Display

Hanwha

SUNAPI

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Chapter 1. Overview

1.1. Description

display.cgi is used for changing the monitor layout configuration.

The following submenus are used for the monitor layout functionalities:

- **decoderboardinf**: Requests the connected board information and configures the maximum allowed bord count.
- **wall**: Adds, updates, controls, and removes the monitor layout for each connected board.
- **videooutlayout**: Configures layout modes for encoder models.
- **spotout**: Configures the layout of analog video output.

> **NOTE** This chapter applies to decoders (NVR) only.

Chapter 2. Decoder Board Info

2.1. Description

The **decoderboardinfo** submenu gets connected decoder board information and configures the maximum allowed board count.

Access level

Action	Camera	NVR	Decoder
view	-	-	User
set	-	-	User

2.2. Syntax

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
decoderboardinfo&action=<value>[&<parameter>=<value>]
```

2.3. Parameters

Action	Parameters	Request/ Response	Type/ Value	Description
view	Index.#.Inserted	RES	<int>	Inserted board number
	Index.#.IsReady	RES	<bool>	Board enable status
set	AllowedBoardsCount	RES, REQ	<int>	Max. allowed board count

2.4. Examples

2.4.1. Getting connected board information

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=decoderboardinfo&action=view
```

TEXT RESPONSE

```
AllowedBoardsCount=8
Index.1.Inserted=True
Index.1.IsReady=True
Index.2.Inserted=True
Index.2.IsReady=True
Index.3.Inserted=False
```

```
Index.3.IsReady=False
Index.4.Inserted=False
Index.4.IsReady=False
Index.5.Inserted=False
Index.5.IsReady=False
Index.6.Inserted=False
Index.6.IsReady=False
Index.7.Inserted=False
Index.7.IsReady=False
Index.8.Inserted=False
Index.8.IsReady=False
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "AllowedBoardsCount": 8,
    "DecoderBoards": [
        {
            "Index": 1,
            "Inserted": true,
            "IsReady": true
        },
        {
            "Index": 2,
            "Inserted": true,
            "IsReady": true
        },
        {
            "Index": 3,
            "Inserted": false,
            "IsReady": false
        },
        {
            "Index": 4,
            "Inserted": false,
            "IsReady": false
        },
```

```
        {
            "Index": 5,
            "Inserted": false,
            "IsReady": false
        },
        {
            "Index": 6,
            "Inserted": false,
            "IsReady": false
        },
        {
            "Index": 7,
            "Inserted": false,
            "IsReady": false
        },
        {
            "Index": 8,
            "Inserted": false,
            "IsReady": false
        }
    ]
}
```

2.4.2. Setting max allowed board counts

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
decoderboardinfo&action=set&AllowedBoardsCount=2
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
```

```
    "Response": "Success"
}
```

Chapter 3. Wall

3.1. Description

The **wall** submenu adds, updates, controls, and removes the monitor layout for each connected board.

Access level

Action	Camera	NVR	Decoder
view	-	User	User
add/update	-	User	User
control	-	User	User
remove	-	User	User

3.2. Syntax

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
wall&action=<value>[&<parameter>=<value>]
```

3.3. Parameters

Action	Parameters	Request/ Response	Type/ Value	Description
view	Index	REQ	<csv>	Wall index
add/update	Index.#.Name	REQ,RES	<string>	Inserted board number
	Index.#.SplitMode	REQ,RES	<string>	Format=NoOfRowsxNoOfColumns 1X1...
	Index.#.MonitorOut	REQ,RES	<csv>	Display monitor index
	Index.#.Coordinates	REQ,RES	<string>	Format=x1,y1,x2,y2
	Index.#.EnableSequence	REQ,RES	<bool> True, False	Enable wall sequence
	Index.#.Layout.#.Name	REQ,RES	<string>	Layout name
	Index.#.Layout.#.IsCurrentLayout	REQ,RES	<bool> True, False	Current layout
	Index.#.Layout.#.EnableSequence	REQ,RES	<bool>	Monitor display sequence enabled
	Index.#.Layout.#.SequenceTime	REQ,RES	<int>	Display sequence time

Action	Parameters	Request/ Response	Type/ Value	Description
	Index.#.Layout.#.MonitorOut.#.SplitMode	REQ,RES	<enum> 1x1, 2x2, 3x3, 4x4	Each monitor split mode
	Index.#.Layout.#.MonitorOut.#.Tile.#.SourceType	REQ,RES	<enum> Stream, MonitorIn, None	Display source type
	Index.#.Layout.#.MonitorOut.#.Tile.#.MonitorIn	RES	<int>	If SourceType=MonitorIn
	Index.#.Layout.#.MonitorOut.#.Tile.#.Channel	REQ,RES	<int>	Channel number This parameter is only valid if **SourceType** is set to Stream.
	Index.#.Layout.#.MonitorOut.#.Tile.#.Profile	REQ,RES	<Int>	If SourceType=Stream
	Index.#.Layout.#.MonitorOut.#.Tile.#.Coordinates	REQ,RES	<string>	Format=x1,y1,x2,y2
	Index.#.Layout.#.MonitorOut.#.Tile.#.Location	REQ,RES	<string>	Format=RowxColumn
	Index.#.Layout.#.MonitorOut.#.Tile.#.MergeID	REQ,RES	<int>	Tile merge id
	Index.#.Layout.#.MonitorOut.#.Tile.#.Merge	REQ,RES	<string>	Format=NoOfRowsxNoOfColumns
	Index.#.Layout.#.MonitorOut.#.Tile.#.ImageLocation	REQ,RES	<string>	Format=RowxColumn
update	Index.#.MonitorOut.\#.CurrentLayoutIndex=\#	REQ	<int>	The index of the layout depends on the current wall's index. Index.# : Wall index MonitorOut.# : Monitor index(number) CurrentLayoutIndex : LayoutIndex **NOTE** CurrentLayoutIndex: main monitor layout index (the index is smaller than the number of layouts).
control	Mode	REQ	<enum> Register, Show	Control action is possible only when the decoder is in vms mode.

Action	Parameters	Request/ Response	Type/ Value	Description
	IsStreamServerPasswordEncrypted	REQ	<bool> True, False	If SourceType=Stream
	CommonUserID	REQ	<string>	Each camera (channel) RTSP account
	CommonPassword	REQ	<string>	Rtsp password
	MonitorOut.#.SplitMode	REQ	<enum> 1x1, 2x1, 2x2, 3x1, 3x3, 4x4, 1+5, 1+7, 1+12	Each monitor split mode
	MonitorOut.#.Tile.#.SourceType	REQ	<enum> Stream, MonitorIn	Display source type
	MonitorOut.#.Tile.#.ActionType	REQ	<enum> MediaOpen, MediaClose	Stream control
	MonitorOut.#.Tile.#.HighProfileRTSPURL	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.LowProfileRTSPURL	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.StreamServerUserID	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.StreamServerPassword	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.CameraIP	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.CameraName	REQ	<string>	If SourceType=Stream
	MonitorOut.#.Tile.#.Coordinates	REQ	<string>	Format=x1,y1,x2,y2
	MonitorOut.#.Tile.#.Merge	REQ	<string>	Format=NoOfRowsxNoOfColumns
	MonitorOut.#.Tile.#.ImageCoordinates	REQ	<string>	Format=x1,y1,x2,y2
remove	Index	REQ	<csv>	Wall index number
	Index.#.Layout	REQ	<csv>	Wall attached layout number

3.4. Examples

3.4.1. Getting wall configuration information

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=wall&action=view&index=2
```

TEXT RESPONSE

```
Index.2.Name=Wall 02
Index.2.SplitMode=1x1
Index.2.MonitorOut=2
Index.2.Coordinates=13.4348,0,11,11
Index.2.EnableSequence=False
Index.2.Layout.1.Name=Layout 01
Index.2.Layout.1.IsCurrentLayout=True
Index.2.Layout.1.EnableSequence=True
Index.2.Layout.1.SequenceTime=10
Index.2.Layout.1.MonitorOut.2.SplitMode=2x2
Index.2.Layout.1.MonitorOut.2.Tile.1.SourceType=Stream
Index.2.Layout.1.MonitorOut.2.Tile.1.MonitorIn=1
Index.2.Layout.1.MonitorOut.2.Tile.1.Channel=0
Index.2.Layout.1.MonitorOut.2.Tile.1.Profile=2
Index.2.Layout.1.MonitorOut.2.Tile.1.Location=1x1
Index.2.Layout.1.MonitorOut.2.Tile.1.MergeID=
Index.2.Layout.1.MonitorOut.2.Tile.1.Merge=
Index.2.Layout.1.MonitorOut.2.Tile.1.ImageLocation=
Index.2.Layout.1.MonitorOut.2.Tile.2.SourceType=Stream
Index.2.Layout.1.MonitorOut.2.Tile.2.MonitorIn=1
Index.2.Layout.1.MonitorOut.2.Tile.2.Channel=2
Index.2.Layout.1.MonitorOut.2.Tile.2.Profile=2
Index.2.Layout.1.MonitorOut.2.Tile.2.Location=1x2
Index.2.Layout.1.MonitorOut.2.Tile.2.MergeID=
Index.2.Layout.1.MonitorOut.2.Tile.2.Merge=
Index.2.Layout.1.MonitorOut.2.Tile.2.ImageLocation=
Index.2.Layout.1.MonitorOut.2.Tile.3.SourceType=Stream
Index.2.Layout.1.MonitorOut.2.Tile.3.MonitorIn=1
Index.2.Layout.1.MonitorOut.2.Tile.3.Channel=1
Index.2.Layout.1.MonitorOut.2.Tile.3.Profile=2
Index.2.Layout.1.MonitorOut.2.Tile.3.Location=2x1
Index.2.Layout.1.MonitorOut.2.Tile.3.MergeID=
Index.2.Layout.1.MonitorOut.2.Tile.3.Merge=
```

```
Index.2.Layout.1.MonitorOut.2.Tile.3.ImageLocation=
Index.2.Layout.1.MonitorOut.2.Tile.4.SourceType=Stream
Index.2.Layout.1.MonitorOut.2.Tile.4.MonitorIn=1
Index.2.Layout.1.MonitorOut.2.Tile.4.Channel=3
Index.2.Layout.1.MonitorOut.2.Tile.4.Profile=2
Index.2.Layout.1.MonitorOut.2.Tile.4.Location=2x2
Index.2.Layout.1.MonitorOut.2.Tile.4.MergeID=
Index.2.Layout.1.MonitorOut.2.Tile.4.Merge=
Index.2.Layout.1.MonitorOut.2.Tile.4.ImageLocation=
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```


```
{
    "Wall": [
        {
            "Index": 2,
            "Name": "Wall 02",
            "SplitMode": "1x1",
            "MonitorOut": [
                "2"
            ],
            "Coordinates": [
                {
                    "x": 13.434783,
                    "y": 0
                },
                {
                    "x": 11,
                    "y": 11.0
                }
            ],
            "EnableSequence": false,
            "Layout": [
                {
                    "Index": 1,
                    "Name": "Layout 01",
                    "IsCurrentLayout": true,
```

```
                    "EnableSequence": true,
                    "SequenceTime": 10,
                    "MonitorOut": [
                        {
                            "Index": 2,
                            "SplitMode": "2x2",
                            "Tile": [
                                {
                                    "Index": 1,
                                    "SourceType": "Stream",
                                    "MonitorIn": 1,
                                    "Channel": 0,
                                    "Profile": 2,
                                    "Location": "1x1",
                                    "MergeID": null,
                                    "Merge": "",
                                    "ImageLocation": ""
                                },
                                {
                                    "Index": 2,
                                    "SourceType": "Stream",
                                    "MonitorIn": 1,
                                    "Channel": 2,
                                    "Profile": 2,
                                    "Location": "1x2",
                                    "MergeID": null,
                                    "Merge": "",
                                    "ImageLocation": ""
                                },
                                {
                                    "Index": 3,
                                    "SourceType": "Stream",
                                    "MonitorIn": 1,
                                    "Channel": 1,
                                    "Profile": 2,
                                    "Location": "2x1",
                                    "MergeID": null,
                                    "Merge": "",
                                    "ImageLocation": ""
                                },
                                {
```

```
                                    "Index": 4,
                                    "SourceType": "Stream",
                                    "MonitorIn": 1,
                                    "Channel": 3,
                                    "Profile": 2,
                                    "Location": "2x2",
                                    "MergeID": null,
                                    "Merge": "",
                                    "ImageLocation": ""
                                }
                            ]
                        }
                    ]
                }
            ]
        }
    ]
}
```


3.4.2. Adding wall (1 monitor, 1 layout) configuration information

REQUEST

```
http://<Device IP>/stw-
cgi/display.cgi?msubmenu=wall&action=add&Index.1.Name=Wall01&Index.1.SplitMo
de=1x1&Index.1.MonitorOut=1&Index.1.Coordinates=0,0,11,11&Index.1.EnableSequ
ence=False&Index.1.Layout.1.Name=Layout01&Index.1.Layout.1.IsCurrentLayout=T
rue&Index.1.Layout.1.EnableSequence=True&Index.1.Layout.1.SequenceTime=10&In
dex.1.Layout.1.MonitorOut.1.SplitMode=1x1&Index.1.Layout.1.MonitorOut.1.Tile
.1.SourceType=Stream&Index.1.Layout.1.MonitorOut.1.Tile.1.MonitorIn=1&Index.
1.Layout.1.MonitorOut.1.Tile.1.Channel=0&Index.1.Layout.1.MonitorOut.1.Tile.
1.Profile=2&Index.1.Layout.1.MonitorOut.1.Tile.1.Location=1x1&Index.1.Layout
.1.MonitorOut.1.Tile.1.MergeID=1&Index.1.Layout.1.MonitorOut.1.Tile.1.Merge=
False&Index.1.Layout.1.MonitorOut.1.Tile.1.ImageLocation=1x1
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
```

```
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```

3.4.3. Updating (1 monitor, 1 layout) configuration information

REQUEST

```
http:// <Device IP>/stw-
cgi/display.cgi?msubmenu=wall&action=update&Index.1.Name=Wall02
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```

3.4.4. Updating (1 monitor, 1 layout) current layout index

REQUEST

```
http:// <Device IP>/stw-
cgi/display.cgi?msubmenu=wall&action=update&Index.1.MonitorOut.1.CurrentLayo
utIndex=1
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```

3.4.5. Removing wall configuration information

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=wall&action=remove&index=2
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```

3.4.6. Control wall mode register

NOTE	Control is supported only in VMS mode (Please refer to system.cgi deviceinfo submenu for mode selection).

REQUEST

```
http://<device-ip>/stw-
cgi/display.cgi?msubmenu=wall&action=control&Mode=Register&IsStreamServerPas
swordEncrypted=False&CommonUserID=admin&CommonPassword=000ppp[[[&MonitorOut.
1.SplitMode=1x1&MonitorOut.1.Tile.1.SourceType=Stream&MonitorOut.1.Tile.1.Ac
```

```
tionType=MediaOpen&MonitorOut.1.Tile.1.HighProfileRTSPURL=rtsp://192.168.71.144/profile1/media.smp&MonitorOut.1.Tile.1.LowProfileRTSPURL=rtsp://192.168.71.144/profile2/media.smp&MonitorOut.1.Tile.1.StreamServerUserID=admin&MonitorOut.1.Tile.1.StreamServerPassword=5tkatjd!&MonitorOut.1.Tile.1.CameraIP=192.168.71.144&MonitorOut.1.Tile.1.CameraName=TestCamera&MonitorOut.1.Tile.1.Coordinates=0,0,1920,1080&MonitorOut.1.Tile.1.Merge=1x1
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
  "Response": "Success"
}
```

3.4.7. Control wall mode show

REQUEST

```
http://192.168.71.48/stw-cgi/display.cgi?msubmenu=wall&action=control&Mode=show
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
```

```
}
```

Chapter 4. Encoder video out layout

4.1. Description

The **videooutlayout** submenu configures layout modes for encoder models.

> **NOTE** This chapter applies to 16 channel encoder only.

Access level

Action	Camera	NVR	Encoder
view	-	-	Admin
set	-	-	Admin

4.2. Syntax

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
videooutlayout&action=<value>[&<parameter>=<value>]
```

4.3. Parameters

Action	Parameters	Request/ Response	Type/ Value	Description
view				
set	LayoutMode	REQ, RES	<enum> 1x1, 2x2, 3x3, 4x4	Layout modes

4.4. Examples

4.4.1. Getting the current layout mode

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=videooutlayout&action=view
```

TEXT RESPONSE

```
LayoutMode=3x3
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
"LayoutMode": "3x3"
}
```

4.4.2. Setting the layout mode to 4x4

REQUEST

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
videolayoutmode&action=set&LayoutMode=4x4
```

TEXT RESPONSE

```
OK
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```

Chapter 5. SpotOut

5.1. Description

The **spotout** submenu configures the layout of analog video output.

> **NOTE**
> This chapter applies to NVR only.
> Attribute to check for **spotout** support: "attributes/System/Limit/MaxAnalogSpotCount"

Access level

Action	Camera	NVR	Decoder
view	-	User	-
set	-	User	-

5.2. Syntax

```
http://<Device IP>/stw-cgi/display.cgi?msubmenu=
spotout&action=<value>[&<parameter>=<value>]
```

5.3. Parameters

Action	Parameters	Request/ Response	Type/ Value	Description
view				
set	Enable	REQ, RES	<bool> True, False	Enables or disables analog monitor spotout
	LayoutMode	REQ, RES	<enum> 1, 2, 4, 9, 16	Layout mode Check whether spotout is supported or not on System/Limit/MaxAnalogSpotCount under attributes.cgi
	SequenceMode	REQ, RES	<bool> True, False	Enables or disables sequence mode
	ChannelList	REQ, RES	<csv>	Monitoring channels

5.4. Examples

5.4.1. Getting spotout configuration information

REQUEST

```
http://<Device IP> /stw-cgi/display.cgi?msubmenu=spotout&action=view
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
"Enable": true,
"LayoutMode": 9,
"SequenceMode": true,
"ChannelList": ["0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0",
"0", "0", "0", "0", "0", "0"]
}
```

5.4.2. Setting spotout configuration information

REQUEST

```
http://<Device IP>/stw-
cgi/display.cgi?msubmenu=spotout&action=set&Enable=True&LayoutMode=16&Sequen
ceMode=True&ChannelList=1,1,1,1,1,1,1,1,1,1,1,1
```

JSON RESPONSE

```
HTTP/1.0 200 OK
Content-type: application/json
<Body>
```

```
{
    "Response": "Success"
}
```