



HDM-C6 Series HDMI-over-IP Video Systems

RTI Driver User Guide

Version 1.3

Driver developed by



Introduction

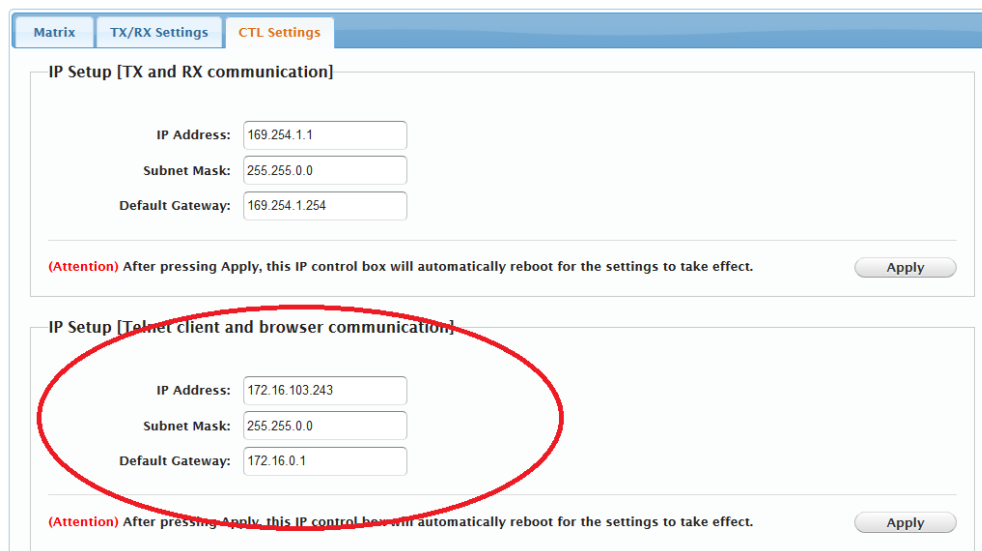
This driver has been designed to provide two-way control of Avenview hDM-C6 series HDMI-over-IP video systems, via TCP/IP. Three separate driver files are included with the packages, providing support for the original HDM-C6VWIP series products, as well as the newer HDM-C6MXIP and HDM-C6MVIP ranges.

Avenview Configuration

It is recommended that the Avenview system be installed, configured and tested by a suitably qualified engineer, according to Avenview documentation, prior to integration with this driver. Some additional, specific configuration is required to ensure correct operation of the driver:

The Avenview Control Interface Telnet Client must be configured with a static IP address in the same range as the RTI processor in order for the two to communicate:

1. Enter the IP address of the IP Control Box into the web browser of a computer connected to the same network, to display the Web Interface (the default IP address is "192.168.11.243" and default password is "admin").
2. Choose the **CTL Settings** tab.
3. Enter the static IP address information into the **IP Setup [Telnet client and browser communication]** section, and click **Apply**.



Matrix TX/RX Settings **CTL Settings**

IP Setup [TX and RX communication]

IP Address: 169.254.1.1

Subnet Mask: 255.255.0.0

Default Gateway: 169.254.1.254

(Attention) After pressing Apply, this IP control box will automatically reboot for the settings to take effect.

Apply

IP Setup [Telnet client and browser communication]

IP Address: 172.16.103.243

Subnet Mask: 255.255.0.0

Default Gateway: 172.16.0.1

(Attention) After pressing Apply, this IP control box will automatically reboot for the settings to take effect.

Apply

Figure 1: Avenview CTL Settings

It is additionally necessary to configure an **Alias** (name) for each transmitter (input) device and each receiver (output) device. Access the web interface as described above, this time choosing the **TX/RX Settings** tab. Note that the current device names are displayed in **Device Settings** at the top of the page. Select a device to display its current configuration:

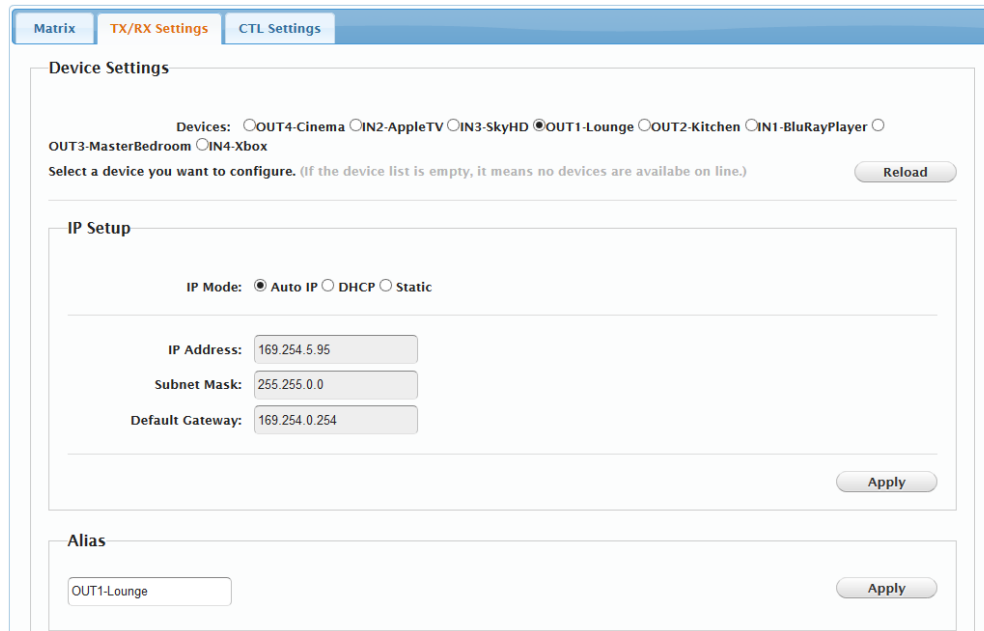


Figure 2: Avenview TX/RX Settings

You can edit the device name in the **Alias** field, clicking Apply when done. Note that the name must comply with the following conventions:

For Transmitter (input) devices: *IN[number]-[name]*
For Receiver (output) devices: *OUT[number]-[name]*

It is important that each name begins with "IN" or "OUT", which is then followed by the input or output number. You can then optionally add a hyphen (-) followed by an appropriate description for the device (note that no spaces are allowed). For example, in the screenshot above, the first input is named *IN1-BluRayPlayer*, equally valid is just *IN1*.

Driver Installation & Configuration

Open your RTI Integration Designer system file (or use the demo programming file entitled "Avenview_HDM_C6VWIP.rti"). Select your XP series processor from the **System Workplace** window and choose the **Drivers** tab.

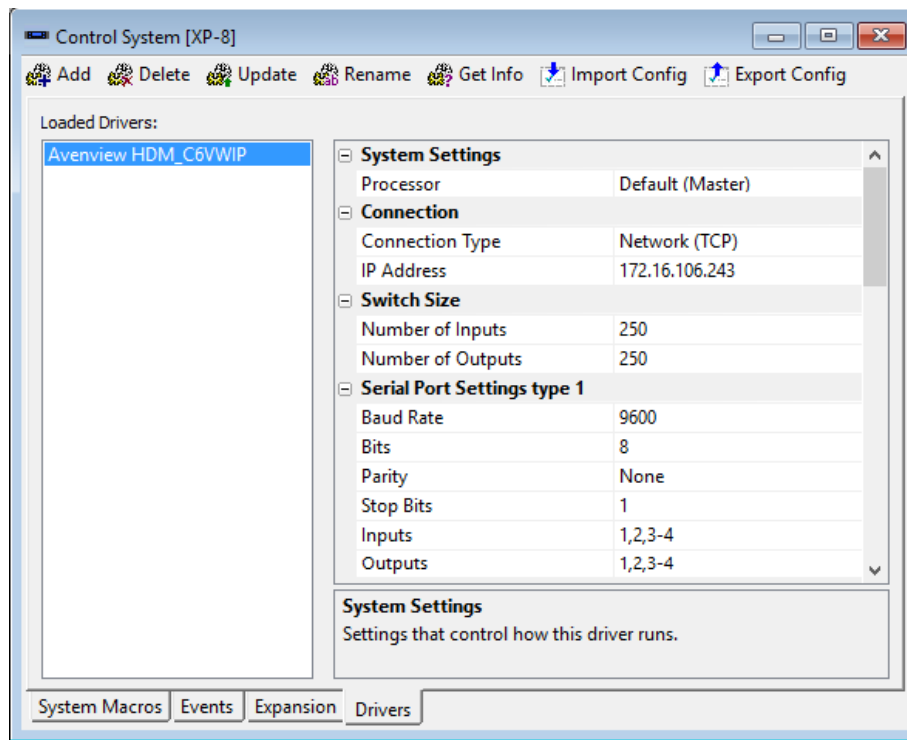


Figure 3: Driver Properties

If the Avenview driver does not appear in the **Loaded Drivers** list, select **Add** and choose to open either the "Avenview_HDM_C6VWIP.rtidriver" or the "Avenview_HDM_C6XMIP.rtidriver" file from the driver package, depending on which product range you are using.

The driver features a number of configuration properties that must first be completed. Note that the Serial Port Settings Types provide a way of defining the settings for a serial port, which can then be applied to the serial ports of multiple inputs and outputs.

Setting	Description
System Settings	Processor - the XP-series processor running the driver.
Connection	Connection Type - this option defaults to "Network (TCP)". IP Address - The IP address on the LAN for the Avenview Control Interface.
Switch Size	Number of Inputs - the number of transmitters in the system. Number of Outputs - the number of receivers in the system.
Serial Port Settings type x	Baud Rate - the baud rate in bits per second. Bits - the number of data bits.

	<p>Parity – the parity bit setting.</p> <p>Stop Bits – the number of stop bits.</p> <p>Inputs - the inputs to which this setting type is to be applied.</p> <p>Outputs - the inputs to which this setting type is to be applied.</p>
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Table 1: Driver Properties

Driver Commands

The driver features a number of commands used for control. To add a command:

- Choose your remote control device from the **System Workplace** window, right click on the button to which a command is to be added and select **Edit Properties**.
- Select the **Driver Command** tab and click the arrow button to display the available commands for the Avenview driver.
- Choose a command and click **Ok**.

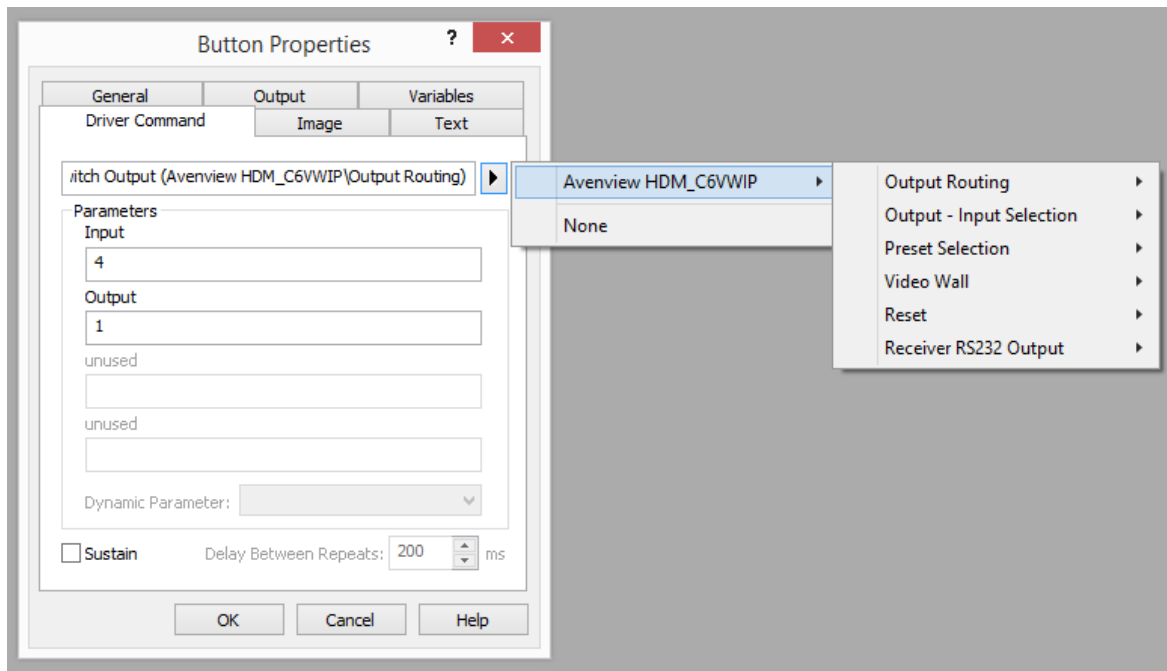


Figure 2: Driver Commands

Command	Description
Switch Output	Switch a specific input to a specific output.
Clear Output Selection	When multi switching outputs, or creating presets, this command clears all currently selected outputs.
Select All Outputs	When multi switching outputs, or creating presets, this command is

	used to select all outputs.
Select Output	This command is used to select individual outputs for subsequent multi switching, or creating presets.
Toggle Output	This command is used to select or de-select individual outputs for subsequent multi switching, or creating presets.
Select Input	This command is used to select an input to which previously selected outputs should be switched.
Store Preset (All Outputs)	Store the current configuration of all outputs as a preset (with an ID of 1-16).
Store Preset (Selected Outputs)	Store the current configuration of all currently selected outputs as a preset (with an ID of 1-16).
Recall Preset Selection	Recall a preset by ID.
Single Host Video Wall Create*	<p>Define a video wall using a single host (input).</p> <p>Wall Name - choose a wall name (this is important as other commands refer to this name).</p> <p>Input - specify an input number to use as the host.</p> <p>Size - the video wall screen configuration expressed as "x,y". For example "2,2" creates a 2 x 2 (4 screen) video wall.</p> <p>Output - the output numbers used to create the video wall. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). This field must contain a number of outputs equal to the amount defined in the Size field.</p>
Single Host Video Wall Switching*	<p>Switch a pre-configured single host video wall to a specific input.</p> <p>Wall Name - the name of the wall to be switched.</p> <p>Input - specify an input number to switch to.</p>
Bezel Gap*	<p>Define the size of the TV frame (video edge) to correct for large bezel screens in video wall mode.</p> <p>Wall Name - specify the wall name defined in the Video Wall command.</p> <p>Overall Width, Height - the overall size of the television in mm (e.g. "600,550").</p> <p>Screen Width, Height - the size of the actual screen in mm (e.g. "550,500").</p>
Picture Parameters*	<p>Make adjustments to screen appearance of specified outputs within a video wall.</p> <p>Wall Name - specify the wall name defined in the Video Wall command.</p> <p>Shift,Scale (Horizontal,Vertical) - shift and/or scale a video screen, horizontally and/or vertically, where 1 unit = 8 pixels (for shift) and 1 row/column (for scale), separated by a colon. For example, "1,-2:3,4" will shift the screen horizontally by 8 pixels, vertically by minus 16 pixels, and over-scale the image by 3 rows and 4 columns.</p> <p>Tearing Delay - define the tearing delay in microseconds. This provides a way of adjusting an input image, distorted as a result of dividing it up for display in a video wall.</p>

	<p>Outputs – the output numbers to which the parameters should be applied. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). This field must contain some or all of the outputs specified in the video wall command.</p>
Multi Host Video Wall Create*	<p>Define a video wall using multiple hosts (inputs). Wall Name – choose a Wall Name (this is important as other commands refer to this name). Size – the video wall screen configuration expressed as "x,y". For example "2,2" creates a 2 x 2 (4 screen) video wall. Inputs – specify the inputs to be used in the video wall. The quantity of inputs must be equal to the amount of columns in the video wall (i.e. the number defined as "y" in the Size field). Output – the output numbers used to create the video wall. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). This field must contain a number of outputs equal to the amount defined in the Size field. NOTE: After using the Multi Host Video Wall command, it may be necessary to send the "Reset Input" command to any inputs remaining distorted.</p>
Multi Host Video Wall Switching*	<p>Switch a pre-configured multi host video wall to specific inputs. Wall Name – the name of the wall to be switched. Input – the inputs to be used in the video wall. The quantity of inputs must be equal to the amount of columns in the video wall (i.e. the number defined as "y" in the Size field).</p>
CEC**	<p>Send a CEC command to specified outputs. Output – the output number(s) to which the command should be sent. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). Control – choose a CEC command to send.</p>
Reinitialize	<p>A command to update text variables in RTI for device names defined in the Avenview system.</p>
Reset Input	<p>Use this command to reset an input previously used in a Multi Host Video Wall command, so that it can be switched as a normal input once again.</p>
RS232 Output	<p>Inputs – the inputs to which the string is to be sent. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). Outputs – the outputs to which the string is to be sent. These can be comma separated (e.g. "1,2,3,4") or defined as a range (e.g. "1-4"), or a combination of the two (e.g. "1,2-4"). String – the serial string to be sent (note that quotation marks (") are disallowed).</p>

Table 2: Driver Commands

* These commands are only supported in the HDM-C6VWIP and HDM-C6MVIP drivers.

** These commands are only supported in the HDM-C6MXIP and HDM-C6MVIP drivers.

Driver Variables

The driver features a number of variables, providing feedback from the Avenview system.

Variable	Description
Operational Mode	Reports the current connection status.
Model Number	Reports the model number of the Avenview IP controller.
OUTxxx Current Input (integer)	Reports the number of the input currently routed to the given output.
OUTxxx Current Input (name)	Report the name of the input currently routed to the given output.
INxxx Name	The name defined for a particular input in the Avenview system.
OUTxxx Name	The name defined for a particular output in the Avenview system.
Output xx Selected	A Boolean variable reporting the selection status of the given output.

Table 3: Driver Variables

The above names can be manually configured via the web interface of the Avenview Control Interface (see the above section entitled "Avenview Configuration" for more information).

Troubleshooting

The driver cannot control the Avenview system

- Confirm the Ethernet switch used by the Avenview system is correctly uplinked to the same network as the RTI processor.
- Confirm that the correct IP address is defined in the RTI driver properties for the Avenview control interface.

Switching commands are failing

- Ensure you have named the devices correctly in the Avenview system. Read the section of this guide entitled "Avenview Configuration" for more information.

An input is distorted, or is displaying only part of the complete image

- Try sending the **Reset Input** command to the affected input.

The input/output names displayed on the RTI panel are incorrect

- Try sending the **Reinitialize** command to update the names after changes have been made to the Avenview system.