



INOGENI TOGGLE ROOMS

User guide

Version 1.2

May 23, 2024

VERSION HISTORY

Version	Date	Description
0.1	January 17, 2024	Preliminary user guide for device launch.
0.2	January 24, 2024	- Added new options to set built-in EDIDs - Updated RESTAPI and serial commands for EDID and EDIDUSR.
0.3	March 15, 2024	- Updated the connectivity diagram.
1.0	March 20, 2024	- Updated serial and REST APIs. - Updated certification page.
1.1	March 25, 2024	- Adding precisions to priority functions.
1.2	May 22, 2024	- Adding Maestro settings explanations. - Adding precision to specific modes. - Adding INO – Host button information.

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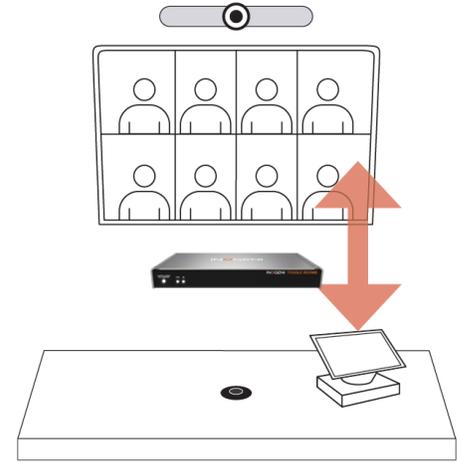
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TYPICAL APPLICATIONS

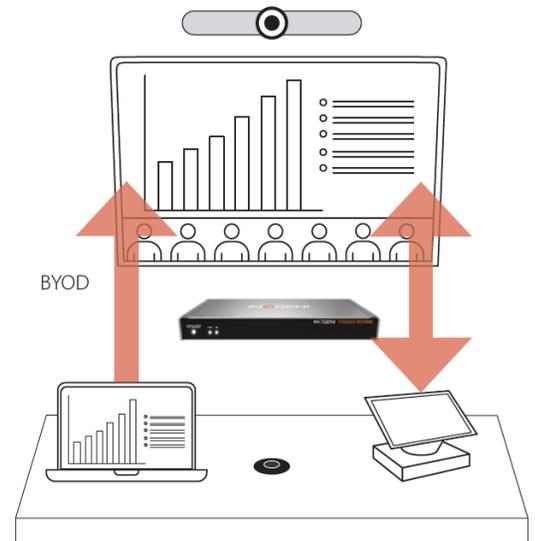
Here is a typical connection diagram used for the TOGGLE ROOMS device in a videoconferencing setup.

ROOM PC MODE WITH BYOD CONTENT SHARING

In this mode, only the Room PC USB and HDMI connections are routed to the main USB and HDMI peripherals.

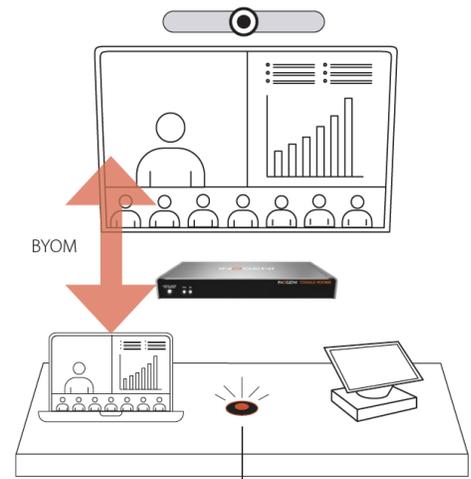


The Room PC is the system that is currently selected to the main USB and HDMI peripherals. However, if the user would like to send HDMI content from the laptop's USB-C or HDMI connection to the Room PC, it is possible to do so with the HDMI SHARE output connection.



BYOM (BRING YOUR OWN MEETING)

In this setup, the laptop is the system that is currently selected to the main USB and HDMI peripherals.



BLOCK DIAGRAM

Here is a simple block diagram to better understand the usage of the product.

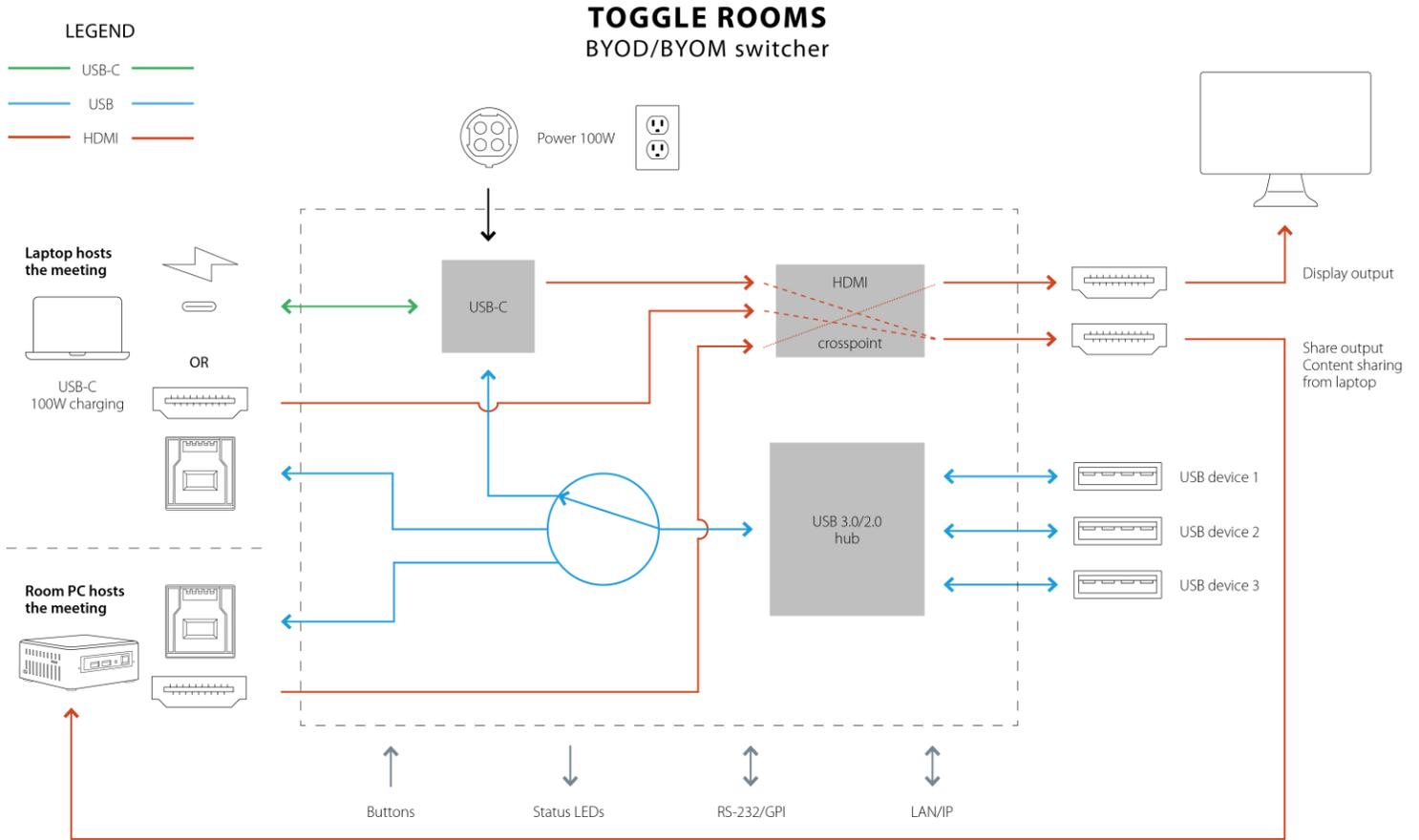
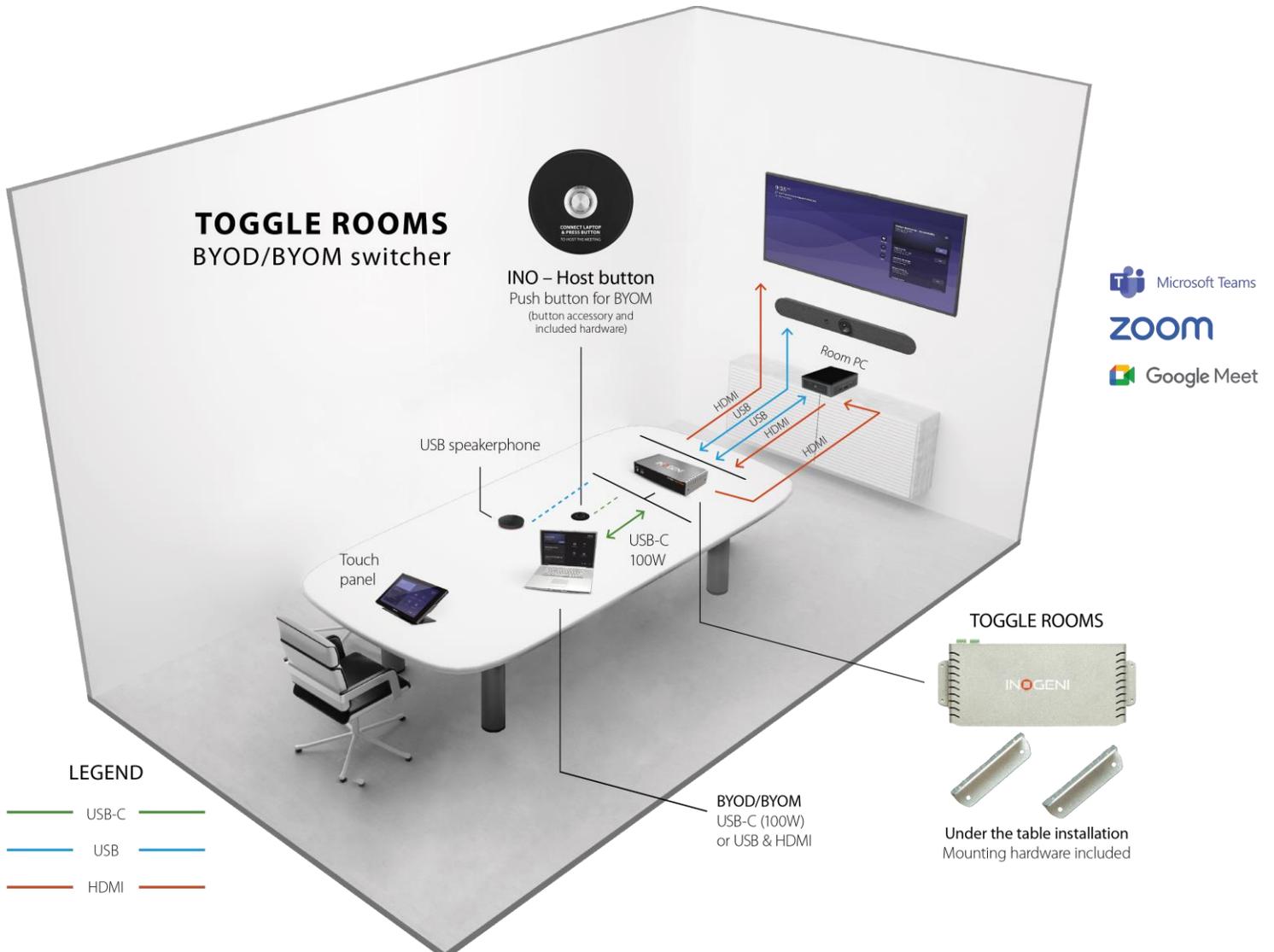


Figure 1: Basic block diagram when RoomPC and content sharing mode is activated.

CONNECTIVITY DIAGRAM

Here is a simple connectivity diagram showing



DEVICE INTERFACES

Here are the devices interfaces.



Figure 2: Front side connections



Figure 3: Back side connections

Items	
1	LAPTOP HOST THE MEETING button. This button will connect HDMI and USB peripherals to the laptop connection for BYOM.
2	PWR and charging status leds.
3	24VDC power input.
4	USB-C laptop connection.
5	USB-B laptop connection.
6	HDMI laptop connection.
7	USB-B Room PC connection.
8	HDMI Room PC connection.
9	USB devices.
10	HDMI display output.
11	HDMI share output from laptop.
12	LAN interface.
13	RS232 and remote interface.
14	GPI/button interface.

LEDS BEHAVIOR

Here are the LEDs behavior:

LAPTOP HOSTS THE MEETING	
OFF	Laptop not selected.
SOLID	Laptop selected. When user presses the button and a laptop is connected, there will be pulses on the integrated led to indicate which laptop is selected: <ul style="list-style-type: none">- 1x pulse: the "Laptop USB-C" host is selected.- 2x pulses: the "Laptop USB-B + HDMI" host is selected.
BLINK	Error condition. <ol style="list-style-type: none">1. When the user tries to switch to laptop if this one is not present or if USB or HDMI connections are missing.2. When the user tries to switch host if button is locked through our API.
PWR	
OFF	Device not powered.
SOLID	Device powered.
Charging 	
OFF	Laptop is not charging.
SOLID	Laptop is charging.

OPERATING MODES

Here are the operating modes supported by the device. They will be explained here.

ROOM PC MODE WITH BYOD CONTENT SHARING MODE

This is the default mode. In this mode, only the Room PC USB and HDMI connections are routed to the main USB and HDMI peripherals.

The Room PC is the system that is currently selected to the main USB and HDMI peripherals. However, if the user would like to send HDMI content from the laptop's USB-C or HDMI connection to the Room PC, it is possible to do so with the HDMI SHARE output connection.

The user can also initiate a BYOM session on their laptop but a user trigger (front button, INO – Host Button or API call) needs to be done.

BYOM MODE

In this mode, the laptop is the system that is automatically selected to the main USB and HDMI peripherals when detected. The Room PC is completely disconnected from the setup. When the laptop gets disconnected, the Room PC takes over until a new laptop is plugged in.

CUSTOM MODE

In this mode, the user can configure the USB and HDMI switching modes independently.

AUTOMATIC

This mode will switch automatically to the last source (USB or HDMI) connected if the operation mode is set to Custom. If the current source is disconnected, the device will switch back to the other source if it is detected. Push-button action and remote control are also supported.

MANUAL

The manual mode will enable you to force a specific source selection. Push-button action and remote control are also supported.

MANUAL WITH FALLBACK

The manual mode with fallback supports the same features as the manual mode. It will only add the possibility to switch to the other detected source connection automatically if the selected source is disconnected.

USB FOLLOWS HDMI

In this mode, the USB host selection depends on the HDMI source selected. If the HDMI display switching mode is set to "Automatic", the selected USB host will be the one associated to the last detected HDMI display source.

Applicable only on the USB host switching mode.

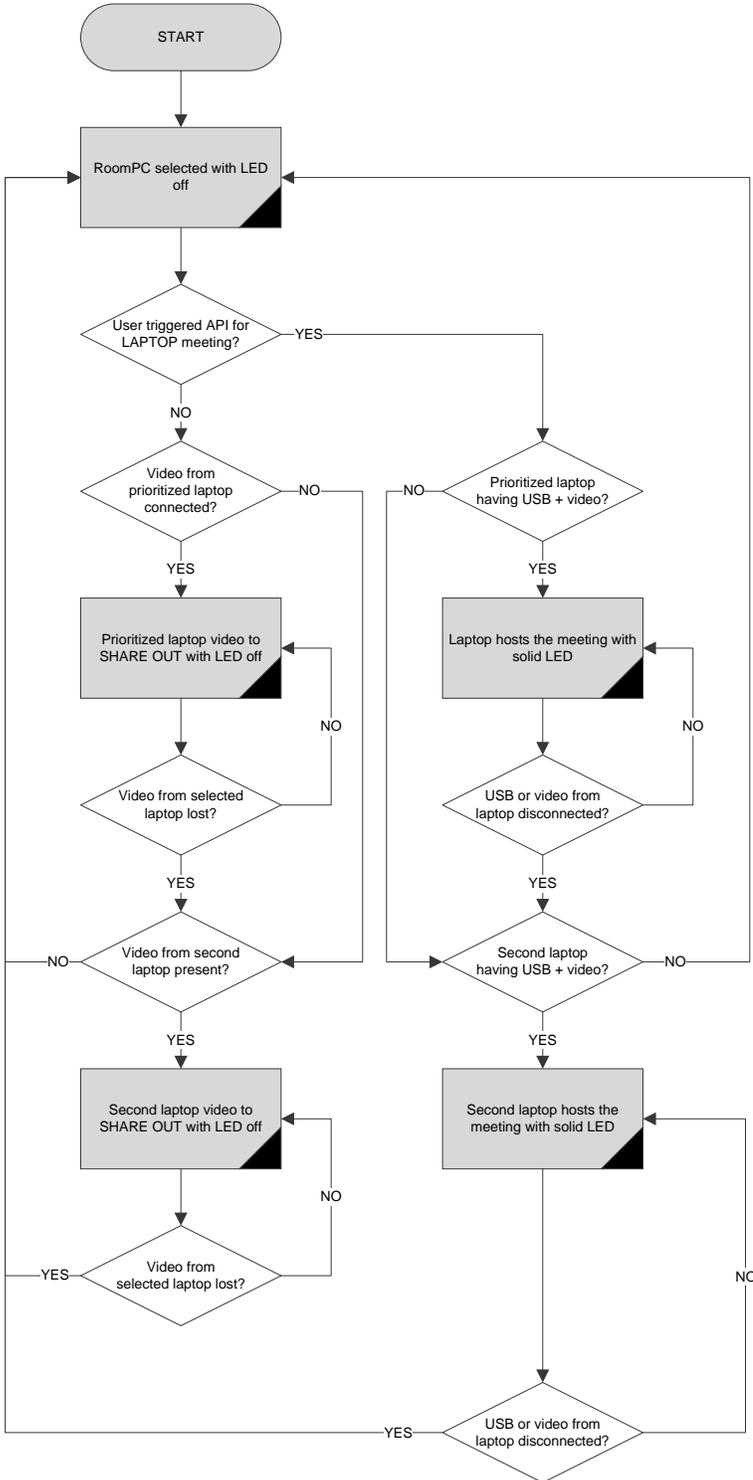
HDMI FOLLOWS USB

In this mode, the HDMI source selection depends on the USB host selected. If the USB host switching mode is set to "Automatic", the selected HDMI display source will be the one associated to the last detected USB host.

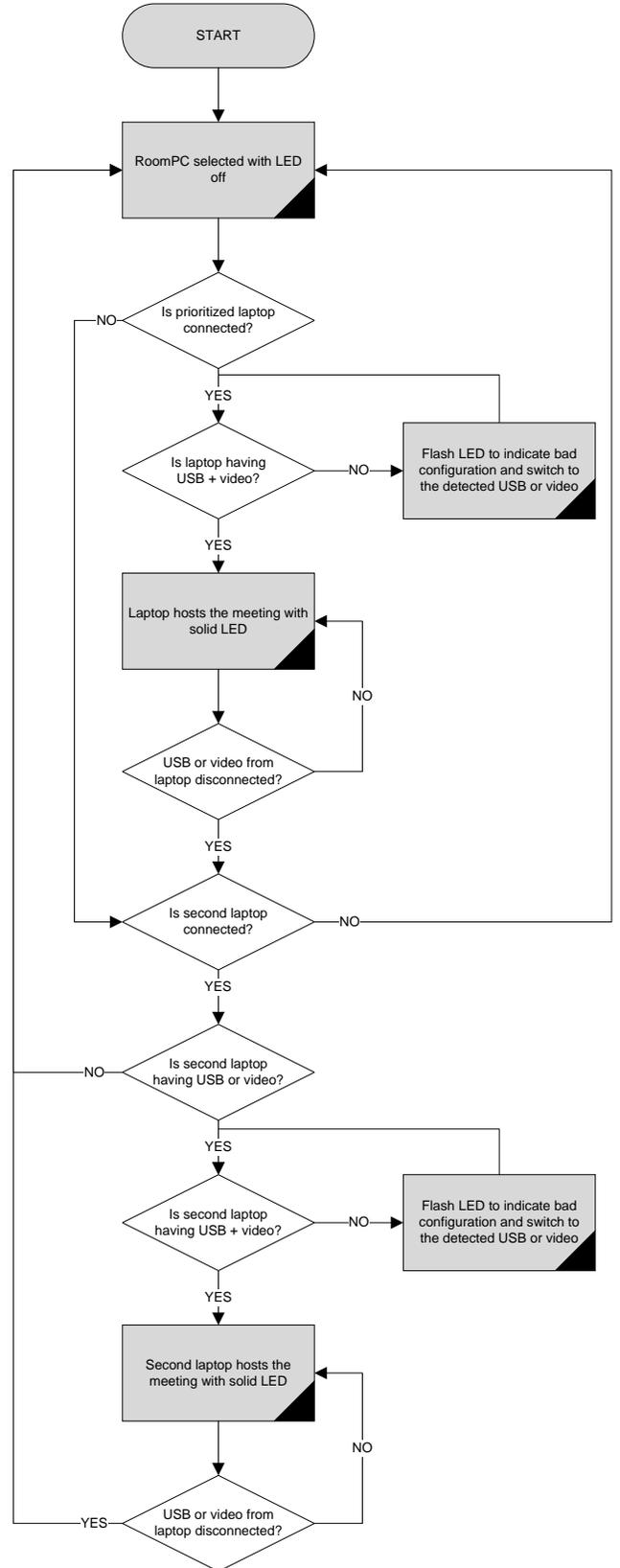


NOTE: You cannot set "USB follows HDMI" and "HDMI follows USB" modes simultaneously.

Room PC with BYOD Content sharing



BYOM



SPECIFICATIONS

Here is the complete specification.

Physical details	
Dimensions (W x L x H)	25.11 cm x 10.97 cm x 3.26 cm 9.89" x 4.32" x 1.28"
Weight	770g
Power supply	160W (85-264VAC 50/60Hz to 24V/6.67A DC)
Power supply dimensions (W x L x H)	175 mm x 72 mm x 35 mm 6.89" x 2.83" x 1.38"
Package contents	1 x Toggle Rooms 1 x USB-C to USB-C cable – 6ft 1 x USB3.0 cable (USB-A to USB-B) – 3ft 2 x terminal block 4-pos 2 x mounting brackets 4 x M2.5 mounting screws for brackets on product 4 x screws for Toggle Rooms table/wall mount 1 x 24V/160W PSU 1 x AC power cord 1 x country-specific power plug (USA/CA or EU/UK/AU/BIS) 1 x PSU mounting brackets 4 x screws for PSU table/wall mount 1 x quickstart guide 4 x rubber feet
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
Mounting options	Ability to mount under the table or on a wall.
UPC code	051497418694
Origin	Canada
Warranty	2 years

HOST - LAPTOP	
1x USB-C connector	Supports USB-C DisplayPort Alternate Mode <ul style="list-style-type: none"> - DisplayPort up to 3840x2160p60 / 4096x2160p60 - USB3.0 (USB 3.1 Gen 1 / 5 Gbps) - USB2.0 (480 Mbps) - Charging up to 100W - USB-C cable locking option
1x USB connector	USB 3.0 Type-B
1x HDMI connector	HDMI 2.0 – Up to 3840x2160p60 / 4096x2160p60 – 18Gbps Cable locking option.

HOST - ROOMPC	
1x USB connector	USB 3.0 Type-B
1x HDMI connector	HDMI 2.0 – Up to 3840x2160p60 / 4096x2160p60 – 18Gbps Cable locking option.

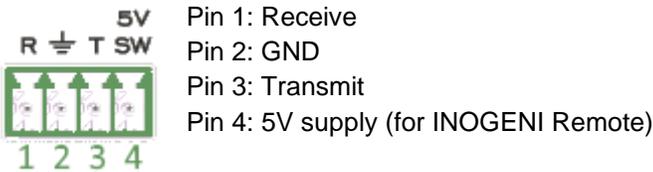
HDMI DISPLAY output	
Resolution	HDMI 2.0 – Up to 3840x2160p60 / 4096x2160p60 – 18Gbps
Connector	HDMI with cable locking option.

HDMI SHARE output	
Resolution	Up to 3840x2160p60 / 4096x2160p60 – 18Gbps
Connector	HDMI with cable locking option.

USB devices	
Connectors	3 x USB 3.0 Type-A ports.
Power	1.8A shared between downstream ports.
Control	
Control options	Front button – for laptop selection RS232 GPI LAN USB
IP interface	10/100Mbps Supports DHCP or static addressing. IP control available through RESTAPI and telnet connections.
RS232 interface	4-pos terminal block connector Baud rates: 9600 [default], 19200, 38400 and 115200 Data bits: 8 Stop bits: 1 Parity: None Flow control: None
GPI interface	4-pos terminal block connector 2x Contact-closure control. GPI: <ul style="list-style-type: none"> - Controlled by open-drain IO (short to ground) or driven IO. - Supported voltage range: 0 to 12V max. - Voltage threshold is 2.3V. VOUT: <ul style="list-style-type: none"> - Able to power up the led on the button of our INO-Button accessory. - Logic-low level: 0 @ 0.5V - Logic-high level: 4.5 @ 5V
HDMI video	
HDCP compliance	Compliant with HDCP2.3, HDCP2.2 and HDCP1.4
HDMI compliance	Compliant with HDMI2.0b, HDMI1.4 and DVI1.0
Sampling frequency	600MHz
Video scaling	Crosspoint switch supports video downscaling from 4K to 1080p.
Chroma subsampling	YUV/RGB 4:4:4, 4:2:2
CEC	Ability to send CEC commands to connected HDMI display sink.
HDMI audio	
Audio	Audio passthrough from input to output
Formats	LPCM, Dolby Digital, DTS up to 192kHz
Certifications	
Device	FCC, CE, UKCA, RoHS, IEC62368, RCM, SoV
Power supply	FCC, CE, UKCA, RoHS, IEC62368, RCM, CCC, CB, EAC, VI, UL
TAA-compliance	Yes
Compatibility	
Operating system	NO driver installation necessary Windows 7 and above (32/64-bit) macOS 10.10 and above Linux (kernel v2.6.38 and above)

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.



NOTE: The user needs to put a **space character** between the command name and argument.

ARG	Lists all the available options for the arguments to be used with the command.
RX	When command does not have any argument or only first argument is provided, it will return information from the device.
TX	When command have all arguments, it will apply the configuration to the device.

You need to add a carriage return **<CR>** character and a line feed **<LF>** character at the end of the command string.

Typically, commands will return "ACK**<CR><LF>**" in case of success and "NACK**<CR><LF>**" in case of failure.

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

Command	REQ/ ARG	Arguments	Return
HELP Return commands list with description.	RX	N/A	List of all the supported commands.
RSTR Restore default settings (including password and REST API token).	RX	N/A	ACK <CR><LF>
REBOOT Reboot the device.	RX	N/A	ACK <CR><LF>
VERSION Return firmware version.	RX	N/A	MAJOR=<Integer> <CR><LF> MINOR=<Integer> <CR><LF> ACK <CR><LF>
STATUS Return laptop and RoomPC information, display and share output timings.	RX	N/A	List of all the status of the device.
USBHOST Get/Set USB host to use.	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B 3 => OFF	
	TX	<host>	ACK <CR><LF>
	RX	N/A	USBHOST=<host> <CR><LF> ACK <CR><LF>
DISPLAYSRC Get/Set which HDMI source to be routed to display output.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => OFF	
	TX	<src>	ACK <CR><LF>

Command	REQ/ ARG	Arguments	Return
	RX	N/A	DISPLAYSRC=<src><CR><LF> ACK<CR><LF>
SHARESRC Get/Set which HDMI source to be routed to share output.	ARG	<src> options: 0 => RoomPC [Not supported in automatic mode] 1 => Laptop USB-C 2 => Laptop HDMI 3 => OFF	
	TX	<src>	ACK<CR><LF>
	RX	N/A	SHARESRC=<src><CR><LF> ACK<CR><LF>
OPMODE Get/Set operation mode. By default, the device will operate in RoomPC / BYOD mode – RoomPC USB and HDMI peripherals selected, and laptop sends video content only to SHARE output. The user will need to trigger our API or use the GPI interface to connect USB and HDMI to the laptop. When BYOM mode is set, the device will automatically switch all HDMI and USB peripherals to the laptop as soon as it is detected. The RoomPC is always selected if there is no laptop detected. When Custom mode is set, the user can set the USB, display and share source switching modes independently.	ARG	<opMode> options: 0 => RoomPC with BYOD/content sharing [default] 1 => BYOM 2 => Custom	
	TX	<opMode>	ACK<CR><LF>
	RX	N/A	OPMODE=<opMode><CR><LF> ACK<CR><LF>
HOSTMEETING This function allows the device to switch USB and HDMI connections to the provided host connection. This is a momentary control. As soon as there are events over USB and HDMI signals, the pre-configured modes will take over. This control is similar to the actual front button and also when user is using the INO - Host button .	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B/HDMI	
	TX	<host>	ACK<CR><LF>
PRIORHOSTMEETING Get/Set host system priority. The function will select which computer to use as the prioritized source, including USB and video associated to the same computer. Only applicable when operation mode is set to “RoomPC / BYOD content sharing” and “BYOM”.	ARG	<host> options: 1 => Laptop USB-C 2 => Laptop USB-B/HDMI 3 => Last detected laptop [default]	
	TX	<host>	ACK<CR><LF>
	RX	N/A	PRIORHOSTMEETING=<host><CR><LF> ACK<CR><LF>

Command	REQ/ ARG	Arguments	Return
HOSTBUTTON This function gives the same functionality as the front button or the INO – Host Button action.	TX	N/A	ACK<CR><LF>
USBHOSTSWMODE Get/Set USB host switching mode. The operation mode must be set to “Custom” to use this.	ARG	<swMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => USB follows HDMI mode	
	TX	<swMode>	ACK<CR><LF>
	RX	N/A	USBHOSTSWMODE=<swMode><CR><LF> ACK<CR><LF>
DISPLAYSWMODE Get/Set HDMI display source switching mode. The operation mode must be set to “Custom” to use this.	ARG	<swMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => HDMI follows USB mode	
	TX	<swMode>	ACK<CR><LF>
	RX	N/A	DISPLAYSWMODE=<swMode><CR><LF> ACK<CR><LF>
SHARESWMODE Get/Set HDMI share source switching mode. The operation mode must be set to “Custom” to use this.	ARG	<swMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => HDMI follows USB mode	
	TX	<swMode>	ACK<CR><LF>
	RX	N/A	SHARESWMODE=<swMode><CR><LF> ACK<CR><LF>
PRIORUSBHOST Get/Set USB priority. Only applicable when operation mode is set to “Custom” and USB host switching mode is set to “automatic” or “manual with fallback”.	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B 3 => Last detected host [default]	
	TX	<host>	ACK<CR><LF>
	RX	N/A	PRIORUSBHOST=<host><CR><LF> ACK<CR><LF>
PRIORDISPLAYSRC Get/Set display source priority. Only applicable when operation mode is set to “Custom” and display source switching mode is set to “automatic” or “manual with fallback”.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => Last detected source [default]	
	TX	<src>	ACK<CR><LF>
	RX	N/A	PRIORDISPLAYSRC=<src><CR><LF> ACK<CR><LF>
PRIORSHARESRC Get/Set share source priority. Only applicable when operation mode is set to “Custom” and share source switching mode is set to “automatic” or “manual with fallback”.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => Last detected source [default]	
	TX	<src>	ACK<CR><LF>
	RX	N/A	PRIORSHARESRC=<src><CR><LF> ACK<CR><LF>

Command	REQ/ ARG	Arguments	Return
NETWORK Get/Set network settings.		<mode> options: static => addressing is static dhcp => use DHCP addressing If mode is static, ip and netmask are required while gateway is optional.	
	ARG	<ip> option: String defined IP address. Example: 192.168.0.20 <netmask> option: String defined netmask address. Example: 255.255.0.0 <gateway> option: String defined gateway address. Example: 192.168.0.1	
	TX	<mode> <ip> <netmask> <gateway>	ACK<CR><LF>
	RX	N/A	MODE=<mode><CR><LF> IP=<ip><CR><LF> NETMASK=<netmask><CR><LF> GATEWAY=<gateway><CR><LF> ACK<CR><LF>
HOSTNAME Get/Set the hostname of the device. This command will change the device name when probed over the network and the name of the USB HID interface.		<hostname> option: String defined hostname to be shown on the network and USB HID interface. This string must not have space characters.	
	TX	<hostname>	ACK<CR><LF>
	RX	N/A	HOSTNAME=<hostname><CR><LF> ACK<CR><LF>
CECPASSTHROUGHEN Get/Set CEC passthrough setting from source to display. This setting allows CEC commands to be sent or not from the video source to the connected display. Manual CEC commands will continue to work regardless of this setting.	ARG	<enable> options: 0 => OFF 1 => ON [default]	
	TX	<enable>	ACK<CR><LF>
	RX	N/A	ENABLE=<enable><CR><LF> ACK<CR><LF>
CECPOWER Power ON/OFF the display.	ARG	<ctrl> options: 0 => power off 1 => power on	
	TX	<ctrl>	ACK<CR><LF>
CECTOGGLEMUTE Toggle mute control.	TX		ACK<CR><LF>
CECVOLUP Increase display volume.	TX		ACK<CR><LF>
CECVOLDOWN Decrease display volume.	TX		ACK<CR><LF>

Command	REQ/ ARG	Arguments	Return
EDID Set specific EDID modes to be reported to video source.		<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edid> options: 0 => Passthrough 1 => User EDID 2 => 3840x2160p60 3 => 3840x2160p50 4 => 3840x2160p30 5 => 3840x2160p25 6 => 1920x1080p60 7 => 1920x1080p50 8 => 1280x720p60 9 => 1280x720p50 10 => 5120x2160p30 11 => 5120x2160p25	
		ARG	
	TX	<src> <edid>	ACK<CR><LF>
	RX	<src>	EDID=<edid><CR><LF> ACK<CR><LF>
EDIDUSR Set user EDID to be sent to specified source. Must have set the according video source EDID in user EDID mode.		<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edidUsr> => formatted 256 bytes array	
	ARG		
	TX	<src> <256 bytes array>	ACK<CR><LF>
	RX	<src>	EDIDUSR=<edidUsr><CR><LF> ACK<CR><LF>
EDIDHDMIOUT Get/Set the EDID from the sink and report it to the associated source. This will put the EDID mode of the associated source to "User EDID".		<sink> options: 0 => Display 1 => SHARE OUT <src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edidHdmiOut> => formatted 256 bytes array	
	ARG		
	TX	<sink> <src>	ACK<CR><LF>
	RX	<sink>	EDID=<edidHdmiOut><CR><LF> ACK<CR><LF>
USBC4K60EN Get/Set the USB-C working mode. NOTE: Enabling DisplayPort signal to support 4K60 will disable USB3.0 connectivity on USB-C port. USB2.0 will remain active. Disabling this option will allow user to support USB3.0 and 4K30 video.	ARG	<mode> options: 0 => Disable 4K60 [default] 1 => Enable 4K60	
	TX	<mode>	ACK<CR><LF>
	RX	N/A	USBC4K60EN=<mode><CR><LF> ACK<CR><LF>

Command	REQ/ ARG	Arguments	Return
HDCPCTL Get/Set the HDCP setting.		<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI	
	ARG	<hdcp> options: 0 => Disabled 1 => HDCP v1.4 2 => HDCP v2.2 3 => Auto	
	TX	<src> <hdcp>	ACK<CR><LF>
	RX	<src>	HDCP=<hdcp><CR><LF> ACK<CR><LF>
GPICFG Get/Set the GPI configuration. NOTE: In pulse mode , a short to GND on this pin will trigger the function. The function will be executed on GPI falling edge. GPI rising edge has no effect. In level mode , the function will be executed on short to GND and open states.		<gpi> options: 1 => GPI1 2 => GPI2	
		<mode> options: 0 => Pulse mode [default] 1 => Level mode	
	ARG	<function> options: 0 => Disabled. 1 => BYOM mode control [default GPI1] SHORT = LAPTOP OPEN = ROOMPC 2 => USB host control [default GPI2] SHORT = LAPTOP OPEN = ROOMPC 3 => Display video source control SHORT = LAPTOP USB-C/HDMI OPEN = ROOMPC 4 => Laptop video source control SHORT = LAPTOP USB-C OPEN = LAPTOP HDMI	
	TX	<gpi> <mode> <function>	ACK<CR><LF>
	RX	<gpi>	MODE=<mode><CR><LF> FUNCTION=<function><CR><LF> ACK<CR><LF>
VOUT Get/Set the VOUT level. NOTE: By default, the firmware will drive this output to power up a led when enabling the BYOM mode. If the user wants to override this behavior, it is possible by changing the <vout> option.	ARG	<vout> options: 0 => Controlled by firmware. 1 => Logic-low. 2 => Logic-high.	
	TX	<vout>	ACK<CR><LF>
	RX	N/A	VOUT=<vout><CR><LF> ACK<CR><LF>
BAUDRATE Set RS232 baud rate.	ARG	<baudrate> options: 0 => 9600 1 => 19200 2 => 38400 3 => 115200	
	TX	<baudrate>	ACK<CR><LF>
	RX	N/A	BAUDRATE=<baudrate><CR><LF> ACK<CR><LF>
BTNLOCK Get/Set the button lock status.	ARG	<lockState> options: 0 => Not locked 1 => Locked	
	TX	<lockState>	ACK<CR><LF>
	RX	N/A	BTNLOCK=<lockState><CR><LF> ACK<CR><LF>

Command	REQ/ ARG	Arguments	Return																																				
SCALER Get/Set the scaler options over the HDMI video outputs.		<output> options: 0 => Display output 1 => Share output																																					
	ARG	<enable> options: 0 => OFF 1 => ON																																					
	TX	<output> <enable>	ACK<CR><LF>																																				
	RX	<output>	ENABLE=<enable><CR><LF> ACK<CR><LF>																																				
USBDEVEN Get/Set the power on USB devices ports according to specific hosts.		<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => When no host detected																																					
		<devices> options: Bitmask to enabled ports.																																					
	ARG																																						
		<table border="1"> <thead> <tr> <th><devices></th> <th>USB #1</th> <th>USB #2</th> <th>USB #3</th> </tr> </thead> <tbody> <tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> <tr><td>1</td><td>ON</td><td>OFF</td><td>OFF</td></tr> <tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td></tr> <tr><td>3</td><td>ON</td><td>ON</td><td>OFF</td></tr> <tr><td>4</td><td>OFF</td><td>OFF</td><td>ON</td></tr> <tr><td>5</td><td>ON</td><td>OFF</td><td>ON</td></tr> <tr><td>6</td><td>OFF</td><td>ON</td><td>ON</td></tr> <tr><td>7</td><td>ON</td><td>ON</td><td>ON</td></tr> </tbody> </table>	<devices>	USB #1	USB #2	USB #3	0	OFF	OFF	OFF	1	ON	OFF	OFF	2	OFF	ON	OFF	3	ON	ON	OFF	4	OFF	OFF	ON	5	ON	OFF	ON	6	OFF	ON	ON	7	ON	ON	ON	
	<devices>	USB #1	USB #2	USB #3																																			
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6	OFF	ON	ON																																				
7	ON	ON	ON																																				
TX	<host> <devices>	ACK<CR><LF>																																					
RX	<host>	DEVICES=<devices><CR><LF> ACK<CR><LF>																																					
AUTOHDMICECPWR Get/Set the automatic CEC power control of the connected display. When enabled, the device will turn on/off the display depending on the actual state of the HDMI source routed to the display.	ARG	<enable> options: 0 => OFF 1 => ON																																					
	TX	<enable>	ACK<CR><LF>																																				
	RX	N/A	ENABLE=<enable><CR><LF> ACK<CR><LF>																																				
HTTPEN Get/Set HTTP control setting.	ARG	<enable> options: 0 => OFF 1 => ON																																					
	TX	<enable>	ACK<CR><LF>																																				
	RX	N/A	ENABLE=<enable><CR><LF> ACK<CR><LF>																																				

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

ARG	Lists all the available options for the arguments to be used with the command.
RX	When command does not have any body arguments or only first argument is provided, it will return information from the device.
TX	When command have all body arguments, it will apply the configuration to the device.

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.

Here is the complete list of commands supported through the REST API (excluding password change, firmware update, bearer token get/set):

Command URL / Description	REQ/ ARG	Body arguments	Return body
HTTP GET https://<IP>/api/v1/help Return commands list with description.	RX	N/A	JSON object with multiple fields
HTTP GET/POST https://<IP>/api/v1/rstr Restore default settings (including password and REST API token).	RX	N/A	{ "message": <String> }
HTTP GET/POST https://<IP>/api/v1/reboot Reboot the device.	RX	N/A	{ "message": <String> }
HTTP GET https://<IP>/api/v1/version Return firmware version.	RX	N/A	{ "major": <Integer>, "minor": <Integer> }
HTTP GET https://<IP>/api/v1/status Return laptop and RoomPC information, display and share output timings.	RX	N/A	JSON object with multiple fields
HTTP GET/POST https://<IP>/api/v1/usbHost Get/Set USB host to use.	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B 3 => OFF	
	TX	usbHost=<host>	{ "message": <String> }
	RX	N/A	{ "usbHost": <host>, "message": <String> }

Command URL / Description	REQ/ ARG	Body arguments	Return body	
HTTP GET/POST https://<IP>/api/v1/ displaySrc	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => OFF		
		TX	displaySrc=<src>	<pre>{ "message": <String> }</pre>
		RX	N/A	<pre>{ "displaySrc": <src>, "message": <String> }</pre>
HTTP GET/POST https://<IP>/api/v1/ shareSrc	ARG	<src> options: 0 => RoomPC [Not supported in automatic mode] 1 => Laptop USB-C 2 => Laptop HDMI 3 => OFF		
		TX	shareSrc=<src>	<pre>{ "message": <String> }</pre>
		RX	N/A	<pre>{ "shareSrc": <src>, "message": <String> }</pre>
HTTP GET/POST https://<IP>/api/v1/ opMode	ARG	<opMode> options: 0 => RoomPC with BYOD/content sharing [default] 1 => BYOM 2 => Custom		
		TX	opMode=<opMode>	<pre>{ "message": <String> }</pre>
		RX	N/A	<pre>{ "opMode": <opMode>, "message": <String> }</pre>
HTTP GET/POST https://<IP>/api/v1/ hostMeeting	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B/HDMI		

Command URL / Description	REQ/ ARG	Body arguments	Return body
<p>This function allows the device to switch USB and HDMI connections to the provided host connection.</p> <p>This is a momentary control. As soon as there are events over USB and HDMI signals, the pre-configured modes will take over.</p> <p>This control is similar to the actual front button and also when user is using the INO - Host button.</p>			
<p>HTTP GET/POST https://<IP>/api/v1/priorHostMeeting</p> <p>Get/Set host system priority. The function will select which computer to use as the prioritized source, including USB and video associated to the same computer. Only applicable when operation mode is set to "RoomPC / BYOD content sharing" and "BYOM".</p>	<p>ARG</p> <p><host> options: 1 => Laptop USB-C 2 => Laptop USB-B/HDMI 3 => Last detected laptop [default]</p>		<pre>{ "message": <String> }</pre>
	TX	<host>	<pre>{ "message": <String> }</pre>
	RX	N/A	<pre>{ "priorHostMeeting": <host>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/hostButton</p> <p>This function gives the same functionality as the front button or the INO – Host Button action.</p>			<pre>{ "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/usbHostSwMode</p> <p>Get/Set USB host switching mode. The operation mode must be set to "Custom" to use this.</p>	<p>ARG</p> <p><usbHostSwMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => USB follows HDMI mode</p>		
	TX	usbHostSwMode=<swMode>	<pre>{ "message": <String> }</pre>
	RX	N/A	<pre>{ "usbHostSwMode": <swMode>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/displaySwMode</p> <p>Get/Set HDMI display source switching mode. The operation mode must be set to "Custom" to use this.</p>	<p>ARG</p> <p><displaySwMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => HDMI follows USB mode</p>		
	TX	displaySwMode=<swMode>	<pre>{ "message": <String> }</pre>
	RX	N/A	<pre>{ "displaySwMode": <swMode>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/shareSwMode</p>	<p>ARG</p> <p><swMode> options: 0 => Automatic mode [default] 1 => Manual mode 2 => Manual mode with fallback 3 => HDMI follows USB mode</p>		

Command URL / Description	REQ/ ARG	Body arguments	Return body	
Get/Set HDMI share source switching mode. The operation mode must be set to “Custom” to use this.	TX	shareSwMode=<swMode>	{ "message": <String> }	
	RX	N/A	{ "shareSwMode": <swMode>, "message": <String> }	
HTTP GET/POST https://<IP>/api/v1/priorUsbHost Get/Set USB priority. Only applicable when operation mode is set to “Custom” and USB host switching mode is set to “automatic” or “manual with fallback”.	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop USB-B 3 => Last detected host [default]		
		TX	prioUsbHost=<host>	{ "message": <String> }
		RX	N/A	{ "priorUsbHost": <host>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/priorDisplaySrc Get/Set display source priority. Only applicable when operation mode is set to “Custom” and display source switching mode is set to “automatic” or “manual with fallback”.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => Last detected source [default]		
		TX	priorDisplaySrc=<src>	{ "message": <String> }
		RX	N/A	{ "priorDisplaySrc": <src>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/priorShareSrc Get/Set share source priority. Only applicable when operation mode is set to “Custom” and share source switching mode is set to “automatic” or “manual with fallback”.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => Last detected source [default]		
		TX	priorShareSrc=<src>	{ "message": <String> }
		RX	N/A	{ "priorShareSrc": <src>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/network Get/Set network settings.	ARG	<mode> options: static => addressing is static dhcp => use DHCP addressing If mode is static, ip and netmask are required while gateway is optional.		
		TX	<ip> option: String defined IP address. Example: 192.168.0.20 <netmask> option: String defined netmask address. Example: 255.255.0.0 <gateway> option: String defined gateway address. Example: 192.168.0.1 mode=<mode> ip=<ip> netmask=<netmask> gateway=<gateway>	{ "message": <String> }

Command URL / Description	REQ/ ARG	Body arguments	Return body
	RX	N/A	{ "mode": <static,dhcp>, "ip": <ip>, "netmask": <netmask>, "gateway": <gateway>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/ hostname	ARG	<hostname> option: String defined hostname to be shown on the network and USB HID interface. This string must not have space characters.	
Get/Set the hostname of the device. This command will change the device name when probed over the network and the name of the USB HID interface.	TX	hostname=<hostname>	{ "message": <String> }
	RX	N/A	{ "hostname": <hostname>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/ cecPassthroughEn	ARG	<enable> options: 0 => OFF 1 => ON [default]	
Get/Set CEC passthrough setting from source to display. This setting allows CEC commands to be sent or not from the video source to the connected display. Manual CEC commands will continue to work regardless of this setting.	TX	enable=<enable>	{ "message": <String> }
	RX	N/A	{ "enable": <enable>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/ cecPower	ARG	<ctrl> options: 0 => power off 1 => power on	
Power ON/OFF the display.	TX	ctrl=<ctrl>	{ "message": <String> }
HTTP GET/POST https://<IP>/api/v1/ cecToggleMute	TX	N/A	{ "message": <String> }
Toggle mute control.			
HTTP GET/POST https://<IP>/api/v1/ cecVolUp	TX	N/A	{ "message": <String> }
Increase display volume.			
HTTP GET/POST https://<IP>/api/v1/ cecVolDown	TX	N/A	{ "message": <String> }
Decrease display volume.			

Command URL / Description	REQ/ ARG	Body arguments	Return body	
HTTP GET/POST https://<IP>/api/v1/edid Set specific EDID modes to be reported to video source.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edid> options: 0 => Passthrough 1 => User EDID 2 => 3840x2160p60 3 => 3840x2160p50 4 => 3840x2160p30 5 => 3840x2160p25 6 => 1920x1080p60 7 => 1920x1080p50 8 => 1280x720p60 9 => 1280x720p50 10 => 5120x2160p30 11 => 5120x2160p25		
		TX	src=<src> edid=<edid>	{ "message": <String> }
		RX	src=<src>	{ "edid": <edid>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/edidUsr Set user EDID to be sent to specified source. Must have set the according video source EDID in user EDID mode.	ARG	<src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edidUsr> => Filetype formatted 256 bytes array		
		TX	src=<src> edidUsr=<256 bytes array>	{ "message": <String> }
		RX	src=<src>	{ "edidUsr": <edidUsr>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/edidHdmiOut Get/Set the EDID from the sink and report it to the associated source. This will put the EDID mode of the associated source to "User EDID".	ARG	<sink> options: 0 => Display 1 => SHARE OUT <src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI <edidHdmiOut> => formatted 256 bytes array		
		TX	<sink> <src>	{ "message": <String> }
		RX	<sink>	{ "edidHdmiOut": <edidHdmiOut>, "message": <String> }
HTTP GET/POST https://<IP>/api/v1/usbc4K60En Get/Set the USB-C working mode. NOTE:	ARG	<mode> options: 0 => Disable 4K60 [default] 1 => Enable 4K60		
		TX	usbc4K60En=<mode>	{ "message": <String> }

Command URL / Description	REQ/ ARG	Body arguments	Return body
<p>Enabling DisplayPort signal to support 4K60 will disable USB3.0 connectivity on USB-C port. USB2.0 will remain active.</p> <p>Disabling this option will allow user to support USB3.0 and 4K30 video.</p>	RX	N/A	<pre>{ "usbc4K60En": <mode>, "message": <String> }</pre>
<p>HTTP GET/POST <a href="https://<IP>/api/v1/hdcpCtl">https://<IP>/api/v1/hdcpCtl</p> <p>Get/Set the HDCP setting.</p>	ARG	<p><src> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI</p> <p><hdcp> options: 0 => Disabled 1 => HDCP v1.4 2 => HDCP v2.2 3 => Auto</p>	
	TX	<pre>src=<src> hdcp=<hdcp></pre>	<pre>{ "message": <String> }</pre>
	RX	<pre>src=<src></pre>	<pre>{ "hdcp": <hdcp>, "message": <String> }</pre>
<p>HTTP GET/POST <a href="https://<IP>/api/v1/gpiCfg">https://<IP>/api/v1/gpiCfg</p> <p>Get/Set the GPI configuration.</p> <p>NOTE: In pulse mode, a short to GND on this pin will trigger the function. The function will be executed on GPI falling edge. GPI rising edge has no effect.</p> <p>In level mode, the function will be executed on short to GND and open states.</p>	ARG	<p><gpi> options: 1 => GPI1 2 => GPI2</p> <p><mode> options: 0 => Pulse mode [default] 1 => Level mode</p> <p><function> options: 0 => Disabled. 1 => BYOM mode control [default GPI1] SHORT = LAPTOP OPEN = ROOMPC 2 => USB host control [default GPI2] SHORT = LAPTOP OPEN = ROOMPC 3 => Display video source control SHORT = LAPTOP USB-C/HDMI OPEN = ROOMPC 4 => Laptop video source control SHORT = LAPTOP USB-C OPEN = LAPTOP HDMI</p>	
	TX	<pre>gpi=<gpi> mode=<mode> function=<function></pre>	<pre>{ "message": <String> }</pre>
	RX	<pre>gpi=<gpi></pre>	<pre>{ "mode": <mode>, "function": <function>, "message": <String> }</pre>
<p>HTTP GET/POST <a href="https://<IP>/api/v1/vout">https://<IP>/api/v1/vout</p> <p>Get/Set the VOUT level.</p>	ARG	<p><vout> options: 0 => Controlled by firmware. 1 => Logic-low. 2 => Logic-high.</p>	
	TX	<pre>vout=<vout></pre>	<pre>{ "message": <String> }</pre>

Command URL / Description	REQ/ ARG	Body arguments	Return body
<p>NOTE: By default, the firmware will drive this output to power up a led when enabling the BYOM mode. If the user wants to override this behavior, it is possible by changing the <vout> option.</p>	RX	N/A	<pre>{ "vout": <vout>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/ baudRate</p> <p>Set RS232 baud rate.</p>	ARG	<p><baudrate> options: 0 => 9600 1 => 19200 2 => 38400 3 => 115200</p>	
	TX	baudrate=<baudrate>	<pre>{ "message": <String> }</pre>
	RX	N/A	<pre>{ "baudrate": <baudrate>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/ btnLock</p> <p>Get/Set the button lock status.</p>	ARG	<p><lockState> options: 0 => Not locked 1 => Locked</p>	
	TX	btnLock=<lockState>	<pre>{ "message": <String> }</pre>
	RX	N/A	<pre>{ "btnLock": <lockState>, "message": <String> }</pre>
<p>HTTP GET/POST https://<IP>/api/v1/ scaler</p> <p>Get/Set the scaler options over the HDMI video outputs.</p>	ARG	<p><output> options: 0 => Display output 1 => Share output</p> <p><enable> options: 0 => OFF 1 => ON</p>	
	TX	output=<output> enable=<enable>	<pre>{ "message": <String> }</pre>
	RX	output=<output>	<pre>{ "enable": <enable>, "message": <String> }</pre>

Command URL / Description	REQ/ ARG	Body arguments	Return body																																		
HTTP GET/POST https://<IP>/api/v1/ usbDevEn Get/Set the power on USB devices ports according to specific hosts.	ARG	<host> options: 0 => RoomPC 1 => Laptop USB-C 2 => Laptop HDMI 3 => When no host detected. <devices> options: Bitmask to enabled ports. 																																			
		<table border="1"> <thead> <tr> <th><devices></th> <th>USB #1</th> <th>USB #2</th> <th>USB #3</th> </tr> </thead> <tbody> <tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td></tr> <tr><td>1</td><td>ON</td><td>OFF</td><td>OFF</td></tr> <tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td></tr> <tr><td>3</td><td>ON</td><td>ON</td><td>OFF</td></tr> <tr><td>4</td><td>OFF</td><td>OFF</td><td>ON</td></tr> <tr><td>5</td><td>ON</td><td>OFF</td><td>ON</td></tr> <tr><td>6</td><td>OFF</td><td>ON</td><td>ON</td></tr> <tr><td>7</td><td>ON</td><td>ON</td><td>ON</td></tr> </tbody> </table>	<devices>	USB #1	USB #2	USB #3	0	OFF	OFF	OFF	1	ON	OFF	OFF	2	OFF	ON	OFF	3	ON	ON	OFF	4	OFF	OFF	ON	5	ON	OFF	ON	6	OFF	ON	ON	7	ON	ON
<devices>	USB #1	USB #2	USB #3																																		
0	OFF	OFF	OFF																																		
1	ON	OFF	OFF																																		
2	OFF	ON	OFF																																		
3	ON	ON	OFF																																		
4	OFF	OFF	ON																																		
5	ON	OFF	ON																																		
6	OFF	ON	ON																																		
7	ON	ON	ON																																		
	TX	host=<host> devices=<devices>	{ "message": <String> }																																		
	RX	host=<host>	{ "devices": <devices>, "message": <String> }																																		
HTTP GET/POST https://<IP>/api/v1/ autoHdmiCecPwr Get/Set the automatic CEC power control of the connected display. When enabled, the device will turn on/off the display depending on the actual state of the HDMI source routed to the display.	ARG	<enable> options: 0 => OFF 1 => ON																																			
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HTTP GET/POST https://<IP>/api/v1/ httpEn Get/Set HTTP control setting.	ARG	<enable> options: 0 => OFF 1 => ON																																			
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<enable>	TX	RX	Return body																																		
0	enable=<enable>		{ "message": <String> }																																		
1		N/A	{ "enable": <enable>, "message": <String> }																																		

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 **usbHost** command, you can issue the following request:

GET https://<IP>/api/v1/**usbHost?host=1**

This request will set the USB host to laptop USB-C port.

The following commands allow to perform password management and bearer token management. The authentication used is basic auth, and we use the same user and password as the webpage (default user=admin and password=[SERIAL_NUM] where [SERIAL_NUM] is the serial number of the device located under the unit).

Command URL / Description	Body arguments	Return body
HTTP POST https://<IP>/api/v1/changeUsername?username=<newUsername> Change the username to <newUsername>.		<pre>{ "message": <String> }</pre>
HTTP POST https://<IP>/api/v1/changePassword?password=<newPassword> Change the password to <newPassword>.		<pre>{ "message": <String> }</pre>
HTTP GET https://<IP>/api/v1/getAccessToken Return the bearer token.		<pre>{ "token": <String> }</pre> <p>If no bearer token is set, the "token" field will be null.</p>
HTTP POST https://<IP>/api/v1/generateAccessToken Generate random access token.		<pre>{ "message": <String> }</pre>

The bearer token is generated using a random process. The format of the bearer token only supports the following:

- Alphanumeric (A to Z) upper and lowercase characters.
- Numbers 0-9.

TELNET

You can use any telnet application to communicate with the device using TCP. Make sure to use the right IP address and **port 23**.

Use the serial communication protocol to configure the device.

The `quit` command can be used to ask server for disconnection.

You can use our [INOGENI Maestro](#) application to monitor firmware information and upgrade your unit.



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

STATUS TAB

Maestro Device controller

DETECTED DEVICES

TOGGLE-ROOMS	ToggleRooms
Connection	USB
Firmware Version	1.20

[Detected device list](#)

Device friendly name
TOGGLE-ROOMS

Firmware, inputs and outputs information

GENERAL		INPUTS	
Firmware version	1.20	USB-C DisplayPort	No Video
MAC address	00:80:E1:00:00:00	Laptop HDMI	No Video
IP address	Not Detected	Room PC HDMI	1920x1080p @60.00HZ
Serial number	TRX4020018	OUTPUTS	
USB HOST		Display	1920x1080p @60.00HZ
Selected USB Host	RoomPC	Share	No Output

REBOOT DEVICE
[Reboot the device](#)

LAPTOP HOSTS THE MEETING
[Select laptop for BYOM session](#)

STATUS | SETTINGS | SYSTEM | RESOURCES

GENERAL

Firmware Version	1.20
Hardware Revision	1.0
MAC Address	00:80:E1:00:00:00
IP Mode	DHCP
IP Address	Not Detected
Subnet mask	Not Detected
Gateway	Not Detected

DEVICE CONFIGURATION

Operation Mode	RoomPC with BYOD
DISPLAY switching mode	Automatic
SHARE switching mode	Automatic
USB switching mode	Automatic
Selected DISPLAY source	RoomPC
Selected SHARE source	OFF
Selected USB host	RoomPC
USB-C 4K60 support	OFF

VIDEO INPUTS

Laptop USB-C

Resolution	No Video
HDCP	OFF
EDID mode	Passthrough

Laptop HDMI

Resolution	No Video
HDCP	OFF
EDID mode	Passthrough

Room PC

Resolution	1920x1080p @60.00HZ
HDCP	NoHDCP
EDID mode	1080P60 EDID

VIDEO OUTPUTS

Display

Selected source	RoomPC
-----------------	--------

Share

Selected source	OFF
-----------------	-----

Maestro Beta version - v1.0.0
Please check [INOGENI's website](#) for latest version.

[Status of the whole device](#)

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

DETECTED DEVICES

TOGGLE-ROOMS	ToggleRooms
Connection	USB
Firmware Version	1.20

GENERAL

Firmware version	1.20
MAC address	00:80:E1:00:00:00
IP address	Not Detected
Serial number	TRX4020018

INPUTS

USB-C DisplayPort	No Video
Laptop HDMI	No Video
Room PC HDMI	1920x1080p @60.00HZ

OUTPUTS

Display	1920x1080p @60.00HZ
Share	No Output

USB HOST

Selected USB Host	RoomPC
-------------------	--------

DEVICE CONFIGURATION

Operation Mode

RoomPC + BYOD Content sharing | BYOM | Custom

USB

Selected USB host: Room PC

USB-C 4K60 support: On

USB devices power control

	USB #1		USB #2		USB #3	
Room PC	On	Off	On	Off	On	Off
Laptop USB-C	On	Off	On	Off	On	Off
Laptop USB-B	On	Off	On	Off	On	Off
No host	On	Off	On	Off	On	Off

VIDEO

CEC DISPLAY CONTROL

Maestro Beta version - v1.0.0
Please check [INOGENI's website](#) for latest version.

DEVICE CONFIGURATION

- Change the operation mode of the unit.
 - o RoomPC + BYOD Content sharing
 - In this mode, as soon as a laptop is connected to the device, video will be routed to HDMI SHARE OUT for content sharing. USB devices are not switched to the laptop in order to avoid disrupting video call on RoomPC. A user trigger (front button, INO – Host Button our API call) needs to be done to initiate BYOM session.
 - o BYOM
 - In this mode, switching between RoomPC and BYOM is automatic upon host detection.
 - o Custom mode
 - In this mode, USB, HDMI display and HDMI share switching modes can be independently controlled.

DEVICE CONFIGURATION

Operation Mode

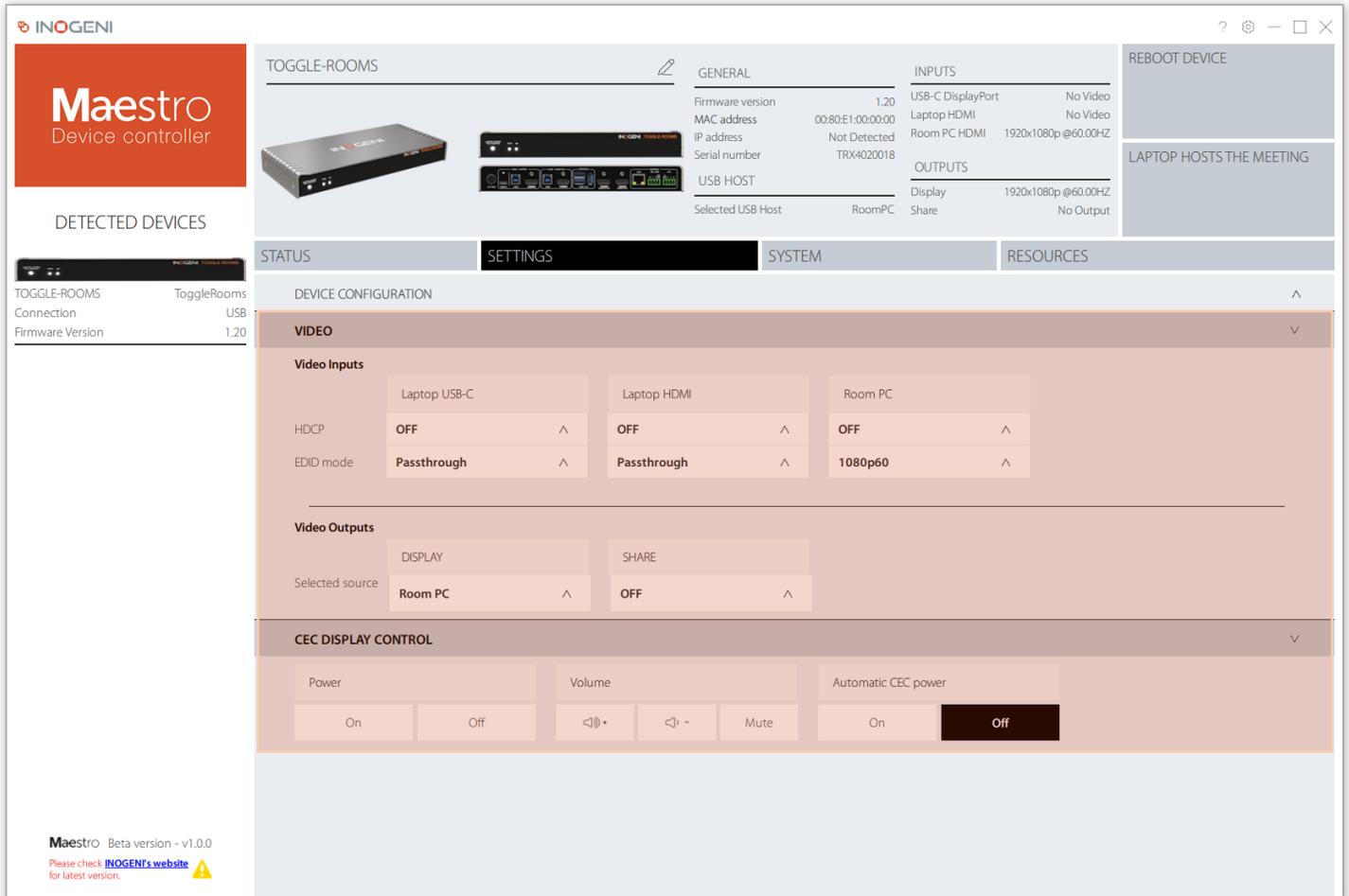
RoomPC + BYOD Content sharing | BYOM | **Custom**

DISPLAY switching mode: Automatic

SHARE switching mode: Automatic

USB switching mode: Automatic

- USB configuration
 - o User can select the USB host.
 - o USB-C 4K60 support.
 - You can turn ON/OFF 4K60 support over USB-C. If you enable 4K60 support, there will be no USB3.0 support over USB-C. Only USB2.0 will remain.
 - o USB devices power control
 - This control allows you to turn ON/OFF USB power on each port depending on the host selected.
 - This can be useful when unit is connected to a Room PC system which have BYOM support.



VIDEO

- Video inputs
 - o HDCP
 - Can be turned ON/OFF and appropriate HDCP version can be set.
 - o EDID mode
 - Can report EDID information based on actual display, using preset EDIDs or using a user EDID that can be uploaded to the device.
- Video outputs
 - o User can select video source to be shown on specified output.

CEC DISPLAY CONTROL

- Power
 - o Can turn ON/OFF connected display.
- Volume
 - o Can send volume UP/DOWN commands.
 - o Can send toggle mute command.
- Automatic CEC power

- Device can automatically send power ON/OFF commands to display when selected video sources is detected or not.

SYSTEM TAB

SECURITY

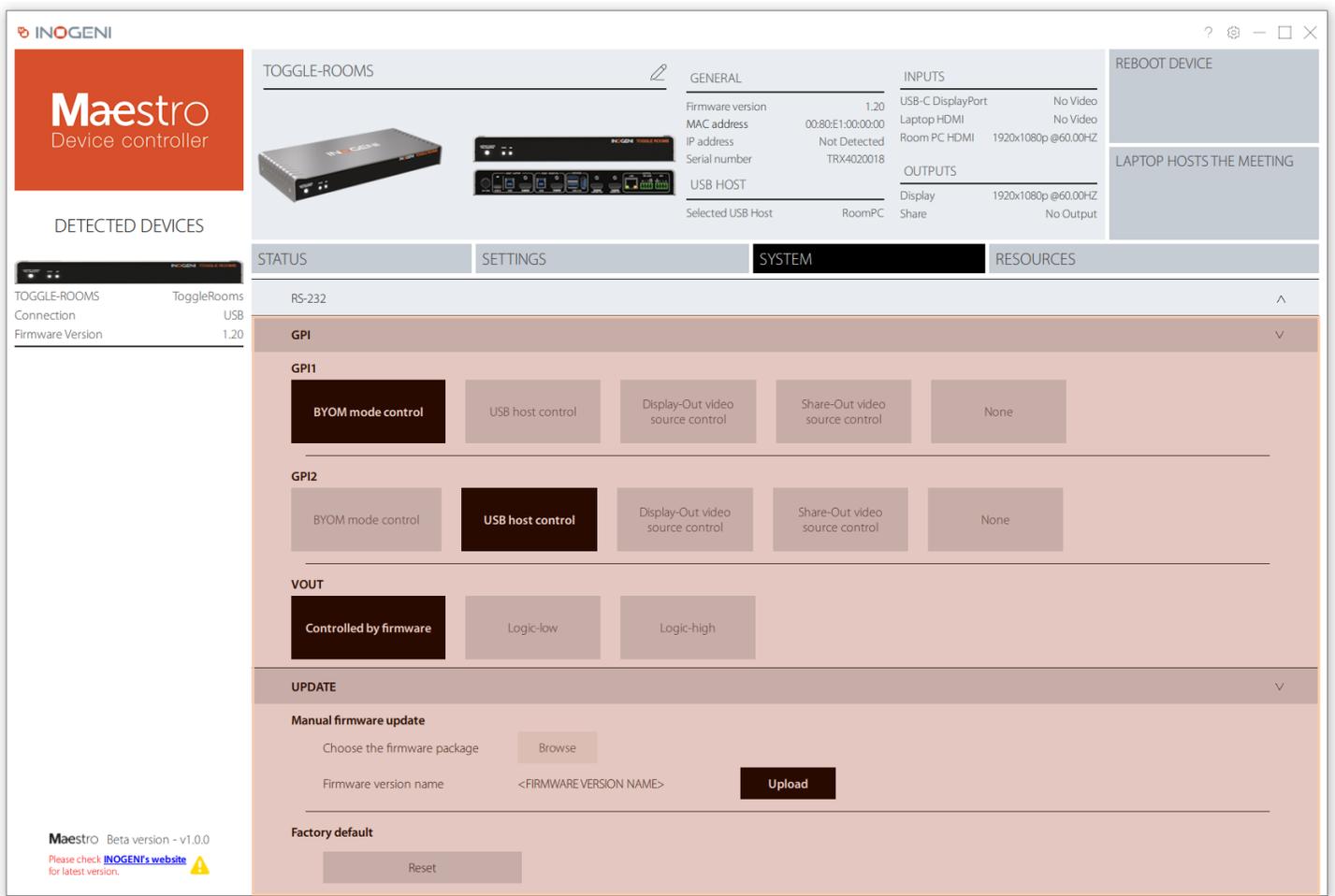
- Telnet connection
 - Allows the device to be connected to a telnet client.
- HTTP server
 - Allow the device to be controlled through HTTP.

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.

RS232

- Baud rate
 - The baud rate of the RS232 port can be set here.



GPI

- GPI functions are set here.
- The VOUT pin can also be configured.

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.

The screenshot displays the INOGENI Maestro Device controller web interface. The top navigation bar includes 'TOGGLE-ROOMS', 'GENERAL', 'INPUTS', 'OUTPUTS', 'REBOOT DEVICE', and 'LAPTOP HOSTS THE MEETING'. The 'GENERAL' section shows device details: Firmware version 1.20, MAC address 00:80:E1:00:00:00, IP address Not Detected, and Serial number TRX4020018. The 'INPUTS' section lists USB-C DisplayPort (No Video), Laptop HDMI (No Video), and Room PC HDMI (1920x1080p @60.00HZ). The 'OUTPUTS' section lists Display (1920x1080p @60.00HZ) and Share (No Output). The 'USB HOST' section shows 'Selected USB Host' as 'RoomPC'. A 'DETECTED DEVICES' table on the left shows 'TOGGLE-ROOMS' connected via 'USB' with 'ToggleRooms' as the name and '1.20' as the firmware version. The 'RESOURCES' tab is active, showing three expandable sections: 'GUIDES', 'DEVICE CERTIFICATIONS', and 'POWER SUPPLY CERTIFICATIONS'. A footer note indicates 'Maestro Beta version - v1.0.0' and advises checking the INOGENI website for the latest version.

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

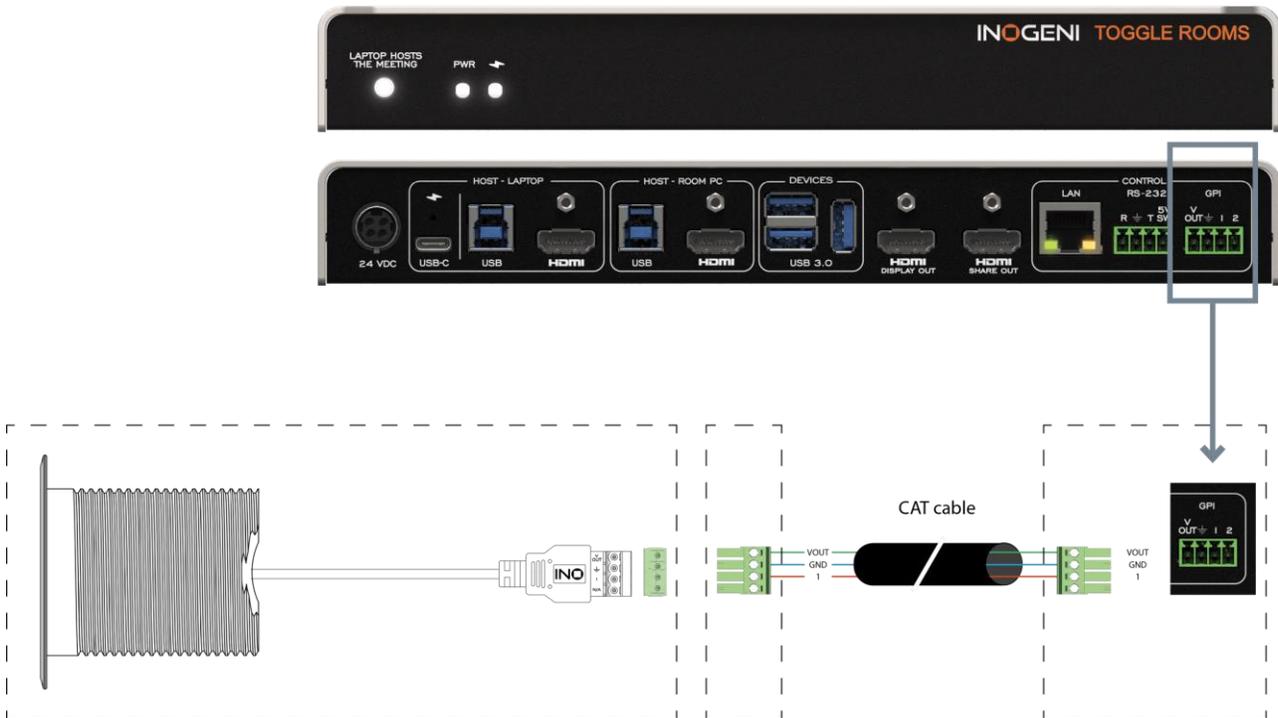
- User guide
- Datasheet
- Brochure
- Device certifications
- Power supply certifications

INOGENI INO – HOST BUTTON

You can use our INOGENI INO – Host Button to trigger the BYOM mode of the TOGGLE ROOMS.



Here is the connectivity diagram of the INO – Host Button to the TOGGLE ROOMS.



Here is also the timing diagram of the GPI and VOUT interfaces. When the GPI1 interface is shorted to GND, the VOUT signal will act like this depending on the laptop selected. Each cycle is 250ms.



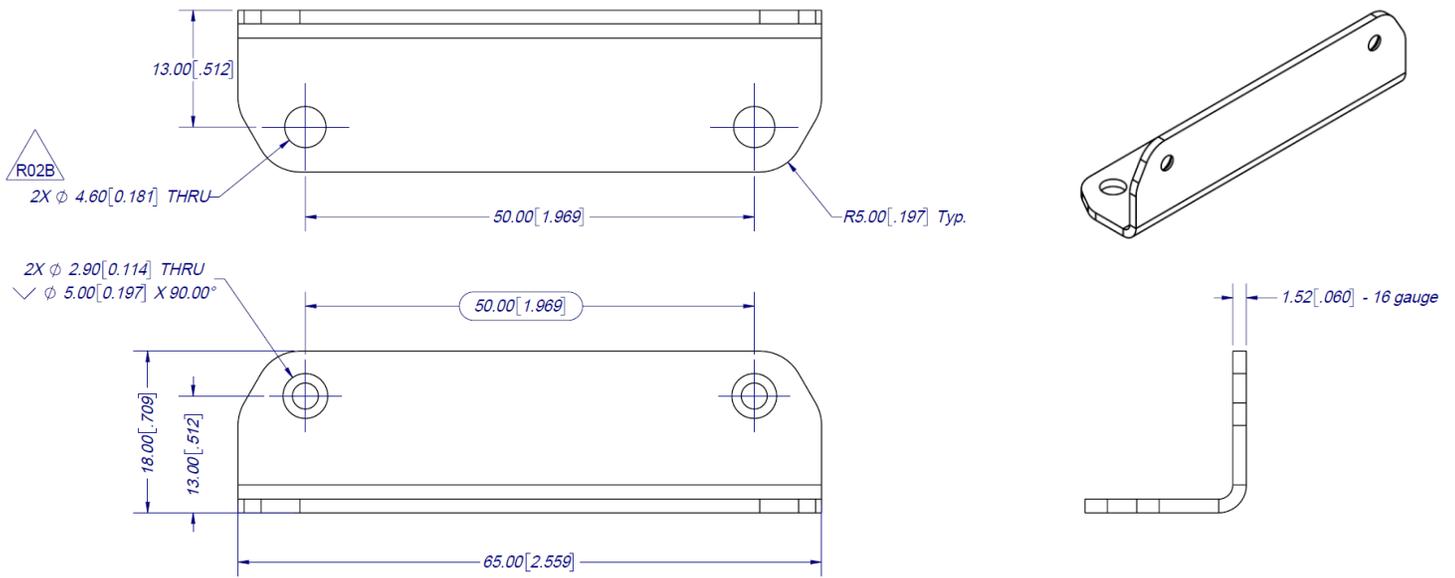


Figure 6: Bracket dimensions

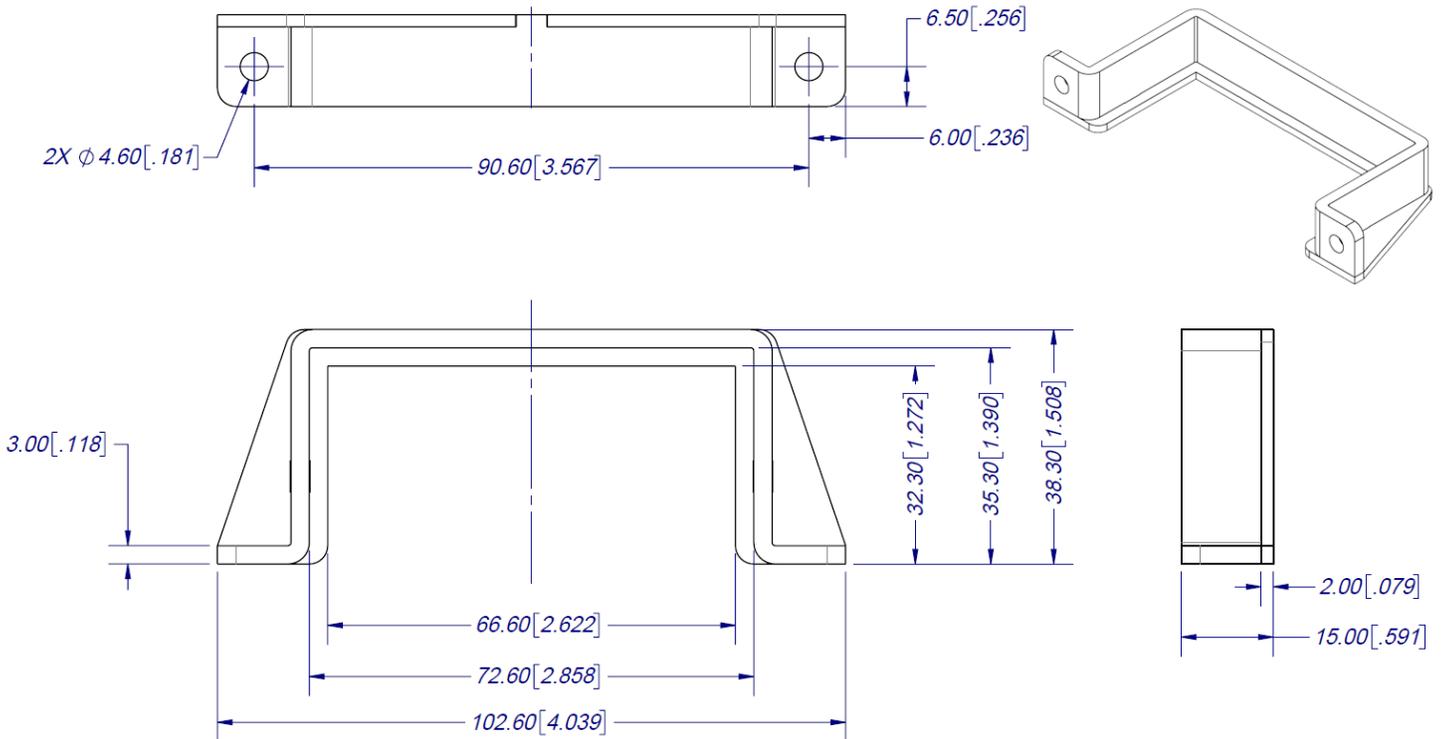


Figure 7: Power supply bracket dimensions

DIP SWITCHES

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

Switch	Position	Description
SW1	OFF	For future use.
	ON	
SW2	OFF	For future use.
	ON	
SW3	OFF	For future use.
	ON	
SW4	OFF	For future use.
	ON	
SW5	OFF	Reserved.
	ON	
SW6	OFF	Disable 5V on terminal block
	ON	Enable 5V on terminal block. This switch must be set to power up the connected remote.

TROUBLESHOOTING SECTION

Here is the troubleshooting section for the device.

Problem	Resolution
My laptop is not charging using my USB-C cable.	Check if the cable is rated to support USB-C power delivery. Also check if the cable used is among the ones that we already support. Visit https://inogeni.com/product/toggle-rooms/ for the complete list. Make also sure that your BIOS and your system chipset drivers are up to date.
The device does not automatically switch USB host and HDMI source.	By default, the device is operating in "RoomPC with BYOD / content sharing" mode to avoid disruption of a current video meeting. See "Operation mode" API to properly set the operation you need.
My device is switching HDMI video slowly.	If your EDID mode is set to "passthrough", the device is handshaking the EDID from the connected display to the source. This will take some time. To minimize video switching time, it is recommended to configure the EDID mode of the video sources to a preset EDID (e.g. 1080p60).

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 the Toggle Rooms, 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.