Switch-iT
Tallybox
TallyboxDV
Inputbox
Switch-iT 8+1

Switch-iT

Switch-iT is a versatile controller system for all Blackmagic Design ATEM switchers, housed in a 19 inch 1U rackmount unit, with a depth of only 95mm. It features 16 illuminated broadcast switches, combined with 8 isolated control inputs and 16 outputs.

Inputs are via opto-coupler and can be either contact closure or a signal of 3-12V. Outputs are open drain and can directly drive a LED, for e.g. Tally.

All switches, control inputs and outputs can be used to select any input and output or macro of your ATEM switcher. The configuration is done via the built-in web-server.

The outputs drive the sum of inputs on selected buses, so that e.g. tally can not only signal the program bus, but also an aux bus if needed.

Switch-iT is used in a network with other controllers (e.g. Mix-iT, Blackmagic Broadcast Panel, ATEM software on PC or Mac). A computer is not required.

Macros are a powerful tool that enable complex sequences to be started with the touch of a button. Macros can be recorded with the ATEM software on Mac or PC, and are stored in the ATEM switcher. They can then be recalled with a keypress or input trigger on Switch-iT.

The Switch-iT family consists of the following members:

Switch-iT is CPU board, 16 broadcast buttons, input and output module in a 19 inch case.

Switch-iT light consists of the CPU and 16 button module in a 19" case.

Tallybox is the CPU board with the 16 output board.

TallyboxDV is the CPU board with the DataVideo Tally output board.

Inputbox is the CPU board combined with the 8 input-board.

Switch-iT 8+1: CPU board with 9 buttons and rotary encoder in a compact 120x80x54mm case, PoE powered.

Switch-iT is a modular control system, based on an ethernet connected microcontroller. At startup, the firmware detects which modules are present. These modules can be configured via a built-in webserver. Default IP-addres**:** **192.168.10.160**

The unit connects to an ATEM switcher for extracting e.g. tally information, default address of the switcher: 192.168.10.240

You can change the settings in the webserver of the device, default address **192.168.10.160/setup.html**

If you have changed the address and don't remember it, power up the unit while pressing the 'setup' button on the unit - this boots up with the default address **192.168.10.160**
(Or press key 16 while powering up)

Modules

The following modules are available:

- A strip of 16 illuminated **broadcast switches**, with replaceable legend. This strip is mounted in a 19" housing, 1U (=44mm) high and 95mm deep. This houses also the CPU and modules.

- Tally module, with **16 outputs**. The outputs are open drain and can directly drive a LED, for e.g. Tally. Also a relais board can be connected.
The outputs drive the sum of an input on selected buses, so that a tallylight not only indicated that a camera is live on the program bus, but also on e.g. an aux bus.

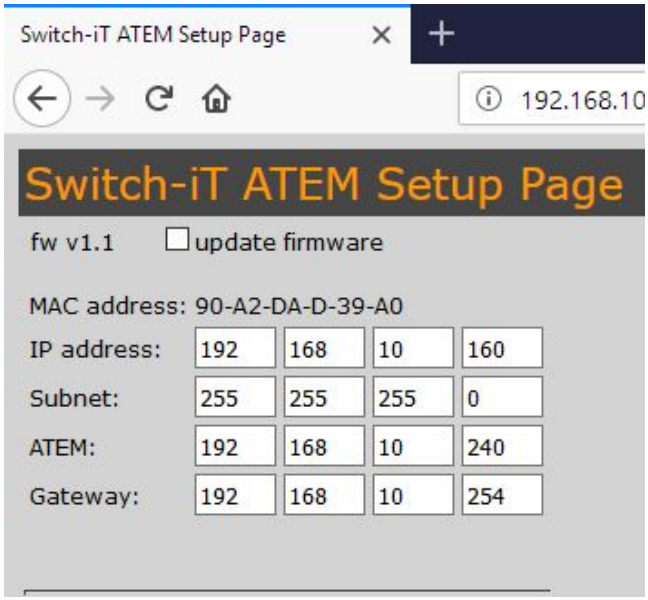
- TallyDV module, with 16 outputs for **8 Red/Green Datavideo TallyLEDs**.

- Input board with **8 opto-isolated inputs**.
Inputs are via opto-coupler and can be either contact closure or a signal of 3-12V.

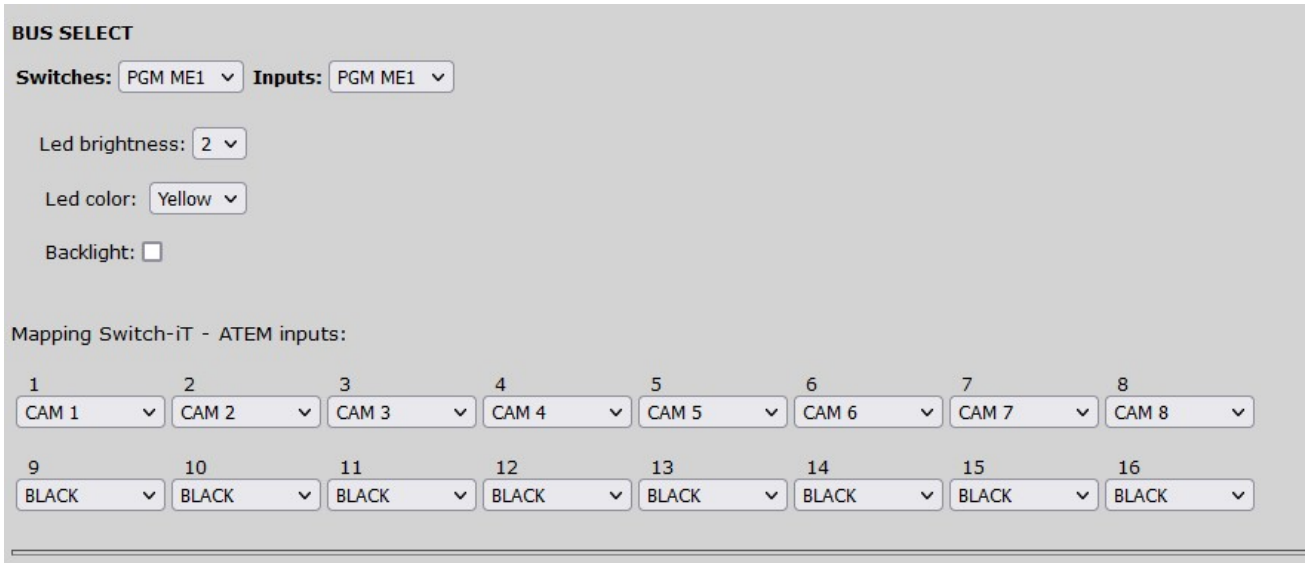
Configuration

The Switch-iT devices can be configured via a webpage, which is generated dynamically, depending on the connected modules.
Default address: **192.168.10.160/setup.html**
All pages have an IP-block, and an input block and/or output block.

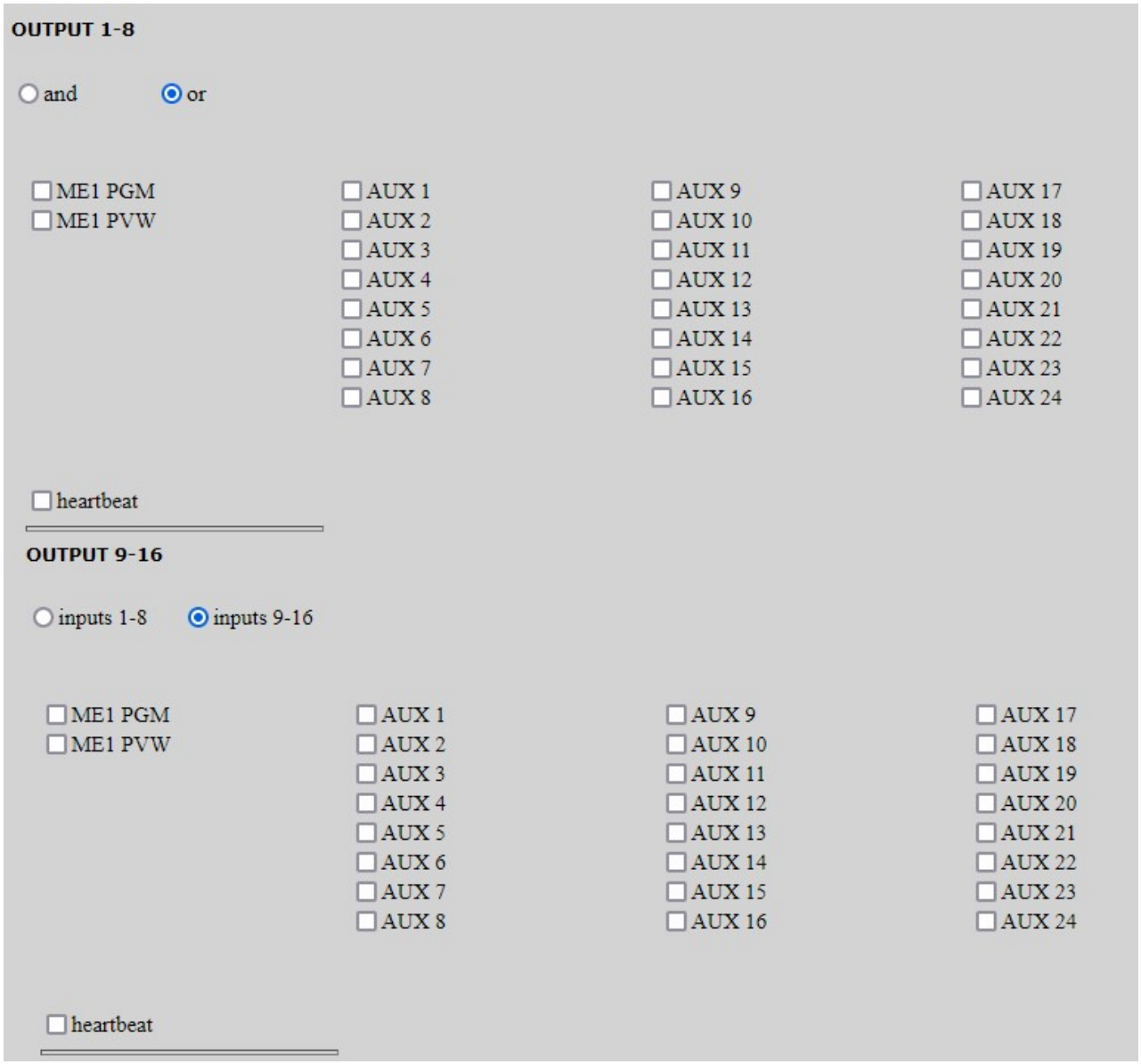
The IP-block enables setting the IP information for the device, including the ATEM address and optionally a gateway address.
Also in this block, you can enable a firmware update.



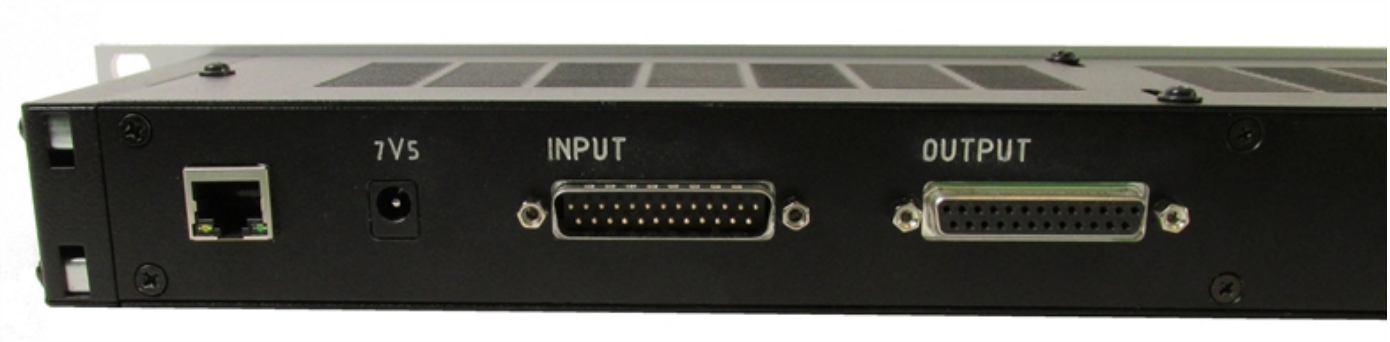
Next is the input-block. For switches and/or the input connector, you can select which bus will be affected.
For the buttons, both brightness and the color of the LEDs can be set.
There is also an option to enable backlighting the buttons.
Finally, the buttons can be mapped to the ATEM inputs.



The output-block: Here you select if multi-bus output should use logical and or logical or. E.g. Tally 1 should light if camera1 is selected on the PGM bus **or** on AUX1.
Next the buses that have to be watched are selected.
When heartbeat is selected, the avtive output is pulsed, to send an 'alive' signal needed by some wireless systems.



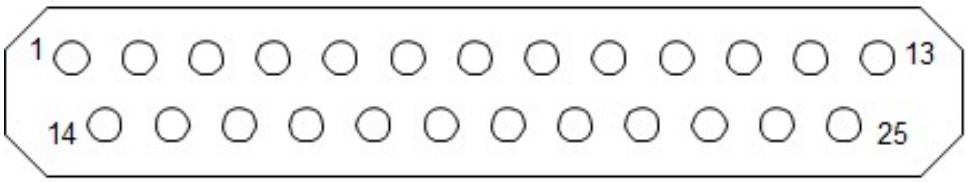
Finally, there is a 'Save config' button to store the settings (or start uploading the firmware update).



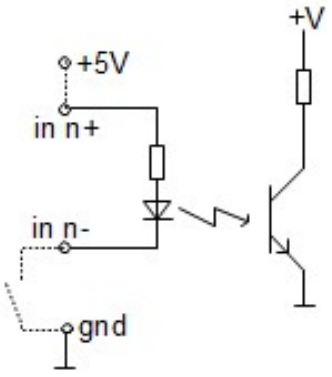
Inputs

The 8 inputs use opto-couplers and an isolated 5V supply. A signal of 3-12V can be applied on in n+ and in n-. If you use contact closure, connect +5V to input n+, and connect the contact between in n- and gnd.
Following is the pinout of the 25pin Dsub male connector:

Switch-iT
INPUT



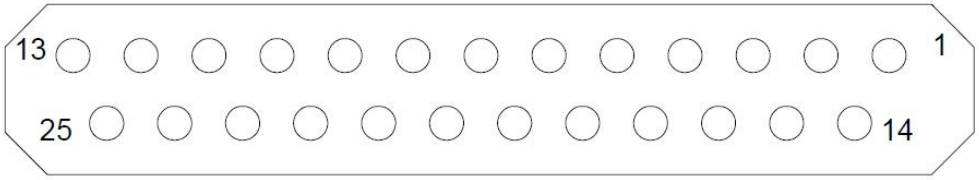
1: in1+	14: in1-
2: in2+	15: in2-
3: in3+	16: in3-
4: in4+	17: in4-
5: in5+	18: in5-
6: in6+	19: in6-
7: in7+	20: in7-
8: in8+	21: in8-
9: nc	22: nc
10: nc	23: gnd
11: +5v	24: gnd
12: +5v	25: gnd
13: +5v	



Outputs

There are 16 open collector outputs, that have a 180 ohm resistor in series and can drive a load of 25mA. A tally LED can be connected between +5V and -led n.

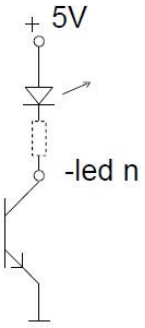
OUTPUT v1.1



1: -led1
2: -led3
3: -led5
4: -led7
5: +Vin
6: +5V
7: nc
8: -led9
9: -led11
10: -led13
11: -led15
12: +Vin
13: +5V

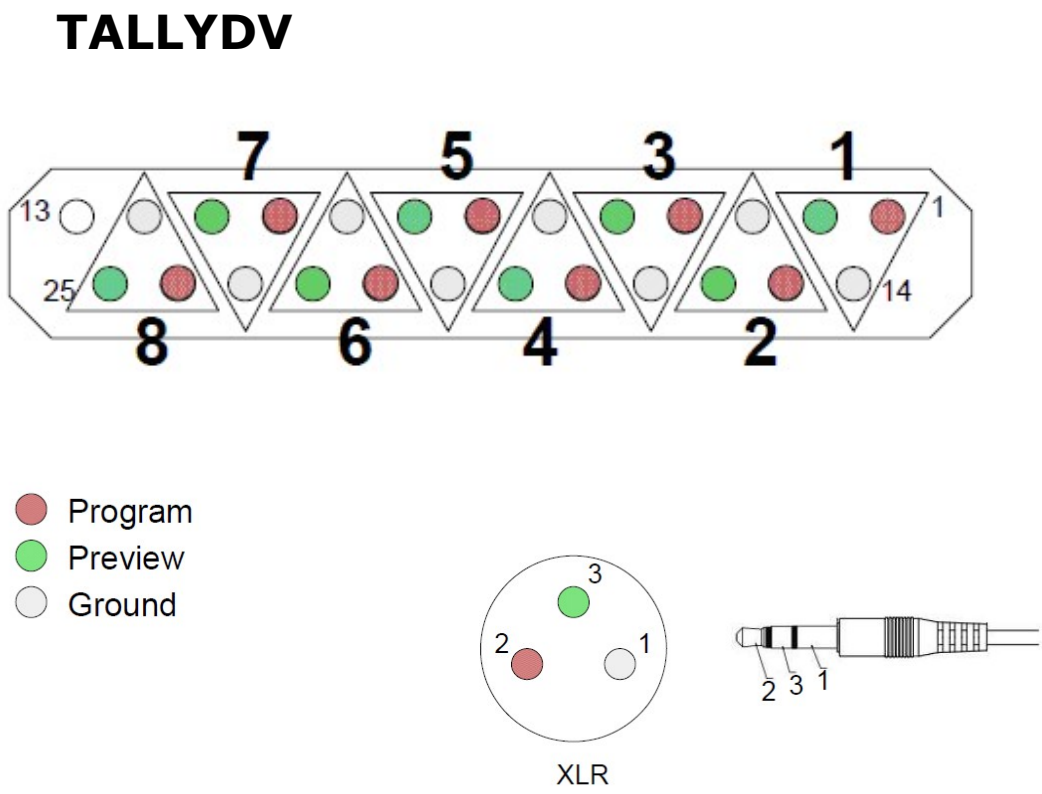
14: -led2
15:-led4
16: -led6
17: -led8
18: Gnd
19: Gnd
20: nc
21: -led10
22: -led12
23: -led14
24: -led16
25: Gnd

direct connect tally



TallyDV

This module outputs preview and program tallyinfo for Datavideo tallyleds. These LED lights have a common ground. Each output can drive 200mA.



Update firmware

The current version of the firmware can be checked in the top of the webpage (fw....)
The Switch-iT firmware is updated via Ethernet. First you need to download the firmware file and the update tool for your PC or Mac

- Before continuing, note down the ip-address of the unit.
- Install the update tool on the PC or Mac
- Be sure that the PC is in the same subnet as the device
- Start the update tool by double clicking the 'updater' icon
- Now enter the IP-address of the device in the uploader tool.

- in the webpage of the device, tick the box 'Update firmware' and click 'save config'
- Now press 'connect' in the update tool
- If the update tool is able to establish a connection, it shows 'Connected'
- Next select the new firmware file (click in the 'firmware file' box) and click 'Upload' in the update tool.
- The firmware transfer is started, progress is reported with '#' on screen.
- When the transfer is finished, it 'upload finished, disconnected' appears, and the device restarts.

You have now completed the firmware transfer.