C D 2 & S I A 2 - I 0 0

u s e r m a n u a l

ACOUSTIC ENGINEERS

CD2 CD player & SIA2-100 integrated stereo amplifier

In selecting ATC you have chosen an example of the finest audio engineering available. ATC has always kept steadfastly to its founders' aim of building, mostly by hand, studio and hi-fi electronics and loudspeakers which employ the most effective of modern engineering principles. That has meant striving to make products as near perfection as it is possible to make them. In order to get the very best from ATC equipment careful and thoughtful installation is essential, so please read the manual fully to understand your ATC purchase and realise the very best performance it has to offer. Please contact ATC with any questions or issues that arise during installation or use and we will do our very best to help.

ATC (Acoustic Transducer Company) was founded in London in 1974 by Australian Billy Woodman who still heads the company today. An enthusiastic jazz pianist and engineer he was naturally drawn to loudspeaker design. ATC's reputation for the design and manufacture of unique high performance loudspeaker drive units is legendary with new concepts of design evolving and being perfected continually since its inception in 1974. The same is true of ATC's equally innovative and successful high performance audio electronic products. It all started in1982 with the EC23, a stereo, 3-way electronic crossover incorporating phase correction and momentary gain reduction – features that are incorporated in all ATC active loudspeaker systems to this day. The EC23 was the controller for all large ATC active loudspeakers right up to the development in 1996 of the SPA24-850, a stand-alone stereo Ampack for the control and amplification of SCM200 and SCM300 monitors.

But it was the development of the SCM50A active 3-way monitor in 1985 that changed everything.

An aluminium plate and heatsink that bolted straight into the back of the loudspeaker cabinet onto which three power amplifiers were mounted: 200W bass, 100W mid-range and 50W high frequency, incorporating phase correction and momentary gain reduction. This technology is why all ATC active monitors have a flat magnitude response, an excellent minimum phase response and are factory set to prevent the amplifiers from clipping when driven hard. There is nothing else that sounds better or offers such great value.

ATC designed and developed its first stand-alone hi-fi electronic product through the necessity of the ongoing quest for the best possible performance money can buy. Few pre-amplifiers available could drive the long lengths of cable necessary from the listening position to the active loudspeakers at the end of the room and hence the SCA2 pre-amplifier was developed in 1996 with its exceptional audio performance, transparency and current drive ability.

ATC today has a broad pallet of high performance audio electronic products from the CA2 pre-amplifier to the exquisite P6 power amplifier.

Expanding this formidable range of audio electronic products are the CD2 compact disc player and its matching 100W integrated stereo amplifier, the SIA2-100. Used together or as separate components the CD2 and SIA2-100 offer music lovers an exceptional combination of performance and functionality.

ATC has grown to become one of the very few manufacturers successful across both domestic and professional audio. By selecting ATC you join a group of music lovers, professional audio engineers, educators, studios and musicians across the world that understand the value of the engineering that goes into every ATC product.

Safety Warnings

1. Read instructions – all the safety and operating instructions should be read before the appliance is operated.

2. Retain these instructions – the safety and operating instructions should be retained for future reference.

3. Heed warnings – all warnings on the appliance and in the operating instructions should be adhered to.

4. Follow instructions – all operating and other instructions should be followed.

5. Water and moisture - the appliance should not be exposed to dripping or splashing and no objects such as vases, should be placed on the appliance.

6. Ventilation – the appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings. Similarly, the appliance should not be built into an installation, such as a bookcase or cabinet, that may impede the flow of air through the ventilation openings.

7. Heat – the appliance should be situated away from heat sources such as radiators, stoves or other appliances that produce heat.

8. Power sources – the appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

9. Power cord protection – power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles and the point where they exit the appliance.

10. Cleaning – the appliance should be cleaned only as recommended by the manufacturer.

11. Unattended periods – the power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

12. Object and liquid entry – care should be taken so that objects and liquids do not fall into the appliance.

13. Damage requiring service – the appliance should be serviced by qualified service personnel when:
    i. the power supply cord or the plug has been damaged
    ii. objects have fallen or liquid has been spilled into the appliance
    iii. the appliance has been exposed to rain or other serious liquid exposure
    iv. the appliance does not appear to operate normally or exhibits a marked change in performance
    v. the appliance has been dropped or the cabinet damaged

14. Servicing – the user should not attempt to service the appliance beyond those measures described in the operating instructions. All other servicing should be referred to qualified service personnel.

15. Grounding or polarisation – precautions should be taken so that grounding or polarisation means for the appliance are not defeated.

The information below is common to all ATC electronics products. We recommend that you read this along with the Safety Warnings section before continuing to read the pages dedicated specifically to the CD2 and SIA2-100 units.

Installation: ATC equipment has been designed to be free standing either within an equipment stand or simply on a convenient item of furniture. There are no special ventilation requirements (but please see notes on amplifiers below). It is recommended that at least 100mm (4 inches) clearance be left behind a unit for plugs and cables.

ATC equipment has been designed to remain powered-up in standby mode unless it is to be unused for a long period of time. Power dissipation will make the unit warm to the touch in either standby or operational mode. Temperature stability will be reached after approximately three hours from mains switch-on. Full audio performance is available immediately.

The SIA2-100 amplifier should ideally be located to minimise the cable lengths from both the source components and the loudspeakers. Similarly, the CD2 compact disc player should be connected to your amplifier via shortest cables practicable. Use of loudspeaker cables in excess of 10 metres should be avoided if possible to prevent a possible degradation in sound quality. Care must be taken to ensure that any ventilation holes in the top and bottom covers are not obscured. Please contact ATC if the amplifier is to be mounted in an enclosed area.

Mains Connection: The mains voltage to be used with both products is displayed on their rear panels. The mains cable has been specifically supplied to comply with local statutory safety approvals and alternatives should not be substituted. If you intend to use your unit in an alternative territory, please contact ATC for advice. ATC equipment MUST be earthed. Do not remove the earth wire in the mains plug.

Fuses: Mains power supply fuses are fitted within the CD2 and SIA2-100, but they are not intended to be user replaceable. The mains power supply fuse for both the SIA2-100 and CD2 is located on the rear panel. Should the unit fail to switch on when the power switch is operated, the fuse should be inspected. PLEASE ENSURE THAT THE UNIT IS DISCONNECTED FROM THE MAINS SUPPLY BEFORE INSPECTING OR REPLACING A FUSE.
Lift out the fuse holder cover using a small screwdriver, remove the fuse and inspect it for damage. Fuses most often fail due to a serious electrical fault. Only replace fuses with the same type as that suspected to be blown. All fuses are 20mm "Type T anti surge". The fuse rating is printed on the rear panel adjacent to the fuse. If a replacement fuse also fails then the unit should be returned to ATC for service.

CD2 stereo compact disc player

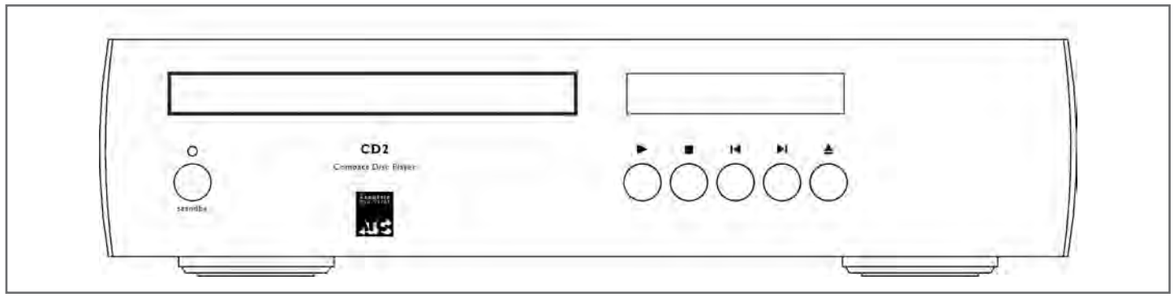

Fig. 1 CD2 front panel and controls

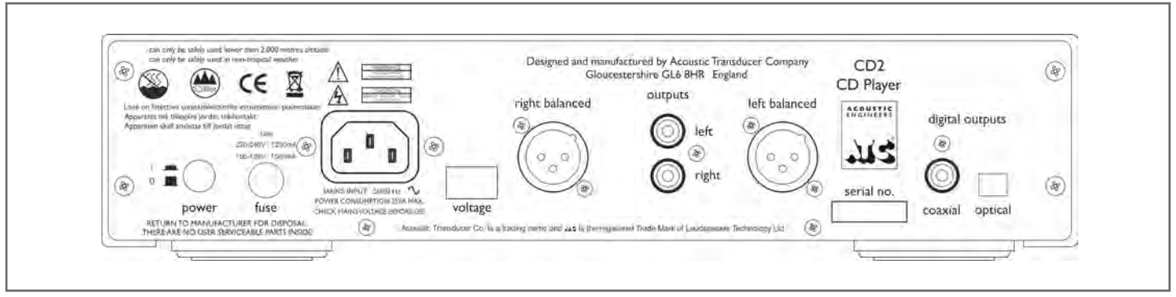

Fig. 2 CD2 rear panel and connection sockets

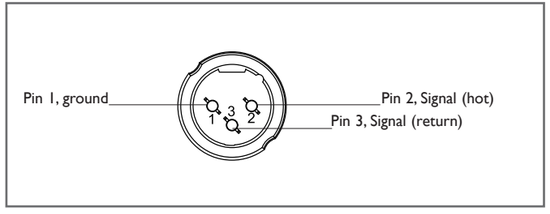

Fig. 3 XLR Output Pin Arrangement

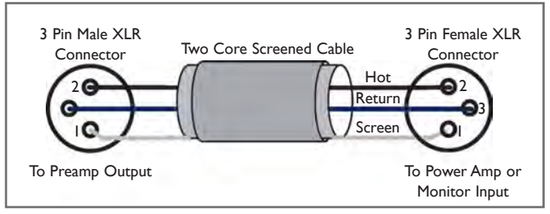

Fig. 4 XLR Balanced Cable

1.1: CD2 – Description

The ATC CD2 Stereo CD Player has been designed to partner the ATC SIA2-100 Integrated Amplifier, or with an appropriate Pre and Power Amplifier, passive or active loudspeaker systems.

A main line level stereo output on RCA phono sockets is provided, together with true differential Left and Right outputs on XLR sockets.

Digital S/PDIF Outputs are available on Optical Toslink and Coaxial outputs.

1.2: Operation

Once connected to mains power, the unit can be turned on from the rear panel mains push button.

Pressing the Standby button on the front panel (**Fig. 1**) will place the unit into standby; the standby indicator above the standby button will glow RED.

CD player commands are entered by 5 push buttons on the front panel below the display window. Commands, functions and disc information are all shown in the display window.

All of the above commands, functions or selections are duplicated on the ATC Remote Control.

Connections to the main output may be by RCA phono plugs or XLR plugs. Connections to the XLR output sockets follow the convention of pin 1 to ground, pin 2 to signal "hot" and pin 3 to signal return "cold". When connecting to equipment with XLR (balanced) inputs, the connectors should be wired pin for pin (i.e. 1 to 1, 2 to 2, and 3 to3).

Fig. 3 illustrates the XLR output pin arrangement.

Fig. 4 illustrates the cable arrangement for connection to balanced Inputs. Cables of up to 50 metres in length may be connected to the main stereo outputs.

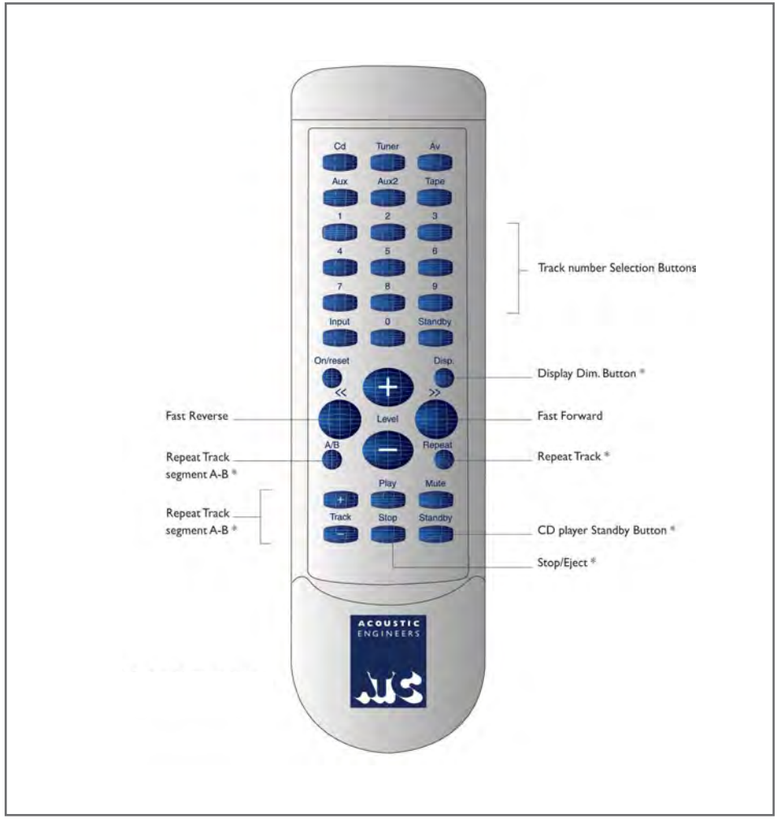

Fig. 5 ATC Remote Control Handset

1.3: Remote Control Handset

The CD2 is supplied with an ATC remote handset. Provided that the CD2 is connected to the mains power and its rear panel power switch is on, the handset provides for remote operation of all functions.

The red indicator on the handset will flash as functions are operated. Failure of this indicator points to exhaustion of the handset battery. The battery should be replaced, and the old battery disposed of, by your local dealer or distributor.
Reliable operation of the remote handsets require direct line of sight between the handset and the unit front panel.

Repeat track segment A – B: The first press of the button marks the start of the track segment to be repeated.
The Display will show A -.

A second press of the button marks the finish of the track segment to be repeated. The Display will show A – B, and the track will be replayed continuously from A to B, unless Stop is pressed.

A third press of the button will cancel A – B repeat.

Display Dim: Pressing the Dim button will brighten the display for a period of approximately 10 seconds.

Repeat track: The first press of the button will repeat the particular track selected. REP T will be shown in the Display.
The second press of the button will repeat the entire disc.
REP A will be shown in the Display.
A further press of the button will cancel Repeat functions.

Stop/Eject: Pressing and holding the Stop button will Open and Close the CD transport tray.

Standby: The Standby button will place the complete unit in standby.

SIA2-100 stereo integrated amplifier

2.1: SIA2-100 – Description

The SIA2-100 integrated amplifier/DAC has been designed to partner ATC passive loudspeaker systems and also other manufacturers' loudspeaker systems. It is designed as a simple yet versatile one-box solution for D-A conversion, and pre power amplification duties.

It incorporates 2 x stereo line level inputs on RCA phono sockets, together with a front panel mounted 3.5mm Jack socket input, 1 x digital SPDIF optical Toslink input, 1 x digital SPDIF coaxial input on an RCA phono socket, and a USB digital audio input on a USB B socket. There is a single pair of stereo power amplifier outputs on 4mm binding posts, a stereo line level output on RC A phono sockets, and a front panel mounted headphone output on a 6.35mm/0.25" jack socket.

Amplifier mains power is connected and controlled via a connector and push button on the rear panel. Input selection is achieved via a front panel push button, and output volume adjustment via a precision potentiometer.

All SIA2-100 functions are duplicated on the included remote control handset.

2.2: Inputs

The preamp/DAC stage features two line level stereo analogue inputs and three digital inputs. Both analogue inputs are equipped with rear panel mounted RCA phono sockets and are labelled 'aux 1' and 'aux 2'. The aux 2 input also features a front panel mounted 3.5mm jack for simple connection to portable music players. The front panel-mounted 3.5mm jack (**Fig. 6** overleaf) input is a switched type and any connections made to it will override connections made to the aux 2 rear RCA phono sockets.

The signal is present on the centre conductor of an unbalanced input and the signal return is made by the screen outer. The tip of a 3.5mm jack plug carries the left channel, the ring carries the right channel and the body is the signal return for both left and right channels. If there is any hum present on the inputs, this must be traced to the source and not suppressed by the removal of screens and earths. Removal of the screen on an unbalanced input will result in uncontrollable hum on the output.

All analogue inputs are line level sensitivity and are electrically identical, meaning that a line level signal from any source can be connected to any input.

The Digital USB and SPDIF inputs are mounted on the rear panel. Connection to the Digital inputs can be either Coaxial via an RCA phono plug, Optical via a Toslink connector or USB via an USB-B plug. Digital audio over USB is not as tolerant of long cable lengths as other audio connections. Typically, 1 metre or 3 feet is the longest cable length that is recommended.

The input sockets are illustrated in **Fig. 7** overleaf.

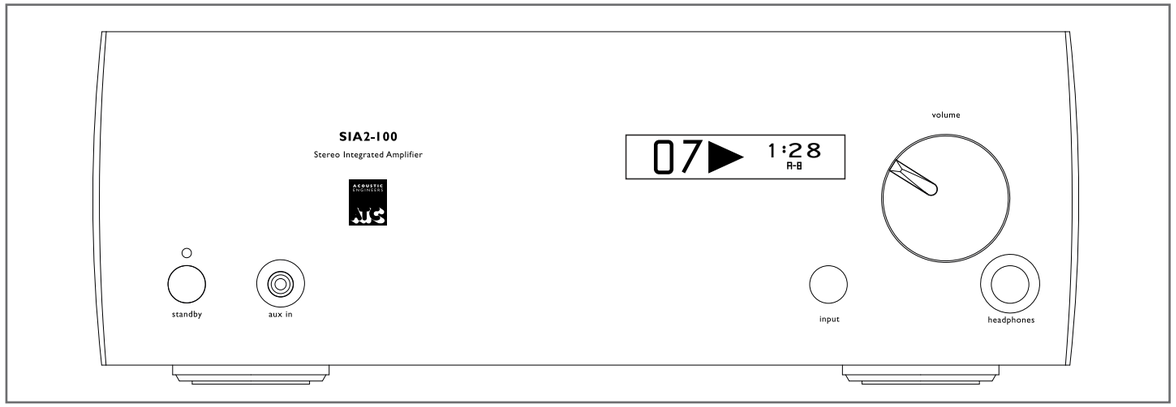

Fig. 6 SIA2-100 front panel and connection sockets

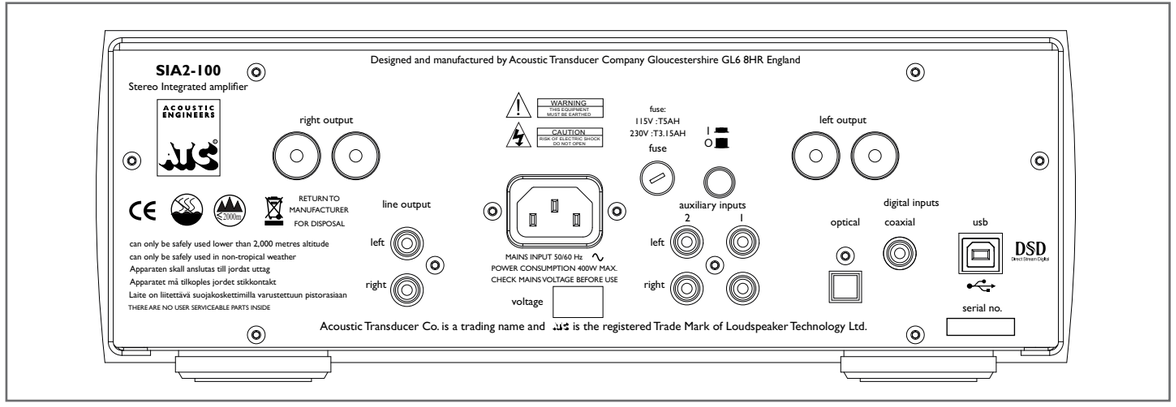

Fig. 7 SIA2-100 rear panel and connection sockets

2.3: Outputs

The SIA2-100 rear panel, as illustrated in **Fig. 7** carries the power amplifier outputs for connection to loudspeakers and also a preamp stereo line level output for connection to additional ancillary equipment e.g. power amp or a separate zone in the home. The headphone output, via a 6.35mm/0.25" jack, is front panel-mounted and is illustrated in **Fig. 6**.

Connections to loudspeakers are made via the two pairs of proprietary ATC loudspeaker terminals. The positive terminal is marked with a red trim and the negative terminal is marked with a black trim. The left and right channels are clearly marked and correspond to the left and right inputs. The loudspeaker cable used for connection between the amplifier outputs and the loudspeakers will usually have some identification of the positive conductor; a red mark, but sometimes a moulded stripe on the insulation. Care must be taken that both the left and right loudspeakers are connected with correct polarity. If the pair of loudspeakers are connected out of phase, the result will be a serious lack of low frequency output and a very wide stereo image with no defined phantom centre.

2.4: Operation

Once connected to the mains power and powered up using the rear panel mains switch, the SIA2-100 will assume the input selected when the unit was last turned off. Alternative inputs may be selected by pressing the Input push button on the front panel. The Input selected will be shown on the display.

Pressing the Standby button on the front panel will place the unit into standby; the standby indicator will glow red. Pressing the standby button again will take the unit out of standby. The indicator will extinguish.

Output level is controlled by the rotary volume control on the front panel, the position of which is indicated by the black pointer. Clockwise rotation will increase the output level. It is good practice to lower the volume setting before switching on the unit or any associated equipment, or while changing the input selection or changing connections from/to the out/inputs.

All the above commands are duplicated on the remote control.

A headphone output is provided via a front panel-mounted 6.35mm/0.25" jack socket and will drive a very wide range of popular headphones. When headphones are connected, the signal to the power amplifier and preamplifier output will be muted.

The stereo line level output on the rear panel can be used to drive an additional power amplifier or zone.

Excessively high operating temperatures are potentially very damaging. The SIA2-100 contains circuitry to monitor the heatsink temperature. The red standby LED will flash to warn the user that the heatsink temperature is rising. Action should be taken to reduce the power output level, or ensure that the ambient temperature around the SIA2-100 is not too high, e.g. by placement too near a radiator etc. If remedial action is not taken and the temperature continues to rise, the SIA2-100 will shut down, indicated by the standby LED glowing solid red. It then becomes necessary to turn the unit off at the mains switch and allow the SIA2-100 to cool down. The unit will not power up again until the temperature of the heatsink is at an acceptable level.

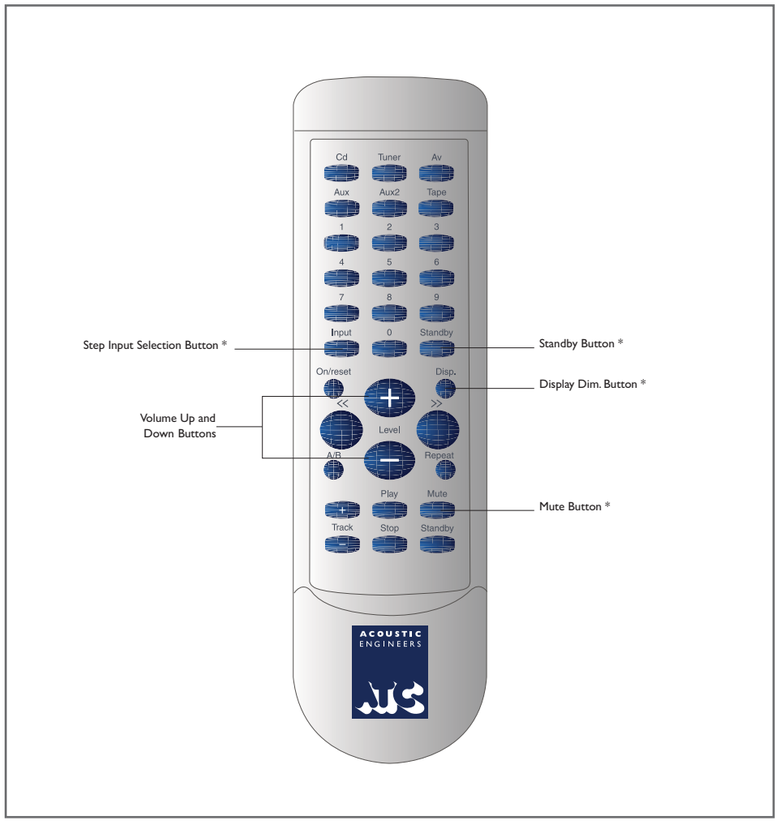

Fig.8 ATC Remote Control Handset

2.5: Remote Control Handset

The SIA2-100 is supplied with an ATC remote handset. Provided that the amplifier is connected to the mains power and its rear panel power switch is on, the handset provides for remote operation of all functions.

The red indicator on the handset will flash as functions are operated. Failure of this indicator points to exhaustion of the handset battery. The battery should be replaced, and the old battery disposed of, by your local dealer or distributor.
Reliable operation of the remote handsets require direct line of sight between the handset and the unit front panel.

Step Input selection: Each press of the Input button will select the next Input. The Input selected will be displayed in the Display window.

Standby: The Standby button will place the complete unit in Standby.

Display Dim: Pressing the Dim button will brighten the display for approximately 10 seconds. When the USB Input is selected the Dim button will display the sample rate. A further press will display the data type (PCM or DSD).

Mute: Pressing the Mute button will mute the output from the unit but not the headphones.

When playing high resolution audio from any laptop/PC, all programs other than the audio playback software should be closed.

USB cables longer than 1 metre should be avoided.

A computer with a 2.8GHz Intel® Core i5™ CPU or equivalent and 4GB RAM is recommended, particularly for playback of DSD content and PCM files with high sample rates.

Supported Operating Systems

Windows® 7, 8 and 10: Windows 10 is recommended for best performance when using Microsoft Windows.
Specific drivers are required for high resolution audio playback over USB 2.0. Please download the appropriate driver from the following location:

Windows 7 and 8:
http://atcloudspeakers.co.uk/wp-content/uploads/2017/09/CDA2-2_drivers_win7_win8_1057.zip
Windows 10:
http://atcloudspeakers.co.uk/wp-content/uploads/2017/09/CDA2-2_drivers_w10_1062.zip

Mac OS® X El Capitan™ and above: No driver is required when using Mac OS X.
For best performance Mac OS X El Capitan is recommended.

Recommended Audio Playback Software

Choice of playback software in both Mac OSX and Windows is vast. The SIA2-100 was developed and tested on JRiver Media Centre 22 on both MacOSX and Windows 7 and 10 operating systems and it is recommended that for best performance this version of JRiver is used.

It is critical for best performance that JRiver MC22 is set as per **Figs. 9 - 12** (Windows) and **Figs. 13 - 15** (MAC).

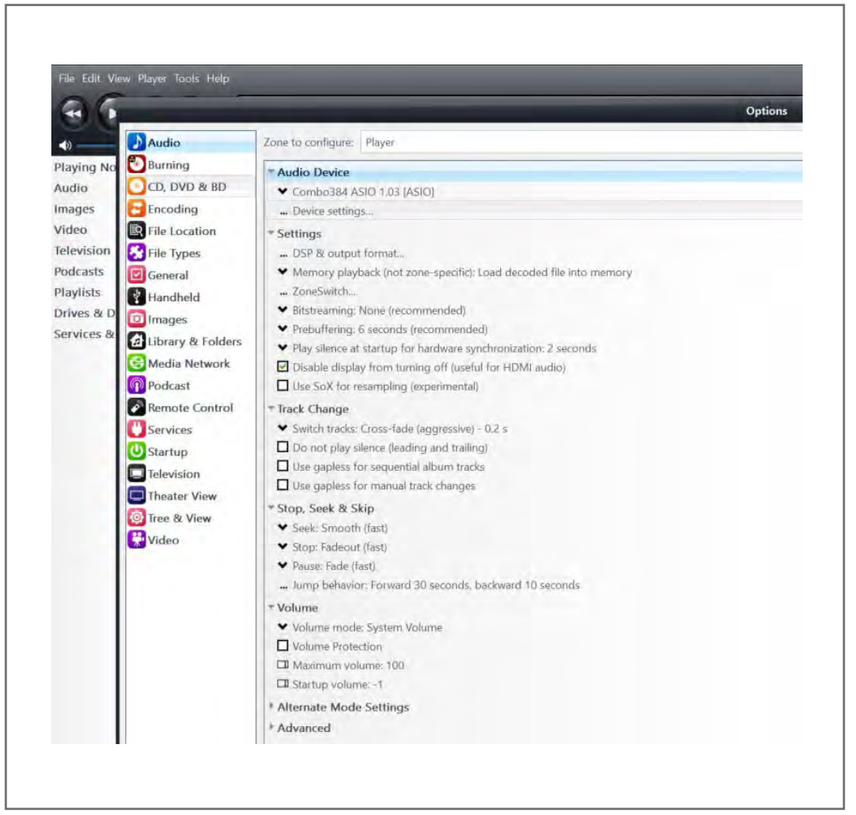

Fig. 9 JRiver MC 22 settings in Windows

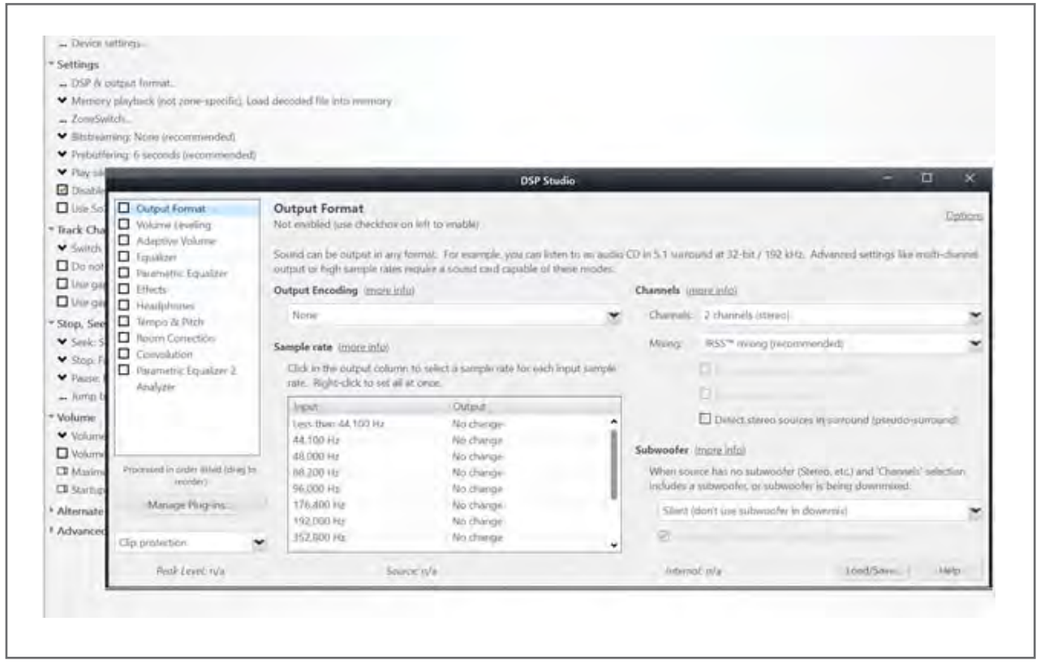

Fig. 10 JRiver MC 22 settings – Windows:
Disabling "Output Format" will ensure the files reach the SIA2-100 without conversion in JRiver

Fig. 11 JRiver MC 22 settings – Windows:
When playing DSD files, "Bitstreaming" should be set to "Yes(DSD)"

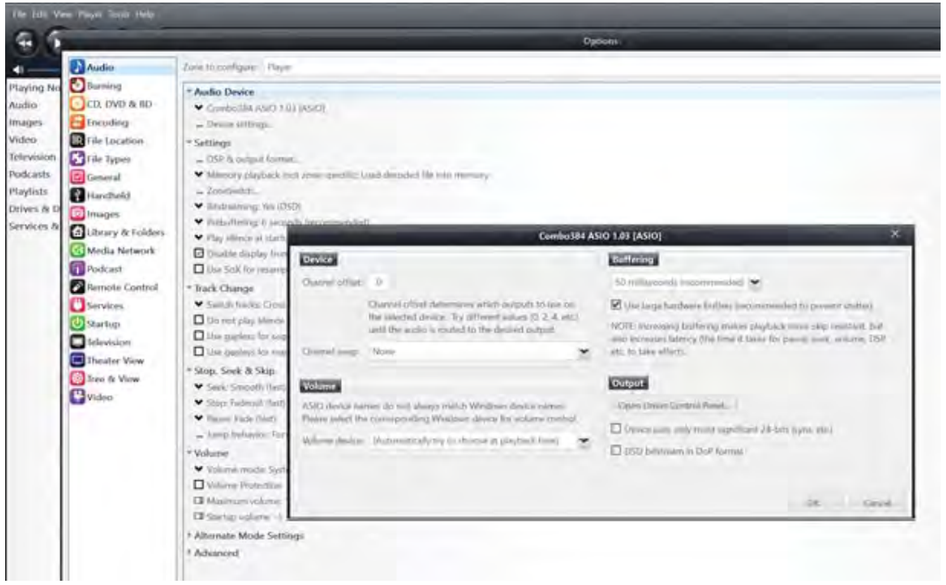

Fig. 12 JRiver MC 22 settings – Windows:
When playing DSD files, "Device Settings" should be as shown as above

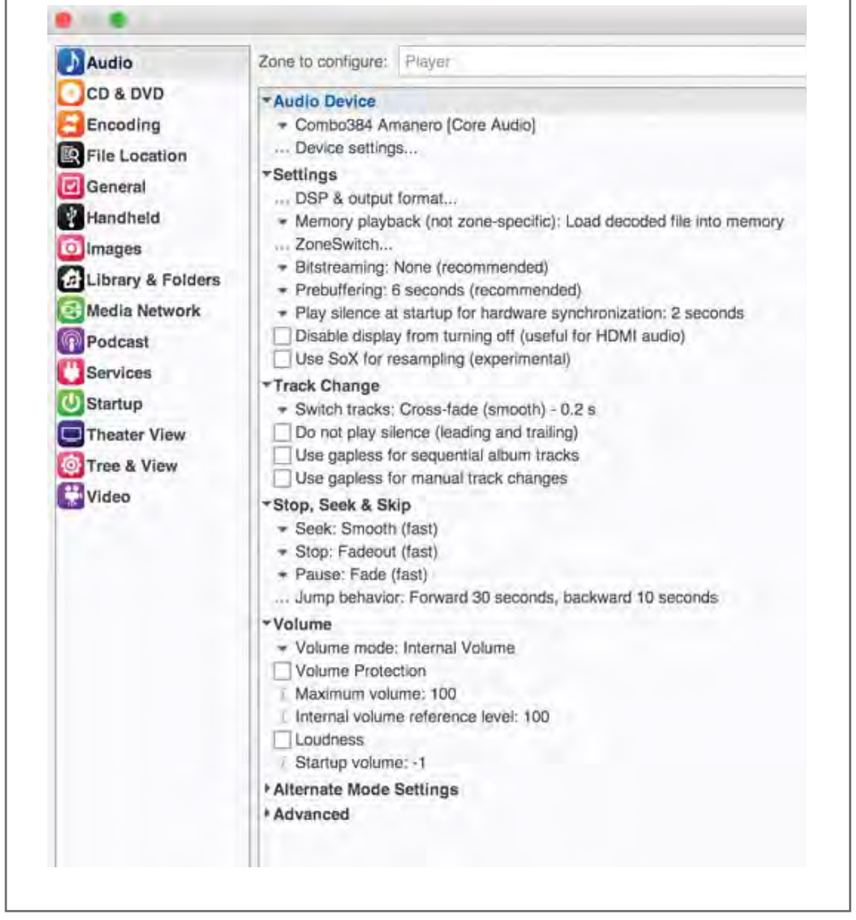

Fig. 13 JRiver MC 22 settings in Mac OS X

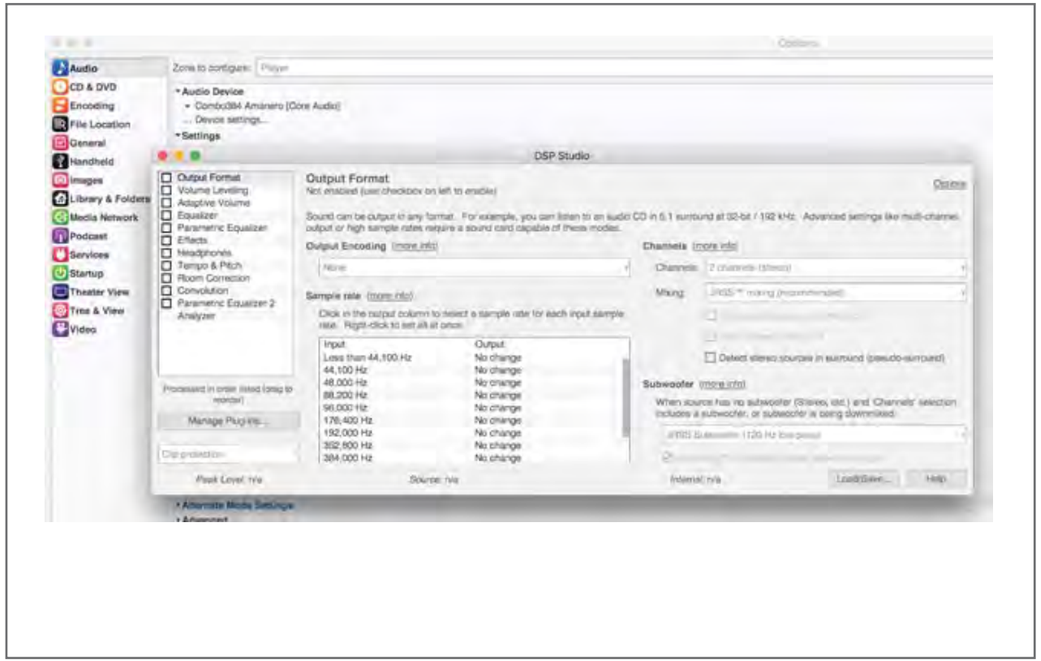

Fig. 14 JRiver MC 22 settings – Mac OS X:
Disabling "Output Format" will ensure the files reach the CDA2 Mk2 without conversion in JRiver

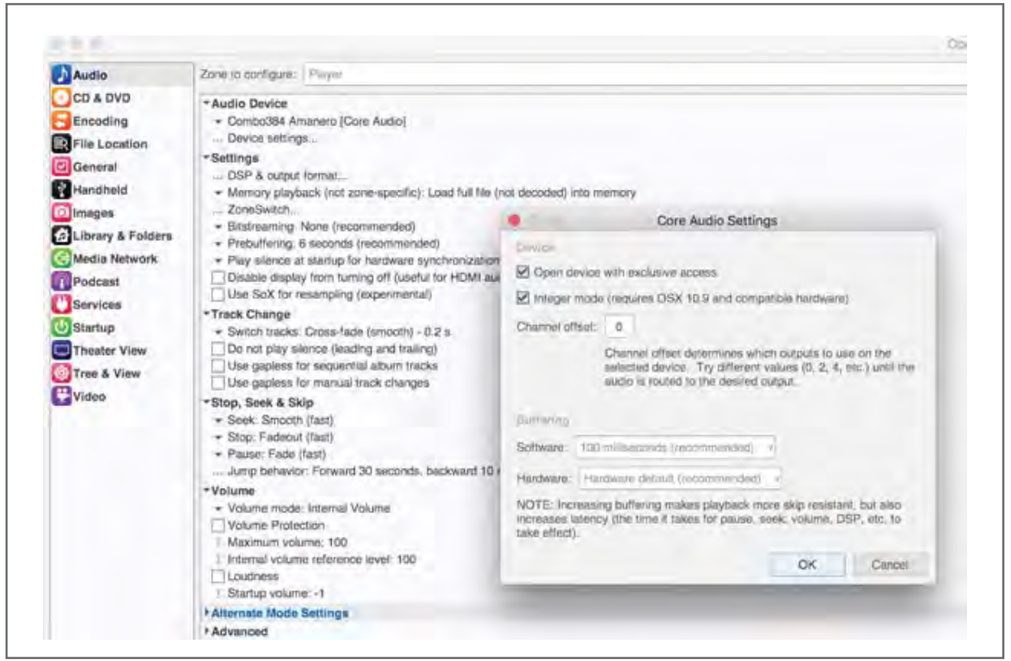

Fig. 15 JRiver MC 22 settings – Mac OS X:
When playing DSD files, "Bitstreaming" should be set to "Yes(DSD)"

3.1 : Specifications

CD2 Compact Disc Player

Maximum Output Level:	
Phono	9.2V r.m.s
XLR	18.4V r.m.s.
Output Impedance	10 Ohms
S+N/N Ratio:	
Wide Band	>96dB
DIN	>108dB
IEC "A"	>112dB
Output XLR CMRR (100Hz - 10kHz)	>60dB
Distortion:	
1kHz	< 0.0015% (-96dB)
10kHz	< 0.003% (-90dB)
Frequency Response (20Hz-20kHz)	+/- 0.2dB
S/PDIF Outputs:	
Toslink	
Coaxial	2V pk-pk, source Impedance 75Ohms

CD2 Mains Power

Voltage
115/230V AC 50/60Hz (internally selectable). 100v AC via dedicated transformer. Mains voltage selection is to be carried out by ATC only.

Maximum Power Consumption	10Watts

CD2 Physical

Dimensions (HxWxD)	77 x 315 x 315mm / 3.1 x 12.4 x 12.4" Dimensions exclude rear panel connectors. Take care to leave space behind the unit for connectors and cables.
Weight	4.2kg / 9.24lbs

SIA2-100 Integrated Amplifier

Max. Power Output	100W (Continuous Av. 8 Ohms, 1kHz, both channels driven)
Line Inputs	Two, stereo (one with additional front panel 3.5mm jack)
Line Input Sensitivity	500mV
Input Impedance	13k8 Ohms
Line Outputs	One, stereo
Overload Capacity	13dB
Line Output Impedance	10 Ohms
Frequency Response	< 2Hz – > 250kHz (@ -3dB)
Total Harmonic Distortion	1kHz <0.0015% (-96dB) 10kHz <0.002% (-90dB)
Crosstalk	>80dB (10Hz – 20kHz)
S+N/N Ratio	> 96dB (Wide band) > 108dB (DIN) > 112dB (IEC "A")

SIA2-100 Digital Inputs – Coaxial & Optical

Distortion	1kHz <0.0015% (-96dB) 10kHz <0.005% (-86dB)
Frequency Response	20Hz – 20kHz (+/- 0.1dB)
S+N/N Ratio	>100dB (IEC "A")
Word Lengths Supported	16 – 24 Bit
Sample Rates Supported	44.1kHz, 48kHz, 88.2kHz, 96kHz, 192kHz * * 192kHz supported via coaxial input only

SIA2-100 Digital Inputs – USB (PCM)

Distortion	1kHz <0.0015% (-96dB) 10kHz <0.005% (-86dB)
Frequency Response	20Hz – 50kHz (+/- 0.1dB)
S+N/N Ratio	>100dB (IEC "A")
Word Lengths Supported	16 – 32 Bit
Sample Rates Supported	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96.0kHz 176.4kHz, 192.0kHz, 352.8kHz, 384.0kHz

SIA2-100 Digital Inputs – USB (DSD)

Frequency Response	10Hz – 50kHz (+/- 0.1dB)
S+N/N Ratio	>100dB (IEC "A")
DSD Rates Supported:	
Windows	DSD64, DSD128, and DSD256
MAC OS	DSD64 and DSD128

3.1 : Specifications (contd.)

SIA2-100 Mains Power

Voltage
115/230V AC 50/60Hz (internally selectable). 100v AC via dedicated transformer. Mains voltage selection is to be carried out by ATC only.

Maximum Power Consumption	400W

SIA2-100 Physical

Dimensions	113 x 315 x 315mm / 4.4 x 12.4 x 12.4" Dimensions exclude rear panel connectors. Take care to leave space behind the unit for connectors and cables.
Weight	9.70kg/24.39lbs

3.2 : Care & Maintenance

ATC uses high technology material finishes in all of its products. The surfaces are durable and with a little care can be kept as good as new even under conditions of heavy use. Normally a dry duster is all that is required to keep the finishes clean. Heavy soiling can be cleaned using a slightly moistened cloth with a non-abrasive household cleaner.

3.3: Warranty & Contact

All ATC products are guaranteed against any defect in materials or workmanship
for a period of two years from the date of purchase.
Within this period we will supply replacement parts free of charge
provided that the failure was not caused by misuse, accident or negligence.

Purchasers who complete and return the Warranty Card
will have their warranty period extended up to a period of six years*
from the date of purchase.

*TWO years only on CD mechanism.

This guarantee does not limit statutory rights.

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