

Mix-iT



User Guide Mix-iT.ATEM v2.0

September 2015

Declaration of Conformity

We, manufacturer/representative

ArtiVisuals
Molukkenstraat 200 S3
1098 TW Amsterdam
The Netherlands

declare under our sole responsibility, that the product

Mix-iT
model: Mix-iT.ATEM
s/n.: 15C0070

to which this declaration relates, is in conformity with

EN55022:2010 /AC:2011
EN55024:2010
FCC CFR 47 part 15:2013

EN61000-3-2:2014
EN61000-3-3:2013
EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

as stated in report: ART-20150603-I1

tested at BICON Laboratories BV

in accordance with EMC-directive 2004/108/EC

Manufacturer/representative:

Name: ing. R. Linders

Function: hard/software developer

Signature



Date: 11-9-2015



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Introduction

Mix-iT is a compact control panel for Blackmagic Design ATEM switchers. The unit features 31 illuminated broadcast buttons, a fader and 4 rotary controls to effortlessly control these great switchers. Buttons can be assigned to serve your needs, direct control of the built-in media players is standard.

Mix-iT may be connected directly to the ATEM, or can live in a network along with PC or Mac based ATEM software and/or other control hardware.

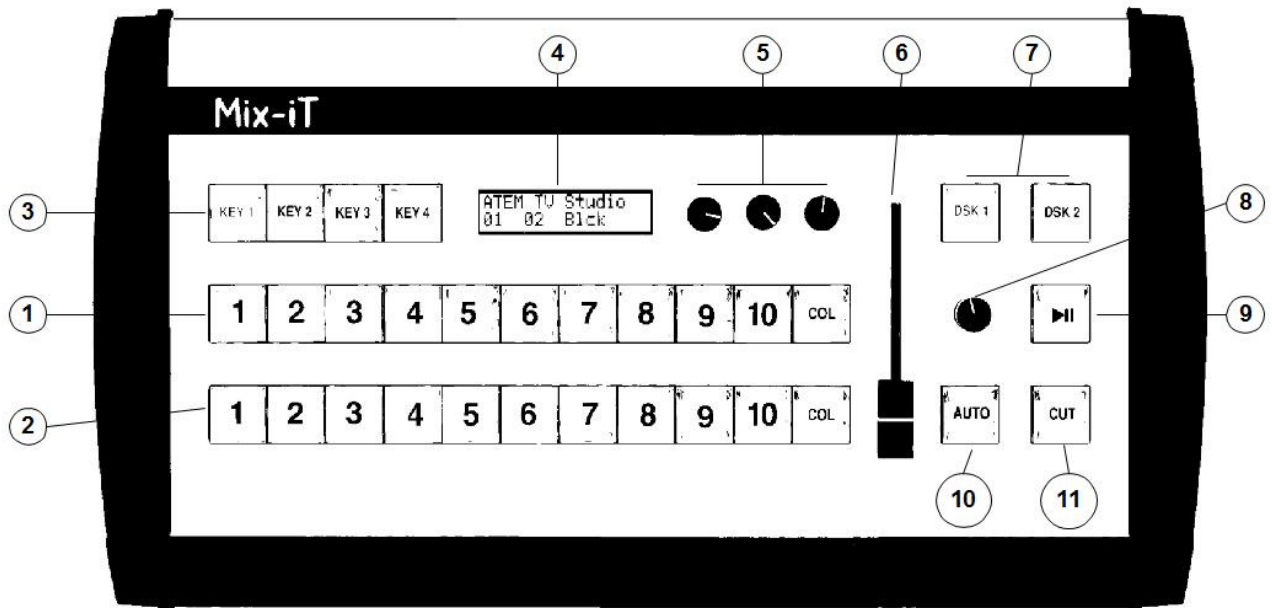
It can be used to operate the main functions of the ATEM switcher, more detailed settings can be programmed in the ATEM software van Blackmagic (on PC or Mac) and stored in the ATEM switcher.

The unit is powered through Power-over-Ethernet or with the supplied 7.5V DC adapter.

Features

- controls all Blackmagic Design ATEM switchers
- compact form factor: 33,5 x 18,5 x 8 cm
- can be powered with Power over Ethernet (PoE)
- can be used direct with the switcher, no computer needed
- future proof, user updatable
- flexible bus assign and button mapping
- quick select for built in Media players
- option port for future expansion
- macro control
- hyperdeck control

Front panel



1. Program bus

The buttons on the program bus are used to switch sources to the program output of the switcher. The selected source has a red light.

2. Preview bus

The **preview** buttons are used for selecting the input that you switch to in the next transition, by using the **cut** or **auto** button, or by using the **fader**. The selected input on the preview bus has a green light, this will be red during a transition.

3. Key buttons

By pressing these buttons, the corresponding upstream keyer is switched on. Pushing the button once more switches the keyer off. These keys can also be assigned as macro keys.

4. LCD panel

During normal operation, the first line of the LCD shows the model of the connected switcher, and the second line shows a status line.

On this status line you find from left to right: the selected clip in mediaplayer 1, in mediaplayer 2, the selected color, and optional the selected macro. These selections correspond to rotaries 1 to 3, and optional 4: turning rotary 1 changes the selected clip in mediaplayer 1 and so on.

5. Rotary 1 to 3

Rotary 1 to 3 are located directly above buttons 9, 10 and 'col' on the preview and program bus. By default these buttons are used for selecting mediaplayer 1 and 2, and color.

6. Fader

To manually perform a transition from the source selected in the program bus to the source in the preview bus. The transition effect is set in the ATEM software.

7. Downstream key buttons

To bring the downstream keyers on air. The downstream keyers are faded in and out, the duration of this fade can be set in the Blackmagic ATEM software, and can then be stored in the mixer.

8. Rotary 4

Can be used to control the option port (with **Play button**), macro's, or a hyperdeck player or recorder. See menus.

9. Play button

Can be used to control the option port (with **Rotary 4**), macro's, or a hyperdeck player or recorder. See menus.

10. Auto button

To run a transition automatically, the speed of the transition is set in the ATEM software.

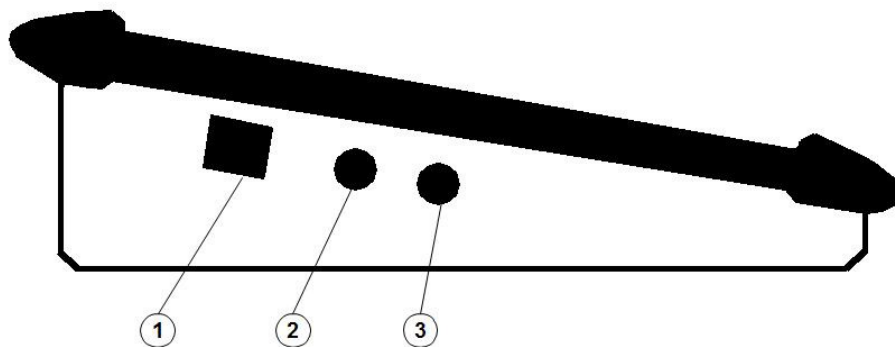
11. Cut button

To switch instant between preview and program bus.

For more information see the **Blackmagic ATEM operation manual**.

Side Panel

1. Network connector
2. Power input
3. Option port



Connecting Mix-iT

Before you connect Mix-iT, be sure that the ATEM switcher functions with/ is recognized by the PC or Mac software.

The Mix-iT controller needs a network connection to the ATEM switcher, this can be realized with a cable direct to the ATEM, or via a network hub or switch that connects both devices.

The Mix-iT can be powered with the supplied main-adaptor (7.5V, 500mA), or through Power over Ethernet if your network switch supports this.

Power up Mix-iT by either connecting the adapter to the mains or by connecting the network cable with Power over Ethernet. The panel now tries to connect to the ATEM switcher, if this succeeds the mixer model is shown in the LCD, along with a statusline (indicating selected media and colour).

If no connection can be established, a message appears in the screen. Check cabling and IP settings.

Menus

When pressing rotary 1 to 3 you switch to the menus:

Rotary 1 is for the **IP-configuration** menu,
rotary 2 for **button mapping** and
rotary 3 for controlling the **aux outputs**.

IP config menu

Controlling the ATEM switchers is done via a network connection. This can simply be a cable between switcher and controller, or both devices can be connected via a hub or switch. In that case, you can connect for instance a Mix-iT, a PC running ATEM software, and a tally box to the switcher, all at the same time. Changes on one controller are reflected on the other connected devices.

After you have made the physical connection, you have to check the IP parameters. Each device or node requires a unique address, and must be told the address of the ATEM switcher.

Enter the IP configuration menu by shortly pressing rotary one.

Next, you can step through the menu items by turning the rotary knob. Clicking once more enters that selected menu item.

1. Load Defaults

If you enter this option and confirm by selecting and clicking 'OK', the default settings for the IP-settings are loaded. These settings are:

192.168.10.99 for the Mix-iT,
and 192.168.10.240 for the ATEM switcher.

If you haven't previously changed the IP addresses of your ATEM switcher or Mix-iT, they already have these default addresses, and the Mix-iT should connect immediately.

2. Mix-iT IP address

If you enter this, you can change the IP Address of the Mix-it. You should enter an address that differs from the ATEM address, but it must be located in the same subnet. Almost always, only the last number of 3 digits will differ from the switcher address.

3. Netmask

In most networks this should be 255.255.255.0.

4. ATEM switcher

This is an important setting, if it is not correct there will be no connection between Mix-iT and ATEM switcher. You can find the switcher address in the preferences window of the ATEM control software for PC or Mac, or with the ATEM setup utility via USB.

For more information on this topic see the Blackmagic ATEM operation manual - getting started.

5. Gateway Address

This address is only used if the ATEM switcher and Mix-iT are not located in the same subnet. The default value for the gateway address is 192.168.10.1

6. Save & Exit

This entry allows you to save the changed IP parameters. If you made any changes, the Mix-iT will now restart, and connect, using the new parameters. You may have to powercycle the panel. If you select cancel, changes will not be stored.

7. Firmware update

To update the firmware, you can download the update utility for Mac or PC from the website 'Mix-iT.tv'. Here you will also find instructions on how to proceed.

If you accidentally selected to update the firmware, powercycling the Mix-iT twice should bring you back in business.

8. Version info

This entry shows the version of the ATEM -firmware and the version of the Mix-it firmware. If your ATEM firmware version is lower than 2.12, we advise you to update the switcher via the USB connector with the ATEM setup utility.

9. MAC address

The MAC address is the unique hardware code for your Mix-IT, and is read-only. Your network administrator may need it.

Note: If you push and hold down any rotary for 2 seconds, you will return to the status display. Beware that all changes will be lost in that case.

Button map menu

By clicking rotary 2, you enter the button menu. In this menu, you can tailor the Mix-iT to your needs.

1. Map busses

Here you can select Preview /program (which is standard) or swap the preview and program bus.

If you use the Mix-iT with a **2 M/E** ATEM switcher, you must choose if you want to control M/E one or two. By using an extra Mix-iT, you can control both ME's at the same time.

The **custom entry** allows you to connect each bus to preview, program or one of the aux outputs.

Finally **return** brings you back to the button menu.

2. Map Buttons

When you select **default**, this resets the mapping:

Buttons 1 to 8 are connected to inputs 1 to 8, buttons 9 and 10 control the mediaplayers, and 'col' is used to select the colors.

SDI first arranges the inputs in such a way, that SDI signals start from switch 1. This relates to the model of the ATEM switcher.

When you select **custom**, you can fully customize the link between sources and buttons. Buttons 1 to 11 can be individually connected to the available sources in the mixer, but you can also disable a button. Selecting button 0 returns you to the button menu.

The entry '**key 1-4**' is for setting the function of these buttons. By default they are used to select upstream keyers 1 to 4, but each button can be changed to start a macro instead. Macro's are recorded in the ATEM control software for PC and Mac, and are stored in the switcher.

3. Player controls.

This sets the function of the player rotary and key. These can be used to control the option port, macro's, or a hyperdeck player or recorder

We will explain this a bit more:

The **option port** is used to connect external hardware, such as the RS485-KBD interface which controls a Mac running Softron On Air Video Express.

When you select **macros**, the rotary is used to select a macro, and the play button is used for start, stop and continue. If you press the rotary and the play button at the same time, the selected macro is played in a loop.

A Blackmagic **Hyperdeck** can be controlled either as a recorder or as a player from the Mix-iT. After you select this, the IP-address of the Hyperdeck has to be entered.

Mix-iT connects to the Hyperdeck at startup, the player key lights up green briefly if this is successful, and red if not.

In **play mode**, use the rotary to jump to clips. Pressing the rotary once lets you jog the selected clip. Use the Play button to start and stop the clip.

When you select Hyperdeck **recorder**, you start or stop recording by pressing both the key and the rotary. The key lights up red when recording.

Return gets you back to the button menu

4. Shift key Enable.

This option is convenient if you use more than 10 video inputs. It changes the col button into a shift button, enabling a total of 20 inputs. Inputs 11 to 20 are selected by -at the same time - pressing shift and key 1-10

5. Player start

This entry lets you link the starting of a clip to an input. Here is how this works:

If you selected 'Hyperdeck play' or 'option port' in the player controls entry, pressing the play button now cues the selected clip, but it doesn't start it yet. The clip is started by switching the selected input live with the 'AUTO' or 'CUT' button, or by directly selecting it in the program bus. The clip can also be started by pressing the player button once more. You can enter a start delay to compensate for the player startup time.

6. DIM Leds in the button menu does just that - it enables you to adjust the brightness of the led's in the switches to the light level of the environment.

7. Save & exit stores the settings you just made in non-volatile memory.

Aux menu

The aux menu is entered by pressing rotary 3.

Auxiliaries are extra outputs on the switcher, that can have all sources directed to them. The number of aux-outputs depends on the ATEM model. The Television studio has none, a 2 ME switcher has six auxes.

Clicking rotary 3 once lets you select the aux output, clicking once more lets you choose the source you want to send to this AUX output.

For example AUX1 - Camera 4

After selecting the output you return to the status display.

Macros

Version 2 of the Mix-iT firmware adds support for Macros, the ATEM switcher needs Blackmagic software 6.3 or higher to run macros. Macros let you automate a sequence of switcher actions that can be recalled with the press of a button.

Some examples of macros:

- select a program input
- select a transition and/or transition speed
- switch to an input, which is chroma-keyed, with adjusting the key-settings
- send the program signal to aux3
- switch a supersource input

The recording of macros is done in the macros window of the ATEM software on your PC or Mac, macros are stored in non-volatile memory the switcher.

To recall a macro, Mix-iT offers two options:

1. Use buttons Key1-4: Each of these buttons can be set to either operate the upstream keyer, or run a selected macro in the range 1-99. Convenient if you need quick access to a few macro's
2. Use player controls: The rotary and play button are used to select and control macros. With the rotary you select a macro in a range of 1-99, indicated in the LCD. The play button is used to start and stop the macro. When the macro has a user-input event, the play button resumes the macro. By at the same time pressing the rotary and the play-button, the macro is played in a loop.

For more information on macros, please consult the Blackmagic ATEM operation manual, 'using macros'.

Update firmware

The current version of the firmware can be checked in the Mix-iT with rotary 1 - IP config menu, entry 8 - version info, this shows the ATEM fw version and Mix-iT fw version.

The Mix-iT firmware can be updated via Ethernet. First you need to download a zip-file containing the firmware file together with the update tool for your PC or Mac from the Mix-iT website - suport.

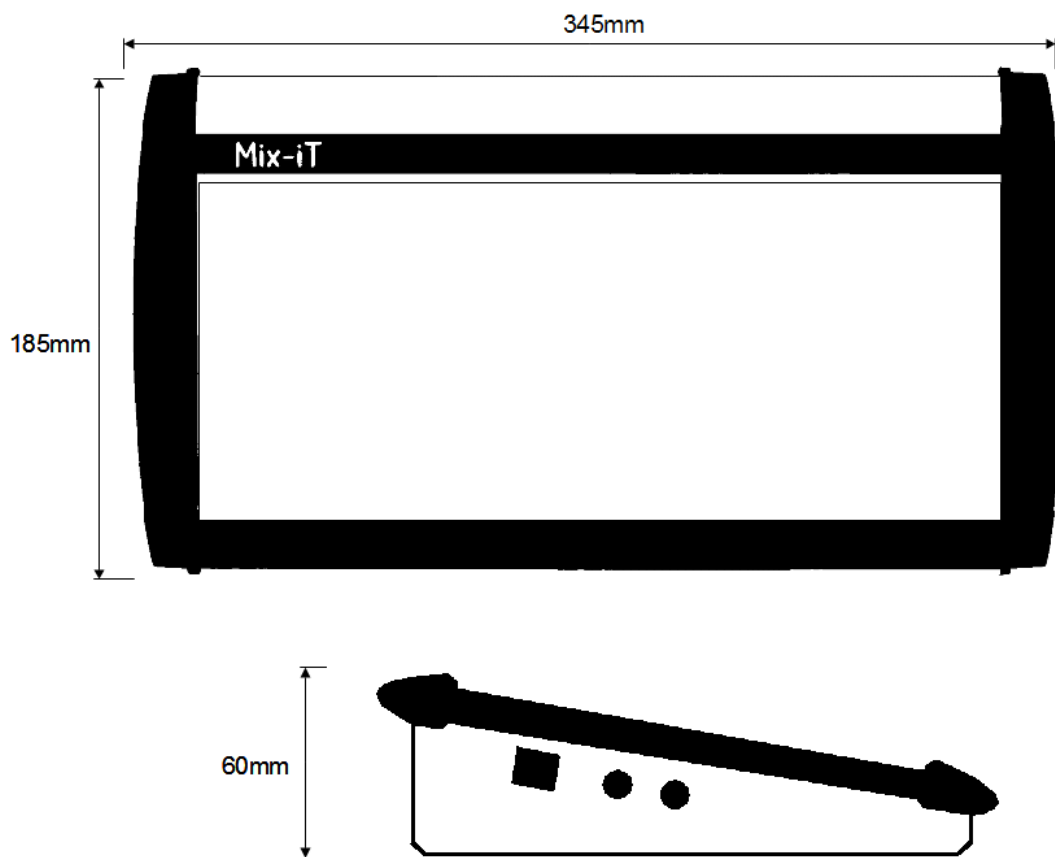
- Before continuing, note down the ip-address of the Mix-iT.
- Install the software on the PC or Mac
- Double click the 'updater' icon
- Be sure that the PC is in the same subnet as the Mix-iT
- Now enter the IP-address of the Mix-iT in the uploader tool.
- In the Mix-iT, enable updating in the IP config menu (rotary 1), entry 9 - Update firmwre, OK
- Powercycle the Mix-iT as indicated
- Display should show no text
- (If you powercycle the unit once again, it resumes normal operation)
- Now press 'connect' in the update tool
- If the update tool is able to establish a connection, it shows 'Connected'
- You now have 8 seconds to click 'send' in the update tool, after that the Mix-iT wil restart.
- If send is clicked in time, the firmware transfer is started.
- When the transfer is done, it shows 'upload finished, disconnected', and the Mix-iT restarts
- Powercycle the Mix-iT

You have now completed the firmware transfer. You can check the firmware version with rotary 1, entry 8 - version info.

Specifications

Input	Network - RJ45, PoE enabled Power - DC jack 5.5/2.1mm
Output	Option port - stereo minijack RS485
Supported Video Switchers	Blackmagic ATEM Television Studio, Production Studio 4K, 1 M/E Production Studio 4K, 2 M/E Production Studio 4K, 2 M/E Broadcast Studio 4K, 1 M/E, 2 M/E
Supported ATEM firmware	Higher than 2.12 (5.0) advised
Power Consumption	7.5V/0.2A (1.5W)
Operating Temperature	0~50 °C [32~114 °F]
Storage Temperature	-10~ +60 °C
Dimension	345mm(W) x 185mm(L) x 60mm(H)
Certifications	CE / FCC

Dimensions



Service & support

For more information on **Mix-iT**, check the website www.mix-it.tv. Here you can find the latest news, the pdf manual and information on updates.

The Blackmagic **ATEM operation manual** contains more information on operating your switcher.