TNET-ENC-C211-DA

1G 4K60 AVoIP Encoder with Dante AV

Version: TNET-ENC-C211-DA_2024V1.0

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till October 31, 2024. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user’s authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration, or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with good ventilation to avoid damage caused by overheating.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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1. Product Introduction

The T-Network series include two encoder models and one decoder model. T-Network The T-Network Series represents a revolutionary line of AVoIP (Audio Video over IP) devices that redifine the user experience and enhance flexibility in audiovisual applications. Thoughtfully crafted in Scandinavia, this series features two encoder models and a single decoder model. The TNET-ENC-C211-DA boasts a USB-C input that accommodates video, USB data, and delivers 100W charging power, alongside the traditional HDMI input.

With the power of Dante AV-A technology, the T-Network Series allows for the smooth integration of audio, video, and control signals across network infrastructure. It also boasts advanced security and networking capabilities, including VLAN tagging, 802.1x, HTTPS, and LDAP.

The T-Network series is ideal for a variety of AVoIP applications, whether small or large. This includes applications like hotels, universities, and BYOM meeting rooms. It offers support for 4K60 4:4:4 over gigabit networks with minimal latency. Additionally, the series accommodates a virtual USB 2.0 hub for BYOM or interactive use.

Our unique management software, T-COMM, offers sophisticated routing and configuration options, making it easy for users to oversee and manage their AV networks. Additionally, the T-Network products are fully compatible with direct-control API, Dante Controller, Dante director and DDM, providing users with maximum flexibility.

1.1 Key Features

- Supports resolutions up to 4096x2160P 60Hz 4:4:4
- Scaling options supported in decoder
- Utilizes 1G LAN network infrastructure
- Dante AV enabled, Dante 2CH audio and 1 stream Video
- Selectable Dante AV-A mode, Video+ Audio or Audio only
- 2x2 CH Dante Audio break-in/out
- 2ms latency using ULL mode
- USB-C, DisplayPort alt mode with USB data and up to 100W PD (TNET-ENC-C211-DA)
- 2 line OLED display for easy installation and troubleshooting
- PoE/PoE+ pass-through when powered by PoE++
- Supports Audio embedding/de-embedding
- Video Wall up to 16x16 with Mosaic configuration support
- USB 2.0 transport and routing/ Mouse Roaming in Video Wall mode

- Built-in WEB UI for configuration and management
- Open direct-control API
- Compatible with Dante Controller, Dante Director and DDM
- Advanced Routing for Video/Audio/USB and Control
- Proprietary management and mass deployment software, T-COOM.
- 802.1Q, VLAN Tagging support
- HTTPS, SSL/TLS, SSH, 802.1x, IPv6, SNMP, LDAP, LLDP

1.2 Package List

- 1x TNET-ENC-C211-DA
- 2x Mounting ears with 4 x screws (Attached by default)
- 1x 5-pin black terminal block
- 1x 3-pin black terminal block + IR Emitter
- 1x 2-pin black terminal block + IR Receiver
- 4x Rubber feet
- 1x User Manual

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

1.3 Customer Service

TiGHT AV provide a limited warranty for the product within **five years** counting from date of purchase (The purchase invoice shall prevail).

For more information see TiGHT AV general Warranty Statement at https://tightav.com/warranty-statement or just scan the QR-code below.

SCAN ME

2. Technical Specification

VIDEO	
Digital Video Inputs	HDMI 2.0b USB-C, DisplayPort alt mode 1.0, DisplayPort 1.4a
Digital Video Output	Streaming video via RJ45, Dante AV-A or TNET Video Stream Local HDMI 2.0 output
Max Resolution	4096x2160P 4:4:4
HDR	HDR10/HLG/HDR10+/Dolby Vision support
HDCP Support	HDCP 2.3/1.x
Color Space Support	RGB, YCbCr
Deep Color Support	1080p and under: 24, 30, 36 bpp 2160p YUV444: 24 bpp 2160p YUV422: 24/30/36 bpp
EDID	Passthrough, Predefined or Custom EDID
Compression Standard	AGIC3, Visually Lossless Compression
Encryption	TNET Video Stream: AES256 Dante AV-A
Bandwidth	4K Peak: ~850Mbps 4K Average: ~440 Mbps 1080P Average: ~190Mbps
Latency Encode-Decode	ULL Mode (Ultra Low Latency): 2160p60Hz: 2ms Normal Mode: 2160p60Hzs: 16ms 2160p30Hz: 33ms 1080p60Hz: 16ms 720p60P: 16ms 1080i30Hz: 33ms Scaling will not add additionally latency* *Rotation CW 90 and 270 will introduce 1 extra frame latency.
Input Switching Time	5s
AUDIO	
Input Signal Types	Embedded audio on HDMI or USB-C Dante Audio Analog Stereo (Balanced or Unbalanced)
Output Signal Types	Analog Stereo (Balanced or Unbalanced) Dante Audio and/or TNET Audio Stream
HDMI Embedded Audio Formats	LPCM: Up to 7.1/24-bit/192kHz Dolby: Dolby AtmosTM, Dolby TrueHD, Dolby Digital PlusTM, Dolby Digital EX, Dolby Digital 5.1, Dolby Digital

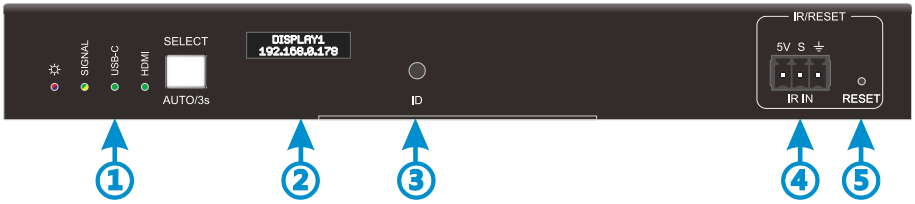
	2/0 Surround, Dolby Digital 2/0 DTS: DTS-HD Master AudioTM, DTS-HD, DTS-ES Discrete 6.1, DTS-ES Matrix 6.1, DTS Digital Surround 5.1
Analog Audio Format	LPCM 2.0
Dante Audio Format	LPCM only
Dante Audio Sample Rate	44.1, 48, 88.2, 96 kHz
ANALOG AUDIO PERFORMANCE	
Frequency Response	20Hz - 20kHz, ±0.5dB
S/N Ratio	>90 dB 20 Hz -20 kHz (@0dB gain) A-weighted
THD +N	< 0.01% @ 1 kHz
Stereo Separation	> 90 dB
Volume	- 80 to 0 dB
Delay	0-170ms
USB	
USB HOST	USB 2.0 Type B port or USB-C Port
Support	USB 2.0
USB Virtual Hub	1 level virtual USB 2.0 hub (maximum 7 USB Devices)
PORTS	
Power	1x 4-pin DC Power Connector
LAN1 PoE+/PoE++	8-wire RJ45 port 10/100/1000 Mbps 10/100/1000Base-T auto-negotiation gigabit Ethernet switch port VLAN tagging
LAN2	8-wire RJ45 port 10/100/1000 Mbps 10/100/1000Base-T auto-negotiation gigabit Ethernet switch port Supports PoE/PoE+ Pass-through if LAN1 is provided PoE++ VLAN tagging
IR IN (front panel)	3-pin terminal Phoenix connector. Provides Infrared (IR) input only and passes signal back to connected decoder (33-60 kHz; typically, 39 kHz)
IR OUT	2-pin terminal Phoenix connector Provides Infrared (IR) output only (33-60 kHz; typically, 39 kHz).
RS232	3-pin terminal Phoenix connector. Full duplex communication. Baud Rate: 2400, 4800, 9600(default), 19200, 38400, 57600, 115200
AUDIO	5-pin terminal Phoenix connector which provides user-selectable balanced/unbalanced input or output
HDMI OUT	HDMI video output (Loop-out from HDMI IN or USB-C IN)
HDMI IN	HDMI video input

USB-C IN	USB-C Video and USB Host, locking
USB HOST	USB 2.0 Type B Host port to be combined with HDMI
Power	
Optional Power Supply	DC24V 6.5A power adapter or PoE++/PoE+
PoE	PoE+ (802.3at), PoE++ (802.3at) for PoE/PoE+ passthrough
PoE Pass-through (LAN2)	PoE (802.3af), PoE+ (802.3at). LAN1 require PoE++ (802.3at)
Max power consumption (no USB-C PD)	16.9W(Max)
Max power consumption (USB-C PD)	6.4W
ENVIRONMENTAL	
Operating Temperature	-5°C ~ +55°C
Storage Temperature	-20°C ~ +70°C
Humidity	10 - 90% RH (non-condensing)
Heat Dissipation	26.5 BTU/hr (Typical) 48.7 BTU/hr (Max)
Cooling	Fan (User Configurable) Auto, OFF, Ultra Low, Low, Medium, High, Super high
Noise Level at 1m	Fan Settings • AUTO • OFF: 3.7 dB • Ultra Low (2700 RPM): 9.8 dB • Low (3900 RPM): 16.2 dB • Medium (5000 RPM): 22.4 dB • High (6000 RPM): 27.3 dB • Super High (6300 RPM): 29.0 dB
GENERAL	
Product Dimensions	196 x 165 x 25 mm
Product Weight	805g
Shipping Weight	1050g
SUBSTREAM MJPEG	
Resolution Support	1280x720, 960x540, 640x360
Frame Rate	15, 20, 25, 30
Bitrate Range	Default/target consumed network bandwidth is < 8Mbps
Streaming Protocols	Motion-JPEG format (MJPEG)
PROTCOLS	
Video Streaming	RTSP Multicast, RTSP Unicast, IGMPV2 or IGMPV3
Audio Streaming	AES67, Dante
Addressing	DHCP or Static IP
Encryption	AES256
Discovery	Broadcast, mDNS, Node Query

Authentication	IEEE 802.1x
Other Supported Protocols	SNMP, MQTT, LLDP, LDAP, HTTPS, SSH, SSL/TLS
INDICATORS AND CONTROL	
POWER	Illuminates red when power off, illuminates blue when power on.
SIGNAL	Illuminates green when there is a valid video signal; Illuminates yellow when streaming with no source image (No valid signal).
HDMI	Illuminates green when the corresponding source is selected.
USB-C	Illuminates green when the corresponding source is selected.
SELECT	Press and hold 3s to toggle between manual and auto switching modes. Short press to switch input source: USB-C/HDMI
ID-Button	Multi-purpose button, refer to manual
RESET	Factory reset
Control	WEB UI, Open API via Ethernet or RS-232, Dante Controller, DDM, Dante Director, Front panel

3. Panel Description

3.1 Front Panel



1. LED and Button:

- **Power LED:** Blinking red when booting up; illuminates red when power off, illuminates blue when powered on.
- **Signal LED:** Illuminates green when there is a valid video signal for the currently selected input. Illuminates yellow when no valid input signal is detected.
- **USB-C & HDMI LED:** Illuminates green when the corresponding source is selected.
- **Select Button:** Press and hold 3s to toggle between manual and auto

switching modes. Short press to switch input source: USB-C/HDMI.

2. **OLED Screen:** The Web UI allows for the selection of information to display. By default, the device name and IP address will be shown. If the user selects more than two pieces of information, the interface will present two rows at a time.

3. **ID Button:**

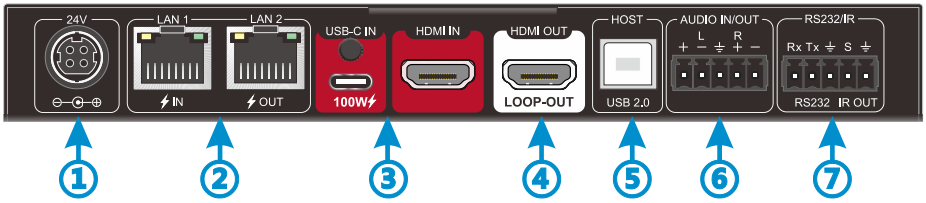
   - Press to add OSD information on top streamed video.
   - If T-COMM software is running on same network, unit will identify itself and automatically open device view in T-COMM
   - Long press 3s: Switch between OLED Display modes:
     - OLED Display Manual On: OLED display is only lit up for 30s when pressing ID button or by API command.
     - OLED Display Always On: OLED display is always on.

4. **IR IN:** 3-pin terminal block for IR receiver sensor.

5. **Reset:**

   - Factory reset button:
     - Short Press: Reboot unit
     - 3s press: Factory reset keeping IP settings
     - 10s press: Factory reset including IP settings (default is DHCP)

3.2 Rear Panel



1. **DC24V:** 1x Power connector, 24V6.5A power adapter (Sold separately).

2. **NETWORK:**

   - LAN1: 1x RJ45, PoE+/PoE++, 10/100/1000 Base-T, half/full duplex, auto-negotiation, VLAN support

- LAN2: 1x RJ45 10/100/1000 Base-T, half/full duplex, auto-negotiation, VLAN support, PoE/PoE+ passthrough

3. **INPUT:**
   - 1x USB-C IN
     - DisplayPort alt mode, DisplayPort 1.4 with HBR3. 4K@60Hz 4:4:4, HDCP 2.3/1.x, HDR10/HLG/HDR10+/Dolby Vision support.
     - USB2.0 Host pass-through to USB-C input.
     - Power delivery 100W (external power supply accessory is required).
     - USB-IF standard screw hole for secure connections.
   - 1x HDMI 2.0b input:
     - 4K@60Hz 4:4:4, 18Gbps, HDCP 2.3/1.x, HDR10/HLG/HDR10+/Dolby Vision support.
4. **Loop out:** 1x HDMI 2.0b loop out.
5. **USB Host:** 1x USB 2.0 Type B Host port to combine with HDMI source.
6. **Audio IN/OUT:**
   - Balanced/unbalanced line level audio input or output on 5-pin terminal block.
   - Analog Audio output.
     - HDMI.
     - USB-C.
     - Dante RX.
   - Analog Audio input.
     - TNET audio.
     - Dante TX.
   - Audio IN/OUT selection by GUI/API.
   - Balanced/unbalanced selection by GUI/API.
7. **RS232/IR Out**
   - RS232: 3-pin terminal block, RTG line sequence.
   - IR OUT: 2-pin terminal block for IR emitter.

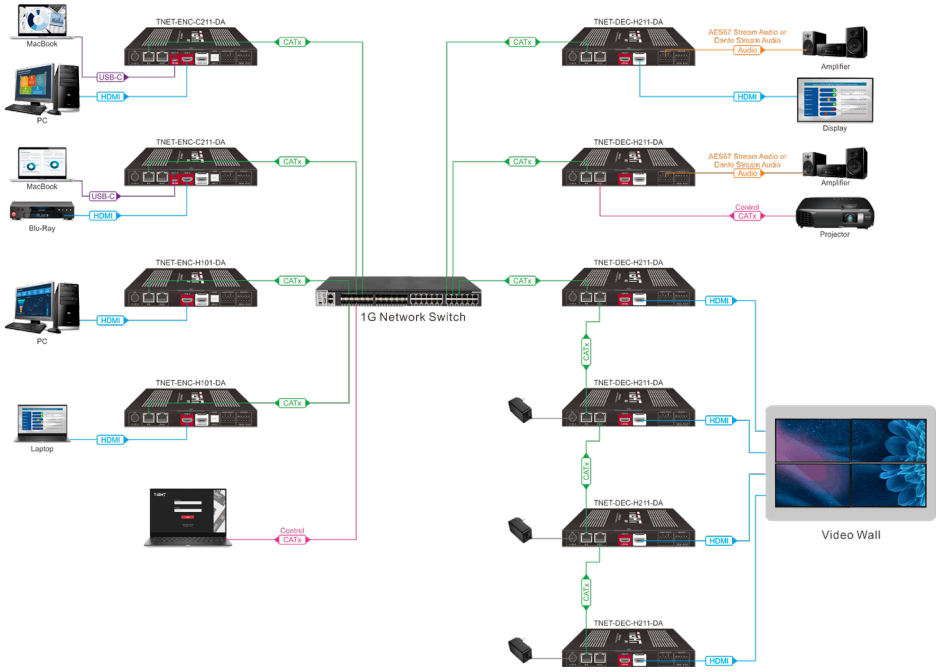
4. System Connection

4.1 Usage Precaution

- Ensure that all components and accessories are included prior to installation.
- The installation should take place in a clean environment with appropriate temperature and humidity levels.
- Verify that all power switches, plugs, sockets, and power cords are properly insulated and safe to use.
- Connect all devices before turning on the power.

4.2 System Diagram Example

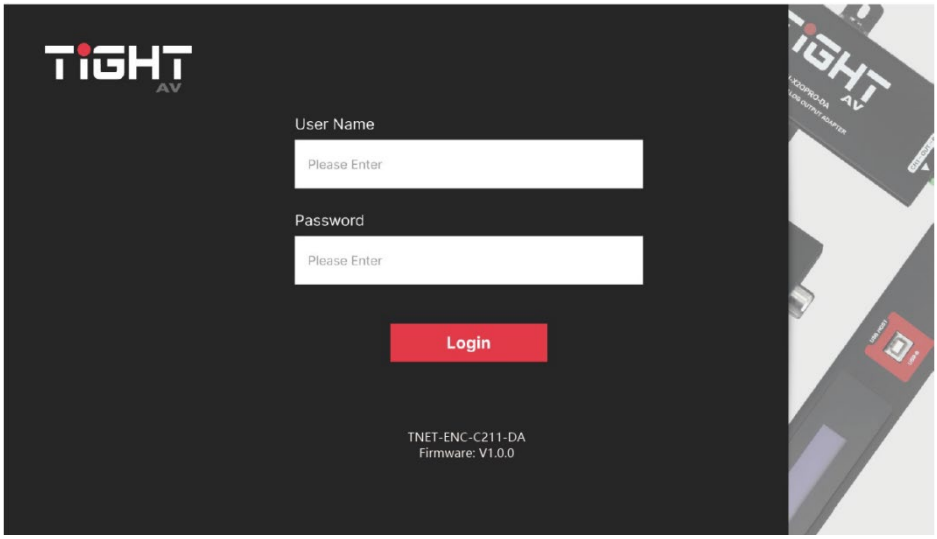
The following diagram illustrates an example of a typical T-Network system design.



5. Web-UI Operation

TNET series can be configurated and controlled via a web-based GUI. To access it, open a web browser and enter the unit's IP address. TNET devices are set to use DHCP by default, and the IP address can be located in the information displayed on the OLED screen.

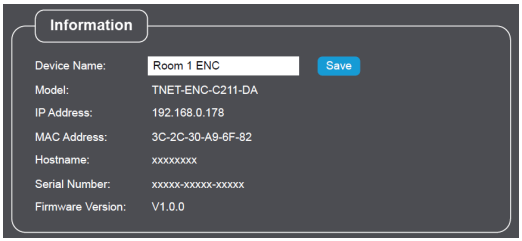
The default username is "admin," and the default password is also "admin." It is highly advisable to change the default password to enhance security.



5.1 Start Tab

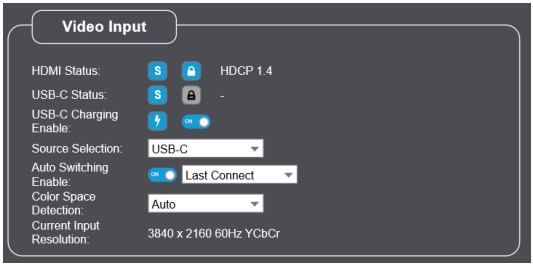
This tab shows the unit information and settings for video, audio and Dante/AES67.

5.1.1 Information



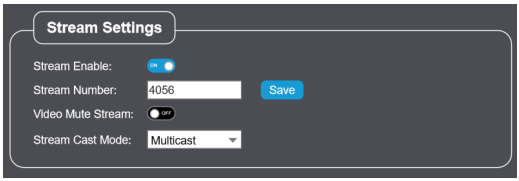
- Lists the unit essential information including device name, model name, IP address, MAC address, hostname, unique serial number and firmware version.

5.1.2 Video Input



- HDMI/USB-C Status: Show the source status, HDCP status and version.
- USB-C Charging Enable: Enable or disable the USB-C PD 100W power supply. If enabled, the encoder requires external power supply to provide up to 100W power (Sold separately)
- Source Selection: USB-C/HDMI/No Source Image.
- Auto Switching: When enabled, unit will switch automatically: Last Connect/Prio USB-C, HDMI/Prio HDMI, USB-C.
- Color Space Detection: Auto/RGB/YCbCr.
- Current Input Resolution: Show the current input source resolution information.

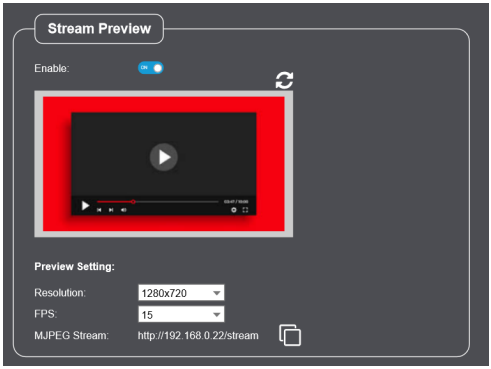
5.1.3 Stream Settings



- Stream Enable Button: Enable or disable the encoder stream.
- Stream number: Custom stream number used by this encoder.
- Video Mute Stream: Send black video stream when enabled.
- Stream Cast Mode: Multicast(default)/Unicast selection.

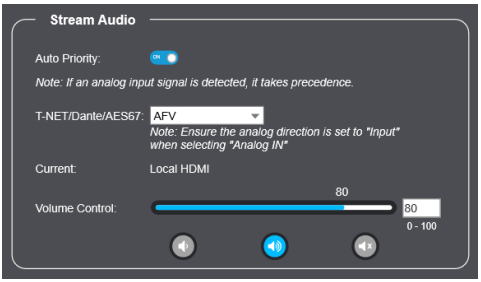
5.1.4 Stream Preview

A MJPEG sub-stream displaying the currently selected active source, which can be used as a preview video in multiple applications.

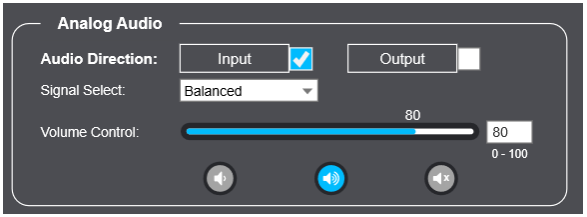


- Enable Button: Enable or disable MJPEG preview sub-stream.
- Resolution: 1280x720(default)/960x540/640x460.
- FPS: Frame rate setting, supports 15/20/25/30(default).
- MJPEG Stream: Copy stream URL link.

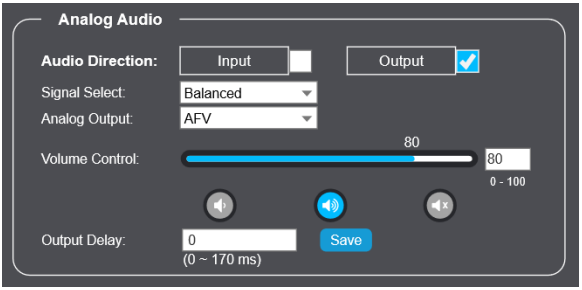
5.1.5 Audio Settings



- Stream Audio
  - Analog Priority Enable: If an analog input signal is detected, it takes precedence.
  - TNET/Dante/AES67 TX: Stream audio source selection, AFV (Audio follow video)/USB-C/HDMI/Analog IN.
  - Current: Show current stream audio source.
  - Volume Control: Stream audio volume and mute settings.

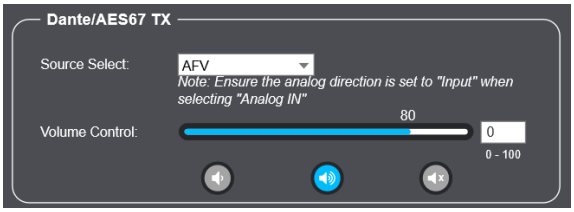


Note: Analog direction must be set to input when selecting source Analog IN.



- Analog Audio
  - Audio Direction: Analog audio direction setting, input or output selection.

- Signal Select: Balanced or unbalanced audio type selection.
- Analog Output: Analog output audio selection, supports AFV/USB-C/HDMI / Dante&AES67 RX
- Volume Control: Analog audio volume setting.
- Output Delay: Analog audio output delay, support range 0 – 170 ms.



- Source Select: Select the Dante or AES67 TX audio source, AFV/USB-C/HDMI/ Analog IN.
- Volume Control: Dante or AES67 TX audio volume setting.

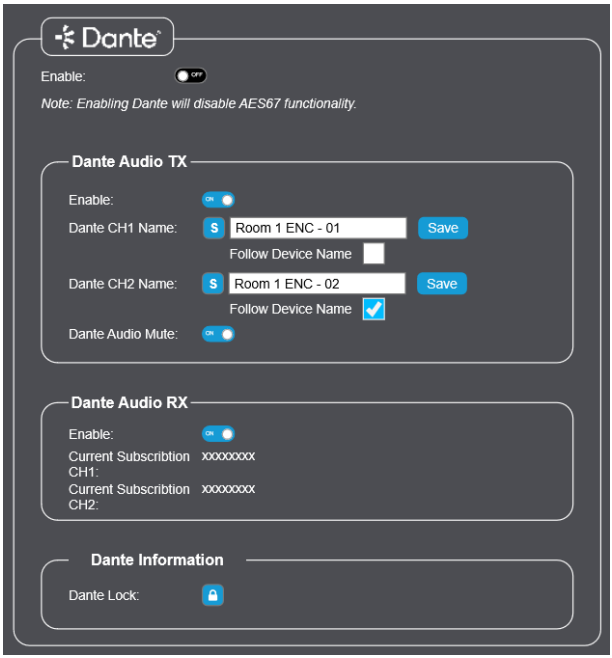
5.1.6 AES67

- When enabling AES67 function, the unit must be rebooted for the changes to take effect. The unit will automatically restart upon confirming the settings.

Note: Enabling AES67 will disable Dante functionality.

5.1.7 Dante

T-NET devices are equipped with Dante AV-A capabilities, offering two operational modes: Dante AV-A for both video and audio, or audio-only functionality.

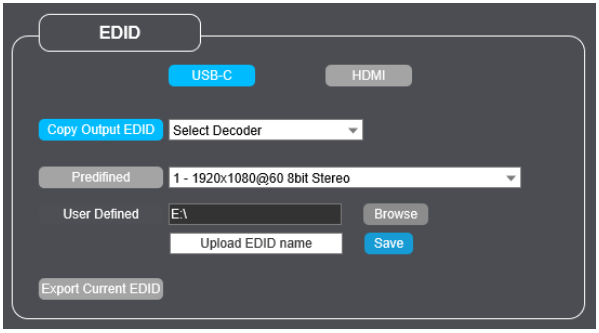


- Dante AV-A mode requires Audinate software's for stream management, such as Dante Controller, Dante Director or DDM.
- Two available Dante AV-A modes :
    - Dante AV-A : 1x Dante Video stream and 2x Dante Audio streams.
    - Dante Audio Only: 1x TNET Video stream and 2x Dante Audio streams.
- The unit must be rebooted for the changes to take effect. The unit will automatically restart upon confirming the settings
- Supports Dante Audio TX and RX to be independently enabled or disabled.
- Supports Dante Audio TX channel name setting and audio mute.
    - Follow Device Name: Uses the device name adding "01"or "02".
- Supports Dante Audio RX subscription information query.
- Supports Dante lock information query.

Note: Enabling Dante will disable AES67 functionality.

5.2 EDID/HDCP

5.2.1 EDID



- Configure EDID for HDMI and USB-C Inputs. Supports EDID Copy from Decoder, Predefined EDID or User Defined EDID.
- Copy Output EDID: Read and copy EDID from any decoder in system.
- Predefined EDID List:
    - 1 - 1280x720@60 8bit Stereo Audio
    - 2 - 1920x1080@60 8bit Stereo Audio
    - 3 - 1920x1080@60 8bit High Definition Audio
    - 4 - 3840x2160@30Hz 8bit Stereo Audio
    - 5 - 3840x2160@30Hz Deep Color High Definition Audio
    - 6 - 3840x2160@60Hz 4:2:0 Deep Color Stereo Audio
    - 7 - 3840x2160@60 8bit Stereo Audio (default)
    - 8 - 3840x2160@60Hz Deep Color Stereo Audio
    - 9 - 3840x2160@60Hz Deep Color High Definition Audio
    - 10 - 3840x2160@60Hz Deep Color HDR LPCM 6CH
    - 11 - User Defined
- User Defined: Browse saved EDID bin file and upload to predefined list.
    - Set friendly name.
- Export Current EDID: Exports the current EDID selection as bin file.

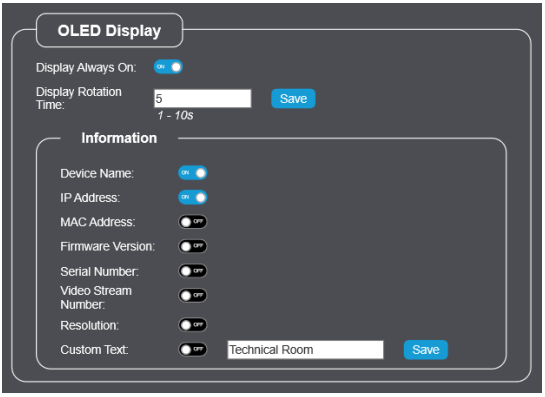
5.2.2 HDCP

- Enable or disable HDMI and USB-C inputs HDCP compatibility. This feature is particularly beneficial for scenarios involving Apple devices, where streaming content over the internet or recording is required

5.3 Device

5.3.1 OLED Display

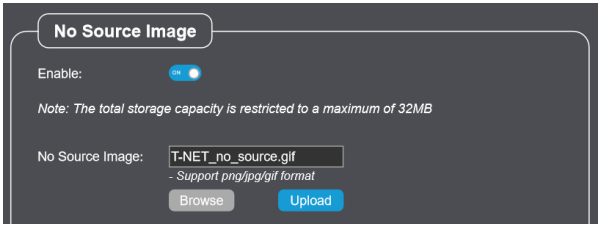
T-NET units feature a 2 line OLED display for easy access to information, installation and troubleshooting.



- Front panel OLED screen display information setting.
- Enable or disable display always on.
    - When off the display will turn on for 30s when ID button is pressed or API command is received.
- Display Rotation Time: Setting the OLED display text line change period.
- Information: Select what information should be displayed.
    - Device Name (default)
    - IP address (default)
    - MAC Address
    - Firmware Version
    - Serial Number
    - Video Stream Number
    - Resolution
    - Custom Text

5.3.2 No Source Image (Coming Soon)

No Source Image will be streamed out whenever encoder can't detect a valid input source. This image can offer valuable troubleshooting insights, guidance on utilizing an application, or serve as straightforward digital signage.



- Supports png/jpg/gif image formats.
- Playlist Mode: When enabled, a number of images can be used in a slideshow fashion with user-defined timings.
- The total storage capacity is restricted to a maximum of 32MB.

5.3.3 File

Manage T-NET firmware and configuration files, as well as perform factory resets and reboot.

- Firmware Update:
  - Browse firmware file on your PC and press "Update".
  - T-NET devices uses one combined file for MCU and AST upgrades. A popup will show after pressing "Update" with MCU and AST upgrade selections. Normally both should be upgraded, but for troubleshooting only one can be upgraded.

- Factory Reset: Resets device but still keeping IP settings.
- Full Factory Reset: resets device including IP settings
- Configuration:
    - Export device settings to a JSON file.
    - Import device settings from a previously saved JSON file.

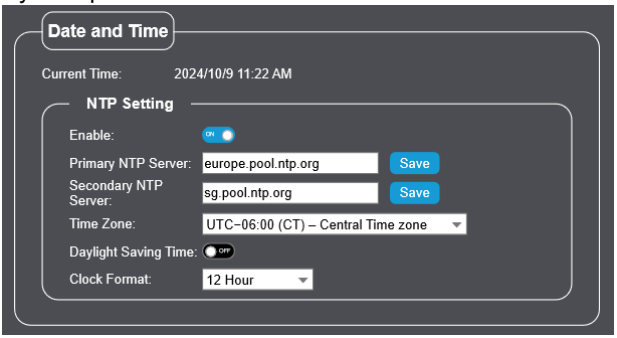
5.3.4 Fan Control

- Fan Control
    - Enable or disable fan.
    - Fan Speed Settings: Auto, Super High, High, Medium, Low, Extra Low.

Note: If the fans are disabled, alternative cooling solutions are essential to ensure optimal performance, longevity and prevent overheating that can cause damage. When reaching critical temperature 50°C/122°F unit will enter standby mode for safety reasons.

5.3.5 Date and Time

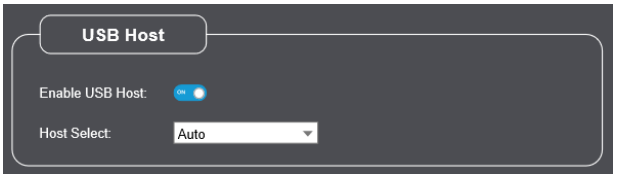
Unit date and time settings, if no NTP is used the unit will show the run time since latest system power on.



- NTP Setting: Supports primary and secondary NTP server configuration.
- Time Zone: Set location time zone.
- Daylight Saving Time: Enable or disable daylight saving.
- Clock format: 12 hours or 24 hours.

5.3.6 USB Host

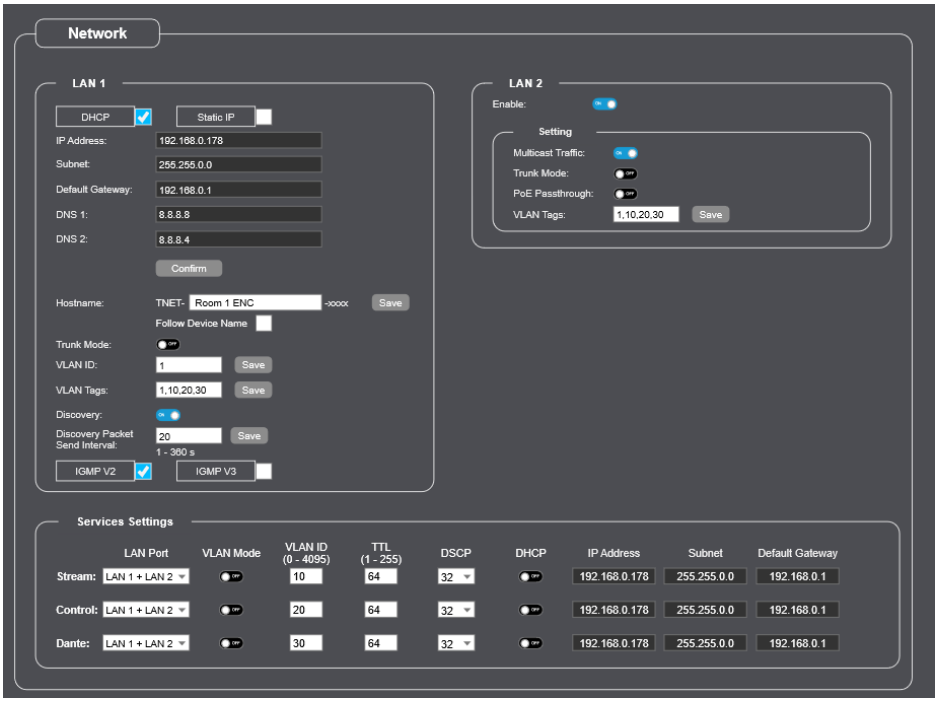
T-NET encoders supports delivering USB data to a USB host device connecting USB devices located on decoders across the network by functioning as a 7-port virtual USB 2.0 hub. Encoders are capable of connecting up to a maximum of 7 USB 2.0 devices from any of the decoders on the network, along with an unlimited number of keyboard and mouse devices.



- Enable or disable encoder USB host functionality. When disabled the USB-C and USB-B ports will not support USB data connectivity.
- Host selection: Auto, USB-C or HDMI

5.4 Network

5.4.1 Network Configuration



- Device network configuration/information LAN1:

  - Network parameters
    - Static or DHCP IP addressing
    - IP Address
    - Subnet Mask
    - DNS 1 and DNS 2
  - Hostname: The unit allows for a customizable hostname for network identification, adhering to DNS naming conventions.
  - VLAN Trunk Mode: (Coming Soon)
  - Discovery: Enable or disable Multicast mDNS discovery
  - Discovery Packet Send Interval: Set the interval for mDNS packets to be sent.
  - IGMP: Unit can be set to use IGMP v2 (default) or IGMP v3.
- LAN 2 Configuration
  - Enable or disable LAN 2 communication.
  - Multicast Traffic: (Coming Soon)
  - VLAN Trunk mode (Coming Soon)
  - POE Passthrough: Enable or disable POE/POE+ passthrough on LAN 2.
  - VLAN ID: (Coming Soon)

Note: POE/POE+ passthrough require LAN1 POE++ powering.

- Services Settings (Coming Soon)

5.4.2 SNMP (Coming Soon)

Coming Soon

5.4.3 MQTT (Coming Soon)

Coming Soon

5.4.4 LLDP (Coming Soon)

Coming Soon

5.4.5 HTTPS (Coming Soon)

Coming Soon

5.5 Security

5.5.1 Security Configuration (Coming Soon)

Coming Soon

5.5.2 802.1x (Coming Soon)

Coming Soon

5.5.3 LDAP (Coming Soon)

Coming Soon

5.5.4 AES256 Encryption (Coming Soon)

Coming Soon

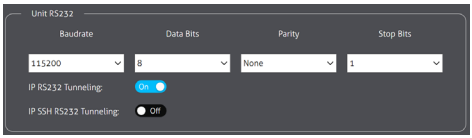
5.5.5 SSH (Coming Soon)

Coming Soon

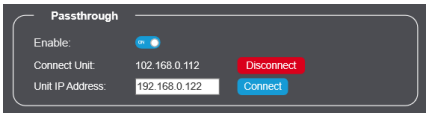
5.6 Control

5.6.1 RS232

T-NET units features a comprehesive RS232 control platform for controlling legacy third-party devices that don't support IP control.

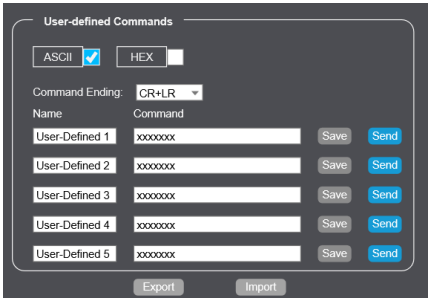


- IP to RS232 Tunneling: Send commands over IP to extract on local RS232 port of a T-NET unit.
    - TCP port 4002.
    - SSH port 4005.
- Unit RS232: Set the unit RS232 parameters utilized in IP to RS232 tunneling.
    - Baud Rate: 2400, 4800, 9600, 19200, 38400, 57600, 115200.
    - Data Bits: 5, 6, 7, 8.
    - Parity: Even, Mark, None, Odd, Space Storing 5 RS232 commands locally in unit.



- Passthrough: Enable or disable bi-directional serial communication between two T-NET units. Enter 2nd unit IP address and press Connect to set up the bi-directional RS232 routing. Press Disconnect to disable the current passthrough routing.
- Enabling passthrough is necessary for the unit to appear in the RS232 routing section of the T-COMM software.

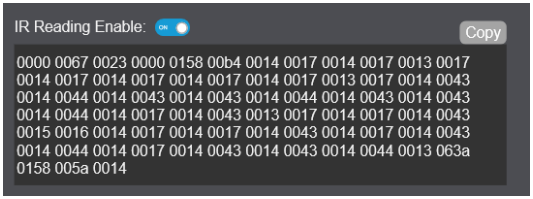
Note: Unit RS232 settings in section 5.6.1 are not applied in passthrough mode.



- User-defined Commands: Stored commands for easy access from WEB UI or API to control third-party device connected to RS232 port.
    - Up to 5 commands to be stored locally in a T-NET unit with custom naming.
    - Commands can be triggered in WEB UI or by API command.
    - Supports export and import of User-defined Commands file for easy commissioning in larger systems or for documentation purposes.

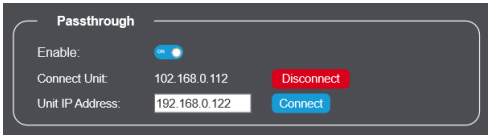
5.6.2 IR

T-NET units provide extensive IR (infrared) capabilities to control legacy third-party devices that do not support serial or IP control.

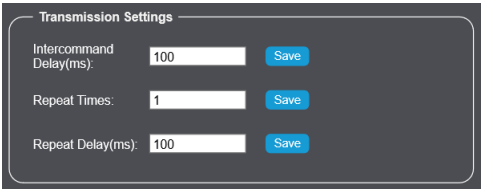


- T-Net units support IR reading from a remote control. To enable IR reading, connect the IR receiver to the IR IN port and direct the remote control towards it. The command will be displayed in the field for convenient copying.

- Up to 40 IR commands can be stored locally in a T-NET unit with custom naming.
  - Commands can be triggered in WEB UI or by API command.
  - Pronto Format
  - Supports export and import of User-defined Commands file for easy commissioning in larger systems.



- Passthrough: Enable or disable uni-directional serial communication between two T-NET units. The unit with IR IN should be connected to the unit with IR OUT by entering IR OUT unit IP address and press connect. Press Disconnect to disable the current passthrough routing.
- Enabling passthrough is necessary for the unit to appear in the IR routing section of the T-COMM software.

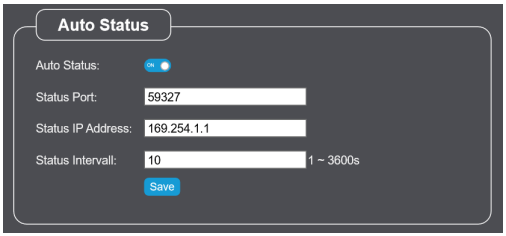


- Transmission configuration:
  - Intercommand Delay: Defines the interval between two successive IR commands that are transmitted.
  - Repeat Times: Specifies how many times a command will be issued for each activation.
  - Repeat Delay: Determines the delay between repeated commands.

- Supports export and import of IR configuration file for easy commissioning in larger systems or for documentation purposes.

5.6.3 Auto Status

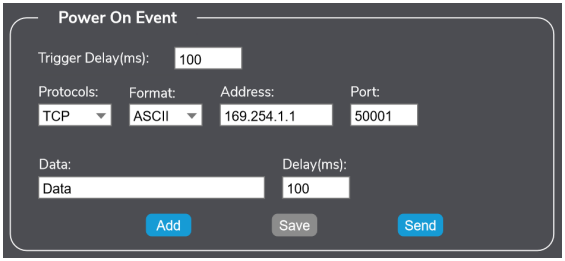
Auto Status employs UDP to transmit device status to a specified IP address, port, and interval. This approach can be advantageous compared to a control system that continuously polls the unit using TCP.



- Send status information to network every time unit status change or at a given time interval.
- User-defined IP Address, UDP port amd status interval.

5.6.4 Trigger Commands

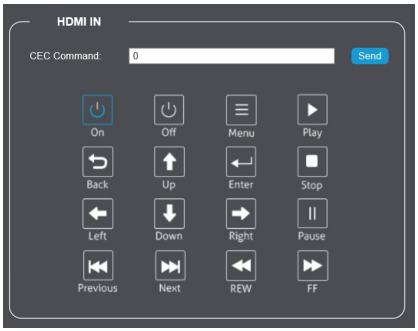
Trigger commands are stored commands that can be triggered based on events in T-NET devices. Commands can be set out using various protocols, TCP, UDP, RS232 and IR to fit any application In more straightforward scenarios, they can also eliminate the necessity for an independent control system by utilizing automation.

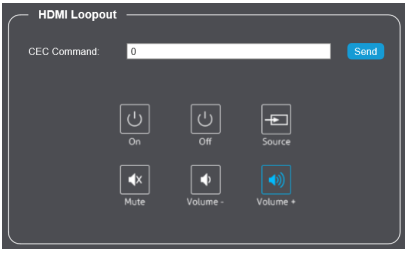


- Unit will send the predefined data to the address when event occurs.
- Event: Power On Event, Video Cable Connected Event, Video Cable Disconnected Event, Custom Event.

5.6.5 CEC

T-NET encoders are equipped with the capability to transmit CEC commands to devices that support CEC via HDMI input and HDMI loop-out. It is important to note that USB-C input does not support CEC functionality. The encoders accommodate both standard predefined commands and custom user-defined CEC commands.

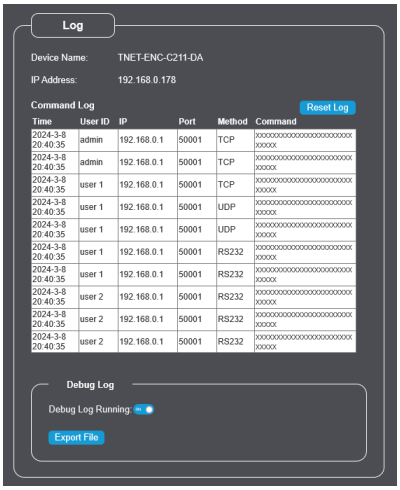




- Send user-defined or preset CEC commands to HDMI IN and HDMI Loop-out.

5.7 Log

Units will maintain a command log that records all commands for reference and troubleshooting purposes. Additionally, they include a Debug Log that is beneficial for more in-depth troubleshooting at the manufacturer, dealer, or distributor level.



- Reset Log: Clears the Command Log.
- Enable Debug Logging: Initiates the debug log to capture events and allows for saving as a file that can be exported using the “Export File” button.

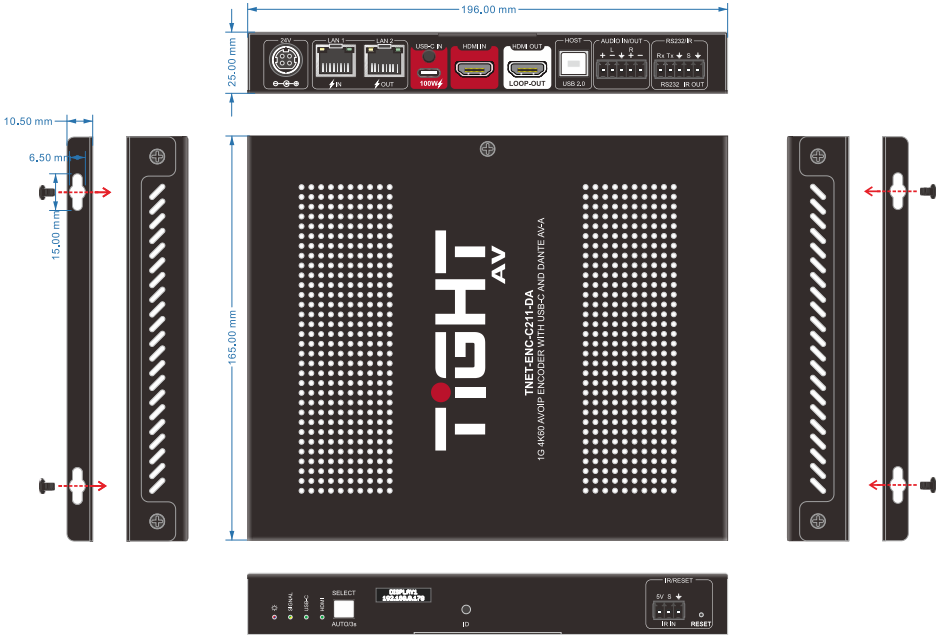
6. API Commands

The T-Network Series offers an open direct control API protocol via TCP, removing the necessity for a central controller. It also includes an SSH control mode to enhance security. For further details, please refer to the separate T-Network API documentation.

7. T-COMM Management Software

T-COMM is an intuitive software solution designed for management and large-scale deployment. For further details, please refer to the dedicated T-COMM manual.

8. Drawings and Dimensions



9. Environment and recycling information

9.1 Disposal of electric and electronic devices EC Directive 2012/19/EU

This product is not to be treated as regular household waste but must be returned to a collection point for recycling electric and electronic devices. Further information is available from your municipality, your municipality's waste disposal services, or the retailer where you purchased your product.

9.2 Packaging recycling information

20 PAP	SCATOLA CORRUGATED PAPER BOX	RACCOLTA CARTA MIXED PAPER AND CARD
22 PAP	PIATTINA ANIMATA CABLE TIE	RACCOLTA CARTA MIXED PAPER AND CARD

Verifica le disposizioni del tuo comune
Check the regulations of your municipality

Note: This manual is recycled as paper (mixed paper and card).