



BZ-MVS4X4-4K

Control4 Driver User Manual

4x4 4K HDMI Seamless Matrix / Video Wall Controller with Audio Matrix

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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 guide covers the Control4 driver for the BZBGear BZ-MVS4X4-4K 4x4 4K HDMI seamless matrix / video-wall controller. The driver is built on the Control4 DriverWorks SDK using the AV Switch proxy and controls the matrix over TCP/IP or RS-232.

It exposes the matrix's 4 HDMI inputs and 4 HDMI outputs for seamless routing, plus an independent analog/Toslink audio matrix. Beyond routing, the driver adds per-output HDMI/DVI + HDCP output type, a scaled output resolution, image mirror, test pattern and picture controls (brightness, contrast, saturation, sharpness), a per-input audio source (embedded HDMI or analog L/R insert), an audio switch mode (Auto follows video / Manual routes audio independently), an audio-only video-blank mode, auto power on, HDMI-CEC to sources and displays, and a per-output video wall engine.

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).

On firmware that supports SDDP the matrix is discovered automatically; add it from the discovered list and the IP Address fills in on its own. Otherwise configure it manually:

1. In System Design, add the "BZBGear BZ-MVS4X4-4K 4x4 Seamless Matrix / Video Wall" driver to your project (BZBGear manufacturer, AV Switch category).

2. On the driver Properties page, set Connection Type to Network (TCP) and enter the matrix IP in the IP Address property. The factory default TCP Port is 23 (telnet). Confirm Connection Status shows Connected and Model reads back BZ-MVS4X4-4K.

3. On the Connections page, bind the HDMI inputs, the HDMI outputs, the analog/Toslink audio outputs and (optionally) the room selection bindings.

To control the matrix over RS-232 instead, set Connection Type to RS-232, bind the serial connection and use the serial settings below.

Connection reference:

Setting	Value
Connection Type	Network (TCP) or RS-232, selected on the Properties page.
IP Address	The IP address of the matrix (front panel / web GUI, or via 'GET SYS IP'). Auto-filled when discovered over SDDP.
TCP Port	23 / telnet (factory default)

To use the RS-232 connection instead, bind the RS-232 connection and use the following serial settings:

- 9600 baud, 8 data bits, no parity, 1 stop bit

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 talks to the matrix. Network uses the IP Address and TCP Port below (telnet, default 23); RS-232 uses the serial binding at 9600 8N1.
IP Address	Editable	IP address or hostname of the BZ-MVS4X4-4K. Populated automatically when the matrix is discovered over SDDP. Otherwise read it from the front panel / web GUI or send 'GET SYS IP'.
SDDP Auto-Configure IP	Editable	When Yes, the driver follows the IP address reported by SDDP discovery, so the matrix keeps working after a DHCP lease change. Set to No to pin the IP Address field manually.
Discovered By	Read-only	How the matrix was located: SDDP discovery or manual configuration.
TCP Port	Editable	TCP control port of the matrix. Factory default is 23 (telnet).
Connection Status	Read-only	Current state of the IP connection to the matrix.
Model	Read-only	Model (set once the matrix answers).
Firmware Version	Read-only	System firmware/build reported by the matrix.
Audio Only	Editable	Blank the video output and keep the audio playing.
Auto Power On	Editable	Whether the matrix powers its displays on automatically.
Audio Switch Mode	Editable	Auto = the analog/Toslink audio follows the video route; Manual = audio is routed independently with Route Audio Output.
Poll Interval	Editable	Seconds between status polls, which keep Control4 in sync with front panel and web GUI 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.
Print Routing Table	Print the current routing to the Lua output window.
Factory Reset Device (erases matrix configuration)	Reset the matrix to factory defaults (erases configuration, including network settings).

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	Output, Input	Route HDMI input PARAM2 to output PARAM1 (audio follows in Auto mode)
Route Audio Output	Output, Input	Route input PARAM2 audio to analog/Toslink output PARAM1 (needs Audio Switch Mode = Manual to route audio away from video)
Set Audio Switch Mode	Mode	Set audio switching to PARAM1 (Auto follows video, Manual routes audio independently)
Set Output Type	Output, Type	Set output PARAM1 HDMI/HDCEP output type to PARAM2
Set Output Resolution	Output, Resolution	Set output PARAM1 scaled resolution to PARAM2
Set Output Mirror	Output, State	Set output PARAM1 image mirror PARAM2
Set Output Test Pattern	Output, State	Set output PARAM1 test pattern PARAM2
Set Output Picture	Output, Attribute, Value	Set output PARAM1 PARAM2 to PARAM3 (0-100)
Reset Output Picture	Output	Reset the picture quality of output PARAM1
Set Input Audio Source	Input, Source	Set input PARAM1 audio source to PARAM2
Set Audio Only	State	Blank the video and keep audio only PARAM1
Set Auto Power On	State	Enable/disable auto power on PARAM1
CEC Source Power	Input, State	Power the source on input PARAM1 PARAM2 via CEC
CEC Display Power	Output, State	Power the display on output PARAM1 PARAM2 via CEC
CEC Display Volume	Output, Command	Send CEC PARAM2 to the display on output PARAM1
Set TV Wall Cell	Output, Rows, Columns, RowPosition, ColumnPosition, Bezel, Input	Assign output PARAM1 as one cell of a Rows x Columns wall at position (RowPosition, ColumnPosition) showing input PARAM7, with a uniform bezel
Exit TV Wall	Output	Return output PARAM1 to normal single-screen output
Query Status	-	Refresh all state from the matrix
Send Raw Command	Command	Send the raw ASCII command PARAM1 to the matrix (a carriage return is added)

Events & Variables

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

- Device Online
- Device Offline
- Video Route Changed
- Audio Route Changed
- Input Signal Changed

Variables (available for programming and conditionals):

Variable	Type	Description
CONNECTED	Bool	True while the driver is connected to the matrix.
MODEL	String	Model (BZ-MVS4X4-4K).
FIRMWARE	String	System firmware/build reported by the matrix.
OUTPUT_01_INPUT ... OUTPUT_04_INPUT	Number	The input currently routed to each video output.
AUDIO_OUT_01_INPUT ... AUDIO_OUT_04_INPUT	Number	The input feeding each analog/Toslink audio output.
INPUT_01_SIGNAL ... INPUT_04_SIGNAL	Bool	Whether a source signal is detected on each input.

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 (players, PCs, cable boxes) to the matrix inputs.
Output 1 - 4	Video Output	Bind displays / video-wall panels to the matrix outputs.
Audio output 1 - 4	Audio Output	Independent analog / Toslink audio outputs (Manual audio switch mode).
Room Selection 1 - 4	Room Selection	Optional: let a room drive the matrix output directly.
RS-232 / Network	Serial / Network	Bind one to control the matrix over serial or IP.

ASCII Command Reference

The matrix is controlled with verbose GET/SET ASCII strings terminated by a carriage return (0x0D). Network: TCP port 23 (telnet). Serial: 9600 8N1. Routing feedback is "INx VIDEO OUTy" / "OUTy VIDEO INx". The following summarizes key commands; see the product command list for the full set.

Routing

Command	Description
SET INx VIDEO OUTy / ALL	Route input x video to output y (or all outputs)
SET SYS AUDIO-SWMODE MANUAL; SET INx AUDIO-ROUTE OUTy	Independent audio route (analog/Toslink)

Per output

Command	Description
SET OUTx OUT-TYPE (UHD-HDMI / -DVI / -HDMI-	HDMI/DVI + HDCP mode

1.4 / -HDMI-2.2)	
SET OUTx OUT-SIGNAL <resolution>	Scaled output resolution (15 modes)
SET OUTx MIRROR / TSP (ON/OFF); SET OUTx BRIGHTNESS/... <0-100>	Mirror, test pattern, picture

Audio / CEC / system / wall

Command	Description
SET INx AUDIO-SRC (EMBEDDED / L/R)	Input audio source; SET SYS AUDIO-ONLY blanks video
SET INx POWER / SET OUTx POWER / SET OUTx AUDIO VOLUME+	HDMI-CEC source/display power and volume
SET OUTx TVWALL <line> <col> <p> <q> <margins...> <input>	Per-output video wall cell geometry

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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