

BG-COMMANDER-PRO

Professional Serial and IP Joystick Controller with 7" Touchscreen

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.
- 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
- Do not hot plug when it is working.



Introduction

The BG-COMMANDER-PRO is a powerful PTZ camera joystick controller featuring a 7" touch screen for real-time video previews. This versatile unit runs on the Android 11 operating system and supports H.265/H.264 decoding. It can display four RTSP streams simultaneously or one large full-screen image directly on its screen.

The BG-COMMANDER-PRO also includes HDMI projection, enabling it to output four additional RTSP streams to a connected display for easier monitoring. Users can quickly and easily manage PTZ controls, including preset positions, focus, zoom, and exposure settings. Additionally, it can directly access a camera's web interface if available.

Designed with our award-winning BG-ADAMO line of cameras in mind, the BG-COMMANDER-PRO offers quick access buttons to control their red/green tally lights and toggle auto-tracking on and off.

Features

- 7" Capacitive touchscreen with Android 11 operating system
- H.264/H.265 compression
- Live view up to 8 RTSP streams when an HDMI display is connected (4 directly on the device, and 4 other streams using the TV Wall function)
- PTZ control including presets, focus, zoom, exposure, and more
- Integrated Patrol feature to have cameras automatically path between presets
- Built with the BG-ADAMO in mind and allows for easy tracking and tally light control
- Capture photos and video directly on the controller or to a connected USB flash drive or micro SD card.
- Integrated search functions assist in easily adding cameras
- Most popular control protocols supported: VISCA (TCP/UDP), Pelco-P, Pelco-D, ONVIF, and NDI
- Supports over 2000 devices
- Firmware is easily upgradable using a USB or Micro-SD storage device
- 1 RS232 port to support legacy systems



Package Contents

- 1 x BG-COMMANDER-PRO
- 1 x Power Adapter (12V DC 2A)

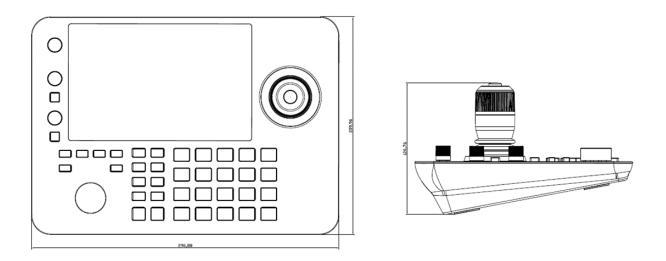
• 1 x User Manual

Specifications

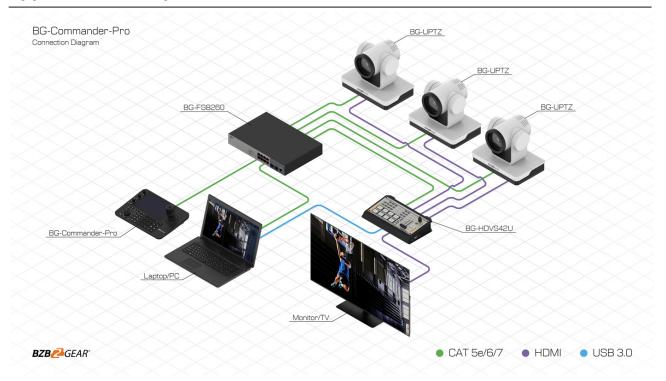
Technical Specifications		
Operating System	Android 11	
Screen Size	7" capacitive touchscreen / resolution 1024x600	
Video Output	HDMI 4K@30Hz	
Video Output Connectors	1x HDMI Type A, 19-pin, female	
Decoding	1. Supports H264/H265 2. Max supported H264: 4x1080p@30fps 3. Max supported H264: 16x720p@30fps 4. Max supported H265: 1x4K@60fps	
Protocols	IP VISCA, ONVIF, NDI, VISCA, Pelco-P, Pelco-D	
Power	Standard 5.5/2.1 power interface, DC 12V2A±10%	
Interface Ports	1. 1x RJ45 (Network) 2. 1x RS232 (RJ45) 3. 1x HDMI output 4. 1x USB 2.0 5. 1x Micro-SD card slot	
Mechanical Specifications		
Power Consumption	<1.5W	
Working Humidity	10%-90% RH(no frost)	
Working Temperature	14°F ~ 122°F / -10°C ~ 50°C	
Storage Temperature	-40°F ~ 140°F / -40°C ~ 60°C	
Dimensions	14 * 9.6 *6.1in [365 * 245 * 155mm]	
Weight	3.75 Lbs [1.7kg]	



Dimensions



Application Example





Panel Descriptions



No.	Name	Function Description
1	MicroSD	x1 Micro-SD card slot
2	USB 3.0	x1 USB Type-A female
3	RS232	x1 RJ45
4	RS422/485	x1 RJ45
5	HDMI OUT	x1 HDMI Type A, 19-pin, female
6	ETHERNET	x1 RJ45 TCP/IP connection
7	DC 12V	x1 12V 2A power supply port
8	POWER	x1 Power toggle switch



Button Descriptions



- **[P/T Speed]:** Adjust the pan, tilt, and zoom speed of the joystick. Press the knob down to switch between the two speed modes, fixed and variable.
- [IRIS]: Manually open or close the selected camera's IRIS.
- [Auto Exposure]: set the selected camera to automatically adjust its exposure levels.
- [R/B Gain]: Adjust the Red or Blue gain of the selected camera. Press the knob down to toggle between the different modes.
- [Auto WB]: Set the selected camera to automatically adjust its white balance.
- [Bright+]: Increase the selected camera's brightness.
- [Bright-]: Decrease the selected camera's brightness.
- **[Patrol]:** The selected camera will automatically follow a predetermined path using the camera presets. See the "Patrol" section for more information.
- [Auto Focus]: Set the selected camera's focus to automatic.
- [Backlight On]: Turn on the camera's backlight if available.
- [Backlight Off]: Turn off the camera's backlight if available.
- [Red On]: Turn on the red tally light of the selected BG-ADAMO or BG-ADAMO-JR camera.
- **[Red Off]:** Turn off the red tally light of the selected BG-ADAMO or BG-ADAMO-JR camera.



- **[Green On]:** Turn on the green tally light of the selected BG-ADAMO or BG-ADAMO-JR camera.
- **[Green Off]:** Turn off the green tally light of the selected BG-ADAMO or BG-ADAMO-JR camera.
- [Track On]: Turn on the "Presenter" tracking mode on a BG-ADAMO and BG-ADAMO-JR camera.
- [Track Off]: Turn off the "Presenter" tracking mode on a BG-ADAMO and BG-ADAMO-JR camera.
- [Play Video]: When a camera is selected in the PTZ Control or PTZ Wall modes, "Video On" will display the RTSP stream from the camera. Press and Hold the button for 3 seconds to start the stream of all cameras on the grid.
- [Stop Video]: When a camera is selected in the PTZ Control or PTZ Wall modes, "Video Off" will turn off the RTSP stream from the camera. Press and hold the button for 3 seconds to stop all streams currently shown on the grid.
- **[Set Preset]:** Press "Set Preset", type in the desired preset address number (1-254), and press "Set Preset" again to save a camera preset.
- [Call Preset]: Press "Call Preset", type in the desired preset address number (1-254), and press "Call Preset" again to recall a camera preset.
- **[Num 0-9]:** Long press for 3 seconds to set presets 0-9; short press to recall presets 0-9.
- [Clear]: Clear the selected menu item.
- [Setup]: From the Main Screen or the PTZ Control menu pressing the "Setup" button will open the controller settings menu.
- **[Lock]:** Tap once to lock the controller screen. Press and hold anywhere on the screen to unlock.
- [Menu On]: Open the camera's OSD Menu (NOTE: Depending on the model of the camera, the OSD menu may only be shown on the camera's physical output and not on the RTSP stream to the controller. The controller may still open the camera menu and navigate.).
- [Menu Off]: Close the camera's OSD menu.
- [Menu Enter]: Advance one level on the camera's selected OSD menu item.
- [Menu Back]: Return one level in the camera's OSD menu.
- **[Home]:** Returns the selected camera to its 'Home' position.
- [Help]: Opens the built-in manual.



Joystick Controls

Operation	Output control	Operation	Output control	Operation	Output control
	Up		Down		Left
Operation	Output control	Operation	Output control	Operation	Output control
	Right		Zoom+		Zoom-



Login Screen



- On initial login, type in the default Username and Password and then press "Login".
 - Default Username: adminDefault Password: admin

Main Menu



- From the main menu, users can select from 2 options: PTZ Control or Settings.
 - PTZ Control: Access the BG-Commander-Pro's PTZ interface to control connected PTZ cameras.
 - Settings: Access the controller's settings for items such as adding or editing a camera, network settings, language, local recordings, and more.



Settings

The Settings menu can be accessed from the main screen or by pressing the Settings button in either PTZ or Video Wall modes. There are several sub-menus within settings which include Camera List, Sequence, System Setting, Factory Debug, Local Camera, Camera Record, Version, and Accounts.

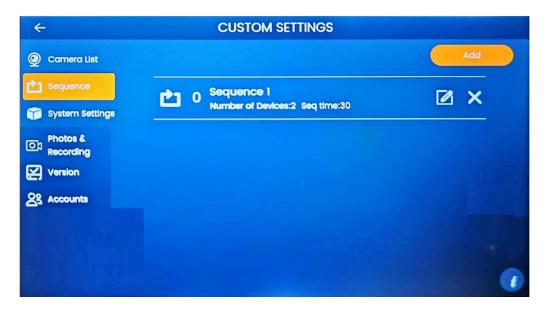
Camera List



 Camera List is used for adding and managing cameras in the system. See the "PTZ Control and Managing Cameras" section of this manual for more information.



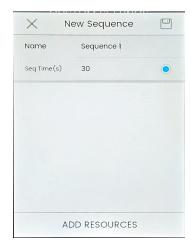
Sequence



- The Sequence function can be used in conjunction with the TV Wall mode but can be used in PTZ control mode as well. Users can create a custom configuration of multiple cameras that will cycle their live stream image at a given time frame.
 - This feature is convenient when users have to monitor more than 4 cameras at once or have camera shots they would periodically like to see an image preview of.
 - Click the "Add" button in the top right corner to create a new sequence.

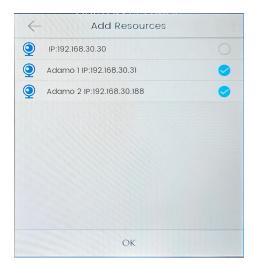


 In the pop-up window name your new sequence so it can be identified easily on the camera list and adjust the "Seq Time" or time between camera changes to the desired length.

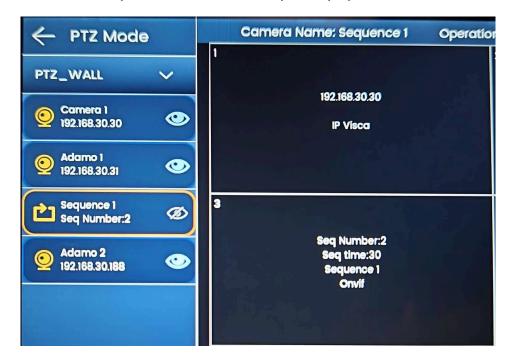




 Next press the "ADD RESOURCES" button at the bottom to select your cameras controlled by the unit to become part of the sequence and press OK.



- The Sequence can now be added to the PTZ Wall or TV Wall grids as if it were a camera.
- o Click the "Play" button to start the sequence playback.

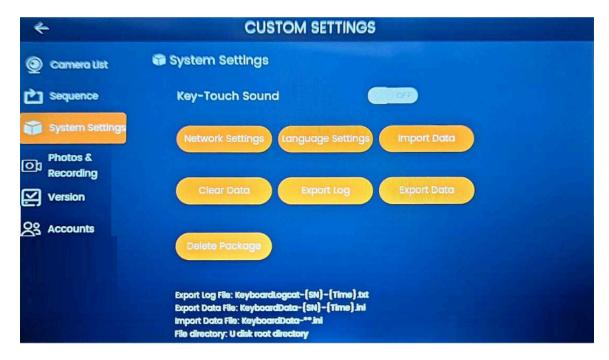


■ **NOTE:** Sequences can only be viewed and cannot be controlled.



System Setting

 System Settings contains several sub-menus including turning on/off key sounds, Network Setting, Language Settings, Import Data, Clear Data, Export Log, Export Data, and Delete Package.



- Network Setting: Click Network Setting to manage the controller's ethernet settings. The controller is set to DHCP by default. NOTE: While other options such as WiFi are available on the Network Settings page they are not functional. See the "Network Settings" section for more information.
- Language Setting: Use this submenu to add more languages to the tablet (default English and Chinese only).
- Clear Data: Clear all added devices and restore the app to its original settings
- Export Log: Export the system log.
- **Export Data:** Export the current app configuration and add devices.
- Import Data: Import saved app configuration data.
- Delete Package: Restore the controller to its original factory settings.
- Photos & Recording: View, manage, and export screenshots or stream recordings captured from the PTZ Control or Video Wall modes that were saved directly to the unit.
- Version: View software version information and perform application updates or system updates.
- Accounts: Modify the password that allows access to the controller.

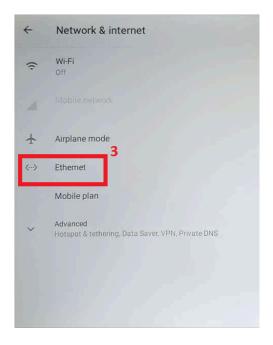


Network Settings

The BG-Commander-Pro is set to DHCP by default. This means, if a router or DHCP server is present on the network, the controller will be automatically assigned an IP address by the network. If needed, the controller can be assigned a static IP address so it does not change.



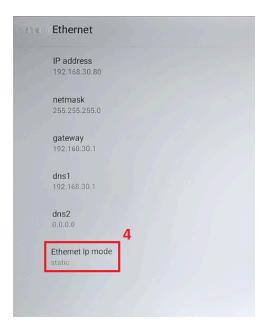
- 1. To modify your network settings, press the "System Settings" tab in the settings
- 2. Press the "Network Settings" option to open the Android settings menu.
- 3. On the Network & Internet page press "Ethernet".



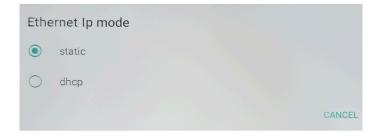
Note: The other settings on this page such as "Wi-Fi" and "Airplane" mode are not functional.



4. On the Ethernet page tap on the "Ethernet IP Mode" to begin modifying the settings.



5. Select the button for "Static" to open the IP settings.



6. Enter the desired information such as IP address, Gateway, Netmask, and then click "Connect" at the bottom to save your configuration.





• You will be returned to the Ethernet menu which will display "getting IP info..." for each of the settings.



 Note: Wait on this screen until the configuration finalizes and then it will be safe to reboot or navigate to the main screen.



Adding Cameras



From the PTZ Control screen, users will have several options to manage and control cameras. To start, it will be necessary to add a camera(s) to the unit for control. Press the "Settings" button at the top of the main menu screen, at the bottom of the PTZ mode screen (shown above), or press the physical "Setup" button on the keyboard while in the PTZ Mode screen. This will open the "Camera List" settings menu as shown below.

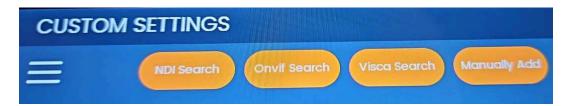




Using the Protocol Search Functions to Add a Camera

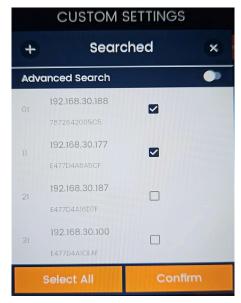
By default, the controller is set to DHCP so it only needs to be connected to your network to begin functioning and looking for devices. If there is no DHCP server or router present, see this manual's "Network Settings" section for further instructions before continuing.

 To add a camera, select one of the control protocol search options at the top to automatically search your network for available cameras, or use the "Manually Add" function if none are found.



NOTE: The automatic searches are based on camera control protocols (ONVIF, VISCA, and NDI), and not every camera supports every protocol. Choose your search function based on what your camera(s) support. Likewise, please also keep in mind that due to the complexity of some networks and devices, some or all cameras may not appear in the search results. In this case, it is recommended to use the "Advanced Search" and "Manually Add" functions.

- After selecting a control protocol to search used by the cameras connected to the network, a window will appear with any available units that the controller can see.
 - For BZBGEAR Cameras, it is recommended to use the VISCA Search / IP Visca control protocols for the best compatibility and the most control options.
- Simply click the checkbox(s) to select a camera(s) to add, and then click "Confirm".

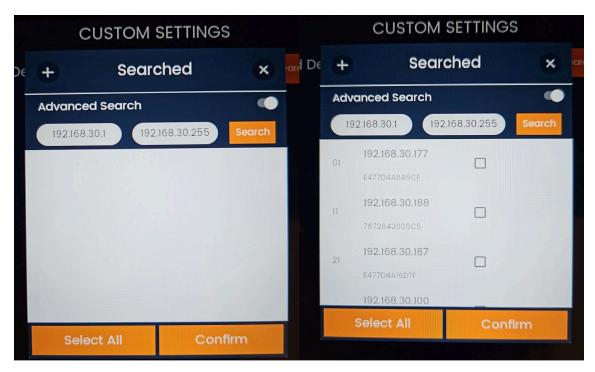


- If no cameras or the desired cameras were not found in the initial search, ensure the
 correct search protocol was used. Otherwise, use the toggle at the top of the window to
 enable "Advanced Search".
 - Advanced Search will automatically populate the IP Range of the subnet that the controller is connected with as shown in the next figure. The IP Range should be verified that it matches with what is expected and modified if necessary.

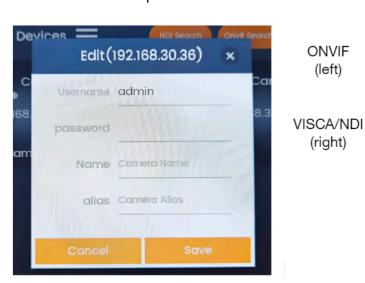


Note: Controller network settings may also need to be adjusted. See the "Network Settings" section of this manual for more information.

Press the "Search" button to see if your cameras are now discoverable.



- Select the desired camera(s) and click "Confirm" to begin adding them to the system.
- Depending on the search mode used, one of two window options will appear as shown below. If multiple cameras are selected the window will pop up for each unit.





- For ONVIF cameras, the camera's password will be required (BZBGEAR cameras use "admin" by default).
 - Enter a camera Name and Alias if desired to make the camera(s) easily identifiable on the camera list.
 - If no Name or Alias is entered, the system will automatically generate a name based on the order the camera was added.



- For VISCA and NDI searches, the RTSP stream link for BZBGEAR cameras will be listed at the top and can be edited if necessary for 3rd party units.
 - Enter a camera Name and Alias if desired to make the camera(s) easily identifiable on the camera list.
 - If no Name or Alias is entered, the system will automatically generate a name based on the order the camera was added.

Manually Adding a Camera

• Use the "Manually Add" option if the search functions are having difficulty locating a camera(s) on your network.



- 1. Select a "Protocol" from the dropdown menu that can be used to control the camera (IP Visca is the default).
- 2. Type in the Port number used by the camera for the selected control protocol.
 - a. Ensure the control type (TCP or UDP) is correct for your camera.
- 3. Enter a Camera Name and Alias
- 4. Enter the Camera IP address
- 5. Type in the camera's username and password
- 6. Type in the camera's RTSP stream URL.
- 7. Once complete, press the save icon in the top left corner.



Controlling Cameras



- After successfully adding cameras to the controller they will be shown in the list to the left of the PTZ grid.
- To control a camera, drag the camera to a position on the PTZ grid or tap the camera on the list.
- Tapping a grid square or camera name will highlight the selected camera to be controlled in an orange box and additional options will be shown across the bottom of the screen.





Pressing the "PTZ_Wall" or Scene dropdown at the top of the list will allow users to select and recall previously saved grid configurations if they are available.

Camera Control Options



There are several camera control options once a camera is added to the unit and selected.

Button Name	Button Icon	Description	
Play	(A) Play	Play will display the RTSP stream of the selected camera in the grid.	
Pause	Pause	Pause will freeze the current image of the RTSP stream shown for the selected camera. Pressing play again will resume the play back.	
Stop	Stop	Stop will turn off the RTSP stream of the selected camera on the controller.	
Photo	Photo	Photo will take a screenshot from the selected camera's RTSP stream playback. Photos can be exported using Micro-SD cards or USB flash drives.	
Record	O) Record	Record will start a capture of the selected camera's RTSP stream and save it to the controller. Recorded files are saved as .MP4 and can be exported using Micro-SD cards or USB flash drives.	
Clarity	LOHOP Clarity	Switch the resolution of the RTSP playback on the controller between 1080p and HD.	
Audio	Audio	Enable or disable the audio from the RTSP stream if available. Audio is captured while using the Record option or output through the 3.5mm Stereo mini audio port on the back of the unit.	



Button Name	Button Icon	Description	
Preset	Preset	Preset opens a menu on the left hand side of the screen. Users can view/recall saved presets, edit preset names, delete presets, and add new presets. Presets added using the physical button methods can also be modified.	
PTZ	PTZ	PTZ will display an on screen joystick controller for the selected camera, the Patrol settings menus, as well as some basic camera settings such as auto focus, PTZ speed, and IRIS control.	
Enlarge & Smaller	Enlarge Smaller	Enlarge will play the selected RTSP stream playback in full screen on the tablet. Pressing Smaller will return the controller to its normal working mode.	
Color	Color	Color gives you the ability to control several camera settings on screen such as Brightness, Red Gain, Blue Gain, Exposure, Auto White Balance, and Auto Exposure.	
Channel	Channel	Channel will display the camera address depending on the protocol that was chosen when it was initially added.	
WebGUI	WebGUI	WebGUI will open the web interface of the camera if one is available and display the current user credentials across the top to login. The web interface functions as if you had accessed your camera from a web browser on a computer.	
Unbind	G Unbind	Unbind will remove all Saved cameras from the PTZ control grid.	
Layout	Layout	Change the PTZ control grid size (1x1 or 2x2).	
Save	Save	Save the active PTZ Wall's current camera layout. When the unit is rebooted or a user logs in the grid will populate automatically.	



Button Name	Button Icon	Description	
Save as	Save as	Save the PTZ Wall's current camera configuration as a new layout.	
HDMI Out	HDMI HDMI Out	Set the HDMI output to mirror the control interface, a full screen image of the current camera, or a saved PTZ grid scene as a 2x2 multiview.	
UART	W UART	Use UART to add and manage serial controlled cameras. Change settings such as camera name, address, RTSP stream, Com port in use on the controller, Baud rate, and protocol.	
Setting	(i) Setting	Open the controller settings menu to control device settings. Add/remove cameras or set camera sequences for TV Wall mode. View and edit system settings such as network, display, language, and more. View and export screenshots, recording, or view and update the controllers firmware.	
Lock	Lock	Press Lock to lock the touch screen. Press and hold anywhere on the screen to unlock	
Refresh	Q Refresh	Refresh the PTZ wall camera streams and information.	
Help	į Help	Open the on board user manual.	
Stream Preview	@	Pressing the eye will open a small preview stream of the selected camera if one is available. For "Unsaved" cameras that are not on the grid but highlighted in orange on the list, they can be controlled with the help of this preview mode, but will have reduced options across the bottom of the screen.	



Patrol

The Patrol feature allows users to set multiple PTZ cameras to automatically path between a selection of chosen preset positions. This is especially useful when monitoring large areas with multiple cameras. It can be useful to have cameras not controlled by the joystick user checking predetermined locations automatically.

In environments where multiple cameras are present, it may be useful to utilize this function in conjunction with TV Wall mode for extra monitoring capabilities. Multiple cameras can be set to Patrol simultaneously.

Patrol patterns are set individually for each camera using their unique presets. Each camera can have multiple patrol patterns saved but only one pattern per camera can be active at a time.

- On the desired camera, first set your preset positions. There needs to be at least 2 preset positions on a camera for the Patrol feature to work properly.
 - See the previous "Camera Control Options" chart, or "Button Descriptions" section of this manual for instructions on managing presets.
- With the desired camera selected, press and hold the "Patrol" button on the keypad for 3 seconds or until a message instructing you to release the button appears to show the Patrol pop-up window.
- 1. Press the "+" button in the top right corner to create a new patrol pattern for the selected camera.





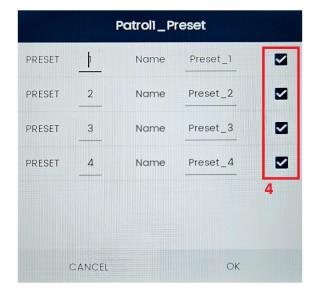
2. Press the "Edit" button to manage or add presets to the patrol pattern.



3. Press the "+" again to open the menu and select the preset positions to add.

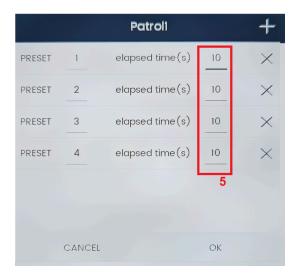


4. Check the boxes for the presets to add to the patrol and then press "OK."





5. Set the elapsed time for each preset position (0 - 120 seconds). This is how long the camera will wait at a given position. Once complete press OK.



6. Press the check box to enable the selected patrol for the camera and press OK.

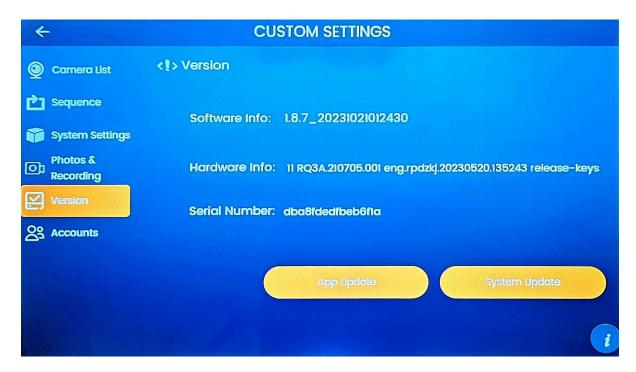


7. To activate the patrol, select the camera from the list or on the grid and then tap the "Patrol" button. The camera will then automatically change between the selected preset positions.



Firmware Upgrade

To upgrade the BG-Commander-Pro system software, first download the firmware from the product page from www.BZBGEAR.com.



1) Copy the .apk file to the root directory of a blank USB flash drive.



- 2) Navigate to the "Version" settings page in the controller's Settings menu.
- 3) Insert the USB flash drive containing the firmware into the USB port on the rear of the controller
- 4) Press "App Update" and then follow the on-screen instructions.
- 5) Once the upgrade is complete, power cycle the controller and remove the flash drive.



Troubleshooting

Factory Reset

To factory reset the controller navigate to the System Settings menu and press the "Clear Data" button.

NOTE: This will remove all currently connected devices, system configurations, and data from the controller and return it to its original settings.

Black or Frozen Camera Stream(s) on Controller Screen

- 1) If a stream is frozen that was previously working, press the "Refresh" button at the bottom of the PTZ control screen to refresh all camera streams.
- 2) If the stream is still frozen, reboot the camera in question. Once the camera fully reboots press the "Refresh" button.
- 3) If the stream is black ensure your RTSP stream settings on the camera and in the controller settings match/are correct and the RTSP stream is enabled on the camera if applicable.

Black or Frozen Camera Stream(s) on HDMI Out

- 1) If a stream is frozen that was previously working, try selecting a different HDMI out scene, or camera to refresh the stream.
- 2) If the stream is black ensure your RTSP stream settings on the camera and in the controller settings match/are correct and the RTSP stream is enabled on the camera if applicable.

Changing Camera Settings

It is highly recommended to reboot the controller after editing any previously added camera settings such as device name, IP address, or RTSP stream address to ensure proper functionality.



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>	<u>Email</u>	Live Chat
1.888.499.9906	support@bzbgear.com	bzbgear.com

Warranty

BZBGEAR Pro AV products and cameras come with a three-year warranty. An extended two-year warranty is available for our cameras upon registration for a total of five years.

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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