DigiBird Technology Co., Ltd.

UniStream - AV over IP

Communication Protocol

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1. Communication

Use network TCP or UDP, port 5000. The length of a single command is limited to 4000 characters.

The PC and the device can communicate in the following ways:

1.1. Serial Port Mode

The PC and controller are connected using a direct RS232 serial port cable. The PC serial port should be set to 9600 baud rate, 1 stop bit, and no parity. The length of a single command is limited to 800 characters.

1.2. TCP/UDP Network Mode

The PC and controller are connected using Ethernet, and the PC sends socket messages to port 5000 of the controller.

The length of a single command is limited to 4000 characters.

The control method is the command-response mode. The two communication modes can work simultaneously, but the controller can only execute one command at a time. The command sent by the PC to the controller during the command execution will be ignored.

The controller provides a 485 or 232 cascade port, which can be used to forward commands to lower-level devices to achieve control of lower-level devices. When using TCP/UDP communication, the message sent to the device's 5001 port will be automatically forwarded to the loop-out serial port.

2. Communication Protocol

2.1. Command Architecture

Request: <CMOD,SEQ,requestParam> line break

Normal response: <CMOD,SEQ,responseParam> line break

Normal response: <CMOD,SEQ,OK> line break

Abnormal response: <CMOD,SEQ,ERROR,errorCode> line break

Description	
CMOD	Used to identify different business instructions
SEQ	Command sequence, used to match requests and responses
requestParam	Parameters used for business requests
responseParam	Parameters used for business responses
errorCode	Error code when an exception occurs
Line break	\n
UDP does not require line breaks, TCP does	

2.2. Unique ID for Input/Output Sources

The unique identifier of the input port of the centralized device is the address (AXXXBXXX).

The unique identifier of distributed devices' input and output ports is IP (192.168.1.200).

If there is a subport, use & to connect it, for example: 192.168.1.200&3 means subport 3.

2.3. Enablement Description for Window Operations

For windows displayed on the video wall, when multiple window changes are involved, a unified enabling command is provided to avoid the effect of flipping cards one by one on the screen. When multiple commands are changed, the windows on the screen will not be changed first, and they will be applied together after the configuration is completed.

2.4. Error Codes

Coding	Description
13950	Execution failed
13951	Parameter error
13952	Parameter length exceeds 4000
13953	Command not supported
13954	Video wall information not found
13955	Port information not found
13956	Window not found
13957	Duplicated port name
12030	No abnormality in the video wall configuration
12031	Excessive windows exception
12032	No response after window operation
12033	Failed to save the standard video wall configuration
12034	Failed to query the video wall
12035	Video wall command execution failed
12039	Failed to delete window
12040	Failed to clear the video wall
12041	Fail to obtain window list
12042	Fail to get a window
12045	Window opening command execution exception
12050	Update screen partition data error
12052	Get screen partition data error
12056	No screen detected
12057	Window exists
40103	No multicast address is configured for the input
11533	Exceeded the maximum number of users
11523	WebRTC server not found
12010	Screen not found

3. Command List

3.1. Basic Information-Related Instructions

3.1.1. Get Device Information <GVSN>

Request Format

<GVSN, SEQ>

Response Format

<GVSN,SEQ,id,series,softVersion,protocolVersion>

<GVSN,SEQ,OK>

Description

Get device information.

Parameters	Description
id (String)	Device unique identifier
series (String)	Product series
softVersion (String)	Software version
protocolVersion (String)	Protocol version

Examples

Request: <GVSN,1>

Response: <GVSN,1, 2dd4f7d88ac545a2bd239af118698eb9,AVCNET-T,3.0,1.0>

Response: <GVSN,1,OK>

3.1.2. Get Input Port <GIIN>

Request Format

<GIIN ,SEQ [,signalCategory]>

Return Format

<GIIN,SEQ,Current page/total pages,portType, inputPortId1, inputPortId2, inputPortId3>

<GIIN,SEQ,current page/total pages,portType, inputPortId 4, inputPortId 5>

<GIIN,SEQ,OK>

Description

Gets the authorized input ports. The returned structure is grouped by port type.

For the input port ID rules, see - **2.2. Unique ID for Input/Output Resources**.

Parameters	Description
signalCategory (String)	Signal type. Video type is default when not specified
The value range is as follows:	
VIDEO	Video signal
AUDIO	Audio signal
KM	Keyboard and mouse signal
INFRARED	Infrared signal
SERIAL	Serial port signal
USB	USB signal
CONTROL	Control signal
portType (String)	Port type
The value range is as follows:	
NONE	Unknown port type
VGA	Computer analog interface, use VGA or RGB terminal to connect
DVI	Computer digital interface, connected using DVI terminal
CVBS	Analog video interface, connected using coaxial terminals
SVIDEO	Analog video interface, use S video terminal to connect
AV	Audio and video composite analog interface, connected using AV terminal
YPBPR	Component video analog interface, use YPbPr terminal to connect
HDMI	High-Definition Digital Interface
SDI	Serial Digital Component Interface
DP	DisplayPort high-definition digital interface
AUDIO	Digital audio interface, connected using coaxial terminals
SPDIF_OPTICAL	Digital audio interface, using optical fiber terminal connection
KM_USB	Keyboard and mouse interface, connected using USB terminal
KM_PS2	Keyboard and mouse interface, connected using PS/2 terminal
INFRARED	Infrared interface
SERIAL_232	232 serial port
SERIAL_485	485 serial port
USB	USB interface
MIXED	Mixed interface type
COMPOSITION	Combined signals
CROPPED	Cropped signals
IP_UNICAST	Unicast signal
IP_MULTICAST	Multicast signal

Examples

Request: <GIIN,1>

Response: <GIIN,1,1/2,VGA,192.168.1.100,192.168.1.101>

Response: <GIIN,1,2/2,HDMI,192.168.1.102,192.168.1.103>

Response: <GIIN,1,OK>

3.1.3. Get Output Port <GIOU>

Request Format

<GIOU, SEQ [,signalCategory]>

Response Format

<GIOU,SEQ,current page/total pages,portUsage, inputPortId 1, inputPortId 2>

<GIOU,SEQ,current page/total pages,portUsage, inputPortId 3, inputPortId 4>

<GIOU,SEQ,OK>

Description

Get all output ports. The returned results are grouped by port usage.

Parameters	Description
signalCategory (String)	Signal type. Video type is default when not specified
The value range is as follows:	
VIDEO	Video signal
AUDIO	Audio signal
KM	Keyboard and mouse signal
INFRARED	Infrared signal
SERIAL	Serial port signal
USB	USB signal
CONTROL	Control signal
portUsage (String)	Port usage
The value range is as follows:	
MATRIX	Matrix output port
VIDEO_WALL	Video wall output port
PREVIEW	Preview port

Examples

Request: <GIOU,1>

Response: <GIOU,1,1/2,MATRIX,192.168.1.101,192.168.1.102>

Response: <GIOU,1,2/2,VIDEO_WALL,192.168.1.103,192.168.1.104>

Response: <GIOU,1,OK>

3.1.4. Read Timing <GTIM>

Request Format

<GTIM, SEQ>

Response Format

<GTIM,SEQ,current page/total pages,id,name,activePixels,activeLines,refreshRate,horTotalPixels,verTotalLines,horSyncPolarity,verSyncPolarity,horFrontPorch,verFrontPorch,horSyncPulseWidth,verSyncPulseWidth,builtIn>

<GTIM,SEQ,current page/total pages,id,name,activePixels,activeLines,refreshRate,horTotalPixels,verTotalLines,horSyncPolarity,verSyncPolarity,horFrontPorch,verFrontPorch,horSyncPulseWidth,verSyncPulseWidth,builtIn>

<GTIM, SEQ, OK>

Description

Get timing information for device configuration.

Parameters	Description
Id (String)	Unique sequence identifier
Name (String)	Sequence name
activePixels (int)	Total active horizontal pixels
activeLines (int)	Active vertical line number
refreshRate (int)	Refresh rate
horTotalPixels (int)	Total horizontal pixels
verTotalLines (int)	Total vertical lines
horSyncPolarity (String)	Horizontal sync polarity
Value Range:	
POSITIVE	Positive pole
NEGATIVE	Negative pole
verSyncPolarity (String)	Vertical sync polarity
Value Range:	
POSITIVE	Positive pole
NEGATIVE	Negative pole

horFrontPorch (int)	Horizontal front porch
verFrontPorch (int)	Vertical front porch
horSyncPulseWidth (int)	Horizontal sync pulse width
verSyncPulseWidth (int)	Vertical sync pulse width
builtIn (boolean)	Built-in or not
Value Range:	
true	Built-in
false	Not built-in

Examples

Request: <GTIM,1>

Response: <GTIM,1,1/2,20, 1920*1080@60, 1920, 1080, 60, 2200, 1125, POSITIVE, POSITIVE, 88, 4, 44, 5, true>

Response: <GTIM,1,2/2,39, 3840*2160@60, 3840, 2160, 60, 4400, 2250, POSITIVE, POSITIVE, 176, 8, 88, 10, true>

Response: <GTIM,1,OK>

3.1.5. Get Port Online Status <GPTS>

Request Format

<GPTS,SEQ,portId/portId>

Return Format

<GPTS,SEQ,current page/total pages,portId, isOnline>

<GPTS,SEQ,current page/total pages,portId, isOnline>

<GPTS,SEQ,OK>

Examples

Request: <GPTS,1,portId1/portId2>

Response: <GPTS,1,1/2,portId1,true>

Response: <GPTS,1,2/2,portId2,false>

Response: <GPTS,1,OK>

3.1.6. Get Input Port Basic Information <GIBI>

Request Format

< GIBI,SEQ [,signalCategory]>

Return Format

<GIBI,SEQ,current page/total pages, inputPortId1/inputPortDispalyName1, inputPortId2/inputPortDisaplyName2>

<GIBI,SEQ,Current page/total pages, inputPortId 3/inputPortDisplayName3, inputPortId 4/inputPortDisplayName4>

<GIBI,SEQ,OK>

Description

Get basic signal information based on signal classification.

Parameters	Description
inputPortId (String)	See the rules in — **2.2. Unique ID for Input/Output Resources**
signalCategory (String)	Signal type, is optional, default is VIDEO. For details, see — **3.1.2 Get Input Port <GIIN>**
inputPortDispalyName (String)	

Examples

Request: <GIBI,1>

Response: <GIBI,1,1/2 ,192.168.1.100/Signal Source 1,192.168.1.101/Signal Source 2>

Response: <GIBI,1,2/2, 3def3850863f42d39e63728372c6be66/camera signals, dc9adcc231114c029e309b9a913056e7/monitor signals>

Response: <GIBI,1,OK>

3.1.7. Get the TX Box Status Information <GTSI>

Request Format

<GTSI,SEQ>

Return Format

<GTSI, SEQ, current page/total pages, inputId1/online/signalState/timingMode/*, inputId2/online/signalState/timingMode >

<GTSI,SEQ,OK>

Description

Get the status information of all TX boxes.

Parameters	Description
inputId (String)	See the rules in — **2.2. Unique ID for Input/Output Resources**
online (Bollean)	True means online, false offline
signalState (Bollean)	True for signal, false for no signal
timingMode (String)	Resolution
*	Used when adding status values later

Examples

Request: <GTSI,1>

Response:

<GTSI,1,1/1 ,192.168.1.100/true/false/1920*1080@60,192.168.1.101/true/false/38
40*2160@60>

Response: <GTSI,1,OK>

3.1.8. Get the RX Box Status Information <GRSI>

Request Format

<GRSI,SEQ>

Return Format

<GRSI,SEQ,current page/total pages, outputId1/online,outputId2/online/* >

<GRSI,SEQ,OK>

Description

Get the status information of all RX boxes. Other status information will be added later.

Parameters	Description
outputId (String)	See the rules in — **2.2. Unique ID for Input/Output Resources**
online (Boolean)	True means online, false Offline
*	Used when adding status values later

Examples

Request: <GRSI,1>

Response: <GRSI,1,1/2 ,192.168.1.100/true,192.168.1.101/false>

Response: <GTSI,1,2/2 , 192.168.1.1/true, 192.1681.2/false>

Response: <GRSI,1,OK>

3.1.9. Get Device Alarm Information <GWRN>

Request Format

<GWRN, SEQ, [type]>

Response Format

<GWRN,SEQ,current page/total pages, id,src,title,content,createTime,state,type>

<GWRN,SEQ,OK>

Description

Get information in the device alarm.

Parameters	Description
id (String)	Alarm ID
src (String)	Alarm source
title (String)	Alarm information
content (String)	Alarm content
createTime (String)	Alarm time
type (int)	Alarm type

Alarm Type	Notes
0	The sub-device is offline
1	The sub-device is in Boot mode
2	Node IP conflict
3	Node MAC conflict
4	Input signal not detected
5	The board self-test failed
6	Over-temperature condition detected
7	Temperature cannot be read
8	Excessive temperature
9	RTC read exception
10	MCU detects abnormality
11	Card IP conflict
12	MCU self-test failed
13	Subcard program abnormality
14	Subcard detection abnormality
15	FLASH is inoperable
16	ASIC chip abnormality
17	FPGA type mismatch
18	The motherboard FPGA program abnormality

19	EEPROM is inoperable
20	USB module abnormality
21	The optical module is not in place
22	Fiber link (LoS) failure
23	Fiber link (LoF) failure
24	The highest resolution fpga id and important data are inconsistent
25	The fpga id of the master/slave capability and main data are inconsistent

Examples

Request: <GWRN,1,0>

Response: <GWRN,1,1/1,2dd4f7d88ac545a2bd239af118698eb9,192.168.8.21, Device not in position, Device not in position,2020-11-03 09:12:19,0>

Response: <GWRN,1,OK>

3.2. Video Wall Related Protocol

3.2.1. Read Video Wall List <GVWS>

Request Format

<GVWS,SEQ>

Response Format

<GVWS,SEQ,current page/total pages,
groupId,name,videoWallMode,syncClockMode,timingId,timingWidth,timingHeight,
physicalRow, physicalColumn, logicRow, logicColumn, horEdge, verEdge, layerMode>
<GVWS,SEQ,current page/total pages,
groupId,name,videoWallMode,syncClockMode,timingId,timingWidth,timingHeight,
physicalRow, physicalColumn, logicRow, logicColumn, horEdge, verEdge, layerMode>
<GVWS,SEQ,OK>

Description

Get the basic information of all video walls.

Parameters	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
videoWallMode (String)	Video wall configuration type
Value Range:	
VIDEO_WALL	Ordinary video wall
LED	LED video wall

BLENDER	Fusion splicing
BLENDER_90	90 ° fusion stitching
syncClockMode (String)	Synchronization mode
Value Range:	
LOCAL	Local
SYNC_BOX	Sync Box
timingId (String)	Unique timing id
timingWidth	Timing effective width
timingHeight	Timing effective height
mberphysicalRow (int)	The video wall row number
physicalColumn (int)	The video wall column number
logicRow (int)	The row number of the logical sub-screen in each video wall. The logical sub-screen is used to automatically determine the window information (width and height) when the UI drags the signal source to open the window
logicColumn (int)	The column number of the logical sub-screen in each video wall
horEdge (int)	Horizontal edge compensation pixels
verEdge (int)	Vertical edge compensation pixels
layerMode (String)	Layer mode
Value Range:	
TWO	2 layers
FOUR	4 layers
EIGHT	8 layers
SIXTEEN	16 layers

Examples

When the device has a video wall named " Video Wall 1" with a resolution of 1080P@60 (timingId = 20), it consists of 8 screens with 4 rows and 2 columns. Each screen can display 4 layers.

   Request: <GVWS,1>

Response: <GVWS,1,1/1, 1, Video Wall 1, VIDEO_WALL,

LOCAL,20,1920,1080,4,2,2,2,0,0,FOUR>

Response: <GVWS,1,OK>

3.2.2. Read the Screen Information of the Video Wall <GVWD>

Request Format

<GVWD,SEQ[, groupId]>

Response Format

<GVWD,SEQ,current page/total pages,groupId,startPointX,startPointY,width,height,
outputPortId,layerMode,timingId>

<GVWD,SEQ,current page/total pages, groupId,startPointX,startPointY,width,height,
outputPortId,layerMode,timingId>

<GVWD,SEQ,OK>

Description

Get the screen information of the video wall. If no id is passed, the screen information of all video walls will be returned.

According to the screen information, the structure of the video wall can be known. For LED or special-shaped video walls, it can help other systems to understand the composition structure of the video wall.

Parameters	Description
groupId (int)	The video wall group id, is used to identify a group of video walls uniquely
startPointX (int)	The screen starting point x-coordinate on the video wall
startPointY (int)	The screen starting point y-coordinate on the video wall
width (int)	The screen width
height (int)	The screen height
outputPortId (String)	The output port id used by the screen
layerMode (String)	Layer mode
Value Range:	
TWO	2 layers
FOUR	4 layers
EIGHT	8 layers
SIXTEEN	16 layers

timingId (String)	Unique timing id

Examples

Request: <GVWD,1>
Response: <GVWD,1,1/2,1, Video Wall 1, 0,0,1920,1080,192.168.1.200,FOUR,20>
Response: <GVWD,1,2/2,1, Video Wall 1, 1920,0,1920,1080,192.168.1.201,FOUR,20>
Response: <GVWD,1,OK>

3.2.3. Open a Window to the Specified Video Wall <OPEN>

Request Format

<OPEN,SEQ,sort&inputPortId&startPointX&startPointY&width&height&groupId/
sort2&inputPortId&startPointX&startPointY&width&height&groupId/
sort3&inputPortId&startPointX&startPointY&width&height&groupId[,
autoEnable]>

Response Format

<OPEN,SEQ,OK>

Description

Open a window to the specified video wall.

If multiple windows need to be added, the window parameters can be sent together through "/" split.

Overall message length is subject to the restrictions described in " **1. Communication".**

If autoEnable is not set or true, the device will automatically enable the window after sending the command, so that it can be displayed on the video wall.

If autoEnable is false, you should wait for the third-party system to send an enable command.

Parameters	Description
sort (int)	Window number: must be unique
inputPortId (String)	The window used input port id
startPointX (int)	The window starting point coordinate x
startPointY (int)	The window starting point coordinate y
width (int)	The window width
height (int)	The window height
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
autoEnable (boolean)	Whether to enable automatically. Not set or true means automatic, false means waiting for the enable command

Examples

Open a window at 0,0 with a width and height of 960x540 on Video Wall 1, and enable it automatically.

Request: <OPEN,1,1&192.168.1.200&0&0&960&540&1>

Response: <OPEN,1,OK>

Request: <OPEN,1,1& 192.168.1.200&0&0&960&540&1,true>

Response: <OPEN,1,OK>

Open a window at 0,0 with a width and height of 960x540 on Video Wall 1, and do not enable it automatically.

Request: <OPEN,1,1& 192.168.1.200&0&0&960&540&1,false>

Response: <OPEN,1,OK>

Multiple window operations

Request: <OPEN,1,1& 192.168.1.200&0&0&960&540& 1/2& 192.168.1.200&960&540&960&540& 1,false>

Response: <OPEN,1,OK>

Window information separator: &; Window-to-window separator: /

3.2.4. Close the Window of the Specified Video Wall <SHUT>

Request Format

<SHUT,SEQ,sort/sort2,groupId[, autoEnable]>

Response Format

<SHUT,SEQ,OK>

Description

Close the specified window.

If multiple windows need to be closed, the window parameters can be sent together through "/" split.

Overall message length is subject to the restrictions described in "**1. Communication".**

If the specified window number does not exist, it still returns OK.

If autoEnable is not set or true, the device will automatically enable the window after sending the command, so that it can be displayed on the video wall.

If autoEnable is false, you should wait for the third-party system to send an enable command.

Parameters	Description
sort (int)	Window number: must be unique

groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
autoEnable (boolean)	Whether to enable automatically. Not set or true means automatic, false means waiting for the enable command

Examples

Request: <SHUT,1,1,1/2,1>

Response: <SHUT,1,OK>

Request: <SHUT,1,1,1,true>

Response: <SHUT,1,OK>

Request: <SHUT,1,1,1,false>

Response: <SHUT,1,OK>

3.2.5. Window on Top <BWOT>

Request Format

<BWOT,SEQ,sort,groupId [,autoEnable]>

Response Format

<BWOT,SEQ,OK>

Description

Bring the specified window to the top.

If autoEnable is not set or true, the device will automatically enable the window after sending the command, so that it can be displayed on the video wall.

If autoEnable is false, you should wait for the third-party system to send an enable command.

Parameters	Description
sort (int)	Window number: must be unique
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
autoEnable (boolean)	Whether to enable automatically. Not set or true means automatic, false means waiting for the enable command

Examples

Request: <BWOT,1,1,1>

Response: <BWOT,1,OK>

Request: <BWOT,1,1,1,true>

Response: <BWOT,1,OK>

Request: <BWOT,1,1,1,false>

Response: <BWOT,1,OK>

3.2.6. Window to Bottom <SWTB>

Request Format

<SWTB,SEQ,sort,groupId [,autoEnable]>

Response Format

<SWTB,SEQ,OK>

Description

Send the specified window to the bottom.

If autoEnable is not set or true, the device will automatically enable the window after sending the command, so that it can be displayed on the video wall.

If autoEnable is false, you should wait for the third-party system to send an enable command.

Parameters	Description
sort (int)	Window number: must be unique
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
autoEnable (boolean)	Whether to enable automatically. Not set or true means automatic, false means waiting for the enable command

Examples

Request: <SWTB,1,1,1>

Response: <SWTB,1,OK>

Request: <SWTB,1,1,1,true>

Response: <SWTB,1,OK>

Request: <SWTB,1,1,1,false>

Response: <SWTB,1,OK>

3.2.7. Clear the Windows <SALL>

Request Format

<SALL,SEQ,groupId/groupId2 [,autoEnable]>

Response Format

<SALL,SEQ,OK>

Description

Clear all windows on the video wall.

If multiple windows need to be cleaned, the window parameters can be sent together through "/" split. The overall message length is subject to the restrictions described in "**1. Communication".**

If autoEnable is not set or true, the device will automatically enable the window after sending the command, so that it can be displayed on the video wall.

If autoEnable is false, you should wait for the third-party system to send an enable command.

Response Data	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
autoEnable (boolean)	Whether to enable automatically. Not set or true means automatic, false means waiting for the enable command

Examples

Request: <SALL,1,1>

Response: <SALL,1,OK>

Request: <SALL,1,1,true>

Response: <SALL,1,OK

Request: <SALL,1,1,false>

Response: <SALL,1,OK>

3.2.8. Enable All Operations of the Video Wall <ENAB>

Request Format

<ENAB,SEQ, groupId>

Response Format

<ENAB,SEQ,OK>

Description

Enable all previous window operations on the video wall.

Response Data Description

- groupId (int): The video wall group id, is used to uniquely identify a group of video walls.

Examples

Request: <ENAB,1,1>

Response: <ENAB,OK>

3.2.9. Read All Windows of the Specified Video Wall <GAWD>

Request Format

<GAWD,SEQ,groupId>

Response Format

<GAWD,SEQ,current page/total pages, groupId,sort,inputPortId,startPointX,startPointY,width,height>
<GAWD,SEQ,current page/total pages, groupId,sort,inputPortId,startPointX,startPointY,width,height>
<OPEN,SEQ,OK>

Description

Read all window information of the specified video wall.

Response Data	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
sort (int)	Window sequence number
inputPortId (String)	The input port id is used by the window
startPointX (int)	The window starting point coordinate x
startPointY (int)	The window starting point coordinate y
width (int)	The window width
height (int)	The window height

zIndex(int)	z-order

Examples

Request: <GAWD,1, 1>
Response: <GAWD,1,1/2,1, 1,192.168.1.1,0,0,960,540,3>
Response: <GAWD,1,2/2,1, 2,192.168.1.2,960,540,960,540,1>
Response: <GAWD,1,OK>

3.2.10. Configure the Display Mode of the Specified Output Port <SOSM>

Request Format

<SOSM,SEQ,outputId,splitMode>

Response Format

<SOSM,SEQ,OK>

Description

Configures the display mode of the specified output port.

Request Data	Description
outputId (String)	Output port id. To obtain it, refer to "**3.2.2. Read the Screen Information of the Video Wall <GVWD>**"
splitMode (String)	Multiview mode
Value Range:	
SINGLE	Single view
ROW2COL2	Quad-view
ROW3COL3	Nine-view
ROW4COL4	Sixteen-view

Examples

Request: <SOSM,1,192.168.1.200,ROW3COL3>

Response: <SOSM,1,OK>

3.2.11. Get the Specified Output Port Display Mode <GOSM>

Request Format

<GOSM,SEQ,signalCate,outputId/outputId2>

Response Format

<GOSM,SEQ,1/2,outputId,NONE>

<GOSM,SEQ,2/2,outputId2,ROW3COL3>

<GOSM,SEQ,OK>

Description

Gets the display mode of the specified output port.

Abnormal ports will not yield any return results.

Parameters	Description
signalCate(String)	Refer to **3.1.2 Get Input Port <GIIN>**
outputId (String)	Output port id
splitMode (String)	Multiview mode
Value Range:	
SINGLE	Single view
ROW2COL2	Quad-view
ROW3COL3	Nine-view
ROW4COL4	Sixteen-view

Examples

Request: <GOSM,1,VIDEO,192.168.1.200/192.168.1.201>

Response: <GOSM,1,1/2,192.168.1.200,NONE>

Response: <GOSM,1,2/2,192.168.1.201,ROW3COL3>

Response: <GOSM,1,OK>

3.2.12. Window Signal Changes <SWIS>

Request Format

<SWIS,SEQ,sort-inputPortId-groupId/ sort2-inputPortId-groupId,[autoEnable]>

Response Format

<SWIS,SEQ,OK>

Description

Signal source change for a window.

Examples

Request: <SWIS,1,1-192.168.1.200-2>

Response: <SWIS,1,OK>

3.2.13. Window Change <UWIB>

Request Format

<UWIB,SEQ,sort&startPointX&startPointY&width&height&groupId/
sort2&startPointX&startPointY&width&height&groupId,[autoEnable]>

Response Format

<UWIB,SEQ,OK>

Description

Zoom or drag to change the window size.

Parameters

Refer to the Parameter Description of **3.2.3. Open a Window to the Specified Video Wall <OPEN>**.

3.2.14. Video Wall Freeze <HOLD>

Request Format

<HOLD,SEQ,gorupId>

Response Format

<HOLD,SEQ,OK>

Description

Freeze Window.

Parameters

- groupId (int): The video wall group id, is used to uniquely identify a group of video walls.

3.2.15. Get Preset List <GWSL>

Request Format

<GWSL,SEQ,groupId>

Response Format

<GWSL,SEQ,1/2,sceneId,name,order>

<GWSL,SEQ,2/2,sceneId,name,order>

<GWSL,SEQ,OK>

Description

Get the preset list of the specified video wall.

Parameters	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
sceneId (String)	Scene id. 32-bit uuid
name (String)	The preset name
order (String)	Preset order

Examples

Request: <GWSL,1,1>

Response: <GWSL,1,1/2, 5723bb1e06264cf792051a90a2c48601,Conference1,1>

Response: <GWSL,1,2/2, 521ca260ba7e4750981ab364ebe18207,meeting2,2>

Response: <GWSL,1,OK>

3.2.16.　Recall Presets<CWSN>

Request Format

<CWSN,SEQ,groupId,sceneId>

Response Format

<CWSN,SEQ,OK>

Description

Recall the specified video wall presets.

Parameters	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls
sceneId (String)	Scene id. 32-bit uuid

Examples

Request: <CWSN,1,1>

Response: <CWSN,1,5723bb1e06264cf792051a90a2c48601 >

Response: <CWSN,1,OK>

3.2.17.　Save Presets <SWSN>

Request Format

<SWSN,SEQ,groupId,name>

Response Format

<SWSN,SEQ,groupId,sceneId,name>

<SWSN,SEQ,OK>

Description

Save the specified preset of the target video wall.

Note that the corresponding preset ID should be returned to the caller after execution!

Parameters	Description
groupId (int)	The video wall group id, is used to uniquely identify a group of video walls

sceneId (String)	Scene id. 32-bit uuid
name (String)	The saved preset name

Examples

Request: <SWSN,1,1,my presets>

Response: <SWSN,1,1,my presets,fd9756103dbf4ee093a7c7b94994bf17>

Response: <SWSN,1,OK>

3.2.18.   Delete Presets <DWSN>

Request Format

<DWSN,SEQ,sceneId>

Response Format

<DWSN,SEQ,OK>

Description

Delete the specified preset of the target video wall.

Parameters

- sceneId (String): scene id. 32-bit uuid.

Examples

Request: <DWSN,1,1,fd9756103dbf4ee093a7c7b94994bf17>

Response: <DWSN,1,OK>

3.3. Matrix Related Instructions

3.3.1. Read the Specified Input Switching Relationship <GIIV>

Request Format

<GIIV,SEQ,signalCate, inputPortIp1/inputPortIp2/inputPortIp3>

Response Format

<GIIV,SEQ,current page/total pages, signalCate,inputPortIp1,outputPortIp1&channel /ouputPortIp2>

<GIIV,SEQ,current   page/total   pages, signalCate,inputPortIp2,outputPortIp3/ouputPortIp4>

<GIIV,SEQ,current page/total pages, signalCate,inputPortIp3>

<GIIV,SEQ,OK>

Description

Read the output switching relationship corresponding to the specified input.

No entry is returned if the corresponding input has no switching relationship.

Examples

Request: <GIIV,1,VIDEO,192.168.1.200/192.168.1.201/192.168.1.202>

Response: <GIIV,1,1/3, 192.168.1.200, 192.168.1.100/192.168.1.101>

Response: <GIIV,1,2/3, 192.168.1.201, 192.168.1.102/192.168.1.103>

Response: <GIIV,1,3/3, 192.168.1.202, 192.168.1.104/192.168.1.105>

Response: <GIIV,1,OK>

3.3.2. Read the Switching Relationship of the Specified Output <GIOV>

Request Format

<GIOV,SEQ, signalCate,outputPortIp1 &channel/outputPortIp2/outputPortIp3 >

Response Format

<GIOV,SEQ,current page/total pages, outputPortIp1&channel,inputPortIp1>

<GIOV,SEQ,current page/total pages, outputPortIp2,inputPortIp2>

<GIOV,SEQ,current page/total pages, outputPortIp3>

<GIOV,SEQ,OK>

Description

Read the input switching relationship corresponding to the specified output.

No entry is returned if the specified output has no switch relationship.

Channel is a subport. For Example, if the output port multiview mode is ROW3COL3, the channel starts from 1 and the maximum is 9. The default is the first subport if there is no channel.

Examples

Request: <GIOV,1,VIDEO, 192.168.1.200,192.168.1.200/192.168.1.201/192.168.1.202>

Response: <GIOV,1,1/3, 192.168.1.200, 192.168.1.100>

Response: <GIOV,1,2/3, 192.168.1.201, 192.168.1.102>

Response: <GIOV,1,OK>

3.3.3. Set the Switching Relationship Between Input and Output <SWCI>

Request Format

<SWCI,SEQ,signalCategory,operateType, inputPortIp-outputPortIp1/outputPortIp2 /outputPortIp3,inputPortIp2-outputPortIp4&channel /outputPortIp5>

Response Format

<SWCI,SEQ,OK>

Description

Set the switching relationship between the specified input and output.

Channel is a subport. For Example, if the output port multiview mode is ROW3COL3, the channel starts from 1 and the maximum is 9. The default is the first subport if there is no channel.

Parameters	Description
signalCategory (String)	Signal type. If not passed, the default video type will be used. For details, see **3.1.2 Get Input Port <GIIN>.** If audio and video are cut simultaneously, you can configure VIDEO/AUDIO in combination
OperateType (String)	Matrix switching operation effect
The value range is as follows:	
ONLY_SWITCH	Only switch
ONLY_ENABLE	Only enable
SWITCH_ENABLE	Switch + enable

Examples

Switch 192.168.1.200 to 192.168.1.100 and 192.168.1.101

Switch 192.168.1.201 to 192.168.1.102

    Request: <SWCI,1, VIDEO,SWITCH_ENABLE,192.168.1.200-192.168.1.100/192.168.1.101,192.168.1.201-192.168.1.102>

    Response: <SWCI,1,OK>

Switch 192.168.1.200 to subport 3 of 192.168.1.100 (switch subport)

    <SWCI,1,VIDEO,SWITCH_ENABLE,192.168.1.200-192.168.1.100&3>

Switch 192.168.1.200 to 192.168.1.100

Synchronous audio-video switching with enable capability

    <SWCI,1,VIDEO/AUDIO, SWITCH_ENABLE,192.168.1.200-192.168.1.100>

Synchronous audio-video switching, only switching

    <SWCI,1, VIDEO/AUDIO, ONLY_SWITCH,192.168.1.200-192.168.1.100>

3.3.4. Read Preview Description <GEPM>

Request Format

<GEPM,SEQ>

Response Format

<GEPM,SEQ,current page/total pages, {preview description}/{preview description 2}>

<GEPM,SEQ,current page/total pages, {preview description}/{preview description 2}>

<GEPM,SEQ,current page/total pages, {preview description}/{preview description 2}>

<GEPM,SEQ,OK>

Description

Read the preview description information.

Preview description:

1) structure:

```
{
    "id": "",
    "url": "",
    "protocolType": "",
    "contents": [
      {
        "portId": "",
        "imageArea": {
          "size": {
            "width": ,
            "height": 
          },
          "startPoint": {
            "x": ,
            "y": 
          }
        }
      }
    ]
  }
```

2) Field Description:

Field	Description
Id (String)	Unique identifier
url (String)	URL for obtaining preview images
contents (array)	Preview content array
portId (String)	The input port id corresponding to the image area
imageArea (Object)	Area description of the preview image

width (int)	The preview image width
height(int)	The preview image height
x (int)	The starting point x-coordinate of the preview image
y (int)	The starting point y-coordinate of the preview image

Examples

Request: <GEPM,1>

Response: <GEPM,1,1/1, {"id":"'Unique identifier'","url":"'Preview address'","protocolType":"'Protocol type'","contents":[{"portId":"'Port unique identifier'","imageArea":{"size":{"width":"'Image width'","height":"'Image height'"},"startPoint":{"x":"'x coordinate'","y":"'y coordinate'"}}}]}>

Response: <GEPM,1,OK>

3.3.5. Read Matrix Output Port Multiview Mode <GMOS>

Request Format

<GMOS,SEQ,signalCate,outputId/outputId2>

Response Format

<GMOS,SEQ,1/2,outputId,NONE>

<GMOS,SEQ,2/2,outputId2,ROW3COL3>

< GMOS,SEQ,OK>

Description

Read the partitioning mode of the specified matrix output port.

Parameters	Description
signalCate (String)	Refer to the Parameter Description of **3.1.2 Get Input Port <GIIN>**
outputId (String)	Output port id
splitMode (String)	Multiview mode
Value Range:	
SINGLE	Single view
ROW2COL2	Quad-view
ROW3COL3	Nine-view
ROW4COL4	Sixteen-view

Examples

Request: <GMOS,1,VIDEO,192.168.1.200/192.168.1.201>

Response: <GMOS,1,1/2,192.168.1.200,NONE>

Response: <GMOS,1,2/2,192.168.1.201,ROW3COL3>

Response: <GMOS,1,OK>

3.3.6. Configure the Multiview Mode of the Specified Matrix Output Port <SMOS>

Request Format

<SMOS,SEQ,outputId,splitMode>

Response Format

<SMOS,SEQ,OK>

Description

Configures the multiview mode of the specified matrix output port.

Request Data	Description
outputId (String)	Output port id
splitMode (String)	Multiview mode
Value Range:	
SINGLE	Single view
ROW2COL2	Quad-view
ROW3COL3	Nine-view
ROW4COL4	Sixteen-view

Examples

Request: <SMOS,1,192.168.1.200,ROW3COL3>

Response: <SMOS,1,OK>