CAMBRIDGE AUDIO

Stream Magic

Control4 Driver User Guide

Driver developed by

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Introduction

This driver has been designed to provide two-way control of Cambridge Audio Stream Magic devices, with either one or two zones. Upon release, this includes the CXR-200, CXR-120, CXN and 851N-B, but theoretically any device conforming to the Stream Magic API should be supported to some degree. The following main features are supported:

- Power control
- Source selection
- Volume control
- Preset save/recall
- Discovery

Note: Browse and selection of media items is unsupported in the initial release.

ECO Standby Mode

If the device has had mains power removed and re-applied, it will start in ECO Standby Mode and will not respond to the driver's Power On command. Once it has been switched on via the front panel for the first time following a complete power down, the Power On command will function normally. For this reason, it is recommended that mains power is supplied permanently to the device.

Driver Installation

The below table details the drivers file included in the release package.

File Name	Description
discovery_ip_camaudio_smoip.c4z	This is the discovery driver and it handles discovery of devices. Only one instance is required.
receiver_ip_cambridge_audio_cxr120.c4z	Driver for control of CXR-120 devices. One instance is required for each device.
receiver_ip_cambridge_audio_cxr200.c4z	Driver for control of CXR-200 devices. One instance is required for each device.
receiver_ip_cambridge_audio_cxn.c4z	Driver for control of CXN devices. One instance is required for each device.
receiver_ip_cambridge_audio_851n.c4z	Driver for control of 851N devices. One instance is required for each device.

Table 1: Driver Descriptions

Copy the .c4z files from the zip package to your Control4 driver folder location (e.g. *My Documents\Control4\Drivers*) and then open Composer. Choose the **Search** tab from **Items** pane and select **Cambridge Audio** from the dropdown list.
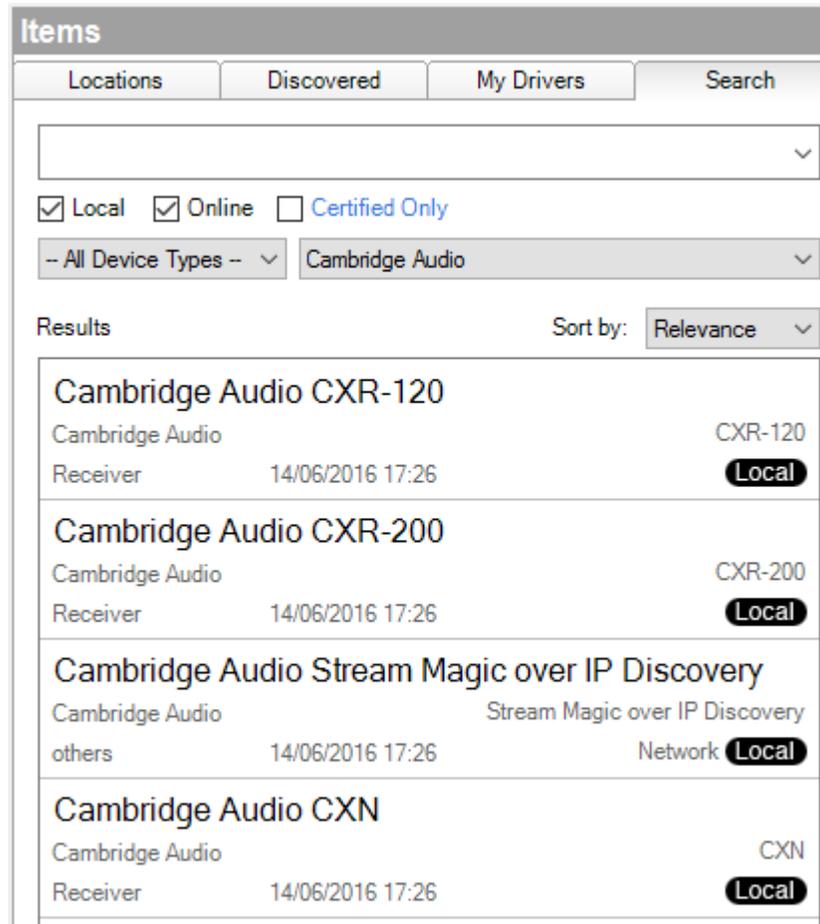
Figure 1: Driver Search

Add one instance of the driver entitled "Cambridge Audio Stream Magic over IP Discovery" into your project. Next, add an instance of the receiver driver that matches the device model to each room in your project in which a Cambridge Audio device is present.

NOTE: It is important that the Discovery driver is added prior to the device drivers, and that Discovery is not run until all drivers have been added.

Discovery Driver Configuration

The discovery driver is used for discovery of the Cambridge Audio devices on the network; no additional configuration is necessary. Prior to performing a discovery, ensure all of the Cambridge Audio devices are correctly installed and powered on, and the system is functioning correctly.

In the **System Design** view, select the **Cambridge Audio Stream Magic over IP Discovery** device and choose the **Actions** tab from **Advanced Properties**. Three buttons are displayed:

Figure 2: Discovery Driver Actions

Initiate a discovery by clicking on **Start Discovery**, and then select the **Lua** tab to see the results of the discovery:
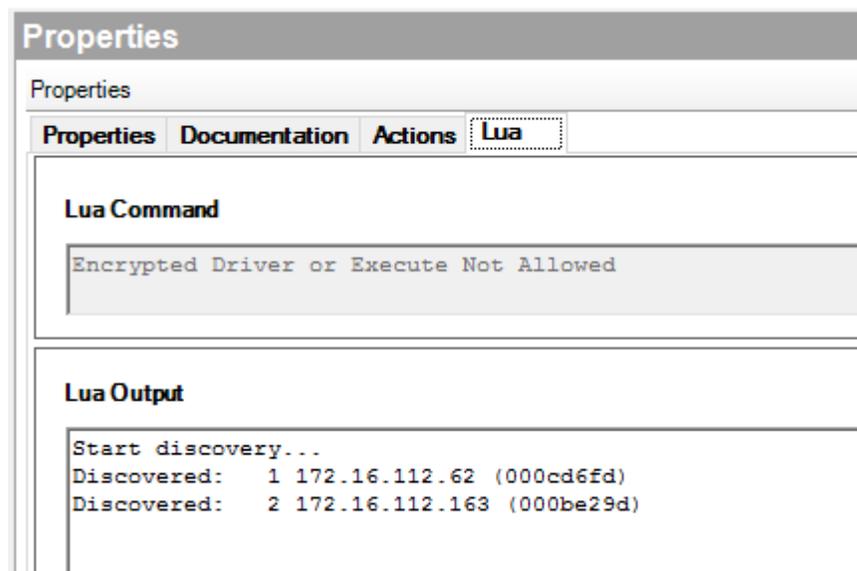
Figure 3: Discovery Results

In the above example, two devices have been discovered on the network. After all devices are discovered, switch back to the **Actions** tab, and press the **Stop Discovery** button. At any time, you may use the **List SMoIP Products Found** button under the **Actions** tab to list all devices currently discovered by the network driver.

Receiver Driver Configuration

The receiver drivers (one for each model) are used for control of the Cambridge Audio devices, as well as for the receipt of status updates. One instance of the driver is required for each Cambridge Audio device to be controlled. Please install the receiver driver that matches the model of your device.
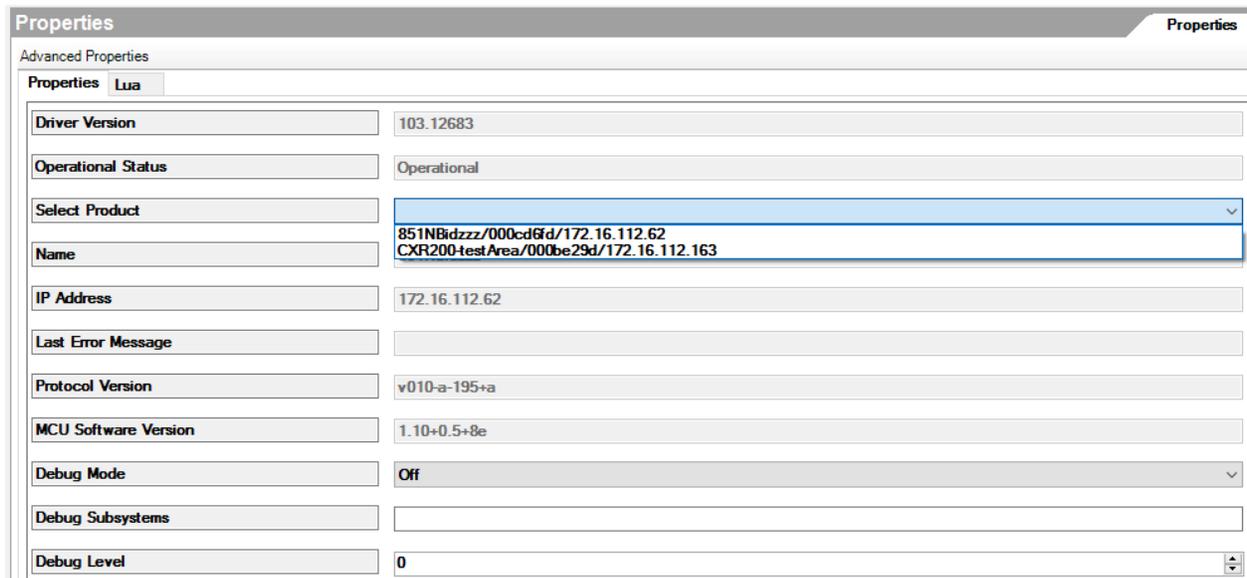
The following properties are available in the **System Design** view, most of which are not user editable.

Setting	Description
Driver Version	The release version of the driver.
Operational Status	The current connection status (e.g. "Connected").
Select Product	Choose the Cambridge Audio device that this instance of the driver is to control.
Name	The name of the Cambridge Audio device, as configured by the device.
IP Address	The IP address of the Cambridge Audio device on the network.
Last Error Message	The most recent error message received from the device.
Protocol Version	The Stream Magic protocol version.
MCU Software Version	The device's firmware version.
Debug Mode	For support use only
Debug Subsystems	For support use only
Debug Level	For support use only

Table 2: Receiver Driver Properties

Assigning Devices to Device Drivers

It is necessary to ensure that each device driver in your project is controlling the correct Cambridge Audio device. The **Name** field reports the device name as configured by the device; you must ensure this name is correct for each instance of the device driver in your project. To select a different device, pull down the **Select Product** drop-down and choose the correct device (listed by IP and MAC address). The **Name**, **IP Address** and **Device ID** will update to reflect the choice. If the device you are looking for is not listed, repeat the discovery process described above.

Figure 4: Device Selection

It is necessary to perform this check for each instance of the device driver added to your project.

Naming Devices

In order for the Cambridge Audio device names to be correctly reflected in the Control4 user interface they must be manually renamed in Composer. Choose the **System Design** view and right click on the device driver's name. From the dropdown box that appears, choose **Rename** and enter the name as it appears in the **Name** field in the driver's properties (or a name of your choosing). It is recommended that you do this for all instances of the device driver.

Establishing A/V Connections

As per standard Control4 practice, it is necessary to establish end-point connections for each device. Choose the **Connections** view, and select the **Control/AV** tab. Select a Cambridge Audio device.
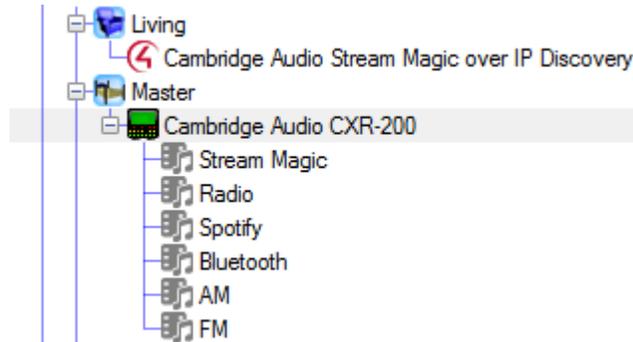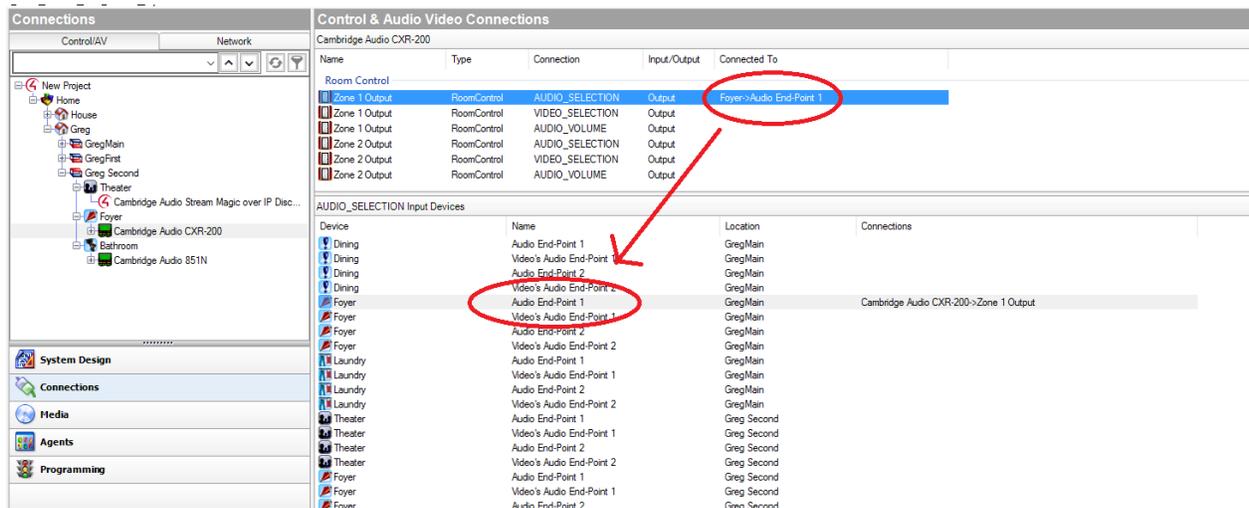

Figure 5: Driver Connections

In the **Control & Audio Video Connections** window, select a **Zone Output** with the Connection type "AUDIO_SELECTION" and drag it onto an available **Audio End-Point** in the appropriate room.

Figure 6: Driver Connections II

Next, do the same for the **Zone Output** with the **Connection** type "VIDEO_SELECTION", this time dragging it onto an available **Video Selection** input in the appropriate room, and finally do the same for **Zone Output** with the **Connection** type "AUDIO_VOLUME" by dragging it to the appropriate room. Repeat these steps for all Cambridge Audio device drivers added to your project.

Establishing Source Connections

Connect the inputs on the Cambridge Audio device to the devices corresponding to the real-world devices that are plugged into the Cambridge Audio Device's inputs. When the plugged-in device is selected within the Control4 Navigator, the device driver will automatically cause the Cambridge Audio device to switch to the corresponding input.

NOTE: Changes made in Composer will only be reflected on Navigators if you choose **File** > **Refresh Navigators**.

Driver Operation

To initiate audio playback on a Cambridge Audio device, using a Navigator, select a room to control and choose the **Listen** option. Sources that aren't physically connected to an input of the amplifier such as Spotify, Radio, Stream Magic, FM, AM and Bluetooth, Airplay (dependent on model) have a Control4 media service interface. Choose any of these sources to switch to that source on the amplifier. A presets screen is displayed:

Figure 7: Presets Screen

Choose a preset to begin playback. The **Now Playing** screen displays information about the currently playing selection, transport and volume controls and the option to select a different preset.

Figure 8: Now Playing Screen

To switch to a physical input on the Cambridge Audio product, select the source device that is plugged into that input and the driver will automatically switch the Cambridge Audio product to the corresponding input.

Presets can be saved programmatically via the **SAVE_PRESET** command, which is available on each Cambridge Audio driver.

Troubleshooting

Discovery isn't working

This is likely due to missing bindings between the network driver and the device drivers, which can occasionally happen if the project gets corrupted for some reason. To check this, open Composer and display the **Connections** view, selecting the **Control/AV** tab. Choose the Cambridge Audio discovery driver to display the **Control Outputs**:

Figure 9: Control Outputs

The control bindings should be established (as highlighted in the above image). If they are not, drag the "SMoIP Drivers" control output onto each of the players in turn.

No current status or volume feedback

If the now playing, current preset or current volume and mute status in the UI does not appear to be showing the correct status, there may be a connection problem either internally within the Composer project or between the Director and the Cambridge Audio device. Check the **Status** property for the corresponding Cambridge Audio product driver. It should read "Operational". If it is something other than "Operational", the following solutions are offered:

Status	Remedial Action
Created	The driver has been created but has no Cambridge Audio product associated with it. Once discovery has been performed, you should no longer see this status. If it persists, contact Cambridge Audio for support.
Disconnected	The driver is associated with a Cambridge Audio product but has not established communication with it. This will be shown briefly during start-up. If it persists, check that the product is contactable on the network.

Device will not power on

If the device has had power removed and re-applied, it will start in ECO Standby Mode and will not respond to the driver's Power On command. Once it has been switched on via the front panel for the first time following a complete power down, the Power On command will function normally.