

azur 640H

Music server

User's manual



Cambridge Audio

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INTRODUCTION

Thank you for purchasing this Cambridge Audio 640H Music Server, the latest addition to the Azur range. In the last few years hard disk technology and compressed audio formats such as MP3 and AAC have revolutionised the way we listen to and store music. Yet despite these technological advances, so far there hasn't been a solution which combines true audiophile standards of reproduction with a high capacity storage server in a cost-effective package. This, we hope you'll agree, changes with the launch of the 640H with AudioFile™ – a suite of proprietary embedded software developed to manage storage, transfer and playback of music in a real hi-fi environment.

About this unit

AudioFile is seen for the first time in the 640H Music Server, where you can appreciate the quality of music reproduction you've come to expect from Cambridge Audio matched to a capacious 160GB AV quality hard drive and a high speed CD burner. With such a large hard drive available, approximately 300 albums can be stored in uncompressed format for the highest sound quality.

Other features include a Hi-fi DAC board using the same Wolfson DAC and proprietary balanced virtual earth filter technology as used in our Azur CD players; an Audiophile oversize toroidal transformer where most competitors use a PC power supply; a fan-less Supply Unit to power the motherboard electronics; and no fewer than seven linear regulated PSUs (Power Supply Units) for all the critical audio stages, DAC, clock etc.

Once your music is stored in uncompressed or compressed MP3 format (where you can choose the compression level) you can form your own personal music library to make music compilations for use in your home, burn to CD or transfer to portable media players. Share uncompressed or compressed music files via a wired or wireless network and playback music from your PC or Mac (stored in programs such as iTunes™ or Windows Media Player) or other network devices via the 640H.

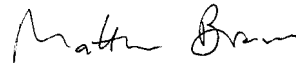
The 640H can also stream to and from other AudioFile based units in your home or even your PC/Mac via wired or wireless network technology using ethernet/Wi-Fi adaptors. On-board internet radio gives you access to stations across the world, and unlike a PC, the 640H offers virtually instant start-up and shut-down from Standby mode.

To access the comprehensive on-screen display menus, it is recommended you connect your 640H to a TV (via Composite, S-Video or VGA OSD outputs). An Azur Navigator remote control is also provided, giving full remote control of your 640H in an attractive and easy to use handset.

Finally, to allow seamless integration with multi-room entertainment systems, a Control Bus input and output have been fitted, plus an IR emitter input and RS232C.

Your 640H 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 this unit. Your dealer can also supply excellent quality Cambridge Audio interconnects to ensure your system realises its full potential.

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



Matthew Bramble
Technical Director

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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

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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:

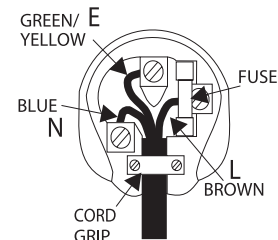
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter 'N' or coloured BLACK.

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 640H, as 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.

The unit is of Class 1 construction and must be connected to a Mains socket outlet with a protective earthing connection. The Mains plug supplied with this unit must be used.

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.

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. Do not route the power cable so that it can be walked upon or damaged by other items near it.

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.

This unit will become hot when in use. 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 install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. 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. When in a 19" rack tray, leave 1 unit space (minimum) between units.

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, switch off immediately, disconnect from the mains supply and contact your dealer for advice.

To clean the unit, wipe its case with a moist, lint-free cloth. Do not use any cleaning fluids containing alcohol, ammonia or abrasives. Do not spray an aerosol at or near your 640H.

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.

If you do not intend to use this unit for a long period, switch it to Standby mode, turn the unit off and unplug it from the mains socket. Also unplug the unit during lightning storms.

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 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.

Important Note

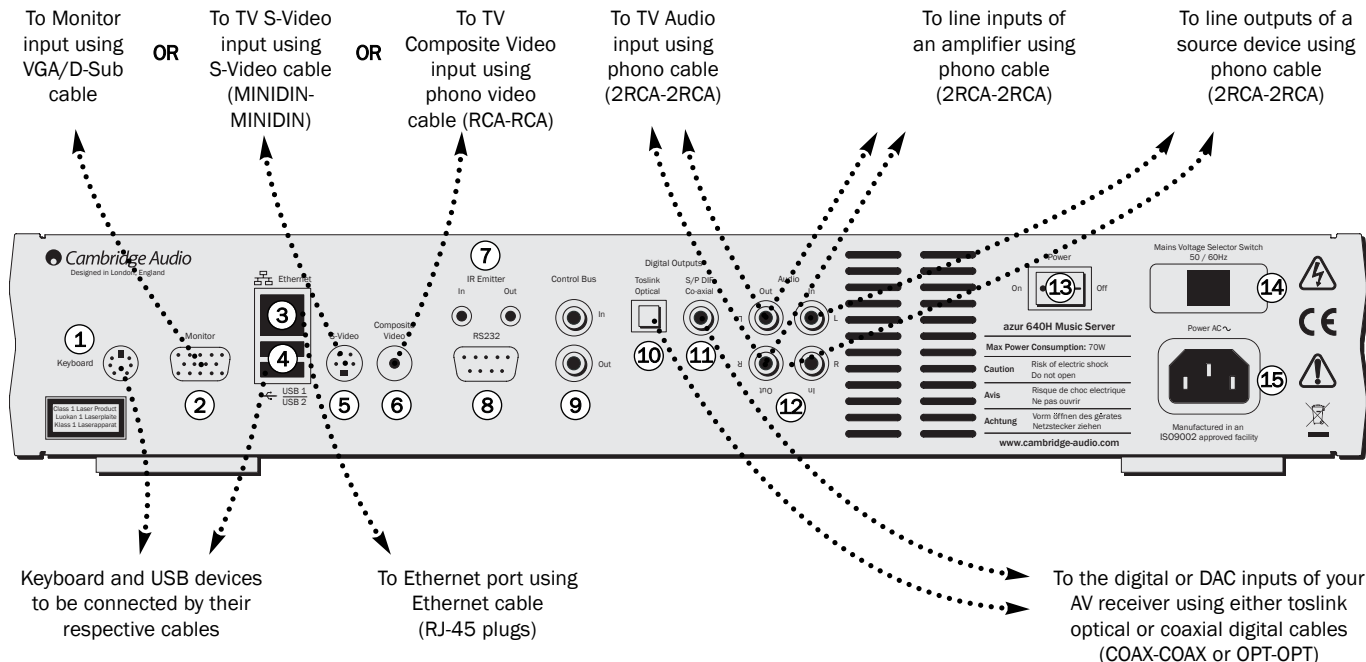


This unit has been designed to play Compact Discs, Recordable CDs and Rewritable CDs bearing the identification logo shown here. No other discs can be used.

REAR PANEL CONNECTIONS

1. Connections to a TV or monitor.

Note: The 640H must be connected to a monitor or TV *before* it is switched on so that the 640H can detect the connection type being used.



3. Connections to optional external devices/network

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2. Audio connections to an amplifier/source

4. Digital audio connections to an amplifier

① Keyboard

Connections for an optional PS/2 keyboard.

② Monitor

VGA monitor connection.

③ Ethernet

Ethernet port for connecting to a network (see the 'Network connections' section of this Manual for more information).

④ USB 1/USB 2

Ports for interfacing to a computer, portable music player, flash/memory card or storage device. All ports are fully "USB2.0" compliant.

⑤ S-Video

S-Video (SVHS) TV connection.

⑥ Composite video

Composite Video (CVBS) TV connection.

⑦ IR (Infra Red) Emitter In/Out

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 (they are looped out of IR Out).

Out - Loop out of IR modulated commands. Also allows the unit to generate IR commands (for future use).

⑧ RS232

For custom install use.

⑨ 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.

⑩ Toslink Optical Digital output

Use to connect to the input of a separate DAC or digital recording machine. Use a high quality TOSLINK fibre optic interconnect cable designed specifically for audio use.

⑪ S/P DIF Co-axial Digital output

Use to connect to the input of 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).

⑫ Audio In/Out

In - Connect to the line level output terminals of a source device for recording (ie CD input or Aux input etc).

Out - Connect to the line level input terminals on your amplifier.

⑬ Power On/Off

Switches the unit on and off.

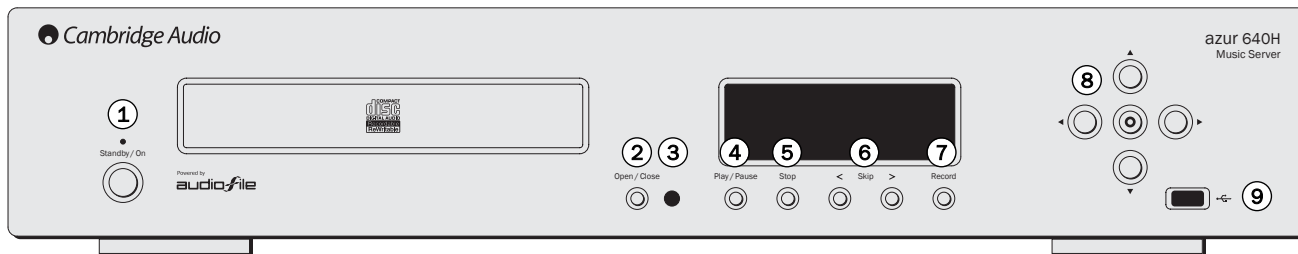
⑭ Mains Voltage Selector Switch

Switches the mains voltage between 115V and 230V. For use by installer/dealer only.

⑮ AC power socket

Once you have completed all connections to the amplifier, plug the AC power cable into an appropriate mains socket. IMPORTANT - Do not remove the power cable without switching the 640H off first.

FRONT PANEL CONTROLS



① Standby / On

Switches the unit between Standby mode (indicated by dim power LED) and on (indicated by bright power LED). The unit should be left in standby mode when not in use, particularly important if the unit is to perform background compression or if serving content to other playback devices. If the unit is not going to be used for an extended period of time, it should be turned off at the rear panel.

② Open / Close

Opens and closes the disc tray allowing you to load a disc. Pressing Play will also close the tray and start the disc.

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 Play / Pause

Plays the disc, selected album/track or internet radio station. Press to pause if currently playing.

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⑤ Stop

Stops the CD, selected album/track or internet radio station currently playing.

⑥ Skip < >

Allows for skipping between tracks. Press the left button to skip backwards by one track, the right button to skip forwards by one track.

⑦ Record

Allows for ripping of CDs to the hard drive of the 640H.

⑧ Navigator / Select

Press to navigate around the menus. Press the centre *Select* button to accept the item/function highlighted in the menu.

⑨ USB port

USB connector for interfacing to a portable music player, flash/memory card or USB keyboard.

REMOTE CONTROL

The 640H is supplied with an Azur Navigator remote control that operates both the 640H and Cambridge Audio Azur amplifiers. The remote is important in setting up your 640H Music Server as many of the menus are most easily accessed from the remote. Insert the supplied AAA batteries to activate.

Note: The remote may be in Amp mode when first activated. Please refer to the Amp Control section for more information.

Standby / On

Switches the unit between On and Standby mode.

Open / Close

Opens and closes the disc tray allowing you to load a CD.

Alphanumeric buttons

Buttons to enter numbers and text into the editable menu fields. Pressing the button will scroll through the available characters on that button. The 'é' button allows access to accents etc. Press the number '0' button to add a space in any editable text,

Info / Extra characters

Brings up the Now Playing menu which displays information on the currently playing album/artist/radio station etc. When entering text, press this button to access extra punctuation symbols (eg # , ; " / ? !), like on a mobile phone keypad.

Shift

When entering text, press to toggle between capital letters, lower-case letters and numbers.



Home

Takes you back to the Main Menu of the 640H operating system.

Back

Press to go back to the previous menu page. Also deletes any editable text.

Navigation

To navigate around the menus, press the directional arrows. Press the left arrow to move backwards through editable text.

Select

Press to accept the item/function highlighted in the menu.

Album / Artist / Genre / Playlist / Track / iRadio

Pressing these buttons takes you directly to their respective menu pages. See the 'Getting started with your 640H' section of this Manual for more information on each menu.

Play / Stop / Pause

Press the relevant button to play/pause/stop the CD, selected album/track or internet radio station.

Skip

Pressing the Skip buttons will skip forward or backwards between tracks.

On-screen display (OSD)

Turns the OSD to the connected monitor/screen on or off.

REMOTE CONTROL CONTINUED

Amp Control mode



The 640H remote features an Amplifier Control button, that activates a special Amp mode allowing operation of a matching Cambridge Audio Azur amplifier. When pressed, the LED will light up for 7 seconds (to let you know you are in Amp mode), and will then flash when any one of the circled Amp buttons is used (Standby/On, 1 - 8, Volume up/down and Mute). All other remote buttons are inactive when in Amp mode.

Standby / On

Press to switch the amplifier between On and Standby mode.

Numerical buttons 1-8

Press to change the input source of the amplifier.

Volume

Increase or decrease the volume of the amplifier.

Mute

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

To exit Amp mode, press the *Amp Control* button again (LED will light up for one second).

AV Control mode

The 640H Amp Control mode can alternatively be used to control a connected Azur AV Receiver (ie Azur 540R). To put the remote into AV mode, first put the remote into Amp mode then press and hold the *Track* button. After 12 seconds the blue LED will flash twice. Amp mode will now send AV receiver instructions instead of Azur amplifier ones.

Standby / On

Press to switch the AV receiver between On and Standby mode.

Numerical buttons 1-8

Press one of the circled Amp buttons to change the input source to the AV receiver:

1 - DVD, 2 - Video1, 3 - Video 2, 4 - Video 3, 5 - Tuner mode (toggles between AM and FM), 6 - Tape/MD/CDR, 7 - CD/Aux, 8 - 6.1 Direct In

Volume

Increase or decrease the volume of the AV receiver output.

Tuning

Press the right arrow to increase tuner frequency, press the left arrow to decrease tuner frequency.

Select

Press to shift through the different AV receiver sources.

Mute

Mutes the audio on the AV receiver. Press again to cancel mute.

To put the remote back into normal Amp mode, simply hold the *Track* button down again (the LED will flash once).

INTRODUCTION TO AUDIOFILE™

The AudioFile operating system of the 640H is easy to follow and use, and has been designed to allow you to get the most out of your 640H. A basic navigational menu is displayed on the front of the 640H, but the full menu system is accessible by connecting your 640H to a monitor or TV. To move around the menus, simply use the directional arrow buttons (on your remote control or front panel of the unit) and press the centre **Select** button to accept your selection or progress to a sub-menu.

From the Main Menu (Fig. 1), you can access the following menus:

Music library - Access the various menus to play and record music, create and organise playlists and search for any music content that is available to the 640H (either on the 640H or via a connected music storage device/computer).

CD - Access CD functions such as playing, storing and burning.

iRadio - With internet access listen to internet radio stations.

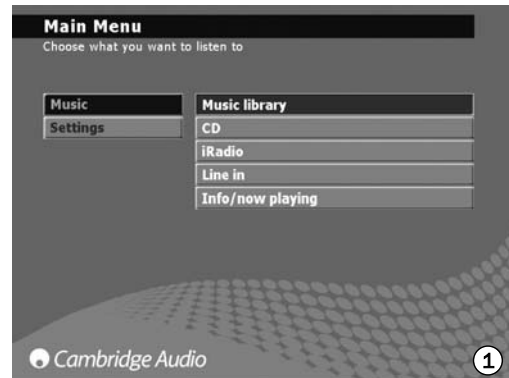
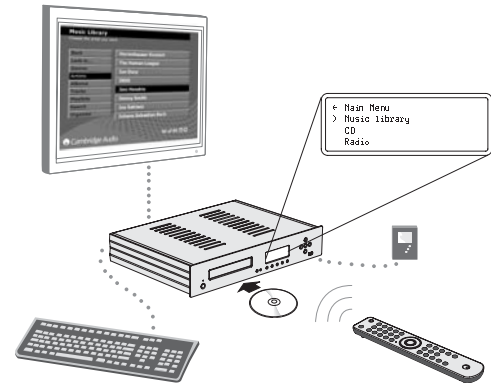
Line in - Access and record from a connected device which has phono out sockets (eg a DAB tuner).

Info/now playing - Displays the music currently playing on the 640H.

Settings - Access the Information, User and System menus.

Data entry into these menus is available from the remote control, but it is advised to connect a keyboard (USB or PS/2 types can be used) if you wish to enter a large amount of track and/or album names.

For more information and the latest news on the AudioFile software, please visit the Cambridge Audio website: www.cambridge-audio.com



GETTING STARTED WITH YOUR 640H

Playing a CD

After you have made all the connections to the 640H and turned the unit on, the first menu screen displayed is the Main Menu. To play a CD, open the CD tray, insert a CD and the CD menu will open automatically (Fig. 2). There is a short delay before you can play the CD whilst the 640H searches for CD details. If there is an internet connection the album title and track names will be displayed. If you are not connected to the internet it will display "CD Album X". Once the CD has loaded it can then be played by pressing the *Play* button. When loaded, all tracks are automatically selected to be played. To unselect, choose CLEAR ALL and then you can select specific/individual tracks to be played.

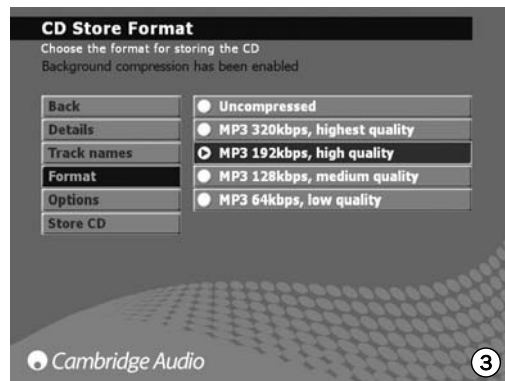
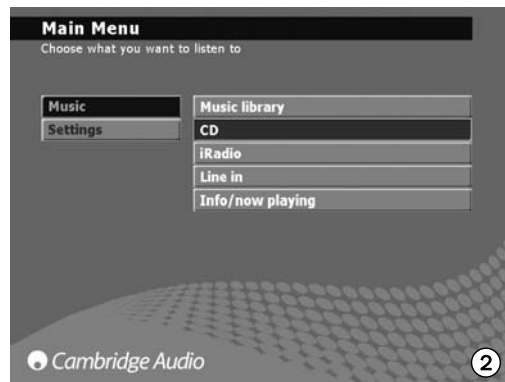
Storing CDs

To copy the CD onto the hard drive of the 640H, select the STORE CD option in the CD menu. From here, the whole album or individual tracks can be stored if desired. Continue to the STORE CD option and select START to begin copying to the hard drive. Alternatively, the *Record* button on the front panel may be used. Before storing to the hard drive, you may want to choose the file compression format.

File compression formats

Music being stored on the 640H can be stored in a number of different file formats (Fig. 3). To choose the compression format, go to CD/STORE CD/FORMAT. The default is "Uncompressed", meaning the CD will be copied in it's original format, the recommended highest quality format. The lower the MP3 file format chosen, the more the music is compressed, reducing the file size and allowing more music to be stored on the hard drive (ie from 300 uncompressed songs to 30,000 compressed songs).

Note: The lower the file size, the more the sound quality is effected.



Background compression

As ripping and compressing music to the hard drive of the 640H can take some time, a 'Background compression' feature is available (Fig. 4). After choosing a compression format, the 640H automatically stores the music as "uncompressed" and the "compressing" process will take place when the 640H is put into Standby mode. For example, the unit will compress the music overnight when you are not using the 640H. If you want to compress the file immediately, background compression can be disabled by going to STORE CD/OPTIONS and unselecting this option. During this process, "Compressing" will appear on the front of the 640H. If the unit is turned on during this time, background compression will stop, the current track being compressed will stop, and will start compressing again from the beginning of that track when returned to Standby mode. If multiple albums are being compressed, each album will not become available until all tracks in the album is compressed.

Naming CDs

When connected to the internet (refer to the 'Networking your 640H' section of this manual for more information), the 640H automatically searches for the genre, track, artist and album names for the loaded CD (original CDs only). If the CD is then stored onto the 640H, so are these CD details. If you do not have internet access or are storing "home-made" CDs, the details of these CDs will be need to be entered manually into the 640H. When the CDs details are being searched for on the internet, it is possible that more than one set of album details may be returned. This is shown in the CD/ALBUM ID option (Fig. 5). Scroll through the available Album ID's, choose the one you prefer, and then press STORE CD to accept that choice. Repeat the storing process to copy further CDs to the hard drive. Once you have stored some CDs on your 640H, these can now be accessed through the MUSIC LIBRARY menu.



Music Library Menus

The Music Library is the music management system of the 640H (Fig. 6), allowing you to select and play your music through a number of different menu categories:

Genres

Choose music by genre (eg blues, rock, classical). Genres are pre-assigned when you are connected to the internet, or you can manually enter in the genre to your own loaded playlists.

Artists

Choose by artist name. Names are displayed alphabetically.

Albums

Choose by album name.

Tracks

Choose by track title.

Simply navigate through the selected menu, choose the album or track you want and select the PLAY option (Fig. 7).



Creating Playlists

Playlists can be created very easily by selecting tracks from the available content and adding these to a new or “current” playlist (Fig. 8). Once created, a playlist can be organized, renamed, copied, deleted, played, burned to CD, sent to another device e.g. portable player, PC etc.

To type in text for naming your playlists you can use your remote or connected keyboard. If using your remote, move to the red field and press *Select*. This field will now turn white and will now allow you to enter text using the alphanumeric buttons. You can scroll through the text available to each button by pressing the button repeatedly, press *Shift* to turn on and off capitals, use *0* to add a space, and *Back* to delete. Pressing the *Select* button will then accept the name of the Playlist.

Note: If you want to burn a created playlist to CD, you can only burn the available time length of the blank CD (ie 74 minutes). You mat select the blank CD szie from the menu.

Info/Now Playing

By going to the Main Menu and selecting INFO/NOW PLAYING (or by pressing the *Info* button on the remote) a screen will be displayed that gives you an instant view of what music is being played on your 640H, the file format, a countdown of the time remaining for that track (Fig. 9), and album art if available.

Note: Track information is also displayed on the LCD on the front of the 640H. If the information cannot be displayed on the LCD, a message will read “See Screen Display”, prompting you to connect a TV/Monitor to access the menu’s details.



Finding music on the 640H

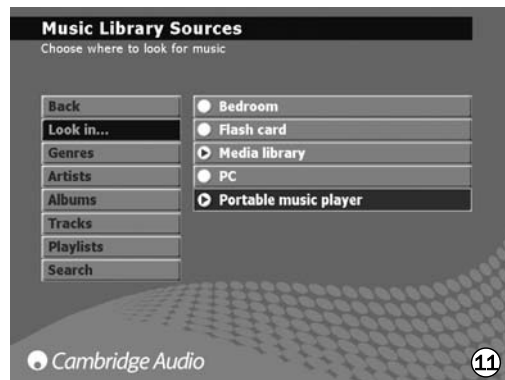
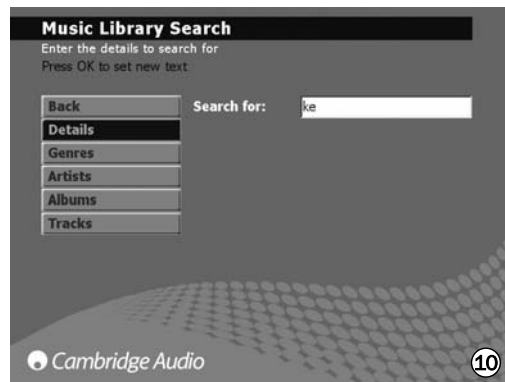
When your music collection builds up, either through copying CDs to the hard drive, recording from external sources, or downloading music from your PC, you may well end up with many thousands of tracks. Here are some ways to make what you are looking for easier:

1. Within the MUSIC LIBRARY section choose SEARCH. Enter in the details of what you are looking for (often just the first and second letter is required), then choose to search through either genre, artist or album and press Select (Fig. 10).
2. To narrow your search, you can also include (or exclude) music that can be “seen” by your 640H. When you connect devices to your 640H, whether another 640H, a PC or a portable storage device, by going to MUSIC LIBRARY/LOOK IN you are provided with a list of these music sources which you can select or unselect to make their music content available or unavailable to your 640H.

For example, the screenshot opposite (Fig. 11) shows that the 640H has been set up to look for music only on a portable music player and a connected media library.

Once the 640H has found all of the music in these locations, the albums and tracks are immediately available from the same menu system as all the locally held content. When a source of music is added, it is automatically added to the list and enabled. Each source can be disabled or re-enabled later if required.

Note: Network connectivity is required for many of these options. Please refer to the ‘Networking your 640H’ section of this manual for more information.



EXTRA FEATURES OF THE 640H

Internet Radio Menus

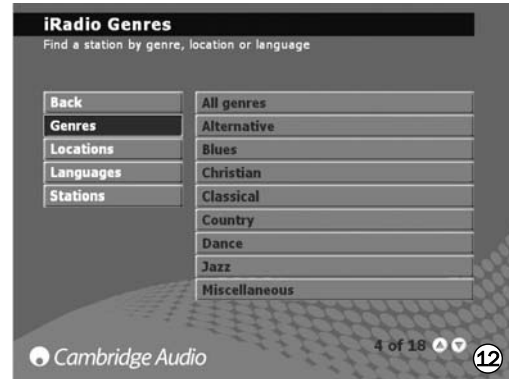
Note: The 640H is required to be connected to the internet for this feature. Please refer to the 'Networking your 640H' section of this manual for more information.

The INTERNET RADIO screen menu is structured identically to the MUSIC LIBRARY screen.

From this menu you can select Internet Radio stations, selecting by genre (Fig. 12), geographic location, broadcast language (Fig. 13) or by looking at all available stations.

Simply move around the screen using the navigation arrows and the *Select* button to choose your desired station and it will play within a few seconds. You can also use the *Info* button on the remote to display the currently playing internet radio station.

Note: New internet radio stations cannot be added by the user to the pre-loaded list of stations, as the streaming format may not be compatible. However, the list will be checked and updated automatically when connected to the internet.



Burning CDs

To burn music stored on your 640H to CD, insert a blank recordable/re-writable CD into the disc tray. Go to the MUSIC LIBRARY and select the music to be burnt by track, album, artist or a specially created playlist. Choose the CREATE CD option from the menu (Fig. 14), choose the CD format you require (Audio CD format is best if the CD is to be played on separate audio equipment, while Data CD format is only being played on a computer), then select the CREATE CD option to begin burning to disc. If you use a re-writable CD (CDRW), you can also use the 640H to clear the CD disc of any unwanted files before burning.

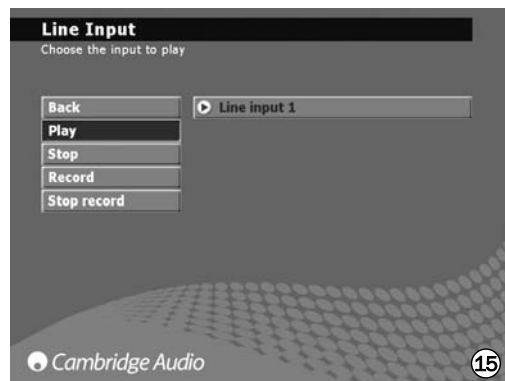
Note: The file format of the music to be burnt needs to be chosen and compressed before being burnt to CD.



Line in Menu

Any device with a phono out socket can be connected to, played through and recorded onto the 640H. Simply connect the device to the Audio In socket of the 640H, go to LINE IN where the connected device will be displayed (Fig. 15). From this menu you can listen to the device through the 640H as well as record from the device onto the hard drive.

For example, you can connect a DAB/FM tuner and record from radio stations onto the 640H. If a recording is made, the file is then added to the Music Library as an "Unknown album" (and also located in MUSIC LIBRARY/GENRES/RECORDING) which then can be renamed (by selecting EDIT DETAILS) and then added to a playlist.



Connecting an external portable device via USB

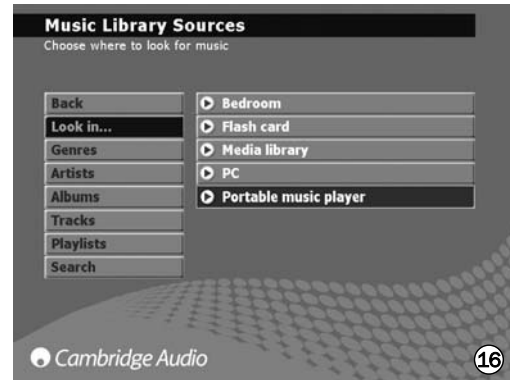
The 640H is compatible with any portable music players that appear as USB mass storage devices (e.g. many MP3 players and Flash disk based player/storage devices). When connected it is scanned and becomes available through the MUSIC LIBRARY to be played on the 640H (there may be a delay of up to 30 seconds whilst the 640H recognises the device). To copy the contents of the device to the 640H, from the 640H to the device, or to another connected storage device, you need to select the connected device in the LOOK IN... menu. It will appear here as a "Portable device" (Fig. 16). Select the tracks you wish to copy from the list, select SEND TO..., choose the hard drive of the 640H and then select SEND (copying will only happen in the same format).

Note: Devices that include their own memory management (such as iPods™ etc) are usually not suitable for direct connection to the 640H via USB.

Send to... Menu

As well as copying music from connected devices to the 640H, it is also possible to send from the 640H back to the connected devices. As explained previously, simply select the tracks from the Music Library you wish to copy, select the SEND TO... option (Fig. 17), choose the destination where you want to send the music, choose the file format and then select START to send. If the content on the 640H is not in a suitable format for sending to the device, a file conversion can be done before sending, without affecting the original file format on the 640H.

Please refer to the 'Networking your 640H' section of this manual for more information on how to connect your 640H to a network/PC.



Settings Menus

Within the SETTINGS menu (Fig. 18) you can tailor your 640H to how you want the unit to operate. A large number of settings can be altered from here, all of which are essentially self explanatory, but a few of the key areas are outlined here.

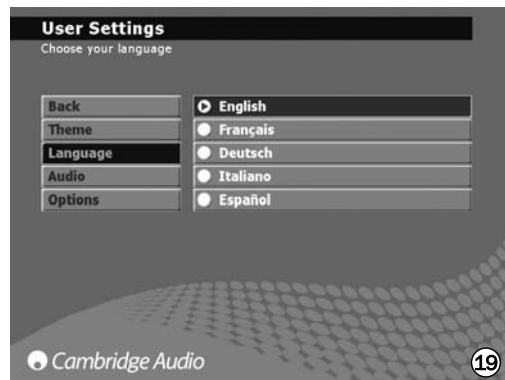
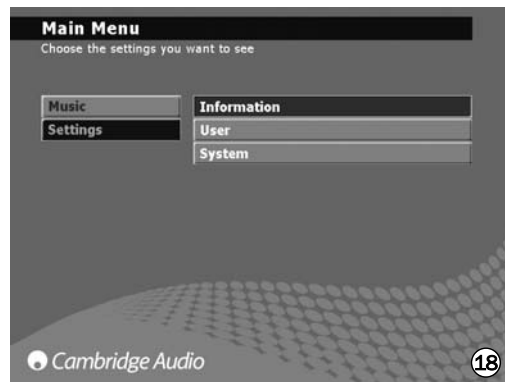
Information settings

View the current software version, how much space you have used and is available on the hard drive of your 640H.

User settings

This menu allows you to change the default settings of the 640H:

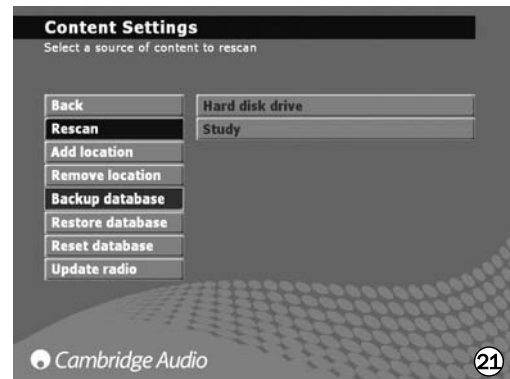
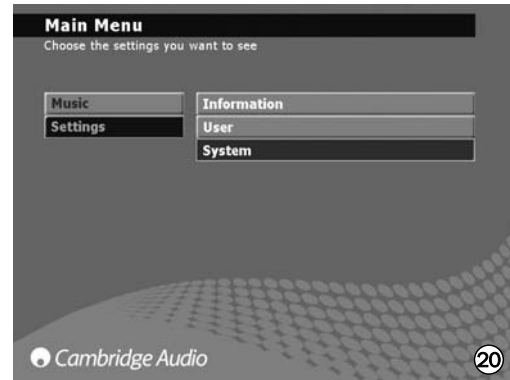
- Choose a different language for your 640H menus (Fig. 19).
- Choose the keyboard language format.
- Choose the default actions for when a CD is put into the 640H. Select from the options of automatic playing, showing of tracks, storing the CD onto the hard drive, or no action.
- Choose the CD burn format and file storage compression rates.
- Select FEEDBACK SOUNDS for a small "click" noise each time a button is selected.



System settings

The system settings (Fig. 20) are important if you wish to use the 640H with a wireless or wired network to communicate with other 640H units or a PC (see the 'Networking your 640H' section of this manual for more information). Other features include:

- Select the monitor/video display format - PAL (UK/Europe/Australia) or NTSC (Canada/USA) depending on your TV type.
- Time and date can be set, as well as the Standby timeout.
- Update the operating system of the 640H from CD (see the 'Product Upgrades' section of this manual for more information).
- Backup, restore or reset the database (Fig. 21). The 640H allows you to backup the music you have stored on the hard drive. To backup, simply select BACKUP DATABASE, and then to access the backup, select RESTORE DATABASE. To restore the factory settings of the 640H, select RESET DATABASE (the 640H will ask for confirmation before completing). **Note:** This will clear the 640H of all stored music and cannot be recovered.
- Choose from automatic IP settings (DHCP) or enter in the Ethernet IP settings manually. Select APPLY to update the network settings you have entered.



NETWORKING YOUR 640H

This section explains how to connect your 640H to a network. Networking (ie connecting ethernet enabled devices together) can allow you to expand the overall capabilities of your 640H. By networking your 640H to a PC or Mac you will be able to have access to (and play) music files stored on your computer, and access to some internet services directly (eg CD recognitions and Internet Radio features).

Before commencing any network setup, we'd encourage you to read through this entire section and then decide on the network layout that you wish to implement. We advise this because different network layouts require different setups of your 640H and your computer.

There are many network variations you can make with your 640H, but to keep things simple we will be explaining some basic network types:

Network type A: "Basic" network (with modem)

If you do not have any data networking in your home (eg if you do not have a PC but have a broadband service supplied by your telecom provider) you can connect directly to the modem or your broadband service to access the CD recognition and internet radio (iRadio) features on the 640H.

Network type B: "Peer to Peer" network (no hub)

This involves connecting one 640H to another 640H, or one computer to one 640H only. These networks consist of only two units directly connected together with no network "hub" involved. When networked, the 640H can automatically access all the music on the other 640H/PC, for playing, burning or transferring music.

Network type C: "Home" network (with hub)

This is the most common network where a hub or router is used to connect multiple devices. These could be one or more 640H's, PC's, Macs and network playback devices. Each 640H can then play back

content or move it from/to the other devices. Likewise content on PC's/Macs etc is available to each 640H and vice versa, and when connected to the internet it allows the 640H access to the CD recognition and internet radio (iRadio) features. Additionally printers and other network enabled devices can share the same network. This is the recommended way to connect 640H's together or to other devices, as devices can be added or subtracted at any time, and as Dynamic IP is possible (see following section) the process is mostly automatic.

IP Addressing

Before setting up a network it is necessary to know a little about IP (Internet Protocol) addressing. For any device on a network to communicate with another it must have a unique IP address. Each device then uses these to identify which device they wish to communicate with. Two types of IP addressing are used in networks called respectively Static IP and Dynamic IP:

Dynamic IP

Dynamic IP is achieved by a process known as DHCP (Dynamic Host Configuration Protocol). This is a protocol for assigning dynamic (i.e. changeable) IP addresses to all the devices on a network without user intervention. With dynamic addressing, each device is given a new IP address automatically each time it connects to the network. This kind of network will require a PC with DHCP server enabled or a router. The router is able to connect together multiple devices and usually contains the DHCP 'server' that does the job of assigning IP addresses.

Dynamic addressing simplifies network administration as it is largely automatic and transparent to the user, and is the preferred (and default) method for the 640H to connect to a network.

Static IP

Static IP just means that each unit is manually assigned a unique unchanging IP address by the user/network administrator. This requires more setup and is not recommended. This system is typically used in very large networks where the administrator may find it useful to always know the exact IP address of each network device (since they cannot change) or conversely very small networks of only two devices where as no hub is used there is no DHCP server present and Dynamic IP cannot be used.

Network Type B must be configured as Static IP as no hub is involved and for this reason is not the recommended configuration.

Network Type C can be configured as either Static IP or Dynamic IP and Dynamic IP is strongly recommended as the process is largely automatic.

Once you have decided on the basic layout of your network, then you can decide whether it will be a wired network (connected via cables) or a wireless network (connected via wireless devices).

Before connecting your network

It is assumed that two or more devices (either one or more 640H and maybe one or more PCs) are going to be connected. To make these connections you will require:

1. An Ethernet network adaptor installed in each PC. If you are not sure if you have one or not, check your computer manual or the back of your computers for an Ethernet interface. If your computer does not have an Ethernet/network interface, then you will need to buy one and fit it according to the manufacturer's instructions before proceeding.
2. Appropriate networking cables. Assuming you have an Ethernet card(s), you will need either "straight-through" (used with a hub or router) or "crossover" (for connecting two computers together directly) Cat 5 Ethernet cable. Any computer store will have them available in a variety of lengths.
3. An active connection to the Internet is highly desirable as a number of features of the 640H make use of on-line services. Cable or DSL is preferred, but dial-up modem is possible, but not recommended if you want to get the best out of your 640H.
4. An Ethernet hub/switch (not required for "Peer to Peer" networks but required for all other networks).
5. A Cable/DSL router is recommended, as it is probably the simplest way to set up a home network. These devices act as switches and enable you to share an Internet connection without needing to leave one of your computers on constantly in order for the others to access the Internet through it. They also provide basic, but effective firewall protection for your network.

NETWORK CONNECTIONS

Network type A: “Basic” network (with modem)



Your broadband modem plugs into the telephone or Cable TV sockets (for DSL and Cable modems respectively) and converts the incoming signals into Ethernet format. Making sure both your modem and 640H are off, make a wired connection from your 640H to the modem (use port 1) using a “straight-through” or Ethernet patch cable.

Switch on the modem and follow its instruction manual to check that it has a “link” connection to the broadband service. Once you have confirmed this, then switch on the 640H. Wait until the front 640H becomes active and then check the Ethernet connection on the rear panel of the 640H. The green LED indicated that there is a good connection to the modem.

Network type B: “Peer to Peer” network (no hub)



For 640H to 640H configuration, use a “cross-over” ethernet cable, plug one end into your 640H ethernet port and one end into the other 640H ethernet port. There will be some additional setup required on your 640Hs, as each unit needs to “named” and assigned an IP address so it that can then be recognised by the other unit.



For a 640H to PC configuration, use a “cross-over” ethernet cable, plug one end into your PC and one end into the 640H. There will be some additional setup required on your PC. If your PC is already connected to a broadband service then once configured the 640H will be able to access the internet using the PC as a gateway. Again, there will be some additional setup required on your 640H.

Note: This configuration is not able to expand to more devices. Only use this network type when connecting a single 640H or PC to your 640H.

Network type C: “Home” network (with hub)



If you already have an existing home network that's already connected to the internet, this setup can be simple to make. If you do not have a home network already setup, then you'll need to consult an expert to setup and configure the PC network into which you'll then add the 640H.

In this configuration you will have a router to link together your existing network devices and PCs. Connecting the 640H to this network requires the use of a simple “straight-through” or Ethernet patch cable from the rear of the 640H into the router. You will need to set up one or more of your PCs to allow the 640H access to the music files on your PC.

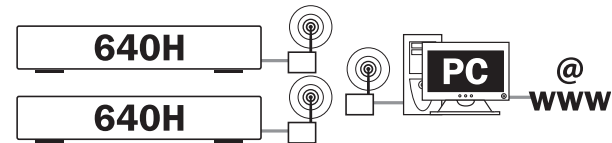
Setting up IP addresses

Once your network connections have been made, for the connected devices to recognise each other and communicate, you will need to enter in the IP addresses into the 640H (located in SETTINGS/SYSTEM/PRODUCT/NETWORK).

Wherever possible, we would encourage the use of DHCP addressing as the 640H is by default set to DCHP mode. In this mode, no further setup of the 640H is required.

To use static IP addressing, you will first need to turn off DCHP addressing on the 640H by going to OPTIONS and unselecting 'Automatic IP settings'. Then go to ETHERNET and enter in the relevant addresses and select APPLY to enter. You will need to Enter an IP Address, Subnet Mask, Gateway Address and DNS server address. Using Static IP and entering these settings should only be attempted by users who have experience of networks and is thus not covered in detail here.

Wireless Networks



The 640H supports wireless networking via its ethernet ports. To enable the 640H for wireless networking, a standard Ethernet to Wi-Fi Bridge needs to be used, these are available from most computer retailers and are connected to the 640H by a standard straight through Ethernet RJ45 to RJ45 cable.

Although these devices operate wirelessly they appear to the 640H as an ethernet connection and thus the setup of the 640H is exactly the same when using Ethernet/Wi-Fi bridges as when using a wired (cat5) connection. Different types are available conforming to the 802.11.b or 802.11.g standards etc. We recommend you use the fastest type available, currently 802.11.g.

Although the 640H requires no setup to use these Ethernet/WiFi Bridges, the Bridges themselves will require setup. This is usually achieved via browser setup of each one in turn; full details on how to do this will be included in the instructions that come with the Bridge (this being a function of the Bridge and not of the 640H, as the 640H is effectively “plug and play” as long as the Bridge is fully configured to the network).

Note: It is always advisable to test that the Bridge is correctly connected and recognised by the network prior to connecting the 640H to it.

NETWORK FILE SHARING

To share music files between another 640H or a PC on your network, the name and file location of the connected device needs to be entered into the 640H. Follow the below setups for another 640H, PC or Mac:

640H to 640H

For your 640H to communicate with another 640H you must first assign each unit a “friendly name” (go to SETTINGS/SYSTEM/NAME). This is how the two units will identify each other and share music. For example, if you have a 640H in your bedroom and living room, name them “Bedroom” and “Livingroom” respectively. Any name can be used as long as the each unit has a unique name (the name of the unit must not contain any blank spaces). Secondly, you must add the location of the other 640H (go to SETTINGS/SYSTEM/CONTENT/ADD LOCATION/FILE LOCATION). Enter it’s name and file location (the location must always start with two backward slashes). The location format always is:

```
\\name of the other 640H\Media
```

For example, to add the location of the “Bedroom” 640H to the “Livingroom” 640H, the location would be:

```
\\Bedroom\Media
```

And vice versa for the bedroom unit to see the living room unit.

Select SCAN, and the 640H will now scan to find the music on the other 640H. The content of the “Bedroom” 640H will now be added to the Music Library of the “Living Room” 640H (and added to the LOOK IN... menu). If the scanning fails, check the unit naming is correct and/or the file location name. Each time you connect a further 640H unit, it’s name and location must be added.

Note: The more content that is stored on each device, naturally the longer the scan will take.

640H to PC/Mac

Once you have made your network connections, you may wish to make available the music files stored on your PC. For this you will need to know both the computer name and the shared name of the music directory/folder (where your music resides), as this information needs to be entered into the 640H. You will also need to ensure that your computer is setup for Dynamic IP.

The program that manages the music files on your PC/Mac must be set to “Shared” to allow the 640H access to play those files (it may also be necessary to initially disable your Firewall to allow file sharing). Please refer to the later section on ‘Album art’ on how to display stored album art on your PC on your 640H.

640H to PC

For Windows XP computers, open the Start Menu, then open ‘My Computer’ and right click the ‘My Network Places’ option on the left of the screen under ‘Other Places’, and select ‘Properties’. You will see a window entitled ‘Network Connections’ which will contain an icon for each network adaptor present in your machine. By default, these will be named ‘Local Area Connection 1’, ‘Local Area Connection 2’, etc.

Right click ‘Local Area Connection 1’ and select ‘Properties’, then highlight ‘Internet Protocol (TCP/IP)’ and select ‘Properties’ again. Ensure that the option ‘Obtain an IP address automatically’ is selected, then click OK, and OK again. Now right click the ‘My Computer’ icon on the start menu and select ‘Properties’, then the ‘Computer Name’ tab. Make a note of the computer name for each computer. These are used to identify the computer over the network. If you wish to rename any of the computers, this is a good time to do it, using the ‘Change’ button. If your PC is part of a workgroup you may find it’s name is specified as “xxx.xxx.xxx etc”. The actual computer name will always be the text before (and not including) the first dot (full stop).

For the 640H to access music on another device the folder in which the music is stored needs to be set as a 'Network share'. To check that this is so, select your storage folder with Windows Explorer etc. and right click it and select the 'Properties' tab. A tab named 'Sharing' should now be visible. Select this tab and ensure that the 'Share this folder' button is turned on. Also note down the 'Share Name', this is the name that the 640H will need to access this content, note that this can be different to the name given to the folder itself.

Once shared and named the folder will normally be available to all users and networked devices. If required access can be limited by setting 'permissions' (note that the 640H accesses content through the 'Guest' account and so permission for this account or any that contains it must be maintained). The icon shown in Explorer etc will normally change to one of a folder with a 'hand' below to indicate that the folder has been shared for other users.

Now go to SETTINGS/SYSTEM/CONTENT/ADD LOCATION/FILE LOCATION menu on the 640H and enter the PC's name and music file location (the location must always start with two backward slashes). The location format for a PC is:

```
\\name of computer\shared music folder name*
```

*This is not the name of the folder, but it's shared name.

Select SCAN, and the 640H will now scan to find the music on the connected PC. If the scanning fails, check the unit naming is correct and/or the file location name.

Note: Access to the content of the 640H from a PC is possible, but not recommended due to varying file transfer speeds. The 640H should always be used as the means to transfer music through the network.

640H to Mac

Note: The 640H is not compatible with OSX 10.1.

Once you have made your network connections, you may wish to make available the music files stored on your Mac. First check that the Mac's IP settings are compatible with the 640H, make sure the Mac's network name and protocols being used for file sharing and write down the name of the directory where your music is stored on the Mac. When setting the file to be a shared file, ensure that both 'Personal File Sharing' and 'Windows File Sharing' is switched on. You must also make sure that all the ownership and permissions are set to read and write on the Mac account being used.

Assuming you are networked to a common router/DHCP server, or are statically configured, on the 640H go to SETTINGS/SYSTEM/CONTENT then ADD LOCATION and enter a friendly name (eg "Mac") and enter the Mac's name and music file location (the location must always start with two backward slashes). The location format for a Mac is:

```
\\Mac network name or "Rendezvous-Name"\account name\shared music folder name
```

You will need to add the User name and Password used to gain access on the Mac account into the 640H to allow you to see the content. Select SCAN, and the 640H will now scan to find the music on your Mac. If the scanning fails, check the unit naming is correct and/or the file location name and the full naming string is present and correct. The music content of the PC/Mac will now be added to the Music Library of the 640H and also added to the LOOK IN... menu.

You may use the ADD LOCATION function to include music files from any number of locations on your PC or indeed from any number of PCs. Just repeat the directory sharing, naming and location process for each directory of music you will want to access.

NETWORK FILE SHARING CONTINUED

Transferring content

Music can be transferred from various compatible sources, i.e. Windows Explorer, Windows Media Player, iTunes, USB Flash Devices (e.g. MP3 player) etc to the 640H.

When streaming/copying content from iTunes, it is recommended you allow iTunes to manage the filing and sorting of your music, as this will speed up the transfer process.

Album art

Album art can also be transferred to your 640H from the compatible sources previously listed. Album art can be found on various websites and copied into your personal computer files as a JPEG file.

When using iTunes, your album art must be stored in the individual album's track listing folder as a JPEG for successful transfer and relationship with the music content. Simply cutting and pasting the album art into the 'Album Art' location on the iTunes screen is not sufficient for the AudioFile software to recognise this as album art.

For more information or technical advice, please visit the Cambridge Audio website: www.cambridge-audio.com

CUSTOM INSTALLATION (C.I.) USE

The 640H features a Control Bus input/output (the Control Bus sockets are colour-coded orange) 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.

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.

This feature is useful for multi-room systems which feature routed I.R. emitter outputs. Instead of using window emitters stuck over the CD players front panel IR receiver, a mono 3.5mm mini-jack to 3.5mm mini-jack lead can be used for a more reliable electrical connection.

In addition the units feature 'direct' IR/Control codes as well as toggle codes for many of their features to simplify programming custom installation systems. Special direct On/Off commands can be accessed on the supplied remote control for teaching into C.I. systems as follows:

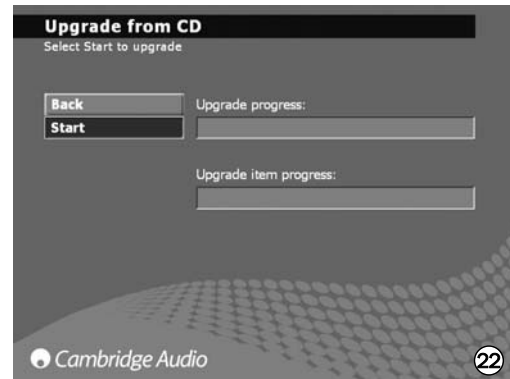
1. Press and hold the Standby/On button. The remote first generates it's standby (toggle) command. Keep the button held down, after 12 seconds a 640H "On" command will be generated. If the button is kept held down for a further 12 seconds, a 640H "Off" command is generated.

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

PRODUCT UPGRADES

Upgrades may be provided for this product from time to time, available as a downloadable ".iso" image file from the Cambridge Audio website. Simply download the image (the ".iso" format requires specific software to be handled), burn the file to a CD-R/CD-RW disc (or alternatively, contact your dealer where you purchased your 640H to order an upgrade disc). Once you have burnt the disc, load it into the 640H and follow the upgrade process (Fig. 22).

For more information, please visit the Cambridge Audio website: www.cambridge-audio.com



TROUBLESHOOTING

Despite our selection of the very highest quality components and extensive testing regime the 640H, like all units using a hard disk drive, is subject to occasional random failure. In the unlikely event of a hard-drive failure, some or all of the music content stored on the 640H's hard-drive may be lost. It is therefore strongly recommended that all music content is regularly backed up to another storage medium to prevent lengthy re-ripping or transferring of content in this event. Cambridge Audio cannot be held responsible for any consequential damage caused by hard-drive failures.

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.

The player will not read the disc

Check the disc is not loaded upside down.

Check that the disc is not too scratched or dirty.

There is no sound

Ensure that the amplifier is set correctly.

Check that the interconnects are inserted correctly.

The disc is skipping

Check that the disc is not too scratched or dirty.

Ensure the player is on a firm surface and not subject to vibrations.

There is a hum coming from the speaker

Ensure that all cable connections are secure.

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The remote handset will not function

Check that the batteries have not expired.

Ensure that nothing is blocking the remote sensor.

Check the remote is in the correct mode - 640H, Amp or AV mode (see the 'Remote control' section of this manual for more information).

There are no menus displayed on a connected monitor

The monitor/TV must be connected to the 640H before you turn on power via the On/Off switch on the rear panel of the 640H.

The player will not burn tracks to disc

Ensure the CD is not scratched or dirty. The CD must also be blank and the correct format for burning (CD-R and CD-RW).

The connected device is not accessible

Ensure the USB cable is connected securely to the portable device and the 640H, and the USB has power.

The unit freezes

Allow a reasonable amount of time before switching the 640H Off on the rear panel of the unit, as the 640H may still be processing a function.

The 640H is not connecting to a network

Double-check all the settings, restart the computers and the 640H in your network and try again.

For more frequently asked questions (FAQ's), technical advice and information on getting the most out of your 640H, please visit the Cambridge Audio website: www.cambridge-audio.com

TECHNICAL SPECIFICATIONS

Hard Drive	160GB hard drive
Processor	VIA C3 1GHz
D/A Converter	Wolfson WM8740 24-Bit/192kHz capable
Frequency Response	20Hz - 20kHz +/- 1dB (PCM)
THD	<0.008% @ 1kHz 0dB (PCM)
S/N Ratio	>104 dB 'A' weighted (PCM)
Playback Formats	<ul style="list-style-type: none">• Uncompressed PCM 44.1kHz / 16-Bit 48kHz / 16-Bit• Windows Media Audio (.wma) 32, 48, 64, 96, 128, 160, 192 kbps CBR or VBR, Voice• Fraunhofer MPEG-1 Layer 3 (.mp3) 48, 96, 128, 160, 192VBR, 192CBR and 320kb• Apple Audio Codec (.aac)• Microsoft MPEG-1 Layer 1• Microsoft MPEG-1 Layer 2• Waveform Audio (.wav)• Sound File (.snd)• Unix Audio (.au)• Audio Interchange File Format (.aif, .aiff, .aifc)
Input Voltage	UK/EU/AU 230V AC ~ 50Hz CU 115V AC ~ 50-60Hz
Maximum Power Consumption	70W
Dimensions - H x W x D	80 x 430 x 315mm (3 x 17 x 12.4")
Weight	8.0kg (17.6lbs)

Connections	1 x Ethernet 3 x USB V2.0/1.1 1 x PS/2 keyboard 1 x RS232C 1 x IR emitter in and out (modulated) 1 x Control Bus in and out (unmodulated) 1 x Composite video 1 x S-Video 1 x VGA 1 x IEC mains inlet 1 x SPDIF digital out 1 x Optical digital out
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This guide is designed to make installing and using the 640H 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.

For the latest version of this manual please visit: www.cambridge-audio.com

If you notice any errors please email us at: support@cambridgeaudio.com

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