METRUM ACOUSTICS


# NOS Differential DAC "*Jade* "

User manual

Made by ALL Engineering

METRUM
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## Introduction

What more can you do after launching one of the best dacs and Digital (Pre) Amplifiers available today? We are aware that our current flagship products Pavane, Adagio and Forte are hard to beat but at least one idea was not realized yet.

The idea of having similar high end sound like the ADAGIO but in an affordable version!

Introducing JADE by Metrum Acoustics, a powerful Digital Pre Amplifier which in sound comes close to our ADAGIO,

The biggest difference between the ADAGIO and JADE is the fact that the JADE uses two DAC chips per channel, whereas the ADAGIO uses 4 Chips per channel. Both ADAGIO and JADE use Forward Correction Technology and are following the working principle of being a Balanced Digital Pre Amplifier. Needless to say that we use Non Oversampling techniques. Our own designed and engineered DAC chips will guarantee a unique listening experience!

The result of this process is an extremely high linearity, right down to -145 dB, which gives the JADE a realistic 24 bit dynamic range. The JADE is a step forwards as it omits a pre-amplifier. It is musical, honors the Non-oversampling principle and simultaneously incorporating the technological progress that has been made over the years while developing our products.

*Remark*
*The Jade will reach its maximum performance after a three to four weeks of intensive use!*

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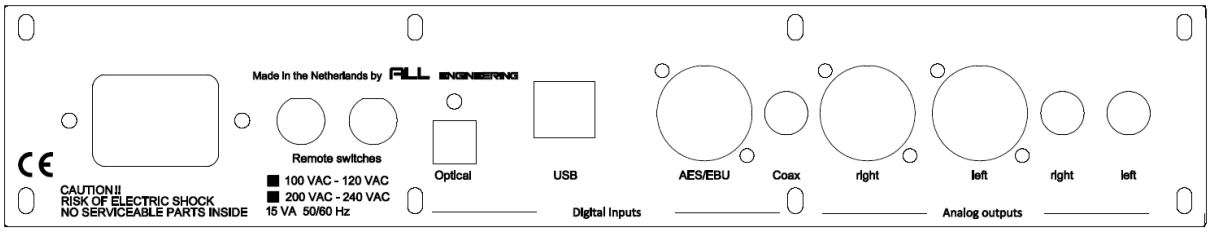
**IMPORTANT SAFETY INSTRUCTIONS**

**1.** Read 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 install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
**8.** Unplug this apparatus during lightning storms or when unused for long periods of time.
**9.** Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a 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.
**10.** The Jade pre amplifier must be placed on a firm, level surface where it is not exposed to dripping or splashing.
**11.** Before making connections to the dac, ensure that the power is off and other components are in mute or stand-by mode. Make sure all cable terminations are of the highest quality, free from frayed ends, short circuits, or cold solder joints.
**12.** THERE ARE NO USER SERVICEABLE PARTS INSIDE THE "Jade" pre amplifier.
Please contact All Engineering if you have any questions not addressed in this guide.
**13**. All Engineering cannot be held accountable and/or responsible for any form of damage or health issues inflicted to you, other people, pets, companies and non-living objects, that are caused by any form of usage of the product which is not described in this manual.
**14.**By actually using this product and turning it on for the first time, you agree to these terms

**What is in the Box**

- The Jade digital pre amplifier
- Power cord (only Euro or USA based power cords)
- USB cable
- USB stick ( user manual and USB drivers )

# Connections




**Caution! Please connect your interconnects first before connecting the mains power cable!**

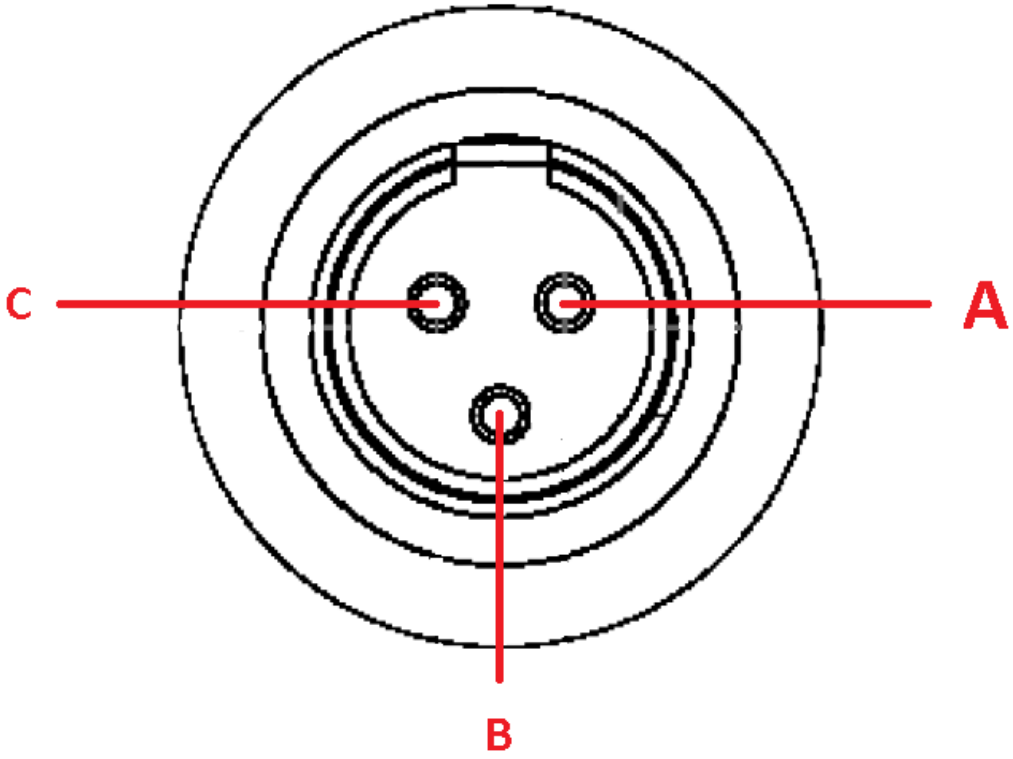
- **Power requirements:** Check if the product is made conform the power requirements of your area. On the back side the product is marked for the specific mains voltage.
- **Optical input:** Use an optical (Toslink) cable to use the optical input. The optical input can be used for sampling rates up to 96 kHz.
- **Coaxial input:** A 75 Ohm coaxial cable should be used to connect the dac to other digital equipment. To avoid ground loops both inputs has a galvanic isolation and can handle a maximum sample rate of 192 kHz.
- **AES/EBU digital input:** When using the AES /EBU digital input a special 110 Ohms XLR cable should be used. The AES/EBU interface has a galvanic isolation and can handle a maximum sampling rate of 192 kHz.
- **USB input:** Use an USB cable to connect the dac to your computer. Only when using a Windows operating system you should install special drivers. In case of Linux or MAC no drivers are required. The USB input can handle sampling rates up to 384 kHz.
  (For installing drivers for PC, we refer to the user manual of the USB interface)
- **RCA outputs:** Standard interlinks can be used to connect the dac to your amplifier. The "Jade" is designed conform the "Red book standard" so the maximum output will be 2 Volts RMS . Your (pre)amplifier should handle this output levels.

- **XLR outputs**: Standard XLR line cables should be used to connect the dac to your (pre) amplifier. The "Jade" is designed conform the "Red book standard" so the maximum output for the XLR output will be 4 Volts RMS. Your (pre)amplifier should handle this output levels.
- **Mains inlet:** Use a power cable to a grounded power outlet.
- **Remote switch:** Depending the type of power amplifier it is possible to switch it “On” or “Off” by using one or both of the remote switches. For connection a 3 pole XLR mini connector can be used and depending the way your power amplifier should be powered, it can be wired accordingly. The following connections are available:

  **A) Common**

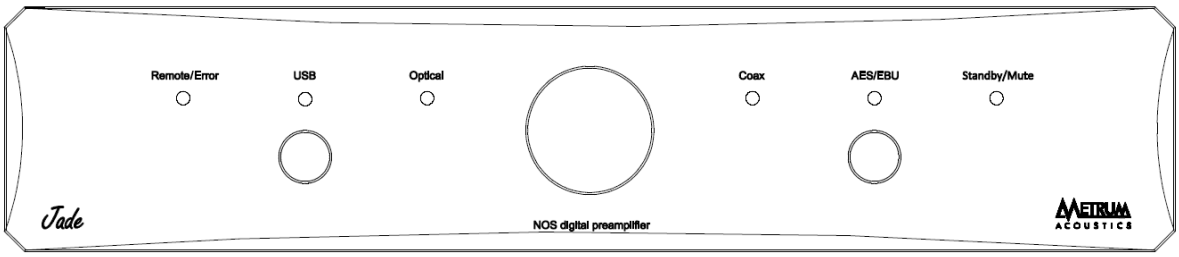
  **B) Normally closed when Jade is switched off.**

  **C) Normally open when Jade is switched off.**



# Operation

**Remark:** When the Jade is fully connected and switched to ”on” the volume knob will turn anti clockwise to the lowest position. Also the mute function will be activated the very first time. To release the mute function one of the remote control buttons should be used. In case of disconnecting the Jade from the mains power, this procedure should be repeated!




- **Standby position :** To reduce power the Dac board will be switched off in stand-by mode. Just the front panel is activated to control the system. Power consumption will be reduced to 0.5 Watts. Any control is possible by using the front button or remote control.

- **Mute function:** By switching to one of the digital sources the mute function will be released after five seconds. When switching the Jade to “standby mode” muting will be active again. When the Jade is operational you can use the mute function only by using the remote control. In this situation the Jade shows you the selected digital source but also the red “Standby/ mute” light will lit. By using one of the volume buttons the mute function is released.

- **Source selection:** The digital inputs can be selected by using the only available button at the front . When switching the Jade to “On”, the first channel (AES/EBU) will be selected. When pushing this button repeatedly, the next “coax ” input will be selected followed by “Optical” and “USB”. The next step is back to “Standby” Note: When moving fast trough the Standby mode the Jade will not switched off. Only when waiting for a few seconds the Jade will go into standby mode when selected.

- **Error indication:** When no digital data is coming in, the orange “Remote /Error” led above the remote sensor will lit.

- **Remote indication:** When using the remote control the Remote/ Error led will flash rapidly.

**Remote control**

The remote control is made  to control the available standby setting, digital inputs, volume and muting. Like the front panel the remote will toggle through the entire range of available digital sources.

**Replacing the batteries**
If one of the buttons is not activated there is no power consumption at all which leads to a very long battery life cycle. The two batteries used has the following type: CR1632 3 Volts.
Batteries can be replaced on the following way:

Use a middle sized Philips screw driver to remove the screws from the back of the remote.

By removing the back cover the printed circuit board will be visible.

By turning the housing upside down the printed circuit board will fall out and the component side will be visible now. Remark: In case that the pcb is stocked in the housing you can push one of the buttons to help this procedure.

As shown above push the battery out of its holder by using the back side of a swab. Take the new battery and push it in the battery holder with the “+” mark on top.

When the new battery is placed, lay back this part of the board where the blue led is situated. The led will be positioned in front of the recess. Next you can lay down the whole board in the housing. Next you can place the cover back to its position and tighten the screws.

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**Technical specs :**

| | |
|---|---|
| Working principle: | Non oversampling digital pre amplifier.<br>Dual mono, four dacs per channel in differential mode. |
| Power supply: | 75 VA devided over three single toroidial transformers |
| Power consumption: | Standby < 1.5 Watts<br>Full operation 25 Watts |
| Power requirement: | 110/115V AC or 220/230 V AC 60/50Hz |
| Inputs: | 1x optical Toslink, 1x RCA coax, 1x AES/EBU and 1x USB. |
| Outputs: | 2x RCA gold plated Neutrik © connectors . 2x XLR 3 balanced outputs. |
| Output voltage: | RCA : 3 Volts RMS max output.<br>XLR: 6 Volts RMS max output. |
| Frequency response: | 1Hz -0.8dB, 20 kHz -1.2 dB 44.1kHz sampling.<br>1Hz -0.8dB, 65 kHz -3dB 192-384 kHz sampling. |
| Distortion: | 0,006 % THD |
| Noise: | -145 dB related to 2 Volt RMS |
| Output impedance: | RCA 100 Ohms , XLR 100 Ohms |
| Sampling frequency: | Optical : 44.1 - 96 kHz sampling ,16 or 24 bits.<br>Coaxial: 44.1 - 192 kHz sampling, 16 or 24 bits.<br>USB: 44.1- 384 kHz sampling , 16 or 24 bits |
| Dimensions hxwxd: | 60 x 290 x 250 mm. |
| Weight: | 3100 gram. |

Subject to change without notice.

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