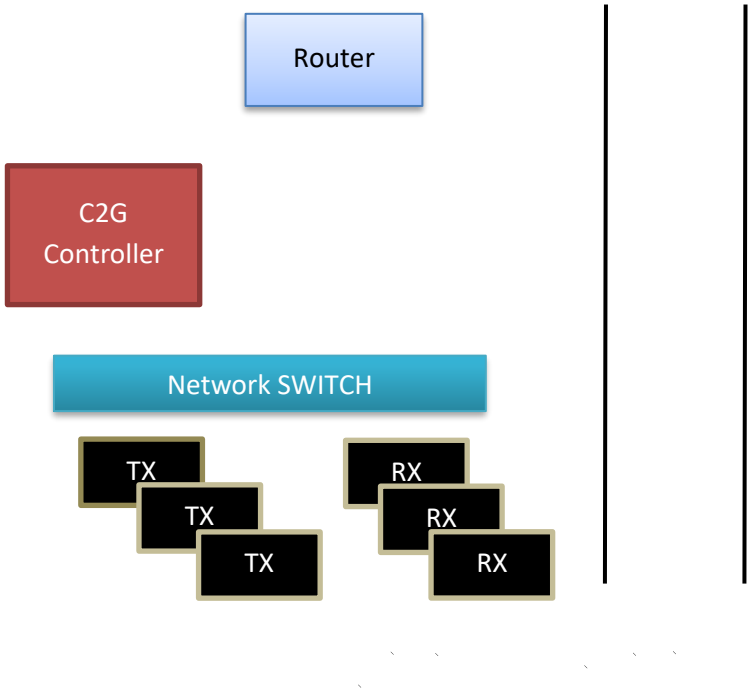
C2G Network Controller (CNC)
Software Version 2.0.4

IP commands to control the following products via CNC:

- 29977 (CNC)
- 29976/29975 (HDMI Over IP H.264 POE Extender)

Table of Contents

Global Low-level architecture



1. IP Command API: definition and format

1.1 Definition

The IP command API use HTTP POST witch JSON data.
Each IP command must sent to the following URL:

http://aaa.bbb.ccc.ddd/CNC/secure_api.php

Each IP command must contain the CNC username and password
aaa.bbb.ccc.ddd: the CNC IP address **(**default static IP: **192.168.168.50)**
p_userName: the CNC user name **(**default value: **admin)**
p_password: the CNC user password **(**default value: **admin)**

1.2 General Format

The IP command (JSON data) has the following format.
Command **without** data parameters:

```
{"p_targetId":<target id>,"p_cmd":"<command name>","p_userName":"<CNC User Name >","p_password":"<CNC password >"}
```

Response format **without** additional data:

```
{"p_targetId":<target id>,"p_cmd":"<command name>","p_rspStatus":"<command status>","p_msg":"<a message>"}
```

Command **with** data parameters:

```
{"p_targetId":<target id>,"p_cmd":"<command name>","p_userName":"<CNC User Name >","p_password":"<CNC password >",
"p_data":[{"key1":"value1","key2":"value2",… }]}
```

Response format **with** additional data:

```
{"p_targetId":<target id>,"p_cmd":"<command name>","p_rspStatus":"<command status>","p_msg":"<a message>","p_data":[{"key1":"value1","key2":"value2",…
}]}
```

- ⇨ **"p_data"** field will depend on the associated command.
- ⇨ **"p_targetId"** value is:
  "0" to send a command for the CNC
  Use the system **ID** displayed in the "Product" web page.
  This is not a constant value, it depend on the client system

EX: To set-up an HDMI Over IP Virtual matrix (must be done only once)

- Login to CNC
- On "products" web page, select "Hdmi Over IP and click "Add Device"
- Enter a name (ex: myHdmiOverIpMatrix) then click OK
- Your Hdmi Over IP virtual Matrix is now added in your system, its system **ID** is now displayed: You must use this ID in the IP commands.
- To auto-configure all, click on "select " then "Launch automatic discovery"

2. IP Command API for all products: command/response list

2.1 Get product list from the database

Description:
The system will retrieve all the product lists currently saved in the database

Command:
{"p_targetId":*0*,**"p_cmd":"getProductListSaved","p_userName":"***<CNC User Name>***","p_password":"***<CNC password>***"}**

Response:
{"p_targetId":*0*,**"p_cmd":"**getProductListSaved**","p_rspStatus":"***SUCCESS***","p_msg":"***<a_message>***","p_data":**[{"globalproductlistsavedID":"<value>","ProductCustomName":"<value>","ProductIp":"<IP Address>","ProductMask":"<Netmask>","ProductIsDhcp":"<0/1>","ProductSupported_ProductSupportedID":"<value>","ProductLogin":"<value>","ProductPassword":"<value>","ProductIdOverride":"<0/1>"{ … }, …}]}

2.2 Automatic discovery

Description:
The system will retrieve all the devices in the network and automatically send all the necessary updates to the devices to configure them properly (duplicate IP address will not be solved by the system; it will let the user resolve this kind of issue). Then it will return the list of devices found with their attributes.

Command:
{"p_targetId":*<systemID>*,**"p_cmd":"launch_discovery_auto","p_userName":"***<CNC User Name>***","p_password":"***<CNC password>***"}**

Response:
{"p_targetId":*<systemID>*,**"p_cmd":"launch_discovery_auto","p_rspStatus":"***SUCCESS***","p_msg":"***<a_message>***","p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"fwVer":"<value>","uartBaudRate":"<value>","irMode":"<emitter/sensor>","rs232FeedbackIP":"<value>","irFeedbackIP":"<value>","isRs232FeedbackOn":<0/1>,"isRs232IpHeader":<0/1>,"compressionRate":"<value>","isAutoCompressionOn":<0/1>>,"is60fps":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>","isAutoResolutionOn":<0/1> { … }, …]}
In Red, these are the additional attributes for RX device
In Green, these are the additional attributes for TX device

2.3 Manual discovery

Description:
The system will retrieve all the devices in the network and it will return the list of devices found with their attributes. (No other actions will be performed)

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"launch_discovery","p_userName":"***<CNC User Name>*","**p_password":"***<CNC password>*"**}**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"launch_discovery_auto","p_rspStatus":"***SUCCESS*","**p_msg":"***<a_message>*","**p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"fwVer":"<value>","uartBaudRate":"<value>","irMode":"<emitter/sensor>","rs232FeedbackIP":"<value>","irFeedbackIP":"<value>","isRs232FeedbackOn":<0/1>,"isRs232IpHeader":<0/1>,"compressionRate":"<value>","isAutoCompressionOn":<0/1>,"is60fps":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>","isAutoResolutionOn":<0/1> { … }, …]}

In Red, these are the additional attributes for RX device

In Green, these are the additional attributes for TX device

2.4 Get devices from the database

Description:

The system will retrieve all the devices currently stored in the database

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"get_devices","p_userName":"***<CNC User Name>*","**p_password":"***<CNC password>*"**}**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"launch_discovery_auto","p_rspStatus":"***SUCCESS*","**p_msg":"***<a_message>*","**p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"fwVer":"<value>","uartBaudRate":"<value>","irMode":"<emitter/sensor>","rs232FeedbackIP":"<value>","irFeedbackIP":"<value>","isRs232FeedbackOn":<0/1>,"isRs232IpHeader":<0/1>,"compressionRate":"<value>","isAutoCompressionOn":<0/1>>,"is60fps":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>","isAutoResolutionOn":<0/1> { … }, …}]}

2.5 Add Remote TX/Delete Remote TX **(For 29976)**

Description:

The system will add/delete a remote source

Command:

{"p_targetId":<systemID>,"p_cmd":"add_remote_tx","p_userName":"<CNC User Name>",
"p_password":"<CNC password>",
"p_data":[{"customNameAdd":"<value>","modelAdd":"<value>","macAddressAdd":"RX-29976","ipAddressAdd":"<value>","ch1_RtspUrllanAdd":"<value>","ch1_HlsUrllanAdd":"<value>","ch1_TsUrllanAdd":"<value>","ch1_FlvUrllanAdd":"<value>","ch1_multicastIpAdd":"<value>","ch1_multicastPortAdd":<value>,"ch1_isHlsOnAdd":<0/1>,"ch1_isRtspOnAdd":<0/1>,"ch1_isTsOnAdd":<0/1>,"ch1_isFlvOnAdd":"<0/1>","ch1_isMulticastOnAdd":"<0/1>"}]}

{"p_targetId":<systemID>,"p_cmd":"delete_remote_tx","p_userName":"<CNC User Name>","p_password":"<CNC password >","p_data":[{"mac":"<value>"}]}

Response:

```
{"p_targetId":<systemID>,"p_cmd":"add_remote_tx","login_ack":"OK","pwd_msg":"SUCCES
S","p_data":[{"customNameAdd":"<value>","modelAdd":"<value>","macAddressAdd":"<valu
e>,"ipAddressAdd":"<value>","ch1_RtspUrllanAdd":"<value>","ch1_HlsUrllanAdd":"<valu
e>","ch1_TsUrllanAdd":"<value>","ch1_FlvUrllanAdd":"<value>","ch1_multicastIpAdd":"
<value>","ch1_multicastPortAdd":<value>,"ch1_isHlsOnAdd":<0/1>,"ch1_isRtspOnAdd":<0
/1>,"ch1_isTsOnAdd":<0/1>,"ch1_isFlvOnAdd":"<0/1>","ch1_isMulticastOnAdd":"<0/1>"}]
}
{"targ":"<value>","p_cmd":"delete_remote_tx","login_ack":"OK","pwd_msg":"SUCCESS","
p_data":[{"mac":"<value>"}]}
```

2.6 Blink Link LED **(For 29976)**

Description:

The system will send a blink command to the device. The device will blink the Link LED indefinitely unless it receives a value=0 blink command or if the device reboots.

Command:

```
{"p_targetId":<systemID>,"p_cmd":"link_led","p_userName":"<CNC User Name
>","p_password":"<CNC password >","p_data":[{"mac":"<value>","blink_led":"<0/1>"}]}
```

Response:

```
{"p_targetId":<systemID>,"p_cmd":"blink_led","p_rspStatus":"SUCCESS","p_msg":"","p_
data":[{"blink_led":"<0/1"}]}
```

2.7 Update some devices attributes

Description:

The system will update the devices specified with the new attributes provided. **Note that to update a device parameter, the device MUST already exist in the CNC database**.

Command:

{"p_targetId":*<systemID>***,"p_cmd":"update_devices","p_userName":"***<CNC User Name>***","p_password":"***<CNC password>***","p_data":[{"mac":"<device mac address>",** *<attribute name>:<attribute value>***,…"}, {"mac":"<device mac address>",** *<attribute name>:<attribute value>***,…},…]]}**

Note:

You have the option to use a port ID (to be defined in web server) instead of the mac address

- **"portIn":"<input port number >"**
- **"portOut":"<output port number >"**

List of attribute names that can be modified:

For TX and RX:

```
"customName" : set the custom name to give to this device
"ip" : set the device ip address (EX: "192.168.1.80")
"mask" : set the device mask (EX: "255.255.255.0")
"isDhcp" : set the dhcp on(1) or off(0) (EX: 1 )
"isIrOn" : set the IR on(1) or off(0) (EX: 1 )
"isDipSwitchEnabled" : set the dip switch on(1) or off(0) (EX: 0 )
"uartBaudRate" : set the RS232 baud rate (9600,19200,38400,57600,115200)
"rs232FeedbackIP" : set IP address where RS232 data feedback should be sent
"isRs232FeedbackOn" : To enable or disable data feedback
```

"irMode" (Does not apply to these models): set IR direction mode <sensor> OR <emitter>

For RX only:

"isScreenImageOn" : 1 => to display loaded image when no video signal
0 => to display a plain black screen when no video signal
"isScreenTextOn" : 1 => to display some debug text information
0 => to not display any debug text information
"videoResolution" : set the desire output video resolution
value="0051" to set video resolution to: 720X480 60Hz
value="2011" to set video resolution to: 480P 60Hz
value="2021" to set video resolution to:576P 50Hz
value="2034" to set video resolution to:720P 50Hz
value="2035" to set video resolution to:720P 60Hz
value="2041" to set video resolution to:1080P 24Hz
value="2042" to set video resolution to:1080P 25Hz
value="2044" to set video resolution to:1080P 50Hz
value="2045" to set video resolution to:1080P 60Hz
value="3041" to set video resolution to: 1080I 50Hz
value="3042" to set video resolution to: 1080I 60Hz
"isAutoResolutionOn" : 1 => to let the device auto-set video resolution
0 => to allow setting video resolution manually
"irFeedbackIP" : set IP address where IR data feedback should be sent

For TX only:

"isAutoCompressionOn" : 1 => to enable automatic video compression
0 => to disable automatic video compression
"irFeedbackIP" (500756 ONLY) : set IP address where IR data feedback should be sent
"is60fps" : 1 => to set video mode to 60 frames per second
0 => to set video mode to 30 frames per second

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"update_devices","p_rspStatus":"***SUCCESS***","p_msg":"***<am essage>***","p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>"}, { … }, …]}

		29976
RX & TX	**customName**	X
	ip	X
	mask	X
	isDhcp	X
	isIrOn	X
	isDipSwitchEnabled	X
	uartBaudRate	X
	rs232FeedbackIP	X
	isRs232FeedbackOn	X
	irMode	X
RX	**isScreenImageOn**	
	isScreenTextOn	
	videoResolution	
	isAutoResolutionOn	X
	irFeedbackIP	X
	hdcpFormat	
TX	**isAutoCompressionOn**	
	irFeedbackIP	X
	is60fps	

2.8 Reboot device

Description:

The system will reboot the devices

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"reboot_devices","p_userName":"***<CNC User Name>*","p_password":"*<CNC password>*","p_data":[{"mac":"<device mac address>"}, {…}, …]]}**

Note:

You have the option to use a port ID (to be defined in web server) instead of the mac address

- **"portIn":"<input port number >"**
- **"portOut":"<output port number >"**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"update_devices","p_rspStatus":"***SUCCESS*","p_msg":"*<a message>*","p_data":**[{"mac":"<device mac address>",**"p_rspStatus"**:"SUCCESS or FAILED","msg":""}, …]]}

2.9 Connect/disconnect device

Description:

Perform a connect/disconnect between devices

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"connection","p_userName":"***<CNC User Name>*","p_password":"*<CNC password>*","p_data":[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>"}, {…}, …]]}**

"macRx" : the RX mac address to connect/disconnect

"macTx": - To disconnect, use "00-00-00-00-00-00"

- To connect, use the TX device mac address to connect to

Note:

You have the option to use a port ID (to be defined in web server) instead of the mac address

- **"portIn":"<input port number >"** (use "0" to disconnect the output port)
- **"portOut":"<output port number >"**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"connection","p_rspStatus":"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>", "p_rspStatus":"SUCCESS or FAILED","msg":""}, …}]}

2.10 Select and apply a preset

Description:

Apply a (existent) preset

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"select_preset","p_userName":"***<CNC User Name>*****","p_password":"***<CNC password>***","p_data":[{"presetId":"<preset id number>"}]}**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"**
select_preset","p_rspStatus":"*SUCCESS***","p_msg":"***<amessage>***","p_data":**[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>","p_rspStatus":"SUCCESS or FAILED","msg":""}, …}]}

Note:

"p_data" will return all the connections result that took place

2.11 Save current matrix connections in a specific preset

Description:

Save the current matrix connections in a specific (existent) preset

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"save_preset","p_userName":"***<CNC User Name>*****","p_password":"***<CNC password>***","p_data":[{"presetId":"<preset id number>"}]}**

Response:

{"p_targetId":*<systemID>*,**"p_cmd":"save_preset","p_rspStatus":"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"presetId":"<preset ID number >"}]}

2.12 Save current matrix connections in a new preset name

Description:

Save the current matrix connections in a NEW preset name

Command:

{"p_targetId":*<systemID>*,**"p_cmd":"create_preset","p_userName":"***<CNC User Name>*****","p_password":"***<CNC password>***","p_data":[{"presetName":"<a new preset name>"}]}**

Response:

{"p_targetId":<systemID>**,"p_cmd":"create_preset","p_rspStatus":"**SUCCESS**","p_msg":"**<a message>**","p_data":**[{"prestName": "<name of the preset>", presetId":"<preset ID number >"}]}

2.13 Delete a preset

Description:

Delete a preset

Command:

{"p_targetId":<systemID>**,"p_cmd":"delete_preset","p_userName":"**<CNC User Name>**","p_password":"**<CNC password>**","p_data":[{"presetId":"<preset id number>"}]}**

Response:

{"p_targetId":<systemID>**,"p_cmd":"delete_preset","p_rspStatus":"**SUCCESS**","p_msg":"**<a message>**","p_data":**[{"presetId":"<preset ID number >"}]}

2.14 Send data to RS-232

Description:

Send data (in hexadecimal) to RS232 port of a device

Command:

{"p_targetId":<systemID>**,"p_cmd":"send_data_to_rs232 ","p_userName":"**<CNC User Name>**","p_password":"**<CNC password>**","p_data": [{"mac":"<Tx/Rx device mac address>","hexdata":"<hex data>">","ack":<0/1>,"feedback":<0/1>}]}**

<hex data> maximum length = 390 characters (i.e: 195 bytes)
<feedback> 1 : to wait for a feedback data to be returned from the RS-232 port
<ack> 1 : to wait to wait for a command acknowledge

Note:

You have the option to use a port ID (to be defined in web server) instead of the mac address

- **"portIn":"<input port number >"**
- **"portOut":"<output port number >"**

Response:

{"p_targetId":<systemID>**,"p_cmd":"send_data_to_rs232","p_rspStatus":"**SUCCESS**","p_msg":"**<a message>**","p_data":**[{"mac":"<device mac address>",**"p_rspStatus"**:"SUCCESS or FAILED","msg":""}, …}]}

2.15 Send data to IR

Description:

Send data (in hexadecimal) to IR port of a device

Command:

{"p_targetId":<systemID>**,"p_cmd":"send_data_to_ir","p_userName":"**<CNC User Name>**","p_password":"**<CNC password>**","p_data": [{"mac":"<Tx/Rx device mac address>","hexdata":"<hex data>"}]}**

<hex data> maximum length = 390 characters (i.e: 195 bytes)

Note:

You have the option to use a port ID (to be defined in web server) instead of the mac address

- **"portIn":"<input port number >"**
- **"portOut":"<output port number >"**

Response:

{"p_targetId":*<systemID>*,"**p_cmd**":"**send_data_to_ir**","**p_rspStatus**":"*SUCCESS*","**p_msg**":"*<a message>*","**p_data**":[{"mac":"<device mac address>","**p_rspStatus**":"SUCCESS or FAILED","msg":""}, …]}

2.16 Modify network setting of the CNC

Description:

Modify any network settings of the CNC (ip/mask/gateway/dhcp)

Command:

{"p_targetId":*0*,"**p_cmd**":"**modifyNetSettings**","**p_userName**":"*<CNC User Name>*","**p_password**":"*<CNC password>*","p_data":[{"dhcp":"<0/1>"}, {"ip":"<ip address>"},{"mask":"<mask address>"},{"gateway":"<gateway address>"}]}

Response:

{"p_targetId":0,"p_cmd":"modifyNetSettings","p_rspStatus":"*SUCCESS/FAILED***","p_msg":"***<a message>***"}**

2.17 Modify Administrator password of the CNC

Description:

Modify the administrator password of the CNC

Command:

{"p_targetId":0,"p_cmd":"changeAdminPswd","p_userName":"<CNC User Name**>","p_password":"**<CNC password>**","p_data":[{"usrname":"<the user name>"},{"currpswd":"<current passsword>"},{"newpswd":"<new password>"}]}**

Response:

{"p_targetId":0,"p_cmd":"modifyNetSettings","p_rspStatus":"*SUCCESS/FAILED***","p_msg":"***<a message>***"}**

2.18 Get a list of users

Description:

Show a list of users on the CNC

Command:

{"p_targetId":0,"p_cmd":"getUsers","p_userName":"<CNC User Name**>","p_password":"**<CNC password>**"}**

Response:

{"p_targetId":0,"p_cmd":" getUsers","p_rspStatus":"*SUCCESS***","p_msg":"***<a message>***","p_data":**
[{"userID":"1","UserName":"<value>","UserEmail":"<value>","UserCreationDate":"<date time>","UserExpirationDate":"<datetime>","UserIsActivated":"0/1","UserRight_UserRightID":"0/1"},…]}

2.19 Get a list of permissions for a user

Description:

Show the permissions for a user on the CNC

Command:

{"p_targetId":0,"p_cmd":" getUserDetail","p_userName":"<CNC User Name**>","p_password":"**<CNC password>**","p_data":[{"userid":"<the user id>"}]}**

Response:

{"p_targetId":0,"p_cmd":" getUserDetail ","p_rspStatus":"*SUCCESS***","p_msg":"***<a message>***","p_data":**[{"userID":"1","UserName":"<value>","UserIsActivated":"0/1","userrightID":"0/1"},…]}

2.20 MULTIVIEW / VIDEOWALL: Get a list of configs (**For 29976**)

Description:

Show a list of existent configurations for Multiview/Videowall

Command:

```
{"p_targetId":<systemID>,"p_cmd":"mvGetConfigList","p_userName":"<CNC User Name>","p_password":"<CNC password>"}
```

Response:

```
{"p_targetId": "","p_cmd": "mvGetConfigListApp","p_rspStatus": "SUCCESS","p_msg": "","p_data": [{"mvConfigId": "","MultiViewVideoWallName": "","MultiViewName": "","MultiViewSizeX": "","MultiViewSizeY": "","RxCount": "","TxCount": "","topX": "0","topY": "0","bottomX": "","bottomY": "","devices": [{"macRx": "","display_mode": "","display_res": "","deep_color": "","num_aud_on": "","mvCoordX": "","mvCoordY": "","mvSizeX": "","mvSizeY": "","bezelTop": "","bezelBottom": "","bezelLeft": "","bezelRight": "","screenWidth": "","screenHeight": "","scaleUpH": "","scaleDownH": "","scaleUpV": "","scaleDownV": "","shiftUp": "","shiftDown": "","shiftRight": "","shiftLeft": "","measureUnit": ""},{"windowId": "","macTx": "","src_onplaying": "","num_aud_on": "","zorder": "","aspectCvrs": "","rotate": "","low_delay": "","repeatable": 0","mvCoordX": "","mvCoordY": "","mvSizeX": "","mvSizeY": "","scaleUpH": "","scaleDownH": "","scaleUpV": "","scaleDownV": "","shiftUp": "","shiftDown": "","shiftRight": "","shiftLeft": ""}]}]}
```

2.21 MULTIVIEW / VIDEOWALL: Select and apply a configuration (**For 29976**)

Description:

Apply an existent Multiview/Videowall configuration

Command:

```
{"p_cmd":"mvApplyConfig","p_userName":"<CNC User Name>","p_password":"<CNC password>","p_targetId":"<systemID>",
"p_data": [{
           "mvConfigId": "<mvConfig id>",
           "mvSettings": [{
                     "windowId": "<window id>",
                     "macTx": "<mac address of Tx>",
                     "isAudio": "<0/1>",
                     "onTop": "<0/1>"
                }
           ]
     }]
}
```

Note:

- "mvSettings" is optional. If used, "windowId" is necessary, but "macTx","isAudio" and "onTop" are optional. If not specified, the default values from the configuration will be used.
- You have the option to use a port ID (to be defined in web server) instead of the mac address for "macTx"
    - **"portIn":"<input port number >"**

Response:

```
{"p_targetId": "","p_cmd": "mvApplyConfig","p_rspStatus": "SUCCESS","p_msg": "",
```

```
"p_data": [{
        "mvConfigId": "",
        "mvSettings":
                [{"windowId": "","macTx": "","rspStatus": "SUCCESS","msg":
         ""}],
        "rspStatus": "SUCCESS","msg": ""}]}
```


3. API Command Usage Guide

The 500811 IP command API uses HTTP POST with JSON data. Each IP command must contain the CNC username and password. Two popular programs to send commands are Postman and cURL.

4.1 Software

Postman

The Postman Rest Client is a very popular and easy to use HTTP Request composer that makes it easy to call web services.

Install/Download:
Windows/Mac/Linux app: https://www.getpostman.com/

Instructions:
In a new tab:

- Change the dropdown to “POST” (default is “GET”)
- Modify URL to “*http://192.168.168.50/CNC/secure_api.php*”.
- Under the Body tab, change to “raw” and “JSON (application/json)”
- In the text area, enter the command and click “Send”
- If successful, a response to the command will be sent back.

Command Examples:
This will return a list of devices from the 1st product target. p_targetId is ID number from the Product page:
{"p_targetId":1,"p_cmd":"get_devices","p_userName":"admin","p_password":"admin"}

This will send a hex data to an IR port of a device (port #1):
{"p_targetId":1,"p_cmd":"send_data_to_ir","p_userName":"admin","p_password":"admin","p_data":[{"port":"1", "hexdata":"0000006f"}]}

This will apply another source (port #3) to an existent videowall configuration (vwConfigID #2):
{"p_targetId":1,"p_cmd":"vwApplyConfig","p_userName":"admin","p_password":"admin","p_data":[{"vwConfigId":"2", "portIn":"3"}]}

cUrl

cURL is a computer software project providing a library and command-line tool for transferring data using various protocols.

Install/Download:
Linux/Mac/Win10: command-line tool

cURL Examples:
Note: 192.168.168.50 is the default IP address of the 500811. P_targetId is ID number from the Product page.

This will return a list of devices from the 1st product target:

curl -i -X POST -H 'Content-Type: application/json' -d
'{"p_userName":"admin","p_password":"admin","p_targetId":1,"p_cmd":"get_devices"}'
http://192.168.168.50/CNC/secure_api.php

This will apply Preset #2:

curl -i -X POST -H 'Content-Type: application/json' -d '{"p_userName":"admin","p_password":"admin","p_cmd":"select_preset","p_targetId":1,"p_data":[{"presetId":"2"}]}' http://192.168.168.150/CNC/secure_api.php

This will apply another source (port #5) to an existent videowall configuration (vwConfigID #1):

curl -i -X POST -H 'Content-Type: application/json' -d '{"p_userName":"admin","p_password":"admin","p_cmd":"vwApplyConfig","p_targetId":1,"p_data":[{"vwConfigId":"1", "portIn":"5"}]}' http://192.168.168.50/CNC/secure_api.php

4.2 Examples of Commands

C2G Network Controller (CNC):

IP address: 192.168.168.50
Login: admin
Password: admin

Target ID: 1 (Click on "Product" menu in the 500811 web server to know the target ID to use)
Transmitter #1 Mac address: 00-0B-78-00-70-19 (assigned to port# 1 via 29977 web server)
Receiver #1 Mac address: 00-0B-78-00-75-38 (assigned to port# 1 via 29977 web server)
Receiver #2 Mac address: 00-0B-78-00-74-14 (assigned to port# 2 via 29977 web server)

All commands must be HTTP POST and sent to the following URL:

The data must be formatted in JSON, here are some command data examples:

a) *{"p_targetId":1,"p_cmd":"connection","p_userName":"admin","p_password":"admin","p_data":[{"macRx":"00-0B-78-00-75-38","macTx":"00-0B-78-00-70-19"}]}*
b) *{"p_targetId":1,"p_cmd":"connection","p_userName":"admin","p_password":"admin","p_data":[{"portOut":"2","portIn":"1"}]}*
c) *{"p_targetId":1,"p_cmd":"send_data_to_rs232","p_userName":"admin","p_password":"admin","p_data":[{"portOut":"2","hexdata":"5F45Ac9B","ack":1,"feedback":1}]}*
d) *{"p_targetId":1,"p_cmd":"send_data_to_ir","p_userName":"admin","p_password":"admin","p_data":[{"portIn":"1","hexdata":"AABBCC01020355FF"}]}*
e) *{"p_targetId":1,"p_cmd":"select_preset","p_userName":"admin","p_password":"admin","p_data":[{"presetId":"6"}]}*
f) *{"p_targetId":1,"p_cmd":"update_devices","p_userName":"admin","p_password":"admin","p_data":[{"irFeedbackIP":"192.168.168.50","portOut":"1"}]}*
g) *{"p_targetId":1,"p_cmd":"vwApplyConfig","p_userName":"admin","p_password":"admin","p_data":[{"vwConfigId":"3"}]}*
h) *{"p_targetId":1,"p_cmd":"vwApplyConfig","p_userName":"admin","p_password":"admin","p_data":[{"vwConfigId":"3", "portIn":"1"}]}*

FCC Statement

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

FCC Statement - §15.105(b):

"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution - §15.21:

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

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