Zigen AX-88
Audio Matrix Switch Serial Driver

Contents

Solution Provider Control4

Introduction

The ZIGEN AX-88 Audio Matrix Switcher is high performance switcher designed for applications where routing of audio signals are required. The AX-88 Matrix switch is capable of switching balanced or unbalanced mono or stereo audio signals. The AX-88 also ensures simultaneous distribution of any input source signal to one or more receivers / amplifiers in (one-to-one / one-to-many combination)

AX-88 matrix switchers are ideal for use in bars, restaurants, hotels, commercial, medical, military, government, and residential environments where distribution of high quality, audio signals are needed and audio output volume, treble, bass, lip-sync and muting is essential.

One of the key features of the AX-88 is the ability to integrate with a fire alarm / life safety systems. When integrated with fire alarm / life safety, AX-88 will detect and go in all mute standby modes until fire alarm / life safety system is reset. This is a great feature when used in hotels, banquet halls and etc.

In addition, AX-88 comes with independent line-level sub-woofer outputs for each zone offering you the ability to control sub levels independently.

All volume and tone levels can be set discretely.

The Extra Vegetables driver is available free to Control4 dealers. No activation code is required.

Setup and Test the Zigen Unit

Before you attempt connection to Control4 you must set up and test the Zigen matrix. You should confirm that the switch works as expected with both the front panel buttons and the supplied IR remote control.

The driver is a serial driver and you must set DIP switch one on the back of the unit to the down position in order to enable serial control
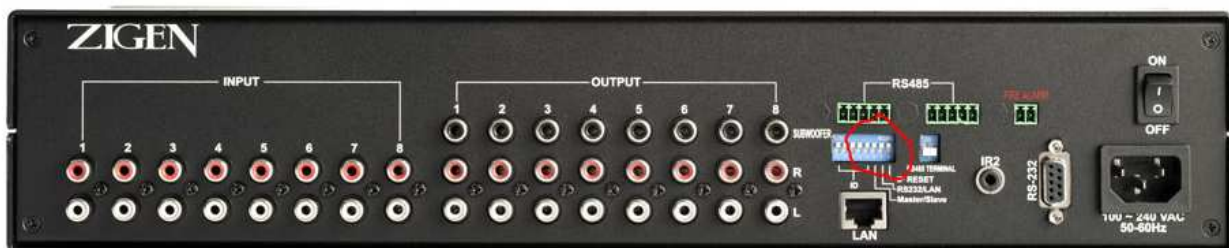
Now connect the Zigen AX-88 to a spare serial port on your Control4 controller.

Test before you install

You should test this driver with Control4 in your office or shop before you attempt to install on site.

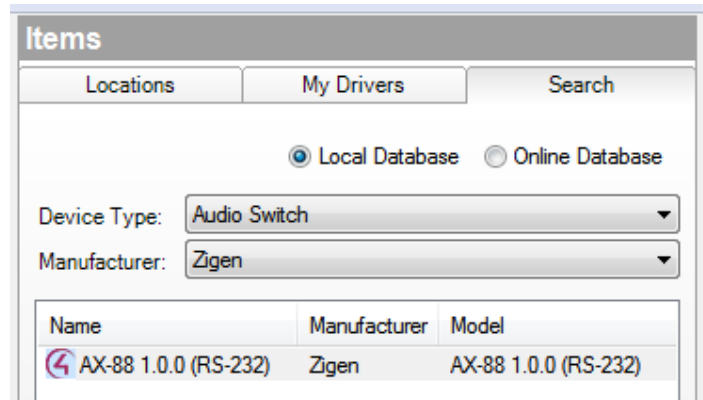If you have problems please create a support ticket via our website at www.extravegetables.com/helpdesk.

Add the driver to your project

Copy all the .c4i files from the zip package to the My Documents – Control4 - Drivers folder.
Open Composer.

You can then find the driver under Device Type – **Audio Switch --,** Manufacturer **Zigen**.

Double click it to add it to your project.

It will appear as   Zigen AX-88

Configuring the Driver

The driver now needs to be set up to work with the system.

Make Your Connections

With everything set up you can now make the connections to the switch. This is all standard Control4 practice.

Name	Type	Connection	Input/Output	Connected To
Control & Audio Video Connections				
Zigen AX-88				
Audio/Video Inputs				
Input 1	Audio	STEREO	Input	Sky+ HD Receiver->AV Out
Input 2	Audio	STEREO	Input	DIRECTV HD PVR (IP)->AV Out
Input 3	Audio	STEREO	Input	Sony Blu-ray Player->AV Out
Input 4	Audio	STEREO	Input	
Input 5	Audio	STEREO	Input	
Input 6	Audio	STEREO	Input	
Input 7	Audio	STEREO	Input	
Input 8	Audio	STEREO	Input	
Audio/Video Outputs				
Output 1	Audio	STEREO	Output	
Output 1	Audio	SPEAKER	Output	
Output 2	Audio	STEREO	Output	
Output 2	Audio	SPEAKER	Output	
Output 3	Audio	STEREO	Output	
Output 3	Audio	SPEAKER	Output	
Output 4	Audio	STEREO	Output	
Output 4	Audio	SPEAKER	Output	
Output 5	Audio	STEREO	Output	
Output 5	Audio	SPEAKER	Output	
Output 6	Audio	STEREO	Output	
Output 6	Audio	SPEAKER	Output	
Output 7	Audio	STEREO	Output	
Output 7	Audio	SPEAKER	Output	
Output 8	Audio	STEREO	Output	
Output 8	Audio	SPEAKER	Output	
Control Inputs				
Serial RS-232	Control	RS_232	Input	Home Controller HC300->SERIAL 2
Room Control				
Output 1 Audio End Point	RoomControl	AUDIO_SELECTION	Output	Zigen->Audio End-Point 1
Output 1 Audio End Point	RoomControl	AUDIO_VOLUME	Output	Zigen->Audio Volume 1
Output 2 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 2 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 3 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 3 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 4 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 4 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 5 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 5 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 6 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 6 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 7 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 7 Audio End Point	RoomControl	AUDIO_VOLUME	Output	
Output 8 Audio End Point	RoomControl	AUDIO_SELECTION	Output	
Output 8 Audio End Point	RoomControl	AUDIO_VOLUME	Output	

You will find input and output Audio connectors for each of the eight inputs and outputs. Connect these to the devices and screens to match the physical connections on the switch. There are no connections for the subwoofer outputs – but you can control the sub levels as described later in this document.

We suggest that before you make the serial connection in Composer that you ensure that the physical serial cable is connected and the Zigen AX-88 is switched on. You should use the serial cable provided with the AX-88.

If you do this it allows the driver to immediately query the AX-88 for its status and provide you with confirmation that the connection is good.

Once you have made the connection the Driver Information box will show the name of the switch. This will be AX-88 as shown unless you have changed the name.
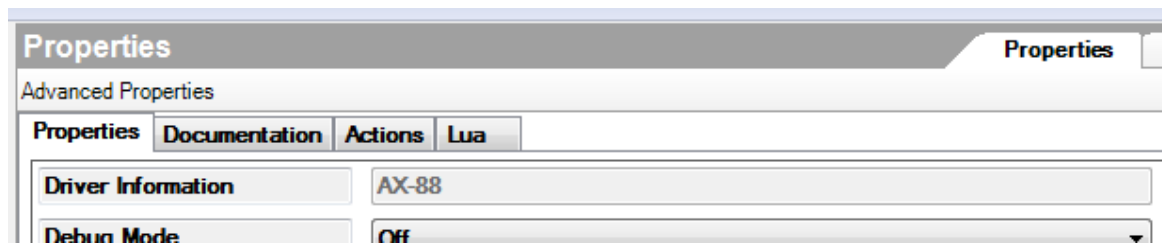
If the name is shown then you know the driver is successfully communicating with the switch. If it is not you should check both your physical and Composer connections.
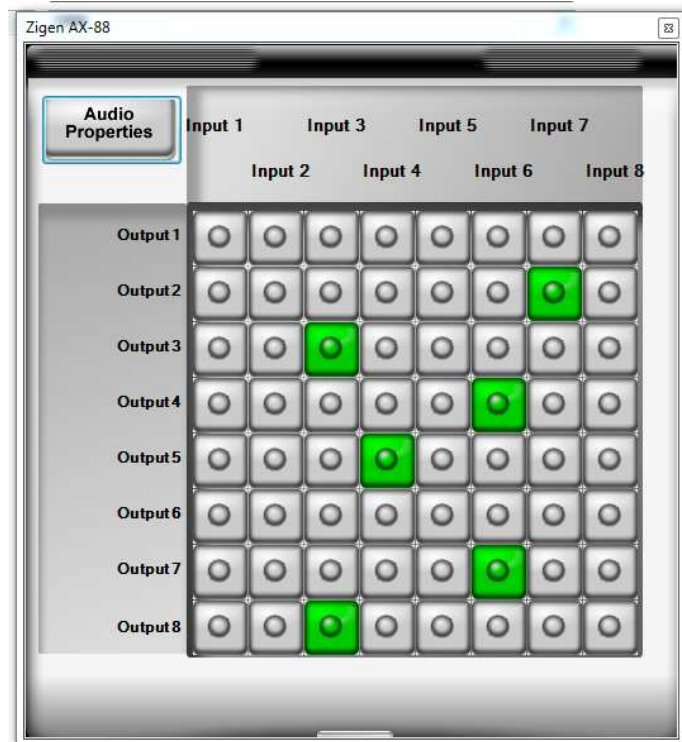
Test the Driver

You can now test the driver. If you highlight the matrix in System Design and double click it the control window will appear.

This will show the current Input to Output combinations highlighted in Green. You can now control the matrix from this screen. The green highlight will move to the new input-output combination when the driver receives confirmation from the switch that the switch has been made.

You will also be able to follow the switch changes on the front panel of the switch.

From Audio Properties you can adjust the volume, mute and tone levels to further test the unit and driver.

Once you are satisfied that all is working correctly you can move onto making the optional settings on the driver.

Properties

There are a number of optional settings on the driver properties page as follows:

Debug Mode
This should only be enabled if requested by Extra Vegetables technical support. It shows diagnostic information on the Lua tab

Query for switch status
The AX-88 does not automatically inform the driver of any changes to the input-output combinations made from the front panel or IR control. If you want the driver to check to see if any such changes occur then you can enable this function. The driver will poll the switch every 60 seconds. Any changes detected will be reflected in the standard Control4 variables for the switch.

Device ID
This is set on the switch to 0 by default. If you change the ID number of the switch then you need to set this to be the same ID number. If you do not then the driver will not work.

Volume Interval
This is the time in milliseconds between volume or tone changes when ramping. If you make this number smaller the volume will ramp quicker, if you increase this value the volume will ramp more slowly. This rate applies to all outputs.

Delay step on AX-88
One of the features of the switch is its ability to delay audio in order to ensure lip sync. The unit can either change the delay in units of 5ms or 10ms. By default this is 5ms. You should set this value to that set on the AX-88. Note changing the value in the driver does not update the setting on the switch.

Delay max set on AX-88
The other parameter regarding lip sync is the maximum delay. This is also set on the switch and you should adjust this value to match. Once again note that changing the value in the driver does not update the setting on the switch.

Actions

We have provided a number of Actions that you can use in Composer to interrogate the switch.

You need to make sure the switch is physically connected and powered on in order to use these buttons.
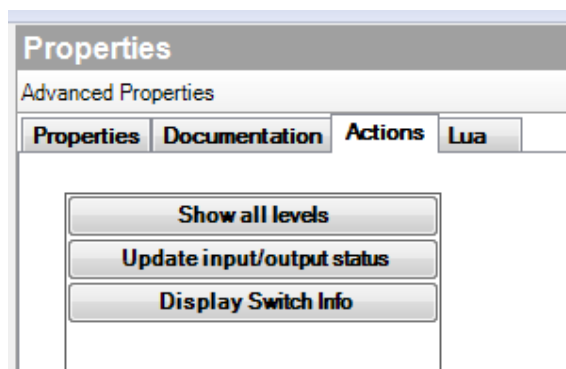
Show all levels

This prints all of the current switch settings onto the Lua tab. This is a useful way of checking the operation of the driver and seeing how the switch is currently set.

Update input/output status

The switch does not automatically report changes to the inputs to outputs from the front panel. You can use this button to refresh Control4 with the current settings from the switch. The driver will automatically interrogate the switch when you make the serial connection in Composer.

Display Switch Info

This button causes the driver to interrogate the switch for its name and the number of inputs and outputs it has. This information is displayed on the Lua tab and is a good quick way of establishing that the communication between Control4 and the switch is good.

Properties

Advanced Properties

| Properties | Documentation | **Actions** | Lua |

- Show all levels
- Update input/output status
- Display Switch Info

Lua Output

```
Output 1 connected to 0
Output 2 connected to 7
Output 3 connected to 3
Output 4 connected to 6
Output 5 connected to 4
Output 6 connected to 0
Output 7 connected to 6
Output 8 connected to 3
Output 1 volume is 47
Output 2 volume is 50
Output 3 volume is 50
Output 4 volume is 50
Output 5 volume is 50
Output 6 volume is 50
Output 7 volume is 50
Output 8 volume is 50
Output 1 treble is 95
Output 2 treble is 50
Output 3 treble is 50
Output 4 treble is 50
Output 5 treble is 50
Output 6 treble is 50
Output 7 treble is 50
Output 8 treble is 50
Output 1 bass is 20
Output 2 bass is 50
Output 3 bass is 50
Output 4 bass is 50
Output 5 bass is 50
Output 6 bass is 50
Output 7 bass is 50
Output 8 bass is 50
Output 1 sub is 100
Output 2 sub is 100
Output 3 sub is 100
Output 4 sub is 100
Output 5 sub is 100
Output 6 sub is 100
Output 7 sub is 100
Output 8 sub is 100
Mute on output 1 is OFF
Mute on output 2 is OFF
Mute on output 3 is OFF
Mute on output 4 is OFF
Mute on output 5 is OFF
Mute on output 6 is OFF
Mute on output 7 is OFF
Mute on output 8 is OFF
Output 1 delay is 0
Output 2 delay is 0
Output 3 delay is 0
Output 4 delay is 0
Output 5 delay is 0
Output 6 delay is 0
Output 7 delay is 0
Output 8 delay is 0
```

Variables

Matrix switches in Control4 have a standard set of VIDEO_OUTPUT_xx_INPUT variables which are populated to show which input is connected to which output. These are updated by the driver as Director switches the matrix.

There are also the standard variables for VOLUME_LEVEL, BASS_LEVEL, TREBLE_LEVEL and MUTE for each output.

We have also added additional variables for SUB_LEVEL and DELAY.

In order for these variables to be updated if a change is made directly on the switch or via IR then you must enable Query for Switch Status in the driver properties or execute a device specific command to update them.

Actions

The driver supports the standard Connect and Disconnect commands for each output. The standard Control4 functions for pulsing, ramping and setting the volume and tone levels are also enabled,

In addition the following Device Specific Commands are also provided.

Pulse Sub Level	This pulses the subwoofer level up or down for the chosen output on the switch.
Start Sub Ramp	This starts the subwoofer level ramping up or down for the chosen output on the switch.
Stop Sub Ramp	This stops the subwoofer level ramping up or down for the chosen output on the switch.

These actions allow you to program adjustment to the subwoofer levels onto a custom button or keypad key.

Set Sub Level	This allows you to set the subwoofer level for the chosen output to a discrete level 0-100.
Set Delay Time	This command allows you to set the lip sync delay for the chosen output to a discrete level. This level must be less than the maximum level set on the switch. Levels are set in milliseconds in steps of 5ms or 10ms depending on the setting on the switch. If the value provided is not on one of the step points it will be rounded down to the nearest point. So if the step on the switch is set to 5ms and you enter a value of 254ms via this action the switch will be set to a delay of 250ms.

Pulse Delay Time	This makes a step up or down in the lip sync delay time on the chosen output. The step size is determined by the setting in the driver properties and the switch.
Get switch I/O Status	This command updates Control4 with the current switch set up. Changes made on the front panel of the switch are not automatically communicated to Control4 and this command can be used to ensure the two are in sync.

Troubleshooting

If you are having problems with the driver the most likely cause is with the physical connection to the switch or forgetting to bind the serial connection in Composer.

Also check that the DIP switch on the rear of the Zigen is set for serial control.

If these have been made correctly check that the ID # of the switch is the same as that defined on the Properties tab. There should be no reason to adjust this from 0 in most cases.

Press the Display Switch Info Action button. If nothing is shown on the Lua tab and you are sure all the above are correct then you may have a faulty device.

Contact Details

We can be contacted in a number of ways:
- For technical support, the fastest way to get assistance is to put a ticket on our Helpdesk at www.extravegetables.com/helpdesk.
- Call us between 9:00 and 17:00 Monday-Friday on +1 (801) 285-9354 (USA) or on +44 (0) 20 8144 9354 (UK). Please note that Helpdesk tickets take priority over phone calls.