

# Sonnet PASITHEA



## Pasithea owner's manual

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Dear Customer,

What more can you do after launching the Morpheus one of the best dacs available today? All the options and features that the Morpheus already had but now on steroids! Introducing Pasithea by Sonnet Digital Audio, a powerful Digital DAC/ Pre Amplifier , a product that is comparable to others with a price tag which is twice as high! The biggest difference between his predecessors is the fact that the Pasithea is based on a new generation of the previous used SDA-2 dac modules. This new SDA-3 module is able to run on an unusual high voltage. Not only does this improve the signal to noise ratio but by working with four modules per channel a very low output impedance can be achieved. As with the Morpheus, consumed energy is kept as low as possible and despite the eight SDA-3 modules used, the Pasithea consumes an average of 16 Watts in full operation. As each SDA-3 module is using four R2R ladder networks in balanced mode, a total of thirty-two R2R ladders are involved to give the Pasithea top performance. 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 -144 dB, which gives the Pasithea a realistic 24 bit dynamic range. Due to new technology as used for the volume control, the Pasithea can be used in both "variable" or "fixed mode". As a result the Pasithea can be used as a digital pre amplifier and driving power amplifiers directly without intervention of a normal pre amplifier or as a normal dac having a fixed output level. Next the Pasithea is equipped with an expansion slot for DSP functions. If used the Pasithea will detect the module automatically.



The MQA module is one of the options available. MQA (Master Quality Authenticated) is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download. After MQA module is installed the Pasithea is able to play back MQA audio files and streams, delivering the sound of the original master recording. MQA decoding is activated by default in the Pasithea menu so MQA will be indicated on the display when played.

The new approach of the Pasithea is a step forwards as it omits all electronics as used for a normal 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.

We wish you many years of enjoyment experiencing music!

You're sincerely

Sonnet Digital Audio

### **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 Pasithea 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 "Pasithea" pre amplifier.  
Please contact Sonnet Digital Audio if you have any questions not addressed in this guide.
13. Sonnet Digital Audio 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



**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 it has a galvanic isolation and can handle a maximum sample rate of 192 kHz

**USB input:** Use an USB cable to connect the Pasithea 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 , Linux or MAC, we refer to our support website <https://www.sonnet-audio.com/Support.html> )

**I2S input:** The I2S input is made to work in conjunction with our Hermes streamer. Use a CAT-6 UTP cable to connect both products together.

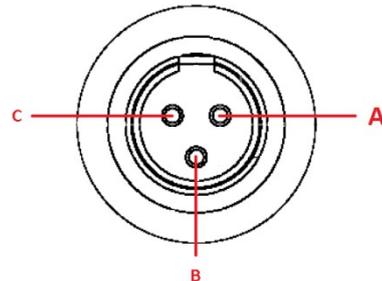
**RCA outputs:** Standard interlinks can be used to connect the dac to your amplifier. The "Pasithea" is designed conform the "Red book standard" so the maximum output will be 2 Volts RMS . Your (pre)amplifier should handle this output levels.

**XLR outputs:** Standard XLR line cables should be used to connect the dac to your (pre) amplifier. The "Pasithea" 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 Pasithea is switched off.
- C) Normally open when Pasithea is switched off.



# Sonnet PASITHEA

Operating



**Remark:** When the Pasithea is fully connected and switched to "on" for the very first time, the volume will be set to -40dB. Every time when the Pasithea is removed from mains, this setting is coming back and is built in to avoid excessive volume levels in case that the unit is used as a digital pre amplifier. During normal use the unit will remember his last setting. When using the Pasithea in conjunction with a normal analog pre amplifier it can be used in "Fixed mode" In Fixed mode the Pasithea will give a fixed output level, based on user preset value. In fixed mode the user setting will be stored in memory and always remembered, also after removing the unit from mains.

**Standby position :** To reduce power, the dac mother 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 buttons or the remote control.

**Source selection:** The digital inputs can be selected by pressing the source button at the front . When the Pasitheia is turned on, the input channel that has been used recently is presented again. When pressing this button repeatedly, the next input will be selected. In case of using the remote control, source selection can be done in two directions.

**Volume control:** The volume control is a so called rotary encoder so it has no end stops like a normal potentiometer. By turning the volume knob, the output level will be changed in steps of + or - 1 dB. After reaching a level of -63 dB the Pasitheia will automatically switch to mute mode. Increasing the volume level will disable the mute setting. In case that the Pasitheia is set for “fixed output level” the volume knob has no function except the “mute function”. The volume level is visible on the front panel display by exact Decibel level and a thermometer scale. In fixed mode the display tells you the fixed user setting like for instance -10dB. The “F” stands for fixed.

**Remark: When using the Pasitheia in conjunction with a power amp and without intervention of a pre amplifier the recommended gain of the used power amp should be between 22 and 26dB! However, the Pasitheia has both hardware and software settings to attenuate the output signal by 10dB or even 20dB when both settings are combined! As a result a wide range of power amps can be used like for instance very sensitive tube designs. The correct settings will be described later in this document.**

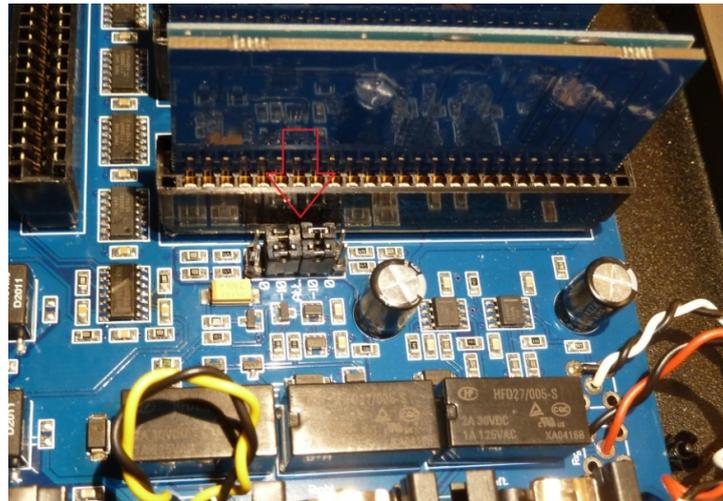
**Mute function:** By pressing the volume knob the Pasitheia will switch into “mute mode” Pressing the volume knob again brings back the actual volume level. The mute status is visible on the front panel display.

**Error indication:** When no digital data is coming in, the front panel display will show “NO DATA”

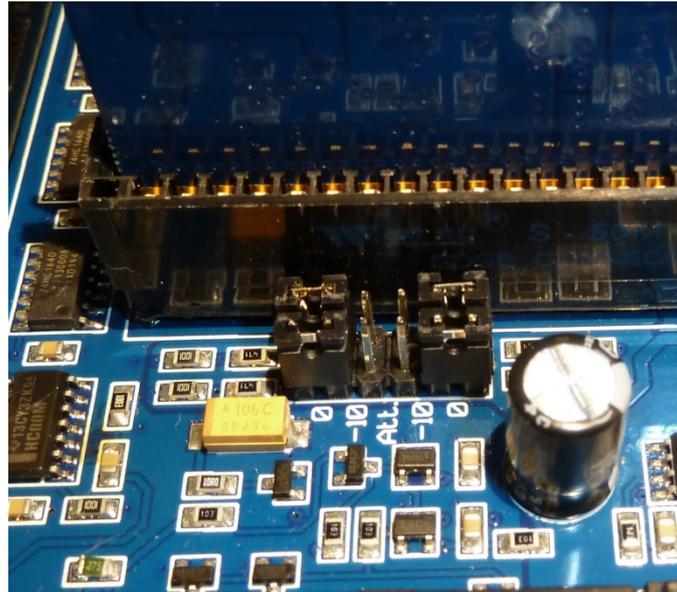
## -10dB option by hardware

Because the Pasitheia does not operate like a normal preamplifier, analog electronics are absent to control volume. Instead, the so-called reference voltage is controlled and to which the dac modules adjust their output level. However, it is not the case that every power amplifier accepts an output level with a maximum level of 2 (RCA) or 4 (XLR) Volts. In particular, this concerns power amplifiers that are satisfied with a lower input level such as tube amplifiers. In the case of a maximum level of 2 or 4 Volts, it would mean that the volume would have to be set particularly low while the sound level is already very high. As a result, in such cases there is only a small range left for the volume knob.

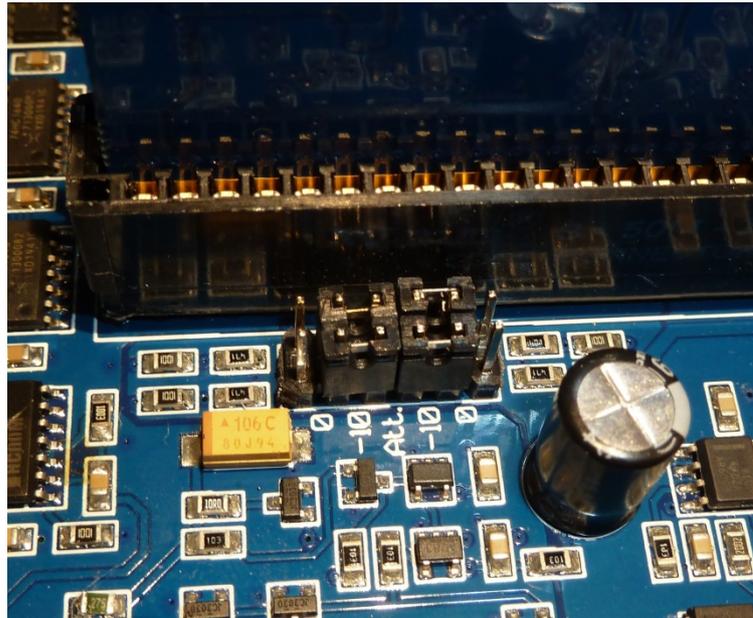
In the Pasitheia, a hardware option has been added to permanently adjust the output level from 2 Volts (RCA) or 4 Volts (XLR) to 0.66 or 1.33 Volts, realizing an attenuation of 10dB. As a result, the volume control range is larger and more comfortable. On the motherboard there is a set of jumpers that can be moved to a different position if necessary and are located close behind the dac modules. As a result the -10dB hardware option will reduce the output impedance from 16 Ohms to 8 Ohms.



To adjust the position of the attenuator, the unit must be switched off and disconnected. The cover must be removed and all torx screws ( T10 size ) should have to be unscrewed all around. By default, the attenuator is in the 0dB position as shown in the picture below. As can be seen, the jumpers are positioned on the outside.



To realize the -10dB option the jumpers must be placed inwards.



## -10dB option by software via Menu settings

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The -10 dB software option can be used instead of the hardware option and is convenient in many situations. Even on top of the present hardware setting the software setting may be applied so that a total attenuation of 20dB can be realized.

### **Enter the menu settings**

The menu settings are accessible by pressing both source and power buttons simultaneously. After entering the menu the -10dB option can be found by toggling the source button until this option is visible. By rotating the volume knob left or right this option can be enabled or disabled. When the right attenuation is set push the volume knob to store this setting in the memory.



-10dB Attenuator  
On

### Additional menu settings

**Variable /Fixed volume** By default the Pasithea is set for variable volume setting . In the menu this can be set to a fixed level and is based on the last volume setting. So in case that the volume level was set for -10dB the Pasithea can be used as a normal dac having a fixed level of -10dB. Especially in case of very sensitive pre-amplifiers this setting can avoid overload of the amplifier input circuitry . When the Pasithea is switched to “Off” this setting is still in the memory and comes back when the Pasithea is switched to “On” . Even when the Pasithea is disconnected from mains this fixed setting will be remembered.

First set your volume for the desired volume setting. To set the Pasithea to “fixed” mode press both front panel buttons on the Pasithea simultaneously to enter the menu mode. The following display will be visible:



Rotate the Volume knob clockwise until the display shows the “On” status. Next press the volume knob to enter this new setting into the memory.



The new setting will be visible and where the “F” stands for “Fixed” Leave the menu by pressing the front panel source button.

A blue LCD display showing the text "Optical -10dB" in a white, monospaced font. The text is arranged in two lines: "Optical" on the top line and "-10dB" on the bottom line.

**Back light** By default the back light of the display is switched to “on”. By entering this menu setting, the user can select that the display is “On” only in case of an event like changing volume or selecting a source, but will be switched “Off” after the time set by the user. The time that the display is “on” can be changed from 1 to 60 seconds. To set the display “On time” press both front panel buttons on the Pasithea simultaneously to enter the menu mode. The volume setting is the first item visible. Now use the source button on the front of the Pasithea only ones to enter the display mode. The following display will be visible:

A blue LCD display showing the text "Dim Timeout: Always On" in a white, monospaced font. The text is arranged in two lines: "Dim Timeout:" on the top line and "Always On" on the bottom line.

Rotating the volume knob clockwise tells the number of seconds that the display remains “On”. Push the volume knob until the right “On time” is found. The set volume level is stored in the memory of the Pasithea.

A blue LCD display showing the text "Dim Timeout: 30s" in a white, monospaced font. The text is arranged in two lines: "Dim Timeout:" on the top line and "30s" on the bottom line.

**DSP functions** Options like MQA or other DSP modules are detected automatically when installed but can be bypassed in the menu. By default the “MQA/DSP” option is switched to “On” . To set the “MQA/DSP” to “Off” press both front panel buttons on the Pasithea simultaneously to enter the menu mode. The volume setting is the first item visible. Now use the source button on the front of the Pasithea twice to enter the “MQA/DSP” mode. The following display will be visible:



Turn the volume knob counter clockwise to switch the “MQA/DSP” function to Off. Rotating the volume knob clockwise will activate the “MQA/DSP” setting again. Press the volume knob to enter this setting in the memory of the Pasithea.



Leave the menu by pressing the source button on the front panel of the Pasithea.

### Disabling the remote control

The infra red data used by the Pasithea remote control is based on an international protocol so that it does not interfere with television sets or other products such as air conditionings. However, when the Pasithea is used as a dac and the connected preamplifier is controlled with a remote control, it is possible that the Pasithea is also controlled by the same remote control. After all, these two devices are using the same standard infra red protocol. In such cases it is possible to disable the remote control of the Pasithea. The consequence is that Pasithea can only be controlled manually.



Enter the menu option. Turn the volume knob counter clockwise to switch the "Remote Control" function to Off. Rotating the volume knob clockwise will activate the "Remote Control" setting again. Press the volume knob to enter the desired setting in the memory of the Pasithea.



### **MQA - Master Quality Authenticated**

The MQA module is one of the options available. MQA (Master Quality Authenticated) is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download. After MQA module is installed the Pasithea is able to play back MQA audio files and streams, delivering the sound of the original master recording. MQA decoding is activated by default in the Pasithea menu so MQA will be indicated on the display when played.

### **What is MQA?**

MQA is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download.

Visit [mqa.co.uk](https://www.mqa.co.uk) for more information.

### **How does MQA work?**

Products with a full MQA Decoder unfold the file to deliver the highest possible sound quality. At this level of playback you are hearing what the artists created in the studio – with precise file and platform-specific DAC compensation and management.

Visit “How it works” <https://www.mqa.co.uk/how-it-works> for more information.

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The display will give you the following information:

### MQA



- Product is receiving a bit perfect MQA stream
- Product performs full MQA decoding
- Product displays "MQA"
- "MQA" indicates that the product is decoding and playing an MQA stream or file, and denotes provenance to ensure that the sound is identical to that of the source material.

### MQA Studio



- Product is receiving a bit perfect MQA stream
- Product performs full MQA decoding
- Product displays "MQA Studio"
- "MQA Studio" indicates it is playing an MQA Studio file, which has either been approved in the studio by the artist/producer or has been verified by the copyright owner.

### MQA Rendering



- Product is receiving a decoded stream from another Decoder e.g. the Tidal application, or the digital output of an MQA enabled network streamer
- Product performs MQA rendering which means it can connect to an MQA Core signal and complete the final unfold of an MQA file. This product will include 'stream lock' but is not able to decode an MQA stream or authenticate it.
- "OFS" confirms that the product is receiving an MQA stream or file. This delivers the final unfold of the MQA file.

Fully balanced Non oversampling DAC

Four SDA-3 dac modules per channel in differential mode

Power supply 30VA 110/115V AC 220/230V AC 60/50Hz. Power consumption max. 16 Watts.

Input 1x optical, 1x coaxial and 1x AES/EBU 1x I2S and USB

Output 1x stereo pair single ended 2 Volts RMS. 0.66 Volts RMS using the -10dB option

Output 1x stereo pair XLR balanced 4 Volts RMS 1.33Volts RMS using the -10dB option

Frequency Response 44.1 kHz sampling 1Hz – 20 kHz -1 dB

Frequency Response 192 kHz sampling 1Hz – 65 kHz – 3dB and 384kHz (USB)

Distortion 0.004% THD

Noise Floor -160 dB related to 4 Volt RMS

Output impedance RCA 100 Ohm, XLR 16 Ohm. 8 Ohms for XLR using the -10dB hardware mode.

Sampling rate Optical 44.1 – 96 kHz

Sampling rate Coax and AES/EBU: 44.1 -192 kHz

Sampling rate USB 44.1 – 384kHz

Aluminum six button remote control included.

MQA option is available as an option.

Dimensions 290 x 250 x 60 mm

Weight 3.5KG





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