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# MIDAS PRO SERIES NEUTRON High Performance Audio System for Pro X Digital Consoles User Guide

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## Quick Start Guide



### PRO SERIES NEUTRON V 1.0

High Performance Audio System Engine with 192 Bidirectional Channels and 96 kHz Sample Rate

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## Important Safety Instructions





Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



**Caution**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.



**Caution**

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.



**Caution**


These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

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 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 are 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. Use only attachments/accessories specified by the manufacturer. injury from tip-over.



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
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. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



17.  Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.
18. Do not install in a confined space, such as a book case or similar unit.
19. Do not place naked flame sources, such as lighted candles, on the apparatus.

20. Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.
21. This apparatus may be used in tropical and moderate climates up to 45°C.

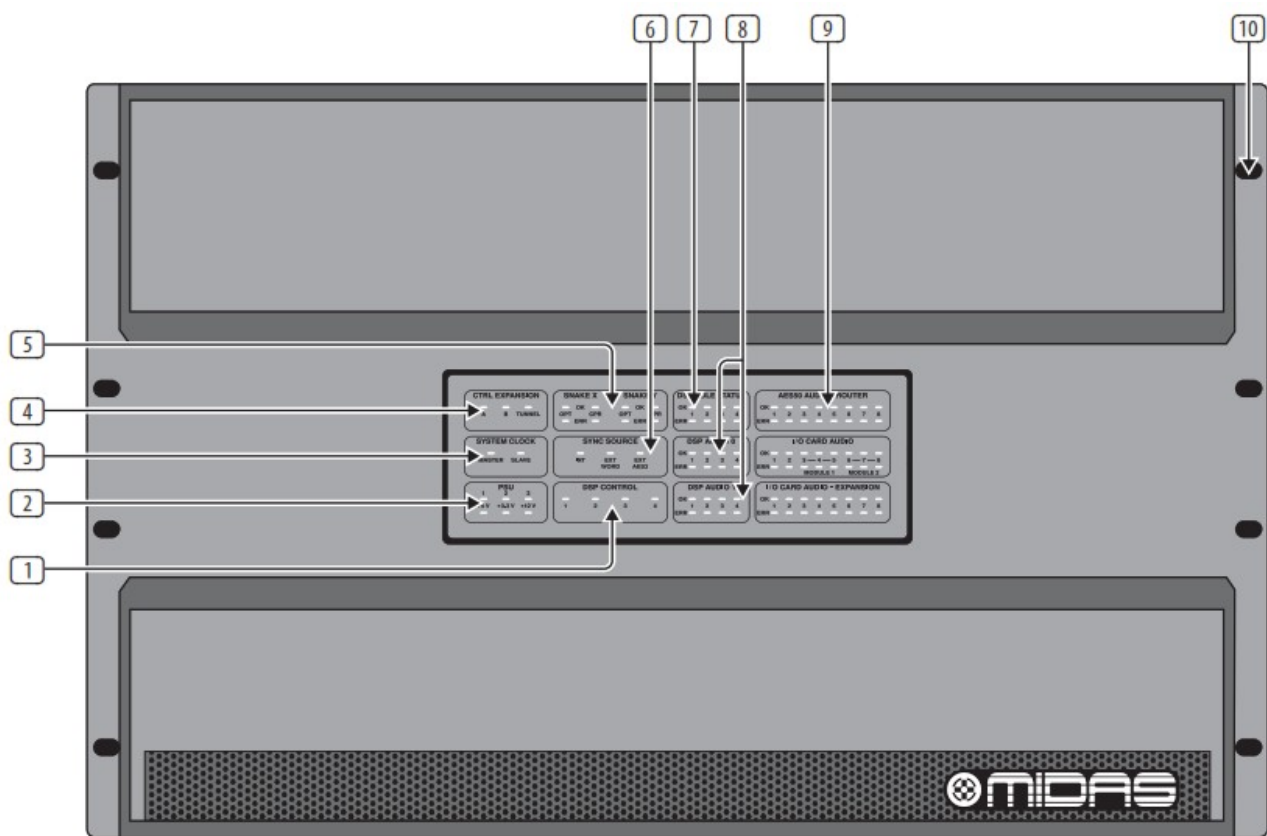
## LEGAL DISCLAIMER

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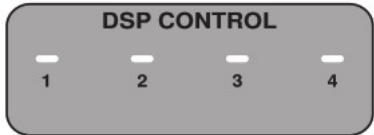
## LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at [musictribe.com/warranty](https://musictribe.com/warranty).

## Front Panel



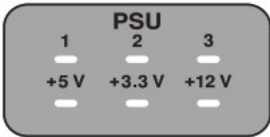
1. The DSP CONTROL panel shows the Ethernet control activity and link status of each fitted module.



• LED constantly illuminated = linked

- LED flashing = data activity (communication is good)
- LED extinguished = bad/ no module fitted.

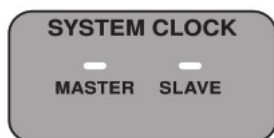
2. The PSU panel shows the status of the three supply units and the three voltage rails.



Each of the three LEDs in the top row represents a PSU. They illuminate when their respective PSU is supplying power to the unit after it has been switched on via the **D.C. POWER ON** switch. During operation, at least two of the PSUs must be supplying power to the unit.

The bottom row of LEDs represent the three voltage rails (+5 V, +3.3 V and +12 V), which are common to each PSU. Each LED illuminates when its rail is live. When the unit is powered, all three LEDs should be illuminated; if not, see 'Voltage rail failure' on page 13.

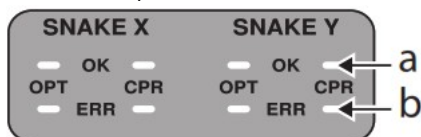
3. The **SYSTEM CLOCK** panel shows whether the router is the source of the system clock (MAST) or if the source is external (SLVE).



4. The CTRL EXPANSION panel shows the status of the external Ethernet connectors on the rear panel.

- Off = not connected
- On = connected
- Flashing = active.

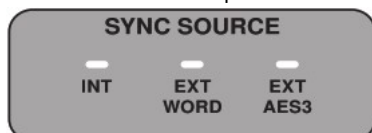
5. The **SNAKE** panel shows the communication status of the copper/optical cabling for both the X and Y networks.



a. The **OK** LED (green) pulsates when the link is synchronised between the router and end point. A solid green LED indicates a connection is present but not active.

b. The **error** LED (red) illuminates when there are no communications or a fault is detected.

6. The SYNC SOURCE panel shows the clock source.



- INT (internal) — clock is sourced internally to the router

- EXT (external) WORD — clock is sourced from the word clock connector on the rear panel of the router at 96 kHz
- EXT (external) AES3 — clock is sourced from the AES3 connectors on the rear panel of the router at 96 kHz.

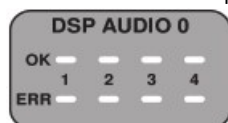
7. The **DSP ROLE STATUS** panel has four sets of LEDs, one per module, for monitoring their module's communication status. Each set comprises a green OK LED and a red ERR LED, which indicate the following:



a. Green OK LED constantly on = module is receiving control updates from the control centre.

b. Red ERR (error) LED constantly on = role is muted/error condition. (The ERR LEDs will illuminate briefly as the role starts.)

8. The two DSP AUDIO panels (link 0 and link 1) show the status of the high speed audio interconnect bus for each module.



- Green OK LED illuminated = communication is good

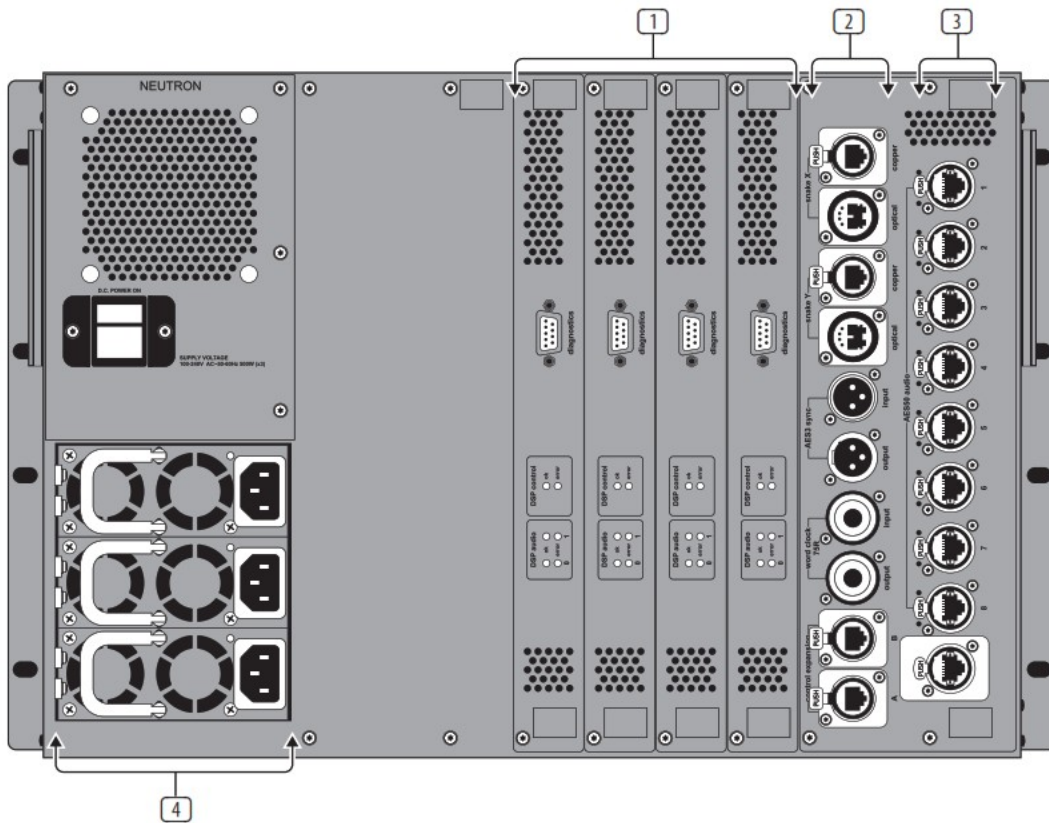
- Green OK LED extinguished = bad/no module fitted
- Red ERR (error) LED illuminated = communication error.

9. The internal and external AES50 audio panels show the communication status of the AES50 audio connections of all modules.

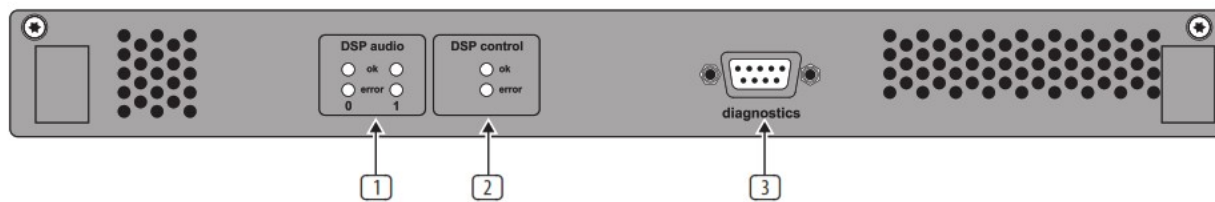
- Green OK LED pulsating = communication is good
- Green OK LED off = bad/no module fitted
- Red ERR (error) LED illuminated = communication error.

10. Cut-outs for rack mounting fixings.

## Rear Panel



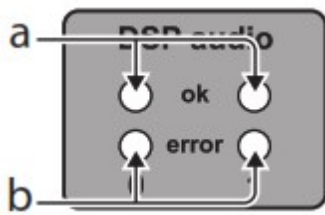
- (1) DSP modules.  
 (2) Connector panel.  
 (3) Router panel.  
 (4) Mains input.



## DSP modules

Four module slots in the rear panel each accept a NEUTRON module.

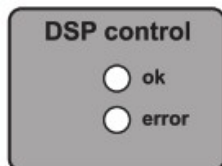
1. DSP audio sections have the same functionality as the DSP audio rings panel on front of the unit.



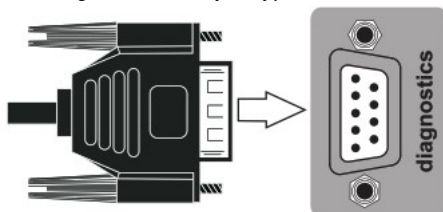
a. Link ok LED (green) illuminates to show that the link is active (link is good).

b. Link error LED (red) illuminates to show that the link has failed.

2. The DSP control section has the same functionality as the DSP control panel on the front of the unit.

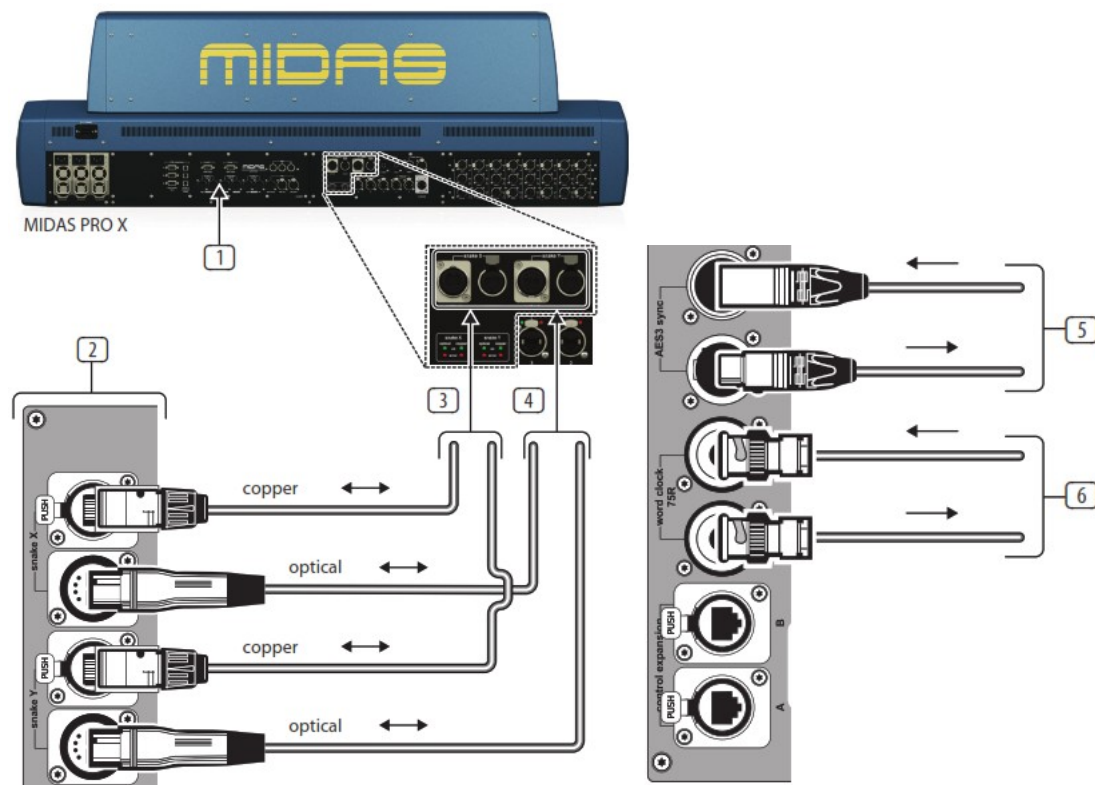


3. The diagnostics 9-way D-type connector socket (female) is for use by service personnel only.



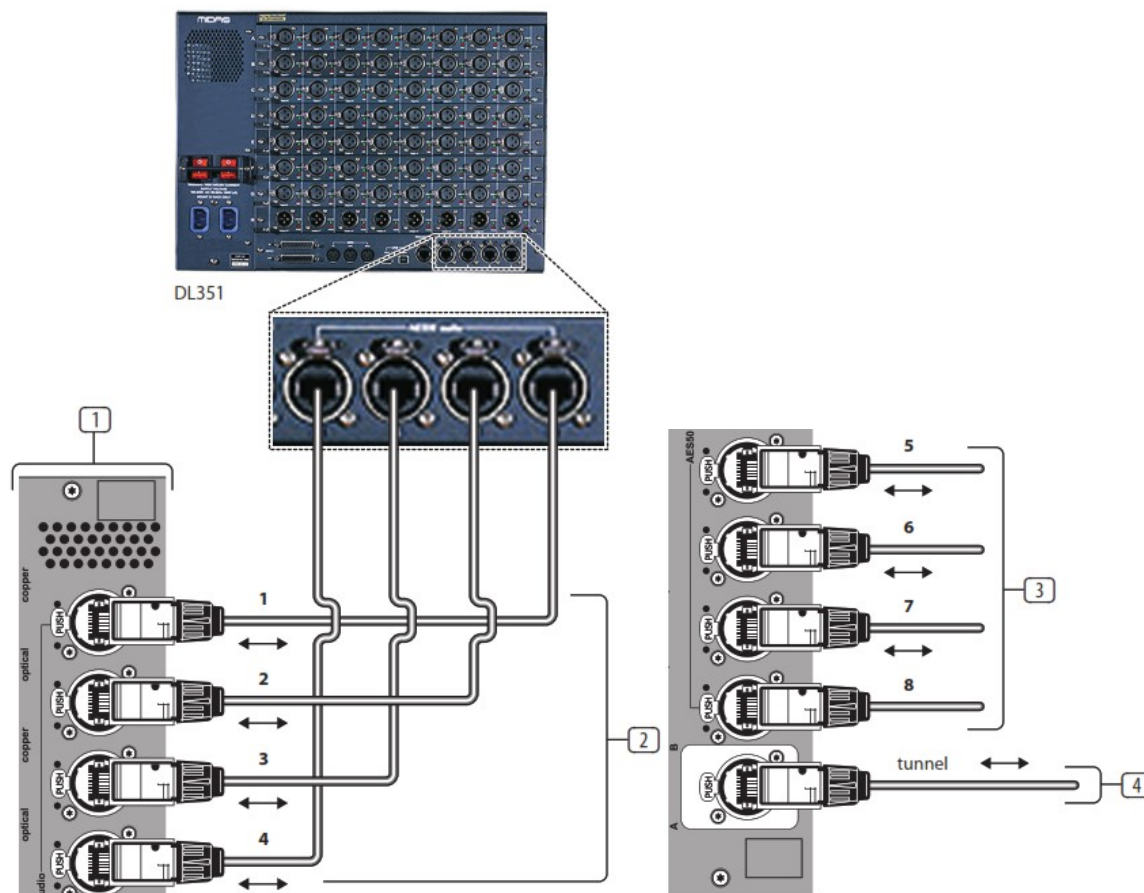


## Connector Panel



1. Console (for example, a MIDAS PRO X).
2. NEUTRON connector panel.
3. Neutrik etherCON connections for connecting the X and Y copper snakes to the console.
4. Neutrik opticalCON connections for connecting the X and Y optical (fibre optic) snakes to the console.
5. AES synchronisation input and output connections.
6. Word clock 75 R input and output BNC connections for synchronisation with routers.

## Router Panel



1. NEUTRON router panel.
2. Neutrik etherCON connections for connecting AES50 audio connectors 1 to 4 to the NEUTRON DSP Engine.
3. Connection to Neutrik etherCON connectors 5 to 8 is optional.
4. For connecting 'tunnelling' Ethernet.

## Specifications

### General specifications

Dimensions	7 U high 425 mm deep
Net weight	25.5 kg
Shipping weight	approx. 30kg
AC requirements	100 V to 240 V 50 Hz to 60 Hz

### Power consumption at 115 V:

2 PSUs	1.10 A, 126.5 W
3 PSUs	1.15 A, 132.25 W

### Power consumption at 230 V:

2 PSUs	0.54 A, 124.2 W
3 PSUs	0.69 A, 158.7 W
Operating temperature range	+5°C to +40°C
Storage temperature range	-20°C to +60°C

### Inputs and outputs

#### System inputs and outputs

System connector	8 x AES50 (24 channels of bi-directional digital audio) on etherCON XLR
Snake connector (copper)	HyperMac (192 channels of bi-directional digital audio) on etherCON XLR
Duplicate snake connector (copper)	HyperMac (192 channels of bi-directional digital audio) on etherCON XLR
Snake connector (fibre)	HyperMac (192 channels of bi-directional digital audio) on opticalCON XLR
Duplicate snake connector (fibre)	HyperMac (192 channels of bi-directional digital audio) on opticalCON XLR

### Miscellaneous inputs and outputs

Word clock IN connector	BNC
Word clock OUT connector	BNC
AES3 Sync IN connector	3-pin XLR
AES3 Sync OUT connector	3-pin XLR
Ethernet Tunnel	etherCON XLR
Control Expansion	2 x etherCON XLR

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## Other important information

### Important information

1. **Register online.** Please register your new Music Tribe equipment right after you purchase it by visiting [musictribe.com](http://musictribe.com). Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.
2. **Malfunction.** Should your Music Tribe Authorized Reseller not be located in your vicinity, you may contact the Music Tribe Authorized Fulfiller for your country listed under "Support" at [musictribe.com](http://musictribe.com). Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at [musictribe.com](http://musictribe.com). Alternatively, please submit an online warranty claim at [musictribe.com](http://musictribe.com) BEFORE returning the product.

3. **Power Connections.** Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

## FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION

### Midas PRO SERIES NEUTRON

**Responsible Party Name:** Music Tribe Commercial NV Inc.  
**Address:** 5270 Procyon Street, Las Vegas NV 89118, United States  
**Phone Number:** +1 702 800 8290

### PRO SERIES NEUTRON

This equipment 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- 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.

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.

#### Important information:

Changes or modifications to the equipment not expressly approved by Music Tribe can void the user's authority to use the equipment.



Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/ EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC.


Full text of EU DoC is available at <https://community.musictribe.com/>

EU Representative: Music Tribe Brands DK A/S

Address: Ib Spang Olsens Gade 17, DK – 8200 Aarhus N, Denmark



## Documents / Resources



PRO SERIES NEUTRON  
High Performance Audio System for Pro X Digital Consoles

**MIDAS PRO SERIES NEUTRON High Performance Audio System for Pro X Digital Consoles** [pdf] User Guide  
PRO SERIES NEUTRON, High Performance Audio System for Pro X Digital Consoles, PRO SERIES NEUTRON High Performance Audio System for Pro X Digital Consoles

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