



User Manual

SMS44-18G

**4x4 Seamless Scaling 4K60 HDMI 2.0
18G Matrix Switch
with
Video Wall Mode**

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Thank you for purchasing the SMS44-18G Seamless Matrix.

This product is designed with professional AV installers in mind. The many extensive features assist with system integration, validation and maintenance. Please carefully read this manual prior to installation and keep for future reference. You can download further supporting documentations from our web site (sy.co.uk)

Installation precautions

This product has special circuitry to protect it against moderate surges and static discharges. However, to ensure reliable operation and long service life, it is important to take the necessary precautions against any spikes, surges, lightening and static discharges.

Place the unit away from heat sources and allow adequate ventilation.

High quality High-Speed HDMI 2.0 cables (such as SY Stealth range) are highly recommended. As much as possible cables should be routed away from any noisy sources and avoiding long runs in close proximity to mains cables.

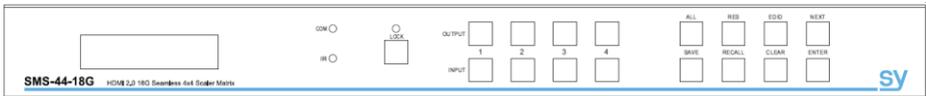
The SY-SMS44-18G is a high-performance HDMI 2.0 seamless scaling matrix switcher capable of handling HDMI signals up to 4K60 4:4:4 (18Gbps) (input and output). It provides 4 HDMI inputs, 4 HDMI outputs and can be used as a 4x4 seamless matrix switcher or a video wall processor that can be configured to almost any video wall layout.

Features

- Supports HDMI 2.0 up to 4K60 4:4:4 – 18Gbps
- Supports all HDCP up to version 2.2
- Seamless switching with powerful output scaling
- 12 Selectable HDMI output resolutions
- Audio embedding for each input – L+R only
- Audio de-embedding of each output – L+R, Balanced L+R, Optical Mini-Toslink
- IR (In/Out) switching follows video switching
- Supports CEC control
- Supports 180° image rotation per display in Video Wall mode
- EDID management for each input
- Controllable from front panel, IR, RS232 or TCP/IP
- 19in 1U rack mounting

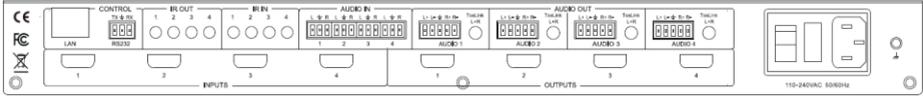
Panel Descriptions

Front Panel



Item	Description
LCD Panel	Displays the current video selections
COM	Power LED (also indicates control commands)
LOCK	Front panel lock/unlock
OUTPUT	Output selection buttons 1~4
INPUT	Input selection buttons 1~4
ALL	Set all outputs to the next input selection
RES	Set the output scaler resolution
EDID	Set the EDID options for the next input selection
NEXT	Select the next available option
SAVE	Save the current matrix setting as a pre-set
RECALL	Set the matrix setting from a saved pre-set
CLEAR	Cancel the current command function
ENTER	Set the displayed option

Rear Panel



Item	Description
LAN	RJ45 control port for operation by TCP/IP
RS232-1	Main RS232 control port
RS232-2	General use RS232
IR	IR Eye input for IR controller
IR OUT 1~4	IR outputs for HDMI inputs 1 to 4
IR IN 1~4	IR inputs for HDMI outputs 1 to 4
AUDIO IN 1~4	Analogue audio inputs for HDMI inputs 1 to 4
AUDIO OUT 1~4	Analogue audio outputs for HDMI outputs 1 to 4
INPUTS 1~4	HDMI inputs 1 to 4
OUTPUTS 1~4	HDMI outputs 1 to 4
POWER INPUT	IEC connector for 100~240V AC power input

Connection Procedure

1. Connect the HDMI sources to the HDMI inputs as required.
2. Connect the HDMI display devices to the HDMI outputs as required.
3. If required, connect any audio inputs or outputs and IR inputs and outputs.
4. If required, connect to the RS232 or LAN control ports.
5. Connect the IEC port to an AC outlet.

Controlling the SY-SMS44-18G

Seamless Matrix Switcher

When the SY-SMS44-18G is being used as a seamless matrix switcher, it can be controlled by any one of the following three methods:

1. Front Panel
2. RS232 Control Software
3. LAN Control WebGUI

Front Panel Control

Each of the following operations is completed only when the **ENTER** key is pressed. If the **ENTER** is not pressed or the **CLEAR** key is pressed, the switcher will return to the current settings.

Signal Routing

Use the following methods to set the signal routing for HDMI, audio and IR:

1. Press one of the numbered output buttons on the top row.
2. Press the desired input button number on the bottom row.
3. Press the **ENTER** button.

Note:

1. IR routing always follows with the video selections.
2. The default audio routing follows with the video routing, but the user can select Audio Manual routing mode by PC Tool or an RS232 command. Note that the front panel does not switch audio when audio routing is in manual mode. This allows a user to independently control the audio matrix switch from the PC Tool or using RS232 commands.

To set all outputs to a single input:

1. Press the **ALL** button.
2. Press the desired input button number on the bottom row.
3. Press the **ENTER** button.

Setting the Output Resolution

Each output can be set to a different resolution:

1. Press the **RES** button.
2. Select the output to be by pressing one of the output buttons on the top row.
3. Press **NEXT** until the desired resolution is displayed on the LCD.
4. Press the **ENTER** button to accept the setting.
5. Repeat from Step 1 until all required outputs are set.

Available output resolutions are:

Number	Output Resolution Setting	Number	Output Resolution Setting
1	3840x2160p 60Hz	9	1400x1050 60Hz
2	3840x2160p 50Hz	10	1366x768 60Hz
3	3840x2160p 30Hz	11	1360x768 60Hz
4	3840x2160p 25Hz	12	1280x1024 60Hz
5	1920x1200 60Hz	13	1280x768 60Hz
6	1920x1080p 60Hz	14	1280x720p 60Hz
7	1920x1080p 50Hz	15	1280x720p 50Hz
8	1600x1200 60Hz	16	1024x768 60Hz

Setting the Input EDID

Each input can have a different EDID setting to ensure that the input HDMI signal is best suited to the HDMI source:

1. Press the **EDID** button.
2. Press one of the numbered input buttons for the input being set.
3. Press **NEXT** until the desired EDID option is displayed.
4. Press the **ENTER** button.
5. Repeat from Step 1 until all the required inputs are set.

The available EDID options are:

Number	Input EDID Setting	Number	Input EDID Setting
1	3840x2160p 60Hz (default)	5	1280x1024 60Hz
2	3840x2160p 30Hz	6	1920x1200 60Hz
3	1920x1080p 60Hz	7	Manual
4	1280x720p 60Hz	—	—

Saving to a Pre-set Memory

The current matrix routing can be stored to one of up to eight pre-set memories:

1. Press the **SAVE** button.
2. Press one of the numbered output buttons for the pre-set memory to set.
3. Press the **ENTER** button.

Recalling a Pre-set Memory

The current matrix routing can be set from one of up to eight pre-set memories:

1. Press the **RECALL** button.
2. Press one of the numbered output buttons for the pre-set memory to recall.
3. Press the **ENTER** button.

Front Panel Lock / Unlock

The front panel control buttons can be individually or globally locked to prevent accidental use or operation by unauthorised persons.

Global Lock / Unlock All Buttons

Press the **LOCK** button for two seconds to globally lock or unlock the front panel. When the panel is locked, all buttons except the **LOCK** button will not function until the front panel is unlocked. The LOCKED/UNLOCKED state is shown on the LCD panel and by the LED above the LOCK button, which is lit when the front panel is fully LOCKED.

Individually Lock/Unlock Specific Input or Output Buttons

When the unit is UNLOCKED, press and hold down the **LOCK** button for six seconds. The LCD panel will show the following (any displayed numbers indicates that those buttons are already locked):

Output: -----
Input: -----

Pressing any of the numbered Input or Output buttons will toggle the lock status of that button. The button will become locked when the respective button number is shown on the LCD panel. When all selections are done, press the **ENTER** button to set the new LOCK/UNLOCK states of those buttons.

Whenever a locked Output or Input button is activated, the LCD panel will show that the button is locked. In this mode, the **LOCK** LED is not lit.

To unlock those buttons, repeat the above steps to remove the button numbers from the LCD panel before pressing ENTER to accept the changes.

Video and IR Routing Relation

The IR detector and emitter must have the following wiring to ensure proper IR function:

3.5mm Jack	IR Detector (Eye)	IR Emitter
Tip	IR Signal	IR Signal
Ring	+5V	+5V
Sleeve	IR Return (Ground)	No Connection

The IR matrix routing will always follow the HDMI matrix video routing.

LAN and RS232 Control Commands

All the ASCII commands given in this section use the following RS232 port settings:

Baud Rate: 57600
Data Bits: 8
Parity: None
Stop Bits: 1

All the ASCII RS232 commands given in this section can also be sent to the LAN port using the following settings:

Default IP Address: 192.168.0.247
Default Network Mask: 255.255.255.0
Default Gateway: 192.168.0.1
Default TCP Port: 23 – Telnet

Notes:

1. All commands in this section are always terminated with the ASCII carriage-return character, 0x0d. This is represented by the ↵ symbol in each command.
2. All responses are always terminated with the ASCII carriage-return and line-feed sequence (0x0d 0x0a).
3. All spaces shown in the command are required. Lowercase letters are used as value placement indicators, the required value or identifier is given in the **Details** panel for each command.

Video RS232 Commands

Video Selections

The following commands are used to make video selections:

Command	Details
SET IN x VIDEO OUT y ↵	Select Input x to Output y Where: x is in the range 1 to 4 y is in the range 1 to 4
SET IN x VIDEO ALL↵	Select Input x to All Outputs Where: x is in the range 1 to 4

Examples:

SET IN4 VIDEO OUT2↵	OUT2 VIDEO IN4↵
SET IN1 VIDEO ALL↵	ALL VIDEO IN1↵

Presets

The following commands are used to save and recall preset settings:

Command	Details
<code>SET SYS ROUTE-MODEx↵</code>	Store current matrix setting to Preset <i>x</i> Where: <i>x</i> is in the range 1 to 8
<code>GET SYS ROUTE-MODEx↵</code>	Recall Preset <i>x</i> to the matrix switcher Where: <i>x</i> is in the range 1 to 8

Examples:

<code>SET SYS ROUTE-MODE3↵</code>	<code>SYS ROUTE-MODE 3↵</code>
<code>GET SYS ROUTE-MODE2↵</code>	<code>SYS ROUTE-MODE 2↵</code>

Video Output Signal Format

The following command configures the output video format for the specified output.

Command	Details
<code>SET OUTx OUT-SIGNAL w↵</code>	Set Output <i>y</i> to the desired output format. Where: <i>x</i> is in the range 1 to 4 for outputs 1 to 4. <i>w</i> is one of the following: 3840x2160p60 3840x2160p50 3840x2160p30 3840x2160p25 1920x1200p60 1920x1080p60 1920x1080p50 1600x1200p60 1400x1050p50 1366x768p60 1360x768p60 1280x1024p60 1280x768p60 1280x720p60 1280x720p50 1024x768p60
<code>GET OUTx OUT-SIGNAL↵</code>	Return the output video format for the specified output. Where: <i>x</i> is in the range 1 to 4

Examples:

<code>GET OUT1 OUT-SIGNAL↵</code>	<code>Get OUT1 OUT-SIGNAL UHD-HDMI@3840x2160p30</code>
<code>SET OUT1 OUT-SIGNAL 3840x2160p60↵</code>	<code>Set OUT1 OUT-SIGNAL 3840x2160p60</code>

Input Video Format

This GET command returns the detected video input format for the specified video input.

Command	Details
<code>GET INx IN-SIGNAL</code>	Return the video format for Input x Where: x is in the range 1 to 4

Examples:

<code>GET INx IN-SIGNAL</code>	IN1 IN-SIGNAL UHD-HDMI@4K2Kp60
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Audio RS232 Commands

Input Audio Select

The Input HDMI audio can be replaced with the external L/R audio input.

The following command sets the audio routing options:

Command	Details
<code>SET INx AUDIO-SRC w</code>	Select Input x to audio input w mode Where: x is in the range 1 to 4 w is one of the following options: EMDEBBED L/R
<code>GET INx AUDIOIN</code>	Return the audio input mode for Input x

Examples:

<code>SET IN1 AUDIO-SRC L/R</code>	Set IN1 audio source with external LR
<code>GET IN2 AUDIO-SRC</code>	Get IN2 audio Source-EMBEDDED

The following command set the L/R and Toslink audio output

Command	Details
<code>SET INx AUDIO-ROUTE OUTy</code>	Select Input x to LRy and Toslink(y) audio output Where: x is in the range 1 to 4 (input channel, HDMI/Audio) y is in the range 1 to 4 (output channel, LR/Toslink)

Examples:

<code>SET IN1 AUDIO-ROUTE OUT1</code>	Set audio IN1 to LR1/Toslink(1) out
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System RS232 Commands

There are several system related commands that can be used to determine which product is connected to the RS232 communication link and getting the current IP configuration for the SY switcher device connected to a network.

Device IP Settings

The following command sets the device IP parameters. Note that when setting to DHCP mode, the IP address, Subnet mask and gateway addresses are not required. For STATIC IP mode, the IP address, subnet mask and default gateway must always be specified in the command.

Command	Details
<code>SET SYS IP DHCP</code>	Set the IP mode to DHCP. The device will get the required IP settings from the network server.
<code>SET SYS IP STATIC ,aa,ss,gg</code>	Set the IP mode to STATIC. The device IP settings are provided in the command. Where: aa is the new device IP address given as four decimal octets ss is the new subnet mask given as four decimal octets gg is the IP address of the default gateway given as four decimal octets
<code>GET SYS IP</code>	Return the IP mode setting (inc. MAC) of the device.

Each of the decimal octets will have one to three digits, as leading zeroes are not presented in the response message.

Examples:

For these examples the MAC address is D8 : B0 : 4C : B9 : 47 : DF. This will be different for each device, but it is always returned without the colons. All of the other IP addresses are the factory default values, except where specified by the command.

Command	<code>GET SYS IP</code>
Response	<code>+++aAT+MAC AT+WANN AT+ENTM SYS IP D8B04CB947DF DHCP,192.168.0.247,255.255.255.0,192.168.0.1</code>

Command	<code>SET SYS IP DHCP</code>
Response	<code>+++aAT+WANN=DHCP AT+Z AT+ENTM SYS IP DHCP</code>

Command	<code>SET SYS IP STATIC 192.168.0.222,255.255.255.0,192.168.0.1</code>
Response	<code>+++aAT+WANN=STATIC 192.168.0.222,255.255.255.0,192.168.0.1 AT+ENTM</code>

Get Firmware Version

This command will return the installed firmware versions.

Command	Details
<code>GET SYS VERSION</code>	Return the firmware version of the output port

Examples:

The following response is just an example, the actual response will always show the installed firmware version.

<code>GET SYS VERSION</code>	<code>SYS VERSION</code> <code>2019/01/01-12:00:00</code>
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System Reset

The System Reset command will restore all settings, except IP settings, to their factory default values. The SYSTEM RESET command acts immediately and will reset all settings except the current IP configuration.

Command	Details
<code>SET SYS RESET ALL</code>	Reset the system to its factory defaults.

Example:

<code>SET SYS RESET ALL</code>	<code>SYS RESET ALL</code> <code>*+---D---</code> <code>U0000U0101U0202U0303U0404U0505U0606U0707--#</code>
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RS232 Control from SY-PC Tools Software

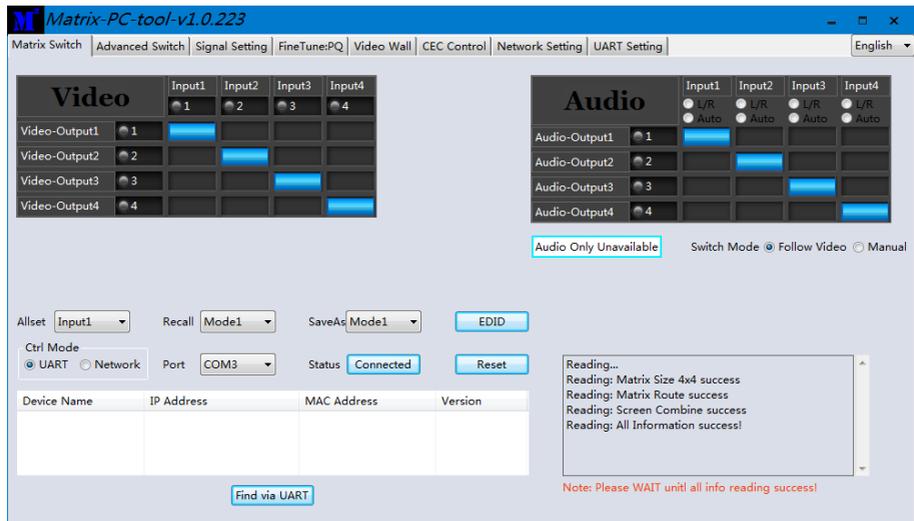
The SY-SMS44-18G can also be controlled using RS232 from the SY-PCTools or by using RS232 commands (see separate RS232 Command Protocol document). This section will only detail controlling the unit from the RS232 PC Tools software (can also use LAN connection).

- Connect an RS232 port from the PC or laptop to the 9-way D connector on the rear of the matrix switcher. (or connect to the LAN via the LAN port)
- Start the software by clicking the **SY-PC TOOL.exe** icon:



- Select SMS44-18G from the software list.
- Wait for the PC software to complete configuring itself.

When the PC software is ready a screen similar to the following will be displayed:



Note: The Port COM number may be different for each PC or laptop that the controller software is run from.

The **Ctrl Mode** control group allows the PC software to use either RS232 (UART) or a TCP/IP (Network) connection. To use a network connection, first set **UART** as the **Ctrl Mode** and then click the **Find via UART** button. When the IP address is displayed, **Network** can be selected as the control mode. When the Control mode is set to Network, the **Find via UART** button changes to **Search Device**. Using the **Search Device** button may require additional firewall permissions by Windows.

Controlling the Matrix Switcher

To make video selections, click anywhere within the grid region and the blue marker will change to the new selection, indicating the updated status of the HDMI matrix.

To quickly set all the outputs to a single input, select that input from the **Allset** drop-down list. The action will be performed immediately, and the upper grid region will show the new selection status.

A matrix selection can be stored to a pre-set memory by selecting from **Mode1** to **Mode12** from the **SaveAs** drop-down list. This action is immediate without any prompts.

A matrix selection can be recalled from a pre-set memory by selecting from **Mode1** to **Mode8** from the **Recall** drop-down list. This action is immediate and will be shown by changes to the video selection markers.

EDID Management

Click the EDID button on any of the Switch Control panels to open the EDID panel:

EDID Read Port (output)
 1 2 3 4

EDID Write Port (input)
 1 2 3 4

0% 100%

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00																
10																
20																
30																
40																
50																
60																
70																
80																
90																
A0																
B0																
C0																
D0																
E0																
F0																

To use this panel, choose one of the following options first:

- **Read EDID from an Output** – Select the output to read from in the top row of selection buttons and then click **Read**.
- **Load an EDID File from disk** – Click **Open** and select the EDID binary file from the File Browse window that opens.

Either of the above options will fill the lower panel with the binary EDID data from either the display at the selected output or from the chosen EDID file.

To set an input to the loaded EDID data:

1. Select an input number to accept the EDID data.
2. Click the **Write** button.

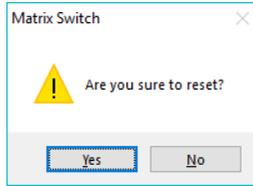
The EDID data is stored to the **EDID Manual** option of that input. Use the front panel to set that input to **EDID Manual** to make updated the EDID active.

To save the EDID data to a disk file after reading from any output:

1. Click the **Save** button and a file browse window will open.
2. Select the location and enter a filename to save the EDID data to and click the **Save** button. Be sure to include the .bin extension when entering the filename as it will not be added automatically when clicking the **Save** button.

Reset to Factory Defaults

The **Reset** button should be used with caution as clicking **Yes** to the following warning message will reset the SY-SMS44-18G matrix switcher back to its factory default settings.



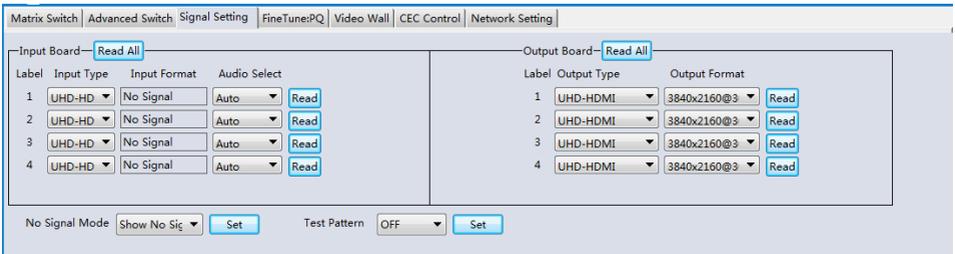
The following items will be affected:

- All named inputs and outputs will lose their names.
- All outputs will be set to 4K2K@30Hz.
- Any video wall configurations will be deleted.
- All pre-set memories will be cleared to the default setting.

Note that any programmed IP settings are not affected by the **Reset** command.

Signal Setting Tab

The **Signal Settings** tab reports the connected signal states along with the input EDID setting and the output Resolution setting.



Input Format

The **Input Format** is for information only as none of the settings can be changed, but each or all of them can be read at any time by clicking on the respective **Read** or **Read All** button.

Audio Select

There are two options for Audio selection for each input channel:

1. Auto
2. L/R

When in Auto and the input is a DVI source, system will select external L/R audio as the audio source of this input channel.

When select L/R, system will select external L/R audio as the audio source of this input channel no matter the input format.

No Signal Mode

The No Signal Mode provides three options for when an input that has no signal present:

1. Show No Signal words – This a screen saver mode
2. Black Screen – This will stop the display from entering standby mode
3. No Timing output – The display device may enter its standby mode

The default setting is No Timing Output.

Test Pattern

The Test Pattern setting will enable or disable the internal test pattern generator. The test pattern is a simple colour bar display that enabled to all screens simultaneously. The test pattern can only be turned off from the pop-up menu of Screen 1 on the Video Wall tab.

The default setting is OFF.

Output Type

The **Output Type** column allows each output to be set to one of the following options:

- **UHD-HDMI** – Sets the respective output signal to HDMI with HDCP pass-through.
- **UHD-DVI** – Set the respective output signal to DVI, with no audio output.
- **UHD-HDMI-1.4** – Sets respective the output signal to HDMI with HDCP 1.4 compliance.
- **UHD-HDMI-2.2** – Sets respective the output signal to HDMI with HDCP 2.2 compliance.

The Output Format column allows the setting of the resolution for each output. The available resolutions are the same as those given in **Setting the Output Resolution** given on page 7.

Fine Tune:PQ

The **Fine Tune – PQ** tab allows adjustment of each of the output signals.

Select PQ FineTune Port- Output1

Brightness

Contrast

Saturation

Sharpness

Temperature Cool

R-Gain

G-Gain

B-Gain

R-Offset

G-Offset

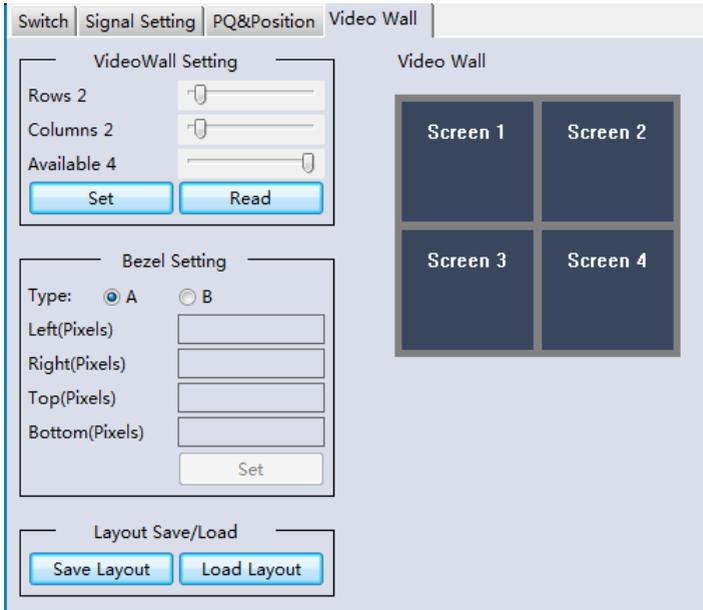
B-Offset

Adjust the Brightness, Contrast, Saturation and Sharpness sliders to the selected output to adjust the image quality of that output. Use the **Read** button to obtain the current values and the **Reset**

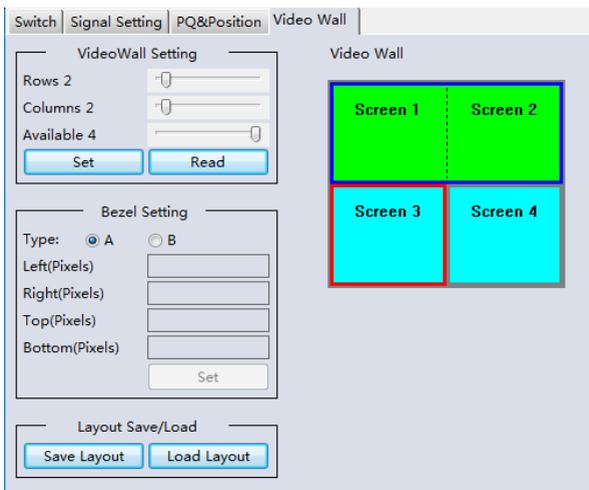
button to restore the factory default values.

TV Wall

This panel allows the configuration of a video wall display. The screen layout is changed by moving the Rows and Columns sliders and clicking the Set button.



1. Use the Video Wall Setting controls to change how the displays are arranged on the Video Wall tab:
 - a. Adjust the Rows and Columns sliders to change the displayed screen arrangement to permit proper Drag-and-Select of the desired screens for the video wall.
 - b. Change the Available slider to set how many outputs will be used for the video wall.
 - c. Click the Set button to change the Screen configuration on the Video Wall tab.
2. Use the left mouse button to drag-select the screens that will be set for video wall mode. The selected screens will be shown as bright blue.
3. Use the right mouse button to open a menu.
4. Select Screen Stitching from the menu to program the video wall mode. The selected screens will now be shown as bright green.
5. To change the displayed image: Right-click to open the pop-up menu and select the desired input from the Input Select menu option.
6. Repeating steps 2 to 5 above with a different set of outputs allows the creation of a second video wall. However, changing the Rows, Columns and Available sliders will automatically delete the current video wall set up when the Set button is clicked. The following example shows a more unusual video wall set-up of two video walls each with a two 2x1 configuration:



The top video wall is complete after using the Screen Stitching command.
 The bottom video wall is waiting for the Screen Stitching command to complete it.

Bezel Setting

The Bezel Setting section allows the entry of values to compensate for the display bezel thickness. These values may be entered either as pixels (Type A) or as millimetre (Type B).

Type A Bezel Settings

The image size will be adjusted to allow for the number of pixels entered in each of the entry boxes. Click the **Set** button view the effect of the new values.

Type B Bezel Settings

The image size will be adjusted to allow for the Inner and Outer display dimensions as entered in each of the entry boxes. Click the **Set** button view the effect of the new values.

Bezel Compensation

The following images demonstrate the effect of not having bezel compensation and what a correctly configured bezel compensation settings should produce:



No Bezel Compensation

Correct Bezel Compensation

Video Wall Context Menu

Right clicking on any of the screen icons will display the following context menu:

Screen Splicing	
Cancel Splicing	
Screen 2 - Cancel Splicing	
Input Select	▶
Output Select	▶
Output Type	▶
Output Format	▶
Rotate	▶
Test Pattern	▶

Screen Stitching	This option stitches and connects the selected screens into a video wall configuration.
Cancel Stitching	Return the Video Wall configuration to normal individual outputs.
Screen x – Cancel Stitching	<p>Removes a single screen x from the video wall, which allows it to display another image within the video wall configuration, as shown in this example:</p>  <p>Video Wall display with bezel compensation and different full frame image on display 3</p>
Input Select	Use the sub-menu to select the input to display on the video wall or the secondary input image shown in the above example.
Output Select	This option is only available for any screen that is not assigned to a video wall mode.
Output Type	Use the submenu to set the HDCP options for that output.
Rotate	Two sub options: OFF (default – No rotation), ON (Rotate image). Select ON : 180° image rotation of the selected screen
Test Pattern	Each output can display Colour Bar pattern at the selected resolution. Use any screen to activate the test pattern for all outputs at the same time. The Test pattern can only be disabled from the context menu of Screen 1.

Scene Save/Load (Pre-set)

The Save Scene and Load Scene buttons allow a video wall configuration to be saved or recalled at any time. Up to seven configurations, each with their own name can be saved or recalled. When saving, each Scene can optionally be given a name to identify that video wall scene setup.

Network Setting Tab

The Network Setting tab allows configuration of the network parameters.

The screenshot shows the Network Setting interface for the SMS88-18G v5.0.184. The interface is divided into several sections. On the left, there is a 'Search List' table with columns for Device Name, IP Address, MAC Address, and Version. Below the table are buttons for 'Search Device', 'Open Website', and 'Find via UART'. Under 'Basic config', there are input fields for URPNP Port, HTTP Port, Device ID, Device ID Type, User Name, Password, Device Name, MAC Address, IP Type, Static IP, Subnet Mask, and Gateway. A 'Save Config' button is at the bottom. On the right, there is a 'Select config port' section with radio buttons for Port 0, Port 1, and Port 2. Below this are various configuration options: Baud Rate, Parity/Data Bit/Stop Bit, Stream Control, Device Port, PC Port, PC IP/Domain, Work Mode, TCP Server connect. co., TCP Server style, ModbusTCP, Package time(ms), Package Length(Byte), and a checkbox for 'Sync BaudRate(RFC2217 similar)'. A 'Save Config' button is at the bottom right.

The **Search Device** button also requires a network connection to complete. The **Find via UART** button only requires an RS232 connection.

Click either **Search Device** or the **Find via UART** button to obtain the current network parameters of the SY-SMS44-18G unit.

Use this form to make any required changes to make the matrix switcher become visible on the network it is connected to and click **Save Config** button to program the changes.

The **Open Website** button will open the built-in WebGUI form in the default web browser.

Using the Built-In WebGUI

The built-in WebGUI interface provides only basic control of the matrix switcher and access to the network settings. The following will be displayed when the web interface is access each time:

The screenshot shows an 'Authentication Required' dialog box. The title bar says 'Authentication Required' with a close button. The main text says 'http://10.64.88.1 is requesting your username and password. The site says: "S2E"'. There are input fields for 'User Name:' and 'Password:'. At the bottom are 'OK' and 'Cancel' buttons.

The default User Name is: **admin**

The default Password is: **admin**

Controlling the Switcher

After entering the **User Name** and **Password** a screen similar to the following will be displayed:

The screenshot shows the 'Matrix 4x4' control panel. It features a 'Matrix Control' sidebar with 'IP Config' selected. The main area is titled 'control panel' and is divided into several sections:

- Video:** A 4x4 grid of buttons for 'OUT \ IN' channels 1-4. Channel 1 is highlighted in blue.
- Audio:** A 4x4 grid of buttons for 'OUT \ IN' channels 1-4. Channel 1 is highlighted in blue. Above it are radio buttons for 'L/R' and 'Auto' for each channel.
- Audio Only:** A dropdown menu set to 'Audio Only'.
- Audio Switch Mode:** A dropdown menu set to 'Follow Video'.
- Auto Power ON:** A blue button.
- CEC:** A table with 4 rows (Input1-4, Output1-4) and 6 columns (Power ON, Power OFF, Volum+, Volum-, Mute/Unmute).
- Configuration:** 'Allset', 'Recall', and 'SaveAs' dropdowns, and a 'Reset' button.
- INPUT TYPE:** A dropdown menu, 'Read', and 'Set' buttons.
- OUTPUT INFO:** A dropdown menu, 'Read', 'Set Type', and 'Set Format' buttons.
- Receive(Hex):** A text area containing hex data: '7B 7B 11 04 00 01 02 03 0B 7D 7D 7B 7B D4 09 00 01 02 03 00 00 01 00 00 D4 7D 7D'.
- Send(Hex):** A text area containing hex data: '7B 7B 12 01 00 03 7D 7D' and '7B 7B 95 03 00 00 88 7D 7D'.
- Buttons:** 'Connect', 'Status', 'Send', and 'Clear' buttons at the bottom.

IP Config Tab

The screenshot shows the 'IP Config' tab within the 'Matrix Control' sidebar. The main area is titled 'parameter' and contains the following settings:

- IP type:** A dropdown menu set to 'Static IP'.
- Static IP:** Four input fields with values 10, 64, 0, and 88.
- Submask:** Four input fields with values 255, 0, 0, and 0.
- Gateway:** Four input fields with values 10, 64, 0, and 1.
- Dns Server:** Four input fields with values 10, 64, 0, and 1.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom.

The IP Config tab is used to change the IP settings of the matrix switcher. Enter necessary changes and click **Save** to program the switcher to the new settings, or **Cancel** to reject the changes.

Specifications

Video

Input HDMI formats supported	All VESA resolutions to 4096x2160p (18G), and all 3D formats – Examples: 4096x2160p 24/25/30/50/60Hz 3840x2160p 24/25/30/50/60Hz 2560x1440 50/60Hz 2048x1152 50/60Hz 1920x1080p 24/25/30/50/60Hz 1920x1080i 50/60Hz 1280x720p 50/60Hz	
	All PC resolution including 1920x1200 – Examples: 1920x1200 60/75Hz 1280x1024 60/75Hz 1680x1050 60/75Hz 1280x960 60/75Hz 1600x1200 60/75Hz 1280x800 60/75Hz 1440x900 60/75Hz 1152x864 60/75Hz 1400x1050 60/75Hz 1024x768 60/75Hz 1366x768 60/75Hz 800x600p 60/72/75/85Hz 1360x768 60/75Hz 720x576p 60Hz 640x480p 60/65/85Hz	
Output – Scaled HDMI Video (Scaled for each output)	3840x2160p 60Hz 3840x2160p 50Hz 3840x2160p 30Hz 3840x2160p 25H 1920x1200p 60Hz 1920x1080p 60Hz 1920x1080p 50Hz 1600x1200 60Hz	1400x1050 60Hz 1366x768 60Hz 1360x768 60Hz 1280x1024 60Hz 1280x768 60Hz 1280x720p 60Hz 1280x720p 50Hz 1024x768p 60Hz
HDMI Version	HDMI 2.0	
HDMI Bandwidth	18Gbps	
Colour space	RGB, YCbCr 4:4:4, 4:2:2, 4:2:0	
HDCP Version	HDCP 1.4 and HDCP 2.2	

Audio

Audio Input (Analogue)	L/R 3.5mm Stereo Jack: 20Hz – 20kHz, 1.5Vrms max.
Audio Output (Analogue)	Balanced and 3.5mm Stereo Jack: 20Hz – 20kHz, 1.5Vrms max.
Mini-Toslink Output	Supports all de-embedded digital formats

Control and Power

Control Ports	RS232, IR or LAN
RS232 (Tx, Rx)	57600, 8 bits, no parity, 1 stop bit
Power Supply	110~240V AC
Power Consumption	60W max.

Environmental

Operating Temperature	0 to +40°C (+32 to +104°F)
Operating Humidity	10 to 90 % RH (non-condensing)
Weight	5kg

Physical

Dimensions (W x H x D)	430 x 44 x 220 mm (19in 1U rack mounting)
Case Material	Steel chassis

Package Contents

Item	Qty
SY-SMS44-18G unit	1
SY-SMS44-18G User Manual	1
Rack mounting brackets	2 (already fitted)
AC Power cord (IEC 60320 C13)	1

Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

1. Do not operate these products outside the specified temperature and humidity range given in the above specifications.
2. Ensure that these products are adequately ventilated to allow them to operate efficiently as these products do generate heat during normal operation.
3. Repair of the equipment should only be carried out by qualified professionals as these products contain sensitive devices that may be damaged by any mistreatment.
4. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with this product.

After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting SY Technical Support.
2. When calling SY Technical Support, the following information should be provided:
 - Product name and model number
 - Product serial number
 - Details of the fault and any conditions under which the fault occurs.
3. This product has a two years standard warranty, beginning from the date of purchase as stated on the sales invoice. For full details please refer to our Terms and Conditions.
4. SY Product warranty is automatically void under any of the following conditions:
 - The product is already outside of its warranty period
 - Damage to the product due to incorrect usage or storage
 - Damage caused by unauthorised repairs
 - Damage caused by mistreatment of the product
5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics.