

OOR by **Ferrum**

user's manual



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INTRODUCTION

OOR, the only headphone amplifier with a soul.

After the initial success of our firstborn HYPPOS, we at Ferrum set out to follow through on our ideas of creating category-defining audio products. We tasked our most talented and promising engineer to focus on analogue audio in its purest form and to create a headphone amplifier. He started from the ground up and presented us the early drawings of OOR, a headphone amplifier with part of his soul forged right into it. Our R&D team put their decades of experience in designing and manufacturing audio electronics into OOR. It marries stunning understated looks with a sophisticated, truly balanced preamplifier, our own discrete power amplifier technology and special power regulating designs. The result simply must be heard to be believed. OOR will drive any headphones effortlessly to the max of their potential while preserving the essence of the music. Ultra-low distortion, zero listening fatigue, huge dynamics and unrivalled detail result in ultimate enjoyment. OOR makes it seem like the most natural thing on earth. The trademarks of a true star. And to make things even better, combining OOR with Ferrum's HYPPOS really exceeds the sum of the parts.

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1. IMPORTANT SAFETY INFO



- **Warning! Read user manual before use.**

WARNING: To reduce the risk of fire, electric shock or enclosure discoloration, be sure that the apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed near or on the apparatus.

Read and follow all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions. Heed all warnings and safety information in these instructions.

Do not allow any objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord.

Take the unit to a qualified service person for inspection and necessary repairs.

Unplug this product from the power supply before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Do not place the unit on a bed, sofa, rug, carpet, or similar surface that could block the heatsink airflow.

If the component is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling.

Keep the OOR away from radiators, kettles, heat registers, stoves, or any other appliance that produces heat.

Connect the OOR only to a power source that meets its requirements (voltage and amps). We recommend using Ferrum power supplies.

The safest and only method of isolating the device from the power supply is to disconnect the DC plug.

Ensure that the DC plug remains accessible at all times.

Unplug the OOR during lightning storms or when unused for long periods of time.

Do not route the DCcord where it will be crushed, pinched, bent at severe angles, exposed to heat, or damaged in any way. Pay particular attention to the DC cord at the plug and where it exits the back of the unit.

Immediately unplug and stop using the OOR and have it inspected and/or serviced by a qualified service agency if:

- The power cord or plugs have been damaged.
- Objects have fallen or liquid has been spilled into the unit.

- The unit has been exposed to rain.
- The unit shows signs of improper operation.
- The unit has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance. This indicates a need for service.

When replacement parts are required after the warranty period, be sure the service technician has used replacement parts specified by the manufacturer or have the same specification as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Make sure that the OOR will be out of the reach of children.

2. BOX CONTENT

- OOR headphone amplifier
- AC/DC power adapter
- power cord
- quick guide

3. DEVICE FEATURES

Truly Balanced - the signal path stays truly balanced using the XLR inputs and becomes truly balanced using the RCA inputs.

Ease of use - only three knobs to control all settings.

Discrete design - modified Class A/B topology used in discrete power stage.

Superior control - perfected steering of output transistors making them to instantly deliver full capacity and two-pole compensation scheme. Together with the high current design we get superior control and ultra fast operation over the total bandwidth.

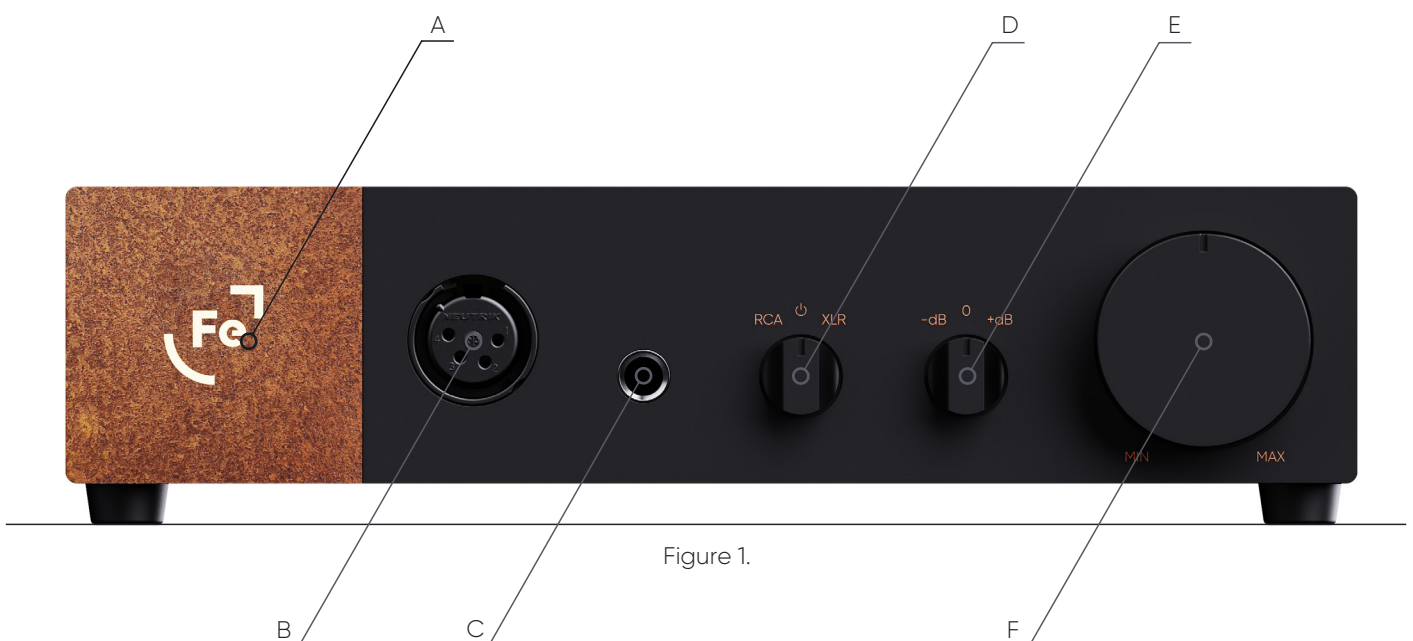
Enhanced transparency - the whole design is focussed on a balanced and very transparent sound signature, making listening fatigue something of the past.

Made for HYPSONS - while OOR performs very good right out of the box, it is made to excel above and beyond when used together with HYPSONS. Using the proprietary Ferrum Power Link connection HYPSONS will perform to its absolute maximum, unleashing unheard musicality from the combination with OOR.

4. OOR OVERVIEW

4.1. Front Panel Overview

- A. Ferrum logo - brightness adjustable
- B. 4 pin XLR headphones output
- C. 6,3mm jack, TRS headphones output
- D. Rotary input selector and on/off switch
- E. Rotary gain selector - allows you to match a gain level to your headphones:
 - for single ended headphones (6,3mm jack) you can choose (from left to right): -10dB, 0dB and +10dB;
 - for balanced output (4 pin XLR) you can choose (from left to right): -4dB, +6dB, +16dB.
- F. Volume knob



4.2. Back Panel Overview

- A. XLR inputs
- B. RCA inputs
- C. XLR outputs
- D. RCA outputs
- E. Bypass rotary switch – allows you to bypass OOR's internal volume potentiometer. This option is useful when you control volume at the source.

Note: For more information please look at paragraph "6.2 Bypass function".

WARNING! Use with caution! Enabling bypass might cause hearing damage or destroy your headphones.

- F. Logo brightness potentiometer
- G. Ferrum Power Link DC input
- H. The 2.5/5.5mm DC input can be used with other PSUs.



Figure 2.

5. CONNECTING THE OOR

Note: Please connect all cables before switching on the OOR.

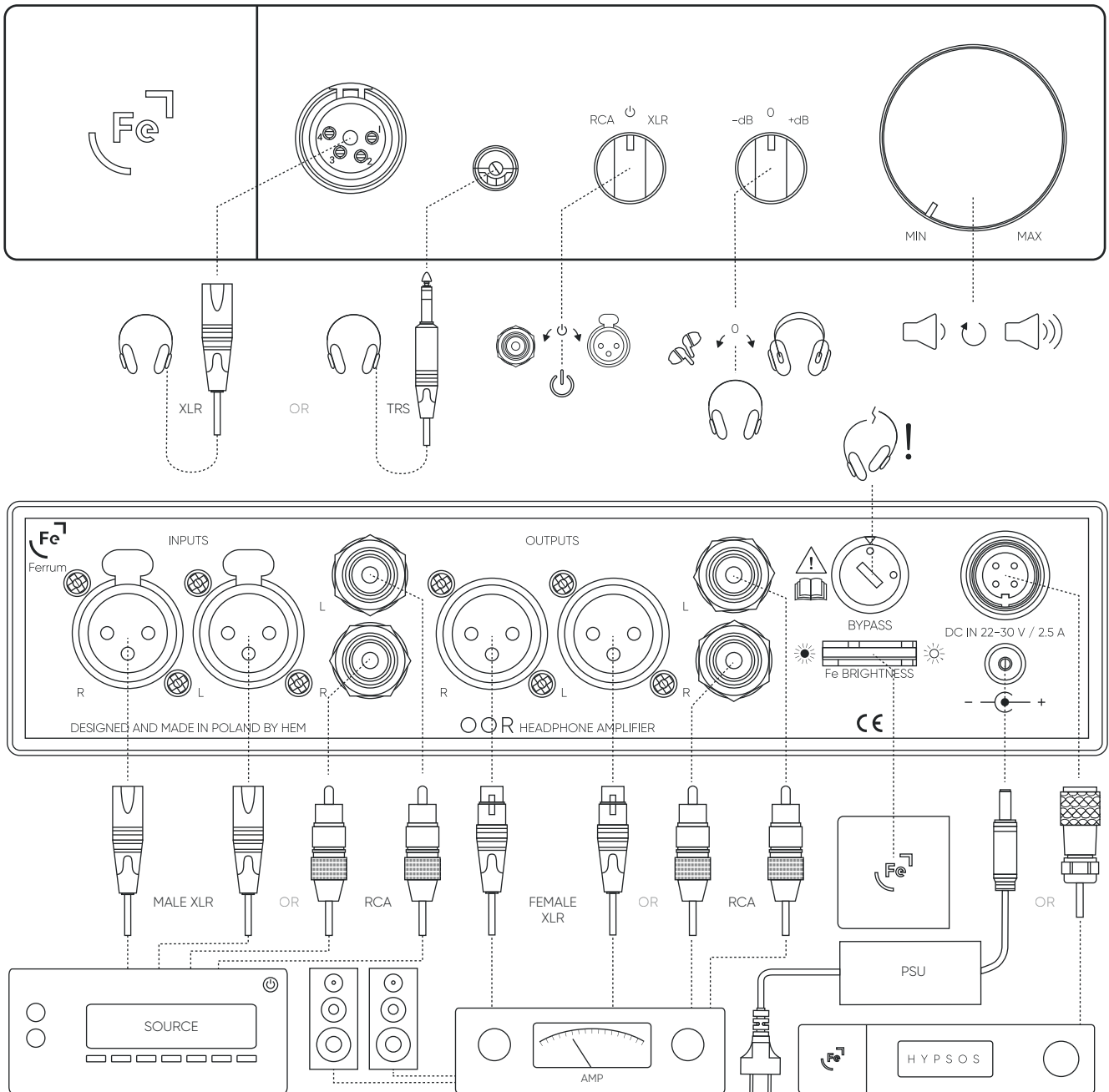


Figure 3.

6. GETTING STARTED

6.1. Using OOR for the first time

Make sure the signal cables (optionally you can also connect an amplifier, active speakers, etc.) are connected to the OOR before turning it on.

Set the Gain knob to the first position (-dB) and the Volume knob to about 25%.

Turn on the OOR using the input selector - select either the RCA or XLR input.

Now while listening to music, gently raise the volume using the Volume knob. If the volume is unsatisfactorily low at about 75% off, move the Volume knob back to 25% and the Gain knob to the second position (0).

Repeat the procedure - gently raise the volume to about 75%.

If the volume is still noticeably low, move the Volume knob back to 25% and the Gain knob to the 3rd position (+dB). The idea is to set the optimum volume level with the Gain knob in such a way that you get the widest possible range from the Volume knob. Our recommendation is to find a Gain knob setting such that the optimum volume level is as close to 50% of the Volume knob as possible.

6.2. Bypass function

The bypass function is disabled at the factory. To activate it you have to switch the rotary switch from position 0 to position 1 - the most convenient way to do it is with a flat screwdriver.

The bypass function disables the built-in potentiometer in OOR. As a result, the signal given at the input of OOR will be transmitted to the headphones or RCA or XLR outputs with all its power. This is useful when it is more convenient for the user to control the volume from the sound source.

Please use the Bypass function with caution! A sudden jump in headphone volume may damage your hearing and the headphones or speakers!

It is best to reduce the input signal at the source to a minimum before the Bypass function is activated.

Note: Ferrum refuses every liability for damage to equipment due to using Bypass function.

6.3. Using OOR with amplifiers or active speakers

The potentiometer built into the OOR affects the volume of not only the headphones, but also the RCA and XLR outputs. We recommend disconnecting headphones from the OOR if they are not used for a longer period of time, and especially if you want to control volume on RCA or XLR outputs (when an amplifier or active speakers are connected). This practice can prevent excessive wear or damage to your headphones.

7. TECHNICAL SPEC

Gain (dB): balanced -4 dB, +6dB, +16 dB / single ended -10 dB, 0 dB, 10 dB

Operation: Fully balanced, proprietary discrete power amp technology

Inputs: XLR, RCA, 2.5 mm DC connector centre positive, proprietary 4-pin DC connector

Outputs: Balanced 4-pin XLR, 6.35 mm jack

Frequency Response: 20 Hz – 100 kHz 0.1 dB

Output Power Single Ended: 400 mW into 300 Ω , 2 W into 60 Ω

Output Power Balanced: 1.600 mW into 300 Ω , 8 W into 60 Ω

THD: <0,0003%/-110dB 100mW into 50 Ω on balanced output

Input Impedance: 94 k Ω

Output Impedance Single Ended: 22 Ω on pre-amp

Output Impedance Balanced: 44 Ω on pre-amp

Output headphones Impedance: < 0.3 Ω

Power Consumption: Idle <15 W

Power Adapter: 100/240 V AC to 22-30 V DC

Dimension (W x D x H) (In/cm): 8.6 x 8.1 x 2.0 inch / 21.7 x 20.6 x 5 cm

Weight (kg/lbs): 1.8 kg / 3.97 LBS

8. WARRANTY

Each individual OOR undergoes comprehensive quality control and a complete test before shipping.

This headphone amplifier is warranted by Ferrum to the owner against defects in workmanship and materials used in manufacture for a period of three years from the date of purchase.

If you suspect that your product is faulty, please contact the place of purchase or you contact Ferrum support.

Prior to shipping for warranty services the customer or dealer must obtain an RMA number from Ferrum for warranty services. Units sent without an RMA number will not be accepted.

Proof of purchase in the form of a bill of sale or received invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service. This warranty is void and inapplicable if the factory applied Serial Number has been altered or defaced from this product. Faults due to customer misuse, unauthorized modifications or accidents are not covered by this warranty.

In case of need to send the OOR for service please pack the product very carefully, preferable in the original packing, to be sure no damage can be done during shipment.

Ferrum is not responsible for accessories, items left in the packaging and the box in which the device has arrived for service. Ferrum reserves the right to use a replacement box if necessary.

9. CONTACT FERRUM

In case of questions, problems or suggestions regarding its form or contents, please contact us via our support system available on our website: ferrum.audio/support

10. WARNING

Excessive sound pressure from speakers and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

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 can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

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.

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European standards:

Safety

IEC 62368-1:2018 and additionally evaluated to: EN IEC 62368-1:2020, EN IEC 62368-1:2020/A11:2020

IEC 60065:2014 and additionally evaluated to: EN 60065:2014, EN 60065:2014/A11:2017

EMC

EN55032:2015

EN55035:2017

FCC Part15.107 & 15.109

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E4 (controlled EMC environment, ex. TV studio).

12. INFORMATION ON DISPOSAL FOR USERS OF WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (PRIVATE HOUSEHOLDS).

The Wheelie Bin symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment.

To properly dispose harmful substances and recycle the product, the user is obliged to return it at the point of collection of electrical and electronic equipment waste. For more information please contact your local authorities, waste disposal units or retailer.

