



Congratulations on your purchase of 500R8 and thank you for selecting Cranborne Audio to be a part of your music creation process.

What we set out to achieve with 500R8 was putting control back into the hands of musicians and engineers. In a sea of products that rely on computer integration and a “virtual emulation” mentality, we set out to offer an alternative that places a true, customisable, and flexible analogue front-end at the forefront of music creation - after all, the feel and touch of a musician is analogue and that’s where the music begins.

Working in harmony with 500R8’s analogue stages is its high-performance digital stages. Each and every component inside 500R8 has been carefully considered to ensure that every nuance of your 500 series module is translated into the best possible digital signal to be processed. We employ converters with specifications that rival that of the best standalone units whilst being governed by our master reference-grade clock featuring less than 0.5 picoseconds of jitter.

Cranborne Audio, for us, means so much more than metal boxes with components in them. These are our labours of love that embody and demonstrate our demand for excellence. By distilling what matters and putting our soul into these tools, we hope to help other people make magic and express themselves, and in some way, become part of our Cranborne Audio family.

So welcome to our family. We care for our family. And we care about making your tracks, albums, scores sound as good as they should.

Sean Karpowicz

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500R8 Quick Start Guide

Controls and Connectors	3
Package Contents	5
Rack Ear Orientations	5
Powering Procedures	6
Powering On	6
Powering Off	6
Installing and Removing 500 Series Modules	6
Installing Modules	6
Removing Modules	6
Hardware Setup	7
Software Setup	8
Windows Configuration	8
Sample Rate Selection In Windows	8
MacOS X Configuration	9
Sample Rate Selection in MacOS	9
Configuring 500R8 in Your DAW	9
Safety Information	10
General Safety	10
Installation notes	10
Power Safety	11
CE Certification	11
FCC Certification	11
RoHS Notice	12
Instructions for disposal of WEEE by end users in the European Union	12
Electromagnetic Compatibility	12



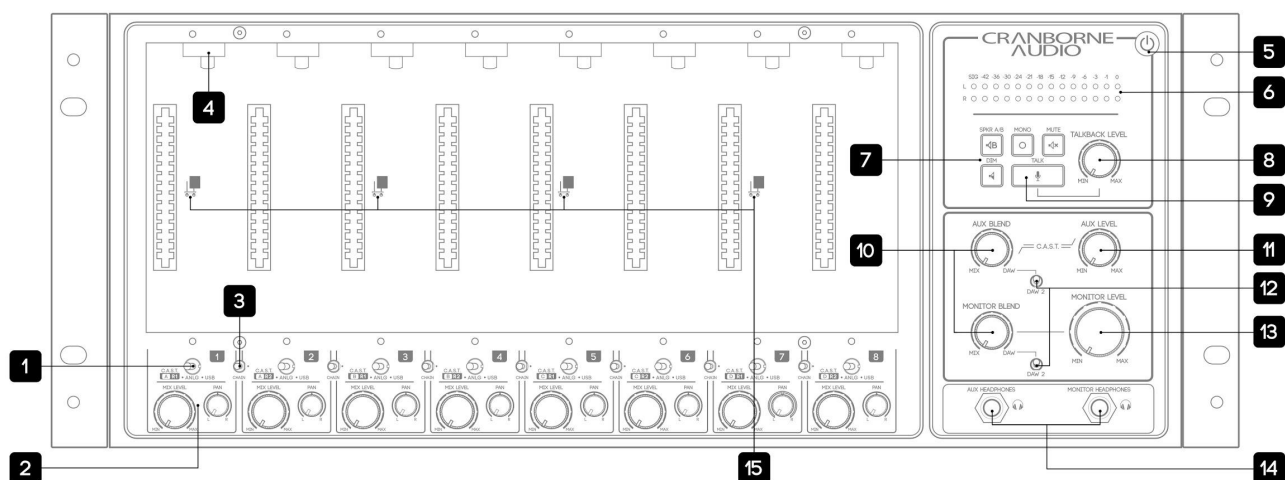
Note:

Before using 500R8, the correct USB output assignment must be configured within your operating system. Please follow the “Software Setup” section of this manual to correctly assign USB playback to the correct USB outputs of 500R8.

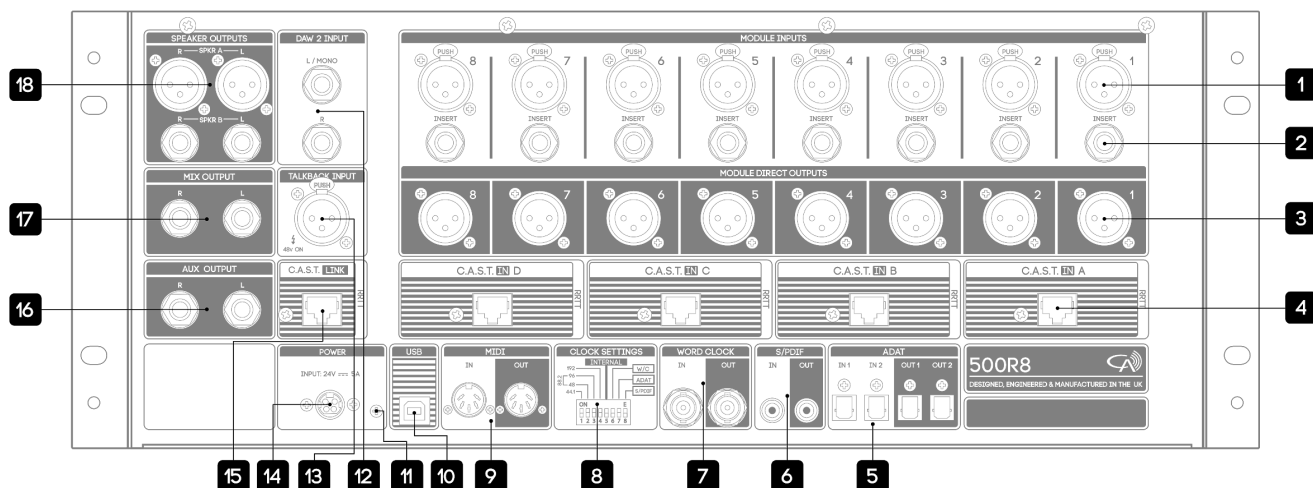
Please download the full User Manual from the 500R8 product page on the Cranborne Audio website

www.cranborne-audio.com

Controls and Connectors



<p>[1] Source Switch: Toggles the input source of each 500 series slot between C.A.S.T., Analogue, and USB sources.</p>	<p>[9] Talk Key: Engages the Talkback facility. Operates in a momentary, push-to-talk behaviour.</p>
<p>[2] Mix Level & Pan Controls: Adjusts the level and pan position of each 500 series slot into the built-in Summing Mixer.</p>	<p>[10] Aux & Monitor Blend Controls: Blends the Summing Mixer and DAW playback together into the Aux and Monitor Busses independently.</p>
<p>[3] Chain Switch: Sends the output of the preceding module into the input of the next. (1 into 2, 2 into 3, 3 into 4 etc).</p>	<p>[11] Aux Level Control: Adjusts the main level of the Aux bus to the Aux Headphones and Aux Output 1/4" jack outputs on the rear panel.</p>
<p>[4] Slot Bypass Switch: Bypasses the 500 series slot to enable recording without a module installed. All other features function normally when slot bypass is engaged.</p>	<p>[12] DAW Select Switches: Assigns an alternate pair of DAW playback returns into the Blend controls for Aux and Monitor busses. DAW 2 is accessed using USB outputs 29/30 or DAW 2 1/4" Jack inputs on the rear panel.</p>
<p>[5] Power Switch: Safely powers on and off 500R8 as well as any inserted 500 series module. Tap to power on, press and hold to power off.</p>	<p>[13] Monitor Level Control: Adjusts the main level of the Monitor Bus to both Monitor Headphones and Speaker Outputs.</p>
<p>[6] Level Meter: Displays the signal level of the Monitor Bus. Meter is positioned pre Monitor Level control in the signal path. The meter scale is in dBFS where 0dBFS = +24dBu.</p>	<p>[14] Aux & Monitor Headphones Outputs: Used for connecting Independent headphones to the Aux and Monitor busses.</p>
<p>[7] Monitor Controller Keys: Controls various options for the connected studio monitors including Speaker A/B, Mono, Mute, and Dim functions.</p>	<p>[15] Stereo Link Jumper: Connects Pin 6 between two adjacent 500 series slots to enable the Stereo Link feature of supporting modules. Stereo Linking only available between modules 1-2, 3-4, 5-6, and 7-8.</p>
<p>[8] Talkback Level Control: Adjusts the global level of the Talkback Bus into all destinations.</p>	



<p>[1] Module Input: Connects balanced XLR analogue inputs into each 500 series slot. Input sensitivity varies depending on the type of module inserted.</p>	<p>[10] USB 2.0: Connects to a PC, macOS, or Linux device to enable 28-in/30-out USB recording and playback. This connection is compatible with USB 3.0 ports.</p>
<p>[2] Insert: Connects external equipment in-line after the 500 series module but before the A/D of each 500 series slot. Utilises a standard Y-split or insert cable. (Tip=send, Ring=return).</p>	<p>[11] Grounding Post: Enables direct binding to chassis ground to help eliminate ground loops in specific setups.</p>
<p>[3] Module Direct Outputs: Sends balanced, line-level outputs of each 500 series slot for connection to external converters and equipment. Module Direct Outputs are positioned post-insert point, pre Mix Level.</p>	<p>[12] DAW 2 Input: Connects analogue playback sources from external audio interfaces directly into 500R8's monitoring paths. Inputs are summed with the DAW 2 USB outputs.</p>
<p>[4] C.A.S.T. A, B, C, & D Inputs: Enables I/O relocation and expansion via Cranborne Audio C.A.S.T. enabled breakout boxes.</p>	<p>[13] Talkback Input: Connects external microphones directly into 500R8's Talkback facility. Phantom power is always ON. Dynamic or Condenser mics can be used.</p>
<p>[5] ADAT I/O: Interfaces 16-in/16-out ADAT optical lightpipe channels directly into 500R8's USB interface.</p>	<p>[14] Power: Provides 500R8 with power via the provided external 24v 5A DC power supply. No other power supply should be used.</p>
<p>[6] S/PDIF I/O: Interfaces 2-in/2-out S/PDIF and AES3 directly into 500R8's USB interface.</p>	<p>[15] C.A.S.T. link: Enables linking of Summing Mixers between 500R8 and 500ADAT. C.A.S.T. link transmits the Aux Mix (inc Talkback) into the connected 500ADAT for monitoring.</p>
<p>[7] Word Clock I/O: Enables sending and/or receiving word clock information to/from external digital devices.</p>	<p>[16] Aux Output: Connects balanced line outputs of 500R8's Aux Bus to external monitoring devices or similar via 1/4" jacks.</p>
<p>[8] Clock Settings DIP switch: Adjusts 500R8's Clock Settings including Clock Source and Sample Rate when a device is not connected via USB.</p>	<p>[17] Mix Output: Connects line outputs of 500R8's built-in Summing Mixer directly to external converters or similar via 1/4" jacks.</p>
<p>[9] MIDI I/O: Converts MIDI information to USB for sending/receiving note and program information.</p>	<p>[18] Speaker A/B Outputs: Connects two discrete sets of speakers to 500R8's Monitor Controller for main and reference monitoring via XLR and 1/4" Jack.</p>

Package Contents

So now your 500R8 is out of its packaging, you're probably itching to get it powered on and making music! But before you get started, please read the sections below that will help guide you through the process of getting 500R8 setup, plugged in, and ready-to-record as quickly as possible!

The following items can be found in the packaging alongside 500R8:

- External power adapter
- IEC cable
- 16 module fixing screws (crosshead, 4-40 thread size)
- Allen key (2.5mm)
- Quickstart Guide

Note:

To reduce environmental waste, 500R8 does not ship with a USB cable to connect it to a host device for recording/playback. To use 500R8 as a USB audio interface, you will need to source a USB Type A to Type B cable - which is a common cable for peripheral USB devices.

Rack Ear Orientations

There's more to 500R8's rack ears than meets the eye. 500R8's rack ears can be repositioned in 3 ways to suit particular applications and offer greater protection during transport.

Standard - Standard rack ear configuration where the rack ears are mounted flush to the front panel of 500R8.

Recessed - Protective rack ear configuration where 500R8 is set backwards into its rack ears to protect front panel controls during travelling and location recording.

Handle - Portable rack ear configuration where 500R8's rack ears are removed, placed back-to-back, and attached to 500R8 as a convenient carry-handle for travelling.

Depending on your desired use case, you may need to reorientate the rack ears and position the rubber feet to best suit your application by using the supplied 2.5mm allen key.

For more information regarding the rack ears and their possible orientations, please read the full instructions in 500R8's User Manual.

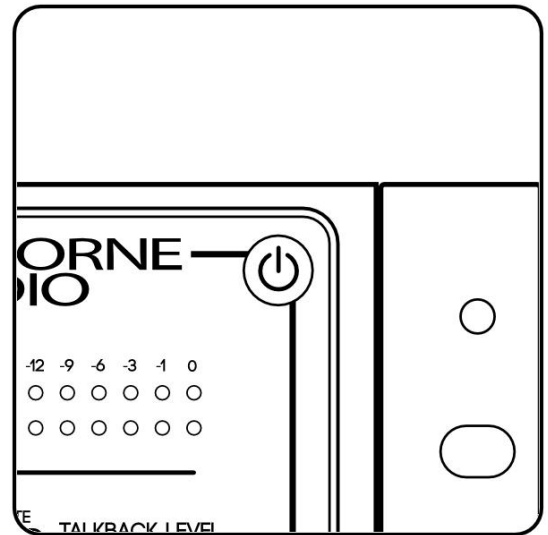
Powering Procedures

Powering On

First, make sure your speakers are switched off and any headphones are disconnected. Briefly tap the power button located on the top right of 500R8's front panel. The power icon will illuminate blue and you will hear soft 'clicking' as 500R8's internal relays actuate. You may now switch on your external equipment sequentially, leaving your speakers until last.

Powering Off

First, make sure your speakers are switched off and any headphones are disconnected. Press and hold the power button for approximately 3 seconds. The power icon will deluminate and you will hear the soft 'clicking' of the relays indicating that the unit has been powered off.



Note:

Please follow these safe powering sequences carefully in order to prevent any unwanted pops and spikes causing damage to downstream audio components including speakers and headphones.

Installing and Removing 500 Series Modules

Installing Modules

1. Ensure 500R8 is powered off and the power connector has been *removed*. Wait 30 seconds before continuing.
2. Firmly touch the metal chassis of 500R8 to discharge any built-up static electricity.
3. Carefully pick up your 500 series module and locate its conductive edge into the backplane connector of 500R8.
4. Once located, push the module into place and secure the module into the rack using the supplied 4-40 screws - be careful not to over tighten and strip the screw or thread.

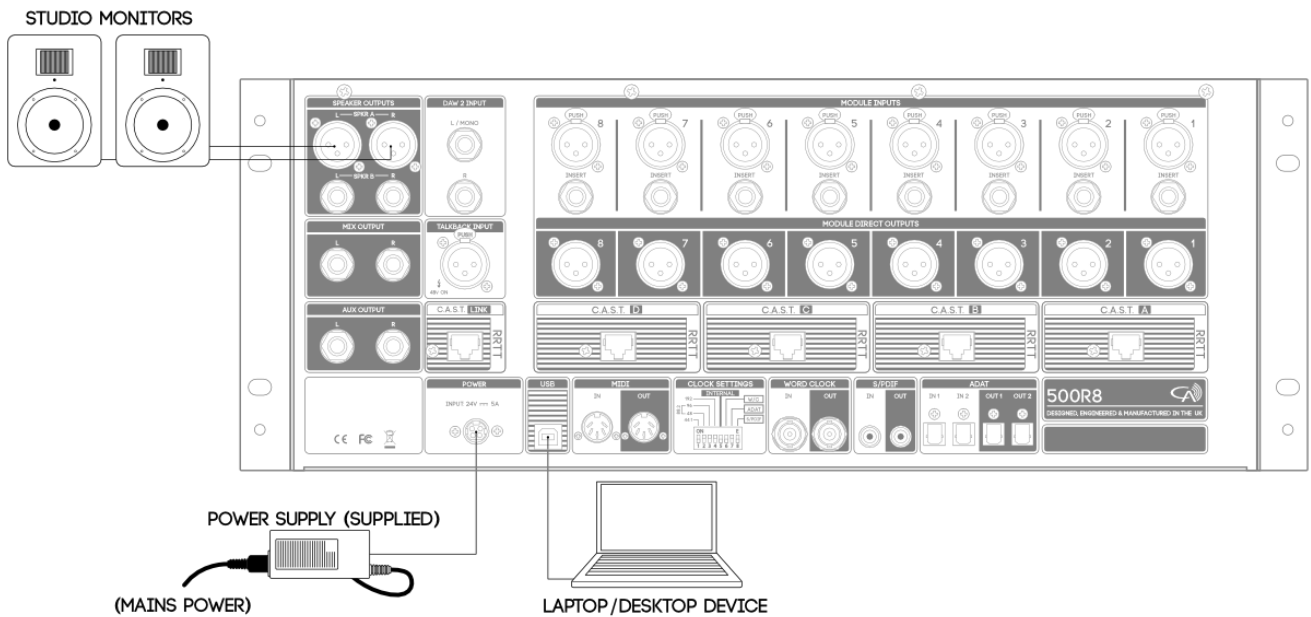
Removing Modules

1. Ensure 500R8 is powered off and the power connector has been *removed*. Wait 30 seconds before continuing.
2. Firmly touch the metal chassis of 500R8 to discharge any built-up static electricity.
3. Remove the 4-40 module fixing screws and store them in a safe place for future use.
4. Firmly pull the 500 series module to release the module from the backplane connector of 500R8 and then carefully remove the module from the rack itself.

Note:

Removing or installing modules when any 500 series rack is powered on can cause irreparable damage to the backplane connector, supporting circuitry, and the 500 series module. Damage caused when "Hot Swapping" or installing/removing modules whilst 500R8 is powered on is not covered under Cranborne Audio's Warranty.

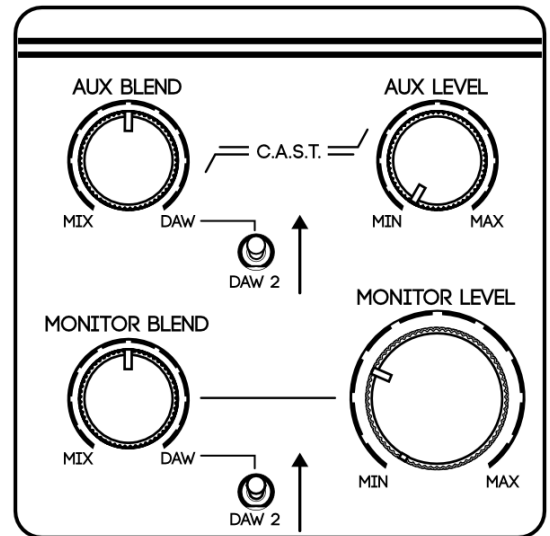
Hardware Setup



This hardware setup diagram will get 500R8 connected to your studio monitors and your laptop/desktop device ready for software installation.

- 1) Connect mains power into the external PSU supplied in 500R8's packaging and connect the power connector into 500R8's power inlet.
- 2) Connect 500R8 to an available USB port on your device using a USB type A to type B cable.
- 3) Connect the left and right Speaker A Outputs of 500R8 into the inputs of your studio monitors using balanced XLR cables.
- 4) Power On 500R8 using a brief tap of the Power button. Then Power On your studio monitors.
- 5) Configure the front panel monitor controls to match the provided diagram.

The Aux and Monitor Blend controls should be set to 12 o'clock and the DAW Select switch should be set into the up position.



Note:

Once 500R8 is connected to your speakers, the Monitor Level control may seem sensitive with small movements causing large changes in volume. In order to get the most out of 500R8's Monitor Level control, we recommend reducing the level of your studio monitors so that nominal listening level is achieved at the 12 o'clock position of 500R8's Monitor Level control.

Software Setup

Windows Configuration

If you are a Windows user, you will need to download 500R8's ASIO drivers in order for the system to detect 500R8 and make it available as an audio device in the Windows Sound Control Panel menu.

To download the latest Windows drivers for 500R8, please visit 500R8's product page on the Cranborne Audio Website.

Once downloaded and installed, the Cranborne Audio USB Control Panel enables you to adjust the settings of the connected 500R8. When you open your DAW (Pro Tools, Cubase, Reaper etc), these settings will be overridden and configured using the Audio Preferences menu from within the DAW.

To configure 500R8 to play system sounds on your Windows device, follow the steps below:

1. Follow the Initial Setup diagram and power on 500R8 using the correct procedure detailed previously in *"Hardware Setup"*.
2. Select the Windows Icon (displayed as a Windows Logo) on the bottom left corner of your screen, search for "Sound", and open up the 'Sound' application.
3. From the list of available audio devices, select "500R8 USB Output 9/10", select the 'Set Default' drop down menu, and select "Default Device".

Once configured, press play in any of your applications (including Spotify, Tidal, iTunes or similar), and the audio will be sent directly into 500R8's DAW return and Monitor Outputs. Increase the Monitor Level control for more volume!

Note:

If you are still unable to hear audio through 500R8, please ensure that the Speaker B, Mute, and Dim keys are switched off on the monitor controller keymat. If the LED meter is indicating signal, please check that the downstream connections are correct and the speakers are switched on.

Sample Rate Selection In Windows

The Windows Sound Control Panel enables you to adjust the Sample Rate settings of 500R8 when it is playing system sounds such as Spotify, Youtube, and iTunes. Right-click "500R8 USB Output 9/10", select 'Properties', select 'Advanced', and select the 'Default Format' drop down menu to select your desired Sample Rate.

When a DAW (Pro Tools, Logic, Cubase, Reaper etc) is opened, the current Sample Rate is overridden and will need to be configured directly using the Audio Preferences menu within the DAW itself.

For more details on how to adjust the Sample Rate settings from within your DAW, please consult the User Manual of your DAW of choice.

MacOS X Configuration

As 500R8 is Class Complaint, it will connect directly with your Apple device and be instantly recognised as an audio device from within the “Audio MIDI Setup” application.

To configure 500R8 to play system sounds, follow the steps below:

1. Follow the Hardware Setup diagram and instructions detailed in “*Hardware Setup*”.
2. Select the Spotlight Search function (displayed as a magnifying glass icon) on the top right corner of the screen, search for “Audio MIDI Setup”, and open the application.
3. Right-click 500R8 listed in the audio device column and select “Use this device for sound output”.
4. Right-click 500R8 listed in the audio device column, select “configure speakers”, and assign the left output to USB output 9 and the right output to USB output 10 using the available drop down menus either side of the speaker representations on the screen.

Once configured, press play in any of your applications (including Spotify, Tidal, iTunes), and the audio will be sent directly into 500R8’s DAW return. Use the Monitor Level control for more volume!

Note:

If you are still unable to hear audio through 500R8, please ensure that the Speaker B, Mute, and Dim keys are switched off on the monitor controller keymat. If the LED meter is indicating signal, please check that the downstream connections are correct and the speakers are switched on.

Sample Rate Selection in MacOS

Audio MIDI Setup for macOS enables you to adjust the Sample Rate settings of 500R8 when it is playing audio from Spotify, Youtube, and iTunes. Simply select the ‘Format’ drop down menu to display the possible Sample Rates from 44.1 to 192kHz.

When a DAW is open on the connected device, the Sample Rate will need to be configured using Audio MIDI Setup as well as the DAW itself. macOS Core Audio requires that sample rates above 88.2kHz and 176.4kHz are selected from within Audio MIDI Setup before they are available for selection in the DAW.

For more details on how to record at higher sample rates on macOS, please download 500R8’s User Manual.

Configuring 500R8 in Your DAW

In order for 500R8 to operate as intended within your chosen DAW, the Stereo/Monitor Output of your DAW’s internal mixer must be configured to send audio out of USB output 9 and 10 by default. These USB paths correspond with 500R8’s Monitor Controller and will allow you to access 500R8’s DAW Returns and 500 series slots independently.

Every DAW handles Monitor Output assignments differently. For instructions on how to reassign the Monitor Output, please consult the User Manual of your chosen DAW.

Safety Information

General Safety

- Read these instructions carefully
- Keep these instructions
- Heed all warnings
- Follow all instructions
- Do not use this apparatus near water
- Clean only with a dry cloth
- Do not block any ventilation openings and install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades with a third grounding prong. The wide blade or the 3rd prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories recommended by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as 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.
- Do NOT modify this unit, alterations may affect performance, safety and/or international compliance standards.
- Cranborne Audio does not accept liability for damage caused by maintenance, repair or modification by unauthorized personnel.

Installation notes

- When installing the apparatus either fit it into a standard 19" rack or place it on a secure level surface.
- If the unit is rack mounted, fit all rack screws.
- When rack mounting, allow a 1U gap above and below the unit for cooling.
- Ensure that no strain is placed on any cables connected to this apparatus. Ensure that all such cables are not placed where they can be stepped on, pulled, or tripped over.



WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

ATTENTION: Afin de réduire les risques de choc électrique, ne pas exposer cet appareil à l'humidité ou à la pluie.

Power Safety

- The unit is supplied with an external power supply and suitable mains lead. Only use the supplied external power supply, however if you decide to use a mains lead of your choice, bear in mind the following:
 - Refer to the rating label of the unit and always use a suitable mains cords.
 - The unit should ALWAYS be earthed with the earth on the IEC socket.
 - Please use compliant 60320 C13 TYPE SOCKET. When connecting to supply outlets ensure that appropriate sized conductors and plugs are used to suit local electrical requirements.
 - Maximum cord length should be 4.5m (15')
 - The cord should bear the approval mark of the country it is to be used.
- Connect only to an AC power source that contains a protective earthing (PE) conductor.
- Only connect unit to single phase supplies with the neutral conductor at earth potential.

GB The apparatus shall be connected to mains socket outlets with a protective earthing connection.

DEN Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

FIN Laite on liitettävä sojamaadoituskoskettimilla varustettuun pistorasiaan.

NOR Apparatet må tilkoples jordet stikkontakt.

SWE Apparaten skall anslutas till jordat uttag.



ATTENTION: Un-earthed metal parts may be present inside the enclosure. No user serviceable parts inside - to be serviced only by qualified personnel. When servicing, disconnect all power sources before removing any panels.

CE Certification



This unit is CE compliant. Note that any cables supplied with Cranborne Audio equipment may be fitted with ferrite rings at each end. This is to comply with the current regulations and these ferrites should not be removed.

FCC Certification

- Do not modify this unit! This product, when installed as indicated in the instructions contained in the installation manual, meets FCC requirements.
- Important: this product satisfies FCC regulations when high quality shielded cables are used to connect with other equipment. Failure to use high quality shielded cables or to follow the installation instructions may cause magnetic interference appliances such as radios televisions and will void your FCC authorisation to use this product in the USA.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

RoHS Notice

Cranborne Audio complies with and this product conforms to European Union's directive 2011/165/EU on Restrictions of Hazardous Substances (RoHS) as well as the following sections of California law which refer to RoHS, namely sections 25214.10, 25214.10.2, and 58012, Health and Safety Code Section 42475.2, Public Resources Code.

Instructions for disposal of WEEE by end users in the European Union



The symbol shown here, which is on the product or on its packaging indicates that this product must not be disposed of with other waste. It is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for recycling waste electrical equipment and electronic equipment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.



WARNING: cancer and reproductive harm - www.P65Warnings.ca.gov



Evaluation of apparatus based on altitude not exceeding 2000m. There may be some potential safety hazard if the apparatus is operated at altitude exceeding 2000m.



Evaluation of apparatus based on the temperate climate conditions only. There may be some potential safety hazard if the apparatus is operated in tropical climate conditions.

Electromagnetic Compatibility

EN 55032:2015, Class B, EN 55016-2-1:2009 A1 2011, EN 55016-2-3:2010 A1 2010, EN 55035:2017, EN 61000-4-2:2009, EN 61000-4-3:2006 A1 2008 A2 2010, EN 61000-4-4:2012, EN 61000-4-5:2014 A1 2017, EN 61000-4-6:2014, EN 6100-4-11:2004 A1 2017, EN 61000-3-2:2014, EN 61000-3-2:2013, FCC Part 15B Class B, ANSI C63.4:2014, ICES-003 Issue 6: Class B

Audio input and output ports are screened cable ports and any connections to them should be made using braid-screened cable and metal conductor shells in order to provide a low impedance connection between the cable screen and the equipment.

WARNING: Operation of this equipment in a residential environment could cause radio interference.

Environmental

- Operating Temperature: +1 to 30 degrees Celsius.
- Storage: -20 to 50 degrees Celsius.

For more information and guidance, please read your devices' User Manual or visit the Cranborne Audio website:

www.cranborne-audio.com