

INOGENI CAM

INOGENI CAM Series HDMI and USB 2.0 Camera selectors User Guide v1.2

CAM100
CAM200
CAM300



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 !**

PRODUCTS HIGHLIGHTS

- EASY ! No drivers required
- Capture from MJPEG and H264 USB 2.0 cameras, which are UVC-compliant
- Capture HDMI and VGA feeds
- High efficiency source selectors
- 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 CAM Series** 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. 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.

CAM Series devices come with a USB 3.0 cable and its power supply.

- Line level stereo audio support
- 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

CAM100



CAM200

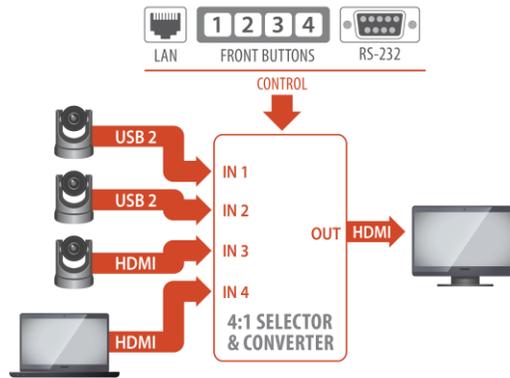


CAM300

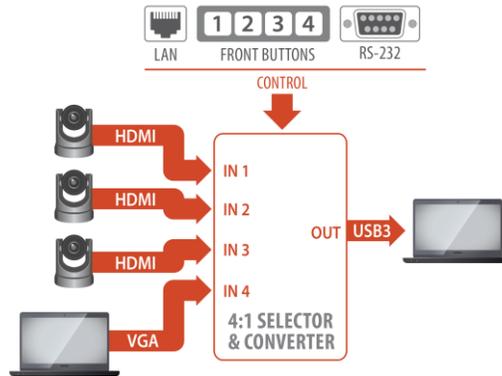


CONNECTION DIAGRAM

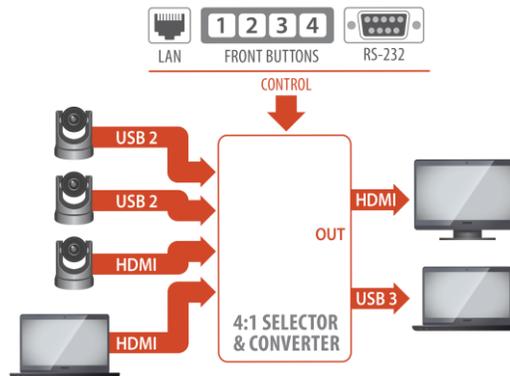
CAM100



CAM200



CAM300



SPECIFICATIONS

CAM100	CAM200	CAM300
		
Feature summary		
4:1 2x HDMI & 2x USB 2.0 Camera selector Smooth video switch HDMI 1080P60 output	4:1 3x HDMI & 1x VGA Camera selector Smooth video switch USB 3.0 output	4:1 2x HDMI & 2x USB 2.0 Camera selector Smooth video switch HDMI 1080P60 + USB3.0 output
Video Inputs		
#1- 1 x USB 2.0 camera MJPEG or H264 (*) Depends on the camera specifications Supported USB 2.0 cameras	#1-HDMI 1080p60	#1- 1 x USB 2.0 camera MJPEG or H264 (*) Depends on the camera specifications Supported USB 2.0 cameras
#2- 1 x USB 2.0 camera MJPEG or H264 (*) Depends on the camera specifications Supported USB 2.0 cameras	#2-HDMI 1080p60	#2- 1 x USB 2.0 camera MJPEG or H264 (*) Depends on the camera specifications Supported USB 2.0 cameras
#3-HDMI 1080p30	#3-HDMI 1080p60	#3-HDMI 1080p30
#4-HDMI 1080p30	#4-VGA 1920x1200	#4-HDMI 1080p30
Video outputs		
HDMI 1080p60	USB 3.0 uncompressed 1080p60	USB 3.0 uncompressed 1080p60 HDMI 1080p60
Audio Inputs		
HDMI embedded PCM	HDMI embedded PCM	HDMI embedded PCM
USB camera audio	Line-in for VGA input	USB camera audio
Audio Outputs		
Through HDMI output	USB 3.0 PCM stereo, audio follow input.	USB 3.0 PCM stereo, audio follow input.
Control Options		
Front buttons	Front buttons	Front buttons

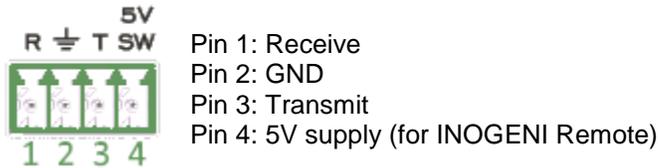
RS-232 LAN	RS-232 LAN USB	RS-232 LAN USB
Video Selection Response Time		
Less than 0.2 second		
Power		
12V, 1.2A. Power supply included		
Motherboard & Laptop		
N/A	Compatible with all processors and chipsets. Intel, Renesas, ASMedia and Fresco Logic	
Cameras Supported		
Cameras and camcorders with an HDMI, DVI or USB 2.0 output	Cameras and camcorders with an HDMI, DVI or VGA output	Cameras and camcorders with an HDMI, DVI, VGA or CVBS output
Software Compatibility		
N/A	UVC-compliant. Runs with all software compatible to DirectShow, AVFoundation and V4L2.	
Adapters/Cables included		
Power supply, RS-232 terminal bock adapter.	Power supply, USB 3.0 Type-C cable, RS-232 terminal bock adapter.	Power supply, USB 3.0 cable, RS-232 terminal bock adapter.
Weight/Dimensions		
1.0 pounds (469 g) 7 1/4" x 4 1/2" x 1 1/4" (L x W x H)		
Operating Temperature		
0° to 45° C 32° to 113° F		
Storage Temperature		
-40° to 105° C -40° to 221° F		
Relative Humidity		
0% to 90% non-condensing		
UPC Code		
040232633850	040232633867	040232633836
Harmonized Code		
8517.62.00.0000		
Origin		
Canada		

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.

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

COMMAND	Command description
<IN1>	Select input 1
<IN2>	Select input 2
<IN3>	Select input 3
<IN4>	Select input 4
<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
<POLL>	Returns the selected input
<GET>	Return the firmware versions and video statistics.

INOGENI REMOTE



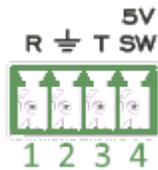
The INOGENI Remote needs to be connected to the terminal block port in order to operate. Apply wiring accordingly. This remote is sending serial commands to the CAM device. Make sure to set the DIP SW6 for CAM100 and CAM300 devices in order to apply power to the remote before going further. See “DIP 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.



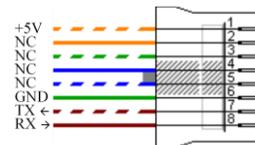
Do not plug a RJ45 cable between the INOGENI device and the REMOTE.

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
\$IN1\$	Select input 1
\$IN2\$	Select input 2
\$IN3\$	Select input 3
\$IN4\$	Select input 4
\$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
\$POLL\$	Returns the selected input
\$GET\$	Return the firmware versions and video statistics.

DIP SWITCHES



This section is only applicable to the CAM100 and CAM300.

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.

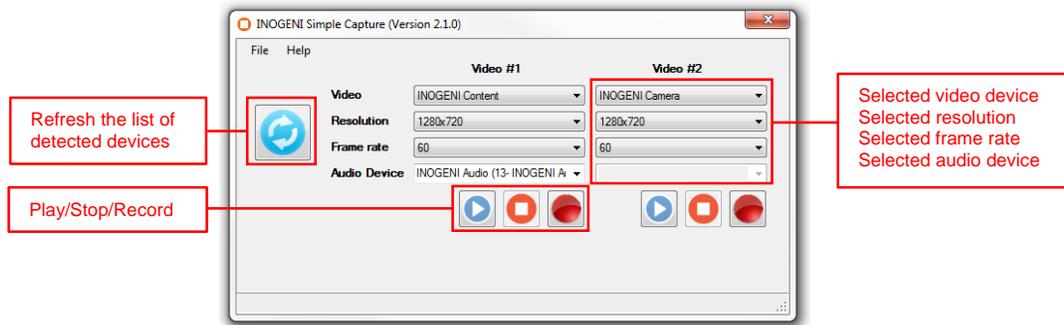
INOGENI SOFTWARE SUITE

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

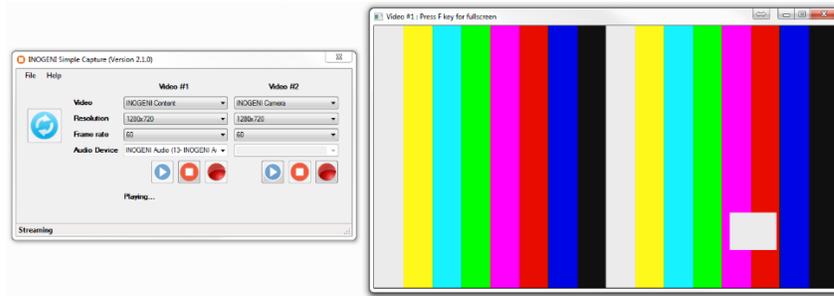
You can use our **INOGENI Software Suite** in order to preview and record your video sources.

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



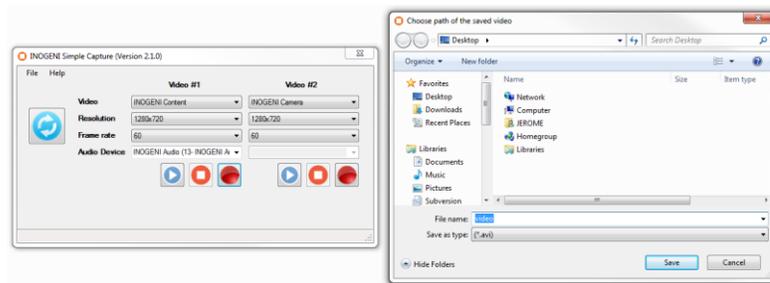
You will then have to use which video device, the resolution and the frame rate to use for the preview/capture. Optional audio source can be selected.

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

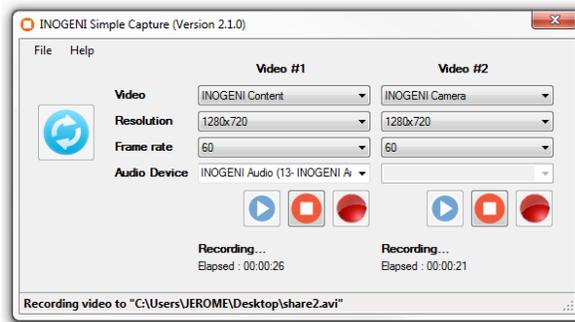


You can click the **Stop** button to quit the preview mode or close the preview window.

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.



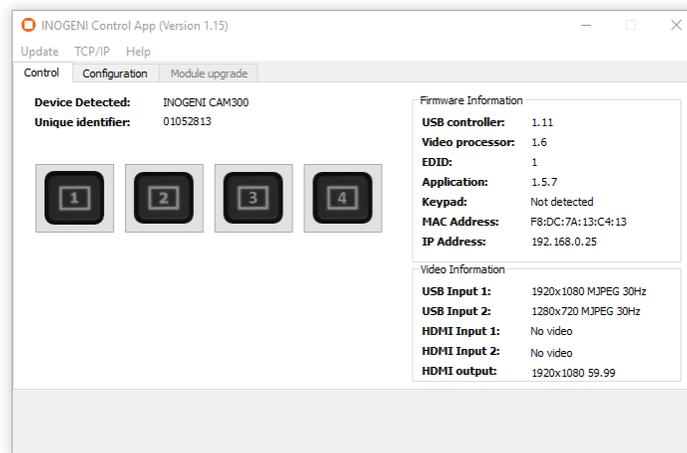
- The application will then record your video sources. The length of the recording will also be available in the application.



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 CAM section for more details.

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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