Meicheng®

MULTIMEDIA AUDIO AND VISUAL

Instruction Manual

MODEL : SB-8180
8x8 VGA MATRIX SWITCHER

8x8 VGA Matrix Switcher Series

Thank you for purchasing the SB-8180 VGA Matrix Switcher. You will find this unit easy to install and highly reliable but it is essential that you read this manual throughly before attempting to use 8x8 VGA Matrix Switcher.

SAFETY INFORMATION

1. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.

2. Read all documentation before operating your equipment. Retain all documentation for future reference.

3. Follow all instructions printed on unit chassis for proper operation.

4. Do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.

5. Make sure power outlets conform to the power requirements listed on the back of the unit.

6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

7. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.

8. Mains voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.

9. Power down & disconnect unit from mains voltage before making connections.

10. Never hold a power switch in the   ON   position.

11. Do not use the unit near stoves, heat registers, radiators, or other heat Producing devices.

12. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be Periodically   blown free   of foreign matter.

13. Do not remove the cover. Removing the cover will expose you to potentially dangerous voltages. There are no user serviceable parts inside.

14. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.

15. Non-use periods. The power cord of equipment should be unplugged from the outlet when left unused for a long period of time.

16. Service Information Equipment should be serviced by qualifier service personnel when:

    A. The power supply cord or the plug has been damaged.

    B. Objects have fallen, or liquid has been spilled into the equipment.

    C. The equipment has been exposed to rain

    D. The equipment does not appear to operate normally, or exhibits a marked change in performance

    E. The equipment has been dropped, or the enclosure damaged.

IMPORTANT SAFETY INSTRUCTIONS

To insure the best from this product, please read this manual carefully. Keep it in a safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

To reduce the risk of fire, do not expose the unit to rain, water or excessive moisture.

Do not force switched or external connections.

When moving the unit disconnect the serial port connections first then the power cable and finally the interconnecting cables to other devices.

Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.

Installation of this unit should be in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold.
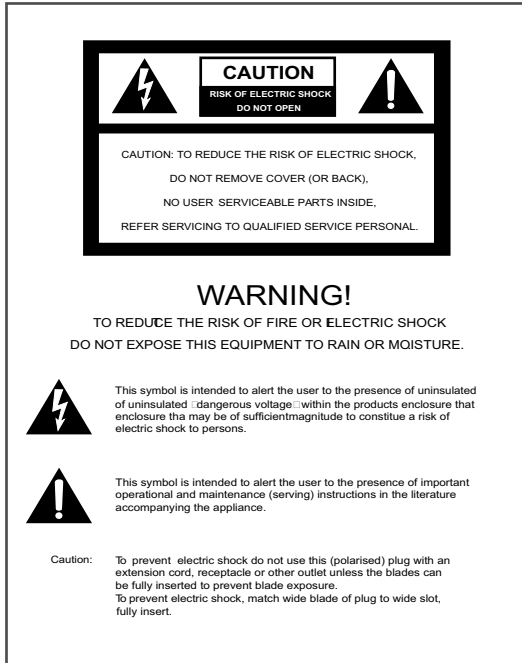
THIS SAFETY INFORMATION IS OF A GENERAL NATURE AND MAY BE SUPERSEDED BY INSTRUCTIONS CONTAINED WITHIN THIS MANUAL

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK),
NO USER SERVICEABLE PARTS INSIDE,
REFER SERVICING TO QUALIFIED SERVICE PERSONAL.

WARNING!
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

This symbol is intended to alert the user to the presence of uninsulated of uninsulated dangerous voltage within the products enclosure that enclosure tha may be of sufficient magnitude to constitue a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operational and maintenance (serving) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarised) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
To prevent electric shock, match wide blade of plug to wide slot, fully insert.

INSTRUCTION

Congratulations on your purchase of one of the most innovative VGA(RGBHV) 8:8 matrix   switching products on the market Today.
The **SB-8180** is a true Matrix Routing Switcher for VGA(RGBHV) signals.   It is a 8 individual VGA(RGBHV) inputs with 8 individual VGA(RGBHV)   outputs.
Because it is a matrix router, any input may be routed to any output; or the same input may be routed to all outputs or any combination. It completely eliminates the need to constantly move around VGA signal input and output VGA cables.
The **SB-8180** is useful for Matrix signals from VGA source devices (such as: Personal computer, Set Top Box, and Satellite Receivers, etc.) To VGA destination devices (Such as LCD Monitors, VGA Monitors, Plasma LCD TV, VGA Projectors, etc.). Selection of inputs is made via the front panel push buttons or an Infrared Remote Control unit or RS 232 control by a computer.

PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make certain
the following items are contained in the shipping carton :

1. Main console unit
2. Operating Instructions
3. IR Remote Controller (**SW-8188**)
4. 19 inch 1D(1U) high Ear mount pair
5. RS232 DRV package
6. Power Supply 12VDC, Universal Type 50/60Hz, 100~230 VAC
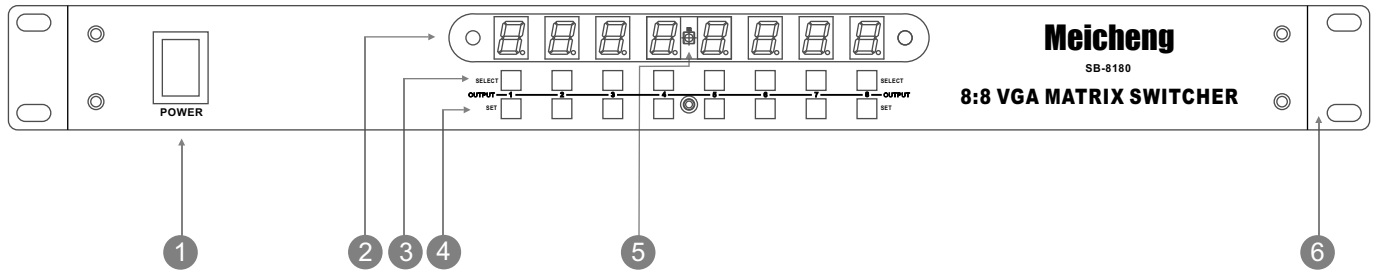
Note :
Please retain the original packing material should the need ever arise to return the unit.
If you find any items are missing, contact your reseller or Meicheng immediately.
Have the Model Number, Serial Number and Invoice available for reference when you call.

FRONT PANEL

1 **POWER ON SWITCH**

The power switch turns the unit on and off.
The LED will illuminate red to indicate
that the switcher is ON and is receiving power

2 **OUTPUT SOURCES STATUS LED DISPLAY**

Output channel 1 to 8 show from LED display illuminates
red to indicate that a video source is present on that input.

3 **INPUT SOURCES SELECT BUTTONS**

A separate output-1 and 8 source select buttons
are provided for each destination.
Select sources are 1-8 VGA(RGBHV)-Stereo Audio

4 **SOURCES SETUP BUTTONS**

Setup the input sources 1 ~ 8 channel

5 **IR SENSOR**

The IR sensor receives IR commands from the
supplied remote controller.

6 **19 INCH EAR MOUNT PAIR**

19 inch 1U(1D) high case Ear Mount pair
Part number : 1U-440L

EXP. : HOW TO SWITCH CH-08 WHEN WORKING ON CH-01

Please press < Select > push button till CH-08, then press < SET > push button to confirm.

PS : If without press < SET > push button to confirm within 1 second, LED display will flash five times for time interval and
return back to CH-01.

OPERATING THE UNIT

Once you have connected the switcher as described above, you must be certain that the input are being fed appropriate signals
and are not suffering from signal loss due to cabling problems or problems with the source device.

If the input signals to the switcher are appropriate, switch the power switch to <ON> and you should see and hear the signals on
the devices you have connected to the various output connectors of the switcher.

POWER AND CONNECTIONS

This unit is not disconnected from the AC power source as long as it is connected to the wall outlet. The off state for this unit is called
standby mode. In standby mode the unit is designed to consume a reduced quantity of power compared to normal operating modes.
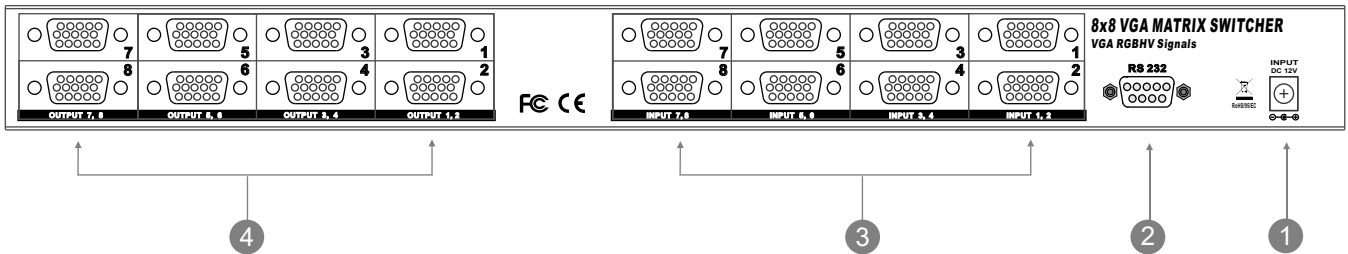
When not using the unit for a long period of time. Insure that the AC power cord is disconnected from the wall outlet.

The AC wall outlet should be installed near to the unit and be easily accessible.

Do not plug in or attempt to operate an obviously damaged unit.

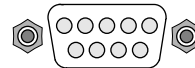## REAR PANEL

① DC POWER INLET

The switcher is fitted with a DC power plug-park input connector. Please ensure that the plug-park used is of an approved type and is of sufficient current carrying capacity with the correct voltage and connector polarity. 12Volt DC power supply 2A Max.

Power Jack:
DC Jack - inner OD Ø 2.1mm (+)
            Outside OD Ø 5.5mm (GND)
Power input - 12VDC, 2A
Switcher power suppler use universal
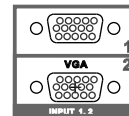Part number : TA 007

② RS 232 CONNECTION

RS 232 control port to allow for interfacing to a PC, Such as a computer or touch panel control, to the switcher via this DB-9pin Female connector for serial RS-232 control.

Remote port :
DB-9pin Female connector

③ INPUT - 1~8 VGA SOURCE PORTS

Connect a signal source of VGA (RGBHV) devise via VGA cable output to 8x VGA Monitor displays
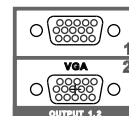
VGA (RGBHV) Via 1x HD-15p connector

Note:
With 1x female D-Sub connector.

④ OUTPUTS - 1~8 VGA-RGBHV PORTS

Connect a signal of VGA via VGA cable output to VGA Monitor displays from 8x VGA input source devices.

VGA (RGBHV) Via 1x HD-15p connector

Note:
With 1x female D-Sub connector.

CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal input-output, Power requirements plus any controls present.

Before using the switcher, please take the time to make certain that the device you wish to connect to its inputs is functioning properly in all respects. Verify that the video and audio signals are present and are being displayed properly on a suitable device.

If all is well connect the appropriate cables between the output of the device you wish to distribute to output(s) of the switcher to the carious devices you wish to feed a signal to. Lastly, connect the AC to DC adaptor, connect the DC connector to the switcher first and then plug the adaptor into a functional AC outlet.
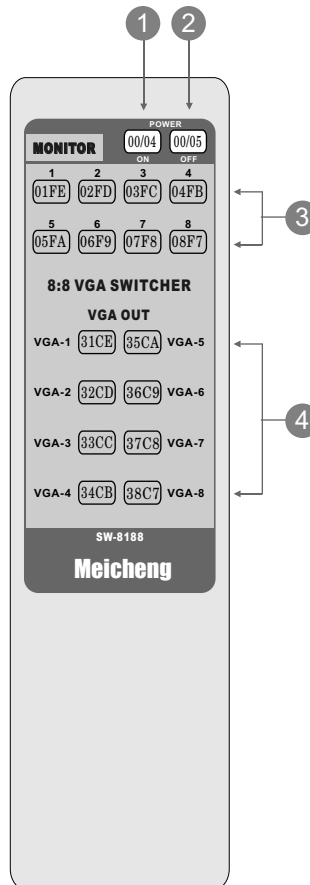
REMOTE CONTROL

Before making any connections to the **SB-8180**. Observe the following:

> Ensure the mains voltage supply matches the label on the supplied plug-Pack (+/- 10%)

> Ensure that the power switch is OFF

> Ensure that all system grounds (earth) are connected to a common point.

> Avoid powering equipment within a system from multiple power sources that may be separated by large distance

> Connect all audio video sources and destination equipment

> power up all source and destination audio-visual sources

> For each destination output select the appropriate input source by using The front panel input 1~8 select buttons. The supplied IR remote control. Or through the RS 232 serial communications port.

> Upon power up the switcher will return to its last used setting before Powered down.

REMOTE CONTROL

① ② SWITCH POWER ON or OFF
Controller with a separate power ON and OFF

③ INPUT 1~8 MONITOR INPUTS SELECTION

Input - **1** : Switch 8x VGA sources to # 1 Monitor Display

Input - **2** : Switch 8x VGA sources to # 2 Monitor Display

Input - **3** : Switch 8x VGA sources to # 3 Monitor Display

Input - **4** : Switch 8x VGA sources to # 4 Monitor Display

Input - **5** : Switch 8x VGA sources to # 5 Monitor Display

Input - **6** : Switch 8x VGA sources to # 6 Monitor Display

Input - **7** : Switch 8x VGA sources to # 7 Monitor Display

Input - **8** : Switch 8x VGA sources to # 8 Monitor Display

④ OUTPUT 1~8 VGA SOURCES OUTPUTS SETUP

Output -1 : **VGA-1** VGA Signal source device # 1

Output -2 : **VGA-2** VGA Signal source device # 2

Output -3 : **VGA-3** VGA Signal source device # 3

Output -4 : **VGA-4** VGA Signal source device # 4

Output -5 : **VGA-5** VGA Signal source device # 5

Output -6 : **VGA-6** VGA Signal source device # 6

Output -7 : **VGA-7** VGA Signal source device # 7

Output -8 : **VGA-8** VGA Signal source device # 8

Remote control panel

POWER

MONITOR 00/04 ON 00/05 OFF

1	2	3	4
01FE	02FD	03FC	04FB

5	6	7	8
05FA	06F9	07F8	08F7

8:8 VGA SWITCHER

VGA OUT

VGA-1 31CE 35CA VGA-5
VGA-2 32CD 36C9 VGA-6
VGA-3 33CC 37C8 VGA-7
VGA-4 34CB 38C7 VGA-8

SW-8188

Meicheng

HOW TO SETUP IR CODES :

POWER ON   : 00FF 04FB
POWER OFF : 00FF 05FA

| Monitor IN | / | VGA OUT |

INPUT#1 / OUTPUT#1 : 01FE 31CE
INPUT#1 / OUTPUT#2 : 01FE 32CD
INPUT#1 / OUTPUT#3 : 01FE 33CC
INPUT#1 / OUTPUT#4 : 01FE 34CB
INPUT#1 / OUTPUT#5 : 01FE 35CA
INPUT#1 / OUTPUT#6 : 01FE 36C9
INPUT#1 / OUTPUT#7 : 01FE 37C8
INPUT#1 / OUTPUT#8 : 01FE 38C7

INPUT#2 / OUTPUT#1 : 02FD 31CE
INPUT#2 / OUTPUT#2 : 02FD 32CD
INPUT#2 / OUTPUT#3 : 02FD 33CC
INPUT#2 / OUTPUT#4 : 02FD 34CB
INPUT#2 / OUTPUT#5 : 02FD 35CA
INPUT#2 / OUTPUT#6 : 02FD 36C9
INPUT#2 / OUTPUT#7 : 02FD 37C8
INPUT#2 / OUTPUT#8 : 02FD 38C7

INPUT#3 / OUTPUT#1 : 03FC 31CE
INPUT#3 / OUTPUT#2 : 03FC 32CD
INPUT#3 / OUTPUT#3 : 03FC 33CC
INPUT#3 / OUTPUT#4 : 03FC 34CB
INPUT#3 / OUTPUT#5 : 03FC 35CA
INPUT#3 / OUTPUT#6 : 03FC 36C9
INPUT#3 / OUTPUT#7 : 03FC 37C8
INPUT#3 / OUTPUT#8 : 03FC 38C7

INPUT#4 / OUTPUT#1 : 04FB 31CE
INPUT#4 / OUTPUT#2 : 04FB 32CD
INPUT#4 / OUTPUT#3 : 04FB 33CC
INPUT#4 / OUTPUT#4 : 04FB 34CB
INPUT#4 / OUTPUT#5 : 04FB 35CA
INPUT#4 / OUTPUT#6 : 04FB 36C9
INPUT#4 / OUTPUT#7 : 04FB 37C8
INPUT#4 / OUTPUT#8 : 04FB 38C7

CONNECTING THE HARDWARE

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If all is well connect the appropriate cables between the output of the device you wish to distribute to output(s) of the switcher to the carious devices you wish to feed a signal to. Lastly, connect the AC to DC adaptor, connect the DC connector to the switcher first and then plug the adaptor into a functional AC outlet.

FEATURES

1. Supports 8x inputs VGA(RGBHV) to 8x VGA(RGBHV) outputs Matrix Switcher
2. Input signals support via VGA (RGBHV)
3. Output Signals support VGA-RGBHV device of Monitor, plasma, LCD display
4. Higher Video Bandwidth 325MB each path R,G,B signals.
5. Supported HD high definition resolutions XGA, SXGA, UXGA, WSXGA, WUXGA
6. RS232 Serial interface via ethernet control is optional
7. Compatible with all VGA Video Monitor devices, Plasma display and Projectors
8. Supported RS232 serial interface protocol commands list
9. Control PC RS232 Drive compatible with win-95/98/2000/xp
10. Various User Interface controls:
    Attached Window based control software for Desktop or NB control by RS232 port
    Manual controlled by Front Panel button
    IR remote control
11. Support desktop with Ear mount and 19 inch Rack mountable type panel
12. Power supply DC12Volt, Universal Type Switch 100~230VAC, 50/60Hz
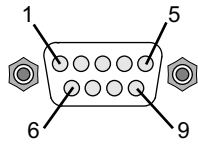
SPECIFICATIONS

Type of Switcher: 8 in To 8 out, VGA (RGBHV) Matrix Switcher
Input ports: 8x VGA (RGBHV) via HD-15p VGA connector
Output ports: 8x VGA (RGBHV) via HD-15p VGA connector
Video Bandwidth :   325MHz (-3db), 200mVp-p
Video Supported: Higher resolution formats HD 1920x1200 (WUXGA)
Low all hostile crosstalk:-83 db@5MHz
Controls: IR remote, Select buttons on the front panel & RS232
PC RS232 Control :   RS232 interface serial via DRV on a PC
Gain control: 60MHz 0.1 db gain flatness
Chassis Material: Metal thin=1mm
Safety Approvals: CE, FCC, RoHS(2002/95/EC).
Dimensions (LWH):   19" x 7.87" x 1.73" (482mm x 200mm x 44mm)
Power Supply: DC12V / 2A (consumption 1.2A Max)
                       Use Universal Switch Type 50/60Hz,100~230 VAC
Shipping Weight :   3.15 Kgs / 5.25 lb

As product improvements are continuous, specifications are subject to change and without notice.

RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT a PC or CONTROL SYSTEM

RS-232 SERIAL INTERFACE

Pin	RS-232	Definition
1	------	Not used
2	TX	Transmitter
3	RX	Receiver
4	------	Not used
5	GND	Ground
6	------	Not used
7	------	Not used
8	------	Not used
9	------	Not used

RS232

The Meicheng switcher can be controlled via the RS-232 serial control port to allow for interfacing to a PC, or similar third party control system.

The serial communication parameters are 9600 baud, 8 bit, No Parity and 1 stop bit - this is often referred to as 9600 8N1. When the unit recognises a complete command it will perform the requested action - there is no delimiter character required.

The unit does not send out a message when a value is changed from the front panel or by IR control. If the unit needs to be controlled via the front panel in addition to the RS232 control, you should regularly poll the unit status to ensure the control system accurately reflects the current settings.

PROTOCOL COMMANDS

To Switch Inputs to Outputs

SBI0XO0Y   - Where X is Output Number (1-8) and Y is
                  Number (1-8)

Unit will respond with

SBUD0XOY   - Where X is Output Number (1-8) and Y is
                  Input Number (1-8)

Example : Send Input 8 to Output 7

SBI08O07   -Send
SBUD08O7   -Rcvd

MORE STUFF FOR SB-8180

☞ Note: Turning the unit System Power Off over RS232 will distinguish the LED display leaving only the Power Switch LED on. The Video and Audio outputs will also mute. While the unit is turned off by RS232 it will continue to accept and act upon switching commands. For example, if the unit is in the off mode (via RS232) and you send a command to switch an input to an output, that route will complete and the video and audio will now appear on that channel only. The front panel LED for that particular output will also show the input selected (for that single output channel only). The remaining LED's will remain off and video and audio outputs muted. The unit will still return status and change messages in response to commands sent while in Power Off state. A hard reset command (SBALLRST) will return the unit to normal operation and also unlock the front panel.

Power Off mode.

SBSYSMOF   - Put system into Standby (Soft Power Off)
SBSYSMON   - Bring unit out of Standby (Soft Power On)

Unit will respond with

SBALOFAK   - Unit is in Standby
SBALONAK   - Unit is no longer in Standby

Example : Put Unit in Standby (Soft Power)
SBSYSMOF   -Send
SBALOFAK   -Rcvd

FRONT PANEL LOCK

☞ Note : Hard resetting the unit will unlock the Front Panel controls.
SBSYSMLK   - When front panel is locked, changes can only be made by RS232

SBSYSMUK   - Front Panel Unlock

Unit will respond with
SBSYSLOK   - Front Panel has been Locked
SBSYSULK   - Front Panel has been Unlocked

Example : Lock Front Panel Buttons
SBSYSMLK   -Send
SBSYSLOK   -Rcvd

UNIT RESET

SBALLRST   - Reset every output to Input 1

Unit will respond with
SBRSTACK   - Unit has reset each Output to Input 1
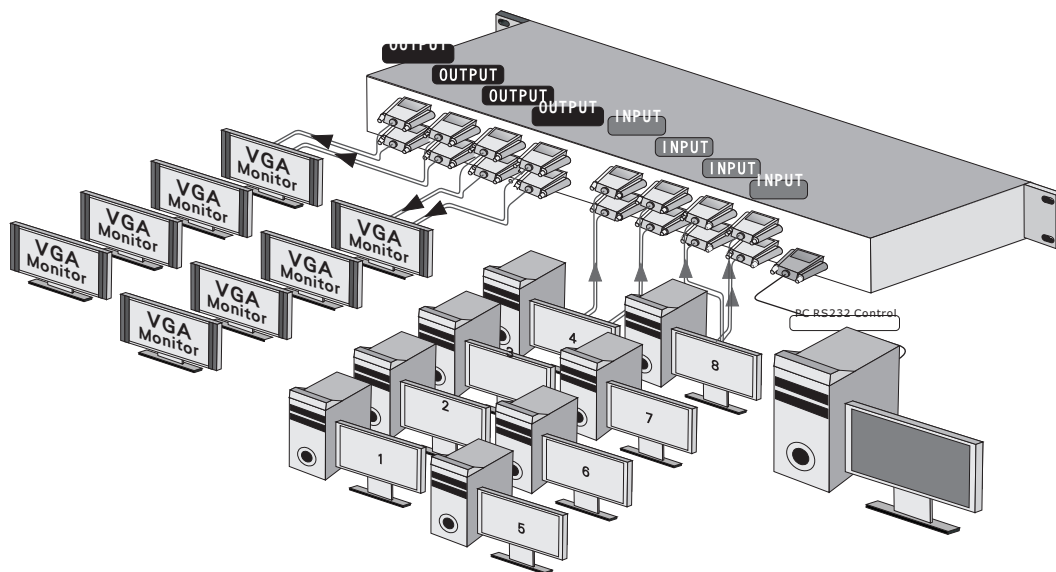
Example : Reset all outputs to Input 1
SBALLRST   -Send
SBRSTACK   -Rcvd

TYPICAL APPLICATION

8x VGA source devices to 8x VGA Display Matrix Switcher

SB-8180

INSTALLING

CONTROL PORTS :
1. IR REMOTE   - IR Remote Controller
2. RS 232 Interface - RS 232 interface system

INPUTS 1 ~ 8 PORT VGA SOURCE DEVICE SIGNALS :
VIDEO   - VGA (RGBHV), connector with HD-15p (D-Sub)

OUTPUT 1 ~ 8 PORT VGA CONNECT TO DISPLAY MONITOR SIGNALS :
VIDEO   - VGA (RGBHV), connector with HD-15p (D-Sub)

SB-8180 SUPPORT VGA EIGHT INPUTS MATRIX TO EIGHT SWITCH OUTPUTS
SUPPORT CONTROL IR & RS232 INTERFACE SYSTEM PORTS.

Meicheng Warranty

Meicheng warrants this product against defects in materials and workman
ship for a period of **1 year** from the date of purchase.

Should this product, in Meicheng opinion, Prove defective within this
warranty period, Meicheng, at its option, repair this product without charge,
to whatever extent it shall deem necessary to restore said product to proper operation
condition.

This warranty does not apply if the fault has been caused by misuse, improper handling
care, electrical or mechanical abuse, and abnormal operating condition or non-Meicheng
authorized modification to the product.

If repairs are necessary under the warranty policy, the original purchaser must return the
product to local distributor, freight prepaid.

After repairs are complete, the product will be returned.

REGULATORY COMPLIANCE

The product complies with the relevant standards for CE, FCC and RoHS approval.

The power Adaptor/Supply has been tested for compliance with UL.CSA and CE standards.

TROUBLESHOOTING

If you experience a <no signal> with this switcher or distributor outputs, first make certain that
the signal being fed to its inputs is acceptable.

Disconnect the cables from the this switcher or distributor inputs and connect them directly to
an appropriate monitoring device, if you do not see or hear a signal the problem may well be
he signal source itself. Also check that the AC outlet you have used to power the switcher or
distributor is actually providing power as a wall switch often controls an AC outlet.

The second most common problem with this switcher or distributor revolves around the cables,
Inspect the cables for loose connectors or cable damage such as crushed cable or cables with
cuts or nicks. Replace any cable exhibiting these problem.

You also must use the highest quality cables if you want to achieve the best results. Poor quality
cables will poor quality signals.

SB RS-232 Commands

1.Model name : SB-5544, SB-5548, SB-4140, SB-4144, SB-8180, SB-8188

2.Commands are sent between the controller and 8 ASCII bytes.

3.Controlling commands (from a controller to) The ASCII bytes indicate the action of the command as ASCII format.

Item	Command	Function	Description
1	SBSYSMON	Power on	System power on
2	SBSYSMOF	Power off	System power off
3	SBIxxO01	Channel 1 setting	1st output comes from xth Input,x=(01,02,.....,06)
4	SBIxxO02	Channel 2	2st output comes from xth
5	SBIxxO03	setting Channel 3 setting	Input,x=(01,02,.....,06) 3st output comes from xth Input,x=(01,02,.....,06)
6	SBIxxO04	Channel 4 setting	4st output comes from xth Input,x=(01,02,.....,06)
7	SBSYSMLK	Locked toggle On	Is locked toggle on. When Locked on, all status are changed by RS-232 only.
8	SBSYSMUK	Locked toggle Off	Is locked toggle off. When Locked off, all status are changed by RS-232 only.
9	SBALLRST	reset	Is reset and every output Comes from 1st input
10	SBASKSTA	Ask status	Request status information

4.Feedback commands (from to a controller) The 8 ASCII feedback commands are sent after receiving the command from a controller.

Item	Command	Function	Description
1	SBALONAK	Power on	Responses the system power On command to the controller.
2	SBALOFAK	Power off	Responses the system power Off command to the controller.
3	SBUDxxO1	Channel 1 updated	Changes the 1st output signal. xx is the selected source. xx =(01,02,.....,06).
4	SBUDxxO2	Channel 2 updated	Changes the 2st output signal. xx is the selected source. xx =(01,02,.....,06).
5	SBUDxxO3	Channel 3 updated	Changes the 3st output signal. xx is the selected source. xx =(01,02,.....,06).
6	SBUDxxO4	Channel 4 updated	Changes the 4st output signal. xx is the selected source. xx =(01,02,.....,06).
7	SBSYSLOK	Lock on	Is locked on.
8	SBSYSULK	Lock off	Is released.
9	SBRSTACK	reset	Responses the reset command.
10	SBSTATAK	status acknowledge	Responses the ask status. Command to the controller.

O ← Not 0 (Zero)

Remark : The devise responses one feedback command for every request except the <SBASKATA>..After the device receives <SBASKSTA>, it will send the 10th, 1/2th, IN/OUT state, 7/8th command sequentially.

Note :　Responses IN/OUT state command : SBUD0000XXYY
　　　　　　　　　　　　　　input port XX=>(01,02,......,06).
　　　　　　　　　　　　　　Output port YY=>(01,02,...06).