Flanders Scientific Inc.

BoxIO User Manual

Updated 7.10.2023

Applies to BoxIO Firmware Version 1.70
IP Remote Utility Version 1.9.2

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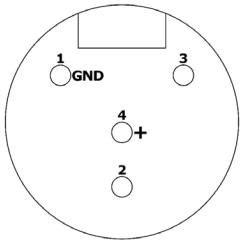
Caution

Using a power supply other than the one provided may damage BoxIO.

Optional DTAP to Mini-XLR cables approved for use with BoxIO are available at ShopFSI.com and ShopFSI.eu.

If using a third party power adaptor, please ensure the proper voltage and pinout are being used.



4 pin mini XLR pinout

BoxIO does not contain any fans.

To cool internal components the chassis operates as a heatsink.

Allow for adequate airflow across the chassis, and never stack BoxIO with any other equipment.

Connecting and Disconnecting SDI BNC Cables

To prevent damage to components from electrical discharge follow these steps:

- Connect power first on all devices.
- Power on all devices.
- Connect BNC cables.

To disconnect:

- Disconnect BNC cables.
- Power down and disconnect power from devices.

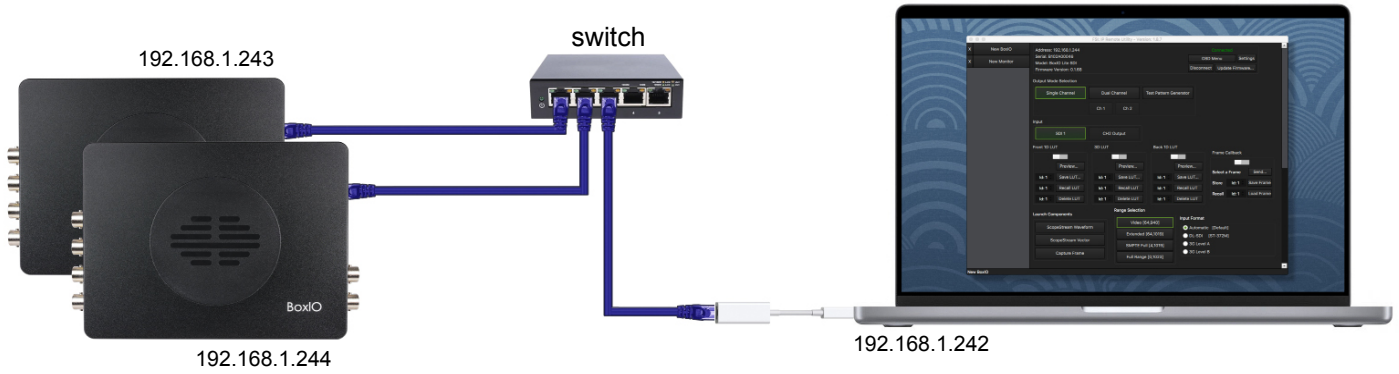
If using a wireless video receiver we strongly suggest using an SDI Video Ground Path Isolator (available at ShopFSI.com and ShopFSI.eu) and powering the receiver from a separate power source than the monitor. Use of wireless video receivers can cause dangerous ground loop issues that can damage connected equipment like monitors. Using a ground loop isolator and powering from a separate power source will help keep downstream equipment protected.

The core functionality of BoxIO is applying 3D and 1D LUTs to an SDI video signal in real time to allow for signal color management in applications including on set look creation/preview, display calibration, and a wide variety of other LUT based operations.

BoxIO interfaces directly with many popular 3rd party look management and calibration software solutions and can also be controlled and managed with FSI's IP Remote Utility for Windows, MacOS, and iOS.

The sample configuration diagram below illustrates the 3 elements (computer, switch, BoxIO) suggested for a typical and robust installation. Please note that the IP addresses listed are for illustrative purposes only, any compatible set of IP pool addresses could be used.

Example: Typical Networked Configuration of Multiple BoxIO devices



BoxIO is equipped with WiFi as one connection option for initial setup. WiFi can also be utilized in use cases requiring simple and infrequent control and settings changes to one BoxIO at a time, but for prolonged or higher bandwidth operations hardwired ethernet connectivity is strongly recommended. Initial configuration of BoxIO can also be accomplished over a hardwired ethernet connection so WiFi connectivity is not strictly needed meaning many users may never utilize BoxIO's wireless connection capability. This is a point worth emphasizing for best user experience: *for applications requiring frequent communication with BoxIO, WiFi is not suggested as the primary connection method.*

While a direct ad hoc connection between computer and BoxIO is possible the normal and suggested configuration is to connect your computer and BoxIO devices to a switch or router as illustrated above, especially if you plan to use multiple BoxIO devices.

When configuring your installation you will want to ensure that your computer and all BoxIO devices are using valid and unique IP addresses within the same IP address pool. Do not give your computer and BoxIO the same IP address, this will cause a conflict and result in a connection failure.

If you have both wireless and hardwired connections active on your computer it can cause conflicts that may prevent your computer from establishing or maintaining a connection to your BoxIO devices. You can either turn off your computer's WiFi connection (preferred) or if needed for other operations you will want to make sure that the IP address pools for WiFi and ethernet connectivity do not conflict. When running concurrent network connections (e.g. ethernet + WiFi) on your computer you may also need to edit network service order on your computer for proper operation.

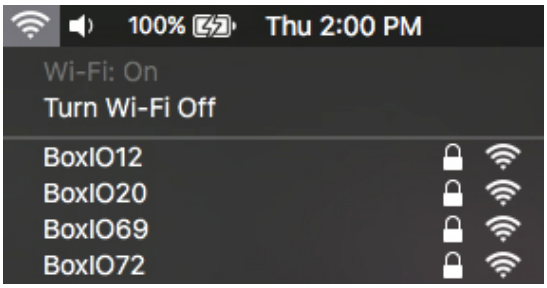
The IP Remote Utility, available as a free download from FlandersScientific.com, provides useful toggles and controls for management of BoxIO.

Initial BoxIO Setup

To begin setup of your BoxIO with the IPRU you will first need to establish a preliminary connection to the device. For initial setup you can connect to BoxIO through your choice of a wireless or wired connection.

Option 1: Wireless Ad Hoc Connection Method

BoxIO will show up as a wireless network that can be joined. WiFi provides a convenient way to quickly configure initial BoxIO settings.



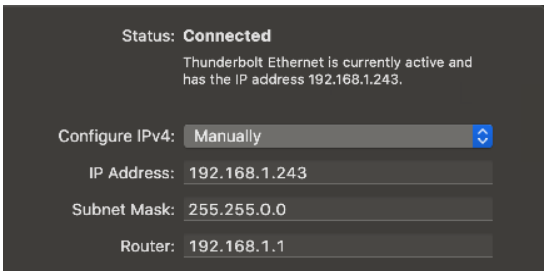
BoxIO has an information label on the back of the unit that includes a default static IP address, ad hoc wireless network SSID with password, and MAC address information. Select the BoxIO WiFi network you wish to connect to and enter the password found on that corresponding BoxIO's information label to connect.

As mentioned on the previous page WiFi connectivity is primarily designed for initial device setup. Once setup is complete the expectation is that most users will utilize BoxIO over a hardwired network connection.

Note: All BoxIO models have a reset button near the USB port that can be used to reset the unit to the factory network settings found on the information label on the back of BoxIO. If you are trying to connect to BoxIO and are unsure of the previously used settings and/or do not see a network name that corresponds to the one indicated on the information label you can reset the device to restore settings to those listed on the label.

Option 2: Ethernet Ad Hoc Direct Connection Method

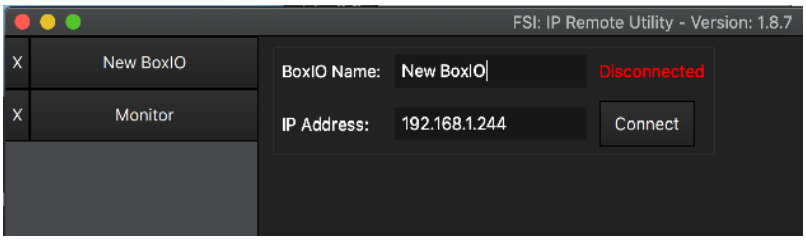
Connect BoxIO directly to your Mac or PC via an ethernet cable. Assign a static IP address to your Mac or PC that is different from BoxIO's IP address. The default IP address of the BoxIO (e.g. 192.168.1.244) is listed on the BoxIO's information label. Your computer's static IP address should be manually set to a valid and unique address (e.g. 192.168.1.243) within the same IP pool. Make sure you have also established a compatible subnet. An example configuration on MacOS is shown.



When connecting over ethernet, if your computer's WiFi connection is also active this may potentially prevent the IPRU from connecting to BoxIO so we suggest either turning your computer's WiFi off during this process or ensuring that your WiFi and Ethernet connections are utilizing separate IP pools.

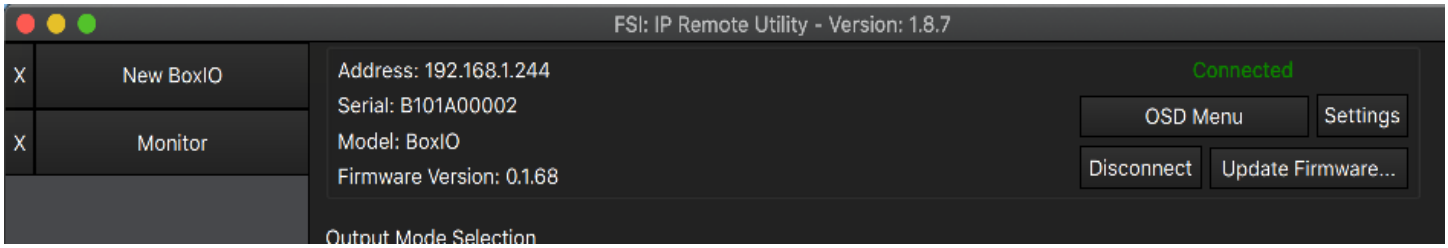
Configuration in IP Remote Utility

Now that BoxIO is connected to your computer it can be configured using the IP Remote Utility. Begin by selecting a BoxIO tab in the application, typing in the BoxIO IP address as discussed above, then pressing the Connect button.



If you are having trouble connecting please verify that your computer is configured as described above and is using compatible IP settings. If necessary reset BoxIO to the factory default settings using the hardware reset button on the device.

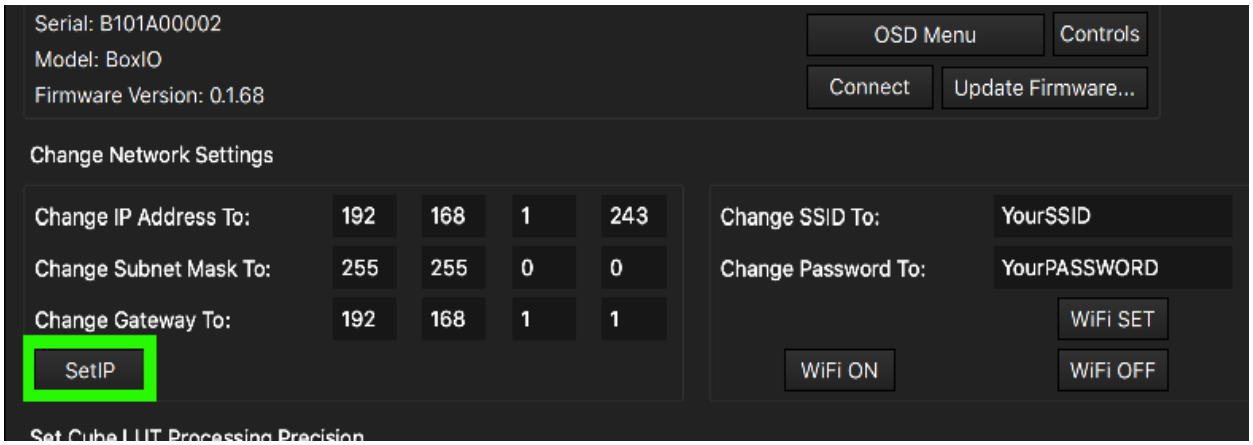
Once connected the IPRU will read back basic information about the BoxIO device you are connected to.



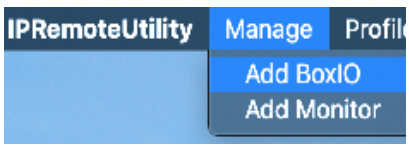
Next you can press the Settings button, which will provide you with access to the network configuration toggles necessary to prepare your BoxIO for use in a hardwired infrastructure installation. The Change IP Address / Change Subnet Mask fields can be used to enter any custom static IP configuration necessary to allow BoxIO to work on your network.

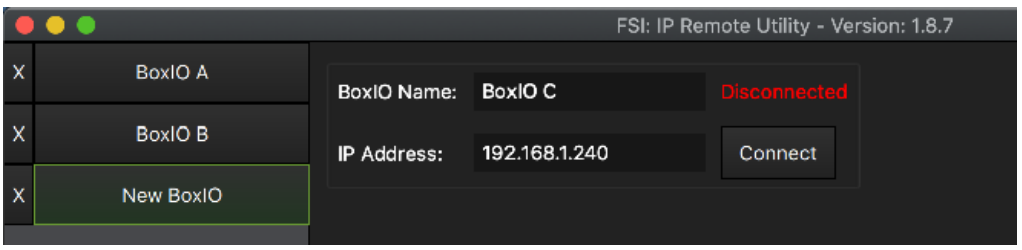
From this window you can also change your BoxIO's wireless SSID and password or even disable BoxIO WiFi entirely. It is a good practice to update these settings to prevent unauthorized access to your BoxIO. Once you have set your Custom SSID and password make sure to press the WiFi SET button to enabled your changes.

After you have entered your desired IP address information press the SetIP button to enable your new settings. Keep in mind that once you change your IP settings you will need to disconnect and reconnect to BoxIO using the newly assigned IP settings. Repeat this process to assign every BoxIO you plan on using a distinct static IP address.



Once you've configured your BoxIO devices and have everything connected on the same network it is easy to manage and switch between multiple BoxIO devices using the IPRU's tabbed layout. To add more than one BoxIO tab at a time use the Manage -> Add BoxIO selection in the menu bar, this will populate an additional BoxIO tab in the IPRU device list. Each tab can be individually named for easier device identification using the BoxIO Name Field when adding a device. The custom tab name will populate on the device list once you press Connect. Tabs are recalled through a program cycle provided that the Connect button is pressed.





General Information
At the top of any selected BoxIO tab window you will find the following information

BoxIO IP Address
BoxIO Serial Number
BoxIO Model Number
Current Firmware Version

Connection Status
Indicates connection status to BoxIO.

Additionally you will find:

OSD Menu Button
Toggle BoxIO's On-screen Status Menu (Seen as overlay on SDI 1 output from BoxIO)

Settings Page Button
Transitions tab window view from Control Page (default) to Settings Page

Update Firmware Button
Opens a prompt to select a Firmware file to send to BoxIO for update

Disconnect Button
Disconnects IPRU from the selected BoxIO

Control Page

The Control Page provides access to all of BoxIO's most commonly used features.
Active Selections highlight in green, not all functions are available on Lite models.

Mode Selection

Single Channel - uses 33x33x33.cube LUTs only
Places BoxIO in Single Channel Mode. Both output channels 1 & 2 will be the use the same selected active Input and LUT.

Dual Channel - uses 17x17x17.dat or 17x17x17.cube LUTs only
Places BoxIO in Dual Channel Mode. Both output channels 1 & 2 can be configured independently with the same or different active input and LUT settings. (Not available on Lite DP models)

Channel 1
Active in Dual Channel Mode, Configure output channel 1's input and LUT settings.

Channel 2
Active in Dual Channel Mode, Configure output channel 2's input and LUT settings.

Test Pattern Generator
Enable Test Pattern Generation Mode

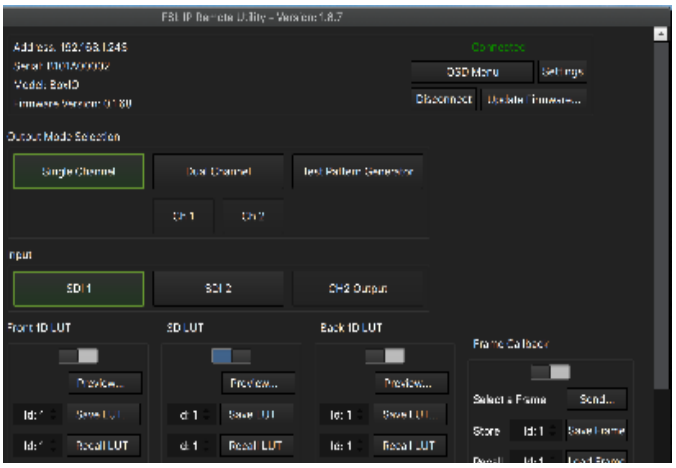
Input

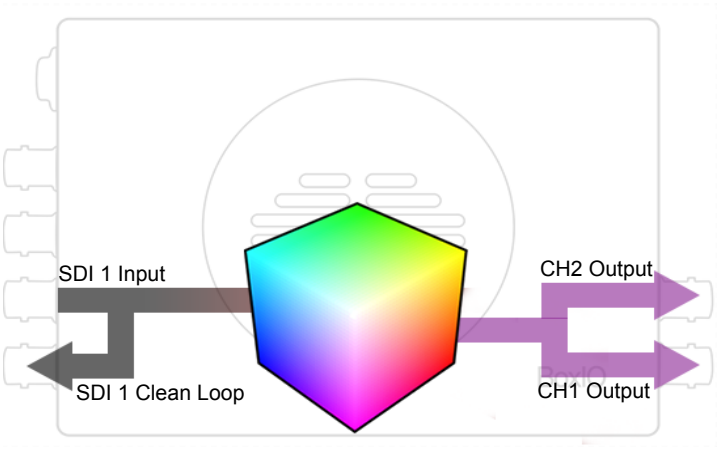
SDI 1
Selects SDI 1 as the active Input for the current Mode and Channel.

SDI 2
Selects SDI 2 as the active Input for the current Mode and Channel.
(Not available on Lite SDI or Lite DP models)

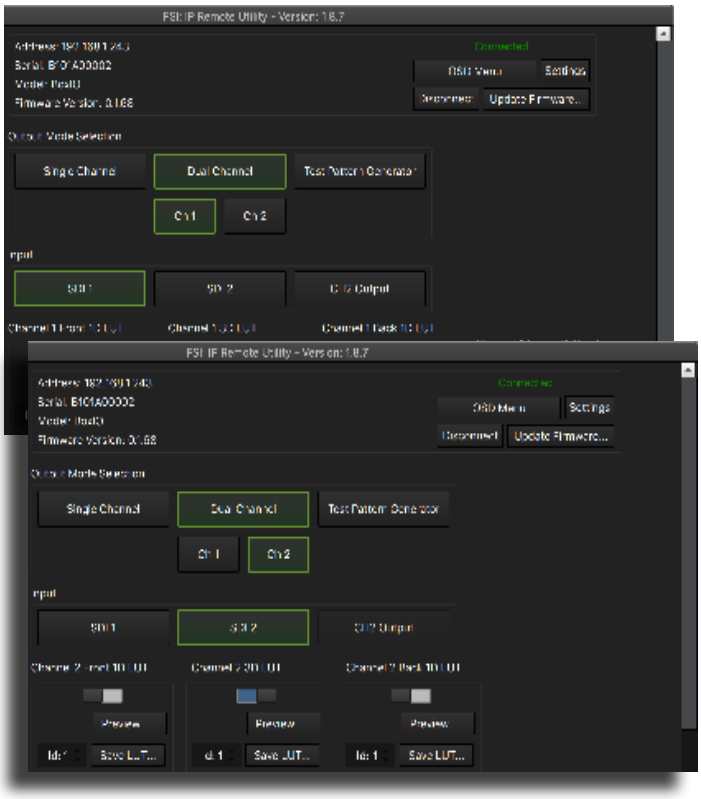
Channel 2 Output
Selectable in Dual Channel, use Channel Two's output as the input for Channel One. Has many potential applications including the ability to use a single device for both calibration and real-time look LUTs.

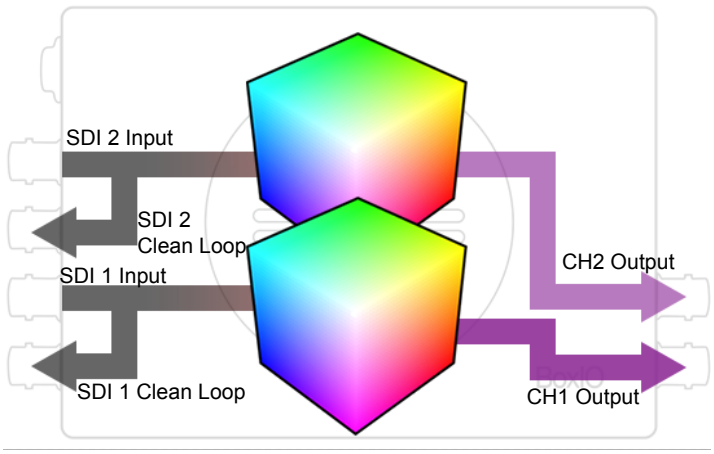
Single Channel Mode - SDI 1 Input selected



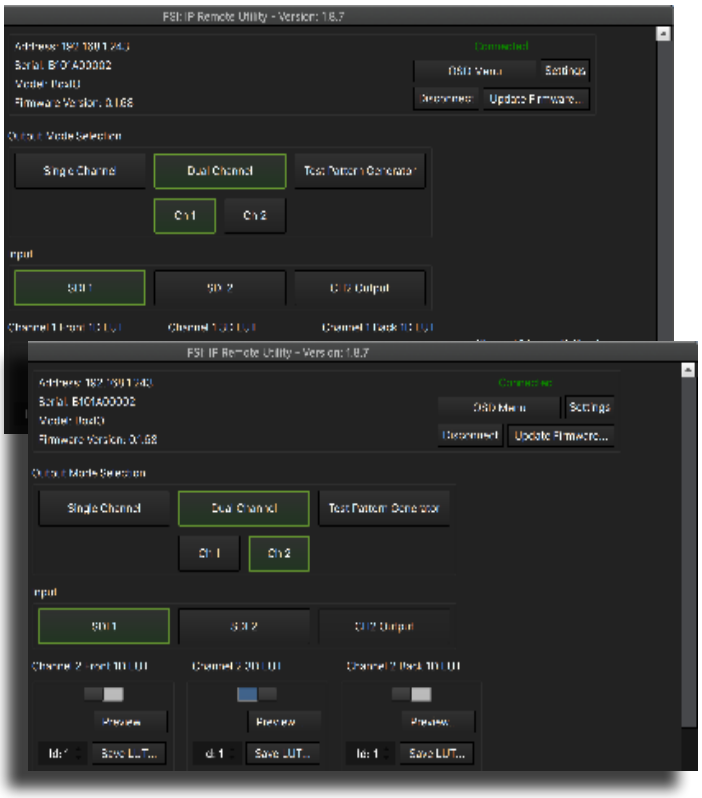


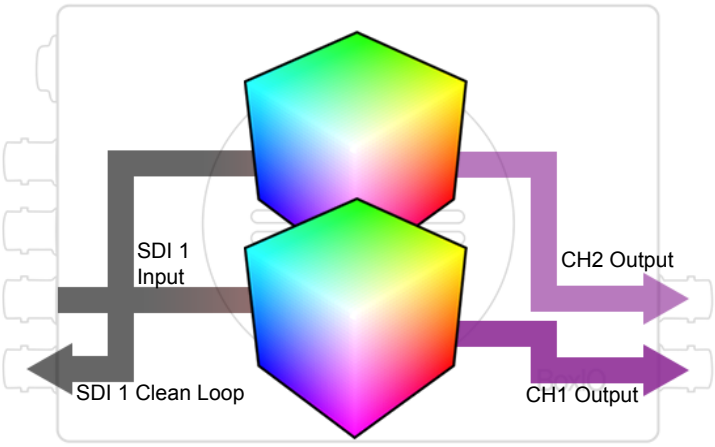
Dual Channel Mode - SDI 1 Input routed to CH1 Output, SDI 2 Input routed to CH 2 Output



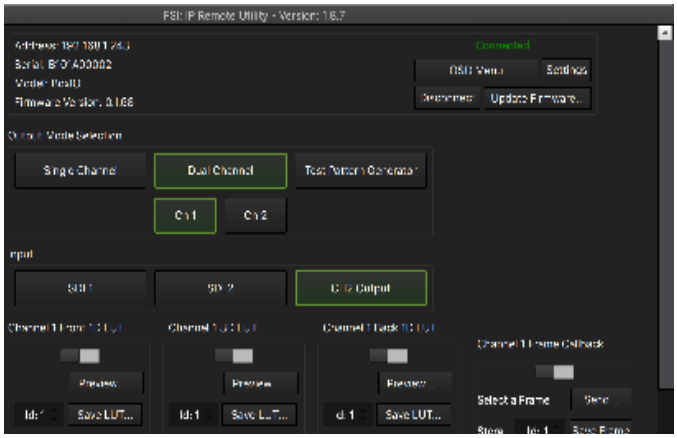


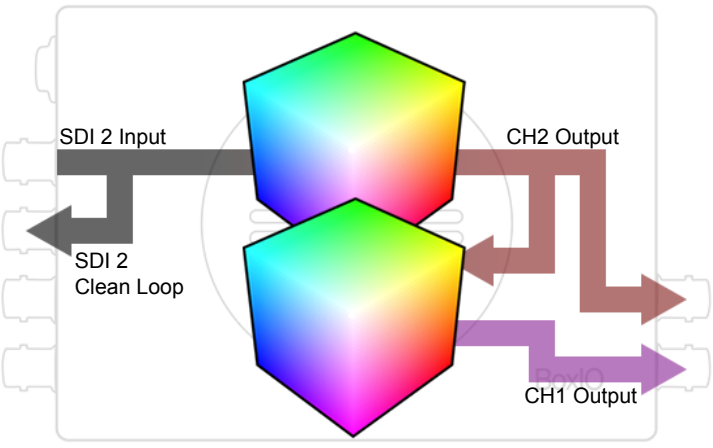
Dual Channel Mode - SDI 1 Input routed to CH1 Output, SDI 1 Input routed to CH 2 Output





Channel Stacking in Dual Channel Mode - CH2 Output routed to CH1 input





Range Selection

As with most LUT processing hardware all LUT calculations on BoxIO are performed in RGB color space. When dealing with YCbCr signals a CSC (color space conversion) is used to generate the RGB values for LUT processing.

BoxIO's processing chain is:
YCbCr signal -> CSC to RGB -> apply LUT -> CSC to YCbCr output

BoxIO has four available range selections that set both the RGB scaling and clamping thresholds used:
Video Range [64,940] *Typically recommended for use with LiveGrade Pro*
Extended Range [64,1019]
SMPTE Full [4,1019]
Full Range [0,1023]

Please note that whether LUTs are turned on or off, the permitted signal output range will follow the active range selection. The Full Range [0,1023] selection is ostensibly unscaled and unclamped, but SDI bit levels 0 to 3 and 1020 to 1023 will remain reserved on output per SMPTE standards.

Note on Range Selection with LiveGrade Pro

By default when a BoxIO device is added to LiveGrade Pro the range set by the FSI IP Remote Utility will be used. LiveGrade will list BoxIO's current range setting in the Device Manger in a field titled "Device signal range:" If a different signal range is desired you can set this from the FSI IP Remote Utility and then simply refresh the device connections in LiveGrade Pro to have LiveGrade recognize this change.

LiveGrade also has the ability to control signal ranges directly*. It is important to note that when LiveGrade controls signal ranges BoxIO will always be natively set to Full Range by LiveGrade first, with any signal range mapping from there being handled internally by the LiveGrade software. The common use case for allowing LiveGrade Pro to control signal range is when the user needs to perform Full Range to Video or Video to Full Range transforms. For most other applications (e.g. Video in Video Out, Full in Full Out) it is typically best to allow the FSI IP Remote Utility to control signal range.

If you select "LiveGrade Controls Signal Range" it is important not to change the signal range in the FSI IP Remote Utility after the fact. This should be left to Full Range anytime LiveGrade is controlling signal range.

**Please ensure you are running LiveGrade Pro 4.4.5 or later for this to work properly.*

Input Format

BoxIO is designed to automatically detect Payload ID in a signal. This selection can typically be left on Automatic, but manual overrides are provided for two potential use case scenarios:

DL-SDI [ST-372M]

BoxIO can accept Dual-Link SDI signals per SMPTE ST-372M. The DL-SDI selection must be selected in order to activate Dual-Link SDI. When selected a list of corresponding Payload ID options will be displayed. This may be left on Auto if Payload ID is present and correct. If Payload ID is not present in the signal or is incorrect please use one of the available manual selections to match the incoming signal format.

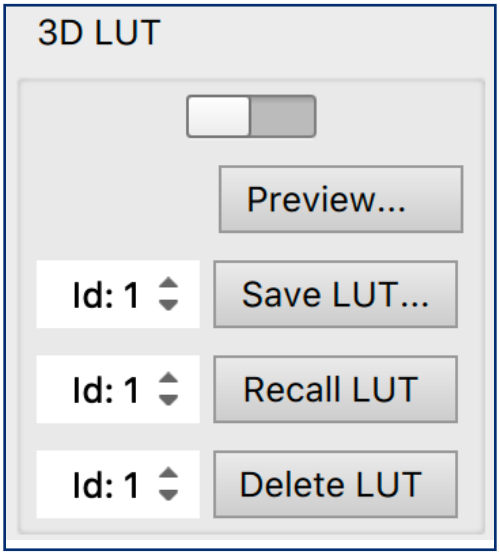
3G Level A / Level B with Missing or Incorrect Payload ID

The Automatic [Default] selection will work with signals that have present and correct Payload ID information. However, in rare circumstances Payload ID may be missing from the signal or may be incorrect. For these scenarios BoxIO provides a manual override. Simply select the format that matches your signal type to properly configure BoxIO.

Test Pattern Generation

Sliders and text fields allow you to specify RGB or YCbCr values for output in Test Pattern Generation Mode.

RGB values will be scaled within your active Range Selection.



LUT Configuration Window
Toggle, Upload, Store and Recall LUTs to BoxIO.

Toggle LUT OFF / On
Will indicate current status (On - *Right* / Off - *Left*)

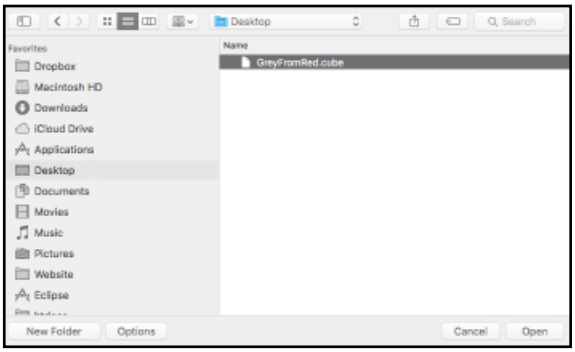
Upload a LUT to temporary flash memory (Preview...)

Select & Store a LUT to non-volatile memory (Save LUT...)
Select a memory position to store a LUT to using the Store ID position dial.

Recall a LUT from non-volatile memory (Recall LUT)
Select a memory position to recall a LUT from using the Recall ID position dial.

Delete a LUT from memory (Delete LUT)
The Delete LUT button will replace LUT data currently saved in the selected ID position with Unity LUT data.

LUTs can be sent to BoxIO temporary flash memory and quickly toggled on and off with the Preview... button which will open a file selection dialog. Select the LUT you'd like to send and press Open.



To save a LUT to BoxIO's non-volatile memory, select a memory position 1-16 to store the LUT using the ID: position dial and press the Save LUT button which will open a file selection dialog. Select the LUT you'd like to save to BoxIO and press Open. Quickly recall these saved positions by selecting the position you'd like to load with the Recall ID: position dial and press the Recall LUT button.

Note: You don't have to toggle LUTs on or off before saving or loading. BoxIO will immediately switch to the LUT you've selected. BoxIO will also boot with the last LUT actively loaded (recalled) from non-volatile memory. Any LUT active in temporary Preview memory is cleared at power cycle.

BoxIO Storage - ***Make sure to load the correct LUT format for your operating Mode.***
Up to 16 33x33x33.cube 3D LUTs in Single Channel Mode plus 1D LUTs
Up to 32 (16 per channel) 17x17x17.dat or 17x17x17.cube 3D LUTs in Dual Channel Mode plus 1D LUTs

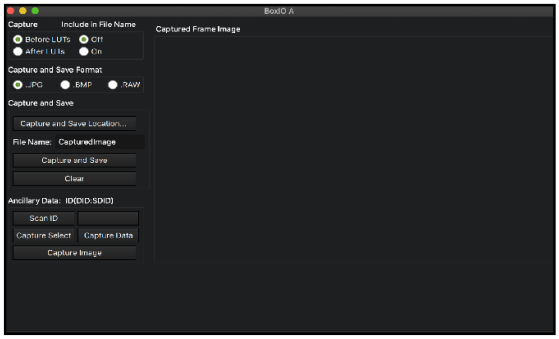
3D LUT Syntax
Common .cube format.
Only use LUT_3D_SIZE keyword to specify LUT size as 17 or 33.

1D LUT Syntax
Text based with .lut extension and following keywords:
LUT_1D_SIZE 4096
LUT_1D_BITS 12

Note: If you have black output from BoxIO with active Video connected, you may have black output LUT data loaded. Try toggling all LUT positions (1D Front and Rear as well as 3D LUT).

Frame Capture

BoxIO is capable of capturing reference still frames from active video to be saved to your hard drive.

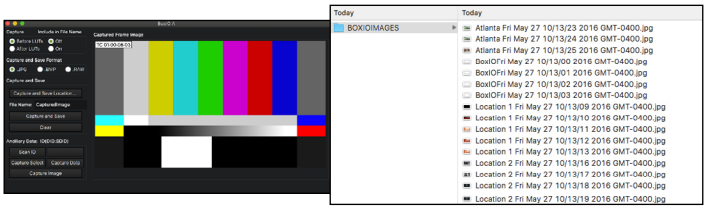


Pressing the Capture Frame button on the Control Page will launch the Capture Frame window. A frame capture can be performed before or after the 3D LUT is applied without needing to toggle the LUT off. Frames will be captured based on your current active Mode, Channel, and Input. A frame can be captured with a left click in the frame capture window, then a right click allows you to save the image to your computer as a .BMP file.

The Clear button in the frame capture area will clear the currently captured frame. It is not necessary to clear before capturing or saving a new image.

Capture And Save

Frame Capture also has a quick capture and save feature that allows you to quickly take frame captures and automatically save them to a location as a .JPG, .BMP, or .RAW image. To enable Capture and Save, press the Quick Save Location button to select a folder where your images will be saved. Enter a name in the quick save file name field (default is CapturedImage).



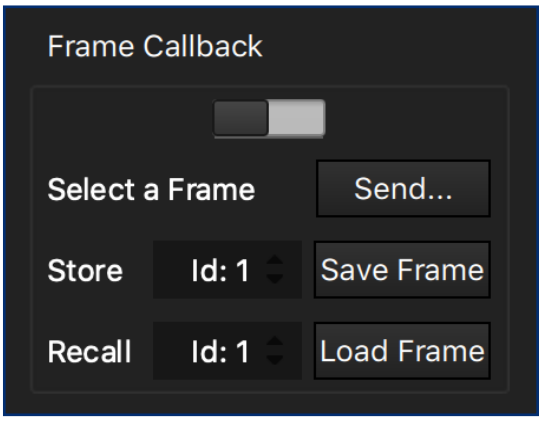
Pressing the Capture and Save button will now show the image being captured and automatically saves it to your selected folder with the designated file name along with a date and time stamp. ***Note: This feature is very resource-intensive and will rely on your network speed and computer's ability to quickly process a full HD image and save the file. You can capture up to 1 frame per second, but some computers may be slightly slower.***

Frame Callback

.RAW files that are saved using Capture and Save can be loaded and displayed using the Frame Callback feature. *When using Frame Callback in Single or Dual Channel mode BoxIO must still be receiving a signal (for sync) in order for the SDI output to work. Sync is only generated without an input signal connected when in TPG mode.*

Toggle Frame Callback

Will indicate current status (right on | left off)



Upload a .RAW Frame to temporary flash memory

Press the Send... button to find a previously saved .RAW file and recall it on video output. This loads the image to temporary memory and the .RAW image will not be retained through a power cycle.

Select & Store a .RAW Frame to non-volatile memory

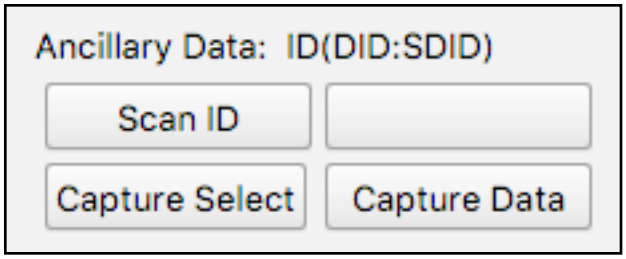
Select a non-volatile memory position to store a Frame to using the ID: position dial. These frames will be stored on BoxIO even through a power cycle.

Recall a .RAW Frame from memory

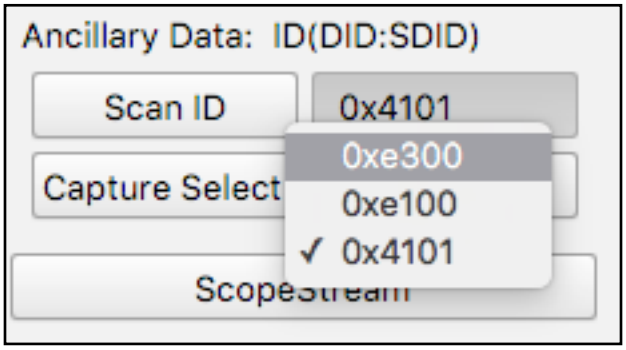
Select a non-volatile memory position on BoxiO to recall a Frame from using the ID: position dial.

Ancillary Data

The IP Remote Utility provides for advanced access to raw ancillary data present in the signal using the Capture Frame window. *Please note that ancillary data capture is only supported from the SDI 1 input.*

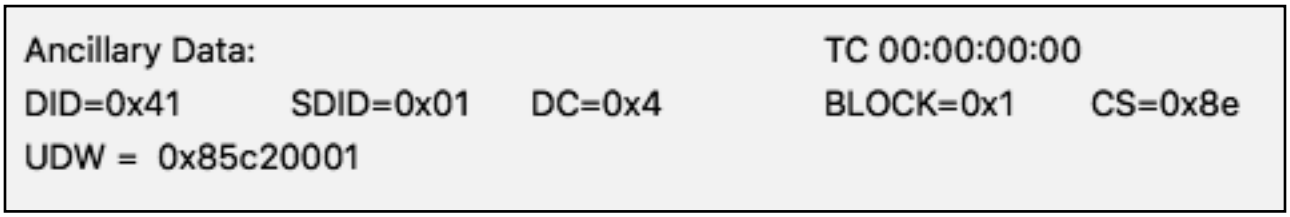


ScanID: pressing this button scans the incoming signal for available ancillary data. After pressing this button the dropdown dialog immediately to the right of the ScanID button will be populated with available ancillary data identified in the list by corresponding DID:SDID (Data Identifier:Secondary Data Identifier).



Capture Select: this button captures just the data block set as the active selection from the DID:SDID dropdown dialog, returning the corresponding UDW for that block.

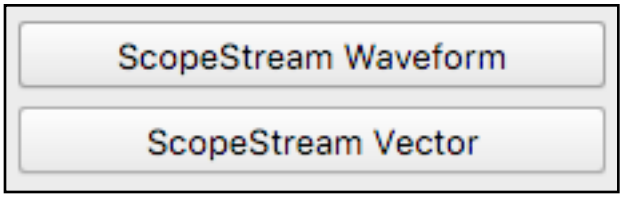
Capture Data: This buttons captures all data blocks, returning corresponding UDW.



If each ID head has only one data block Capture Select and Capture Data will return the same data.

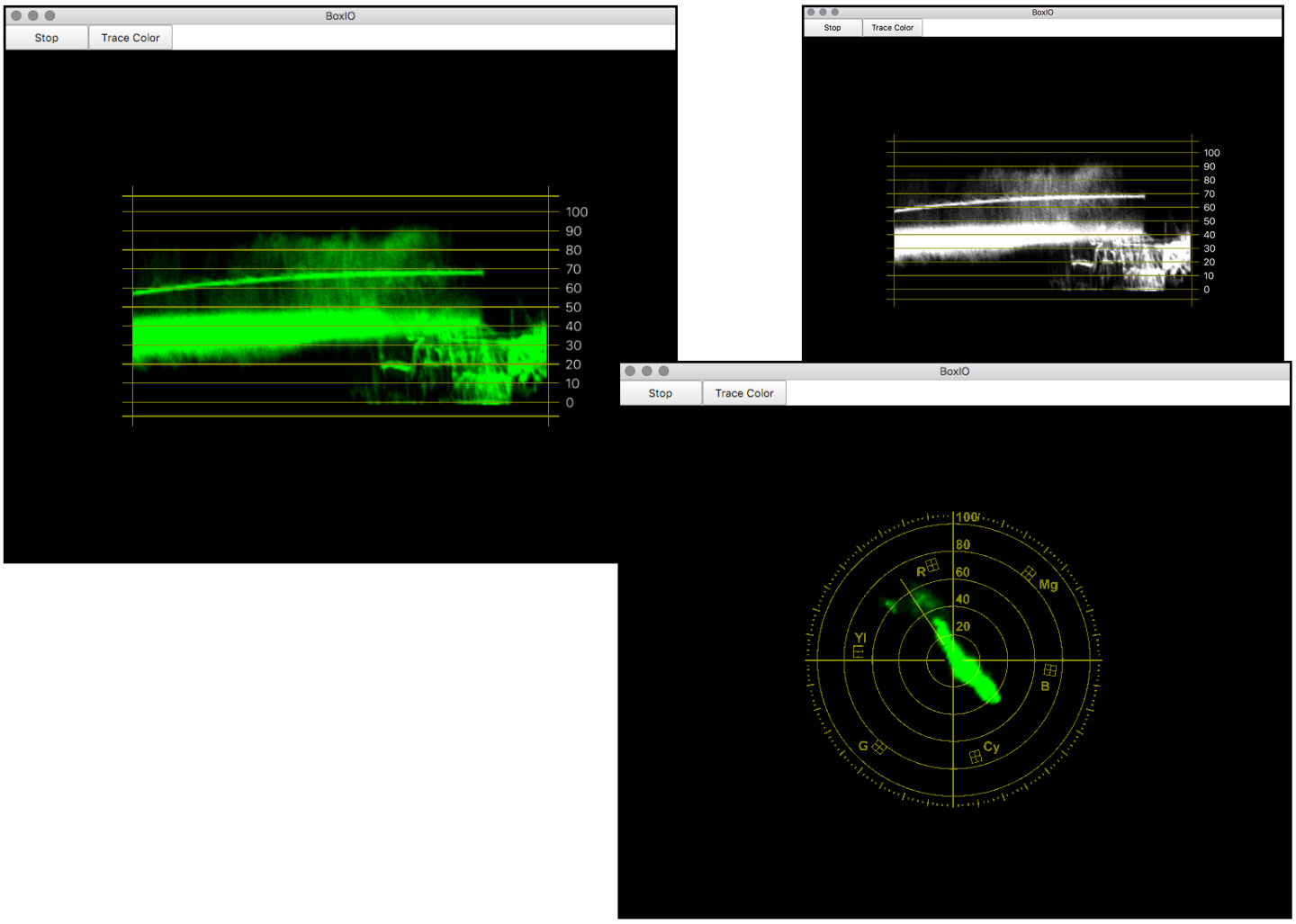
ScopeStream

ScopeStream Waveform and Vectorscope windows can be launched independently from the Control Page of the IPRU. ScopeStream is a realtime hardware-based feature that analyzes your signal and then streams a Waveform or VectorScope readout to a connected computer via an ethernet connection. ScopeStream analyzes the incoming signal as received and is not impacted by settings or active LUTs on BoxIO.



ScopeStream can be used at the same time as realtime LUT updates with little to no interruption to ScopeStream functionality. However, with some more intensive operations, such as Frame Capture, ScopeStream may pause momentarily while the operation is performed, but will resume as soon as the function is completed. ScopeStream is limited to operation in Single Channel and Dual Channel / CH1 operation. It is not compatible with CH2 in Dual Channel mode.

ScopeStream performance is primarily impacted by network speed and your computer's ability to draw the received scope information on screen. Provided that sufficient network bandwidth and computer resources are available ScopeStream should allow for essentially realtime waveform / vector scope performance.



Settings Page

The settings page is accessible from the a button at the top of each BoxIO tab window. It allows you to change BoxIO network settings, view current BoxIO status, and set Cube LUT processing bit depth / precision.

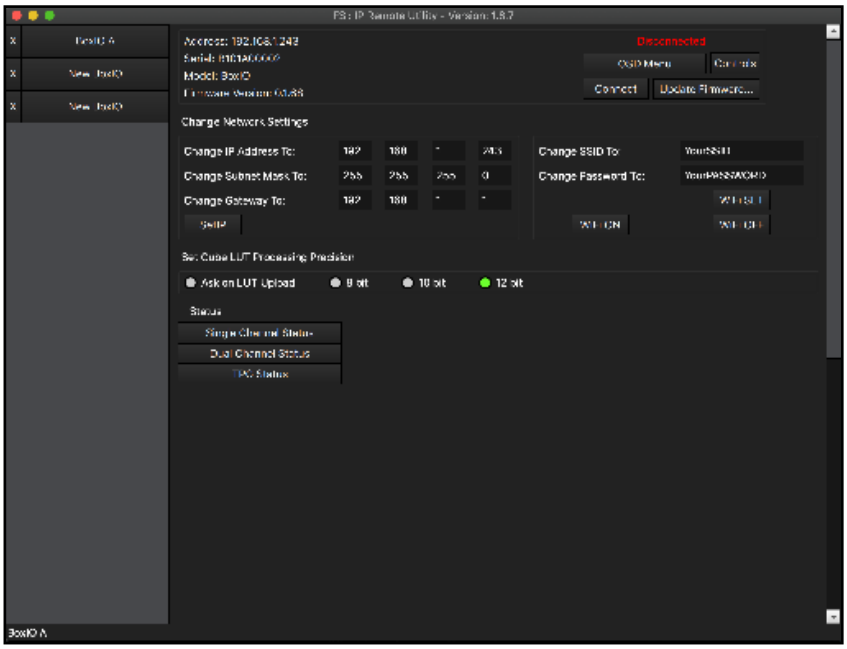
From this page you can assign a new static IP address, subnet mask, and gateway. You will have to reconnect to BoxIO after changing IP address. See the connectivity and initial setup sections at the beginning of this manual for more details on network settings.

Note: When changing the IP address of BoxIO, be sure to fill out all fields in the Change Networks Settings box before pressing Set IP. Leaving the gateway empty may cause the new IP address to not apply correctly. *192.168.0.1* is a reserved address for the BoxIO WiFi host, and you may have difficulty using addresses in the *192.168.0* subnet range. The 192.168.0.1 host address can be used as a recovery address if you have forgotten the assigned custom IP of your BoxIO device. Alternatively a hardware reset of BoxIO (reset button) will return BoxIO to the default settings found on the device's information label.

You can assign a new SSID and Password for a BoxIO unit's ad hoc wireless network by entering the SSID and Password and pressing WiFi Set. You can also toggle WiFi on and Off from this panel.

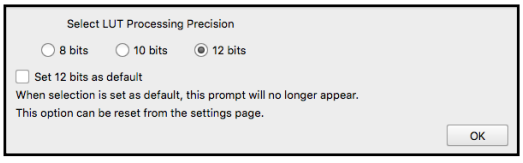
Set Cube LUT Processing Precision

Typically selecting the highest bit depth (12bit) will yield the most precise results, but you may want to select 10bit or 8bit if trying to match the output behavior of programs or devices processing at a lower precision level.



Ask on LUT Upload

When sending BoxIO a 3D LUT a LUT Processing dialog will be displayed allowing you to select the level of precision used for LUT calculations.

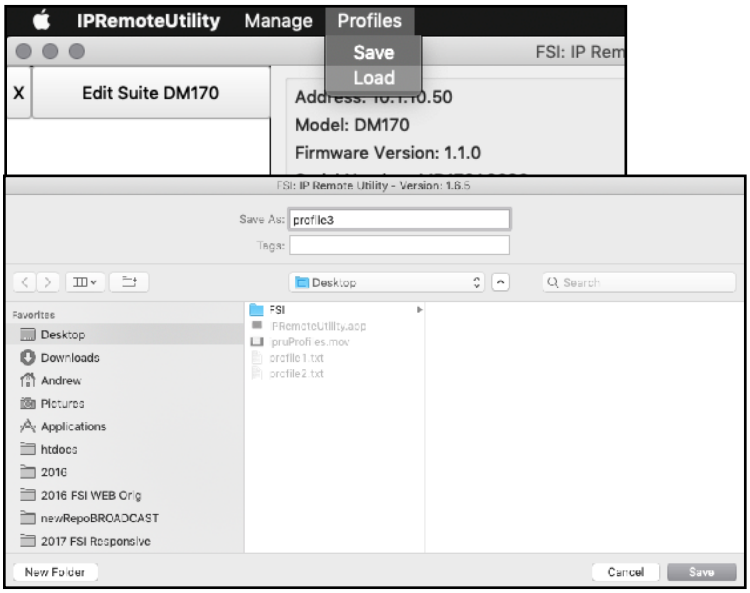


Status

Status windows provide you with current settings info for BoxIO's various mode and channels including LUT state and sizes.

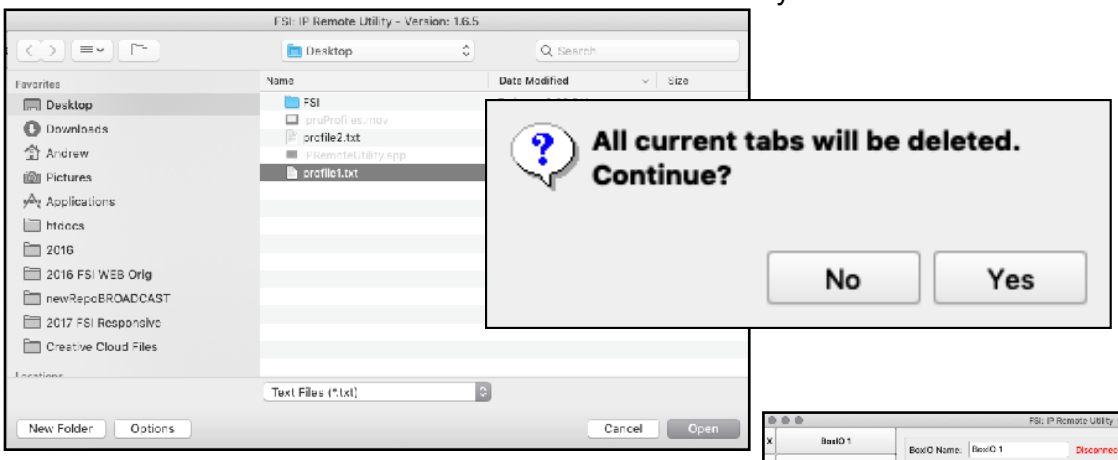
User Profiles

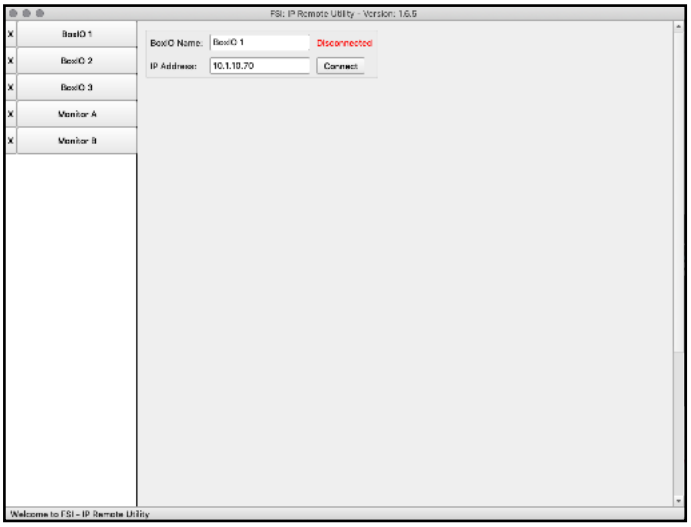
You can easily recall BoxIO and Monitor tab configurations by saving and loading profiles. Loading a profile will recall all of your tabs, device names, and IP addresses.



Profiles are saved as .txt files and can be transferred to another computer or quickly recalled.

Loading a profile will delete all your currently active tabs. Be sure to save your active tabs as a profile if you wish to recall it later.





BoxIO OSD Menu Overlay

BoxIO has an OSD Menu Overlay that can be recalled by pressing the **Menu** button on the control page. The menu will also be shown anytime BoxIO is turned Off and back On. When the overlay is turned on, it can be captured with frame capture by using the After LUT capture feature.

IP : 192.168.1.244	M1C1_1D1 : 1 Off	M2C1_1D1 : 1 Off	M2C2_1D1 : 1 Off	TPG_1D1 : 1 Off
SSID : BoxIO123	M1C1_3D : 1 On	M2C1_3D : 1 Off	M2C2_3D : 1 Off	TPG_3D : 1 On
Mode : Mode 1	M1C1_1D2 : 1 Off	M2C1_1D2 : 1 Off	M2C2_1D2 : 1 Off	TPG_1D2 : 1 Off
	M1C1_FM : 1 Off	M2C1_FM : 1 Off	M2C2_FM : 1 Off	TPG_FM : 1 Off
	M1C1_IN : SDI1	M2C1_IN : SDI1	M2C2_IN : SDI2	

IP: **Current IP Address**
SSID: **SSID if WiFi is turned ON**
Mode: **Current Operation Mode**

M1C1_1D1: **Single Channel Front 1D LUT Status**
M1C1_3D: **Single Channel 3D LUT Status**
M1C1_1D2: **Single Channel Back 1D LUT Status**
M1C1_FM: **Single Channel Frame Memory**
M1C1_IN: **Single Channel Input**

M2C1_1D1: **Dual Channel 1 Front 1D LUT Status**
M2C1_3D: **Dual Channel 1 3D LUT Status**
M2C1_1D2: **Dual Channel 1 Back 1D LUT Status**
M2C1_FM: **Dual Channel 1 Frame Memory**
M2C1_IN: **Dual Channel 1 Input**

M2C2_1D1: **Dual Channel 2 Front 1D LUT Status**
M2C2_3D: **Dual Channel 2 3D LUT Status**
M2C2_1D2: **Dual Channel 2 Back 1D LUT Status**
M2C2_FM: **Dual Channel 2 Frame Memory**
M2C2_IN: **Dual Channel 2 Input**

TPG_1D1: **Test Pattern Generator Front 1D LUT Status**
TPG_3D: **Test Pattern Generator 3D LUT Status**
TPG_1D2: **Test Pattern Generator Back 1D LUT Status**
TPG_FM: **Test Pattern Generator Frame Memory**

Best Practices

In Dual Channel Mode ensure you are sending the same format / resolution / frame rate to SDI 1 & SDI 2
SDI 1 and SDI 2 inputs do not need to receive genlocked signals for proper operation, but these inputs should be given the same format, resolution, and frame rate signals for proper operation. Sending different signal types (e.g 24P to SDI 1 and 23.98 PsF to SDI 2) can cause glitches on SDI output and problems with frame capture.

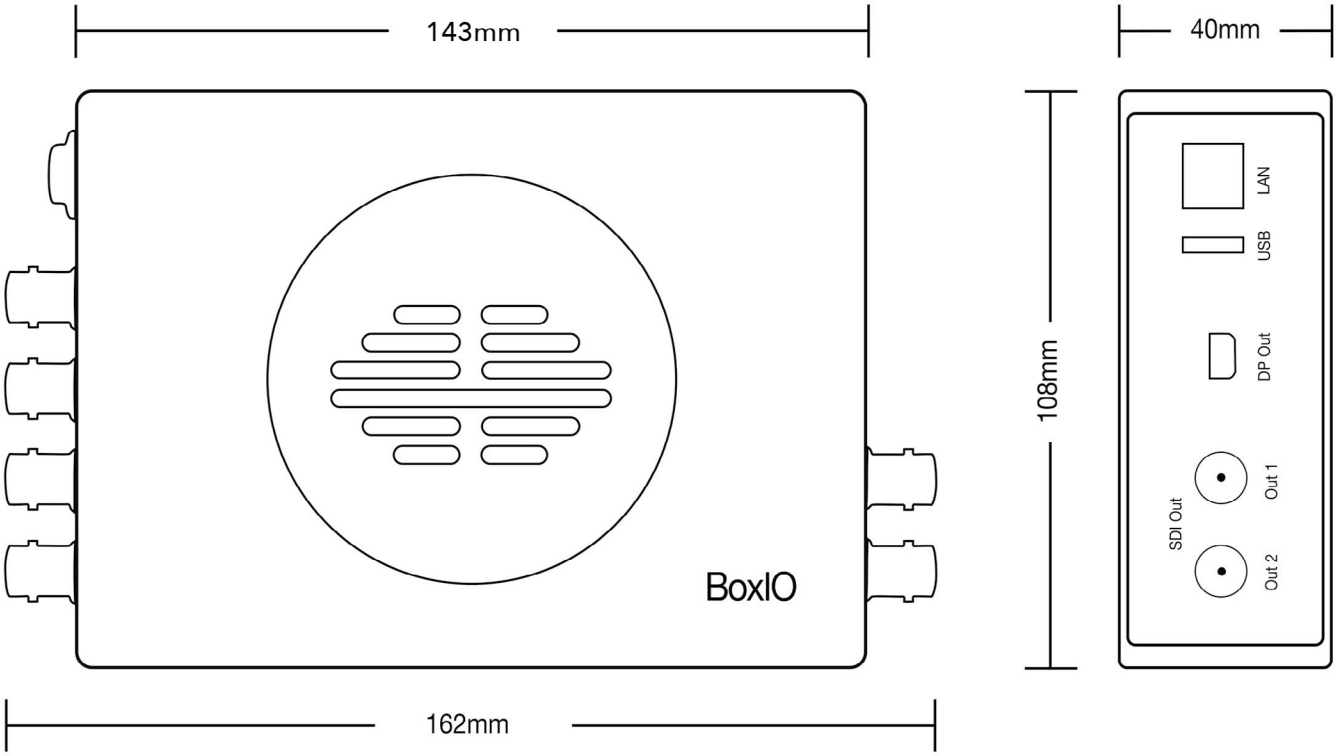
Avoid Rapid Automatic Frame Captures
Some third party applications may optionally allow for rapid automatic frame captures. We suggest disabling such features or if required setting to a low frequency capture interval. Manual frame captures taken as needed in these applications typically work without issue, only high frequency automatic frame captures tend to be problematic. Frame captures are resource intensive and are handled serially with all other requests being sent to BoxIO. If the frame capture process is interrupted by loss of signal before it completes it can cause BoxIO to hang, requiring a power cycle of the device.

Using a Unity LUT to Ensure BoxIO Passes a Clean Signal Whenever Booted
BoxIO will boot with the last LUT that was recalled from non-volatile memory. This allows a user to save a LUT to non-volatile memory, activate it (recall and turn LUT on), and then power cycle the device as needed with this selected LUT automatically active whenever the device is turned on. If you are only using the temporary flash memory Preview.. LUT functionality this does not override the non-volatile memory recall. Save and recall a new LUT to non-volatile memory if you would like BoxIO to boot with a different LUT. If you want to ensure a default clean pass through of the image on boot whether the LUT position is toggled on or off then saving and recalling a UNITY LUT to non-volatile memory will accomplish that goal.

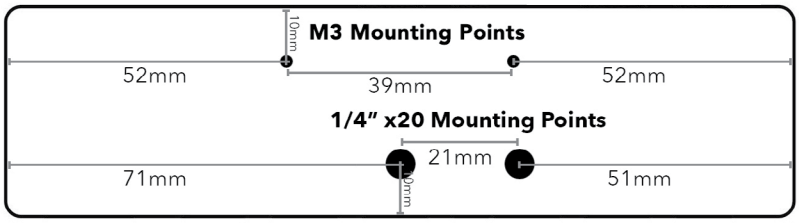
Troubleshooting

Distorted or Corrupted Screen Captures
Reselect your current SDI Input button within the IP Remote Utility Application to refresh BoxIO, subsequent frame captures should be as expected.

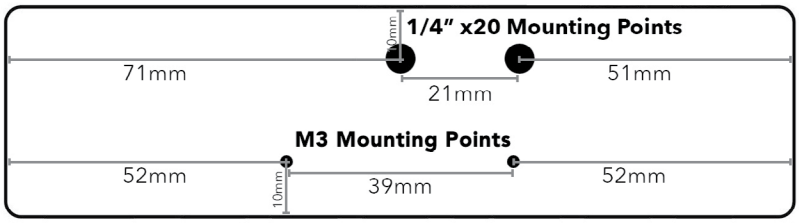
Black Output
Press the OSD Menu button to determine if a signal is being output to your display. If you can see the OSD Menu when toggled you may be outputting a null (black) LUT. Toggle 1D LUTs on/off to refresh output. If using LiveGrade Pro selecting ‘Permanently Store Looks on Devices’ before closing the application will prevent null LUTs from being loaded to the device.



Mounting Point Layout (Top)



Mounting Point Layout (Bottom)



Flanders Scientific Inc.

4pin Mini XLR Power
12~18 VDC
7-10W Consumption

Power LED
Off: Off
Red: Booting Up
Green: System Ready

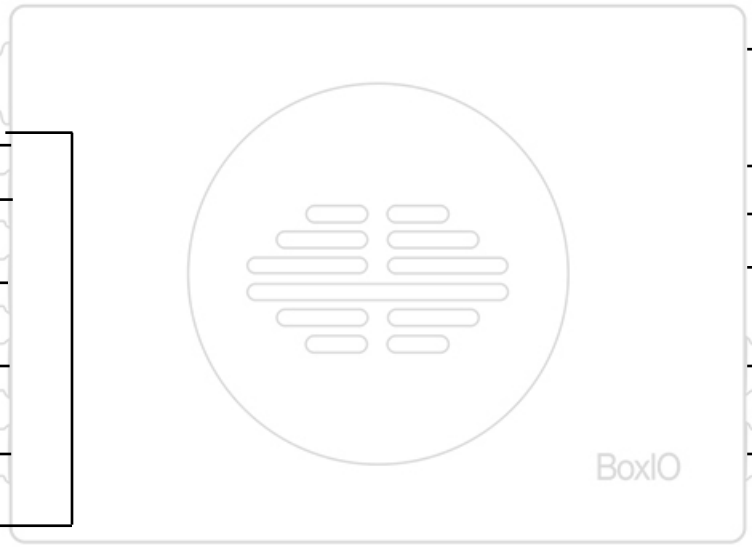
SDI 2 Input

SDI 2 Clean Loop Out

SDI 1 Input

SDI 1 Clean Loop Out

Status LED



Ethernet

USB Port

Reset

DP Out
Mirrors SDI 1 Out

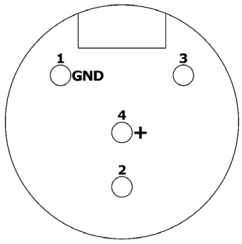
SDI 2 Out

SDI 1 Out

2.2 lbs (998g)

Single Channel Mode:
LED Off: LUTs Off
Green: LUT On

Dual Channel Mode:
LED Off: LUTs Off
Green: Channel 1 LUT On
Red: Channel 2 LUT On
Yellow: Channel 1 & 2 LUT On



4 pin mini XLR pinout