

BG-MFVS61-G2

6-Channel/Input 3G-SDI and 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 avoid falling or damage, please do not place this unit on an unstable cart, stand, or table.
- Operate unit only on the specified supply voltage.
- Disconnect power cord by connector only. Do not pull on the cable portion.
- Do not place or drop heavy or sharp-edged objects on the 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 grounded at all times to prevent electrical shock hazard.
- Do not operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
- Do not use this unit in or near water.
- Do not allow liquids, metal pieces, or other foreign materials to enter the unit.
- Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.
- 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.

Introduction

The BG-MFVS61-G2 is a compact 6-channel SDI/HDMI multi-format video switcher that can also perform audio mixing and different transition effects. The USB 3.0 video output allows a direct connection to a computer so you can stream directly to platforms like YouTube and Facebook. Featuring 4 SDI and 2 HDMI inputs as well as 2 scalable SDI and 1 HDMI PGM outputs, this versatile unit is able to handle nearly any combination of equipment you can find. The unit also features 1 HDMI and SDI multiview out along with an integrated T-bar slider that allows for precise control of selectable transitions such as mix, fade, and wipe. This cost-effective video switcher will be your perfect choice for various events, production applications, and more.

Features

- 6 inputs: 4×SDI & 2×HDMI
- Outputs: 1× USB type-C, 2× SDI & 1× HDMI PGM, 1×SDI & 1×HDMI multiview
- Uncompressed: Capture uncompressed video for live streaming compatible with UVC & UAC
- SDI AUX: 1× SDI AUX output can be selected as PGM or PVW
- Multi-format: Input format auto-detected and PGM outputs selectable
- T-Bar: Auto/ Cut/ Mix/ Fade/ Wipe transition effects
- Picture in Picture: PIP mode size and position adjustable
- Audio Mixing: Selectable Mixing and Audio Follow Video (AFV) modes
- **GPIO:** Tally and FTB control capable.

Packing List

- 1x BG-MFVS61-G2
- 1x Power Supply (DC12V 2A)
- 1x 3' USB-C to USB-A cable
- 1x Padded Carrying Case
- 1x User Manual

Specifications

	Video Inputs	4× 3G/HD/SD-SDI, 2× HDMI		
	SDI Input Format	1080p 60/59.94/50/30/29.97/25/24/23.98 1080psF 30/29.97/25/24/23.98 1080i 60/59.94/50 720p 60/59.94/50/30/29.97/25/24/23.98		
Inputs	HDMI Input Format	1080p 60/59.94/50/30/29.97/25/24/23.98/23.976 1080i 50/59.94/60 720p 60/59.94/50/30/29.97/25/24/23.98 576i 50, 576p 50		
	SDI Video Rate	Auto detection, SD/HD/3G-SDI		
	SDI Compliance	SMPTE 259M/ SMPTE 292M/ SMPTE 424M		
	Color Space and Precision	SDI: YUV 4:2:2, 10-bit; HDMI: RGB 444 8/10/12 bit; YUV 444 8/10/12 bit; YUV 4:2:2 8/10/12 bit		
	PGM Outputs	2× 3G/HD/SD-SDI; 1×HDMI Type A		
Video Outputo	PGM Output Format	1080p 60/50/30/25/24; 1080i 50/60		
	Multiview Output	1× 3G-SDI; 1×HDMI Type A		
	Multiview Output Format	1080p 60		
	USB interface	1× USB3.0 Type-C (USB3.1 Gen1, up to 200MB/s)		
	Output Format	1920×1200, 1920×1080, 1680×1050, 1440×900, 1368×768,1280×1024, 1280×960, 1280×800, 1280×720, 1024×768, 1024×576, 960×540, 856×480, 800×600, 768×576, 720×576, 720×480, 640×480, 640×360		
USB Output	Frame Rate	Up to 60fps		
	Supports OS	Windows 7/8/10/11, Linux (Kernel version 2.6.38 and above), Mac OS (10.8 and above)		
	Software compatibility	OBS studio, Skype, ZOOM, Teams, Google Meet, Youtube Live, QuikcTime Player, Facetime, Wirecast, CAMTASIA, Ecamm.live, Twitch.tv, etc.		
Audia	Audio Input	1× 3.5mm Stereo audio; 1× RCA(L/R)		
Audio	Audio Output	1× 3.5mm Stereo audio; 1× RCA(L/R)		
	GPIO	Tally		
	LAN	RJ45		
	Power	DC 12V, 1.8A		
	Consumption	≤ 22W		
Othere	Operation Temperature	-4°F ~ 140°F / -20°C ~ 60°C		
Others	Storage Temperature	-22°F ~ 158°F / -30°C ~ 70°C		
	Operation Humidity	20%~70%RH		
	Dimensions	13 x 9.6 x 2.64in [330 x 244 x 67mm]		
	Weight	2.2 lbs [1.0kg]		
	Warranty	2-Year Limited		
Accessories	Accessories	1× Power Supply (DC12V 2A), 1× USB3.0 Cable Type-C to Type-A		

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Operation Controls and Functions

6 8 9 BZB GEAR* 5 · MIX PIP FTB ന 2 3 5 6 AUTO 1 4 2 3 5 6 4 CUT 1 13

Front Panel

No.	Name	Function Description
1	PVW: 1-6	Select the signal source for Preview
2	PGM: 1-6	Select the signal source for Program
3	MENU	Open/navigate the Menu settings
4	MIXER	Select 2-ch audio mixing
5	AFV	Audio follow video mode
6	FADE	Fade transition effect
7	MIX	Mix transition effect
8		Wipe transition effect
9	PIP	Picture in Picture
10	FTB	Fade to Black
11	AUTO	Performs an automated switch between Program and Preview.
12	CUT	Performs a simple immediate switch between Program and Preview.
13	T-bar	Manual Transition between Program and Preview.

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Rear Panel



No.	Function Description
1	LAN firmware updates and time sync
2	3.5mm AUDIO IN/OUT
3	AUDIO OUT
4	AUDIO IN
5	HDMI PGM OUT
6	HDMI & SDI MULTIVIEW OUT
7	SDI AUX OUT
7	SDI PGM OUT
8	SDI IN
9	HDMI IN
10	DC 12V
11	Power Switch
12	SDI AUX OUT(for PVW/PGM)
13	USB OUT (for connection to a computer/live streaming)
14	GPIO (for tally)

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	PGM-IN5	10	PVW-IN5
3	PGM-IN6	4	PVW-IN6
5	GND		

Operation Instructions

Multiview Output Layout

PGM (Program) and PVW (Preview) are displayed as shown in the following image. The signal level meter of PGM audio is shown only in the multiview output. SDI/HDMI PGM out have no overlays.



The following 6 'IN#' windows (shown below) display the 6 input signals underneath the Preview and Program windows .



The lower right corner of the display features the menu and status information. CH1 & CH2 are the channel selection of the 2 audio sources for the audio mixer. There is a real-time Digital clock/Analog clock displayed beside the menu.

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PGM PVW Switching

PGM, PVW Channel Selection

PGM and PVW buttons 1-6 in the image below correspond with the 6 'IN#' windows in the multiview layout. The selected PGM source will turn the button red and the selected PVW source will turn the button green.



The selected PGM source will have a red border while the selected PVW source will have a green border in the multiview display.



Transition Control

There are two transition control types for this video switcher: Transition without effects and Transition with effects.

1) Transition without Effects

CUT performs a simple immediate switch between Preview and Program views. This is no delay and the selected transition effect WIPE, MIX, or FADE will not be used.



2) Transition with Effects

AUTO performs an automated switch between Preview and Program views. The timing of the transition is set in the multiview on screen menu. The selected transition WIPE, MIX, or FADE will be used.

T-Bar manual transition performs the selected transition but it is more flexible in timing as the transition depends on the speed of the manual switch movement.

FTB (Fade to Black)

Pressing the FTB button will fade the current video Program source to black. The button will flash to indicate that it's active. When pressing the button again it acts in reverse, from complete black to the currently selected Program video source, and the button will stop flashing. FTB is usually used for an unexpected situation.



Note: When the PGM window display is black and stays black even after a transition, please check if the FTB button is flashing as the new source may have had FTB enabled.

Transition Effects

MIX Transition

Pressing the MIX button selects a basic A/B Dissolve for the next transition. It is active when the button LED is illuminated. Use the T-Bar or AUTO to operate the transition. The MIX transition effect is shown below:



WIPE will replace the current source by another source by replacing the image from one edge of the screen to the opposite side. It is active when the WIPE button is illuminated. There are a total of 8 WIPE start directions.

For example:



If choosing *List*, use the T-Bar or AUTO to operate the transition and the WIPE effect will perform as follows:



FADE Transition

Fade is a transition from one source to another by fading gradually. Press the FADE button and use T-Bar or AUTO to operate the FADE transition.

Audio Mixer Setting

Audio Description

This video switcher is equipped with 1 3.5mm Stereo audio input & output, 1 RCA(L/R) analog audio input & output, and 4 channels of SDI embedded audio.



USB 3.0 Live Streaming

The USB 3.0 streaming output transmits the PGM output as an uncompressed video and audio signal. The USB 3.0 streaming output is based on UVC (USB video class) and UAC (USB audio class) standards. No additional drivers need to be installed. Once the unit is detected/plugged in, the relevant video and audio devices will be added in the Windows Device Manager. There will be two new devices:

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

Use a third-party Video Media Player like OBS Studio, vMix, or Windows Media Player to play and store the captured video content. The signal can also be streamed directly to Facebook or YouTube.

Menu Setting

SDI PGM/ AUX and Multiview Output Format

The output format of multiview is fixed at 1080p60 while the PGM output can be set in the menu. In addition to the PVW and PGM outputs there is a programmable AUX output. The auxiliary output can easily be switched between PVW and PGM via the Menu knob and its default setting is set to PGM. Selectable resolutions include 1080P 50/60/30/25/24Hz and 1080I 50/60Hz for the SDI/HDMI PGM and AUX outputs.

STAT	TUS	
CH1	IN1	CH1
CH2	IN2	CH2
CH1_VOL.	100	CH1_VOL.
CH2_VOL.	100	CH2_VOL.
AUX	PGM	AUX
Audio Mode	- Mixing	Audio Mode
PGM	1080P30	PGM

Audio Setting

This video switcher features 1 L/R analog audio input & output and 1 3.5mm stereo audio input and output which support both audio follow video (AFV) and audio mixing modes.

Mixing Mode

Press the MIXER button to set audio mode to Mixing. Press the menu dial and choose the audio channel and source for audio mixing. Users can select audio sources from IN1/ IN2/ IN3/ IN4/ IN5 / IN6/ Phone/ and RCA IN.

STAT	US
CH1	IN1
CH2	IN2
CH1_VOL.	100
CH2_VOL.	100
AUX	PGM
Audio Mode	Mixing
PGM	1080P30

STA	TUS
CH1	IN1
CH2	IN2
CH1_VOL.	100
CH2_VOL.	100
AUX	PGM
Audio Mode	Mixing
PGM	1080P30

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Press AFV button to enable the audio follow video mode. When the audio is in follow mode the audio is taken from the embedded audio of the Program video source. Users can control the audio volume by adjusting the channel volume.

STAT	TU S
CH1	IN1
CH2	IN2
CH1_VOL.	100
CH2_VOL.	100
AUX	PGM
Audio Mode	AFV
PGM	1080P30

Picture in Picture (PIP) Mode

When PIP is pressed a small image will appear on the top left corner of the PVW window as shown in the following image. The menu tile will change as seen below. The window size, position, and border of PIP can be set from the menu.



Main Menu Settings

When the STATUS menu is not selected, press the MENU button to enter the main menu.



System Settings

Entering system settings allows the system language to be switched between English and Chinese. From this menu the real-time clock can also be switched between Analog or Digital displays.



Connect the switcher to a PC via an ethernet cable and download the time control software from our website:

https://bzbgear.com/knowledge-base/how-to-set-the-time-on-the-bg-mfvs-61/

Open the software and click "Scan" to search for and connect to the device. Once connected the clock time will be changed to the same time as the PC.

Network Settings

Network

There are two ways to acquire an IP: Dynamic (IP configured by router) and Static (set IP manually). Select the method you need in the menu. The default setting is Dynamic.

Dynamic: Connect the video switcher to a router with DHCP, it will obtain an IP address automatically.

Make sure that the video switcher and PC are on the same local area network.

Static: Select static IP when the network is without DHCP. Connect the video switcher directly to the PC with a network cable, set the PC's IP address to the same IP range as video switcher (the video switcher's default IP address 192.168.1.215), or set the video switcher's IP address to the same IP range as PC's IP address.

Netwo	ork S	Setting	S		Ne	twork	Setting	gs	
IP Acquisition Static		IP Acquisition D		Dynan	Dynamic				
IP 19	92.	168.	123.	50	IP	192.		123.	50
NetMask 25	55.	255.	255.	0	NetMask				0
GateWay 1	92.	168.	123.	1	GateWay	192.		123.	1
Save					Save				
Return					Return				

NetMask

Set the NetMask. The default setting is 255.255.255.0.

Gateway

Set the Gateway according to the current IP address. Save the configuration when finished.

Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (<u>bzbgear.com/support</u>) for helpful information and tips regarding our products. Here you will find our Knowledge Base (<u>bzbgear.com/knowledge-base</u>) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (<u>youtube.com/c/BZBTVchannel</u>), 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:

<u>Phone</u>	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 <u>bzbgear.com/warranty.</u>

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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