

CRESTRON MODULE 3.07.01 DOCUMENTATION

WolfVision Cynap Pro, Cynap, Cynap Core Pro, Cynap Core and Cynap Pure Pro
Optimized for firmware version V1.55e

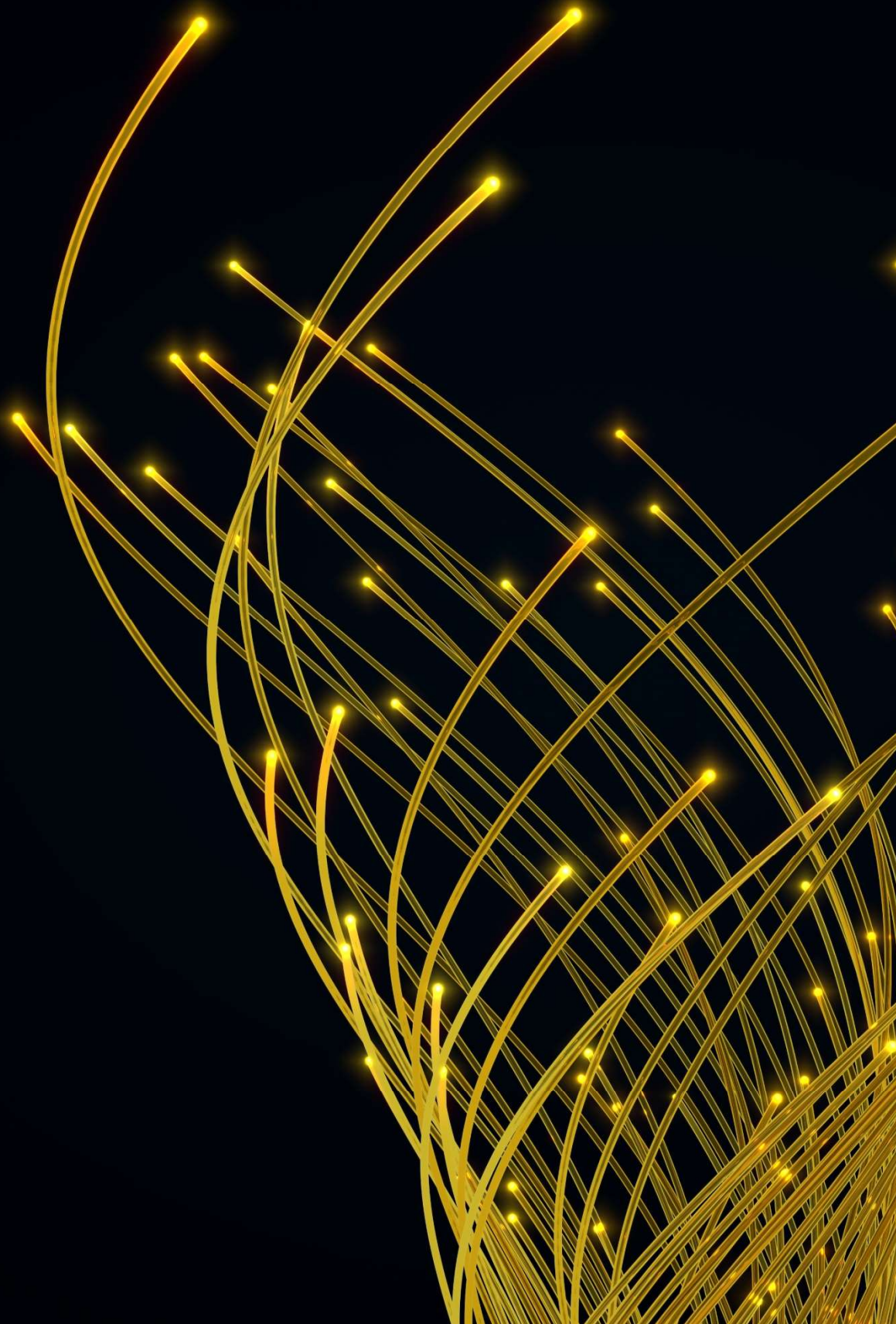


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1 INTRODUCTION

1.1 Version History and Change Log

Version	Date (dd/mm/yyyy)	Remarks
3.07.01	18/08/2022	- IMPROVEMENT: Always use 1d as default ID value for module/sub modules
3.07.00	14/07/2022	- NEW: Added signal "Initializing" to show when the module is trying to connect to the Cynap device. - NEW: Use Windows 3 command instead of deprecated Windows 2 command to get window information from Cynap (required firmware version 1.52 or higher)
3.06.01	05/03/2021	- IMPROVEMENT: Removed Firmware popup
3.06.00	22/03/2021	- NEW: Removed firmware popup notice subpage - NEW: Added camera icon for HDMI sources 1 & 2 - NEW: Added default source icon (HDMI) for unknown sources. For future use. - IMPROVEMENT: Removed version number from module names - IMPROVEMENT: Speedup Screen-Saver handling
3.05.00	10/12/2020	- NEW: user interaction speed improvement - NEW: hostname in Screen Mirror window - NEW: Microsoft 365 support for MS Whiteboard and MS Teams
3.04.01	02/11/2020	- FIX: Visualizer window not displaying controls when added as a USB input source - IMPROVEMENT: Optimized queuing mechanism
3.04.00	25/09/2020	- NEW: Now up to 20 input streams can be selected - NEW: Support for Office 365 local account - IMPROVEMENT: The character length for the HDMI input names has been increased to 128. This avoids warning messages like "Cannot set permanent string at input 1 from symbol [...]" in the controller. - FIX: The message "Screensaver/Screen Off is active" remains visible on the touch panel although the Cynap is active again.
3.03.00	07/07/2020	Added support for Microsoft Teams window
3.02.02	22/02/2020	Bug fixes for disconnect issues
3.02.01	20/02/2020	Added support for Zoom window
3.01.00	13/05/2020	Updating doc with new info for recommended hardware.
3.00.00	19/07/2019	Splitting of main module into smaller individual modules to lessen system load.

Modules, touchscreen and CynapBase file for this version	Version and remarks
Cynap_Audio_Client	3.00
Cynap Browsing Client	3.00
Cynap Cloud Service Client	3.01
Cynap_Freeze_Client	3.00
Cynap Main Client	3.06

Cynap_Mirroring_Client	3.00
Cynap_Presentation_Client	3.01
Cynap_Recording_Client	3.00
Cynap_RemoteControl	3.00
Cynap_Sources_Client	3.04
Cynap_Streaming_Client	3.00
Cynap_vMeeting_Client	3.00
Cynap_Windows_Client	3.03
Cynap ver_3_07.vtz	3.07
CynapBase.clz	

1.2 Purpose

The purpose of this document is to provide information about the Crestron Cynap modules. This module is for demonstration purposes only (provided as it is) and it is not intended to run in production environments. Please adapt and test this module for your environment.

1.3 Preferred hardware

It is recommended to use at least a CP3/CP4 controller and a touch panel. Lower end controllers with less processing power like a RMC3 or a DIN-AP3 can be used as well but might only work with a single instance of the module running at a time.

1.4 Time zone and time server

Configure time zone and time server to allow TLS encrypted web socket communication. Cynap settings for time server and time zone need to be set on Cynap's general settings. Legacy TLS 1.0 can be activated in Cynap's security settings.

2 GENERAL DESCRIPTION

2.1 Getting started with the test environment.

To utilize the test environment, or any Crestron modules, Crestron's development tools (see 4.5 Software) are needed.

2.1.1 Files

The following files are included in the test environment file (Cynap.zip):

File	Description
Main Environment Files	
Cynap_verX_YY.smw	The SIMPL Windows project file. The main file for the test environment.
Cynap_verX_YY.sig	Crestron Test Manager signal file.
Cynap_verX_YY.lpz	3-series SIMPL Windows program file. This is uploaded to the processor.
	Module Files For each module file, there is a .usp, .ush, and a .pdf file.
.usp files	The Cynap client module, written in SIMPL+
.ush files	SIMPL+ compile file generated from .usp module files.
Module File List	
Cynap_Main_Client	This is the core module which holds the configuration information and main functions. (Mandatory install)
Cynap_Audio_Client	This module handles the audio aspect of the Cynap.
Cynap_Browsing_Client	This module handles the file browsing of the Cynap.
Cynap_Cloud_Service_Client	This module handles the Cloud Connection/Disconnection of the Cynap.
Cynap_Freeze_Client	This module handles the Freeze function for the main part of the Cynap.
Cynap_Mirroring_Client	This module handles the Mirroring Connection of the Cynap.
Cynap_Presentation_Client	This module handles the Presentation settings of the Cynap.
Cynap_Recording_Client	This module handles the Recording functions of the Cynap.
Cynap_Remote_Control_Client	This module handles the Remote Control emulation of the Cynap.
Cynap_Sources_Client	This module handles the Source select and management of the Cynap.
Cynap_Streaming_Client	This module handles the Streaming functions of the Cynap.
Cynap_vMeeting_Client	This module handles the vMeeting setup and functions of the Cynap.
Cynap_Windows_Client	This module handles the Windows control and functions of the Cynap.
Touchpanel Files	
Cynap_verX_YY.vtp	The Visiontool Pro-e template file (uncompiled) for the touch panel.
Cynap_verX_YY.vtz	The compiled graphics file for the touch panel which is loaded to the touch panel.
Cynap_verX_YY.sgd	Smart Graphics Data file generated by Visiontool Pro-e for Simpl Windows.
	Simpl# Supplementary Files
CynapBase.clz	SIMPL# library for encrypted communication.

2.1.2 Modules

The Cynap_Main_Client and the IBM keyboard module are the only modules needed to interact with the Cynap.

The Cynap_Main_Client facilitates the control and communication of/with the Cynap. The IBM keyboard module allows for the user to enter URLs used for the browser function.

2.1.3 Simpl Windows Folder Structure

The test environment is organized into separate sections.

The folder, (Subsystem), S-1: Keyboard contains the symbols needed for the keyboard functionality, which are a Crestron IBM Keyboard module, a termination buffer and delay symbol used to clear entries once "enter" is pressed. Separate subfolders are used to pass data between the needed functions for Cloud Services and Bookmarks.

The next folder S-2: UI Logic, holds the symbols needed to allow the provided touch panel graphics to function. The graphics combined with these symbols allows the test environment to mimic the web interface provided by the Cynap. As such, this folder is not necessary to use the Cynap module in a new project.

The remaining modules are exposed without needing to be placed in folders. This is to easily connect and use the modules.

3 GRAPHICS TEMPLATE

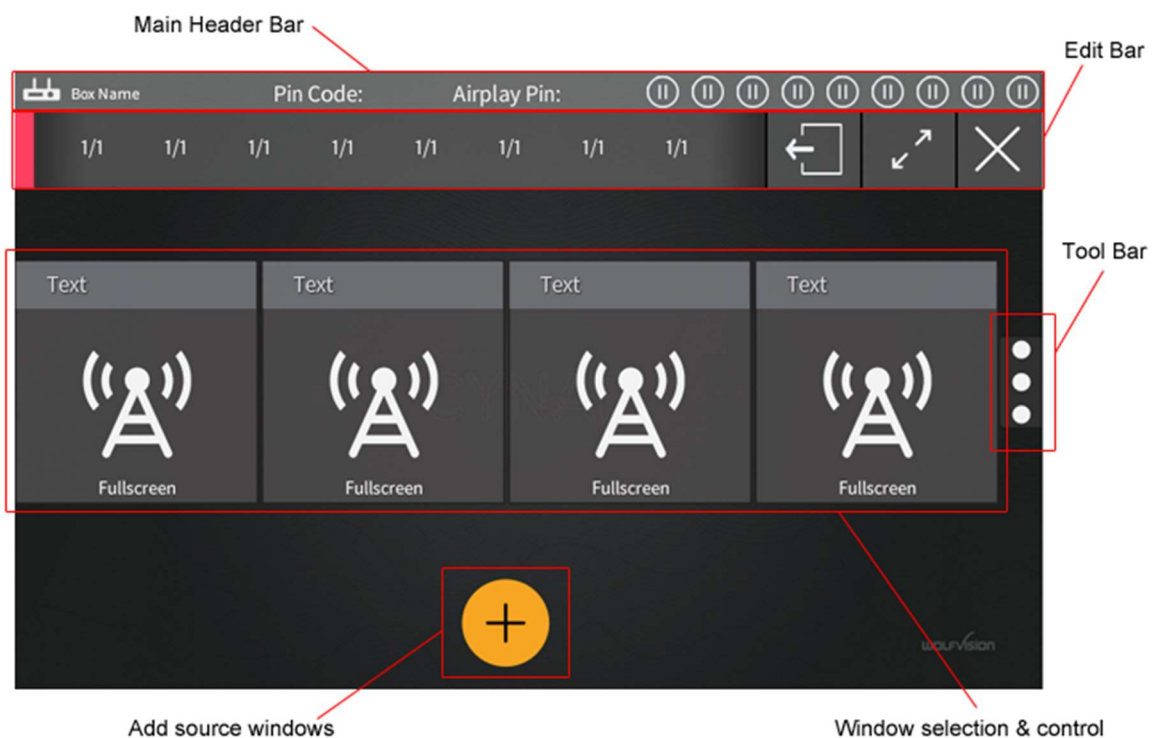
3.1 Overview

The touch panel template file (Cynap_verX_YY.vtp), which is used for the test environment, contains all graphical components and elements needed to use the Cynap client on a Crestron touch panel.

3.2 Graphics Theme

The theme is graphically driven, meaning we do not use any theme, but each button/element has a graphic for its states. This allows for easier copying and pasting into existing project files without the need of a Crestron Theme to be present or matched.

3.3 Graphics Structure



3.3.1 Main

The main page has 5 elements.

- Main Header Bar**
 This area shows the name assigned to the Cynap for easy connection, an icon indicating that the module is connected, "Pin Code" popup area if a pin code is needed, "Airplay Pin" popup and icon that reflect the state of the Cynap.
- Source Selection**
 The "Add source windows" button on the bottom of the page will display a popup window with available sources to choose from. Adding a source will bring up a new window in the Active Window List.
- Active Windows List**
 The center of the panel is for showing what the active sources are on each window. The windows are color coded to match the Cynap WebUI display with the color appearing in the top left of each window.

By selecting an active window, the color code will disappear, and be replaced by a full color boarder around the window. This will also activate the "Edit Bar" window.

- **Edit Bar**

The Edit Bar window will always display 2 icons on the right, with a 3rd icon sometimes being displayed.

- 1) **Fullscreen/Normal**

This button will make the currently selected window either full screen, or return it to normal size. If a window is in full screen mode, it will also appear on the window in the Active Window List.

- 2) **Close Window**

This button will close the currently selected window and removes it from the Active Window List.

- 3) **Dual Screen**

This button is for using the "Dual Screen" feature. Please refer to Cynap help on HDMI Output feature.

Sources are based on content and may show additional functions.

- **Tool Bar**

The Tool bar will display several functions depending on the Cynap model and its configuration.

- 1) Downloads (if available)

Press to bring up a browse window with all downloaded files.

- 2) Uploads (if available)

Press to bring up a browse window with all uploaded files.

- 3) Snapshots

Press to take a snapshot.

- 4) Recording (if available)

Press to Start/Pause/Stop recording.

- 5) Streaming (if available)

Press to toggle the streaming on/off.

- 6) Link to Stream (if streaming is available and active).

Press to display or hide a QR code on the screen.

- 7) App Recording (if streaming is available and active).

Press to enable or disable app recording.

- 8) Mute

Press to mute or unmute the main volume.

- 9) Volume

Press to change the main volume

- 10) Freeze

Press to freeze or unfreeze the current Cynap screen. Some features are locked during freeze.

- 11) Close Windows

This will close all open windows.

- 12) End Presentation

Pressing this will prompt to end the presentation with or without saving snapshots and recordings.

- 13) Standby

Toggles the power on or off.

3.3.2 Smart Objects

Crestron uses smart objects to simplify its programming. This test environment uses some of these elements as well.

- **Subpage Reference List (SRL)**

The Subpage Reference List is a SmartGraphics control that allows a designer to create a scrollable list, but reference an actual subpage as the list item. What this means is that the programming can be made for a subpage and repeated with unique data in each element.

SRL Windows (SO ID-1)

This SRL has 2 Digital Joins. 1 for Fullscreen On/Off, and 1 for the Press.

This SRL has 3 Analog Joins. 1 for Border Color, 1 for Passive Color, and 1 for the Current Source.

This SRL has 1 Serial Join, used for the Current Source Name Text.

It also uses the Visibility Join numbers

SRL Sources. (SO ID-3)

This SRL has 1 Digital Joins. 1 for the Press.

This SRL has 1 Analog Join, used for the image of the Source Type.

This SRL has 1 Serial Join, used for the Source Name Text.

It also uses the Visibility Join and Enable Join numbers.

SRL Edit Bar. (SO ID-4)

This SRL has 1 Digital Join. 1 for the Press/Feedback.

This SRL has 1 Analog Join, used for the image icon.

It also uses the Visibility Join numbers.

SRL Edit Bar. (SO ID-5)

This SRL has 1 Analog Join, used for the image icon.

It also uses the Visibility Join and Enable Join numbers.

SRL Icon List. (SO ID-6)

This SRL has 1 Analog Join, used for the image icon.

It also uses the Visibility Join numbers.

SRL for Cloud Drives. (SO ID-8)

This SRL has 1 Digital Joins. 1 for the Press.

This SRL has 2 Analog Join, 1 used for the Icon, and 1 used for the Status.

This SRL has 1 Serial Join, 1 used for the Drive Name Text.

It also uses the Visibility Join numbers.

SRL for vMeeting Meetings. (SO ID-12)

This SRL has 1 Digital Joins. 1 for the Press.

This SRL has 4 Serial Joins, 1 Organizer Text, 1 for the Subject Text, 1 for the Start Time Text and 1 for the End Time Text.

It also uses the Visibility Join numbers.

- **Dynamic Button List (DBL)**

The Dynamic Button List is a SmartGraphics control that allows a designer to create a scrollable list of buttons, and show or hide each button in code.

DBL Drives. (SO ID-2).

This DBL has 1 Digital Join. 1 for the Press/Feedback.

It also uses the Visibility Join numbers.

DBL Upload Drives. (SO ID-7).

This DBL has 1 Digital Join. 1 for the Press/Feedback.

It also uses the Visibility Join and Enable Join numbers.

DBL WebRTC Streams. (SO ID-13).

This DBL has 1 Digital Join, 1 for the Press/Feedback.

This DBL has 1 Serial Join, 1 used for the WebRTC Name Text.

It also uses the Visibility Join numbers.

- **Spinner List (Spinner)**

The Spinner List is a SmartGraphics control that allows a designer to create a scrollable list of items to be selected.

Spinner Hours. (SO ID-10).

This Spinner object is for selecting hours when setting times.

Spinner Minutes. (SO ID-11).

This Spinner object is for selecting minutes when setting times.

4 COMPILATION & TEST

4.1 Configuration and Compilation Process

4.1.1 Software

The test environment consists of multiple files, where "Cynap_x.yy.smw" is the main project file. Open it in Crestron's SIMPL Windows. In order to connect to your Cynap, you need to adjust the connection settings in the "Cynap Main Client" as follows:

ServerIP	Cynap IP address under which your controller reaches your Cynap.
Password	Enter the login password which is configured on your Cynap (see Settings/Login/Room Management System RMS) which will grant User level access.
MACAddress	The MAC address of your specific Cynap networking interface (e.g., LAN1). Mandatory for Wake-on-Lan (WOL) and Standby modes: STANDBY or SHUTDOWN. See Cynap help for more information on WOL and Standby modes.
Connection	Use Secure for encrypted communication with Cynap (see Settings/Security/Secure Connection) Secure connections require the configuration of time zone and timeserver on Crestron and Cynap. Use Unsecure in an environment where TLS is not supported.

The screenshot shows the Crestron SIMPL Windows interface. On the left, the 'Program View' tree shows a hierarchy of modules, with 'S-7: Cynap Main Client ver_3_03_00' highlighted in a red box. The main 'Detail View' shows the configuration for this module. A red box highlights the following settings:

- GroupID: 01d
- ServerIP: 192.168.103.150
- Password: RMPASSWORD
- MACAddress: \x08\x60\x6E\xFB\x6D\x8C
- Connection: Secure

Other visible settings in the Detail View include:

- Office365 Use_Local_Account: [Office365_Use_Local_Account]
- Office365 Dont_Use_Local_Account: [Office365_Dont_Use_Local_Account]
- Office365 Toggle_Local_Account: [Office365_Toggle_Local_Account]
- Office365 Skype_Use_Local_Account: [Office365_Skype_Use_Local_Account]
- Office365 Skype_Dont_Use_Local_Account: [Office365_Skype_Dont_Use_Local_Account]
- Office365 Skype_Toggle_Local_Account: [Office365_Skype_Toggle_Local_Account]
- Send Command: [SendCommand]

Once loaded, press the F12 (Convert/Compile) button to convert the project into a compiled file.

Once the project has been compiled the file will have to be uploaded to the Crestron processor. Depending on your default settings in SIMPL Windows, you might be asked to upload directly from within the application. It is, however, recommended that this process is performed using Crestron's Toolbox application.

4.1.2 Graphics

The Cynap_x_yy.vtp file is opened using Crestron's VisionTools Pro-e software. Once opened, press the F12 key in order to initiate the compile procedure.

When the compilation process has completed (without failures) a new file will have been generated called Cynap.vtz.

This is the graphics file that will have to be uploaded to the touch panel.

4.2 Installation/Upload Process

4.2.1 Software

When Crestron's Toolbox is open, select the "I" icon from the icons list. Alternatively, this function can also be selected from Tools->System Info.

This will open a new dialog window. Depending on your settings, the window might attempt to connect to a previously used connection. Use the "Pencil" icon at the bottom of the window to enter the IP address of the processor.

Select Functions->SIMPL Program->SIMPL Program (Program 01) from the tool bar.

Press "Browse", locate the Cynap_x_yy.lpz file and select "Open".

Once selected press "Send" in order to start the transfer.

When the send procedure is complete the processor will reboot and execute the project.

4.2.2 Graphics

Although the upload can be done directly in VisionTools Pro-e, it is recommended to use Crestron's Toolbox for this purpose.

When Crestron's Toolbox is open, select the "I" icon from the icons list. Alternatively, this function can also be selected from Tools->System Info.

This will open a new dialog window. Depending on your settings, the window might attempt to connect to a previously used connection. Use the "Pencil" icon at the bottom of the window to enter the IP address of the Touch Panel.

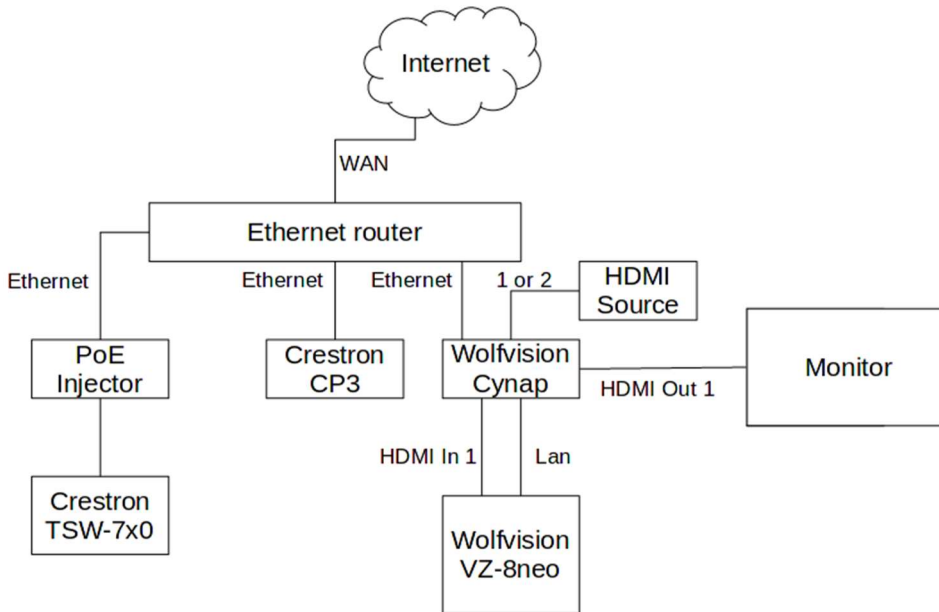
Select Functions->Project from the tool bar.

Press "Browse", locate the Cynap_x_yy.vtz file and select "Open".

Once selected press "Send" to start the transfer of the graphics.

When the send procedure is complete the panel will reboot and load the new graphics.

4.3 Test environment setup



4.3.1 Crestron TSW-7x0 Panel

Ensure that the panel is setup to connect to the Crestron processor using IP-ID 03.

This can be done on the panel's setup menu (refer to the Crestron manual about entering setup menu).

In the setup menu, press "IP Table Setup" and "Add/Edit" the first entry. Use the default port of 41794.

Once the IP Table (IP-ID) settings have been entered (and the program has been loaded to the processor) the "Online" light will turn on.

4.4 Firmware

The Cynap Client has been tested with the following firmware.

Device	Firmware
Crestron CP4 processor	v2.7000.00052
Crestron TSW-770	v1.006.0046

Device	Firmware
WolfVision Cynap	1.54e (Build 20220729111910)

4.5 Software

The following software tools have been used during the development and test process:

Crestron

Software	Version
Simpl Windows	4.2000.00.00
Simpl Windows library	1172
Simpl+ Cross compiler	1.3
VisionTools Pro-e	6.2.02.08
Device Database	200.201.001.00
Crestron Database	213.00.003.00
Core 3 UI Controls/Smart Graphics	2.17.01.01
Toolbox	3.1220.0018.0

5 APPENDIX

5.1 Module Information

5.1.1 Cynap_Audio_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Master Mute On	D	Pulse to turn the Master Mute On
Master Mute Off	D	Pulse to tun the Master Mute Off
Master Mute Toggle	D	Pulse to toggle the Master Mute state
Mic Mute On	D	Pulse to turn the Mic Mute On
Mic Mute Off	D	Pulse to tun the Mic Mute Off
Mic Mute Toggle	D	Pulse to toggle the Mic Mute state
Master Volume In	A	Analog value from 0-100

OUTPUTS		
NAME	TYPE	DESCRIPTION
Audio Enabled Fb	D	High if module is subscribed.
Audio Disabled Fb	D	High is Module is not Subscribed.
Master Mute On Fb	D	High if Master Mute is on.
Master Mute Off Fb	D	High if Master Mute is off.
Mic Mute On Fb	D	High if Mic Mute is on.
Mic Mute Off Fb	D	High if Mic Mute is off.
Master Volume Out	A	Value from 0-100
Mic Status	A	Value from 0~2 (0=Disabled, 1=Active, 2=Inactive)

5.1.2 Cynap_Browsing_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Browse Close Windows	D	Pulse to close the browsing windows.
Get Downloads	D	Pulse to retrieve and display the Downloaded files
Get Uploads	D	Pulse to retrieve and display the Uploaded files
Drive X Select	D	Pulse to browse drive X
Number of File Lines	A	Analog value from 1-12 on how many lines to use for browsing
List Level In	A	Analog value from 0-65535 used for scrolling through the files list.
Browse Path Direct	S	Serial path for direct browsing.
Back Button	D	Pulse to go back one level in the browsing structure.
Select Path	A	Analog value to be directly accessed.
Path X Pressed	D	Pulse to select the path displayed.
Select Download Path	A	Analog value to be directly accessed.
Download File Button	D	Pulse to download the selected file. Used within Option Path
Open File Button	D	Pulse to Open the selected file. Used within Option Path
Upload Delete Button	D	Pulse to upload the selected file. Used within Option Path
Option Path X Pressed	D	Pulse to access the Extra options for a selected file
Browse Line X Abort	D	Pulse to abort the current upload/download
Upload To X	D	Pulse to upload previously selected file to a drive.

OUTPUTS		
NAME	TYPE	DESCRIPTION
Browse Local Drives Subpage Fb	D	High while browsing the local drive list.
Browse Cloud Drives Subpage Fb	D	High while browsing the Cloud drive list.
Browse Files Subpage Fb	D	High while browsing files in a drive.
Get Downloads Available	D	High when Downloads are available.
Get Uploads Available	D	High when Uploads are available.
Browse List Drive Type	A	Analog value for icon of drive type currently being browsed.
Browsing Cloud Drive Index	A	Analog value for the icon of the Cloud drive currently being browsed.

Drive X Mounted	D	High if the drive is mounted and can be accessed.
Drive X Name	S	Serial value for the name of the Drive
Number Of Paths	A	Analog value for the total number of file items.
List Level Out	A	Analog value for current location of the scrollbar withing the list.
Browse List Header Text	S	Serial text of the Browsing folder structure.
Back Button Show	D	High if "Back Button" can be accessed.
Back Button Text	S	Serial text of the previous folder structure.
Path X Enabled	D	High if Path is enabled.
Path X Name	S	Serial text of path Name
Path X Type	A	Analog value for Path Type
Path X Status	A	Analog value for path status
Download File Button Show	D	High if download button should be shown
Open File Button Show	D	High if open file button should be shown.
Download Options Show	D	High if file has download options.
Upload Options Show	D	High if selected file has upload options.
Upload Status Show	D	High if there are Uploads available
Download Status Show	D	High if there are downloads available.
Options Path X Visible	D	High if the path has options available
Path X Failed	D	High if path failed
Upload to X Show	D	High if file can be uploaded to X drive.

5.1.3 Cynap_Cloud_Service_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Cloud Disconnect Dropbox	D	Pulse to disconnect Dropbox
Cloud Disconnect Google Drive	D	Pulse to disconnect GoogleDrive
Cloud Disconnect Box	D	Pulse to disconnect Box
Cloud BoxUser	S	Serial Text for Username
Cloud BoxPassword	S	Serial Text for Password

Cloud Box Cancel	D	Pulse to Cancel the Login and close the page.
Cloud Box Login	D	Pulse to Login. (Must have username and password)
Cloud Disconnect Jianguoyun	D	Pulse to disconnect Jianguoyun
Cloud JianguoyunUser	S	Serial Text for Username
Cloud JianguoyunPassword	S	Serial Text for Password
Cloud Jianguoyun Cancel	D	Pulse to Cancel the Login and close the page.
Cloud Jianguoyun Login	D	Pulse to Login. (Must have username and password)
Cloud Disconnect OneDrive	D	Pulse to disconnect OneDrive
Cloud Disconnect WebDAV	D	Pulse to disconnect WebDAV
Cloud WebDAVUser	S	Serial Text for Username
Cloud WebDAVPassword	S	Serial Text for Password
Cloud WebDAV Cancel	D	Pulse to Cancel the Login and close the page.
Cloud WebDAV Login	D	Pulse to Login. (Must have username and password)

OUTPUTS		
NAME	TYPE	DESCRIPTION
Cloud Show Source CloudFile	D	High if any cloud drive is active
Cloud Show Dropbox Enabled	D	High if Dropbox is enabled
Cloud DropboxStatus	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show GoogleDrive Enabled	D	High if Google Drive is enabled
Cloud GoogleDriveStatus	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show Box Enabled	D	High if Box is enabled
Cloud BoxStatus	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show Box Login	D	High if Login page should be shown
Cloud Show Jianguoyun Enabled	D	High if Jianguoyun is enabled
Cloud Jianguoyun Status	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show Jianguoyun Login	D	High if Login page should be shown
Cloud Show OneDrive Enabled	D	High if OneDrive is enabled
Cloud OneDriveStatus	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show WebDAV Enabled	D	High if WebDAV is enabled

Cloud WebDAV Status	A	Analog Value for status 0~ 4 (0=Disconnected, 1=Authenticating, 2=Connected, 3=Failed, 4=Synched)
Cloud Show WebDAV Login	D	High if Login page should be shown

5.1.4 Cynap_Freeze_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Freeze On	D	Pulse to turn the freeze on
Freeze Off	D	Pulse to turn the freeze off
Free Toggle	D	Pulse to toggle the freeze state

OUTPUTS		
NAME	TYPE	DESCRIPTION
Freeze Enabled Fb	D	High if subscribed
Freeze Disabled Fb	D	High if not subscribed
Freeze On Fb	D	High if freeze is active
Freeze Off Fb	D	High if freeze is not active

5.1.5 Cynap_Main_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module
Server IP	S	IP Address of the Cynap Unit
Password	S	Password for the RMS User
MAC Address	S	MAC Address to use WoL
Connection	D	Unsecure (0d), Secure (1d)

INPUTS		
NAME	TYPE	DESCRIPTION

Power On	D	Pulse to Power On
Power Off	D	Pulse to Power Off
Power Toggle	D	Pulse to toggle power state
Close All Windows	D	Pulse to Close all windows
Take Snapshot	D	Pulse to take a snapshot
Load User Settings	D	Pulse to Load User Settings from USB
Cancel User Settings	D	Pulse to cancel Load Question
Save User Settings	D	Pulse to save User Settings to USB
User Settings Poll Type	D	While High, it will poll only internal Settings, While Low, it will poll USB Settings
Office365 Use Local Account	D	Pulse to use Local Settings
Office365 Dont Use Local Account	D	Pulse to not use Local settings
Office365 Toggle Local Account	D	Pulse to toggle local settings use.
Office365 Skype Use local Account	D	Pulse to use Local Settings
Office365 Skype Dont Use local Account	D	Pulse to not use Local settings
Office365 Skype Use local Account Toggle	D	Pulse to toggle local settings use.
Show Splash Screen	D	Pulse to Show Splash Screen
PiP_On	D	Pulse to set the PiP function on
PiP_Off	D	Pulse to set the PiP function off
PiP_Toggle	D	Pulse to toggle the state of the PiP.
Send Command	S	Directly Send Commands to Cynap

OUTPUTS		
NAME	TYPE	DESCRIPTION
Link Established Fb	D	High if there is an established connection.
Link Status	A	Analog value of Link Status
Initializing	D	High while the module is attempting to establish a connection to the Cynap device.
Valid Login	D	High if there was a successful login
Box Name	S	Serial Text of Box Name
Power On Fb	D	High if Power is on
Power Off Fb	D	High if Power is Off
Show PIN Code	D	High if PIN Code should be shown
PIN Code	S	Serial text of PIN Code
Show PIN BYOD	D	High if BYOD PIN Code should be shown
BYOD PIN	S	Serial text of BYOD PIN Code
UserData Show Settings Fb	D	High if User Settings popup should be shown
UserData X Present	D	High if UserData is present for drive X

Office365 Show Local Account Setting	D	Drives a popup page when saving local settings for skype is available.
Office365 Use Local Account Fb	D	Indicates that the Office365 user settings that are present will be saved.
Office365 Dont Use Local Account Fb	D	Indicates that the Office365 user settings that are present will not be saved.
Office365 Skype Show Local Account Setting	D	Drives a popup page when saving local settings for skype is available.
Office365 Skype Use Local Account Fb	D	Indicates that the Office365 user settings that are present will be saved.
Office365 Skype Dont Use Local Account Fb	D	Indicates that the Office365 user settings that are present will not be saved.
Splash Screen Enabled	D	High if Splash Screen is enabled
PiP_Enabled	D	High if the PiP function is enabled
PiP_On_Fb	D	High if the PiP is active
PiP_Off_Fb	D	High if the PiP is not active

5.1.6 Cynap_Mirroring_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Mirroring Mode On	D	Pulse to turn the mirroring mode on
Mirroring Mode Off	D	Pulse to turn the mirroring mode off
Mirroring Mode Toggle	D	Pulse to toggle the mirroring mode state

OUTPUTS		
NAME	TYPE	DESCRIPTION
Mirroring Mode Button Show	D	High if mirroring button should be shown
Mirroring Mode On Fb	D	High if mirroring is active
Mirroring Mode Off Fb	D	High if mirroring is not active
Mirroring Mode	A	Analog Value from 0-6 for mirroring value

5.1.7 Cynap_Presentation_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Presentation Mode Open	D	Pulse to switch to Open Mode
Presentation Mode Protected	D	Pulse to switch to Protected Mode
Presentation Mode Toggle	D	Pulse to toggle Presentation Mode
Presentation Snapshots Toggle	D	Pulse to toggle Snapshots being saved
Presentation Recordings Toggle	D	Pulse to toggle Recordings being saved
Presentation New	D	Pulse to start a New presentation
Presentation End	D	Pulse to start an End presentation, and go to standby
Presentation Screensaver	D	Pulse to start a New presentation and go to screen saver

OUTPUTS		
NAME	TYPE	DESCRIPTION
Presentation Enabled Fb	D	High if module is subscribed
Presentation Disabled Fb	D	High if module is not subscribed
Presentation Mode Open Fb	D	High if device is in Open mode
Presentation Mode Protected Fb	D	High if device is in Protected mode
Presentation Snapshots Fb	D	High if snapshots will be deleted, low if they will be saved
Presentation Recordings Fb	D	High if recordings will be deleted, low if they will be saved
Presentation Screensaver Show	D	High if screensaver button should be shown
Screensaver Active	D	High if screensaver is currently active
Screensaver Text	S	Screensaver text.
Standby_Button_Text	S	Text that reflects the chosen state of the power down button.

5.1.8 Cynap_Recording_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Recording On	D	Pulse to start Recording
Recording Off	D	Pulse to stop Recording
Recording Pause	D	Pulse to pause Recording

OUTPUTS		
NAME	TYPE	DESCRIPTION
Presentation Enabled Fb	D	High if module is subscribed
Presentation Disabled Fb	D	High if module is not subscribed
Recording On Fb	D	High if device is currently recording
Recording Off Fb	D	High if device is currently not recording
Recording Pause Fb	D	High if device is currently paused

5.1.9 Cynap_Remote_Control_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Pulse_X	D	Pulse to mimic a Press and Release on the handheld remote.
Press_X	D	Pulse to mimic a Press without release on the handheld remote. This is used for custom "Long Presses".
Release_X	D	Pulse to mimic a Release on the handheld remote. This is used for custom "Long Presses".

5.1.10 Cynap_Sources_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Source X	D	Pulse to select a source, may open a window if available.
Source Stream List	D	Pulse to open the Stream List popup
Source Stream List Close	D	Pulse to close the StreamList popup
StreamList X	D	Pulse to select X item in the StreamList
Close WebRC Extra	D	Pulse to close the WebRTC Select Popup
Source WebRTC stream X	D	Pulse to select a WebRTC from the setups

OUTPUTS		
NAME	TYPE	DESCRIPTION
InputX Visible	D	High if input X should be visible
InputX Type	A	Analog value for icon of input X
Inputx Name	S	Serial Text of Input X Name
Source Mirror Waiting	D	High if mirror waiting subpage should be shown
Source WebRTC Enabled	D	High if WebRTC is enabled
Source StreamX Visible	D	High is Streamx should be shown
Source StreamX Type	A	Analog value for icon of Stream X
Source StreamX Name	S	Serial Text of Stream X Name
Source WebcamX Visible	D	High is Webcamx should be shown
Source WebCamX Type	A	Analog value for icon of WebCam X
Source WebCamX Name	S	Serial Text of WebCam X Name
Source Office365 Enabled	D	High is Office365 should be shown
Source Office365 Skype Enabled	D	High is Skype should be shown
SkypeStatus	A	Analog value of skype status
Source Stream List Enabled	D	High if StreamList is available
Source Stream List Popup	D	High if StreamList is being shown
StreamList X Enabled	D	High if item X is enabled
SreamList X Type	A	Analog value for Stream Icon

StreamList X Name	S	String value for Name of Stream
Source WebRTC Extra	D	High if popup page for WebRTC Sources should be shown
Source WebRTC Extra Pulse	D	Pulsed output to clear popup and extra pages
Source WebRTC Stream X Enabled	D	High if Source should be shown
Source WebRTC Stream X Name	S	Serial Name of WebRTC Source

5.1.11 Cynap_Streaming_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Streaming On	D	Pulse to turn the streaming on
Streaming Off	D	Pulse to turn the streaming off
Streaming Toggle	D	Pulse to toggle the streaming state
QR Code On	D	Pulse to turn the QR Code on
QR Code Off	D	Pulse to turn the QR Code off
QR Code Toggle	D	Pulse to toggle the QR Code state
App Record On	D	Pulse to turn the App Record on
App Record Off	D	Pulse to turn the App Record off
App Record Toggle	D	Pulse to toggle the App Record state
Webcast On	D	Pulse to turn the Webcast on
Webcast Off	D	Pulse to turn the Webcast off
Webcast Toggle	D	Pulse to toggle the Webcast state

OUTPUTS		
NAME	TYPE	DESCRIPTION
Streaming Enabled Fb	D	High is Streaming is enabled
Streaming Disabled Fb	D	High if streaming is disabled
Streaming On Fb	D	High if streaming is on
Streaming Off Fb	D	High if streaming is off
RTP Streaming Mode	A	Analog value for RTP Mode

RTSP Streaming Mode	A	Analog value for RTSP Mode
QR Code On Fb	D	High if QR Code is on
QR Code Off Fb	D	High if QR Code is off
App Record On Fb	D	High is App Record is on
App Record Off Fb	D	High if App Record is off
Webcast On Fb	D	High if Webcast is on
Webcast Off Fb	D	High if Webcast is off
Webcast State	A	Analog value of webcast state 0x00 = Disabled 0x01 = Ready 0x02 = Active 0x03 = Error
Webcast Mode	A	Analog value of webcast mode 0x00 = Off 0x01 = Custom 0x02 = Ustream 0x03 = Wowza 0x04 = YouTube 0x05 = Custom 2nd Stream
Webcast Ustream State	A	Analog value of Ustream state 0x00 = Not logged in 0x01 = Login successful 0x02 = Login in progress 0x03 = Login failed
Webcast Youtube State	A	Analog value of YouTube state 0x00 = Disconnected 0x01 = Authenticating 0x02 = Authenticated 0x03 = Token expired 0x04 = Failed

5.1.12 Cynap_vMeeting_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
Vmeeting Checkin	D	Pulse to check in for vMeeting (Needs PIN)
Vmeeting PIN	S	PIN for vMeeting
Vmeeting Resend PIN	D	Pulse to resend PIN to email account
Vmeeting AdHoc Start	D	Start AdHoc meeting (needs adHoc Time)
Vmeeting AdHoc time	A	Analog value in minutes of time for AdHoc meeting.

Vmeeting Extend Deadline	D	Pulse to extend deadline (needs AdHoc Time)
Vmeeting Hide deadline	D	Pulse to hide warning for deadline.

OUTPUTS		
NAME	TYPE	DESCRIPTION
Vmeeting Display Calander	D	High if Calander should be shown
Vmeeting Checkin Wrong PIN	D	Pulses high if PIN is not correct
Vmeeting Checking Approved	D	Pulses high if PIN was approved
Vmeeting AdHoc time wrong	D	Pulses High if Time is not accepted
Vmeeting Adhoc Approved	D	Pulses high if meeting time was approved
Vmeeting Deadline	A	Time until deadline of next meeting
Vmeeting Time until next meeting	A	Time until next meeting Starts
Vmeeting Time until end of meeting	A	Time left in meeting
Vmeeting Display Now	D	High if "NOW" details should be shown
Vmeeting Now *	S	Serial text for Organizer/Subject Start and End times
Vmeeting Display Next	D	High if "NEXT" details should be shown
Vmeeting Next Show X	D	High if details should be shown for item X
Vmeeting Next *X	S	Serial text for Organizer/Subject Start and End times

5.1.13 Cynap_Windows_Client

PARAMETERS		
NAME	TYPE	DESCRIPTION
ID	D	Used to group modules to the Main module

INPUTS		
NAME	TYPE	DESCRIPTION
Subscribe	D	Pulse to activate the module. This will allow for feedback to be provided from the main module.
Unsubscribe	D	Pulse to de-activate the module. This will stop the feedback being provided from the main module.
ACTIVE WINDOW		
Close	D	Pulse to Close the active window
Mode Fullscreen	D	Pulse to switch active window to full screen mode
Mode Normal	D	Pulse to switch active window to normal mode
Mode toggle	D	Pulse to toggle active window between full screen/normal mode
Volume Button	D	Pulse to open active window volume page
Volume In	A	Analog value for active window volume level

Mute On	D	Pulse to switch active window mute on
Mute Off	D	Pulse to switch active window mute off
Mute toggle	D	Pulse to toggle active window mute on/off
Dualscreen Mode On	D	Pulse to switch active window dual screen mode on
Dualscreen Mode Off	D	Pulse to switch active window dual screen mode off
Dualscreen Mode Toggle	D	Pulse to toggle active window dual screen mode on/off
WINDOW X (1~4)		
Select	D	Pulse to select window to be active window
Close	D	Pulse to Close the window
Mode Fullscreen	D	Pulse to switch window to full screen mode
Mode Normal	D	Pulse to switch window to normal mode
Mode toggle	D	Pulse to toggle window between full screen/normal mode
Volume In	A	Analog value for window volume level
Mute On	D	Pulse to switch window mute on
Mute Off	D	Pulse to switch window mute off
Mute toggle	D	Pulse to toggle window mute on/off
Dualscreen Mode On	D	Pulse to switch window dual screen mode on
Dualscreen Mode Off	D	Pulse to switch window dual screen mode off
Dualscreen Mode Toggle	D	Pulse to toggle window dual screen mode on/off
EDIT BAR		
Home	D	Browser
Bookmarks	D	Browser
Power	D	Visualizer
Light	D	Visualizer
Zoom Out	D	Visualizer, Browser, Doc, PDF, Calc, Pres, Office365
Zoom In	D	Visualizer, Browser, Doc, PDF, Calc, Pres, Office365
Back	D	Browser
Forward	D	Browser
FullPage	D	Doc, PDF, Calc
FullWidth	D	Doc, PDF, Calc
FullHeight	D	PDF
Arrow Down	D	Browser, Doc, PDF, Calc, Pres
Arrow Up	D	Browser, Doc, PDF, Calc, Pres
Arrow Left	D	Browser, Doc, PDF, Calc, Pres
Arrow Right	D	Browser, Doc, PDF, Calc, Pres
Previous	D	Image, Doc, Calc, Pres, Office365
Rewind	D	Video, Audio

Step Back	D	Image, Doc, Calc, Pres
Stop	D	Video, Audio
Play	D	Video, Audio
Pause	D	Video, Audio
Step Forward	D	Image, Doc, Calc, Pres
Fast Forward	D	Video, Audio
Next	D	Doc, Calc, Pres, Image, Office365
Reload	D	Browser, Office365
WWW	D	Browser
Focus Near	D	Visualizer
Focus Far	D	Visualizer
Auto Focus	D	Visualizer
Freeze	D	Visualizer
Preset Save	D	Visualizer
Preset Recall	D	Visualizer
Capture	D	Visualizer
Loop	D	Video, Audio
Keyboard Close	D	Browser
Browser URL Enter	S	Serial Text for URL entry
KeyboardText	S	Serial Text for Keyboard
BOOKMARKS		
Number of Bookmarks	A	Analog Value for total number of bookmarks
Bookmark Scroll Level In	A	Analog value to scroll through bookmarks
Bookmark X Pressed	D	Pulse to select and open bookmark
Bookmark X Delete	D	Pulse to delete bookmark from list
Bookmark Add	D	Pulse to add bookmark to list
Add Bookmark URL	S	Serial Text for Bookmark URL
Add Bookmark Name	S	Serial Text for Bookmark Name

OUTPUTS

NAME	TYPE	DESCRIPTION
New Window is Available	D	High if there is less than 4 windows open
Number of Active Windows	A	Analog value for current number of windows
ACTIVE WINDOW		
Active Window	A	Analog value for currently active window (1~4)
Fullscreen Mode Fb	D	High if active window Fullscreen mode is active
Normal Mode Fb	D	High if active window normal mode is active

Volume Subpage	D	High if Volume subpage should be shown
Volume Button Show	D	High if Volume button is available
Mute Button Show	D	High if Mute button is available
Volume Out	A	Analog value of volume bar
Mute On Fb	D	High if active window mute is on
Mute Off Fb	D	High if active window mute is off
WINDOW X (1~4)		
X Visible	D	High if window has a source
X Source Text	S	Serial text of window type
X Source Type	A	Analog value of window type
X Selected Fb	D	High if window is currently selected (active window)
Fullscreen Mode Fb	D	High if window Fullscreen mode is active
Normal Mode Fb	D	High if window normal mode is active
Volume Out	A	Analog value of volume bar
Mute On Fb	D	High if window mute is on
Mute Off Fb	D	High if window mute is off
EDIT BAR		
EditBar Active	D	High if Edit Bar should be shown
Home Show	D	High if Home should be shown
Bookmarks Show	D	High if Bookmarks should be shown
Bookmarks Active Fb	D	High if bookmarks has data
Power Show	D	High if Loop Power be shown
Light Show	D	High if Light should be shown
Zoom Out Show	D	High if Zoom Out should be shown
Zoom In Show	D	High if Zoom In should be shown
Back Show	D	High if Back should be shown
Forward Show	D	High if Forward should be shown
FullPage Show	D	High if FullPage should be shown
FullWidth Show	D	High if FullWidth should be shown
FullHeight Show	D	High if FullHeight should be shown
Arrow Down Show	D	High if ArrowDown should be shown
Arrow Up Show	D	High if ArrowUp should be shown
Arrow Left Show	D	High if ArrowLeft should be shown
Arrow Right Show	D	High if ArrowRight should be shown
Previous Show	D	High if Previous should be shown
Rewind Show	D	High if Rewind should be shown
Step Back Show	D	High if StepBack should be shown

Stop Show	D	High if Stop should be shown
Play Show	D	High if Play should be shown
Pause Show	D	High if Pause should be shown
Step Forward Show	D	High if StepForward should be shown
Fast Forward Show	D	High if FastForward should be shown
Next Show	D	High if Next should be shown
Reload Show	D	High if Reload should be shown
www Show	D	High if www should be shown
Focus Near Show	D	High if Focus Near should be shown
Focus Far Show	D	High if Focus Far should be shown
Auto Focus Show	D	High if Auto Focus should be shown
Freeze Show	D	High if Freeze should be shown
Preset Recall Show	D	High if Preset Recall should be shown
Preset Save Show	D	High if Preset Save should be shown
Capture Show	D	High if Capture should be shown
Loop Show	D	High if Loop should be shown
Loop Active	D	High if loop is currently active for active window
Browser Keyboard Show	D	High if keyboard should be shown
Window Data Show	D	High if Extra data should be shown
Window Data	S	Serial Text for Exta window data
BOOKMARKS		
Number of Bookmarks	A	Analog value for total number of bookmarks
Bookmark Scrool Level Out	A	Analog value for Bookmark scroll level
Bookmark X Name	S	Serial Text for Bookmark X Name
Bookmark X URL	S	Serial Text for Bookmark X URL
Update Bookmark Name	S	Serial Text for Bookmark Name
Update Bookmark URL	S	Serial Text for Bookmark URL