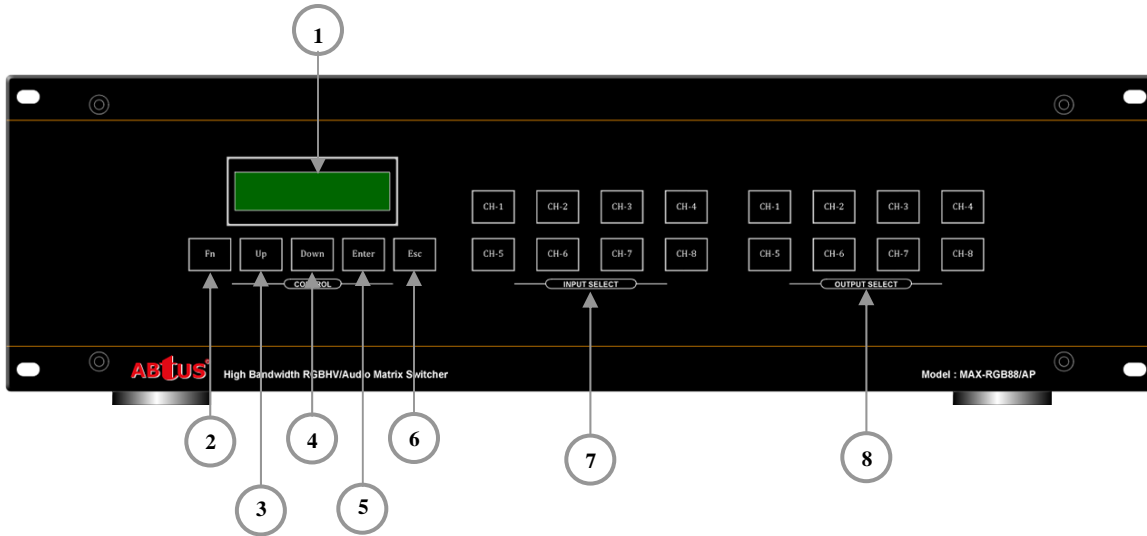


## Matrix Switcher Operational Manual 2009/06/10 ver:1.1

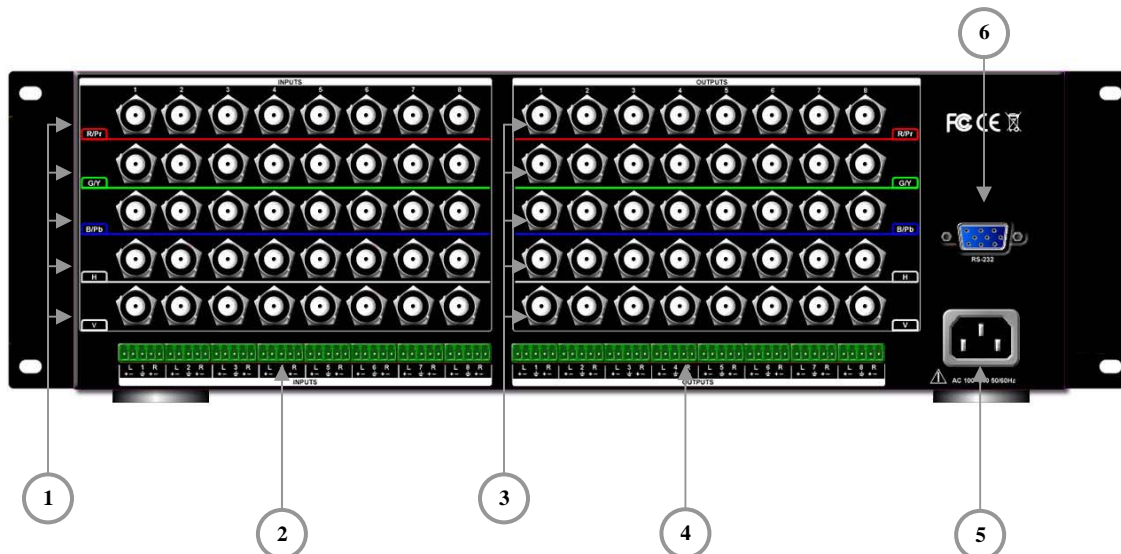
### ■ MAX-RGB88A/P 1. Front Panel View



Item	Description
1.	LCD display which shows the current system status
2.	“Fn” Function key, entering into setup menu
3.	“Up” selection
4.	“Down” selection
5.	“Enter” key
6.	“Esc” key
7.	Input Channel Select, Selection of the input port 1 to 8
8.	Output Channel Select, Selection of the output port 1 to 8

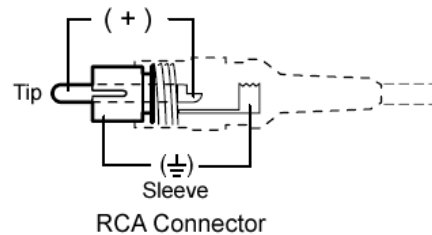
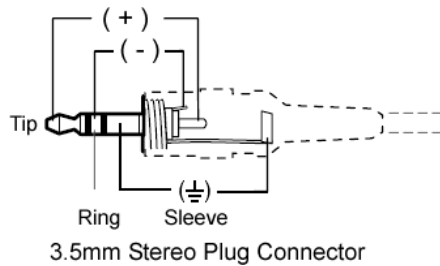
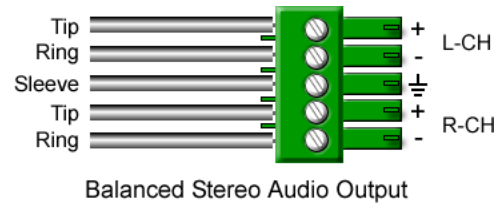
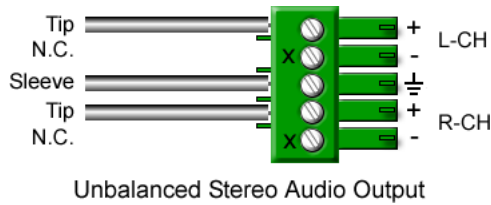
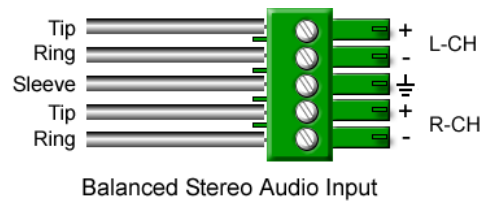
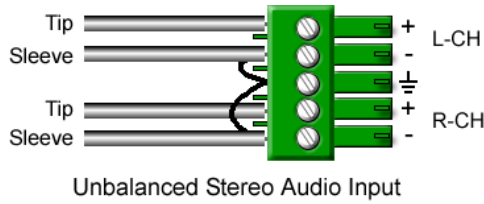
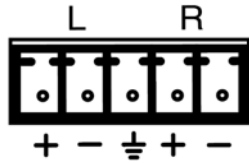


### 2. Back Panel View



- | Item | Description   |
|------|---|
| 1.   | 5xBNC RGBHV Input port 1 to 8   |
| 2.   | Balanced/Unbalanced Audio Input port 1 to 8   |
| 3.   | 5xBNC RGBHV Output port 1 to 8  |
| 4.   | Balance/Unbalance Audio Output port 1 to 8  |
| 5.   | Power Input plug. Before plugging in the power, please check if power is AC 100~230V, 50/60Hz |
| 6.   | RS-232 I/O control port   |

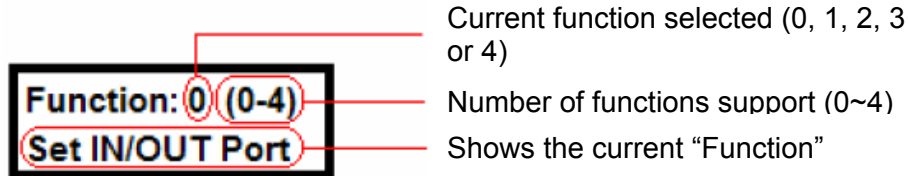
Balanced/Unbalanced Audio connections:



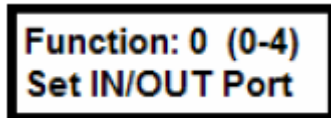
### 3. Function: 0 Function menu setup page

#### (1) Entering "Setup Menu page"

To enter "Setup Menu" press the "Fn" button once, LCD Display will show the function menu accordingly. Select the relevant function by using the "Up" and "Down" button and confirm selection by pressing the "Enter" button.



#### (2) Setting up the I/O port



Enter the setup menu page and select "Set IN/OUT Port" function and press "Enter". LCD display will show "Select IN/OUT Port:"

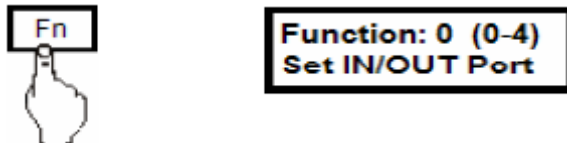
By using the "Up" and "Down" button select the desire switching mode. i.e. Video/Audio, Video Only or Audio Only and confirm by pressing the "Enter" button. The LCD display will then show "IN, OUT" and the "Input Select" buttons will be blinking. Select the desire Input port number by pressing the respective buttons. Once selected the LCD will displayed the respective Input port number and the buttons back light will stays ON.

Select the desired Input and Output ports by pressing the Input and Output Channel Selection buttons or deselect by pressing the same button again.

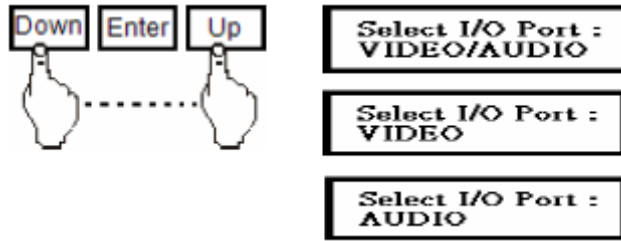
Steps are as followed:

#### ■ Example:

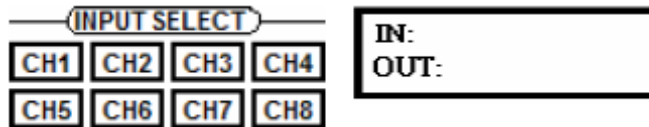
1. Press "Fn" button to enter Setup Menu page, making use of the Up/Down button and move to "Set Input/Output Port" function and press "Enter"



2. Enter "Select I/O Port" function and again making use of the Up/Down button to select the Video and or Audio switching mode i.e. Video/Audio, Video Only or Audio Only.



3. The front panel “Input Select” buttons will be flashing waiting for selection.

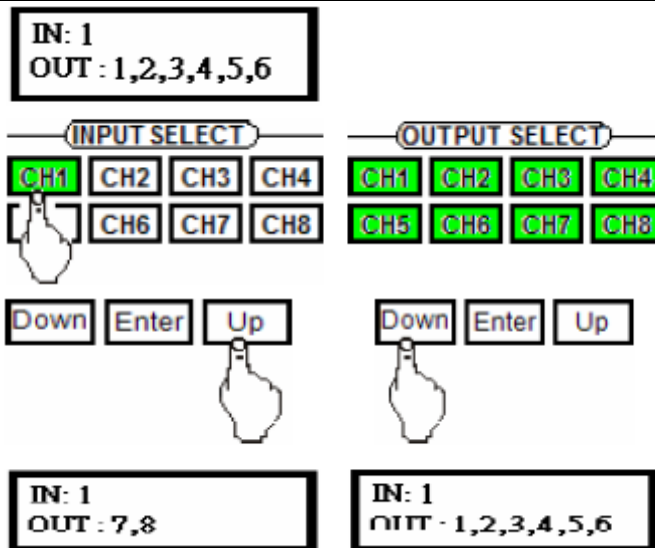


Assuming that the current setup was Input port 1 is routed to Output port 1 to 8.

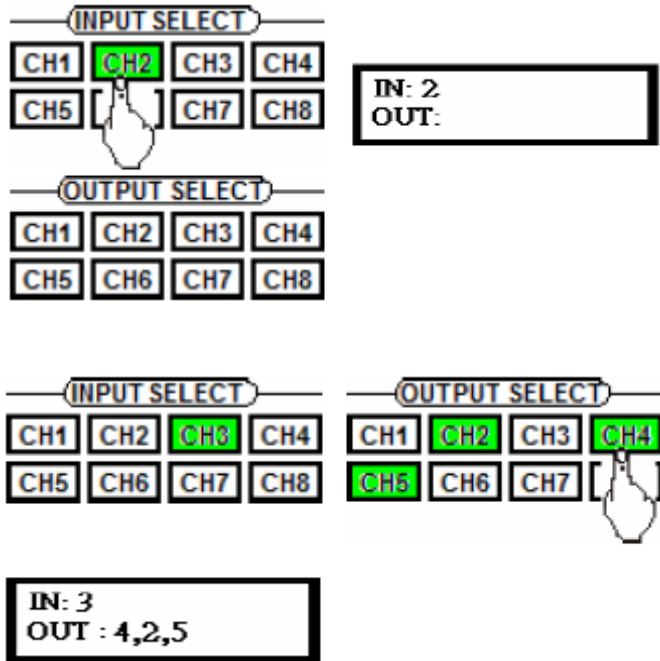
Hence, if Input Select CH1 is pressed, all Output Port buttons from 1 to 8 will be lighted. And these Input/Output port number will also be shown on the LCD display accordingly.

Therefore if any other Input Select Channel (Port 2 to Port 8) is selected the Output Select Buttons will NOT be lighted up.

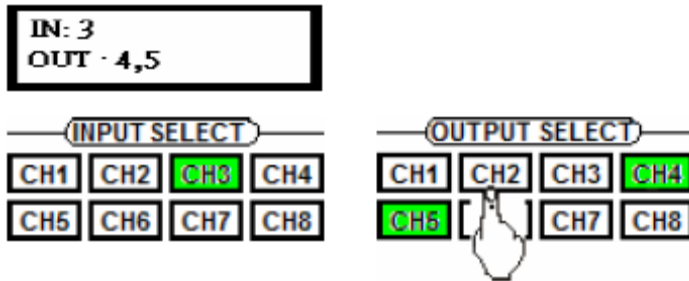
“Up” and “Down” can be used to scrow if Output select is more 6



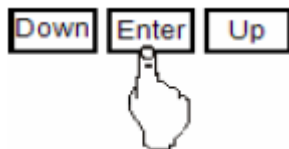
4. And NOW if Input Channel 2 is to be routed to Output port 2, 4, and 5. The settings up are as follows:  
 Select the “Input Select” button CH2 and select the “Output Select” Ch2, Ch4 and CH5. Back light for all selected buttons will stay ON.  
 And these Input and Output port number will also be shown on the LCD display accordingly.

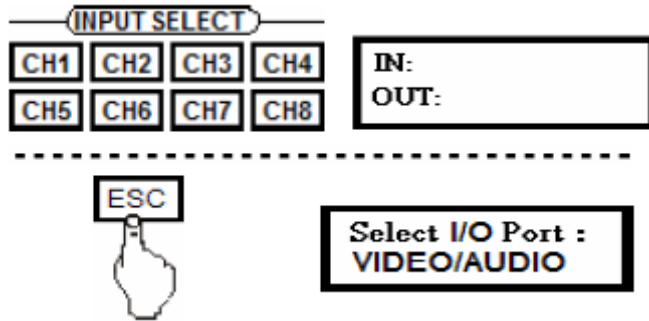


Press the respective button again to "Cancel" a selection when required and the respective button will go off together with the displayed port number on the LCD.



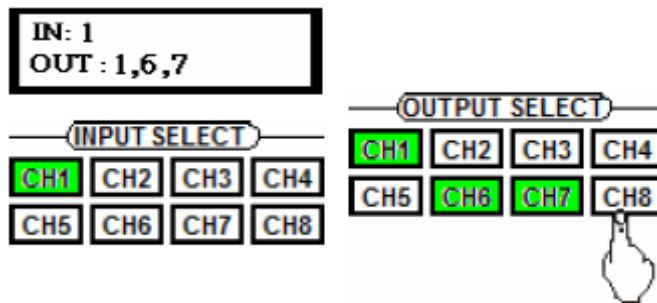
Then press the "Enter" button to confirm and store the setting. The LCD Menu display will then return to "IN, OUT" page and the "Input Select" buttons will now flashing waiting for selection. Repeat step number 3 to set another I/O routing or if different "Video" and or "Audio" channel switching model is required press "Esc" to return to "Select I/O Port" page and repeat Step number 2.





And just press the “Enter” button again if other I/O setting is required.

- Now assuming that the setup was Input Channel 1 was routed to Output Channel 1, 3, 6, 7 and 8. And to remove the output rout “Output port” 3 and 8. Follows the steps as followed:



Follows the steps as shown:

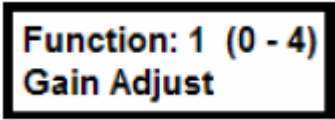
- Base on the above steps press “Input Select” CH1 then follow by Output Select CH3 and CH8. The buttons will stays ON and it LCD display will the channel selected accusingly.

Press “Enter” to confirm setting.

Notes:

Setting will NOT be stored if “Fn” or “Esc” is press instate of “Enter”  
And all setting will remain as before.

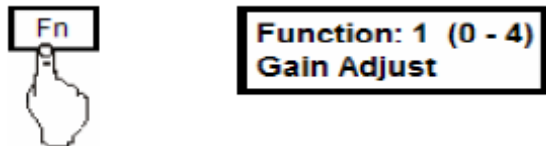
**(3) Function 1: Video and Audio Gain Control**



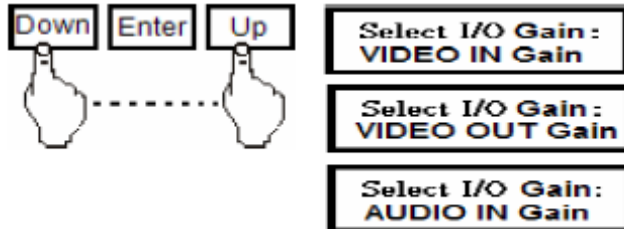
The Gain adjust function allows user to set the Video/Audio IN and OUT gain accordingly for every single port independently.

■ Steps are as followed:

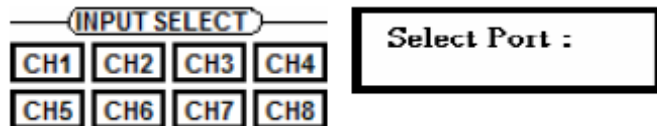
1. Press "Fn" to enter Function Menu, making use of the Up/Down button and select "Gain Adjust" function and select Enter for confirmation.



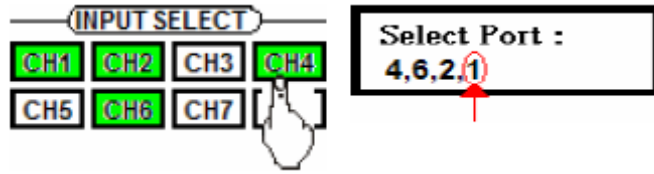
- 
2. In "Select I/O Gain :." Menu, making used of the Up/Down button to select the desired channel to be adjusted. Namely: VIDEO IN Gain or VIDEO OUT Gain, AUDIO IN Gain.



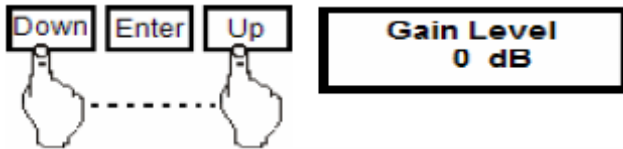
- 
3. If the above selection was "VIDEO IN Gain" the LCD display will shows "Select Port :." accordingly and the INPUT SELECT buttons will be flashing indicates that the system is waiting for selection.



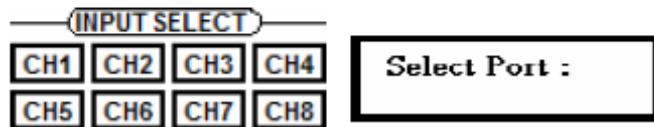
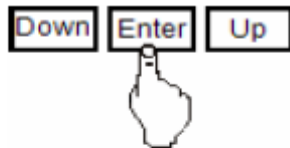
- 
4. Select the desired IN port by selecting form the INPUT SELECT buttons Select 1 → 2 → 6 → 4 and press "Enter". The Input gain level will then base on port 1 as reference.



5. In the “Gain Level” Menu, and making use of the Up/Down button and select the desire gain level accordingly and press “Enter” once confirm. The gain level selected will then be stored accordingly



The system will then return to “Select Port:” Menu and the “INPUT SELECT” buttons will be flashing again indicates that the system is waiting for selection. Repeat step number 3 to select other ports.



If a new I/O Gain selection is required, press “Esc” return to “I/O Gain:” Menu and repeat steps number 2 accordingly.



**Notes:**

Setting will NOT be stored if “Fn” or “Esc” is press instate of “Enter”  
And all setting will remain as before.

#### (4) Function 2: Volume Adjust

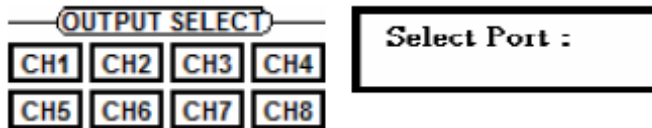
The Volume adjust function allows user to set the Audio Output volume accordingly for every single port independence.

- Steps are as followed:

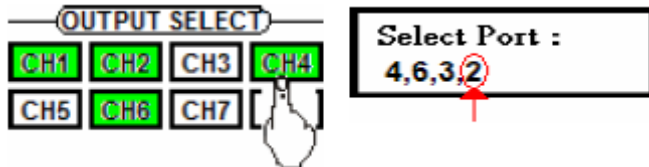
1. Press “Fn” to enter Function Menu, making use of the Up/Down button and select “Volume Adjust” function and select Enter for confirmation.



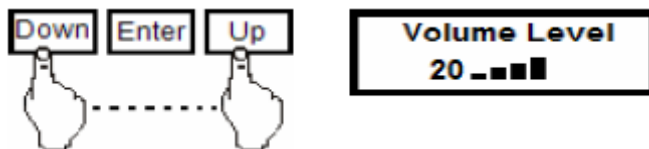
2. In “Select Port:” Menu, “OUTPUT SELECT” buttons will be flashing indicates that the system is waiting for a selection.

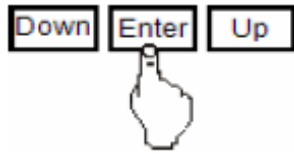


3. Select the desired Output port by selecting form the OUTPUT SELECT buttons. Select 2 → 3 → 6 → 4 and press “Enter”. The Output gain level will then base on port 2 as reference.



4. In the “Volume Level” Menu, and making use of the Up/Down button and select the desire Volume level accordingly and press “Enter” once confirm.  
The Volume level selected will then be stored accordingly.





The system will then return to "Select Port:" Menu and the "OUTPUT SELECT" buttons will be flashing again indicates that the system is waiting for selection. Repeat step number 2 to select other ports.

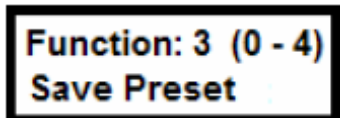


To setup a new Volume Setting, returning to the "Volume Adjust:" function can be done by pressing "Esc" and repeat steps number 2 accordingly.

Notes:

Setting will NOT be stored if "Fn" or "Esc" is press instate of "Enter"  
And all setting will remain as before.

**(5) Function 3: Save Preset**



The "Save Preset" function allows user to store the Audio/Video routing configuration. A total of 10 different of such configuration can be stored which also has the availability of "Naming" each of these Preset accordingly.

- Steps are as followed:

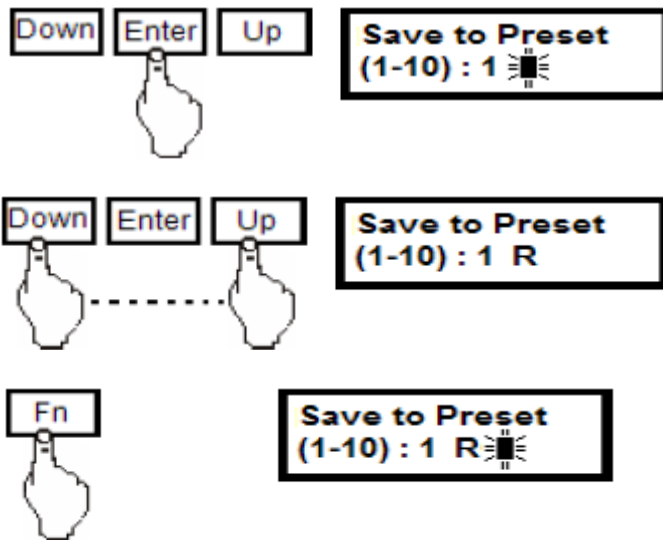
1. Press "Fn" to enter Function Menu, making use of the Up/Down button and select "Save Preset" function and select Enter for confirmation.



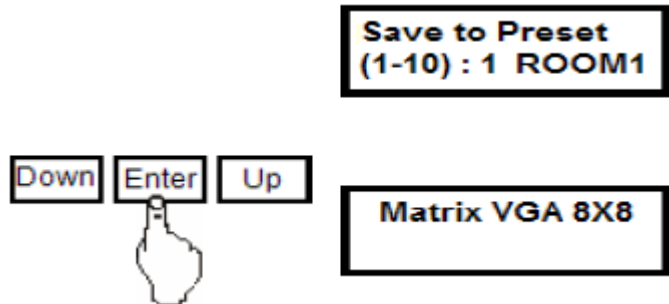
2. In "Save to Preset" Menu, again making used of the Up/Down button and select the desire Preset number. The respective Preset number will be displayed on LCD display with "<empty>".



3. And press "Enter" to confirm the Preset Number selected. A curser will appear flashing indicate that the system is waiting user to "Name" the Preset selected. A total of 5 characters can be entered accordingly with the use of the Up/Down button. Press "Fn" to back space when required



4. Last press "Enter" to confirm the Preset Name. the "Preset" will be stored and the system will return to it Main Menu page as shown.



Notes:  
Setting will NOT be stored if "Fn" or "Esc" is press instate of "Enter"  
And all setting will remain as before.

(6) **Function 4: Recall Preset**

**Function: 4 (0 - 4)  
Recall Preset**

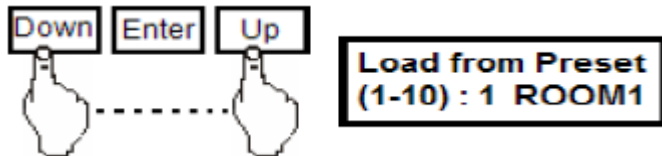
The “Recall Preset” function allows user to recall a stored Audio/Video routing configuration preset. A total of 10 different of such configuration can be stored and recalled base on the setting which also make easy identification with its different “Naming” for each of these Preset accordingly.

■ Steps are as followed:

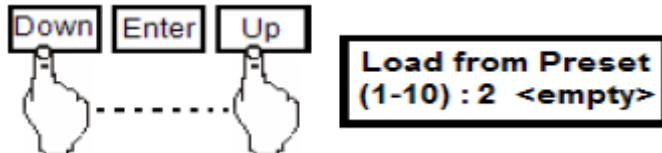
1. Press “Fn” to enter Function Menu, making use of the Up/Down button and select “Recall Preset” function and select Enter for confirmation.



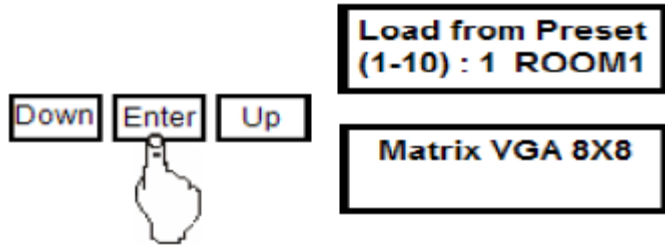
2. In “Load from Preset” Menu, making used of the Up/Down button and select the desire Preset number. The respective Preset number will be displayed on LCD display together with the Preset Name “e.g. ROOM1” accordingly. Press “Enter” to confirm selection.



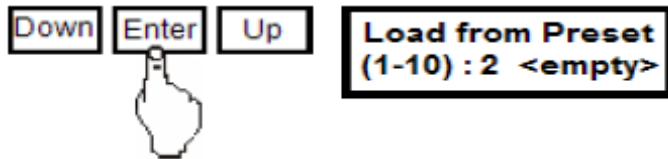
When a “empty” shown with a Preset, this indicate that there no Preset stored in the selected Preset Number.



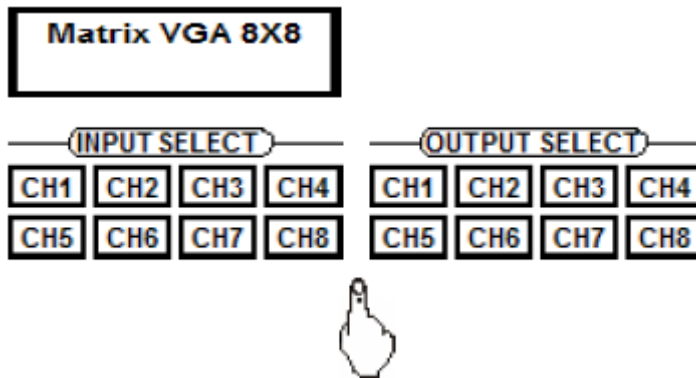
3. Press “Enter” once a selection is confirmed and the system will executed the function and display will return to it’s main Menu as shown.



If “Enter” is press within a “<empty>” Preset number, the system will ONLY sound with a beeps indicating an error operation.

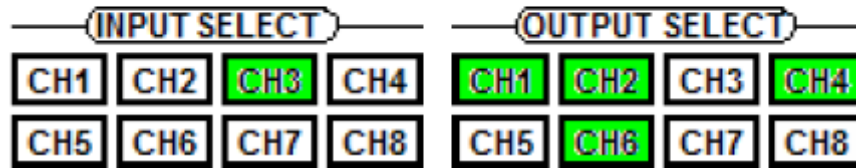


**(7) Status display and temporally muting the I/O routing setting**



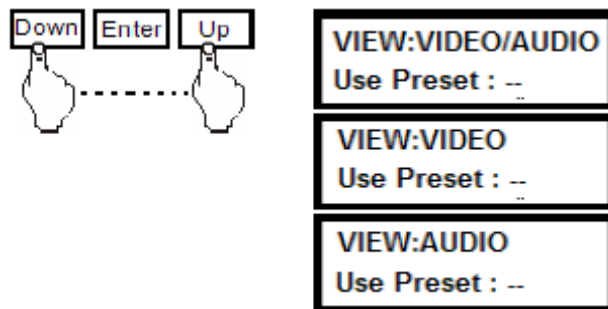
- Steps are as followed:
  1. Assume that the current routing setting is Video/Audio Input port 3 to Video/Audio Output port 1, 2, 4 and 6.  
In the main Menu, Pressing the “INPUT SELECT” CH3 or “OUTPUT SELECT” CH1, CH2, CH4 or CH6 the status display will be shown accordingly and the respective button will stays ON

VIEW:VIDEO/AUDIO  
Use Preset : --



2. In the main Menu, making the use of the Up/Down button to select the “VIEW” function and press “Enter” to confirm
- 

3. within the “VIEW” Menu, making the use of the Up/Down button again to select the desire Video/Audio, Video ONLY or Audio ONLY channel to be “Viewed”.

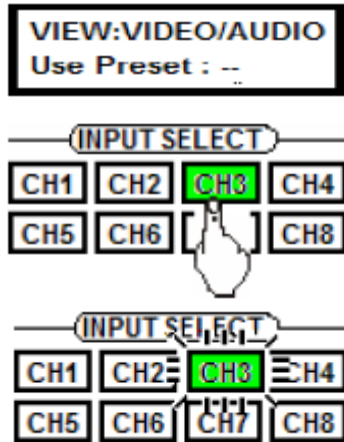


4. If a temporarily muting of routing is required. One can select the desire routing mode i.e. VIDEO/AUDIO for both Video and Audio channel together, VIDEO for Video ONLY or AUDIO for Audio ONLY by using the Up/Down button as above.

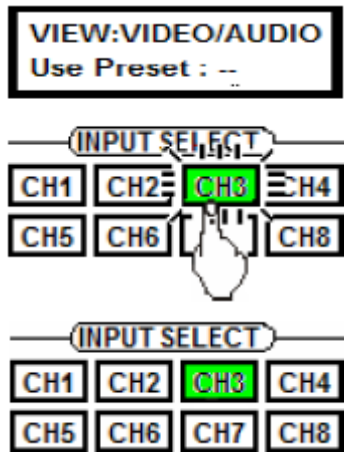
Then press and hold the desire Input or Output channel directly from the front panel “INPUT SELECT” or “OUTPUT SELECT” respective for 1 to 2 sec and the respective channel will be temporarily “MUTE” and the button will now stay flashing after two beeps.

Example:

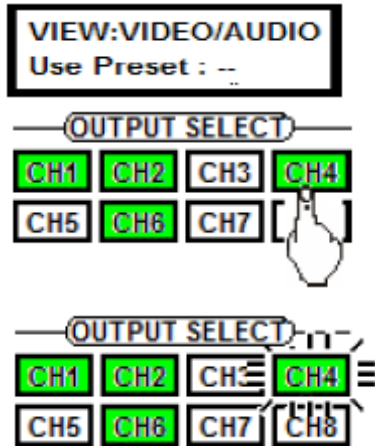
To temporarily "MUTE" the Video and Audio of the Input channel 3, in "VIEW" Menu select "VIDEO/AUDIO mode. Then press and hold the "INPUT SELECT" button CH3 for 1 to 2 sec till a two beep sound is heard. Now both the Video and Audio are temporarily "MUTE" and the "INPUT SELECT" CH3 button will be flashing



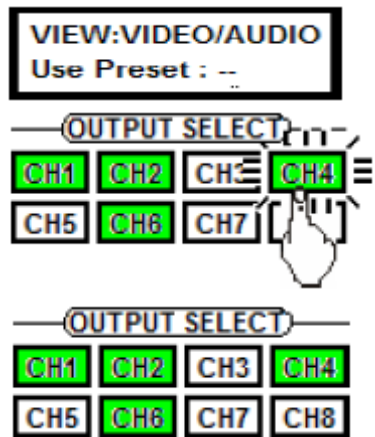
Cancellation of the "MUTE" can be done by press and hold the same button for 1 to 2 sec again till two beeps sound is heard. The button will stay ON



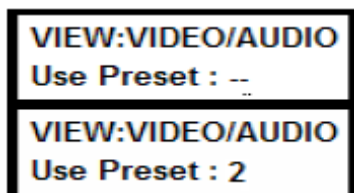
To temporarily "MUTE" the Video/Audio of the Output channel 4, in "VIEW" Menu select "VIDEO/AUDIO mode. Then press and hold the "OUTPUT SELECT" button CH4 for 1 to 2 sec till a two beep sound is heard. Now both the Video and Audio are temporarily "MUTE" and the "OUTPUT SELECT" CH4 button will be flashing



Cancellation of the "MUTE" can be done by press and hold the same button for 1 to 2 sec again till two beeps sound is heard. The button will stay ON



The 'Use Preset :' within the "VIEW" Menu indicate that the system is set to rout according to the Preset stored.  
 "Use Preset : 2" means that there is a "Recall Preset" done and the system is now routing base of the stored preset number 2



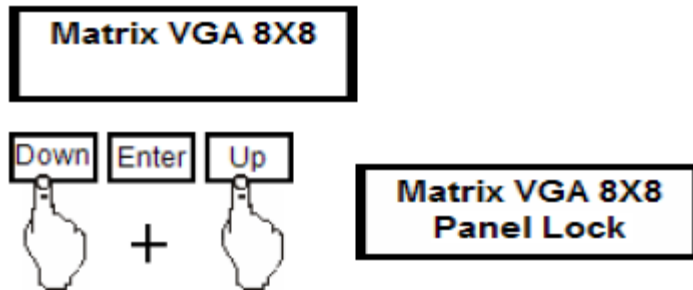
Notes:

All “temporarily mute” setting will be reset once any of the following is performed:

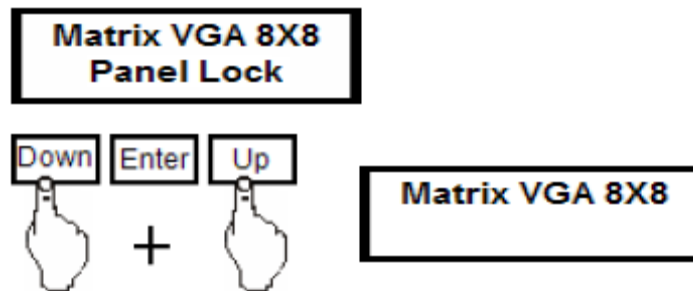
1. Power reset
2. “Set IN/OUT” setting
3. “Gain Adjust”
4. “Volume Adjust”

### (8) Panel Lock and Unlock

Panel lock, disable the use or control from all the front panel buttons. In Main Menu, press and hold both Up and Down button for 1 to 2 sec till two beep sound is heard. And a “Panel Lock” will be displayed accordingly as shown.



Cancellation of “Panel Lock” can be done by press and hold the Up/Down button again for 1 to 2 sec till two beeps sound is heard. The “Panel Lock” will go off accordingly.

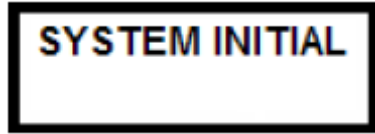


Note:

The “Panel Lock” will also be disable once a power reset is performed

**(9) System Initial**

This will allow the system to be reset to factory preset mode.



■ Steps are as followed:

1. Remove the AC power source
2. Press and hold "INPUT SELECT" button CH1 and CH3
3. Then apply AC power source

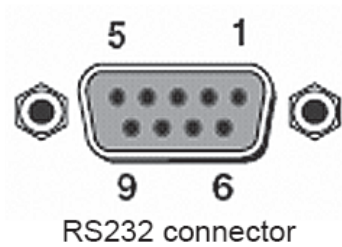
The LCD Display will shown "SYSTEM INITIAL" indicating the system is now back to initial setting and it will then return to "Main Menu"

## RS-232 Protocol and Control Command

### (1) Parameter setting

Baud Rate: 9600 bps  
 Data Length: 8 bits  
 Parity: Non parity  
 Stop bit: One bit  
 X on/off: None

### (2) RS-232 Connection



Pin		Function
1	-	Not used
2	TX	Transmit data
3	RX	Receive data
4	-	Not used
5	Gnd	Signal ground
6	-	Not used
7	-	Not used
8	-	Not used
9	-	Not used

### (3) RS-232 Command Code

Item	Function	Command Code	Return Code
1	Power on	SETC10P31	RETC10P31
2	Power off	SETC10P30	RETC10P30
3	Panel Lock	SETC10L31	RETC10L31
4	Panel Unlock.	SETC10L30	SETC10L30
5	Video Source Select.	SETC60S3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....	RETC60S3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....

6	Audio Source Select.	SETC60g3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....	RETC60g3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....
7	Video/Audio Source select	SETC60j3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....	RETC60j3xxxxyy xxx is input source. xxx = 001,002,.... yyy is output source. yyy = 001,002,....
8	Turn off video channel	SETC40m3zxxx z is in/out port setting. z = 0, setting output z = 1, setting input xxx is port select. xxx = 001,002,....	RETC40m3zxxx z is in/out port setting. z = 0, setting output port. z = 1, setting input port. xxx is port select. xxx = 001,002,....
9	Turn off audio channel	SETC40n3zxxx z is in/out port setting. z = 0, setting output z = 1, setting input xxx is port select. xxx = 001,002,....	RETC40n3zxxx z is in/out port setting. z = 0, setting output port. z = 1, setting input port. xxx is port select. xxx = 001,002,....
10	Turn off video/audio channel	SETC40p3zxxx z is in/out port setting. z = 0, setting output port. z = 1, setting input port. xxx is port select.	RETC40p3zxxx z is in/out port setting. z = 0, setting output port. z = 1, setting input port. xxx is port select.
11	Volume Level Setting	SETC70V30xxxxyy. xxx is output port. xxx = 001,002,.... yyy is volume level. yyy = 001,002,.... If xxx = 000, indicates that Volume Level will take effect on all the Audio Output Port.	RETC70V30xxxxyy. xxx is output port. xxx = 001,002,.... yyy is volume level. yyy = 001,002,.... If xxx = 000, indicates that Volume Level will take effect on all the Audio Output Port.
12	Volume Level up/down	SETC50r30xxxy xxx is output port. xxx = 001,002,.... y is up/down setting. y = 0, Volume up. y = 1, Volume down. If xxx = 000, indicates that Volume Level will take effect on all the Audio Output Port.	RETC70V30xxxxyy. xxx is output port. xxx = 001,002,.... yyy is volume level. yyy = 001,002,.... If xxx = 000, indicates that Volume Level will take effect on all the Audio Output Port.

13	Video input/output Gain Level Setting.	SETC70W3zxxxyyy. z is in/out gain select. z = 0, select output gain. z = 1, select input gain. xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Video Gain will take effect on all the Video Input or Output Port.	SETC70W3zxxxyyy. z is in/out gain select. z = 0, select output gain. z = 1, select input gain. xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Video Gain will take effect on all the Video Input or Output Port.
14	Video input/output Gain Level up/down.	SETC50t3zxxxxy z is in/out gain select. z = 0, select output gain. z = 1, select input gain. xxx is port select. xxx = 001,002,.... y is up/down setting. y = 0, Level up. y = 1, Level down. If xxx = 000, indicates that Video Gain will take effect on all the Video Input or Output Port.	SETC70W3zxxxyyy. z is in/out gain select. z = 0, select output gain. z = 1, select input gain. xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Video Gain will take effect on all the Video Input or Output Port and the "Gain Level" will base on the last adjusted port as reference.
15	Audio input Gain Level Setting.	SETC70X31xxxyyy xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Audio Input Gain will take effect on all the Audio Port.	RETC70X31xxxyyy xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Audio Input Gain will take effect on all the Audio Port.
16	Audio input t Gain Level up/down.	SETC50u31xxxxy xxx is output port. xxx = 001,002,.... y is up/down setting. y = 0, Level up. y = 1, Level down. If xxx = 000, indicates that Audio Input Gain will take effect on all the Audio Port.	RETC70X31xxxyyy xxx is port select. xxx = 001,002,.... yyy is gain level. yyy = 001,002,.... If xxx = 000, indicates that Audio Input Gain will take effect on all the Audio Port and the "Gain Level" will base on the last adjusted port as reference.
17	Video Channel Mute.	SETC50Y3zxxxxy z is in/out port setting. z = 0, setting output port. z = 1, setting input port.. xxx is port select. xxx = 001,002,.... y is mute setting. y = 0, is mute. y = 0 , is un-mute.	RETC50Y3zxxxxy z is in/out port setting. z = 0, setting output port. z = 1, setting input port.. xxx is port select. xxx = 001,002,.... y is mute setting. y = 0, is mute. y = 0 , is un-mute.

18	Audio Channel Mute.	SETC50A3zxxxy z is in/out port setting. z = 0, setting output port. z = 1, setting input port. xxx is port select. xxx = 001,002,.... y is mute setting. y = 0, is mute. y = 0 , is un-mute.	RETC50A3zxxxy z is in/out port setting. z = 0, setting output port. z = 1, setting input port.. xxx is port select. xxx = 001,002,.... y is mute setting. y = 0, is mute. y = 0 , is un-mute.
19	Save Preset Item.	SETC30f3xxx xxx is save item. xxx = 001,002,....	1. When a "Preset" is setup accordingly and is ready to "Save". RETC30f3xxx xxx is save item. xxx = 001,002,.... 2. When there isn't any "Preset" done to be "save". RETC0!
20	Load Preset Item.	SETC30e3xxx xxx is load item. xxx = 001,002,....	1. When there is the "Preset" stored. RETC30e3xxx xxx is load item. xxx = 001,002,.... 2. When there isn't any "Preset" stored. RETC0!
21	Factory reset	SETC00U0	RETC00U0
22	Get Power State.	SETC01P3	RETC11P3x. x is power state. x = 0, is poweroff x = 1, is power on.
23	Get Panel Lock state.	SETC01L3	RETC11L3x. x is panel lock state. x = 0, is panel unlock. x = 1, is panel lock.
24	Get Video output port Source state	SETC61S3yyy yyy is output port. yyy = 001,002,....	RETC61S3xxxyyy yyy is output port. yyy = 001,002,....  1. When a Output port is connected to a Input port.

			<p>xxx is input port.  xxx = 001,002,.....  2. When NO input port is connected.  xxx = 000.</p>
25	Get Audio output port Source state	<p>SETC6013yyy  yyy is output port.  yyy = 001,002,.....</p>	<p>RETC61g3xxxyyy  yyy is output port.  yyy = 001,002,.....</p> <p>1. When a Output port is connected to a Input port.  xxx is input port.  xxx = 001,002,.....  2. When NO input port is connected  xxx = 000</p>
26	Get volume level.	<p>SETC41V30xxx.  xxx is port select.  xxx = 001,002,.....</p>	<p>RETC71V30xxxyyy  xxx is select port .  xxx = 001,002,.....  yyy is volume level.  yyy = 001,002,.....</p>
27	Get Video input/output Gain level.	<p>SETC41W3zxxx  z is in/out gain select.  z = 0, select output gain.  z = 1, select input gain.  xxx is port select.  xxx = 001,002,.....</p>	<p>RETC71W3zxxxyyy  z is in/out gain select.  z = 0, select output gain.  z = 1, select input gain.  xxx is port select.  xxx = 001,002,.....  yyy is gain level.  yyy = 001,002,.....</p>
28	Get Audio input Gain level.	<p>SETC41X31xxx  xxx is port select.  xxx = 001,002,.....</p>	<p>RETC71X31xxxyyy  xxx is port select.  xxx = 001,002,.....  yyy is gain level.  yyy = 001,002,.....</p>
29	Get Video Channel Mute state.	<p>SETC41Y3zxxx  z is in/out port setting.  z = 0, getting output port.  z = 1, getting input port..  xxx is port select.  xxx = 001,002,.....</p>	<p>RETC51Y3zxxxxy  z is in/out port getting.  z = 0, getting output port.  z = 1, getting input port..  xxx is port select.  xxx = 001,002,.....  y is mute state.  y = 0, is mute.  y = 0 , is unmute.</p>
30	Get Audio Channel Mute state	<p>SETC41A3zxxx  z is in/out port setting.  z = 0, getting output port.  z = 1, getting input port..</p>	<p>RETC51A3zxxxxy  z is in/out port setting.  z = 0, getting output port.  z = 1, getting input port..</p>

		xxx is port select. xxx = 001,002,....	xxx is port select. xxx = 001,002,.... y is mute state. y = 0, is mute. y = 0 , is unmute.
31	Detect Video input channel signal state	SETC41b31xxx. xxx is port select. xxx = 001,002,....	RETC51b31xxxy xxx is select port. xxx = 001,002,.... y is input signal state. y = 0, no signal detect. y = 1, had signal detect.
32	Get Support stated for : Independence Video and Audio switching	SETC01i3	RETC11i3x x indicates whether the system support independence Video and Audio switching x = 0, NOT Supported x = 1, Support
33	RS232 control code no support		RETC0!