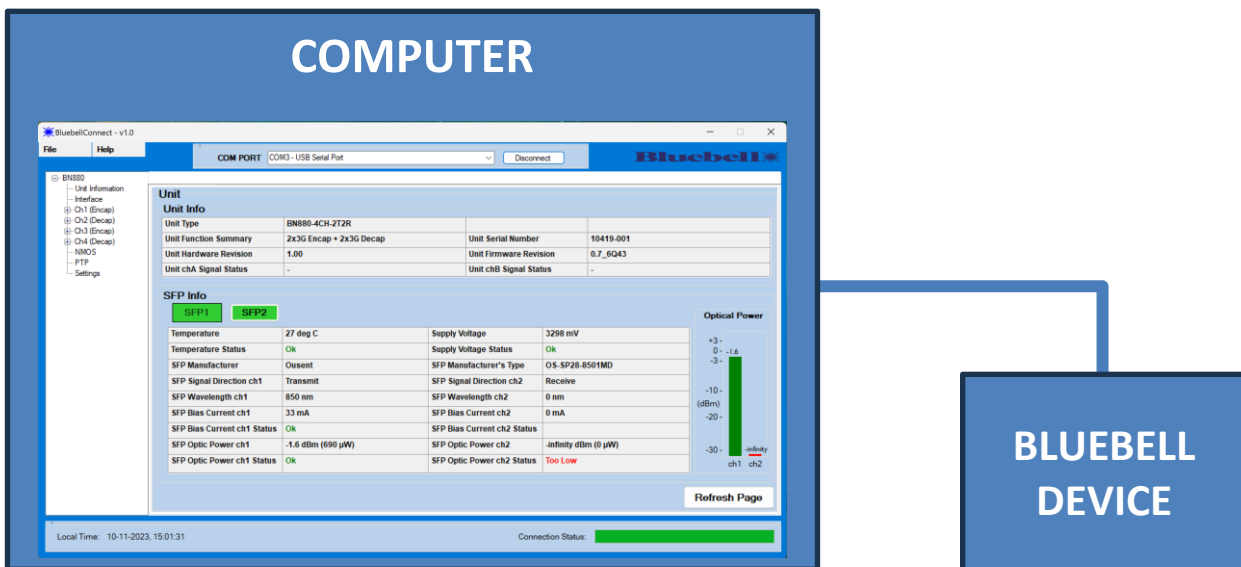


## BluebellConnect



Thank you for your interest in Bluebell Opticom, a leading company in professional broadcast equipment. The BluebellConnect user interface is quick and simple to run on any Windows Platform. This User Guide should provide sufficient information to get you up and running in the vast majority of cases.

## User Guide

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# Contents

BluebellConnect.....	1
User Guide .....	1
Contents .....	2
1. Overview:.....	3
2. BluebellConnect Walkthrough.....	3
2.1. Hardware connection: .....	3
2.2. Opening BluebellConnect .....	4
2.3. Connecting to a device .....	4
2.4. Unit Information Page .....	5
2.5. BN880 Example.....	6
3. Contact details:.....	11

## 1. Overview:

Many of Bluebell Opticom's products are plug-and-play where no configuration is needed, however some units can be configuration beforehand to work with the user's system.

The intended use of BluebellConnect is not to configure the device during live production, but to help set-up and pre-configure the device before connecting to a network.

BluebellConnect is a user interface that runs on Windows which is used to monitor/configure the Bluebell products. The software runs by opening an executable (.exe) file and there is no need for any installation on the user's PC.

With some of our products being versatile in their use, users can configure them through BluebellConnect rather than changing parts of their system, such as network settings, to configure our products.

## 2. BluebellConnect Walkthrough

In this walkthrough, we will connect to a BN880 unit which is one of our ST2110 Encapsulator/Decapsulator solutions.

To connect a unit to BluebellConnect, simply:

1. Power the Unit
2. Connect a USB from the type-C connector at the rear of the unit to a PC.
3. Open BluebellConnect.exe
4. Once the Bx880's LEDs have stopped toggling green/red, it is ready for a connection.
5. Select the correct COM port for your device, and click "Connect"

### 2.1. Hardware connection:

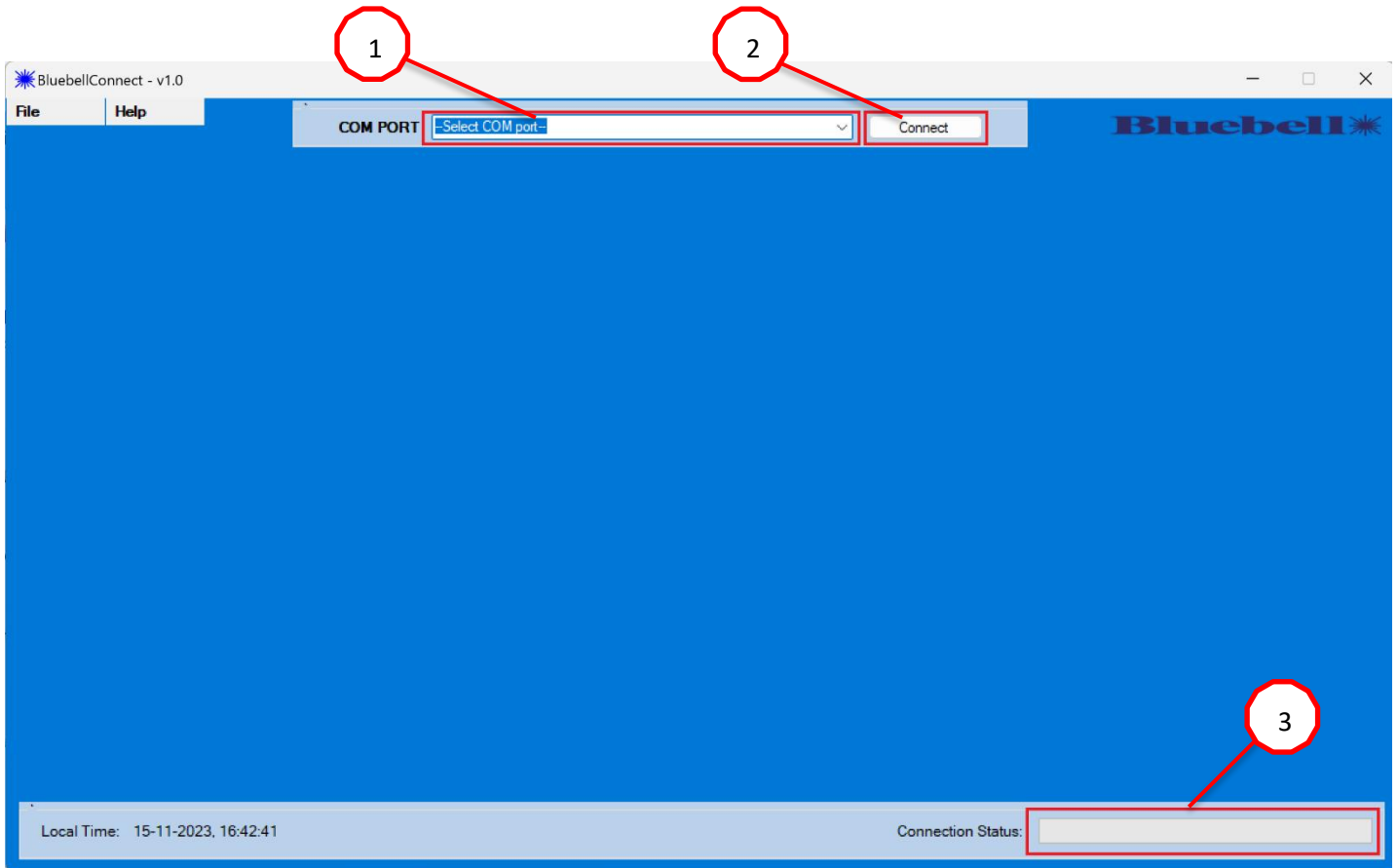
Power up the unit, connect the unit's USB port to the PC's COM port. The COM number does not need to be known, as BluebellConnect scans through all the active COM ports on the PC and will display them for selection.



The unit's LEDs may flash to indicate it is not ready for serial communication. Once the flashing has stopped and is stable, you can connect to the device on BluebellConnect.

## 2.2. Opening BluebellConnect

Run BluebellConnect.exe to open user interface.

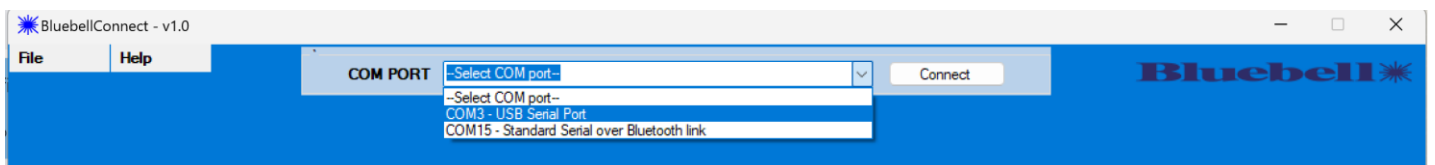


1. Detected COM Ports (auto refreshes at dropdown)
2. Connect/disconnect button
3. Connection status bar

## 2.3. Connecting to a device

Ensure the LED on the unit has stopped toggling green-red.

Click on the dropdown menu to view the COM ports currently occupied on the PC.



Select the device, in this case it is COM3 – USB Serial Port and click “Connect”.

## 2.4. Unit Information Page

Unit Information page is the first page to open once a valid connection is established.

BluebellConnect - v1.0

File Help

COM PORT: COM3 - USB Serial Port Disconnect

Bluebell

BN880

- Unit Information
- Interface
  - Ch1 (Encap)
  - Ch2 (Decap)
  - Ch3 (Encap)
  - Ch4 (Decap)
- NMOS
- PTP
- Settings

### Unit

#### Unit Info

Unit Type	BN880-4CH-2T2R		
Unit Function Summary	2x3G Encap + 2x3G Decap	Unit Serial Number	98765-432
Unit Hardware Revision	1.00	Unit Firmware Revision	1.0_6Q43
Unit chA Signal Status	-	Unit chB Signal Status	-

#### SFP Info

SFP1 SFP2

Temperature	48 deg C	Supply Voltage	3300 mV
Temperature Status	Ok	Supply Voltage Status	Ok
SFP Manufacturer	Ousent	SFP Manufacturer's Type	OS-SP28-8501MD
SFP Signal Direction ch1	Transmit	SFP Signal Direction ch2	Receive
SFP Wavelength ch1	850 nm	SFP Wavelength ch2	0 nm
SFP Bias Current ch1	31 mA	SFP Bias Current ch2	0 mA
SFP Bias Current ch1 Status	Ok	SFP Bias Current ch2 Status	
SFP Optic Power ch1	-1.6 dBm (688 µW)	SFP Optic Power ch2	-infinity dBm (0 µW)
SFP Optic Power ch1 Status	Ok	SFP Optic Power ch2 Status	Too Low

Optical Power

+3 -  
0 -  
-3 -  
-10 -  
-20 -  
-30 -  
-infinity

ch1 ch2

Refresh Page

Local Time: 15-11-2023, 17:04:19

Connection Status: █

The first table (Unit Info) has the basic information of the device such as type, serial number, hardware, and firmware revisions.

The second table (SFP Info) shows the diagnostic parameters of the SFP. If a device has no SFP slot, this section will not show. If a device has SFP slots but no SFPs are present, the SFP# button will be red.

The optical power bar graph represents the optical light level emitted/detected by the SFP and is displayed in dBm.

**Note:** The parameters are static and only updated once the “Refresh Page” button (bottom right) or “Unit Information” node on the tree (left) is pressed.

## 2.5. BN880 Example

The following section is an example of one of our BN880 units. Other units may have different parameters to control. Please refer to the user guides for each unit for further information.

### 2.5.1. Interface Page

**Interface (25G)**

Host Name: **bx880-a1-b1-62**

**Primary Interface**

IP Address: **192.168.16.248**      MAC Address: **40:A3:6B:A1:B1:62**  
Subnet Mask: **255.0.0.0**      DHCP: **Disable**  
Gateway: **192.168.16.2**      FEC Scheme: **None**  
Link Status: **Link Down**

NOTE: For configuration to be valid, IP and Gateway must be in the same network  
Changes will issue a reset and can take up to 20 seconds to re-connect

**Save Changes**

**Unit Info**

Temperature: +40 degC  
Protocol: NMOS

**Device Log:**

Max Recorded Temp.: +41 degC  
Unit Run Time: 0d 4h 34m      **Reset**

**Licenses:**

UHD License  
Frame Sync License  
Clean Switch License  
Blackburst License

**Secondary Interface**

IP Address: **172.16.16.2**      MAC Address: **40:A3:6B:A1:B1:63**  
Subnet Mask: **255.255.255.0**      DHCP: **Enable**  
Gateway: **172.16.16.1**      FEC Scheme: **None**  
Link Status: **Link Down**

NOTE: For configuration to be valid, IP and Gateway must be in the same network  
Changes will issue a reset and can take up to 20 seconds to re-connect

**Save Changes**      **Refresh Page**

The interface page can be used to change the network settings on the BN880. This is helpful to configure the network settings before connecting the units to the network. The primary and secondary interfaces have separate “Save” buttons and causes the units to reset, it can take up to 15 seconds to reboot.

**Note: The parameters are static and only updated once the “Refresh Page” button (bottom right) or “Interface” node on the tree (left) is pressed.**

### 2.5.2. ENCAP Settings

#### 2.5.2.1. Video Page:

**Channel 1**

Primary Interface      Secondary Interface

**Primary Video Flow**

Flow Enabled:       Tx Packet Count: 118784926

Flow Name: **F: 0- 0- 0**

Dest. MAC: **01:00:5E:00:01:02**

Source IP: **192.168.0.1**      **10000**

Destination IP: **239.0.1.2**      **20000**

**SDI Status (Valid)**

Bit Rate: 12G

Scan Mode: **Progressive**      Bit Depth: **10 bits**

Video Format: **3840x2160**      Colorimetry: **BT2020**

Frame Rate: **59.94**      Dynamic Range: **SDR**

Sampling Format: **422 YCbCr**      ICIp: **Inactive**

**Set Parameters**      **Refresh Page**

For encoding a video flow, the SDI video settings are automatically detected by the unit and displayed.

The SDI status parameters is only updated once a valid signal is detected. If an invalid signal is detected, the last valid SDI parameters will be displayed instead.

2.5.2.2. Audio Page:

**Channel 1 - Audio 1**

**Primary Audio Flow**

Flow Enabled:

Flow Name:

Dest. MAC:

Source IP:

Destination IP:

**Audio Settings**

Sampling Rate: 48000

RTP Payload:

Format:

Packet Time:

**Secondary Audio Flow**

Flow Enabled:

Flow Name:

Dest. MAC:

Source IP:

Destination IP:

**Audio Settings**

Sampling Rate: 48000

RTP Payload:

Format:

Packet Time:

[Set Parameters](#) [Refresh Page](#)

2.5.2.3. Ancillary Page:

**Channel 1**

**Primary Ancillary Flow**

Flow Enabled:

Flow Name:

Dest. MAC:

Source IP:

Destination IP:

**Secondary Ancillary Flow**

Flow Enabled:

Flow Name:

Dest. MAC:

Source IP:

Destination IP:

[Set Parameters](#) [Refresh Page](#)

By default, all flows are disabled. To enable a video/audio/ancillary flow, go to the correct page and tick the **Flow Enabled** button and Set Parameters.

## 2.5.3. DECAP Settings

### 2.5.3.1. Video Page:

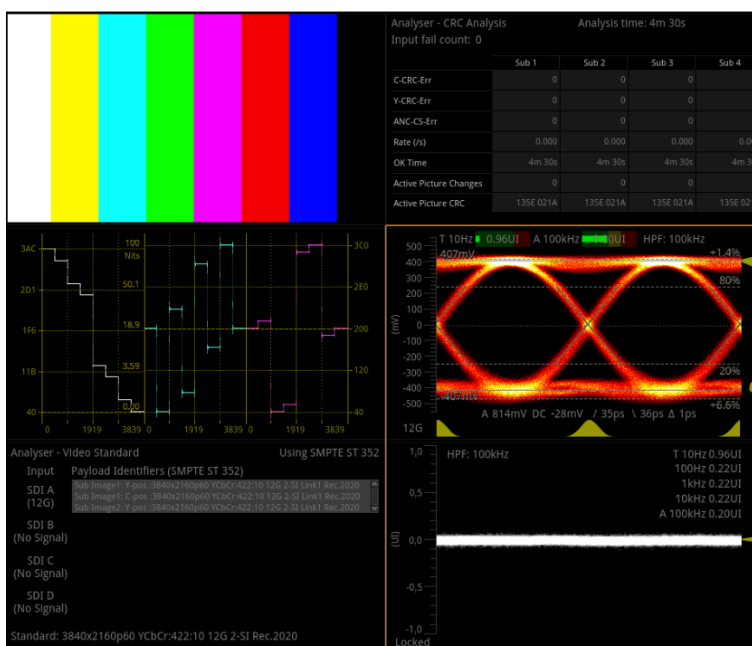
For decoding a video flow, the settings must be manually set to match the encoded video's settings.

#### 2.5.3.1.1. Colour Bar Generator

The decap channel has the capability to generate a colour bar at any of the following video formats:

- 4096x2160
- 3840x2160
- 1920x1080 (ST 274)

Any frame rate can be selected. Video flow must be enabled. The Loss of Input must either be put to either *Freeze*, *Black* or *Blue* and the *Colour Bar* must have *Enable* selected.





2.5.3.2. Audio Page:

**Channel 2 - Audio 1**

**Primary Audio Flow**  
 Flow Enabled:   
 Flow Name: F: 1- 1- 0  
 Dest. MAC: 01:00:5E:01:01:04  
 Source IP: 192.168.1.1 10000  
 Destination IP: 239.1.1.4 20000

**Audio Settings**  
 Sampling Rate: 48000  
 RTP Payload: 0  
 Format: Uncompressed  
 Packet Time: 1 ms

**Packet Filtering**  
 Source IP  
 Source UDP Port  
 Destination IP  
 Destination UDP Port  
 Destination MAC  
 VLAN

**Secondary Audio Flow**  
 Flow Enabled:   
 Flow Name: F: 1- 1- 1  
 Dest. MAC: 01:00:5E:01:01:05  
 Source IP: 192.168.1.1 10000  
 Destination IP: 239.1.1.5 20000

**Audio Settings**  
 Sampling Rate: 48000  
 RTP Payload: 0  
 Format: Uncompressed  
 Packet Time: 1 ms

**Packet Filtering**  
 Source IP  
 Source UDP Port  
 Destination IP  
 Destination UDP Port  
 Destination MAC  
 VLAN

Set Parameters Refresh Page

2.5.3.3. Ancillary Page:

**Channel 2**

**Primary Ancillary Flow**  
 Flow Enabled:   
 Flow Name: F: 1- 5- 0  
 Dest. MAC: 01:00:5E:01:01:14  
 Source IP: 192.168.1.1 10000  
 Destination IP: 239.1.1.20 20000

**Packet Filtering**  
 Source IP  
 Source UDP Port  
 Destination IP  
 Destination UDP Port  
 Destination MAC  
 VLAN

**Secondary Ancillary Flow**  
 Flow Enabled:   
 Flow Name: F: 1- 5- 1  
 Dest. MAC: 01:00:5E:01:01:15  
 Source IP: 192.168.1.1 10000  
 Destination IP: 239.1.1.21 20000

**Packet Filtering**  
 Source IP  
 Source UDP Port  
 Destination IP  
 Destination UDP Port  
 Destination MAC  
 VLAN

Set Parameters Refresh Page

By default, all flows are disabled. To enable a video/audio/ancillary flow, go to the correct page and tick the **Flow Enabled** button and Set Parameters.

## 2.5.4. NMOS Page

**Interface**

- Ch1 (Encap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch2 (Decap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch3 (Encap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch4 (Decap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- NMOS**
- PTP
- Settings

**NMOS**

Status: DISCOVERING

Registry Address:

Uptime:

Connection Count:

Registry Mode:  Auto  Manual

DNS Registry Service:

MDNS:

DNS Server Address:

Manual DNS Server Address:

NOTE: When changing the MDNS settings, the unit will reboot itself and it can take up to 15 seconds to show the correct parameters.

## 2.5.5. PTP Page

**Interface**

- Ch1 (Encap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch2 (Decap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch3 (Encap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- Ch4 (Decap)
  - Video
  - Audio 1
  - Audio 2
  - Audio 3
  - Audio 4
  - Ancillary
- NMOS
- PTP**
- Settings

**PTP**

PTP Mode:  Multicast  Unicast

PTP Source:  Auto  Manual Source Selection:  Source 1  Source 2

**Source 1**

Version:

Presence: Not Present

Domain Number:

Vlan ID:

DSCP:

Grand Master ID:

Clock ID:

**Source 2**

Version:

Presence: Not Present

Domain Number:

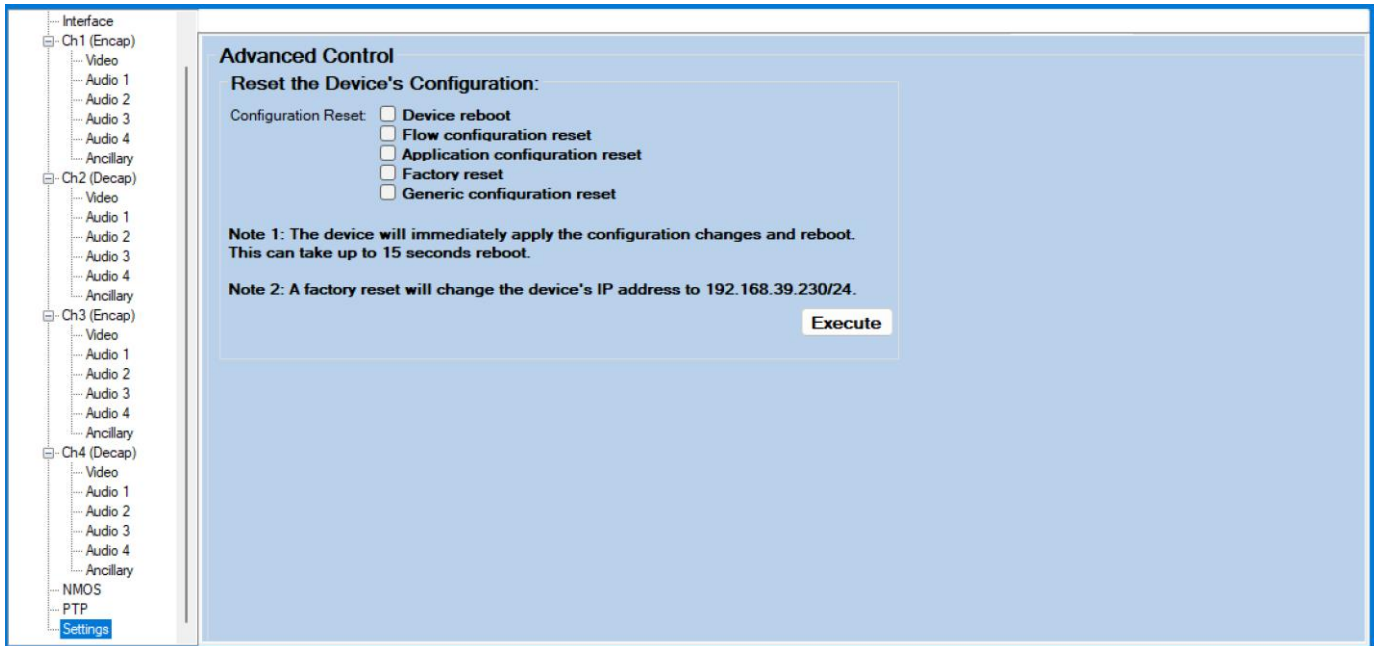
Vlan ID:

DSCP:

Grand Master ID:

Clock ID:

## 2.5.6. Settings Page



When triggering a “Generic Configuration Reset”, this will also remove all the licenses (displayed on Interface Page). The user will have to re-upload the licenses if this happens.

**NOTE:** When resetting any of the device configuration, it will initiate a device reboot can take up to 20 seconds for the unit to be fully functional again.

**NOTE:** For any technical issues not covered in this User Guide, please contact Bluebell Opticom.

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE

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