



VUDU

Module Application Guide






Description

This module will control a VUDU set-top box using an Ethernet enabled Crestron processor. The revolutionary VUDU (www.vudu.com) box and service deliver instant access to thousands of movies directly to your television via a high-speed internet connection. Rent or own the content of your choice in SD or HD from a selection of over 5000 releases, with more being added each day.

The Ethernet control provided by our VUDU module emulates the user experience available from box's RF remote control. Since there's not an infrared option for the box, this module is an excellent solution for Crestron integration of a VUDU box located in a centralized equipment rack. An Ethernet equipped processor is required.

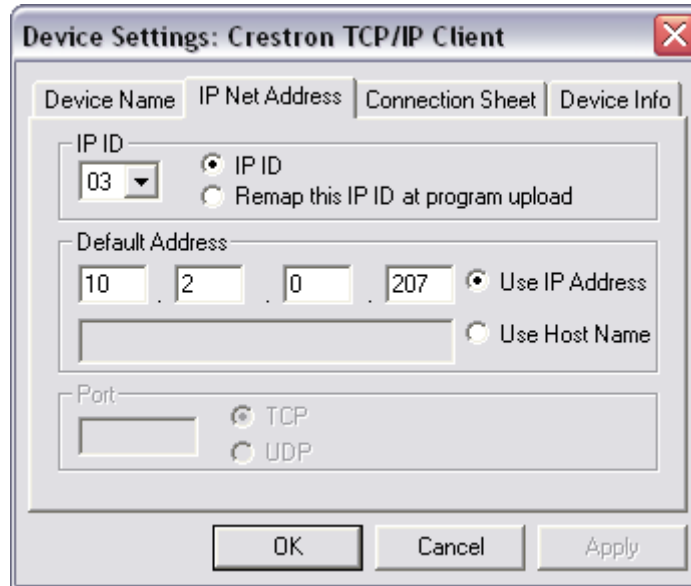
Supported Processors

This module will run on any Crestron processor equipped with a C2ENET-1 or 2 card as well as processors with built in Ethernet ports.

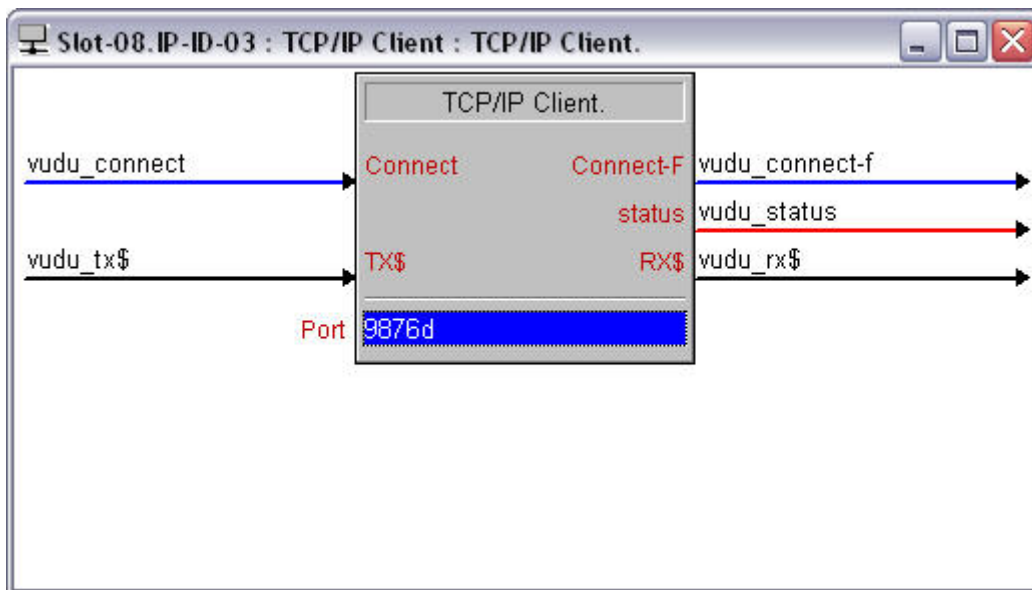
Compatibility			Processor Requirements	
 2-Series Compatible	 NOT CNMSX Compatible	 NOT System Builder Compatible	 Ethernet REQUIRED	 Compact Flash NOT NEEDED

Ethernet Configuration Information

Under the Configure side of SIMPL Windows insert a TCP/IP client from the device library into your C2ENET-x card. Configure the client as shown below, making sure you use the fixed IP address of your VUDU as the default address. The IP ID will vary depending on where it is inserted into the program, or the IP ID numbering scheme of the system.



Under the Program view define the TCP/IP client symbol details as shown below, making sure the port is set to 9876d.



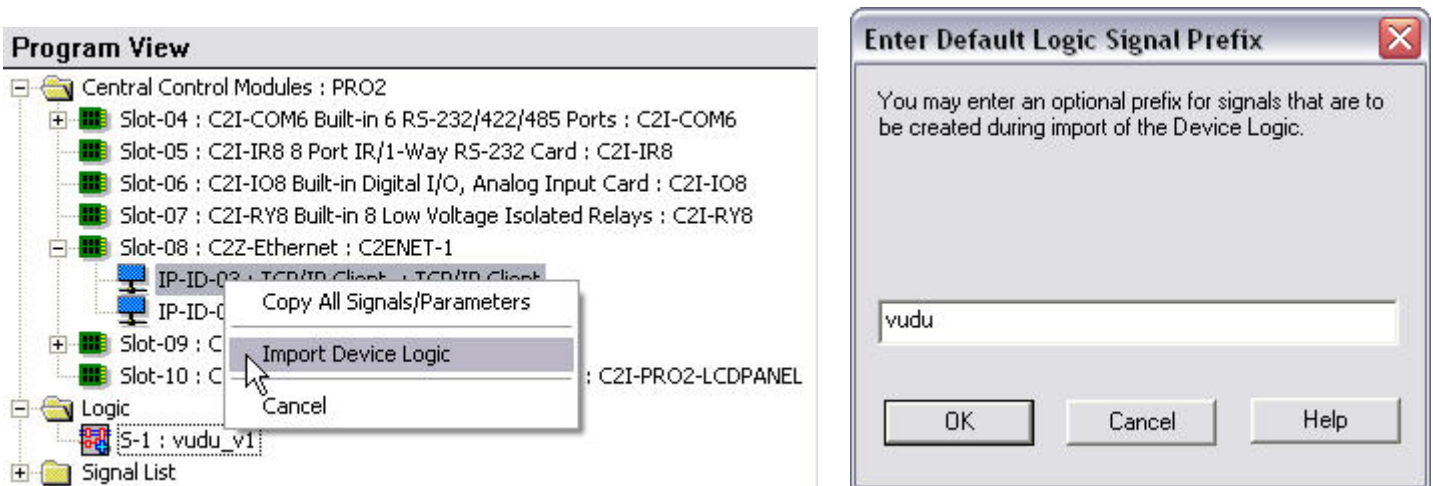
Note: The VUDU will only accept one remote connection at a time. Please be sure that you do not have more than one TCP/IP client attempting to connect to the VUDU.

Module Application

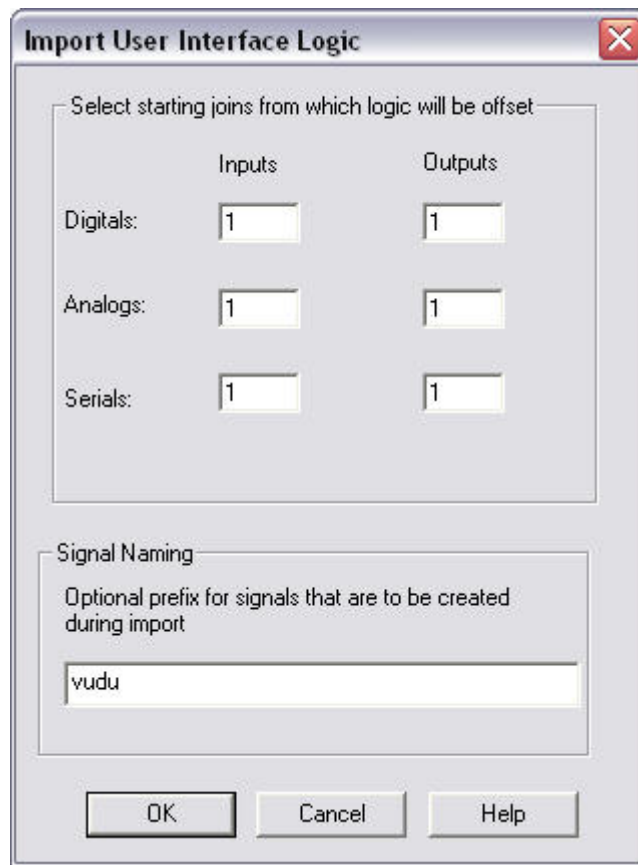
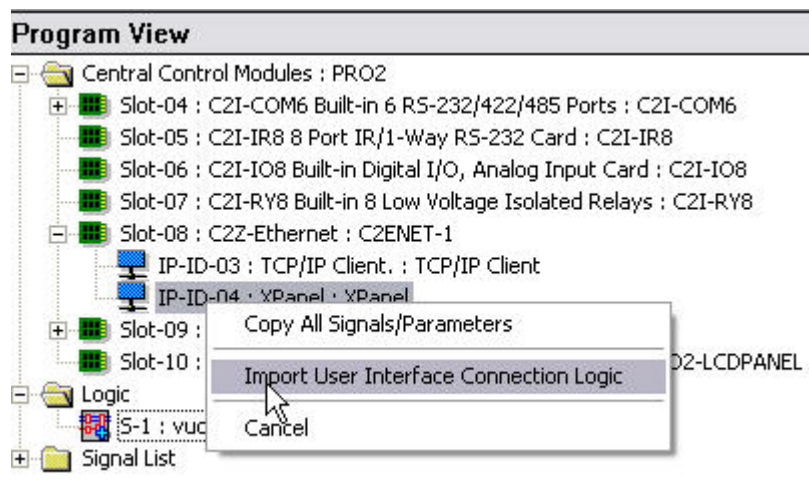
This module is based on the current protocol for VUDU's Net Remote at the time of authoring the module. The commands available currently are one-way in nature. Currently there is no feedback for power or transport state as well as no metadata available.

The VUDU must be configured to utilize the "Network Remote Capabilities." To enable this feature, from the VUDU home menu, select "Info & Settings." Scroll down to "Advanced Setting" and press select. Scroll down to "Network Remote" and press select. Scroll down to "Enabled" and press select.

This module is built utilizing virtual connection logic that will allow you to right-click and drag the module symbol to a TCP/IP client symbol, select "Import Device Logic" to auto-connect the two symbols. You will be prompted to add an optional signal prefix to the auto-connected signals. SIMPL will add an underscore character at the end of the prefix you enter automatically, so a space or underscore does not need to be entered in this dialog. Due to Crestron's implementation of this feature, the programmer will still need to manually enter port number 9876d on the TCP/IP client symbol.



Also utilized is connection logic enabling you to right-click and drag the VUDU module symbol to a touchpanel and have the two objects auto-connected. Right-click and drag the VUDU module symbol to a touchpanel and select "Import User Interface Logic" from the drop-down list. You will be prompted for starting join offsets and a signal prefix. You may change this offset to suit the needs of your project.



IMPORTANT NOTE REGARDING THE VUDU RF REMOTE

If you are using a Crestron ML-600 and possibly other 418 MHz devices certain functions can duplicate those of the VUDU RF remote. Specifically, the volume up and down on the Crestron ML-600 has been demonstrated to mimic the scroll up and down of the VUDU RF remote.

Signal and Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

DIGITAL INPUTS

establish_tcp_connection	Pulse to establish a TCP connection with VUDU
close_tcp_connection	Pulse to close the TCP connection with VUDU
connect-f.....	Route from the "Connect-F" output of the TCP/IP client symbol.
[power_on].....	Pulse to power on VUDU
[power_off]	Pulse to power off the VUDU
[menu_home]	Pulse to display the main or home menu
[scroll_up].....	Pulse to scroll the selection up one unit. Press and hold to scroll repeatedly up.
[scroll_down].....	Pulse to scroll the selection down one unit. Press and hold to scroll repeatedly down.
[page_up]	Pulse to scroll the selection up six units
[page_down]	Pulse to scroll the selection down six units
[select]	Pulse to select the currently highlighted menu item
[back].....	Pulse to browse back one menu level
[more]	This feature, as of this module version, has not been implemented on the current VUDU firmware, but was included in the Net Remote protocol for future use.
[play_pause_toggle]	Pulse to toggle playback between play and pause
[play]	Pulse to play the current selection
[pause]	Pulse to pause the current selection
[fast_forward]	Pulse to fast forward the currently playing selection. Subsequent presses will increase the speed of fast forward.
[fast_backward]	Pulse to fast backward the currently playing selection. Subsequent presses will increase the speed of fast backward.
[skip_forward]	Pulse to skip forward to the next section of the currently playing selection.
[skip_backward]	Pulse to skip backward to the previous section of the currently playing selection.
[most_watched]	Pulse to jump to the "Most Watched" menu selection
[new_on_vudu].....	Pulse to jump to the "New on VUDU" menu selection
[new_to_rent].....	Pulse to jump to the "New to Rent" menu selection
[new_to_own].....	Pulse to jump to the "New to Own" menu selection
[all_new_titles]	Pulse to jump to the "All New Titles" menu selection
[coming_soon]	Pulse to jump to the "Coming Soon" menu selection
[explore_catalog]	Pulse to jump to the "Explore Catalog" menu selection
[explore_by_genre]	Pulse to jump to the "Explore by Genre" menu selection
[explore_hd].....	Pulse to jump to the "Explore HD" menu selection
[explore_tv_shows]	Pulse to jump to the "Explore TV Shows" menu selection
[search_by_actor_or_director]	Pulse to jump to the "Search by Actor or Director" menu selection
[search_by_title]	Pulse to jump to the "Search by Title" menu selection
[my_vudu]	Pulse to jump to the "My VUDU" menu selection

[my_rentals]	Pulse to jump to the "My Rentals" menu selection
[my_movies]	Pulse to jump to the "My Movies" menu selection
[my_tv_shows]	Pulse to jump to the "My TV Shows" menu selection
[my_wish_list]	Pulse to jump to the "My Wish List" menu selection
[archive_or_delete]	Pulse to jump to the "Archive or Delete" menu selection
[info_and_settings]	Pulse to jump to the "Info and Settings" menu selection
[key_space]	Pulse to enter a space character while on a text entry menu screen
[key_backspace]	Pulse to backspace a character while on a text entry menu screen
[key_return]	This feature, as of this module version, has not been implemented on the current VUDU firmware, but was included in the Net Remote protocol for future use.
[key_escape]	This feature, as of this module version, has not been implemented on the current VUDU firmware, but was included in the Net Remote protocol for future use.
[key_0] through [key_z]	Pulse to enter alpha-numeric characters while on a text entry menu screen

ANALOG INPUTS

tcp_connection_status..... Route from the status output of the TCP/IP client symbol

SERIAL INPUTS

vudu_rx\$..... Route from the RX\$ output of the TCP/IP client symbol

DIGITAL OUTPUTS

This module does not utilize any digital outputs.

ANALOG OUTPUTS

This module does not utilize any analog outputs.

SERIAL OUTPUTS

vudu_tx\$..... Route to the TX\$ input of the TCP/IP client symbol

PARAMETERS

vudu_unit_id..... Enter the unit ID of the VUDU to be controlled by this module. The default is "id-1".

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct application of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address supplied when the module was purchased. Please be sure to keep this email address up to date as this is the only means for you to receive notification of an update. In addition, updates may be obtained by logging in using your username and password at:

<http://www.thecontrolworks.com/customerlogin.aspx>

Distribution Package Contents

The distribution package for this module should include:

vudu_v2.umc.....	Crestron User Module
vudu_command_processor_v1.usp.....	SIMPL+ file used within the user module
vudu_command_processor_v1.ush.....	SIMPL+ header file
vudu_xpanel_v2.vtp.....	Demo touchpanel for xpanel
vudu_demo_v2.smw.....	Demo program for PRO2 processor
vudu_v2_help.pdf.....	Help file for module

Revision History

V1 - gary@controlworks.com - 2008.02.11

-Initial release

v2 -- gary@controlworks.com – 2008.04.16

-changes based on new vudu firmware v1.4.0(rev 22450)

-added new transport functions; fast-forward, fast-backward, skip-forward, skip-backward, keyboard clear

-revamped menu shortcut items changed on the vudu interface

Development Environment

This version of this module was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Crestron Hardware

Crestron PRO2 Processor

v 3.155.1240

Crestron Software

Crestron SIMPL Windows

Version 2.10.24

Crestron Vision Tools Pro-e

Version 3.7.2.1

Crestron Database

Version 19.02.005

Crestron Symbol Library

Version 532

Crestron Device Library

Version 532

VUDU Hardware

Software Version 1.4.0 Rev 22450

VUDU Protocol

Version 0.2

ControlWorks Consulting, LLC Software License Agreement

Definitions:

ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

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Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software

You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless

ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

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