

Partner: Canon
Model: VC-C4
Device Type: Camera



GENERAL INFORMATION

SIMPLWINDOWS NAME:	Canon VC-C4 Full Control
CATEGORY:	Camera
VERSION:	2.0
SUMMARY:	Controls pan/tilt/foc/zoom/exposure/25 presets. This module allows camera control using joysticks as well as standard buttons. Either the Crestron CPC-2000 or C2N-CAMIDJ Joystick Controller can be used. Note that the C2N-CAMIDJ is not supported on systems prior to the 2-Series processors.
GENERAL NOTES:	<p>The Canon VC-C4 camera must be set up properly for communications with the Crestron system. This is done by using the Canon IR remote to enter the on-screen menus. Go to the Set Menu. Under the RS232 menu, make sure that the settings match the settings of the Crestron com port. It was tested at Crestron using 9600,N,8,1. Under Remote Controller ID, make sure that the ID number matches the ADDRESS(0-9) parameter on the module. Under the Command menu, make sure that VC-C4 mode is selected.</p> <p>After applying AC power to the camera, you will need to put it into Host mode. This is done by pulsing the RS232-ON input on this module. If it is desired to return to Local mode, you can pulse the RS232-OFF input. Note that while Host mode is active, the Canon IR remote will no longer directly control the camera. However, it will pass commands to the Crestron system, which can be set up to control the camera. If it is desired to have the IR remote functions active while Host mode is on, put a 1 on the ENABLE-IR-REMOTE_(0_OR_1) input. If the IR remote should be disabled, put a 0 on this input. If enabled, all IR remote functions should work except for Power, On-Screen, Fn, ID, Menu, Cancel, and Bright+/-.</p> <p>After putting the camera into host mode, you should initialize it using either the INITIALIZE-TO-HOME (which will send the camera to the home position) or the INITIALIZE-TO-ORIGIN (which will return the camera to it's original position) input. If this is not done, the first time that a camera movement function is activated, the camera will automatically initialize itself.</p> <p>Note that whenever a preset is selected, auto-focus mode will be activated. Also note that whenever focus near or far is activated, auto-focus will be deactivated.</p> <p>This module allows you to specify the address of the camera. It should be set to match the address as set in the Camera's on-screen menu. This module was only tested with a single camera attached to the Crestron system. No testing was performed of multiple cascaded cameras connected to a single Crestron port.</p> <p>This module applies the same auto-speed function as the Canon IR remote uses. So as you hold down a pan, tilt, or zoom button, the speed will increase. Pan and Tilt have three speeds. Zoom has 2 speeds. You can select the speeds you want to use using the parameter fields in module. For tilt, the speeds must be entered as a three digit hex number between 008 and 26E with no suffix. Values tested at Crestron were 018, 080, and 26E for slow, medium and fast respectively. For pan, the speeds must be</p>

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entered as a three digit hex number between 008 and 320 with no suffix. Values tested at Crestron were 018, 080, and 320 for slow, medium and fast respectively. For zoom, the speeds must be entered as a single digit number between 0 and 7 with no suffix. Values tested at Crestron were 1 and 7 for slow and fast respectively. Note that you could disable this auto-speed function entirely by entering the same value for slow medium and fast speeds.

This module provides access to 25 presets stored in the Crestron system. You cannot select a new preset until the camera has finished going to the previous preset. While the camera is going to a preset, the PRESET-BUSY output will be high. Storing a preset is a three step process:

1. Move the camera to the desired position
2. Pulse the SAVE input - SAVE-FB will go high indicating store mode is active.
3. Pulse the preset you would like to store the position into.

This module provides access to the exposure settings of the camera. Note that certain settings are only available when the camera is in certain modes. Specifically, AE-BRIGHT-UP/DOWN and BACKLIGHT-COMPENSATION ON/OFF are only available when the camera is in Auto-Exposure Mode. AGC, SHUTTER, and IRIS adjustments are only accessible when the camera is in Manual-Exposure Mode. WHITE-BALANCE adjustments are only valid when the camera is in Manual White Balance Mode.

This module also provides inputs for joystick controls as would be provided by Crestron's CPC-2000 Joystick Controller. Connect the analog outputs of the joystick controller to the appropriate -JOYSTICK and -SPEED inputs of this module. Note that there is no input for focus speed, since this cannot be adjusted on the camera. Also note that the camera will prevent both focus and zoom from being adjusted simultaneously. It will allow only one of Focus or zoom to be adjusted at one time. Pan, tilt and either focus or zoom can be adjusted simultaneously. If joystick controls are to be used, it is not recommended to use an ST-COM for control of the camera.

There are two sets of joystick inputs that can be used. The signals prefaced with CPC-2000 are designed to be connected to the corresponding signals on a Crestron CPC-2000A Joystick Controller. The signals prefaced with C2N-CAMIDJ are designed to be connected to the corresponding signals on a Crestron C2N-CAMIDJ Joystick Controller. Note that the camera will prevent both focus and zoom from being adjusted simultaneously.

Unused inputs can have a "0" assigned to them. Unused outputs should have unique commented out signal names assigned to them.

Speeds are set on the CPC-2000 by using the Speed knobs. On the C2N-CAMIDJ, two sets of speeds can be saved - High and Low. Speeds are set on the C2N-CAMIDJ as follows:

1. Select high or low speed by pressing the top (high) or bottom (low) button on the top of the joystick handle. The corresponding High or Low LED will illuminate.
2. Press the function that you want to set the speed for (Zoom, Pan, Tilt). The current speed will be displayed on the 2-digit display on a scale of 00- 99.
3. Rotate the wheel on the side of the C2N-CAMIDJ to the desired speed. The speed will be automatically saved.
4. Continue selecting and setting speeds until High and Low speeds have been set for Pan, Tilt, and Zoom. Focus and Iris speeds cannot be set.

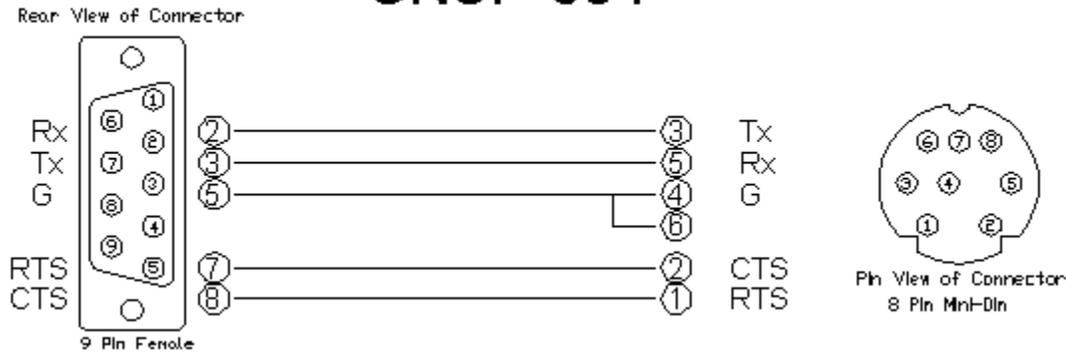
The normal use of the side wheel on the C2N-CAMI-DJ is for Focus Adjustments. When FC is displayed, the wheel will control focus. When a number is displayed, a

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	<p>speed is being adjusted. The wheel can also be used to adjust the Iris. When the camera is put into Manual Exposure mode, AP will be displayed, and the wheel will control the Iris. After 5 seconds of inactivity, the wheel will default back to Focus mode.</p> <p>Note that all digital inputs to this module should be momentary, (as if coming from a button on a touch panel), or 0, except where previously noted.</p>
CRESTRON HARDWARE REQUIRED:	CNMSX, C2COM, ST-COM
SETUP OF CRESTRON HARDWARE:	<p>RS232</p> <p>Baud: 9600</p> <p>Parity: None</p> <p>Data Bits: 8</p> <p>Stop Bits: 1</p>
VENDOR FIRMWARE:	None
VENDOR SETUP:	<p>VENDOR SETUP: Using on screen menus, must set:</p> <ol style="list-style-type: none"> 1. RS232 baud rate/parity 2. Camera ID 3. VC-C4 command mode
CABLE DIAGRAM:	CNSP-504

CNSP-504



CONTROL:

TILT-UP/DOWN	D	Press and hold to activate tilt
PAN-LEFT/RIGHT	D	Press and hold to activate pan
ZOOM-IN/OUT	D	Press and hold to activate zoom

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FOCUS-NEAR/FAR	D	Press and hold to activate focus. Will turn off auto-focus automatically
AUTOFOCUS-ON/OFF/TOG	D	Enable/Disable auto-focus mode
PRESET-*	D	If pressed while Save Mode active - will recall a preset. If pressed while Save Mode active - will store a preset
SAVE	D	Enable/Disable Save Mode
HOME	D	Send the camera to the Home position
RS232-ON/OFF	D	Activate/Deactivate Host mode. Camera must be placed in host mode before any other commands will function.
POWER-ON/OFF	D	Pulse to power the camera on or off
INITIALIZE-*	D	Pulse to initialize the camera to either it's home position, or it's original position
ENABLE-IR-REMOTE	D	Place a 1 or 0 on this input to either enable or disable most of the functionality of the Canon IR remote, while Host mode is active
EXPOSURE-MANUAL/AUTO	D	Pulse to deactivate/activate auto-exposure mode
BACK-COMP-ON/OFF	D	Pulse to activate/deactivate backlight compensation
AE-BRIGHT-UP/DOWN	D	Press and hold to ramp auto-exposure brightness up/down. Valid only in auto-exposure mode
AGC-UP/DOWN	D	Press and hold to ramp AGC up/down. Valid only in manual exposure mode
SHUTTER-FASTER/SLOWER	D	Press and hold to ramp relative shutter up/down. Valid only in manual exposure mode
IRIS-OPEN/CLOSE	D	Press and hold to open/close the iris. Valid only in manual exposure mode.
AUTO-WHITE-NORMAL	D	Pulse to activate auto white balance mode
AUTO-WHITE-LOCK	D	Pulse to lock the white balance to it's current level. Can only be activated from auto white balance mode
AUTO-WHITE-MANUAL	D	Pulse to activate manual white balance mode. Can only be activated from auto white balance mode
AUTO-WHITE-UP/DOWN	D	Press and hold to adjust the white balance. Only valid in manual white balance mode

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CPC-2000_*_JOYSTICK	A	Joystick controls to be routed from a Crestron CPC-2000 Joystick Controller
CPC-2000_*_SPEED	A	Joystick Speed Knob controls to be routed from a Crestron CPC-2000 Joystick Controller
C2N-CAMIDJ_Iris_Auto_Button	D	Digital Signal connected to the IrisAutoBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Iris_Manual_Button	D	Digital Signal connected to the IrisManualBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Focus_Button	D	Digital Signal connected to the FocusBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Zoom_Button	D	Digital Signal connected to the ZoomBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Pan_Button	D	Digital Signal connected to the PanBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Tilt_Button	D	Digital Signal connected to the TiltBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Speed_Fast	D	Digital Signal connected to the JoystickTopBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Speed_Slow	D	Digital Signal connected to the JoystickBtmBtn output of the C2N-CAMIDJ
C2N-CAMIDJ_Wheel_*	D	Digital Signals connected to the Wheel* outputs of the C2N-CAMIDJ
C2N-CAMIDJ_Pan	A	Analog signal connected to the Pan output of the C2N-CAMIDJ
C2N-CAMIDJ_Tilt	A	Analog signal connected to the Tilt output of the C2N-CAMIDJ
C2N-CAMIDJ_Zoom	A	Analog signal connected to the Zoom output of the C2N-CAMIDJ
C2N-CAMIDJ_Speed_Adjust	A	Analog signal connected to the SpeedAdjust output of the C2N-CAMIDJ
CANON-RX\$	S	Serial signal to be routed to a 2-way RS232 port
ADDRESS(0-9)	P	Address of the camera (as set in the camera's on-screen menu). Should be a number from 0-9 with no suffix
TILT-*-SPEED-HEX	P	Fields specifying the slow medium and fast speeds for tilt. Should be a three digit hex number from 008-26E with no suffix.
PAN-*-SPEED-HEX	P	Fields specifying the slow medium and fast speeds for pan. Should be a three digit hex number from 008-320 with no suffix.
ZOOM-*-SPEED-HEX	P	Fields specifying the slow and fast speeds for zoom. Should be a single digit number from 0-7 with no suffix.

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FEEDBACK:

AUTOFOCUS-ON/OFF-FB	D	Simulated feedback indicating when autofocus mode is on/off
PRESET-*-FB	D	Indicates the last preset selected
SAVE-FB	D	High while save mode is active
PRESET-BUSY	D	High while the camera is moving to a preset. Another preset cannot be selected while this output is high
EXPOSURE-*-FB	D	Simulated feedback indicating auto-exposure on/off
BACK-COMP-*-FB	D	Simulated feedback indicating backlight compensation on/off
AE-BRIGHT-LEVEL	A	Analog signal indicating the relative level of AE Brightness. Should be routed to a bargraph on a touch panel
AGC-LEVEL	A	Analog signal indicating the relative level of AGC. Should be routed to a bargraph on a touch panel
SHUTTER-LEVEL	A	Analog signal indicating the relative shutter speed. Should be routed to a bargraph on a touch panel
IRIS-LEVEL	A	Analog signal indicating the relative iris level. Should be routed to a bargraph on a touch panel
AUTO-WHITE-*-FB	D	Simulated feedback indicating the current white balance mode
AUTO-WHITE-LEVEL	A	Analog signal indicating the relative level of white balance. Should be routed to a bargraph on a touch panel
C2N-CAMIDJ_Iris_Auto_Button_Fb	D	Digital Signal connected to the IrisAutoLEDLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Iris_Manual_Button_Fb	D	Digital Signal connected to the IrisManualLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Focus_Button_Fb	D	Digital Signal connected to the FocusLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Zoom_Button_Fb	D	Digital Signal connected to the ZoomLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Pan_Button_Fb	D	Digital Signal connected to the PanLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Tilt_Button_Fb	D	Digital Signal connected to the TiltLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Speed_Fast_Fb	D	Digital Signal connected to the SpeedHighLED-F signal on the C2N-CAMIDJ
C2N-CAMIDJ_Speed_Slow_Fb	D	Digital Signal connected to the SpeedLowLED-F signal on the C2N-CAMIDJ

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C2N-CAMIDJ_Display	A	Analog Signal connected to the Display signal on the C2N-CAMIDJ
C2N-CAMIDJ_Display_Mode	A	Analog Signal connected to the DisplayMode signal on the C2N-CAMIDJ
CANON-TX\$	S	Serial signal to be routed to a 2-way RS232 port

TESTING:

OPS USED FOR TESTING:	PRO2: 3.137
COMPILER USED FOR TESTING:	2.05.22
SAMPLE PROGRAM:	Canon VC-C4 Full Control Demo
REVISION HISTORY:	V2.0 – Added support for C2N-CAMIDJ Removed Signals without destinations