



Manufacturer: Epiphan Video
Model: EC20
Device Type: PTZ Camera

CONTACT SUPPORT:

COMPANY NAME:	Epiphan Video
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NOTES:	Support: https://www.epiphan.com/support/ (website chat and community forum also available). When reporting camera communication issues, include the module debug log (Enable_Debug high, Debug_Level = 5). Module developed for Epiphan Video by ClearAlan Inc.

GENERAL INFORMATION

SIMPLWINDOWS NAME:	Epiphan EC20 v1.0.0
CATEGORY:	Camera
VERSION:	v1.0.0
SUMMARY:	This module controls an Epiphan EC20 PTZ camera through the camera's HTTP/HTTPS REST API. It provides power control, pan/tilt/zoom with adjustable speeds, home, focus (auto/manual, near/far, speed), preset recall and save, presenter/zone tracking with auto-zoom, tally light control, and device, system and network status feedback. Connection type: TCP/IP (Ethernet) – HTTP on port 80 (default, configurable) or HTTPS on port 443.
GENERAL NOTES:	Once Enable is latched high, the module manages the connection on its own: it reconnects automatically if the connection is lost and polls the camera regularly so changes made outside the control system are reflected on the module outputs. Connection details can be set by parameter or at runtime using the Connection input



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	signals (which supersede the parameters). When setting them at runtime, latch Enable high after the values are set. PTZ and focus speeds used by the module are independent of the speeds set on the camera web UI. If the speed inputs are not used, the module uses tested default values. To use custom speeds, drive the speed inputs with an Analog Initialize at program start. Two demonstration programs are provided, identical except for their target rack: Demo_EpiphanEC20_4series (4-Series) and Demo_EpiphanEC20_3series (3-Series), with the Crestron Construct (CH5) UI project Demo_EpiphanEC20.ch5z. Load the UI as an HTML5 Web XPanel or on any 10" x60, x70 or x80 series touch screen at IP ID 03. See the appendices at the end of this document for a quick start guide and troubleshooting tips.
CRESTRON HARDWARE REQUIRED:	Crestron 3-Series or 4-Series control processor. Developed and tested on a CP3 and a CP4.
SETUP OF CRESTRON HARDWARE:	The module is supported on 3-Series and 4-Series processors. On 3-Series processors, firmware 1.8001 or newer is recommended; use the latest firmware available for best results. The processor requires IP connectivity to the camera on the configured HTTP (80) or HTTPS (443) port. If running the demo UI as an HTML5 Web XPanel, ensure the processor firmware supports CH5 Web XPanels.
VENDOR FIRMWARE:	EC20 firmware 2.0.16 (tested). Earlier firmware versions may work but are not supported.
VENDOR SETUP:	1. Assign the camera an IP address (or DNS-resolvable hostname) reachable from the processor and enter it in the IP Address or HostName parameter. 2. Enter the camera web UI username and password in the module parameters (default: admin / admin). 3. Confirm the HTTP Port on the camera web UI Network tab matches the module Port parameter (default 80). 4. For encrypted communication, set the module Port to 443; the module will then connect using HTTPS with the camera's digest authentication.
CABLE DIAGRAM:	No serial control cable is required. Control is over TCP/IP Ethernet. Connect the camera LAN port to the same IP network as the Crestron processor (Cat5e or better patch cable to a network switch). Protocol: HTTP REST API on TCP port 80 (default, configurable) or HTTPS on TCP port 443.

CONTROL:

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For more information please contact our Crestron Application Market team at applicationmarket@crestron.com. The information contained on this document is privileged and confidential and for use by Crestron Authorized Dealers, CSP Members, A+ Partners and Certified Integrated Partners only. Specifications subject to change without notice.



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<u>Signal/Function Name</u>	<u>D,S,A</u>	<u>Digital, Serial, Analog signal property definition.</u>
Enable	D	Latch this signal high to enable the IP connection. The module will disconnect and stop all activity on a trailing edge.
Connection		
Username	S	The username used by the module to connect to the device. Will supersede the value on the parameter field.
Password	S	The password field used by the module to connect to the device. Will supersede the value on the parameter field.
IP_Address	S	The IP address (or hostname) of the device. Will supersede the value on the parameter field. If using hostnames, ensure the DNS setup on the AV network will resolve the hostname/FQDN properly.
Port	A	The port of the driver used for communication represented as an analog signal. Will supersede the value on the parameter field.
Port_String	S	The port of the driver used for communication represented a serial signal. Will supersede the value on the parameter field.
Power		
Power.On	D	Powers on the camera on a rising edge. Note: communication with the camera may be interrupted for a period of time while the camera powers on. This is normal.
Power.Off	D	Powers off the camera on a rising edge. Note: communication with the camera may be interrupted for a period of time while the camera powers off. This is normal.
Power.Toggle	D	Toggle the camera power from its last known state on a rising edge. Note: as the camera takes a period of time to power on and off, using this signal while the power on or off sequence is being completed is permitted, but be aware that the desired power state as a result of the toggle may take time to execute.



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CONTROL:

<u>Signal/Function Name</u>	<u>D,S,A</u>	<u>Digital, Serial, Analog signal property definition.</u>
PTZ Control		
<i>Note: All PTZ sensitivity/speeds used by the module are independent of the speeds set on the camera's web UI. If the PTZ speed signals are not used, the corresponding PTZ sensitivity feedback signals will indicate the "Default" value the module uses, which has been tested as a reasonable default for most use cases.</i> <i>Should a custom P/T/Z speed be needed, the corresponding PTZ sensitivity signals can be set before the camera connects – simply drive them with an Analog Initialize at program start (or during your program startup sequence as desired).</i>		
Tilt_Up	D	Press and hold to tilt the camera up.
Tilt_Down	D	Press and hold to tilt the camera down.
Pan_Left	D	Press and hold to pan the camera left.
Pan_Right	D	Press and hold to pan the camera right.
Zoom_In	D	Press and hold to zoom the camera in.
Zoom_Out	D	Press and hold to zoom the camera out.
Home	D	Set the camera to the home position on a rising edge
PanTilt_UpLeft	D	Press and hold to pan and tilt the camera up and to the left.
PanTilt_UpRight	D	Press and hold to pan and tilt the camera up and to the right.
PanTilt_DownLeft	D	Press and hold to pan and tilt the camera down and to the left.
PanTilt_DownRight	D	Press and hold to pan and tilt the camera down and to the right.
Pan.Speed	A	Sets the sensitivity of the pan controls. Values used are 1-24, where 24 is the fastest movement and 1 is the slowest.
Tilt.Speed	A	Sets the sensitivity of the tilt controls. Values used are 1-20, where 20 is the fastest movement and 1 is the slowest.
Zoom.Speed	A	Sets the sensitivity of the zoom controls. Values used are 1-7, where 7 is the fastest movement and 1 is the slowest.



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<u>Signal/Function Name</u>	<u>D,S,A</u>	<u>Digital, Serial, Analog signal property definition.</u>
Focus Control		
<i>Note: The focus speed used by the module is independent of the speeds set on the camera's web UI.</i>		
Focus.Near	D	Press and hold to focus the camera in the near direction. Only functions when the Focus.Mode is set to "Manual" mode (ie. Has a value of 2).
Focus.Far	D	Press and hold to focus the camera in the far direction. Only functions when the Focus.Mode is set to "Manual" mode (ie. Has a value of 2).
Focus.Mode	A	Assign the focus mode: 1 = Auto 2 = Manual
Focus.Speed	A	Set the sensitivity of the focus controls. Values 1-7, where 7 is the fastest movement and 1 is the slowest.
Presets		
Preset[0-11]	D	Triggers the corresponding preset on a short press. Saves the corresponding preset when pressed and held for the configured amount of time in the corresponding module parameter. Numbering used corresponds directly with the preset numbering used on the web UI for calling/setting a preset.
PresetRecall	A	Recalls a preset at the given number on signal stimulus. Numbering used corresponds directly with the preset numbering used on the web UI.
PresetSave	A	Saves a preset at the given number on signal stimulus. Numbering used corresponds directly with the preset numbering used on the web UI.
Tracking		
Tracking.On	D	Enables the camera tracking functions on a rising edge
Tracking.Off	D	Disables the camera tracking functions on a rising edge
Tracking.Toggle	D	Toggles on camera tracking functionality on a rising edge
Tracking.Mode	A	Sets the tracking mode used by the camera. Values: 1 = Presenter 2 = Zone
Tracking.AutoZoom.On	D	Enables camera tracking auto-zoom on a rising edge



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<u>Signal/Function Name</u>	<u>D,S,A</u>	<u>Digital, Serial, Analog signal property definition.</u>
Tracking.AutoZoom.Off	D	Disables camera tracking auto-zoom on a rising edge
Tracking.AutoZoom.Toggle	D	Toggles camera tracking auto-zoom on a rising edge
Tally Light Control		
Tally.On	D	Pulse to turn on the tally light
Tally.Off	D	Pulse to turn off the tally light
Tally.Toggle	D	Pulse to toggle the tally light state
Tally.Action	A	Sets the Tally light behavior when Tally.Toggle is enabled. Values: 1 = Off 2 = Blinking 3 = On
Tally.Colour	A	Sets the Tally light color when Tally.Toggle is enabled. Values: 1 = Green 2 = Red
Debug		
Debug_Level	A	Indicates the debug level verbosity. There are 5 values that can be used. In order of increasing verbosity: 0 – “Fatal” – Typically, no debug messages except for rare occasions. 1 – “Error” – All the above, and includes debug messages that indicate that something has gone wrong that cannot be handled normally and are impacting normal operation. 2 – “Warning” – All of the above, and includes debug messages that indicate something out of the ordinary or an error that might impact normal operations, but in many cases can be ignored or handled by the module. 3 – “Information” - All of the above, and includes debug messages with information about normal operation. 4 - “Debug” – All of the above, and includes debug messages with information about normal module operation, sequencing, and processing of data to and from the camera. 5 – “Verbose” – All available debug messages are included in the output. Importantly, this level includes all REST communications to and from the device. Be prepared to enable/disable logging for a short window or capture the output of the text console to a file for later use. The debug output will be very difficult to follow in real time.



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<u>Signal/Function Name</u>	<u>D,S,A</u>	<u>Digital, Serial, Analog signal property definition.</u>
Enable_Debug	D	Latch this signal to enable debug messages to be printed to the text console of the Crestron 3- or 4-series appliance, or the error log in the case of a Crestron virtual control application. These debug messages are also available on the Debug.Message signal as described below for use within the SIMPL program.

FEEDBACK:

Connection		
Connected	D	A high value indicates the control system has connected to the camera and is able to communicate properly with the REST API on the device.
Connection_Status	S	A string value from the module to display an accurate connection status from the control system to the peripheral.
Username.Feedback	S	The username used by the module to connect with the device.
Password.Feedback	S	The (unmasked) password used by the module to connect with the device.
IP_Address.Feedback	S	The IP address or hostname used by the module to connect with the device.
Port.Feedback	A	The TCP port number used by the module to communicate with the REST API, represented as an analog signal.
Port_String.Feedback	S	The TCP port number used by the module to communicate with the REST API, represented as a serial signal.
Power		
Power.On.Feedback	D	A high value indicates the camera is powered on.
Power.Off.Feedback	D	A high value indicates the camera is powered off.
PTZ Control		
Pan.Speed.Feedback	A	The current pan speed sensitivity
Tilt.Speed.Feedback	A	The current tilt speed sensitivity
Zoom.Speed.Feedback	A	The current zoom speed sensitivity



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FEEDBACK:		
Focus Control		
Focus.Mode.CurrentMode.Name	S	Indicates the current focus mode as a user-friendly name.
Focus.Mode.Feedback	A	The analog representation of the focus mode: 1 = Auto 2 = Manual
Focus.Speed.Feedback	A	The current focus speed sensitivity
Presets		
Preset[0-11].fb	D	A high value indicates the last preset recalled or saved using the module.
Preset.fb	A	Indicates the last preset recalled or saved using the module.
PresetSaved.fb	D	An indicator that a preset has been saved. Stays high for the configured timespan in the corresponding module parameter.
PresetSaved^.fb	D	A short pulse that indicates that a preset has been saved.
Tracking		
Tracking.On.Feedback	D	A high value indicates that camera tracking is on
Tracking.Off.Feedback	D	A high value indicates that camera tracking is off
Tracking.Mode.Feedback	A	Reports the tracking mode. Values: 1 = Presenter 2 = Zone
Tracking.Mode.CurrentMode.Name	S	Indicates the current tracking mode as a user-friendly name
Tracking.AutoZoom.On.Feedback	D	A high value indicates tracking auto-zoom auto-zooming is on
Tracking.AutoZoom.Off.Feedback	D	A high value indicates tracking auto-zoom is disabled
Tally Light Control		
Tally.On.Feedback	D	A value of high indicates that the tally LED is illuminated
Tally.Off.Feedback	D	A value of high indicates that the tally LED is not illuminated



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FEEDBACK:

Tally.Action.Feedback	A	Indicates the current setting for the Tally light behavior. Values: 1 = Off 2 = Blinking 3 = On
Tally.Action.CurrentAction.Name	S	Indicates the Tally light behavior as a user-friendly name.
Tally.Color.Feedback	A	Indicates the current setting for the tally light color. Values: 1 = Green 2 = Red
Tally.Color.CurrentColor.Name	S	Indicates the current tally light color setting as a user-friendly name.
System		
Device.Name.Feedback	S	Indicates the connected device's name. This is the "Device ID" that is user-settable on the EC20 device webpage.
Serial.Number	S	Indicates the connected device's serial number.
Firmware.Version	S	Indicates the connected device's firmware version
Version.Info	S	Indicates the connected device's version number
Model.Number	S	Indicates the connected device's model number
Network		
IP.Address.Feedback	S	Indicates the connected device's IP Address
Netmask.Feedback	S	Indicates the connected device's subnet mask in a four octet format.
Gateway.Feedback	S	Indicates the connected device's gateway address
DNS.Feedback	S	Indicates the connected device's DNS address
MAC.Address.Feedback	S	Indicates the connected device's MAC address. Uppercase, colon separated format.
Debug		
Debug_Level_Feedback	A	Indicates the current debug level setting. Unless set by the programmer using this module, this value defaults to 3, which is the "Information" debug level.



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FEEDBACK:

Debug.Message	S	Last reported debug message from the module.
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PARAMETERS:

IP Address Or HostName	S	IP address or hostname for connection. If specifying this value at runtime is needed, the IP_Address signal can be used to replace this value.
Port	A	Default Port for connection If specifying this value at runtime is needed, the Port signal can be used to replace this value.
Power On With Preset Recall	A	If enabled, trigger a power on request when a preset is recalled
Preset Save Hold Time	A	Duration, in seconds, where the user will have to hold a Preset[x] signal high to store its position
PresetSaved fb Duration	A	Duration, in seconds, where the PresetSaved.fb is pulsed high to indicated preset stored
Preset FB Timeout	A	Duration, in seconds, after which Preset.fb reverts to -1 following a preset save or recall when Preset FB Timeout Enable has been set to "Yes"
Preset FB Timeout Enable	A	Choose to enable/disable functionality to have Preset.fb revert to -1 following a preset save or recall after a certain period of time.



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PARAMETERS:

Username	S	Default username for connection If specifying this value at runtime is needed, the Username signal can be used to replace this value.
Password	S	Default password for connection If specifying this value at runtime is needed, the Password signal can be used to replace this value.

TESTING:

OPS USED FOR TESTING:	CP4 – firmware v2.8006.00284 CP3 – firmware v1.8001.5761.25659
SIMPL WINDOWS USED FOR TESTING:	SIMPL Windows 4.32 (build 4.3200.02) SIMPL+ 4.06 (build 4.0600.00)
DEVICE DB USED FOR TESTING:	200.465 (build 200.46500.001.00)
CRES DB USED FOR TESTING:	228.55 (build 228.5500.001.00)
SYMBOL LIBRARY USED FOR TESTING:	1243 (Symlib2.tio / iodev.tio, 07/06/2026)
SAMPLE PROGRAM:	Demo_EpiphanEC20_4series.lpz (4-Series) Demo_EpiphanEC20_3series.lpz (3-Series) Demo_EpiphanEC20.ch5z (Crestron Construct UI)
REVISION HISTORY:	v1.0.0 – 2026 – Initial Release (SP and TA) v1.0.0 – 2026-10-14 – Documentation updated for submission to the Crestron Application Market (signal names, types and descriptions aligned with the module). Documentation update only; module unchanged at v1.0.0. (SP)



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APPENDIX A: QUICK START GUIDE

- 1) Ensure the IP Address or HostName parameter contains the IP address of the EC20 camera.
- 2) Ensure the Username and Password fields have been set correctly. The default username and password are "admin" – if they have been changed, ensure these match accordingly
- 3) In your program, latch the "Enable" signal when you would like the module to initiate the connection with the camera. The module manages the connection to the camera on its own; it will attempt to reconnect to the API if the connection is broken, and regularly polls the camera to ensure external changes in camera state are reflected on the output signals of the module accordingly.
- 4) Should difficulties arise with connecting to the camera, consult the troubleshooting steps outlined at the end of this help file.



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APPENDIX B: TIPS AND TROUBLESHOOTING

A secure connection to the device is required

An IT group or 3rd party may require all devices on the network for the AV system use encrypted communications. The EC20 does support HTTPS connections, always on port 443.

Setting the Port parameter on the module or use the Port signal on the module to a value of 443 will cause the module to utilize HTTPS to connect to the device. HTTPS, in addition to the digest authentication used by the camera, should satisfy this requirement. For more information, please contact Epiphan directly.

Cannot connect to the device

Depending on how the system has been commissioned, there are a few things to check:

1) Is the username and password correct?

Access the camera web UI by entering its IP address (or hostname if the network has been setup with an appropriate DNS configuration) in a web browser. The browser will prompt for a username and password – this can allow you to confirm if the username and password are valid. This same username and password can be used with the camera module.

2) Is the port being used by the module correct?

The module uses HTTP REST requests to communicate with the camera. This is, by default on port 80, but it is configurable. If it has been changed, the port value used by the module must match the “HTTP Port” field on the camera web UI, seen on the “Network” tab:

The screenshot shows the Epiphan Video EC20 CAMERA web interface. The 'Network' tab is selected, displaying various network settings. The 'Port' sub-tab is active, showing the following values: HTTP Port (80), RTSP Port (554), TCP Port (5678), UDP Port (1259), and Sony Visca (52381). The 'Submit' button is visible at the bottom right of the settings area.



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3) Is the camera able to communicate with the module?

The Connected signal indicates that regular communication is occurring with the camera and the username and password are correct. If you are sure the username, password, and port are set correctly, it is necessary to review if communication is occurring at all between the camera and the module.

Enable debugging on the module at a "Verbose" level and view the output using Toolbox or an SSH client. Reviewing the output of the debug messages, especially if the logs are set to "verbose" will indicate quickly if communication is occurring properly between the EC20 camera and the module. Regular operation will see REST requests exchanged between the module and the camera every few seconds.

If many "Error" messages are seen indicating a connection refusal or a timeout, this may indicate an issue with the AV network configuration. Troubleshoot this accordingly.

Once network configuration has been confirmed to not be an issue, if there is still an issue with device communications, please open a Support ticket with Epiphan, and include the debug logs captured, if available.