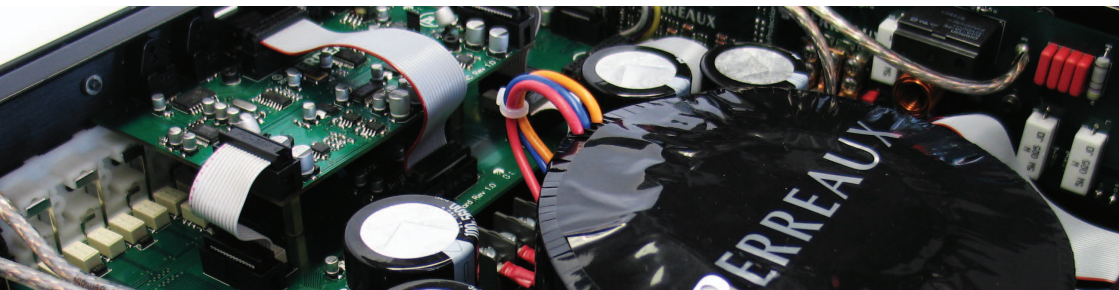


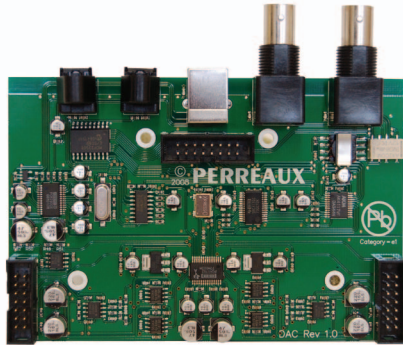
éloquence Digital to Analogue Converter



Owners Manual

PERREAUX





The éloquence digital to analogue converter

Designed and Manufactured in Dunedin, New Zealand



Table of Contents

INTRODUCTION	3
FEATURES	5
INSTALLATION	7
Unpacking	7
Fitting Instructions	7
QUICK START	8
CONNECTING	10
THE MENU SYSTEM	13
DAC Configuration	13
Polarity	13
Filter	14
Upsampling	15
TROUBLESHOOTING	16
TECHNICAL SPECIFICATIONS	18
CONTACT DETAILS	21



Introduction

The éloquence digital to analogue converter

Congratulations on your éloquence digital to analogue converter purchase. To realise the full potential of your module you need to appreciate all aspects of its operation.

3

The digital to analogue converter module needs be installed into your éloquence amplifier by your Perreaux dealer or an authorised Perreaux service technician.

Before using your éloquence amplifier and newly installed digital to analogue converter in your system, read the entire manual carefully. Endeavour to understand every detail by familiarising

yourself with the controls and features as you read. You will find it easier to install using the relevant sections of this manual as a reference.

We have attempted to explain every feature and operation facet clearly and concisely. Your Perreaux dealer will be happy to assist if you encounter any unforeseen problems.

Read this manual, install your unit correctly and realise the sonic significance of your investment in Perreaux.

Perreaux products are designed to provide the utmost in sonic realism and electronic reliability, with a functional yet elegant appearance that reflects the



care and craftsmanship applied during all stages of construction.

Features at a Glance

24-bit/192kHz conversion

Upsample to 24-bit/192kHz

Low-jitter master clock

Versatile input connections

Digital recording

Customisable

We maintain the human-link throughout; from design and construction, through to the ultimate test – your music, your system, your ears.

Because we too listen to our products,

we know that with your éloquence digital to analogue converter you will discover many more of the musical secrets we strive to reveal.

From all of us at Perreaux, thank you for choosing the éloquence digital to analogue converter.



Features

24-bit/192kHz Conversion

At the heart of the éloquence digital to analogue converter is a high-quality balanced converter IC from Texas Instruments (Burr Brown), which features 192kHz sampling and 24-bit resolution, as well as offering excellent dynamic performance and improved tolerance to clock jitter.

5

Upsample to 24-bit/192kHz

The éloquence digital to analogue converter upsamples the incoming digital audio signal to 192kHz and increases the data word length to 24-bits – improving distortion performance, increasing the signal-to-noise ratio and providing higher resolution.

Low-Jitter Master Clock

The master clock, and its implementation, is the single most important aspect which influences the performance of a digital to analogue converter. The master clock uses a precision crystal oscillator with high temperature stability, fast 3ns rise and fall times and jitter less than 5psp-p – ensuring the éloquence digital to analogue converter presents the music with precision and fluidity.

Versatile Input Connections

The éloquence digital to analogue converter has five individually selectable inputs – two coaxial SPDIF BNC connectors, two optical SPDIF Toslink connectors and a USB input. This array of



inputs caters for almost any digital audio input; from consumer audio devices and computers, to many of the ultra-high-end CD players on the market.

Digital Recording

Using the USB port, the éloquence digital to analogue converter allows you to digitally record any of the amplifiers inputs to your computer. Sample rates between 8kHz and 48kHz, and resolution up to 16-bits, ensure the digital recording retains the quality of the original audio signal.

Customisable

The settings for signal polarity, up-sampling and the digital filter response are all user selectable, ensuring the éloquence digital to analogue converter provides optimal performance in your system and for your listening tastes.



Installation

Unpacking

The éloquence digital to analogue converter is supplied with the following accessories:

- Four 28mm standoffs
- Four 14mm standoffs
- Four 3.5mm lock washers
- Two Phillips head self-tapping screws
- Two 12.75mm lock washers
- Two 1/2-28UNEF-2B 14mm A/F hex nuts
- Two 14-way ribbon cables
- 16-way ribbon cable
- RCA to BNC adaptor
- Coaxial digital cable
- USB cable
- This manual

We recommend you retain the packaging for reuse in case you need to transport the unit at a later date.

Fitting Instructions

Fitting the digital to analogue converter requires an internal hardware configuration to your éloquence amplifier, which must be carried out by an authorised Perreux dealer or service technician. Dismantling or adjustment of the amplifier by persons other than Perreux approved personnel could invalidate the manufacturer's warranty.



Quick Start

If you are like us, the first thing you will want to do is to play your favourite piece of music through your éloquence amplifier with the newly installed digital to analogue converter. The following instructions are written to enable you to achieve this as quickly as possible. These are not comprehensive instructions, but are designed to enable you to play music now!

Please take the time to read this manual thoroughly, as the éloquence digital to analogue converter incorporates many features which enhance its operation.

Turn off associated components

This minimises the potential to damage your éloquence amplifier, or any other

components, when connecting the unit into your system.

Connect a source component

For example, connect the digital output of your CD player to the Coax 1 (BNC) input at the rear of your éloquence amplifier.

Connect loudspeaker cables

Connect the left and right channel loudspeaker cables to the appropriate speaker binding posts at the rear of the amplifier.

Switch on source component

Turn on the source component, making sure you have your favourite recording ready to play.



Quick Start Continued

Switch on your éloquence amplifier

After checking the supply voltage compatibility with the voltage rating on the rear panel, insert the power cord supplied into the rear of the unit and into the wall socket. Switch on power to the amplifier.

Select the appropriate input

- 9 Using the $\wedge/\vee$ buttons on the front panel of your éloquence amplifier, or the remote control, select the digital input to which the source component is connected.

Play your source material

Start playing your favourite recording.

Increase the volume

Slowly increase the volume on your éloquence amplifier to achieve a comfortable listening level.

Congratulations!

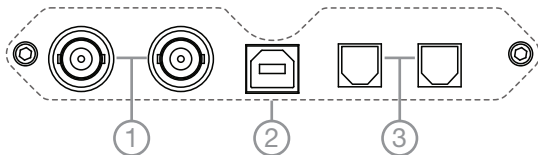
Now that you have achieved your first objective, sit back, relax and please read the rest of the manual at your own pace, in your favourite armchair, whilst enjoying a glass of wine. You'll find the whole experience much more pleasurable whilst listening to music.



Connecting

Important:

Before making any connections, switch off the mains power to all components in your system.



1 Coaxial Inputs

The coaxial (BNC) inputs accept a Sony/Philips Digital Interface Standard (SPDIF) digital audio signal from a source component such as a CD player. They support input sample rates between 32kHz and 192kHz, with a maximum word length

of 24-bits. The coaxial input is DC isolated and transformer coupled providing high immunity to cable induced jitter.

The SPDIF standard dictates 75Ω transmission of the digital audio signal. A digital interconnect cable specifically designed with a charac-



Connecting Continued

teristic impedance of 75Ω is recommended for stable performance. Do not use a 50Ω cable.

BNC connectors have been used in place of the “standard” RCA type because design limitations mean RCA connectors can never achieve a characteristic impedance of 75Ω and the BNC connector offers superior reliability and RF performance. If you already have a suitable high-quality digital interconnect equipped with RCA connectors, please use the supplied adaptor to convert the BNC input to RCA.

2 USB Connector

The USB (Type B) connector allows

direct connection to a computer via the Universal Serial Bus (USB) port. The USB interface utilises USB 1.1 protocol, and is compatible with both USB 1.1 and USB 2.0 ports. The USB interface does not require the installation of any custom drivers and no software or hardware configuration is required.

The USB port can be used to playback music files stored on the computer, as well as digitally record audio from any of your éloquence amplifiers analogue inputs.

Playback

Used as an input the USB port supports input sample rates between



32kHz and 48kHz, with a maximum word length of 16-bits. To get the best performance from your computer playback it is recommended to have the volume control of the operating system, and the application you are using, set to maximum and control the volume level using the amplifiers volume control.

Record

Used as an output the USB port supports sample rates between 8kHz and 48kHz, with a maximum word length of 16-bits. Recording via the USB port is perfect for transferring your record collection to a digital format on your computer (provided

you also have the optional phono preamplifier installed).

3 Optical Inputs

The optical (Toslink) inputs accept a Sony/Philips Digital Interface Standard (SPDIF) digital audio signal from consumer audio devices, such as Sony Playstation™ and Apple AirPort Express™. They support input sample rates between 32kHz and 192kHz, with a maximum word length of 24-bits.

To get the best performance we recommend using a high-quality fibre-optic interconnect cable designed specifically for audio use.



The Menu System

Installing the digital to analogue converter into your éloquence amplifier activates the digital to analogue (DAC) options in the menu system, allowing you to configure its settings.

DAC Configuration

The settings of the digital to analogue converter can be customised to provide the best performance in your environment as well as to suit your listening tastes.

Polarity

The polarity menu allows you to select the absolute polarity of the audio signal for each of the digital inputs. Selecting NORMAL retains the polarity that is received at the input, whilst INVERSE

```
MENU>OPTIONS>
DISPLAY        POLARITY
TIMER          FILTER
SLEEP          UPSAMPLE
SEPARATE
S-KEYS
DAC            |
BACK          |
EXIT    <    v    ^    >
```

```
MENU>OPTIONS>DAC
POLARITY      ■ COAX 1
FILTER        COAX 2
UPSAMPLE      TOSLINK 1
BACK          TOSLINK 2
              USB
EXIT    <    v    >
```



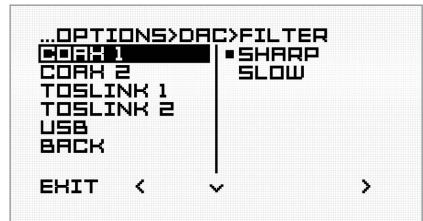
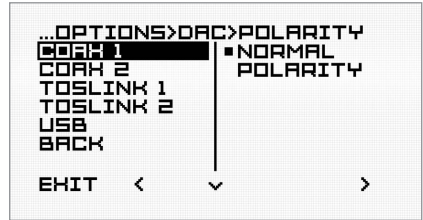
inverts the polarity of the received audio signal.

The factory default polarity setting is NORMAL.

Filter

The filter menu allows you to select the response characteristic at the cut-off frequency of the converters digital filter for each of the digital inputs. Choosing the SHARP response results in a faster roll-off at the cut-off frequency, while SLOW has a more gradual transition from pass-band to stop-band.

The factory default filter setting is SHARP.



The Menu System Continued

Upsampling

The upsampling menu allows you to disable the upsampling feature of the éloquence digital to analogue converter. Selecting BYPASS forces the converter to use the resolution and sample rate received at the digital input instead of upsampling to 24-bit/192kHz.

- 15 The factory default upsampling setting is 192kHz.

```
...OPTIONS>DAC>UPSAMPLE
COAH 1      ■ 192KHZ
COAH 2      BYPASSED
TOSLINK 1
TOSLINK 2
USB
BACK
EHIT  <  v  >
```



Troubleshooting

There is no power

Ensure the AC power cord is connected securely.

Ensure the mains plug is fully inserted into the wall socket and is switched on.

Check the mains fuse of the amplifier.

Check fuse in the mains plug or adaptor.

There is no sound

Check that the source component is properly connected.

Check that the source component playing.

Check that the speakers are properly connected.

Make sure the amplifier is not muted.

There is no sound on one channel

Ensure the balance control is in the correct position.

Check speaker connections.

Check interconnects.

There is a loud buzz or hum

Ensure no interconnects are loose or defective.

Ensure that your tape deck/turntable is not too close to the amplifier.

Unable to make or play tape recordings

Check TAPE OUT has been connected correctly.



Troubleshooting Continued

There is weak bass or diffused stereo imaging

Ensure the speakers are not wired out of phase.

Protection message on display

See section on éloquence protection system.

17 The remote handset will not function

Check that the battery has not expired.

Ensure that nothing is blocking the remote sensor.

Installation Notes

Please record the serial number of your éloquence digital to analogue converter for future reference.

Serial Number: _____



Technical Specifications

The correlation between published specifications and sonic quality can be unreliable. A list of numbers reveals virtually nothing. All technical measurements must be subject to qualitative as well as quantitative interpretation. Measurements of the éloquence digital to analogue converter reveal excellent results by any standards.

All specifications are accurate at the time of printing. Perreaux Industries Ltd. reserves the right to adjust specifications without notice. All specifications measured at 230V after a 10 minute warm up period.

Digital to Analogue (DAC) Section

Digital Inputs:

Two SPDIF coaxial (BNC)
Two SPDIF optical (Toslink)
One USB (Type B)

Input Sample Rate:

Coaxial
Optical
USB

32kHz to 192kHz
32kHz to 192kHz
32kHz to 48kHz



Technical Specifications Continued

Maximum Input Word Length:

Coaxial 24-bit

Optical 24-bit

USB 16-bit

Input Impedance: 75 Ω , coaxial

Minimum Input Level: 0.35Vp-p, coaxial

Transformer Coupled Inputs: Coaxial

Converter Sample Frequency: 192kHz

Converter Resolution: 24-bit

Analogue Output Level: 2.0Vrms

Distortion (THD + noise): 0.001%, 1kHz at 0dBFS

less than 0.010%, 20Hz to 20kHz at 0dBFS

Frequency Response: +0.0dB -0.2dB, 20Hz to 20kHz at Fs=44.1kHz

+0.0dB -0.1dB, 20Hz to 20kHz at Fs=96kHz

Signal to Noise Ratio (unweighted): better than 115dB, ref. 2.0Vrms

Crosstalk: -115dB, 20Hz to 20kHz



Channel Balance: better than $\pm 0.2\text{dB}$

Total Correlated Jitter: $<100\text{ps}$

Analogue to Digital (ADC) Section

Sample Rate: 8kHz to 48kHz

Maximum Word Length: 16-bit

Distortion (THD + noise): less than 0.007%, 20Hz to 20kHz at 0dB

Signal to Noise Ratio (unweighted): better than 89dB, ref. 2.0Vrms

Crosstalk: -85dB, 20Hz to 20kHz

Compatible Operating Systems:

Windows Vista, XP, 2000

Mac OS X

PCB Dimensions (WxH): 120mm x 80mm (4.7" x 3.1")

Weight: 0.5kg (1.1lb)



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