



# BG-COMMANDER-ULTRAX

**4K HDMI 4-Channel Portable Production Switcher/Joystick  
Controller Combo with Touchscreen, PIP/Chroma Key, and USB-C  
Streaming**

## User Manual







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## Statement

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

## Safety Precaution

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- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- 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.
- 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.



## Introduction

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The BG-COMMANDER-ULTRAX is a powerful all-in-one production switcher and joystick controller designed for professional yet portable multi-camera workflows. Equipped with four HDMI 4K inputs and dual HDMI outputs, it delivers smooth 1080p60 program output while supporting advanced features such as Picture-in-Picture (PIP), chroma key, logo overlay, and multiple transition effects. Its 7-inch LCD touchscreen and intuitive joystick provide precise camera control, while the integrated T-bar and knob controls allow operators to execute seamless live productions with ease.

Built for modern streaming and recording needs, the BG-COMMANDER-ULTRAX supports direct program recording to USB drives or SD cards, as well as USB-C virtual camera output for effortless integration with popular live streaming and conferencing platforms. Also equipped with professional audio mixing inputs, tally light support, and PTZ camera control via IP or serial protocols.

## Features

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- **4K HDMI Input, Full HD Output:** Supports four HDMI 4K@30 inputs with two HDMI 1080p60 outputs (Program + Monitor).
- **Touchscreen Interface:** 7-inch LCD display (1024×600) for real-time monitoring, settings, and control.
- **Integrated Joystick Control:** 4D joystick for smooth PTZ camera operation with ONVIF 2.8 and VISCA over IP support.
- **Professional Switching Tools:** T-bar and step-less knob for seamless transitions.
- **Built-In Video Effects:** Picture-in-Picture (PIP), Chroma Key, logo overlay, and transition effects (CUT/AUTO/FTB).
- **Dual Recording Options:** Record directly to USB storage devices or SD cards without needing a computer.
- **USB-C Virtual Camera Output:** Stream switched video/audio directly to conferencing and streaming software.
- **Professional Audio Integration:** 3x audio inputs and a 3.5mm headphone jack for monitoring and mixing.
- **Expanded Control Capabilities:** Supports Tally light interface for live production status feedback.
- **Compact & Portable Design:** Lightweight build ideal for e-commerce, online classes, worship services, and live events.
- **Flexible Connectivity:** LAN port for IP control, multiple video formats supported, and DC 12V power input.
- **Durable Performance:** Low power consumption (<15W) with wide operating temperature range (-10°C to 50°C).



## Packing List

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- 1x BG-COMMANDER-ULTRAX
- 1x DC 12V Power Adapter
- 1x Manual



## Specifications

Technical Specifications	
Operating system	Linux
LCD display size	7-inch LCD screen
Display resolution	1024×600
Decoding ability	<b>Input:</b> 4K@30Hz (3840×2160) / 1080p@60Hz (1920×1080); <b>Output:</b> 1080p@60Hz (1920×1080), compatible with 1080p@30Hz / 720p@60Hz / 480p / 576p
Control protocol	ONVIF 2.8, VISCA Over IP
Interface	4× Video input (HDMI IN); 2× Video output (HDMI OUT (PGM/MON)); 1× Video Output (USB-C (Webcam)); 3× Audio Input (AUDIO IN); 1× Headphone Jack (3.5mm); 2× Control Ports (Tally & LAN); 2× Data Storage (USB-A 2.0 & SD Card); 1× Power Port (DC12V IN)
System setting	Supports video settings; audio settings; recording settings; device control; system maintenance
Operating components	4D control joystick, step-less knob, sliding T-bar
Hardware Specifications	
Power supply	Standard 5.5/2.1 power connector, DC 12V 2A ±10%
Power consumption	< 15W
Working temperature	14°F - 122°F / -10°C - 50°C
Working humidity	20%–80% Non-condensing
Storage temperature	-40°F - 140°F / -40°C - 60°C
Storage humidity	0%–90% Non-condensing



## Operation Controls and Functions

### Front and Rear Panel



1. **SD Card Slot** – For direct recording to SD media.
2. **Headphone Jack (3.5mm)** – For real-time audio monitoring.
3. **MIC Input 1 (3.5mm)** – Microphone/line input channel 1.
4. **MIC Input 2 (3.5mm)** – Microphone/line input channel 2.
5. **HDMI IN 1-4 (4K)** – HDMI video input, supports up to 4K@30Hz.
6. **HDMI AUX OUT** – Assignable auxiliary HDMI output for monitoring.
7. **HDMI PGM OUT** – Program HDMI output at up to 1080p60.
8. **USB OUT (USB-C)** – Virtual webcam output for direct streaming to a PC.
9. **TALLY Port** – For connecting tally lights during live productions.
10. **USB 2.0 Port (Type-A)** – For external USB storage devices.
11. **LAN Port (RJ45)** – Network connection for PTZ/IP camera control and ONVIF/VISCA over IP.
12. **DC 12V Power Input** – Power supply connection.
13. **Power On/Off Switch** - Manually power on/off



# Connection Diagram

BG-COMMANDER-ULTRAX Port Connection Diagram





## Troubleshooting

Problems	Causes	Solutions
No Power / All LED off	Power supply not connected, connected fully, or wrong power supply.	Check if the power supply is connected correctly and the output voltage value is within recommended specifications.
No sound or sound issues	The HDMI connection is faulty, the audio format is not supported by the displays, or the source player is set to another port for audio output	Check if the HDMI cables are connected correctly. Check if the audio format is supported by the display and that a user has not changed the supported audio format on the player's audio output. Ensure output settings from the HDMI source device as set correctly.
No picture or picture flickers	The HDMI cable may be faulty or the category cable quality is faulty.	Check if the HDMI and category cable connections are correct and undamaged. Change to another good working HDMI cable or category cable (CAT6 or better cable is recommended).



## Tech Support

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Have technical questions? We may have answered them already!

Please visit BZBGear's support page ([bzbgear.com/support](https://bzbgear.com/support)) for helpful information and tips regarding our products. Here you will find our Knowledge Base ([bzbgear.com/knowledge-base](https://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](https://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:

<b>Phone</b>	<b>Email</b>	<b>Live Chat</b>
1.888.499.9906	<a href="mailto:support@bzbgear.com">support@bzbgear.com</a>	<a href="https://bzbgear.com">bzbgear.com</a>

## Limited Product Warranty Terms

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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](https://bzbgear.com/warranty).

For questions, please call 1.888.499.9906 or email [support@bzbgear.com](mailto:support@bzbgear.com).



## Mission Statement

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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.

## Copyright

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