azur 640T V2.0

DAB/FM Tuner

User's manual

Cambridge Audio

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INTRODUCTION

Thank you for purchasing this Cambridge Audio Azur range DAB/FM tuner. These version 2 models are part of our commitment to the on-going development of the Azur range. We hope that you will appreciate the results and enjoy many years of listening pleasure from them.

About the 640T V2.0

The 640T V2.0 tuner can receive both DAB and FM broadcasts and was developed to offer high performance for both the digital and analogue bands. This V2.0 model now features the same WM8740 D/A converter as used in our highly acclaimed 540C V2.0 and 640C V2.0 models. A full range of presets are available in both FM and DAB modes.

To allow seamless integration with multi-room entertainment systems, a Control Bus input and output have been fitted, as has an IR emitter input. All this proprietary engineering is housed within our low resonance, acoustically damped chassis. An Azur Navigator remote control is also provided, giving full remote control of your tuner in an attractive and easy to use handset.

Your V2.0 tuner can only be as good as the system it is connected to. Please do not compromise on your amplifier, speakers or cabling. Naturally we particularly recommend amplification from the Cambridge Audio Azur range, which have been designed to the same exacting standards as our tuners, connected to suitably revealing loudspeakers.

Your dealer can also supply excellent quality Cambridge Audio interconnects to ensure your system realises its full potential. The use of an external FM aerial is strongly recommended to get the best from your 640T V2.0.

Thanks for taking the time to read this manual, we do recommend you keep it for future reference.

Matthew Bramble
Technical Director

Cambridge Audio

SAFETY PRECAUTIONS

Checking the Power Supply Rating

For your own safety please read the following instructions carefully before attempting to connect this unit to the mains.

Check that the rear of your unit indicates the correct supply voltage. If your mains supply voltage is different, consult your dealer.

This unit is designed to operate only on the supply voltage and type that is indicated on the rear panel of the unit. Connecting to other power sources may damage the unit.

This equipment must be switched off when not in use and must not be used unless correctly earthed. To reduce the risk of electric shock, do not remove the unit's cover (or back). There are no user serviceable parts inside. Refer servicing to qualified service personnel. If the power cord is fitted with a moulded mains plug the unit must not be used if the plastic fuse carrier is not in place. Should you lose the fuse carrier the correct part must be reordered from your Cambridge Audio dealer.

The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated '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 instructions in the service literature relevant to this appliance.

This product complies with European Low Voltage (73/23/EEC) and Electromagnetic Compatibility (89/336/EEC) Directives when used and installed according to this instruction manual. For continued compliance only Cambridge Audio accessories should be used with this product and servicing must be referred to qualified service personnel.

The crossed-out wheeled bin is the European Union symbol for indicating separate collection for electrical and electronic equipment. This product contains electrical and electronic equipment which should be reused, recycled or recovered and should not be disposed of with unsorted regular waste. Please return the unit or contact the authorised dealer from whom you purchased this product for more information.
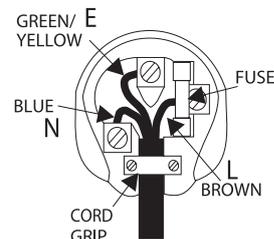
Plug Fitting Instructions (UK Only)

The cord supplied with this appliance is factory fitted with a 13 amp mains plug fitted with a 3 amp fuse inside. If it is necessary to change the fuse, it is important that a 3 amp one is used. If the plug needs to be changed because it is not suitable for your socket, or becomes damaged, it should be cut off and an appropriate plug fitted following the wiring instructions below. The plug must then be disposed of safely, as insertion into a 13 amp socket is likely to cause an electrical hazard. Should it be necessary to fit a 3-pin BS mains plug to the power cord the wires should be fitted as shown in this diagram. The colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug. Connect them as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter 'N' or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter 'L' or coloured RED.

The wire which is coloured GREEN/YELLOW must be connected to the terminal which is marked with the letter 'E' or coloured GREEN.

If your model does not have an earth wire, then disregard this instruction.

If a 13amp (BS 1363) plug is used, a 3amp fuse must be fitted, or if any other type of plug is used a 3amp or 5amp fuse must be fitted, either in the plug or adaptor, or on the distribution board.

IMPORTANT SAFETY INSTRUCTIONS

Please take a moment to read these notes before installing your Azur tuner, they will enable you to get the best performance and prolong the life of the product. We advise you follow all instructions, heed all warnings and keep the instructions for future reference.

Only use the specified attachments/accessories with this unit.

This unit must be installed on a sturdy, level surface. Do not place in a sealed area such as a bookcase or in a cabinet. Any space open at the back (such as a dedicated equipment rack) is fine however.

When a cart is used, use caution when moving the cart to avoid injury from tip-over.

The unit requires ventilation. Do not situate it on a rug or other soft surface and do not obstruct any air inlets or outlet grilles. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

Since the power transformers generate a magnetic hum-field of moderate strength, a turntable should not be located nearby. Do not plug your unit directly into a power amplifier unless it has a variable output level.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Do not route the power cable so that it can be walked upon or damaged by other items near it. The unit must be installed in manner that makes disconnection of the mains plug from the mains socket outlet (or appliance connector from the rear of the unit) possible.

When using for the first time it is advisable that it is left on, playing music, for at least 36 hours prior to critical listening. For subsequent use, a warm up period of 10-15 minutes is recommended for maximum enjoyment.

To turn the unit off completely switch off on the rear panel. If you do not intend to use this unit for a long period of time, unplug it from the mains socket. Unplug this unit during lightning storms.

WARNING - To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture. This unit must not be exposed to dripping or splashing water or other liquids. No objects filled with liquid, such as vases, shall be placed on the unit. In the event of spillage, switch off immediately, disconnect from the mains supply and contact your dealer for advice.

To clean the unit, wipe its case with a dry, lint-free cloth. Do not use any cleaning fluids containing alcohol, ammonia or abrasives. Do not spray an aerosol at or near the unit.

Ensure that small objects do not fall through any ventilation grille. If this happens, switch off immediately, disconnect from the mains supply and contact your dealer for advice.

Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as a damaged power-supply cord or plug, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

If you have checked the Troubleshooting section in this manual with no improvement, do not attempt to repair, disassemble or reconstruct the unit. A serious electric shock could result if this precautionary measure is ignored.

Approvals

This unit conforms to ANSI/UL STD 60065, 7th Edition 2003 Rev 2006/03/20. Certified to CAN/CSA STD C22.2 No. 60065-03.
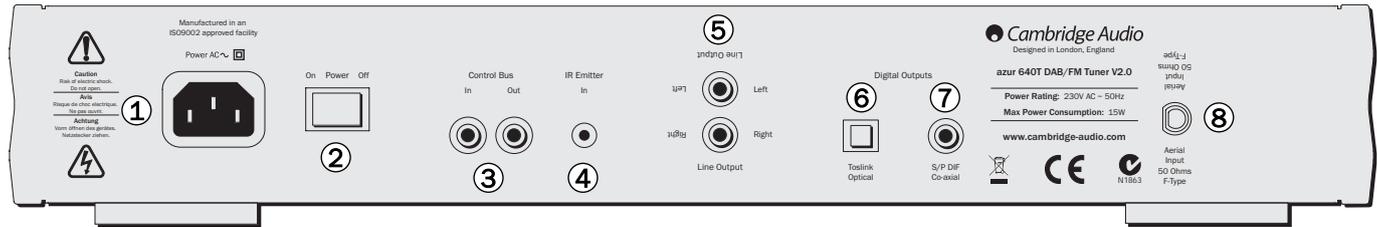
3098092

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER AUTHORITY TO OPERATE THE EQUIPMENT.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

REAR PANEL CONNECTIONS

① AC power socket

Once you have completed all connections to the unit, plug the AC power cable into an appropriate mains socket. Your tuner is now ready for use.

② Power On/Off

Switches the unit on and off.

③ Control Bus

In - Allows un-modulated commands from multi-rooms systems or other components to be received by the unit.

Out - Loop out for control bus commands to another unit.

The 640T V2.0 can also output unmodulated codes during alarm/sleep functions to wake and/or put the connected Cambridge Audio amplifier into Standby mode.

④ IR (Infra Red) Emitter In

Allows modulated IR commands from multi-room systems to be received by the unit. Commands received here are not looped out of the Control Bus.

⑤ Line Output

Use good quality interconnect cables from these sockets to any line level audio input on your amplifier.

⑥ Toslink Optical Digital output

For output to a separate DAC or digital recording machine. Use a high quality TOSLINK fibre optic interconnect cable designed specifically for audio use.
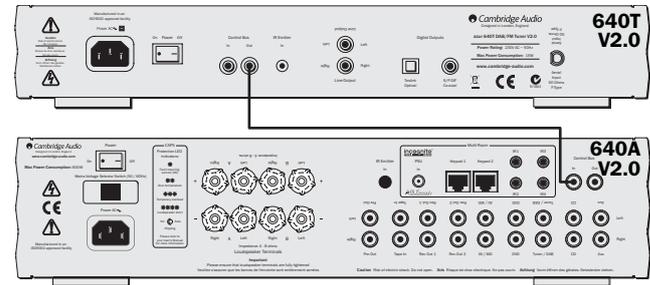
⑦ S/P DIF Co-axial Digital output

For output to a separate DAC or digital recording machine. To obtain best results, use a high quality 75 ohm digital RCA interconnect cable (not one designed for normal audio use).

⑧ Aerial input

The 640T V2.0 has an F-type screw connection aerial for both FM and DAB signals (a temporary aerial is supplied). Extend the lead and move the aerial around until you get the best reception. For permanent use, outdoor DAB & FM aerials are highly recommended.

Connecting the Control Bus

If it is desired to control a Cambridge Audio azur amplifier by the tuner's Alarm or Sleep timers, connect the two units via the orange Control Bus sockets using a RCA/phono lead as shown below:

Please refer to the 'Operating Instructions' section of this manual for more information.

FRONT PANEL CONTROLS

① Standby/On

Switches the unit between Standby and On. When in Standby the front panel display shows the current time in hours and minutes.

② Presets/Shift

The 640T V2.0 can store up to 20 Presets for each of the DAB and FM bands. The *Shift* button alternates the 5 buttons between accessing Presets 1-5 and 6-10. To access Presets 11-20, hold down the *Shift* button. The display will show which choice has been made.

③ Infrared sensor

Receives IR commands from the supplied Azur remote control. A clear unobstructed line of sight between the remote control and the sensor is required.

④ DAB/FM modes

Press to switch the 640T V2.0 between the DAB and FM bands.

⑤ Autotune

DAB mode - Press once for a quick scan through the receivable stations, or hold for a full scan. The stations found will be displayed in alphabetical order, shown as 'A-Z'.

FM mode - Press once to scan up to the next available station. Press and hold to scan down.

⑥ Info

Press to select and view different information on the front panel display. The display modes are:

DAB mode - Program Type, Radio Text, Transmission Group, Signal Strength, Time/Date, NCT mode, Manual Tuning Info, Stereo mode, Bit Rate, Alarm and Sleep.

FM mode - Program Type, Radio Text, Signal Strength, Time/Date, NCT mode, Manual Tuning Info, Stereo mode, Alarm and Sleep.

Note: The 640T V2.0 has a function which configures the DAB frequency selection and FM de-emphasis to a country's broadcasting settings. This can be set from either DAB or FM mode (with the same result).

FM mode - When pressing and holding the *Info* button, the display will show a country selection. The default setting is 'Other' which represents all countries except those specifically selectable in this function (Canada, Korea, US etc). To change the country, press *Select*. Press *Info* twice (the first press will show the software version) to go back to the main menu, and the change will now take effect.

DAB mode - This function is exactly the same as in FM mode, but when pressing and holding the *Info* button it will go to 'Manual Tuning Info' mode. Press *Info* again to go to the country selection mode.

Please note that when the country selection has been changed, most of the 640T V2.0 settings will be reset.

⑦ Select

DAB mode - Press to listen to the selected station. If you do not press *Select* the 640T V2.0 will revert to the previously tuned station. Press and hold *Select* to enter 'Auto Enter' mode. This mode automatically selects the last viewed DAB station.

FM mode - Press to switch between auto (normally stereo) and mono transmission.

⑧ ı<< >>ı (Skip/Scan)

DAB mode - Press to scroll through available stations.

FM mode - Press to move the frequency in .05Mhz steps up or down. Also used for Clock/Alarm/Sleep settings.

REMOTE CONTROL

The 640T V2.0 is supplied with an Azur Navigator remote control that operates both this tuner and Cambridge Audio Azur amplifiers. Insert the supplied AAA batteries to activate.

Standby/On

Switches the unit between On and Standby mode. The blue LED on the front panel of the unit indicates that it is On when bright and in Standby mode when dim.

1 - 10+ buttons

These allow access to any stored presets that have saved on the 640T V2.0. The 10+ button allows access to preset stations 11-20. Press and hold to store the desired preset location.

NCT (Natural Contour Technology)

Press to toggle between the sound settings of "Warm", "Dynamic" or "Off". Experiment to achieve the optimum sound quality from your 640T V2.0 for each station. Please note that the NCT mode will also be stored in the presets.

DAB/FM

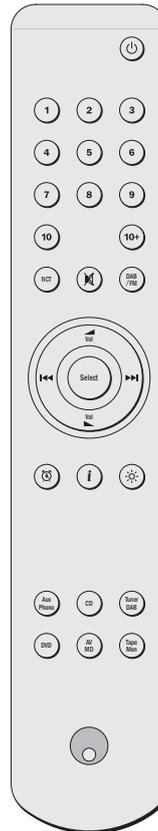Switches the 640T V2.0 between the DAB and FM bands the unit is capable of receiving.

Select

Confirms DAB station, alarm and sleep choices.

Skip/Scan

For use with manual tuning, alarm, sleep, and clock settings. Also used to cycle through the list of stations in DAB mode. In FM mode, press once for a quick scan or hold down for a full scan through the receivable stations.

Alarm/Clock

Press to access the alarm and sleep menu. Press and hold to access the clock menu. Press again to exit out of the menu. Refer to the 'Operation Instructions' section of this manual for more information.

Info

Displays information such as music type and station provider. The information on the FM band is dependant on the strength of the signal.

Brightness

Switches the display brightness between high, low and off.

Please note that the following buttons will only operate a matching Cambridge Azur Amplifier.

Mute

Mutes the audio on the amplifier. Press again to cancel mute.

Volume

Increase or decrease the volume of the amplifier.

Channel select

The five channel select buttons and the Tape monitor select button are used to change the input source (CD, DVD etc) of the amplifier.

OPERATING INSTRUCTIONS

Tuning and listening

1. Press the *DAB/FM* button to toggle between DAB and FM modes. When in FM mode, 'FM' is shown in the top right hand corner of the display.

2. In DAB mode, press the *Skip/Scan* buttons to scroll through the receivable stations. Press the *Select* button to listen to your chosen station.

3. In FM mode, press the *Autotune* button to scan up to the next available station (dependant on signal strength). Press and hold *Autotune* to scan down to the next available station. Use the *Skip/Scan* buttons to manually tune in 0.05Mhz increments.

DAB manual tuning

1. In DAB mode, hold the *Info* button down until 'Manual Tune' appears on the front panel display, then press *Select* and the frequency and name of the particular station will be displayed.

2. Use the *Skip/Scan* buttons to adjust the transmission group.

3. After pressing *Select* again it is possible to select a station from the chosen transmission group.

4. Press *Select* again to exit from manual tuning.

Setting presets

1. Select the station you wish to store and hold down the desired preset number (e.g 3) until the display shows that the station has been stored.

2. To store the presets 6-10 press the *Shift* button first. You can store 20 stations for both FM and DAB. Press and hold *Shift* to toggle between the sets of 10 presets.

3. Press the chosen preset button at any time to listen to the corresponding station.

Note: When a preset is stored, the current NCT mode is stored with it (i.e. each preset can have its own NCT mode).

Setting the clock

The user can either allow RDS FM transmissions to automatically set the clock time/date, or the clock can be set manually if you cannot receive RDS FM transmissions. To change the clock modes:

1. Press and hold the *Alarm/Clock* button on the remote control until the display reads 'Clk Mode'.

2. Use the *Skip/Scan* buttons on the remote to scroll between RDS "sync" mode and Manual mode.

3. Press the *Alarm/Clock* button to confirm your choice. Press again to exit from setting the clock.

If manual mode is selected, you can set the time by first adjusting the hour using the *Skip/Scan* buttons, then press *Alarm/Clock* again to adjust the minutes. Press *Alarm/Clock* to finish.

OPERATING INSTRUCTIONS CONTINUED

Setting the alarm

The Alarm function will turn on the 640T V2.0 at a chosen time. It will also generate a command on the Control Bus output that, when connected, will turn on a compatible Cambridge Audio azur series amplifier and cause it to select the tuner input. To set the alarm time:

1. Press *Alarm/Clock* on your remote control. 'Alarm' will appear on the front panel display.

2. Use the *Skip/Scan* buttons to select if the alarm should be off, work once, or every day.

3. Press *Alarm/Clock* to accept and progress to set the hour.

4. Use the *Skip/Scan* buttons to alter the hour.

5. Press *Alarm/Clock* to accept and progress to set the minutes.

6. Use the *Skip/Scan* buttons to alter the minute.

7. Press *Alarm/Clock* to continue to the Sleep function or press *Alarm/Clock* again to finish.

Setting the sleep time

The sleep function will turn off the 640T V2.0 at a chosen time. It will also generate a command on the Control Bus outputs that, when connected, will turn off a compatible Cambridge Audio Azur series amplifier. To set the sleep time:

1. Press *Alarm/Clock* on your remote control. 'Alarm' will appear on the front panel display. Press *Alarm/Clock* again 'Sleep' will appear on the display.

2. Use the *Skip/Scan* buttons to alter the hour.

3. Press *Alarm/Clock* to accept and progress to set the minutes.

4. Use the *Skip/Scan* buttons to alter the minute.

5. Press *Alarm/Clock* to finish.

Note: The Sleep function will reset after it has been performed.

DAB system reset

If the 640T V2.0 is moved to another location where there are different stations the old stations can be removed from the memory. To do a system reset:

1. Turn the 640T V2.0 off on the rear panel. Hold down the *Select* button whilst turning the unit back on.

2. Continue holding *Select* until 'System Reset' appears on the display.

CUSTOM INSTALLATION (C.I.) USE

The 640T V2.0 has a Control Bus input/output that allows unmodulated remote control commands (positive logic, TTL level) to be received electrically by the unit and looped to another unit if desired. These control commands are typically generated by custom installation (multi-room) systems or IR repeater systems.

The Control Bus sockets are colour coded orange. The 640T V2.0 features an IR emitter input allowing modulated IR to be received (IR commands received here are not looped out of the Control Bus). The 640T V2.0 also features direct IR/Control codes as well as toggle codes for many of its features to simplify programming custom installation systems. Special direct commands can be accessed on the supplied remote control for teaching into C.I. systems as follows:

Specific power on/off commands – Press and hold the *Standby* button. The remote first generates it's usual amp and tuner standby (toggle) commands (both are sent). Keep the button held down, after 12 seconds an 'Amp On' command will be generated, then if the button is kept held down after a further 12 seconds an 'Amp Off' command is generated, then separated by 12 second pauses, 'Tuner On', and finally 'Tuner Off'.

Specific band selection commands – Press and hold the *DAB/FM* button. The usual band toggle command is first, then the 'DAB Mode' command, followed by the 'FM Mode' command is generated.

Specific NCT commands – Press and hold the *NCT* button. The usual NCT toggle command is first, then the 'Warm' command, the 'Dynamic' command and then the 'Off' command.

Specific Mute On/Off commands – Press and hold the *Mute* button. The usual mute toggle command is first, followed by the 'Mute On' command, and then the 'Mute Off' command.

A full code table for this product is available on the Cambridge Audio website at **www.cambridge-audio.com**.

TROUBLESHOOTING

There is no power

Ensure the AC power cord is connected securely.

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

Check fuse in the mains plug or adaptor.

There is no sound

Ensure that the amplifier is set correctly.

Check that the interconnects are inserted correctly.

Check aerial connections and an available station is selected.

The sound is distorted or garbled

Check aerial connections and placements.

There is a hum coming from the speaker

Ensure that all cable connections are secure, particularly ground/shield connections.

There is unwanted background noise and interference

Move the unit away from other electrical equipment that is likely to cause interference.

Re-orientate the aerial.

The remote handset will not function

Check that the batteries have not expired.

Ensure that nothing is blocking the remote sensor.

TECHNICAL SPECIFICATIONS

Frequency range	VHF (87.5MHz to 108MHz) Band 2 DAB (175MHz to 240MHz) Band 3 DAB (1453MHz to 1491MHz) L-Band
Aerial input impedance	50 ohms
Sensitivity	-97dBm typical
Signal to noise	105dB typical (DAB) 60dB typical (FM)
Frequency response	20Hz-20kHz ±0.3dB (NCT at Flat, DAB) 20Hz-18kHz ±1dB (NCT at Flat, FM)
Distortion	<0.005%, 1kHz 2vrms o/p (DAB) <0.15%, 1kHz 50KHz deviation (FM mono) <0.6%, 1kHz 50KHz deviation (FM stereo)
S/P DIF output sample rate	48kHz
Input voltage	230V AC~50Hz (UK/EU/AU) 115V AC~60Hz (CU/US)
Max. power consumption	15W
Standby power consumption	9W
Dimensions (H x W x D)	70 x 430 x 305mm
Weight	3.9kg (12.3Lbs)

Visit www.cambridge-audio.com and register to receive notification of future hardware and software releases.

This guide is designed to make installing and using this product as easy as possible. Information in this document has been carefully checked for accuracy at the time of printing; however, Cambridge Audio's policy is one of continuous improvement, therefore design and specifications are subject to change without prior notice. If you notice any errors please feel free to email us at: support@cambridgeaudio.com

LIMITED WARRANTY

Cambridge Audio warrants this product to be free from defects in materials and workmanship (subject to the terms set forth below). Cambridge Audio will repair or replace (at Cambridge Audio's option) this product or any defective parts in this product. Warranty periods may vary from country to country. If in doubt consult your dealer and ensure that you retain proof of purchase.

To obtain warranty service, please contact the Cambridge Audio authorised dealer from which you purchased this product. If your dealer is not equipped to perform the repair of your Cambridge Audio product, it can be returned by your dealer to Cambridge Audio or an authorised Cambridge Audio service agent. You will need to ship this product in either its original packaging or packaging affording an equal degree of protection.

Proof of purchase in the form of a bill of sale or receipted invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service.

This Warranty is invalid if (a) the factory-applied serial number has been altered or removed from this product or (b) this product was not purchased from a Cambridge Audio authorised dealer. You may call Cambridge Audio or your local country Cambridge Audio distributor to confirm that you have an unaltered serial number and/or you purchased from a Cambridge Audio authorised dealer.

This Warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of, the product. This Warranty does not cover damage due to improper operation, maintenance or installation, or attempted repair by anyone other than Cambridge Audio or a

Cambridge Audio dealer, or authorised service agent which is authorised to do Cambridge Audio warranty work. Any unauthorised repairs will void this Warranty. This Warranty does not cover products sold AS IS or WITH ALL FAULTS.

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