

BirdDog Installation and Usage Guide



Version: 2.0.0
Date: Tuesday, December 05, 2023
Authors: Richard Mullins

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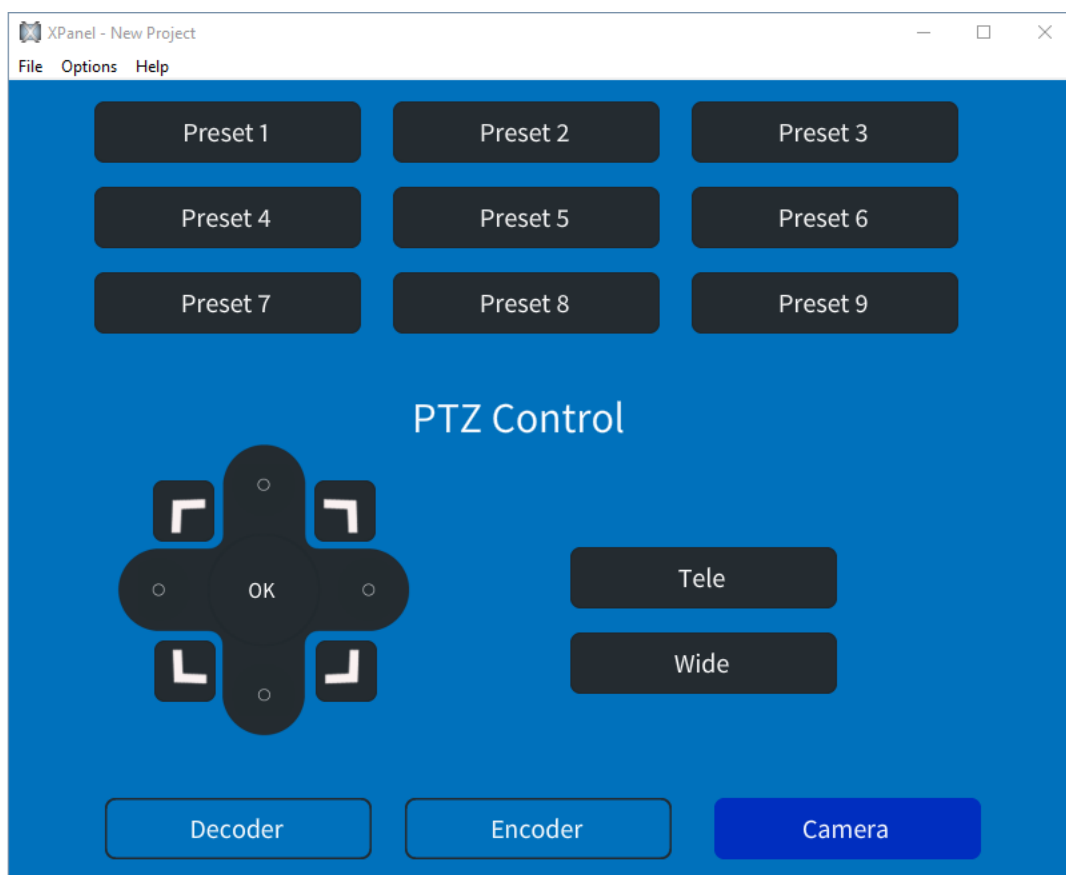
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Overview

The BirdDog Crestron module is actually two modules bundled together.

The first one provides control of camera presets. This module can have a hard coded IP address for a specific camera or it can use a string input to set the address while the program is running allowing a single module to be used to control multiple cameras.

The second module is designed to control the BirdDog decoders controlling what will be displayed by that decoder. It builds a list of connected cameras (up to 500) and allows direct selection via an analog input making it compatible with a Smart Graphic List Object. It is also possible to search the list of connected cameras and change the label if desired. The module provides the current connected cameras IP address in a format suitable for connecting to the Camera Preset module.



Features

- Dedicated Encoder, Decoder and Camera modules

Encoder Module

- Stream On/Off
- Bandwidth Control
- NDI Group Enable/Disable
- NDI Audio control
- Screensaver Control
- LoopTally Control
- VideoCSC Control
- Sample Rate Control
- Color Depth Control
- Video Format Control

Decoder Module

- List of discovered devices
 - Includes variables for list size, selection and currently selected item
 - Get, Refresh and Reset list functions
 - List search
- Restart and Reboot commands
- Set to encode or decode
- Directly select a source by name

Camera Module

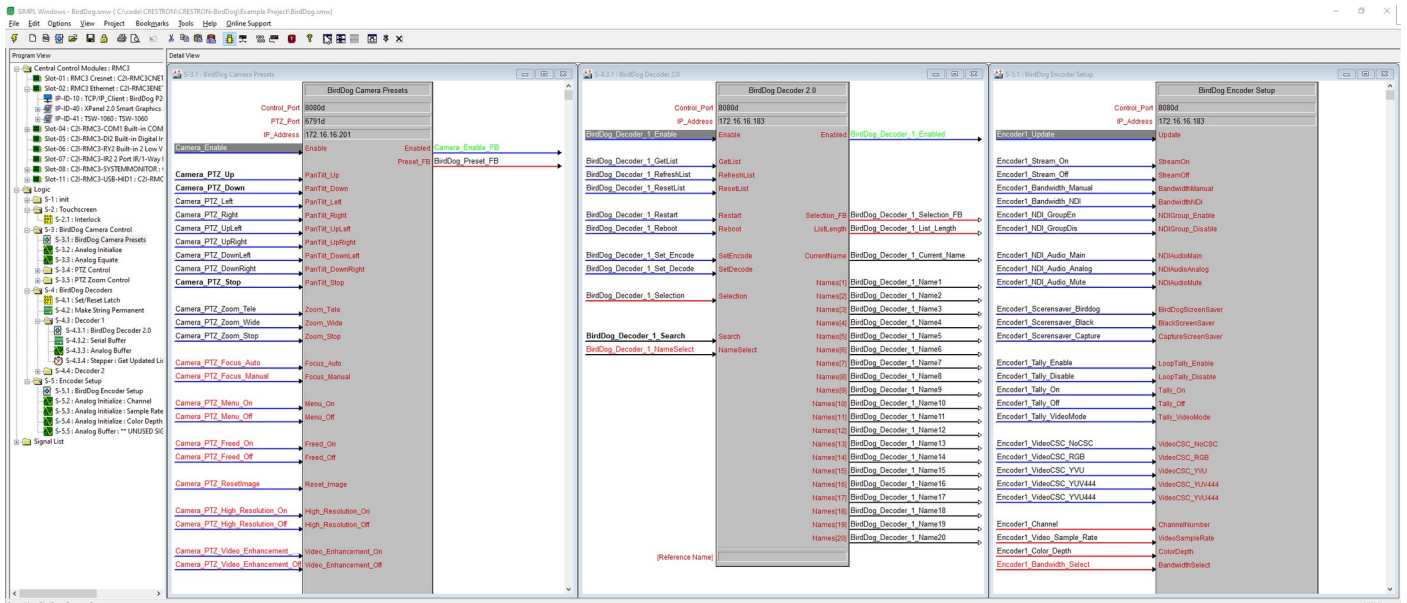
- PTZ Controls
- Focus Control
- Menu Control
- Freed On/Off
- Reset Image
- High Resolution On/Off
- Video Enhancement On/Off
- Exposure Mode and Compensation Control
- Brightness Control
- Shutter Speed and Slow Shutter Speed Control
- High Sensitivity Control
- Red/Blue/Green/Cyan/Magenta/Yellow Control
- Color Gain Control
- Hue Phase Control

- Gamma Offset Control
- Preset Control

Installation

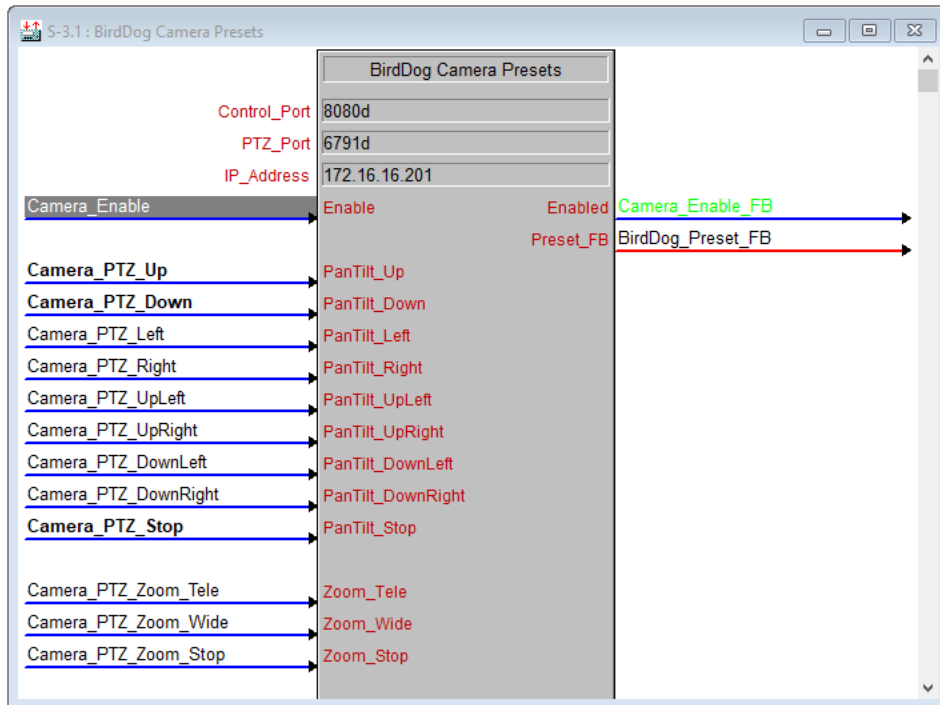
The zip file that includes this documentation has the simpl+ and simpl# modules that need to be copied into your project folder. The files were built and tested on a Crestron 4-series processor.

There are three simpl+ modules, the BirdDog Camera Presets module, the BirdDog Decoder module and the BirdDog Encoder module. The zip file also contains a SIMPL project and a VT-Pro touchscreen design that you can use for testing. The touchscreen design and both modules will need to have their IP addresses set correctly for valid testing.



Camera Module

This module needs an IP address that can be directly provided using the IP_Address parameter, or provided while the project is running by the serial join DynamicIP. Sending the Module enable signal high will establish the connection to the camera.



Input Signals

Enable [digital]

The Enable signal is used to start the module. This is level triggered and needs to be held high to use the module. Once the signal goes low the connection will be closed. The enabled output will go high once the module is ready.

PanTilt_Up [digital]

The PanTilt_Up signal is used to tilt the camera up. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_Down [digital]

The PanTilt_Down signal is used to tilt the camera down. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_Left [digital]

The PanTilt_Left signal is used to pan the camera left. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_Right [digital]

The PanTilt_Right signal is used to pan the camera right. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_UpLeft [digital]

The PanTilt_UpLeft signal moves the camera up and to the left. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_UpRight [digital]

The PanTilt_UpRight signal moves the camera up and to the right. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_DownLeft [digital]

The PanTilt_DownLeft signal moves the camera down and to the left. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_DownRight [digital]

The PanTilt_DownRight signal moves the camera down and to the right. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

PanTilt_Stop [digital]

The PanTilt_Stop signal stops the camera from moving.

Zoom_Tele [digital]

The Zoom_Tele signal is used to zoom in. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

Zoom_Wide [digital]

The Zoom_Wide signal is used zoom out. This is level triggered, when the signal is high the camera will continue to move and when it goes low it will stop.

Zoom_Stop [digital]

The Zoom_Stop signal stops the camera from zooming in or out.

Focus_Auto [digital]

The Focus_Auto signal activates the cameras auto focus.

Focus_Manual [digital]

The Focus_Manual signal set the camera focus to manual.

Menu_On [digital]

The Menu_On signal opens the menu of the camera. This is level triggered, opening the menu when the signals goes high. Sending the signal low has no effect.

Menu_Off [digital]

The Menu_Off signal closes the menu of the camera. This is level triggered, closing the menu when the signals goes high. Sending the signal low has no effect.

Freed_On [digital]

The Freed_On signal turns FreeD on. This is level triggered, activating FreeD when the signals goes high. Sending the signal low has no effect.

Freed_Off [digital]

The Freed_Off signal turns FreeD off. This is level triggered, deactivating FreeD when the signals goes high. Sending the signal low has no effect.

Reset_Image [digital]

The Reset_Image signal will reset the image from the camera. This is level triggered, resetting the image when the signals goes high. Sending the signal low has no effect.

High_Resolution_On [digital]

The High_Resolution_On signal will enable the high resolution setting in the camera. This is level triggered, enabling the high resolution setting when the signals goes high. Sending the signal low has no effect.

High_Resolution_Off [digital]

The High_Resolution_Off signal will disable the high resolution setting in the camera. This is level triggered, disabling the high resolution setting when the signals goes high. Sending the signal low has no effect.

Video_Enhancement_On [digital]

The Video_Enhancement_On signal will enable the video enhancement setting in the camera. This is level triggered, enabling the video enhancement setting when the signals goes high. Sending the signal low has no effect.

Video_Enhancement_Off [digital]

The Video_Enhancement_Off signal will disable the video enhancement setting in the camera. This is level triggered disabling the video enhancement setting when the signals goes high. Sending the signal low has no effect.

Exposure_Compensation_On [digital]

The Exposure_Compensation_On signal will enable the exposure compensation setting in the camera. This is level triggered, enabling the exposure compensation setting when the signals goes high. Sending the signal low has no effect.

Exposure_Compensation_Off [digital]

The Exposure_Compensation_Off signal will disable the exposure compensation setting in the camera. This is level triggered, disabling the exposure compensation setting when the signals goes high. Sending the signal low has no effect.

Slow_Shutter_On [digital]

The Slow_Shutter_On signal will enable the slow shutter setting setting in the camera. This is level triggered, enabling the slow shutter setting when the signals goes high. Sending the signal low has no effect.

Slow_Shutter_Off [digital]

The Slow_Shutter_Off signal will disable the slow shutter setting setting in the camera. This is level triggered, disabling the slow shutter setting when the signals goes high. Sending the signal low has no effect.

Brightness_Low [digital]

The Brightness_Low signal will set the brightness setting to low. This is level triggered, setting the brightness to low when the signals goes high. Sending the signal low has no effect.

Brightness_Med [digital]

The Brightness_Med signal will set the brightness setting to medium. This is level triggered, setting the brightness to medium when the signals goes high. Sending the signal low has no effect.

Brightness_High [digital]

The Brightness_High signal will set the brightness setting to high. This is level triggered, setting the brightness to high when the signals goes high. Sending the signal low has no effect.

High_Sensitivity_On [digital]

The High_Sensitivity_On signal will enable the high sensitivity setting in the camera. This is level triggered, enabling the high sensitivity setting when the signal goes high. Sending the signal low has no effect.

High_Sensitivity_Off [digital]

The High_Sensitivity_Off signal will disable the high sensitivity setting in the camera. This is level triggered, disabling the high sensitivity setting when the signal goes high. Sending the signal low has no effect.

Preset_Save [digital]

The Preset_Save signal allows you to save the current setup as a preset. Please note you need to set the Preset analog signal first.

Preset_Load [digital]

The Preset_Load signal allows you to load the current setup as a preset. Please note you need to set the Preset analog signal first.

Preset [analog]

The Preset signal sets the preset number you want to either load or save. You need to set this first and then use the Preset_Load or Preset_Save digital joins appropriately.

Blue_Gain [analog]

The Blue_Gain signal allows you to adjust the gain for the blue channel. Valid values are 0 to 64.

Blue_Hue [analog]

The Blue_Hue signal allows you to adjust the hue for the blue channel. Valid values are 0 to 64.

Cyan_Gain [analog]

The Cyan_Gain signal allows you to adjust the gain for the cyan channel. Valid values are 0 to 64.

Cyan_Hue [analog]

The Cyan_Hue signal allows you to adjust the hue for the cyan channel. Valid values are 0 to 64.

Green_Gain [analog]

The Green_Gain signal allows you to adjust the gain for the green channel. Valid values are 0 to 64.

Green_Hue [analog]

The Green_Hue signal allows you to adjust the hue for the green channel. Valid values are 0 to 64.

Magenta_Gain [analog]

The Magenta_Gain signal allows you to adjust the gain for the magenta channel. Valid values are 0 to 64.

Magenta_Hue [analog]

The Magenta_Hue signal allows you to adjust the hue for the magenta channel. Valid values are 0 to 64.

Red_Gain [analog]

The Red_Gain signal allows you to adjust the gain for the red channel. Valid values are 0 to 64.

Red_Hue [analog]

The Red_Hue signal allows you to adjust the hue for the red channel. Valid values are 0 to 64.

Yellow_Gain [analog]

The Yellow_Gain signal allows you to adjust the gain for the yellow channel. Valid values are 0 to 64.

Yellow_Hue [analog]

The Yellow_Hue signal allows you to adjust the hue for the yellow channel. Valid values are 0 to 64.

Color_Gain [analog]

The Color_Gain signal allows you to adjust the color gain for the camera. Valid values are 0 to 255.

Hue_Phase [analog]

The Hue_Phase signal allows you to adjust the hue phase for the camera. Valid values are 0 to 255.

Gamma_Offset [analog]

The Gamma_Offset signal allows you to adjust the gamma offset for the camera. Valid values are -16 to 64.

Brightness_Level [analog]

The Brightness_Level signal allows you to adjust the brightness level for the camera. Valid values are 0 to 6.

Brightness_Compensation [analog]

The Brightness_Compensation signal allows you to adjust the brightness compensation for the camera. Valid values are 0 to 6.

Exposure_Mode [analog]

The Exposure_Mode signal

Exposure_Compensation_Level [analog]

The Exposure_Compensation_Level signal

Auto_Exposure_Response [analog]

The Auto_Exposure_Response signal

Exposure_Brightness [analog]

The Exposure_Brightness signal

Slow_Shutter_Limit [analog]

The Slow_Shutter_Limit signal

Gain_Level [analog]

The Gain_Level signal

Gain_Limit [analog]

The Gain_Limit signal

Iris_Level [analog]

The Iris_Level signal

Shutter_Speed [analog]

The Shutter_Speed signal

Dynamic_IP [string]

The Dynamic_IP signal allows you to set the dynamic IP address, overwriting any address that was set in the modules property field.

Freed_IP [string]

The Freed_IP signal allows you to set the FreeD IP address

Outouts

Enabled **[digital]**

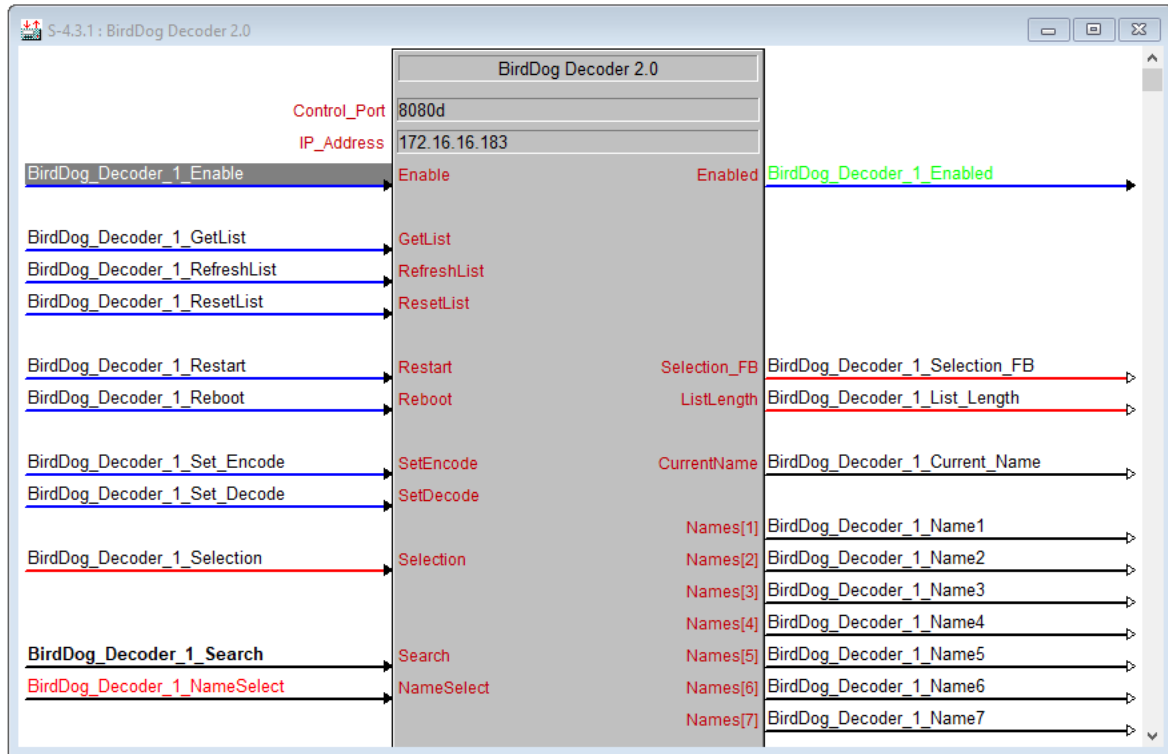
The Enabled signal will go high once the enable input has gone high. This signal indicates the module is connected and ready for use.

Preset_FB **[analog]**

The Preset_FB signal will contain the value of the last preset that was called.

Decoder Module

This module needs an IP address and a port to be configured before use.



Inputs

Enable [digital]

The Enable signal is used to start the module. This is level triggered and needs to be held high to use the module. Once the signal goes low the connection will be closed. The enabled output will go high once the module is ready.

GetList [digital]

The GetList signal is used to fetch the list of discovered devices. You may need to use this in conjunction with the RefreshList or ResetList commands to get the most up to date list of devices. The device names are provided by the Name outputs.

RefreshList [digital]

The RefreshList signal is used to force a refresh of the currently discovered devices. You may need to run this periodically to maintain an accurate list of devices.

ResetList [digital]

The ResetList signal is used to reset the list of discovered devices. You may need to run the RefreshList command after using this.

Restart [digital]

The Restart signal is used to restart the decoder.

Reboot [digital]

The Reboot signal is used to reboot the decoder.

SetEncode [digital]

The SetEncode signal is used to set the device to act as an encoder, for devices that support that.

SetDecode [digital]

The SetDecode signal is used to set the device to act as a decoder, for devices that support that.

Selection [analog]

The Selection signal is used to select the numbered list item. This is typically used in conjunction with a dynamic list smart object.

Search [string]

The Search signal is used to filter the list of discovered devices to ones matching the character you use with this input. Changing this input will immediately trigger a rebuild of the discovered device list.

NameSelect [string]

The NameSelect signal is used to directly select a source based on its name. Please note that the name has to match exactly.

Outputs

Enabled [digital]

The Enabled signal will go high once the enable input has gone high. This signal indicates the module is connected and ready for use.

Selection_FB [analog]

The Selection_FB signal provides feedback for currently selected device from the discovered device list.

ListLength [analog]

The ListLength signal provides feedback for the length of the discovered device list. This is typically used in conjunction with a dynamic list smart object.

CurrentName [string]

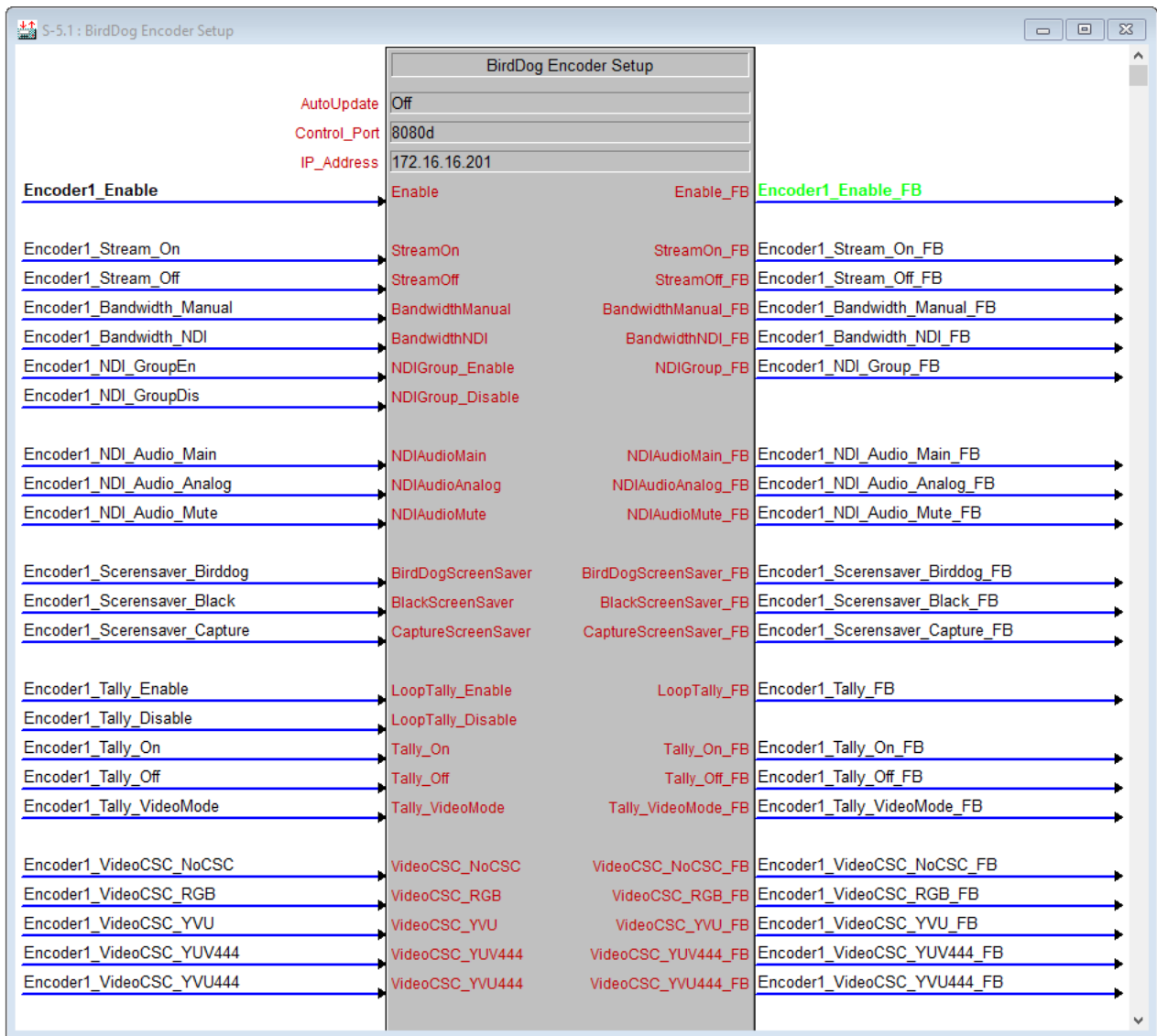
The CurrentName signal provides feedback for the name of the currently selected device from the discovered device list.

Names [string]

The Names signals provide feedback for the various discovered devices. The module supports up to 500 names and is designed to work with a dynamic list.

Encoder Module

This module needs an IP address and a port to be configured before use.



Parameters

Auto Update

The Auto Update parameter controls when the updates are made to the encoder. There are two modes, one which will immediately send any changes you make and another that will only send the changes when you trigger the Update input. If the Auto Update parameter is set to On, all changes will be sent immediately when any input changes. If Auto Update is set to Off then any changes you make will be stored and only sent when you raise the Update join. This allows you to make a change to any/all settings in one step.

Control Port

The TCP Port that the encoder uses. The default is 8080

IP Address

The IP Address of the encoder.

Inputs

Update [digital]

The Update signal is used to update all settings for the encoder with the current config. Specifically it updates the following settings

Encoder Settings

Bandwidth Mode

Bandwidth Select

Color Bit Depth

Channel Number

NDI Audio

NDI Group

Loop Tally

Tally Mode

Screen Saver

Stream Name

Stream to Network

Video CSC

Video Format

Video Sample Rate

StreamOn [digital]

The StreamOn signal is used to enable the stream mode. This signal is edge triggered, enabling the stream on the rising edge. The trailing edge has no effect.

StreamOff [digital]

The StreamOff signal is used to disable the stream mode. This signal is edge triggered, disabling the stream on the rising edge. The trailing edge has no effect.

BandwidthManual [digital]

The BandwidthManual signal is used to set the bandwidth setting to its manual mode. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

BandwidthNDI [digital]

The BandwidthNDI signal is used to set the bandwidth setting to its NDI mode. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

NDIGroup_Enable [digital]

The NDIGroup_Enable signal activates the NDI Group setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

NDIGroup_Disable [digital]

The NDIGroup_Disable signal deactivates the NDI Group setting. This signal is edge triggered, clearing this option on the rising edge. The trailing edge has no effect.

NDIAudioMain [digital]

The NDIAudioMain signal is used to set the NDI audio mode to the main setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

NDIAudioAnalog [digital]

The NDIAudioAnalog signal is used to set the NDI audio mode to the ANalog setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

NDIAudioMute [digital]

The NDIAudioMute signal is used to set the NDI audio mode to mute. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

BirdDogScreenSaver [digital]

The BirdDogScreenSaver signal is used to set the screensaver to the BirdDog setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

BlackScreenSaver [digital]

The BlackScreenSaver signal is used to set the screensaver to the blank setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

CaptureScreenSaver [digital]

The CaptureScreenSaver signal is used to set the screensaver to the capture setting. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

LoopTally_Enable [digital]

The LoopTally_Enable signal is used to enable the LoopTally. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

LoopTally_Disable [digital]

The LoopTally_Disable signal is used to disable the LoopTally. This signal is edge triggered, clearing this option on the rising edge. The trailing edge has no effect.

Tally_On [digital]

The Tally_On signal is used to enable the Tally. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

Tally_Off [digital]

The Tally_Off signal is used to disable the Tally. This signal is edge triggered, clearing this option on the rising edge. The trailing edge has no effect.

Tally_VideoMode [digital]

The Tally_VideoMode signal is used to the Tally to Video Mode. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

VideoCSC_NoCSC [digital]

The VideoCSC_NoCSC signal is used to set the Color Space Conversion mode to use no color space conversion. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

VideoCSC_RGB [digital]

The VideoCSC_RGB signal is used to set the Color Space Conversion mode to RGB. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

VideoCSC_YVU [digital]

The VideoCSC_YVU signal is used to set the Color Space Conversion mode to YVU. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

VideoCSC_YUV444 [digital]

The VideoCSC_YUV444 signal is used to set the Color Space Conversion mode to YUV444. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

VideoCSC_YVU444 [digital]

The VideoCSC_YVU444 signal is used to set the Color Space Conversion mode to YVU444. This signal is edge triggered, setting this option on the rising edge. The trailing edge has no effect.

ChannelNumber [analog]

The ChannelNumber signal is used set the channel number.

VideoSampleRate [analog]

The VideoSampleRate signal is used to set the video sample rate.

ColorDepth [analog]

The ColorDepth signal is used to set the color depth

BandwidthSelect [analog]

The BandwidthSelect signal is used set the bandwidth

VideoFormat [string]

The VideoFormat signal is used to set the video format

StreamName [string]

The StreamName signal is used to attach to a named stream

NDIGroupName [string]

The NDIGroupName signal is used to attach to a named NDI group