BZB GEAR®
Solutions to Amplify Your World™

BG-HDVS42U

4-Channel/Input HDMI Live Streaming Video/Audio Production Switcher and Mixer with Integrated Capture Card

User Manual

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Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- To avoid damage from drops, make sure this unit is placed on a stable and solid surface.
- Only connect the unit with the included power supply.
- Disconnect power cord by connector only - Do not pull on the cable.
- Do not place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.
- Ensure the unit is properly always grounded to prevent electrical shock hazard.
- Turn off the unit if a malfunction occurs. Disconnect everything before moving the unit.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- Unplug this device during lightning storms
- Clean only with a soft dry microfiber cloth.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGEAR is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.
- Only use accessories specified by the manufacture
- Product specifications may be subject to technical upgrades without further notice.

Introduction

The BG-HDVS-42U is a 4-channel HDMI multi-format video switcher with a compact metal case design. It supports various functions including video switching, audio mixing, PGM/Multiview output, different transition effects, Luma Key, Chroma Key, DSK, LOGO, PIP/POP, media library, pattern, color generator, and more.

The inputs support multiple formats and the PGM output can be scaled, ensuring compatibility with a variety of equipment. The unit also supports streaming to a computer via the USB-C port. Users can also customize different settings and import or export the configuration quickly for various scenarios. Powerful and portable, this professional video switcher is an ideal choice for any small-scale HDMI production.

Features

- x4 auto-detected HDMI inputs
- x1 HDMI PGM out, x1 HDMI Multiview out, x1 USB type-C output
- USB-C for capturing and streaming to a PC
- Clear and uncluttered multiview & status page
- Upstream key: Luma key, Chroma key, PIP×2 / POP
- Downstream key and LOGO overlay
- T-bar/Auto/Cut transitions; various effects: WIPE (9×2 patterns) / MIX/ DIP
- Audio mixer: HDMI embedded audio and x2 MIC/line in; audio delay available
- Media library: 49 default patterns, 16 imported images, 16 captured images, 2 color generators
- LAN port for PC software remote control
- Custom configuration import and export
- FTB/ MUTE/ STILL/ GPIO for tally

Packing List

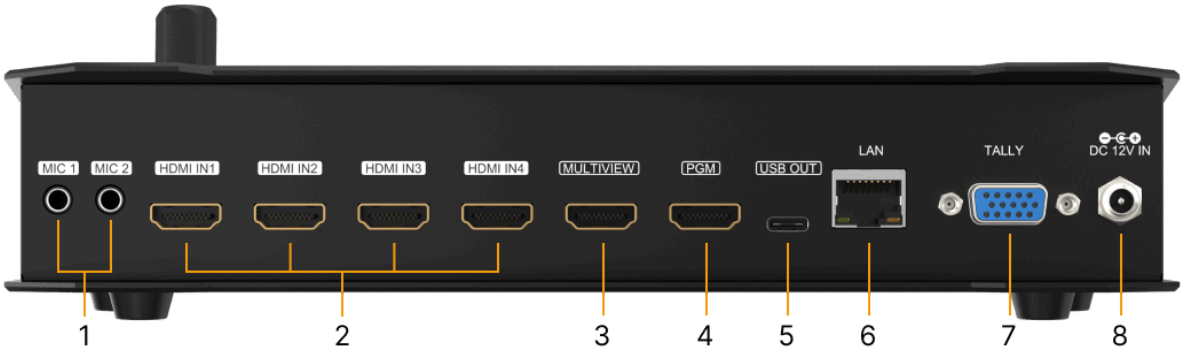
- 1x BG-HDVS42U
- 1x Power supply (12V 2A)
- 1x USB cable (type-A to C)
- 1x Tally connector (DB-15)

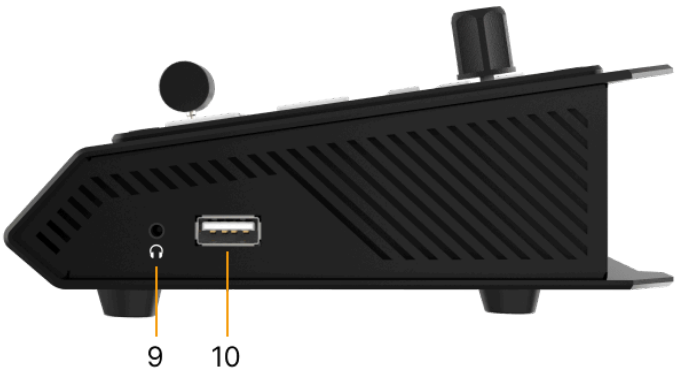
Specifications

Connection	
Video In	HDMI type-A x4
Video Out	HDMI type-A PGM ×1 HDMI type-A Multiview ×1 USB2.0 type C ×1 (Streaming on PC) Assignable HDMI 1~4, PGM, Clean PGM, PVW, Color bar, Multiview
Audio In	MIC/ Line level (3.5mm stereo audio) x2
PC Control Port	LANxI
Media Library	USB type-A x1 (USB disk port for image import and firmware upgrade)
Tally Port	DB-15 x1
Power In	DC 2V x1
Functions	
Transitions	T-Bar/AUTO/ CUT
Effects	Wipe (9x2 patterns)/ Mix/ DIP/ Pattern/ Still(freeze)/ MUTE/ FTB
Layouts	2 styles of Multiview layout (6 windows and status)
Keys	Upstream Key: Luma Key xi / Chroma Key xi/ PiP x2/ POP Downstream Key: DSK xi/ Logo xi
Audio Mixer	HDMI x4 and MIC/ Line level x2; Audio delay: 0-500ms
Media	Default image: 49 preset patterns Local image: up to i6 imported images Capture image: up to i6 captured images
Generators	Pattern generator x1 Color generators x2
Standards	
HDMI In Format Support	1080p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98 1080i 50/ 59.94/ 60 720p 60/ 59.94 /50/ 30/ 29.97/ 25/ 24/ 23.98 576i 50, 576p 50, 480p 59.94/ 60, 480i 59.94/ 60
HDMI PGM Out	1080p 60/ 59.94/ 50/ 48/ 47.95/ 30/ 29.97/ 25/ 24/ 23.98; i080i 60/ 59.94/ 50
HDMI Multiview Out	1080p 60/ 59.94/ 50/ 48/ 47.95/ 30/ 29.97/ 25/ 24/ 23.98; i080i 60/ 59.94/ 50
HDMI Color Space	RGB/ YUV
USB Capture Out	MJPG, Up to i080p 60
Media Format	USB disk format support: FAT32, Ext3, Ext4, up to 256GB Image format support: png, bmp, jpg Logo format support: png, bmp, jpg Logo size support: 10*10 pixel to 600*600 pixel
Others	
Power	Wide voltage: 7~24V; Operating power:12W (12V 1A)
Dimension (LWD)	244.5 * 143.2 * 44.5mm
Weight	Net: 1030g; Gross: 1500g
Temperature	Working: -20°C~60°C, Storage: -30°C~70°C
Accessories	Power supply (12V 2A) *1; USB cable (type A-C) *1; Tally connector (DB-15) *1

Operation Controls and Functions

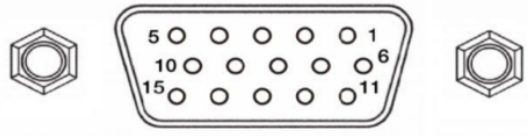
Interface Overview





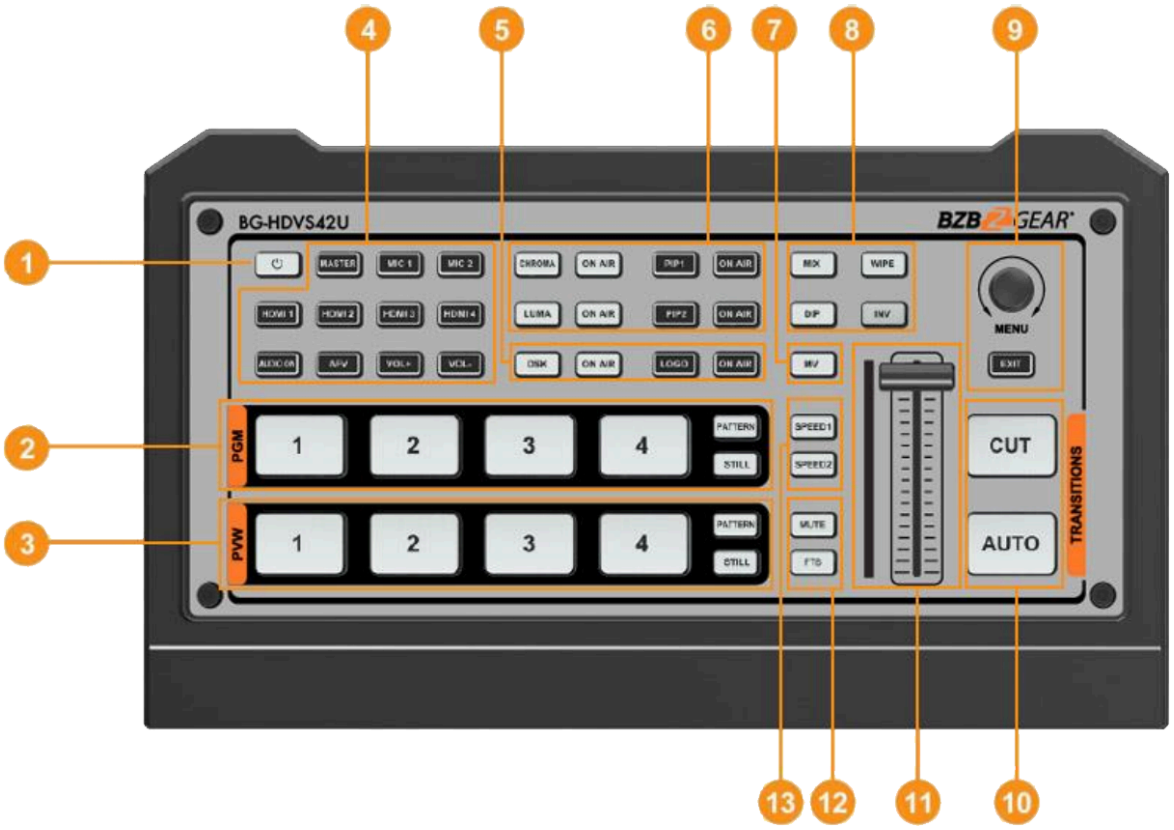
NO.	Name	Function Description
1	2x MIC/Line level IN	3.5mm stereo mini line in microphone
2	4x HDMI IN	Connect to HDMI sources
3	MULTIVIEW OUT	HDMI to display to simultaneous show all 4 inputs
4	PGM (AUX) OUT	HDMI to display, capture device, etc for selected output
5	USB OUT	Connect to a PC to view the PGM out image
6	LAN port	Connect to PC for access to control software
7	GPIO (for tally)	Connects to a tally light control system (not included)
8	DC 12V IN	Connect to provided power supply.
9	Earphone OUT	3.5mm stereo mini line out
10	USB type-A	Insert a usb disk to import images and LOGOs; firmware upgrades

Tally PIN Definition



PIN	Definition	PIN	Definition
11	PGM-IN1	6	PVW-IN1
12	PGM-IN2	7	PVW-IN2
13	PGM-IN3	8	PVW-IN3
14	PGM-IN4	9	PVW-IN4
15	NC	10	NC
3	NC	4	NC
5	GND		

Front Control panel

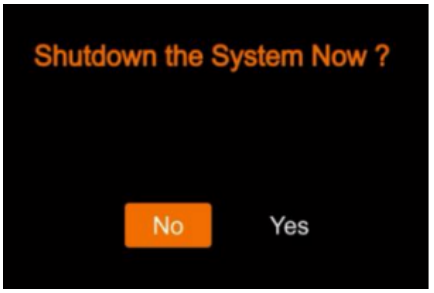


NO.	Name	Function Description
1	Power	Press power to start the device; Press for 3 seconds to shut down the system
2	PGM:1-4	Select the signal source for the Program out. PATTERN displays a test pattern to PGM output, STILL freezes the input source image. Note: different patterns can be set including Black/Color Bar/Color1/Color2/ HDMI In1/HDMI In2/HDMI In3/HDMI In4/Image. (Refer to Part 13.1)
3	PVW:1-4	Select the signal source for Preview. PATTERN displays a test pattern to PVW (Refers to Part 13.1), STILL freezes the input source image (Refer to Part 7.2).
4	AUDIO	Configure the audio of each channel, including AFV or audio mix mode, audio source selecting, volume + & volume -
5	DSK	DSK: Enable the downstream key ON AIR: Put the DSK on air
6	CHROMA KEY / LUMA KEY	CHROMA: Enable the Chroma Key LUMA: Enable the Luma Key PIP1/PIP2: Enable two groups of Picture in Picture. Size and position can be set via Menu. LOGO: Add logo bin from USB flash disk, enable the logo overlay ON AIR: Put the corresponding Chroma/Luma/PIP/Logo on air.
7	MV	MV: quickly switch between Multiview and the configured Multiview out (Refer to Part 11.2)
8	Transition Effects	WIPE: Transition from one source to another INV: Invert the direction of selected wipe transition MIX: Selects a basic A/B dissolve for the next transition DIP: Gradual transition from one source to another.
9	MENU	MENU: For menu control, configure different parameters
10	CUT/ AUTO	CUT: Performs a simple immediate switch between Program and Preview. AUTO: Performs an automated switch between Program and Preview.
11	T-Bar	Switch the PVW and PGM using the T-Bar
12	MUTE/ FTB	MUTE: Mute the master audio FTB: Fade to Black
13	Speed	SPEED 1-2: Control transition rate, speed can be configured on Menu.

Power ON / OFF

Connect your video sources, output devices, and plug in the power adapter. Press the power button on the top panel to power up the switcher.

Press the power button for about 3 seconds to power off the switcher and select YES in the prompt box to shut down the system.



Multiview

The switcher provides two HDMI outputs (PGM/Multiview) and a USB Type-C. The PGM and USB Type-C outputs can be changed through the on screen multiview menu to show an individual system input, color bars, additional multiview, or preview screen(the multiview out can only be multiview). Connecting the HDMI Multiview out to an additional monitor will provide the Multiview image. In Multiview there are windows for PVW, PGM, HDMI 1, HDMI 2, HDMI 3, HDMI 4, and the Status/Menu page (see image below).

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Status/Menu Page

The Status/Menu page shows information for FTB (Fade to Black), P-PVW (Pattern in PVW row), PPGM (Pattern in PGM row), Logo, Still, Audio, Transition Effect, Transition Speed, USK (Upstream Key), DSK (Downstream Key), and System Time (see image below).

The taskbar below shows username, working time, USB connection, CPU working temperature, and system time in the bottom of the Status/Menu page.

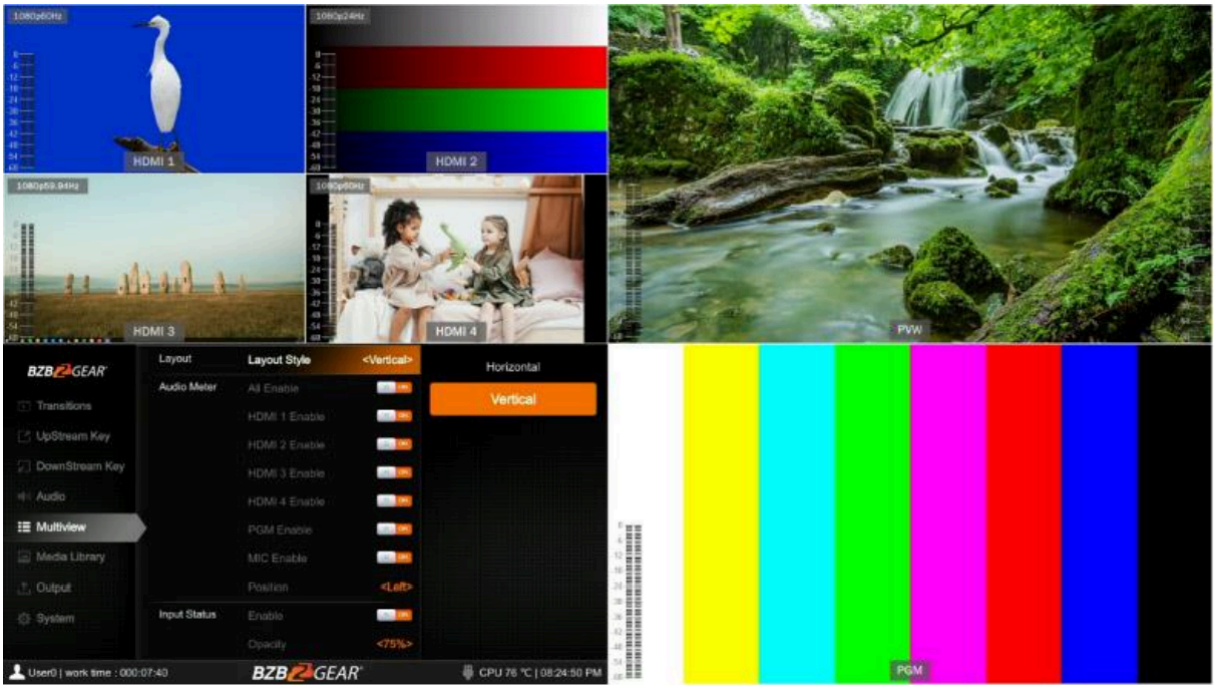
The information on the status page will be updated in real time as the settings are changed. Pressing the menu button on the switcher will open the menu page as shown in the image below.

Layouts

There are two Multiview layouts which can be selected. Simply switch between the horizontal layout and vertical layout from the menu as shown in the images below.

Horizontal:

Vertical:



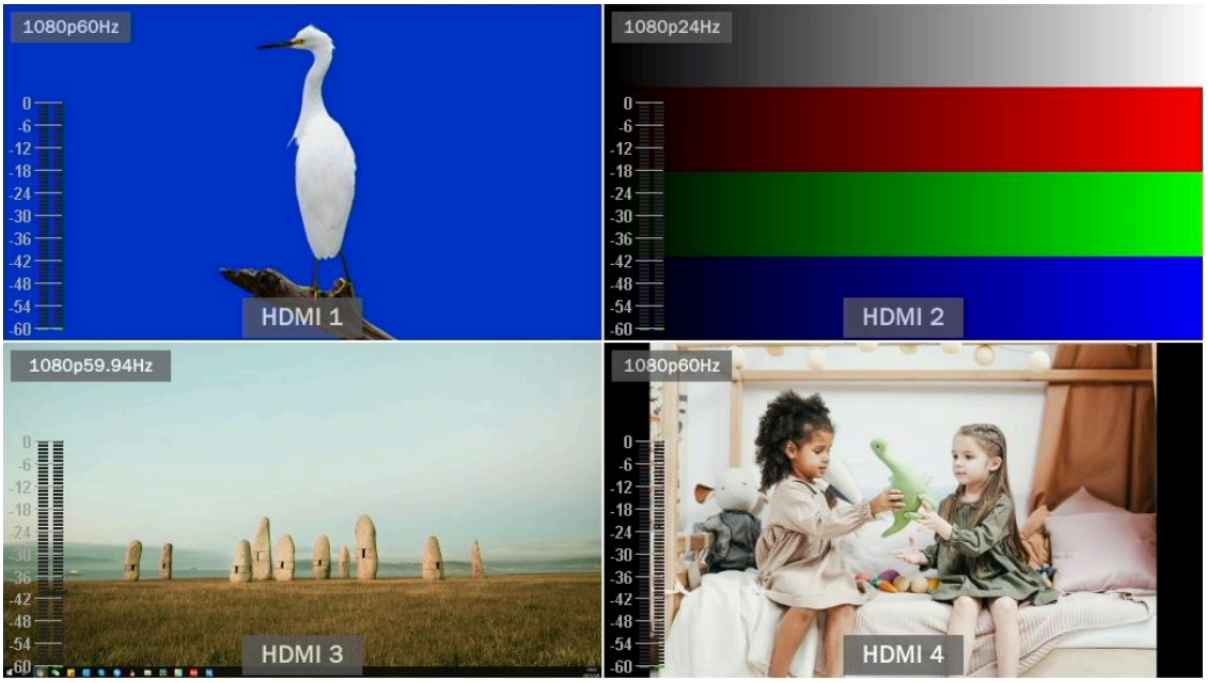
Audio Meter

There are audio meters in each window of the Multiview including HDMI1-4, PGM, and MIC to show the audio level of each input. The audio meters of MIC 1 and MIC 2 show in the left and right of the PVW window.

Users can turn on/off all or individual audio meters from the menu. The audio meter position can be displayed in the right or left of each window. See below image.

Input Information

There is an overlay in each window of HDMI inputs 1-4. The overlay shows the resolution and frame rate of the HDMI input. Users can turn on/off the overlay in each input window. Users can also set the overlay Opacity (50%, 75%, 100%), Size (Small/Medium/Large), Position X & Y (1-100), Foreground color, and Background Color (see image below).



UMD Settings

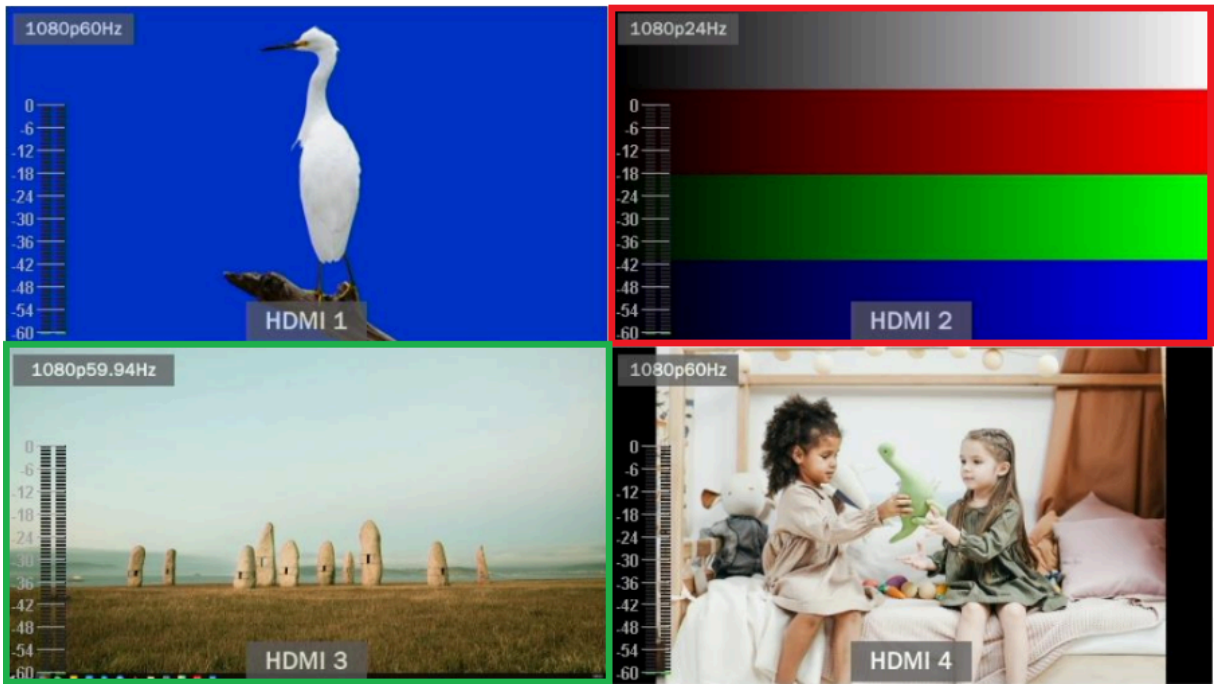
The default UMD of the four inputs are HDMI 1, HDMI 2, HDMI 3, HDMI 4. Users can turn on/off the UMD in each window. Users can also set the overlay Opacity (50%, 75%, 100%), Size (Small/Medium/Large), Position X & Y (1-100), Foreground color, and Background Color (see image below).

The UMD text content for the 4 HDMI inputs can be set from the menu. Users can rename the UMD content for each window by using a virtual keyboard and rotary button. It supports up to a maximum of 10 characters for each input. In the example below the input has been renamed from HDMI 1 to CAM1.

PGM & PVW Switching

PGM/PVW Channel Selection

Choose the PGM and PVW sources from their corresponding row and enable/disable PATTERN from the adjacent buttons (different patterns can be configured in the menu). The selected button for PGM will turn red and the selected button for PVW will turn green. The PGM source will be highlighted with a red border, while the PVW source will be highlighted with a green border.



Still

The video switcher features a STILL function which users can freeze the input sources. Select the channel you want to freeze in the PGM or PVW row, then press the STILL button to freeze the input source. Users can freeze all four inputs if desired. Press the input channel and STILL again to unfreeze the image.

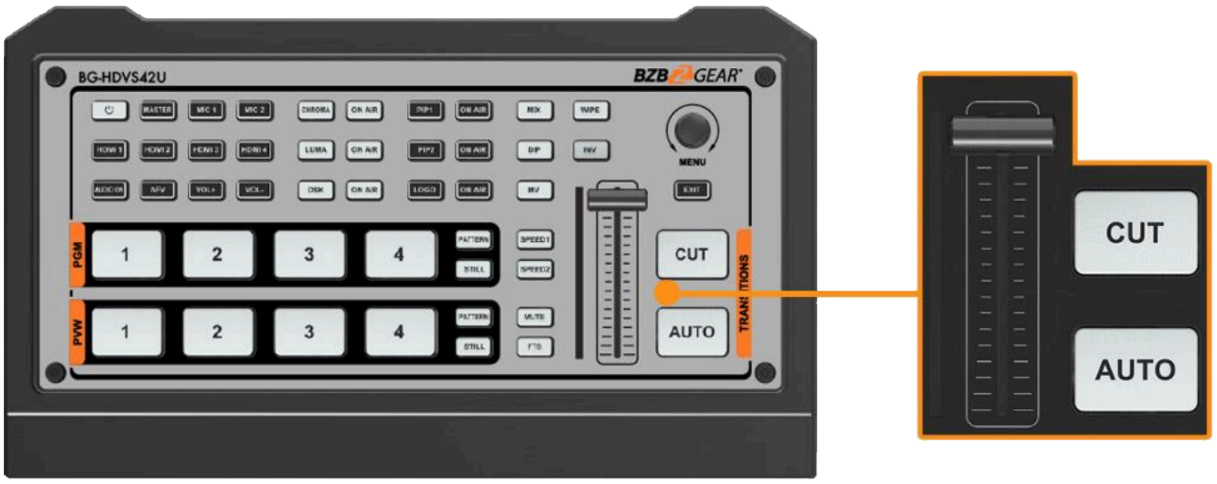
Transition: CUT/ AUTO/ T-BAR

There are two transitional control types for this video switcher: Transition without effects (CUT) and Transition with effects (AUTO, T-Bar).

CUT performs a simple immediate switch between Preview and Program. This is no delay providing seamless switching, and the selected transition effect WIPE, MIX or DIP is not utilized.

AUTO performs an automated switch between Preview and Program views. The timing of the transition can be set by the speed button (see Transition Speed Settings below). The transition effects WIPE, DIP, MIX will also be used.

T-BAR manual transition is similar to using the AUTO button but offers flexibility as a manual transition based on the speed that the user prefers using Hand Speed.



Transition effects

This switcher provides various transition effects including WIPE, DIP and MIX.

WIPE

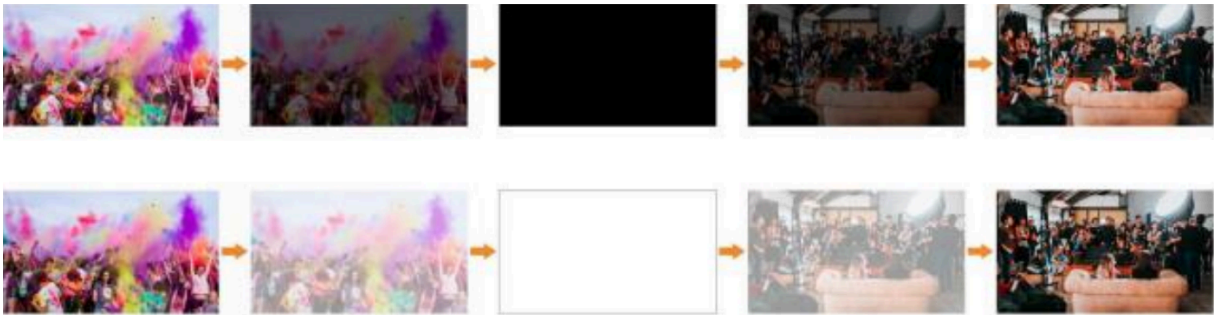
Press the WIPE button to perform the wipe transition effect. Users can choose different versions of the WIPE effect through the menu; as well as setting the softness of the edge. Select the direction from Normal/ Invert/ Flip-Flop when using the AUTO transition feature.

Press the INV button to invert the selected wipe so it creates the reverse direction effect.

DIP

Press the DIP button to perform the DIP transition effect. User can select from various colors.

NOTE: On the menu screen, the default color is black.



MIX

Press the MIX button to perform the MIX transition effect.

Transition Speed Settings

Users can set two separate speeds of transition on the menu, as well as define the speed value which can be saved and will correspond to the Speed 1 or Speed 2 buttons. The higher the value, the slower the transition speed, selectable range is between 0.1s - 8.0s.

Upstream Key

Luma Key

Luma keys provide a way to compose a foreground clip over a background clip based on the luminance levels in the video. When the Luma Key is activated, a color from the key source will be removed, revealing another background image behind it.

Switch the video with a background to the PVW window and turn on the Luma Key. Press the menu knob to enter the settings menu. Users can assign the fill and key source from various options including Black/ Color Bar/ Color1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3/ HDMI 4/ Image (import from USB disk). Configure and adjust the Key parameters including Clip/Gain/Mask to achieve the desired effect. See Key Menu Interface and Parameter settings below.

Press the ON AIR button and the ON AIR button will illuminate and LUMA button will turn off while the Key effect will display on the PGM. Use CUT, AUTO, or T-Bar to switch the PVW with KEY to the PGM output.

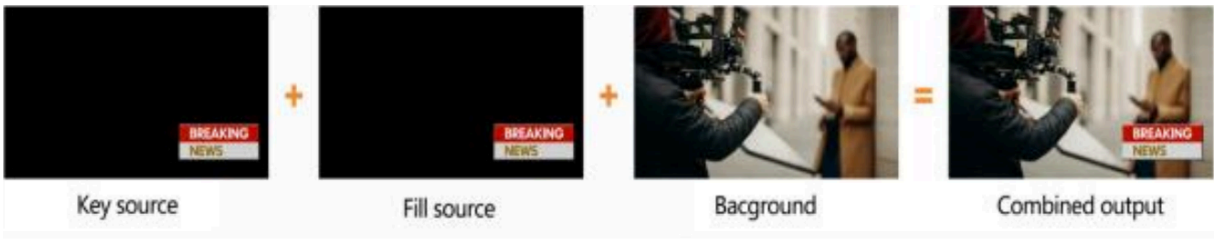
LUMA button ON: Luma key shows on PVW

ON AIR button ON: Luma Key is available on PGM

ON AIR and LUMA button simultaneously ON: Luma Key is available on both PVW and PGM. Corresponding status in menu is <KEY & ON AIR>

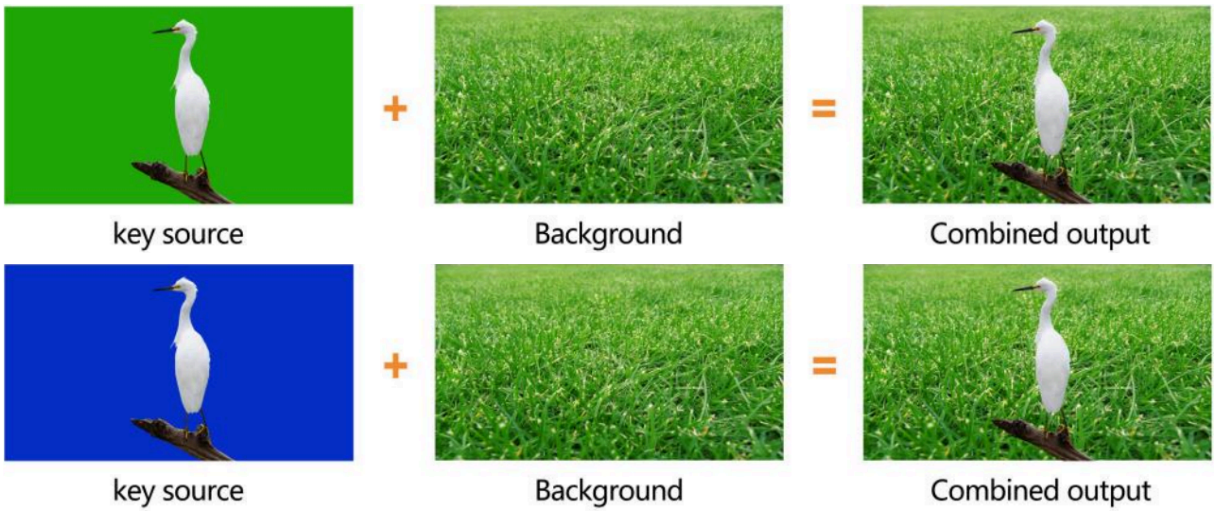
Menu	Sub-Menu	Item	Parameter	Default
Upstream Key	Luma Key	Luma Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	Off
		Fill Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3/ HDMI 4/ Image	Color1
		Key Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3/ HDMI 4/ Image	Image
		Clip	0%-100%	10%
		Gain	0%-100%	0%
		Invert Key	On/Off	Off
		Mask Enable	On/Off	Off
		Mask Left	0%-100%	0%
		Mask Top	0%-100%	0%
		Mask Right	0%-100%	50%
		Mask Bottom	0%-100%	50%

Clip: Adjust the threshold at which the key cuts its hole. When decreasing the clip more of the background will appear. If the background video is completely black, then the clip value is too low.
Gain: Adjusts the performance of the chroma key in light or white areas. Apply more Key Gain if the light areas are becoming too transparent.
Invert Key: Inverts the Key signal.
Mask: Configure the Mask for the Key area



Chroma key

Chroma Key is a visual-effects and post-production technique for compositing (layering) two images or video streams together based on color hues (chroma range). This technique is used in many fields to remove a background from the subject of a photo or video, particularly tin newscasting, motion picture, and video game industries.



Press the CHROMA Key button, press the Menu knob and choose Chroma to configure the effect of Chroma Key, including the Key Source, Key Color, Clip, Gain, Key Fetch, Mask, etc., detailed parameters setting as below.
Press the ON AIR button next to the CHROMA button to enable the KEY on PVW. Use the AUTO key or T-Bar control to switch the PVW with the key to PGM.
CHROMA button ON: Chroma key shows on PVW.
ON AIR button ON: Chroma Key available on PGM
ON AIR and **CHROMA** button both ON: Chroma Key available on both PVW and PGM.
Corresponding status in menu is <KEY & ON AIR>

Menu	Sub-Menu	Item	Parameter	Default
Upstream Key	Chroma Key	Chroma Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	Off
		Key Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3/ HDMI 4/ Image	Image
		Key Color R	0~255	10
		Key Color G	0~255	154
		Key Color B	0~255	56
		Fetch X	0~100%	0
		Fetch Y	0~100%	0
		Fetch Width	0~50%	5
		Clip	0%-100%	40%
		Gain	0%-100%	10%
		Mask Enable	On/Off	Off
		Mask Left	0%-100%	0%
		Mask Top	0%-100%	0%
		Mask Right	0%-100%	50%
		Mask Bottom	0%-100%	50%

PIP & POP

The video switcher supports two groups PIP or one POP. When pressing PIP1 or PIP2 button, there will be a small image display on the top left corner of PVW window. Press the Menu knob and choose the PIP setting interface, user can set parameters including position, size, border, etc. See details below.

Press ON AIR button next to PIP1 and PIP2 to put the PIP into effect on PGM.

Set the POP in the same menu as detailed below. When POP is working PIP is disabled.

Menu	Sub-Menu	Item	Parameter	Default
Upstream Key	PIP/POP	Border Color	Color	White
		Border Width	in Y o	2
		PIP1 Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	Off
		PIP1 Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	HDMI 1
		PIP1 Size	1/2 1/4 1/8	1/4
		PIP1 Position X	0~100	0
		PIP1 Position Y	0~100	0
		PIP2 Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	Off
		PIP2 Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	HDMI 2
		PIP2 Size	1/2/1/4/1/8	1/4
		PIP2 Position X	0~100	100
		PIP2 Position Y	0~100	0
		POP Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	off
		POP Source 1	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	HDMI 1
		POP Source 2	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	HDMI 2

DownStream Key

DSK

Press the DSK button to mask the DSK signals utilizing the mask signal of the source. The source (Fill Source, Key Source), Clip, Gain, and mask (Mask Enable, Mask Left, Mask Top, Mask Right, Mask Bottom) of DSK can be set from the menu. Options are detailed below. Press the ON AIR button next to the DSK button to enable the KEY on PGM. Use the AUTO button or T-Bar control to switch the PVW and DSK to PGM. The Key will not be changed when switching between the PVW and PGM sources.

DSK button ON: DSK key shows on PVW.

ON AIR button ON: DSK Key available on PGM.

ON AIR and DSK button both ON: Downstream Key available on both PVW and PGM. The corresponding status in the menu is <KEY & ON AIR>

Menu	Sub-Menu	Item	Parameter	Default
Downstream Key	DSK	DSK Status	OFF/ KEY (PVW)/ ON AIR (PGM)/ KEY & ON AIR	Off
		Fill Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	Black
		Key Source	Black/ Color Bar/ Color 1/ Color 2/ HDMI 1/ HDMI 2/ HDMI 3 /HDMI 4/ Image	Black
		Clip	0%-100%	0%
		Gain	0%-100%	0%
		Invert Key	On/Off	Off
		Mask Enable	On/Off	Off
		Mask Left	0%-100%	0
		Mask Top	0%-100%	0
		Mask Right	0%-100%	0
		Mask Bottom	0%-100%	0

LOGO

This switcher permits users to import their own logos. Press the menu knob and choose the logo setting interface, this is where the user can choose a logo from the media pool on the USB disk and set the position, size, and opacity. Rotate the menu knob to choose the logo, press the Menu knob to select and delete a logo. Users can view the logo effect in PVW.

Press the ON AIR button next to the LOGO button to display the effect.

LOGO button ON: DSK key shows on PVW.

ON AIR button ON: DSK Key available on PGM

ON AIR and **LOGO** button both ON: LOGO available on both PVW and PGM.
Corresponding status in menu is <KEY & ON AIR>

Output Setting

Output Interfaces

The HDVS42U has 3 output interfaces, Multiview Out, PGM Out, and USB-C Out. The PGM and USB outputs can also be assigned as AUX OUT for HDMI1, HDMI2, HDMI3, HDMI4, PVW, PGM, Clean PGM, Color Bar, and Multiview out. Multiview can only be Multiview.

Multiview Out

The default output of the Multiview port is the Multiview window and the LED indicator of the MV button on the front panel will be green to indicate its default status. Users can connect it to an additional LCD display to view the 4 HDMI source inputs using PVW, PGM and status interface. Users can also configure the output of the Multiview port for other options based on an application's requirements. When the Multiview output is defined as an alternative output, for example HDMI 1, the user can press the MV button to switch inputs for the Multiview output to the configured HDMI 1.

: LED indicator on, Multiview output port shows the Multiview.

: LED indicator off, Multiview output port shows the configured alternate output

PGM Out

When designating specific outputs for the PGM output, users can connect it to an additional LCD display to monitor the PGM output. The PGM output video is the Program video including the overlay images from USK and DSK. PGM Clean out is the option for removing the overlay images from Program out DSK.

USB Out

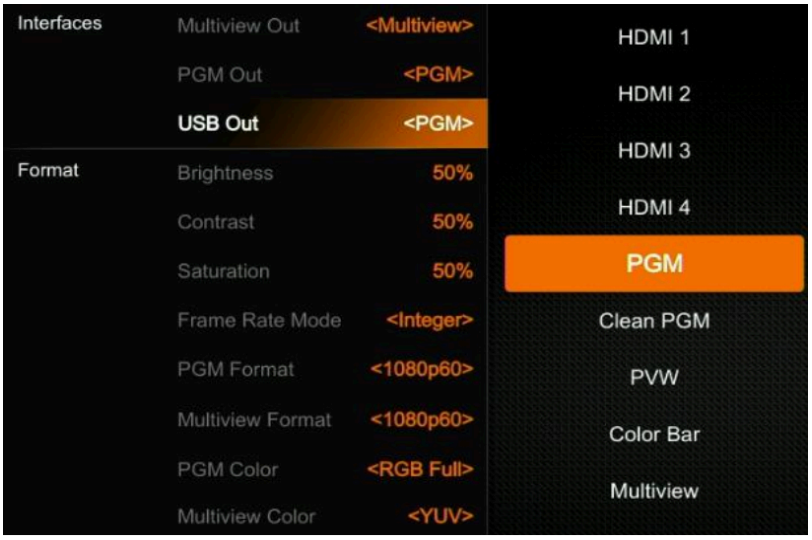
Connect the USB-C output to a PC with a USB 2.0 cable for software programs like OBS Studios, PotPlayer, vMix, etc. Play or store the captured USB streaming video and audio on live streaming platforms like YouTube, Facebook, Twitter, etc. The USB 2.0 streaming output is based on UVC (USB video class) and UAC (USB audio class) standards. No additional drivers need to be installed.

The video source of USB for the PGM output can be associated with HDMI 1, HDMI 2, HDMI 3, HDMI 4, PVW, or the Clean PGM output. This means users can capture any input source for live streaming capabilities.

Upon completing the connection, the relevant video and audio devices will be added in the Windows

Device Manager as below:

- **Under Imaging Devices**: USB 2.0 Capture Video
- **Under Audio inputs and outputs**: USB 2.0 Capture Audio



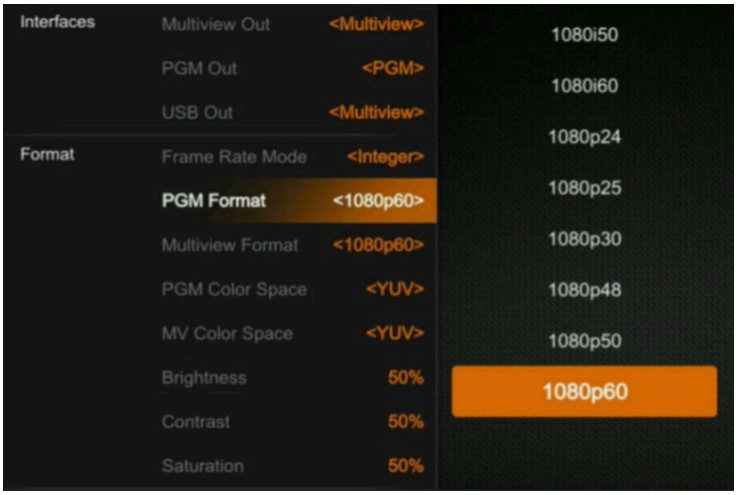
Output Format Setting

PGM Image Setting

Users can set Brightness, Contrast, and Saturation of the PGM output in the menu. The setting range is from 0%-100%. The default setting is 50%.

PGM and Multiview Format

The switcher supports up/down scaling output. Users can switch the Frame Rate Mode between Integer or Decimal. When the Frame Rate Mode is integer, available options are 1080i50, 1080i60, 1080p24, 1080p25, 1080p30, 1080p48, 1080p50, 1080p60. When the Frame Rate Mode is set to Decimal the available options are 1080i50, 1080i59.94, 1080p23.98, 1080p25, 1080p29.97, 1080p47.95, 1080p50, 1080p59.94. The default formats of the PGM and Multiview outputs are both 1080p60.



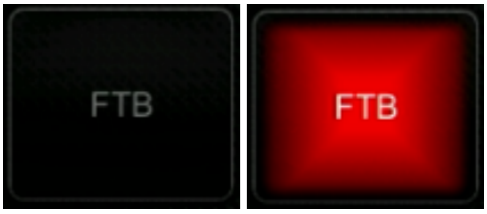
PGM and Multiview Color Space

There are YUV, RGB Full, RGB Limit color space options for PGM and Multiview out. The default color space of the output is YUV.

FTB

The FTB (Fade to black) feature is usually for an emergency situation when using the switcher for a live event. By pressing the FTB button the PGM will fade to a black screen to hide all the other layers, and the FTB button will keep flashing until the user presses the button again to stop the FTB.

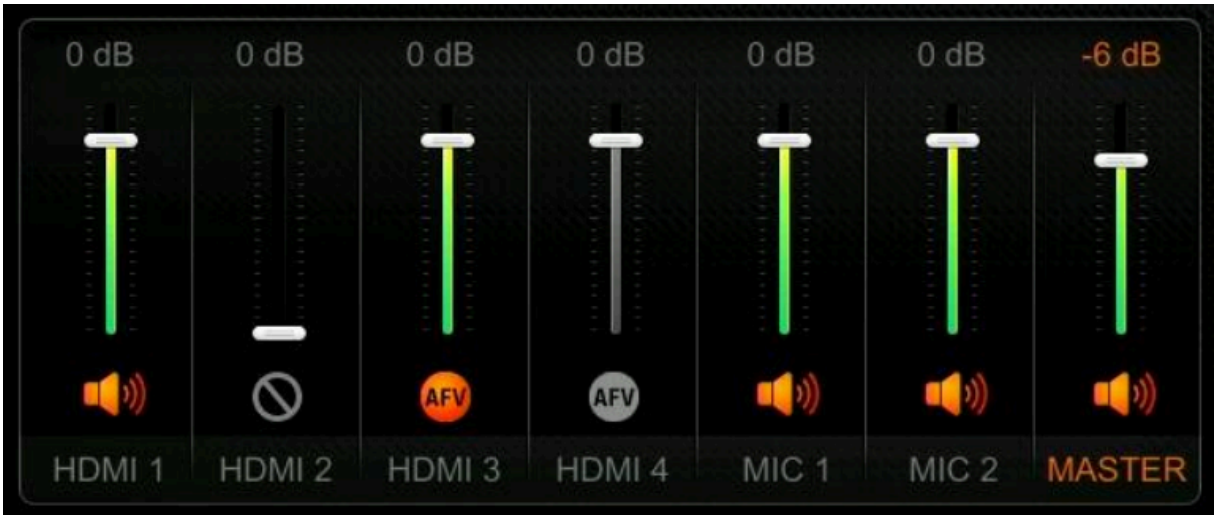
Note: When the PGM window displays black for an extended period of time (5-10 seconds) even after the transition, verify that the FTB button is flashing.



1. Set the FTB and Mute speed. The speed of FTB / MUTE is adjustable from 0-3s located in the menu. The speed relates to the time regarding the entire transition for FTB and MUTE. For example, if the speed is set to 2.5s the PGM video will fade to black with audio gradually becoming muted in 2.5s.
2. FTB with MUTE FTB can also work with MUTE. Press the MUTE button or turn on the FTB with MUTE on from the menu, then the PGM will fade to black with mute active.

Audio Settings

All audio statuses are displayed in the status page of Multiview and in each Multiview window there is an audio meter for monitoring status of all the audio inputs.



: Audio off;

: Audio on, AFV off;

: Audio on, AFV on & activated;

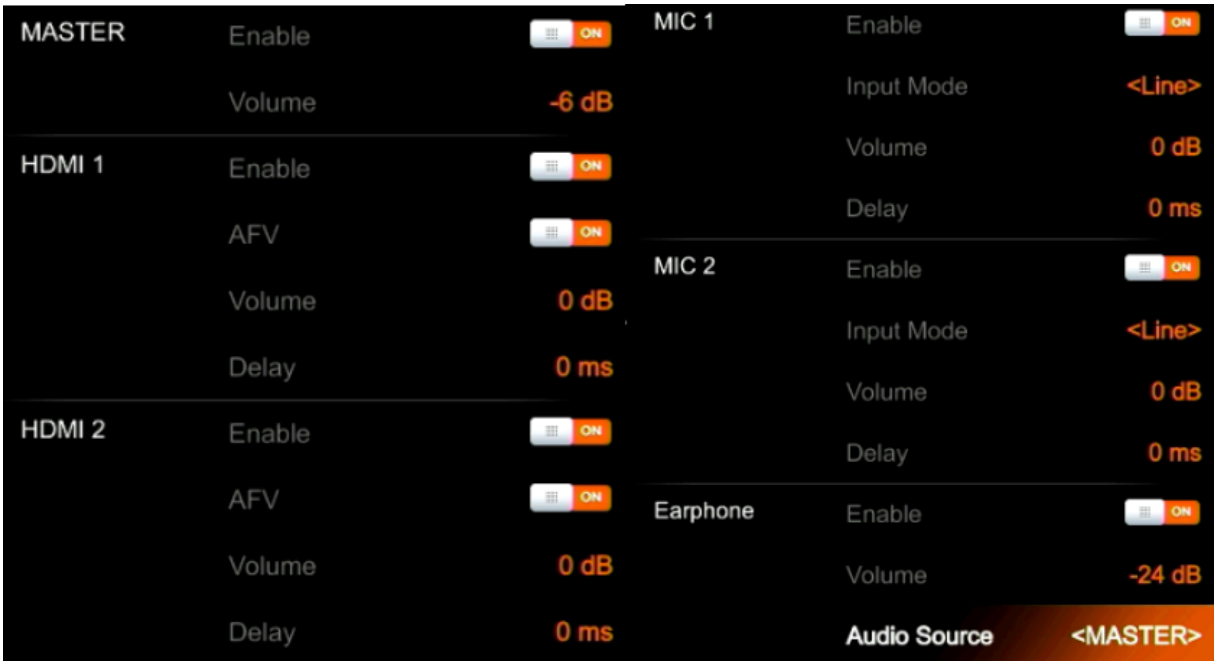
: Audio on, AFV on & nonactivated.

Master Audio

Master audio is the primary audio control for the PGM output. It can be mixed audio or AFV audio. Users can turn on/off the master audio or adjust audio volume.

Audio On (MIX)

There are 6 Audio source inputs that can be selected for the audio source embedding, including 4 HDMI connections and 2 MIC 3.5mm audio inputs. Users can turn on/off or adjust volume for each audio of HDMI 1, HDMI 2, HDMI 3, HDMI 4, MIC 1 and MIC 2 independently. When enabling an audio source the audio will be permanently mixed into the PGM output.



AFV

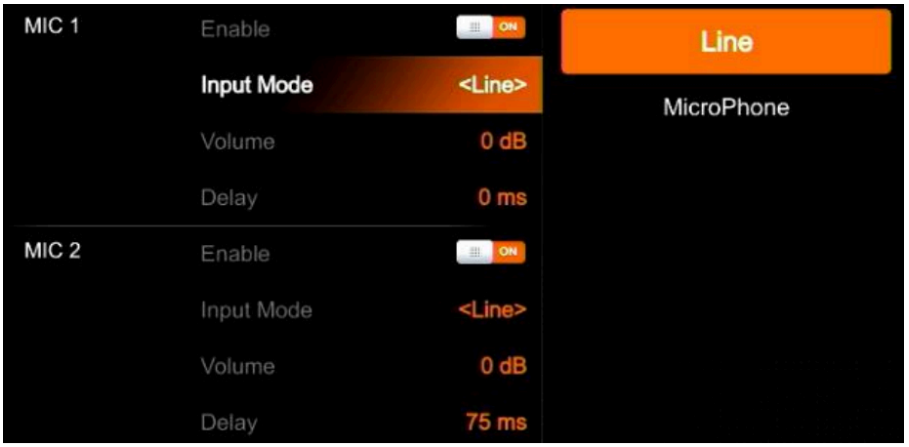
Each channel of the 4 HDMI embedded audio inputs can be set to AFV (Audio-Follows-Video). When one HDMI embedded audio is set to AFV, then the audio will be turned on when the PGM switches to the HDMI video. See the below image as an example. When HDMI 1 embedded audio is set to AFV, HDMI 2 embedded audio will be turned off when selecting HDMI 1 for audio aligning with video source for PGM.

Audio Delay

In the menu there is an audio delay setting for HDMI 1, HDMI 2, HDMI 3, HDMI 4, MIC 1 and MIC 2. Users can adjust the audio delay to make the audio and video synchronization. One level of the audio delay setting equals 5ms. The audio can be delayed max 500ms.

MIC

The switcher has two MIC inputs that users can connect to a line-level or microphone signal and turn on/off or adjust the audio volume and delay level.



Headphone

The switcher has a headphone output for monitoring audio. Users can choose one audio source for headphones from the Master audio, the 4 embedded HDMI audio sources, and the 2 MIC inputs. Users can turn on/off the headphone or adjust audio volume.

Audio Keyboard Configuration

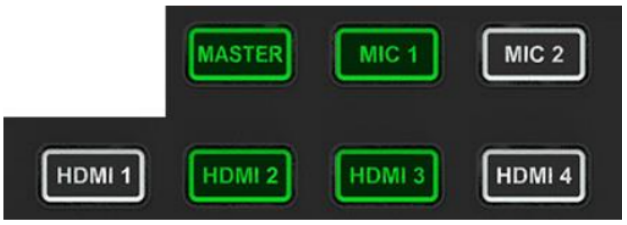
Audio can also be configured using the keyboard control of the switcher. The keyboard includes two parts as shown below.

Part A: Used for selecting one audio source to be configured, including Master, MIC 1, MIC 2, HDMI 1, HDMI 2, HDMI 3, and HDMI 4.

Part B: Used for setting audio functions, including AUDIO ON, AFV, VOL+, and VOL-.

Audio Indicator

The LED indicator of buttons shows the current audio status.



When the indicator button in Part A is green, it indicates the corresponding audio is ON. When the indicator is OFF it means the corresponding audio is OFF.

In the example image, when the indicators of MASTER, MIC 1, HDMI 2, HDMI 3 are on, the corresponding audio sources are ON. The indicators of MIC 2, HDMI 1, HDMI 4 are off, the corresponding audio signals are OFF.

When any button in Part-A is pressed and the indicator for the button in Part B turns green it means the corresponding audio function is ON. When the indicator is OFF it means the corresponding function is OFF.

In the example image, after pressing the HDMI 1 button, the indicator for HDMI continues flashing. If the AUDIO ON indicator button is green and the AFV button is OFF, this indicates the audio of HDMI 1 is ON and the AFV of HDMI 1 is OFF.

Audio Configuration Steps

Step 1. Press any button from Part-A to select the audio for configuration, the LED indicator of the button will continue flashing which indicates it is available to configure.

Step 2. Press the AUDIO ON button from Part-B to turn on the audio. The LED indicator will turn green.

Press the AFV button to set the audio to follow the video, and the LED indicator will turn green. Double-tap the AUDIO ON/ AFV button to turn it OFF and the indicator will also turn off. Press the VOL+/ VOLbuttons to adjust the audio volume.

Note: AFV button is not available for MASTER.

Step 3. The selected button from Part-A in Step 1 is still flashing, press it again to finish the configuration and the indicator should stop flashing. Alternatively, when the Part-A button is flashing press another button from Part-A to select the next audio source for configuring. When audio configuration is complete, press the flashing button again from Part-A to complete configuration and stop the flashing indication.

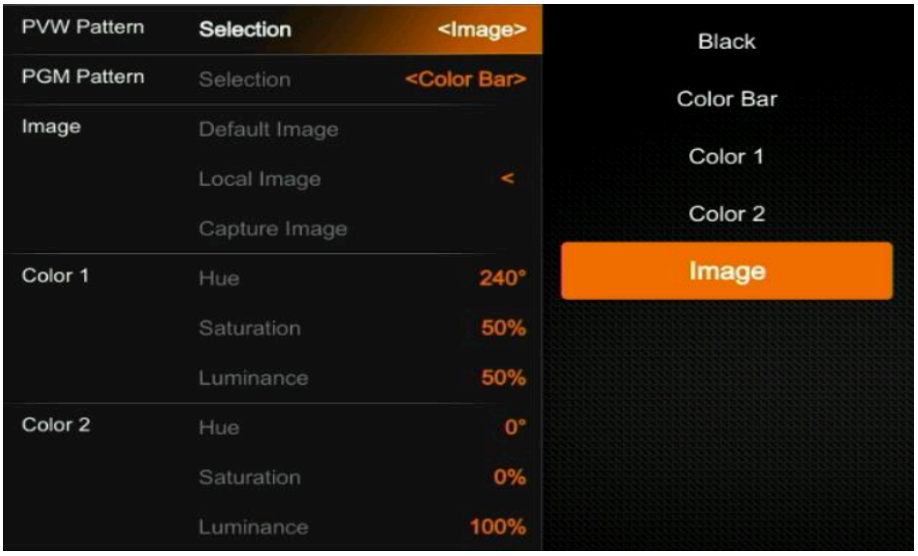
12.8. Mute

The switcher has a MUTE button in the row of PVW keyboard. It is quick and easy for users to press the button to make the Master audio turn off. When MUTE turns on the LED indicator keeps flashing which means the PGM audio is being muted. The speed of MUTE can be set from menu (Refer to Part 12.8)

Media Library

PVW Pattern & PGM Pattern

The switcher can generate patterns for PVW and PGM. The PVW/PGM pattern source can be selected from the Color Bar, Black, Color 1, Color 2 and Image.



User-defined Color Pattern

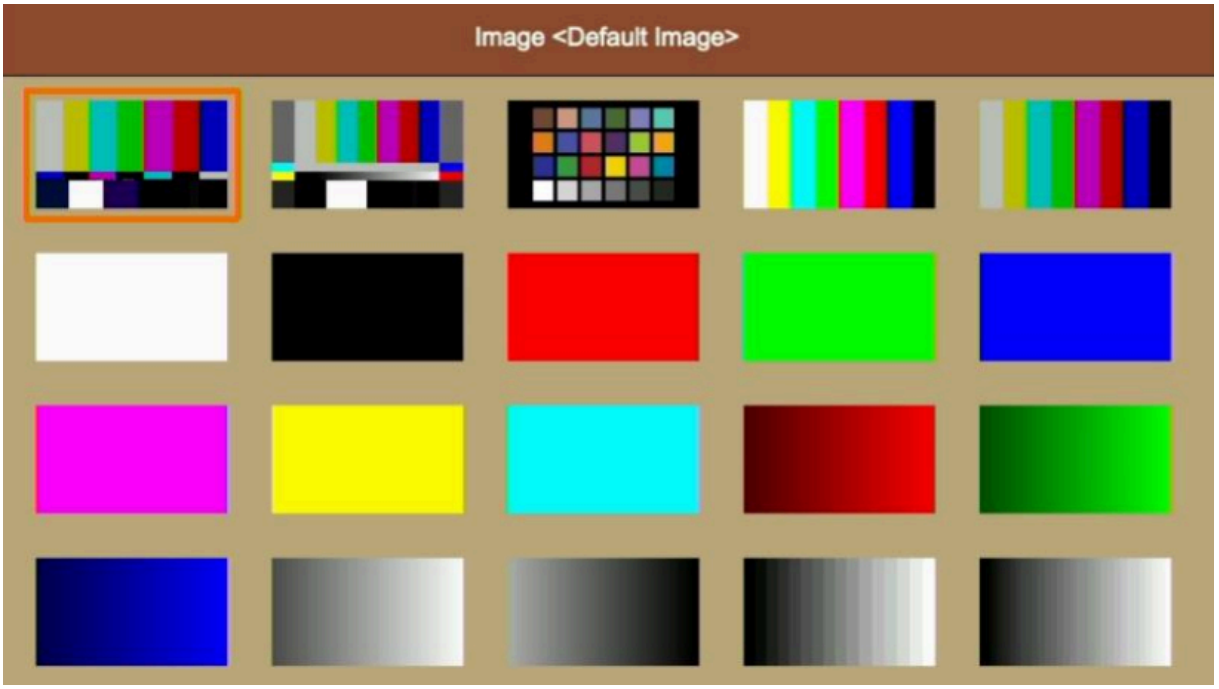
There are two color patterns Color 1 and Color 2 for user-definition. Users can set the hue, saturation, and luminance to generate the color pattern for Color 1 and Color 2. See below image.

Image Setting

The Image is one of the sources for PVW Pattern and PGM Pattern. Users can choose the Image source from the Default Image, Local Image or Captured Image. The selected image is the last selection from the Default image, Local Image, and Capture Image.

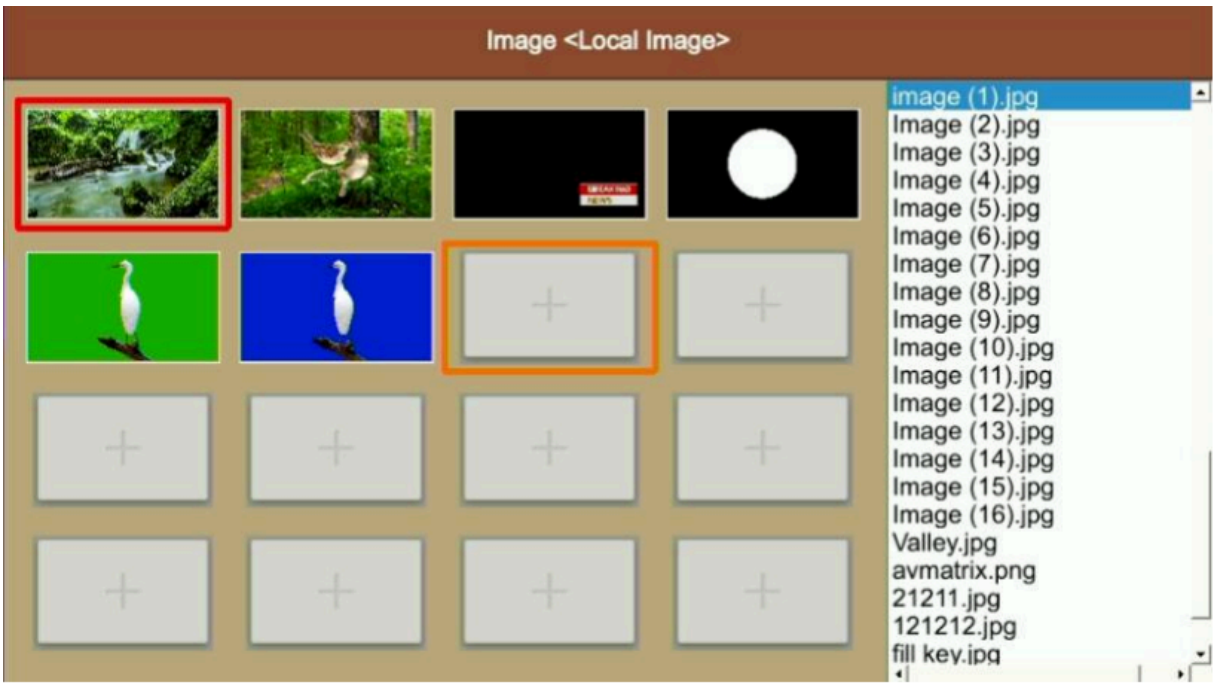
Default Image

The default images are preset in the switcher. Use the rotary button to select one of images from the Default Image menu as the source for PVW or PGM pattern.



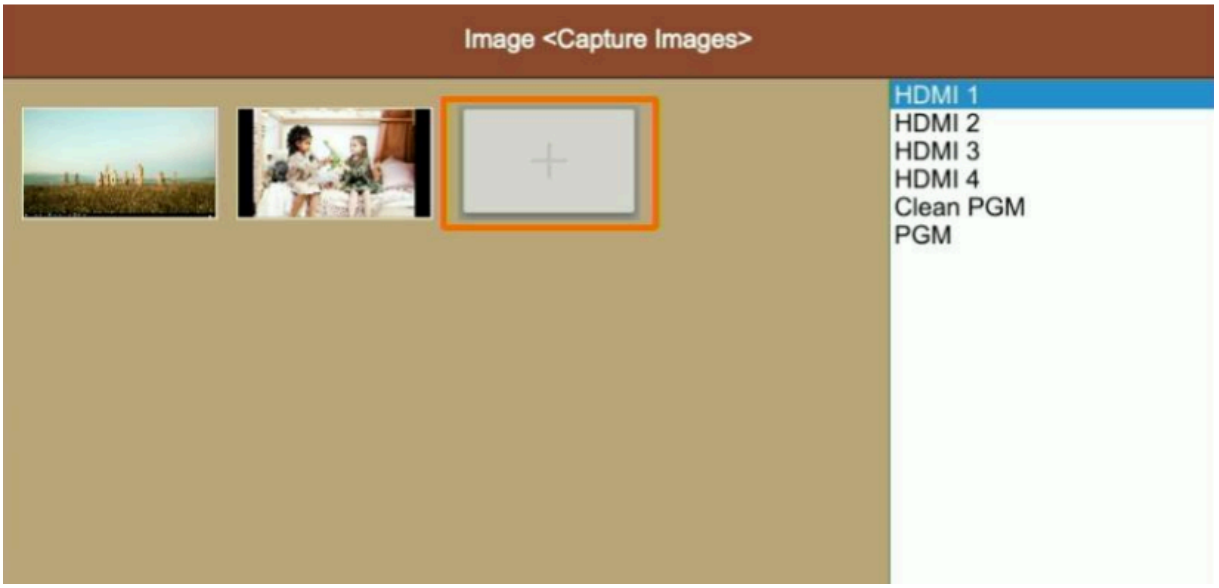
Local Image

The local images are the images which you upload from a USB disk. When you plug in a USB drive, a USB icon will appear in the bottom of the Status/Menu page. The image list from the USB disk displays on the right side of the menu. Select a single image to upload it into the switcher. The uploaded image will be listed in the media list. Users can press the rotary button to select the uploaded image as source for PVW/PGM pattern by selecting the option Select. Users can delete the uploaded image from the menu.



Capture Image

The capture image comes from a screenshot of HDMI 1, HDMI 2, HDMI 3, HDMI 4, Clean PGM, PGM. The captured image will be listed in the media list. Users can press the rotary button to select the captured image as source for PVW/PGM pattern by selecting the option Select. Users can delete the captured image from the menu. See below images.



System setting

Language

Entering system settings from the menu to switch the system language between English and Chinese.

Fan Setting

Set the cooling fan speed to control the temperature and noise of the switcher. There are 3 options, Auto/ Off / On.

When users select the Auto option, the speed of the fan will be adjusted automatically according to the switcher's operating temperature. If the application/environment requires no fan noise, the user can turn the fan off manually from the menu as well if the switcher's operating temperature continues to elevate and reaches the preset value, a pop-up prompt notification will appear and auto turn on the high-speed fan cooling down the CPU. If the switcher is working in a high temperature environment and the auto fan setting is unable to meet required cooling temperature, then the user can select the fan setting to ON option to maintain the high-speed fan setting.

System Reset

- **Reset Preferences**: Restore settings to default Settings but remain the part of settings including the Media library, Time, Network, Language, Fan and User Setting.
- **Factory Reset**: Restore all settings to default Factory Settings.

Download

The BG-HDVS42U comes with a free PC control software. Users can connect the switcher with a windows OS computer via LAN port to have remote control. The software and user manual can be downloaded from www.bzbgear.com.

Version

Check the switcher's Software Version, FPGA Version, MCU Version, PCB Version.

Time Setting

Setting Time Manually

Users can set Year/ Month/ Day/ Hour/ Minute directly through the Menu. The time format can be set to 12h and 12h. The default setting is 12h.

Time Synchronization

Connect the video switcher to a PC (windows OS) via LAN port and use the control software to search for the device. The time will automatically synchronize once the video switcher is discovered on the network.

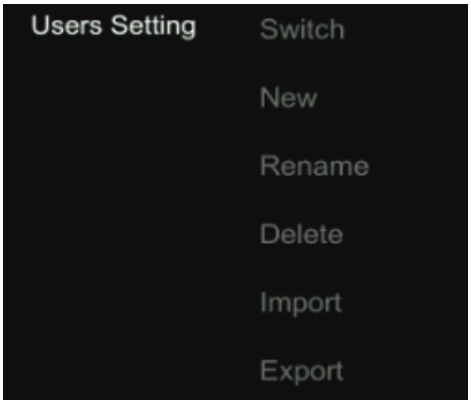
Network Setting

There is a switch setting for DHCP in the menu. When turning on DHCP, the switcher will obtain an IP address automatically after connecting the switcher to the network using DHCP.

When turning off DHCP, users can set the IP address, Subnet Mask, Gateway from the menu manually. The default IP address of the switcher is 192.168.1.215.

User Setting

Users can save all current settings into an account in the switcher. You can add a new user account, rename an account, switch between accounts, delete an account, or import/export the account to a USB flash disk.



- **New.** Adding a new user account and save all current settings to the account. Input the name through a virtual keyboard from the menu.
- **Rename.** Rename the current user account name.
- **Switch.** Switch to another saved user account to have the saved settings easily and quickly. Meanwhile, the Username will be updated in the bottom of the Status/Menu page after switching.
- **Delete.** Delete a saved user account which you will never use again.
- **Import.** Import the current user account and settings to a USB flash disk.
- **Export.** Export the user account and settings saved in a USB flash disk.

Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone	**Email**	**Live Chat**
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.

Mission Statement

BZBGEAR is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGEAR delivers quality products designed with users in mind.

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