

The Switch Box OSC is a fully user programmable OSC routing switch designed for use in dule redundant playback systems. Previously a problem with using OSC in such systems was the risk of faults caused by commands arising from both main and back up machines. Commands could clash or mismatch and cause unreliable behaviors. Now with the Switch Box OSC there is a solution. Each input source (main and backup) has its Ip address registered with Switch Box OSC, when data enters the unit it's origin IP is compared to that register and only data originating from the currently selected IP will be forwarded on the output as defined by the Target IP.

The Switch Box OSC can be controlled with the 2 large select buttons on the front, via GPI with either a remote button or another GPIO capable device, or Via OSC. It can also output GPO when switched to allow you to trigger another simultaneous even such as audio signal switching. The Unit can be powered using either a USB B connector delivering 5 volts, or via POE.

FRONT



1. Select A

This is a large push button used to select A as the active lien for data forwarding. When A is select this button will be illuminated Blue, and any OSC data arriving at the Switch Box OSC with and origin IP matching what the box as defined as "Input A" will be forwarded to all Target IPs.

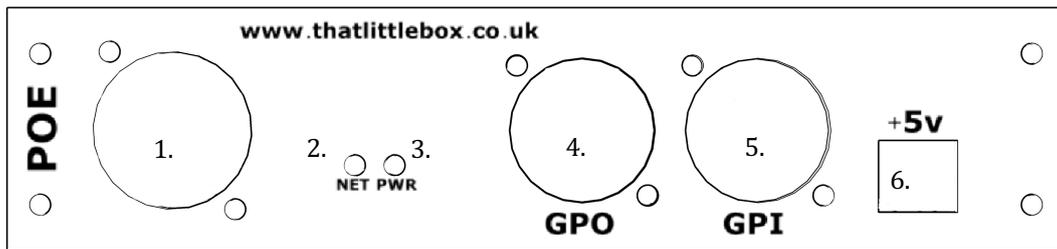
Holding Down this button on startup will enter Setup Mode

2. Select B

This is a large push button used to select B as the active lien for data forwarding. When A is select this button will be illuminated Red, and any OSC data arriving at the Switch Box OSC with and origin IP matching what the box as defined as "Input B" will be forwarded to all Target IPs.

Holding Down this button on startup will perform a system reset to factory settings.

BACK



1. POE Ethernet Port

This is the network connection for the Switch BOX OSC. From here the Switch BOX is connected to all other devices on the network and both receives and sends OSC commands. This port accepts IEEE 802.3-compliant POE allowing the Switch BOX to be powered with just its network connection. When in factory settings the Switch BOX OSC will use the fixed IP: 192.168.0.100.

2. Network LED

This LED will be lit if the Switch BOX OSC is connected to a network. If the Switch Box OSC is powered and **not** connected to a network both buttons A and B will flash slowly to warn the user.

3. Power LED

This LED will be lit if the Switch BOX OSC is receiving power from either USB or POE.

4. GPO Output

When "Enable GPO" is selected in the Switch BOX OSC options menu then this Male XLR will output GPO. When line A is selected when pins 1 and 2 will short together for 1 second. When line B is selected when pins 1 and 3 will short together for 1 second.

5. GPI input

This Female XLR connector is an alternative way of controlling the Switch BOX OSC. If Pin 2 is connected to pin 1 then Line A will be Activated. If pin 3 is connected pin 1 then line B will be activated. This can be used with an external button or with any other GPIO capable device, such as a mixing desk or another Switch BOX product.

6. +5v power input

This USB B connector can be used to power the unit if POE is not available. The USB is wired for power only and not data. All firmware updates are done using the network port.

Setup Mode

To enter Setup Mode, hold down button A when powering the unit up. When the Switch Box OSC powers up both buttons A and B will light and remain illuminated to indicate that setup mode has been entered.

When the Switch BOX OSC is in Setup Mode its settings page can be reached by connecting it to a computer and typing the units IP address in to any web browser.

The default IP address is 192.168.0.100.

The default Subnet Mask is 255.255.0.0

Make sure that your computer has an IP in the appropriate range. For the default IP and Subnet this would be any IP starting with 192.168.

Settings

The following settings can be accessed using the settings page in Setup Mode:

Input A

This is where we define the network settings for OSC input A. We must set an IP, Input port, and Reply port.

Input IP A:

This is the IP address of the OSC source connected to line A. It is important that this IP is entered correctly as it is by comparing incoming data with this IP address that we will achieve OSC switching.

Input Port A:

This is the OSC port that we will use to receive OSC data on Input A

Reply Port A:

This is the OSC port that any OSC reply will use to send data back to the source connected to input A. If for

SWITCH BOX OSC

Options

- : Allow OSC control
- : Send Ping
- : Reply to Selected
- : Enable GPO
- : Single Button GPI
- : Send OSC on Switch
- : Check Net on boot

Input A

Input IP A: 192.168.0.101

Input Port A: 8888

Reply Port A: 0

Input B

Input IP B: 192.168.0.102

Input Port B: 8889

Reply Port B: 0

Local Network

Static IP: 192.168.0.100

Gateway: 192.168.0.1

Subnet: 255.255.0.0

Target Network

Target IP 1: 255.255.255.255

Target Port 1: 53000

Target IP 2: 0.0.0.0

Target Port 2: 0

Target IP 3: 0.0.0.0

Target Port 3: 0

Target IP 4: 0.0.0.0

Target Port 4: 0

Target IP 5: 0.0.0.0

Target Port 5: 0

OSC Output

Target IP for OSC Output: 0.0.0.0

Target Port for OSC Output: 0

A: /switch-box-osc/Switched/a Arg1: Arg2:

B: /switch-box-osc/Switched/b Arg1: Arg2:

Reboot

By That Little Box

1.4.5

example the source on input A sent a ping message to a lighting desk connected at the target IP this is the port that would be used to receive the “pong” reply.

Input B

This is where we define the network settings for OSC input B. We must set an IP, Input port, and Reply port. For help with these see the “input A” section above.

Local Network

This is where we set how the Switch BOX OSC will appear on the network. It is important to note that changing the local IP will change the address used to access the settings page, if you change the local IP and can't remember what you changed it to you will need to perform a factory reset to get back to the settings page.

By default, the Switch Box will have IP:192.168.0.100, on Gateway 192.168.0.1, with subnet mask 255.255.0.0.

Options

In this section we can select various options to control the behavior of the Switch BOX OSC:

Allow OSC control

This setting allows the Switch BOX OSC itself to be controlled by OSC arriving at either input port A or B. with this option selected the Switch BOX OSC can be switched and rebooted remotely. When this option is not elected the Switch BOX OSC will not actively parse any OSC strings.

Send Ping

This check box controls weather or not the Switch BOX OSC sends an OSC ping. A ping is useful to monitor the status of devices on the network and can be used by a remote machine to ensure that the Switch BOX OSC is working correctly. When ping mode is selected the Switch BOX OSC will send the message “/switch-box-osc/Ping” every 5 seconds.

Reply to selected

This option controls the routing of any reply received from the target IP to Either Input Port. With this option selected any reply will be sent **only** to the selected IP and reply port. When this option is no selected all replied are sent to both input IPs and reply ports.

Enable GPO

This option defines weather or not the Switch BOX OSC send an OSC pulse when its switch state is changed. When this option is selected the GPO XLR will short pins 1 and 2 when Input A is selected and 1

and 3 when Input B is selected. These pins are shorted via relays. De-selecting this option will ensure the silent running of the Switch BOX OSC.

Single button GPI

With this option selected the Switch BOX OSC's GPI will toggle the selected line between A and B when a contact is closed. This is useful if you are using a single switch over button.

OSC on switch

This option controls whether or not the Switch BOX OSC sends OSC messages when it is switched between A and B.

Check net on boot

This Option controls how the Switch BOX OSC powers up. If this option is not selected the Switch BOX OSC will boot in to its normal operating mode whether or not any active network is detected. With this option selected the Switch BOX OSC will attempt to ping its source IPs and will only boot in to operating mode if it received a reply. If no reply is received it will reset and try again. This mode is useful when using Managed switched that take a while to boot up.

Target Network

This is where we place the network settings for the device we wish to control from our selected OSC input. We need to set an IP address and a target network port.

We can set 5 separate target network destinations. This might for example include a main and a backup Lighting desk, a special audio engine, and some other playback machines. When in factory settings only 1 target is defined but this is 255.255.255.255 also known as the broadcast IP. The default port is 53000, When in factory settings any computer connected to the Switch BOX OSC will receive OSC output from the Switch BOX OSC on port 53000.

OSC Commands

Here we find the user input for custom OSC commands to be sent to all target devices when the Box is switched to A or B and OSC on Switch is selected. This might be useful for triggering scene recalls on mixing desks or redundant audio switches

As well as the OSC address you can also set up to 2 arguments that can be strings, integers or float values.

You can also set the target IP and port for the self-generated OSC commands in this section. Note that while "OSC on Switch" is selected, OSC will be sent to this IP and port as well as the Input IPs and reply ports.

Reboot

This button will reboot the Switch BOX OSC. Click here when you have finished editing your settings.

Factory Reset

To Reset the Switch BOX OSC to its default settings, Power it up while holding down the B button.

Setting	Default Value
Input IP A	192.168.0.101
Input Port A	8888
Reply Port A	0000
Input IP B	192.168.0.102
Input Port B	8889
Reply Port B	0000
Target IP	255.255.255.255
Target Port	53000
Target IP 2,3,4,5	0.0.0.0
Target Port 2,3,4,5	0000
Static IP	192.168.0.100
Gateway	192.168.0.1
Subnet	255.255.255.255
Allow OSC control	off
Send Ping	off
Reply to Selected	off
Enable GPO	on
Single button GPI	off
OSC on switch	on
Check net on boot	off
OSC Command A	<code>/switch-box-osc/switched/a</code>
Arg 1 and 2	[NO DATA]
OSC Command B	<code>/switch-box-osc/switched/b</code>
Arg 1 and 2	[NO DATA]

LED indicators

Each button on the front of the Switch BOX OSC has an LED indicator. Normally this will display the currently selected OSC line but it will also sometimes display the status of the unit. Display patterns and their meanings are shown in the following table.

LED Behavior	Meaning
LED A ON LED B OFF	Line A Selected
LED B ON LED A OFF	Line B Selected
LED A and B Flash together	No Ethernet Connected.
LED A and B ON for 1 second	Power Up successful
LED A and B ON	Setup Mode
LED A and B Flash alternately	Factory Reset in progress
LED B ON for 2 seconds	no network found, rebooting

OSC Library

Control Input

Function	Message
Switch TO A	<code>/switch-box-osc/a</code>
Switch TO B	<code>/switch-box-osc/b</code>
Switch	<code>/switch-box-osc/switch</code>
Reboot	<code>/switch-box-osc/reboot</code>

Output

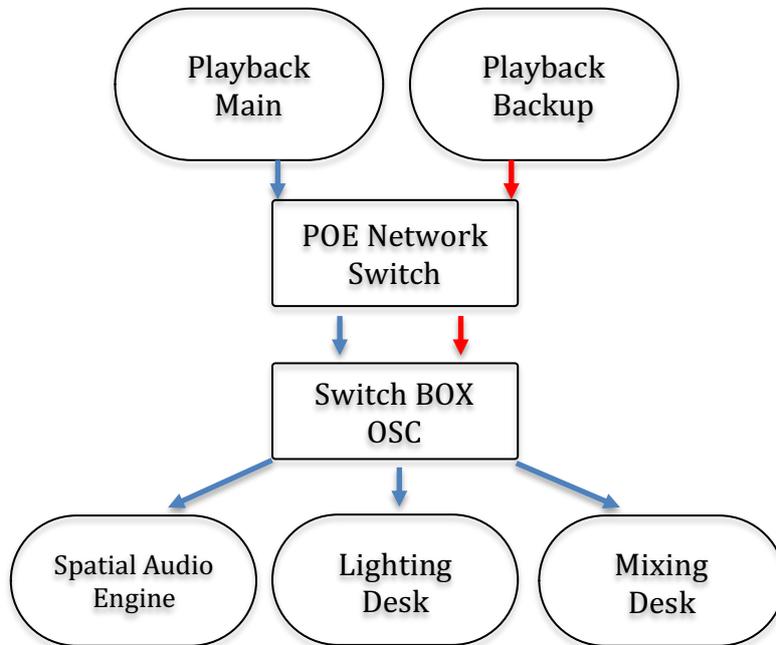
Meaning	Message
Input switched to A (default)	<code>/switch-box-osc/switched/a</code>
Input switched to B (default)	<code>/switch-box-osc/switched/b</code>
Ping	<code>/switch-box-osc/ping</code>

Firmware update

Firmware updates are performed using TLB updater for Mac. If an update is available, it will be downloadable from www.thatlittlebox.co.uk. To update your firmware the Switch BOX OSC must be in Setup Mode. The updater may ask you to download python developer tools. This is normal. **Updating firmware will return your Switch BOX OSC to factory settings.**

Typical application

The following example shows a typical application of dataflow for control of a lighting desk, Spatial audio engine, and a sound mixing desk. Note that arrows show dataflow, in practice all devices shown are connected to the same network switch and have IP addresses in the same subnet:



Change log In Firmware 1.4.5

From 1.4

- Adds support for OSC bundles
- The user can now define the OSC command sent when the Switch BOX OSC is switched to A or B.

from 1.3

- Fixed an issue that could cause unintentional switching when powered on PoE and sending large streams of data.

If you have any questions regarding your Switch Box or would like to talk to us about custom button boxes or custom Switch BOX features then please get in touch via our website www.thatlittlebox.co.uk.