



MURIDEO®



User Manual

MU-STIX-A

STIX Test Ecosystem Signal Analyzer



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Introduction

Murideo's MU-STIX-A is a revolutionary, ultra-compact HDMI 2.1 signal analyzer. Ideal for commercial and residential integrators, this cost-effective and user-friendly tool simplifies the verification of HDMI distribution systems and HDMI endpoints.

The STIX-A supports both cutting-edge HDMI 2.1 (FRL) signals up to 48 Gbps and legacy HDMI (TMDS), making it versatile for a wide range of signal paths. The STIX-A can analyze video signals up to 8K /60 Hz, including 4K /120 Hz. The OLED screen features an easy-to-use navigation menu that displays a low-resolution thumbnail of the source and video parameters such as resolution, timing, color space, color depth, and more. The STIX-A also provides audio parameters such as audio type, sampling rate, and audio channel count.

Designed for convenience, the STIX-A features a low-power draw and can be powered directly via a USB-A port on an AV receiver, a display or through a USB Type-C port on a mobile device. Compact, reliable, and powerful, the MU-STIX-A is a must-have tool for HDMI signal verification.

Features

- A cost-effective HDMI 2.1b, 8K 48 Gbps (FRL) compliant signal analyzer
- Analyze signals with up to 8K resolution timings at 8-, 10-, and 12-bit color depths, in RGB 4:2:0, 4:2:2, and 4:4:4 color spaces
- Automatically detects and logs signal changes, sync losses and signal loss time
- OLED color screen with an intuitive navigation menu displays the incoming video as a thumbnail, source timing, FRL or TDMS presence, color space, color depth, and HDCP 1.4/2.X versions
- Displays audio information, including audio type, sampling rate and number of channels
- Low power draw allows device to be powered over USB-A (from an AVR or a display) and via USB Type-C from mobile device.

In The Box

- MU-STIX-A
- 5-ft. USB Type-C to USB Type-A Cable

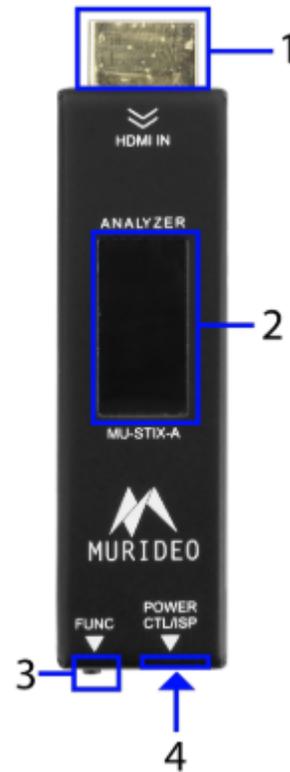
Specifications



Video	
HDMI Version	2.1
HDCP Version	1.4 and 2.3
HDCP On/Off	No
Maximum Clock Rate	600 mscs (1188 MHz)
Maximum Throughput Per Channel	12 Gbps (48 Gbps Total)
Resolution Timings	HDMI VICs up to 8K/ 60 Hz DCI up to 4096x2160 /60 Hz VESA DMT VESA CVT-RB up to 600 MHz
Video Encoding	RGB, YCbCr
Video Sampling Models	RGB 4:4:4, YUV 4:4:4, YUV 4:2:2, YUV 4:2:0
Color Bit Depth	8-, 10-, 12-bit
Audio (Diagnostic Only)	
Audio Type	L-PCM
Audio Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176, 192
Audio Channels	Up to 8
Audio Volume	No
Ports	
HDMI	Male Type-A
Firmware/Control	USB Type-C
Environmental	
Operating Temperature	23° to 125° F (-55° to 1° C)
Storage Temperature	-4° to 140° F (-20° to 60° C)
Humidity Range	5% to 90% RH (No condensation)
Power	
Power	5 VDC, 540 mA
Power Consumption	2.7 W Max
Dimensions	
Dimensions (Height, Depth, Width)	mm: 12 x 21 x 81.1
Weight	27 g / 1 oz

Front Overview

- 1 – HDMI IN
- 2 – OLED Screen
- 3 – Function Button
- 4 - USB-C: Power, Control (CTL)
In-system Programming (ISP)



Preparing For Use

The Murideo STIX-A is powered through the USB Type-C input using any standard USB power supply.

- Connect the STIX-A to a power supply using the supplied USB cable. Any USB Type-C to C or Type-C to A cable may be connected to the STIX-A.
- Insert the STIX-A into an HDMI source device output or an HDMI output to be tested (such as a matrix switcher or distribution amplifier HDMI output).
 - Murideo does not recommend using female HDMI extension cables or couplers when testing HDMI 2.1 and FRL Signals.
 - Source devices include set-top boxes, streaming devices, HDMI matrixes, or any HDMI device with an HDMI output.
- Video and Bandwidth information will be displayed on the Home Screen.
 - By default, the EDID stored in the STIX-A can receive signals up to 8K in resolution, at 30 frames per second, with 12-bit Color Depth.

Home Screen

By default, the STIX-A will power up to the Home Screen shown below:



The home screen displays 5 forms of information:

1. Thumbnail
 - a. Low resolution video image of source
2. Incoming Resolution, Timing, and Scan Type.
3. HDMI Transmission Method
 - a. TMDS or FRL
4. Color Space
 - a. RGB 4:4:4, YUV 4:4:4, YUV 4:2:2, YUV 4:2:0
5. Color Depth
 - a. Bits per Component

There are three total screens including the Home Screen. To see additional diagnostics information, short press the function button (labeled FUNC). Return to the home screen by cycling through the screen options.

Other Info Screen



The Other Info screen displays information related to the HDCP encoding and Audio Format of the incoming video and audio signal. These include:

1. HDCP
 - a. No HDCP
 - b. HDCP 1.4
 - c. HDCP 2.X

Indicates legacy HDCP 2.2 and newer HDCP 2.3 formats.

2. Audio Frequency
 - a. Frequency of the incoming audio signal.
3. Audio Size
 - a. Bit depth of the incoming audio signal.
4. Audio Type
 - a. The number of channels the incoming (L)PCM audio signal contains.
 - b. Encoded audio, such as Dolby or DTS, cannot be decoded by the STIX-A. These signals are presented as NON-PCM and indicate their Audio Size as 16-bit. Lossy audio, Dolby Digital or DTS Digital will indicate Audio Frequency up to 192 kHz. Lossless audio, Dolby MAT or DTS MA, will show Audio Frequency as HBR.

After 5 seconds of inactivity, the STIX-A will return to the home screen.

Signal Monitor Screen



The Signal Monitor screen consists of three fields that pertain to the health of the HDMI signal and a device's uptime, which is useful for checking changes in the video signal or dropped connections. These fields function as follows:

1. Signal Change
 - a. A static test pattern is recommended when using the signal change function. At each one-second interval, the STIX-A checks for changes in the video signal, such as resolution, color space, refresh rate, and RGB Triplet values. If any of the video frame values have changed, the value will increase by 1.
 - b. If the HDMI source device disconnects and the signal remains unchanged when reconnected, the value will remain unchanged.
 - c. The Signal Change field will count to 999; any new signal changes will roll over the count to 001.
2. Sync Loss
 - a. Counting of the number of times the TMDS/FRL negotiation has been lost or disconnected begins after the initial video signal connection.
 - b. The Sync Loss field will count to 999; any new signal changes will roll over the count to 001.
 - c. Sync Loss can measure up to 65,535 instances when connected directly to the control port via serial.
3. PRBS Passs
 - a. Counting of the number of complete Pseudorandom Binary Sequence passes (one pass = all frames; 60 Hz = 60 frames per second) received from an MU-STIX-G.
 - b. The PRBS Pass field will count to 999; any additional passes will roll over the count to 001.
4. Time
 - a. The total uptime of the unit.
 - b. The Time field will count to 99h 59m 59s. Additional uptime will roll over the uptime to 00h 00m 01s.
5. Resetting the Signal Monitor screen
 - a. While the Signal Monitor screen is open, press and hold the function button for 2 seconds.
 - b. Signal Monitor settings are volatile and will reset after a power cycle.

Screen Saver

The blank (black) screen saver will appear after 5 minutes of inactivity. During this state the STIX-A is operational, and serial data may be sent to and received from the unit. Users may open the Home Screen at any time by pressing the function button. Signal changes or changes in the HDMI sync will cause the Home Screen to open as a response.

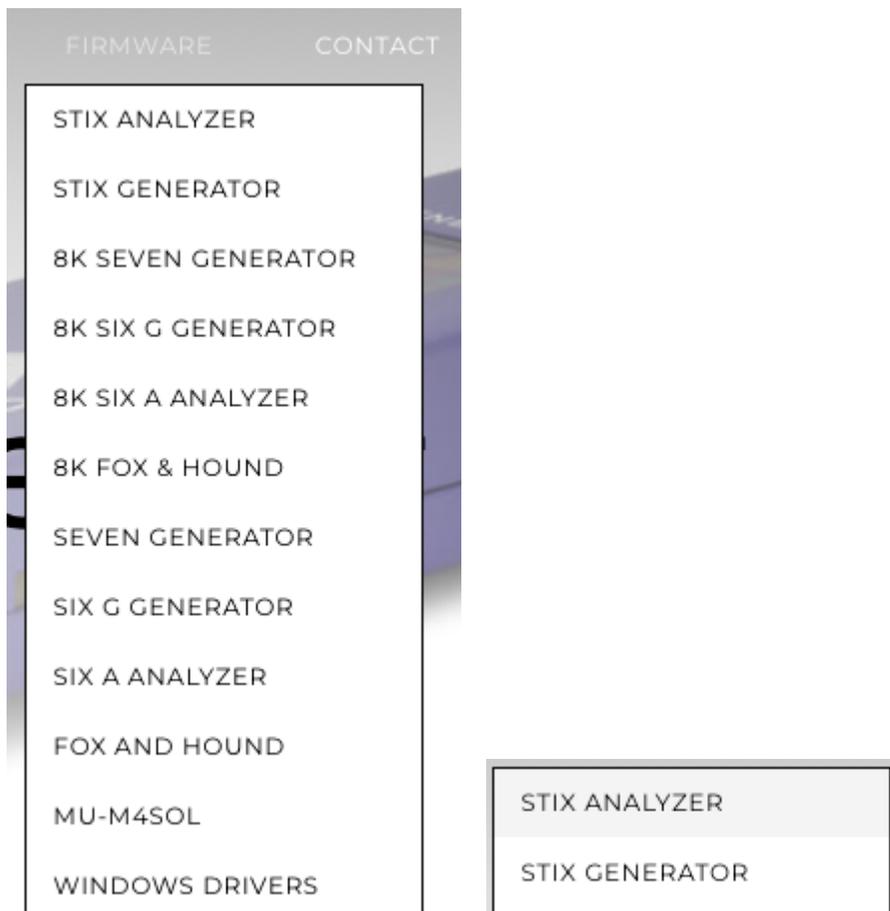
Firmware and Control

Updating the firmware Requirements:

- Windows PC
- USB-A or USB-C to USB-C data cable for a direct serial connection
- Firmware FWM file and Uploader
- CH340 USB Serial Driver (available on murideo.com)

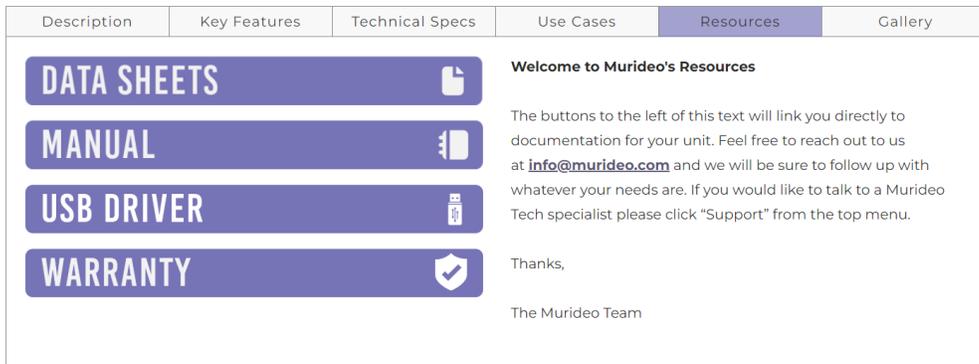
Follow the steps below to update the firmware on the STIX-A:

1. Find the firmware file under the firmware dropdown on murideo.com

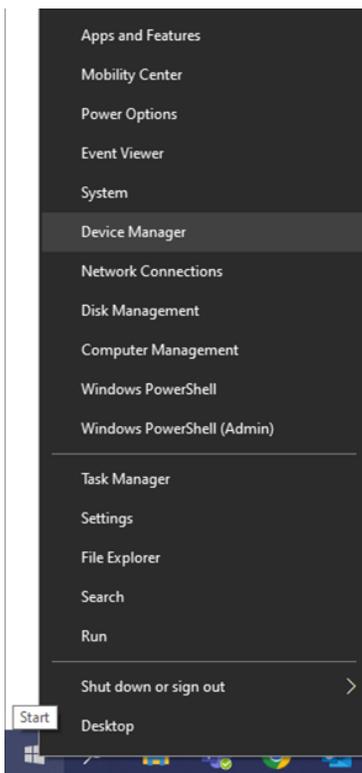




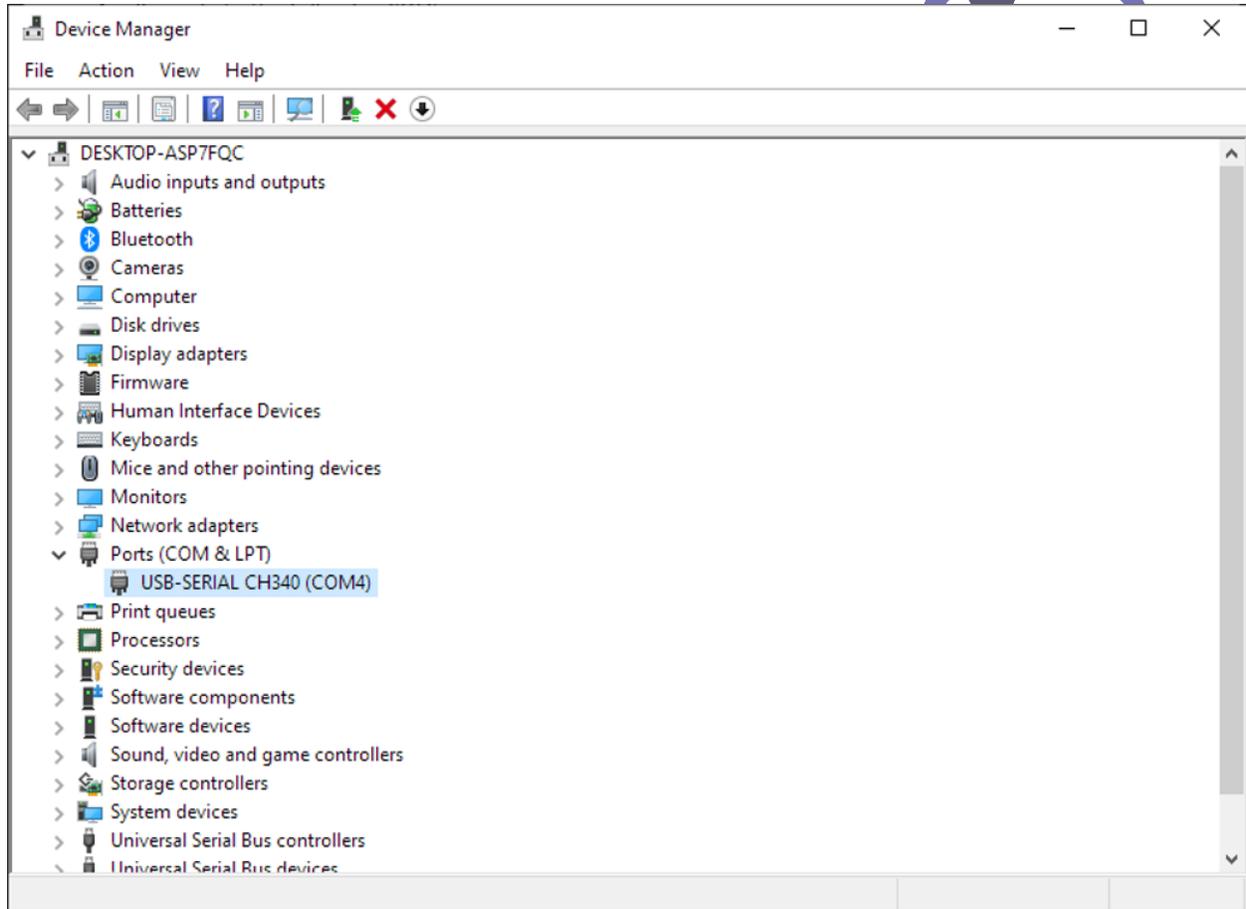
2. Connect PC directly to the USB-C CTL/USP ports on the STIX-A using a USB -C cable.
3. Download and install the CH340 USB Serial Driver.
 1. Navigate to www.murideo.com/mu-stix-g.html
 2. Click on the Resources tab.
 3. Click the USB DRIVER link.
 4. Download the CH340 driver to your PC.



4. Right-click on the Windows Start button and select Device Manager.



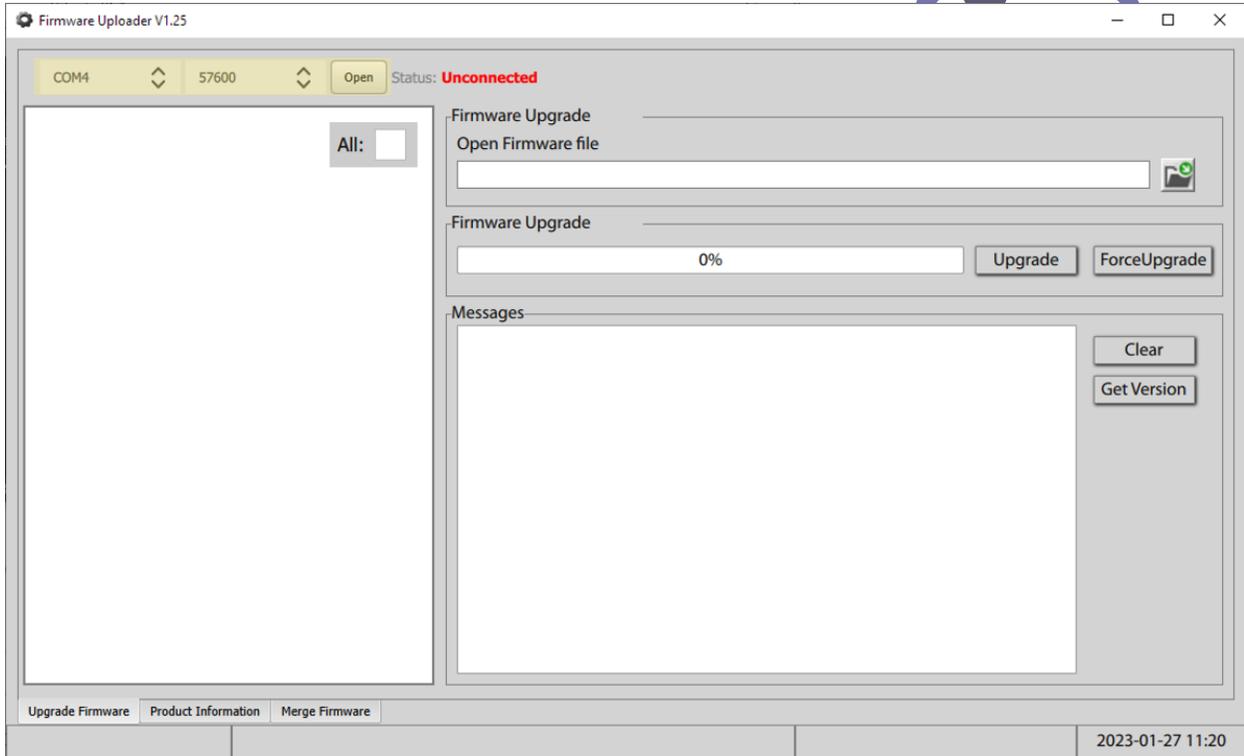
Then select the Ports (COM & LPT) drop-down menu and locate the port labeled USB-SERIAL CH340 (COMX) to confirm the STIX-A is connected to the PC.



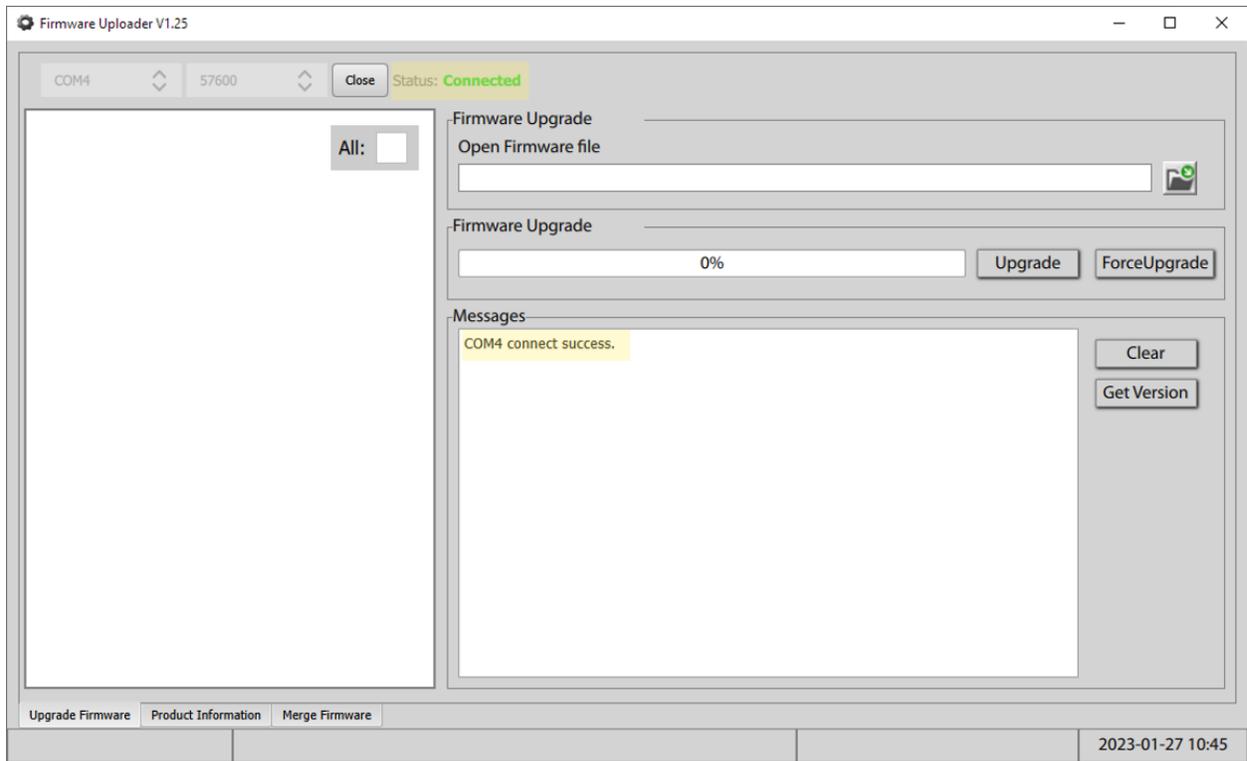
5. Open the Firmware Uploader program

Name	Status	Date modified	Type	Size
Firmware Uploader V1.25.exe	✓	6/30/2023 1:31 PM	Application	35,079 KB
MU-STIX-A_Ver1.02.00.00(A32C).fwm	✓	1/1/2025 10:21 AM	FWM File	106 KB

Select the correct COM, Baud: 57600, and select the Open button to open the port.

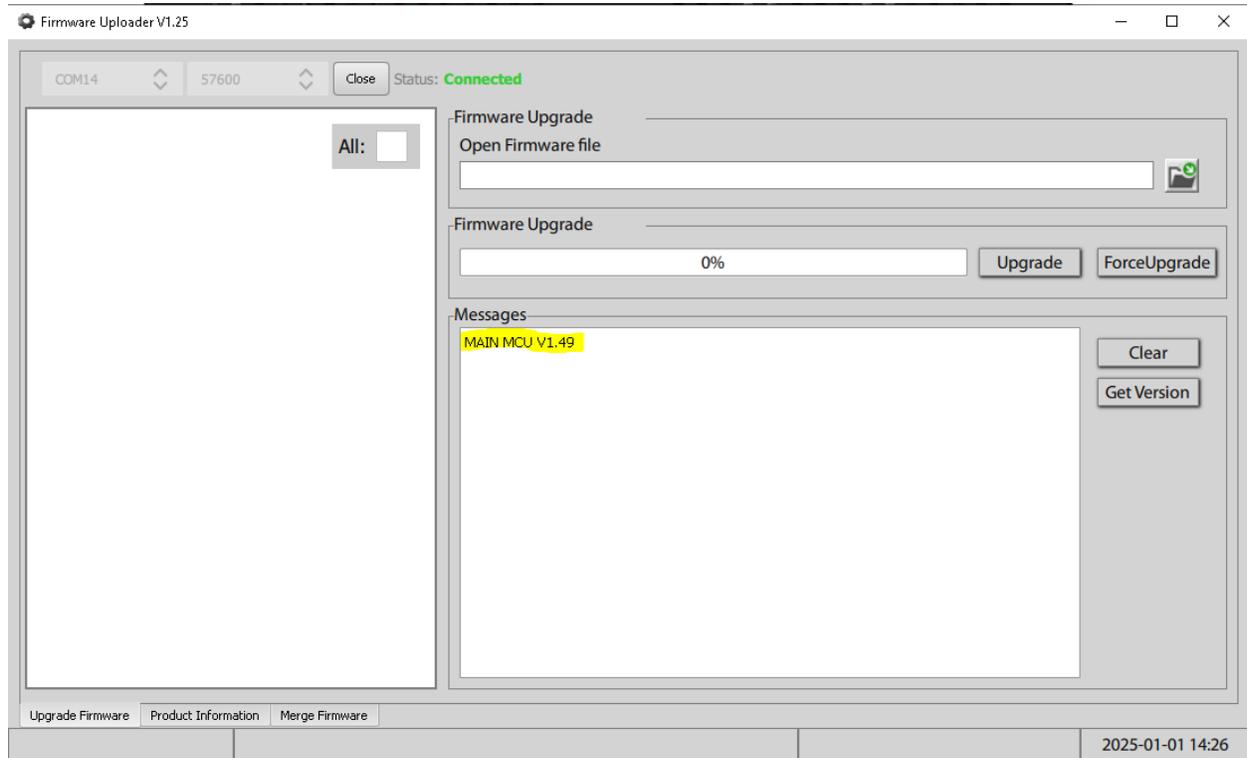


The Status will now show as Connected in green text with COMX connect success under Messages.





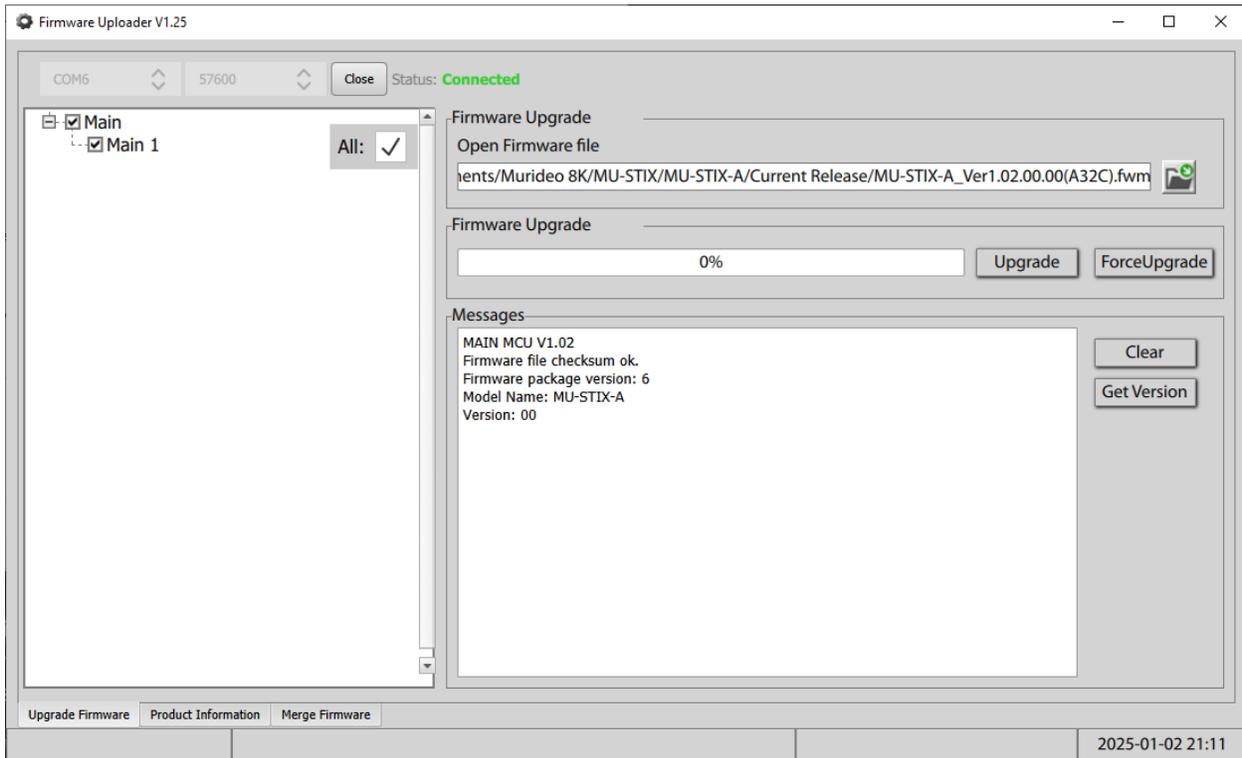
6. Select the Get Version button to see the current firmware version on the STIX-A (note: screenshot below is only an example and may not display the exact version).



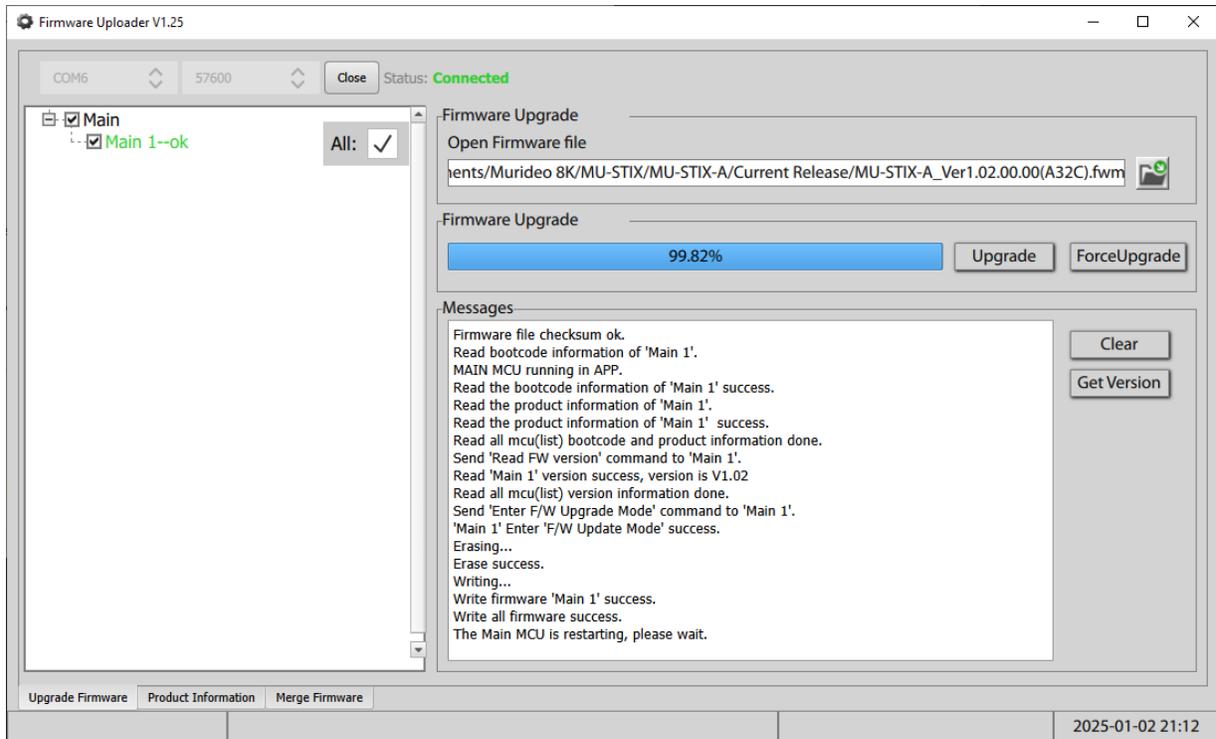
7. Select the file button  to load the firmware file. Make sure to select the correct firmware file for the device you are currently updating.

Name	Status	Date modified	Type	Size
Firmware Uploader V1.25.exe	✓	6/30/2023 1:31 PM	Application	35,079 KB
MU-STIX-A_Ver1.02.00.00(A32C).fwm	✓	1/1/2025 10:21 AM	FWM File	106 KB

The firmware file will be loaded into the Open Firmware file field with the following information under Messages:

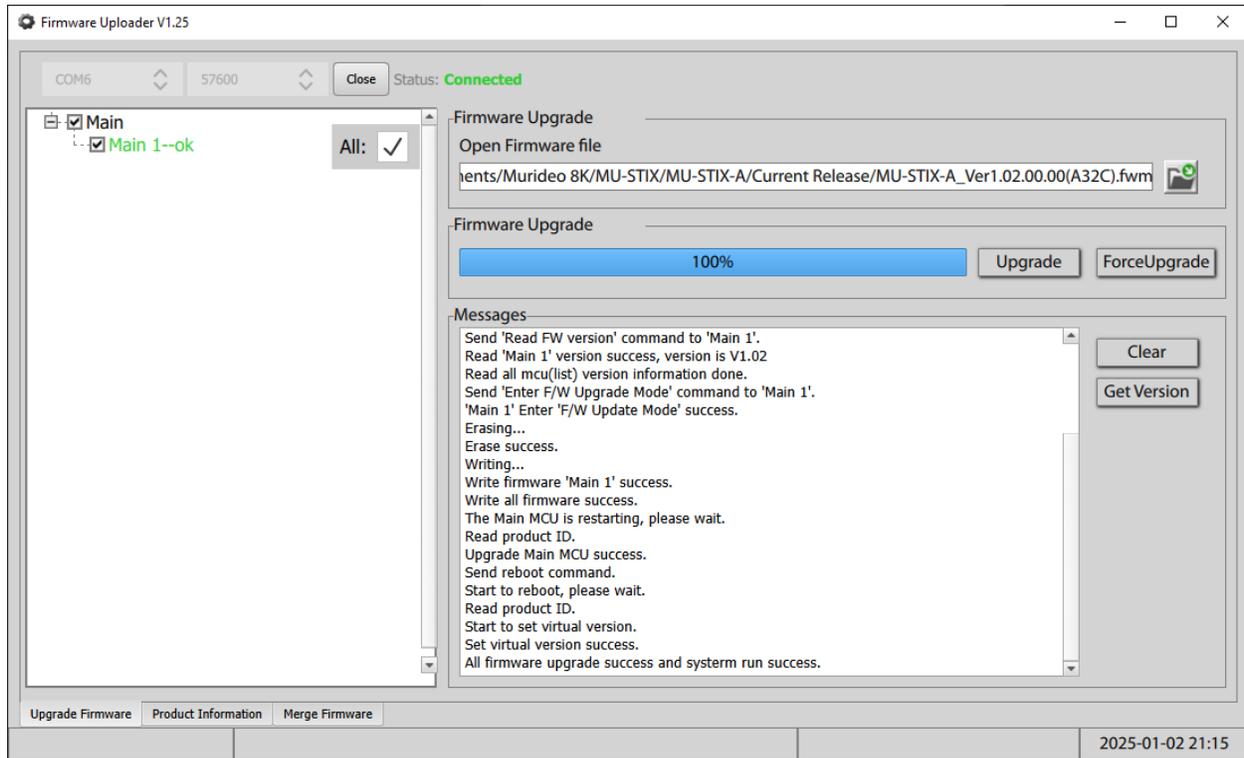


8. Select the Upgrade button to start the firmware update. The loading bar will pause at 99% for a few seconds before automatically rebooting the unit. Do not use the ForceUpgrade button. If the Uploader is not updating firmware for any reason, please contact Murideo Support to assist in troubleshooting your STIX-A.





9. Once the loading bar reaches 100%, use the Get Version button again to ensure the new firmware version is correct (note: screenshot below is only an example and may not display the exact version).



10. Select the  button to close the port, then select the X at the top-right to exit the Uploader. The STIX-A is now up to date on its firmware and is safe to disconnect from your PC and power.

Control



The STIX-A can be controlled through Serial communication from a USB port with serial capabilities (COM) using the internal USB to UART adaptor. Ensure the CH340 Driver has been installed before connecting the device.

STIX-A Serial Port Properties

Baud Rate	57600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

The STIX-A features an ASCII API; the carriage return control character should follow commands sent to the unit. In the following example, we will use <cr>:

USER SENT:	GET ADDR<cr>
ECHO RECEIVED:	ADDR 00<cr>

Command-List



Azz	All Commands start with Prefix System Address zz, {zz=[01-99]}(zz=00,broadcast address)}
H	Help
STA	Show Global System Status
SET RST	Reset to Factory Defaults
SET RBT	System Reboot
SET ADDR xx	Set System Address to xx{xx=[01~99]}
SET INx TMDS ON/OFF	SET INx TMDS ON/OFF{x=[0~1]}(0=ALL)
GET ADDR	Get System Address
GET TMDS CHECK	Check Whether the TMDS Voltage works Properly
GET CRC VAL	Get CRC VALUE xx
SET INx EDID y	Set Input x EDID=NEW Add{x=[0~1]}(0=ALL),y=[0~3] (0:1080P_2CH,1:4K60Hz_2CH,2:8K60Hz_2CH,3=User_EDID)}
SET INx EDID Uy DATAz	Write EDID To User y Buffer of Input x{x=[0~1]}(0=ALL), y=[1],z=[EDID Data]}
GET INx TMDS	Get INx TMDS Status{x=[0~1]}(0=ALL)
GET INx EDID	Get Input x EDID Index{x=[0~1]}(0=ALL)}
GET INx EDID y DATA	Get Input x EDID y Data{x=[0~1]}(0=ALL),y=[0~3]}
GET INx VID INF	Get Input x Video Information

Additional Automation



CRC Evaluation

USER SENT:	GET CRC VAL<cr>
ECHO RECEIVED:	CRC Value {integer}<cr>

The CRC Value calculates the checksum of the video signal, including resolution, color space, refresh rate, and RGB Triplet values. Any change in the video signal, including moving video, will cause the CRC Value to change. It is recommended to use a static test pattern when testing for Signal Change.

Sync Loss Testing

EVENT:	TMDS/FRL connection has been lost
ECHO RECEIVED:	SYNC LOSS {32 bit Integer} <cr>

If the HDMI connection is dropped between the HDMI Output and the STIX-A, the STIX-A will echo the number of instances the connection has been lost. The Sync Loss counter begins after the first HDMI connection is established and will continue to count until the unit is reset or power-cycled.

USER SENT:	SET INx TMDS ON/OFF<cr>
ECHO RECEIVED:	INx TMDS ON/OFF<cr>

The HDMI input's operating state can be manually toggled using the command above. The user can simulate a Sync Loss when an active video signal is present.

Video Format Testing

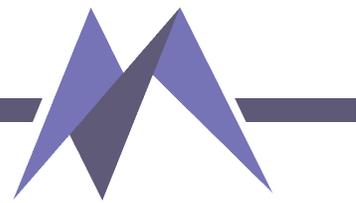


ECHO RECEIVED:	IN0 SGMT {HActive}*{VActive}{scantype} {refreshrate}Hz IN0 SGMT 1920*1080P 60Hz	HActive: Active Horizontal Resolution VActive: Active Vertical Resolution Scantype: - I: interlaced - P: Progressive Refreshrate: Active Refresh Rate, whole integer.
ECHO RECEIVED:	IN0 CD x	x= Color Depth (8, 10, 12)
ECHO RECEIVED:	IN0 CSC x	x = Color Space 0: RGB4:4:4 1: YUV4:2:2 2: YUV4:4:4 3: YUV 4:2:0
ECHO RECEIVED:	IN0 HDCP x	x = HDCP Version 0: No HDCP 1: HDCP 1.4 2: HDCP 2.X

Upon establishing an HDMI connection with the source device, the STIX-A will echo information relevant to the video signal, including Resolution and Timing, Color Depth, Color Space, and HDCP version.

Full video information, including Bandwidth and HDR presence, can be polled anytime using the command below:

USER SENT:	GET IN1 VID INF<cr>
ECHO RECEIVED:	IN1 VID INF <{H}x{V}.{S}.{R}Hz.CSa. VTb.HDCPc.CDd.TBe.HDRf><cr> IN1 VID INF <3840x2160.p.60Hz.CD0.VT1.HDCP0.CD8.TB17.8.HDR0><cr>



H	Horizontal Active Resolution
V	Vertical Active Resolution
S	Scan Type I = Interlaced P = Progressive
R	Refresh Rate
a	Color Space x = Color Space 0: RGB4:4:4 1: YUV4:2:2 2: YUV4:4:4 3: YUV 4:2:0
b	Video Type 0: DVI 1: HDMI
c	x = HDCP Version 0: No HDCP 1: HDCP 1.4 2: HDCP 2.X
d	x= Color Depth (8, 10, 12)
e	Value of the HDMI Bandwidth in Gigabits per second. Bandwidth measures to the nearest tenth decimal.
f	HDR Presence 0: No HDR Metadata Present 1: HDR Metadata Present



Warranty

AVPro Global Holdings (DBA MURIDEO) offers a 2-year international limited warranty for its Murideo products. Any product first sold to you is guaranteed to be free from defects in both components and workmanship under regular use. The warranty period commences on the date the item ships.

Attention:

Your invoice with the date of purchase, model number, and serial number of the product is proof of the date of purchase. The International Limited Warranty is applicable and shall be honored in every country where MURIDEO or its Authorized Service Providers offer warranty service subject to the terms and conditions provided in this International Limited Warranty Statement. Products included in this warranty:

- Murideo SEVEN Series Generators
- Murideo SIX Series Generators
- Murideo SIX Series Analyzers
- Murideo Fox & Hound Series
- Murideo HDMI Test Monitor Series
- Murideo GAX Series
- Murideo STIX Series

During the warranty period, the defective hardware of Murideo products will be either repaired or replaced with new or like-new products at Murideo's discretion. This International Limited Warranty covers the costs of service parts and labor required to restore your product to fully functional condition. MURIDEO will, at its discretion, repair or replace any defective products or parts covered by this International Limited warranty with refurbished parts of the product that are equivalent to new or like new products in both functionality and performance. A product or part repaired or replaced under this International Limited Warranty shall be covered for the remainder of the original warranty period applying to the product or part or for 90 days, whichever expires last. All exchanged parts and products under this International Limited Warranty will become MURIDEO's property.



Obtaining Warranty Service

Warranty service or Returned Merchandise Authorization (RMA) under this International Limited Warranty will be honored only if claims are made within the warranty period. The process for notifications to MURIDEO or products outside the warranty period will be the same, but charges may apply. Contact details may be obtained on the MURIDEO website:
<https://www.murideo.com/>

Customers are requested to perform the following actions before claiming MURIDEO product as defective:

- Owner must notify MURIDEO, during the warranty period, in writing of the alleged defect and allow MURIDEO a reasonable opportunity to inspect the allegedly defective product;

- No Product may be returned without MURIDEO's consent. The MURIDEO RMA# must accompany all returns, and all returns must be delivered to MURIDEO within the warranty period;

- Owner may, then at its own expense, return the allegedly defective Product, freight pre-paid and in the original packaging, accompanied by a brief statement explaining the alleged defect to MURIDEO;

- If MURIDEO determines that any returned Product is not defective, or if MURIDEO determines that the warranty does not cover the defect, MURIDEO will return the Product to the Owner at the Owner's expense, freight collect, and Owner agrees to pay MURIDEO reasonable cost of handling and testing;

- Upon determining that a returned product is defective, the Owner will need to present the invoice showing the original purchase transaction to receive warranty service. If shipping the product, the Owner will need to package it carefully and send it, transportation prepaid by a traceable, insured method, to the MURIDEO Service Center. Package the product using adequate padding material to prevent damage in transit. The original container is ideal for this purpose. Include the RMA #, your name, return shipping address, email address, and telephone number where you may be reached during business hours inside the shipping package with the unit. Any replacement unit will be warranted under these Terms and Conditions for the remainder of the original warranty period or ninety (90) days, whichever is longer.

For important tips on operating and troubleshooting the product, refer to the user manual, which can be downloaded from our website, <http://www.murideo.com/>.



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This Limited Warranty gives you specific legal rights. You may also have other rights that vary from state to state or country to country. You are advised to consult applicable state or country laws to fully determine your rights. Some jurisdictions do not allow the exclusion or limitation of special, incidental, or consequential damages or limitations on how long a warranty lasts, so the above exclusion and limitations may not apply to everyone.



Support

For service and support, contact your local dealer.

To find your dealer or to contact MURIDEO support, go to:

<https://support.murideo.com/>

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support

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Limitation of Liability

MURIDEO reserves the right to refuse warranty service of products under disputable conditions. MURIDEO also holds the right to declare the final decision on whether products are within warranty conditions. The following actions and damages will result in voiding the limited warranty:

- Damage caused by acts of nature, such as fire, flood, wind, earthquake, lightning, etc.
- Damage or incompatibility caused by failure to perform a proper installation or to provide an appropriate operational environment for the product, including but not limited to unstable wired/wireless network connection and phone lines, insufficient grounding, external electro-magnetic fields, direct sunlight, high humidity, and vibration.
- Damage caused by impact with other objects, dropping, falls, spilled liquids, or submersion in liquids.
- Damage caused by unauthorized repair or disassembling of the product.
- Damage caused by abuse, misuse, mishandling, or misapplication.
- Damage caused by third-party peripherals (including but not limited to visible damages on the motherboard or other electronic parts of the product, such as burn spots after electric discharge, melting, fusing, splitting, etc.)
- Any unauthorized software or modification of built-in software not approved by MURIDEO.
- The product's serial number (or serial number stickers of its parts) has been modified, removed, blurred, or damaged.

-
- Defects caused by transportation, handling, or customer abuse.



Thank you for choosing Murideo!
Please contact us with any questions, we are
happily at your service!



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