

EL-IPD-MTX-8CH

Multi Zone Audio Matrix

Quick Start Guide

IMPORTANT SAFETY INSTRUCTIONS:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. The power supply cord (sometimes referred to as the "Mains Plug") is used as the disconnect device and shall remain accessible and operable at all times.



18. Do not expose batteries to excessive heat such as sunshine, fire or the like.
19. Open flame sources, such as lighted candles, should NOT be placed on the apparatus.
20. Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

FCC REQUIRED TEXT:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC AND IC INFORMATION:

This Class B digital apparatus complies with Part 15 of the FCC rules and with Canadian ICES-003.

OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

1. This device may not cause interference and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

OVERVIEW

The EL-IPD-MTX-8CH Multi Zone Audio Matrix can be used in a stand-alone configuration or with other amplifiers and pre-amps within the ELAN IP audio distribution family of products by adding the optional Dante™ Audio Networking Card.

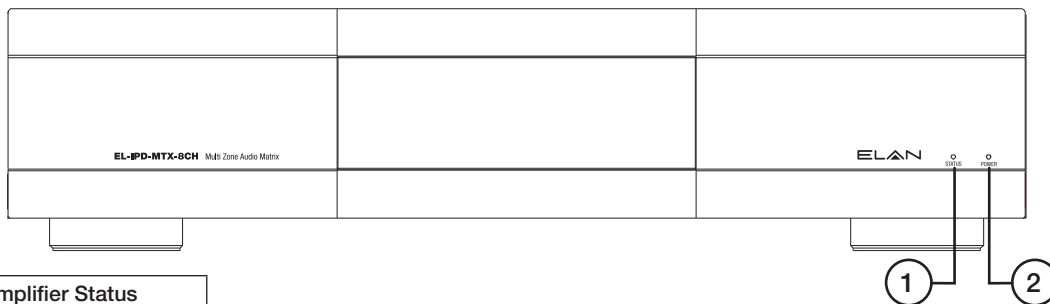
ELAN IP enabled audio distribution simplifies whole house audio distribution and enhances the intelligent home by delivering high quality audio over the existing network. Easily scaling from a single chassis solution to a decentralized multi-chassis / multi-source implementation, ELAN IP audio distribution meets the needs for projects of any size.

WHAT'S INCLUDED

- EL-IPD-MTX-8CH Multi Zone Audio Matrix
- Rack Mount Hardware and Ears
- Quick Start Guide
- Power Cord, UK
- Power Cord, EU
- Power Cord AU/NZ
- Power Cord, USA/Canada

FUNCTIONS AND INDICATORS

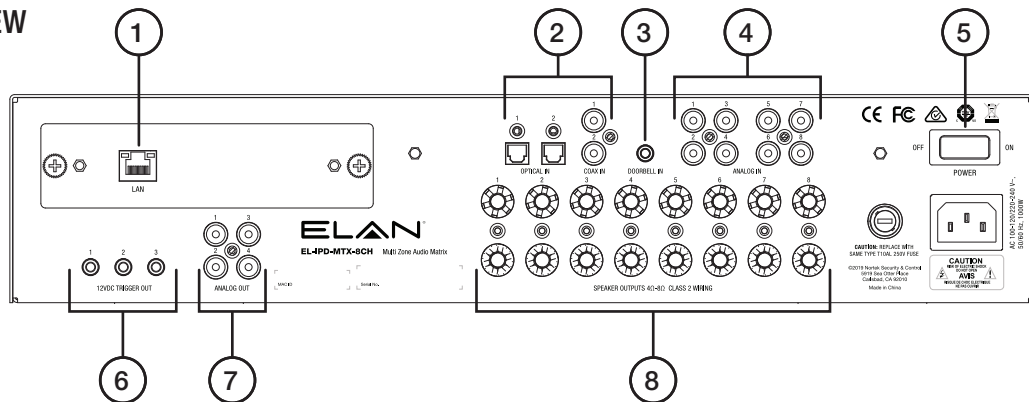
FRONT VIEW



1	Amplifier Status
2	Power

Condition	Amplifier Status	Power/Network Status
Power On, Booting	Off	Flashing Blue
Power On, Connected to Network	Off	Solid Blue
Self-Check Failure	Off	Flashing Red
Boot Failure	Solid Red	Solid Red
No Network Found	Off	Solid Amber
Power Off	Off	Off
Chassis in Low Power Mode	Solid Blue	Solid Blue
Chassis in Sleep Mode	Off	Solid Red
Amplifier or Preamp Channel Clipping	Solid Amber	Solid Blue
Amplifier Channel in Protection Mode	Solid Red	Solid Blue
Chassis Identify Mode	Flashing Amber	Flashing Blue

REAR VIEW

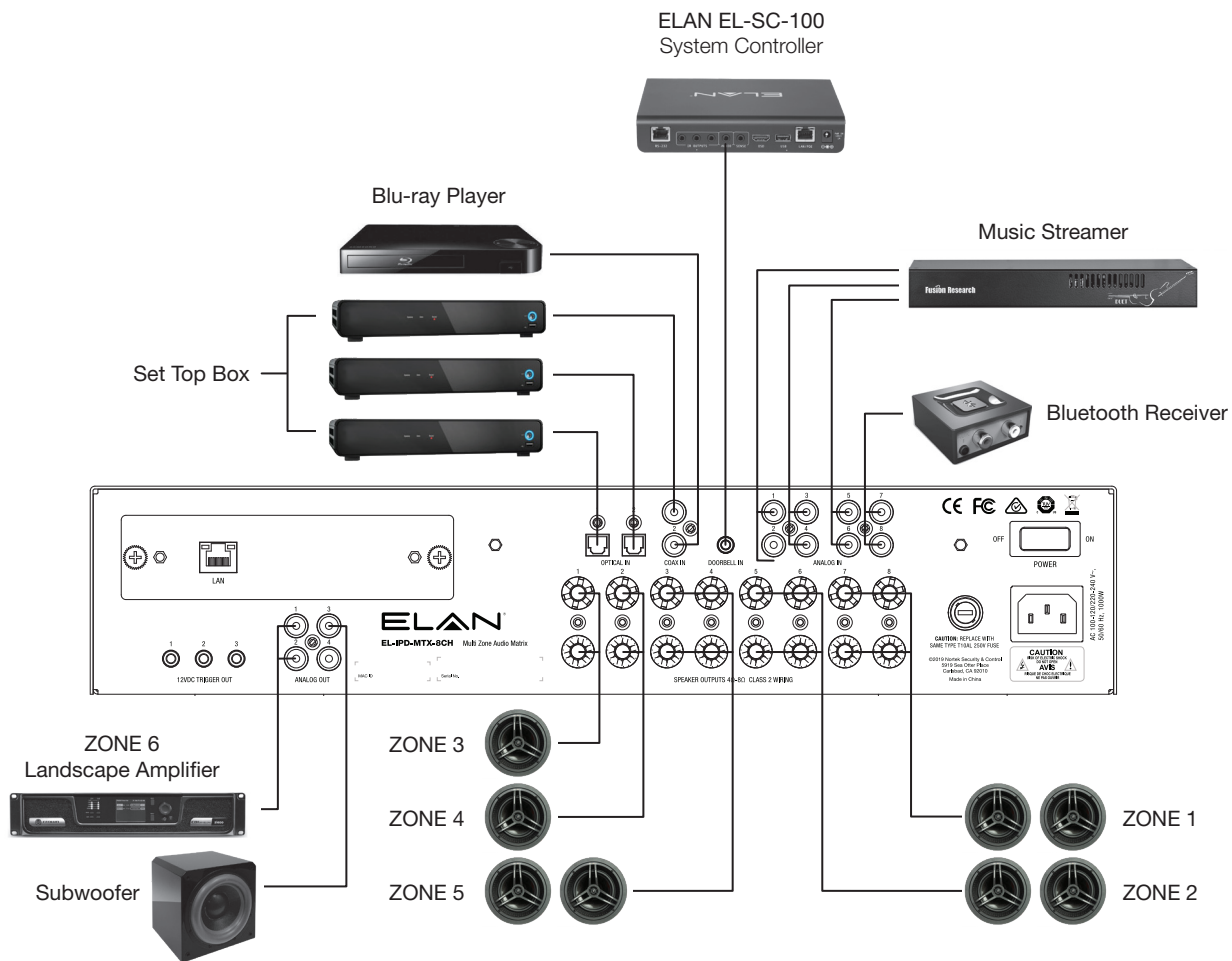


	Item	Description
1	Network <ul style="list-style-type: none"> 1 RJ45 Jack 	100/1000 Ethernet DHCP Enabled by Default
2	Digital Audio Inputs <ul style="list-style-type: none"> 2 Optical TOSLINK Inputs 2 Coaxial RCA Inputs 	Stereo, PCM, 96kHz, 24-bit
3	Doorbell Audio Input <ul style="list-style-type: none"> 3.5mm Stereo Input 	Maximum input level: 2.0 VRMS Input sensitivity: 0dbV (1.0 VRMS) Input impedance 47k Ω to 49k Ω
4	Line Level Audio Inputs <ul style="list-style-type: none"> 4 Stereo / 8 Mono Analog RCA Inputs Configurable to Left, Right, or Mono 	Max input level 2.0 VRMS Input Sensitivity: 0dbV (1.0 VRMS) Input Impedance: 47k Ω -49k Ω
5	Power	AC 100-120 / 220-240 V~ 50/60Hz, 1000W
6	Trigger Outputs <ul style="list-style-type: none"> 3.5mm Mono 	Zone Trigger / System Trigger Outputs Pinout: Tip = signal, Sleeve = ground Output: +12Vdc, 100mA current limit
7	Line Level Audio Outputs <ul style="list-style-type: none"> 2 Stereo / 4 Mono Analog RCA Pre-amp Outputs Configurable to Left, Right, Mono, or Sub-woofer 	Fixed or variable line level output Fixed: 0 dB nominal gain Variable: -50 to +0dB at 0.5dB per step Unbalanced Output impedance: 470 Ω
8	Amplifier Output <ul style="list-style-type: none"> 4 Stereo / 8 Mono Amplified Outputs Configurable to Left, Right, or Mono 	Output Power: 80W at 8 Ω 100W at 4 Ω THD: < 0.05% @ 1kHz Frequency Response: 20Hz to 20kHz, +.5dB/- .5dB Crosstalk: >60dB @ 1kHz/1W Signal to Noise: >100dB
	Lip Sync Delay <ul style="list-style-type: none"> Individual Lip Sync Delay for Each Zone 	Delay Time: 0 - 400ms Adjustable: 10ms increments
	Tone Control <ul style="list-style-type: none"> Individual Tone Control for Each Speaker and Preamp Zone 	Five-band equalizer Loudness on/off High/Low pass Adjustable Crossover Points
	Temperature	Operating Temperature: +5° C – +45° C (+41°F - +113°F) Operating Humidity: 0 – 90% non-condensing Storage Temperature: 0° C – +60° C (32°F - +140°F)
	Dimensions	17D X 17W X 4H in. / 431.8D X 431.8W X 101.6H mm (with feet) 17D X 17W X 3.5 in. / 431.8D X 431.8W X 88.9H mm (without feet)
	Weight	21.9 lbs / 9.93 Kg

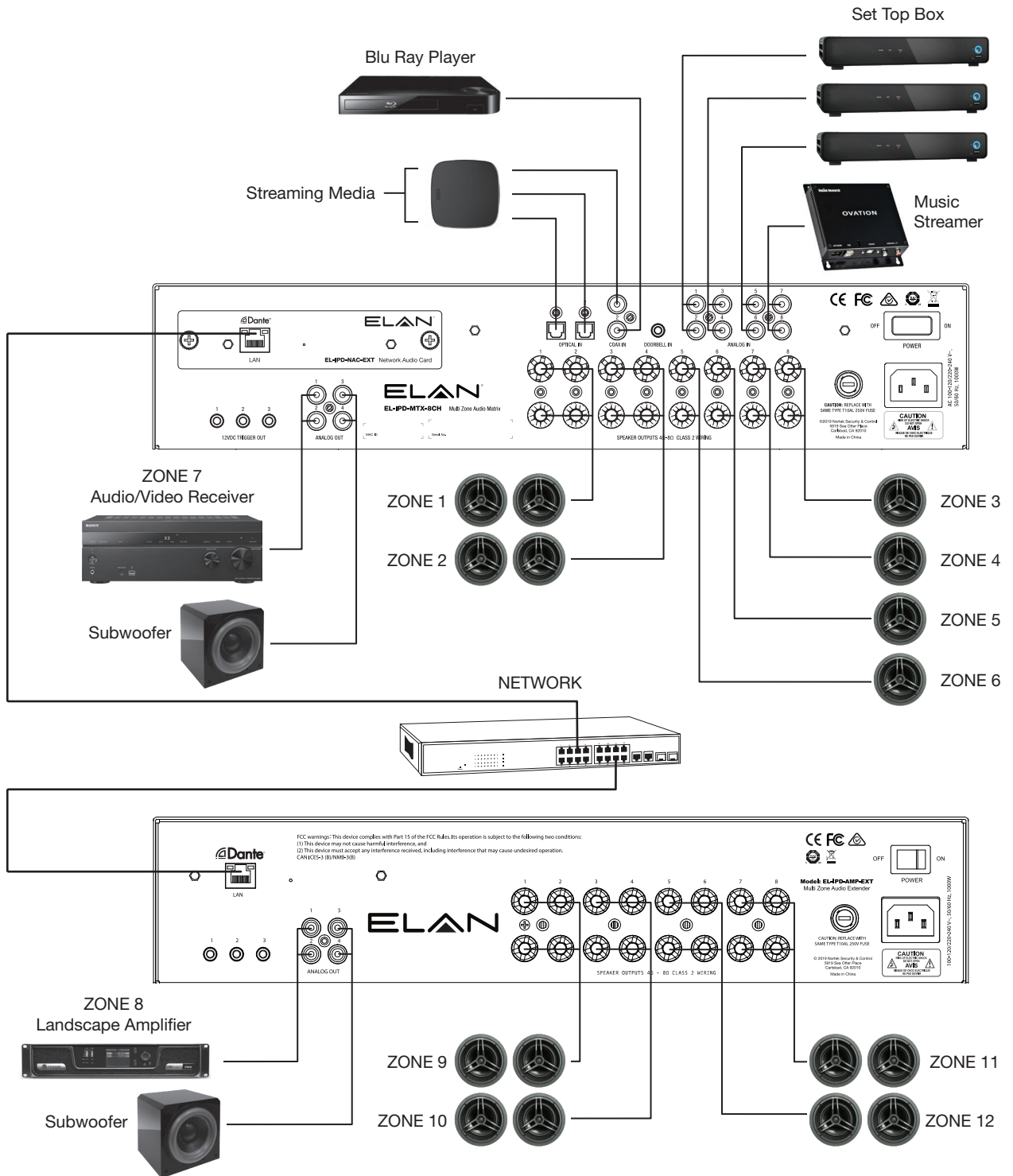
APPLICATIONS

The following applications are examples of how the EL-IPD-MTX-8CH Multi Zone Audio Matrix can be used. For more detailed system design guidelines, see the ELAN IP Amplifier Design Guide from www.elanhomesystems.com.

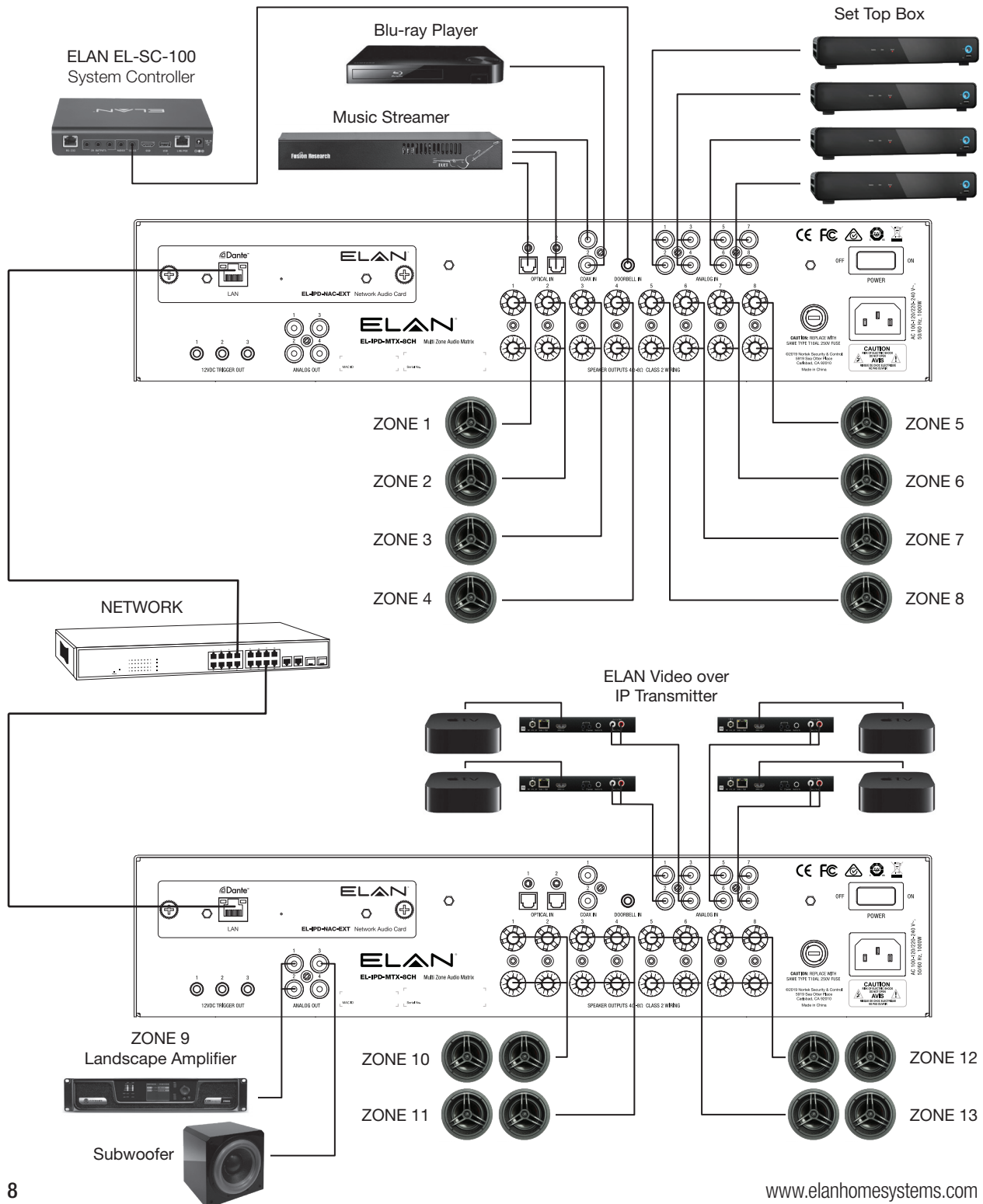
The EL-IPD-8CH-MTX can be used in stand alone mode to support up to 13 input sources (4 digital, 8 mono / 4 stereo analog RCA and 1 stereo 3.5mm typically used as the doorbell input from an ELAN System Controller). Each RCA analog input can be configured with another as a L/R pair or individually as mono. 8 speaker channels are available (up to 4 stereo zones or 8 mono zones). 4 line level outputs can be configured as 4 mono or 2 stereo output zones or as sub-woofer out. Each can be configured as left, right, mono, or sub out.



Adding the EL-IPD-NAC-EXT -Network Audio Card gives the ability to combine multiple chassis in to one system. Combine the EL-IPD-MTX-8CH Multi Zone Audio Matrix with the EL-IPD-AMP-EXT Multi Zone Audio Extender to add up to 8 more zones of audio. Using Dante™ Audio Networking, the two chassis can be linked using standard networking equipment.

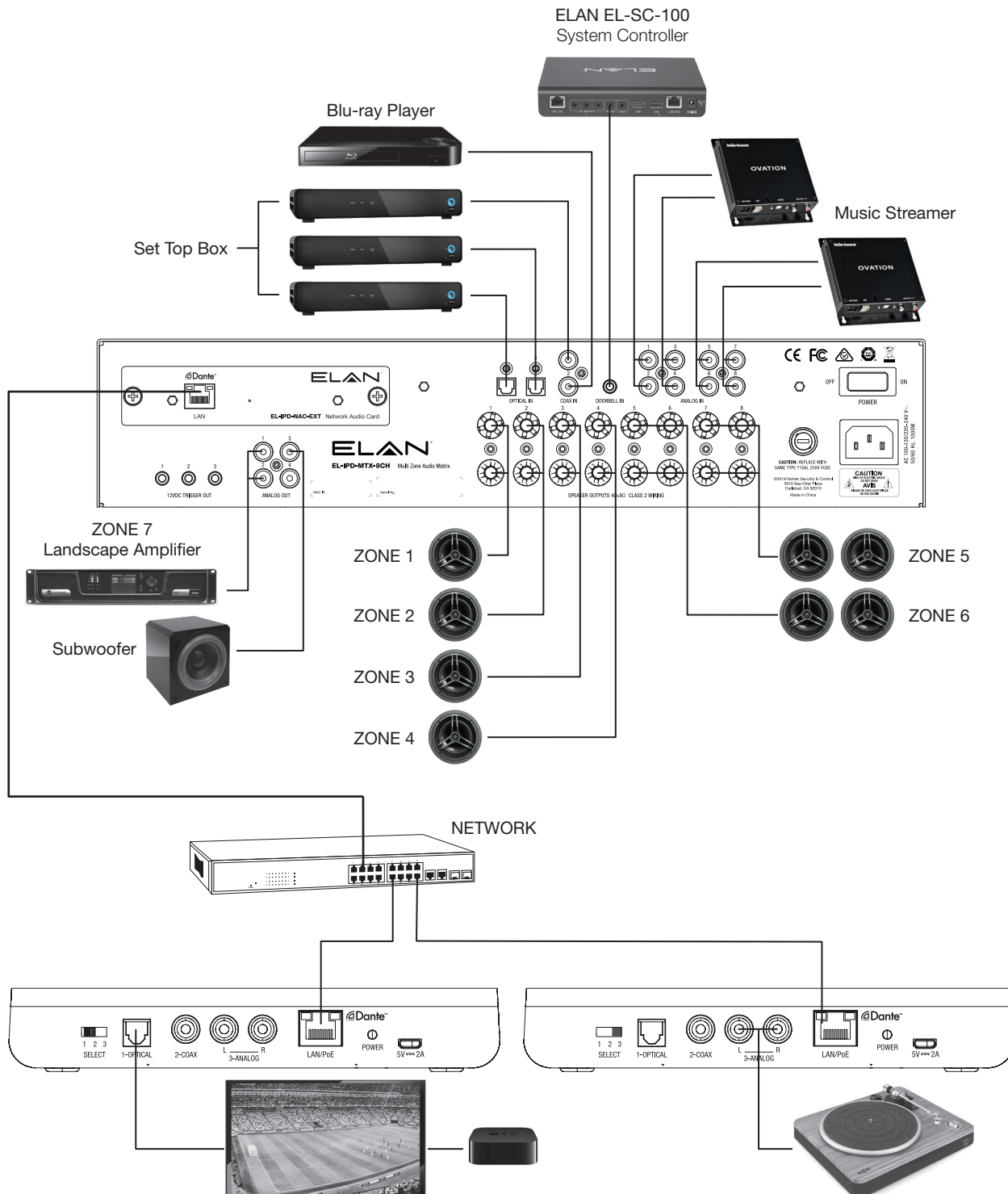


If more zones AND sources are needed beyond the capability of a single EL-IPD-MTX-8CH Multi Zone Audio Matrix, a second can be added to double the number of inputs and zones. By adding the EL-IPD-NAC-EXT - Network Audio Card to both EL-IPD-MTX-8CH Multi Zone Audio Matrix chassis, they can be connected to add up to 12 more zones and 12 inputs. Using Dante™ Audio Networking, the two chassis can be linked using standard networking equipment. All sources and zones are shared as one system.



[illegible]

If remote sources are needed such as a TV's audio output, the EL-IPD-PRE-SSI Local Audio Source input device can be used to send audio over the network to the EL-IPD-MTX-8CH Multi Zone Audio Matrix. Using Dante™ Audio Networking, the two devices can be linked using standard networking equipment. The EL-IPD-PRE-SSI is an additional source added to the direct input sources on the EL-IPD-MTX-8CH.



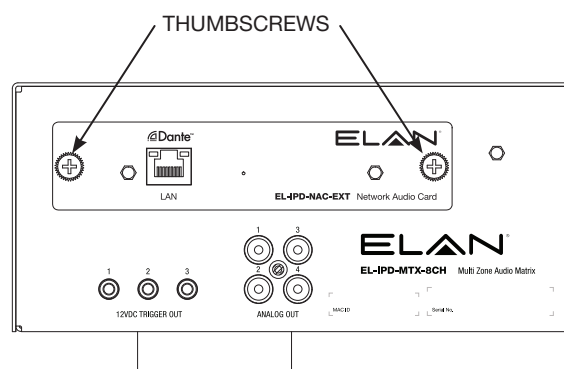
INSTALLATION

Mount the EL-IPD-MTX-8CH Multi Zone Audio Matrix in a cabinet by setting it on a sturdy shelf. As with any electronic device, the EL-IPD-MTX-8CH generates heat at all times, but considerably more when all zones are playing. Ensure clear positive airflow within the cabinet by using fans. Locating the EL-IPD-MTX-8CH in a completely enclosed cabinet is not recommended due to heat build up.

Use the included rack mount ears and hardware to mount into a standard equipment rack. Use only the included screws to attach the ears to the EL-IPD-MTX-8CH. Ensure adequate ventilation for the EL-IPD-MTX-8CH by leaving at least one blank rack space empty above and below. If the rack is completely closed, use positive ventilation to dissipate heat build up.

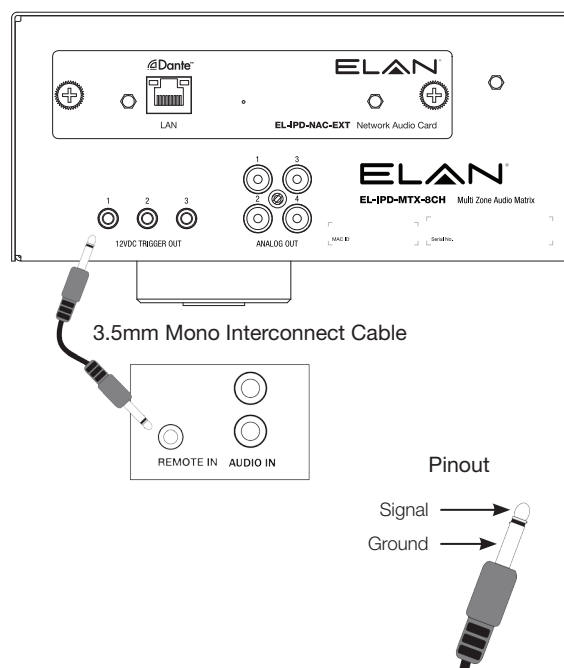
ADDING THE NETWORK AUDIO CARD

If you are linking other ELAN Dante™ devices with the EL-IPD-MTX-8CH Multi Zone Audio Matrix, you will need to add the EL-IPD-NAC-EXT Dante™ Network Audio Card. Loosen the two thumbscrews on the standard LAN card and remove the card. Slide the EL-IPD-NAC-EXT Dante™ Network Audio Card into the rails on the chassis, press firmly and tighten the two thumbscrews.



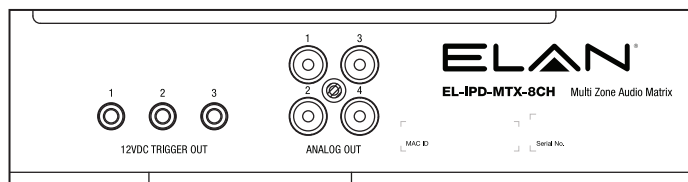
TRIGGER OUTPUT CONNECTIONS

There are 3 trigger outputs available on the EL-IPD-MTX-8CH Multi Zone Audio Matrix. The trigger outputs can be configured using the event mapper. For more information see the integration note. Use 3.5mm mono interconnect cables to connect the EL-IPD-MTX-8CH Multi Zone Audio Matrix trigger outputs to the device that needs to be turned on.



LINE LEVEL AUDIO OUTPUTS

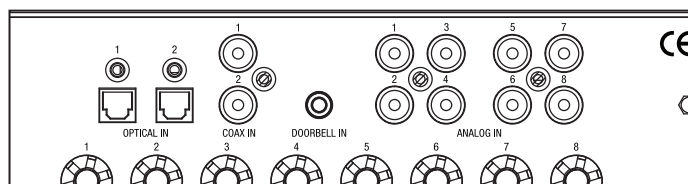
There are four line level audio outputs that can be configured as left, right, mono, or subwoofer out. Each output or combination of outputs can be configured as separate zones. Each zone can have a lip sync delay applied of up to 400ms with intervals of 10ms.



AUDIO INPUTS

There are 2 optical and 2 coax stereo, 2 channel PCM digital inputs, and 8 line level analog audio inputs available that can be configured as left, right, or mono. The line level analog audio inputs can be configured in pairs or independently as sources available to any zone. The digital inputs are independent of the line level analog audio inputs and are available as sources to any zone.

The doorbell input is used to route audio from the ELAN control system - including paging via the ELAN user interfaces and audio from video doorbells.

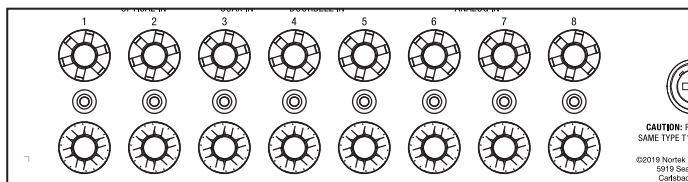


SPEAKER OUTPUTS

CAUTION! ALL SPEAKER WIRE CONNECTIONS MUST BE MADE WITH THE CHASSIS POWER OFF

There are eight sets of speaker wire terminals. Each set can be configured as an individual zone or can sets be grouped together as a zone. Each zone can have a lip sync delay applied of up to 400ms with intervals of 10ms. Each speaker output can be configured as left, right, or mono. Multiple speakers can be connected to each set of terminals. When connecting more than one speaker to a set of terminals, be sure to calculate the impedance values and not exceed the rating for the amplifier.

When wiring speakers in parallel, do not use more than two speakers per speaker wire terminal.

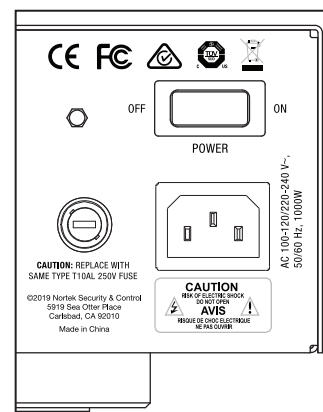


POWERING THE SYSTEM

Plug in the EL-IPD-MTX-8CH Multi Zone Audio using the correct power cord for your region and engage the Main Power switch on the rear.

CONFIGURATION

For detailed configuration information, download the ELAN integration note and ELAN IP Amplifier Design Guide from www.elanhomesystems.com.



NETWORK SETUP FAQ'S FOR DANTE™

What type of Ethernet cable is recommended for Dante™?

Cat5e or Cat6 cable is recommended. For purely 100Mbps networks, CAT5 may be used.

Does Dante™ work with Fiber Optic network cable?

Yes. Because Dante™ works with standards based networking technology, using fiber is simple. Use a switch that supports fiber connections to send Dante™ data over a fiber optic cable.

Can Dante™ operate over a Wi-Fi network?

No. While possible in principle, the practical limitations of current wireless technology (802.11a/b/g/n).

Does Dante™ require any special network infrastructure?

No, special network infrastructure is not required. Since Dante™ is based upon universally accepted networking standards, Dante™-enabled devices can be connected using off-the-shelf Ethernet switches and cabling.

Does Dante™ require a dedicated network infrastructure?

No, a dedicated network infrastructure is not required. Dante™-enabled devices can happily coexist with other equipment making use of the network.

Does Dante™ require special switches?

No. But we strongly recommend that Gigabit switches be used due to the clear advantages in performance and scalability. If using a 100Mbps, see the design guide and ELAN integration note.

TROUBLESHOOTING

The two LEDs on the front face of the unit provide information regarding the status of the L-IPD-MTX-8CH Multi Zone Audio Matrix

POWER INDICATOR

Condition	Amplifier Status	Power/Network Status
Power On, Booting	Off	Flashing Blue
Power On, Connected to Network	Off	Solid Blue
Self-Check Failure	Off	Flashing Red
Boot Failure	Solid Red	Solid Red
No Network Found	Off	Solid Amber
Power Off	Off	Off
Chassis in Low Power Mode	Solid Blue	Solid Blue
Chassis in Sleep Mode	Off	Solid Red
Amplifier or Preamplifier Channel Clipping	Solid Amber	Solid Blue
Amplifier Channel in Protection Mode	Solid Red	Solid Blue
Chassis Identify Mode	Flashing Amber	Flashing Blue

NOTES

LIMITED WARRANTY

Nortek Security & Control ('NSC') warrants the EL-IPD-MTX-8CH to be free from defects in materials and workmanship for the period of two years (2 years) from the date of purchase. If within the applicable warranty period above purchaser discovers that such item was not as warranted above and promptly notifies 'NSC' in writing, 'NSC' shall repair or replace the item at the company's option. This warranty shall not apply (a) to equipment not manufactured by 'NSC', (b) to equipment which shall have been installed by other than an 'NSC' authorized installer, (c) to installed equipment which is not installed to 'NSC's' specifications, (d) to equipment which shall have been repaired or altered by others than 'NSC', (e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond 'NSC's' control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or other catastrophic events beyond

'NSC's' control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by 'NSC', the warranty obligations of 'NSC' shall in all respects conform to the warranty actually extended to 'NSC' by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation or other expenses which may be incurred in connection with repair or replacement. Except as may be expressly provided and authorized in writing by 'NSC', 'NSC' shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by 'NSC' or services rendered by 'NSC'.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

ATTENTION: TO OUR VALUED CUSTOMERS

To ensure that customers obtain quality pre-sale and after-sale support and service, Nortek Security & Control products are sold exclusively through authorized dealers. Nortek Security & Control products are not sold online.

The warranties on Nortek Security & Control products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your Nortek Security & Control reseller is authorized, please call Nortek Security & Control at 800-622-3526.



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