Device: BMD ATEM

Update January 2020

With release of UniSketch v2.3.8 we now have support (for UniSketch controllers) for ATEM 8.1 and the ATEM Constellation.

Known Bugs:

- UniSketch v2.3.8 + v2.3.9 had connectivity issues. Please update to v2.4.0

Standalone Firmwares

Please find the latest standalone firmware updates at: https://www.skaarhoj.com/support/firmware-updater/

For the ATEM-TCP Link on AVR control of ME3 and ME4 is not possible due to memory restrictions. On the Due it works.

Please notice we do not have a firmware update for the ATEM Proxy yet.

Introduction

A larger number of functions on the ATEM series of switchers can be controlled from a SKAARHOJ control panel and we have integrated with the ATEM switchers for a long time.

When using the ATEM Device Core our controllers can connect to the ATEM Switcher directly without the need of running ATEM Software Control Panel on your computer. But you can, and any change made either way will be reflected on each device.

You can connect to multiple ATEM Switchers from the same SKAARHOJ interface but limitations apply. The different ATEM Switchers varies in how many clients can be connected at the same time. For details see https://www.youtube.com/watch?v=ApYouYfX5G4

Please notice the ATEM Switchers are very picky as to latency for connected clients. Ensure a stable and fast network. If using VPN or other long distance network solutions latency may be too high and connection will not be established.

Protocol	Source Port (Random)	Destination Port
UDP	50100 -65300	9910

Connection

When a SKAARHOJ controller have successfully connected to the ATEM the serial monitor will report:
ATEM has initialized

If the SKAARHOJ controller is unable to locate the ATEM on the network the serial monitor will report:
.Connection to ATEM Switcher has timed out - reconnecting!
Continuosly connecting to ATEM switcher on IP 192.168.10.240

About ATEM Audio, Video and Camera Sources

Whenever you can select audio, video and camera sources you will find special options in the drop down:

- Whenever you see "Mem A"-"Mem L" it means the source selected will be the one from the list which the given memory register value currently points to, starting the counting from zero. For example, if Mem A is41, the source will be "Bars" because it's element number 42 in the list (and the first element, "Black", has number 0).

- For video sources, selecting AUX1-40 means the source will be whatever source is currently on AUX1-40. This will be dynamically evaluated.

- For video sources, selecting MVx/y means the source will be whatever source is currently on the multiviewer "x" (1-4) in window number "y". This will be dynamically evaluated.

- For camera sources, "Mem A"-"Mem L" will not point to the list, but simply refer to the camera number.

Device Configurations

Device configuration options exist:

- Index 0: **Sensor Gain / Camera Gain Setting Range**

  - If "0" = default

  - If "1" = Extended -12dB/12dB Range (-12, -6, 0, 6, 12)

  - If "2" = Original 0db/18dB Range (0, 6, 12, 18)

Example:

Enabling "Sensor Gain / Camera Gain Setting Range" with the extended could look like this device configuration code: "D0:0=1" where the general form would be "Dx:0=1" where "x" is the number of the device core as installed on the controller (starting with zero for the first device core).

To confirm that a device configuration is in fact detected by the controller, please check it out on the serial monitor where it will be mentioned:

```
Memory A-D restored
Compiled: Dec 18 2017 15:17:32
DeviceCore #0: ATEM0, IP = 192.168.10.240
ATEM: Extended CCU Sensor gain range
setup() Done
----------------------------
Sending connect packet to ATEM switcher on IP 192.168.10.240 from port
55548
ATEM _hasInitialized = TRUE
171
```

Example: If the ATEM device core is the first like below:

Then settings the extended rage would be set by this configuration under "Manage Media" on cores.skaarhoj.com:
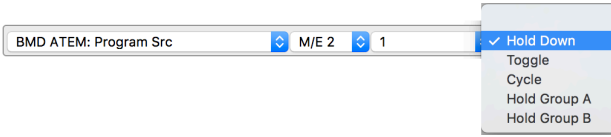
Device Core Options

Some device cores support additional options that can be defined through this text field. Please refer to the manual for the particular device core for details.

D0:0=1
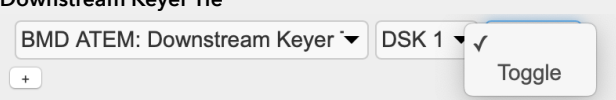
An excerpt of the actions in the ATEM Device Core

✓

BMD ATEM: Program Src
BMD ATEM: Preview Src
BMD ATEM: Prv/Prg Src
BMD ATEM: AUX Output Src
BMD ATEM: Upstream Keyer
BMD ATEM: Upstream Keyer Fill
BMD ATEM: Upstream Keyer Key
BMD ATEM: Upstream Keyer Type
BMD ATEM: Downstream Keyer
BMD ATEM: Downstream Keyer Fill
BMD ATEM: Downstream Keyer Key
BMD ATEM: Downstream Keyer Tie
BMD ATEM: MP Still
BMD ATEM: Cut
BMD ATEM: Auto
BMD ATEM: FTB
BMD ATEM: Transition Style
BMD ATEM: Transition Pos
BMD ATEM: Transition Preview
BMD ATEM: Next Transition
BMD ATEM: Play Macro
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BMD ATEM: Audio Volume
BMD ATEM: Audio Balance
BMD ATEM: Audio Levels
BMD ATEM: Transition Rate
BMD ATEM: Focus
BMD ATEM: Iris
BMD ATEM: Iris (f-stop)
BMD ATEM: Sensor Gain
BMD ATEM: Shutter
BMD ATEM: White Balance
BMD ATEM: Auto White Balance
BMD ATEM: Lift
BMD ATEM: Gamma
BMD ATEM: Gain
BMD ATEM: Hue
BMD ATEM: Contrast
BMD ATEM: Saturation
BMD ATEM: Bars
BMD ATEM: Detail
BMD ATEM: CCU Settings
BMD ATEM: PT Drive
BMD ATEM: PT Preset
BMD ATEM: Reset
BMD ATEM: Video Tally
BMD ATEM: Audio Tally
BMD ATEM: PIP
BMD ATEM: Digital Zoom
BMD ATEM: DVE Size
BMD ATEM: DVE Position
BMD ATEM: DVE Border
BMD ATEM: DVE Fill Source
BMD ATEM: DVE Adjust
BMD ATEM: DVE PTZ
BMD ATEM: DVE Preset
BMD ATEM: Audio Peaks
BMD ATEM: Zoom
BMD ATEM: SuperSource Fill
BMD ATEM: SuperSource Adjust
BMD ATEM: Hold Group Default
BMD ATEM: AUX Follow Program
BMD ATEM: Camera Select
BMD ATEM: MemGroup Autorouter
BMD ATEM: Coarse Scale
BMD ATEM: Video Mode
BMD ATEM: Push data

This is a table of actions for Blackmagic Design ATEM Switchers

Program Src	Sets Program Source on the given M/E row.
BMD ATEM: Program Src — M/E 2 — 1 — ✓ Hold Down / Toggle / Cycle / Hold Group A / Hold Group B	*Binary triggers:* Sets the selected source on Program. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a subsequent trigger, it will fall back to the previous value. If Cycle mode is selected, a trigger will set the next source on Program (corresponds to a single pulse input). Hold Group A+B works like "Hold Down" but adds the previous source to a queue from which the fall back value is pulled when the button is released.
	Pulse inputs: Will cycle through and set the possible sources for Program limited by the selected source and not including Black, unless Black is selected as source in which case all possible sources are traversed.
	Binary outputs: On when actual Program Src matches selected source (or when trigger is held in Cycle mode)
	Button colors: Will be red when Program Src matches selected source, otherwise dim. In Cycle mode color will be highlighted when button is held down.

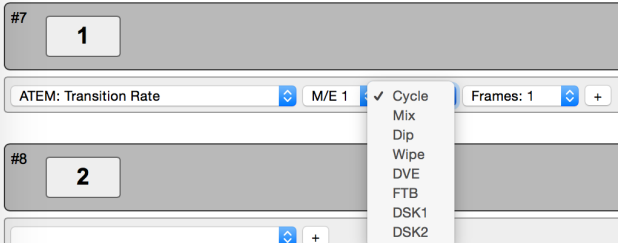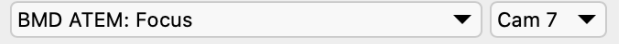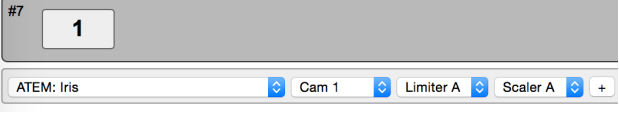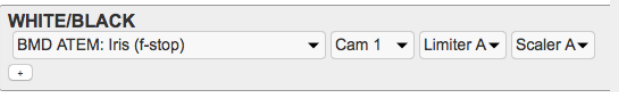| **Preview Src**	Sets Preview Source on the given M/E row.
BMD ATEM: Preview Src — M/E 1 — 1 — Hold Group B	*Binary triggers:* Sets the selected source on Program. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a subsequent trigger, it will fall back to the previous value. If Cycle mode is selected, a trigger will set the next source on Program (corresponds to a single pulse input). Hold Group A+B works like "Hold Down" but adds the previous source to a queue from which the fall back value is pulled when the button is released.
	Pulse inputs: Will cycle through and set the possible sources for Preview limited by the selected source and not including Black, unless Black is selected as source in which case all possible sources are traversed.
	Binary outputs: On when actual Preview Src matches selected source (or when trigger is held in Cycle mode)
	Button colors: Will be green when Program Src matches selected source, otherwise dim. In Cycle mode color will be highlighted when button is held down.

Prv/Prg Src	Set Preview Source on the given M/E row and if the trigger is held down for more than 1 second, it will perform a Cut action too.
#8 CAM 3 — ATEM: Prv/Prg Src — M/E 1 — 3 — ✓ / Cycle	*Binary inputs:* Sets the select source on Preview. If Cycle mode is selected, a trigger will set the next source on Preview (corresponds to a single pulse input) when released unless the button is held until a Cut is performed in which case no new Preview source is selected.
	Pulse inputs: Will cycle through and set the possible sources for Preview limited by the selected source and not including Black, unless Black is selected as source in which case all possible sources are traversed.
	Binary outputs: On when actual Preview source or Program source matches the selected source (or when trigger is held in Cycle mode)
	Button colors: Will be red or green when Program or Preview Src matches selected source, otherwise dim. In Cycle mode color will be highlighted when button is held down. For mono-color buttons, the button will blink when the source is on preview (normally green on a multicolor button).

AUX Output Src

ATEM: AUX Output Src | AUX 1 | 3

- ✓ Hold Down
- Toggle
- Hold Group A
- Hold Group B
- Cycle

Set AUX source on the given AUX bus.

Binary inputs: Sets the select source on the AUX bus. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a second trigger, it will fall back to the previous value. Hold Groups will fall back to a previous source for a group of triggers using a queue system and finally to the first previous value before any trigger in the group was activated. If Cycle mode is selected, a trigger will set the next source on the AUX bus (corresponds to a single pulse input).

Pulse inputs: Will cycle through and set the possible sources for AUX limited by the selected source and not including Black, unless Black is selected as source in which case all possible sources are traversed.

Binary outputs: On when actual AUX bus source matches selected source (or when trigger is held in Cycle mode)

Button colors: will be highlighted when AUX bus source matches selected source, otherwise dim. In Cycle mode color will be highlighted when button is held down.

Upstream Keyer

ATEM: Upstream Keyer | M/E 1 | Keyer 1

- Toggle
- ✓ On
- Off
- Hold Down
- Auto

#2

Turns upstream keyers on and off

Binary inputs: If Toggle mode, the given upstream keyer is turned or/off successively. If On or Off the upstream keyer is set On or Off respectively. Hold Down will turn the keyer on as long as the trigger is held. Auto will fade in the keyer (still pending as of June 2016)

Pulse inputs: Will turn on/off

Binary outputs: Follows highlighted button color.

Button colors: Will be highlighted if the keyers state corresponds to the selected mode. For most modes except "Off" this means the color will be highlighted (but for Off a button is highlight in case the keyer is actually off)

Upstream Keyer Fill

ATEM: Upstream Keyer Fill | M/E 1 | Keyer 1 | 1 | +

Selects the fill source for Upstream Keyer

Binary inputs: Sets the selected source.

Pulse inputs: Cycles through the available sources. Press and hold will reset to the selected source.

Binary outputs: On if current keyer source is the selected source.

Button colors: Will be highlighted if current keyer source is the selected source.

Upstream Keyer Key

BMD ATEM: Upstream Keyer Key | M/E 1 | Keyer 1 | Bars

Selects the fill source for Upstream Keyer Key Source

Binary inputs: Sets the selected source.

Pulse inputs: Cycles through the available sources.

Binary outputs: On if current keyer source is the selected source.

Button colors: Will be highlighted if current keyer source is the selected source.

Upstream Keyer Type

BMD ATEM: Upstream Keyer Type | M/E 1 | Keyer 1 | +

- ✓ Cycle
- Luma
- Chroma
- Pattern
- DVE

Selects the keyer type settings

Binary inputs: Sets the selected type. With Cycle it will cycle through the 4 options.

Pulse inputs: Cycles through the available options

Binary outputs: On if current option is the selected option.

Button colors: Will be highlighted if current option is the selected option.

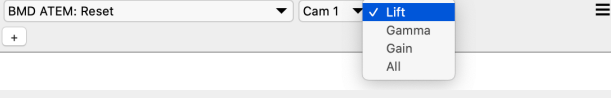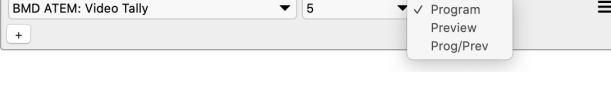|	
Downstream Keyer Toggle On ✓ Off Hold Down Auto ATEM: Downstream Keyer ⇕ · DSK 1 ⇕ · [Off] · +	Turns downstream keyers on and off *Binary inputs:* If Toggle mode, the given downstream keyer is turned or/off successively. If On or Off the downstream keyer is set On or Off respectively. Hold Down will turn the keyer on as long as the trigger is held. Auto will fade in the keyer. *Pulse inputs:* Will turn on/off *Binary outputs:* Follows highlighted button color *Button colors:* Will be highlighted if the keyers state corresponds to the selected mode. For most modes except "Off" this means the color will be highlighted (but for Off a button is highlight in case the keyer is actually off)
Downstream Keyer Fill ATEM: Downstream Keyer Fill ⇕ · DSK 1 ⇕ · 1 ⇕ · +	Selects the fill source for Downstream Keyer *Binary inputs:* Sets the selected source. *Pulse inputs:* Cycles through the available sources. Press and hold will reset to the selected source. *Binary outputs:* On if current keyer source is the selected source. *Button colors:* Will be highlighted if current keyer source is the selected source.
Downstream Keyer Key ATEM: Downstream Keyer Key ⇕ · DSK 1 ⇕ · 1 ⇕ · +	Selects the key source for Downstream Keyer *Binary inputs:* Sets the selected source. *Pulse inputs:* Cycles through the available sources. Press and hold will reset to the selected source. *Binary outputs:* On if current keyer source is the selected source. *Button colors:* Will be highlighted if current keyer source is the selected source.
Downstream Keyer Tie BMD ATEM: Downstream Keyer ⇕ · DSK 1 ⇕ · ✓ Toggle +	Tie the selected Downstream Keyer *Binary inputs:* Enable selected downstream keyer. If Toggle turn Tie on/off *Pulse inputs:* Not implemented (besides with press and hold) *Binary outputs:* On if Tie is enabled *Button colors:* Will be highlighted if Tie is on..
MP Still #7 [1] ATEM: MP Still ⇕ · MP 1 ⇕ · 1 ⇕ · Hold Down / Toggle / Cycle · + #8 [2]	Sets selected Media Player Source. *Binary inputs:* Sets the selected source in selected Media Player. If Hold Down is selected, the source will fall back to the previous source whenever the trigger is released. Toggle will select the source, but on a subsequent trigger, it will fall back to the previous value. If Cycle mode is selected, a trigger will set the next source on in selected Media Player (corresponds to a single pulse input). *Pulse inputs:* Cycles through the available sources. Press and hold will reset to the selected source. *Binary outputs:* On if current media player source is the selected source. *Button colors:* Will be highlighted if current media player source is the selected source.

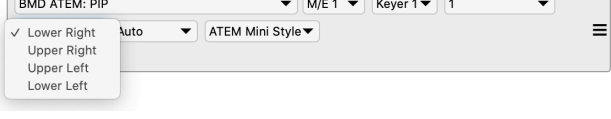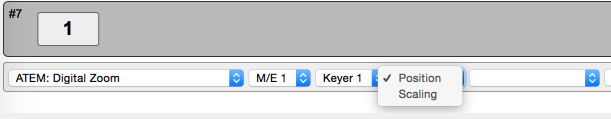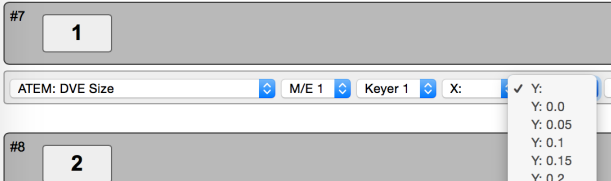|	
CUT #7 **1** ATEM: Cut ✓ M/E 1 + M/E 2	Executes CUT transition on selected M/E bus. *Binary triggers:* Transitions source in preview to program and program to preview. *Pulse inputs:* Toggles Preview and Program. Pressing down executes the command. *Binary outputs:* On while transition executes. *Button colors: Will be highlighted when held down.*
AUTO #7 **1** ATEM: Auto ✓ M/E 1 + M/E 2	Executes assigned transition on the selected M/E bus. *Binary trigger:* Transition source in preview to program and program to preview using the transition type assigned to the selected M/E bus. *Pulse inputs:* Turning executes the transition. Pressing down executes the transition *Binary outputs:* On while transition executes. *Button colors:* Red while executing transition
Fade to Black (FTB) #7 **1** ATEM: FTB ✓ M/E 1 M/E 2	Fades Program Output to Black on selected M/E bus. *Binary trigger:* Pressed once, fades program output to black on selected M/E bus. Pressed a second times, fades program up from back on selected M/E bus. *Pulse input:* Turning executes the transition. Pressing down executes transition *Binary output:* On when FTB active *Button colors:* Solid red while executing transition. Flashes red while in black.

Transition Style
 	
#7   **1**
 	
ATEM: Transition Style   M/E 1   ✓ Cycle   +
     Mix
     Dip
     Wipe
     Stinger
     DVE
 	
#8   **2**
	Selects the Auto Transition type for selected M/E bus.
	
	Binary trigger: Will cycle through available auto transition types on selected M/E bus.
	
	Pulse input: Pressing left or right will cycle through transition types.
	
	Binary output: On when selection matches
	
	Button color: Highlighted when Transition style matches selection

Transition Position
 	
BMD ATEM: Transition Pos   ✓ M/E 1   ≡
     M/E 2
 +   M/E 3
     M/E 4
     Mem A
	Controls Transition Position via analog component (slider, fader, T-bar)
	
	Binary trigger: Not implemented.
	
	Pulse input: Not implemented.
	
	Analog input: Sets transition position
	
	Binary output: On during transition
	
	Button color:
	
	Note: If action assigned directly on a transition LED bar the LED bar will always light up from the same side. However if on the transition LED bar the system action "Tie to HWC#" is used and tied to the slider/fader/T-bar the order of the LEDs will be correct.

Transition Preview

BMD ATEM: Transition Preview ▼ ✓ M/E 1
M/E 2
M/E 3
M/E 4
Mem A

+

Toggle Transition Preview for selected ME.

Binary trigger: Sets Transition Preview to on/off

Pulse input: Not implemented (besides for press nad hold)

Binary output: On when Transition Preview engaged

Button color: Highlighted when Transition Preview engaged

Macro

#7
1

ATEM: Play Macro ▼ 1 ✓ Play
Stop
Toggle
Hold Down
Cycle

#8
2

Will execute Macro command selected

Binary trigger: Play will play macro. Stop will stop macro. Toggle will play macro but on a subsequent trigger will stop macro. Hold down will play the macro. Cycle will cycle through available macros.

Pulse input: Cycle through available macros

Binary output: Not implemented

Button color: Will be highlighted when playing macro, otherwise dimmed.

Audio

-
INS CP -

BMD ATEM: Audio ▼ 2 ▼ On ▼ ✓
Hold Down
Toggle
Cycle

+

Controls selected audio channel.

Binary trigger: Hold down will turn on desired function of audio channel, ie-On/Off, AVF On/AVF Off, Solo On/Solo Off, while held down. Toggle will turn on desired function, subsequent trigger will turn off. Cycle will cycle between On/Off/AVF On.

Pulse input: Cycle though On, Off and AFV

Binary Output: On when action criteria met (On, Off, AFV)

Button color: Highlighted when on. Otherwise dimmed.

Audio Volume

BMD ATEM: Audio Volume ▼ 2 ▼ ▼

Control the Audio Volume of selected audio channel.

Binary Input: Left/Right button push adjust the volume linearly but does not cycle around. Push down for 1 second resets to 0dB.

Pulse input: Left/Right adjust the volume linearly but does not cycle around. Push down for 1 second resets to 0dB. If option "Off" is set, push down for 1 second turns audio all the way down.

Binary Output: On when triggered otherwise off.

Button color: Highlight when pushed, otherwise dimmed.

Audio Balance

#7
1

ATEM: Audio Balance ▼ 1 ▼ +

Control the Audio Balance of selected audio channel.

Binary Input: Left/Right button push adjust the audio balance but does not cycle around. Push down for 1 second resets balance.

Pulse input: Left/Right adjust the audio balance but does not cycle around. Push down for 1 second resets balance.

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Audio Levels

BMD ATEM: Audio Levels ▼ 5 ▼

Shows Audio Levels on LED bars and VU meters

Binary Input: Not implemented.

Pulse input: Not implemented.

Binary Output: Not implemented.

Button color: Indicates volume VU meter levels (green, yellow & red)

Transition Rate

#7	1	

ATEM: Transition Rate	M/E 1	✓ Cycle	Frames: 1	+
		Mix		
		Dip		
#8	2	Wipe		
		DVE		
		FTB		
		DSK1		
	+	DSK2		

Adjusts the video transition rate for the selected M/E bus.

Binary Input: Cycles through the transition types.
4-way buttons:
Button press: Cycle through transition rate
Left/Right press and hold: Adjust Frames

Pulse Input: Cycles through transition rate in frames for selected transition type. Holding down changes transition type you are adjusting. Subsequent triggers continue to cycle through available transition types.

Binary output: Not implemented.

Focus

BMD ATEM: Focus	Cam 7

Controls Focus on BMD Cameras via relative values (focus in/out). An absolute focus parameter cannot se sent to the cameras (not supported by protocol)

Binary Input: Not implemented

Pulse input: Adjust focus in/out

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Iris

#7	1		

ATEM: Iris	Cam 1	Limiter A	Scaler A	+

Changes iris value for the selected camera
Iris range: 0-100% - will **not** reflect change in ATEM Software Control Panel but still transmit iris data.

Binary inputs: Will trigger auto iris
Pulse inputs: Changes the value up/down.
Analog inputs: Set the value between 0-100%
Displays: Will show the current value

Values:
- Select Camera 1-20. If you choose Mem A-D, the camera value will be taken from the value of this memory register.

Iris (f-stop)

WHITE/BLACK

BMD ATEM: Iris (f-stop)	Cam 1	Limiter A	Scaler A
+			

Changes iris value for the selected camera
Iris range: f1.4-f22 - will reflect change in ATEM Software Control Panel.

Binary inputs: Will trigger auto iris
Pulse inputs: Changes the value up/down.
Analog inputs: Set the value between f1.4-f22
Displays: Will show the current value

Values:
- Select Camera 1-10. If you choose Mem A-D, the camera value will be taken from the value of this memory register.

Sensor Gain

BMD ATEM: Sensor Gain	Cam 7	✓ Cycle
+		-12db
		-6db
		0db
		6db
		12db
		18db
		24db

Controls Sensor Gain on BMD Cameras

Binary Input: Sets sensor gain to selected value . If Cycle selected sensor gain value goes up until maximum value is reached.

Pulse input: Adjust Sensor Gain up/down

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Shutter

BMD ATEM: Shutter ▼   Cam 7 ▼

| ✓ Cycle |
| 1/50 |
| 1/60 |
| 1/75 |
| 1/90 |
| 1/100 |
| 1/120 |
| 1/150 |
| 1/180 |
| 1/250 |
| 1/360 |
| 1/500 |
| 1/725 |
| 1/1000 |
| 1/1450 |
| 1/2000 |

+

#10   **X1**

-

BMD ATEM: Shutter ▼   Cam 7 ▼

+

Controls Shutter on BMD Cameras

Binary Input: Sets Shutter to selected value . If Cycle selected Shutter goes up until maximum value is reached.

Pulse input: Adjust Shutter Speed up/down

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

White Balance

BMD ATEM: White Balance ▼   Cam 7 ▼   Cycle ▼   ✓
50K Step

+

Controls White Balance on BMD Cameras

Binary Input: Sets White Balance to selected value . If Cycle selected White Balance goes up until maximum value is reached.

Pulse input: Adjust White Balance up/down

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Auto White Balance

BMD ATEM: Auto White Balance ▼   Cam 7 ▼ | ✓ Set |
| Restore |

+

Trigger Auto White Balance Set/Restore on BMD Cameras

Binary Input: Trigger the camera to perform a Auto White Balance

Pulse input: Not implemented.

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Lift/Gamma/Gain

BMD ATEM: Lift ▼ | ✓ Y | Cam 1 ▼
| R |
| G |
| B |

+

BMD ATEM: Gamma ▼ | ✓ Y | Cam 1 ▼
| R |
| G |
| B |

+

BMD ATEM: Gain ▼ | ✓ Y | Cam 1 ▼
| R |
| G |
| B |

+

Controls YRGB Lift, Gamma, Gain on BMD Cameras

Binary Input: Not implemented.

Pulse input: Adjust the chosen color parameter. Press and hold will reset to unity.

Binary Output: Not implemented.

Button color: Have native color embedded in the action

Hue

BMD ATEM: Hue ▼   Cam 3 ▼

Controls Hue on BMD Cameras

Binary Input: Not implemented.

Pulse input: Adjust the chosen color parameter. Press and hold will reset to unity.

Binary Output: Not implemented.

Button color: Have native color embedded in the action

Contrast

BMD ATEM: Contrast ▼   Cam 3 ▼

Controls Contrast on BMD Cameras

Binary Input: Not implemented.

Pulse input: Adjust the chosen color parameter. Press and hold will reset to unity.

Binary Output: Not implemented.

Button color: Have native color embedded in the action

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Saturation BMD ATEM: Saturation ▾ Cam 3 ▾ ✓ Normal / Desaturated +	Controls Saturation on BMD Cameras *Binary Input:* Not implemented. *Pulse input:* Adjust the chosen color parameter. Press and hold will reset to unity. *Binary Output:* Not implemented. *Button color:* Have native color embedded in the action
Bars BMD ATEM: Bars ▾ Cam 3 ▾ ✓ Toggle / On / Off / Hold Down Seconds: 5 ▾ ☰ +	Triggers Bar on BMD Cameras *Binary Input:* Sets Bar on BMD Cameras *Pulse input:* Not implemented *Binary Output:* Not implemented. *Button color:* Have native color embedded in the action
Detail BMD ATEM: Detail ▾ Cam 1 ▾ ✓ Cycle / Off / Low / Medium / High +	Sets Detail levels on BMD Cameras *Binary Input:* Sets the selected Detail Leve. For Cycle, the Detail options are cycled through. *Pulse input:* Cycle the options *Binary Output:* Not implemented. *Button color:* Have native color embedded in the action
CCU Settings WHITE/BLACK BMD ATEM: CCU Settings ▾ Mem A ▾ Recall/Save▾ Bank: 1▾ ✓ Include Iris / Include Irisf +	Save, Recall or Save/Recall CCU Settings (color parameters) *Binary inputs:* If Save mode, the given CCU settings will be saved to the chosen bank. Iris can be included if wanted. In Recall mode the CCU settings will be recalled. The button will blink for 10 seconds and if you push the button again within this period of time settings will revert back to the settings prior to the recall. If Recall/Save mode the two functions are combined. Press and hold will Save. One press will recall. *Displays:* Will show File 1-6 Values: ⁃ Select Camera 1-10. If you choose Mem A-D, the camera value will be taken from the value of this memory register. A total of 6 banks can be selected, not per camera but in *total.* The function originates from the RCP implementation. CCU Settings include: Lift YRGB + Gamma YRGB + Gain YRGB + Contrast + Saturation + Hue + LumMix + Shutter + Iris + irisf + Gain
PT Drive (Pan and Tilt) BMD ATEM: PT Drive ▾ Cam 1 ▾ ✓ Pan / Tilt ☰ +	Controls Pan and Tilt on robotics heads connected to the expansion cable on a Micro Studio Camera

PT Preset

Save, Recall or Save/Recall Pan/Tilt Settings (zoom and focus not included)

Binary inputs: If Save mode, the given Pan/Tilt settings will be saved to the chosen bank. In Recall mode the Pan/Tilt settings will be recalled. In Recall/Save mode (the blank option) the two functions are combined. Press and hold will Save. One press will recall.

Displays: Will show Cam x: Set/Pre/Rec/Del

Values:
- Select Camera 1-10. If you choose Mem A-D, the camera value will be taken from the value of this memory register. A total of 6 banks can be selected, not per camera but in *total*. The function originates from the RCP implementation.

Reset

Reset color values on BMD Cameras

Binary Input: Resets the selected Color parameter (or all 3 for All) to default values.

Pulse input: Not implemented.

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Video Tally

Shows the "Video Tally" for Program, Preview or both. Uses the generic Video Tally information from the ATEM Switcher. So if a source is activated via a DSK or USK in a PIP or the like, that will be reflected in the Video Tally output as well

Audio Tally

Have been implemented - description coming soon

Picture-In-Picture (PIP)

Activates Picture-In-Picture (PIP) for selected keyer, source, position and transition style (on/off or Auto)

Binary Input: For Toggle press will result in PIP on/off. Direct set to On or Off is also possible. Via Auto the PIP fades in/out. For Hold Down PIP is only activated when button is held down. If "ATEM Mini Style" is selected the position of the 4 PIP locations matchs the settings on the ATEM Mini and thereby also turn on/off the PIP buttons on that controller.

Pulse input: Not implemented.

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

Digital Zoom

Have been implemented - description coming soon

DVE Size

Have been implemented - description coming soon

DVE Position

#7
1

ATEM: DVE Position | M/E 1 | Keyer 1 | X: | ✓ Y:
Y: -35
Y: -34
Y: -33

Have been implemented - description coming soon

DVE Boarder

#7
1

ATEM: DVE Border | M/E 1 | Keyer 1 | On | Black | Inner: 0.05 | Outer: 0.1 | +

Have been implemented - description coming soon

DVE Fill Source

#7
1

ATEM: DVE Fill Source | M/E 1 | Keyer 1 | 1 | +

Selects the DVE Fill Source

Binary Input: Paired with System: Force HWC Type: Pulsed will cycle through available fill sources for selected M/E and Keyer combination

Pulse Input: Will cycle through available fill sources for selected M/E and keyer combination.

Binary Output: On when triggered otherwise off.

Button color: Highlight when pushed, otherwise dimmed.

DVE Adjust

-
INS CP -
BMD ATEM: DVE Adjust | M/E 1 | Keyer 1
+

Pos X
✓ Pos Y
Size Abs
Size Rel
Size X
Size Y
Mask Left
Mask Top
Mask Right
Mask Bottom

#15

Adjusts various parameters on the DVE

Binary Input:

Pulse Input:

Speed Input:

Binary Output:

Button color:

DVE PTZ

-
INS CP -
BMD ATEM: DVE PTZ | M/E 1 | Keyer 1
+

✓ Pan
Tilt
Zoom

Controls position and scaling of DVE

Binary Input:

Pulse Input:

Speed Input:

Binary Output:

Button color:

DVE Preset

-
INS CP -
BMD ATEM: DVE Preset | M/E 1 | Keyer 1 | Recall/Set
Preset: 1 | ✓ Transition Time (s): 0
+ | **Transition Time (s): 1**
Transition Time (s): 2
Transition Time (s): 3
Transition Time (s): 4
Transition Time (s): 5
Transition Time (s): 6
Transition Time (s): 7
#15 | X | Transition Time (s): 8

Save/Recall DVE Presets

Binary Input:

Pulse Input:

Speed Input:

Binary Output:

Button color:

Audio Peaks

BMD ATEM: Audio Peaks | 1

Save/Recall DVE Presets

Binary Input:

Pulse Input:

Speed Input:

Binary Output:

Button color:

Zoom

BMD ATEM: Zoom ▼   Cam 1 ▼

Controls Zoom on BMD Cameras via relative values (Zoom in/out). An absolute zoom parameter cannot se sent to the cameras (not supported by protocol)

Binary Input: Not implemented

Pulse input: Adjust focus in/out

Speed input: Adjust zoom in/out

Binary Output: Not implemented.

Button color: Highlight when pushed, otherwise dimmed.

SuperSource Fill

BMD ATEM: SuperSource Fill ▼   Box 1 ▼   5 ▼
+
✓
Hold Down
Toggle
Cycle

SuperSource Adjust

BMD ATEM: SuperSource Adjust ▼   Box 1 ▼
+
✓ Pos X
Pos Y
Size
Crop Left
Crop Top
Crop Right
Crop Bottom

Hold Group Defaults

BMD ATEM: Hold Group Default ▼   Hold Group A ▼   ME1 Prg ▼

Configuration of a fixed Hold Group default source - the source that a Hold Group queue will fall back to.

If you are using Hold Groups with very quick triggers you may experience that the original source was not correctly picked up due to the timing gap between a command is sent and to the ATEM reports back the new value. With this configuration value you are guaranteed that the fall back will always be a particular source.

This action does not depend on any trigger from the HWC, it will always be evaluated if inside the proper state and shift levels.
Has a transparent return value.

AUX Follow Mode

BMD ATEM: AUX Follow Program (Pro) ▼   AUX 4   M/E 2 ▼   CP -
Map A to B, C to D ▼   1   2   3   10
+

Forces an AUX channel to follow the Program output of an M/E (bus linking).

The Mapping function allows you to exclude certain sets of sources. "Map A,B,C to D" means the sources entered in the following 3 drop downs (1,2, and 3 in the screenshot) will map to the forth source (10 in the screenshot). "Map A to B, C to D" means that the first source maps to the second and the third to the forth (in the example screenshot this would be 1 -> 2 and 3 -> 10).

This action does not depend on any trigger from the HWC, it will always be evaluated if inside the proper state and shift levels. The way you could enable / disable this function is by placing it in a given shift level or state.
Has a transparent return value.

Camera Select

BMD ATEM: Camera Select ▼   Camera: 1 ▼   Set/Add ▼
Global Tally ▼
+
✓ Mem AA
Mem BB

Memory Group Auto Router and — BMD ATEM: MemGroup Autorouter Mem BB — Last — AUX 2 — Color1 Always run — +	Will monitor the selected memory group for its values (first or last) and if it changes it will set this value as the input for the selected aux output. If the value in the memory group is 0 (the group is empty) it will set the selected input source as input on the aux output. The Memory Group Auto Router will run either always or when a particular selected system flag is set. This action does not depend on any trigger from the HWC, it will always be evaluated if inside the proper state and shift levels. Has a transparent return value. This action is well suited to be placed in the Controller virtual HWC.
Coarse Scale #1 CAM 1 LIFT — INS CP · BMD ATEM: Coarse Scale — ✓ Factor: 1 + — Factor: 2 Factor: 3 Factor: 4 Factor: 5 Factor: 6 Factor: 7 Factor: 8 Factor: 9	Will change the steps for coarse adjustments. The parameter cannot be adjusted via binary/pulse/analog inputs. The action just need to added somehere on the controller and it will take effect.
Video Mode BMD ATEM: Video Mode — Cam 1 — ✓ NTSCi60 + — PALi50 720p24 720p25 720p30 720p50 720p60 1080p24	
Push Data BMD ATEM: Push data — Cam 1 — ✓ On trigger + — 5 sec 10 sec 30 sec 60 sec	

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