



Sony P2 Protocol VTR Control Module Application Guide

Description

This module provides control of any Video Tape Recorder (VTR) or Digital Video Recorder (DVR) supporting Sony's P2 Edit Controller Protocol (also known as the "BVW", "RS-422", "9-pin", or simply "Sony" protocol), including many Sony, JVC, and Panasonic Professional video tape formats (including VHS, DVCAM, Betacam, Betacam SP, Digital Beta, HDCAM, etc.)

This module provides a wide variety of functionality for control of a supported VTR including:

- Standard transport controls (play, stop, fast forward, etc.)
- Timecode feedback
- The ability to store and recall up to 10 presets based on time code
- Jog and Shuttle controls using a slider
- The ability to enable or disable local (front panel) control of the deck.

Note: Most "consumer" and "prosumer" (even some professional decks) do not support the P2 protocol. Please check compatibility before attempting to use this module. Also note that every VTR implements the protocol slightly differently (even between different models from the same manufacturer). Therefore, ControlWorks is unable to guarantee that all functions of the module will work the same way with every VTR that claims P2 Protocol Support.

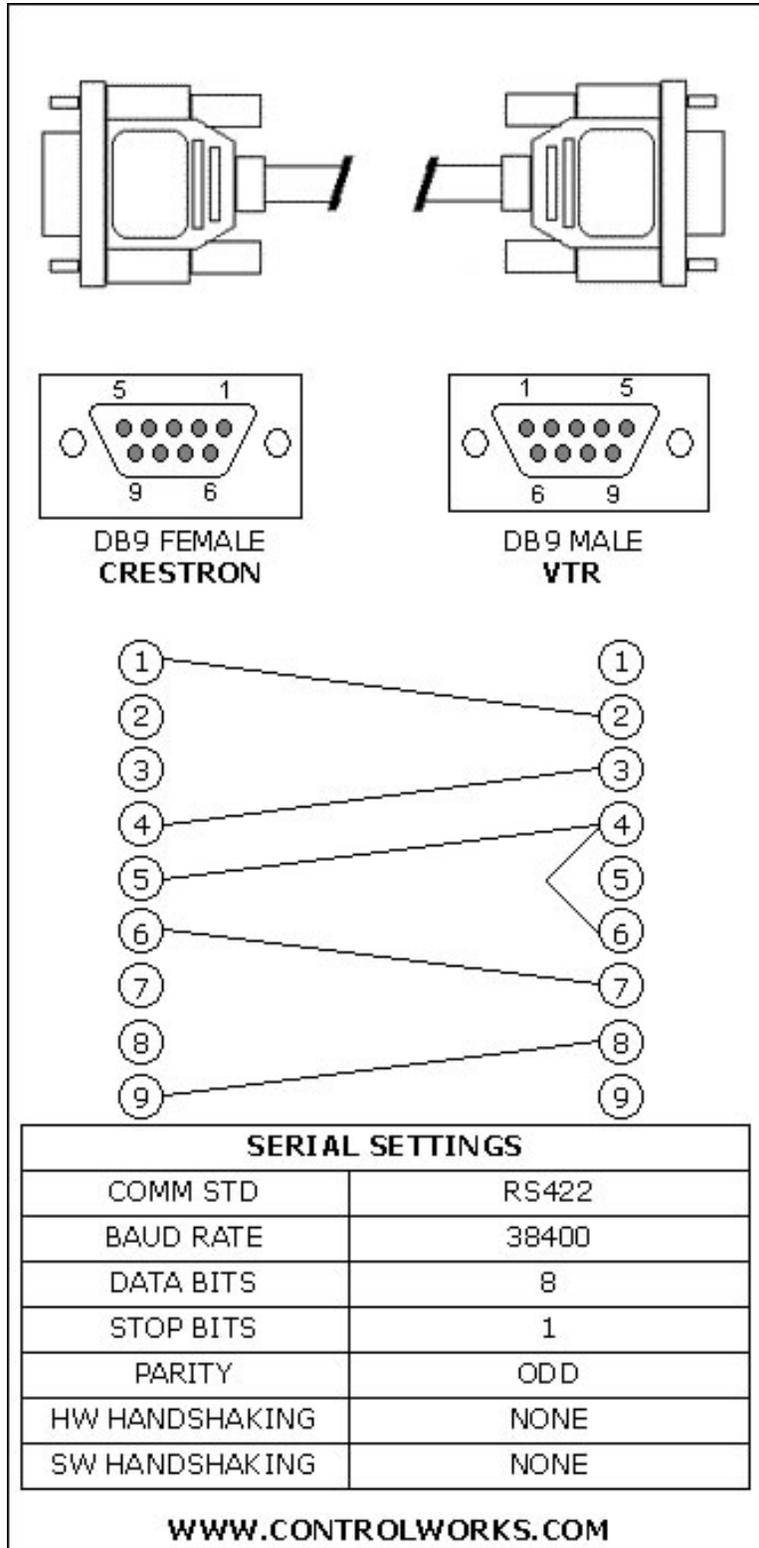
Supported Processors

This module is supported on all 2-series and X-generation processors with RS-422 ports. It is not possible to use this module in conjunction with a RS-232-only or one-way (IR) serial port.

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

Serial Cable Pinout

A serial cable with the following pinout is required to connect the VTR to the processor:



Note that is necessary to change the configuration of the desired serial port in SIMPL Windows to RS422, 38400 baud, 8 data bits, one stop bit and Odd (O) parity.

Module Application

On many VTRs there is either a physical switch on the unit or an on-screen menu item that must be set correctly to enable RS-422 control. Common names for this setting include "9P", "Remote", "Sony P2", "RS422", and "BVW". If this option is not properly configured, the [\[vtr_in_local_mode_fb\]](#) digital output will be high and the module will not control the unit as expected.

Using a Jog/Shuttle Slider

To make use of the "Jog/Shuttle Slider" feature of this module, be sure to assign the slider a Digital Press Join in your VisionTools project and connect it to the module's [\[jog_shuttle_press\]](#) digital input.

Time Code

By default, when polling for time code, the module will request any available time code (vertical interval, linear, or internally generated). To poll for only Vertical Interval (VITC) or Linear Time Code (LTC), pulse the corresponding input on the module.

Some VTRs will respond with any available time code regardless of what format is requested, and in some cases (if the tape is being moved very slowly or quickly, if there is not a time code decoding board installed or it is defective) will respond with an internally-generated time code.

Protocol Support

Various VTRs implement the protocol in different ways (for example. Some JVC VTRs seem to treat the "Jog" and "Shuttle" commands identically). Therefore, it is impossible to guarantee that all commands will function identically on all VTRs, even if "Sony P2 Protocol" support is claimed.

This module was developed in ControlWorks offices and tested using the Sony BVW-10 (BetaCam) and JVC BR-S822U (SVHS) video tape recorders and the Grass Valley Turbo iDDR Digital Recorder/Player¹.

¹ In order to control both record and playback functions of a Grass Valley Turbo iDDR, two instances of the module and two RS-422 ports on the Crestron process or are required. The clips to be recorded and played back must be loaded using the front panel of the iDDR or the iDDR workstation software.

Signal And Parameter Descriptions

Bracketed signals such as “[signal_name]” are optional signals

DIGITAL INPUTS

[rewind]	Pulse to start the VTR rewinding
[play]	Pulse to start the VTR playing from the current position
[stop]	Pulse to stop the VTR at the current position
[fast_forward]	Pulse to start the VTR fast forwarding
[still]	Pulse to still the VTR at the current position
[eject]	Pulse to eject the tape if one is currently loaded
[record]	Pulse to start recording. Note that not all decks support recording.
[standby_off]	Pulse to take the VTR out of standby mode and remove the tape from the heads. Note: This command only functions when the VTR is in the “Stop” mode.
[standby_on]	Pulse to engage the tape. This command is also automatically executed by the deck when needed.
[enable_poll_for_time]	Hold high to enable polling for time code information
[use_any_time_code]	Pulse to use any available time code when polling for time code (This is the default when the module starts up)
[use_vitc_time_code]	Pulse to use Vertical Interval Time Code (VITC) when polling for the time code.
[use_ltc_time_code]	Pulse to use Linear Time Code (LTC) when polling for the time code.
[position_store]	Pulse before selecting a preset to store the current time code as a position preset.
[position_preset1...10]	If pulsed when [ready_to_store_preset] is low, recalls the selected preset by instructing the deck to go to that time code; if pulsed when [ready_to_store_preset] is high, stores the current position as the preset and updates the preset position text.
[jog_enable]	Hold high to enable the VTR “Jog” function using a slider
[shuttle_enable]	Hold high to enable the VTR “Shuttle” function using a slider
[jog_shuttle_press]	Connect the digital press feedback from the slider used for jog/shuttle functions
[local_control_disable]	Pulse to disable local controls on the VTR
[local_control_enable]	Pulse to enable local controls on the VTR
[enable_poll_for_status]	Hold high to enable polling of the VTR’s current status

ANALOG INPUTS

[jog_shuttle_slider]	Connect to the analog touch from a slider (unsigned touch/feedback, snap to center not enabled) for jog/shuttle functionality.
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SERIAL INPUTS

vtr_rx\$	Route from serial port RX\$ line.
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DIGITAL OUTPUTS

[rewinding_fb]	High while the deck is rewinding
[playing_fb]	High while the deck is playing
[stopped_fb]	High while the deck is stopped
[fast_forwarding_fb]	High while the deck is fast forwarding
[still_fb]	High while the deck is in still (pause) mode
[tape_out_fb]	High when the tape has been ejected/there is no tape loaded
[recording_fb]	High when the deck is recording
[record_inhibit_fb]	High when the deck is record inhibited (including but not limited to a deck without record capabilities or the "record inhibit" tab or slider on the loaded tape selected). Depending on the deck, this feedback may be a bit inconsistent, especially when the tape is stopped, rewinding, or fastforwarding.
[standby_on_fb]	High when the VTR is "standing by" (ie tape threaded on heads)
[read_vitc_time_code_fb]	Pulsed momentarily when a Vertical Interval Time Code has been read from the deck
[read_ltc_time_code_fb]	Pulsed momentarily when a Linear Time Code has been read from the deck.
[read_internal_time_code_fb]	Pulsed momentarily when the VTR's internal time code generator provides the time code (usually due to ta damaged or missing time code track, bad TBC, or when jogging or shuttling at low speeds).
[ready_to_store_preset]	High when the module is ready to store a preset. Pulse [position_preset1...10] to store the current time as a preset.
[preset_cued_up_fb]	High when a previously stored preset has been cued up and is ready for playback. This digital will go low as soon as any other transport command is sent to the deck.
[vtr_in_local_mode_fb]	High when the VTR is in the "Local" mode. On many models, remote controls can not be utilized when the VTR is in the Local Mode. This digital may be tied to a subpage to provide further instructions to the user.

ANALOG OUTPUTS

[jog_shuttle_fb]	Connect to the analog feedback join of the jog/shuttle slider if not used. This analog forces the slider back to the center position when it is released.
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SERIAL OUTPUTS

vtr_rx\$	Route to the serial driver TX\$ line.
[vtr_position_preset1...10_time\$]	The time code position associated with the corresponding preset (in HH:MM:SS format)

PARAMETERS

Running status poll interval	The amount of time to wait between polling while the VTR is running (for example, play, rewind, fast forward, jog, or shuttle)
Idle status poll interval	The amount of time to wait between polling while the VTR is idle (for example, stopped or stilled)
Tape out poll interval	The amount of time to wait between polling when there is no tape loaded in the VTR.

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 440-729-4640. 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 operation 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 entered when the module was purchased. In addition, updates may be obtained using your username and password at <http://www.thecontrolworks.com/customerlogin.aspx>.

Distribution Package Contents

The distribution package for this module should include:

ControlWorks Sony P2 Protocol Module Help v1.pdf	This help file
ControlWorks Sony P2 Protocol v1.umc	Crestron user module to insert in program
Serial String Queue 1.0.usp	SIMPL+ module that is used inside the UMC
Serial String Queue 1.0.ush	Compiled SIMPL+ (for 2-series processors)
Serial String Queue 1.0.uf	Compiled SIMPL+ (for X-generation processors)
Sony P2 String Comparison.usp	SIMPL+ module that is used inside the UMC
Sony P2 String Comparison.ush	Compiled SIMPL+ (for 2-series processors)
Sony P2 String Comparison.uf	Compiles SIMPL+ (for X-generation processors)
ControlWorks Sony P2 Protocol Demo TPS-4500.vtp	Example Touchpanel (TPS-4500)
ControlWorks Sony P2 Protocol Demo Pro2.smw	Example Program (Pro2)
ControlWorks Sony P2 Protocol Demo XGen.smw	Example Program (CNMSX-PRO)

Revision History

NC lincoln@controlworks.com 2006.11.22

Updated help file format only; no change to module or version number

V1 lincoln@controlworks.com 2006.01.06

Initial release

Development Environment

Version 1 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.

Hardware

Crestron PRO2 Processor	v3.137
Crestron TPS-4500 Touchpanel	v2.002
Sony BVW-10	
JVC BR-S822U	

Software

Crestron SIMPL Windows	Version 2.06.20
Crestron Vision Tools Pro-e	Version 3.4.2.9 Build 20051123:1
Crestron Database Version	17.4.4
Crestron Symbol Library	Version 360
Crestron Device Library	Version 360

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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