

VMS-741 MULTIVIEWER PROGRAMMING & SETUP

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.

General

Advanced

EDID

Network

Window Input Select

A 1 ▼ B 2 ▼ C 3 ▼ D 4 ▼

Window Aspect Ratio

A Normal ▼ B Normal ▼ C Normal ▼ D Normal ▼

Audio Input Select WinC ▼ Volume (0~10) 5 ▼

Audio Mute off ▼ Audio Delay (0~10) 0 ▼

Audio Input Configuration:

1 Auto ▼ 2 Auto ▼ 3 Auto ▼

4 Auto ▼ 5 Auto ▼ 6 Auto ▼

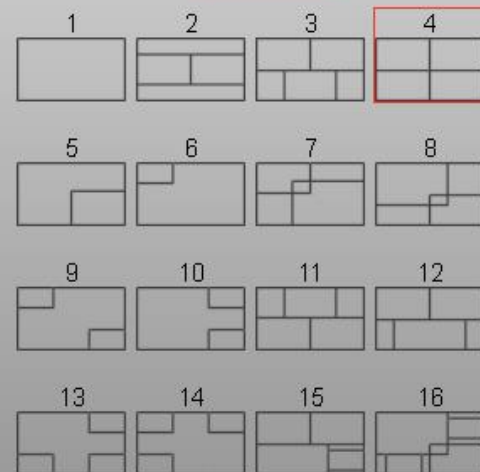
Output Resolution AUTO ▼

Button Configuration

Button 1 Layout 1 ▼ Button 2 Layout 2 ▼

Button 3 Layout 3 ▼ Button 4 Layout 4 ▼

Window Layout



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.

Select the General tab:

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

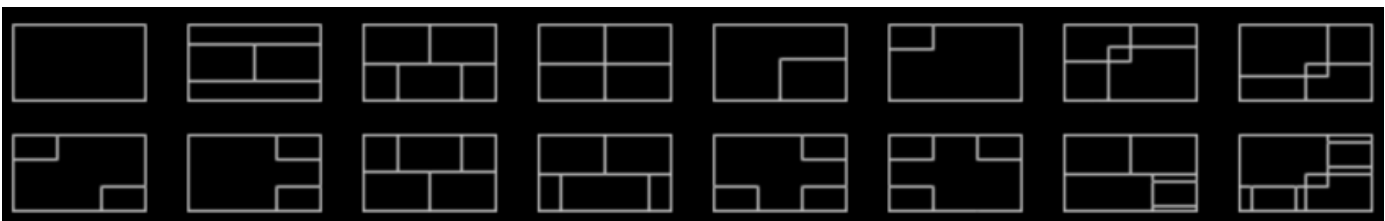
A variety of output resolutions may be selected as well as a refresh rate. Note that the highest possible resolution is 4k x 2k@30Hz.

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.

General

Advanced

EDID

Network

Auto position

Restore to default

RS-232 Baudrate 57600

Audio OSD On

Video OSD On

Analog setting RGB

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

Audio DownMix Disable

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

Firmware Version: VMS741 1.0.1.1

WebGUI Version: 1.12

Advanced Tab

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.

General Advanced **EDID** Network

EDID Copy:

Input Port1 [HDMI 1]: Copy EDID from	Internal_4K*2k Multi ch	Submit
Input Port2 [HDMI 2]: Copy EDID from	Internal_4K*2k Multi ch	Submit
Input Port3 [HDMI 3]: Copy EDID from	Internal_4K*2k Multi ch	Submit
Input Port4 [HDMI 4]: Copy EDID from	Internal_4K*2k Multi ch	Submit
Input Port5 [DP 5]: Copy EDID from	Internal_DP_4K*2k@60Hz 2 ch	Submit
Input Port6 [HDBT 6]: Copy EDID from	Internal_4K*2k Multi ch	Submit
Input Port7 [VGA]: Copy EDID from	Internal_VGA	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 Tab

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.

General

Advanced

EDID

Network

Network:

DHCP: Enabled ▾

Submit

IP: 192.168.27.180 Mask: 255.255.255.0

Gateway: 192.168.27.1 DNS: 192.168.27.1

Sockets:

Socket: TCP Auto ▾

Submit

Port: 23

Submit

Others:

Revert network settings to factory default

Reset

Network Tab

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.

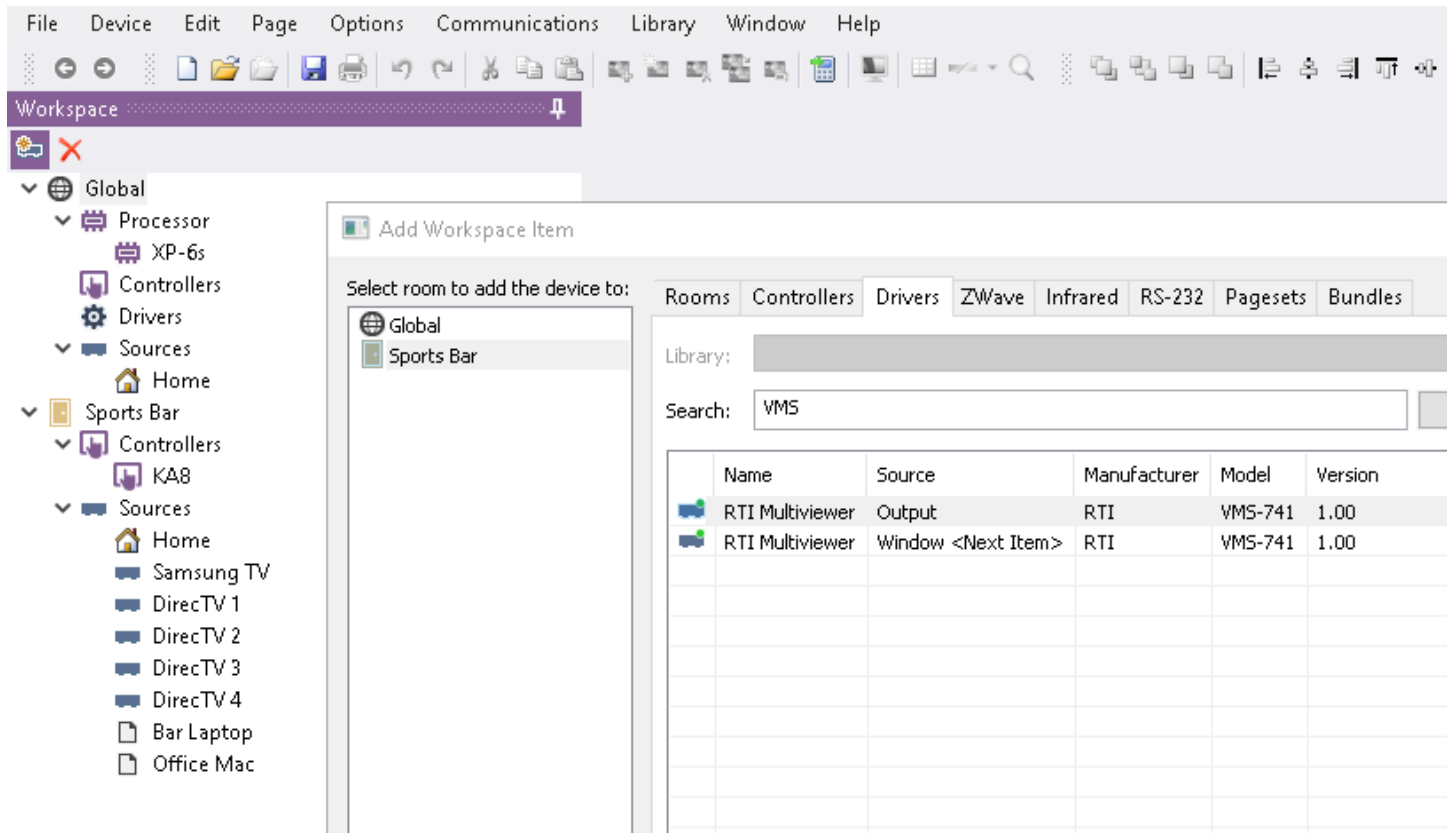
Sockets

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.

Programming a user interface using the VMS-741 driver

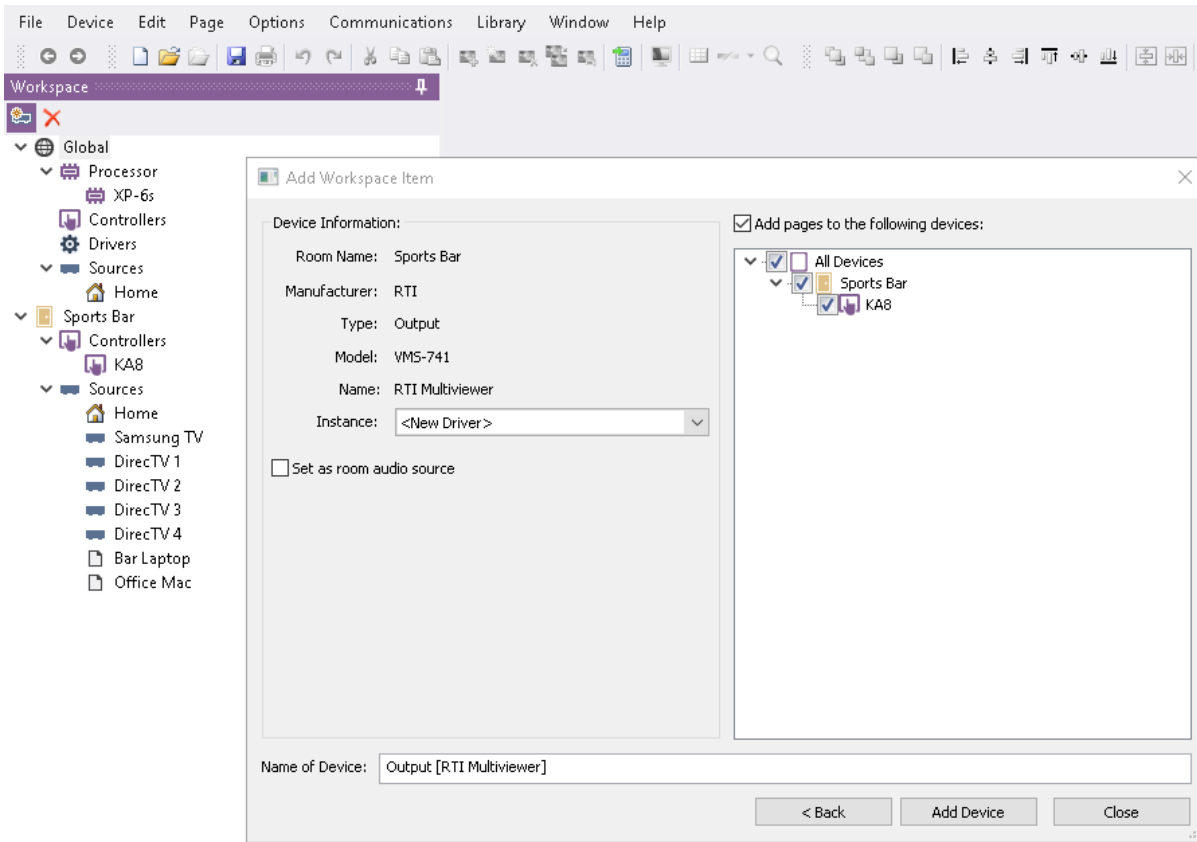


Begin by adding a processor, rooms, controllers, and sources in Integration Designer APEX software. Download the VMS-741 driver from RTI's website and place it in a target directory so the software can find it.

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.

Configuring Driver Properties

<ul style="list-style-type: none"> Driver Configuration Driver Utilities... <li style="background-color: #d0d0d0;">Driver Properties Driver Events Driver Info 	<table border="1"> <tr> <td colspan="2" style="background-color: #e0e0e0;">System Settings</td> </tr> <tr> <td colspan="2" style="background-color: #e0e0e0;">Connection</td> </tr> <tr> <td>Connection Type</td> <td>Network (TCP)</td> </tr> <tr> <td>TCP Address</td> <td>192.168.27.160</td> </tr> <tr> <td>TCP Port</td> <td>23</td> </tr> <tr> <td colspan="2" style="background-color: #e0e0e0;">Input Names</td> </tr> <tr> <td>Input 1</td> <td>DirecTV 1</td> </tr> <tr> <td>Input 2</td> <td>DirecTV 2</td> </tr> <tr> <td>Input 3</td> <td>DirecTV 3</td> </tr> <tr> <td>Input 4</td> <td>DirecTV 4</td> </tr> <tr> <td>Input 5</td> <td>DirecTV 5</td> </tr> <tr> <td>Input 6</td> <td>Bar Laptop</td> </tr> <tr> <td>Input 7</td> <td>Office MAC</td> </tr> </table>	System Settings		Connection		Connection Type	Network (TCP)	TCP Address	192.168.27.160	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
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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.

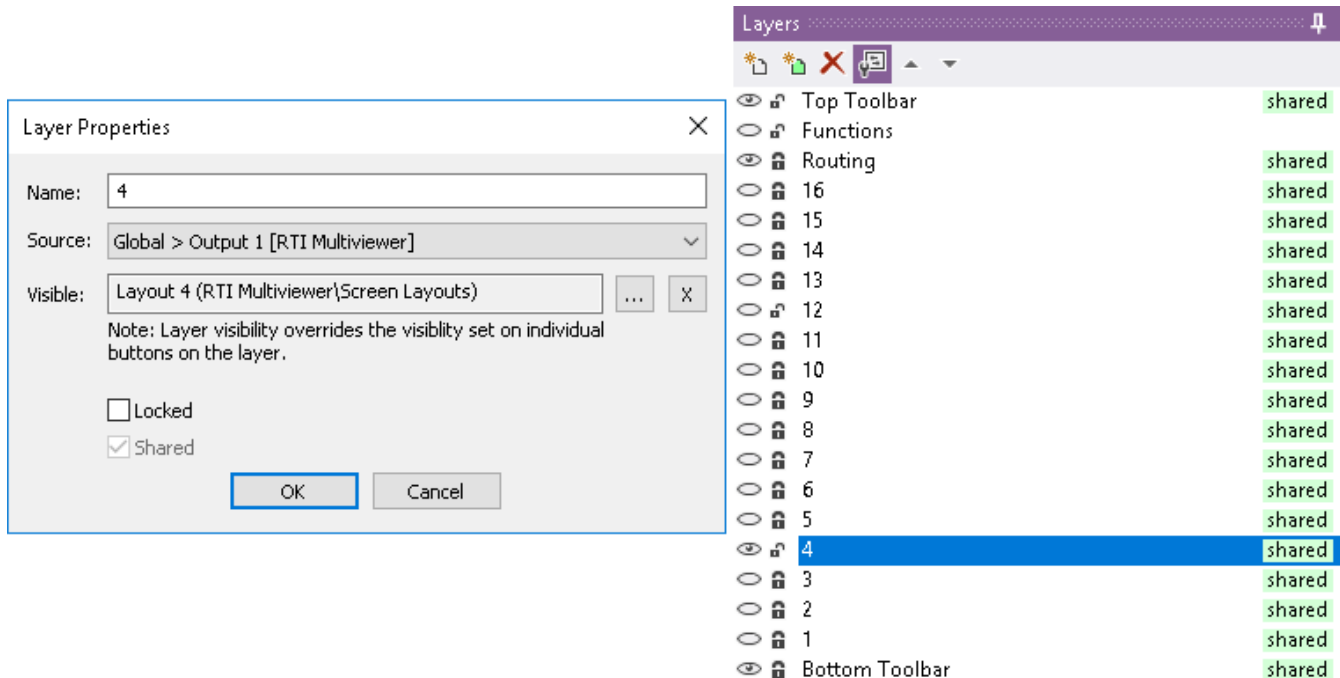
Feedback

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 below.



Breaking Down the Driver Functions

- RTI Multiviewer [Attic]
 - Video Controls
 - Screen Layout **1**
 - Video Set
 - Video Input Swap
 - Audio Controls
 - Mute **2**
 - Audio Volume
 - Volume Up
 - Volume Down
 - Audio to Output
 - Audio Input Config **3**
 - System Controls
 - OSD Control **3**
 - Selected Window
 - Set Selected Window **4**
 - Selected Window Up
 - Selected Window Down

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		

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.

Applications & 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.