Pinot
Music Recording A/D Converter

USER MANUAL

IMPORTANT SAFETY INSTRUCTIONS

- Read and follow these instructions and keep this manual in a safe place.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings.
- Do not install near any heat sources such as radiators, heaters, or other apparatus (including pre-amplifiers and amplifiers) that produce heat.
- Do not install this apparatus in a confined space such as book cases or closed cabinets.
- Unplug this apparatus from the mains during lightning storms or when unused for long periods of time.

CAUTION

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN
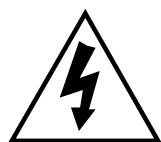
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
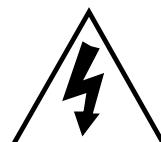
The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

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

WARRANTY

Playback Designs warrants the Pinot product against defects in material and workmanship under normal use and service for a period of time specified by the product's serial number from the date of first delivery to the owner. The warranty time period is for 30 days. If within the first 30 days of ownership you register your Playback Designs Pinot product, by sending us a copy of your sales receipt, your name, address, city, state, zip code, phone number, email address and your dealer's store name, we will extend the warranty to 3 years. This warranty is limited to the original owner.

Playback Designs will pay for return shipping charges (domestically) back to the owner when the product is sent to Playback Designs within the first 30 days after purchase and the fault can be confirmed by Playback Designs. Otherwise, owner will be responsible for all shipping charges to and from Playback Designs. International customers must deal with their local dealer or distributor.

For all warranty claims, a copy of the original invoice must accompany the product.
Opening the product or modifying it in any way by the owner, including but not limited to cryogenic treatment, will void any warranty.

Please contact Playback Designs with a clear trouble report and for shipping instructions before shipping any product to Playback Designs.

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Playback Designs products are sold worldwide through authorized dealers with restricted territories. If any Playback Designs product is purchased from non-authorized dealers or from a dealer selling outside his / her authorized territory all warranties will be void.

Alteration or modification carried out without appropriate approval may invalidate the user's right to operate the equipment.

BEFORE USING THE PRODUCT

- What is in the box:
  Pinot recording system
  Power cord (100V and 110V versions only)
  USB cable
  Optical PlayLink cable
  RCA to XLR adapters for each analog signal input
  User manual
  Wine glass by Playback Designs

- Registration
  If you purchased this product from a dealer please take a moment and send us an email to info@playbackdesigns.com so we can register you for the warranty.

- Installation:
  The AC voltage supplied to the unit should match the voltage rating indicated on the rear panel.
  Do not place the Pinot on any other equipment that generates heat.

  As the Pinot may become warm during operation, always leave sufficient space around it for ventilation. Always allow adequate air circulation around the system.

FRONT PANEL BUTTON FUNCTIONS

⊙ This button toggles the level meter display on and off for all DSD recording modes. For PCM modes the level meter is always on.

f$_n$ The first time this button is pressed the software version is displayed. If the button is then pressed again within 5 seconds the last 3 digits of the serial number are displayed. Pressing it a third time will display the filter selection for quad DSD.
If no button is pressed for 5 seconds the display will indicate the recording sample rate.

CLK The Pinot can slave to an external word clock (BNC WCLK input connector) and this button toggles this function on an off. When it is set to clock slave mode (external clock) the last decimal point on the front panel display is lit:

Clock slave mode activated:

Clock slave mode inactive:

When in clock slave mode the Pinot will automatically detect the base frequency (44.1kHz or 48kHz). The user can then select any multiple of the base frequency as the recording sample rate. For instance, if the Pinot detects a base frequency of 44.1kHz, then the user can select any of the following recording sample rates: 44.1, 88.2, 176.4, 352.8, DSD1, DSD2, DSD4. Similarly, if the Pinot detects a base frequency of 48kHz then the following recording sample rates can be selected: 48, 96, 192, 384kHz (all DSD rates are multiples of 44.1kHz).

The frequency of the word clock input signal can be any binary multiple of 44.1kHz or 48kHz up to 512FS.

▼ Adjusts recording sample rate down one step. Only active when no USB device is connected, otherwise sample rate is set by computer connected via USB.

▲ Adjusts recording sample rate up one step. Only active when no USB device is connected, otherwise sample rate is set by computer connected via USB.
This button can also be used to change the filter setting for quad DSD when the filter selection is displayed (see Function button and chapter for "Filter Settings for quad DSD").

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FRONT PANEL DISPLAY AND LEVEL ADJUSTMENT
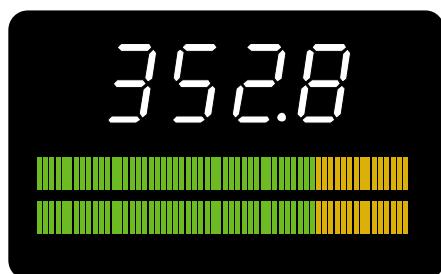
Recording sample rate

Left channel audio level meter

Right channel audio level meter

The level meter has 3 different colors:
- green: audio signal level is below -6dbFS*.
- amber: audio signal level is between -6dbFS and 0dbFS*. Each amber LED corresponds to 0.5dbFS*, in other words there are 12 amber LED's. Ideal recording level is around -6 to -3dbFS*.
- red: audio signal is clipping. When clipping is detected the entire bar graph is lit red.

Audio signal levels can be adjusted with 1 knob for each channel separately. They are located on the right side of the Pinot as shown below:

adjustment knob for left channel

adjustment knob for right channel
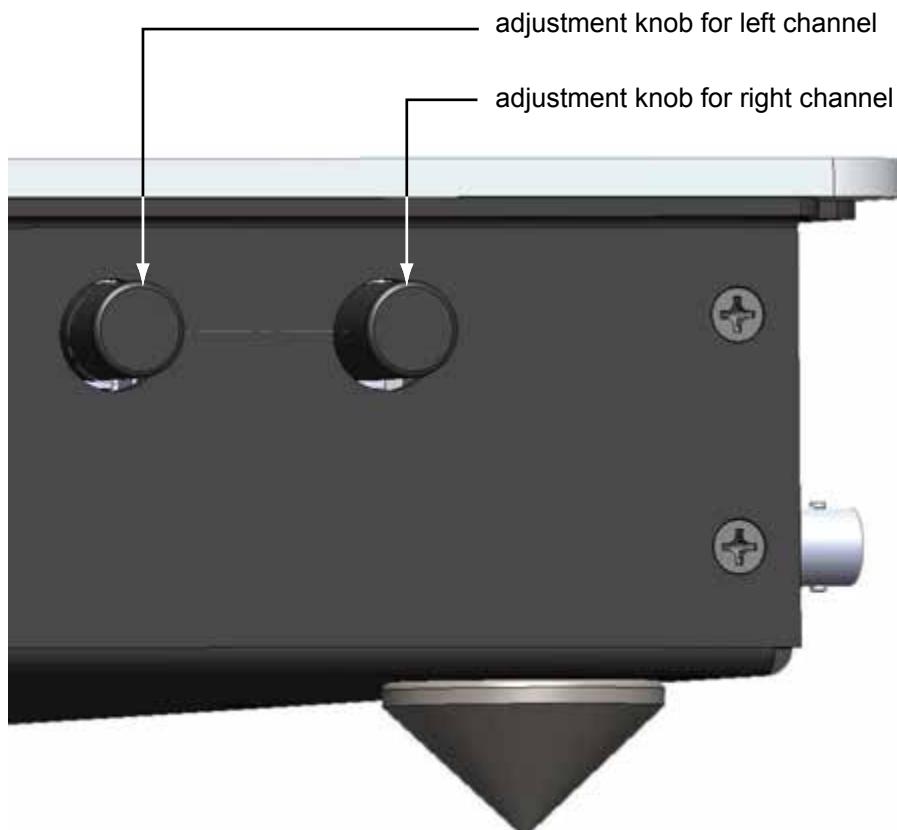
*NOTE: the units to measure digital levels are usually shown as dbFS indicating the decibels below absolute digital clipping. In other words 0dbFS is the maximum level possible before clipping occurs.

CONNECTIONS

Analog inputs: XLR and RCA via adapters (included)

Digital outputs: AES: XLR connector for AES/EBU formatted stereo linear PCM data, up to 24bits and up to 192kHz and 64FS DSD via DoP. The signal on this output connector is always directly from the A/D converter.

    COAX: same as AES, but COAX formatted on RCA connector. The signal on this output connector is always directly from the A/D converter.

    PLAYLINK: This optical proprietary link (PlayLink) is used to connect to other Playback Designs equipment, such as the Merlot D/A Converter. This connection supports multiple audio formats and should be used for native monitoring and native playback via the Merlot D/A converter. Depending on whether the USB connector is used or not, the signal on this output connector is either the loop-back signal from the external computer or directly from the A/D converter.

    USB: USB connection to computer running the recording software. As soon as a computer is connected the front panel buttons to select the sample rate are disabled. In this case you need to set the sample rate through the recording software on your computer.

    AUX: For future expansion

    WCLK IN: Word clock input on BNC connector. The word clock frequency can be any binary multiple of the base frequencies of 44.1kHz or 48kHz up to 512FS.

    WCLK OUT: A Word clock signal is provided on this BNC output connector. The frequency of this signal is always the base sample rate (44.1kHz or 48kHz).

Power: Before connecting the Pinot to the AC mains, please make sure that the rated voltage is set correctly as indicated on the rear panel. Operating the system at the wrong voltage will damage the unit. The voltage rating of the power supply cannot be changed by the user. A surge protector should be used to protect this product from harmful power surges.

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CONNECTING THE PINOT TO A WINDOWS BASED PC or APPLE MAC

Supported PCM audio resolutions: all sample rates up to 384kHz and word lengths up to 24 bits.

Supported DSD audio resolutions: 2.8224MHz (as on SA-CD), 5.6448MHz (double) and 11.2896MHz (quad).

Connection protocol and method: USB 2.0 / Audio class 2.0 compliant, asynchronous mode where Pinot generates high precision clock master and computer is clock slaved.

PC requirements: Windows 8 or later
ASIO compatible recording software such as Sonoma (by Playback Designs), VinylStudio (by AlpineSoft.co.uk) etc.

In order for your computer to communicate with the Pinot and to exchange audio data a custom driver software needs to be installed before you can connect it to the Pinot.

Mac requirements: OS X (10.6.6 or later). This platform only supports PCM format, no DSD.

Driver software installation and first time connection:
1. Do not connect the Pinot to the computer yet.

2. Turn on your computer.

3. Windows PC users only: Launch your favorite internet browser and navigate to the Support>Product Drivers page on our website **www.playbackdesigns.com**. Click on USB Windows Driver to download the latest driver:
   - akdesigndrv.zip for PC. Unzip it to the desktop.
   - No driver software is required for the Mac platform.

4. Windows PC users only: Double click on:

   akdesigndrv.exe (PC)

   and follow the instructions on your screen. This will install the driver necessary to communicate with the Playback Designs products via USB.

5. Once your computer is properly configured, power on the Pinot.

6. Connect the included USB cable between Pinot and your computer.

7. The computer will take a moment to enumerate the Pinot on its USB bus and notify you when it is installed successfully. Do not attempt to record anything before the computer tells you that the device is ready to use. You can check successful driver installation and connection:

- On the PC in the device manager (below), where the driver will show up as AKDesign USB Audio under the Sound, Video and Game Controllers tab. It will not be listed in the Sound Control panel

- on the Mac in the Sound Control panel (below), where the Pinot should be listed as an audio input and output device

8. For PC users only: Configure your recording software to receive and send audio data from and to the ASIO interface. Depending on your software this may be identified as "AKDesign USB ASIO" or simply as "ASIO".

9. For best performance and bit perfect reproduction make sure to set all volume controls in the computer software, Windows / OSX control panel to exactly 0db (wide open), turn off all operating systems sounds, effects or equalizer that might be running in your software or Windows / OSX. Control the volume only with your analog pre-amp.

Your system is now ready for high resolution recording.

PREPARING FOR RECORDING WITH PINOT

Your basic and most versatile setup will look similar to the picture below. It uses a Playback Designs DAC (Merlot) for monitoring your audio.

Fig. 1

This configuration allows you to monitor every sample rate and format that the Pinot supports.

If you are using a different branded DAC for monitoring your audio, then your setup will look like this:
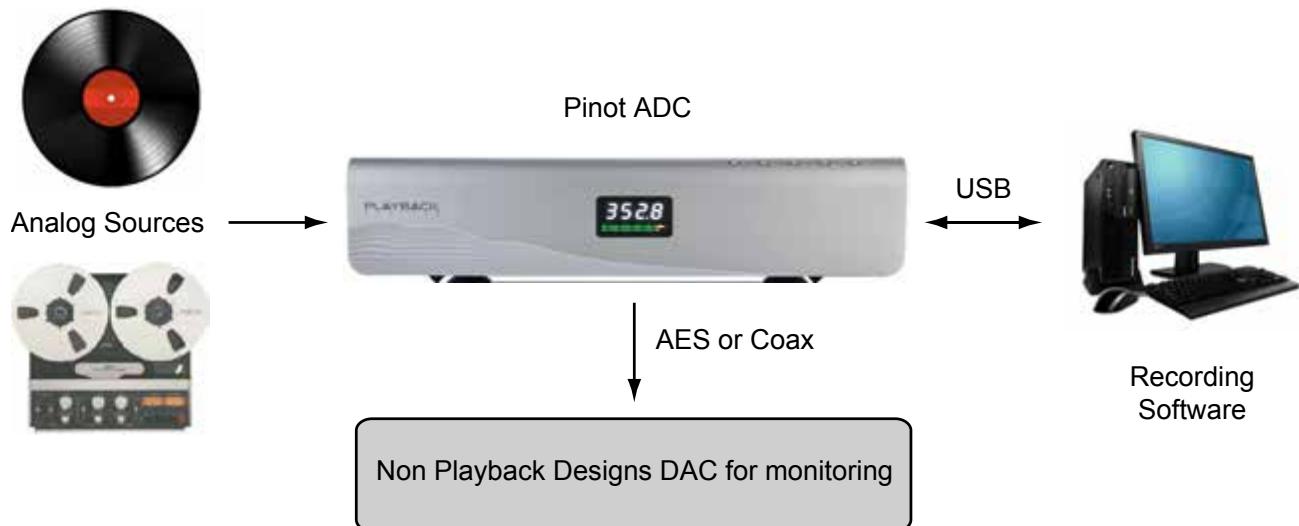
Fig. 2

This configuration is limited to monitoring PCM up to 192kHz and only single rate DSD.

Connection to analog source
Any analog source can be connected to the built-in differential XLR input connectors of the Pinot. If your source only has unbalanced analog RCA outputs then you can use the included adapters to connect them to the same XLR inputs on the Pinot.
We have purposely chosen to provide these adapters rather than built-in unbalanced inputs on the Pinot itself, because of signal quality reasons.

Automatic DC offset calibration feature
Each time the Pinot is powered on or reset (button on rear panel) it enters a calibration cycle to compensate for any DC offset in the audio signal. It is best to leave your analog source connected to Pinot while not playing any audio. After about 1 minute the calibration is complete.
However, it is possible to play and record audio during the calibration cycle, but as a result DC offset may not be completely removed. Also, during the calibration cycle a time varying filter is inserted in the audio signal and, therefore, for best recording performance it is recommended to not record until the calibration cycle is fully completed and the time varying filter is removed from the signal path.

Each time the meters indicate a small amount of DC offset while no source is connected to the analog input of the Pinot you can reset it to enter a new calibration cycle to remove the DC offset.

Connection to recording computer
In most cases you will want to connect your recording device (computer) to the Pinot via USB, because that is the interface that supports all recording formats. If you are using a Windows PC then you will have to install a driver software (see more detailed instructions elsewhere in this manual). The Windows platform supports all recording formats that Pinot offers. Therefore a Windows computer is the recommended system. However, if your computer is a Mac then no driver is necessary, but that platform only supports the PCM format and no DSD.

NOTE: As soon as a USB connection is established with the Pinot converter, all audio sent out via PLINK is from the same USB connection and not directly from the A/D converter. The purpose of this is that:
- your recording software can loop the audio from Pinot right back to Pinot and out through PLINK to a Playback Designs DAC for monitoring, and
- you can play your recording from the same computer and hear it instantly through the Playback Designs DAC.

It is possible to connect other recording devices that can receive either digital AES or Coax inputs. Both interfaces support DSD via DoP up to single rate.

Connection to audio monitoring equipment
Unless your computer has built-in monitoring capability and your recording software supports it, an external monitoring DAC is recommended. It is not required, but if you cannot hear what you are recording you may spend a lot of time in vain.

The Pinot supports more recording formats and sample rates than most D/A converters support via their digital inputs. This is mostly due to the fact that there is no standard, industry-wide digital interface format that supports all the audio formats from single rate PCM all the way to quad DSD. Playback Designs has designed a sophisticated and yet very easy-to-use optical interface (PlayLink or PLINK) that allows the unaltered and purest native transmission of the digital signal as it is generated by the Pinot to any Playback Designs D/A converter. It is therefore recommended that you connect a Playback Designs DAC to the Pinot via the included optical cable (see Fig.1 above). This configuration also allows you to play back your recording and hear it immediately without changing your setup.

Other converters can also be connected either via the digital AES or Coax output (see Fig. 2 above). Both connections support DSD via DoP up to single rate. The audio you hear in this setup is always directly from the Pinot. No playback from the computer is possible without changing cables.

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SETTING RECORDING LEVELS

Assuming you have prepared your system as outlined before you are now ready to calibrate your audio levels. For this you will need an analog source with a test tone. Tapes and vinyl discs with calibration test tones are readily available. You can also use your computer to play a digital file with a test tone into your DAC and connects its analog outputs directly to the analog inputs of the Pinot.

A digital file with a full scale 1kHz sine wave is available for download from our website (www.playback.designs).

The idea is that you set this level once for each analog source and then don't have to touch it again. Having said that, it is important that you allow just enough headroom so you can record a variety of sources without having to set levels every time.

You will wonder why there isn't a single level knob for both channels like on some other converters. The answer is quite simple: the Pinot was designed to give you the absolute best performance that can be achieved with today's technology. With a single adjustment knob you could never compensate for subtle differences between channels caused by variations in electronic components and temperatures. With due diligence you will achieve recordings with the Pinot that cannot be matched in quality by any other ADC.

There are several methods to calibrate the Pinot, we will describe two:

Setting the level with your music directly
This is the preferred method as it yields the best setting for optimal performance.

1. play your analog source music into the Pinot and adjust the level for 1 channel only. Set it so that the loudest passage of your music is around -6dbFS to -3dbFS (half of the amber range on the level meter).). Each amber LED corresponds to 0.5dbFS, in other words there are 12 amber LED's.
   This will give you enough headroom in case there is a higher peak somewhere else in your music and also allows the A/D converter to operate at its optimal performance.

2. Stop your analog source and play a stereo test tone into Pinot.

3. Adjust the other channel so that both channels are set exactly the same. Make sure to not touch the knob for the channel you already adjusted above.

4. You are now ready to record.

Setting the level with a test tone

1. Play your source with the test tone (tape, vinyl or digital file via DAC) into the Pinot.

2. Adjust the levels for both channels to the exact same amount. It isn't directly intuitive as to what level on the meters you should set this to. You may have to try several settings and then monitor with your music while making sure the peaks are around -6dbFS to -3dbFS.). Each amber LED corresponds to 0.5dbFS, in other words there are 12 amber LED's.

3. You are now ready for recording.

RECORDING WITH PINOT

If you have not calibrated the recording levels yet, please follow the instructions in the previous chapter. Also, it is recommended to read the paragraph above about DC offset calibration if you have not done so already.

For basic recording you can use our own Sonoma Recorder software on a Windows PC platform. It is free and you can download it from our website along with the user's manual. It requires Windows 8 or newer.

For more advanced recording features you can also use the shareware VinylStudio from Alpine Software (www.alpinesoft.co.uk).

In both cases you are using the USB connection to the Pinot and need to select the recording sample rate in the software you are using.

You can also use the AES or Coax outputs directly on the Pinot to record to other recorders that support this interface. In this case you will need to select the recording sample rate on the Pinot itself. However, this method is limited and only allows PCM sample rates up to 192kHz and no DSD. This is a limitation of the AES and Coax interfaces.

MONITORING AND PLAYING BACK YOUR RECORDINGS

If your system is setup as in Fig.1 above then you can simply monitor and play your recordings from the same computer as you recorded them on. For playback you can use any standard playback software such as JRiver, Foobar etc.

If your system is setup as in Fig. 2 above then you will have to disconnect your computer from Pinot and connect it to your DAC before playing the recorded file.

EXTERNAL CLOCK

The Pinot supports operation with an external clock. Simply select Clock Slave mode with the front panel button and connect a word clock to its BNC input connector.

When in clock slave mode the Pinot will automatically detect the base frequency (44.1kHz or 48kHz). The user can then select any multiple of the base frequency as the recording sample rate. For instance, if the Pinot detects a base frequency of 44.1kHz, then the user can select any of the following recording sample rates: 44.1, 88.2, 176.4, 352.8, DSD1, DSD2, DSD4. Similarly, if the Pinot detects a base frequency of 48kHz then the following recording sample rates can be selected: 48, 96, 192, 384kHz (all DSD rates are multiples of 44.1kHz).

The frequency of the word clock input signal can be any binary multiple of 44.1kHz or 48kHz up to 512FS.

The purpose of operating the Pinot with an external clock should only be to synchronize it with other equipment (video, other channels etc.), and not necessarily as a way to improve sound performance. In fact, for optimal performance the clock source should be as close to the actual A/D process as possible - i.e. internal.

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FILTER SETTINGS FOR QUAD DSD

The Pinot offers 2 different filter settings for quad DSD. For all other sample rates the filter cannot be changed. To display and change the filter setting:
1. press the function key 3 times and the display will indicate the currently selected filter (FL 1 or FL 2).
2. while the display indicates the fitter setting you can change it by pressing the button with the up arrow.
3. Once you no longer press a button for about 5 seconds the filter will be selected and the display will revert back to normal sample rate indication.

FL 1: more aggressive and steeper filter
FL 2: more gentle filter. This is the default filter setting from the factory.

BREAKING IN THE PINOT

Breaking in the Playback Designs Pinot is time consuming but well worth the effort. It would be a mistake to pre-judge the system based on what you might hear at first listen. This is what you can expect to hear at different intervals during break-in:

1. Out of the box: The system will have good clarity, but the highs can be recessed. Bass might appear to be a bit muddy and lacking punch. Soundstage might sound closed in.

2. 50 - 150 Hours: The sound will open up a little bit, but can still sound a bit brittle.

3. 150 - 350 Hours: Midrange will start smoothing out and clarity will increase, but highs might continue to remain recessed. At this point, there probably will not be much change in the bass. You will probably wonder how the Playback Designs system will ever sound like others have described, but we assure you that you will start to hear substantial changes within another week of play.

4. 350 - 500 Hours: The magic will be starting. Highs will be open and airy. Midrange will appear much more full bodied and natural. Soundstage will be huge and the image presentation will start appearing very holographic. Bass will be incredibly deep and tight with texture and detail galore.

5. Over 500 Hours: The system will continue to change subtly over the upcoming month of usage, but you should be recognizing a very life-like and natural sound.

In order to break in the Pinot simply connect an analog source to it and continuously play audio into it.

SPECIFICATIONS

Power Supply		Analog Audio Inputs:	
Japan model..................	AC 100V, 50/60Hz	Max Input Level: 23dBu (10.95Vrms),	
North America model………	AC 120V, 60Hz		balanced, pin 2 hot
Europe / Asia model……….	AC 230V, 50Hz	Input Impedance: 20.5kΩ	
Consumption……………….…...	100W max.	Max Gain: 26dBu (balanced)	
Weight……………………………………..	3.5kg / 8 lb	Operating Temperature………………+5°C to +30°C	
Ext. dimensions (W x H x D)	36 x 8 x 23 cm 12 x 3.25 x 9 inches	Mains fuse: T1.6A / 250V slow blow, 20mm	

CHANGING THE FUSE ON THE PINOT

Inside the power connector on the rear panel of the Pinot is a fuse that protects the system from dangerous power surges. If the system fails to power up or no light on the front panel is lit then proceed as follows to change the fuse:

1. Locate fuse compartment on power connector on rear panel.

Fuse compartment

2. Use a small screw driver to pry open the fuse holder.

3. The fuse holder contains 2 fuses. The top one is a spare and can replace the blown one at the bottom.
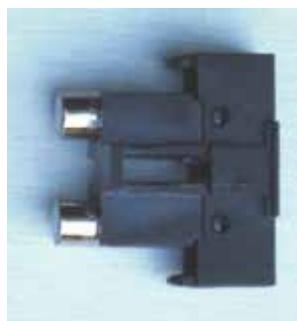
4. Replace fuse holder into power connector by making sure that good fuse is at bottom. Replacement fuses should be rated:

T1.6A / 250V slow blow, 20mm

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UPGRADING THE FIRMWARE IN YOUR PINOT

Playback Designs is constantly innovating new algorithms and methods for audio processing and from time to time may release new firmware for the Pinot that may further enhance the sonic performance or add new features. New releases will be distributed as audio wave files. They can be played into the Pinot just like any other audio file. The Pinot processor will automatically detect this file and update the firmware. No audio will be audible as the processor will automatically set the volume to 0.
The Pinot contains 2 processors and hence there may be 2 separate files available, one for each processor.
It is possible to display the version of the currently installed software of the main processor. The version of the secondary processor cannot be dislayed (see chapter Front Panel Functions for more details).

Upgrade Procedure:

1. Power on Pinot.
2. Connect your computer with the included USB cable.
3. Load the wave file with the update firmware into your player software on your computer.
4. Play the file.
5. The front panel will indicate FLASh. It is important that at this point you no longer touch the system, nor your PC, nor the remote, don't change the input, don't turn the power off. Go have a glass of Playback Designs wine, because it will take about 2 minutes for this to finish.
6. Once playback has finished the front panel will return to either normal display or it will say FAIL. A failure can happen when you didn't follow the instructions in the previous steps or your PC had a dropout during playback. If this failure happens, don't panic, but follow the next steps precisely:
   a. DO NOT POWER OFF the Pinot (doing so will render your Pinot inoperable).
   b. Disconnect your computer from the Pinot.
   c. Push the Reset button on the read panel.
   d. Re-connect the USB cable.
   f. Go to step 3.
7. If playback of the update file has finished and the front panel does not display any error message, but indicates normal operation then stop playback and disconnect the USB cable.
8. power off the Pinot.
9. power on the Pinot and proceed to normal operation.

Now that you made it all the way to here it is time to take a deep breath and enjoy the high-rez immersion: