Zenty | Professional A/V Solution Provider

User Manual [V1.0]



4-Channel HDMI H.264 / H.265 Hardware Encoder

ZT-519 | ZT-EN204XV2

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Scan the QR code below or visit

https://www.zenty.com/product/519

to view and access detailed digital resources regarding this unit

ZT-519 INFO

To explore similar products, click the link below

https://www.zenty.com/collections/iptv-encoders-decoders

SAFETY PRECAUTIONS

- Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.
- Please keep the following in mind as you unpack and install this equipment:
- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person to walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

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1. Product Introduction

Thank you for purchasing the Zenty ZT-519 4-Channel HDMI H.264/H.265 Hardware Encoder. For optimum performance and safety, read these instructions carefully before connecting, operating, or adjusting this product. Keep this manual for future reference.

The ZT-519 is a professional four-channel hardware encoder designed to ingest up to four independent HDMI video sources and convert them into network streams. It supports H.265, H.264, and MJPEG encoding. Each HDMI channel provides one primary stream and up to three secondary streams that can be configured independently for different resolutions, frame rates, bitrates, codecs, and delivery protocols.

The encoder is suitable for live broadcasting, IPTV distribution, surveillance and NVR integration, corporate streaming, education, houses of worship, digital signage, remote monitoring, and local-area-network video distribution.

2. Package Contents

- 1 × Zenty ZT-519 4-Channel H.264/H.265 Hardware Encoder
- 1 × 12V DC 1A Power Adapter
- 1 × User Manual

3. Key Features

- 4-channel HDMI input with network output; each input supports 1 primary stream and 3 secondary streams.
- H.265, H.264, and MJPEG video encoding.
- Maximum input/frame-rate capability: 2 channels at 3840×2160p30 or 4 channels at 1920×1080p60.
- Private PTE protocol for ultra-low-latency transport, typically 80–200 ms.
- Streaming protocols: RTMP, RTSP, HTTP TS, HTTP FLV, SRT, HLS, UDP multicast, and RTP multicast.
- ONVIF discovery and NVR integration.
- Image rotation, flip, mirror, and coordinate-based cropping.
- OSD overlays for logos, text, date/time, and scrolling text.
- HDMI embedded audio plus four 3.5 mm external stereo audio inputs.
- Complete parameter configuration, firmware upgrades, backup, and management through the Web GUI.

4. Hardware Description

Front Panel



Parameter	Description
HDMI LEDs 1–4	Illuminate blue when active HDMI sources are detected on inputs 1 through 4
POWER LED	Illuminates red when the encoder is receiving power
LAN LED	Illuminates green when the LAN interface is connected to an active network device

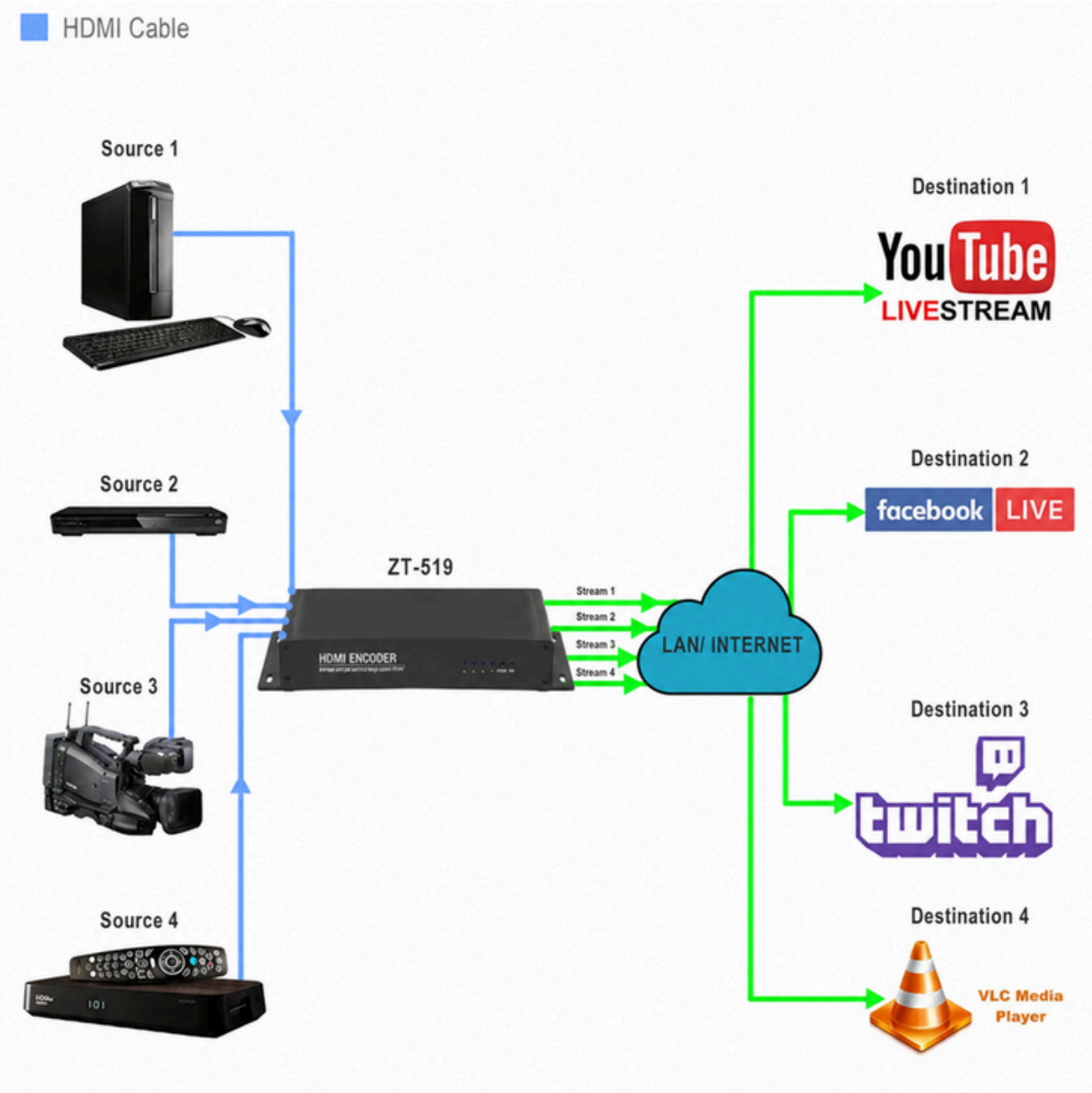
Back Panel



Parameter	Description
RESET	Factory-reset pinhole. Press and hold for approximately 10 seconds until the Power and LAN LEDs turn off
AUDIO 1-4	3.5 mm analog stereo audio input jacks corresponding to HDMI channels 1–4
HDMI 1-4	HDMI video inputs supporting up to 4K30 or 1080p60, subject to the active channel configuration
LAN	1000M full-duplex RJ45 Ethernet port. Default IP address: 192.168.1.168
DC 12V	12V DC, 1A power input

5. Typical Application

The ZT-519 functions as a central bridge between physical HDMI sources and network streaming destinations. Up to four source devices can be encoded and distributed simultaneously over a local network or the internet.



1. Connect up to four HDMI sources, such as media computers, cameras, cable boxes, or playback devices, to HDMI inputs 1–4.
2. Optionally connect analog audio sources to AUDIO inputs 1–4.
3. Connect the LAN port to a gigabit network switch, router, or internet gateway.
4. Configure one or more streams per channel for destinations such as YouTube Live, Facebook Live, Twitch, VLC, ONVIF-compatible NVRs, or local multicast receivers.

6. Connection Configuration

Communicating with the ZT-519 Encoder

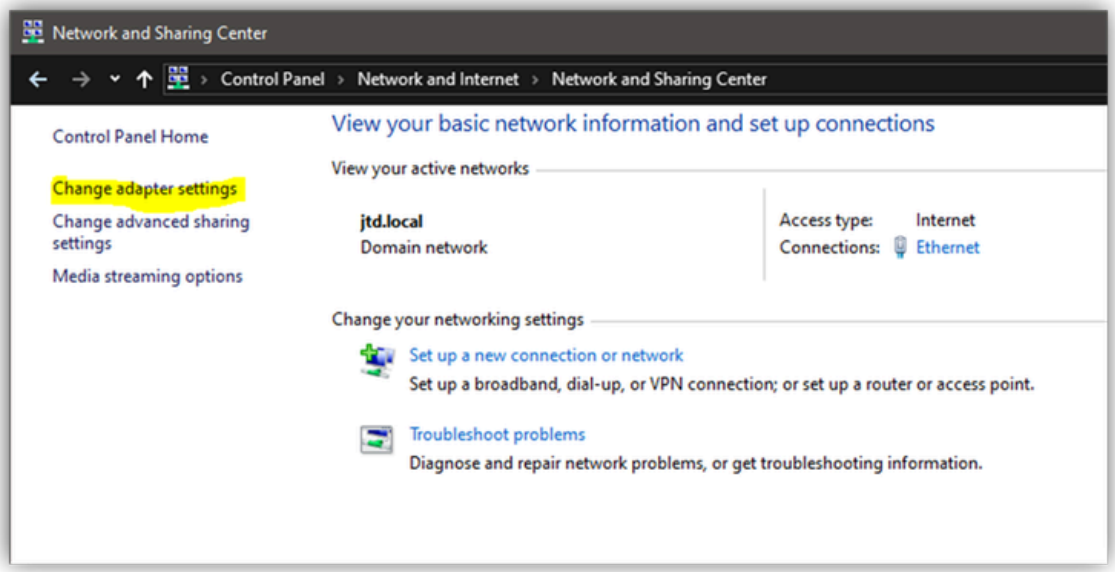
A computer with an Ethernet port is required for initial configuration. The encoder uses the default IP address 192.168.1.168. Your computer must temporarily use an address in the same subnet so the two devices can communicate.

Changing Your PC's IP Address

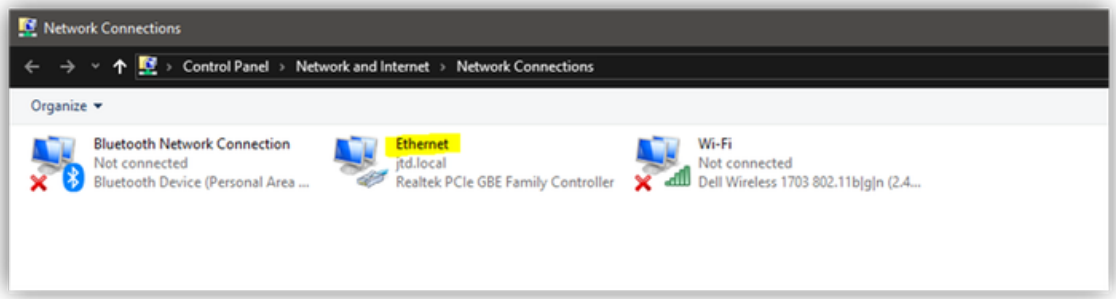
On a Windows computer, navigate to:

Control Panel > Network and Internet > Network and Sharing Center

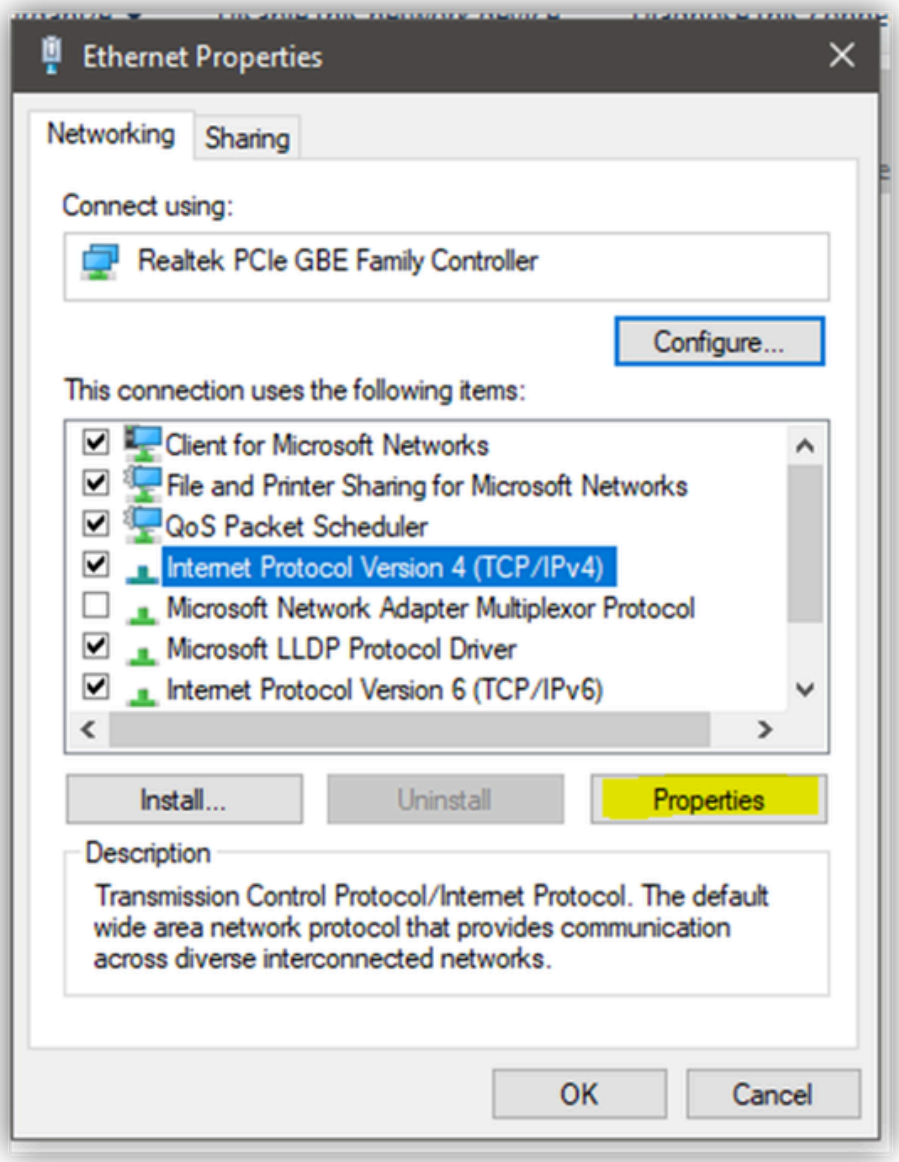
Select Change adapter settings from the left-hand menu



Right-click Ethernet and select Properties.

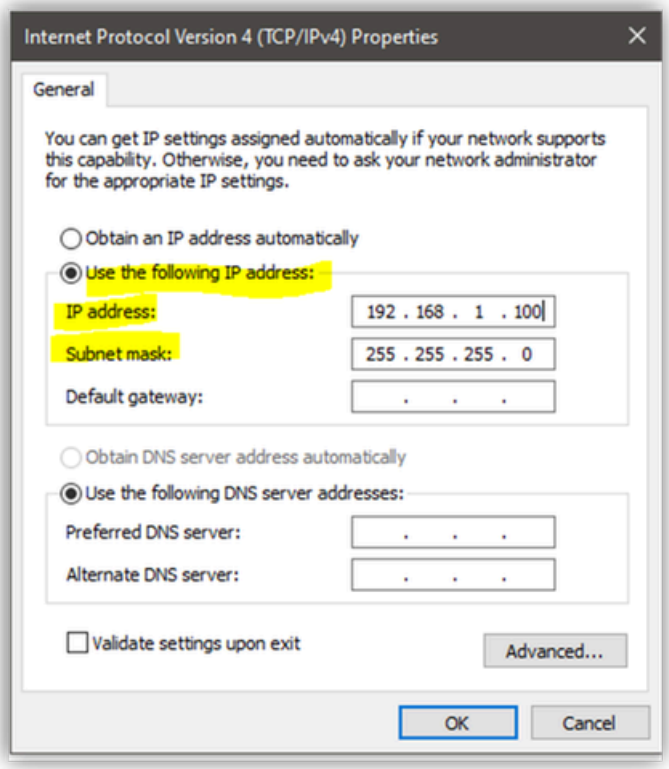


Highlight Internet Protocol Version 4 (TCP/IPv4), and then select Properties.

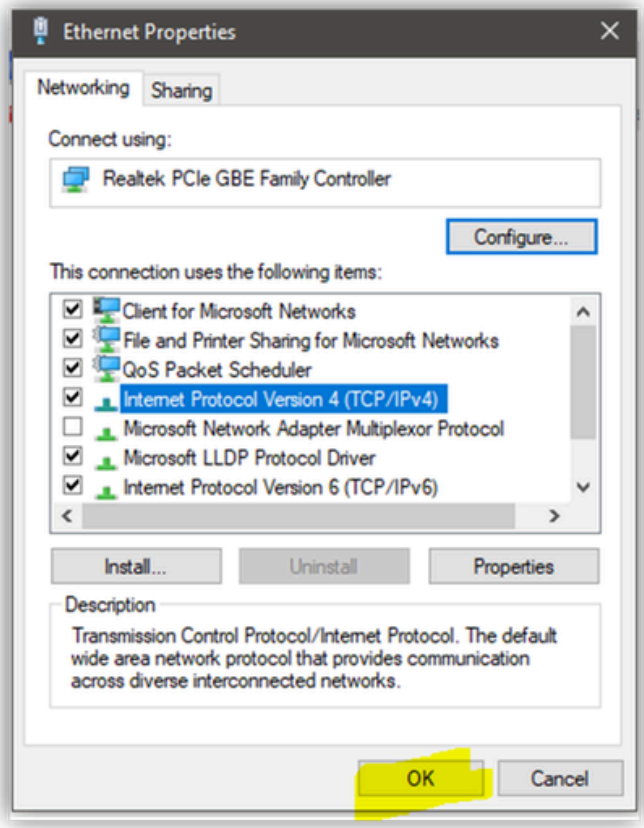


Select Use the following IP address. Enter an unused address in the encoder's default subnet, such as:

Parameter	Description
IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Default Gateway	Leave blank for a direct connection

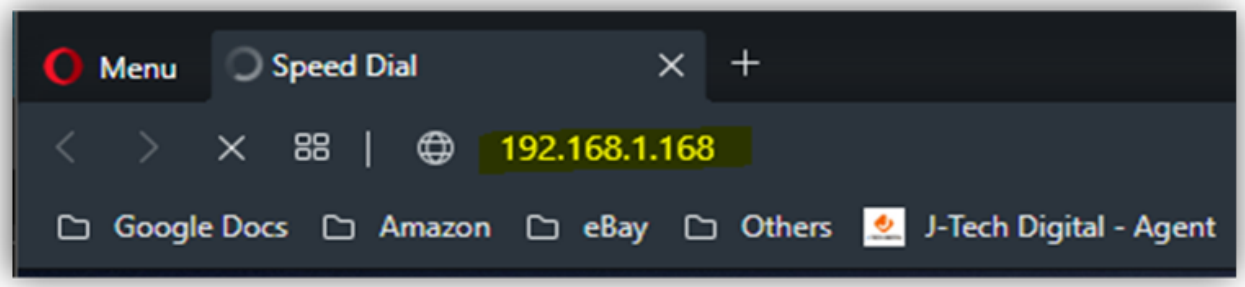


Select OK to apply the IPv4 settings, and then select OK again in the Ethernet Properties window.

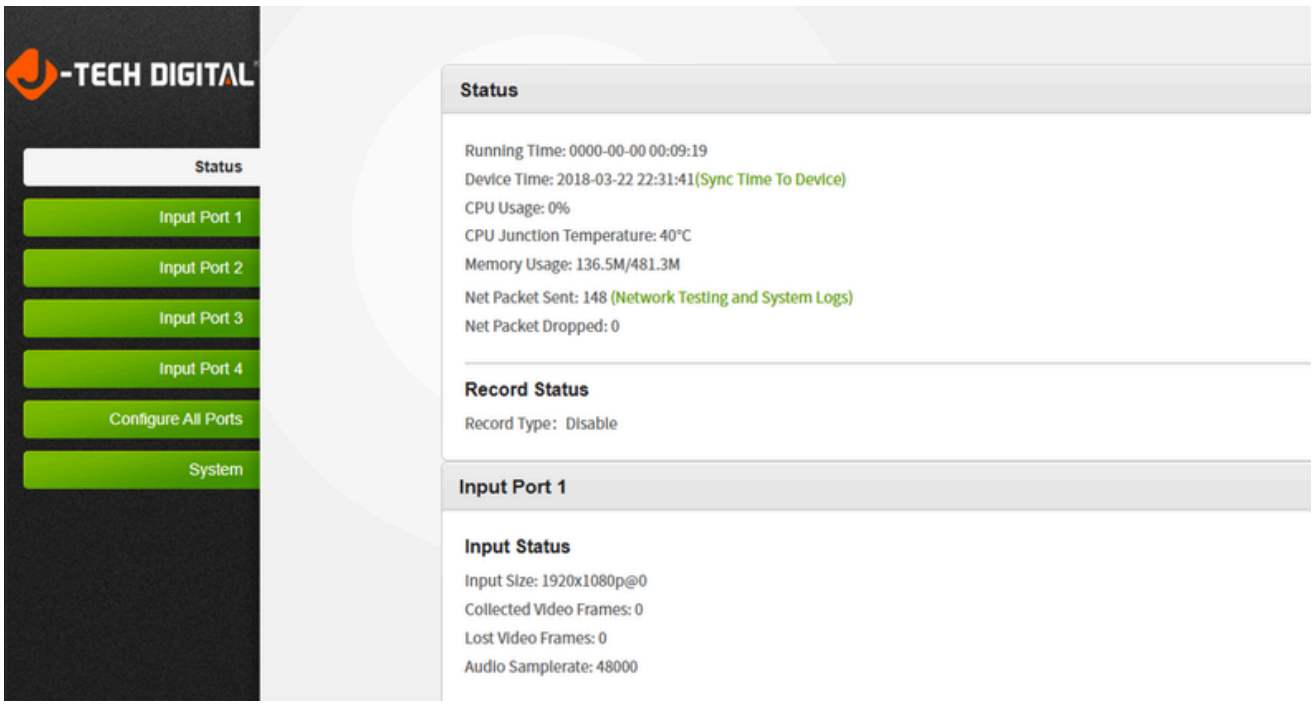


Connecting to the Web GUI

- Connect an Ethernet cable directly between the computer and the ZT-519 LAN port.
- Open Google Chrome, Microsoft Edge, or Mozilla Firefox.
- Enter 192.168.1.168 in the browser address bar.
- When prompted, enter the default credentials: **Username admin**; **Password admin**



- After successful login, the ZT-519 Web GUI opens to the Status page.



7. Assigning the ZT-519 a Static IP Address

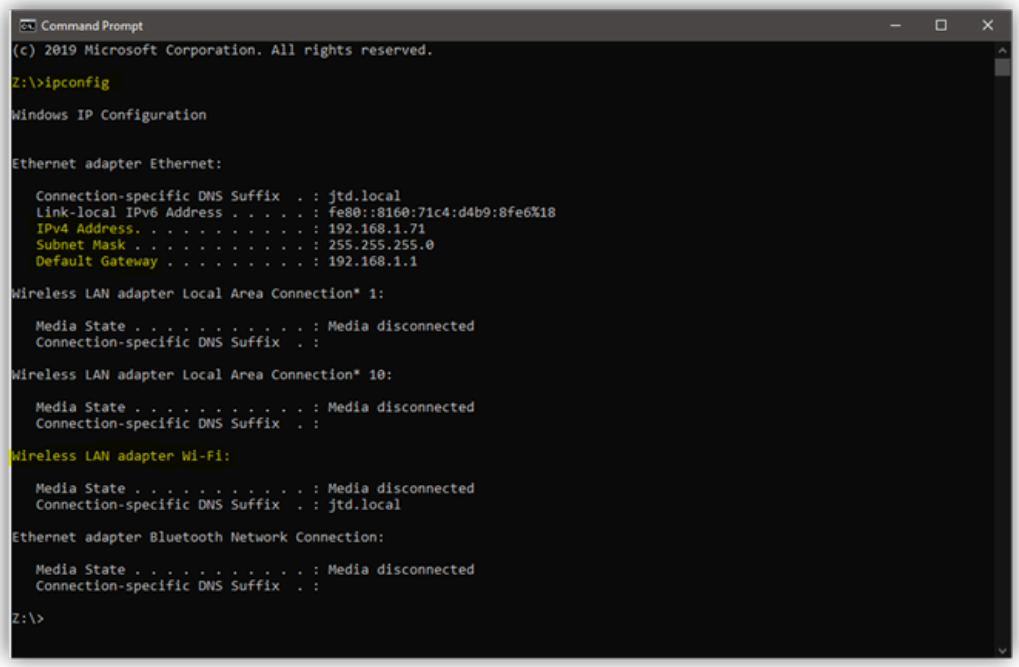
In order to setup your encoder for the first time, you will need to find out the IP scheme of your network and locate an unused IP address to be assigned to the encoder.

***Note – You must be connected to your network via ethernet or WiFi to determine the IP scheme of your network.**

Determining the IP Scheme of Your Network- Windows

Before placing the encoder on the production network, determine the network's IPv4 address range, subnet mask, and default gateway. The computer must be connected to that network through Ethernet or Wi-Fi.

- Open Command Prompt.
- Type ipconfig and press Enter.
- Record the computer's IPv4 address, subnet mask, and default gateway.
- Please be sure to write down this information for future use as this is all information you will enter into your encoder during setup. You can determine the scheme of your network by your '**IPv4 Address**' and your '**Default Gateway**'.



For example, if the computer is 192.168.1.71 and the default gateway is 192.168.1.1, the network scheme is typically 192.168.1.xxx with a subnet mask of 255.255.255.0.

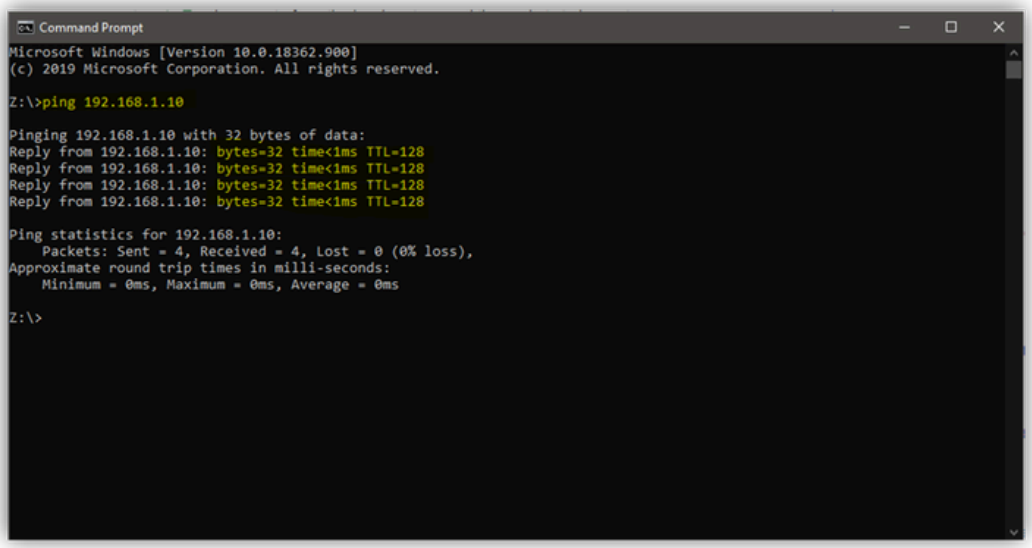
Locating an Unused IP Address

Now that you know the IP Scheme of your network, you will need to locate a static IP address that is not being used by a device on your local area network (LAN).

Most networks have a router that uses a function called DHCP (dynamic host configuration protocol). This function allows the router to assign an IP address to the devices on the LAN. We do not want to utilize DHCP with your encoder because the IP address assigned by the router has a "lease" time and may be changed after the lease expires. If the IP address changes and you do not know the IP address of the encoder, then you cannot make any necessary changes to the encoder.

The encoder should use an address that is not already assigned to another device. A basic ping test can help identify a candidate address, although a network administrator or DHCP reservation table provides more reliable confirmation.

- If you are on a Windows PC, navigate back to or open the '**Command Prompt**' application.
- We will start checking for unused IP addresses with **XXX.XXX.XXX.200. XXX.XXX.XXX** will be replaced by your network's IP scheme. For the example below, we use the command '**ping 192.168.1.200**' because our network's IP scheme is 192.168.1.XXX.
- After you press '**enter**' information will populate below the command
- A reply generally indicates that a device is using the address.
- A "Destination Host Unreachable" or timeout response may indicate that the address is unused, but some devices block ping. Confirm the address through the router, DHCP server, or network administrator whenever possible.
- If your results show the following, there is a device/host on your network with that IP address already. In the example below, the results from command 'ping 192.168.1.10' show that there is a device on the LAN at that IP address responding to our ping request.



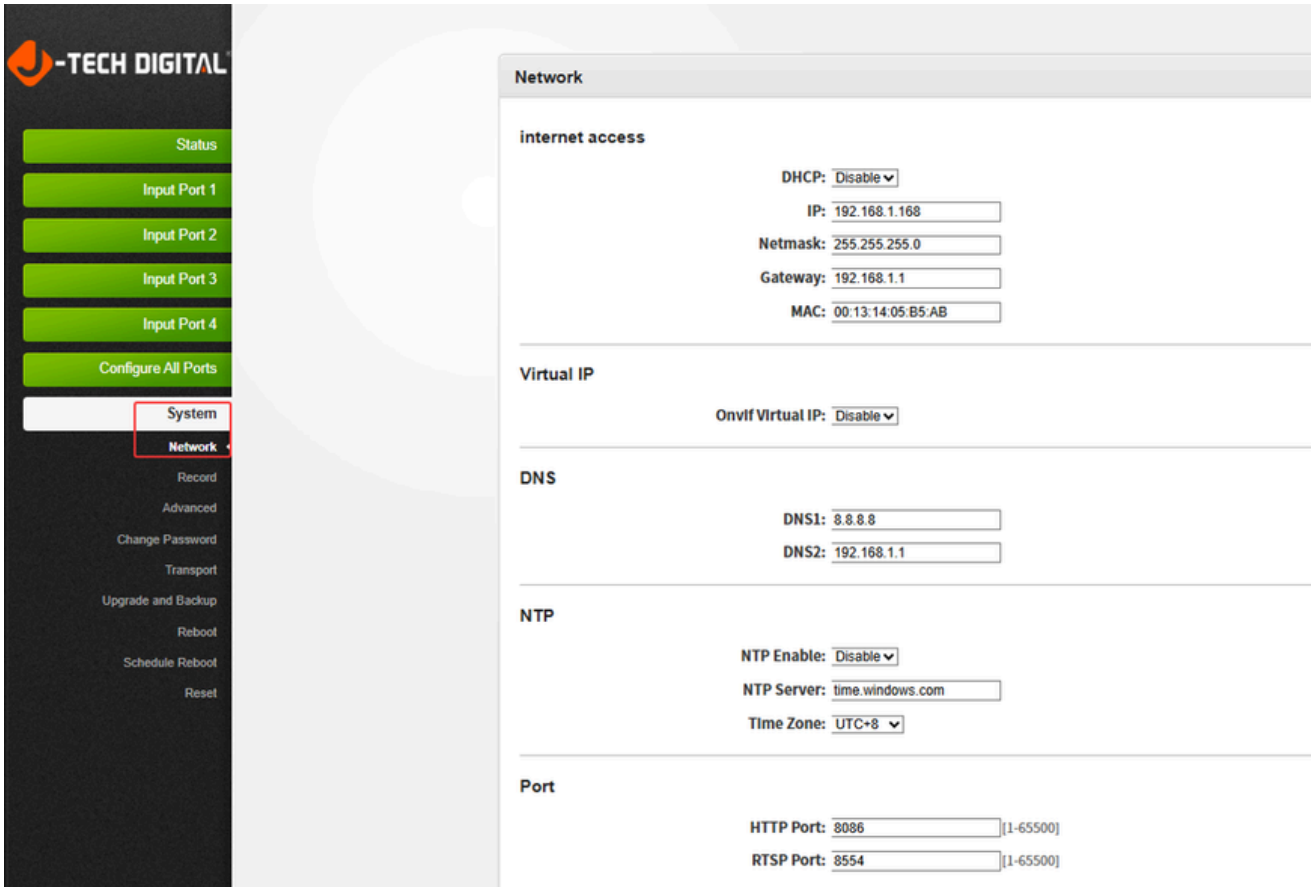
- If there is a device using the IP address 192.168.1.200 on your network, try to ping another IP address like 192.168.1.201 until your results show “Destination Host Unreachable”
- Once you have found an unused IP address on your network, write this IP address down as it will become the static IP address of your encoder.

Assigning the Address in the Web GUI

In order for the JTECH-ENCH54 to operate correctly, the device needs to live on your existing network and have access to the internet. The best way to ensure that these two things happen is to assign your encoder a new static IP address.

Before you assign the encoder a static IP address, you will need to know the scheme of your current network and ensure that the IP address is not being used. Please review sections “Determining the IP Scheme of your Network” and “Locating an Unused IP Address on your Network”.

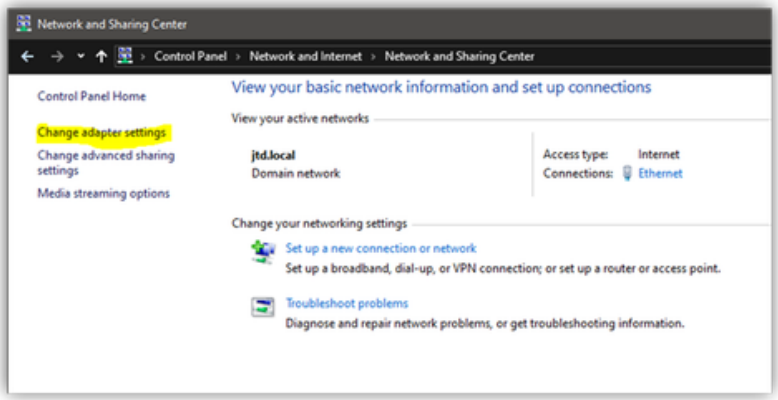
- Once you know the IP address you want to assign the encoder, navigate to the 'System' Tab > 'Network' menu.



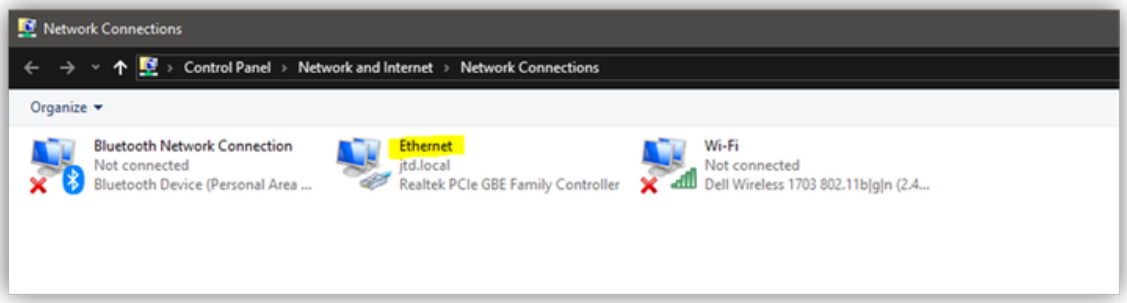
Parameter	Description
DHCP	It is recommended you leave DHCP disabled and assign a static IP address to your encoder so that you know where to access the WEB GUI
IP	This is the field where you will enter your new static IP address for the encoder that matches your current network's scheme
Netmask	Set the netmask based on your connected network. In the above example, our network is Class C so our subnet mask is 255.255.255.0
Gateway	Enter the gateway address of your network's router
MAC	Displays the encoder’s hardware MAC address and normally should not be changed

- Select Apply. A confirmation message indicates that the changes were saved and a reboot is required.
- Navigate to System > Reboot and reboot the encoder.
- After device has rebooted connect the ZT-519 LAN port to the production network switch or router.
- Reconnect the computer to network switch or router and ensure you still have connection
- If the computer was given a temporary static address, return the PC’s IP settings to DHCP to obtain an IP address automatically unless your network requires a static computer address.

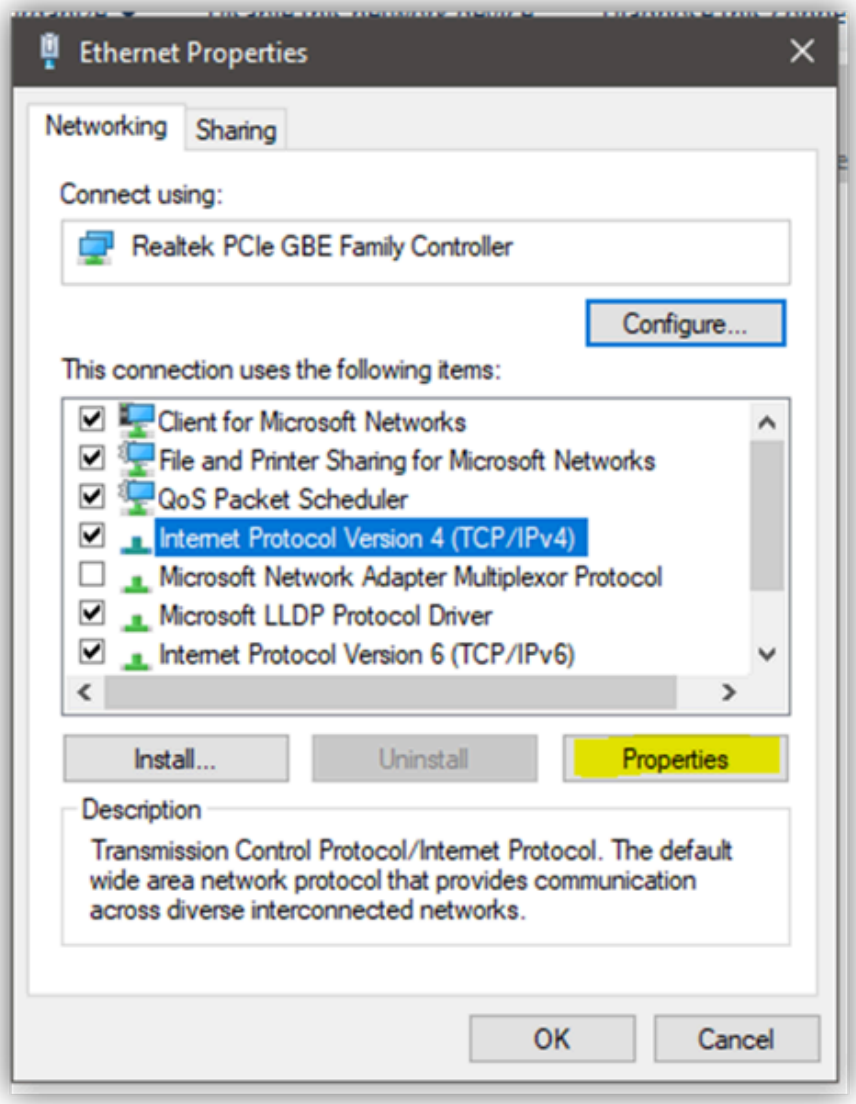
Navigate to Control Panel > Network and Internet > Network and Sharing Center
Then, on the left-hand side select 'Change Adapter Settings’



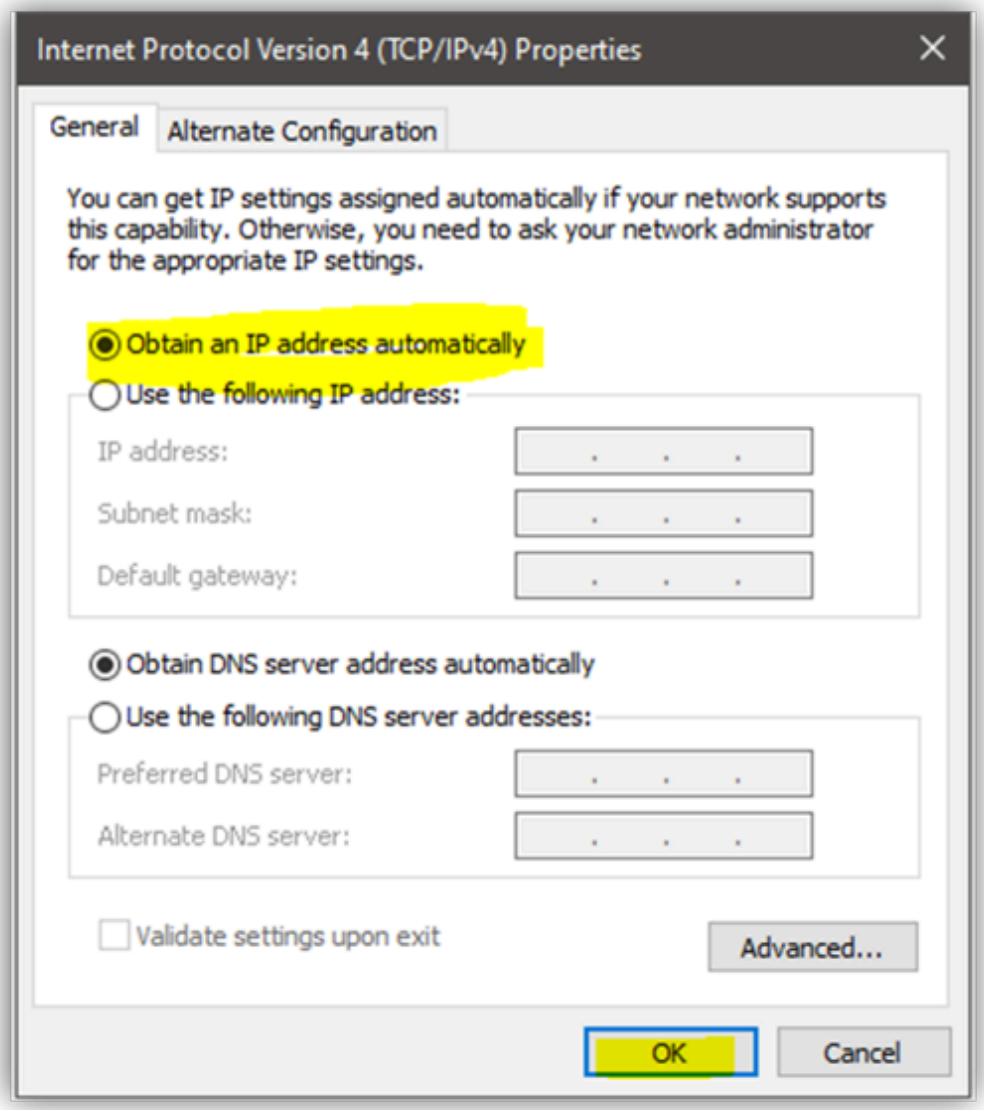
This will bring up a new window. Right-Click on 'Ethernet' and select 'Properties'.



This will bring up a new window. Highlight '**Internet Protocol Version 4 (TCP/IPv4)**' and select the '**Properties**' button.



Select '**Obtain an IP address automatically**' (or use DHCP) and hit the '**OK**' button to confirm the changes. This will allow your router to assign you an IP address that works with your network's scheme and provide you with access to the internet.

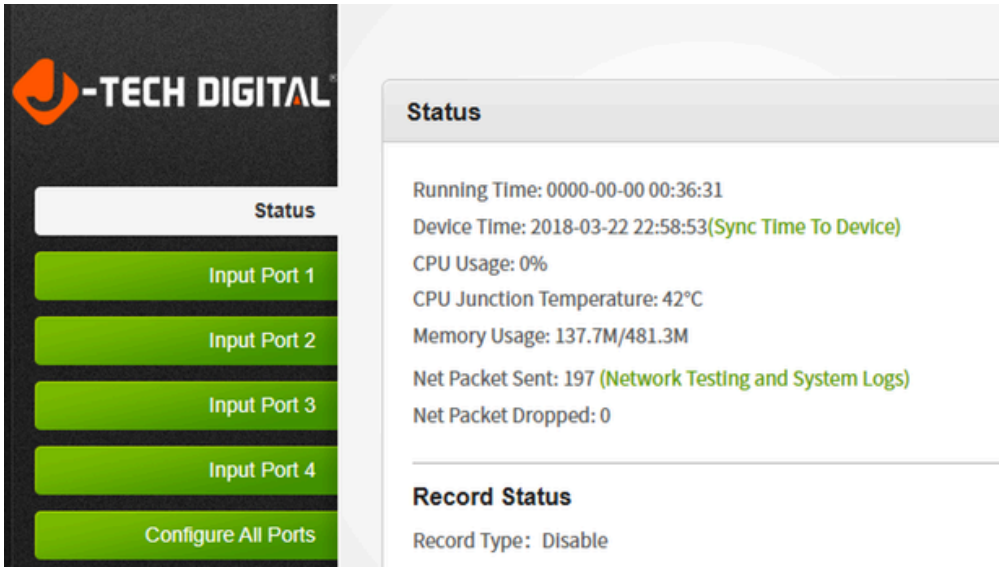


After these changes have been made, you can confirm two things:

- Open a web browser to confirm you have regained internet access
- Open a web browser, type in the new static IP address of your encoder in the web address bar and ensure that you can now access the encoder's WEB GUI via your own network (vs direct connection). (Username – admin, Password – admin)

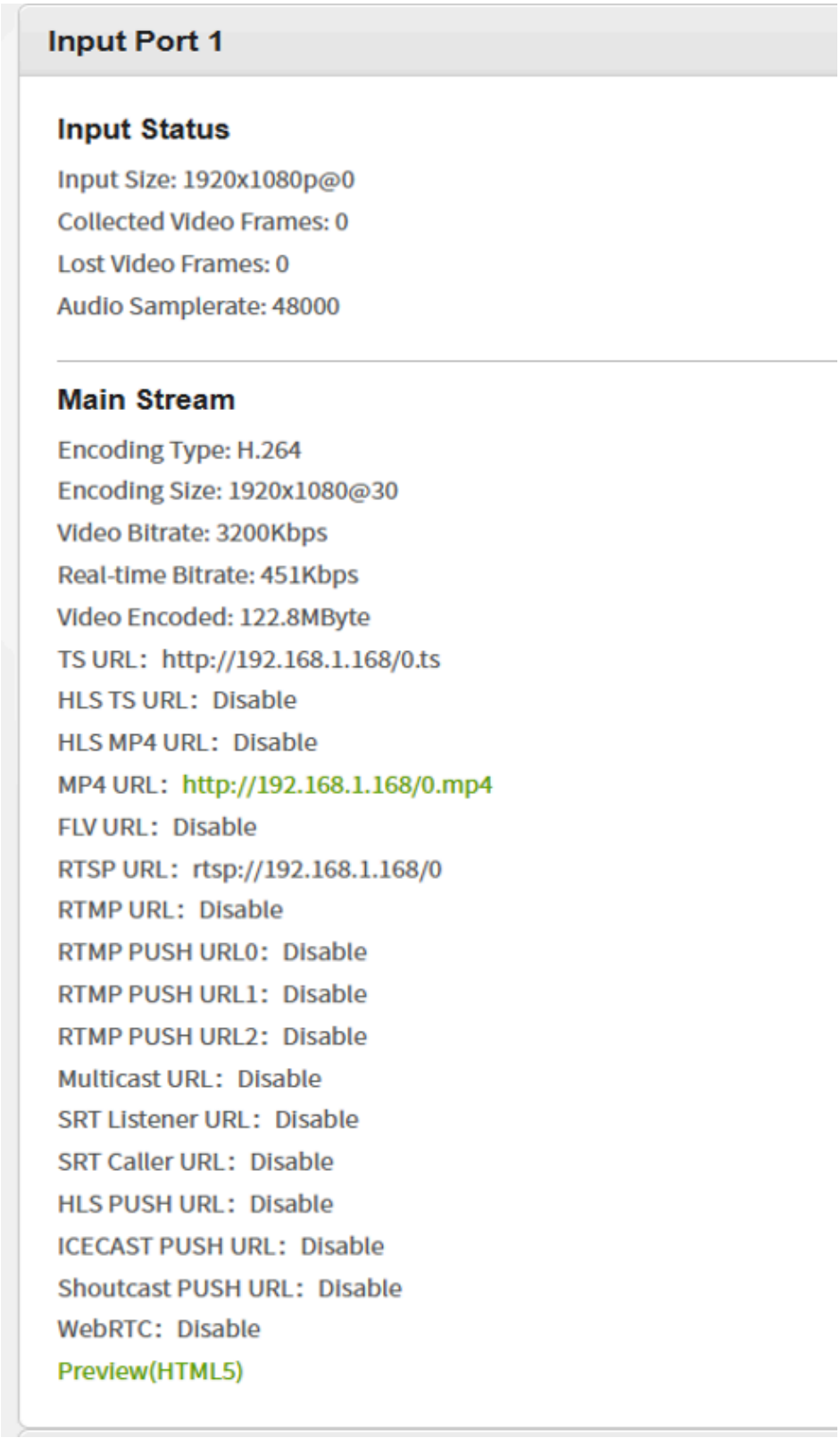
8. Navigating the ZT-519 Web GUI

Status Menu



Parameter	Description
Running Time	Elapsed time since the encoder was powered on or rebooted
Device Time	Current date and time referenced by the encoder
CPU Usage	Current percentage of CPU processing resources in use
CPU Junction Temperature	Current processor temperature
Memory Usage	Current memory consumption and total available memory
Net Packet Sent	Total network packets transmitted by the encoder
Net Packet Dropped	Packets dropped by the encoder
Record Status	Current local recording mode and status, where supported

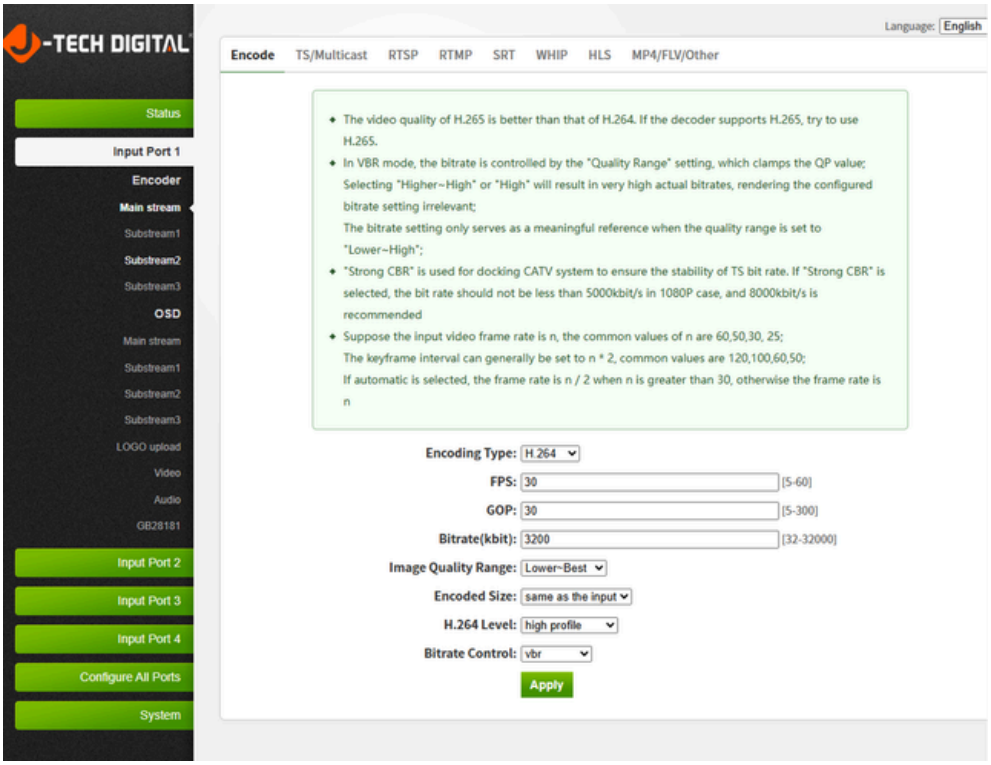
Input Port Status and Main Stream URLs



Parameter	Description
Input Size	Detected HDMI input resolution and refresh rate
Collected Video Frames	Number of captured input video frames
Lost Video Frames	Number of input video frames lost
Audio Sample Rate	Detected HDMI input audio sampling rate
Encoding Type	Selected H.264, H.265, or MJPEG codec
Encoding Size	Configured output stream resolution and frame rate
Video Bitrate	Configured target video bitrate
Real-Time Bitrate	Current measured stream bitrate
TS / HLS / FLV / RTSP / RTMP / SRT URLs	Network addresses used by compatible players, servers, and receiving devices
Preview (HTML5)	Browser-based stream preview when supported by the selected configuration

9. Encoder and Stream Settings

Each of the four HDMI input channels has one Main Stream and three Substreams. Every stream can be configured independently. Changes to one stream do not automatically apply to the others.



Parameter	Description
Encoding Type	H.264, H.265, or MJPEG. H.265 generally delivers similar quality at a lower bitrate than H.264 but requires compatible decoders
FPS	Output frame rate, typically adjustable from 5 to 60 fps depending on the input and selected resolution
GOP	Keyframe interval. A common starting point is two times the frame rate
Bitrate (kbit)	Target video bitrate from 32 Kbps to 32,000 Kbps
Image Quality Range	Quality range used by VBR operation

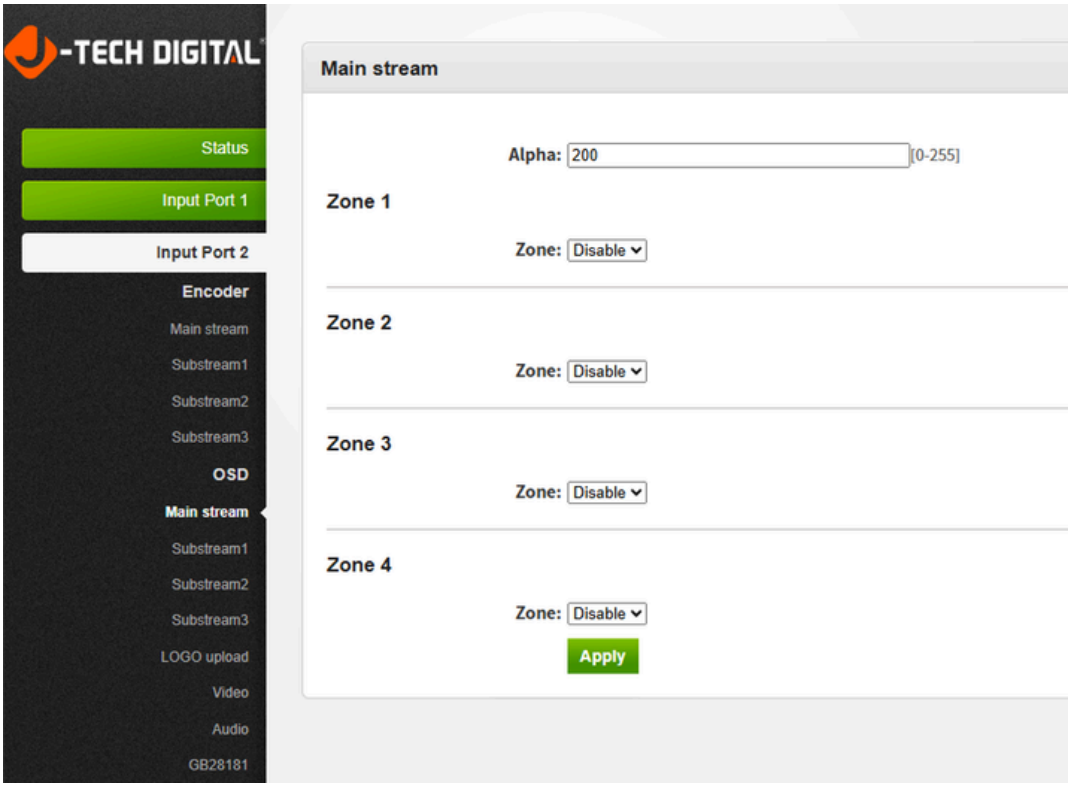
Encoded Size	Output resolution and scaling mode
H.264 Level / Profile	Compatibility and compression profile options for H.264
Bitrate Control	CBR for a stable target bitrate or VBR for quality-based variation

Protocol Configuration

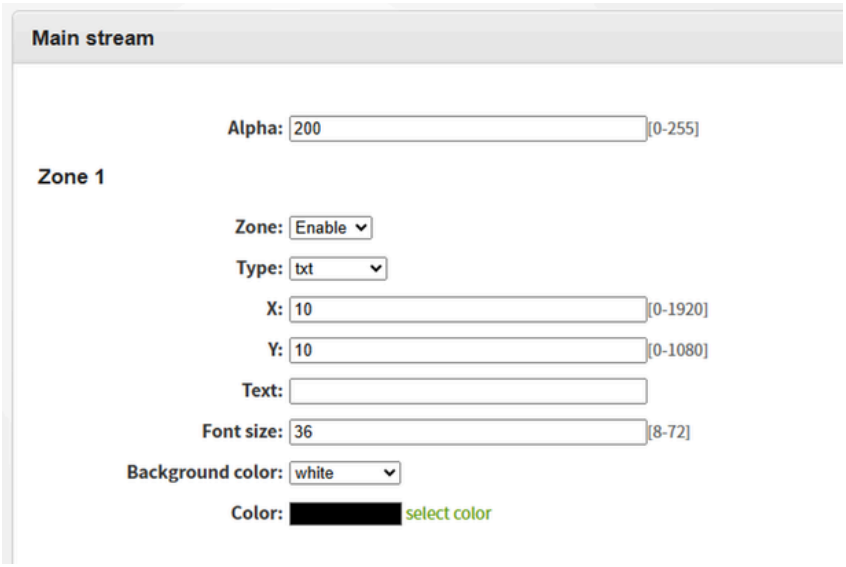
Protocol tabs may include TS/Multicast, RTSP, RTMP, SRT, WebRTC, HLS, MP4/FLV, PTE, and other options depending on firmware. Enable only the protocols required by the application. Multiple protocols may be active simultaneously, subject to network bandwidth and processing limits.

10. OSD and Logo Upload

Each stream supports up to four OSD zones. OSD elements may include static text, scrolling text, date/time, or uploaded logos.

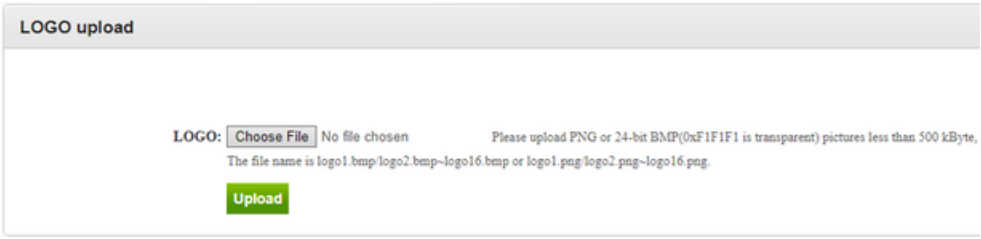


Alpha controls OSD transparency. The available range shown by the Web GUI may vary by firmware; lower values are more transparent and higher values are more opaque.



Parameter	Description
Zone	Enable or disable OSD zones 1–4
Type: txt	Static customizable text
Type: bmp	Uploaded image logo
Type: scroll txt	Custom text that moves horizontally
Type: time	Date and time overlay
X / Y	Horizontal and vertical coordinates for the OSD element
Text	Text displayed by the selected zone
Font Size	OSD font size, typically 8–72
Background Color	Transparent, white, or black
Color	Text color selection
Speed	Scrolling-text speed, typically 0–30

Logo Upload

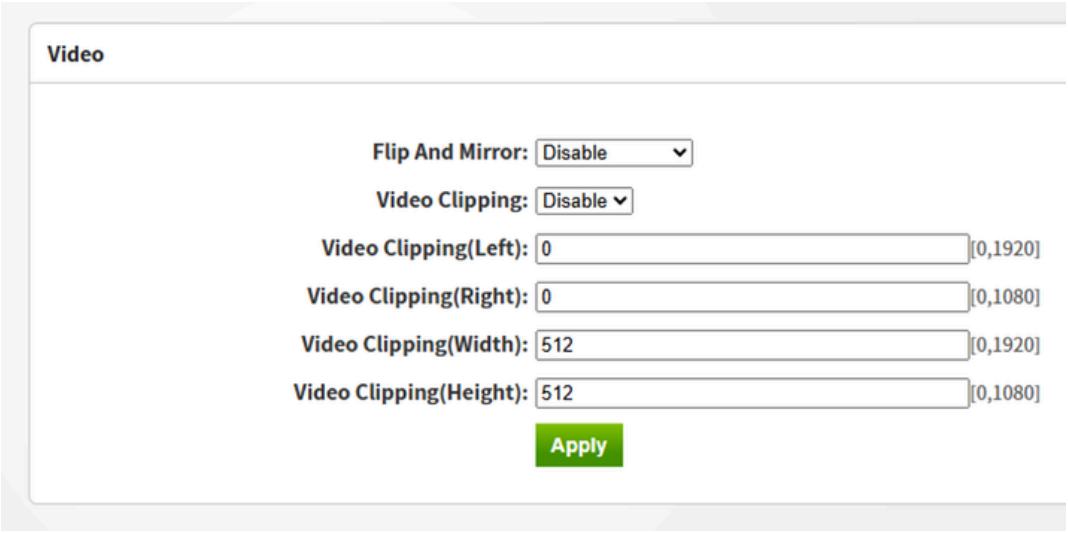


Up to 16 custom logo files can be stored in the encoder. Follow the Web GUI instructions and use the required filenames, such as logo1.bmp through logo16.bmp.

- Supported format: PNG or 24-bit BMP.
- Maximum file size: 500 KB per image.
- For BMP transparency, firmware may treat the color value 0xF1F1F1 as transparent.
- Use the exact filename format required by the Web GUI before uploading.

11. Video and Audio Settings

Video

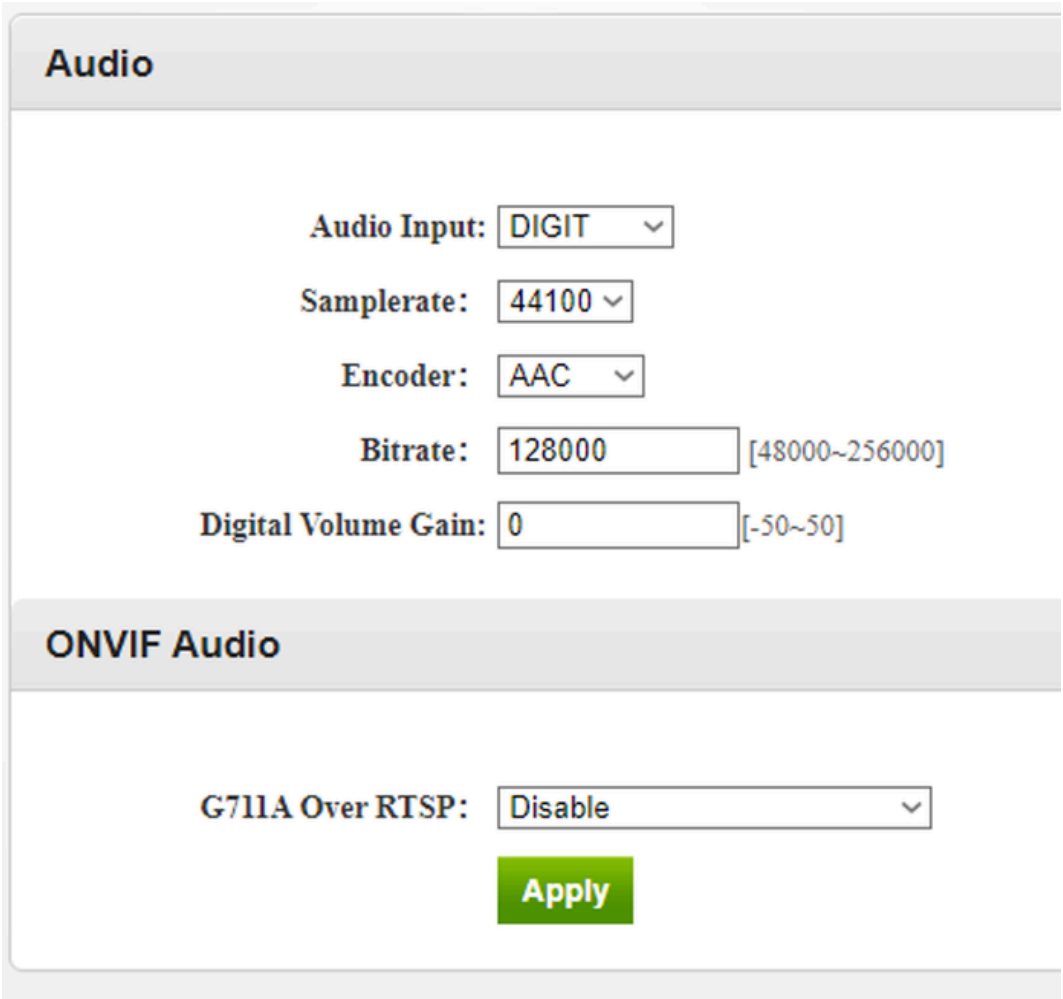


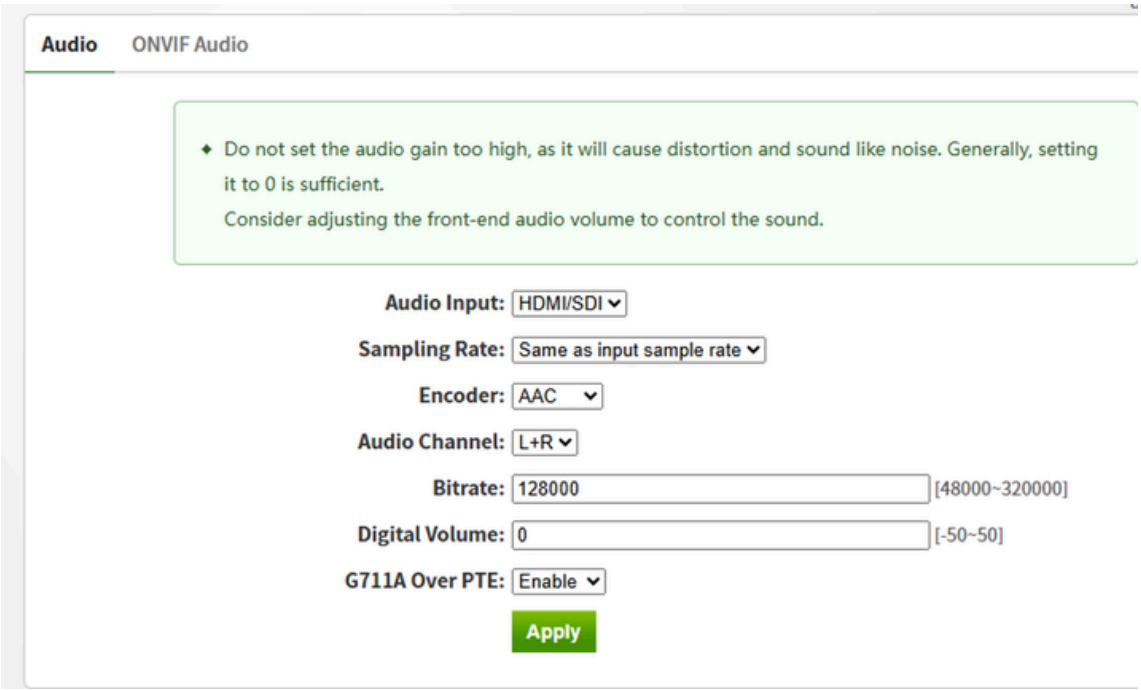
Parameter	Description
Flip	Flips the image across the vertical/Y axis
Mirror	Mirrors the image across the horizontal/X axis
Flip and Mirror	Applies both transformations

Video Clipping	Enables or disables coordinate-based cropping
Left	Horizontal crop start position from the left
Right	Vertical crop start position as identified by the Web GUI
Width	Horizontal cropped-image width
Height	Vertical cropped-image height

Cropping ranges depend on the configured resolution. Confirm the result through the HTML5 preview or the receiving decoder before placing the stream into production.

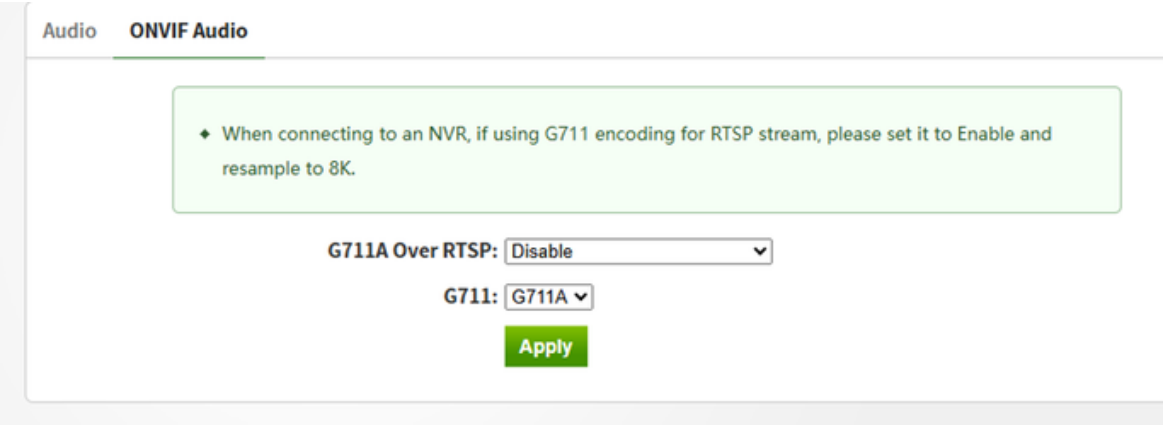
Audio





Parameter	Description
Audio Input	Select HDMI embedded audio, the corresponding analog 3.5 mm input, or Mute
Sampling Rate	44.1 kHz, 48 kHz, or Same as Input
Encoder	AAC, AAC+, AAC++, AC3, MP3, MP2, or Opus, subject to firmware and protocol compatibility
Audio Channel	Stereo channel mapping such as L+R
Bitrate	Audio bitrate setting. The Web GUI displays the supported range for the selected codec
Digital Volume	Digital gain adjustment, typically -50 to +50. Excessive gain may cause clipping and distortion
G711A over PTE	Enables or disables G.711A audio for the private PTE transport mode

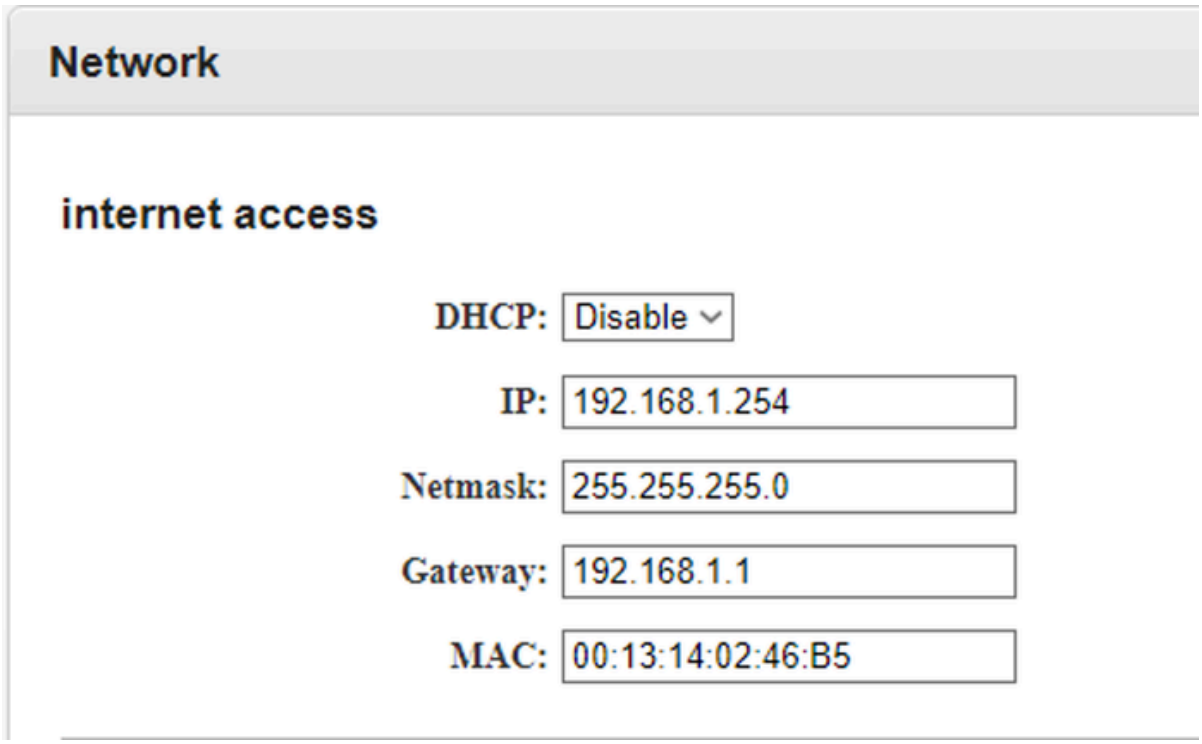
ONVIF Audio



For NVR integration, enable G711A over RTSP when the NVR requires G.711 audio. The Enable & Resample with 8K option resamples audio to 8 kHz for compatibility. Select G711A or G711U as required by the receiving NVR.

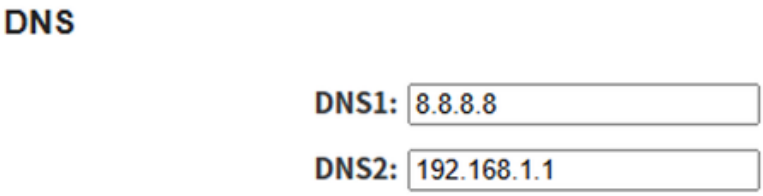
12. System and Network Settings

Network



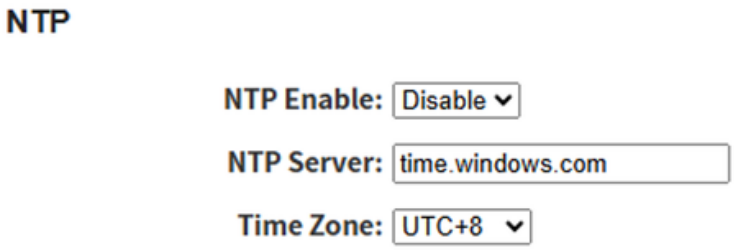
Parameter	Description
DHCP	Enable or disable automatic address assignment
IP	Static IPv4 address of the ZT-519
Netmask	Subnet mask
Gateway	Default network gateway
MAC	Hardware MAC address of the encoder

DNS



DNS1 and DNS2 specify the primary and secondary DNS servers. DNS resolution is required for hostnames used by streaming services, NTP servers, or other network destinations.

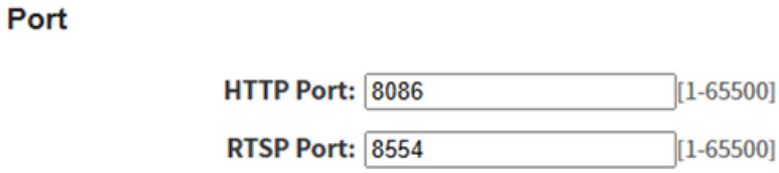
NTP



Parameter	Description
NTP Enable	Enables or disables Network Time Protocol synchronization
NTP Server	Hostname or IP address of the time server

Time Zone	UTC offset used for device time and OSD timestamps

Port



Parameter	Description
HTTP Port	Web GUI and HTTP service port, typically selectable from 1–65500
RTSP Port	RTSP service port, typically selectable from 1–65500

13. Advanced Settings

Parameter	Description
EDID	Selectable profiles may include 4K30 + 1080p60, 1920×1080p60 ITE, 1920×1080p60 Dell U2414H, and 1920×1200p60
Gamut	BT.601 or BT.709 color matrix selection
Color Range	PC/full or TV/limited range
Video Input Format	YUV422 or YUV420. Rotation may require YUV420 depending on firmware
Video Only / Audio Only	Enables a video-only or audio-only stream
AV Sync Strategy	Auto or Resample

Deinterlace	Weaving, Both, Bottom Only, or Bobbing/field extension for interlaced sources
No Signal	No Display, Display Picture, or Display Color
Record Type	MPEG-TS or MP4
Cycle Record	Enables or disables cyclic recording
Record Splitter Time	Recording segment length, typically 60–7200 seconds
HLS Splitter Time / HLS Number	HLS segment duration and number of cached HLS segments
TS Muxer	FFmpeg- or VLC-compatible TS multiplexing mode
Net Drop Threshold	Network buffer threshold. Buffered data may be dropped when congestion exceeds this value
TS Once Pack	Number of bytes in each TS packet group pushed by the encoder
TS/RTSP Password	Requires credentials for protected HTTP/RTSP stream access
HTTP No Password	Allows or blocks password-free HTTP access
Telnet Service	Enables or disables Telnet management. Disable when not required
ONVIF Service	Enables or disables ONVIF discovery and services
RTSP Default Stream	Selects Main Stream or Substream 1–3 as the default RTSP stream
vMix Compatible	Compatibility mode for vMix playback
TS over RTSP	Selects the RTSP transport working mode

Multicast Type	Selects the multicast transport protocol
Enable SAP	Enables Session Announcement Protocol/service announcements
Ethernet Speed	100M or 1000M
UDP TTL	Time-to-live value for UDP multicast packets
UDP Socket Buffer Size	Socket receive/transmit buffer setting
Slice Split / Slice Size	H.264 slice configuration
Mix QP / Max QP	Quantization range. Lower QP generally improves quality and increases bitrate
Debreath Effect	Reduces visible bitrate “breathing” in some scenes
Contrast Improve / Image Enhance	Contrast and sharpness enhancement
Y/C Space and Time Filters	Static and temporal noise reduction for luminance and chroma

Password, Serial, Firmware, and Restart

Parameter	Description
Change Password	Enter the old password, the new password, and confirmation. Store the new credentials securely
Serial to TCP	Select a serial baud rate from the available list and assign a TCP port from 1–65535
Upgrade Firmware and Configuration	Upload approved firmware or configuration files. Do not interrupt power during an upgrade
Backup Firmware and Configuration	Download a backup before changing critical settings or upgrading

Reset	Restores all encoder settings to factory defaults
Reboot	Restarts the encoder without intentionally erasing the configuration
Schedule Restart	Enables a scheduled automatic restart at a configured time

Factory Reset Procedure:

To reset the unit using the rear-panel RESET pinhole, press and hold the button for approximately 10 seconds until the Power and LAN LEDs turn off. Release the button and allow the encoder to restart. The default IP address and credentials are restored.

14. Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner, or benzine to clean.

15. Warranty

If your product does not work properly because of a defect in materials or workmanship, our company (referred to as “the warrantor”) will, for the length of the period indicated as below, “Parts and Labor (5) Years”, which starts with the date of original purchase (“Limited Warranty period”), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the “Labor” limited warranty period, there will be no charge for labor. During the “Parts” warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers products purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

16. Mail-In Service

When shipping the unit, carefully pack and send it prepaid, adequately insured, and preferably in the original carton. Include a letter detailing the complaint and provide a daytime phone and/or email address where you can be reached phone and/or email address where you can be reached.

17. Limited Warranty Limits and Exclusions

This Limited Warranty ONLY COVERS failures due to defects in material or workmanship and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, mis-adjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributed to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER “LIMITED WARRANTY COVERAGE”. THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.) PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.



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