the surrounding equipment, such as the projector, electric curtain and TVs.

This matrix switchers have been widely used in the conferencing, radio&television project, multimedia conferencing hall, large screen display project, television teaching, command control center and so on applications.

#### 2. Product Features

- Modular designing chassis
- ➤ 1 channel 1 card, supports DVI-I/ HDMI/ 3GSDI/ HDBaseT/ Fiber to mix input and output
- Support seamless switching between all the signals
- > 4-core 4 links processing chipset provides up to 32GBPS signal switching processing ability
- Front buttons with background lights, easier to operate at any time
- Support EDID automatic recognition and compatible with HDCP
- Support 3.5mm audio embedded and de-embedd function
- Support 4K60, HDMI2.0 444 digital HD video signal transmission and seamless switching
- Support 3D image frequency repairing, pixel reread processing function
- > Support scaling up/down function via the DIP switch
- Support dual LAN ports backup control and centralization network management function
- Support hot-plug function
- Support auto saving protection and auto recovery function while power cut

#### 3. Technical Datasheet

Model	GMS0909	GMS1818	GMS3636
Description	9x9 modular chassis	18x18 modular chassis	36x36 modular chassis

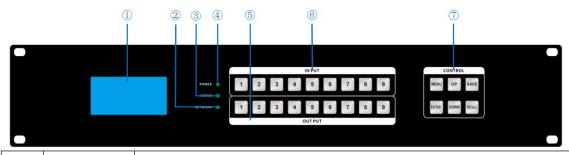
	1										
Input Card	1 Channel 1 Card, suppo	1 Channel 1 Card, support HDMI, DVI, 3GSDI, VGA, YPBPR, CVBS, HDBaseT, Fiber Optic									
Output Card	1 Channel 1 Card, suppo	1 Channel 1 Card, support HDMI, DVI, 3GSDI, VGA, YPBPR, CVBS, HDBaseT, Fiber Optic									
Protocol	HDMI1.4a/ HDMI2.0, DV	11.0, compatible with HDCP ar	nd EDID function								
Color Space	RGB444, YUV444, YUV42	22, support x.v.Color extension	color gamut standard								
Resolution	640x4801920x1200@	60Hz(VESA), 480i4K30Hz(НЕ	OTV), 4K60Hz								
Data Speed	12.5Gbps										
Transmission distance	70/100m(Cat6), 80Km(Si	ngle-mode), 20m(Digital cable	e), 25m(Analog cable)								
Control Methods	Broadcasting switching b	outton, dual RS232+LAN contro	ol								
Dimension	482*390*88(2U)mm	482*390*178(4U)mm	482*390*355(8U)mm								
Weight	6KG(No cards)	12.5KG(No cards)	25KG(No cards)								
Consumption	17W(No cards)	21W(No cards)	30W(No cards)								
Power Supply	AC 110V-240V 50/60H	Z									
Working Temp	-10℃ -50℃	-10℃ -50℃									
Storage Temp	-25℃ - 55℃										

# 4. Packing Details

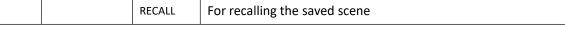
Matrix switch chassis with customized configuration	1 unit
Power cord	1 pcs
User manual	1 pcs

## 5. Panel Diagram

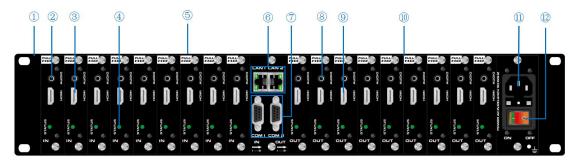
### Front Panel



No.	Name	Description							
1	LCD Screen	Operation in	formation real-time Display						
2	POWER	light up aft	er power on, it will light off after power off						
3	ACTIVE	Flashing w	hile using the buttons/ WEB switching successfully						
4	NETWORK	Flashing w	hile using the WEB control operation						
5	ОИТРИТ	Input butto	Input buttons with background light, from 1~9 input buttons						
6	INPUT	Output buttons with background light, from 1~9 output buttons							
		MENU	Select between View, Switch, Scene Save/ Recall and Setup						
		UP	Upward and short cut button for switching to ALL outputs						
7	CONTROL	SAVE	For saving the scene or setup						
		ENTER	Enter button						
		DOWN	Downward and short cut button for canceling to ALL outputs						

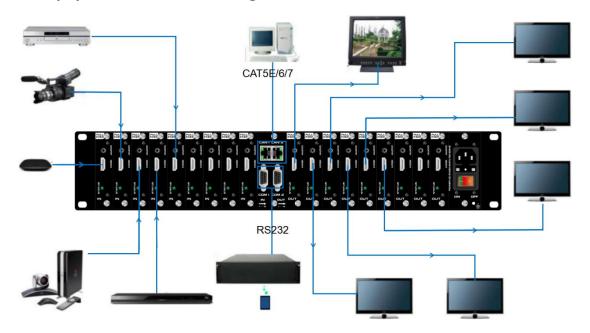


#### **Rear Panel:**



No.	Name	Description
1	Rack ear	For installing on the 19 inch Rack Cabinet
2	3.5mm audio	External 3.5mm audio embedded
3	HDMI Port	HDMI input card
4	Status Indicator	Power on indicator
(5)	Input slots	Supports DVI/HDMI/VGA/CVBS/YPbPr/FIBER/HDBaseT input
6	LAN Ports	Dual LAN ports for WEB/TCP/IP control
7	RS232 Ports	Dual RS232 ports for 3 <sup>rd</sup> parties control
8	3.5mm audio	External 3.5mm audio de-embedded
9	HDMI Port	HDMI output card
10	Input slots	Supports DVI/HDMI/VGA/CVBS/YPbPr/FIBER/HDBaseT output
11)	Power Port	AC 220V-240V 50/60Hz
12	Power Switch	Power ON/OFF switch with light

### 6. Equipment Connection Diagram



### 7. Equipment Operation and Instruction

The LCD display screen will light up after power and turned on. It shows the current operation status, press MENU button, it will keep recycling between VIEW, SWITCH, SCENE, SETUP four

different interface. The default interface is VIEW.

#### 7.1 Font buttons switching operation

#### 7.1.1 Switching operation

Switching with industry 2-key fast switching, first press the input button and then select/press output button. Details are as follow:

- ➤ There are 1~9 nine input buttons, 1~9 nine output buttons. First press MENU to show SWITCH interface, then can continue the next switching step
- > Press input number at the INPUT area, the input button will light up with blue light
- Then press output number at the OUTPUT area, and the output button will light up. Users also can press the UP button to realize 1 to ALL switching.
- If need to cancel switching, can press the button again to cancel. Users also can press the DOWN button to cancel all outputs

#### 7.1.2 Scene Operation

- The system can save 24 scenes, after switching successfully in the SWITCH interface, press MENU button and switch to SCENE interface.
- ➤ Enter the wanted scene save number(1~24), then press SAVE. If want to reload the saved scene, press the scene number and press RECALL button

Note: Via front buttons to save/recall scene, Mini99 only support 9 scenes, Mini1818 supports 18 scenes

#### 7.1.3 Setup Operation

- First press MENU switch to SETUP interface, then continue next operation
- Via SETUP, it can realize IP address changing, in SETUP interface can use UP/ DOWN button to position, enter the needed IP address from the left button side, then press SAVE button to save

#### 7.1.4 View Operation

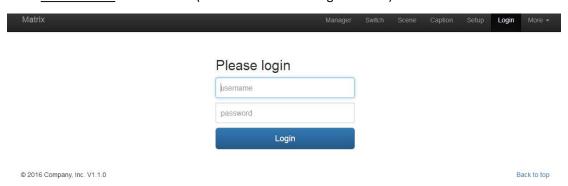
Via MENU button switch to VIEW interface, will display the current switching status

#### 7.2 WEB Control

The default IP address are 192.168.0.80(LAN1) and 192.168.1.80(LAN2).

#### 7.2.1 Login Operation

Accordingly to connected LAN port, enter the corresponding IP address, if using the LAN1, then enter <u>192.168.0.80</u> in the browse(Recommend with Google browse) as below:



Note: The default user name and password is same: admin, click login after entering. Please make sure the control PC is at the same IP segment.

#### **7.2.2 Switch**

#### Switch interface:



The left side of the long string is input area: GMS0909 will have 9 buttons, GMS1818 has 18 buttons, GMS3636 will have 36 buttons. The right side is output area, the buttons are the same with input area. And there're 5 buttons: The 1<sup>st</sup> for 1 to all, 2<sup>nd</sup> for 1 off to all, 3<sup>rd</sup> for 1 to 1, 4<sup>th</sup> for all off, the last one is for scene save and recall. (Change names can be done in Caption interface)

If need to switch 1 input to 1 output: First click the input number, then click the output number If need to switch 1 input to many outputs: First click input number, then press all the needed output number

If need to switch 1 input to all outputs, first click input number, then click the 1<sup>st</sup> button at the right side

If need to switch off the input, first click the input number, then click the 2<sup>nd</sup> button at the right side

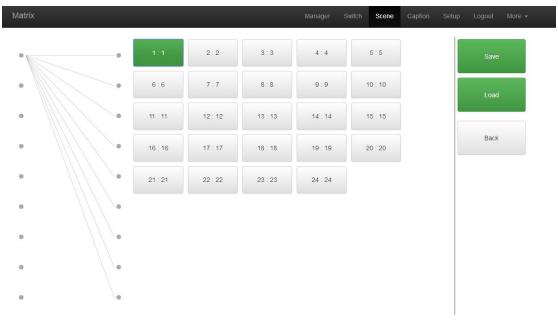
If need to switch 1 to 1, 2 to 2...., then just click the 3<sup>rd</sup> button at right side directly

If want to switch off all the input and output, then just click the 4<sup>th</sup> button at the

If want to switch off all the input and output, then just click the  $4^{\text{th}}$  button at the right side directly

7.2.3 Scene

#### Scene Interface:



There're 24 scenes in the middle, can view the current switching status from left side, the right side are the Save, Load, Back buttons. (All scenes can be named in Caption interface)

If want to save the current switching status as the scene: Select the wanted scenes number(1~24), then click Save to save.

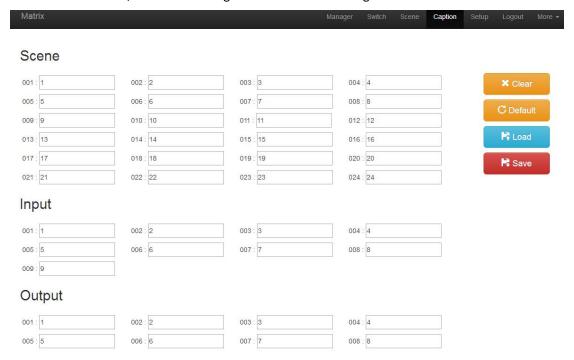
If want to recall the saved scenes: Select the wanted scene number(1~24), then click Load button to recall

Click Back button to return back the Switch interface.

#### **7.2.4 Caption:**

#### For changing the input, output and scenes' name

There are 3 parts on the left side, the first one is for Scene, middle one is for Input and the last one is for the Output. And there are 4 buttons on the right side, Clear for clearing all the names, Default for returning back to default status, Load is for syncing, click Load can recall all the saved names on the matrix, Save is for saving the current name changes to the matrix



#### 7.2.5 Manager

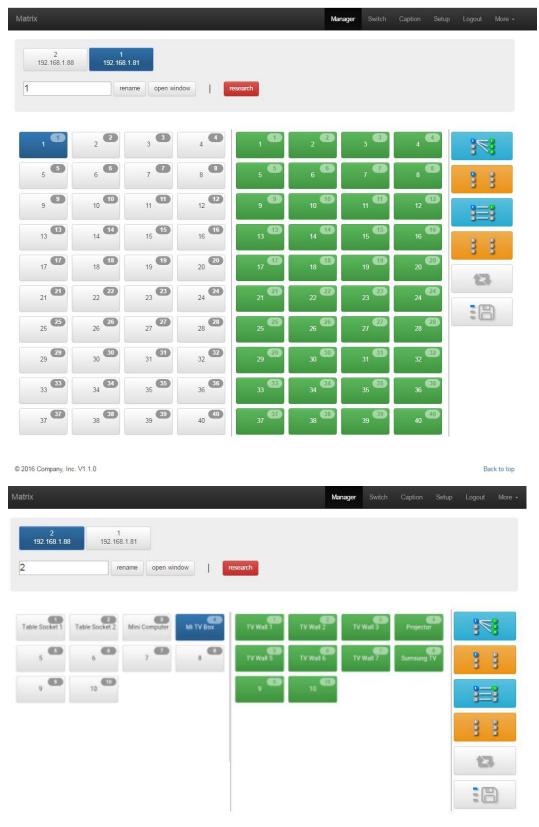
#### **Centralization Manage interface:**

Click Manager can realize many matrices centralized controlling



At the same local area network, it can control one to many matrices with same segment but different IP address, the most can control 254 units matrices. Such as the following IP are 192.168.1.81 are 192.168.1.88 two different matrices, and 192.168.1.81 is 40x40 matrix, and 192.168.1.88 is 10x10 matrix. Click research to find and control all the matrices. Also support rename the matrices' name, such as to change 192.168.1.81 as 1, then click 192.168.1.81 and

enter number 1 and click rename. And rename 192.168.1.88 as 2. Check as following interface: Also can click IP address to control at this interface:



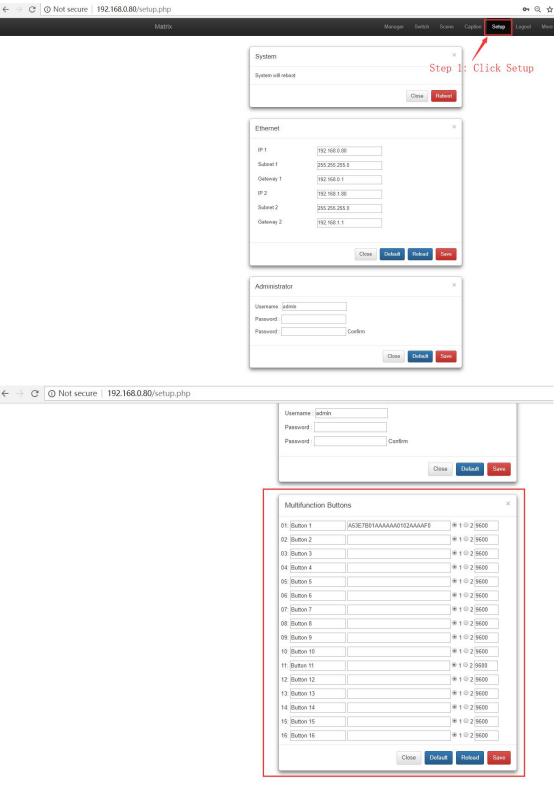
#### 7.2.6 Setup

#### Set up interface:

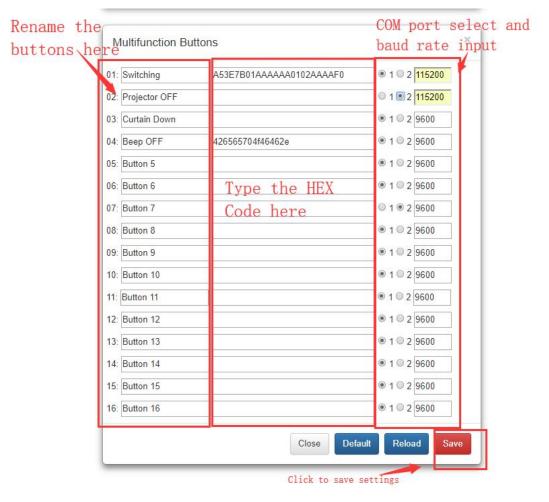
System Reboot: for modifying the matrix configuration(IP address, Login password)

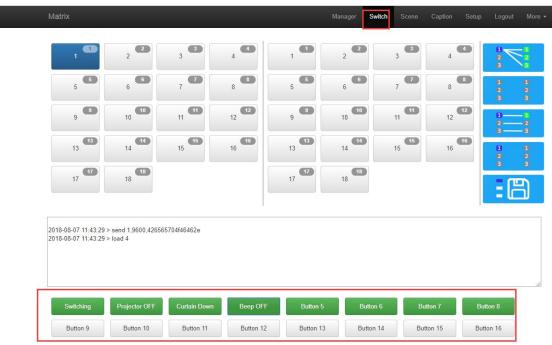
Ethernet: for changing IP address accordingly

Administrator: For changing the Login user name and password Multifunction Buttons: For controlling the surrounding equipment



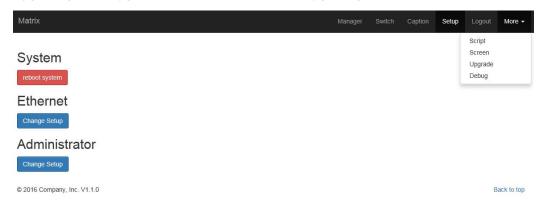
**Multifunction buttons set up**, total we have 16 multifunction buttons at present. We can rename the buttons, Type the HEX code for each button, and baud rate select. Then click "Save".





#### 7.2.7 More:

Upgrading: Click Upgrade can realize new software upgrading



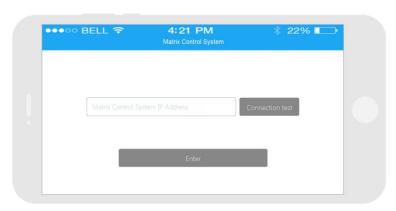
#### 7.3 APP Control

It also can support IOS and Android APP control, users only need to well connected the matrix with the WIFI router or local network. Download the APP from the application store. The steps and interfaces show as below:

Step 1: Make sure the matrix well connected with the router or local network, and open the APP:



Step 2: Enter the IP address of the matrix:



Step 3: After log in successfully, users can switch, change the inputs and outputs name directly.



#### 7.4 Central Control Commands

RS232 cable with straight-through connection(USB-RS232 can be used directly to control) Communication protocol:

Baud rate: 115200

Data bit: 8
Stop bit: 1

Check bit: None **Commands Function description Explanation** Switch Input Y to all the outputs YAII. Y=1,2,3,4..... Eg. "1ALL." means switch input 1 to all outputs Switch all the channels to be one to one. Eg.1->1, All1. One to one 2->2, 3->3..... Y=1,2,3,4..... Switch Input Y to Output Z YXZ. Z=1,2,3,4..... Eg. "1X2." means switch Input 1 to output 2 Y=1,2,3,4..... Switch Input Y to Output Z, Q, W Z=1,2,3,4..... YXZ&Q&W. Eg. "1X2&3&4." means switch Input 1 to Output 2, Q=1,2,3,4..... 3, 4 W=1,2,3,4..... Save current status to scene Y SaveY. Y=1,2,3,4..... Eg. "Save2." means saving current status to Scene 2 Recall the saved scene Y RecallY. Y=1,2,3,4..... Eg. "Recall2." means recall the saved Scene 2 BeepON. Buzzer on Beep sound Buzzer off BeepOFF. Check the Input Y to outputs switching status Y?. Y=1,2,3,4..... Eg. "1?." means to check Input 1 switching status

#### Note:

- > Every command ends with a period "." and it can't be missing.
- > The letter can be capital or small letter.
- > Switch success will return as "OK", and failed will return as "ERR".

### 8. Trouble Shooting and Attention

No signal on the display?

Make sure all the power code well connected

- > Check the display switcher and make sure it's in good condition
- Make sure the the DVI cable between the device and display are short than 7 meters
- Reconnect the DVI cable and restart the system
- Make sure the signal sources are on
- Check the cables between the devices and displays are connected correctly.
- ▶ Dial the switcher 7 to 1, then dial the switcher1,2 and choose the corresponding inputs.
- ➤ Make sure the resolution less than WUXGA(1920\*1200)/ 60HZ
- Make sure the display can support the output resolution.

#### 9. After Sales

#### 9.1 Warranty Information

The Company warrants that the process and materials of the product are not defective under normal use and service for 2 (2) year following the date of purchase from the Company or its authorized distributors.

If the product does not work within the guaranteed warranty period, the company will choose and pay for the repair of the defective product or component, the delivery of the equivalent product or component to the user for replacement of the defective item, or refund the payment which users have made.

The replaced product will become the property of the Company.

The replacement product could be new or repaired.

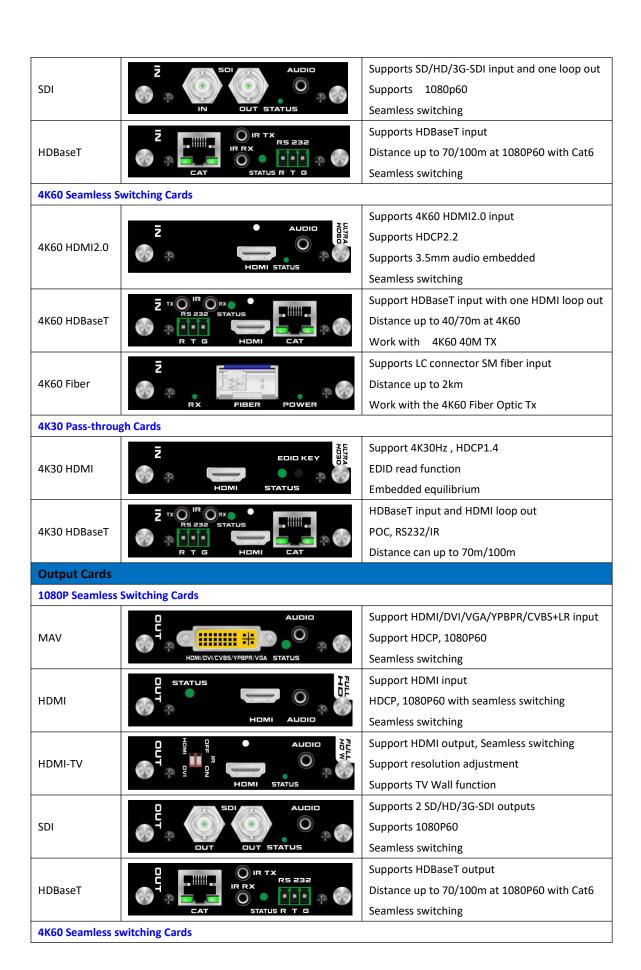
Whichever is longer, any replacement or repaired of the product or component is for a period of ninety (90) days or the remaining period of the initial warranty. The Company shall not be responsible for any software, firmware, information, or memory data contained in, stored in, or integrated with the product repaired by the customer's return, whether or not during the warranty period.

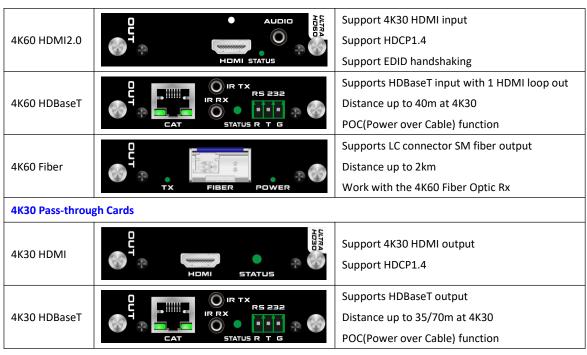
#### 9.2 Warranty limitations and exceptions

Except above limited warranty, if the product is damaged by over usage, incorrectly use, ignore, accident, unusual physical pressure or voltage, unauthorized modification, alteration or services rendered by someone other than the Company or its authorized agent, the company will not have to bear additional obligations. Except using the product properly in the proper application or normal usage

# Attachment A: Input and output cards for GMS0909 / 1818 / 3636

Input Cards											
1080P Seamless	1080P Seamless Switching Cards										
	Ž AUDIO	Support HDMI/DVI/VGA/YPBPR/CVBS+LR input									
MAV		Support HDCP, 1080P60									
	HDMI/DVI/CVBS/YPBPR/VGA STATUS	Seamless switching									
	Z ¿Z J	Support HDMI input									
HDMI		HDCP, 1080P60 with seamless switching									
	HDMI STATUS	Seamless switching									





**Note:** All the above cards can work with GMS, BUT we suggest to use only 1080P, 4K60 or 4K30 pass-through cards on one chassis instead of mixing use 1080P and 4K60 or 4K30 cards together.

#### Attachment B:

#### **DIP Switches Operation Instruction**

4K60 seamless switching cards:

	4K60 HDMI2.0 Input Card DIP Switch															
Customize Resolution						3.5mm Audio			Null						IR Function	
DIP 1	DIP 2	DIP 3	DIP 4	Description	DIP 5	Description	DIP 6	C	escript	ion	DIP 7	Des	criptio	n	DIP 8	Description
0	0	0	0	1080P@60Hz	0	Using External audio	0	I	Null		0		Null		0	IR off
0	0	0	1	1080P@50Hz	1	Using HDMI audio	1		IVUII		1		IVUII		1	IR on
0	0	1	0	3840*2160@50Hz												-
0	0	1	1	720P@60Hz												
0	1	0	1	1366*768@60Hz	1											
0	1	1	0	1024*768@60Hz			9. 1	1	100	75	341	1	Tool	63	10	(6)
0	1	1	1	3840*2160@30Hz	1	AND DESCRIPTION OF THE PERSON										
0	1	0	0	3640 2160@30H2			ON						V	E		8
1	0	0	0	3840*2160@24Hz	1			_								3
1	0	0	1	480P@60Hz	1		7	7		5			-			
1	0	1	0	720P@50Hz	1		1	2	3	4	5	6	7	8		
1	0	1	1	576P@50Hz	l	-		_	-	-		_		_	-	4
1	1	0	0	3840*2160@60Hz	l										10%	
1	1	1	0	4096*2160@60Hz	l											
1	1	1	1	4096*2160@50Hz												

	4K60 HDMI2.0 Output Card DIP Switch														
	Cus	tomiz	ze Re	solution	Cus	tomi	ze Color Space	Н	DCP2.2	IR	IR Function				
DIP 1	DIP 2	DIP 3	DIP 4	Description	DIP 5	DIP 6	Description	DIP 7	Description	DIP 8	DIP 8 Description				
0	0	0	0	1080P@60Hz	1	1	RGB	0	HDCP On	0	IR off				
0	0	0	1	1080P@50Hz	1	0	YUV422	1	HDCP Off	1	IR on				
0	0	1	0	3840*2160@50Hz	0	0	YUV420								
0	0	1	1	720P@60Hz	0	1	YUV444								
0	1	0	1	1366*768@60Hz											
0	1	1	0	1024*768@60Hz	1										
0	1	1	1	2040*2100@2011-		V204.71				100					
1	1	1	1	3840*2160@30Hz											
0	1	0	0	4096*2160@50		0	ON			VÉ					
1	0	0	0	4096*2160@30		Table 1									
1	0	0	1	480P@60Hz	à										
1	0	1	0	720P@50Hz			1 2	3 4	5 6	7	8				
1	0	1	1	576P@50Hz		-	100	0		00	1 1 1				
1	1	0	1	1920*1200/60		(a)	-	-		-	-				
1	1	0	0	3840*2160@60Hz						10.00	A 100				
1	1	1	0	4096*2160@60Hz											

### 1080P seamless switching cards:

	1080P Input Card DIP Switch													
	Custo	mize F	Resolution		Inpu	t Sou	rce Select		Image o	or Audio S	elect	1	IR Function	
DIP 3	DIP 4	DIP 5	Description	DIP 7	DIP 1	DIP2	Description	DIP 6	Version	Descriptio	n	DIP	8 Description	
0	0	0	1024*768	1	0	0	CVBS Input	1	Version 1	Normal disp	olay	0	IR off	
0	0	1	1360*768	1	0	1	YPBPR input	0	version 1	Image mirro	or	1	IR on	
0	1	0	1920*1200	1	1	0	VGA input	1	Version 2	HDMI audio	input			
0	1	1	720P/60	1	1	1	DVI input	0	version 2	3.5mm audio	input			
1	0	0	Null	0			Signal Auto detect					-		
1	0	1	Null											
1	1	0	1080P/50			0	ON				V	E		
1	1	1	1080P/60			0.3								
				1				-				-		
						1		_			_	_		
						1	1 2	3	4	5 6	7	8		
													1	

					1080P Ou	utpu	ut Card DI	P S	witch_		
		Res	soluti	on Set	Up	•	Color Space		Image		IR
D2	D3	D4	D5	D6	Description	D1	Description	D7	Description	D8	Description
0	0	0	0	0	1024*768@60	0	RGB	0	Image mirror	0	IR ON
0	0	0	0	1	800*600@60	1	YUV	1	Normal display	1	IR OFF
0	0	0	1	0	1280*800@60						9
0	0	0	1	1	1280*1024@60						
0	0	1	0	0	1360*768@60						
0	0	1	0	1	1366*768@60						
0	0	1	1	0	1400*1050@60						
0	0	1	1	1	1440*900@60						
0	1	0	0	0	1680*1050@60						
0	1	0	0	1	1600*1200@60						
0	1	0	1	0	1920*1200@60						
0	1	0	1	1	1600*1200@60						
0	1	1	0	0	1680*1050@60						
0	1	1	0	1	1400*900@75						
0	1	1	1	0	640*480@75						
0	1	1	1	1	800*600@75	200	ON				
1	0	0	0	0	4801@60	0	ON				VE
1	0	0	0	1	5761@50		-				
1	0	0	1	0	480P@60			-			
1	0	0	1	1	576P@50				-	•	_
1	0	1	0	0	1280*720@24	1	1 2	3	4 5 (	2	7 9
1	0	1	0	1	1280*720@25		' -	9	7 0		1 0
1	0	1	1	0	1280*720@30						
1	0	1	1	1	1280*720@50						
1	1	0	0	0	1280*720@60						
1	1	0	0	1	10801@50						
1	1	0	1	0	10801@60						
1	1	0	1	1	1080P@24						
1	1	1	0	0	1080P@25						
1	1	1	0	1	1080P@30						
1	1	1	1	0	1080P@50						
1	1	1	1	1	1080P@60						