



## ID48 – Installation Matrix Signal Processor

### User Manual

Revision 1.2.1



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## EU DECLARATION OF CONFORMITY

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This declaration is issued under the sole responsibility of the manufacturer.

The object of the declaration is in conformity with the relevant Union harmonisation Legislation.

NST Audio Ltd  
15 Chamberlain Road  
Worcester  
Worcestershire  
WR2 4PP  
England  
United Kingdom

accept responsibility that the following products:

Kind of equipment: Audio processor

Model: ID48

are manufactured in accordance with EMC Directive 2014/30/EU,

in compliance with the following technical regulations: EN55103-1:2009, EN55103-2:2009

And in accordance with the Low Voltage Directive 2006/95/EC,

in compliance with technical regulations: EN/IEC60065:2014

Signed:

A handwritten signature in black ink, appearing to read 'D. Cartman', with a stylized flourish at the end.

Name: Dan Cartman

Position: Research and Development Manager

Date: April 2017

## IMPORTANT SAFETY INSTRUCTIONS

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Terminals marked the lightning symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality cables with 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 un-insulated 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 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.
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. 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: The wheeled bin symbol indicates that this product must not be disposed of with household waste. Please refer to the WEEE page of this manual.

## WEEE

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Once your NST Audio product has reached the end of its useful life, please ensure that it is recycled in a proper manner.

"The WEEE Regulations 2013 are the UK interpretation of the EU WEEE Directive and aim to reduce the quantity of waste electrical and electronic equipment (WEEE) disposed of in the UK".

EEE producers are required to pay for the reuse, recycling and recovery of the products by registering as an EEE producer which requires them to join a producer compliance scheme.

NST Audio has been registered with producer compliance scheme Comply Direct since 2015 ensuring 100% compliance with the WEEE regulations 2013.

Our WEEE Producer Registration Number is WEE/HG5453ZY.

Old electrical equipment can be recycled along with its metal enclosure. Our products are marked with a crossed-out wheeled bin symbol on the rear of the product.

Please do not throw any electrical equipment (including those marked with the crossed out wheeled bin symbol) in your general waste bin.

NST Audio Ltd. is able to arrange WEEE collections for our customers through a trusted network of WEEE recycling facilities made available by Comply Direct. We are able to arrange collection and transportation of your WEEE to reprocess and recycle ensuring the minimum goes to landfill.

## ROHS

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The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive (2011/65/EU).

NST Audio Ltd products are RoHS compliant, and are available for export as lead-free and RoHS compliant.

NST Audio Ltd is committed to eliminating the use of hazardous substances in the materials, manufacturing and packaging of our audio amplifier and other audio products in strict accordance with the RoHS directive.

With regards to the RoHS Directive 2002 / 95 / EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, we declare that to the best of our knowledge, all products meet and fulfil all the requirements of the aforementioned directive.

All RoHS compliant product shipped will be clearly externally marked as compliant on the packaging.

## THANK YOU

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Thank you for choosing an NST Audio product for your application. Please spend a little time reading through this manual, so that you can obtain the best possible performance from the unit. All NST products are carefully designed and engineered for cutting-edge performance and world-class reliability. If you would like further information about this, or any other NST product, please do not hesitate to contact us.

## UNPACKING THE UNIT

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After unpacking, please check the unit carefully for any damage. If any is found, immediately notify the carrier concerned - you, the consignee, must instigate any claim.

Please retain all packaging, in case of future re-shipment.

## INSTALLATION

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### **Electrical Considerations:**

The NST device has been manufactured to comply with your local power supply requirements, but before connecting the unit to the supply, ensure that the voltage (printed on the rear panel) is correct, and that a mains fuse of the correct type and rating has been fitted.

Make sure power outlets conform to the power requirements listed on the back of the unit.

Damage caused by connecting to incorrect AC voltage is not covered by the warranty.

### **Mechanical Considerations:**

To ensure that this equipment performs to specification, it should be mounted in a suitable rack or enclosure. When mounting the unit in a rack or enclosure, ensure that there is adequate ventilation. The cooling fan sucks cool air in through the right side and blows warm air out of the left side of the unit through the ventilating grills. Take care when mounting other equipment in the same rack.

### **Operation:**

Read all documentation before operating your equipment and retain all documentation for future reference. Do not spill water or other liquids into or on the unit and do not operate the unit while standing in liquid. Do not block the fan intake or operate the unit in an environment that could impede the free flow of air around the unit. If the unit is used in an extremely dusty or smoky environment, it should be cleaned of any collected debris at regular intervals.

## OVERVIEW

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With 4 balanced analogue inputs and 8 outputs with full matrix mixing capabilities, the ID48 gives the flexibility you need to integrate into your system. Compressors are available on every input as well as a high pass filter, 6 bands of parametric EQ and up to 1.3 seconds of delay.

Routing to outputs can be configured to either mix-matrix mode, free-routing or several pre-configured routing options. Flexible channel linking enables quick and easy configuration of common crossover setups or customised configurations as required. Every output channel has high and low pass filters, 8 bands of parametric EQ, up to 1.3 seconds of delay as well as a new limiter designed to offer the best driver protection with the lowest distortion.

The ID48 runs at 96kHz as standard but can be switched into 48kHz mode to take advantage of 48dB/oct output crossover filters and two bands of dynamic EQ on both input and output channels.

The Ethernet based PC control software gives you the ability to not only control all the devices on a network but also to store preset memories and configure systems offline.

## KEY FEATURES

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4 Analogue Inputs, 8 Analogue Outputs

Sample rate switchable between 96kHz and 48kHz (adds DEQ filters and 48dB/Oct crossover filters)

### **Input Processing Features:**

Soft Knee Compressor

6 Parametric EQs

24dB/Oct HPF

2 bands of Dynamic EQ (48kHz mode)

Gain, Polarity, Delay

### **Routing Matrix Modes:**

Mix Matrix, Routing Matrix, Preset Configurations (2x4, 4x2, 1x8, 2x3+2)

### **Output Processing Features:**

6 Parametric EQs

Crossover Filters up to 24dB/Oct (96kHz mode) 48dB/Oct (48kHz mode)

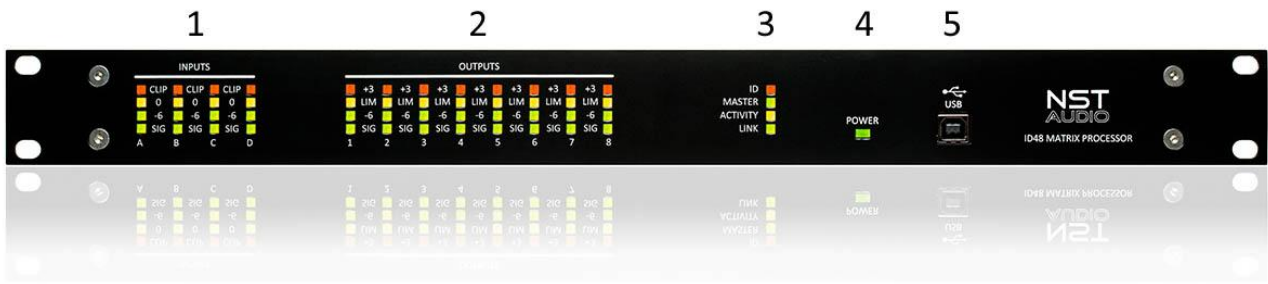
2 bands of Dynamic EQ (48kHz mode)

Gain, Polarity, Delay, Limiter

Remote control via 100Mbps Ethernet, USB Type B

Up to 30 presets may be stored for offline recall

Front Panel Overview:



**1. Input Meters:**

Real time LED input meters show level from maximum input level (clip) in 4-segments...

Signal present, 6dB below clipping, 0dB/maximum input level and clip\*.

\*If analogue input clipping is neared by 1dB, the red input Clip LED will illuminate to show this.

**2. Output Meters:**

Real time LED output meters show level from the limiter threshold in 4-segments...

Signal present, 6dB below limiter threshold, Limiter threshold and 3dB into limiting.

Note: The red limiter +3 LED will also illuminate if this output is muted.

**3. Comms:**

ID: Flashes when the 'ID' button is clicked on a connected device within the D-Net software.

Master: [for future use]

Activity: Flashes when communication is taking place between the device and D-Net software.

Link: Illuminates when a suitable Ethernet connection is established.

**4. Power Light:**

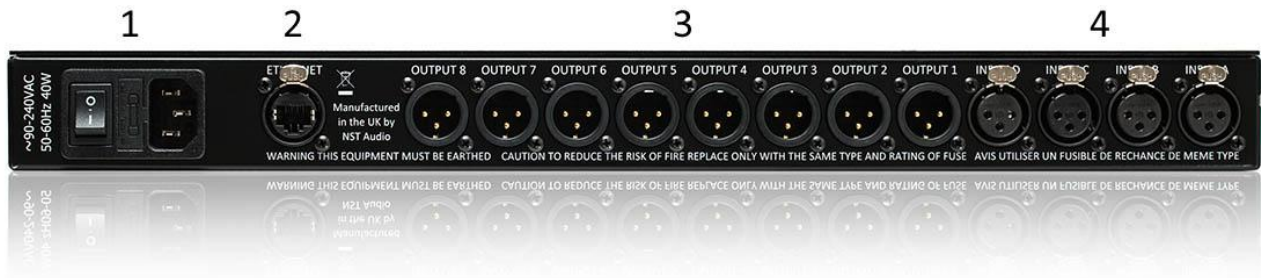
Illuminates when a suitable power source is connected and the unit is powered on.

**5. USB port:**

USB type B port for single unit connection to a computer running the D-Net software.



## Rear Panel Overview:



### 1. Mains Power Inlet, Fuse and Power Switch:

3-pin IEC input, fused [5mm x 20mm, 3.15A, 250V, Anti-Surge (T)], 90-250VAC, 50-60Hz <40W. A spare fuse is located within the fuse holder – only replace with the correctly rated fuse!

### 2. Ethernet Computer Control Port:

Neutrik etherCON RJ45 network Ethernet port accepts either a standard CAT5 cable or housed RJ45 connector for connection to a computer (or suitable network switch to control multiple units simultaneously).

### 3. Balanced Analogue Audio Outputs:

The analogue outputs are wired as follows:

Pin 1: Shield/Ground

Pin 2: Signal Hot (+)

Pin 3: Signal Cold (-)

### 4. Balanced Analogue Audio Inputs:

The analogue inputs are wired as follows:

Pin 1: Shield/Ground

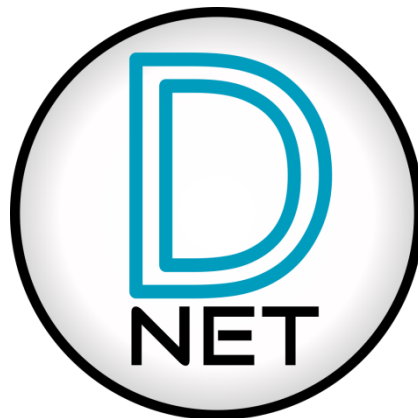
Pin 2: Signal Hot (+)

Pin 3: Signal Cold (-)

## D-NET REMOTE CONTROL APPLICATION

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Windows, Mac and iPad compatible remote control software with USB and Ethernet access. Full control of all DSP, routing and configuration of multiple ID48 units with the ability to set up systems offline and store/load presets and preset libraries.



Please visit [www.nstaudio.com](http://www.nstaudio.com) and click on the Software link to download D-Net!



## TECHNICAL SPECIFICATIONS

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### **Analogue Inputs – 4**

Electronically balanced, pin 2 hot

CMRR: >60dB @ 1kHz

Maximum Level: >20dBu

Input Impedance: 10k $\Omega$  balanced

### **Analogue Outputs – 8**

Electronically balanced, pin 2 hot

Maximum Level: >20dBu

Source Impedance: <60 $\Omega$

### **Performance:**

Frequency Response (20Hz to 20kHz): +/-0.4dB

Dynamic Range: >110dB unweighted (in to out analogue)

THD + N (+10dB @ 1kHz): 0.0007%

Latency: 1.074ms (in to out, analogue, 96kHz)

### **Power Requirements:**

3-pin IEC input, fused [5mm x 20mm, 3.15A, 250V, Anti-Surge (T)], 90-250VAC, 50-60Hz < 40W

### **Dimensions:**

Height: 44mm (1.75inch) 1U

Depth: 170mm (6.7 inches)

Width: 482mm (19 inches)

### **Weight:**

Net: 2.8kg

Shipping: 3.4kg

*Due to continuing product improvement the above specifications are subject to change.*

## MAINTENANCE

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The unit will require very little routine maintenance, apart from occasional routine checking of the fan inlet outlets on the side panels. Cleaning the casework should only be done with a cloth lightly dampened with water only! The use of chemical or abrasive cleaners may damage the paint finish.

## SERVICING

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There are no user serviceable parts within the unit!

Please contact us to arrange returning any units to us that require servicing or repairing.

## WARRANTY

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This product comes with a warranty against defects in components and workmanship only, for a period of five years from the date of shipment to the customer. During the warranty period, NST Audio will, at its discretion, either repair or replace products that prove to be defective, provided that the product is returned, shipping prepaid, to an authorised NST Audio service facility.

Defects caused by unauthorised modifications, misuse, negligence, act of God or accident, or any use of this product that is not in accordance with the instructions provided by NST Audio, are not covered by this warranty.

This warranty is exclusive and no other warranty is expressed or implied.

NST Audio is not liable for consequential damages.

## CONTACT

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If you have any questions or comments about the information contained within this manual, or require further assistance, then please do not hesitate to contact us at [www.nstaudio.com](http://www.nstaudio.com)

Thank you

The NST Audio team