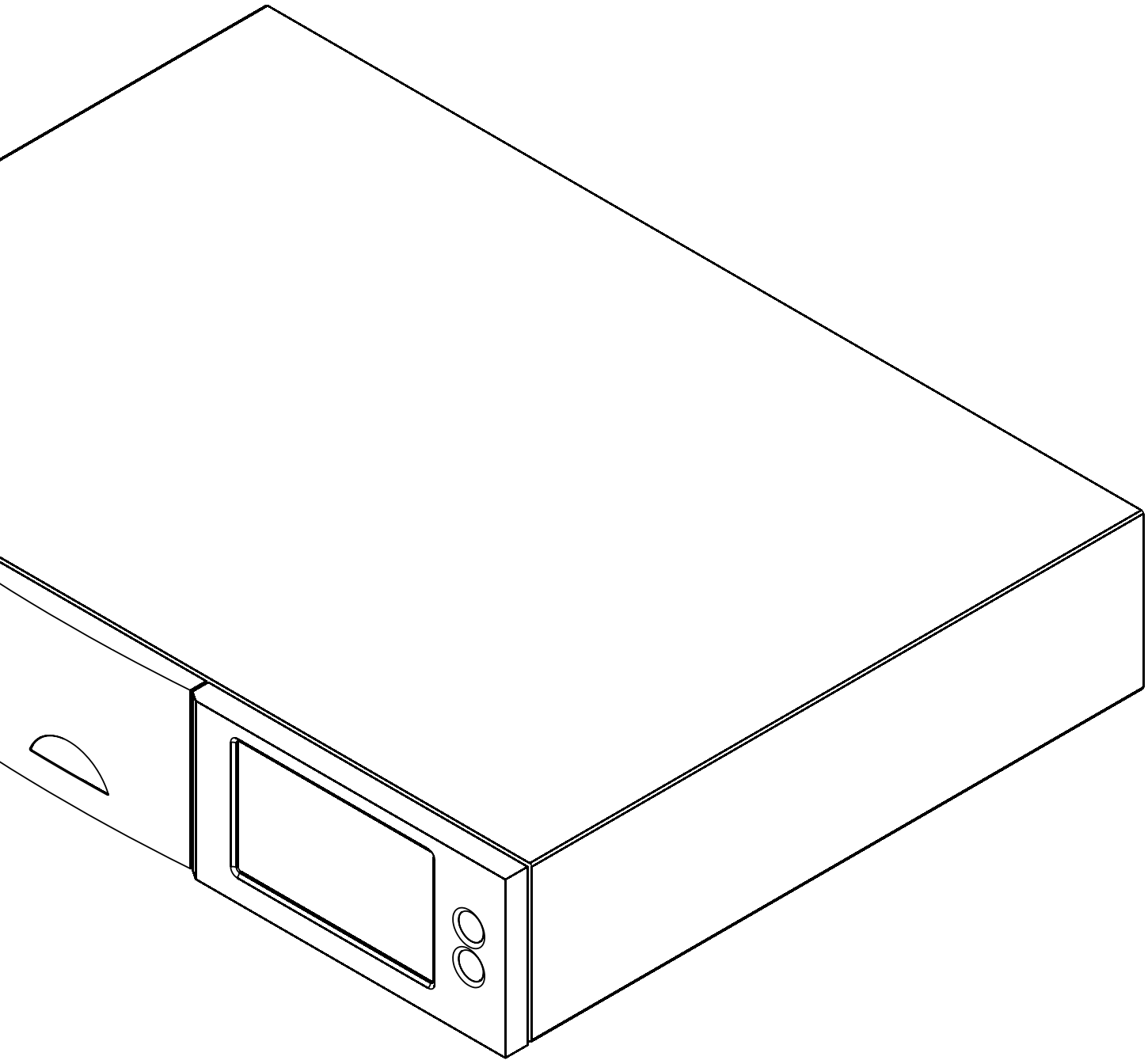
naim

world class sound...



REFERENCE MANUAL
HDX HARD DISK PLAYER
ENGLISH

Contents

Note: *This manual is issue No. 7 and describes the operation of HDX units running software release version 1.7a HDX units running earlier software will not operate fully in the manner described in this manual. The software running on an HDX is displayed in the System Status menu.*

HDX Hard Disk Player Introduction

1 HDX Hard Disk Player Introduction

The Naim HDX hard disk player will completely change the way you access and listen to your music collection. While the HDX may look like a CD player and can play CDs conventionally, it is intended to operate in a fundamentally different way.

- **Rather than simply reproducing the audio on a CD inserted in the drawer, the HDX automatically reads and stores the CD data for replay at any later time.**
- **The HDX can store CD data in FLAC and WAV formats and in parallel create and store lower resolution MP3 copies for use in applications where smaller files are advantageous. It can also store and play audio data copied from external sources in a variety of formats and resolutions (including high resolution).**
- **In addition to storing audio on its local hard disk, the HDX can store and play audio on network connected hard disk drives. Network stored files can be audio files ripped from CD, audio file downloads or audio files created by other means.**
- **The HDX can operate as a UPnP™ server providing audio files to any UPnP™ compatible playback hardware connected on the same network.**
- **In addition to its conventional analogue or digital audio outputs, the HDX can provide up to six NaimNet/StreamNet network streams for playback in multiple remote areas.**
- **When the HDX first reads the data from a CD, it automatically accesses an internet music database and downloads the information held for that CD. The information can include title, tracks, artist, composer, genre and numerous additional details. This can then be used by the HDX to select or search for material and to build custom playlists. The CD cover artwork will also be downloaded if available and displayed by the user interface. Artwork is downloaded and stored at up to 1280 x 1280 pixel resolution for use on HDX interface hardware, such as an iPad and the n-Serve app, able to display high resolution images.**
- **The HDX is able to operate as a conventional CD player. A CD inserted in the drawer can be played immediately with its audio routed to the analogue and digital audio outputs.**
- **The HDX can play internet radio streams and access a list of available stations from the vTuner.com internet radio server. Up to 40 iRadio stations can be saved as favourites. iRadio streams can be played via the HDX analogue and digital audio outputs.**

The mode of control and operation of your HDX will depend upon the type of system with which it is integrated. These different "user interfaces" are introduced in Section 1.1 while the touch screen controlled Front Panel Display Interface is described in detail in Section 4.

If the HDX is your first experience of a network connected product you may find it worthwhile to read the glossary in Section 9 before moving on to installation and operation.

HDX Hard Disk Player Overview

1.1 HDX User Interfaces

Unlike a conventional item of hi-fi equipment, the HDX can be operated in a number of different ways using a variety of user interfaces. The user interface you use to control your HDX will depend on the type of system in which it is installed and the ancillary equipment available. The following short paragraphs and table describe each user interface.

1.1.1 The Front Panel Display Interface

The HDX is most conveniently operated via its Front Panel Display Interface using either the front panel touch screen or the remote handset.

Note: *The Front Panel Display Interface can also be configured to control any StreamNet compliant device connected to the network.*

1.1.2 The External Display Interface

The HDX can be operated via its **External Display Interface** using the supplied **remote handset** (or a keyboard and/or mouse), in combination with an additional external display screen. The screen may be a monitor or TV with composite video, S-video or VGA input.

The External Display Interface is closely related to the Front Panel Display Interface and similarly provides access to HDX operational and setup features.

1.1.3 The NaimNet/StreamNet Touch Screen Interface

If the HDX is installed in a NaimNet home network, HDX network audio streams can be controlled from the NaimNet/StreamNet Interface. The NaimNet/StreamNet Interface can be accessed from a StreamNet compliant touch screen or a web browser. The interface can also control any StreamNet compliant device.

Note: *The NaimNet/StreamNet Interface is not covered in this manual.*

1.1.4 The Web Browser Interface

If the HDX is installed in a home network the External Display and Front Panel Display interfaces can be duplicated by any Flash enabled web browser

To access the External Display Interface from a web browser, open the web browser and type the unique "name" of your HDX into the browser address field. The name is the last four characters of the MAC address (excluding the colon separators) printed on the rear panel preceded by NSHDX). A typical "name" would be NSHDX89B5.

To access the Front Panel Display interface from a web browser add the suffix:

/index.html?movie=fp.swf to the HDX name.
E.g. NSHDX89B5/index.html?movie=fp.swf

Note: *Depending on your web browser you may need to type "http://" immediately before the HDX name.*

1.1.5 The Desktop Client

If the HDX is installed in a home network that includes a personal computer running Windows XP, Vista or 7, it can be operated via the **Desktop Client Interface**. The **Desktop Client** application provides comprehensive operational, search and background functionality. The **Desktop Client** is covered in a separate manual that can be downloaded from the Naim Audio web site at www.naimaudio.com**.**

1.1.6 n-Serve for Mac OS X

If the HDX is installed in a home network that includes a personal computer running Mac OS X Version 10.7 or above, it can be operated using the **n-Serve** OS X application available for download from the Mac App Store. **n-Serve** for OS X provides comprehensive operational, search and background functionality.

1.1.7 n-Serve for iPad, iPhone and iPod touch

The n-Serve iOS app, available from the iTunes App Store, enables wireless touch screen control of HDX from an iPhone, iPad or iPod touch.

1.2 HDX Interface Options

Interface	Control	Display	Notes
Front Panel Display	Touch screen. Remote handset.	Front Panel display.	Enables control of both HDX local outputs in stand-alone installations and network streams in network connected installations.
External Display	Remote handset. Keyboard/mouse. USB/VGA touch screen.	TV or monitor with VGA, S-video or composite input. USB/VGA touch screen.	Controls local outputs only.
Web Browser	Flash enabled web browser.		Duplicates functionality of Front Panel and External Display Interfaces. Network connection required. Controls local outputs only.
Desktop Client	Computer running Windows XP, Windows Vista or Windows 7.		Provides music database management and advanced HDX setup functions. Can also control local outputs. Network connection required.
n-Serve for OS X	Computer running Mac OS X, 10.7 or above.		Provides music database management and advanced HDX setup functions. Controls primary local output only. Network connection required.
n-Serve for iOS	iPhone, iPad or iPod touch		Controls HDX local output only. Wireless network connection required.
NaimNet/StreamNet	StreamNet compliant network touch screen.		Controls network streams only. Does not control local outputs. Network connection required.

Note: *An internet connection is required for detailed CD data lookup. Without an internet connection, limited information is available from a locally held database.*

Installation - Getting Started

2 Getting Started

The HDX should be installed horizontally on a dedicated equipment stand intended for the purpose. Do not stand the HDX directly on top of another item of equipment. Ensure that the fan aperture on the rear panel is not obstructed. The HDX should be installed in its final location before connecting cables or switching on. Remember to install batteries in the remote handset.

The HDX can be connected to a computer network to retrieve album data and artwork from the internet, to stream music around the home using NaimNet hardware, or to take advantage of one of its alternative user interfaces. If the HDX is to be used in a network it is important that the network is working when the HDX is connected and switched on.

Locally connected audio amplifiers should not be switched on before the HDX is switched on. The HDX power switch is located on the rear panel with a shutdown button located on the front panel. The front panel shutdown button extinguishes when the HDX wakes from shutdown.

To begin installation first identify the rear panel network, audio output and mains input sockets, and connect the appropriate cables.

2.1 Internet/Network Connections

While the HDX can be used in "stand-alone" mode without any network connection, if its full capabilities are to be realised it requires connection to an "always on" internet service via an ethernet router/modem with a built-in firewall.

If the HDX is to be used in a NaimNet/StreamNet network audio system, the network connection also enables the HDX to communicate with other network devices and provides access to its alternative user interfaces.

The HDX is set up when originally shipped not to require any further network configuration but to connect to a network automatically (it uses DHCP by default). However, if your HDX has been previously used, its network configuration may have been altered leaving it unable to connect automatically. Contact your retailer, installer or Naim Audio directly if this appears to be the case.

Note: *An HDX used in stand-alone mode and switched on without a working network connection will revert to an internal IP address only suitable for stand-alone use. To restore the default DHCP setup, switch the HDX off, connect the network and switch it on again.*

2.1.1 Network Hardware

Wired network connection is strongly recommended for the most consistent and secure HDX operation.

Ethernet-over-mains hardware may be used and provides a simple and convenient method of home network connection. However, depending on mains wiring factors specific to each home environment, the presence of network data on the mains supply may compromise overall system sound quality. If any sound quality compromise is found to be unacceptable, dedicated network cabling should be installed.

2.2 Power Supply Upgrade

The HDX can be upgraded through the use of an external Naim XPS or CD555PS external power supply to power its analogue circuits.

If an external power supply is to be used, the link plug in the rear panel of the HDX should be removed and the power supply connected in its place using an SXPS Burndy cable. See Diagram 3.3.

THE SXPS BURNDY CABLE ONLY MUST BE USED TO CONNECT THE XPS OR 555PS POWER SUPPLIES.

Both the HDX and the external power supply must be switched off when the link plug is removed and the Burndy connections are made. Switch on the external power supply first followed by the HDX.

2.3 Audio Connections

Connect one or all of the analogue **DIN** (output 1) or **Phono** (output 2) output sockets**,** or the **Digital** output socket**,** to an appropriate audio system input. If using the analogue outputs use a Naim Hi-Line interconnect cable for best results.

Note: *The output selector on the rear panel should be switched to reflect the analogue output connections used.*

2.3.1 Signal Ground

Switch the HDX's rear panel **Signal Ground** switch (see paragraph 3.2.14) to the **Chassis** position unless the HDX is connected in a hi-fi system incorporating another earthed source component, or mains "hum" is audible through the loudspeakers. Contact your retailer, distributor or Naim for advice if necessary.

Note: *All Naim CD players are earthed so the Signal ground switch should be set to floating if one is connected in the system.*

Note: *"Connected" in this context means an analogue audio signal cable that includes an earth connection.*

Installation - Getting Started

2.4 Switch On

If the HDX's network facilities are to be used ensure that it is connected to a working internet connection before switching it on and that all the necessary peripheral equipment is appropriately connected and configured.

Switch on the HDX using the rear panel power switch.

Note: *If the HDX is to be switched on from shutdown mode, the power switch must be switched off and on again. See Section 2.8 for more on shutdown mode.*

After approximately one minute's delay, the user interface **Home** menu will appear on the front panel touch screen (and any connected display). Navigate around the interface and select options by touching the screen or using the remote handset **navigation** (◀ ▶ ▲ ▼), **ok, home** and **back** keys.

Note: *It is occasionally possible for the default remote handset command set to conflict with other remote controlled equipment in the home. A conflict will be apparent if the handset appears to control an unintended device or if another handset appears to control the HDX. If a conflict occurs the HDX handset command set can be changed. While pointing the handset towards the HDX, press and hold both the page down and input keys while simultaneously pressing the 2 or 3 key to change the command set. Press the 1 key to return to the default command set.*

2.5 External Screen Setup

If an external display is used, the HDX external display setup may need to be modified. Navigate, via the **System** menu, to the **System Settings** menu. Select and save the desired **External Display Theme, External Display Aspect Ratio**, **External Display Mode** and **TV System**. Initially disable the **Screen Saver** (found on System Setup page 1).

Note: *The External Display Mode setting configures the external display for use with either an external touch screen or a remote handset. In touch screen mode, four shortcut buttons are displayed on the right of the screen that correspond to the home, browse, find and back keys on the remote handset. The on screen shortcut buttons can only be accessed from the touch screen so are not shown in remote control mode.*

Note: *Once you have become used to the interface and are familiar with its functions the screen saver can be re-enabled.*

2.6 First Use

The HDX is shipped with some music files already stored on its hard disk. One of these can be used to check that playback is operating correctly. Navigate via the Front Panel Display Interface from the **Home** Menu to the **Quick Play** menu and select **Play Random** to play a track.

To "rip" a CD to the HDX hard disk, use the front panel **open** button to open the CD drawer. Insert a CD and press the **open** button again to close the drawer. The ripping process will begin automatically. When CD ripping is complete the HDX will eject the CD automatically. See Section 6 for further information on ripping CDs.

Only CDs owned personally should be ripped. Ripping a borrowed CD may violate copyright law.

Note: *Although the HDX contains a small internal music database, to be able to identify a CD and download its associated data during the ripping process, it must be connected to a working internet connection.*

2.7 Software Upgrade

Software upgrade CDs will occasionally be released for the HDX. New software is installed simply by inserting the upgrade CD in the drawer. The software upgrade process will commence automatically. As part of the upgrade process the HDX will eject the CD and re-boot. The front panel display may also go blank temporarily. The upgrade process is complete once the display returns to the Home Menu.

Note: *Any specific instructions included with the upgrade CD should be followed carefully.*

Never switch off the HDX from the rear panel power switch or unplug it from the mains supply while a software upgrade process is underway.

2.8 Switching Off

Switching off the HDX from its rear panel power switch is not normally necessary unless it is to be un-installed. It can be put into shutdown mode by pressing the handset **shutdown** key or pressing and holding the front panel **shutdown** button for one second. The HDX may take up to one minute to enter shutdown mode during which time the shutdown button will flash. The shutdown button will remain lit when the HDX is in shutdown mode. Wait until the shutdown button stops flashing and remains lit before switching off the HDX from the rear panel mains switch.

Never switch off the HDX from the rear panel mains switch or unplug it from the mains supply unless it is in shutdown mode.

To switch the HDX back on from shutdown mode, the power switch must be switched off and on again.

2.9 Data Backup

HDX does not incorporate an integral backup disk drive and we strongly advise that you protect your stored music by implementing a regular backup to a Network Attached Storage (NAS) hard disk drive.

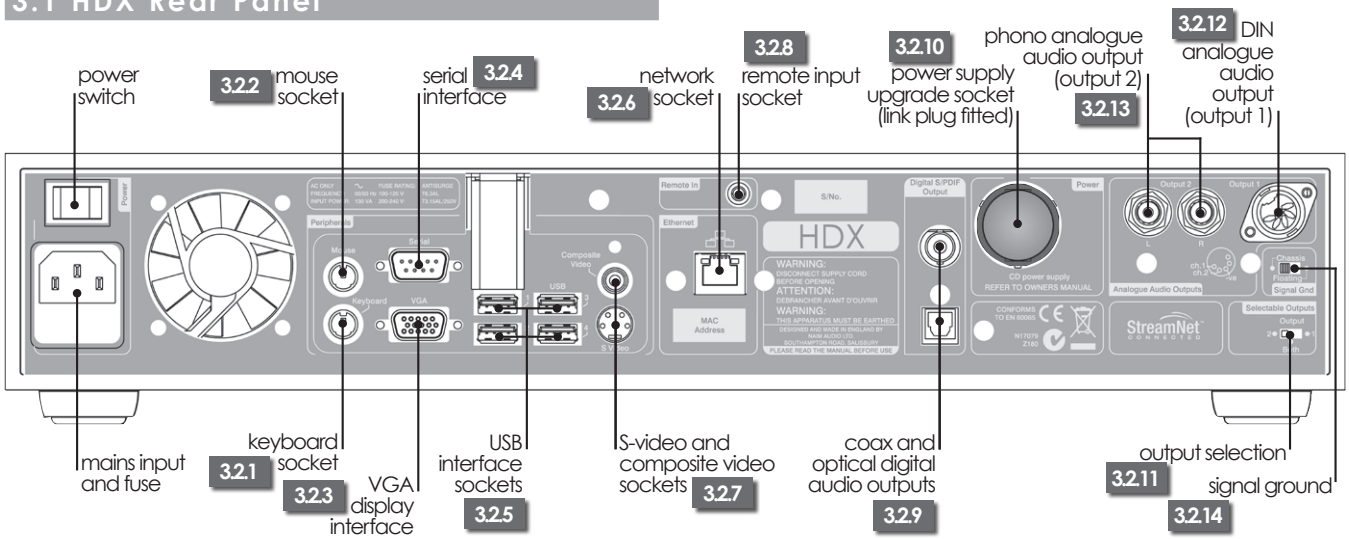
Implementing regular backups to a network share can be set up via the HDX System menu. This is described in Section 4.8.4.

Installation - Getting Connected

3 Getting Connected

The HDX carries a variety of connection sockets on its rear panel. These are illustrated and described in the following diagrams and paragraphs. The numeric legends on the rear panel diagram refer to the numbered paragraphs in Section 3.2.

3.1 HDX Rear Panel



3.2 HDX Connections

3.2.1 Keyboard Socket

Optionally connect a PS2 format keyboard here to control the HDX in combination with an external display.

3.2.2 Mouse Socket

Optionally connect a PS2 format mouse here to control the HDX in combination with an external display.

3.2.3 VGA Interface

Optionally connect a VGA format screen here to display the HDX External Display Interface.

3.2.4 Serial Interface

For use if the HDX is to be integrated into an RS232 controlled environment.

3.2.5 USB Interface Sockets

USB control or audio source devices may be connected here. USB source devices can be made available across a network.

3.2.6 Network Socket

Connect to your network router here. The HDX requires a working internet connection.

3.2.7 S-video and Composite Video Sockets

Connect an S-video or composite video screen (television) here for display of the HDX External Display Interface.

3.2.8 IR Input Socket

Optionally connect an RC5 control signal here for local control of the HDX from an IR control repeater.

3.2.9 Coax and Optical Digital Audio Outputs

S/PDIF digital audio for connection to an audio system digital input. These TosLink and BNC outputs duplicate the analogue outputs.

3.2.10 Power Supply Upgrade

Enables the connection of an upgrade XPS or 555PS power supply. The link plug fitted must be removed. See Diagram 3.3.

THE SXPS BURNDY CABLE ONLY MUST BE USED TO CONNECT THE XPS OR 555PS POWER SUPPLIES.

Note: *Both the HDX and upgrade power supply must be switched off when the link plug is removed and cable connections are made.*

3.2.11 Output Selector

Selects **output 1** (DIN), **output 2** (phono) or **both**.

3.2.12 DIN Analogue Output (output 1)

Analogue output from the HDX for connection to a local audio system. Use this option if connecting to a Naim system.

3.2.13 Phono Analogue Output (output 2)

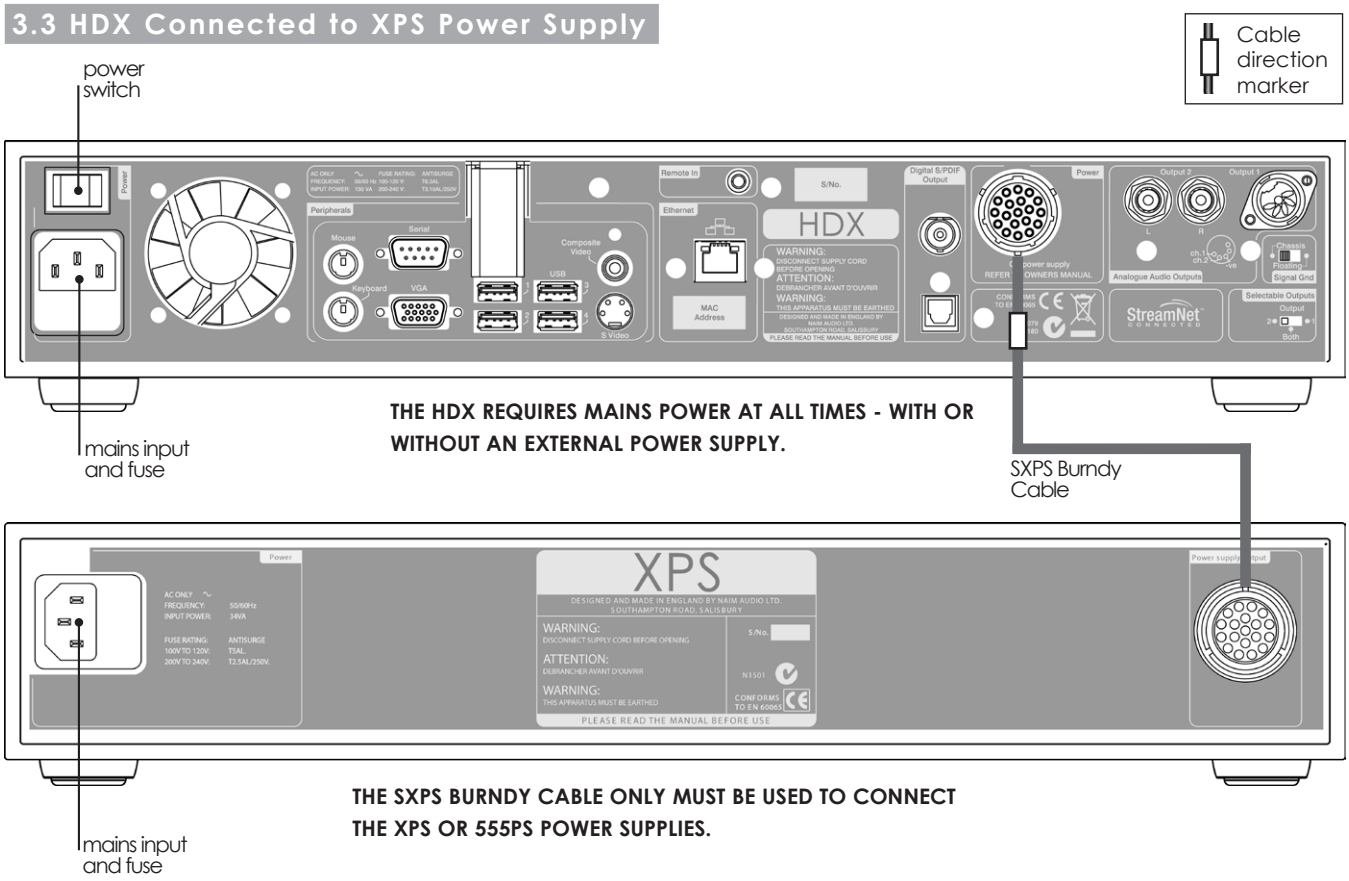
Analogue output from the HDX for connection to a local audio system. Use the DIN option in preference to the Phono option if connecting to a Naim system.

3.2.14 Signal Ground

Optionally disconnects and "floats" the analogue signal ground from the chassis earth. Select **chassis** unless the HDX is installed in a hi-fi system incorporating another mains earthed source component or mains "hum" is audible from the loudspeakers.

Installation - Getting Connected

3.3 HDX Connected to XPS Power Supply



4 The Front Panel Display Interface

As introduced in Section 1.1, the HDX can be controlled via a number of different interfaces. This section covers the Front Panel Display Interface.

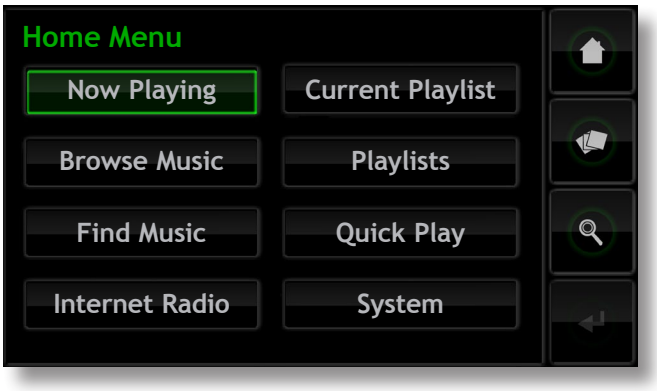
The Front Panel Display Interface is a graphical touch screen interface based on navigation around pages and selection of icons. The emphasis in this section is on the use of the interface via the touch screen although the supplied remote handset can also be used. The handset can also be used to operate Naim preamplifiers, integrated amplifiers and CD players.

The following paragraphs and illustrations describe how the Front Panel Display Interface is used to access some of the most frequently used HDX functions. Other functions can be accessed by following the same principles of interface navigation and selection. A navigation diagram showing the top levels of the interface can be found in Section 8. The remote handset is illustrated and its functions described in Section 4.9.

4.1 The Home Menu

The **Home** menu, illustrated below as it appears on the HDX front panel touch screen, is the menu from which all other interface menus can be accessed. Touch an option to select it. Touch the **back** (↵) button to return to the previous menu.

The icons stacked vertically on the right hand side of the menu provide shortcuts to the **home** (⌂), **browse** (▭) and **find** (🔍) menus, and the **back** (↵) button. These icons remain present in all menus and screens.



Selecting each of the options on the **Home** menu provides the following pages and functions.

Now Playing: Displays the track currently playing, its associated information and any associated artwork. Touching the Now Playing screen will also open a temporary, floating transport control window containing play/pause (▶/⏸), step backwards (⏮), step forwards (⏭), shuffle (🔀) and repeat buttons (🔁).

Note: *If no track is playing the Now Playing information will be blank.*

Browse Music: Provides access to the library of music stored on the HDX and on any network or USB connected storage media. See Section 4.2.

Find Music: Provides access to search functions that enable material stored on the HDX and on any network or USB connected storage media to be located. See Section 4.3.

Internet Radio: Provides access to the HDX internet radio functions enabling stations to be browsed and selected, and presets to be stored and recalled. Access details for the vTuner.com internet radio portal are also provided. See Section 4.4.

Current Playlist: Displays details of the tracks in the current playlist with options to clear the playlist, remove tracks, or save the playlist with a new name. If no user playlist has been selected, the tracks of the currently playing album will be displayed along with options to "remove" tracks and to save an edited version of the album as a playlist. See Section 4.5.

Playlists: Displays a screen showing all the saved playlists together with options to play, edit and delete. See Section 4.6.

Quick Play: Selects a menu offering quick playback options. See Section 4.7.

System: Provides access to HDX system setup functions and status information. See Section 4.8.

4.2 The Browse Music Menu

Selecting **Browse Music** from the **Home** menu will open the browse menu, illustrated below, and provide access to the library of tracks held either locally on the HDX or on any available network or USB storage device.

Albums: Displays an alphabetical list of material sorted by album. The menu also provides options of **Play**, **Add to..** (a playlist), **Tracks**, **Info** and **View.**

Artists: Displays an alphabetical list of material sorted by artist. The menu also provides options of **Play**, **Add to..** (a playlist), and **Info.**

Note: *The icon to the left of the album name indicates the file location - local (), USB () or network ().*

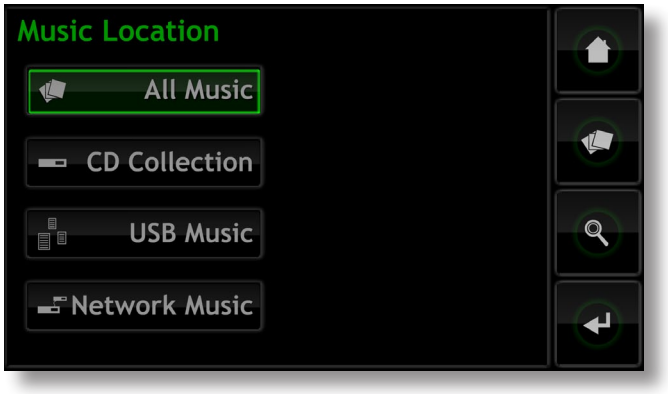
Genres: Displays an alphabetical list of the genres assigned to albums. The menu also provides options to **Play**, **Add to..** (a playlist), and **Albums** (within each genre).

Composers: Displays an alphabetical list of material sorted by composer. The menu also provides options to **Play**, **Add to..** (a playlist), and **Albums** (by each composer).

Conductors: Displays an alphabetical list of material sorted by conductor. The menu also provides options to **Play**, **Add to..** (a playlist), and **Albums** (by each conductor).

Performers: Displays an alphabetical list of material sorted by performer. The menu also provides options to **Play**, **Add to..** (a playlist), and **Albums** (featuring each performer).

Music Location: Opens a menu, illustrated below, showing the music storage locations available to the HDX. Selecting one of the locations restricts browsing (or searching) to that location.



Note: *If no external storage (USB or network) is connected this screen will not display. The interface will remain at the CD Collection browse menu.*

All Music - music stored both locally (on the HDX's internal hard disk) and on all connected storage hardware.
CD Collection - music stored on the HDX's internal hard disk or on network shared locations converted to the status of Music Stores. See Sections 4.8.3, 4.8.4 and 7 for more on Network Shares and Music Stores
USB Music - music stored on locally connected USB devices (a memory stick for example).
Network Music - music stored on network connected hardware (a network hard disk or a shared folder on a computer).

Note: *Network storage converted to Music Store status will not be included in the Network Music menu.*

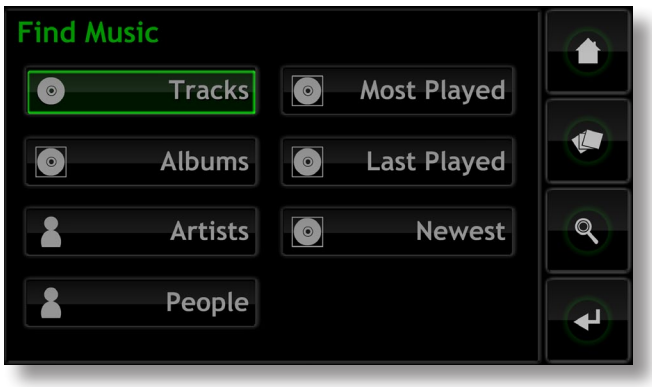
Selecting play from any of the **Browse** menus will clear the current playlist, play the selected item then display the Now Playing screen, illustrated below, showing the track playing, the artist, the album title and any available artwork. Touching the screen will then open a temporary floating transport control window containing play/pause (▶/II), step backwards (⏮), step forwards (⏭), shuffle (🔀) and repeat buttons (🔁).

Note: *Selecting the handset Home key twice at any time will open the Now Playing screen.*

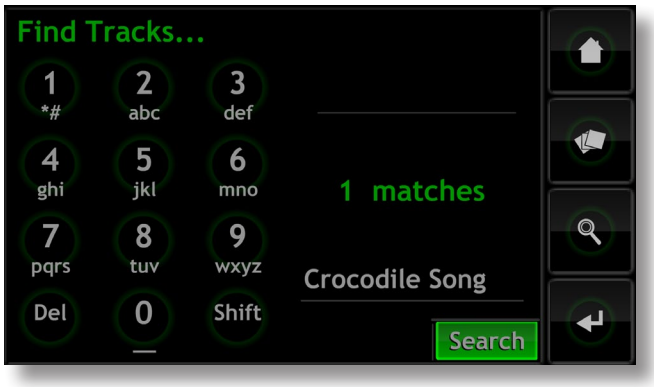
Operation - The Front Panel Display Interface

4.3 The Find Music Menu

Selecting **Find Music** from the **Home** menu will open a menu, illustrated below, providing access to search functions that enable music held either locally, or on any available network or USB device, to be found.



Tracks: Displays a menu, illustrated below, that enables an alpha-numeric search of tracks. Enter text to type a track



name. Use the **Search** key to initiate the search.

Note: *The handset numeric keys may also be used to enter text in a similar manner to mobile phone SMS text entry.*

Albums: Displays a screen that enables an alpha-numeric search of albums. Type an album name and use the **Search** key to initiate the search.

Artists: Displays a screen that enables an alpha-numeric search of artists. Type an artist name and use the **Search** key to initiate the search.

People: Displays a screen that enables an alpha-numeric search of people (performers, conductors etc.). Type a name and use the **Search** key to initiate the search.

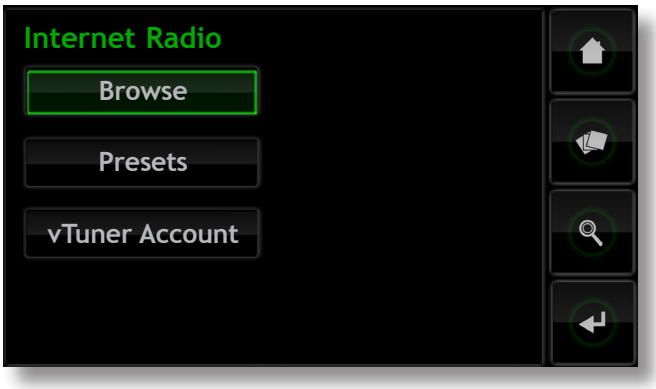
Most Played: Displays a list of most played albums together with **Play, Add** (add the selected Album to a playlist), **Tracks** and **Info** buttons.

Last Played: Displays a list of last played albums together with **Play, Add**, **Tracks** and **Info** buttons.

Newest: Displays a list of newest (most recently ripped) albums together with **Play, Add**, **Tracks** and **Info** buttons.

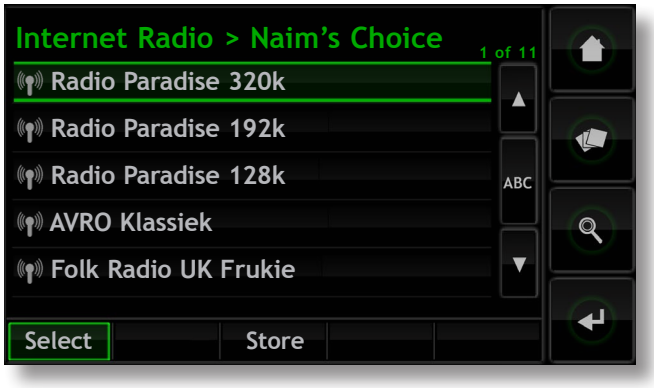
4.4 The Internet Radio Menu

Selecting **Internet Radio** from the **Home** menu will open a menu, illustrated below, that enables internet radio stations and podcasts to be browsed and presets to be stored or recalled. Access details for the Naim vTuner.com internet radio portal, which enables more iRadio stations to be added, are also provided.



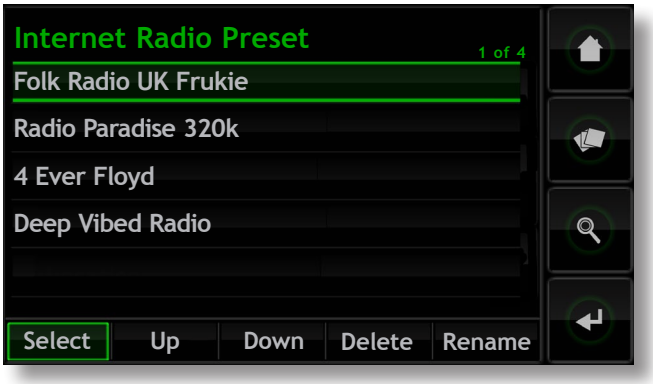
Browse: Displays a menu that enables internet radio stations and podcasts to be browsed and selected by location, genre and popularity. Options to browse new stations, Naim recommendations and extra stations added from vTuner.com are also provided.

To play a station select one of the Browse menu options to display a list of those available. Select from the subsequent list to play the station through the HDX local outputs. Station list screens, as illustrated below, also provide the option to store selected stations as presets.

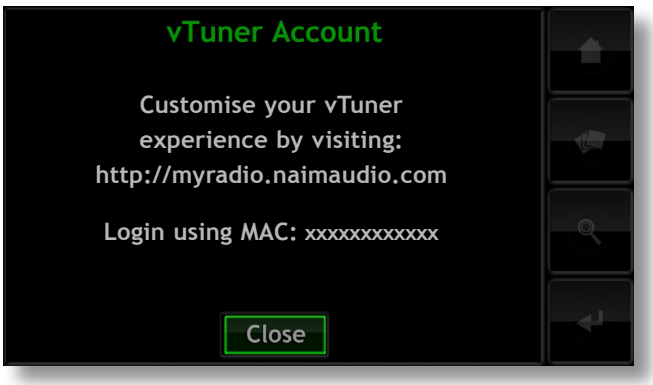


If podcasts are displayed on a station list, the option to select and queue podcasts in a playlist is also available.

Presets: Displays a list of stored preset stations or podcasts as illustrated below. Options to delete or rename items or re-order their position in the list are provided.



vTuner Account: Displays URL and login information for access to the Naim vTuner.com internet radio portal.

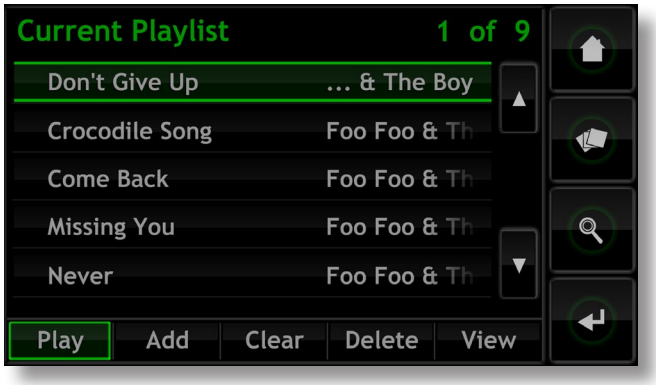


Note: *The login Mac (Media Access Control) identifier displayed will be specific to the HDX.*

Logging in to the vTuner portal using http://myradio.naimaudio.com and the HDX MAC identifier enables a personal on-line vTuner account to be created. A vTuner account enables internet radio stations not included in the standard vTuner lists to be specified and added. Stations added to the vTuner account can then be downloaded to the HDX. They will appear in the Browse menu under Added Stations.

4.5 The Current Playlist Screen

Selecting **Current Playlist** from the **Home** menu will open a page, illustrated below, that displays all the tracks in the current playlist. The tracks are displayed in the order in which they were added to the playlist. If a whole album was added, the tracks will play in the same order as they appear on the album. If the tracks of an album were added individually, or by creating a random playlist, they will appear in the order they were added regardless of the track order on the album they originally came from. The currently playing track is indicated by a 🔊 symbol.



Note: *Selecting the handset Home key twice at any time will open the Now Playing screen.*

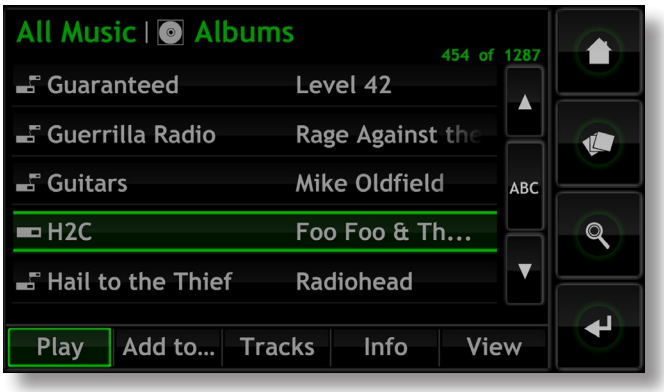
4.6 Playlists

A playlist is a list of tracks collected together and saved with a specific name; "favourites" perhaps, or "party tracks". Playlists are created by locating the desired items then adding them to either a new or existing playlist. An item may be a single track, a whole album, an entire genre or any group of items generated from a search.

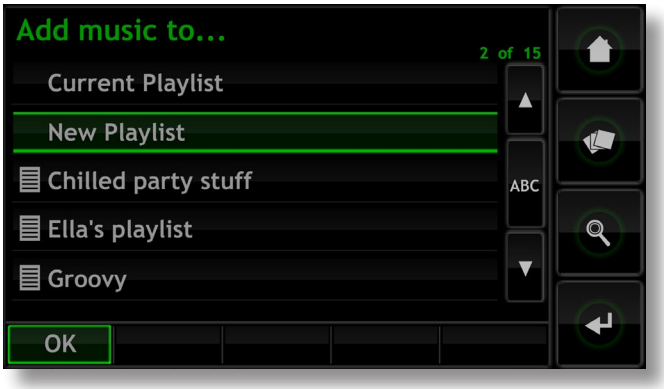
4.6.1 Creating, Naming and Saving Playlists

The procedure described below covers the creation of a new playlist by selecting items from the **Browse** menu. Items can however be added and playlists created or augmented from any menu that includes an **Add to...** button.

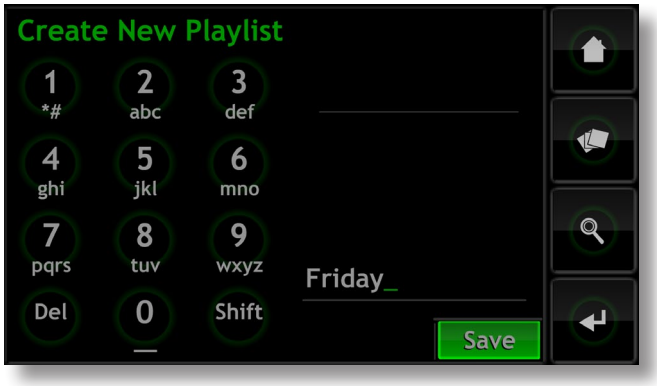
Selecting **Albums, Artists,** or **Genres** from the Browse menu displays a menu, illustrated below, that lists all the available items in the selected category.



To create a playlist, select the first desired item (H2C is selected in the illustration) followed by the **Add to...** button. Selecting the **Add to...** button will open the playlist selection window illustrated below.



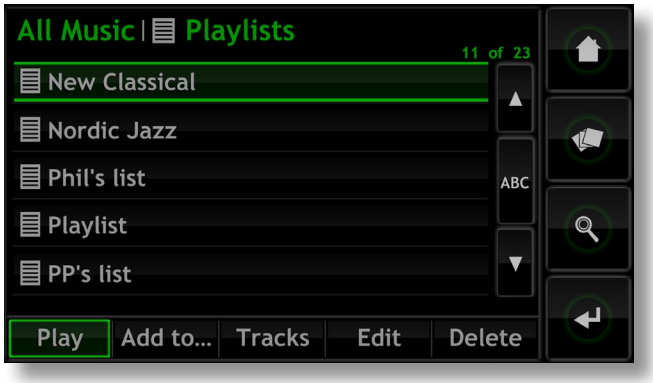
Select **New Playlist** followed by the **OK** button. A screen, illustrated below, will open that enables the new playlist to be named.



Name the new playlist by selecting text in a similar manner to mobile phone SMS text entry and touch the **Save** button. Selecting save returns the interface to the previous page. Selecting an additional item followed by **Add** opens the playlist selection window again where the newly saved playlist can be selected and addition of the item confirmed.

4.6.2 Selecting and Managing Playlists

Selecting **Playlists** from the **Home** menu displays a list of previously saved playlists together with options to **Play, Add too...** (add the selected playlist to the current playlist, an existing playlist or a new playlist), **Tracks** (tracks that make up the selected playlist), **Edit** (change track order or remove tracks) and **Delete** (the entire playlist).



4.7 The Quick Play Menu

Selecting **Quick Play** from the **Home** menu will open a menu, illustrated below, that provides access to five playback shortcut pages.

Play Popular: Plays randomly from an automatically generated playlist of the most often played tracks.

Play Recent: Plays randomly from an automatically generated playlist of the most recently played tracks.

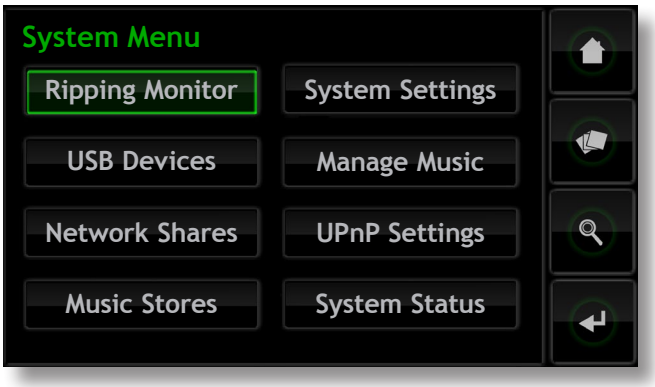
Play Newest: Plays randomly from an automatically generated playlist of the most recently ripped tracks.

Play Random: Plays tracks randomly selected from all those available to the HDX.

Random Playlist: Displays sequential menus from which genres, artists and albums can be selected. A random playlist will then be chosen from within those selections.

4.8 The System Menu

Selecting **System** from the **Home** menu will open the System menu, illustrated below, to provide configuration of various setup and house-keeping functions.



4.8.1 Ripping Monitor

Selecting **Ripping Monitor** opens a page, illustrated below, that displays the HDX's ripping activity. Ripping can be stopped by selecting the **abort** function or pressing the HDX front panel **open** button or handset **open** key.

4.8.2 USB devices

Selecting **USB Devices** displays a list of connected or previously connected USB storage devices and their connection status. Docked devices can be un-docked, and un-docked devices can be removed from the list.

4.8.3 Network Shares

Music files stored on network connected hardware (a network hard disk or a shared folder on a computer) is known as a Network Share.

Selecting **Network Shares** opens the Network Shares menu and provides options to **Manage Shares**, **Refresh All Shares** and **Add New Share**.

Manage Shares: Displays a list of connected or previously connected network storage devices and their connection status. Red, orange and green indicators describe the status of each network share: Red indicates **unavailable**, orange indicates **scanning** and green indicates **available**.

Network shares can be **enabled**, **disabled** or **removed** from the list. Their **Status** can be displayed and their Password **Settings** can be modified.

Note: *Network Shares are only enabled automatically if their name contains the words "music", "MP3" or "Content".*

Network shares may be stand-alone network attached storage (NAS) drives or shared folders on a computer attached to the network. The HDX will automatically identify network shares and, if they are enabled, allow the audio files they hold to be browsed and played.

Refresh All Shares: Refreshes the status of all network shares. If a large number of network shares is present, this may take some time.

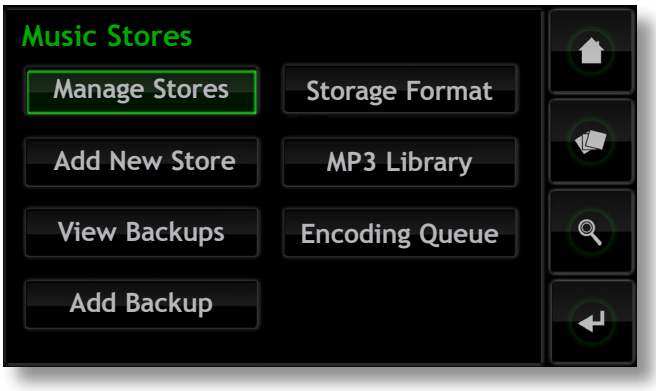
Add New Share: Enables the manual addition of a network share. Normally the HDX will automatically identify network shares but if a share fails to appear in the Manage Shares list the Add New Share routine may be used.

Note: *Audio files stored on network shares and protected by Digital Rights Management (DRM) that restricts playback to specific hardware may not be available to play via the HDX.*

Note: *Network shares can be converted to become "Music Stores" where ripped CD data is stored. A Network Share nominated as a Music Store will no longer appear in the network shares list but will appear in the Music Stores list. Any audio files it already contains generated by a process other than NaimNet Server or HDX ripping will not be available to the HDX. See the following paragraphs for more on Music Stores.*

4.8.4 Music Stores

Music Stores are the locations where ripped CD data is stored and can include both the HDX internal hard disk and nominated Network Share locations. Selecting **Music Stores** opens the Music Stores menu to provide options to **Manage Stores**, **Add New Store**, **View Backup**, **Add Backup**, **Storage Format**, **MP3 Library**, and **Encoding Queue.**



Manage Stores: Displays a list of connected or previously connected music stores and their connection status. Red, orange and green indicators describe the status of each music store: Red indicates **unavailable**, orange indicates **scanning** and green indicates **available**.

Music Stores can be raised or lowered in priority or removed from the list through **Down**, **Up** and **Remove** buttons. Their **Status** can be displayed and their Password and Lock **Settings** can be modified.

Newly ripped CD data will be stored on the Music Store at position 1 in the list. If that store is full or unavailable, the data will be stored on the next available store with sufficient free space.

Note: *Files should never be added to or deleted from Music Stores via an alternative computer operating system.*

Add New Store: Initiates a routine that enables the creation, naming and password protection of new Music Stores. Music Stores can only be created from existing empty Network Shares.

Note: *Individual Music Stores may be locked to prevent ripped data being stored. If the primary Music Store is locked, the next in line will automatically be used to store newly ripped data.*

View Backup: Shows details of the currently active backup location(s). An option to remove backup locations is also provided.

Note: *The default HDX daily backup schedule is automatically implemented as soon as a backup location is added. The backup schedule can only be modified via the Naim Desktop Client PC application and the n-Serve OS X application.*

Add Backup: Enables an empty Network Share to be nominated as a backup location.

Note: *Only empty Network Shares can be nominated as backup locations.*

Storage Format: Enables WAV or FLAC formats to be selected for existing and newly ripped CDs. The default HDX setting is to rip CDs in WAV format. FLAC can be selected as an alternative to offer reduced file size but may result in subjectively less good sound.

Choosing an alternative format to the one currently selected will begin the process of converting the existing files in all HDX music stores to the new format. Even with a relatively small number of ripped CDs the conversion process can take a significant amount of time. The process however has no impact on HDX performance and can be halted when incomplete if desired without any ill effects.

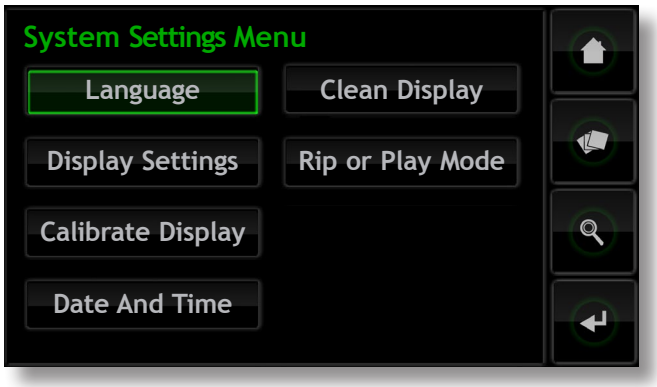
Note: *File format conversion can be managed on a file by file basis with the DTC or n-Serve for OS X applications.*

MP3 Library: Enables MP3 format copies of ripped music files to be created. The MP3 copies can be used for playback applications where the reduced file size is advantageous; portable music players for example. Four MP3 conversion quality options are provided, each one broadly appropriate to different playback hardware: 320kb for hi-fi systems, 224kb for personal audio players, 160kb for televisions and and 128kb for mobile phones. MP3 file size falls with decreasing conversion rate, however audio quality will also reduce. Once created, MP3 copies are stored in the LQ folder located in each HDX music store.

Encoding Queue: Selecting Encoding Queue displays MP3, FLAC or WAV file format conversion activity. File format conversion can also be cancelled from the Encoding Queue screen.

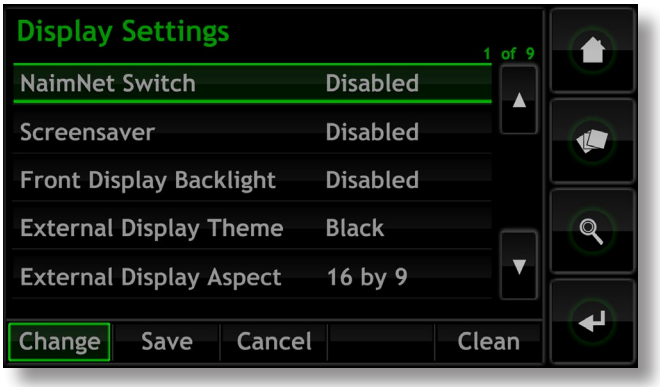
4.8.5 System Settings

Selecting **System Settings** from the System Menu provides access to HDX system settings and functions. To change a parameter either select it and touch the **change** button, or double-touch the parameter. Once the system settings have been configured they can be saved by touching the **save** button.



Language: The HDX Front Panel Display, External Display and Web interfaces can operate in a variety of languages. Selecting Language enables the interface language to be changed.

Display Settings: Provides access to a number of parameters that configure the HDX front panel display and its interface with any external display screen.



NaimNet Switch: Select to enable access to a NaimNet system if one is connected to the HDX. A NaimNet button will then be present on the right hand side of the interface display if a NaimNet system is available.

Screensaver: Select to engage the front panel and external display screensaver and specify its switch on delay.

Front Display Backlight: Sets time before the front display backlight automatically switches off.

External Display Theme: Enables the appearance of any external display to be changed. **Black** and **Silver** options are available.

External Display Aspect: Selects the video aspect ratio for the External Display Interface.

External Display Mode: Selects the interface mode for the External Display (either Touchscreen or Remote). In Touchscreen mode the interface displays shortcut buttons that correspond to the **home**, **browse**, **find** and **back** keys on the handset.

TV System: Selects **PAL** or **NTSC** TV video modes for the external display.

Scroll Drag Mode: Enables selection of **Page** and **Initial letter** modes for the display scroll function. With **Initial Letter** selected, screen scrolling is indicated by initial letters displayed at the top of the screen. With **Page** selected, screen scrolling is indicated by page numbers displayed at the top of the screen.

Screen Lock: Enables the HDX display settings menu to be locked and password protected.

Calibrate Screen: Enables calibration of the front panel touch screen or any USB connected external touch screens. Touch **Calibrate Screen** and follow the on-screen instructions.

Note: *The HDX front panel touch screen is calibrated before shipping and should only be re-calibrated if operational inconsistency is suspected.*

Date and Time: Enables the HDX internal clock and calendar to be set.

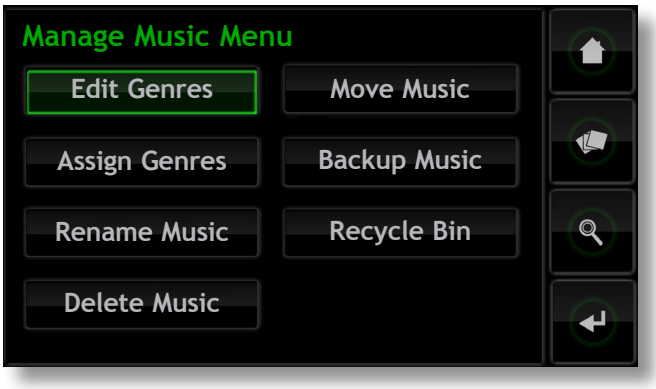
Clean Display: Disables the HDX touch screen for 30 seconds so that it can be cleaned.

Rip or Play Mode: Selecting **Rip or Play Mode** displays a menu that provides the option for the HDX to play a CD rather than ripping it.

To play a CD in **Play Mode**, open the HDX drawer and insert the CD. The CD will begin playback automatically. The Current Playlist menu will list the tracks on the CD as if it were a playlist. Use either the handset transport keys or those in the Now Playing screen to **play** (▶), **pause** (⏸), **stop** (■), **step forward** (⏭) or **step backwards** (⏮).

4.8.6 Manage Music

Selecting **Manage Music** opens the Manage Music menu to provide options to **Edit Genres**, **Assign Genres**, **Rename Music**, **Delete Music**, **Move Music**, **Backup Music** and to view the **Recycle Bin**.



Edit Genres: Enables the music genres listed by the HDX to be deleted, added to or renamed.

Assign Genres: Initiates a routine enabling music to be assigned to genres. Music can be listed by **Album**, by **Artists** or by **Recently Ripped,** individually or collectively selected, and a genre assigned. Existing genre assignments can also be listed and changed, by selecting **View Genres**.

Rename Music: Enables **Albums**, **Artists** and **Tracks** to be renamed. Selecting **Albums** displays a list of items and provides options to rename the selected album, its tracks or its artist. Selecting **Artists** displays albums listed by artist.

Delete Music: Enables **Albums** to deleted. Selecting **Albums** displays a list of items and provides the option to delete the selected album. Selecting **Artists** displays albums listed by artist.

Note: *Deleting items moves them to the Recycle Bin from where they can be permanently deleted or restored.*

Move Music: Provides access to a routine that enables music files to be moved between Music Stores. Select **Move Monitor** to display ongoing file movements and select **Move History** to display previous file movements.

Note: *Moving a large number of files can take a considerable time.*

Note: *Music files should never be added to or deleted from Music Stores via an alternative computer operating system.*

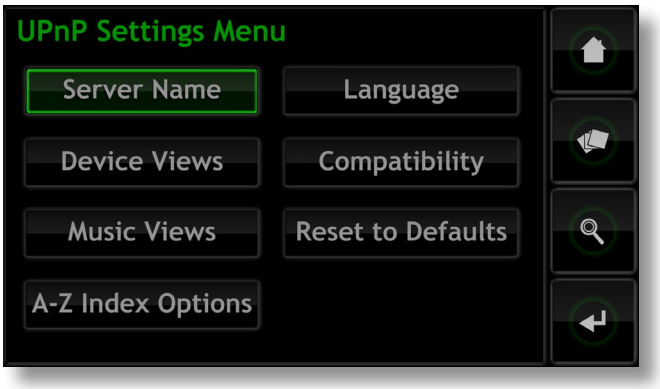
Backup Music: Enables HDX backups to be monitored and their history interrogated.

Note: *Backup routines can be viewed and backup locations added via the Music Stores menu.*

Recycle Bin: Displays a list of deleted items and enables either their restoration or permanent erasure.

4.8.7 UPnP™ Settings

The HDX operates as a UPnP™ music server providing music files and internet radio broadcasts to any network attached UPnP™ compatible playback device. Selecting **UPnP™ Settings** from the System menu opens the UPnP™ Settings Menu to enable the HDX UPnP™ settings to be configured appropriately.



Note: *For HDX internet radio to be accessible to a UPnP™ playback device, the option must be enabled from either the Naim Desktop Client or n-Serve for OS X application.*

Server Name: Select **Server Name** to specify the name of the HDX UPnP™ server that will be seen by UPnP™ playback devices. The name can be changed by selecting the name field to open a text entry screen. Connected UPnP™ playback devices will have to be restarted if the HDX name is changed.

Device Views: Select **Device Views** to specify how the UPnP™ playback device views and browses the music files available on the HDX and any connected Network Share or USB device. Select **All Music** to view and browse all the files available to the HDX. Select **CD Collection** to view and browse just the ripped CDs held by HDX Music Stores. Select **Browse by Device** to view and browse the files held individually on each device connected to the HDX. Select **Internet Radio** to view and browse internet radio stations available to the playback device via the HDX.

Note: *Deselecting all Device View options will make all music unavailable for UPnP™ playback.*

Music Views: Select **Music Views** to specify the information displayed by the UPnP™ playback device for each music file available from the HDX. Albums, Artists, Playlists, Genres, Tracks, Composers, Conductors, Performers, and Newest CDs can be collectively or individually selected.

A-Z Index Options: Selecting **A-Z Index Options** enables music collections to be divided alphabetically into segments when displayed by the UPnP™ playback device. First select **Show Index** to switch on segmented display and then select the preferred alphabetic segment option. The number in the right hand column corresponds to the number of items in the music collection above which the selected alphabetic segmentation is implemented. The number can be adjusted for each segmentation option.

Language: Select **Language** to specify the interface language that the UPnP™ playback device will display when accessing the HDX.

Compatibility: Select **Compatibility** to specify the audio data **Stream Format** that the HDX will stream to the UPnP™ playback device and to switch CD artwork transmission to the playback device **on** or **off**.

The Stream Format options available are **Native**, **44.1kHz WAV**, **WAV Decode**, **24bit / 96kHz Max** and **Best Compatibility**:

Native: Streams audio files in the same format as they are stored.

44.1kHz WAV: Converts streamed files to CD format.

WAV Decode: Converts files to WAV format while retaining their native sample rate and bit depth.

24bit / 96kHz Max: Converts very high sample rate files (>96kHz) to 96kHz to ensure they can be played at the highest possible sample rate on playback hardware that supports a maximum of 96kHz.

Best Compatibility: Enables the UPnP™ playback device and the HDX automatically to negotiate the best compatible format.

Note: *Native stream format offers the highest potential audio quality. The appropriate choice will depend on the capability of the playback hardware. Select Native initially and check that the playback hardware operates correctly with all stored file formats. If it fails to operate at any time select WAV Decode. If it still fails occasionally select Best Compatibility, 24bit / 96kHz Max or finally 44.1kHz WAV.*

Reset to Defaults: Select **Reset to Defaults** to return the HDX UPnP™ settings to their defaults.

4.8.8 System Status

Selecting **System Status** displays a list of current system status and setup parameters.

Operation - The Front Panel Display Interface

4.9 Handset Functions

Navigating around and selecting options in the Front Panel Display Interface can be done with seven primary handset keys: **Navigation (◀ ▶ ▲ ▼), ok, back and home.** These keys are highlighted in the diagram annotations.

Shutdown: Switches to shutdown. Ensure the handset is in the appropriate mode (hdd for HDX).

Mode: Switches handset mode to preamplifier/integrated amplifier **(pre)**, CD player **(cd)**, or hard disk player **(hdd)**.

Numeric: Enable numeric or text entry for track selection or search.

Delete (del): Enables deletion of the last numeric or text entry.

Shift (↑): Shifts text entry to upper case.

Output (out): Selects local outputs on appropriately equipped products (not HDX).

Volume: Volume up **(▲)** and down **(▼)** for preamplifier or AV processor. These keys function regardless of the handset **mode**.

Mute: Mutes the preamplifier or AV processor audio output. These keys function regardless of the the handset **mode.**

Info (i): Displays information about the currently selected item.

Page: Selects the next **(▼)** or previous **(▲)** interface menu page.

Navigation: (◀ ▶ ▲ ▼) Navigates around and selects menu icons.

ok: Confirms icon selection.

Back: Steps back one interface page.

Home: Selects the **Home** menu.

Browse: Selects the **Browse** menu.

System: Selects the **System** Setup menu.

Find: Selects the **Find** menu.

Album: Selects the **Album** browse menu.

Artist: Selects the **Artist** browse menu.

Genre: Selects the **Genre** browse menu.

Playlist: Selects the **Playlist** menu.

Previous (⏮): Returns to the start of a track.

Next (⏭): Advances to the next track.

Stop (■): Stops play.

Play (▶): Begins play.

Rewind (◀◀): Fast reverse.

Forward (▶▶): Fast forward.

Repeat (↻): Repeats the current playlist.

Pause (❚❚): Pauses play.

Shuffle (⤮): Randomises order of play.

Input: Selects audio inputs on appropriately equipped products (not HDX).

Open: Opens the CD drawer.

Operation - Playback

5 Playback

The HDX is able to provide one local output and multiple network streams simultaneously. The outputs you will employ from your HDX will depend on the type of system in which it is used. The following paragraphs describe the various output options and their context.

5.1 Local Playback

The HDX is fitted with the following local outputs:

• A single analogue output with switchable DIN and phono socket options.

• A single S/PDIF digital audio output with coaxial 75Ω BNC and TosLink optical socket options. The digital audio output is a duplicate of analogue output.

HDX audio outputs are intended to be connected to a hi-fi system or systems located either in the same area as the HDX or in nearby areas.

Selection of local playback can be made using the Local and Network Browser interfaces.

In addition to the CDs stored on the HDX's hard disk, DRM-free MP3, AAC, WMA, FLAC, WAV, Apple Lossless, Ogg and AIFF audio files stored on external storage devices can also be played by the HDX. HDX internet radio is also available from the local analogue and digital outputs.

Note: *Memory sticks connected via USB must be in FAT, FAT32, or NTFS format. Apple Macintosh formats are not compatible.*

Note: *Other playback file formats may be added as firmware updates in the future. Contact your Naim retailer or distributor for more information.*

5.2 NaimNet Network Playback

The HDX is compatible with all NaimNet/StreamNet enabled devices. In addition to providing network-based remote control, NaimNet enables six unique streams of audio files to be delivered from the HDX for playback through NaimNet enabled output hardware.

The user interface presented by NaimNet/StreamNet hardware will provide most of the functionality available through local HDX control.

Note: *HDX internet radio is not available over network playback.*

5.3 UPnP™ Network Playback

The HDX can operate as a UPnP™ server and provide audio files to any UPnP™ compatible playback hardware connected on the same network. The number of simultaneous UPnP™ streams available will depend primarily on the capabilities of the network hardware.

The user interface presented will be defined by the UPnP™ playback hardware, however the HDX can be configured to present music file information to UPnP™ hardware as preferred. See Section 4.8.7.

Operation - Ripping

6 Ripping

The HDX will only fulfil its potential if it holds a significant library of music. A typical music CD carries approximately 600MB of data and the 2TB storage capacity of the HDX internal hard disk will hold approximately 2400 CDs. The addition of network music stores can increase storage capacity effectively without limit. Advanced data handling algorithms ensure, unless a CD is badly damaged, that the ripped data is always a "bit-perfect" copy. Ripping a typical CD takes up to ten minutes.

6.1 The Ripping Process

Ripping CDs to the HDX is a simple process. It is preferable while ripping for the HDX to be connected to a working and reliable internet service.

Note: *An internet connection is necessary for the HDX to identify CDs and download their artist, title, track listing and artwork data. If the HDX is unable to access the internet while ripping, it will initially interrogate a small internal database for the CD's associated data. If the CD is not found on the internal database, only the ripped audio data and its identification code will be stored. Manual input of CD data or further AMG and FreeDB database requests can be made via the Desktop Client application once an internet connection is re-established.*

Note: *Right-click on the album name in the Desktop Client interface to request an online database lookup manually.*

To rip a CD press the front panel or handset **open** button and place the CD on the drawer. Press the **open** button again to close the drawer. Ripping will begin automatically and takes up to eight minutes.

Note: *It is good practice to check that the playing surface of each CD is clean before ripping.*

Note: *Ripping can be cancelled once underway by pressing the HDX front panel open button or selecting Abort on the Front Panel Display Interface Ripping Monitor page.*

When the HDX has ripped the CD and downloaded its associated data it will eject the CD automatically. As soon as a CD has been ejected, the HDX is ready to rip the next one. The **Ripping Monitor** menu provides feedback on progress as the ripping process takes place.

The CD will be included in the HDX's music library listing about 1 minute after it has been successfully ripped. It will then be available for playback either locally or across a NaimNet network.

Note: *Ripping to an external Music Store may result in a longer delay before the HDX library listing is updated.*

6.2 Copyright Issues

The music carried on a CD, and the recording of the CD itself, is likely to be the subject of copyright restrictions which allow the owner of the CD only to make copies (ripping in effect copies a CD) for personal use only. Ripping CDs that you don't personally own may violate copyright law.

Note: *CD copyright law may vary with territory.*

Operation - External Storage

7 External Storage

The HDX is not only able to replay material ripped and stored on its internal hard disk but can also replay material stored on a variety of externally connected storage hardware. Such hardware might be relatively small capacity devices temporarily connected via one of the HDX's USB interface sockets, or large capacity "Network Shares" connected via a home network. Network Shares can also be configured as HDX rip locations.

7.1 USB Storage Devices

A locally connected storage device will most likely be a memory stick connected to one of the HDX's USB sockets.

Note: *The amount of music stored on an external device determines how long the HDX will spend scanning the device when it is first connected before the music is available to browse.*

Note: *Locally connected devices are re-scanned every time the HDX starts up.*

The tracks found by the HDX on locally connected storage will only be held in its database while the storage is connected and switched on.

Note: *Local connection is only intended for relatively small music collections on temporarily connected memory sticks. Any large capacity storage should always be connected via a network.*

In order for USB stored music to be available to the HDX, for playback various conditions must be met:

- Music files must be in AAC, FLAC, MP3, or WAV formats (up to 24 bit, 192kHz).
- Music files must be unprotected by DRM encoding that restricts them to specific playback hardware.

7.2 Network Shares

Before material stored on shared network devices can be accessed by the HDX, it must scan the network to identify the address of each share and to build a database of the locations and details of the available audio files.

The HDX automatically scans the network when first switched on and will then periodically scan to find new network shares and identify any changes to the available audio files. It may however take a considerable time following connection of the HDX to the network for changes to be reflected in the HDX's database.

Note: *Network scanning is carried out at up to several hundred files per minute although this figure depends on the speed of the file storage device.*

The music files found by the HDX on network shares will be incorporated into its database and remembered until any changes are identified, irrespective of the HDX being switched off.

In order for network shared music files to be available to the HDX, for network or local playback various conditions must be met:

- Folders containing audio files must be set up to be "shared". Refer to the folder's host computer operating system user manual for details on setting up shared folders.
- Music files must be in AAC, FLAC, MP3, WAV, Apple Lossless, Ogg, AIFF or WMA formats (up to 24 bit, 192kHz).
- Music files must be unprotected by DRM encoding that restricts them to specific playback hardware.

Network shares can be viewed and managed from the Front Panel interface Network Shares menu. See Section 4.8.3

7.3 Music Stores

Network Shares can be converted to operate as HDX Music Stores – locations where the data from ripped CDs is stored. Promoting a Network Share to Music Store status may be appropriate if the internal HDX drive is becoming full or if external rip storage provides enhanced network convenience or data security.

Note: *Enhanced data security is only likely if the network share is a RAID device.*

Just as the HDX internal hard disk does not appear as a Network Share, when a Network Share is converted to Music Store status it will no longer appear in the HDX Network Shares list.

Important: Network Shares converted to Music Store status are not automatically backed-up by the HDX. They must be backed-up manually.

Music Stores are used as rip locations by the HDX in order of priority. CDs will be ripped automatically to the highest priority Music Store until it is full, when the next priority Music Store will be used.

Network Shares can be converted to Music Store status via the **Add New Store** option of the **Music Stores Menu**. See the following section and Section 4.8.4 for more information on Music Stores.

Important: Files should never be added to or deleted from Music Stores via an alternative computer operating system.

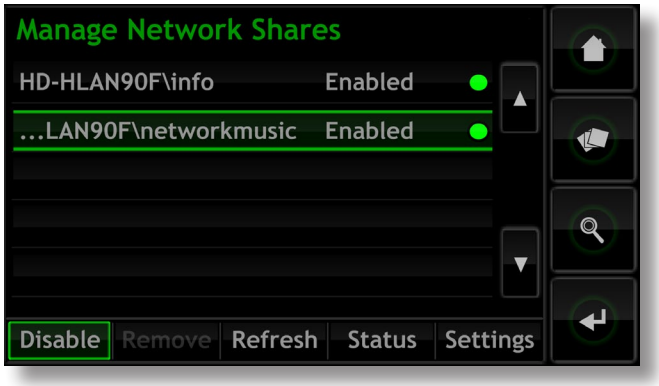
Note: *This is because Music Stores contain not only the ripped CD data files but also the associated database and meta-data files. External manipulation of a Music Store will almost certainly result in database or meta-data corruption.*

7.4 Adding a Music Store

The following paragraphs and illustrations describe the process of adding a Network Share, promoting it to Music Store status and then nominating it as the primary Music Store where ripped data is stored.

To begin, ensure that the new storage device (or shared folder on an existing network device) is connected to the network, switched on and configured to be shared. It may also be useful to give the device an appropriate name. In the illustrations following, the Network Share is called Network Music.

It is important that the Network Share to be converted to a Music Store contains no existing files.



Note: *Naming the Network Share must be done via the connected computer operating system. Network Shares are only enabled automatically if their name contains the words "music", "MP3" or "Content".*

The HDX will automatically find appropriately configured network shares and list them in the **Manage Network Shares** screen found via **Home Menu** > **System Setup** > **Network Shares**. If the new share does not appear select **Refresh**.

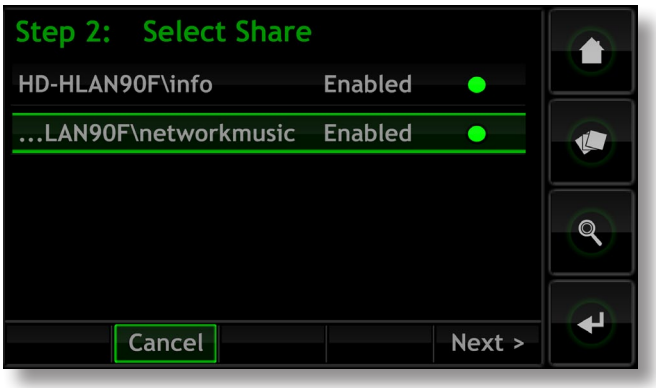
Audio files stored on Network Music will now be available for browse and playback via the HDX. Select **Home Menu** > **Browse** > **Music Locations** > **All Music** or **Network Music**.

To convert the Network Share to Music Store status take the following steps:

Note: *Only enabled Network Shares can be converted to become Music Stores.*

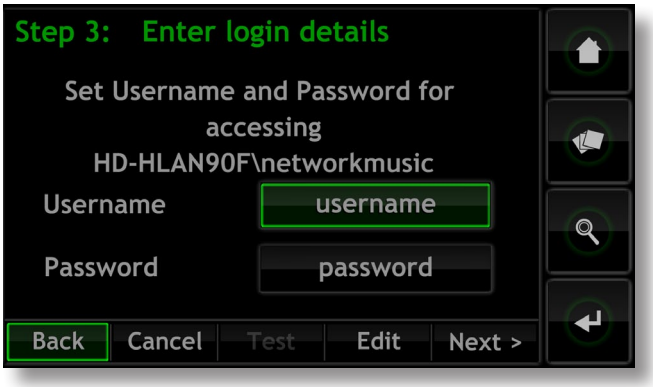
Step 1: Select **Music Stores** from the **System Setup** menu and then **Add New Store**. Selecting **Next** at the subsequent information screen opens a list menu showing all the available Network Shares able to be converted to Music Store status.

Step 2: Select the desired Network Share followed by **Next**.

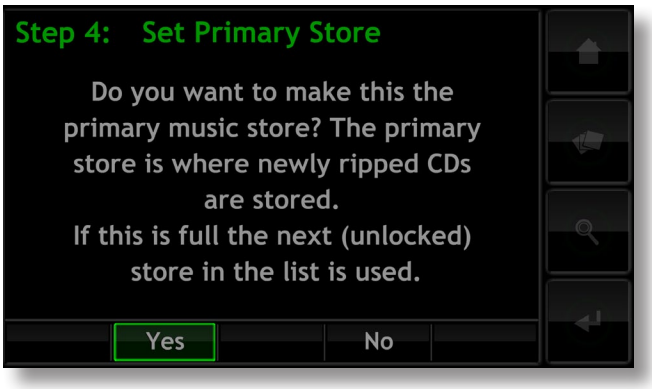


Step 3: If the Network Share is username and password protected these must be entered in the appropriate fields. Selecting the fields in turn opens a text input screen. Select **Next** when the username and password are entered.

Note: *If the Network Share is not protected, the username and password fields should be left blank.*

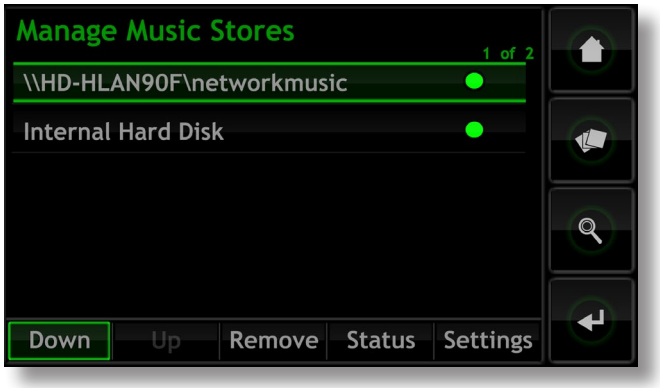


Step 4: If the new Music Store is to be the primary store location where newly ripped CD data is held, select **Yes** at the Step 4 screen. This will complete the Music Store addition process and the data from any subsequently ripped CDs will be held by the new Music Store.



Operation - External Storage

If the new Music Store is not to be the primary CD data store location select **No**. The new Music Store will then take lowest priority position in the list of Music Stores but be available for promotion to a higher priority if desired via the **Manage Music Stores** menu.

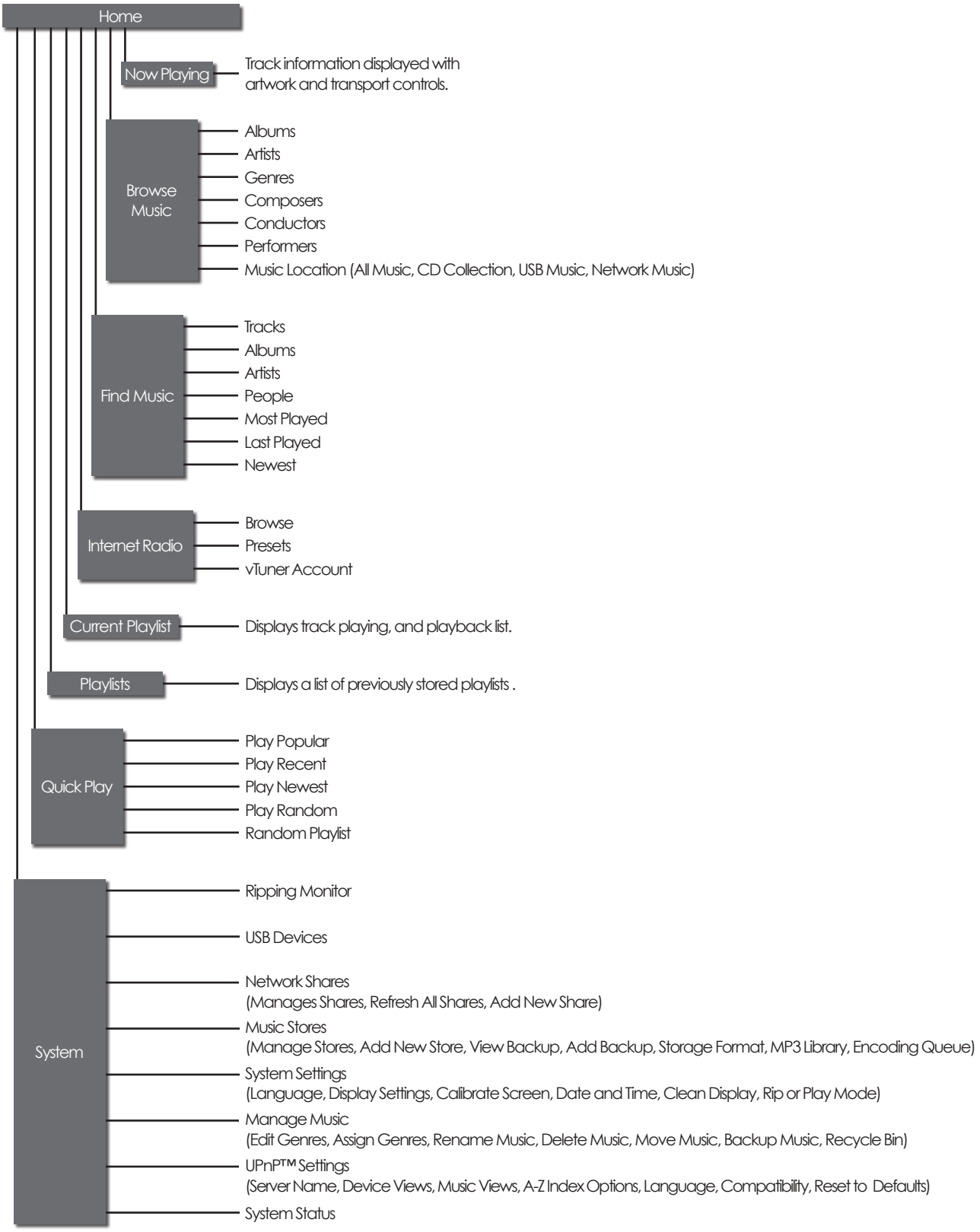


To lower the priority of a Music Store select the desired store followed by **Down**. To raise the priority of a Music Store select the desired store followed by **Up**.

HDX Interface Menu Structure

8 Interface Menu Structure

The diagram illustrates the upper levels of Front panel display Interface menu and menu structure.



Supplement – Internal Storage of External Data

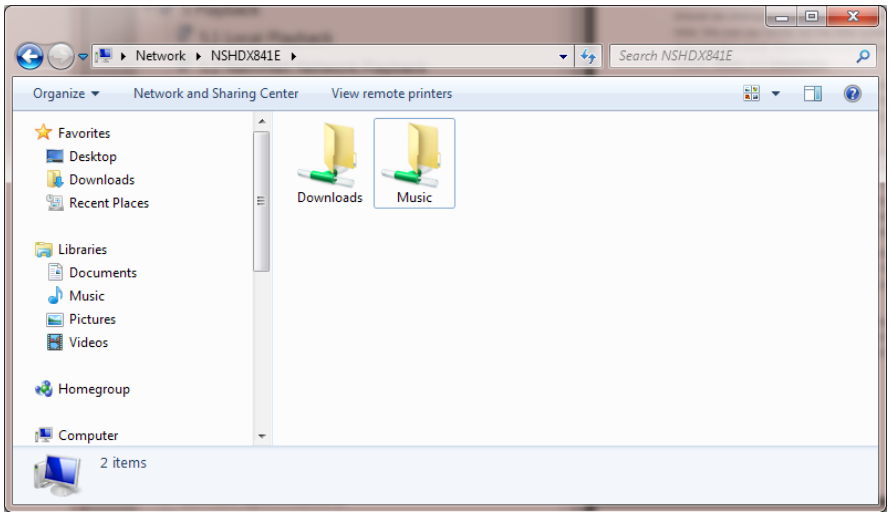
9 Internal Storage of External Data

With the introduction of a 2TB internal hard disk the HDX can store and play music files created or downloaded from external sources in addition to files locally ripped from CDs. To enable external file storage, a folder called "Downloads" is located on the HDX internal hard disk. The folder can be accessed and files copied to it using Windows Explorer or OS X Finder folder browsing. The following paragraphs describe access and use of the HDX Downloads folder.

Note: *Internal storage of external data is only available on units fitted with a 2TB internal hard disk.*

9.1 Accessing The Downloads Folder

To locate the Downloads folder browse to the HDX hard disk by using Windows explorer or OS X Finder. An example of this from Windows 7 is illustrated below.



The HDX network name in the address bar (NSHDXDF52 in the example above) should specify the network name of your HDX. This can be found via the HDX System Status menu (See Section 4.8.8). Browsing to the HDX reveals two folders: **Music** and **Downloads**.

The Downloads folder is a free storage space, located on the same hard disk as the Music folder that contains the files created by the HDX from ripped CDs. The Music folder should always remain unmodified.

Music files (or other files) may be copied to the Downloads folder. Sub-folders may also be created within the Downloads folder if desired. The HDX will treat the Downloads folder as a **Network Share** and automatically scan and list all the music files that it finds (and can play). See section 7.2 for further information on Network Shares.

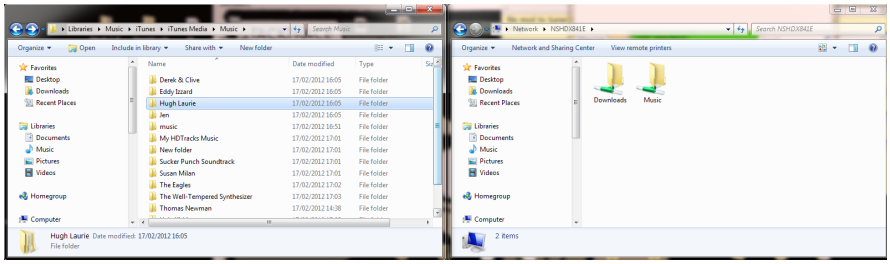
Note: *To ensure reliable operation, at least 4GB of free space should always be maintained on the HDX internal hard disk. Hard disk free space can be checked via the HDX System Status menu.*

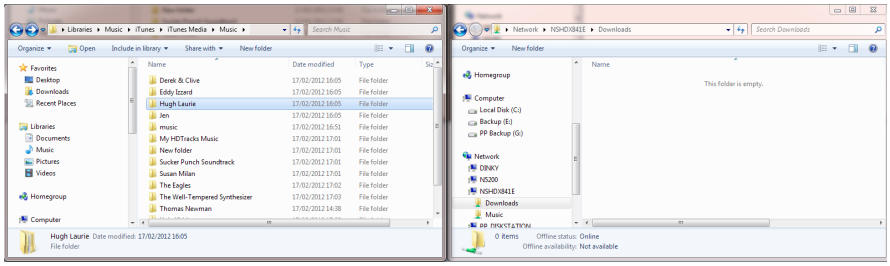
Note: *Temporary disturbance of audio reproduction may occur (from local output or UPnP™) when simultaneously copying large volumes of data to the HDX hard disk over the network.*

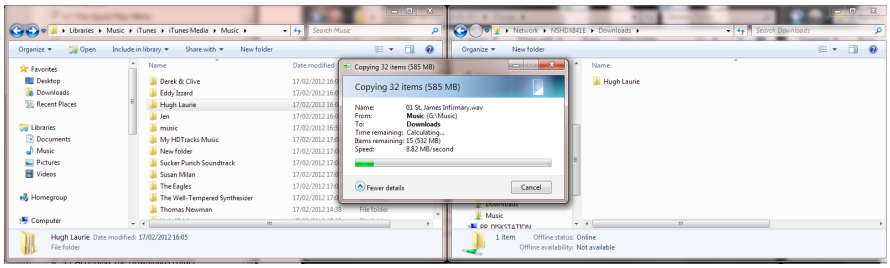
Supplement – Internal Storage of External Data

9.2 Copying to The Downloads Folder

The HDX Downloads folder operates just like any other folder in a network environment. Select the files to be copied from elsewhere on the network and then copy and paste them to the Downloads folder. The HDX will make the files available for selection and playback only once the copy operation is complete and it has scanned the folder. If a large number of files are copied in one pass, this may take a little time. The screen-shots below illustrate copying an item from the iTunes music folder on the network to the HDX Downloads folder.







Supplement – Hard Disk Player Terminology

10 Hard Disk Player Terminology

The following pages carry a glossary of hard disk player and network terminology that will help you get the best from this manual and ease the installation and operational learning-curve.

AAC:
AAC (Advanced Audio Coding) is a lossy compression and encoding format for digital audio. Intended to be a successor of the MP3 format, AAC was designed to achieve better sound quality than MP3 at equivalent levels of data compression. AAC's best known use is as the default audio format of Apple's iPhone, iPod, and iTunes application, and as the format of all iTunes Store audio. AAC is however also employed by Sony and Nintendo. AAC files are sometimes identified by .m4a or .mp4 file extensions.

AMG:
The **All Music Guide** database is the primary database that the HDX interrogates when a new CD is inserted in its drawer. The AMG database can be interrogated manually at www.allmusic.com

Note: *The data provided by AMG is occasionally inaccurate or incomplete. It is possible however to submit corrections at www.allmusic.com*

Broadband Internet:
Broadband internet is the generic term for an "always-on" **internet** connection that provides data download rates above 256kb/sec.

Apple Lossless:
Apple Lossless is a loss less compression and encoding format for digital audio. It offers between 40% and 60% data compression without loss of audio information.

Bit Perfect:
The term bit perfect refers to the error free ripping of digital data stored on CD. A bit perfect rip file will be, bit for bit, identical to the data held on the CD.

Browser:
A browser is a PC application that accesses, displays and implements **web pages**. Microsoft Internet Explorer and Mac OS X Safari are examples. As well as distributing music data on a **network**, the HDX generates **web pages** that can be read by a browser.

Client:
A client is a software application on a PC that accesses a remote service on another computer system, known as a server, by way of a network - the HDX Desktop Client application for example.

DHCP (Dynamic Host Configuration Protocol):
Hardware items installed on a **TCP/IP** network have an **IP Address** through which they are identified by all the other items on the network. DHCP is a set of rules that enable the automatic allocation of addresses as items are connected (or switched on while connected) to the network. The HDX is set up by default to use DHCP.

Digital Rights Management (DRM):
Digital Rights Management refers to the data embedded in some music files that restricts copying and playback. Material downloaded from the Apple iTunes store is an example.

Firewall:
A firewall is a network device or software application designed to control computer network traffic by compliance with a specific set of rules and security criteria.

Firmware:
Firmware describes control and interface computer programs that are embedded in the electronic hardware of a product.

FLAC:
FLAC (Free Lossless Audio Codec) is a file format for audio data compression. Being a lossless format, it removes no information from the audio data, as lossy compression formats such as MP3. FLAC's primary advantage is a reduction of data storage requirements by up to 50%, it may however result in subjectively less good sound.

Flash:
Adobe Flash is a software application that provides interactivity and animation in web sites. It is usually embedded into web **browser** applications.

FreeDB:
FreeDB is the secondary database that the HDX interrogates when an unknown CD is inserted in its drawer.

Internet:
The internet is the worldwide network of predominantly TCP/IP connected servers and computers. While the internet provides a variety of data services for professional and corporate use, most people know it for email and the World Wide Web.

IP Address:
An IP address is a numerical identifier unique to a specific piece of hardware on a TCP/IP network. IP addresses contain four groups of numbers from 0 to 255 separated by dots. 192.168.0.8 is a typical IP address.

Local:
Local in terms of this manual means non-network connections and associations. For example, a hi-fi system (amplifier and speakers) connected to the HDX's audio outputs, or a touch screen connected to the HDX's **USB** interface is local. A hi-fi system or a touch screen connected via the **NaimNet** network is not local.

Memory Stick:
A memory stick is a small, portable solid-state computer memory element that connects via USB to provide removable extra storage. Memory sticks have replaced floppy disks.

Supplement – Hard Disk Player Terminology

Modem:
A modem is an item of network hardware that forms a bridge between the network and the internet - usually via a broadband connection through telephone lines.

MP3:
MP3 was the original audio data compression algorithm that made practical the transmission of audio files over the internet and their playback on portable audio hardware products with limited storage capacity.

Naim Extended Music Database:
Thanks to the HDX's use of the **AMG** database, it is able to access significantly more information than competing products. This means selection and searching for specific items can be more intuitive and productive.

NaimNet:
NaimNet **network** enabled audio products are manufactured in the UK by Naim Audio. Like their closely related non-network Naim products, they represent the ultimate in musical performance.

Network:
A network in terms of this manual is a group of interconnected and communicating servers, computers, or peripheral devices that are able automatically to share and control large volumes of data at high speeds.

Network Attached Storage (NAS):
If a CD collection is too large for the internal storage of the HDX, an external hard disk can be added to the network to increase the storage available.

Network Share:
A Network Share is a network attached storage location from which the HDX can playback audio. A Network Share may be a NAS hard disk (see above) or a shared folder on a computer.

Music Store:
A Music Store is a storage location where the HDX stores ripped CD data. Normally the HDX internal hard disk is its Music Store however Network Shares can be converted to become Music Stores.

Playlist:
A playlist is a specific group of tracks collected together for a specific purpose; "favourites" perhaps, or "party tracks". A simple list of tracks queued-up to play (the tracks of an album for instance) may also be referred to as a playlist.

RAID (Redundant Array of Independent Disks):
RAID storage incorporates multiple hard disk drives into a single element. Data stored in a RAID is divided and replicated among the drives to improve reliability and, in some cases, read and write speeds.

Ripping:
Ripping is the slang term for extracting and storing the audio data from a CD. The HDX is unusual in ripping the audio data repeatedly to minimise errors. There are some copyright and legal issues to consider when ripping CDs.

Router:
A router is an item of network hardware that controls **network** traffic. Many home network routers include a broadband **modem** to connect the network to the **internet** and many also include a wireless element that enables network hardware with wireless capabilities to connect.

Server:
Server is a generic term that describes an item of network hardware that stores and provides data to the network.

Shuffle:
Shuffle is a term used to describe the random playback of tracks.

S/PDIF:
S/PDIF (Sony/Philips Digital Interconnect Format) is a digital audio interface format commonly used in domestic digital audio equipment.

StreamNet:
StreamNet is a proprietary network technology that enables synchronous and very high quality streaming of audio and video over TCP/IP networks. The HDX and all NaimNet products are StreamNet compatible.

TCP/IP:
TCP/IP (Transmission Control Protocol/Internet Protocol) is the communications protocol on which the **internet** and many other networks are based.

User Interface (UI):
Different user interfaces are available with the HDX depending on the model and mode of use. See Section 1.2.

UPnP™:
UPnP™ (Universal Plug and Play) is network connection standard that enables compatible hardware to connect automatically and to simplify the implementation of home networks.

USB:
USB (Universal Serial Bus) is a computer interface format developed to enable simple connection of computer peripheral devices.

WAV:
WAV (Waveform Audio Format) is a Microsoft/IBM audio file format for storing and transferring audio on PCs. WAV is a "lossless" file format.

Web Page:
A web page is a computer screen full of data output by a **network** device that communicates information on its status and may enable control via a mouse and keyboard.

WMA:
WMA (Windows Media Audio) is an audio data compression technology developed by Microsoft. The name can refer to both the audio file format and the audio compression technique itself.

Specifications and User Notes

11 HDX Specifications

Line Output:	DIN and RCA Phono, 2.1V @ 1kHz
Output Impedance:	22Ω maximum
Frequency Response:	10Hz - 20 kHz +0.1/-0.5dB
Distortion and Noise:	<0.1%, 10Hz - 18kHz at full level.
Phase Response:	Linear phase, absolute phase correct
Disc Compatibility:	Red Book compatible CD, CDR & CDRW
Audio Formats Supported:	WAV, MP3, AAC, FLAC, WMA, Apple Lossless, Ogg Vorbis, AIFF
Main Supply:	100-120V or 220V-240V, 50/60Hz
Dimensions (H x W x D):	87 x 432 x 314mm
Finish:	Black

12 User Notes

HDX Serial Number _____ *eg. 123456 (on rear panel)*

HDX MAC Address _____ *eg. 1A:2B:3C:4D:5E:6F (on rear panel)*

Display MAC Address _____ *eg. A1:B2:C3:D4:E5:F6 (on rear panel)*

HDX Name _____ *eg. NSHDX89B5*
(NSHDXxxxx where xxxx is last 4 digits of MAC Address)

Use this section to record your HDX's identification data for possible future reference. The **Serial Number**, **HDX MAC Address** and **Display MAC Address** can be found printed on the rear panel. The **HDX Name** can be found via the **System Status** page of the **Front Panel Display Interface**.

13 Commercial Acknowledgements

13.1 DigiFi End-user License Agreement

USE OF THIS PRODUCT IMPLIES ACCEPTANCE OF THE TERMS BELOW.

This product contains technology from DigiFi LIMITED of London, United Kingdom ("DigiFi"). The technology from DigiFi LIMITED (the "DigiFi Embedded Software") enables this product to rip, encode, store, manage and control digital music from compact discs owned by the user. This digital music is stored in the DigiFi Database (the "DigiFi Database"). The software specified in this Licensing Agreement is and will be the sole property of DigiFi LIMITED. It is subject to copyright and as such is protected to the fullest extent allowable by law.

You agree that you will use the DigiFi Embedded Software for your own personal use only and that if this product is used in an environment where there is a risk of public broadcast of music or images stored thereon, that you are properly licensed to do so.

You agree that you will access the DigiFi Database only by means of the standard end user functions and features of this product.

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13.2 StreamNet Acknowledgement

NetStreams' patent-pending StreamNet technology provides an end-to-end IP ecosystem for plug-n-play connectivity, A/V signal synchronization, high performance A/V reproduction, automatic device discovery and configuration, network control, and more. All products that carry the 'StreamNet Connected' logo are interoperable, enabling easy integration of audio/video and control products from multiple manufacturers. StreamNet provides a stable, easily expandable platform and toolset for future products and new applications.
www.streamnetconnected.com

13.3 Adobe Flash Acknowledgement

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