

VMS-741 Multiviewer – Programming & Setup

Contents

1. Overview	1
2. VMS-741 Web Interface General Tab.....	2
3. VMS-741 Web Interface Advanced Tab	4
4. VMS-741 Web Interface EDID Tab.....	5
5. VMS-741 Web Interface Network Tab	6
6. Programming A User Interface Using The VMS-741 Driver	7
7. Programming Configuring Driver Properties	9
8. Programming Feedback.....	10
9. Programming Breaking Down The Driver Functions	12
10. Programming Hints	13
11. Application & Design	13



1. Overview

The VMS-741 4K MultiViewer is designed for commercial spaces such as huddle rooms, auditoriums and lecture halls as well as sports bars, hotels, educational venues, and residential projects when using a wide range of sources with different resolutions and format. With the MultiViewer functionality, up to four of the seven input connections can be accessed simultaneously on a single display, with different user layout options. It also offers audio embedding and de-embedded audio outputs, creating a comprehensive user experience.

Follow the instructions as outlined in the operation guide. Once all components have been connected, and the unit is connected to the local area network, enter the IP address in a browser to access the web interface.

2. VMS-741 Web Interface | General Tab

The screenshot shows the 'General' tab of the VMS-741 web interface. At the top, there are four tabs: 'General' (selected), 'Advanced', 'EDID', and 'Network'. Below the tabs, the 'Window Input Select' section has dropdowns for A (1), B (2), C (3), and D (4), with a 'Submit' button. The 'Window Aspect Ratio' section has dropdowns for A, B, C, and D, all set to 'Normal', with a 'Submit' button. The 'Audio Input Select' section has a dropdown for 'WinC' and a 'Volume (0~10)' dropdown set to '5', with a 'Submit' button. The 'Audio Mute' is set to 'off' and 'Audio Delay (0~10)' is set to '0', with a 'Submit' button. The 'Audio Input Configuration' section has six dropdowns, all set to 'Auto', with a 'Submit' button. The 'Output Resolution' is set to 'AUTO' with a 'Submit' button. The 'Button Configuration' section has four dropdowns for 'Button 1' through 'Button 4', all set to 'Layout 1' through 'Layout 4' respectively, with a 'Submit' button. On the right side, the 'Window Layout' section shows a grid of 18 window layouts numbered 1 to 18. Layout 4 is highlighted with a red border. A 'Submit' button is located above the grid.

Window Input Select

Each letter (A, B, C & D) correspond to one of the four possible regions available for any of the seven sources connected to the unit. The window select function allows you to designate the sources you want to include in the MultiViewer and the default screen location.

Window Aspect Ratio

For each window, region choose a normal, full, 16:9 or 4:3 aspect ratio view.

Audio Input Select

Determine the source for audio output by selecting the screen region. You may also designate a volume level from 0~10, the mute status, and an audio delay to deal with lip sync issues.

Audio Input Configuration

The VMS-741 may output audio through HDMI (Auto) or through optical and analog outputs. Determine how to derive the audio by selecting auto or external.

Output Resolution

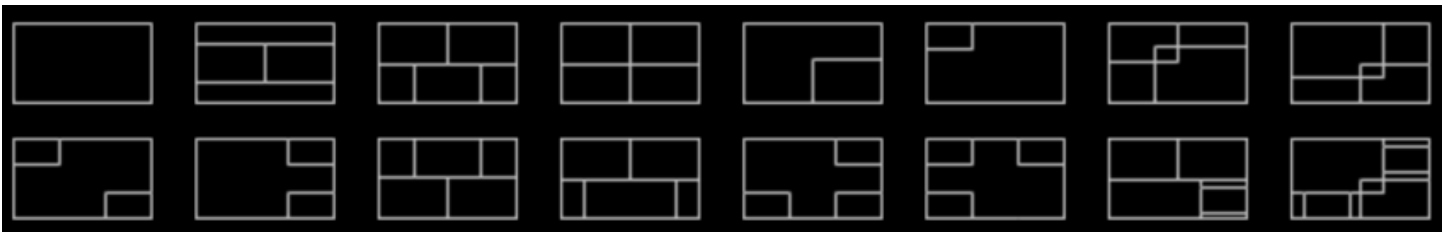
A variety of output resolutions may be selected as well as a refresh rate. Note that the highest possible resolution is 4k x 2k@30Hz.

Button Configuration

There are four buttons that will by default select preset layouts 1-4 of the 16 possible preset layouts. Other layers may be changed here if desired. Each button can be made to call any of the 16 presets.

Window Layout

The user may select one of the 16 preset layouts and reflect that layout on the output display.



Note: Layouts 1-4, as shown above, may be selected on the face of the unit but may be changed using the button configuration option described above.

Next, select the “Advanced” tab.

3. VMS-741 Web Interface | Advanced Tab

General Advanced EDID Network

Auto position Submit

Restore to default Submit

RS-232 Baudrate 57600 Submit

Audio OSD On Submit

Video OSD On Submit

Analog setting RGB Submit

(Attention: Analog setting will take effect after reboot.)

Audio DownMix Disable Submit

(Attention: Audio DownMix setting will take effect after reboot.)

Firmware Version: VMS741 1.0.1.1

WebGUI Version: 1.12

Auto Position

Use this option to position VGA/RGB sources automatically.

Restore to Default

Factory default all settings and options.

Audio OSD

You may choose an option from the Audio OSD drop-down list to turn information on audio on or off.

Video OSD

You may choose an option from the Video OSD drop-down list to turn information on video on or off.

Analog Setting

It is possible to switch the VGA input between RGB and YPbPr by selecting either RGB or YPbPr from the drop-down menu.

Audio Downmix

You may enable or disable audio downmixing from the VMS-741. This setting will be activated after reboot.

Firmware and WebGUI Version

Information regarding the firmware and WebGUI version is found on this advanced tab.

4. VMS-741 Web Interface | EDID Tab

General Advanced **EDID** Network

EDID Copy:

Input Port1 [HDMI 1]: Copy EDID from	<input type="text" value="Internal_4K*2k Multi ch"/>	<input type="button" value="Submit"/>
Input Port2 [HDMI 2]: Copy EDID from	<input type="text" value="Internal_4K*2k Multi ch"/>	<input type="button" value="Submit"/>
Input Port3 [HDMI 3]: Copy EDID from	<input type="text" value="Internal_4K*2k Multi ch"/>	<input type="button" value="Submit"/>
Input Port4 [HDMI 4]: Copy EDID from	<input type="text" value="Internal_4K*2k Multi ch"/>	<input type="button" value="Submit"/>
Input Port5 [DP 5]: Copy EDID from	<input type="text" value="Internal_DP_4K*2k@60Hz 2 ch"/>	<input type="button" value="Submit"/>
Input Port6 [HDBT 6]: Copy EDID from	<input type="text" value="Internal_4K*2k Multi ch"/>	<input type="button" value="Submit"/>
Input Port7 [VGA]: Copy EDID from	<input type="text" value="Internal_VGA"/>	<input type="button" value="Submit"/>

EDID Upload:

Select EDID File to Upload (*.bin): No file chosen

Select Custom Location:

EDID Download:

Select an EDID file
(Right-click and save target / link as...)

Output

Input

Custom

EDID Copy

EDID, or Extended Display Identification Data, is information sent from the output device to the source device to ensure that resolutions and signal timings are properly supported. Occasionally these signals can be interrupted and cause issues with the display. You may copy EDID information from any output device to any source device.

EDID Upload

If copying EDID from outputs to the source do not work, you may upload an EDID file that is confirmed to work with that device.

EDID Download

Downloading and EDID is also possible, as the file may be edited and uploaded when troubleshooting.

5. VMS-741 Web Interface | Network Tab

General **Advanced** **EDID** **Network**

Network:

DHCP:

IP: 192.168.27.160 Mask: 255.255.255.0

Gateway: 192.168.27.1 DNS: 192.168.27.1

Sockets:

Socket:

Port:

Others:

Revert network settings to factory default

Network

Network information such as IP address, Netmask, Gateway, and DNS is provided. Select the DHCP drop-down menu to set static network information. If you are using IP protocol for the purpose of control, it is important to set a static IP address or reserve the DHCP address of the VMS-741.

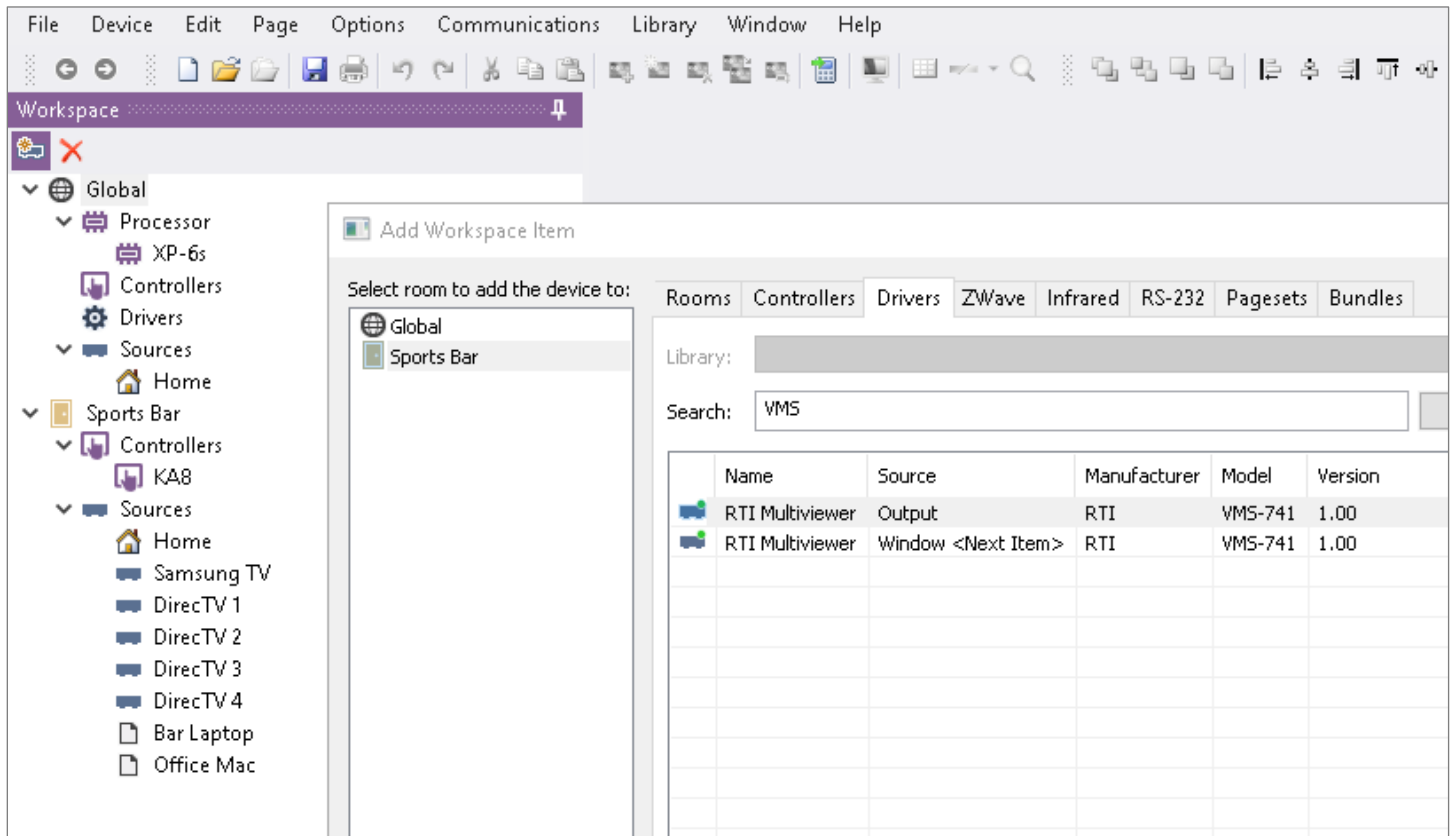
Sockets

You can choose from TCP Server, TCP Client, TCP Auto, UDP Mode or UDP Multicast by selecting an option in the drop-down menu. The default port 23 may be changed as well.

Others

All network information may be factory reset to default values by selecting the checkbox and pressing the reset button.

6. Programming A User Interface Using The VMS-741 Driver

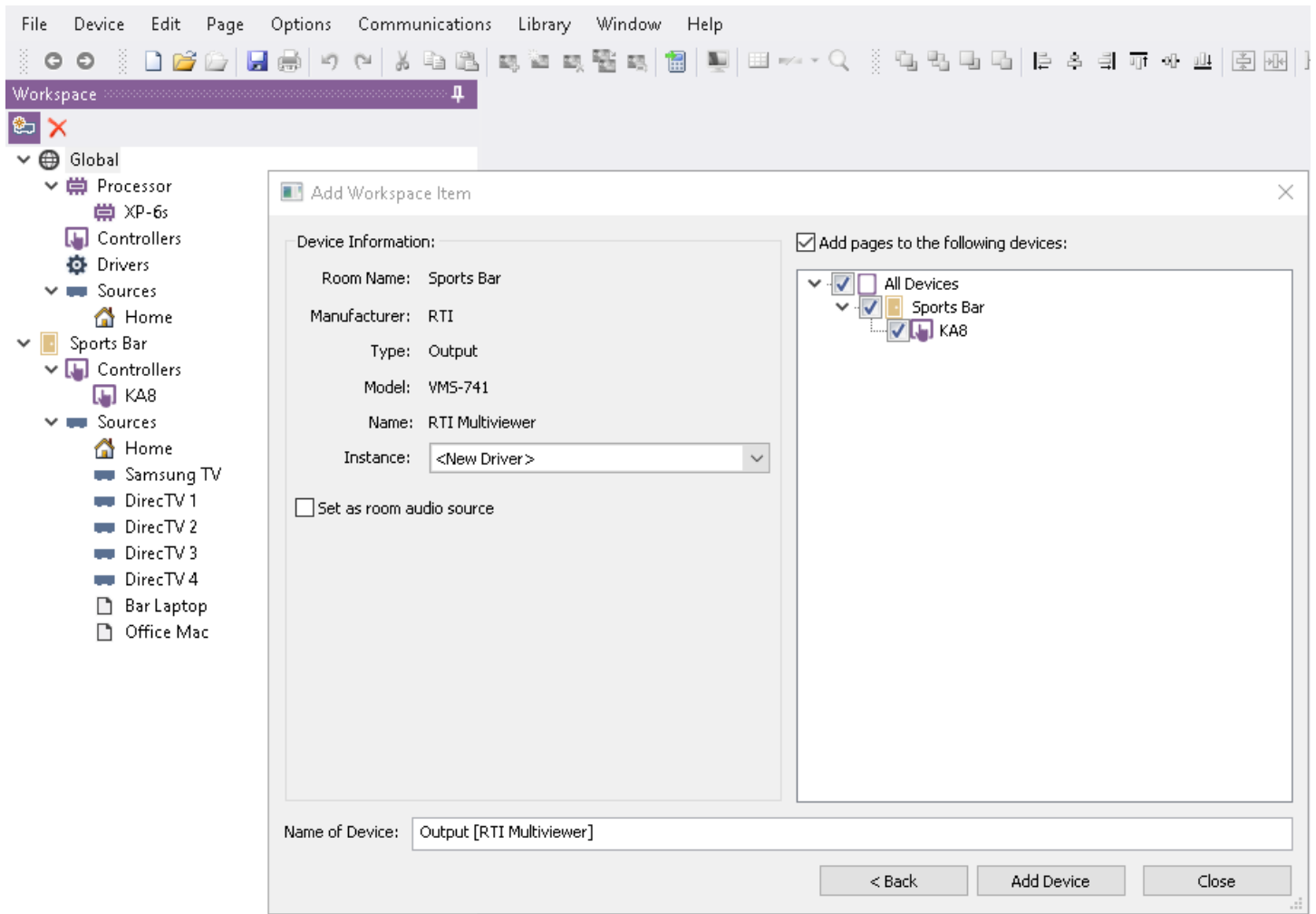


Begin by adding a processor, rooms, controllers, and sources in Integration Designer APEX software. Download the VMS-741 driver from RTI’s website and place it in a target directory so the software can find it.

APEX will create an “Output” driver as well as a “Window” driver for each of the 4 window regions. Add the output driver to the area where the video display is located. Add the window {next item} if you want to create control interfaces for individual windows. This option might not be necessary if you choose to create a single user interface to control the VMS-741.

Each time you add the “Window {Next Item}” by default APEX will count each occurrence and increment the region number, allowing you to control multiple windows without the need to add multiple drivers.

Please note that APEX will not create any pre-programmed user interfaces, so if you choose to provide the client with a user interface to control the vital functions of the unit, you will have to do it manually. However, once this is completed, you may bundle the interface to use it for subsequent projects.



In this example, we will add an output to a Sports Bar display as there is no need to use the window functions.

7. Programming | Configuring Driver Properties

Driver Configuration	System Settings	
Driver Utilities...	Connection	
Driver Properties	Connection Type	Network (TCP)
Driver Events	TCP Address	192.168.27.160
Driver Info	TCP Port	23
	Input Names	
	Input 1	DirecTV 1
	Input 2	DirecTV 2
	Input 3	DirecTV 3
	Input 4	DirecTV 4
	Input 5	DirecTV 5
	Input 6	Bar Laptop
	Input 7	Office MAC

Select the driver from the system tree and then select “Driver Properties.” Select Network (TCP) or serial and enter in applicable settings for each.

Next, name each input to the corresponding source connections. If you are controlling less than seven sources, leave the default value the name of the connection type.

Here is an example of a user interface that will allow the end-user to select a layout. This will display a corresponding layer tied to a layout variable number. The user may select a screen region (1) and then select one of the video sources (2). He may also select the source or region, identified by letters A, B, C and D that is outputting audio. Volume control buttons on the upper toolbar allow the client to control the volume level of the selected audio source.



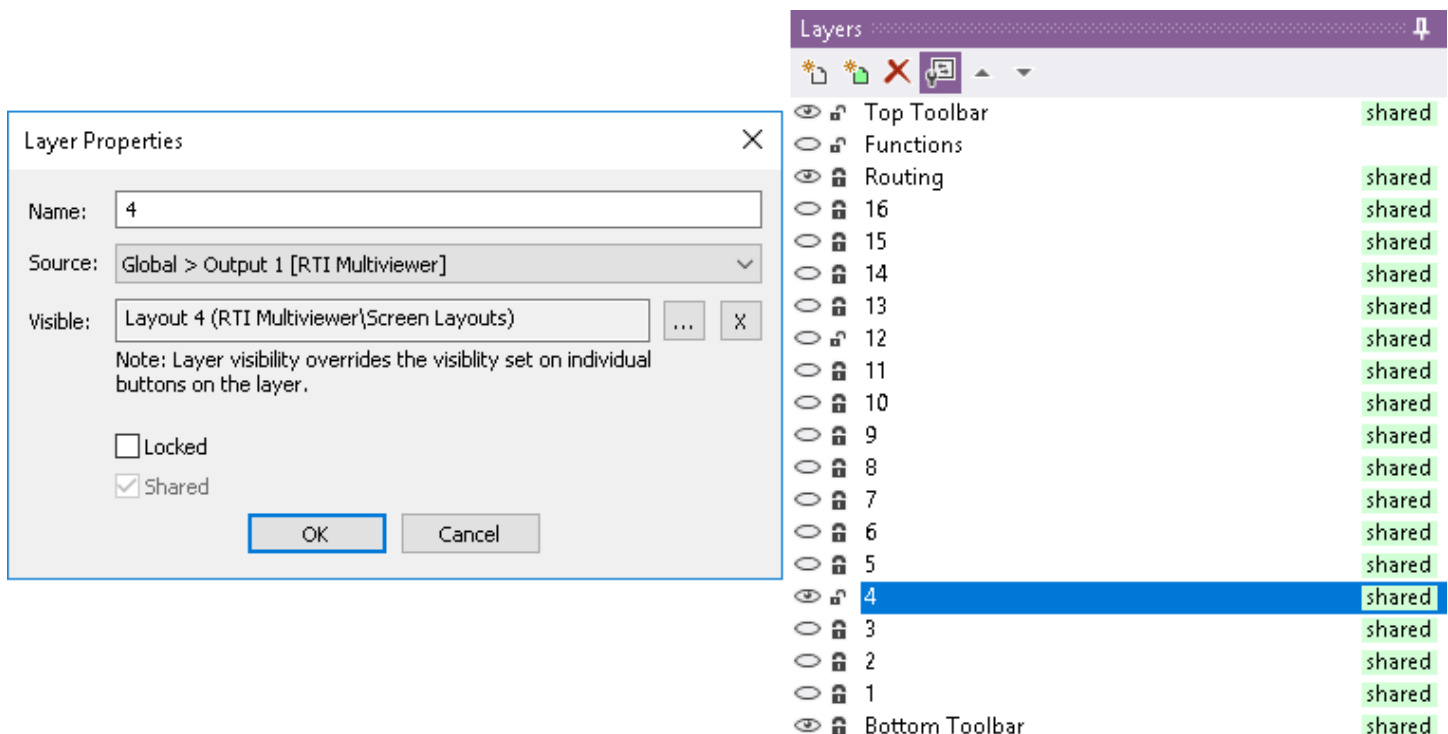
8. Programming | Feedback

In the screen region (1) be sure to indicate the letter and name of the current source. It is best to display the reverse state of the region selected by using a reverse state variable.

For the video selection options (2) name each input with text variables. By pressing one of the video sources, the current selected region will display that source.

For the audio selection area (3) include the name of each lettered region as well as the 4 possible sources. Use a reverse state variable to display what area and source is the current audio output selected.

In the layout area, use a reverse state variable to reflect the current layout selected. When a user selects one of the 16 different layout presets, a corresponding region control window will display. It is recommended the programmer create a layer for each of the sixteen presets as illustrated below.

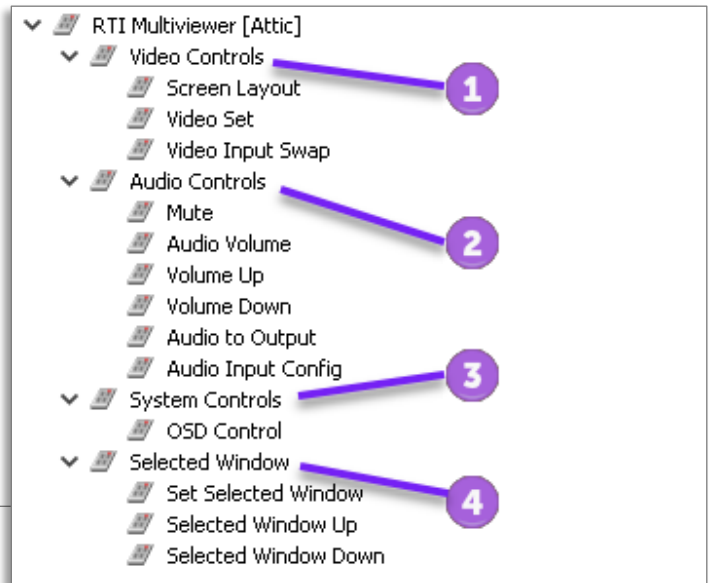


Each layout has a “Layout #” variable that may be assigned to a layer. Each layer will display a selectable region that matches the preset style.

In order to access more advanced settings, another page or pop-up display should be programmed. Options include the ability to turn on/off the audio and video OSD, and a button that will toggle between HDMI (auto) or external audio source. To always use an analog source for an input, selected the external option. If auto is chosen, the analog source will be used as a backup. Give the client buttons to toggle between using external audio or auto mode on the interface as seen here.



9. Programming | Breaking Down The Driver Functions



comment [] *****VIDEO CONTROLS***** (1)

comment [] Select from 1 of 16 screen layouts

command [] RTI Multiviewer Video Controls \ Screen Layout 16

comment [] Set a selected region to an input source

command [] RTI Multiviewer Video Controls \ Video Set A Input 1 (Digital Signage 1)

comment [] Swap a region with another on screen

command [] RTI Multiviewer Video Controls \ Video Input Swap A B

comment [] *****AUDIO CONTROLS***** (2)

comment [] Set volume level

command [] RTI Multiviewer Audio Controls \ Audio Volume 0

comment [] Volume Up/Down/Mute

command [] RTI Multiviewer Audio Controls \ Mute Toggle

command [] RTI Multiviewer Audio Controls \ Volume Up

comment [] Assign a window region or input for audio

command [] RTI Multiviewer Audio Controls \ Audio to Output Input 1 (Digital Signage 1)

comment [] Set an input to auto or external analog audio

command [] RTI Multiviewer Audio Controls \ Audio Input Config Input 1 (Digital Signage 1) HDMI/Auto

comment [] *****SYSTEM CONTROLS***** (3)

comment [] Enable or Disable OSD control for audio and video

command [] RTI Multiviewer System Controls \ OSD Control Video Enable

command [] RTI Multiviewer System Controls \ OSD Control Audio Disable

comment [] *****SELECTED WINDOW***** (4)

comment [] Set the selected window region to A, B, C and D or scroll up/down by window region

command [] RTI Multiviewer Selected Window \ Set Selected Window D

command [] RTI Multiviewer Selected Window \ Selected Window Up

command [] RTI Multiviewer Selected Window \ Selected Window Down

10. Programming Hints

- Create a simple and intuitive interface for the client without providing options they don't need or understand.
- Utilize feedback and meta-data to give the client an optimal user experience.
- Make it simple for a client to access the VMS-741 user interface and an even easier way to return to the control interface.
- Interview the client to understand their specific needs and expectations so that the web interface can be programmed most effectively.

11. Application & Design

- In a residential situation, consider using an XP-8v user interface via HDMI and toggling between a dual screen and single screen layout to allow the client to access a control interface easily. Since the window regions are separated, the client can access cameras, automation and control functions without interrupting a program.
- In a Sports Bar, even with several video displays, there is usually a focal point video display that is very large. Use the VMS-741 to show multiple games at the same time and getting the most out of an expensive display.
- In a college or university, a way for a lecturer to model multiple displays. A section for assignments, video presentation, and research material can be enriching and productive.
- In a conference room or huddle space, use as an option to display video conference software, spreadsheets, agendas, and financial data in a single session.
- In a sports venue, a solution for watching instant replays at different angles, or displaying different camera angles at a sporting event.
- For sports enthusiasts, a way to watch multiple sporting events without missing a beat.
- Security command centers can benefit by monitoring multiple areas using preset layouts that go beyond an NVR's functionality and better suit the monitored space.
- May be used in hotels for multiple digital signage displays, hotel activities, and local travel information.
- It is utilized in financial offices on a trading desk to display analytical tools, financial programs, and trading software without the need for multiple monitors.
- If necessary, may be used as a standalone product without a control system required.

Please contact the Dealer Experience Team with any questions.