BZBGEAR®

Amplify Your World™

BG-QuadFusion-JR

Control4 Driver User Manual

4-Channel 1080p HDMI & DisplayPort Production Switcher with Micro SD Recording and Streaming

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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 the BZBGEAR BG-QuadFusion-JR production switcher within a Control4 system over the local network.

Built on the Control4 DriverWorks SDK using the AV Switch proxy, the driver routes the switcher's four inputs (input 1 can use HDMI or DisplayPort) to its Program (PGM) output and to Preview (PVW). It provides two-way feedback and control of CUT and AUTO transitions, transition effect and rate, Fade To Black, program freeze, Picture-in-Picture and Picture-out-of-Picture, Luma and Chroma keys, the audio mixer (AFV or Mix, channel and master volume, mixer sources, one-touch mute), the output resolution, Micro SD recording and RTMP streaming.

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).

1. Connect the switcher's LAN port to the same network as the Control4 controller and note its IP address (System menu on the multiview output, or the QuadFusion PC application).

2. In System Design, add the "BZBGEAR BG-QuadFusion-JR Production Switcher" driver to your project.

3. On the driver Properties page, enter the switcher's IP address in the IP Address property. The factory default UDP Port is 7000.

4. On the Connections page, bind your sources to Inputs 1 - 4 and bind the Program output to your display or downstream device.

5. Confirm Connection Status reads "Connected" and Model reads back "BG-QuadFusion-JR".

To record, insert a Micro SD card in the switcher; to stream, configure the RTMP destination in the switcher's web interface first. The SD Card, Recording and Streaming properties show their state.

Connection reference:

Setting	Value
Connection Type	Network (UDP)
IP Address	The IP address of the switcher (System menu or the QuadFusion PC application).
UDP Port	7000 (factory default)

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
IP Address	Editable	IP address of the BG-QuadFusion-JR (set in the switcher's System menu or the QuadFusion PC application).
UDP Port	Editable	UDP control port of the switcher. Factory default is 7000.
Connection Status	Read-only	Whether the switcher is answering on its UDP control port.
Model	Read-only	Device name reported by the switcher.
Device Platform	Read-only	Internal switcher platform id reported in every reply.
Program Source	Read-only	Source currently on the Program (PGM) output.
Preview Source	Read-only	Source currently on Preview (PVW).
Transition Type	Read-only	Current transition effect (Mix / Fade / Wipe).
Transition Rate	Read-only	Current AUTO transition speed.
Fade To Black	Read-only	Fade To Black state.
Freeze	Read-only	Program freeze (STILL) state.
PIP	Read-only	Picture-in-Picture state.
POP	Read-only	Picture-out-of-Picture state.
Luma Key	Read-only	Luma key state.
Chroma Key	Read-only	Chroma key state.
Audio Mode	Read-only	AFV (audio follows video) or Mix.
CH1 Volume	Read-only	Audio channel 1 volume (0-100).
CH2 Volume	Read-only	Audio channel 2 volume (0-100).
Master Volume	Read-only	Master audio volume (0-100).
Audio Mute	Read-only	One-touch audio mute state.
Output Resolution	Read-only	Program/Multiview output resolution reported by the switcher.
Recording	Read-only	Micro SD recording state (Stopped / Recording / Paused / Waiting).
Streaming	Read-only	RTMP streaming state.
SD Card	Read-only	Whether a Micro SD card is inserted.
Stream Network	Read-only	Whether the streaming network connection is up.
Input 1 Port	Read-only	Whether input 1 is using its HDMI or DisplayPort connector.
Last Device Error	Read-only	Most recent error returned by the switcher.
Poll Interval	Editable	Seconds between status polls, which keep Control4 in sync with front panel

		and T-bar changes. Set to 0 to disable polling.
Debug Mode	Editable	Diagnostic output. Automatically returns 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.
Restart Device	

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
Set Program Source	Source	Put PARAM1 on the Program (PGM) output
Set Preview Source	Source	Put PARAM1 on Preview (PVW)
Cut	-	Swap Preview and Program instantly
Auto Transition	-	Transition Preview to Program using the current effect and rate
Set Transition Type	Transition	Set the transition effect to PARAM1
Set Transition Rate	Rate	Set the AUTO transition speed to PARAM1
Set Fade To Black	State	Set Fade To Black PARAM1
Set Freeze	State	Set Program freeze (STILL) PARAM1
Set PIP	State	Turn Picture-in-Picture PARAM1
Set PIP Size	Size	Set the PIP window size to PARAM1
Set POP	State	Turn Picture-out-of-Picture PARAM1
Set POP Window	Window	Select the POP window PARAM1
Set Luma Key	State	Turn the Luma key PARAM1
Set Chroma Key	State	Turn the Chroma key PARAM1
Set Chroma Key Color	Color	Set the Chroma key background color to PARAM1
Set Audio Mode	Mode	Set audio to PARAM1 (AFV = audio follows video)
Set Audio Volume	Channel, Volume	Set PARAM1 volume to PARAM2 (0-100)
Set Audio Source	Channel, Source	Set mixer PARAM1 to PARAM2 (takes effect in Mix audio mode)
Set Audio Mute	State	Set the one-touch audio mute PARAM1
Set Output Resolution	Resolution	Set the Program/Multiview output resolution to PARAM1
Set Recording	State	Start (On) or stop (Off) Micro SD recording of the Program output
Pause Recording	-	Pause / resume the current Micro SD recording
Set Streaming	State	Start (On) or stop (Off) RTMP streaming (configure RTMP in the web GUI first)
Query Status	-	Refresh all state from the switcher
Restart Device	-	Restart the switcher
Send Raw Command	Command	Send a raw protocol command as hex bytes, command first then data (e.g. 80 01 = Program to input 1)

Events & Variables

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

- Device Online
- Device Offline
- Program Changed
- Preview Changed
- Fade To Black Changed
- Freeze Changed
- Recording Changed

Variables (available for programming and conditionals):

Variable	Type	Description
CONNECTED	Bool	True while the switcher is answering.
MODEL	String	Device name reported by the switcher.
PROGRAM_INPUT	Number	Source on Program (1-4, 9 = color bars).
PREVIEW_INPUT	Number	Source on Preview (1-4, 9 = color bars).
FADE_TO_BLACK	Bool	True while Fade To Black is on.
FREEZE	Bool	True while the program output is frozen (STILL).
PIP / POP	Bool	Picture-in-Picture / Picture-out-of-Picture state.
AUDIO_MUTE	Bool	True while the one-touch audio mute is on.
MASTER_VOLUME	Number	Master audio volume (0-100).
RECORDING	Bool	True while Micro SD recording is running.
STREAMING	Bool	True while RTMP streaming is on.

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
Input 1 - 4	Video Input	Connect sources; input 1 accepts HDMI or DisplayPort.
Program (PGM) Out	Video Output	The switcher's program output; room source selection switches this output.
Preview (PVW)	Video Output	Preview bus (shown on the multiview); routing here sets the next source.

Protocol Reference

The switcher is controlled with binary frames over UDP port 7000: A5 6C, a 2-byte length, a fixed header, the command byte and its data, a 2-byte checksum and AE. The driver builds the frames; Send Raw Command takes just the command and data bytes in hex. Key commands:

Routing / Transitions

Command	Description
80 n / 81 n	Program / Preview source (n = 1-4, 9 = color bars)
83 / 84	CUT / AUTO transition
8D / 8E / 92 n	Mix / Fade / Wipe effect (n = 116-125 for Wipe 1-10)
B1 n	Transition rate (0-2)

Effects / Output

Command	Description
85 / CF	Fade To Black / Freeze (toggles)
86 n / A7 n	PIP / POP on (1) or off (0)
8B n / 8C n	Luma / Chroma key on or off
A3 n	Output resolution: 7 1080p60, 11 1080p50, 3 1080p30, 13 1080p25, 5 1080p24, 9 1080i60, 1 1080i50

Audio / Record / System

Command	Description
B6 n	Audio mode: 0 AFV, 1 Mix
B8 c v	Volume: c = 0 CH1, 1 CH2, 3 Master; v = 0-100
D6	One-touch mute (toggle)
B2 n / C7 / 87 n	Record on/off / pause / RTMP stream on/off
0A / 0B	Read all status / restart

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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