



ICRealtime Security DVR Crestron Module Help File

Description

These modules will support a RS-232 or TCP-IP connection to an ICREALTIME Security DVR.

Supported ICREALTIME Products

- Flex series (Version 1, 2, 3)
- Max D series (D1 Realtime Unit)
- 'Version 1' Elite Flex (960H)
- HD-SDI series (DVR-HDS)
- HD-AVS series (AVS-1X0X)
- HD-AVR series (AVR-8XX)
- NVR 600V series
- NVR 700N series
- NVR 700NS series
- NVR 700MP series
- NVR 8128
- DVR 4/8/1600HS 'Hybrid' series

This modules were tested against an ICREALTIME Flex32.

Supported Processors

These modules will run on any Crestron 2-series or 3-series processor.

Supported Applications

These modules have been tested in SIMPL Windows.

Serial Pinouts

The connection requires a cross-over through cable

Signal and Parameter Descriptions

DIGITAL INPUTS

[enable_module]	Hold this signal high to enable the module. On first enable, the module will query the DVR over ethernet to verify the DVR is genuine ICR realtime hardware. Once that is verified, the module will log the DVR MAC address and be provided an authorization token valid for that DVR. Once that is complete, the module will be functional. Subsequent enabling of the module will not perform these connections, unless the token is lost.
[serial_control_login]	Sends the login string, using the username and password set in the parameters of the module. The module will automatically send the login once every 4 minutes.
[serial_control_logout]	Sends the logout string, disabling serial communication until the login string is sent again.
[serial_control_keypad_X]	Numeric keys 0-9
[serial_control_single_screen_X]	Selects the camera input to be displayed full-screen on the monitor output
[serial_control_four_screen_X-X]	Selects four camera inputs to be displayed in a 2x2 grid on the monitor output.
[serial_control_nine_screen_X-X]	Selects nine camera inputs to be displayed in a 3x3 grid on the monitor output
[serial_control_sixteen_screen_X-X]	Selects sixteen camera inputs to be displayed in a 4x4 grid on the monitor output
[serial_control_twenty_five_screen_X-X]	Selects twenty-five camera inputs to be displayed in a 5x5 grid on the monitor output
[serial_control_thirty_six_screen_X-X]	Selects thirty-six camera inputs to be displayed in a 6x6 grid on the monitor output
[serial_control_navigation_XXXX]	Navigate on screen menus.
[serial_control_playback_XXXX]	Control playback of recorded content.
[serial_control_ptz_begin_ptz-mode]	Pulse to begin ptz mode when using the serial_control_ptz_XXXX inputs. Sending the serial control login resets this mode and will need to be sent again after logging in. Typically this should be pulsed when PTZ commands are needed.
[serial_control_ptz_end_pt-mode]	Pulse to end ptz mode when using the serial_control_ptz_XXXX inputs. Typically this should be pulsed when PTZ commands are no longer needed.
[serial_control_ptz_cam]	Pulse to select which camera to control PTZ functions. Controls will not function until [serial_control_ptz_number] is defined.
[serial_control_ptz_mode]	Selects PTZ mode (typically not used in most applications)
[serial_control_ptz_XXXX]	Controls PTZ functions when in ptz mode. Direction of panning, tilting, and zooming. Also, focus and iris controls and special controls. Controls will not function until [serial_control_ptz_number] and [serial_control_ptz_speed] are defined.
[streaming_refresh_urls]	Pulse to force the module to rebuild the string outputs containing the urls for displaying streaming video on a touchpanel as defined by [streaming_camera_number].
[tcp_control_ptz_XXXX_press]	Controls for camera PTZ over ethernet. Controls will not function until [tcp_control_camera_number] and [tcp_control_ptz_speed] are set.
[tcp_control_preset_XXXX]	Controls for storing, recalling, and clearing camera PTZ presets. These presets are stored on the camera. They depend on [tcp_control_preset_number] and [tcp_control_camera_number] being set.
[tcp_control_alarm_XXXX]	Controls for manually triggering, releasing, or restoring alarm outputs.

[tcp_control_channelX_single_screen_X] ..Selects the camera input to be displayed full-screen on the channelX output.

[tcp_control_channelX_four_screen_X-X] ..Selects four camera inputs to be displayed in a 2x2 grid on the channelX output.

[tcp_control_channelX_nine_screen_X-X] .Selects nine camera inputs to be displayed in a 3x3 grid on the channelX output.

[tcp_control_channelX_sixteen_screen_X-X]Selects nine camera inputs to be displayed in a 4x4 grid on the channelX output.

[tcp_control_channelX_twenty_five_screen_X-X] Selects nine camera inputs to be displayed in a 5x5 grid on the channelX output.

[tcp_control_channelX_thirty_two_screen_X-X] Selects nine camera inputs to be displayed in a 6x6 grid on the channelX output.

[tcp_control_channelx_advanced_views_enter] Pulse to enter the [advanced_views_split_number] and [advanced_views_group_number] and make the NVR switch to the correspondind view. Contact IC Realtime support if additional Split views are needed.

[tcp_control_clear_tcp_queue] Pulse to clear the commands in the TCP queue. All commands that are sent to the DVR/NVR are sent through the queue. In cases that the network is overly saturated, it may be necessary to clear what is in the queue.

RSTP playback commands Digital inputs to set the start and end date and time for the RTSP playback feature. First, set the start and end time, then pulse [rtsp_start_playback] the result will be a url string to send to the RTSP(embedded streaming video) viewer on a touchpanel to view the stream of the time period set up. This depends on the start and end dates being set properly and a camera being selected on the [tcp_control_camera_number] analog input.

[tcp_control_get_camera_record_state]....Pulse to manually query the DVR for all cameras main and extra streams record state. Module will automatically query 3 seconds after the last analog input for camera record changes, as well as when the module is enabled.

ANALOG INPUTS

[serial_control_ptz_camera] Use to set the camera input to be controlled over serial. Valid values are 1d – 32d, depending on the size/model of DVR used

[serial_control_preset_number] Use to select the preset to store, clear, or recall. Valid values are 1d – 8d

[serial_control_ptz_speed] Use to set the speed of the serial PTZ controls. Valid values are 1d – 255d. 15d is typically a good speed to default to, however different cameras respond differently to this input. The default_pan-tilt_speed parameter will initialize this value to what is defined in the parameter at startup. It is reccommended you initialize this value (if you are using it) after [module_enabled_fb] is high.

[streaming_camera_number] Use to set the camera input to be displayed on the streaming output. Valid values are 1d – 255d, depending on the size/model of DVR used

[tcp_control_camera_number] Use to set the camera input to be controlled over ethernet. Valid values are 1d – 255d, depending on the size/model of DVR used

[tcp_control_ptz_speed] Use to set the speed of the ethernet PTZ controls. Valid values are 1d – 255d.15d is typically a good speed to default to, however different cameras respond differently to this input. The default_pan-tilt_speed parameter will initialize this value to what is defined in the parameter at startup. It is reccommended you initialize this value (if you are using it) after [module_enabled_fb] is high.

[tcp_control_preset_number] Use to select the preset to store, clear, or recall. Valid values are 1d – 8d

[cameraX_XXXX_stream_record_mode_input]Use to set the record state of a camera. 0d = Auto 1d = manual 2d = stop record. Any change of this input after

[module_enabled_fb] is high, will be sent to the DVR, sent to the output of the module, and the module will automatically query the DVR 3 seconds after the last input change for that channels current status. Do not tie the same signal name to the output of the module.

[advanced_views_split_number] Used in conjunction with [advanced_views_group_number]. Initialize this analog to the layout view you wish to see on the video output. Supported views are 1,4,8,9,16,25,36,64. Contact IC Realtime support for additional information regarding split views and groups. Once [advanced_views_split_number] and [advanced_views_group_number] are initialized, pulse [tcp_control_channelx_advanced_views_enter] to send the view command.

[advanced_views_group_number] Used in conjunction with [advanced_views_split_number]. Initialize to the group ID for the associated view. Typically this is an integer 1-32d. Contact IC Realtime support for additional information regarding split views and groups. Once [advanced_views_split_number] and [advanced_views_group_number] are initialized, pulse [tcp_control_channelx_advanced_views_enter] to send the view command.

SERIAL INPUTS

This module does not utilize any serial inputs

DIGITAL OUTPUTS

[module_enabled_fb] Latched high when the module is enabled (enable_module is latched high) and authorized. If no inputs are functioning, check to see if this output is latched high.

dvr_user_locally_logged_in--reboot_dvr_or_locally_logout Latched high when the module attempts to log in over serial but a local user is logged in on the NVR. You must log out of the NVR from the front panel or by rebooting the NVR. After logging out, this output may not go low for up to five minutes.

ANALOG OUTPUTS

[streaming_port_number] set to the streaming port if needed.

[items_in_tcp_queue] indicates the total number of tcp commands waiting to be sent to the NVR/DVR.

[rtsp_date_start_xxxx] analogs for rstp playback command digitals.

[rtsp_date_end_xxxx] analogs for rstp playback command digitals.

[cameraX_XXXX_stream_record_mode_fb] used to indicate the cameras record state. 0d = Auto 1d = manual 2d = stop record. Do not tie same signal name to input of module.

SERIAL OUTPUTS

[dvr_serial_tx\$] Serial command string to route to the COM port object connected to the DVR

[streaming_single_line_mjpg_url\$] Route to touchpanel serial join. This is for touchpanels whose MJPEG viewer object requires a single string for the URL.

[streaming_ip_address\$] Route to touchpanel serial join. This is for touchpanels whose MJPEG viewer object requires a separate string for the IP address or hostname of the MJPEG source.

[streaming_mjpg_url_command\$] Route to touchpanel serial join. This is for touchpanels whose MJPEG viewer object requires a separate string for the URL command of the MJPEG source.

[streaming_single_line_dynamic_graphic_url\$] Route to touchpanel serial join. This is for touchpanels that cannot display an MJPG stream, but can display a dynamic graphic, refreshed every few seconds.

[streaming_rstp_url\$] Route to touchpanel serial join. This is for touchpanels that support a H.264 streaming object. Typically, this is only for Smart Graphics. This URL is for the live stream.

[rtsp_playback_url\$] Route to touchpanel serial join. This is for touchpanels that support a H.264 streaming object. Typically, this is only for Smart Graphics. This URL is for the timed playback stream.

PARAMETERS

dvr_ip_address	Enter the IP address or hostname of the DVR
dvr_http_port	Enter the DVR's HTTP port. This is typically 80d but can be changed in the DVR.
dvr_address_id_(in_hex)	Enter the DVR address ID of the DVR in hex. The default is 08h
username	Enter the user name of the account to use to log in to the DVR
password	Enter the password of the account to use to log in to the DVR
dealer_name	Enter your dealer name. This is only used for the authorization process.
site_name	Enter the user site or project name or ID. This is used in the authorization process.
mjpeg_streaming_port.....	Enter the user port number configured on the DVR for streaming video. Typically this is 80.
default_pan-tilt_speed	Enter the default pan-tilt speed. This value is set at program start, but can be user or programmatically changed during runtime.
rtsp_streaming_port.....	Enter the user port number configured on the DVR for streaming video. Typically this is port 554.
rtsp_streaming_subtype	Enter the rtsp streaming subtype configured on the DVR for streaming video. Use 00 for main stream, enter 01 for the sub stream.
Legacy PTZ Mode	Typically this is set to No. In rare cases when NVR firmware is very old, the module needs to send different values to control PTZ and recall presets when using TCP functions.
Legacy Single Screen Camera Index	Typically this is set to No. Some firmware versions use a different camera index. Set to yes if any single screen press is off by one camera.
Legacy Video Output Index.....	Typically this is set to No. Some firmware versions use a different video output index. Set to yes if the physical video output is one off (i.e [tcp_control_channel1_single_screen_1_press] changes the video out on physical channel 2).
Legacy Split View Commands	Set to Yes if NVR is older than S/W version 3.210. Build date of 12-4-2015

Revision History

[V1] – 4-23-2013

- Release candidate

[V1.1] – 8-15-2013

- Changes to Auth process

[V1.2] – 9-1-2013

- Added serial login processor and module now has a digital output and prompts when a user is logged in. If the output is high you must locally log out of the DVR. There are no commands to log the user out.

[v1.3] - 9-13-2013

- Changes to Auth process

- Added TCP split mode screen controls

- Changed and added inputs for serial PTZ.

[v1.4] – 9-21-2013

- Changed parsing of DVR network information

[v1.5] – 10-15-2013

Internal Version

[v1.6] – 10-17-2013

- Exposed HTTP port number as a parameter.

- Resolved issue with serial PTZ commands not sending the correct string.

- Fixed Serial PTZ speed commands.

- PTZ speed commands support 1-255

- Changes to automatic serial login.

- Module now watches for last serial PTZ mode and sends the appropriate string after login.

- Changes to demo program to reflect serial login.

- Changes to demo touchpanel.

- Changes to documentation.

[v1.7] – 4-7-2014

- More robust module authentication processor

- Fixed serial presets

[v1.8]

- Fix for authentication state during reboot or program reset.

[v1.9] – 10-30-2014

- TCP commands now get sent into queue to help with saturated networks.

- added parameter for legacy TCP commands.

- SIMPL+ improvements

- fix for playback dates recalling the incorrect date

- Added queue count output

- Added clear queue digital input

[V2.0] 6-24-2015

- added video output number

- added manual authentication method.

[V2.1] 9-11-2015

- Removed Video output number
- Added digitals for all six video outputs.
- Reorganized TCP command groups on UMC.
- Added zero channel (streaming split view).
- Added record controls for both streams of 32 cameras.
- Added manual polling of current record state of 32 camera streams (main and sub).
- Added parameter to use Legacy PTZ commands.
- Added parameter for Maximum number of cameras for zero channel steam.
- Added parameter for legacy single screen views (used when cameras are offset by 1).
- Added parameter for legacy video output index (used when video outputs are offset by 1).

[V2.2] 4-20-2015

- Bug fixes for PTZ control
- Added support for Legacy Spilt View Commands. NVR's running software newer then S/W version 3.210 and Build date of 12-4-2015 use new commands. Older units use legacy commands.
- Added split and group inputs for uncommon video output split views.