



BG-IPGEAR-ULTRA-C

Control4 Driver User Manual

AV-over-IP Distribution System - Managed by the BG-IPGEAR-ULTRA-C Controller

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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.
- 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

This driver has been designed to provide control of a BZBGear BG-IPGEAR-ULTRA AV-over-IP system within a Control4 system via the BG-IPGEAR-ULTRA-C controller (Telnet, or RS-232).

The BG-IPGEAR-ULTRA system distributes video, audio, USB, and RS-232 over a standard IP network using encoders (transmitters, connected to sources) and decoders (receivers, connected to displays). Built on the Control4 DriverWorks SDK using the AV Switch proxy, this driver presents the encoders as video inputs and the decoders as video outputs, so any source can be routed to any display as a matrix switch. It also exposes matrix and video-wall presets, per-decoder output settings, per-encoder audio source selection, and device management, with two-way routing feedback.

Installation

Copy the driver (.c4z) into your Control4 driver folder, then in Composer Pro use Driver -> Add or Update Driver... and add it to your project. On the Connections page, bind the sources and displays as described under Connections (Bindings).

To control the device over the network, set the following on the Properties page:

Setting	Value
Connection Type	Network (TCP) - Telnet
IP Address	The IP address of the controller's Control LAN port. Auto-filled when discovered over SDDP.
TCP Port	23 (Telnet, factory default)
Username	The controller account used for routing. The factory default is "admin".

To use the RS-232 connection instead, set Connection Type to RS-232 and use the following serial settings:

- 115200 baud, 8 data bits, no parity, 1 stop bit (adjustable on the controller)

If the device supports SDDP, it is discovered automatically and the IP Address is filled in for you.

Properties

The driver exposes the following properties on the Composer Properties page. Read-only properties reflect live status reported by the device.

Property	Access	Description
Connection Type	Editable	How the driver reaches the controller. Network uses the IP and port below (Telnet). RS-232 uses the serial binding at the configured baud rate.
IP Address	Editable	IP address or hostname of the BG-IPGEAR-ULTRA-C control LAN port. Auto-filled by SDDP discovery when available.
TCP Port	Editable	Telnet control port of the controller. Factory default is 23.
Username	Editable	Controller user account used for routing (the SWITCH command requires it). Default is admin. Change only if the admin account was renamed.
Connection Status	Read-only	Current state of the control connection.
Controller Version	Read-only	Firmware version reported by the controller.
Encoders Found	Read-only	Number of encoders (inputs) the controller reports online.
Decoders Found	Read-only	Number of decoders (outputs) the controller reports online.
Poll Interval	Editable	Seconds between status polls, which keep Control4 in sync with routing changes made from the web GUI or other controllers. Set to 0 to disable.
Discovered By	Read-only	How the controller was located: SDDP discovery or manual configuration.
SDDP Auto-Configure IP	Editable	When Yes, the driver follows the IP reported by SDDP discovery.
Last Device Error	Read-only	Most recent error string returned by the controller.
Debug Mode	Editable	Diagnostic output. Auto-reverts to Off after one hour.
Driver Version	Read-only	Driver version.

Actions

The following actions are available on the Composer Actions tab.

Action	Description
Reconnect	Tear down and re-establish the connection to the device.
Query Status	Refresh all state from the device.
Search For Devices	Ask the controller to scan the video LAN and auto-add new encoders and decoders.
Print Routing Table	Print the current routing to the Lua output window.

Programming Commands

The following device-specific commands are available in the Composer Programming tab. Parameters are chosen from drop-down lists unless noted.

Command	Parameters	Description
Route Video	Decoder, Encoder	Route Encoder PARAM2 to Decoder PARAM1

Apply Matrix Preset	Preset	Apply saved matrix preset PARAM1
Apply Video Wall Preset	Wall, Preset	Apply preset PARAM2 of video wall PARAM1
Set Decoder Resolution	Decoder, Resolution	Set Decoder PARAM1 output resolution to PARAM2
Set Decoder Rotate	Decoder, Rotation	Rotate Decoder PARAM1 output to PARAM2 degrees
Set Decoder Test Pattern	Decoder, Pattern	Set Decoder PARAM1 test pattern to PARAM2
Set Decoder OSD	Decoder, State	Turn Decoder PARAM1 ID on-screen display PARAM2
Set Encoder Audio	Encoder, Source	Set Encoder PARAM1 audio source to PARAM2
Reboot Decoder	Decoder	Reboot Decoder PARAM1
Reboot Encoder	Encoder	Reboot Encoder PARAM1
Query Status	-	Refresh routing and device state from the controller
Send Raw Command	Command	Send raw API command PARAM1 to the controller (no trailing terminator needed)

Events & Variables

Events (available as "when" triggers in Programming):

- Controller Online
- Controller Offline
- Route Changed

Variables (available for programming and conditionals):

Variable	Type	Description
CONNECTED	Bool	True while the driver is connected to the controller.
CONTROLLER_VERSION	String	Controller firmware version.
ENCODER_COUNT	Number	Number of encoders (inputs) reported online.
DECODER_COUNT	Number	Number of decoders (outputs) reported online.
DECODER_01_SOURCE ... DECODER_16_SOURCE	Number	The encoder feeding each decoder (0 = none or video-wall mode).

Connections (Bindings)

On the Composer Connections page, bind the following. Unused bindings are hidden automatically on Control4 OS 3.3.0 and later.

Binding	Type	Description
Encoder 1 - 16 (In)	Video Input	Each encoder (TX) is a source; bind players, PCs, cameras to these.
Decoder 1 - 16 (Out)	Video Output	Each decoder (RX) drives a display; bind displays to these.
RS-232	Serial	Optional serial control of the controller in place of Telnet.

Telnet Command Reference

The controller is controlled over Telnet (port 23) with ASCII commands, one per line. There is no login. Encoders and decoders are addressed by zero-padded 3-digit index; 000 means "all". The following is a summary of key commands; see the API command list for the full set.

System / Status

Command	Description
GET STATUS	Full status, including the routing (Out / FromIn) table
GET VERSION	Controller and per-device version/IP/MAC
SEARCH / ADD DEV AUTO	Scan the video LAN and auto-add new devices

Routing

Command	Description
SET DEC ddd SWITCH eee ALL USER admin	Route encoder eee to decoder ddd (all signals)
SET DEC ddd SWITCH eee RS232 / USB	Route only RS-232 / USB from an encoder
APPLY MATRIX PRESET pp	Apply a saved matrix preset (01-30)
APPLY WALL hh PRESET pp	Apply a video-wall preset

Decoder

Command	Description
SET DEC ddd RESOLUTION n	Set output resolution (see driver list)
SET DEC ddd ROTATE n	0=0deg 1=90deg 2=180deg 3=270deg
SET DEC ddd TESTMODE mode	OFF / COLOR / GRAY / WHITE / ...
SET DEC ddd OUTPUT OSD ON/OFF	Show the decoder ID overlay
SET DEC ddd REBOOT	Reboot the decoder

Encoder

Command	Description
SET ENC eee AUDIO HDMI/ANALOG	Select the encoder audio source
SET ENC eee REBOOT	Reboot the encoder

Tech Support

For technical support, please contact BZBGear:

- Email: support@bzbgear.com
- Phone: +1(888)499-9906
- Address: 830 National Drive #140, Sacramento, CA 95834, USA

Warranty

BZBGear products are backed by a limited product warranty. For full warranty details, please visit www.bzbgear.com or contact BZBGear support.

Mission Statement

BZBGear is dedicated to providing high-quality, professional-grade AV equipment that delivers exceptional performance and reliability for both commercial and residential applications.

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