

To our valued customer and music enthusiast,

with the purchase of your new ACCUSTIC ARTS® TUBE DAC II – MK 3 you have opted for a product which incorporates the most modern technology to achieve excellent sound and quality. To make sure that you have pleasure for as long as possible with your unit we kindly ask you to thoroughly read this instruction manual through to the end.

We wish you many enjoyable hours of listening to music with your new unit.

ACCUSTIC ARTS® / Lauffen (Germany)

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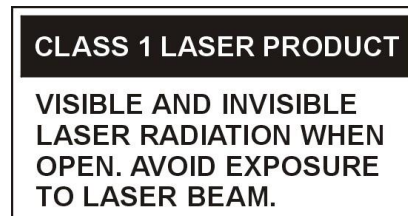
## 1 TUBE DAC II – MK 3 highlights

- Audiophile high-precision D/A converter
- Ultra-precise 24 bit / 192 kHz technology
- ACCUSTIC ARTS® "tube hybrid" technology
- D/A converter section with the following advantages:
  - 5 digital inputs: 2 x coaxial, 1 x balanced, 1 x optical, 1 x USB
  - USB interface with modern asynchronous 24/192 technology
  - easy playback of different audio files (WAV, AIFF, FLAC, MP3, etc.) from Windows® or Mac OS X® computer via USB interface with USB drivers within scope of delivery
  - selection between "native" signal processing or 24/192 upsampling
- Playback of hi-res DSD audio files
- ACCUSTIC ARTS® "tube hybrid" technology with following advantages:
  - very low distortion and a "good-natured", perfect distortion spectrum
  - "analog" sound experience with exceptional precision
  - easy tube change without readjustment (plug & play)
  - selected "military" tubes of the highest quality
- Analog section with the following advantages:
  - 1 fully balanced output (XLR)
  - 1 unbalanced output (RCA)
  - outputs are fixed or volume controlled via the integrated pre-amplifier function (selected by push-in button)
  - analog output stage class A standard
- 2 magnetically shielded toroidal core transformer ("Made in Germany") of the highest quality for high output reserve (2 x 75 VA)
- Very elaborate power supply with separate supply voltages for the individual assemblies to enable best possible decoupling of signals
- ACCUSTIC ARTS® remote control
- Extremely stable, solid, resonance-balanced housing manufactured primarily with 10 mm thick aluminium plates
- The ACCUSTIC ARTS® TUBE DAC II – MK 3 is "Handmade in Germany"

## 2 Important safety instructions

- Read these instructions.
- Keep these instructions.
- Follow all instructions.
- **Do not** use this appliance near water.
- **Never** use this appliance near hot surfaces.
- **Never** use this appliance outside and always place it in a dry environment.
- Check that your mains voltage corresponds to that stated on the appliance.
- **Never** leave the appliance unsupervised when in use. Always keep electrical equipment out of the reach of children.
- **Never** pour or spill liquids directly onto this appliance.
- **Never** operate this apparatus in an explosive atmosphere.
- **Do not** put any vases or similar objects containing water or liquids on top of this appliance.
- Unplug this appliance during lightning storms or when unused for long periods of time.

- Ensure that the appliance has sufficient air around it and avoid extreme temperature influences on the unit, especially direct sunshine and high humidity.
- **Always** disconnect the appliance from the mains power before carrying out any changes to the cables or when cleaning the appliance.
- Protect the mains cable from being walked on or pinched particularly at plugs and the point where they exit from the appliance.
- The mains cable of this appliance is equipped with an equipment grounding conductor. This equipment grounding conductor must **never** be disconnected or taped over. In case any humming occurs, please contact your authorized dealer.
- From time to time check the mains cable and the appliance for damages. Take care that the mains cable is not buckled or damaged by any house pets.
- **Never** move the appliance by pulling the mains cable. Make sure the mains cable cannot get caught in any way. **Do not** wind the mains cable around the appliance and do not bend it.
- **Never** use accessories which are not recommended by the manufacturer. They could constitute a danger to the user and risk to damage the appliance.
- **Never** operate the appliance with the housing open.
- To clean the aluminium housing, please only use a cloth moistened with water and some detergent. **Never** use inflammable or chemically aggressive cleaning agents.
- In the event of a defect, please **never** attempt to repair it yourself. Any tampering with the appliance by an unauthorised person will make the warranty void. Please get in contact with your authorized dealer.
- Refer all servicing to qualified service person. Servicing is required when the appliance 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 appliance, the appliance has been exposed to rain or moisture, does not operate normally or has been dropped.
- **Never** bypass a fuse.
- Replace fuses only with original types having the same ampere value, the same voltage endurance and the same time-lag. You can find the corresponding value in chapter 7.2 of this instruction manual.
- No user-serviceable parts inside.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.



Marking by the "CE" symbol indicates compliance of this device with the EMC (Electromagnetic Compatibility) and LVD (Low Voltage Directive) standards of the European Community.

### Remarks in the manual:

**WARNING!** Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in personal injury or death.

**CAUTION!** Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in a damage or destruction to part or the entire component.

To guarantee a reliable function of this unit over the long-term we kindly ask you to thoroughly **read this instruction manual** before connecting this unit and to observe the following instructions. This is also necessary for your own safety when dealing with the unit.

## **3 Unpacking and positioning**

Great care must be exercised when unpacking the unit. Carefully store the transportation packaging for the possibility of further use. If you have a claim on the warranty, always use the original packaging for any necessary transportation. Transportation without this packaging can lead to damage to the housing.

**Please check, if the following items are included:**

- 1 x AC mains cable (type depends on your country)
- 1 x ACCUSTIC ARTS® remote control
- 2 x batteries for the remote control
- 1 x replacement fuse (type depends on your mains voltage)
- 1 x CD-ROM (USB drivers, installation manual)
- 1 x Installation manual for USB drivers

This unit has no special requirements regarding its position, but it should be positioned on stable, even and horizontal surface. You can even put the unit in a cupboard. For reasons of better access to the various input and output sockets we recommend you position the unit in an audio rack. Professionally designed audio racks can have a positive effect on the music reproduction of your audio system.

**CAUTION!**

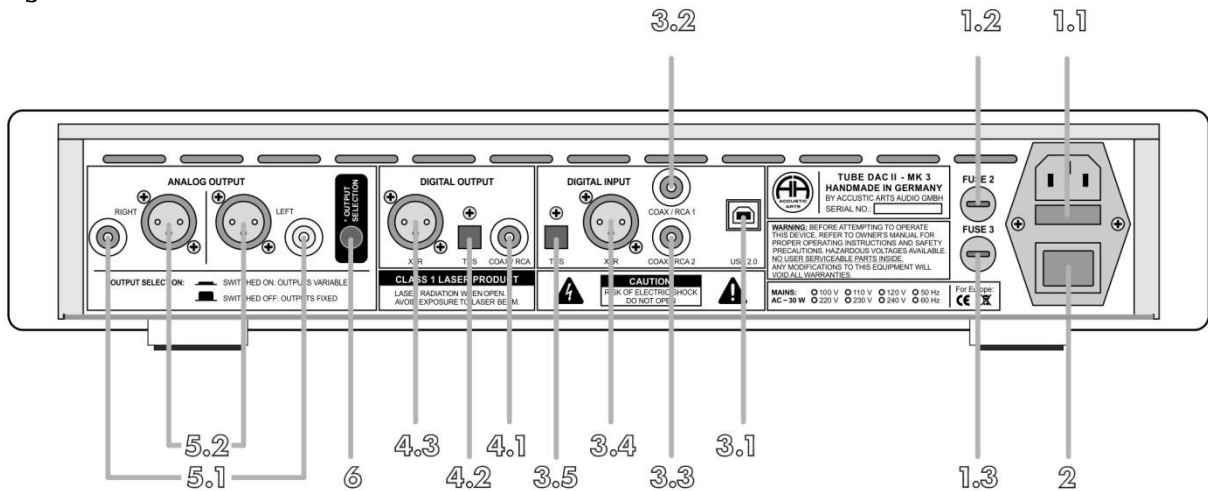




**Please observe at all times:**

**Before you connect the TUBE DAC II - MK 3 with some other unit using a cable, please never forget that both units must first be switched off and disconnected from the mains power.**

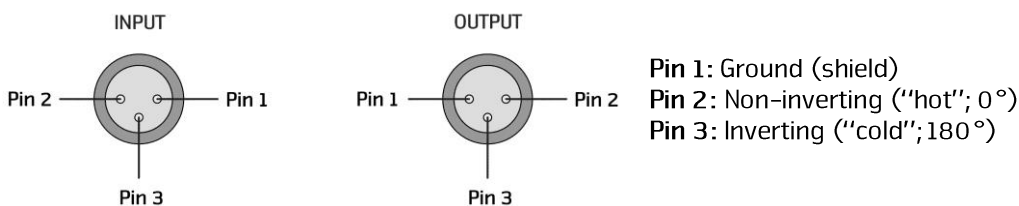
## 4 Installation

Fig. 1: Rear view



- 1.1 FUSE 1: Fuse holder for main fuse (plastic cap with integrated fuse)
  - 1.2 FUSE 2: Fuse holder for fuse of transformer 1
  - 1.3 FUSE 3: Fuse holder for fuse of transformer 2
  - 2 Mains power switch and power supply socket
  - 3.1 DIGITAL INPUT – USB 2.0: Asynchronous 24/192 USB input for connection of PC or Mac  
**CAUTION:** Installation of a special ACCUSTIC ARTS® USB driver can maybe necessary.  
Please install USB driver from included CD-ROM. See installation manual before.
  - 3.2 DIGITAL INPUT – COAX/RCA 1: Unbalanced, coaxial input; digital standard S/P-DIF (75 Ω)
  - 3.3 DIGITAL INPUT – COAX/RCA 2: Unbalanced, coaxial input; digital standard S/P-DIF (75 Ω)
  - 3.4 DIGITAL INPUT – XLR: Balanced input; digital standard AES/EBU (110 Ω)
  - 3.5 DIGITAL INPUT – TOS: Optical input; digital standard TOSLINK
  - 4.1 DIGITAL OUTPUT – COAX/RCA: Unbalanced, coaxial output; digital standard S/P-DIF (75 Ω)
  - 4.2 DIGITAL OUTPUT – XLR: Balanced output; digital standard AES/EBU (110 Ω)
  - 4.3 DIGITAL OUTPUT – TOS: Optical output; digital standard TOSLINK
  - 5.1 ANALOG OUTPUT : Unbalanced analog output (RCA)
  - 5.2 ANALOG OUTPUT: Fully balanced analog output (XLR)
  - 6 **OUTPUT SELECTION** : Output selection for analog outputs COAX and XLR:  
 = SWITCHED ON: OUTPUTS VARIABLE (= volume controlled)  
 = SWITCHED OFF: OUTPUTS FIXED (= no volume control)
- CAUTION:** Please chapter **5** before use.

### Pin declaration of the balanced input / output (XLR):



These pin assignments comply with the standard adopted by the Audio Engineering Society.


Fig. 2: Front view



- 7 **USB:**  
**RCA 1:**  
**RCA 2:** } Input selection for digital inputs  
**XLR:**  
**TOS:**

- 8 **TUBES ON**  / **TUBES OFF**  :

This push-button is exclusively responsible for the tube section of this device. Push the button and the complete tube section is switched off completely. Push again and the tube section will be switched on. During the following heating period the LED 10 in the middle glows red for approx. 2 to 3 minutes and then changes its colour into blue, indicating that the unit is now ready for operation.

 **IMPORTANT:** This push-button is no replacement for the power switch. It is only intended for short operational breaks to extend the lifetime of the tubes.

- 9 **TUBES OFF:** The blue LED lights up when the tube section is switched off.

- 10 **ON:** LED indicates unit is ready for operation



**1. LED red = unit is in "warm-up" mode**


This LED lights up **red** when the mains power switch 2 on the rear panel is switched on and the push-button 8 **TUBES ON** is activated. It indicates that the unit is in the warm-up mode (2 to 3 minutes).

**2. LED blue = unit is ready**

After the warm-up mode the tubes are ready for operation and the colour of the LED turns **blue**. When the tubes are ready the unit is also completely ready for operation

- 11 **ERROR:** This red LED always lights up when no digital reproduction device is connected to the respective selected input or when it is not active (= "digital error").

- 12 **NATIVE**  : Native signal processing and digital filter stage 1  
**192 UP**  : 24/192 up-sampling and digital filter stage 2.

 **IMPORTANT:** The up-sampling function isn't available for the USB input. All music files are processed natively when transferred via the USB input. But the digital filter stages 1 and 2 are active that means, when e.g. the push-button is switched on, digital filter 2 is activated.

- 13 **VOLUME:** Volume control is active when **OUTPUT SELECTION** 6 is switched on (outputs = variable)

## 5 Important before you start: Volume control YES or NO?



**CAUTION!** Please read this chapter before you start to operate the TUBE DAC II - MK 3.

Before you operate your TUBE DAC II - MK 3, please decide how you wish to use the analog outputs 5.1 / 5.2 of your device. This is because the analog outputs of the unit can be used with the **volume controllable (= variable)** or **not controllable (= fixed)**.



### 5.1 Variation 1: Analog outputs without volume control

Always use this option if you wish to connect the unit to a standard preamplifier. The volume is then controlled by the connected preamplifier, i.e. the outputs of the TUBE DAC II - MK 3 have to be unregulated, i.e. fixed. The **OUTPUT SELECTION** must therefore be switched off.



**CAUTION!** If the unit is in "FIXED" mode it must not be connected directly to a power amplifier without volume control. Otherwise your loudspeakers may be severely damaged when switching the unit on

### 5.2 Variation 2: Analog outputs with activated volume control (= preamp function)

Use this option if you wish to connect the TUBE DAC II - MK 3 **directly** to a power amplifier, i.e. without a preamplifier connected in-between. The volume is then adjusted via the volume control of the TUBE DAC II - MK 3, i.e. the outputs of the TUBE DAC II - MK 3 have to be controlled, i.e. are variable. The **OUTPUT SELECTION** must therefore be switched on. The button is set into the rear panel in order to avoid unintentional activation of the outputs. Therefore use a thin pin to operate the switch.

**CAUTION:** During the heating up phase of the tubes the volume can't be changed by remote control.



Push to switch on. Use a pen or something similar.

## 6 TUBE DAC II – MK 3 operation

In order to use the TUBE DAC II – MK 3, it is firstly necessary to connect the analog outputs to the corresponding analog inputs on your preamplifier / amplifier. Then you can connect the selected digital input to the appropriate digital output of the respective source device.

### 6.1 Digital inputs COAX – XLR – TOSLINK

These digital inputs allows the processing of audio data up to **24 bit / 192 kHz** (see chapter **4**). Source devices can be CD drives or SAT receivers etc. The interface from a PC is possible provided a corresponding soundcard with appropriate S/P-DIF output is present. The conversion of data from other, special sound standards such as SACD or DVD audio is not possible.

Playback is possible for wave audio files (CD format) and also formats such as FLAC, ALAC, MP3 etc.

When an appropriate device is connected to the input, you can activate the input by turning the rotary switch **7** on the front panel.

### 6.2 USB-IN: asynchronous 24/192 digital input

**CAUTION: The USB driver has to be installed before using the USB 24/192 interface of your ACCUSTIC ARTS® device for the first time. Please install a USB driver from included INSTALLATION CD-ROM on your computer. See separate installation manual.**

Source devices can be connected to the digital input **USB-IN** which transfers digital audio data. This includes a **PC, laptop, notebook** or other portable music players. The development in this area is very dynamic and the offer is continually changing. Therefore, it is not possible for us to provide a list of devices compatible to this input. We recommend that you connect the respective source device to the TUBE DAC II – MK 3 to test for compatibility.

The description of the USB socket integrated in the TUBE DAC II – MK 3 is **USB 2.0 (type B)**. This socket can therefore receive digital data, but is not able to transmit digital data. As a result, the TUBE DAC II – MK 3 cannot control a different device via the USB socket, but can be considered solely as a D/A converter. Maximum data rate is 24 bit / 192 kHz. **Connection of a USB stick is not possible.**

**After installation of the correct USB driver**, the connection of a source device, e.g. notebook, is made easily according to the known "plug and play" principle. This means it is only necessary to connect both devices with a USB cable (cable type: USB-A to USB-B) and the notebook will recognise the TUBE DAC II – MK 3 as an external device. Playback is possible for wave audio files (CD format) and also formats such as FLAC, ALAC, MP3 etc.

Now all you have to do is open your favourite music program and you can play the selected music tracks via the TUBE DAC II – MK 3.

## 7 Troubleshooting

### 7.1 Malfunctions

Malfunctions are mostly caused by something simple which can be put right quickly. In the next section some possible malfunctions are described together with their corrective action. However, if it is not possible to remove the malfunction please contact your authorised dealer.

**Malfunction** The unit was switched on, the blue LED (ON) remains dark.

Cause 1            The mains cable is not properly connected.  
Solution Check mains cable and push in firmly.

Cause 2            The mains fuse is damaged.  
Solution           Pull out all mains plugs and replace the corresponding fuse (see chapter **7.2**).



**Malfunction** Volume can not be controlled even though the unit has been set to "OUTPUTS VARIABLE" (during tube warm-up mode).

Cause: This is a protective function during warm-up mode and no error.  
Solution: Please wait until the light of the "ON" LED in the middle is blue.

**Malfunction:** When the unit is switching from "warm up" mode into operating mode (LED "ON" changes from red to blue) the music is played back extremely loud via the speakers.

Cause: The TUBE DAC II - MK 3 has been connected directly to an amplifier even though **OUTPUT SELECTION** is set to „OUTPUTS FIXED“.  
Solution: Please swiftly set **OUTPUT SELECTION** switch to „OUTPUTS VARIABLE“

For malfunctions which affect the reproduction relating to individual devices first of all make sure that all connections are correctly and thoroughly made. In general, errors which arise are often a result of an unsatisfactory or wrongly-made connection.

## 7.2 Replacing damaged mains fuses

If a fuse is damaged only replace the fuse with original types having the same ampere value, the same voltage endurance and the same time-lag. **Never** use fuses with other ampere classes or time-lag classes.

**WARNING!**



**Pull out the mains plug!**

Always disconnect the unit from the mains power before replacing a fuse.

To change fuses 1 to 3 please use a screwdriver suitable for the slot in the fuse holder. Now you can take out the fuse holder and replace the fuse.

For countries with 220– 240 V / 50– 60 Hz please use the following fuse types:

FUSE 1: 1.25 mA – time lag

FUSE 2: 800 mA – time lag

FUSE 3: 400 mA – time lag

For countries with 100–120 V / 50– 60 Hz please use the following fuse types:

FUSE 1: 2.5 A – time lag

FUSE 2: 1.6 A – time lag

FUSE 3: 800 mA – time lag

## 8 Looking after your equipment

This unit does not require special treatment in excess of the usual care taken with high quality devices. Clean the housing with a dry or slightly moistened cloth. Please do not use any aggressive detergents or detergents which contain silicon.

The best way to clean the front plate is with a mild non-aggressive fat-dissolving detergent (e.g. glass cleaner). Use a very soft clean cloth and wipe the front plate with this without exerting strong pressure. **Never** use abrasive agents or polishing agents with abrasive particles.

**WARNING!**



**Do not place the unit in direct sunshine and avoid extreme changes in temperature.**

## 9 Specifications (selection)

Input data formats:	Hi-res audio up to 24 bit / 192 kHz (ALAC, FLAC, AIFF, WAV etc.) DSD64 (2.8 MHz)
Digital inputs:	1 x AES/EBU; balanced - 110 $\Omega$ (XLR) 2 x S/P-DIF; unbalanced - 75 $\Omega$ (COAX) 1 x TOSLINK; optical 1 x USB 2.0
Digital outputs:	1 x AES/EBU; balanced - 110 $\Omega$ (XLR) 1 x S/P-DIF; unbalanced - 75 $\Omega$ (COAX) 1 x TOSLINK; optical
Analog outputs:	1 x balanced - 2 x 33 $\Omega$ (XLR) 1 x unbalanced - 33 $\Omega$ (COAX)
Transformer power:	2 x 75 VA
Distortion (THD+N):	0.005 % with 24 bit (22Hz – 22 kHz)
Power consumption:	max. 30 W
Tube type:	12 AX 7 dual triode – military version, 4-times selected and matched
Dimensions (H x W x D):	100 x 482 x 375 mm / 3.9 x 19 x 14.8 inches
Weight:	12 kg / 26.4 lbs.

## 10 Copyright, trademarks, warranty

### Copyright:

This instruction manual was correct at the time of going to press. The manufacturer reserves the right to make changes to the technical specification without prior notice as deemed necessary to uphold the ongoing process of technical development.

This manual is done by ACCUSTIC ARTS Audio GmbH.

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### Trademarks:

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### Warranty:

The manufacturer accepts no responsibility for damage caused by not adhering to these instruction manual. Modification or change to any part of the product by unauthorized persons releases the manufacturer from any liability over and above the lawful rights of the customer.