

VACUUM TUBE AUDIO DAC UNIT

LM-502CA



*LineMagnetic*

LINE MAGNETIC AUDIO

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Thanks for choosing our Line Magnetic LM-502CA Digital-to-Analog Converter as an important part of your music system and please read the manual carefully before installation and operation.

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### **Suggestions:**

LM-502CA DAC is designed and manufactured with our original parts and reaching the best results. We are not responsible for problems and damages caused by non-original parts replacement in the DAC.

## Package Contents

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Please carefully check the package first and then open the package. Package contents include:

1. Line Magnetic LM-502CA 1
2. Main Fuses 2
3. Power cord 1
4. 1.5V Batteries(AAA) 2
5. User's Manual 1
6. Warranty Card 1

Note: All other parts except above are not included.

### Recommendation:

Keep all packing materials for future use and please fill in the warranty card for registration of warranty.

### Note:

Please make sure local voltage level is matched with the input level of the DAC which indicates on the rear panel. Too low or too high voltage may cause problem and in case you've found improper voltage please contact our company or our local agent.

## Product features

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- . LM-502CA digital DAC takes Xmos USB audio technology which utilizes high speed USB 2.0 receiving and decoding 32bit/192kHz high resolution digital signals.
- . LM-502CA digital DAC is designed with top grade ESS 9016 DAC chips.
- . LM-502CA digital DAC features five digital inputs: AES/EBU, BNC, USB, OPTICAL, and COXIAL. It is an asynchronous design with awesome performance from its low distortion, Ultra-low-jitter Clock Recovery technology to high quality separate power supply for Analogue and Digital part: Toroid power transformer for Digital part while EI power transformer for Analogue part.
- . LM-502CA digital DAC offers a choice of outputs: Tube output or Solid-state Output.
- . Digital circuit has taken high speed rectification circuitry while Analogue parts has taken 6Z4 for tube rectification.
- . LM-502CA will lock onto any signal input at 44.1, 48, 88.2, 96, 176.4 and 192kHz with the front panel LCD display showing the input frequency.
- . LM-502CA incorporates LM Audio's world class leading Tube analogue output stage. Two pieces of 12AU7 are employed at Tube buffer to true tube output.

## Specification

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Sampling Rate: 32bit 44.1KHz 48KHz 88.2KHz 96KHz 176.4KHz 192KHz	
Output Impedance: 2K $\Omega$ (Tube),600 $\Omega$ (Solid State)	Digital Input Impedance: 75 $\Omega$
Dimension (W×D×H) : 430mm x 325mm x 105mm	Frequency response: 15Hz~50kHz ( $\pm$ 1dB)
Power Requirements: 230V      Net Weight: 6.7kg	Dynamic Range: 120dB (A Weighted)
Output Level: 3V $\pm$ 0.5dB(Tube) 2.5V $\pm$ 0.5dB(Solid State) THD: 0.5%(Tube) 0.02%(Solid State)	
S/N Ratio: 92dB(Tube) 98dB(Solid State)	Power Consumption: 24W
Working Condition: Temperature: 0°C ~40°C	Moisture: 20%~80%
Storage Condition: Temperature: -20°C ~70°C	Moisture: 20%~90%

**Note:** Line Magnetic Audio reserves the right to change specifications at any time without further notice in advance if products are upgraded. Specifications on the manual only show the specifications of the DAC you bought.

## Safety precautions

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1. Unplug the power cord if you are not going to use the product for an extended period of time.
2. Temperature will become higher after working in long period of time and please keep the unit's ventilation open and install the DAC at a well-ventilated place to avoid troubles and fire hazard.
3. Forbidden to operate as unloaded.
4. Forbidden to operate when the output is open or shorted.
5. Do not attempt to service this product yourself. Opening the cover may expose you to dangerous voltage or other hazards.
6. We are not responsible for any problems caused by checking and opening without permission of our company. For service, Please contact a qualified service technician.
7. Do not place any objects filled with liquids such as vases or some others on the top or around.
8. Clean only with dry cloth.
9. Please move the DAC carefully not to drop the unit or be subject to other strong shocks.
10. Unplug the power cord if you are not going to use the product during thunderstorm.

### Carefully read and follow the Manual for installation:

1. Do not place the product near heat sources such as radiators, heat registers or other products that produce heat.
2. In order to avoid being overheated please keep the unit's ventilation open.
3. Do not expose this appliance to rain or moisture.
4. DAC should install steadily and make sure all four feet are on the same level.
5. Keep the DAC in a certain distance so that it can be easily connected.
6. Keep the DAC in 15CM's distance to the surrounding walls.

\*Note: If you need to use the USB function, Please login "www.lm-audio.com" download USB driver for V1.61.

## Safety precautions



- .To reduce the risk of electric shock, do not remove the cover.
- .No user serviceable parts inside. Refer servicing to qualified service personnel.
- .To reduce the risk of fire or electronic shock, do not expose the unit to rain or moisture.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert users to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude a risk shock to persons.

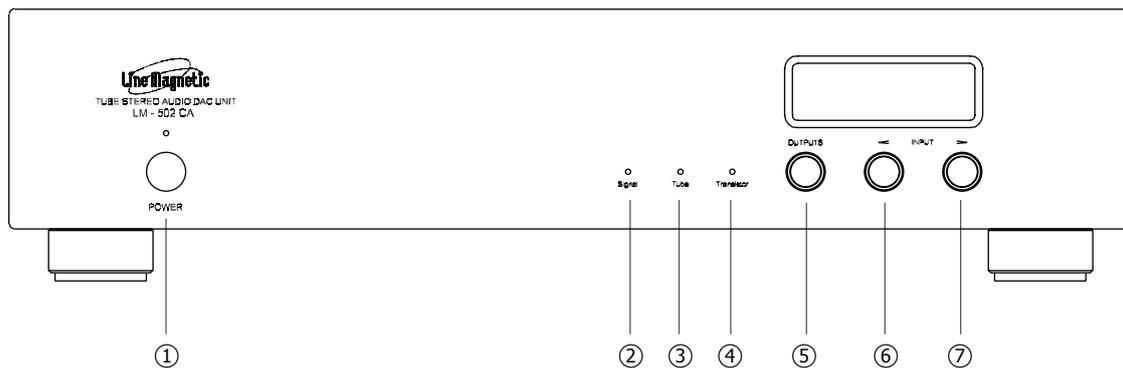


The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**Note:** Input voltage level of the amplifier is 230VAC $\sim\pm 5\%$  and please make sure that the supply voltage is proper. Too low or too high voltage may cause problem or reduce its life.

## Functions Description

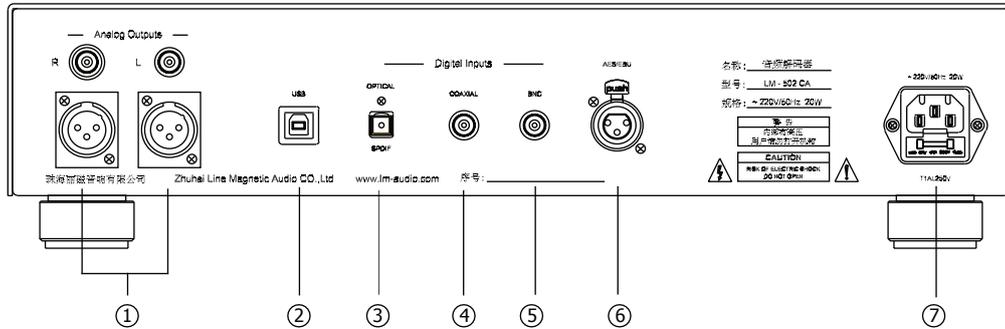
### Front Panel:



- |                               |                            |
|-------------------------------|----------------------------|
| ① Power Switch                | ⑤ Output Selector          |
| ② Signal Indicator            | ⑥ Previous Input Selection |
| ③ Tube Output Indicator       | ⑦ Next Input Selection     |
| ④ Transistor Output Indicator |                            |

## Functions Description

### Rear Panel:

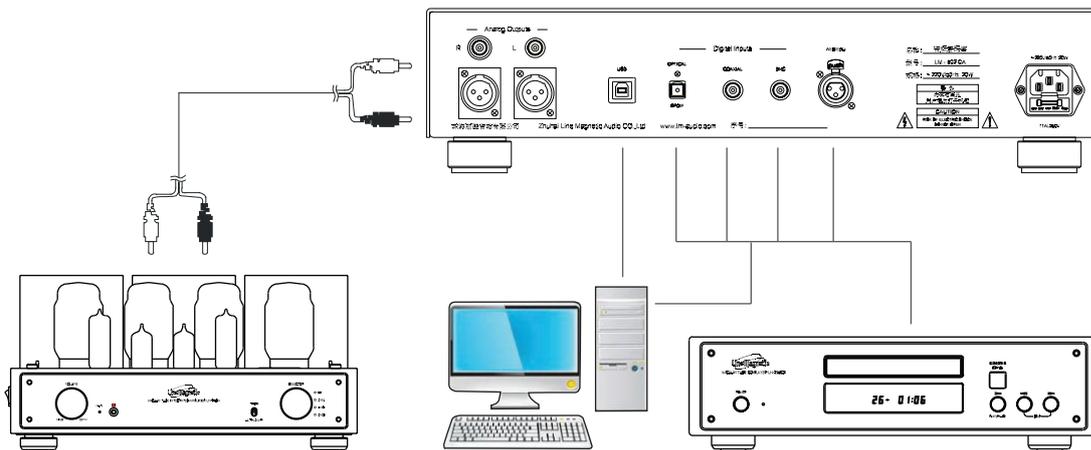


- |                  |                                |
|------------------|--------------------------------|
| ① Analog Outputs | ⑤ BNC Input                    |
| ② PC-USB Input   | ⑥ AES/EBU Balance Input        |
| ③ Optical Input  | ⑦ Power Socket with Main Fuse. |
| ④ Coaxial Input  |                                |

## Connection

### Audio Connection

Here is the standard way of connection for LM-502CA with other audio equipments.  
Please take pictures below for your reference:



### Suggestions:

1. During installation please always refer to other products' operation manuals.
2. Please do not insert the power cord into the main socket only if all other instruments are well connected.
3. R refers to right channel while L represents left channel.
4. Please take the right guidance for connection as wrong connection may cause noise or low grade function.
5. Do not fasten signal cables together with other cables just like the power cables to avoid disturbance.

## Turning ON

Before turning on the DAC please make sure all connections are correct and the power supply is stable.

1.If you are going to use PC-USB function please install the USB driver program first and the software is in the Driver disk attached. Please kindly note iOS system does not need to install the driver software. Method of installation of the driver program:

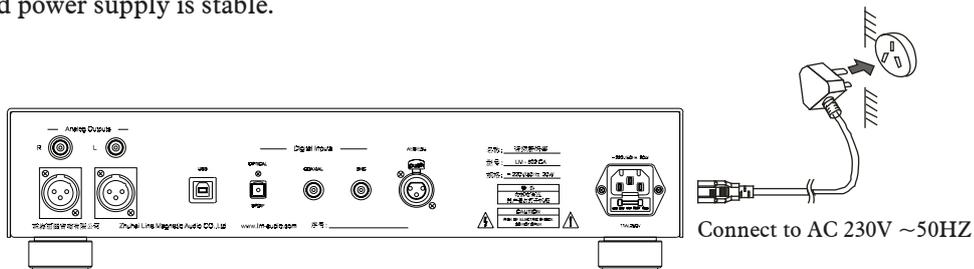


- 2.Please connect the computer and the DAC with USB cable and then turn on the DAC. Find the driver software in the driver CD and install according to the instruction step by step. If the program is correctly installed you will find an icon of the driver program at the lower right hand side of the computer.
- 3.Open Audio Setup of the computer and choose XMOS Audio 2.0 Output for the Audio output instrument.
- 4.Turn on the DAC and the power LED will be on. It shines indicating that the amplifier is working.
- 5.In 30 seconds the display will show INPUT: USB SR:-----, It means the DAC functions very well.
- 6.Or if the power LED is not on please contact with our local agent or our company.Select the right sound source and you can enjoy the music you prefer.
- 7.Open the media player and play music. Choose USB input and the display will show the sampling rate of the music currently played.Connect your sound source with digital output (Optical, RCA Coaxial, BNC Coaxial, AES/EBU, USB) to the DAC and select the corresponding input by buttons on the front. Then you can enjoy the music with the full system and the display can show the sampling rate of the music played.



### Precautions:

Connection of the power cord:Connect the speaker cables and signal cables first and then plug the power cord into the power socket. Before turning on the amplifier please make sure all connections are right and power supply is stable.



#### Note:

- 1.It is normal that power transformer becomes hot for extended period of operation.
- 2.Please unplug the power cord if you're not going to use the product for an extended period of time.
- 3.Please do not insert the power cord into the mains socket only if all other instruments are well connected
- 4.To prevent damage to the system never cut off the speaker cables while the unit is ON.
- 5.In order to protect the tubes please re-switch on the DAC after turned off in two minutes.

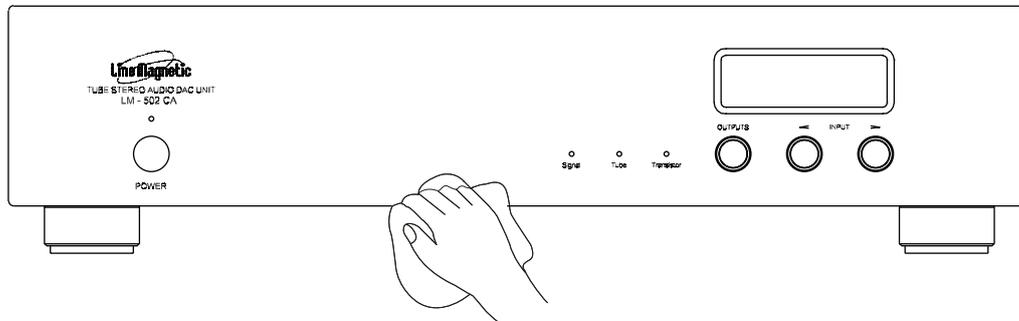
#### Warning:

Please make sure corresponding voltage is the same as required. We are not responsible for damage caused by misuse of unsuitable voltage.

## Maintenance

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Clean the DAC with soft dry cloth and please do not use any chemicals for cleaning.



## Warranty Statement

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### Terms & Conditions:

1. **Limited Warranty:** One-year limited warranty from the date of purchase except vacuum tubes which are warranted for six months.
2. **Limited to original purchaser.** This warranty is for the sole benefit of the original purchaser of the covered product, and may not be transferred to a subsequent owner.
3. **Conditions & Limitations.** This warranty is subject to conditions and limitations, as follows. This warranty is void and inapplicable if the product has not been used or handled other than in accordance with the instructions in the owner's manual, or if it has been misused, abused, damaged by accident or neglect, or in transport once in possession of purchaser, or the defect is due to the product being repaired or tampered with by anyone other than Zhuhai Line Magnetic Audio Co., LTD or an authorized Line Magnetic Audio Representative.
4. **Remedy:** If the product contains material, or manufacturing defects, it must be packed in original packaging and returned to Zhuhai Line Magnetic Audio Co., LTD or an authorized Line Magnetic Audio Representative at his or her sole expense. A returned product must be accompanied by a written description of the defect and the warranty card with an authorized dealer's stamp on which indicates the model and series number, the date of purchase, the name and address of the purchaser. Zhuhai Line Magnetic Audio Co., LTD reserves the right to modify the design of the product and change the specifications without notice or obligation to any person.
5. **Miscellaneous.** Any implied warranties relating to the above product shall be limited to duration of this warranty. This warranty does not extend to any incidental or consequential costs or damages to purchaser. Our liability will be no more than the amount you paid for the product that is the subject of a claim. This is the maximum amount for which we are responsible. This warranty gives you specific legal rights. You may also have other rights which vary from country to country, state to state

## Troubleshooting

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Please follow the instruction in the manual in order to keep the DAC work in its best state. If wrongly operated and you thought that would be troubles please check according to following tips to look for the exact reason. Sometimes problems would be caused by the other related products and please have a check too on those connections. Even doing so, if the problem still exists please contact with your local agent or our company.

	Problem	Cause	Remedy
NO OUTPUT	Power indicator is OFF	Power cord is not well-connected	Please check the power cable connection or power outlet connection
		Main fuse is out.	Replace with the same type and value fuse
		Troubles of inner parts or components	Please contact with local agents or our company.
	Power indicator is ON	NO signal input	Check the function of the sound source Check the input selection and switch to the proper input.
Noise output	Ground of input signal cable is open or bad contact of the input signal cable	Replace the input signal cable with a new one	
	Components or circuits are in trouble	Please contact with local agents or our company.	
Sound field Positioning is not so good.	Signal input cables or speaker cables are wrongly connected	Reconnect it as suggested in the manual	
Problematic USB playback	Audio output device of the PC is wrongly set up.	Choose the correct Output device.	
	Problem on USB Driver.	Install the driver correctly.	

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