INOGENI

INOGENI CAM300

User guide

Version 2.0

November 20, 2025

VERSION HISTORY

Version	Date	Description
2.0	November 20, 2025	New product user guide.

CONTENTS

PRODUCT HIGHLIGHTS

Here are the product 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, macOS and Linux
- DirectShow, AVFoundation and V4L2 Compatible
- Professional grade full-metal enclosure

OVERVIEW

The **INOGENI CAM300** 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.

CAM300 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
- Supports multiple devices on the same PC.
- Compatible with Windows, macOS and Linux.

DEVICE INTERFACES

Here are the devices interfaces.

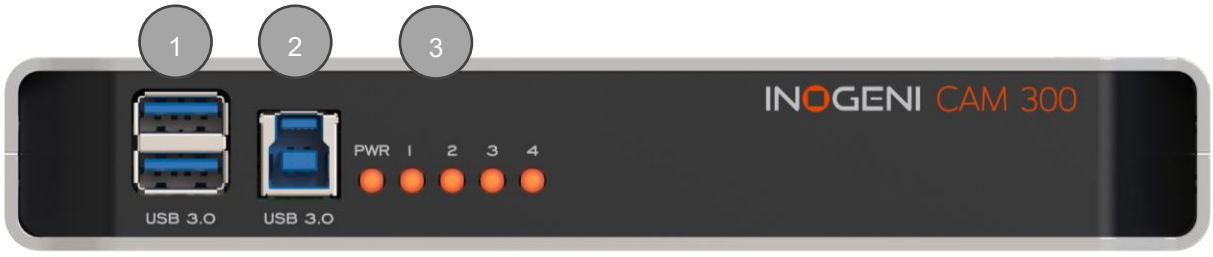
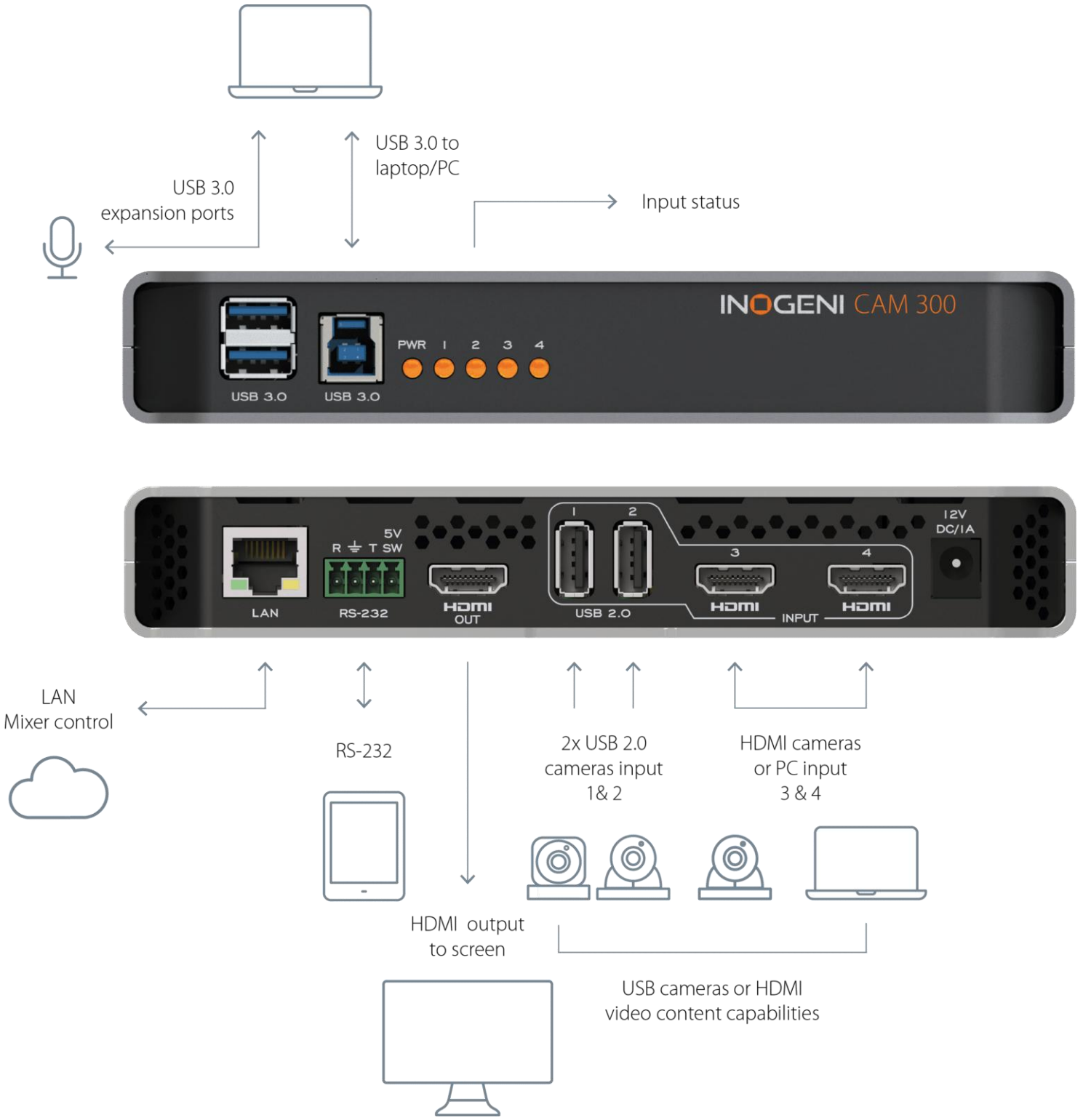


Figure 1: Front side connections

Figure 2: Back side connections

	Items
1	USB3.0 expansion ports.
2	USB3.0 host port.
3	Status leds for power, USB1, USB2 and HDMI inputs
4	LAN interface.
5	RS232 and remote interface.
6	HDMI output.
7	USB1 camera input.
8	USB2 camera input.
9	HDMI camera input #1.
10	HDMI camera input #2.
11	+12VDC power input.

CONNECTION DIAGRAM



LEDS BEHAVIOR

Here are the LEDs behavior:

PWR	
OFF	Device not powered.
ON	Device powered.
1	
OFF	USB1 camera input not detected.
SOLID	USB1 camera input detected.
2	
OFF	USB2 camera input not detected.
SOLID	USB2 camera input detected.
3	
OFF	HDMI1 camera input not detected.
SOLID	HDMI1 camera input detected.
4	
OFF	HDMI2 camera input not detected.
SOLID	HDMI2 camera input detected.

SPECIFICATIONS

Here is the complete specification.

Main feature	
4:1 Camera selector	**4:1 Camera selector** (Smooth video switch) 4 inputs: 2x HDMI & 2x USB 2.0 2 outputs: HDMI 1080p60 & USB 3.0 output

Video input	
#1 Connector & video resolutions	**1x USB 2.0 camera** MJPEG or H264 (*) Depends on the camera specifications Compatible USB cameras
#2 Connector & video resolutions	**1x USB 2.0 camera** MJPEG or H264 (*) Depends on the camera specifications Compatible USB cameras
#3 Connector & video resolutions	**1x HDMI** 1080p60, 1080p30, 720p60 and 480p60 (1080p60 supported for S/N greater than KC2111xxx and KCM111xxx)
#4 Connector & video resolutions	**1x HDMI** 1080p60, 1080p30, 720p60 and 480p60 (1080p60 supported for S/N greater than KC2111xxx and KCM111xxx)
1080p notes for MJPEG and H264	***CAM300 USB limitations and optimizations for up to 1080p** The USB 2.0 or USB 3.0 cameras that only support uncompressed video will have reduced video resolution to optimize fluidity. Due to hardware limitations, only 1x 1920x1080p30 MJPEG and 1x 1280x720p30 MJPEG video resolutions can be captured simultaneously. For better performance and video fluidity, use USB 3.0 or 2.0 cameras that support MJPEG or H264 CODECs. **You have two options to achieve 1080p on two video sources for the CAM300:** **Option 1** • **1x** USB camera (1080p MJPEG or H264 CODECs) • **1x** 1080p HDMI camera **Option 2** • **1x** USB camera (1080p MJPEG or H264 CODECs) • **1x** USB camera (1080p or higher) connected to the CAM300 HDMI input via the INOGENI U-CAM converter (4K USB to HDMI converter)
Color space	HDMI : RGB, YCbCr 4:4:4 and 4:2:2

Video output	
HDMI	1x HDMI up to 1080p60 (One mixed video stream)
USB	1x USB 3.0 uncompressed up to 1080p60 (One mixed video stream)
USB - Color Space ou CODEC	USB 3.0: YCbCr (YUY2) 4:2:2 8-bit. USB 2.0: MJPEG
USB - Video scaler **USB - Color space conversion** **USB - Sampling conversion** **USB - Frame rate conversion**	Automatic hardware-based

Audio	
Digital audio input	HDMI embedded PCM USB camera audio USB 3.0 PCM stereo, audio follow input

Control	
Control options	Integrated keypad, RS-232, LAN, USB

IP interface	10/100 Mbps DHCP (default) and static IP addressing. Supports the APIPA protocol when no DHCP server found.

USB Port	
USB expansion port	Two (2) extra USB 3.0 ports for expansion purposes. The devices connected will appear to the host.

Compatibility	
Barco ClickShare Conference Compatible	Compatible with Barco ClickShare Conference (CX-20, CX-30 & CX-50)
Operating systems	NO driver installation necessary! Windows 7 and above (32/64-bit) macOS 10.10 and above Linux (kernel v2.6.38)
Consumed USB tiers	2 tiers The device is a USB composite device connected to an embedded USB hub. USB tiers between USB cameras and the device are not reported to the connected host. The device acts in some way as a “tier resetter.”
Minimum host requirements	USB 2.0 port – We recommend USB 3.0 for uncompressed video 4GB RAM Intel Core i5 or equivalent Graphic card with dedicated memory
Supported cameras	Depends on the camera specifications Compatible USB cameras
Software Compatibility	UVC-compliant. Runs with all software compatible to DirectShow, AVFoundation and V4L2. Compatible to: Teams, Zoom, Webex, Google Meet, etc. See more compatible applications here

Video switch speed	
Video switch speed	Less than 0.2 second for switching between USB inputs. Less than 0.2 second for switching between HDMI inputs with same video resolution. Less than 0.2 second for switching between USB input and “active” HDMI input and vice-versa. Up to 2 seconds switching between HDMI inputs if video resolutions are different. *Active HDMI input is the last selected HDMI input.

Physical details	
Dimensions (W x L x H)	18.5 cm x 11.0 cm x 3.0 cm 7.28” x 4.33” x 1.18”
Power supply	12V (100-240 VAC 50/60Hz to 12V/1.2A DC)
Weight	570 g (1.26 lb)
Package content	1x 1 m/3.3 ft USB 3.0 cable (Type-A to Type-B) 1x RS-232 terminal block adapter 2x mounting brackets 1x power supply 100-240 VAC 50/60Hz to 12V/1.2A DC International adapters included in the box (AUS, EUR, UK and US)
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

Informations	
UPC code	040232633836
Origin	Canada
Warranty	5 years: Products purchased by the end-user after August 1, 2024 2 years: Products purchased by the end-user before to August 1, 2024

Certifications	
Download	Certifications available on the Support Tab
HDCP-compliant	The INOGENI device does not decrypt BD/DVD movies, satellite/cable receivers or other encrypted sources.
Certifications	FCC, CE, RoHS, IEC62368, SoV, RCM, KC, NOM
TAA-compliant	Yes

TOP USER BUTTONS

Here is the view of the top user buttons.

Input 1 (USB1) to full screen.

Input 2 (USB2) to full screen.

Input 3 (HDMI1) to full screen.

Input 4 (HDMI2) to full screen.

Black video outputs.

Lock keypad. To lock/unlock the keypad, press and hold this button for a minimum of 5 seconds.

Not used, reserved for customization.

SERIAL COMMUNICATION PROTOCOL

Here is the complete list of commands provided through the serial connection. As written on the back of the device, here is the pinout of the terminal block.

Pin 1: Receive
Pin 2: GND
Pin 3: Transmit
Pin 4: 5V supply (for INOGENI Remote)

NOTE: Commands sent to the serial interface must have the '<' character at the beginning and '>' character at the end. You also need to put **the space " " character between command and argument**.

Baud rate: 9600 [default] // **Data bits**: 8 // **Stop bits:** 1 // **Parity:** None // **Flow control:** None

REST API

You can enable a bearer authentication in the HTTP header (Authorization: Bearer <token>) through our configuration page to increase security on the API.

There will be a return code to each call with the following commands:

```
200 => success
400 => error
401 => authorization error
```

The return body will usually be JSON formatted with a "`message`" field containing a JSON string explaining the cause of the error or "success" in case of success. Note that we are using self-signed certificates.

It is also possible to embed arguments to an API call inside the URL to ease configuration with some control systems with the following topology:

GET `https://<IP>/api/v1/`**<COMMAND>**`?`**<ARG1>=value**`&`**<ARG2>=value**

where **<COMMAND>**, **<ARG1>** and **<ARG2>** are command and associated arguments.

For example, using the **output** command, you can issue the following request:

GET `https://<IP>/api/v1/`**output**`?`**resolution=1**

This request will set the HDMI output resolution to the option 1, which is 1080p60.

TELNET

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

Here is the list of the RESTAPI, telnet and RS232 commands available for the device.

NOTE: Commands sent to the **serial interface** must have the '<' character at the beginning and '>' character at the end. You also need to put **the space " " character between command and argument**.

NOTE: Commands sent to the **telnet interface** must have the '$' character at the beginning and $' character at the end. You also need to put **the underscore "_" character between command and argument**.

REST API	Telnet	RS232	Description
/api/v1/accessToken	N/A	N/A	Supports the GET / POST / DELETE commands for the access token.
/api/v1/ accessTokenEn?enable= X	N/A	N/A	Enable access token. X = 0 => Disable X = 1 => Enable
/api/v1/ audioConfig?config=X	$ACFG_X$	<ACFG X>	Set audio configuration of the device. X = 0 => Automatic input selection X = 1 => Follow selected input X = 2 => Mix all inputs
/api/v1/ audioInputVolume?id=X &volume=Y	$AIN1_Y$ $AIN2_Y$ $AIN3_Y$ $AIN4_Y$	<AIN1 Y> <AIN2 Y> <AIN3 Y> <AIN4 Y>	Audio input selection X = 1 for USB1 input X = 2 for USB2 input X = 3 for HDMI input Adjust audio input level of the specific input. Parameter is 2-complement. Y = 166 to 6 For example, Y = 0 means no audio modification. Y = 255 means -1 dB audio gain. Y = 166 is MUTE value.
/api/v1/ audioOutputSource?id= X&source=Y	$AOUTHDMI_Y$ $AOUTANALOG_Y$ $AOUTUSB1_Y$ $AOUTUSB2_Y$	<AOUTHDMI Y> <AOUTANALOG Y> <AOUTUSB1 Y> <AOUTUSB2 Y>	Audio output selection. X = 1 => HDMI output X = 2 => analog audio output X = 3 => USB1 output X = 4 => USB2 output Audio source associated to the specific output. Y = 0 => PC-Speaker Y = 255 => mixer Y = 128 => analog input & PC-Speaker Y = 127 => analog input
/api/v1/ audioOutputVolume?id= X&volume=Y	$AOUT1$ $AOUT2$ $AOUT3$ $AOUT4$	<AOUT1 Y> <AOUT2 Y> <AOUT3 Y> <AOUT4 Y>	Audio output selection X = 1 => analog output X = 2 => USB1 output X = 3 => USB2 output X = 4 => HDMI output Adjust audio output level of the specific output. Parameter is 2-complement. Y = 166 to 6 For example, Y = 0 means no audio modification. Y = 255 means -1 dB audio gain. Y = 166 is MUTE value.
/api/v1/ blank?enable=X	$BLANK_X$	<BLANK X>	Disable HDMI output. X = 0 => Enable HDMI output. X = 1 => Disable HDMI output.
/api/v1/blk	BLK	<BLK>	Black video over USB 3.0 and HDMI outputs. You need to use the shw, SHW or <SHW> to recover video.
/api/v1/dhcp?enable=X	$DHCP_X$	<DHCP X>	Turn ON/OFF DHCP client. X = 0 => Disable DHCP client. X = 1 => Enable DHCP client.
/api/v1/ enjpegparse?enable=X	$ENJPEGPARSE_X$	<ENJPEGPARSE X>	Enable parsing of the JPEG payload on camera side. X = 0 => Disable X = 1 => Enable

/api/v1/ enlog?enable=X	$ENLOG_X$	<ENLOG X>	Enable logging over telnet for troubleshooting purpose. X = 0 => Disable X = 1 => Enable
/api/v1/ friendlyName?name=X	N/A	<FRIENDLYNAME X>	Set the friendly name of the device reported over the USB output. The device must be rebooted to take effect.
/api/v1/ gateway?gateway=W.X.Y .Z	$GATEWAY_W_X_Y_Z$	<GATEWAY W X Y Z>	Set the gateway address where gateway address = W.X.Y.Z
/api/v1/getLog	N/A	<GETLOG>	Get information of the device for troubleshooting
/api/v1/ httpEn?enable=X	N/A	N/A	Enable HTTP server. X = 0 => Disable X = 1 => Enable
/api/v1/in1	$IN1$	<IN1>	Select input 1.
/api/v1/in2	$IN2$	<IN2>	Select input 2.
/api/v1/in3	$IN3$	<IN3>	Select input 3.
/api/v1/in4	$IN4$	<IN4>	Select input 4.
/api/v1/ inv?id=X&mode=Y	INV_X_Y	<INV X Y>	Video source flip. X = 1, for USB1 = 2, for USB2 = 3, for HDMI Y = 0, no flip = 1, vertical flip = 2, horizontal flip
/api/v1/ip?ip=W.X.Y.Z	$IP_W_X_Y_Z$	<IP W X Y Z>	Set the IP address where IP address = W.X.Y.Z
/api/v1/ netmask?netmask=W.X.Y .Z	$NETMASK_W_X_Y_Z$	<NETMASK W X Y Z>	Set the subnet mask where subnet mask = W.X.Y.Z
/api/v1/ output?resolution=X?	$OUTPUT_X$	<OUTPUT X>	Set the output resolution over HDMI. X = timing index TIMING_AUTO_EDID = 0 TIMING_1080P60 = 1 TIMING_1080P50 = 2 TIMING_720P60 = 3 TIMING_720P50 = 4 TIMING_1080P30 = 5
/api/v1/pan?x=X&y=Y	PAN_X_Y	<PAN X Y>	Moves PTZ camera horizontally. This is a relative control. X = 1, for USB1 = 2, for USB2 Y = -1, counterclockwise = 0, stop = 1, clockwise
/api/v1/poll	$POLL$	<POLL>	Returns the current view of the device.
/api/v1/ preset?x=X&y=Y	$PRESET_X_Y$	<PRESET X Y>	Tells PTZ camera to go to a saved preset position. X = 1, for USB1 = 2, for USB2 Y = 1 to 3, for preset 1, 2 and 3
/api/v1/reboot /api/v1/rst	RST	<RST>	Reboot the unit.
/api/v1/rstr	$RSTR$	<RSTR>	Erase the current configuration onboard and return to default values
/api/v1/save	$SAVE$	<SAVE>	Save the current configuration onboard for future use
/api/v1/ savepreset?x=X&y=Y	$SAVEPRESET_X_Y$	<SAVEPRESET X Y>	Saves current position to camera preset memory. X = 1, for USB1 = 2, for USB2 Y = 1 to 3, for preset 1, 2 and 3
/api/v1/shw	SHW	<SHW>	Show video over USB 3.0 and HDMI outputs.
/api/v1/ standByMode?enable=X	$ALLOWSTANDBYMODE_X$	<ALLOWSTANDBYMODE X>	Set the standby mode of the device. X = 0 => Device always capture video from USB and HDMI sources X = 1 => Device capture video from USB and HDMI sources when USB output interface is requested
N/A	GET	<GET>	Return the firmware versions and video information of the legacy api.
/api/v1/status	$STATUS$	<STATUS>	Return the firmware version and video information of the new V2 api.
/api/v1/sw	SW	<SW>	Swap View
/api/v1/ telnetEn?enable=X	N/A	N/A	Enable telnet server. X = 0 => Disable X = 1 => Enable

/api/v1/tilt?x=X&y=Y	$TILT_X_Y$	<TILT X Y>	Moves PTZ camera vertically. This is a relative control. X = 1, for USB1 = 2, for USB2 Y = 1, camera goes up = 0, stop = -1, camera goes down
/api/v1/ usbInputAudio?enable= X	$USBAIN_X$	<USBAIN X>	Set the USB input audio state. The device must be rebooted to take effect. X = 0 => Disable X = 1 => Enable
/api/v1/zoom?x=X&y=Y	$ZOOM_X_Y$	<ZOOM X Y>	Sets zoom of camera. This is a relative control. X = 1, for USB1 = 2, for USB2 Y = 100 to 500

WEB INTERFACE ACCESS

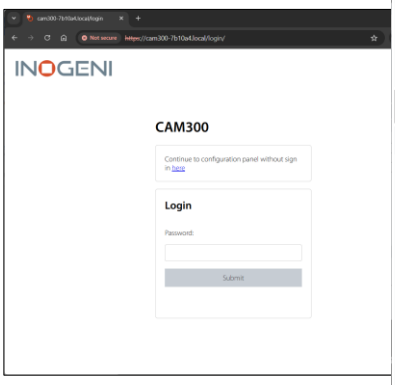
A web interface is available for the device. This one is accessible through your network.

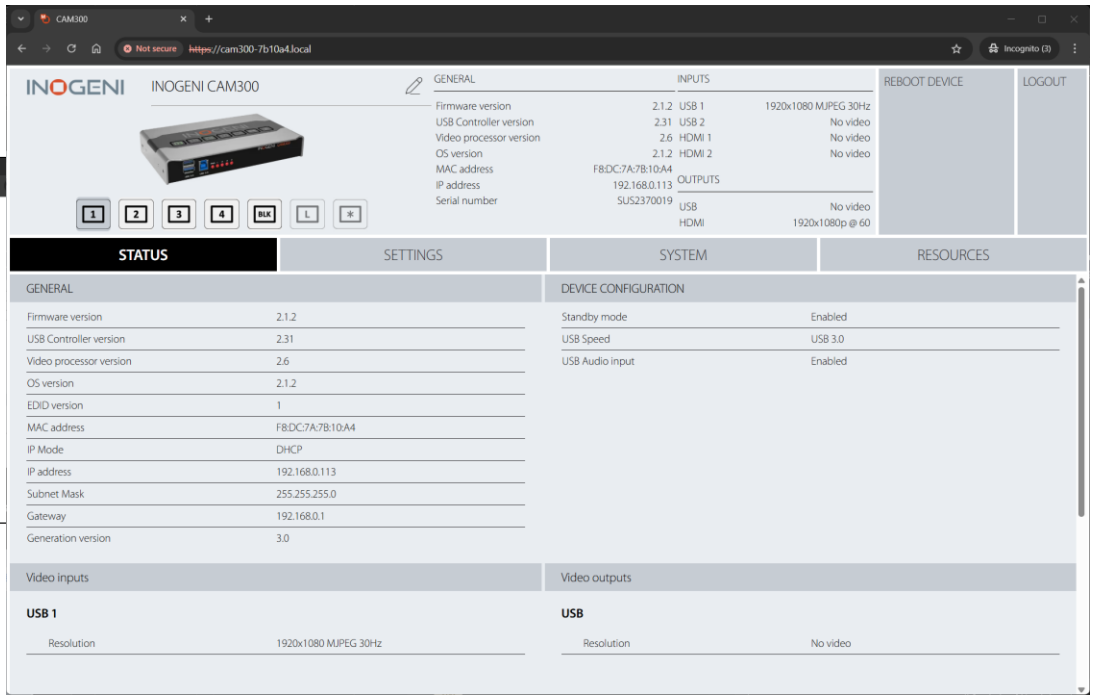
The web interface is only available when using firmware greater or equal to 2.1.2.

Since the device supports the mDNS networking protocol, you can access the web interface of the device using a networking URL. This URL looks like the following example and includes the last 3 bytes of the MAC address and will end with the **.local** suffix:

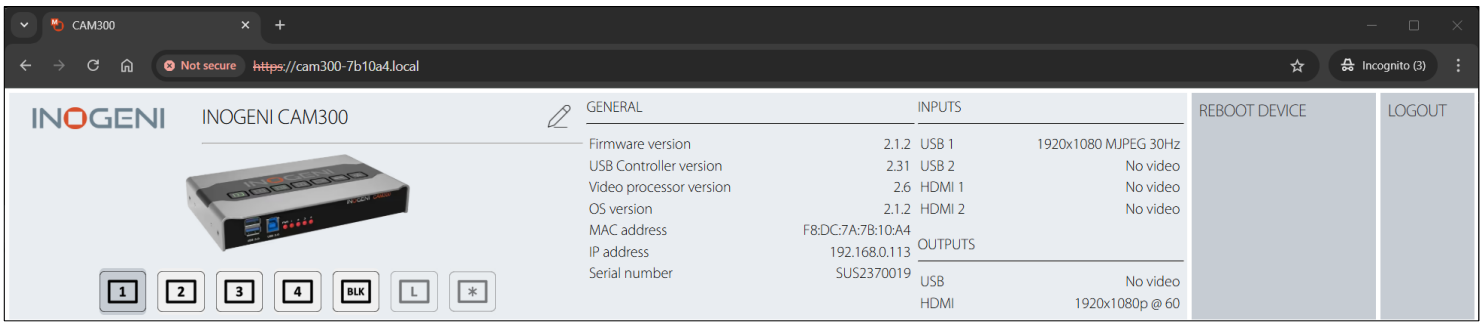
38:76:05:00:80:00
cam300-008000.local

You can access the device using any browser and enter the URL with the **.local** suffix or the IP address of the unit if you have this information. You will be prompted with a login dialog. At first connection, the device will ask you to configure a new password.





When you enter the web interface, you will get access to the general information of the device. This information is always available when you navigate through the tabs.

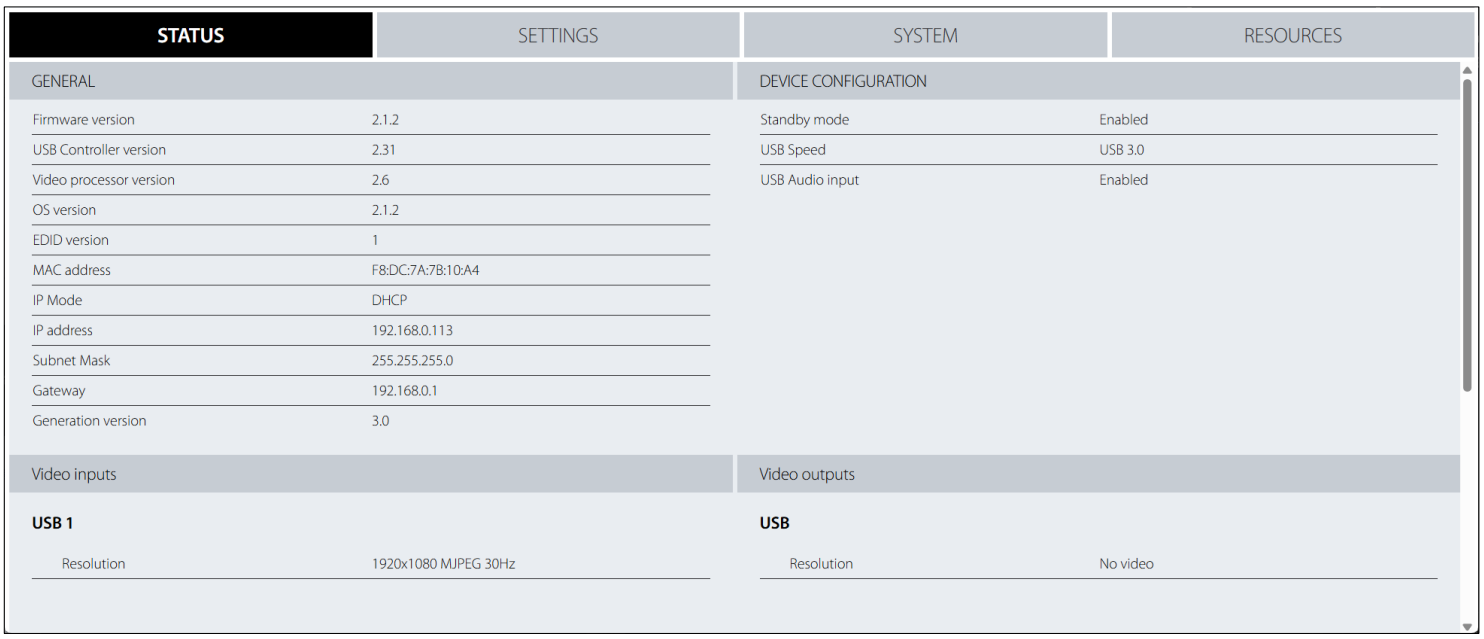


- General section with firmware version, MAC address, IP address and serial number of the unit.
- Status of the USB and HDMI inputs

- Status of the video outputs
- Buttons to reboot the unit and the logout action.

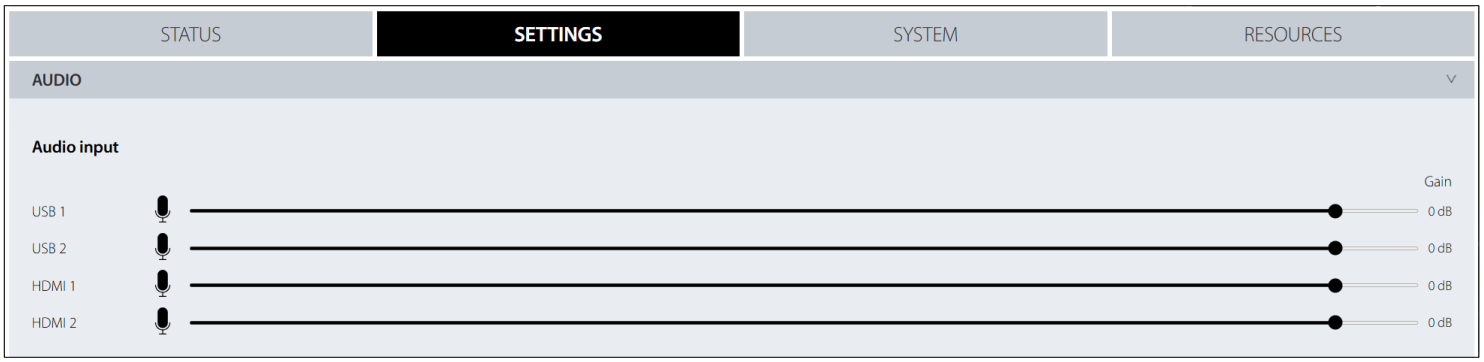
STATUS TAB

This section contains all the firmware information, video sources detections/resolutions along with the actual configuration of the unit.



SETTINGS TAB

AUDIO



The device embeds an audio selector. You have complete control over USB 2.0 and HDMI inputs and output. You can also mute and adjust gain on I/Os.

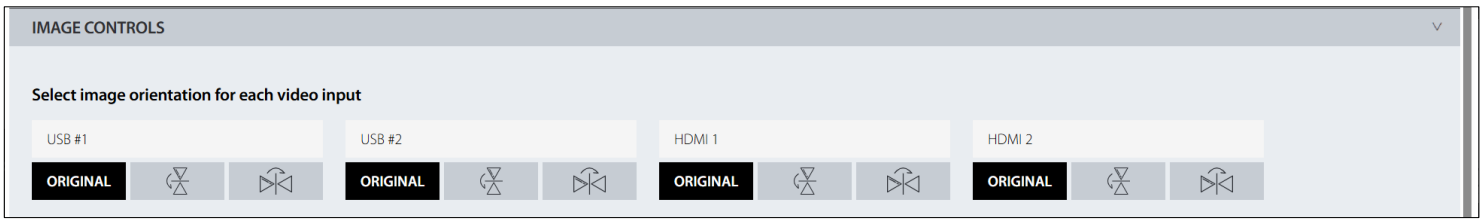
HDMI input audio is always mixed with the USB 2.0 and/or analog inputs. You can mute HDMI audio by clicking on MUTE button.

USB OUTPUT

Here are also the features of the Host USB Audio section:

Enable USB audio input: This will enable microphone interface on your computer.

IMAGE CONTROLS



You can do a vertical / horizontal flip of each video inputs if it is necessary.

MISCELLANEOUS

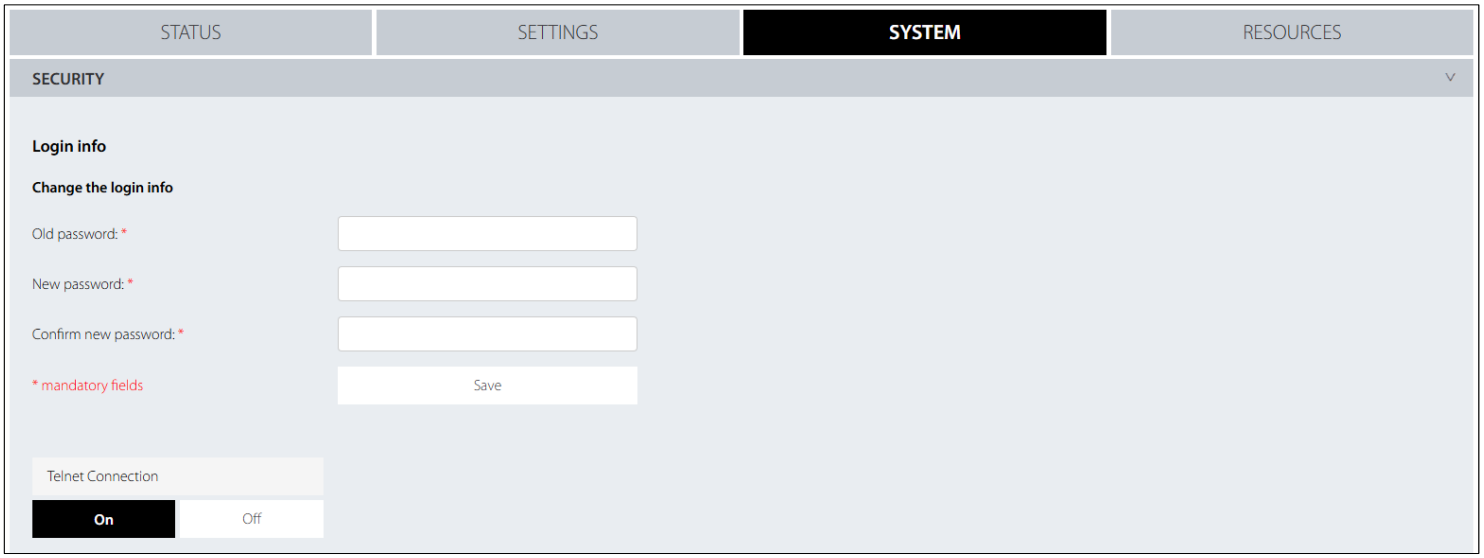
- Allows you to disable video capture from the cameras if the INOGENI device is not in use. If the HDMI output of the device is active, this setting is overridden.

HDMI OUTPUT

- Blank
  - Will turn ON/OFF the sync over HDMI output.
- Output resolution
  - You can set the HDMI output resolution to your choice.

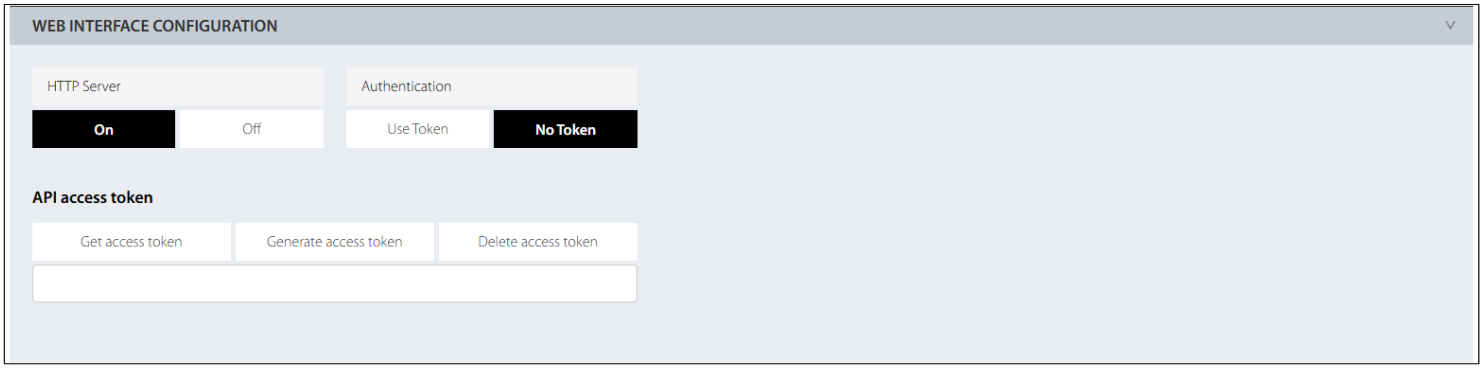
SYSTEM TAB

SECURITY



- Login info
  - Ability to change the current password of the device.
- Telnet connection
  - Allows the device to be connected to a telnet client.

WEB INTERFACE CONFIGURATION



- Ability to turn on or off the HTTP server.
- Allows the authentication token.
- API access token can be accessed, generated or deleted using those buttons.

NETWORK

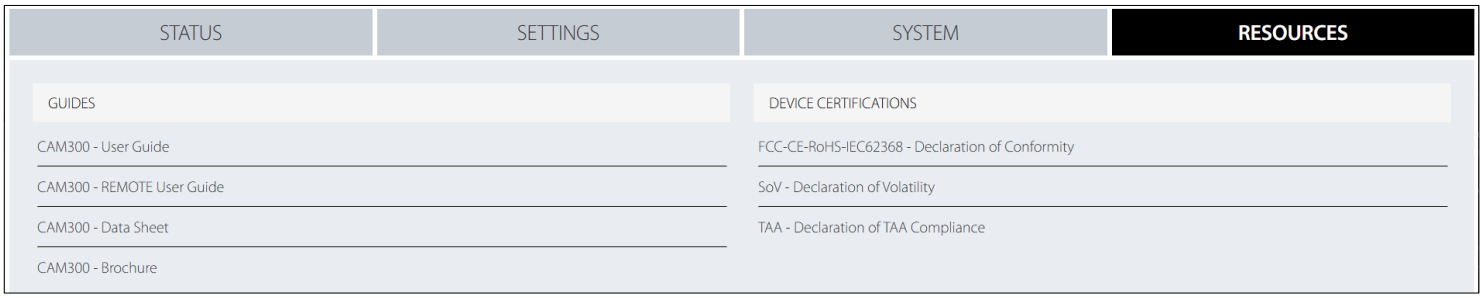
- IP mode

- Device can be configured using DHCP or static IP address.
- If static IP addressing is selected, you can set IP address, subnet mask and gateway.

UPDATE

- You can force a specific firmware package (ZIP file) after clicking on the Browse button. Click on “Upload” button to proceed to the update.
- If you need to do a factory reset of the product, you can click on the “Reset” button.

RESOURCES TAB



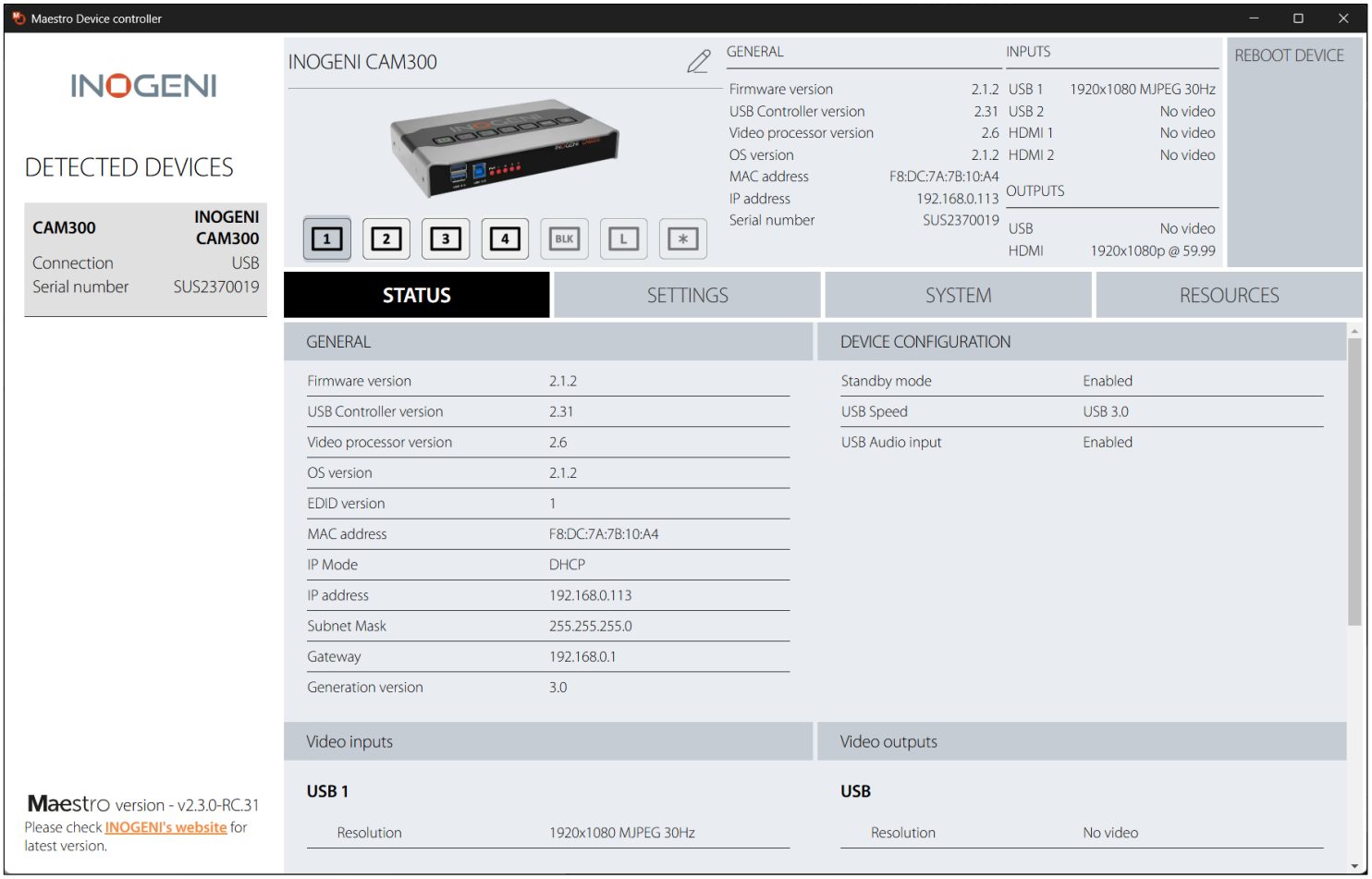
In this section, you will have access to the latest documentation.

- User guide
- Datasheet
- Brochure
- Device certifications

INOGENI MAESTRO APPLICATION

You can use our INOGENI Maestro application to monitor firmware information and upgrade your unit. All settings explained in the web interface section apply to the Maestro application.

NOTE: You need to use the USB-B to USB-A cable provided with the box for the Maestro application to detect the unit.

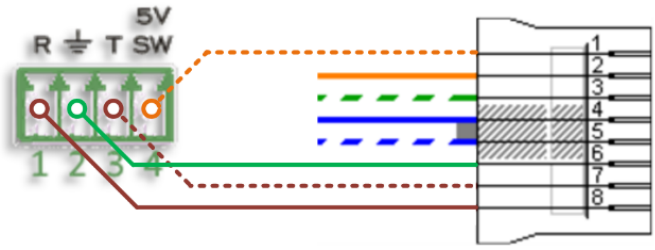


The INOGENI Remote needs to be connected to the terminal block port in order to operate. Apply wiring accordingly. This remote is sending serial commands to the device. Make sure to set the **DIP SW6** below the device to ON in order to apply power to the remote before going further. See “DIP SWITCHES”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

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

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

RJ45:
Pin 1: 5V supply
Pin 2,3,4,5: NC
Pin 6: GND
Pin 7: RX
Pin 8: TX



You can find the mechanical specification of the device. All dimensions are in **mm [in]**.

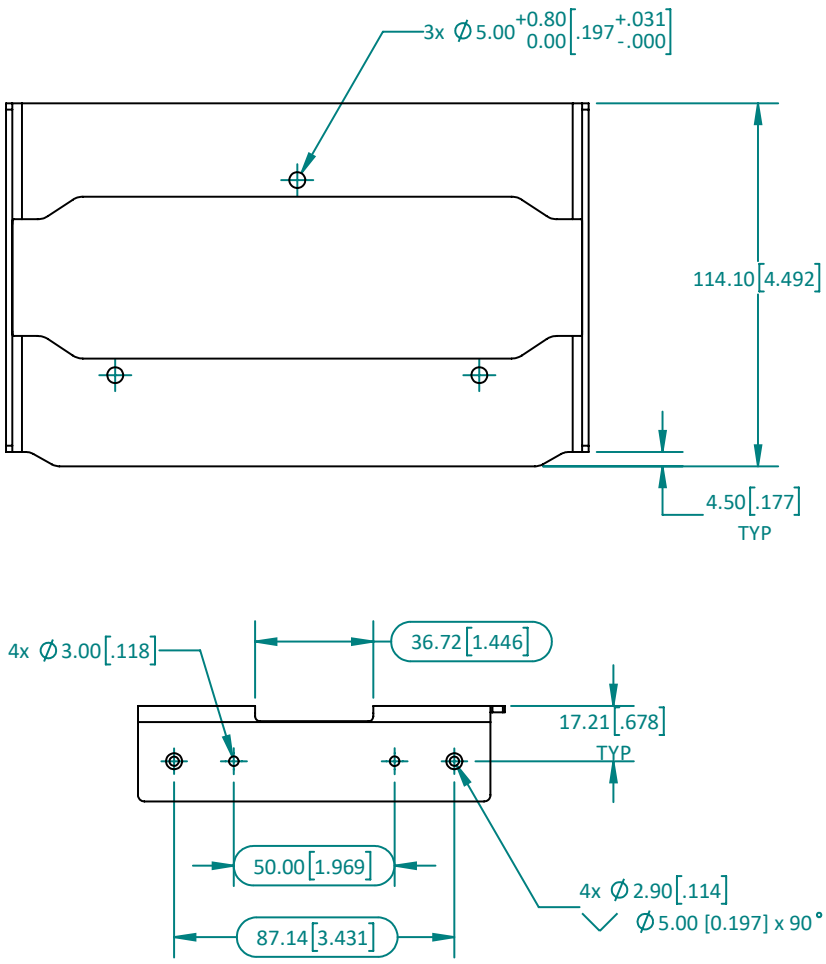


Figure 3: Top plate dimensions

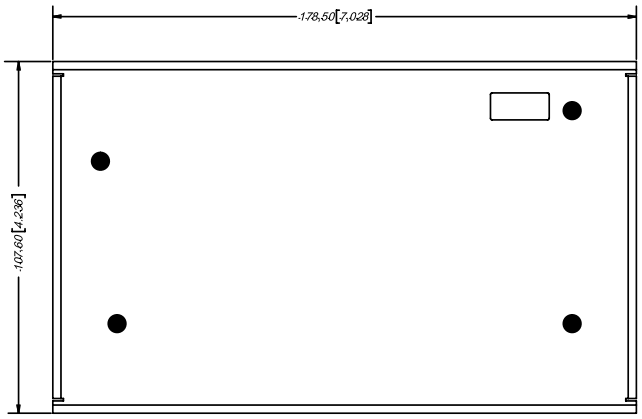


Figure 4: Bottom plate dimensions and holes positions

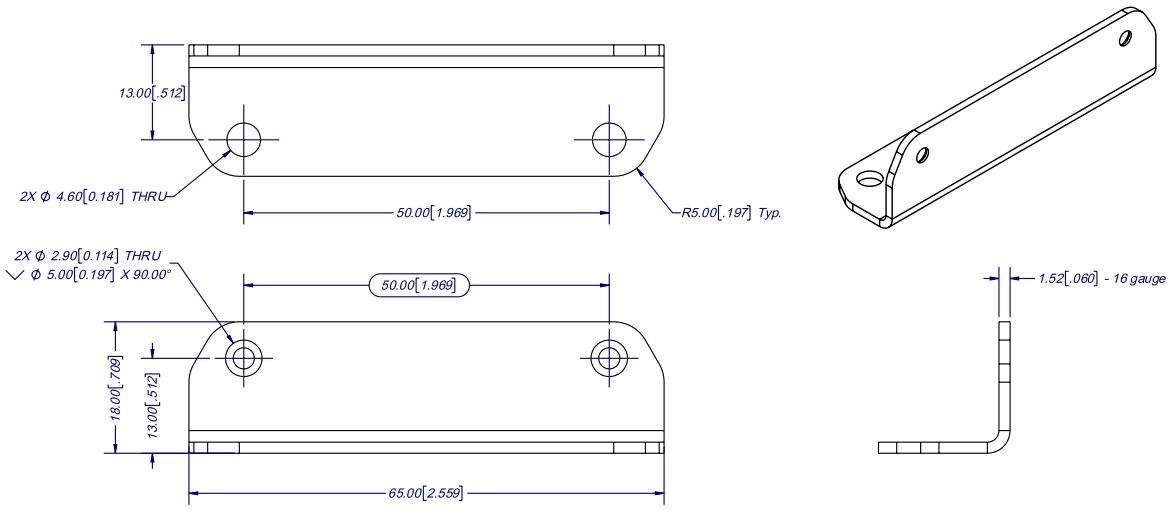


Figure 5: Bracket dimensions

DIP SWITCHES

Here you can find the behavior of the DIP switches located at the back of the unit.

Switch	Position	Description
SW1	OFF	USB resolution is 1080p only. This will force application to take high quality video. (default)
	ON	Multiple USB resolutions available.
SW2	OFF	For future use.
	ON	
SW3	OFF	Frame buffer frequency is set to 60Hz. (default)
	ON	Frame buffer frequency is set to 50Hz.
SW4	OFF	For future use.
	ON	
SW5	OFF	Reserved.
	ON	
SW6	OFF	Disable 5V on terminal block (default)
	ON	Enable 5V on terminal block. This switch must be set to power up the connected remote.

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.
- Extensive **Knowledge Base** to learn from other customers' experiences.

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CERTIFICATIONS

FCC Radio Frequency Interference Statement Warning
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received including interference that may cause undesired operation.

IC Statement
This Class A digital apparatus complies with Canadian CAN ICES-3(A)/NMB-3(A).

CE Statement
We, INOGENI Inc., declare under our sole responsibility that this product, to which this declaration relates, is in conformity with European Standards EN 55032, EN 55035, and RoHS Directive 2011/65/EU + 2015/863/EU.

UKCA Statement
This device is compliant with the Electromagnetic Compatibility Regulations 2016 No. 1091 as part of the requirements leading to the UKCA marking.

WEEE Statement
The European Union has established regulations for the collection and recycling of all waste electrical and electronic equipment (WEEE). Implementation of WEEE regulations may vary slightly by individual EU member states. Please check with your local and state government guidelines for safe disposal and recycling or contact your national WEEE recycling agency for more information.

RCM Statement
This device is compliant with Regulator Compliance Mark (RCM) certification.

NOM Statement
This device is compliant with the NOM-019 standard.