

# Titania

## USER'S MANUAL

## SAFETY TIPS \_\_\_\_\_



In order to obtain the highest possible sound reproduction quality and for the sake of your own safety, please kindly refer to the following safety guidelines and please adhere to them:

- Never place the Fezz Audio Titania amplifier near heat sources, such as radiators, heaters or direct sunlight. Ensure adequate ventilation and airflow.
- We also warn against exposure of the amplifier to conditions such as very low temperatures and/or high humidity.
- During normal operation, the vacuum tubes radiate significant amounts of heat - there is a risk of burns
- The amplifier should be plugged directly into a wall socket. If you must use an extension cord, please make sure that it has load parameters sufficient to ensure proper handling of current delivery to the device.
- When cleaning, always disconnect the Titania from the power source. Use a dry, soft cloth. Do not use water or cleaning agents.
- If your amplifier starts to misbehave or to work incorrectly, if it's temperature gets too high or you start feeling smoke - immediately disconnect the device from the mains.
- Due to the risk of exposure to high voltages - please do not open the lid of the amplifier. ATTENTION: This warning remains in force also in a situation where the device is already disconnected from the wall outlet.
- Always replace fuses in accordance with the original, intended specification.
- Do not make repairs on your own, or adjustments beyond those as described in this manual. Execution of any unauthorized repairs or modifications of the device result in a loss of warranty.

TABLE OF CONTENTS \_\_\_\_\_

**SAFETY TIPS** \_\_\_\_\_ **2**

**INTRODUCTION** \_\_\_\_\_ **4**

The Tube Amplifier

**INSTALLATION OF THE DEVICE** \_\_\_\_\_ **5**

Unpacking

Contents of the package

Description of the elements of the amplifier

Installation of the vacuum tubes

Where to place your amplifier

**INTERCONNECTIONS** \_\_\_\_\_ **9**

Hook-up of the power supply cord

Hook-up of the signal sources

Hook-up of the speakers

**OPTIONAL EQUIPMENT** \_\_\_\_\_ **11**

Automatic bias module

Vacuum tubes protective cage

Remote control

HT (pre-in) input

**FIRST POWER-UP AND GETTING STARTED** \_\_\_\_\_ **12**

**ADJUSTMENT AND CONTROL OF THE BIAS CURRENTS** \_\_\_\_\_ **13**

The procedure for adjustment of the bias for the right channel

The procedure for adjustment of the bias for the left channel

**REPLACEMENT OF VACUUM TUBES** \_\_\_\_\_ **14**

Power vacuum tubes replacement procedure

Power vacuum tubes replacement procedure

**"BURNING-IN" THE AMPLIFIER** \_\_\_\_\_ **15**

**TROUBLE-SHOOTING GUIDE** \_\_\_\_\_ **16**

**TECHNICAL DATA** \_\_\_\_\_ **17**

**LIMITED WARRANTY CONDITIONS** \_\_\_\_\_ **18**

## INTRODUCTION

---

Thank you for your trust and for choosing the Fezz Audio Titania amplifier.

At times when the audio world becomes increasingly digital, Fezz Audio does not forget about analog lovers. Titania is the Polish, series produced integrated vacuum tube amplifier, which is designed for both people starting out in their audio adventure, but also for those experienced with the "vacuum tube sound" before. The Fezz brand is a team of people who are fascinated since multiple years with the world of sound in its pure, analog form, a team which adapts proven technologies so as to meet the expectations of a contemporary audience.

We invite you to familiarize yourself with a clear sound, characterized by excellent separation, imaging and dynamics. Let the wide sound scene take on a new, multiple depths dimension.

### **THE TUBE AMPLIFIER**

Many of us, when looking upon audio amplifiers of decades ago, keep repeating a slogan, like a mantra: "Such things are not manufactured anymore". When we finally manage to acquire such a amplifier, we treat it in a very unique way. We look for the best possible location to present it, we adore the moment that we switch it on and we shall certainly not fail to mention in passing about this new "treasure" of ours to any of our visiting guests. Whatever we do is all underlined by a great feeling of fondness to those times long past. Why is this happening? The most likely reason is that it is a vacuum tube amplifier. An amplifier with a specific warmth to its sound, with a natural ambience, timber. We also do know that the 'Big Names' have created their memorable music albums using vacuum tubes. When one explores this topic in depth, it turns out that many a prominent musician, till this present day, plays back music and creates music using solely analog amplifiers, and they justify their decision with just a few words: "The vacuum tube simply sounds better, it has a soul and an ambience".

Once that we purchase such an amplifier, set it up, hook it up, a kind of hesitance kicks in ... "Gee, this equipment is 40 years old". Will it continue to be reliable? We are aware that there is contemporary production of vacuum tube amplifiers out there, but these amplifiers are very expensive. Thus, in praxis, they are exclusively destined for the audiophile circles.

And it is at this very point where the unique offering of Fezz Audio comes into play. A unique vacuum tube sound, made available at a price point similar to a new, "transistor" based device as sourced from a market.

## INSTALATION OF THE DEVICE \_\_\_\_\_

### **UNPACKING**

Please kindly check if the packaging of the Titania amplifier has not been damaged during transit. If you find any damages, please immediately contact your dealer. Remove the amplifier and accessories from the packaging. Make sure that the content is not damaged.



**Do not connect the device to the power supply if it has visible signs of damage on it.**

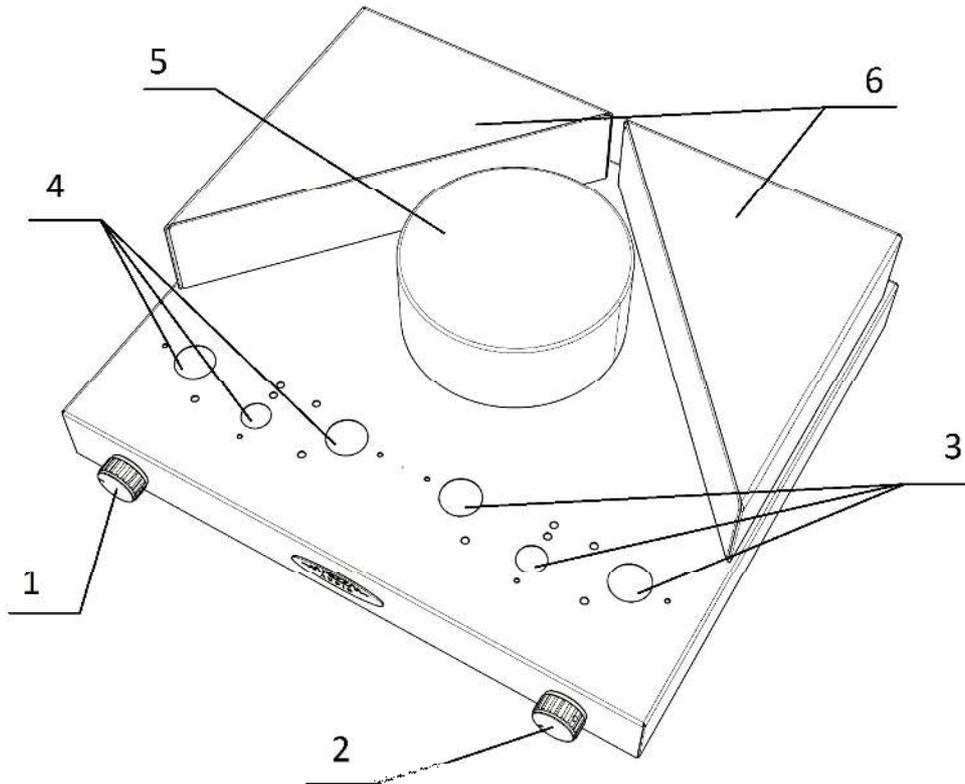
Please do not dispose of the original packaging, so as to facilitate possible shipment of the device in the future.

### **CONTENTS OF THE PACKAGE**

The package should contain:

- The Fezz AUDIO Titania tube amplifier
- Vacuum tubes of type KT88, produced by Electro-Harmonix - 4 pcs.
- Vacuum tubes of type 12AX7, produced by Electro-Harmonix - 2 pcs.
- A power cord
- Optional: vacuum tubes protective cage, remote control
- A Users Manual

## DESCRIPTION OF THE ELEMENTS OF THE AMPLIFIER

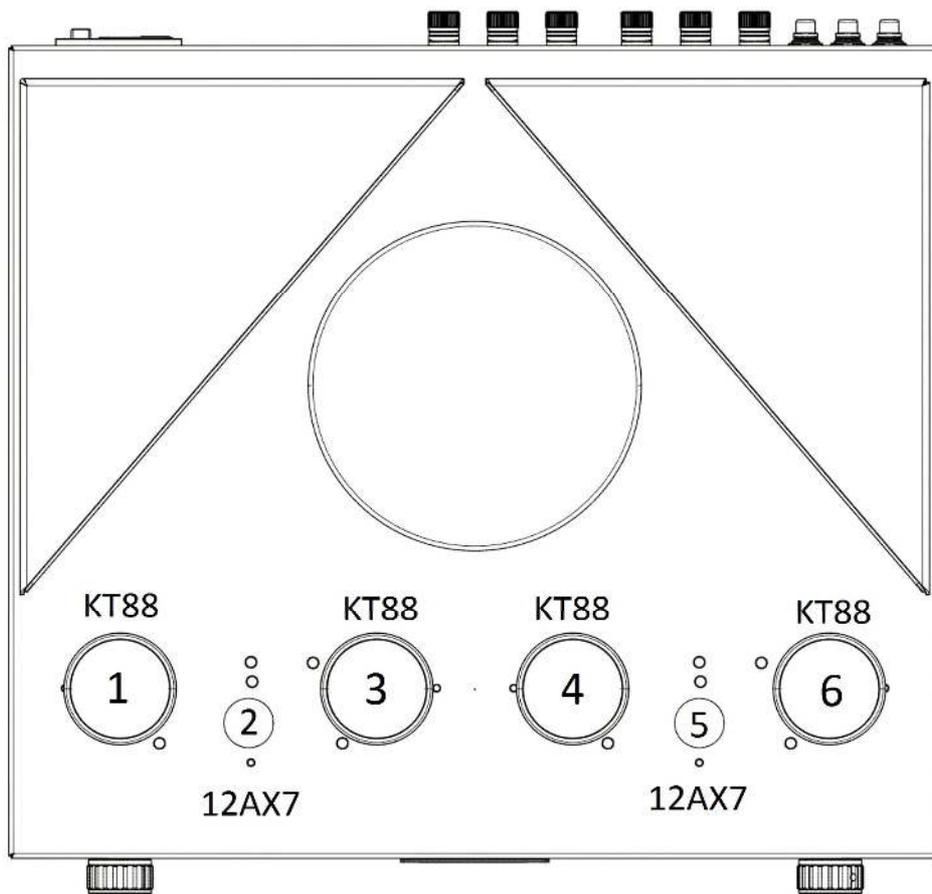


- 1) Volume control
- 2) Input source selector
- 3) Sockets for the right channel vacuum tubes
- 4) Sockets for the left channel vacuum tubes
- 5) The housing for the power supply transformer
- 6) The housing for the output transformers

## INSTALLATION OF THE VACUUM TUBES

Place the Titania amplifier on a stable surface. Carefully remove the vacuum tubes from their packaging and install them in the appropriate sockets, as shown below, and adhering to the numbering scheme as identified on the packaging. Please pay attention to the diameter of the socket and to the appropriate orientation of the vacuum tube pins.

The pins in the base of each of the vacuum tubes are “coded”, and this has the result that the insertion of the vacuum tube into the socket is possible only in one correct and appropriate orientation. If, whilst inserting the vacuum tube you sense resistance, and you can not push the tube into the socket, please check the orientation of its pins, rotate the tube to the correct position and try again.



**WARNING ! Excessive force may damage the socket and/or the pins of the vacuum tube.**

## **WHERE TO PLACE YOUR AMPLIFIER**

Due to the presence of high temperatures during normal operation of the vacuum tubes, the location that you pick to place your amplifier should ensure ample ventilation, a free flow of air.

Please maintain at least 10 cm clearance between the housing of the amplifier, together with the vacuum tubes, and other devices or elements of the interior.

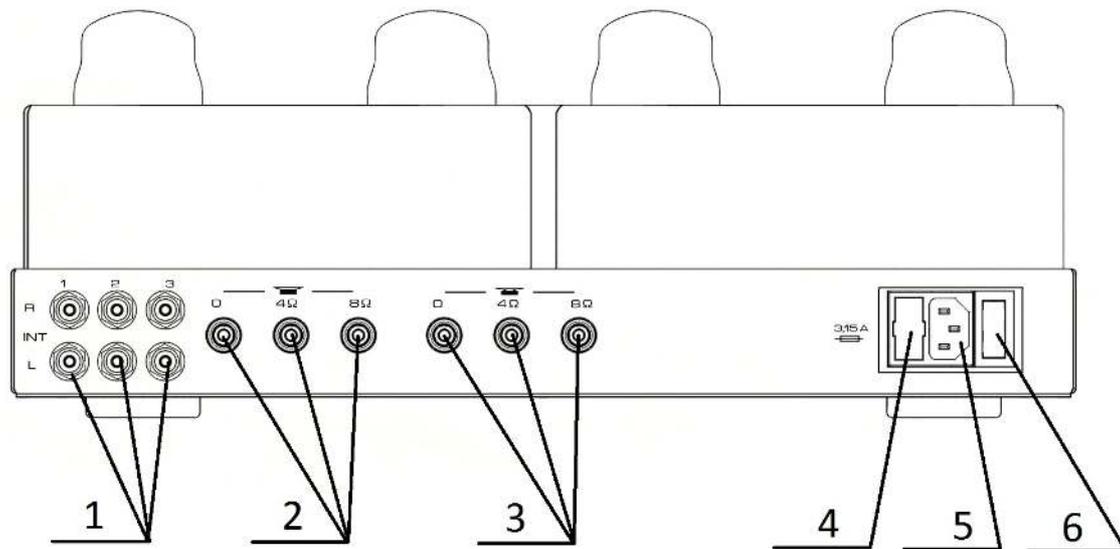
The sound quality may be degraded as a result of vibrations. Therefore we recommended to place the amplifier on a flat and stable surface.



**ATTENTION - Never place the Fezz Audio Titania amplifier in the vicinity of sources that produce large amounts of heat.**

## INTERCONNECTIONS

---



- 1) Source signal inputs
- 2) Speaker outputs for the right channel
- 3) Speaker outputs for the left channel
- 4) Socket for the main fuse
- 5) The IEC power supply cord socket
- 6) Mains switch

The figure above shows the rear panel view of the Fezz Audio Titania tube amplifier, together with a description of the inputs and outputs allowing for connection of the other elements of your audio system.



**WARNING! - To avoid electrostatic shock to the components of the amplifier, please touch a grounded conductive surface before making any connections.**

Any and all connections must be made whilst the device is disconnected from the mains power supply. Before making any such connections, make sure that the amplifier is switched off.

## **HOOK-UP OF THE POWER SUPPLY CORD**

Make sure that the amplifier is switched off. Connect the power cord to the IEC socket on the rear panel of the amplifier.

The amplifier is designed to operate at a rated voltage of 230V/50Hz for EU and 115V/60Hz for US and CAN models. Connecting the device to a mains network with incorrect parameters can lead to damage that is not covered by manufacturers warranty

## **HOOK-UP OF THE SIGNAL SOURCES**

Connect the signal source to the amplifier inputs IN1, IN2 or IN3. Select the source of input signal by rotating the input selector located on the front panel of the amplifier. In order to achieve the highest sound quality, use only high-quality RCA cables. Pay attention to the proper connection and distinction of the right (R) and the left (L) channels.



**WARNING!** To connect a turntable, you need to use an external phono MC/MM preamplifier or a turntable with a built-in preamplifier.

## **HOOK-UP OF THE SPEAKERS**

Check the impedance of the speaker set that you possess. Connect the speaker cable to the appropriate terminals on the rear panel of the amplifier. Depending on the impedance of the speakers that you possess, connect it to the terminal marked either 4Ω or 8Ω. If your speaker impedance is 6Ω - connect the speaker wire to the terminal 8Ω.

## OPTIONAL EQUIPMENT \_\_\_\_\_

The Titania amplifier may be optionally equipped with the following accessories

### **AUTOMATIC BIAS MODULE**

If the amplifier is equipped with the optional automatic bias module, then it is not required to monitor and re-adjust this parameter, as described in the section "Adjustment and control of the bias currents". The automatic bias module ensures the proper operation of the amplifier and provides for an easier daily use.

### **VACUUM TUBE PROTECTIVE CAGE**

The following picture shows the correct positioning of the optional protective cage for the tubes.



### **VOLUME LEVEL REMOTE CONTROL**

The remote control enables remote adjustments of the volume.



## **HT (Pre-in) INPUT**

The additional HT (Pre-in) signal input makes it possible to use this amplifier as a stereo power amplifier. In order to make this possible, it is necessary that you have a separate pre-amplifier with its own volume control, or a receiver with 'Pre-out' output.



**WARNING! Never directly connect sources such as a CD, DVD, BlueRay, DAC, file streamer, or similar devices to the HT (Pre-In) input. The HT input HT is specifically and exclusively designed for use with preamplifiers with adjustable output volume and with receivers which are equipped with a 'pre-out' .**

## FIRST POWER-UP AND GETTING STARTED \_\_\_\_\_

Make sure that all of your wiring is connected in accordance with the information as provided above on page no. 10 of this manual.

Select the source of signal using the rotary selector switch located on the front panel.

Set the volume control to minimum. Turn on the mains power of the Titania amplifier - the vacuum tubes shall begin to glow. Make sure that the sound source is turned on, playing, and then gradually increase the volume level by turning the potentiometer.

The correct 'Switch-ON' (start-up) sequence for the individual devices:

First the Signal Source → then the Fezz Audio Titania amplifier.

The correct 'Switch-OFF' (shutdown) sequence for the individual devices:

First the Fezz Audio Titania amplifier → and then the Signal Source.

Conduct a measurement of the BIAS and, if necessary, adjust it in accordance with the instructions as presented below on pages 13-14 of this manual. This operation is not required for amplifiers, which are equipped with the optional 'Automatic Bias' module.

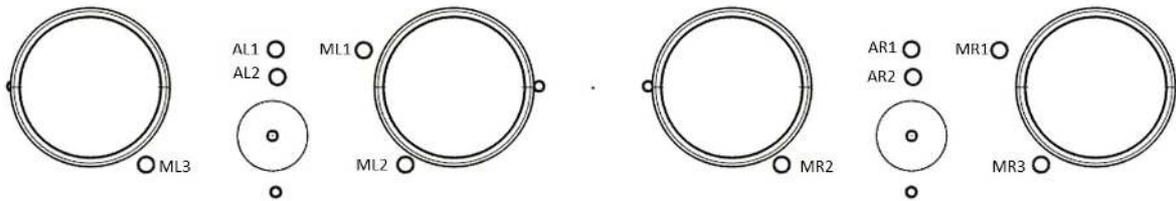
The operation of the amplifier narrows down to adjusting the volume potentiometer VOLUME and selecting an audio signal source via rotation of the SOURCE switch.

## ADJUSTMENT AND CONTROL OF THE BIAS CURRENTS \_\_\_\_\_

This section does not apply to those amplifiers, which are equipped with the optional 'Automatic Bias' module.

Setting and control of the bias is a procedure that is required after the first switch-on and after the initial burn-in period of the amplifier.

Later on, we recommend to check these parameters once a month.



Please make yourself acquainted with the locations of the measuring points:

- MR1, MR2, MR3 (for the right channel)
- ML1, ML2, ML3 (for the left channel)

and of the regulation potentiometers:

- AR1 (Sets the BIAS value for the right channel)
- AR2 (Sets the BIAS balance for the right channel)
- AL1 (Sets the BIAS value for the left channel)
- AL2 (Sets the BIAS balance for the left channel)

### **THE PROCEDURE FOR ADJUSTMENT OF BIAS FOR THE RIGHT CHANNEL**

- 1) Use a digital multi-meter. Set it to either automatic mode, or to manual mode, to an operating measurement range of 2V DC. Next, please measure the differential voltage between MR2 and MR3.
- 2) Adjust the balance of the BIAS by gently rotating the BIAS balance potentiometer AR2, so as to achieve a measured differential value as close as possible to 0 mV DC (+/-20mV).
- 3) Measure the actual value of the BIAS between MR1 and MR2 or MR1 and MR3.

- 4) Adjust the voltage reading using the BIAS level potentiometer AR1 to a value as close as possible to 500 mV (+/- 20mV).

### **THE PROCEDURE FOR ADJUSTMENT OF BIAS FOR THE LEFT CHANNEL**

Similarly as described in the procedure for the right channel, conduct the adjustments using potentiometers AL1 AL2 and the measurement points ML1, ML2 and ML3.

### REPLACEMENT OF VACUUM TUBES \_\_\_\_\_

In the event that a need arises to replace the vacuum tubes, either the power tubes, or the control tubes, the following guidelines must be adhered to:

- The KT88 power vacuum tubes may be replaced only with the same type, or with another type, but such that is a direct equivalent.
- You can replace the 12AX7 control tubes only with the same type, or with another type, but such that is their direct equivalent.

### **POWER VACUUM TUBE REPLACEMENT PROCEDURE**

- 1) Using a multi-meter, measure the voltage between the test points ML1 and ML3. Adjust the position of the AL2 potentiometer so as to achieve the MINIMUM value of voltage between the test points.
- 2) Similarly, measure the voltage between points MR1 and MR3. Adjust the position of the AR2 potentiometer so as to achieve the MINIMUM value of voltage.
- 3) Disconnect the amplifier from the mains.
- 4) Remove the currently installed tubes, from their respective sockets: 1,3,4,6 (page no. 7) Plug in the new vacuum tubes in these sockets.
- 5) Connect the power plug back to the power line socket and perform the BIAS adjustment procedure - as described on page 13-14 of this manual.
- 6) Please remember that it is necessary to check and possibly re-adjust the BIAS, as may be required, after every exchange of old tubes for new tubes, and then, it is necessary to re-check the BIAS periodically during the burn-in period of the new tubes.

Within models, which are equipped with the optional automatic bias module, it is necessary to use vacuum tubes that have previously been pre-selected and paired up in quads or pairs.

## **DRIVER VACUUM TUBE REPLACEMENT PROCEDURE**

- 1) Disconnect the amplifier from the mains socket, the power supply network.
- 2) Remove the currently installed tubes from their respective sockets: 2 and 5 (page no. 7). Plug in the new replacement vacuum tubes in these sockets.



**WARNING ! Execution of the above listed procedure, while the device is not disconnected from the mains power, may result in permanent DAMAGE of the device.**

### **“BURNING-IN” OF THE AMPLIFIER** \_\_\_\_\_

Any tube amplifier requires an initial pre-heating (or "burn-in") period, in order so that it achieves its full sonic potential. This is due to the presence of residual polarization of dielectric elements and due to a necessary stabilization of working parameters of the vacuum tubes. The stabilization of the electrical parameters of the system occurs in a natural process whilst playing music through your audio system.

A preliminary degree of pre-heating of the amplifier is reached after about 10 hours of quiet music playback.

The full sonic capabilities shall stabilize and unfold within a time-span ranging from 40 to 60 hours of music reproduction at a moderate volume levels.

In the initial period of operation of the amplifier it is advisable to avoid short-term operation periods of the amplifier. Once activated, it should remain operational for a period of about 4-6 hours.



**WARNING! After the “burn-in” period, it is necessary to check, readjust the BIAS values. This operation does not apply to those amplifiers which are equipped with the optional automatic bias module.**

## TROUBLE-SHOOTING GUIDE

---

If your amplifier does not work as it is supposed to, it is fairly easy to diagnose and remedy some of the common malfunctions, by following procedures as outlined in this following.

THE PROBLEM	PROBABLE REASON	THE SOLUTION
After turning the power switch to the ON position, the amplifier does not switch on	A blown fuse.	Please exchange to faulty fuse to a new one (3,15A T), within the fuse holder as depicted with index 4 on page no. 9 of this user manual.
	An improper connection of the mains cable.	Please check if the plugs of the mains cable are properly inserted into the electrical mains socket and to the socket as depicted with index 5 on page 9 of this user manual.
One of the vacuum tubes is glowing red	Improper bias setting of the bias within those amplifiers, which are equipped with the standard manual bias system.	Please set the proper bias values as per procedure described on pages 13-14 of this manual.
The sound produced by the amplifier is distorted. A hum or pops have appeared and are coming from one of the channels.	Improper placement of the vacuum tubes in the sockets.	Switch off the amplifier. Wait until the vacuum tubes cool down. Check for proper placement of vacuum tubes in their sockets. If necessary - correct their orientation.
	Improper setting of the bias within an amplifier that is equipped with manual bias.	Set the bias according to the instructions as specified on pages 13-14 of this manual.
	One of the driver tubes (12AX7) has lost its nominal working parameters.	Switch off the amplifier. Wait until the vacuum tubes cool down. Exchange the positions of the driver tubes between channels. Turn on the amplifier. If the disturbing sounds have moved to the other channel, please send the faulty tube back to Fezz Audio, informing the company about the need for its replacement.
	One of the power tubes (KT88) has lost its nominal parameters, within an amplifier that is equipped with manual bias.	Using a digital multi-meter, that you set to the automatic range selection mode, or manually to the 750mV DC range, set the voltage between MR1 and MR2 to a minimum in the right channel, by turning AR1 (see fig. on page 13). Conduct a similar activity for the left channel, whilst measuring the voltage between ML1 and ML2 - set it also to a minimum by turning AL1. Now turn off the amplifier and wait until the tubes cool down. Now swap this pair of tubes between the two channels. Turn the amplifier on again and then conduct the bias setting procedure as described on page 13 of this manual. If the disturbing sounds have moved to the other channel, please send the pair of faulty tubes back to Fezz Audio, informing the company about the need of their replacement.
	One of the power tubes (KT88) has lost its nominal parameters, within an amplifier that is equipped with auto-bias.	Turn off the amplifier. Wait until the tubes cool down. Swap the pair of power tubes between channels. Turn the amplifier on again. If the disturbing sounds have moved to the other channel, please send the pair of faulty tubes back to Fezz

If you have verified the aforementioned situations, and your problem still persists, please contact our service department ( [info@fezzaudio.com](mailto:info@fezzaudio.com) )

## TECHNICAL DATA

---

Type:	Stereo integrated power amplifier
Model:	Titania
Output power:	2x 45W
Circuit architecture	Push-Pull, class AB1
Output Impedance:	4Ω / 8Ω
Input connectors:	3x RCA
THD distortion:	< 0,2%
Frequency response:	18Hz - 103kHz (at -3dB)
Power consumption:	180W
Mains fuse:	3,15A T / delayed
Weight:	17,5 kg
Dimensions:	420 x 410 x 175mm
Tube types:	4x KT88 (or similar) / 2x 12AX7 (or similar)

## LIMITED WARRANTY CONDITIONS \_\_\_\_\_

The manufacturer, the company Fezz Audio warrants that this Titania amplifier is free from defects in materials and in workmanship.

This warranty is valid for a period of 24 months from the date of purchase.

During the warranty period, any defects will be repaired free of charge, after showing the proof of purchase (receipt), in its original form.

You are responsible for transporting the equipment from the place of use to the dealer, distributor, national or international.

The warranty applies only to the original purchaser. The warranty is non-transferrable to subsequent owners.

This guarantee is subject to the following limitations and will be cancelled, void and null in case of:

- Use of the product that is not in accordance with this Users Guide
- Mechanical damage by the user
- Damage caused by electrical discharges (storms)
- Breach of guarantee seals, unauthorized use, adjustments or modifications
- Carelessness or damage resulting from improper transportation

The company Fezz Audio reserves the right to amend the designs of its products and their specifications without prior notice to the previous buyers.

**Fezz Audio**

**ul. Mazowiecka 20**

**16-001 Księżyno / Poland**

**[www.fezzaudio.com](http://www.fezzaudio.com)**