User Manual

SMS88-18G

8x8 Seamless Scaling HDMI 2.0 4K60 4:4:4
18G Matrix Switch
with
Video Wall Mode

Contents

The SY-SMS88-18G is a high-performance HDMI 2.0 seamless scaling matrix switcher capable of handling HDMI signals up to 4K60 4:4:4 (18Gbps). It provides 8 HDMI inputs, 8 HDMI outputs and can be used as an 8x8 seamless matrix switcher or a video wall source 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
- 16 Selectable HDMI output resolutions (per output)
- Audio embedding for each input – L+R only
- Audio de-embedding of each output – L+R only
- IR switching follows video switching
- EDID management for each input
- Controllable from front panel, RS232 or TCP/IP
- 19in 1U rack mounting

Panel Descriptions

Front Panel
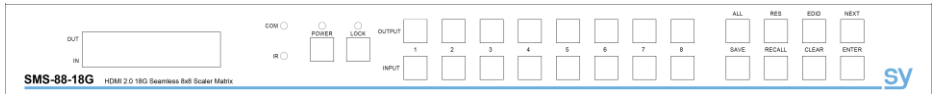
Item	Description
LCD Panel	Displays the current video selections
COM	Power LED (also indicates control commands)
IR	Reserved
POWER	Power on/off (standby) mode switch
LOCK	Front panel lock/unlock
OUTPUT	Output selection buttons 1~8
INPUT	Input selection buttons 1~8
ALL	Set all outputs to the next input 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 preset
RECALL	Set the matrix setting from a saved preset
CLEAR	Cancel the current command function
ENTER	Set the displayed option

Rear Panel
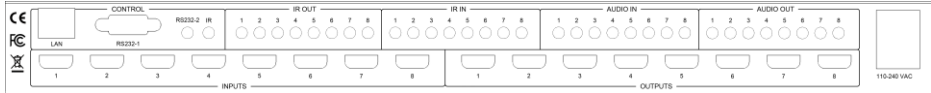
Item	Description
LAN	RJ45 control port for operation by TCP/IP
RS232-1	Main RS232 control port
RS232-2	Reserved
IR	IR Eye input for IR controller
IR OUT 1~8	IR outputs for HDMI inputs 1 to 8
IR IN 1~8	IR inputs for HDMI outputs 1 to 8
AUDIO IN 1~8	Analogue audio inputs for HDMI inputs 1 to 8
AUDIO OUT 1~8	Analogue audio outputs for HDMI outputs 1 to 8
INPUTS 1~8	HDMI inputs 1 to 8
OUTPUTS 1~8	HDMI outputs 1 to 8
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-SMS88-18G

Seamless Matrix Switcher

When the SY-SMS88-18G 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 that IR and audio routing always follow the video routing selections.

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 different resolutions:

1. Press the **RES** button.
2. Press one of the numbered output buttons to select the output being set.
3. Press **NEXT** until the desired resolution is displayed on the LCD.
4. Press the **ENTER** button.

Available output resolutions:

Number	Output Resolution Setting	Number	Output Resolution Setting
1	3840x2160p 60Hz	9	1440x1050 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 different EDID settings 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.

The available output resolutions are:

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

Saving to a Preset Memory

The current matrix routing can be store to one of up to eight preset memories:

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

Recalling a Preset Memory

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

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

The default state for the Manual EDID option is the same as EDID option 1, 3840x2160p 60Hz. To change the contents

Full Front Panel Lock / Unlock

The front panel control buttons can be locked to prevent accidental use or operation by unauthorised persons. Press the **LOCK** button for two seconds to 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.

Input or Output ports Lock Unlock

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

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

Pressing any of the numbered Output or Input 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.

Power Control

The **POWER** button can be used to place the SY-SMS88-18G in to standby mode. Press and hold the power button until the POWER LED lights. Release the **POWER** to power down the unit. Press the **POWER** button again to return the unit to normal operation.

Video and Audio Routing Relation

Use the PC control software to select which audio inputs will be embedded onto the HDMI inputs. By default, the analogue audio output is from the de-embed audio of its respective HDMI output.

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.
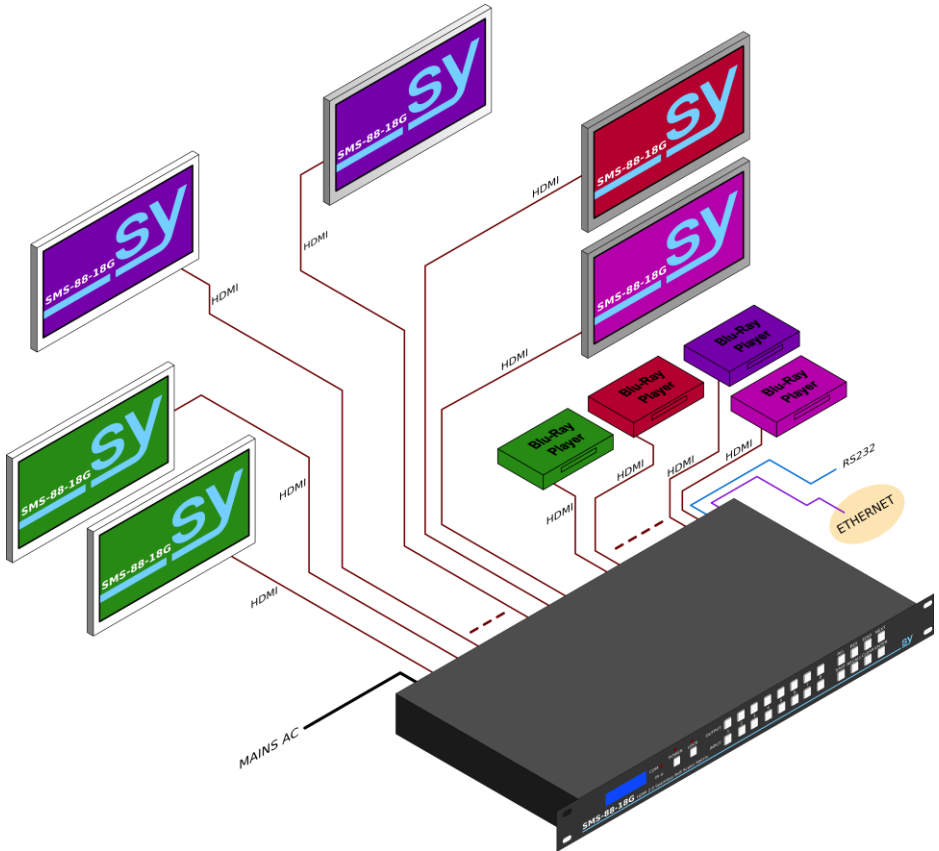
System Connection Example

Figure 1 - SY-SMS-88-18G System Connection

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 INx VIDEO OUTy↵`	Select Input x to Output y Where: **x** is in the range 1 to 8 for inputs 1 to 8 **y** is in the range 1 to 8 for outputs 1 to 8.
`SET INx VIDEO ALL↵`	Select Input **x** to All Outputs Where: **x** is in the range 1 to 8 for inputs 1 to 8

Examples:

`SET IN4 VIDEO OUT2↵`	`OUT2 VIDEO IN4↵`
`SET IN5 VIDEO ALL↵`	`ALL VIDEO IN5↵`

Video Output Signal Format

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

Command	Details

`SET OUTx OUT-SIGNAL w↵`	Set Output y to the desired output format.
	Where:
	x is in the range **1** to **8** for outputs 1 to 8.
	w is one of the following:
	    `3840x2160p60`
	    `3840x2160p50`
	    `3840x2160p30`
	    `1920x1200p60`
	    `1920x1080p60`
	    `1920x1080p50`
	    `1600x1200p60`
	    `1360x768p60`
	    `1280x720p60`
	    `1024x768p60`
	    `AUTO`

`GET OUTx OUT-SIGNAL↵`	Return the output video format for the specified output. Where: **x** is in the range **1** to **8** for outputs 1 to 8

Examples:

`GET OUT OUT-SIGNAL↵`	`OUT OUT-SIGNAL UHD-HDMI@3840x2160p30↵`
`SET OUT OUT-SIGNAL AUTO↵`	`OUT OUT-SIGNAL UHD-HDMI@AUTO↵`

Input Video Format

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

Command	Details
`GET INx IN-SIGNAL↵`	Return the video format for Input x Where: **x** is in the range **1** to **8** for inputs 1 to 8

Examples:

`GET INx IN-SIGNAL↵`	`IN1 IN-SIGNAL UHD-HDMI@4K2Kp60↵`

Audio RS232 Commands

Audio Routing

The following command sets the audio routing options:

Command	Details

`SET INx AUDIOIN w↵`	Select Input **x** to audio input mode **w**
	Where:
	x is in the range **1** to **8** for inputs 1 to 8
	w is one of the following options:
	   `EMDEBBED`
	   `L/R1`
	   `L/R2`
	   `L/R3`
	   `L/R4`
	   `L/R5`
	   `L/R6`
	   `L/R7`
	   `L/R8`

`GET INx AUDIOIN↵`	Return the audio input mode for Input **x**

Examples:

`SET IN4 AUDIOIN L/R1↵`	`IN4 AUDIOIN L/R1↵`
`SET IN1 AUDIOIN EMBEDDED↵`	`IN1 AUDIOIN EMBEDDED↵`
`GET IN5 AUDIOIN↵`	`IN5 AUDIOIN EMBEDDED↵`

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.

Get Device Size

The following command returns the number of inputs and outputs for the SY switcher device:

Command	Details
`GET SYS SIZE↵`	Get the number of video inputs and outputs supported by the device.

Examples:

`GET SYS SIZE↵`	`SYS SIZE↵` `8 8 32↵`

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
`SET SYS IP DHCP↵`	Set the IP mode to DHCP. The device will get the required IP settings from the network server.
`SET SYS IP STATIC,aa,ss,gg`	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
`GET SYS IP↵`	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	`GET SYS IP↵`

Response	`+++aAT+MAC↵`
	`AT+WANN↵`
	`AT+ENTM↵`
	`SYS IP D8B04CB947DF`
	`DHCP,192.168.0.247,255.255.255.0,192.168.0.1↵`

Command	`SET SYS IP DHCP↵`

Response	`+++aAT+WANN=DHCP↵`
	`AT+Z↵`
	`AT+ENTM↵`
	`SYS IP DHCP↵`

Command	`SET SYS IP STATIC 192.168.0.222,255.255.255.0,192.168.0.1↵`
Response	`+++aAT+WANN=STATIC 192.168.0.222,255.255.255.0,192.168.0.1↵` `AT+ENTM↵`

Get Firmware Version

This command will return the installed firmware versions.

Command	Details
`GET SYS VERSION↵`	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.

`GET SYS VERSION↵`	`SYS VERSION↵` `  2019/01/01-12:00:00↵`

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
`SET SYS RESET ALL↵`	Reset the system to its factory defaults.

Example:

|	

`SET SYS RESET ALL↵`	`SYS RESET ALL↵`
	`*+---D----`
	`U0000U0101U0202U0303U0404U0505U0606U0707-`
	`-#`

RS232 Control from PC Software

The SY-SMS88-18G can also be controlled using RS232 from PC software or by using RS232 commands (see separate RS232 Command Protocol document). This section will only detail controlling the unit from the RS232 software.

- Connect an RS232 port from the PC or laptop to the 9-way D connector on the rear of the matrix switcher.
- Start the RS232 software by clicking the **Matrix-PC-tool.exe** icon:


SMS-88-18
G.exe

- The software will begin with a login prompt:
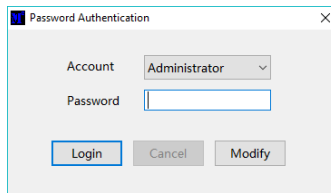
The default Administrator password is **111111**. The default User is **000000**. To change either of the passwords, select **User** or **Administrator** from the **Account** list, enter the new password and click **Modify** to accept it or **Cancel** to reject the new password entry. Re-enter the new password and click **Login** to proceed to the next screen.

- Wait for the PC software to complete configuring itself.

When the PC software is ready a screen similar to the following will be displayed:
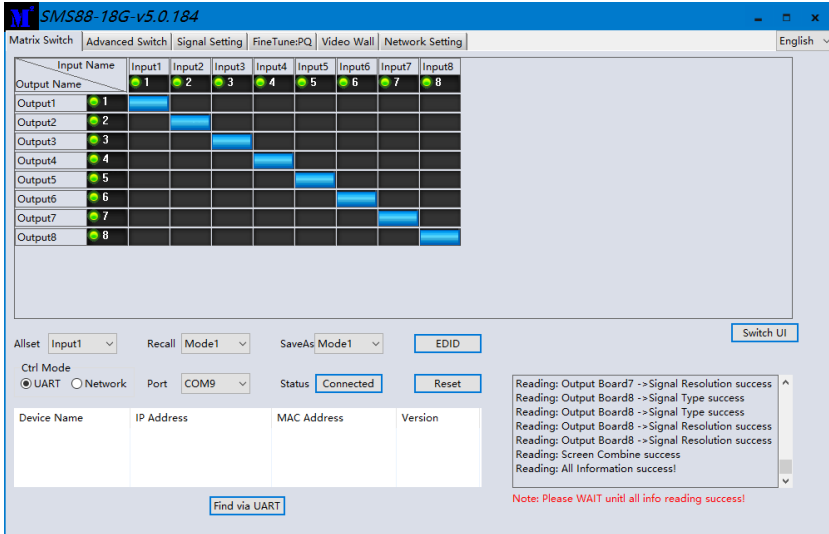
Note that the Port value may be different for each PC or laptop that the controller software is run from.

The **Ctrl Mode** selection buttons allow 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 show **Search Device**. Using the **Search Device** button may require additional firewall permissions by Windows as network connection is used to determine the IP address.

The green indicators show which inputs and outputs had video present when the software started up. Where there was no video present, the respective indicator is shown as grey. To refresh these indicators, click the **Connected** button twice.

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 new 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 preset memory by selecting from **Mode1** to **Mode8** from the **SaveAs** drop-down list. This action is immediate without any prompts.

A matrix selection can be recalled from a preset 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.

Clicking the **Switch UI** button will change the control interface to the following control screen:
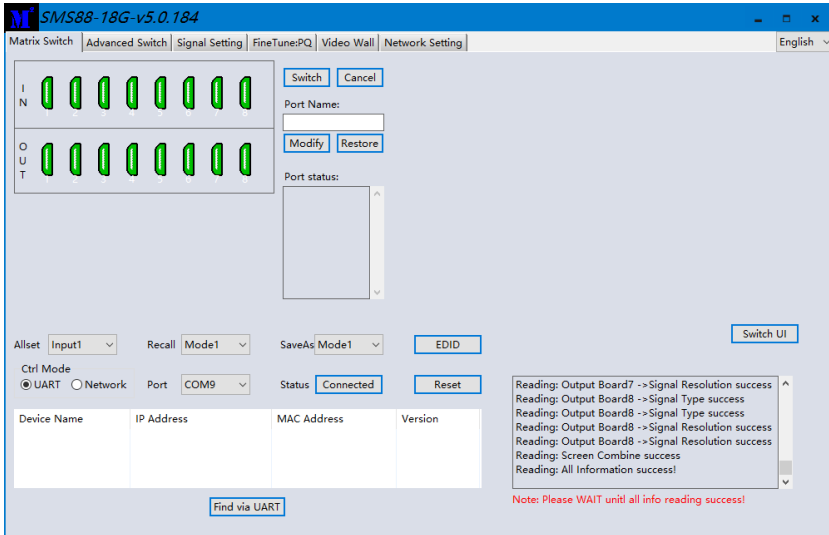
The connectors shown in green are those that had video present when the software started up. To refresh these indicators, click the **Connected** button twice (once to Disconnect, the again to Re-Connect).
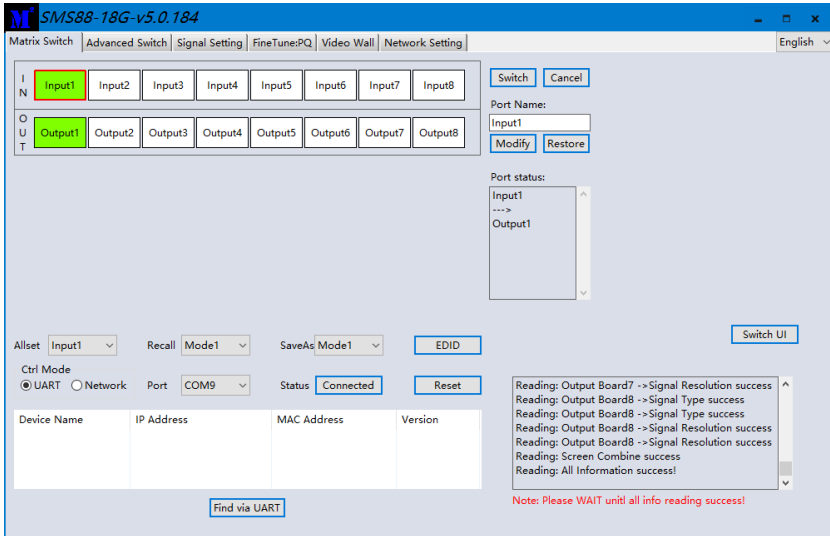
Making video selections

1. Click one of the input connectors.
2. Click one or more of the output connectors.
3. Click **Switch** to confirm the selection, or **Cancel** to remove the selections.

Clicking on any of the input connectors will highlight some of the Output connectors to show which outputs that input is routed to.

The Port Name box allows the naming of the inputs and outputs, which will then be used in the **Port status** window as, for example, If the **Port name** is changed to **BluRay**, then **Port status** window will display **Input1(BluRay)**. Click the **Modify** set the new name, or **Restore** to cancel the name update. Note the Restore button does not clear any changes made previously.

Clicking the **Switch UI** button again will change the control interface to the following control screen:

The top row (IN) will only highlight the input number that was clicked. The boxes in the bottom row (OUT) are highlighted in green to indicate each output that the selected input is routed to.

Making video selections

1. Click one of the input boxes.
2. Click one or more of the output boxes.
3. Click **Switch** to confirm the selection, or **Cancel** to remove the selections.

Clicking on any of the input connectors will highlight some of the Output connectors to show which outputs that input is routed to. If there are no highlighted outputs, then that input is not currently selected to any output.

The Port Name box allows naming of the inputs and outputs, which will then be used in the **Port status** window as, for example, If the **Port name** is changed to **BluRay**, then **Port status** window will display **Input1(BluRay)**. Click **Modify** to set the new name, or **Restore** to cancel the name update.
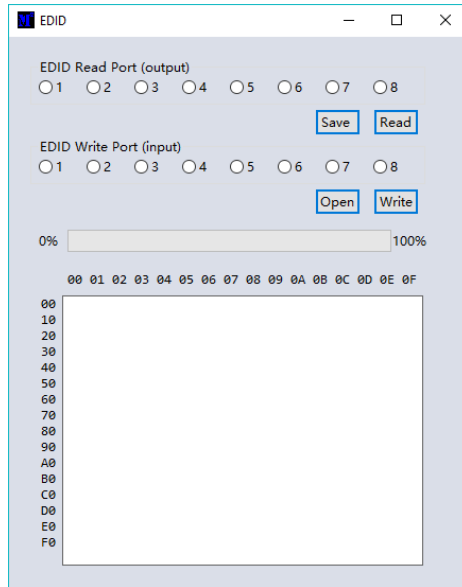
Note: The Restore button does not remove any modified changes made previously.

Clicking the **Switch UI** button will revert the control interface to the first control screen.

EDID Management

Click the **EDID** button from any of the three Control panels to open the EDID panel:

To use this panel, do 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 browse for 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 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-SMS88-18G matrix switcher back to its factory defaults.
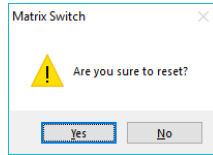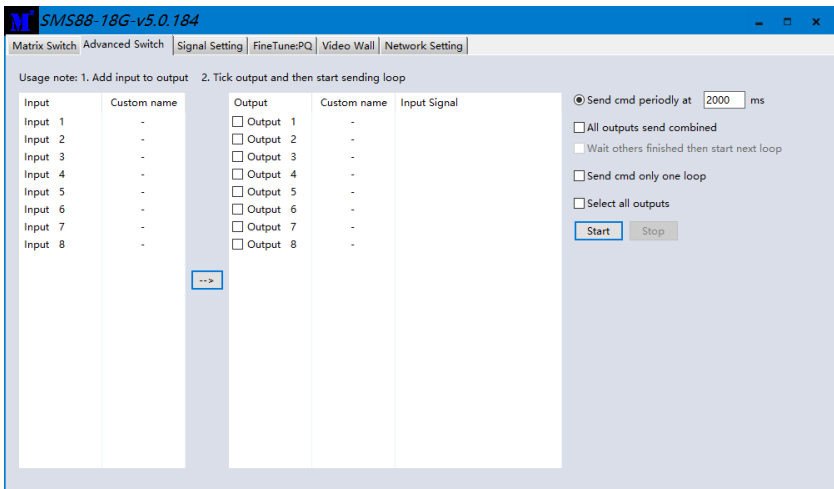
The following items will be affected:

- 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 preset memories will be cleared to the default setting.

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

Advanced Switch Tab

The Advanced Switch tab will repeatedly send a batch of matrix selection commands at the interval specified in the value box after **Send cmd periodly at** text.

1. Select one or more outputs.
2. Select one input.
3. Use the arrow button (-->) to assign that input to the selected output or outputs.
4. When all required selections have been made, click the Start button to run the commands.

The available options are:

- **All outputs send combined** – Include all outputs that have the same input number as a single command.
- **Wait others finished the start next loop** – Wait for all commands in the previous pass to complete before sending the next batch of commands.
- **Send cmd only one loop** – Only send a single batch of commands.
- **Select all outputs** – Selects all outputs when checked. Unselects all outputs when unchecked.
- **Start** – Begin the command cycles.
- **Stop** – Stop the command cycles.

Signal Setting Tab

The **Signal Settings** tab reports the connected signal states along with the Input Resolution and the Output Resolution settings.
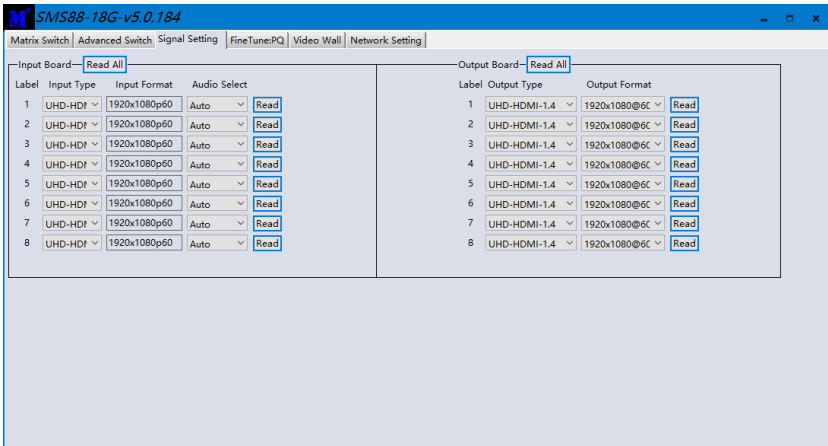
Input Board

The **Input Board** 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.

Output Board

The **Output Board** allows the setting of the output signal type and the output resolution.

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 without HDCP.
- **UHD-DVI** – Set the respective output signal to DVI, with no audio output
- **UHD-HDMI-1.4** – Sets the respective output signal to HDMI with HDCP 1.4 compliance.
- **UHD-HDMI-2.2** – Sets the respective 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** shown on page 6.

Fine Tune: PQ

The **Fine Tune – PQ** tab allows adjustment of each of the output signals.
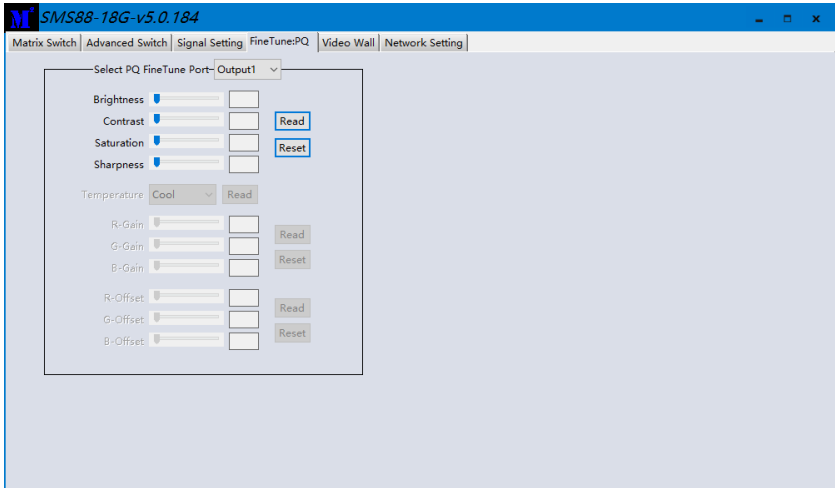
Adjust the Brightness, Contrast, Saturation and Sharpness sliders to the selected output to adjust the image quality of that output. Use the **Read** button to obtain the current values and the **Reset** button to restore the factory default values.

TV Wall

The TV Wall tab is used to configure a group of outputs to function as a video wall.
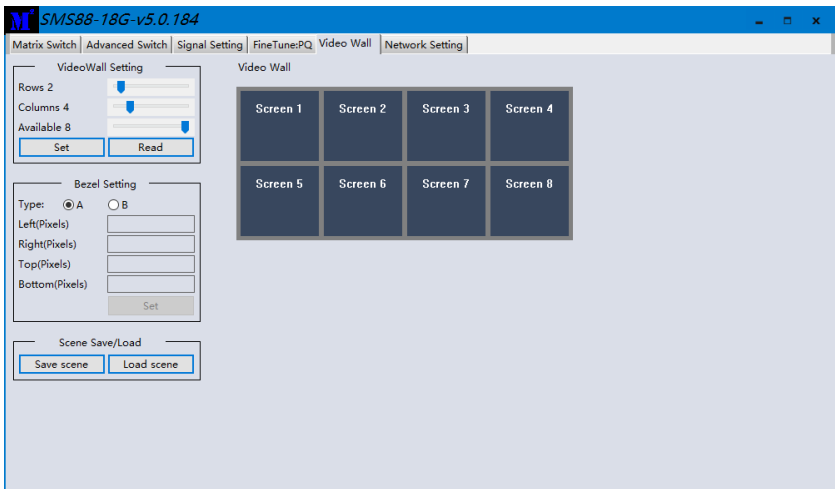
1. Use the Video Wall Setting controls to change how the displays are arranged on the Video Wall tab:
   a. Adjust the Rows and Columns sliders to change the displayed screen

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: either use the methods detailed in the section **Controlling the Matrix Switcher** starting on page 14, or right-click to open the pop-up menu and select the desired input from the **Input Select** menu option.
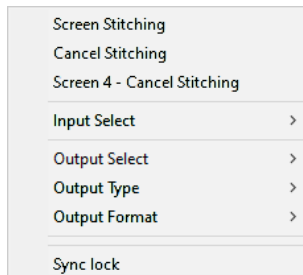
Repeating steps 2 to 5 above with a different set of outputs allows the creation of a second video wall. However, changing the **Rows**, **Columns** and **Available** sliders will automatically delete the current video wall set up when the **Set** button is clicked.

The following example shows a more unusual video wall set-up of two video walls with 1x3 and 2x2 configurations:
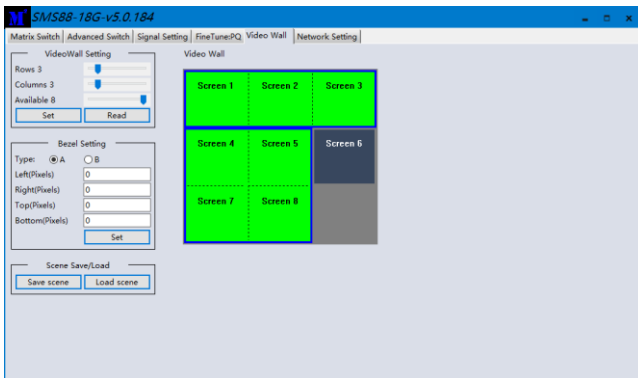
Video Wall Context Menu

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

Screen Stitching	This option connects the selected screens into a video wall configuration.
Cancel Stitching	Return the Video Wall configuration to normal outputs.
Screen x – Cancel Stitching	Removes the single screen x from the video wall to allow the displaying another full frame image within the video wall configuration, as shown in the following example. To return the output to video wall mode, uncheck the Screen x – Cancel Stitching option. Video Wall display with bezel compensation and different full frame image on display 3
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	This option is only available for any screen that is not assigned to a video wall mode. It allows setting of the selected screen output mode as described in the Output Board section on page 19.
Output Format	This option is only available for any screen that is not assigned to a video wall mode. It allows setting of the output resolution for the selected screen output.
Sync Lock	This option of only available for Video Wall set ups. It is used to turn the Sync Lock mode to reduce image edge tearing between the video wall screens.

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 millimetres (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 and 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 and 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*

Scene Save/Load

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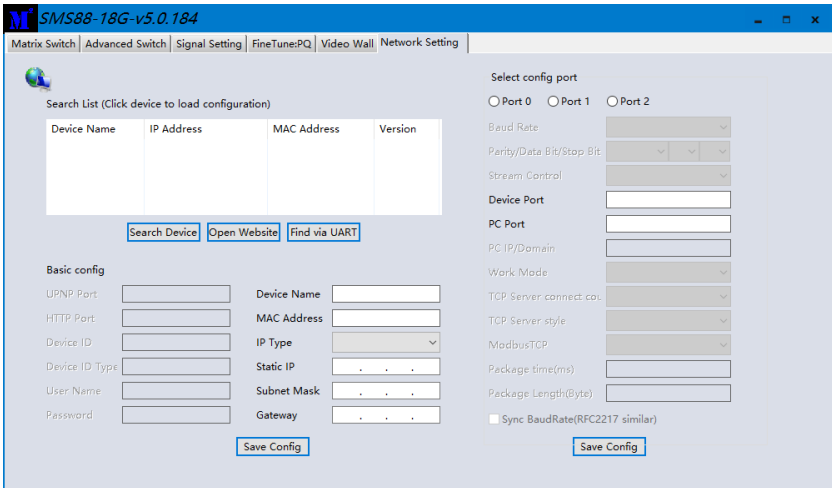
The **Search Device** button also requires a network connection to complete. The Find via UART button only requires an RS232 connection.

Click either **Search Device** or the **Find via UART** button to obtain the current network parameters of the SY-SMS88-18G 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:
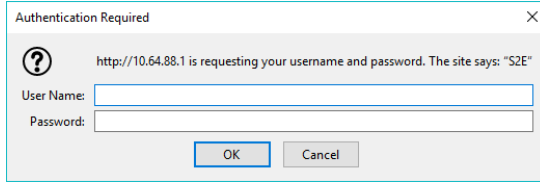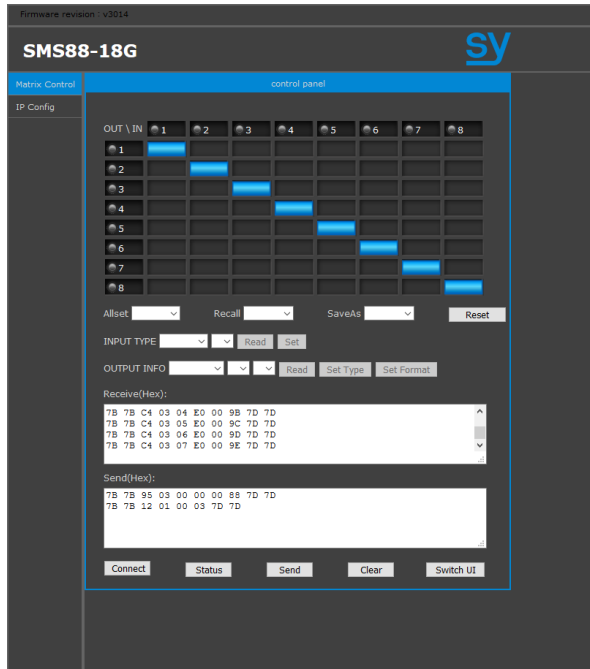

The default User Name is: **admin**
The default Password is: **admin**

Controlling the Switcher

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

The **Matrix Control** panel is used to control the signal routing of the matrix switcher.

The **Allset** control will set all outputs to the selected input number from the list.

The **INPUT TYPE** section is for information only as there are no configurable settings available.

The **OUTPUT TYPE** section will set the setting for the output selected in the first list to the values selected in each of the remaining selection boxes. Click the **Set Type** button to set the output type or click the **Set Format** to set the output resolution.

The **Reset** button will, after accepting the next confirmation box, reset the SMS88-18G back to factory defaults.

The **Connect** button is used to obtain a full update from the matrix switcher. The **Status** button only retrieves a short status update from the matrix switcher.

The **Send** button will send any command entered into the **Send(Hex)** box to the matrix switcher. The **Clear** button will remove the contents of both the Receive and Send boxes.
The Switch UI toggles between the above interface and this one, shown below:
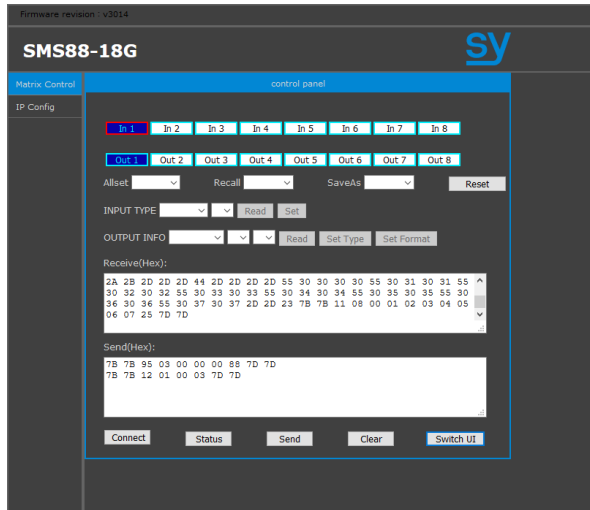
This interface provides all the same control functions as the previous interface.
The two boxes for **Receive** and **Send** provide visual indication of the control commands being sent via the LAN connection.
IP Config Tab
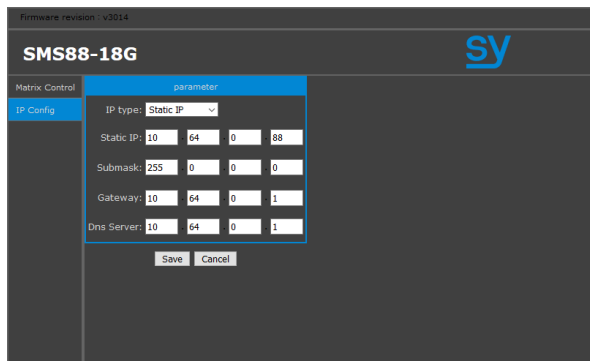
The IP Config tab is used to change the IP settings of the matrix switcher. Enter any necessary changes and click **Save** to program the switcher to the new settings, or **Cancel** to reject the changes.

Specifications

Video

Input HDMI formats supported	All HDMI resolutions to 4096x2160p 60Hz 4:4:4 Examples: 4096 x 2160p 24/25/30/50/60Hz 3840 x 2160p 24/25/30/50/60Hz 2560 x 1440 50/60Hz 1920 x 1200 60/65/75Hz 1920 x 1080p 24/25/30/50/60Hz 1920 x 1080i 50/60Hz 1680 x 1050 60/75Hz 1600 x 1200 60/65/70/75Hz 1600 x 1024 60/75Hz 1600 x 900 60/75Hz 1440 x 900 60/75Hz 1400 x 1050 60/75Hz 1366 x 768 60Hz 1360 x 768 60Hz 1280 x 1024 60/72/75/85Hz 1280 x 960 60/75/85Hz 1280 x 800 60/75Hz 1280 x 768p 50/60/75Hz 1280 x 720p 25/30/50/60/75Hz 1024 x 768p 60/70/75/85Hz 800 x 600p 60/72/75/85Hz 720 x 576p 60Hz 640 x 480p 60/65/85Hz
Output Scaled HDMI Video (Scaled for each output)	3840 x 2160p 25/30/50/60Hz 1920 x 1200p 60Hz 1920 x 1080p 60Hz 1920 x 1080p 50Hz 1600 x 1200 60Hz 1400 x 1050 60Hz 1366 x 768 60Hz 1360 x 768 60Hz 1280 x 1024 60Hz 1280 x 768 60Hz 1280 x 720p 50/60Hz 1024 x 768p 60Hz Auto
HDMI Version	HDMI 2.0
HDMI Bandwidth	18Gbps
HDCP Version	HDCP 1.4 and HDCP 2.2

IR

IR Input	8x 3.5mm Jack. 30Hz – 60kHz carrier
IR Output	8x 3.5mm Jack. 30Hz – 60kHz carrier

Audio

Audio Input	8x L+R 3.5mm Stereo Jack. 20Hz – 20kHz, 1.0Vrms max.
Audio Output	8x L+R 3.5mm Stereo Jack. 20Hz – 20kHz, 1.0Vrms max.

Control and Power

Control Ports	RS232, IR or LAN (default IP: 192.168.0.247)
RS232 Settings	57600, 8 bits, no parity, 1 stop bit
Power Supply	110~240V AC
Power Consumption	100W max.

Environmental

Operating Temperature	0 to +40°C (+32 to +104°F)
Operating Humidity	20 to 80 % RH (non-condensing)
Weight	5kg

Physical

Dimensions (WxHxD)	430 x 44 x 300 mm (19in 1U rack mounting)
Case Material	Steel chassis

Package Contents

Item	Qty
SY-SMS88-18G unit	1
SY-SMS88-18G User Manual	1
Rack mounting brackets	2 (already fitted)
AC Power cord (IEC 60320 C13)	1

NOTE: Considerations for Ventilation / Heat dissipation

When fully loaded, the SMS88-18G can consume 100W. As such it is important to ensure that there is a clearance of at least 45mm on the left, right and top sides of the unit.

It is advisable not place any heat sources (products generating significant heat) directly above or below the unit.

It is best to leave a gap between the SMS88-18G and items above and below it. Any item installed above the unit should be low power, with maximum depth of 175mm.

Please ensure the ventilation holes are not obstructed.

Safety Instructions

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

1. This product is powered directly from a mains outlet. **DO NOT** open this product as doing so will increase the risk of electrical shock.

2. Do not operate this product outside the specified temperature and humidity range given in the above specifications.

3. Ensure there is adequate ventilation to allow this product to operate efficiently. **DO NOT** block any of the ventilation holes. Allow at least 45mm clearance around all sides of the product.

4. 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.

5. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.

6. Due to the weight and physical size of some of these matrix switchers, correct Manual Handling and Lifting procedures should be observed at all times while handling these products in order to minimise the risk of injury.

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 year standard warranty, beginning from the date of purchase as stated on the sales invoice. Online registration of this product is required to activate the full three year extended warranty. 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.