welcome

Thank you for buying a Chord Electronics product.

Before you start to enjoy using your Chord Electronics product, please take a couple of minutes to read how to connect your audio equipment and loudspeakers to your Chord Choral product and how to maximise your listening experience.

user guide for

digital to analogue converter
DAC 64

pre-amplifier

PRIMA

The pre-amplifier is the control centre of your system. By connecting your audio sources to it you can choose the source you want at any particular time and control it.

You can also adjust the balance and volume before the signal is sent to a power amplifier. Your pre-amplifiers can be operated manually or via any Chord remote control.

power amplifier

MEZZO

The power amplifier is the heart of your system, and your Chord amplifier offers stunning results providing effortless power across the whole spectrum of music's tonal span.

phono stage

SYMPHONIC

The phono stage provides the vital conditioning needed for a signal coming from the stylus of your turntable and hugely amplifies the signal before it is fed to your pre-amplifier. Combining high performance and ease of use, the phono stage is an important component in a system that utilises a turntable.

digital to analogue converter

DAC 64

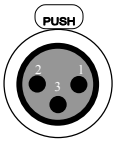
This award winning, state of the art product converts the digital signal coming from your digital sources (such as a DVD/CD transport) into a suitable analogue signal that can be fed to your pre-amplifier.

background

We want you to be confident using your new Chord Electronics product.
You are probably an audiophile with extensive knowledge of audio equipment.
However, you may not be!
So in the following section we explain a few basics to help you get started, or get you back up to speed if you are a little rusty.

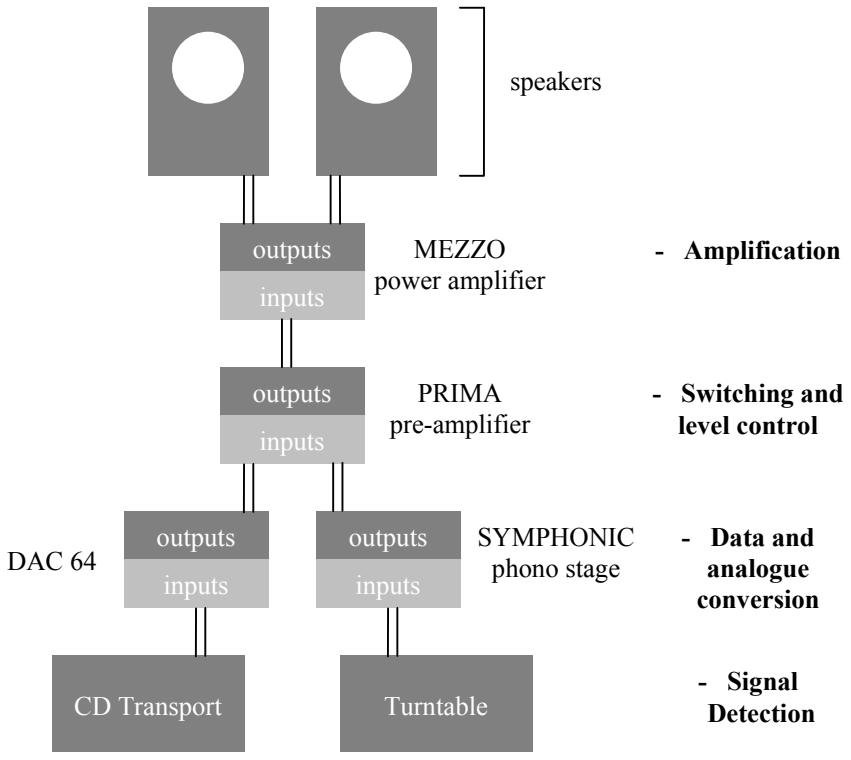
connecting your equipment

Chord amplifiers are supplied with and designed to be connected using balanced inputs. The interconnecting cables you use will depend on the available input and output sockets on your other equipment. We have installed unbalanced inputs on all Chord equipment, thus enabling you to mix Chord Electronics and other manufacturer's equipment.



Balanced inputs carry twice the strength of signal of unbalanced inputs and are able to be fed down long lengths of cable with less deterioration of signal. They are also less prone to interference than unbalanced inputs. Balanced inputs have three pins and use Neutric XLR style connectors. Pin 1 is earth, pin 2 is positive and pin 3 is negative.

Unbalanced inputs use RCA phono connectors, which are gold plated with teflon high performance dielectric insulators for optimum performance.



Basic system diagram

when setting up

To ensure that your Chord product works efficiently and safely, please pay particular attention to the following issues.

ventilation

Your Chord product should have at least 5cm of clear space all around it to ensure a free flow of air at all times. We do not recommend that you place your Chord product directly on a carpet as this can damage the equipment through blocked ventilation.

mains lead and plug

All Chord equipment comes supplied with the correct mains lead and plug. This should be used at all times.

if you need to fit a plug for UK/Europe

Connect the blue wire to the neutral terminal
Connect the brown wire to the live terminal
Connect the yellow/green wire to the earth terminal

if you need to fit a plug for US/Canada

Connect the white wire to the neutral terminal
Connect the black wire to the live terminal
Connect the green to the earth terminal

earthing issues in Europe

In some European countries a hum may occur if your processor is connected to mains sockets that do not have an earth. If this is the case please ensure that:

1. Your equipment is connected via a multi-way mains block which contains an earth point at each socket outlet. This is to ensure that the chassis metalwork of each item is connected together.
2. We recommend that an earthing method for your building is implemented.
3. Use the connecting points on your Chord unit and connect to an available earth point.

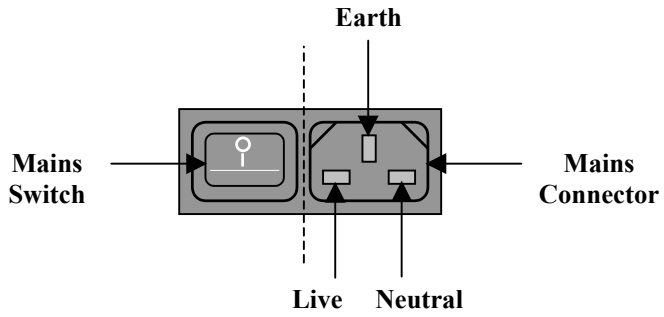
safety warnings

It is important that your equipment is earthed at all times via its own mains lead. Failure to do this may be hazardous. The power supply components within the units are designed to be operated at lethal voltages and energy levels. Circuit designs that embody these components conform with applicable safety requirements. Precautions must be taken to prevent accidental contact with power-line potentials. Do not connect grounded test equipment.

This unit complies with EN 50081-1 and IEC 801/2

mains connection

The mains connector of your Choral product is at the back of the unit. Plug the female end (socket) of the mains cable into the power connector of your Choral product, and the male end (plug) of the mains cable into mains wall socket or mains extension socket. The mains connector type will differ slightly for each Choral product. This is due to the highly compact nature of this range requiring differences in chassis metalwork for each product.



Mains connector and switch

powering up

Press the bottom part of the power switch labelled ‘I’.

powering down

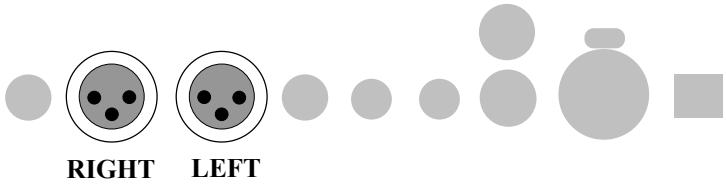
Press the top part of the power switch labelled ‘O’.

balanced outputs on the DAC 64

You need to connect the outputs on the back of your DAC 64 to a pre-amplifier, which in turn will feed a signal to a power amplifier in order to drive your loudspeakers. There is a pair of balanced XLR outputs, which will drive a 68Ω load.

connecting to your pre-amplifier

Use the XLR style output connectors to connect your DAC 64 to the XLR style input connectors of your PRIMA or any other model of pre-amplifier. Ensure that you connect the left output on the DAC 64 to your left input on your pre-amplifier. Also the right output on the DAC 64 should be connected to the right input on your pre-amplifier. If you are using the PRIMA pre-amplifier to connect to the DAC 64 then use the gain setting x0.50. If you using any other Chord pre-amplifier or integrated amplifier then use the gain setting x1.00.



Balanced outputs on the DAC 64

phase inverted outputs

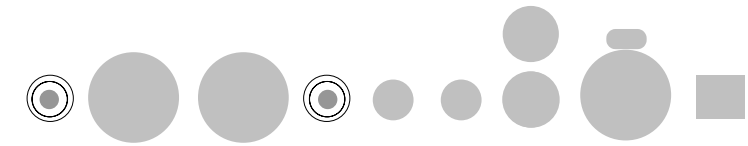
It is important to know that the outputs of DAC 64 are phase inverted i.e. on the XLRs the positive and return pins are American style not Euro style. If the DAC 64 is used outside a Chord system, you must either swap over the speaker connectors or use XLR to RCA leads with the phase inversion built into the leads.

unbalanced outputs on the DAC 64

You need to connect the outputs on the back of your DAC 64 to a pre-amplifier, which in turn will feed a signal to a power amplifier in order to drive your loudspeakers. All Chord equipment is designed to be used with balanced connections to maximise audio signal quality. However there is also a pair of unbalanced outputs as well in case your pre-amplifier does not have balanced inputs.

connecting to your pre-amplifier

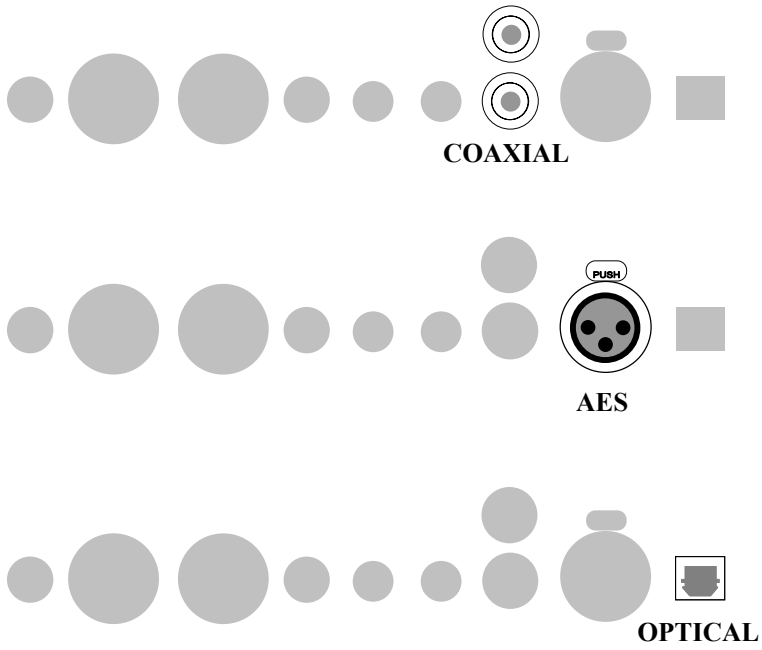
Use the phono style output connectors to connect your DAC 64 to the phono style input connectors of your pre-amplifier. Ensure that you connect the left output on the DAC 64 to your left input on your pre-amplifier. Also the right output on the DAC 64 should be connected to the right input on your pre-amplifier.



Unbalanced outputs on the DAC 64

digital inputs on the DAC 64

The DAC 64 comes equipped with four digital inputs, allowing compatibility with virtually any digital audio source equipment. Digital audio source equipment includes CD transports, DVD players and Mini Disc players. The four digital inputs consist of two 75ohm-SP/DIF2 BNC coaxial input (COAXIAL), one AES balanced XLR input (AES) and one Plastic Fibre Optical input (OPTICAL).

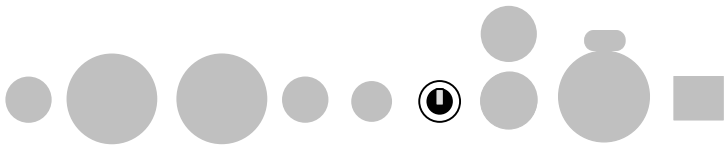


Digital inputs on the DAC 64

everyday use of the DAC 64

selecting a digital input

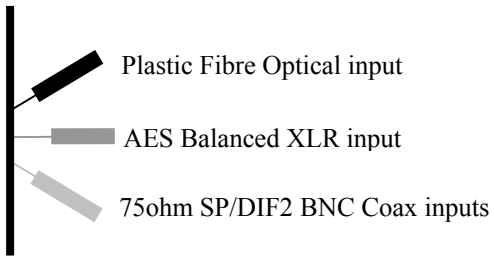
Once you have connected your digital audio source equipment to the digital input connections on the DAC 64, you need to select your chosen input by using the digital input selection toggle switch on the back panel of the unit. The switch is located next to the COAX input.



Digital input selection toggle switch

On powering the unit there should be a blue glow from the central located glass window. Once the DAC 64 has achieved a digital lock on the selected incoming signal, an additional set of hidden red light emitting diodes (LEDs) will illuminate changing the overall glow to a purple colour.

Each of the four different digital inputs are selected by changing the position of the digital input selection toggle switch. The top position of the toggle switch is used for the plastic fibre optical input (OPTICAL). The middle position of the toggle switch is used for the AES balanced XLR input (AES). The bottom position of the toggle switch is used for the 75ohm-SP/DIF2 BNC coaxial inputs (COAXIAL).

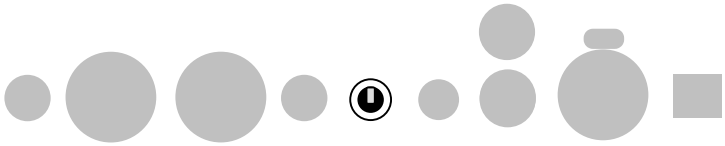


Position settings for the digital input selection toggle switch

Either or both of the two BNC (COAXIAL) inputs can be used and selection is automatic once the toggle switch is in the lower position. If you are using two different sources with BNC connections switch off the source not in use to activate the other input. For Dual Data 192 kHz mode use both BNC inputs from a dual data, 192 kHz compatible transport.
If both BNC's are used make sure that the BNC source(s) is (are) switched off when using either the AES or optical inputs.

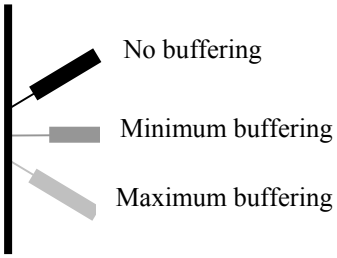
buffer settings

buffering is a processing operation where the digital input signal is stored in RAM (random access memory) for a period of time before it is passed through the DAC 64. This period of time allows the DAC 64 to analyse the input signal for any errors and to correct them.



Buffer setting toggle switch

There are three buffer settings to choose from. These are no buffering, minimum buffering and maximum buffering. The three buffer settings are chosen using the buffer setting toggle switch. The top position of the toggle switch is used for the no buffering setting. The middle position of the toggle switch is used for the minimum buffering setting. The middle position of the toggle switch is used for the maximum buffering setting.



Position settings for the buffer setting toggle switch

When using the DAC 64 with the buffer set to minimum, there is a time delay of 2 - 3 seconds from triggering your digital input source equipment to play to actually hearing music. On the maximum setting this is 4 - 5 seconds. Whenever switching between the different buffer settings there is a delay of approximately 4 seconds before play resumes.

Whenever buffering is activated, in either minimum or maximum settings, an additional set of hidden yellow LEDs will illuminate.

maintenance of the DAC 64

cleaning

To clean finger marks and other blemishes from your DAC 64 spray clear glass cleaner onto a soft lint free cloth and then use the cloth to gently clean your Chord product.

servicing

There are no user serviceable parts in your Chord product, and it should only be serviced by Chord Electronics Limited or their expressly approved Service Agents.

frequently asked questions about the DAC 64

there is no output from the DAC once everything has been connected and the digital source is playing

It may be that the DAC has not set itself. Switch off the DAC 64 at the power switch (see powering down on page 7), and wait for 30 seconds before powering up. This should be enough time for the DAC to configure itself.

how does the DAC 64 handle de emphasis coding?

The DAC 64 will automatically detect when a pre-emphasised recording is being played, and will set the correct de-emphasis filters in the converter section.

are there any precautions before I make changes to the positioning of the toggle switches on the DAC 64?

It is important to set the volume on the pre-amplifier to minimum when switching between digital inputs or setting the Ram buffer on the DAC64.

can the DAC 64 be used in an AV system to handle the audio?

The DAC 64 is an ideal component in any system requiring digital to analogue conversion of stereo digital audio signals. Do not use any buffering, as the audio will be out of sync with the video on your display device. Also make sure that the digital output on your DVD player is set to PCM.

how does the DAC 64 work?

The design of the digital to analogue circuitry has been implemented with great care. The DAC 64 is the first model to be introduced which features a radically new type of filter called the Watts Transient aligned filter. It also includes the latest generation Pulse Array DAC, 64-bit filter and DAC architecture, and an all new digital receiver chip.

The receiver chip takes the data from the transport and generates clocks and data in a form that the filter can accept. The new chip has two major benefits – all digital data extraction and a RAM buffer. This RAM buffer sequentially takes all the data, retimes it, and sends it out. The RAM buffer allows the jitter free local clock operation without needing to send back a clock signal to the data source.

are there any special requirements to ensure compatibility of the DAC 64 with equipment made by other manufacturers?

It is important to know that the outputs of DAC 64 are phase inverted. If the DAC 64 is used outside a Chord system, you must either swap over the speaker connectors or use XLR to RCA leads with the phase inversion built into the leads.