

INOGENI SHARE_{2U}

Dual USB 2.0 Video to USB 3.0 Converter User Guide v1.2



Thank you!

You have just acquired the finest and easiest to use tool for simultaneous capture of two streams of uncompressed video with audio for your computer.

**Easy, No Drivers, No Setup !
Versatile !
Compatible with all Apps !**

SHARE2U CONVERTER P/N SHARE2U

PRODUCT HIGHLIGHTS

- EASY ! No drivers required
- Capture from MJPEG and H264 USB 2.0 cameras, which are UVC-compliant
- Capture HDMI feeds
- Predefined Picture in Picture (PIP) views
- Ideal for Video streaming and Videoconferencing
- Compatible to all motherboards and chipsets
- Powered via external power supply.
- Scaler and Colorspace Conversion
- Supports Windows, OSX and Linux
- DirectShow, AVFoundation and V4L2 Compatible
- Professional grade full-metal enclosure

OVERVIEW

The **INOGENI SHARE2U Converter** is the most easy and reliable tool for simultaneous capture of two webcam and HDMI feeds into one single USB stream with audio for your PC for recording, videoconferencing, lecture capture and streaming applications. No driver installation is necessary and it will work on all motherboards and USB 3.0 chipsets. It features two USB inputs, one HDMI input, a line level stereo analog input, a line level stereo analog output, an internal USB 3.0 hub with 2x USB 3.0 ports for expansion purposes and USB 3.0 connector for the host. It supports SD and HDTV video formats, up to 1080p60, and most computer graphic formats. Compact in size and rugged, the converter is a practical and an easy-to-use USB 3.0 capture solution. It is compatible with Windows, OSX and Linux operating systems, and is UVC-compliant, so it will work with all DirectShow/V4L2 and AVFoundation compatible software.

The converter supports 1080p resolutions up to 30 fps for USB and HDMI inputs. The line level stereo analog audio input and output are two-channel LPCM.

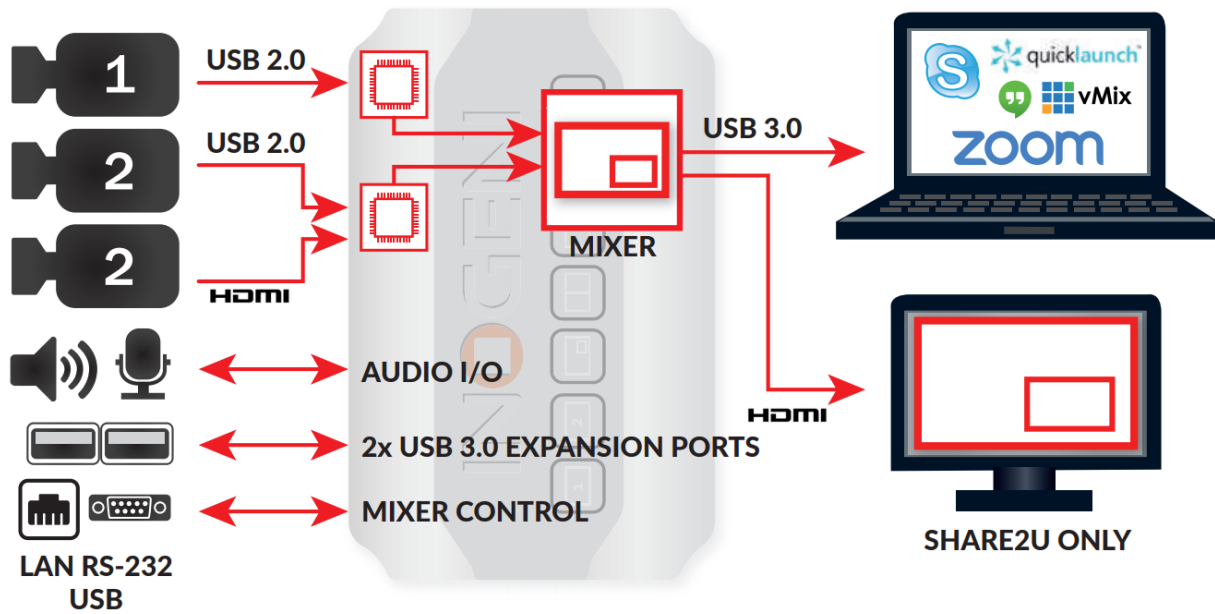
SHARE2U comes with a USB 3.0 cable and its power supply.

- Line level stereo audio support
- Predefined Picture in Picture (PIP) views
- Digital Fluid technology - Internal frame buffers maximize frame rate with any PC
- Hardware-based color space and sampling conversion
- Automatic scaling and frame rate conversion
- Customizable video processing functions
- Image controls: Brightness, contrast, saturation and hue settings
- Supports multiple devices on the same PC.
- Compatible with Windows, Mac OSX and Linux.

DEVICE CONNECTORS



CONNECTION DIAGRAM



SPECIFICATIONS

Video Input 1	
Connector	1 x USB 2.0 camera (MJPEG or H264)
Video Resolutions	Depends on the camera specifications
Video Input 2	
Connector	1 x USB 2.0 camera (MJPEG or H264)
Video Resolutions	Depends on the camera specifications
Connector	1 x HDMI
Video Resolutions	1080p, 720p and 640x480
Frame Rates	Up to 30 Hz, all formats
Analog input	Analog stereo, line level, 3.5mm jack.
Analog output	Analog stereo, line level, 3.5mm jack.
HDCP Copy protection	The device will not decrypt BD/DVD movies, satellite/cable receivers or other encrypted sources.
Mixer Control	The Mixer feature can be controlled by the following interfaces: HID RS-232 Keypad INOGENI REMOTE LAN

Output	
Connectors	1 x USB 3.0 to host 1 x HDMI output
Color Space	YCbCr (YUY2) 4:2:2 8-bit
Video Scaler	Automatic hardware based
Color Space Conversion	Automatic hardware based
Sampling Conversion	Automatic hardware based
Frame Rate Conversion	Automatic hardware based
USB expansion	2 x USB 3.0 ports for expansion purposes. The devices connected will appear to the host.

Audio	
Audio input	2-channel LPCM 48kHz audio from Line input or embedded in HDMI
Audio output	2-channel LPCM 48kHz audio Line level

Compatibility	
Operating System	NO driver installation necessary. Windows 7 and above (32/64-bit) OSX 10.10 and above Linux (kernel v2.6.38 and above) Android
Host Requirements	USB 3.0 port Minimum 4GB RAM Intel Core i5 Graphic card with its own memory for on-screen rendering applications.
Motherboard	Compatible with all motherboards Intel, Renesas, ASMedia, and Fresco Logic
Cameras Supported	UVC-compliant cameras for USB inputs. HDMI sources up to 1080p30.
Software Compatibility	UVC-compliant Runs with all software compatible to DirectShow, V4L2, QuickTime and AVFoundation.

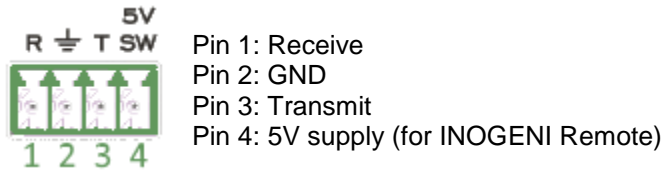
Dimensions [W x L x H, cm]	18.5 x 11 x 3
Weight [g]	466
Power	12V, 700mA (adapter included)
UPC Code	040232355523
Origin	Canada
Harmonized Code	8517.62.000.900

SERIAL COMMUNICATION PROTOCOL

The device baud rate is 9600. This setting is configured using the appropriate firmware.

Terminal block pinout

As written on the back of the device, here is the pinout of the terminal block.



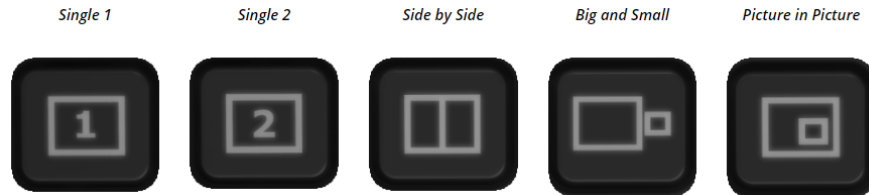
Commands

If the commands are recognized, the “**ACK**” string will be sent.

If the commands are NOT recognized, the “**NACK**” string will be sent.

Input 1 is the **USB input 1**.

Input 2 is the **USB input 1 OR HDMI input**.



Commands sent to the serial interface must have the ‘<’ character at the beginning and ‘>’ character at the end.

COMMAND	Command description
<S1>	Source 1, which comes from the USB input 1 connector
<S2>	Source 2, which comes from the USB input 1 or HDMI connector
<SS>	Side by Side View
<BS>	Big and Small View
<PPTR>	Picture in Picture at top right corner
<PPTL>	Picture in Picture at top left corner
<PPBR>	Picture in Picture at bottom right corner
<PPBL>	Picture in Picture at bottom left corner
<SW>	Swap View
<SS1>	Side by Side View where Input 1 is at the left side
<SS2>	Side by Side View where Input 2 is at the left side
<BS1>	Big and Small View where Input 1 is at the left side
<BS2>	Big and Small View where Input 2 is at the left side
<PPTR1>	Picture in Picture at top right corner where Input 1 is the background
<PPTR2>	Picture in Picture at top right corner where Input 2 is the background
<PPTL1>	Picture in Picture at top left corner where Input 1 is the background
<PPTL2>	Picture in Picture at top left corner where Input 2 is the background
<PPBR1>	Picture in Picture at bottom right corner where Input 1 is the background

<PPBR2>	Picture in Picture at bottom right corner where Input 2 is the background
<PPBL1>	Picture in Picture at bottom left corner where Input 1 is the background
<PPBL2>	Picture in Picture at bottom left corner where Input 2 is the background
<SAVE>	Save the current configuration onboard for future use
<RSTR>	Erase the current configuration onboard and return to default values
<BLK>	Black video
<SHW>	Show video
<RST>	Reset the device
<SWUSB>	Select USB source as input 2.
<SWHDMI>	Select HDMI source as input 2.
<POLL>	Returns the current view of the device. In case PPTL1 mode is active, you will receive: <pre>>> <POLL> VIEW => S1 BLACK => disabled ACK</pre>
<GET>	Return the firmware versions and video. Here is an example. <pre>>> <GET> StreamerApp => 1.4.1 DeviceID => 0 FX3 => N/A FPGA => N/A EDID => N/A Input 1 => 1920x1080 MJPEG Input 2 => Unlocked Input 3 => Unlocked VIEW => S1 BLACK => disabled IP => 192.168.0.29 MAC => f8:dc:7a:5:76:8 ACK</pre>

INOGENI REMOTE



The INOGENI Remote needs to be connected to the terminal block port in order to operate. Apply wiring accordingly. This remote is sending serial commands to the SHARE2U device. Make sure to set the **DIP SW6** in order to apply power to the remote before going further. See “DIP SWITCHES” section of this document for more details. Check the user manual of the INOGENI REMOTE for more details.

For SHARE2U and CAM series – You need to wire up a RJ45 cable to a terminal block plug.



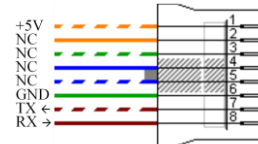
Do not plug a RJ45 cable between the INOGENI device and the REMOTE.

INOGENI device side



Pin 1: Receive
 Pin 2: GND
 Pin 3: Transmit
 Pin 4: 5V supply

REMOTE side



LAN INTERFACE

The device supports a LAN interface. The device is DHCP compliant. Your DHCP server should assign an IP address to the device automatically.

You can use any telnet application in order to communicate with the device using TCP. Make sure to use the right IP address and **port 50000**.



You can use the commands by sending HTTP or TCP requests. For example, you can send an HTTP request by sending it using any browser, for example, to 192.168.0.80:50000/COMMAND. If the command is recognized, you will receive the ACK string.

Commands sent to the serial interface must have the '\$' character at the beginning and '\$' character at the end.

COMMAND	Command description
\$\$S1\$	Source 1, which comes from the USB input 1 connector
\$\$S2\$	Source 2, which comes from the USB input 1 or HDMI connector
\$\$\$	Side by Side View
\$BS\$	Big and Small View
\$PPTR\$	Picture in Picture at top right corner
\$PPTL\$	Picture in Picture at top left corner
\$PPBR\$	Picture in Picture at bottom right corner
\$PPBL\$	Picture in Picture at bottom left corner
\$SW\$	Swap View
\$\$S1\$	Side by Side View where Input 1 is at the left side
\$\$S2\$	Side by Side View where Input 2 is at the left side
\$BS1\$	Big and Small View where Input 1 is at the left side
\$BS2\$	Big and Small View where Input 2 is at the left side
\$PPTR1\$	Picture in Picture at top right corner where Input 1 is the background
\$PPTR2\$	Picture in Picture at top right corner where Input 2 is the background
\$PPTL1\$	Picture in Picture at top left corner where Input 1 is the background
\$PPTL2\$	Picture in Picture at top left corner where Input 2 is the background
\$PPBR1\$	Picture in Picture at bottom right corner where Input 1 is the background
\$PPBR2\$	Picture in Picture at bottom right corner where Input 2 is the background
\$PPBL1\$	Picture in Picture at bottom left corner where Input 1 is the background
\$PPBL2\$	Picture in Picture at bottom left corner where Input 2 is the background
\$\$SAVE\$	Save the current configuration onboard for future use
\$\$RSTR\$	Erase the current configuration onboard and return to default values
\$BLK\$	Black video
\$\$HW\$	Show video

\$RST\$	Reset the device
\$POLL\$	Returns the current view of the device. In case PPTL1 mode is active, you will receive: VIEW => S1 BLACK => disabled ACK
\$GET\$	Return the firmware versions and video resolutions of CAM and CONT inputs. Here is an example. StreamerApp => 1.4.1 DeviceID => 0 FX3 => N/A FPGA => N/A EDID => N/A Input 1 => 1920x1080 MJPEG Input 2 => Unlocked Input 3 => Unlocked VIEW => S1 BLACK => disabled IP => 192.168.0.29 MAC => f8:dc:7a:5:76:8 ACK

DIP SWITCHES

The device have DIP switches below the device in order to force settings. Here are the functions of the DIP switches.

SW1		For future use
SW2		For future use
SW3	OFF	Frame buffer frequency is set to 60Hz. (default)
	ON	Frame buffer frequency is set to 50Hz.
SW4		Reserved
SW5		Reserved
SW6	OFF	Disable 5V on terminal block. (default)
	ON	Enable 5V on terminal block. This switch must be set in order to power up the connected remote.

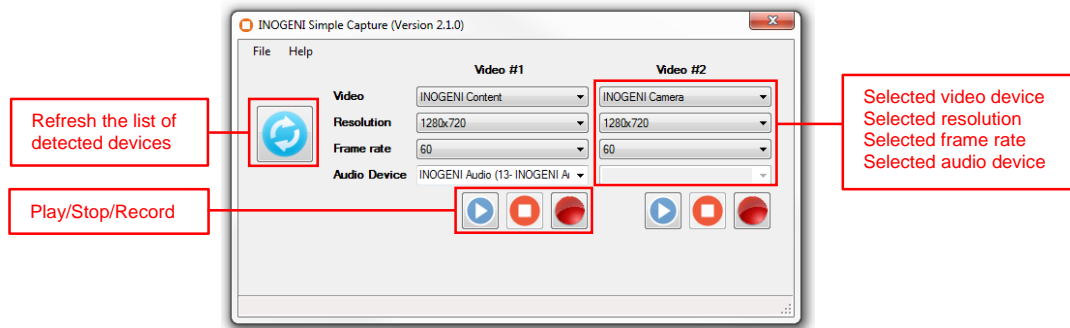
INOGENI SOFTWARE SUITE

Eager to try it now? Simple as 1-2-3!

- 1- Connect the USB 3.0 cable to your computer
- 2- Connect any type of video source
- 3- Run your App or Download INOGENI Software Suite

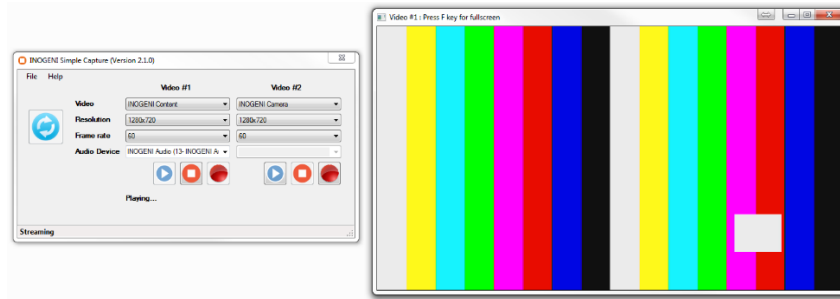
You can use our **INOGENI Software Suite** in order to preview and record your video sources.

1. You can open the **INOGENI Simple Capture** application.



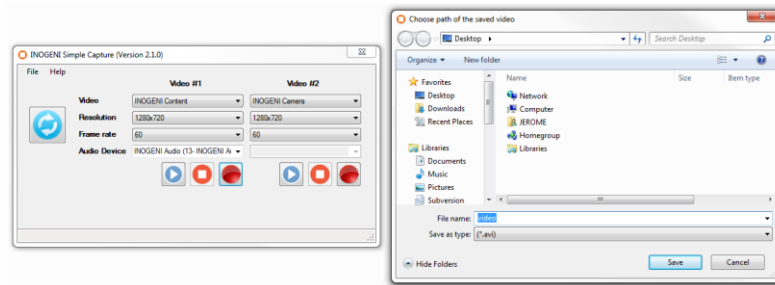
You will then have to use which video device, the resolution and the frame rate to use for the preview/capture. Optional audio source can be selected.

2. To preview, you can click on the **Play** button and a window will appear with the video content.

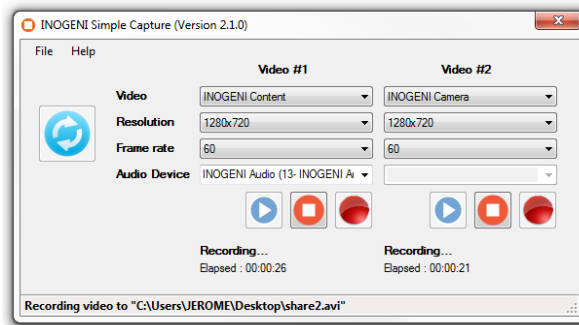


You can click the **Stop** button to quit the preview mode or close the preview window.

3. If you want to capture to a file, you can click on the **Record** button and the application will ask you where to save the file to.



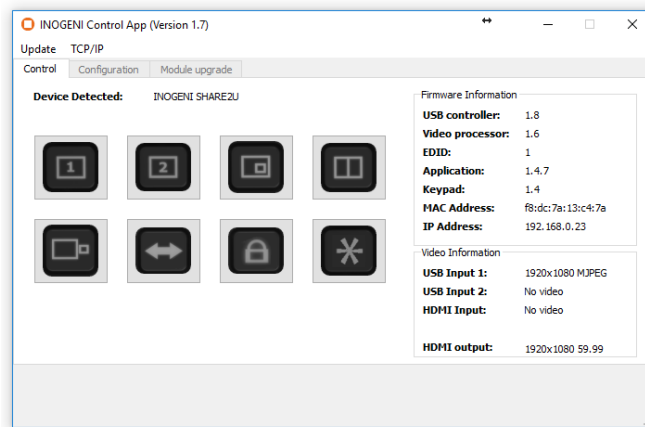
- The application will then record your video sources. The length of the recording will also be available in the application.



You can also use our INOGENI Simple Viewer which only offers a single preview of a video and audio sources.

INOGENI CONTROL APP

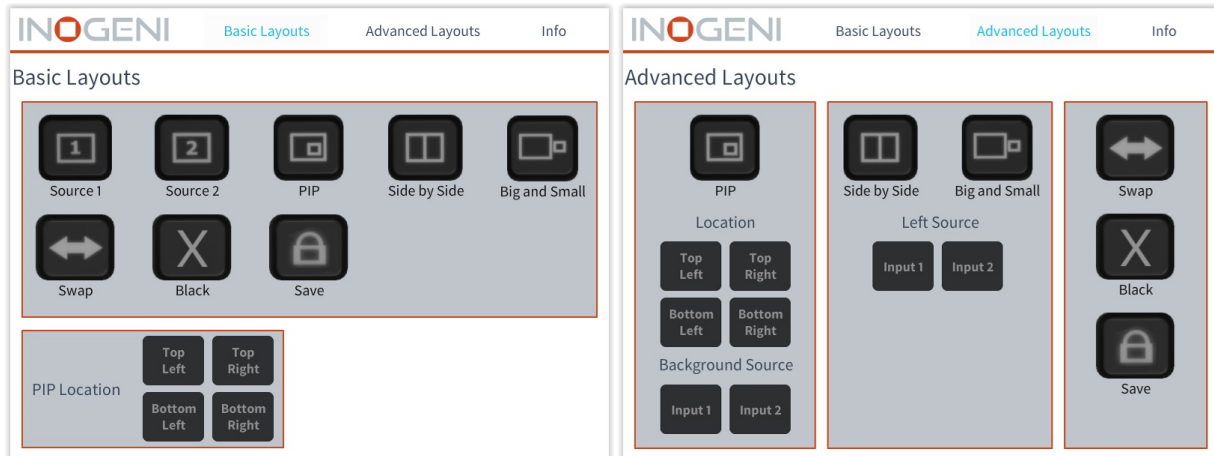
The INOGENI Control App allows you to control and monitor video sources.



The device has its own application in order to control the Mixer configuration using the USB HID or the LAN interfaces. You can also monitor the firmware versions installed on the device and the status of the USB and HDMI inputs. You can update your device to the latest firmware using the Update menu. The C++ source code of this application is available on demand. Visit the Software Update page under the INOGENI SHARE2U section for more details.

CRESTRON MODULES

You can use the Crestron modules in order to control the INOGENI SHARE2U device using the serial or the IP connections. These modules are available on our website under the section Software Update. Refer to the Help file on how to use the modules.



SUPPORT

Engineered by video professionals, for video professionals, it is your most compatible USB 3.0 device. INOGENI expertise at your fingertips:

- **Expert Technical Support team** at support@inogeni.com for immediate help or if you have any technical question about our products.
- **INOGENI Software Suite** to start capturing quickly with your INOGENI device. Please visit www.inogeni.com/software-upgrade for more details.
- Extensive **Knowledge Base** to learn from other customers experiences.

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INOGENI, Inc.
979 de Bourgogne avenue, suite 530
Québec
G1W 2L4 (QC) Canada