Clearone StreamNet

Stardraw Control Driver Use Guide

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Contents

Overview

The Clearone StreamNet system is a network based audio visual streaming system that can grow very large. Sources in the system actually take their audio/video inputs and create a network stream of the encoded information. On the other end the Renderer Controllers receive the network stream information, and decodes it, and provides audio/video outputs for display and listening purposes.

Renderer Controllers can be considered a zone controller. At the time of this development process, the Renderers are what are controllable and sources are not. Sources will be controllable in the future.

In order to handle the potential size of the system, two drivers were developed to work hand in hand the first driver is the system communication conduit; its responsibility is to communicate with the system. The other driver is the Renderer Controller, which connects to the system communication conduit driver and provides individual control of the zone/Renderer.

Each instance of the Communication Conduit driver can connect up to 16 Renderer Controller drivers. In order to completely control up to 128 Renderer Zones, you will need eight separate instance of the Communication Conduit driver. Each Communication Driver will have 16 Renderer Controller driver connected. There by making it 128 (16x8) instances of Renderer Controller Drivers total.

The Clearone StreamNet has to be programmed in order for it to be configured and run. Each of the StreamNet Source and Renderer Device has a unique IP address. For traffic reasons each instance of the Communication Conduit Driver needs to connect to a different StreamNet device. It actually does not matter which device is used as long as they are not the same device. So enter the IP address of the device that you pick in the IP address parameter of the Communication Conduit driver.

The drivers have been design to limit the amount of settings that you need to set per instance. Automatic settings have been designed into the drivers to this end. However if you need to go away from the automatic settings then you will need to change more properties on the driver. Here is a quick overview of how it all works.

The Communication Conduit driver gets a list of all the Renderer Zone Controllers that have been programmed into the StreamNet system on initial connection. They get reported to the driver in a specific order from 1 – 128 depending on the size of the system. One of the properties on the Communication Driver is the Zone Group; each Zone group is broken up into groups of 16 zones. This property has to be set differently per instance of the Communication Conduit Driver. So Zones 1-16 on the first instance, and Zones 113-128 on the eighth instance.

On the Renderer Controller driver there is a Zone_ID property. By default this property is set to Zone_Auto. When this property is set to Zone_Auto the actual Zone_ID (1-16) get set automatically, depending on the order you connect the Renderer Controller driver to the Communication Conduit driver. So as long as you design your system with this in mind, you're done!

If for some reason you need to change around the order, or have your own order, you can than choose which Zone_ID (1-16) is used for which instance of the renderer module. You will need to make sure that all Renderer Control drivers have a unique Zone_ID or you will find that you are duplicating control. So in example the second Communication Conduit driver has Zone Group 17-32. If the Zone_ID of the Renderer Controller driver is set to Zone_02, that Render Controller will actually control Zone 18. Zone 18 is the Second Zone of that Zone Group.

Now let's say as an example that you find that you need to control the Renderer that is assigned to the 10th zone position and the Renderer that is on the 45th zone position only. Using the automatic method would be overkill. You can in this instance use one Communication Conduit driver and assign the Renderer Names manually. So in this example the 10th position is the Theater Renderer, and the 45th position is the Master Bedroom Renderer. In the Clearone programming they have been assigned names "Theater Player" and "Master Bedroom Player". Go ahead and connect two Renderer Control Drivers to the single Communication Conduit driver. There is a property that is Labeled "Renderer Name – Auto Assign", assign that property to false. Once false a new property will be visible, Renderer Name. Enter the name of the Renderer there, just as it was programmed into the Clearone system. IT MUST MATCH COMPLETELY in order to work. During initialization of the drivers the Communication Conduit driver will compare the one you entered, if it finds a match is will allow control of the Renderer. On a side note the Zone_IDs are ignored with this configuration.

Drivers

StreamNet SC – System Communication Diver

Overview

The Clearone StreamNet SC, system communication driver, is responsible for communicating with the system via a single StreamNet device and up to 16 Clearone StreamNet RC, renderer controller drivers. If you need to control more than 16 renderer zones, you will need to provide other instances of the system communication driver. For traffic reasons, please use a unique StreamNet device per system communication driver you include in your project.

Driver Properties

Name	Description
IPAddress	The IP address of a single StreamNet device that this driver will use for connection.
IPPort	The IP Port used for connection. Default: 15000
Zone Group	The StreamNet programming assigns a zone position for every programmed renderer controller. When you need to control more than the first 16 renderer controllers, you will use a new instance of this driver. Set this setting to the zone range you wish to control.

Controllable Driver Properties

Name	Description
InitializationProgress	Status only indication of the modules initialization progress. Not Started: 0 Get Source List: 1 Get Renderer List: 2

	Register Renderer Controllers: 3 Completed: 4
SourcesNames	A string list of source names that are programmed in to the StreamNet system. You will need to use these names in order to route to the renderer zone. *Pass the chosen source name from the list to the set property "SelectedSource" on the renderer control driver. This will instruct the system to stream this source to the selected renderer zone.*

Driver Events

Name	Description
OnIntializationProgressChanged	Indication that the InitializationProgress has changed.

StreamNet RC – Renderer Zone Controller Diver

Overview

The Clearone StreamNet RC, renderer zone controller driver, is responsible for controlling a single renderer on the StreamNet system. It gets connected to a single Clearone StreamNet SC driver via the Renderer In port. Only 16 renderer zone controller drivers can be connected to a single system communication driver.

Driver Properties

Name	Description
Renderer Name	This property Is hidden until the "Renderer Name – Auto Assign" is set to false. It is used when you want to bypass the default settings of the driver and select the exact renderer to control by entering in its name. The name must match EXACTLY (case sensitive) as programmed into the Clearone StreamNet system.
Renderer Name – Auto Assign	True is the default setting, when set to True, it will auto assign the renderer name based on the Zone Group parameter on the StreamNet SC driver and the Zone Group – Zone_ID settings on this driver. False will allow you to enter the exact renderer name to be controlled.
Zone Group – Zone_ID	Each StreamNet SC driver allows only 16 StreamNet RC drivers to be connected and controlled. This setting decides which of the 16 zones this renderer will control. By default Zone_Auto is selected, in this mode it will automatically assign the Zone_ID based on the order you connected this driver to StreamNet SC driver. When you want to bypass that auto – order assignment. Choose the Zone_ID from the list. The Zone_ID is the index of the Zone_Group that you selected on the StreamNet SC driver. So in

example the second system communication driver has Zone Group 17-32. If the Zone_ID of the Renderer Controller driver is set to Zone_02, that renderer controller will actually control Zone 18. Zone 18 is the Second Zone of that Zone Group. When bypassing the auto-order assignment, each renderer zone controller driver must have a unique Zone_ID.

Controllable Driver Properties

Name	Description
Volume	Use to set or get the absolute value of the volume, valid range (0-100).
Mute	Use to set or get the state of the mute, true or false.
Bass	Use to set or get the absolute value of the bass, valid range (0-100).
Treble	Use to set or get the absolute value of the treble, valid range (0-100).
Balance	Use to set or get the absolute value of the balance, valid range (0-100).
EQBand1	Use to set or get the absolute value of the EQ band 1, valid range (0-100).
EQBand2	Use to set or get the absolute value of the EQ band 2, valid range (0-100).
EQBand3	Use to set or get the absolute value of the EQ band 3, valid range (0-100).
EQBand4	Use to set or get the absolute value of the EQ band 4, valid range (0-100).
EQBand5	Use to set or get the absolute value of the EQ band 5, valid range (0-100).
AVMode	Use to set or get the state of the av mode (streaming status), true or false.
MultiRoomSessionName	Use to set or get the name of the multi-room session, example: "Party Mode"
MultiRoomSession	Use to set or get the state of the multi-room session, true or false.
Registered	Use to get the state of the drivers registration status, true or false. When true driver is controllable.

RendererName	The assigned renderer's name.

Controllable Driver Methods

Name	Description
Volume_Raise	Use to increase the volume, repeatable.
Volume_Lower	Use to decrease the volume, repeatable.
Mute_Toggle	Use to change toggle state of the volume mute.
Bass_Raise	Use to increase the bass, repeatable.
Bass_Lower	Use to decrease the bass, repeatable.
Treble_Raise	Use to increase the treble, repeatable.
Treble_Lower	Use to decrease the treble, repeatable.
Balance_AdjustRight	Use to adjust the balance toward the right, repeatable.
Balance_AdjustLeft	Use to adjust the balance toward the left, repeatable.
Balance_Center	Use to set the balance to the center position.
EQBand1_Raise	Use to adjust the EQ band up, repeatable.
EQBand1_Lower	Use to adjust the EQ band down, repeatable.
EQBand1_Center	Use to set the EQ band to the center position.
EQBand2_Raise	Use to adjust the EQ band up, repeatable.
EQBand2_Lower	Use to adjust the EQ band down, repeatable.
EQBand2_Center	Use to set the EQ band to the center position.
EQBand3_Raise	Use to adjust the EQ band up, repeatable.
EQBand3_Lower	Use to adjust the EQ band down, repeatable.
EQBand3_Center	Use to set the EQ band to the center position.
EQBand4_Raise	Use to adjust the EQ band up, repeatable.
EQBand4_Lower	Use to adjust the EQ band down, repeatable.
EQBand4_Center	Use to set the EQ band to the center position.

EQBand5_Raise	Use to adjust the EQ band up, repeatable.
EQBand5_Lower	Use to adjust the EQ band down, repeatable.
EQBand5_Center	Use to set the EQ band to the center position.
AVMode_Toggle	Use to toggle the AV mode (streaming) state.
MultiRoom_Toggle	Use to toggle the multi-room session state.

Driver Events

Name	Description
OnVolumeChanged	Indicates the volume level has changed.
OnMuteChanged	Indicates the mute state has changed.
OnBassChanged	Indicates the bass level has changed.
OnTrebleChanged	Indicates the treble level has changed.
OnBalanceChanged	Indicates the balance position has changed.
OnEQBand1Changed	Indicates the EQ band position has changed.
OnEQBand2Changed	Indicates the EQ band position has changed.
OnEQBand3Changed	Indicates the EQ band position has changed.
OnEQBand4Changed	Indicates the EQ band position has changed.
OnEQBand5Changed	Indicates the EQ band position has changed.
OnAVModeChanged	Indicates the AV Mode (streaming) state has changed.
OnMultiRoomSessionNameChanged	Indicates the multi-room session name has changed.
OnMultiRoomSessionChanged	Indicates the multi-room session state has changed.
OnSelectedSourceChanged	Indicates the selected source has changed.
OnRendererNameChanged	Indicates the renderer name has changed.
OnRegisteredChanged	Indicates the mute state has changed.