

azur

650T

 *Cambridge Audio*

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Introduction

Thank you for purchasing your Azur 650T. We are confident that you will enjoy many years of listening pleasure from it. Like all Cambridge Audio products, the Azur 650T adheres to three core principles – stunning performance, ease of use and incredible value.

The 650T is a newly developed tuner for the Azur range available in two versions, one supporting DAB/FM/AM and one supporting FM/AM/Sirius Ready. Both feature true analog domain decoding of FM/AM for best sound quality.

In the continental US and Canada the Sirius Ready version can optionally be connected to a suitable Sirius Ready module allowing reception of Sirius Satellite Radio (requires subscription and purchase of the module).

The DAB version features an in-built digital radio tuner compatible with both the DAB and DAB+ standards and features a Wolfson WM8740 Digital to Analog converter.


A specific version of the Azur Navigator remote is provided, giving full remote control of the tuner functions in an attractive and easy to use handset.

The 650T can only be as good as the system it's connected to. Please do not compromise on your amplifier, speakers or cabling. Naturally we particularly recommend models from the Cambridge Audio Azur range which have been designed to the same exacting standards as this tuner. Your dealer can also supply excellent quality Cambridge Audio interconnects to ensure your system realises its full potential.

The use of an external aerial is also strongly recommended to get the best from your 650T.

Ultimate sound quality depends on the whole of your system, naturally we particularly recommend speakers from the Cambridge Audio Sirocco range as these have been designed for a perfect acoustic and aesthetic match. Your dealer can also supply excellent quality Cambridge Audio interconnects to ensure your system realises its full potential.

Thank you for taking the time to read this manual; we recommend you keep it for future reference.



Matthew Bramble
Cambridge Audio Technical Director
and the 650T design team

Make sure you register your purchase.

Visit: www.cambridge-audio.com/sts

By registering, you'll be the first to know about:

- Future product releases
- Software upgrades
- News, events and exclusive offers plus competitions!

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.

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"SIRIUS" and the SIRIUS dog logo are registered trademarks of SIRIUS Satellite Radio Inc.

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks.

Important safety instructions

For your own safety please read the following important safety instructions carefully before attempting to connect this unit to the mains power supply. They will also enable you to get the best performance from and prolong the life of the unit:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use with only the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug having been 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.

WARNING

- To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The unit is of Class 1 construction and must be connected to a mains socket outlet with a protective earthing connection.

The unit must be installed in a manner that makes disconnection of the mains plug from the mains socket outlet (or appliance connector from the rear of the unit) possible. Where the mains plug is used as the disconnect device, the disconnect device shall remain readily operable. Only use the mains cord supplied with this unit.

Please ensure there is ample ventilation (at least 10cm clearance all round). Do not put any objects on top of this unit. Do not situate it on a rug or other soft surface and do not obstruct any air inlets or outlet grilles. Do not cover the ventilation grilles with items such as newspapers, tablecloths, curtains, etc.

This unit must not be used near water or exposed to dripping or splashing water or other liquids. No objects filled with liquid, such as vases, shall be placed on the unit.



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.



WEEE symbol

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.



CE mark

This product complies with European Low Voltage (2006/95/EC) and Electromagnetic Compatibility (2004/108/EC) 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.



C-Tick mark

This product meets the Australian Communications Authority's Radio communications and EMC requirements.



Ross Test Stamp

This product meets Russian electronic safety approvals.

FCC regulations

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.

Ventilation

IMPORTANT - The unit will become hot when in use. Do not stack multiple units on top of each other. Do not place in an enclosed area such as a bookcase or in a cabinet without sufficient ventilation.

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.

Positioning

Choose the installation location carefully. Avoid placing it in direct sunlight or close to a source of heat. No naked flame sources, such as lighted candles, should be placed on the unit. Also avoid locations subject to vibration and excessive dust, cold or moisture. The unit can be used in a moderate climate.

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. Do not place the unit on an unstable surface or shelf. The unit may fall, causing serious injury to a child or adult as well as serious damage to the product. Do not place other equipment on top of the unit.

Due to stray magnetic fields turntables or CRT TVs should not be located nearby due to possible interference.

Electronic audio components have a running in period of around a week (if used several hours per day). This will allow the new components to settle down, the sonic properties will improve over this time.

Power sources

The unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power-supply to your home, consult your product dealer or local power company.

This unit has been designed to be left in Standby mode when not in use, this will increase the life of the unit (this is true with all electronic equipment). To turn the unit off, unplug it from the mains socket.

Overloading

Do not overload wall outlets or extension cord as this can result in a risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard.

Be sure to insert each power cord securely. To prevent hum and noise, do not bundle the interconnect leads with the power cord or speaker leads.

Cleaning

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.

Battery disposal

Please dispose of any discharged batteries according to local environmental/electronic waste disposal guidelines.

Loudspeakers

Before making any connections to loudspeakers, make sure all power is turned off and only use suitable interconnects.

Servicing

These units are not user serviceable, never attempt to repair, disassemble or reconstruct the unit if there seems to be a problem. A serious electric shock could result if this precautionary measure is ignored. In the event of a problem or failure, please contact your dealer.

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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Some countries and US states do not allow the exclusion or limitation of incidental or consequential damages or implied warranties so the above exclusions may not apply to you. This Warranty gives you specific legal rights, and you may have other statutory rights, which vary from state to state or country to country.

For any service, in or out of warranty, please contact your dealer.

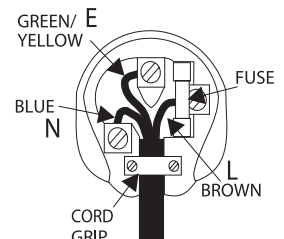
Plug Fitting Instructions (UK Only)

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.

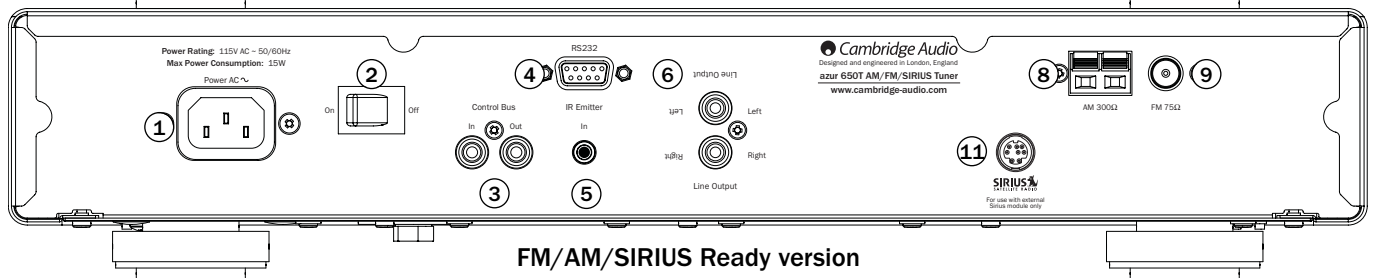
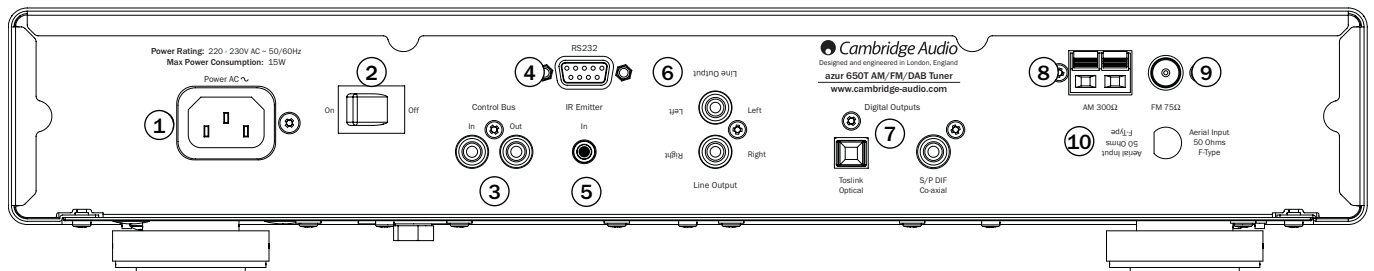
The wire which is coloured GREEN/YELLOW must be connected to the terminal which is marked with the letter 'E' or coloured GREEN.



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

Rear panel connections

DAB/FM/AM version



① AC Power Socket

Once all connections have been made, plug the AC power cable into an appropriate mains socket. Your 650T is now ready for use.

② Power On/Off

Switches the unit on and off.

③ Control Bus

The Control Bus carries control information, in the form of demodulated remote control signals, between the tuner and other Cambridge Audio devices connected to it. The 650T will respond to appropriate commands, as well as generating specific amplifier On/Off commands according to the tuner's Alarm and Sleep functions.

④ RS232

For custom install use.

A full protocol is available on our website www.cambridge-audio.com.

⑤ IR (Infra-Red) Emitter In

Allows modulated IR commands from multi-room systems or IR repeater systems to be received by the unit. Commands received here are not looped out of the Control Bus. Refer to the 'Custom installation' section for more information.

⑥ Line Output

Connect to your amplifier using good quality RCA/Phono cables.

⑦ Digital Outputs (DAB/FM/AM version only)

Note: The Digital outputs only work in DAB mode.

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.

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 AM Loop Aerial

Connect each end of the single length antenna to the antenna terminals. Place the antenna as far from the main system as possible to prevent unwanted noise and to obtain optimum reception.

If the AM loop aerial provided does not receive sufficient reception, it may be necessary to use an outdoor AM aerial.

⑨ FM Aerial

Connect an aerial to the FM 75 ohm socket (a simple wire aerial is supplied only for temporary use). Extend the lead and move the aerial around until you get the best reception.

For continued use, we strongly recommend using a 75 ohm outdoor FM aerial.

⑩ DAB Aerial Input

Azur 650T has a 50 Ω F-type screw connection aerial for DAB signals (a temporary aerial is supplied). Extend the aerial lead and move around until you get the best reception.

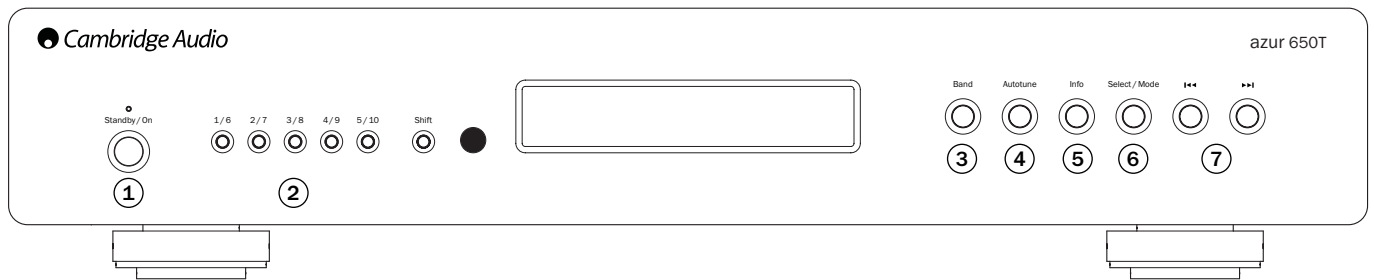
For continued use, we strongly recommend using an outdoor DAB aerial.

⑪ SIRIUS Socket (FM/AM/SIRIUS Ready version only)

Note: Do not use any power supply with your SIRIUS module. The 650T unit will power your SIRIUS module itself.

The SIRIUS socket allows the connection of a SIRIUS Ready satellite radio reception module (subscription required). Consult your dealer for more information.

Front panel controls



① Standby/On

Switches the unit between Standby mode (indicated by dim power LED) and On (indicated by bright power LED). Standby is an eco power mode where the power consumption is less than one watt.

Note: Press the Info button to briefly display the current time and date.

② Presets

The 650T can store up to 20 Presets for each of the SIRIUS, DAB, FM and AM bands. All 20 per band are available from the remote control, while 10 per band are available from the front panel. The Shift button alternates the 5 buttons between accessing or storing Presets 1-5 and 6-10.

Press and hold the appropriate button to store the presets. Press the appropriate button to access the stored presets. See later sections for more information.

Note: When the Shift button on the front is pressed to access or store Presets 6-10, the unit will revert to Presets 1-5 afterwards.

③ Band

This button switches between the AM, FM, DAB or SIRIUS bands as appropriate.

④ Autotune

SIRIUS mode - Autotune is disabled in SIRIUS mode.

DAB mode - Because DAB stations are transmitted in digital multiplexes containing several stations bundled together the 650T needs to scan and find the available multiplexes in your area before it can allow you to step through the stations they contain. The quick scan scans all the most common bands for multiplexes, whilst the full scan will scan all possible DAB frequencies and may take up to a couple of minutes to complete. Press once for a quick scan through the receivable stations, or press and hold for a full scan. The stations found will be displayed in alphabetical order.

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

Note: Scanning is also possible by pressing and holding the ◀◀ or ▶▶ buttons.

⑤ Info

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

SIRIUS mode - Press once for Name, Category, Title, Artists, Signal Strength, NCT mode, Date/Time, Sleep and Alarm.

Press and hold to display the SIRIUS ID. Press again to exit SIRIUS ID.

DAB mode - Radio Text, Program Type, Transmission Group, Signal Strength, Date/Time, NCT mode, Frequency Info, Bitrate, Alarm and Sleep.

Press and hold to initiate manual tuning in DAB mode. Press and hold to exit manual tuning mode. See later section for more information.

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

AM mode - Time/Date, Alarm, Sleep and NCT mode.

Standby mode - Press to display the Time and Date for a few seconds.

⑥ Select/Mode

FM mode - Press and hold to toggle Radio mode 'Ster/Mono'.

DAB mode - Press and hold to toggle Auto Select 'On/Off'.

When Auto Select On, if you browse to a station in the display (using ◀◀ and ▶▶) and then nothing is pressed for a few seconds the 650T will automatically tune to that station.

When Auto Select Off, you need to press Select after browsing to a station to tune to that station (if nothing is pressed for a few seconds the display reverts to the current station).

SIRIUS mode - Press and hold to enter the menu for Channel Lock, Channel Browse, Category Browse. The functions are described in the SIRIUS section later.

⑦ ◀◀ ▶▶ (Skip/Scan)

DAB/SIRIUS mode - Press to browse/tune through available stations.

AM/FM mode - Press to move the frequency in .05MHz steps up or down. Press and hold to scan up or down to the next strong station.

Note: Also used for Clock/Alarm/Sleep/Menu settings and manual tuning in DAB mode.

Remote control

The 650T is supplied with a system remote control that operates both this tuner and Cambridge Azur amplifiers.

Power

Switches the unit between Standby mode (indicated by dim power LED) and On (indicated by bright power LED). Standby is an eco power mode where the power consumption is less than one watt.

Note: Press the Info button to briefly display the current time and date.

0-9 numeric keys

These allow access or store presets. Also used to enter PIN in SIRIUS mode.

-/--

Allows access to preset stations. Press the -/-- button then use the numeric keys. Press the Select/Mode button to confirm.

Store

To store a preset with the remote press the Store button then use the numeric keys to select the desired preset location. Press the Select/Mode button to confirm.

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 650T for each station. Please note that the NCT mode will also be stored preset by preset so that you may use different settings for each station.

Band

This button switches between the AM, FM, DAB or SIRIUS bands as appropriate.

Skip/Scan

DAB/SIRIUS mode - Press to browse/tune through available stations.

AM/FM mode - Press to move the frequency in .05MHz steps up or down. Press and hold to scan up or down to the next strong station.

Note: Also used for Clock/Alarm/Sleep/Menu settings and manual tuning in DAB mode.

Select/Mode

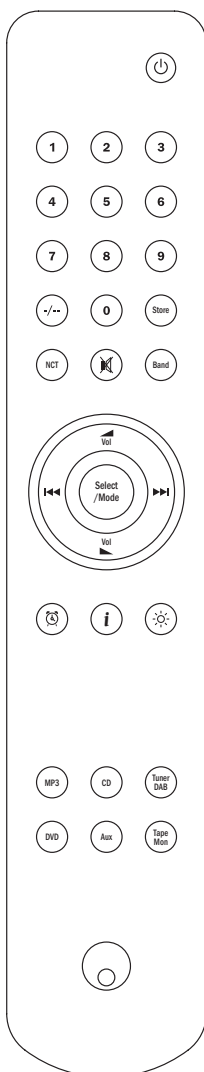
FM mode - Press and hold to toggle Radio mode 'Ster/Mono'.

DAB mode - Press and hold to toggle Auto Select 'On/Off'.

SIRIUS mode - Press and hold to enter menu, Channel Lock, Channel Browse, Category Browse.

Clock

This button is used to access the Clock and Alarm menu. See Operation Instructions section of this manual.



(Info)

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

SIRIUS mode - Press once for Name, Category, Title, Artists, Signal Strength, NCT mode, Date/Time, Sleep and Alarm.

Press and hold to display the SIRIUS ID. Press again to exit SIRIUS ID.

DAB mode - Radio Text, Program Type, Transmission Group, Signal Strength, Date/Time, NCT mode, Frequency Info, Bitrate, Alarm and Sleep.

Press and hold to initiate manual tuning in DAB mode. Press and hold to exit manual tuning mode. See later section for more information.

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

AM mode - Time/Date, Alarm, Sleep and NCT mode.

Standby mode - Press to turn the display backlight on for a few seconds.

Bright

Alters the brightness of the display backlight. There are three levels of brightness: Bright, Normal, and Off.

Please note that the following buttons will only operate on a matching Cambridge Audio Azur amplifier:

Volume

Volume buttons to increase or decrease the Volume of the amplifier output.

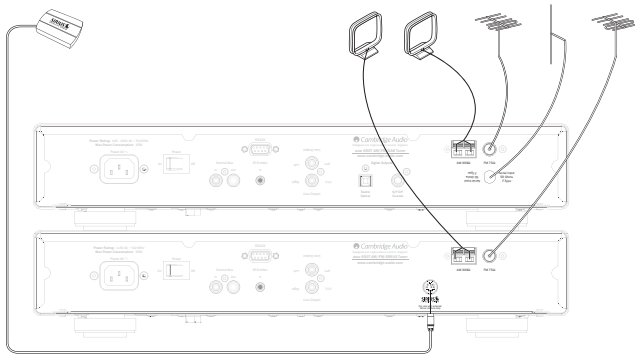
Mute

This button mutes the audio on the amplifier. The Mute mode is indicated by the channel LED flashing.

Source select

The five source select buttons and the Tape Monitor select button are used to change the input source (MP3, CD, DVD etc).

Aerials



Note: The 650T is supplied with temporary FM or DAB aerials for initial use only. For permanent use, outdoor aerials are highly recommended.

AM loop aerial

Connect each end of the single length antenna to the antenna terminals. Place the antenna as far from the main system as possible to prevent unwanted noise and to obtain optimum reception. If the AM loop aerial provided does not receive sufficient reception, it may be necessary to use an outdoor AM aerial.

FM aerial

Connect the supplied aerial to the FM 75 ohm socket. Extend and move the aerial lead around until you get the best reception. For continued use, we strongly recommend using a 75 ohm outdoor FM aerial.

DAB aerial

The 650T has a 50 Ω F-type screw connection aerial for DAB signal.

Connect the supplied DAB aerial to the socket. For continued use, we strongly recommend an external aerial.

Note: It is desirable to separate the DAB and FM aerials for best performance.

SIRIUS ready (CU version only)

Note: Do not use any power supply with your SIRIUS module. The 650T unit will power your SIRIUS module.

The SIRIUS socket allows the connection of a SIRIUS satellite radio reception module (require subscription). Consult your dealer for more information. For continued use, we strongly recommend an external aerial.

Operating instructions

After making the connections to your unit, activate the 650T by switching the power button on the rear panel to 'On', then press the Standby/On button on the front of the unit or remote.

Note: When used for the first time, the unit will perform a DAB full scan when turned on.

Tuning and listening

Press the Standby/On button.

Press the Band button to toggle between bands.

In FM/AM mode, use the **◀ ▶** buttons to manually tune in 0.05MHz increments or press and hold the **◀** or **▶** button.

DAB mode (DAB version only)

Because DAB stations are transmitted in digital multiplexes containing several stations bundled together the 650T needs to scan and find the available multiplexes in your area before it can allow you to step through the stations they contain.

The quick scan scans all the most common bands for multiplexes, whilst the full scan will scan all possible DAB frequencies and may take up to a couple of minutes to complete.

Performing a scan is only required at first setup and perhaps occasionally afterwards to see if any new services have been added in your area.

If you are using the 650T for the first time or have moved to a different geographic location always perform a full scan. It is recommended to perform a factory reset before performing a full scan to erase all stored presets and existing stations.

Quick scan is accomplished by briefly pressing the Autotune button.

Full scan is accomplished by pressing and holding the Autotune button.

Once a scan has been performed, use the **◀ ▶** buttons to browse through receivable station. Then press Select/Mode to listen to your chosen station.

Note: DAB mode the 650T can be set to Autoselect On or Off. When On if you browse to a station in the display (using the **◀ ▶** buttons) and then press nothing for a few seconds, the display will automatically tune to that station.

When Off you need to press Select after browsing to a station to tune to that station (if nothing is pressed the 650T reverts to the current station after a couple of seconds).

Press and hold the Select/Mode button to set Autoselect On. Press and hold again the Select/Mode button to set Autoselect Off

DAB settings

It is possible to change the DAB region setting for this unit. This is necessary if the unit has been moved to a different region location.

Note: Changing the DAB region will erase all the stored DAB presets.

1. Press and hold the Select/Mode button when powering up the unit to access the advance setting.
2. Use the **◀ ▶** buttons and select 'DAB settings'. Press the Select/Mode button to change the DAB region settings.
3. Use the **◀ ▶** buttons to browse through the available country DAB region setting Europe, Canada, Korea and China.
4. Select the correct region and press the Select/Mode button to accept the new changes.
5. Restart the unit and perform a full station scan.

DAB manual tuning

It is also possible to manually tune to DAB stations if you know their transmission frequencies.

1. Press and hold the 'Info' button to initiate manual tuning (by frequency). Manual tuning will be displayed on the front.
2. Use the ◀ ▶ buttons to change the radio frequencies. Allow the unit a few seconds while it registers the transmission group which will be displayed below the frequency range on the second line.
3. Press the 'Select/Mode' button to select the transmission group. Use the ◀ ▶ buttons to browse through available stations from the chosen transmission group.
4. Press the 'Select/Mode' button to select the desired station. The unit will go back to 'auto' DAB tuning.
5. You may rapidly browse through available channels by holding down either the ◀ or ▶ buttons.

Note: To exit manual tuning mode without selecting a station, press and hold the 'info' button again.

DAB+

The 650T is compatible with both DAB (MP2 audio compression) and DAB+ (AAC+ audio compression) broadcasts. A '+' symbol will appear on the far right of the front panel display when a DAB+ broadcast is being received.

DAB Secondary services

Station with secondary services will be indicated by a '▶' on the far right first line of the display. DAB secondary services are part-time broadcasts on the DAB network, such as some BBC LW transmissions.

1. Press the 'Select/Mode' button to tune in and access the secondary services.
2. Press the 'Select/Mode' button to exit the secondary services and revert to the primary station.

Connecting and using a SIRIUS Connect Home Tuner (SIRIUS Ready version only)

The 650T can be used in conjunction with a compatible SIRIUS receiver module such as the SIRIUS Connect Home Tuner SC-H1. This module allows you to subscribe and listen to any station on the SIRIUS satellite radio network.

Please carefully read the instructions included with your particular tuner, paying attention to antenna configuration.

Note: The 650T can power the SIRIUS Ready module via the SIRIUS socket and no separate power adaptor is required.

1. Ensure your 650T is powered Off using the power switch on the rear panel. Connect the SIRIUS module using the supplied DIN cable. Connect the AC power supply to the Home Tuner, and confirm that the LED indicator is on.
2. Power On your 650T from the power switch on rear panel.
3. Press the Band button and select the SIRIUS mode.

Subscribing to services

First, make a note of your Home Tuner's identification number (SID). This number may be obtained by selecting SIRIUS mode, and holding down the Info button on the front of the unit. The SID may also be found on a label located on the Home Tuner module.

To activate your subscription, please call 1-888-539-SIRIUS (1-888-539-7474).

Alternatively, visit www.sirius.com and click Activate. Follow the online instructions to register your module.

Positioning the antenna

The antenna must be positioned in such a way that the tuner can receive the best possible signal from the transmission satellite. The direction of the antenna depends on your geographical location in the United States.

Location	Antenna Direction
Northwestern US or western Canada	East
Midwestern US or central Canada	Directly above
Northeastern US or eastern Canada	West
Southwestern US	North-east
South central US	North
Southeastern US	Northwest

The LED indicator on the receiver module will turn green when you have sufficient signal strength.

Manual tuning

In this mode, you can navigate through all subscribed stations using the ◀ ▶ buttons.

1. Press the Band button to change to SIRIUS mode.
2. Use the ◀ ▶ buttons to browse/tune through available stations. If the station you wish to listen to is not present, you may need to add it to your subscription. Call 1-888-539-SIRIUS for more information.
3. To store a station as a preset, see 'Setting Presets' on previous section.
4. You may rapidly step through the subscribed and available channels by holding down either the ◀ or ▶ buttons.

Direct tuning

You can tune directly to a channel of your choice.

1. Press the Band button to change to SIRIUS mode.
2. Press the Select/Mode button on the remote control. The display will show 'SELECT CHANNEL CH---'.
3. Enter the channel number you wish to tune to using the numerical keys on the remote.
4. Press the Select/Mode button to confirm.

Operating instructions (continued)

SIRIUS menu

1. Press and hold the 'Select/Mode' button to access the menu.
2. Use the ◀ ▶ buttons to browse through Channel Lock/Unlock, Channel Browse, Category Browse and Exit.
3. Press the 'Select/Mode' button to confirm selection.

Channel lock function

The 650T has a channel lock function using four digits PIN code (default: 1234). This is to prevent anyone listening to a specific SIRIUS subscribed channel. To use this function, do the following:

Channel locking

Note: It is important to remember the channel's number before locking as this channel won't be displayed when browsing through the channels once it's locked.

1. Press the Band button to change to SIRIUS mode.
2. Tune in to the station you wish to lock. Press and hold the Select/Mode button. Navigate to 'Channel Lock' using the ▶ button.
3. Press the Select/Mode button to enter the channel lock mode. 'Enter Pin: ---' will be displayed. Using the numeric keys, enter 1234 (default PIN) and 'Channel Locked' will be briefly displayed before exiting the channel lock function.

Repeat the steps to lock the other channels.

Note: Locked channels can not be stored as presets.

Tuning to locked channels

1. Press the Select/Mode button. Tune directly to the locked channel and the 'Enter Pin:' will be displayed.
2. Enter 1234 (default PIN) to tune in to that locked channel.

To unlock channels

1. Tune directly to the locked channel (see previous section).
2. Press and hold the Select/Mode button.
3. Navigate to 'Channel UnLock' using the ▶ buttons.
4. Press the Select/Mode button to unlock the channel.

Repeat the steps to unlock the other channels.

Changing PIN code

1. Press and hold the 'Autotune' button on front of the unit
2. While holding down the 'Autotune' button, press the Select/Mode button on the remote and select channel 888 using the numerical keys.
3. Enter the OLD PIN and followed by the NEW PIN. The unit will ask you to re-enter NEW PIN. The display will show 'NEW PIN STORED' when successful.

PIN code reset

1. Press and hold the 'Autotune' button on the front of the unit.
2. While holding down the 'Autotune' button, press the Select/Mode button on the remote and select channel 999 using the numerical keys. 'PIN reset OK' will be displayed briefly to confirm the function.

Channel browse

1. Press and hold the 'Select/Mode' button to access the SIRIUS menu.
2. Use the ◀ ▶ buttons and navigate to Channel Browse. Press the 'Select/Mode' button to confirm selection.
3. Use the ◀ ▶ buttons to browse through all available channels.
4. Press the 'Select/Mode' button to tune in to the channel.

Note: The unit will revert back to the current channel if nothing is pressed for a few seconds.

Category browse

1. Press and hold the 'Select/Mode' button to access the SIRIUS menu.
2. Use the ◀ ▶ buttons and navigate to Category Browse. Press the 'Select/Mode' button to confirm selection.
3. Use the ◀ ▶ buttons to browse through all available category. Press the 'Select/Mode' button to confirm category selection.
4. Use the ◀ ▶ buttons to browse through all available channel within the selected category.
5. Press the 'Select/Mode' button to tune in to the channel.

Note:

- The unit will revert back to the current channel if nothing is pressed for a few seconds.
- Category browse is not available when tuned in to channel 0 (SIRIUS ID channel).

Resetting skipped channels

1. Press and hold the 'Autotune' button on the front of the unit.
2. While holding down the 'Autotune' button, press the Select/Mode button on the remote and select channel 777 using the numerical keys. 'Cleared Skipped Ch' will be displayed briefly to confirm the function.

Setting the time zone (SIRIUS Ready version only)

If the 650T is configured to Sync mode, and the unit is connected to a SIRIUS tuner module, it is important to specify the appropriate time-zone and DST for your geographic region.

To set the time zone:

1. Press and hold the Clock button and choose 'Sync' mode. Press the Select/Mode button to accept.
2. Use the ◀ ▶ buttons and choose the correct time zone. See below for the appropriate time zone:
 - Zone NST = GMT-3h30 (Newfoundland)
 - Zone AST = GMT-4h (Atlantic)
 - Zone EST = GMT-5h (Eastern)
 - Zone CST = GMT-6h (Central)
 - Zone MST = GMT-7h (Mountain)
 - Zone PST = GMT-8h (Pacific)
 - Zone AKST = GMT-9h (Alaska)
3. Press the Select/Mode button to confirm. Please continue to set the Daylight Saving Time to either 'DST On' or 'DST Off'. If set to 'On', then USA/Mexico/Canada daylight saving will be observed.

Note: When setting a new time zone, the unit needs to be restarted for the new time zone to take effect.

General operation (all modes)

Setting presets

To store a station as a preset do the following:

1. Press the Store button on your remote control and use the numerical keys and select the desired preset number.
2. Press the Select/Mode button to confirm preset selection.
3. Alternatively, you can use the Preset buttons on the front of the unit. Press and hold the desired Preset button until the display shows 'Stored Preset #'. Pressing the Shift button alternates between accessing Presets 1-5 and 6-10.

Note:

- When a preset is stored, the current NCT mode is stored with it (i.e. each preset can have its own NCT mode).
- Locked channels can not be stored as presets.

How to select preset stations

1. Select AM, FM, DAB or SIRIUS mode by pressing the Band button.
2. Press the +/- button on the remote and use the numerical keys to directly access the desired stored station.
3. Alternatively, press the corresponding Preset button on the front of the unit. Pressing the Shift button alternates the 5 buttons between accessing Presets 1-5 and 6-10.

Resetting the presets

This will erase all stored presets for AM, FM, DAB/SIRIUS and NCT settings. It will also cause the unit to perform a full scan for DAB stations when the unit is turned on.

1. Press and hold the Select/Mode button when powering up the unit to access the advance setting.
2. Use the ◀ ▶ buttons and select 'Factory Reset'. Press the Select/Mode button to accept the confirmation and erase all presets.
3. Restart the unit.

Setting the clock

The user can either allow RDS transmissions to automatically set the clock Time/Date (not available in AM mode), or the clock can be set manually. To change the clock mode:

Note: To use the Sync function on the US version unit, see later section 'Setting the time zone' of this manual.

1. Press and hold the Clock button on the remote.
2. Use the ◀ ▶ buttons to change mode between Sync and Manual.
3. Press the 'Select/Mode' button to confirm your choice. If Manual is selected, you can then set the time.
4. Adjust the hour using the ◀ ▶ buttons.
5. Press the 'Select/Mode' button again to adjust the minutes.
6. Press the 'Select/Mode' button again to adjust the date.
7. Keep pressing the 'Select/Mode' button to accept the the settings and exit.

Setting the alarm time

The Alarm function will turn on the 650T at a chosen time. It will also generate a command on the control bus that, when connected, will turn on a Cambridge Audio Azur series amplifier and select the tuner input.

Note: Make sure that the time is either synced or set manually for the Alarm function to work.

To set the Alarm time:

1. Press the Clock button on the remote.
2. Use the ◀ ▶ buttons to toggle between Once, Daily and Off.
3. Press the Select/Mode button to confirm your selection. If Once or Daily is selected, you can then set the time.
4. Press the ◀ ▶ buttons to adjust the hour.
5. Press the Select/Mode button to adjust the minute.
6. Press the ◀ ▶ buttons to change the minute.
7. Keep pressing the 'Select/Mode' button to accept the the settings and exit Alarm function.

Note:

- The 650T will send an On command through the Control Bus. If the 650T unit is used with an azur 840A unit, please use input 3 to connect your 650T.
- Press the 'Info' button when on Standby mode to briefly turn the display backlight on.

Setting the sleep time

The Sleep function will turn off the 650T at a chosen time. It will also generate a command on the Control Bus that, when connected, will turn off a compatible Cambridge Audio Azur series amplifier.

Note: Make sure that the time is either synced or set manually for the Sleep function to work.

To set the Sleep time:

1. Keep pressing the Clock button on your remote control until 'Sleep' is displayed.
2. Use the ◀ ▶ buttons to change mode between On and Off.
3. Press the Select/Mode button to confirm your selection. If On is selected, you can then set the time.
4. Press the ◀ ▶ buttons to adjust the hour.
5. Press the Select/Mode button to adjust the minute.
6. Press the ◀ ▶ buttons to change the minute.
7. Press the 'Select/Mode' button again to finish and exit the menu.

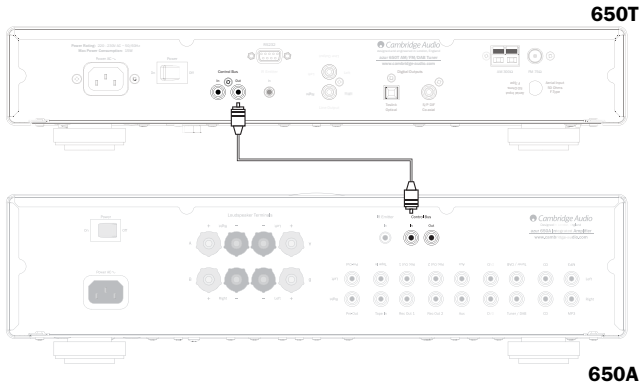
Note:

- The 650T will send an Off command through the Control Bus. If the 650T unit is used with an azur 840A unit, please use input 3 to connect your 650T.
- Press the 'Info' button when on Standby mode to briefly turn the display backlight on.

Operating instructions (continued)

Connecting the Control Bus

If it is desired to control a Cambridge Audio Azur amplifier by the 650T's Alarm or Sleep timers, connect the two units via the orange Control Bus sockets using the supplied orange RCA/phono lead as shown below:



Custom installation (C.I.) use

The 650T features a Control Bus input/output that allow un-modulated 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 remote IR receiver systems. The Control Bus sockets are colour-coded orange.

An IR Emitter Input is also provided that allows modulated IR remote control commands to be received electrically by the unit. Commands on this input operate the unit only and are not looped out demodulated on the Control Bus Output.

An RS232 port is also featured which allows the 650T to be controlled by C.I. systems.

In addition the unit 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 Band key. The usual band toggle command is first, then the DAB/SIRIUS Mode command, then the FM Mode command, then finally followed by the AM 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 key. 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.

Technical specifications

Frequency Range	FM (87.5–108MHz) Europe FM (88–108MHz) US AM (531–1620kHz) Europe AM (530–1710kHz) US DAB Band 3 (175MHz to 240MHz) DAB L Band (1453MHz to 1491MHz)
Aerial Inputs	50 Ω F-Type (DAB) 75 Ω (FM) AM Loop
Sensitivity	-25dBm typical
Signal to Noise	105dB typical (DAB) 60dB typical (FM) 47dB typical (AM)
DAB codec types supported	DAB (MP2) / DAB+ (ACC+)
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) <0.3%, @ 1kHz, 50kHz deviation (FM) <0.9%, @ 1kHz (AM)
S/P DIF output sample rate	48kHz
Input voltage	220 - 230V AC ~ 50/60Hz (Europe) 115V AC ~ 50/60Hz (US)
Maximum Power Consumption	15W
Standby Power Consumption	<1W
Dimensions – H x W x D	70 x 430 x 305mm (2.75 x 17 x 12")
Weight	4.10kg (9 lbs)

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 tuner 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.

Cambridge Audio is a brand of Audio Partnership Plc
Registered Office: Gallery Court, Hankey Place,
London, SE1 4BB, United Kingdom
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www.cambridge-audio.com

