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**Note:** This manual is Issue No. 2 and describes the operation of NDS units running software release version 3.13.xx.
Introduction

1 Introduction

The NDS is a highly capable network and digital audio player that will repay time and effort spent on installation and setup. We strongly recommend that you read this manual.

The NDS incorporates four distinct audio components, each routed to analogue or digital outputs intended for connection to an appropriate preamplifier input. Each component is introduced in the paragraphs below and the first three subsequently described in full detail in Sections 5 to 7. The components are:

An Internet Radio
A UPnP™ Audio Interface
A USB Audio Interface
A Digital to Analogue converter

Prior to the sections describing NDS components, Section 2 covers installation, Section 3 describes operation and Section 4 describes setup.

1.1 The Internet Radio

The NDS internet radio requires high speed internet access via a home network connection. When connected to the internet the NDS receives data streams and a list of available radio stations from a dedicated internet server. Up to 40 internet radio stations can be stored as presets (favourites).

1.2 The UPnP™ Audio Interface

NDS can connect to a home network and play audio files stored on UPnP™ drives such as the Naim UnitiServe or on PC and Mac computers.

1.3 The USB Audio Interface

NDS incorporates a front panel USB interface socket that enables audio files stored on USB memory devices to be selected and played.

1.4 The Digital to Analogue Converter

NDS incorporates a three input digital to analogue converter able to handle S/PDIF format digital audio at up to 24 bit and 192kHz resolution. The three DAC inputs comprise one coaxial BNC socket, one coaxial phono socket and a TosLink optical socket. The analogue output is available on both 5-pin DIN and phono sockets.
Installation and Connection

2 Installation and Connection

Your NDS should be installed on an equipment stand intended for the purpose. Four transit screws on its underside must be removed before use. Ensure the NDS is well ventilated, and do not stand it directly on top of another item of equipment. It should be installed in its final location before connecting cables or switching on.

The NDS requires an external Naim 555PS, XPS or XP5 XS power supply. Connection of external power supplies is illustrated in Diagram 2.3, 2.4 and 2.5, and described in Section 2.6.

Connecting the NDS to a variety of audio peripherals and sources is described in paragraphs 2.7 onwards. Diagram 2.2 illustrates the NDS rear panel connection sockets.

2.1 NDS Transit Screws

The four transit screws located on the underside of the NDS must be carefully removed before use. Do not invert the NDS to remove the transit screws but work from the underside by positioning the NDS at the edge of a table. The transit screws must be replaced if the NDS is to be re-packed or shipped. The transit screw locations are illustrated in the diagram opposite.

DO NOT INVERT THE NDS DURING OR FOLLOWING TRANSIT SCREW REMOVAL.

2.2 NDS Rear Panel

[Diagram showing the rear panel connections]

- Digital Inputs 1, 2, & 3
- Power Supply Socket 2 (Link plug fitted)
- Analogue Output (Phono)
- Analogue Output (DIN)
- USB Upgrade Interface
- Remote In
- Remote Out 1 & 2
- Digital Output
- Power Supply Socket 1
- Signal Ground Switch
- Wireless Network (Wi-Fi) Antenna Socket
- Network Socket
Installation and Connection

2.3 NDS Connected To 555PS Power Supply

Important: XPS power supplies with serial numbers below 188015 are not compatible with the NDS and should not be used. Contact your local retailer or distributor for more information.

2.4 NDS Connected To XPS Power Supply
2.5 NDS Connected To XP5 XS Power Supply

The NDS requires an external XP5 XS, XPS or 555PS power supply connected to one (XP5 XS, XPS) or both (555PS) of its power supply input sockets. Use only the Burndy cable or cables intended for the specific power supply. Your retailer or local distributor will be able to supply the appropriate Burndy cable or cables.

**IMPORTANT:** XPS POWER SUPPLIES WITH SERIAL NUMBERS BELOW 188015 ARE NOT COMPATIBLE WITH THE NDS AND SHOULD NOT BE USED. CONTACT YOUR LOCAL NAIM RETAILER OR DISTRIBUTOR FOR MORE INFORMATION.

If an XP5 XS or XPS power supply is used it should be connected to NDS Power Supply Input 1. If a 555PS power supply is used it should be connected to both NDS Power Supply Inputs 1 and 2. The link plug must remain fitted to Power Supply Input 2 unless a 555PS power supply is used. Do not switch on the external power supply until all the required NDS signal and network connections are made.

**Note:** It is possible to power the NDS using a multiple power supply arrangement comprising two 555PS units, or a 555PS and one other compatible power supply. Contact your local Naim retailer or distributor for more information.

2.6 Power Supply Connection

2.7 Audio Inputs and Outputs

2.7.1 Audio Signal Inputs

NDS provides three S/PDIF digital inputs. Connection to the inputs is made via a variety of socket types. The following table lists the inputs and their socket types:

<table>
<thead>
<tr>
<th>Input</th>
<th>Socket</th>
</tr>
</thead>
<tbody>
<tr>
<td>dig. 1</td>
<td>Coaxial (BNC)</td>
</tr>
<tr>
<td>dig. 2</td>
<td>Coaxial (RCA phono)</td>
</tr>
<tr>
<td>dig. 3</td>
<td>Optical (TosLink)</td>
</tr>
</tbody>
</table>

Always use high quality interconnect cables to connect sources to NDS inputs.

The digital inputs are configured via the NDS Digital Inputs setup menu. See Section 4.3.4.

2.7.2 Audio Signal Outputs

The NDS provides analogue and digital audio signal outputs intended for connection to an appropriate preamplifier or digital to analogue converter input. NDS output connections are made via the socket types listed below:

<table>
<thead>
<tr>
<th>Output</th>
<th>Socket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analogue stereo</td>
<td>5-pin DIN</td>
</tr>
<tr>
<td>Analogue stereo</td>
<td>RCA phono</td>
</tr>
<tr>
<td>S/PDIF digital stereo</td>
<td>BNC Coaxial</td>
</tr>
</tbody>
</table>

**Note:** Output sockets are selected and configured via the NDS Analogue Outputs and Digital Output setup menus. See Sections 4.4 and 4.6.
Installation and Connection

2.8 USB Audio Interface

The NDS is fitted with a front panel USB interface intended for the connection of USB memory hardware carrying audio files. The USB interface should not be used for any other purpose.

Most UMS (Universal Mass Storage) USB devices are compatible with the NDS USB audio input. Such devices might include portable digital music players, smart-phones, tablet computers, USB memory sticks and memory card readers.

2.9 Network Connections

The NDS can be connected to a TCP/IP network via either a wired or wireless connection. Network connection enables the NDS to play internet radio data streams or play audio files stored on UPnP™ servers such as the Naim UnitiServe and HDX, and appropriately configured computers and network drives.

2.9.1 Wired Network Connection

The NDS is fitted on its rear panel with a standard Ethernet socket. For wired network connection this socket should be connected to a spare Ethernet socket on your network router.

Note: Ethernet-over-mains hardware may be used and provides a simple and convenient method of wired 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 or wireless networking should be employed.

2.9.2 Wireless Network Connection

If NDS is to connect wirelessly to the home network the supplied Wi-Fi antenna must be fitted to the rear panel wireless antenna socket. Wireless configuration will also be necessary before NDS is able to connect to your home network. See Section 4.5.1.

2.9.3 Network Settings

The NDS is set up when originally shipped not to require any on-site TCP/IP configuration but to connect to a network automatically (it uses DHCP by default). However, if your NDS has been previously used, its network configuration may have been altered leaving it unable to connect automatically. If this appears to be the case ensure that DHCP is selected in the Network Settings menu (see Section 4.5 of this manual) and re-start NDS. If problems still persist contact your retailer, installer or Naim Audio directly.

Note: Before reporting network connection problems carry out a Factory Reset operation. Select Reset All Settings from the Factory Settings setup menu. See Section 4.10.

Note: An NDS switched on without a working wired network connection will only be able to connect to a home network wirelessly. To use an Ethernet (wired) connection, switch the NDS off, connect the network and switch it on again.

Note: For internet radio to operate, the NDS requires connection to a high speed internet service.

2.10 System Automation

NDS control can be linked using System Automation to the control of some Naim preamplifiers, CD players and the Naim DAC. System Automation enables for example, preamplifier inputs to be selected via the NDS, or for n-Stream transport functions to control a CD player. To take advantage of System Automation, connect one of the NDS rear panel Remote Out sockets to a preamplifier, CD player or DAC Remote In socket. Use a cable terminated with a 3.5mm jack plug at one end and a 3.5mm jack or phono plug as necessary at the other end.

Using both NDS Remote Out sockets, for example, one connected to a preamplifier and one connected to a CD player, enables comprehensive system control via the n-Stream app.

Note: Stereo and mono 3.5mm jack to 3.5mm jack can be used for System Automation. If a stereo 3.5mm jack to phono plug cable is used, connect the left channel phono plug.

Note: NDS System Automation is switched off by default. A full description of its configuration and use can be found in Section 4.9.

2.11 External Control and Update Sockets

The NDS is fitted with a 3.5mm jack Remote In socket on its rear panel. The Remote In socket can be used for RCS remote control via a fully wired connection or a remote IR repeater.

The NDS is also fitted with a rear panel mini-USB socket. This socket enables firmware upgrades and diagnostic tests to
Installation and Connection

be carried out. Contact your retailer for more information if required.

Note: The rear panel mini-USB socket is not intended for the connection of USB storage hardware and cannot be used for audio playback.

2.12 Signal Ground Switch

The NDS is fitted on its rear panel with a Signal Ground switch offering two positions: Chassis and Floating. Select the Chassis position unless NDS 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: “Connected” in the context above means an analogue audio signal cable that includes an earth connection.

Note: All Naim CD players are earthed so the Signal Ground switch should be set to floating if one is connected in the system (unless a digital signal connection is used).

No damage will be done if the wrong Signal Ground position is chosen, however the system sound quality may be compromised.

2.12.1 General Audio Connection Notes

The NDS power supply mains earth (ground) should always be connected regardless of what other equipment is used.

Note: As an external power supply is used the NDS mains earth is connected through the Burndy connection cable to the power supply mains earth.

A mains earth grounds the chassis and the electrostatic screen within the power supply transformer, and is only connected to the signal negative if the Signal Ground switch is set to Chassis. In order to avoid hum loops, the signal negative of the whole system should be connected to the mains earth in one place only.
3 NDS Operation

The NDS can be operated from either its front panel controls, from the supplied remote handset or via the n-Stream iPod, iPhone and iPad app. Setting up and operating an NDS requires navigation through a menu-driven user interface. The general principles of the interface are carried across each of NDS’s components so this section of the manual describes and illustrates those general principles.

3.1 NDS Front Panel Features

3.2 Front Panel Buttons

The NDS front panel buttons function as described below:

- **play**: Plays a selected track or radio station.
- **^**: Navigates up a menu or list.
- **input**: Sequentially selects NDS inputs.
- **<**: Returns to the previous display menu.
- **ok/list**: Enters list display mode. Confirms menu item selection.
- **>**: Advances to the next display menu.
- **stop**: Stops playing a track or radio station.
- **v**: Navigates down a menu or list.
- **exit**: Exits list display mode.

3.3 Front Panel Display (normal play mode)

In normal play mode the NDS screen provides a variety of information on the current setup, the input selected and the material playing. A typical normal play mode screen is illustrated above showing the internet radio station BBC 6Music playing.

At the top of the screen, “P3” shows that the radio station is stored as preset 3, and the “iRad” icon shows that internet radio is selected.
List mode is entered by pressing the front panel ok/list button or handset ok/list key. List mode is used where NDS sources provide data that can be browsed: a list of radio stations or tracks for example.

Lists displayed will depend on the source selected and data available. A typical list mode screen, illustrated above, shows the initial internet radio display menu.

At the top right of the screen, “3/8” denotes that the selected item is number three of eight.

To scroll up and down lists and select items use the front panel or handset up (↑) and down (↓) and ok/list buttons or keys. To return to normal display press the handset exit key or front panel list button.

**Note:** The right (▶) key duplicates the ok/list key when navigating list mode menus.

In long item lists the handset numeric/text keys can be used to jump through the list alphabetically.

Setup mode is engaged by pressing the handset setup (_SETUP) key or pressing and holding the front panel ok/list button. Setup mode provides access to all NDS setup functions.

The illustration above shows the setup home screen displayed when setup mode is engaged. The “1/9” at the top right denotes that the selected item is number one of nine.

To navigate around the setup menus and make selections use the front panel or handset up (↑), down (↓) and left (←) arrow keys to navigate around menus and the ok/list button or key to confirm a selection.

**Note:** The right (▶) key duplicates the ok/list key when navigating setup mode menus.

To exit setup mode press the handset setup (_SETUP) key a second time or press the exit key or front panel list button.

NDS setup is covered in Section 4.

**Note:** If programme material is playing when NDS enters setup mode it will continue to play. The volume, mute and transport (play, pause, stop etc.) keys on the handset will remain operational.
3.6 NDS Remote Handset

The supplied remote control handset is a multifunctional device designed specifically for Naim Streamer and Uniti Series products.

To fit batteries, remove the battery cover and insert the batteries into the body taking care with their orientation. Replace the battery cover.

3.6.1 Normal and List/Setup Mode Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Normal Mode</th>
<th>List/Setup Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric text</td>
<td>Enter digits</td>
<td>Enter characters in text</td>
</tr>
<tr>
<td>0</td>
<td>Enter 0 (zero)</td>
<td>Enter spaces in text</td>
</tr>
<tr>
<td>preset</td>
<td>Display the radio preset list</td>
<td>Delete last character in text</td>
</tr>
<tr>
<td>store</td>
<td>Display the radio preset menu</td>
<td>Switch text case</td>
</tr>
<tr>
<td>input+</td>
<td>Select next input</td>
<td>Menu up navigation</td>
</tr>
<tr>
<td>input-</td>
<td>Select previous input</td>
<td>Menu down navigation</td>
</tr>
<tr>
<td>⇧</td>
<td>Input dependent or back one character in text</td>
<td>Previous menu or back one character in text</td>
</tr>
<tr>
<td>⇩</td>
<td>Input dependent or forward one character in text</td>
<td>Next menu or forward one character in text</td>
</tr>
<tr>
<td>exit</td>
<td>No function</td>
<td>Ends current menu without saving changes</td>
</tr>
<tr>
<td>list/ok</td>
<td>Display input dependent list of tracks/functions</td>
<td>Confirm action or selection</td>
</tr>
</tbody>
</table>

Note: Navigation (⇦ ⇧ ⇩ ) key assignments can be altered via the Handset Keys setup menu. See Section 4.8.

3.6.2 Normal Play Mode Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>disp</td>
<td>Switches NDS display on or off</td>
</tr>
<tr>
<td>vol +</td>
<td>Increase preamp volume</td>
</tr>
<tr>
<td>vol –</td>
<td>Decrease preamp volume</td>
</tr>
<tr>
<td>mute</td>
<td>Silence preamp</td>
</tr>
<tr>
<td>(repeat)</td>
<td>Repeat selected track, or playlist</td>
</tr>
<tr>
<td>(shuffle)</td>
<td>Play tracks randomly from list</td>
</tr>
<tr>
<td>(setup)</td>
<td>Display the setup menu</td>
</tr>
<tr>
<td>(info)</td>
<td>Cycle through input information</td>
</tr>
<tr>
<td>(play/pause)</td>
<td>Play or pause audio</td>
</tr>
<tr>
<td>(previous)</td>
<td>Go to previous track/station</td>
</tr>
<tr>
<td>(next)</td>
<td>Go to next track/station</td>
</tr>
<tr>
<td>(stop)</td>
<td>Stop audio</td>
</tr>
<tr>
<td>(reverse)</td>
<td>Fast reverse audio (with system automation)</td>
</tr>
<tr>
<td>(forward)</td>
<td>Fast forward audio (with system automation)</td>
</tr>
<tr>
<td>cd</td>
<td>Unassigned</td>
</tr>
<tr>
<td>radio</td>
<td>Selects the iRadio input</td>
</tr>
<tr>
<td>pc</td>
<td>Selects the UPnP™ input</td>
</tr>
<tr>
<td>iPod</td>
<td>Selects the USB audio input</td>
</tr>
<tr>
<td>tv</td>
<td>Selects the Digital 1 input</td>
</tr>
<tr>
<td>av</td>
<td>Selects the Digital 2 input</td>
</tr>
<tr>
<td>hdd</td>
<td>Selects the Digital 3 input</td>
</tr>
<tr>
<td>aux</td>
<td>Unassigned</td>
</tr>
</tbody>
</table>

Note: The default input selection key assignments can be modified via the Handset Keys setup menu. See Section 4.8.

Note: Use of system automation can modify the action of remote handset keys. See section 4.9.
3.7 Handset Text Entry

Some NDS menu screens require text entry - naming inputs for example. Text entry is carried out using the handset numerical buttons in a manner similar to mobile phone SMS text entry.

When text entry is required, multiple presses of a key will scroll through the characters associated with that key. In addition to characters, the preset key provides a delete function, the zero key provides a space and the store key provides letter case change. The up (▲) and down (▼) keys will also scroll through all the available letters.

The enlarged handset image illustrates the number keys and the characters associated with each.

When prompted on a NDS screen to enter text, select characters in turn by pressing each appropriate key the required number of times. Confirm the text entry by pressing the ok/list key.

3.8 The n-Stream Control App

The n-Stream NDS control application is available from the iTunes App Store. n-Stream is compatible with iPad, iPhone and iPod touch models running iOS software Version 3.1.3 or later.

3.8.1 n-Stream Setup

To begin using n-Stream to control your NDS you must first install the app on your iPad, iPhone or iPod touch. With the app installed and the iPad, iPhone or iPod wirelessly connected to the same network as your NDS, start the app by touching its screen icon.

Selecting setup opens a menu that enables the NDS to be selected for control. Touch the appropriate NDS as identified by its device name or network address: NDS-C135 and 192.168.001.065 respectively in the illustration above.

Note: Your NDS network address and device name can be found in its Factory Settings setup menu.

Note: The NDS name can be changed from its setup menu. Doing so can enable individual units in a multiple installation to be identified more easily.

The setup menu enables the following options to be selected:

Auto connection: Select ON for automatic connection to the NDS whenever the n-Stream app is running.

Stay connected: If OFF is selected, the n-Stream app will “sleep” following a preset period of inactivity. Selecting ON will force n-Stream to remain continuously active.

Note: Continuous connection of n-Stream may result in your iPad, iPhone or iPod battery draining.

Use Hi-Fi Language: Select ON for the n-Stream app to reflect the selected NDS display language. If NO is selected the n-Stream app will display in the default iPad, iPhone or iPod language.

Clear Image Cache: Deletes album artwork images stored by the n-Stream app.
### 3.8.2 Using n-Stream

The n-Stream app is based on three main screens. The **Inputs** screen, the **Playing** screen and the **Library** screen. These screens are selected by touching the icons at the top of the display.

The **Inputs** screen enables selection of NDS inputs. Input names reflect those specified in the NDS input setup menus (See Section 4.3) or through System Automation (See Section 4.9).

The **Playing** screen displays the currently playing item and provides appropriate transport controls. When a Radio station is playing an icon is also provided to open a preset station menu through which presets can be either stored or recalled.

The **Library** screen displays lists of playback items available to the selected NDS input. The adjacent illustration shows Allegro Media Server is available to the NDS UPnP™ input.

**Note:** Allegro Media Server is an application that makes iTunes songs and playlists available to UPnP™ players.
Setup

4 NDS Setup

Once NDS is installed with mains power and all external connections made, it can be switched on and set up for use.

The degree to which you modify NDS default settings will depend upon the uses to which you put it and the extent to which you use its capabilities. It may be that you have no need to modify the default settings at all, however we would encourage you to read this section of the manual in order that you gain a full understanding of NDS abilities. The following paragraphs describe each NDS setup menu in turn starting with the setup home menu.

Enter NDS setup mode by pressing the handset setup (F) key. Navigate around the setup menus using the handset arrow keys and make selections using the ok/list key. Exit setup by pressing the exit key.

4.1 The Setup Home Menu

The NDS setup home menu provides access to nine setup menus. The function of each menu is listed below:

- **Language**: Enables the user interface language to be changed.
- **Inputs**: Enables parameters for each internal and external input to be configured.
- **Analogue Outputs**: Enables analogue output socket options to be selected.
- **Network Settings**: Configures network connection settings.
- **Digital Output**: Enables digital output options to be selected.
- **Front Display**: Configures display features.
- **System Automation**: Enables system automation to be configured.
- **Handset Keys**: Enables inputs to be assigned to specific handset keys. Also enables configuration of the handset navigation (↑ ↓ ← →) keys.
- **Factory Settings**: Enables interrogation of NDS status, monitoring of handset commands, deletion of all user presets, reset of system automation and return to factory default settings.

Each of the nine setup menus is described in detail in the following sections. Use the handset up (↑) and down (↓) and ok/list keys to select a setup menu.

4.2 The Language Menu

The Language setup menu enables the NDS user interface language to be changed. Enter setup mode and use the handset ok/list key to select Language. Use the handset up (↑) and down (↓) and ok/list keys to select a language. Exit setup mode by pressing the handset exit key.

4.3 The Inputs Menu

The Inputs setup menu enables a variety of parameters to be configured for each NDS internal and external input. The options available for each are described in the following sections. Two parameters are common to all inputs:

- **Enabled**: Switches the input on or off and displays or hides any associated menus.
- **Name**: Enables user specified names to be attached to inputs. Use the handset to enter text.

4.3.1 iRadio Input

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Name</td>
<td>User definable</td>
</tr>
<tr>
<td>Auto Disconnect</td>
<td>Select time</td>
</tr>
<tr>
<td>Browse History</td>
<td>Yes / No. If Yes is specified NDS will select the last used station if it is available. If No is specified NDS will display the full list of available stations.</td>
</tr>
</tbody>
</table>

Auto-disconnect is provided so that internet provider data usage limits are not inadvertently exceeded by an NDS left connected to internet radio.
Setup

4.3.2 UPnP™ (Network) Input

Parameter Options
Enabled: Yes / No
Name: User definable
Server History: Yes / No. If Yes is specified NDS will remember the last used folder if the UPnP™ server is still available. If No is specified NDS will display the full list of available servers.

4.3.3 USB Input

Parameter Options
Enabled: Yes / No
Name: User definable
Folder History: Yes / No. If Yes is specified NDS will automatically display the last used folder on the USB device. If No is specified the top level folder of the device will be displayed.

4.3.4 Digital Inputs 1, 2 and 3

Parameter Options
Enabled: Yes / No
Name: User definable
Unstable source: Yes / No
Select No unless the NDS has problems locking to a digital signal. Selecting Yes will enable the NDS to lock to unstable digital signals, however sound quality will be slightly degraded.

4.4 The Analogue Outputs Menu

The Analogue Outputs menu enables the main DIN or RCA phono outputs to be disabled or individually or simultaneously selected.

Parameter Options
Main out: Disabled / DIN / Phono / DIN-Phono. Select the appropriate option for your installation. Only select the DIN-Phono option if both outputs are simultaneously required.

4.5 The Network Settings Menu

The Network Settings menu enables NDS network parameters to be customised to suit the router and network. The options are tabulated and described in the following sections:

Parameter Options
Name: User definable (text entry)
Default: NDS-xxxx
Wireless: Not Used / Wireless Network Names
Status: Connected / Not Connected / No Signal / Login Failure / Busy / Etc.
DHCP: Yes / No
MAC: Displays the NDS MAC address

The Name parameter enables the NDS’s default network name to be changed.

The Wireless parameter enables a wireless network to be chosen and joined. See Section 4.5.1 below for detailed wireless set up notes.

Network Status displays the current network connection status.

The DHCP parameter enables the NDS network settings to be modified. In most cases, specifying Yes and leaving NDS set to DHCP, will be the appropriate option. See Section 4.5.2 for notes on static address (non-DHCP) network connection.

Note: Devices installed on a 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. NDS is set up by default to use DHCP.

Note: If NDS is connected to the network both wirelessly and via Ethernet (wired), the Ethernet connection will take priority.
4.5.1 Wireless Network Connection Set Up

If the Wireless parameter is selected in the Network Settings menu the Select Network menu will display a list of the available networks. An option not to use a wireless connection is also provided. Use the handset up (▲) or down (▼) keys to scroll through the list and the ok/list key to select a network.

Note: NDS is compatible with most commonly used Wi-Fi standards. Routers that support 802.11b and 802.11g will work, however those with 802.11n compatibility are recommended for best results.

Note: As with any wireless network hardware, NDS connection reliability will be affected by both network router performance and Wi-Fi signal quality. To minimise the possibility of poor connection reliability, NDS should be connected to network audio sources by no more than one wireless “leg”. Other “legs” necessary between NDS and the network audio sources should be wired.

Note: NDS cannot connect to a “hidden” wireless network.

If the selected network is secure and requires a passphrase or access key to join, NDS will display an alert message. Pressing the handset ok/list key will then open a text entry screen for entry of the passphrase or access key.

Use the handset numeric/text keys to enter the passphrase or access key taking care to ensure that the letter case is correct. Press the handset ok/list key when text entry is complete. In the illustration the passphrase is “flatfish”.

If the network is successfully joined NDS will display a confirmation screen.

If an incorrect passphrase or access key is entered NDS will display an alert message.

Note: As a security measure, a router may also require the NDS’s MAC address to be entered before allowing it to join the wireless network. This type of security feature is known as ‘MAC address filtering’. The NDS MAC address is shown in the ‘Factory settings > System Status’ page.

Note: The wireless passphrase/access key is created when the wireless router is first set up and could be a word or a series of numbers and letters. If the passphrase/access key is not known, check on the router settings page or with the person who initially set up the router.

Note: If a router offers multiple security configurations, NDS will automatically offer only the most secure one.

Note: If WEP security is used the router should be set to “auto” or “open” authentication.

If the selected network is insecure and requires no passphrase or access key to join, NDS will display an alert message. Pressing the handset ok/list key will immediately connect NDS to the network and display a confirmation screen.

Note: Wireless connection difficulties can sometimes be resolved by changing the wireless connection channel in the router settings.

4.5.2 Non-DHCP (Static) Network Connection

If DHCP is de-selected in the Network Settings menu, five further parameters will be displayed.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP</td>
<td>User definable (numerical entry)</td>
</tr>
<tr>
<td>Mask</td>
<td>User definable (numerical entry)</td>
</tr>
<tr>
<td>Gateway (Gtwy)</td>
<td>User definable (numerical entry)</td>
</tr>
<tr>
<td>DNS1</td>
<td>User definable (numerical entry)</td>
</tr>
<tr>
<td>DNS2</td>
<td>User definable (numerical entry)</td>
</tr>
</tbody>
</table>

These settings enable NDS to connect to a network using a fixed IP address. On selecting each one in turn, numerical entry screens will be displayed that require completion with the appropriate network IP address settings. Consult your network router’s user documentation for help with specifying fixed IP address settings.
4.6 The Digital Output Menu

The Digital Output menu allows the digital output to be enabled and its data format to be configured.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled:</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

The Digital Output should be enabled only if it is specifically required.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output:</td>
<td>Native / 96kHz 24bit</td>
</tr>
</tbody>
</table>

Select Native unless a subsequent digital to analogue converter is unable to process a native clock rate reliably.

4.7 The Front Display Menu

The Front Display setup menu enables the behaviour of the NDS front panel display to be modified.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Off:</td>
<td>Select from list.</td>
</tr>
</tbody>
</table>

Auto Off defines the length of time the display will remain switched on after the last interface operation is carried out. Time periods of between 10 seconds and 1 hour can be selected.

Note: If the display has been switched off using the handset disp key this setting will take priority over the Auto Off setting. The display will always switch on briefly when control commands are received.

4.8 The Handset Keys Menu

The Handset Keys setup menu enables the function of the handset navigation keys (Diagram 4.8.3) to be configured, and the NDS inputs assigned to each handset input selection key (Diagram 4.8.4) to be changed.

4.8.1 Navigation Key Functions

Selecting the Up/Down Actions parameter from the Handset Keys menu opens a further menu that enables the selection from two modes of handset up (↑) and down (↓) key function: Input and Off. If Input is selected the keys will select inputs and if Off is selected the keys will be disabled in respect of input selection.

Selecting the Left/Right Actions parameter from the Handset Keys menu will open further menus enabling the configuration of the left (◀) and right (▶) keys independently for the, Radio(s), USB and UPnP™ inputs. The options available for the USB, and UPnP™ inputs are Track, List and Off. If Track is selected the left (◀) and right (▶) keys will select the previous or next track. If List is selected the keys will return NDS to list display mode, and if Off is selected the keys will be disabled in respect of track or list selection.

The options available for the Radio(s) input are Station, Preset, List and Off. If Station is selected the left (◀) and right (▶) keys will select the next or previous station. If Preset is selected the keys will select the previous or next preset. If List is selected the keys will return NDS to list display mode, and if Off is selected the keys will be disabled in respect of station or preset selection.

4.8.2 Input Key Assignments

Each handset input selection key may have up to four inputs assigned to it. The default assignments are shown in the following table:

<table>
<thead>
<tr>
<th>Handset Key</th>
<th>Input Assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>cd:</td>
<td>None</td>
</tr>
<tr>
<td>radio:</td>
<td>iRadio</td>
</tr>
<tr>
<td>pc:</td>
<td>UPnP™</td>
</tr>
<tr>
<td>iPod:</td>
<td>USB</td>
</tr>
<tr>
<td>tv:</td>
<td>Digital 1</td>
</tr>
<tr>
<td>av:</td>
<td>Digital 2</td>
</tr>
<tr>
<td>hdd:</td>
<td>Digital 3</td>
</tr>
<tr>
<td>aux:</td>
<td>None</td>
</tr>
</tbody>
</table>

Beneath the Up/Down keys and Left/Right keys parameters the Handset Keys menu displays a list of the eight handset input keys. Selecting one of the keys then displays a list of the four existing assignments to that key (including unassigned). To change an assignment, select the assignment number to be altered and, from the subsequent menu, select the desired input.
4.9 The System Automation Menu

With System Automation enabled and an NDS Remote Out socket connected to the Remote In socket of a Naim preamplifier (or integrated amplifier), CD player or the Naim DAC, the NDS handset and n-Stream App can provide system-wide control.

The System Automation setup menu comprises five items. These are explained in the following paragraphs:

Selecting Preamp or Naim DAC opens a menu that enables preamplifier or DAC inputs to be added to the inputs available for selection via the NDS handset and n-Stream interfaces. Inputs can be enabled, disabled and renamed and, as “virtual” NDS inputs, can be assigned to NDS handset input keys.

Selecting NDS Connection opens a menu that enables the preamplifier input to which the NDS is connected to be specified. This preamplifier input is then automatically selected on selection of NDS inputs.

Selecting CD Player opens a menu that makes CD transport control available through the NDS n-Stream interface. Select Enabled to enable CD control and select Input Used to specify the NDS, preamplifier or DAC input that the CD player is connected to.

Note: CD player transport control using the NDS handset is not possible. The n-Stream App must be used.

Selecting Advanced Setup opens a menu that provides access to a range of advanced configuration parameters. These parameters will not normally need adjustment.

Contact your retailer, distributor or Naim directly for more information if required.
### 4.10 The Factory Settings Menu

The Factory Settings setup menu enables NDS’s system status information to be displayed, handset commands to be analysed, radio presets to be deleted, system automation to be reset, and all settings to be returned to their defaults.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Status</td>
<td>Select to display</td>
</tr>
<tr>
<td>Handset IR Monitor</td>
<td>Select to display</td>
</tr>
<tr>
<td>Clear All Presets</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Reset Sys Auto.</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

**Reset All Settings.** Warning displayed: Resetting to factory defaults. You will lose ALL user settings. Press front panel Play to continue.
Internet Radio

5 NDS iRadio

The NDS internet radio requires connection to a high speed internet service via a network router incorporating an appropriate firewall. The NDS is able to store a total of forty station presets (favourites). Select the iRadio input to begin.

5.1 iRadio Tuner – Seeking Stations

When NDS is connected to a network with high speed internet access it will automatically download a list of available internet radio stations. When the iRadio input is subsequently selected, a list mode menu will be displayed that shows all the available stations sorted in a variety of categories. The display will automatically enter list mode so the handset up (↑), down (▼), left (◄) and ok/list keys can be used to browse the categories and select stations. In long lists the handset numeric/text keys can be used to jump through the list alphabetically.

Once a station is selected the NDS display will exit from list mode and revert to normal mode. To re-enter list mode for further list browsing and selecting press the handset ok/list key.

Pressing the handset info (ℹ️) key while a station is playing will sequentially display the station (stream) name, elapsed time, stream info, buffer level and any station info broadcast.

Note: Buffer level indicates the quantity of stored data within NDS and reflects the ability of the network to provide data at the necessary rate.

It is possible for an internet radio station listed to be “off-line” and be unavailable when selected. If this occurs an alert message will be displayed.

5.2 Adding iRadio Stations

The Naim Radio Guide web site enables iRadio stations not included in the standard NDS list to be added for download to your NDS. To access the web site and add stations follow the steps below.

- With a computer connected to the same network as the NDS, browse to http://naim.vtuner.com
- Enter the identification (ID) of your NDS where requested on the web page. The ID is the unit’s MAC address. This can be found via the following NDS menus: Setup > Factory Settings > System Status > MAC.

Note: You can register a username and password so that the MAC address is not required on any subsequent visit.

- To add stations follow the My Added Stations link and provide the information required. Click on the arrow to complete the procedure.
- The added station will then be visible on the Naim Radio Guide home page.
- To access the stations from the NDS, select the iRadio input then select Added Stations.

5.3 Storing Radio Presets

When the handset store key is pressed the display will show a menu that enables confirmation of the preset store and options to rename or delete a stored preset.

Selecting the store option opens a menu that enables the preset to be stored in one of the forty locations. Scroll to the desired location and press the ok/list key.

Selecting Rename preset opens a menu that provides the opportunity to rename a previously stored station. Scroll to the preset to be renamed and press the ok/list key to open a text entry screen. Use the handset numeric/text keys in text entry mode to select characters. Press the ok/list key to save the new preset name. See Section 3.7 for a full description of text entry.

Selecting Delete Preset opens a preset list menu. Scroll to the desired preset and press the ok/list key.

Note: Preset operations (store, rename or delete) are not possible directly from list mode. The store key must be pressed when in normal play mode to access these options.

5.4 Using Radio Presets

To select a preset press the handset preset key to open the Browse Presets menu. Scroll to the desired preset and press the ok/list key.

Note: It is possible for an internet radio station stored as a preset to be “off-line” and be unavailable when subsequently selected. If this occurs an alert message will be displayed.

Note: Pressing the preset key will display the preset list regardless of the currently selected input.
The manner in which the UPnP™ server is set up will define how the audio files and playlists it holds are listed and displayed. In most cases the default setup will list and display files by artist and album, but list by genre and predefined playlists may also be available.

**Note:** Playlists cannot be generated or stored locally by NDS. To play a playlist it must reside on the UPnP™ server.

Selecting one of the playlist categories using the up (▲), down (▼) and ok/list keys will display a menu showing items that fall into the selected category. An entire category can be selected for playback by using the up (▲), down (▼) keys followed by the play/pause (▶) key.

Alternatively, selecting a category using the up (▲), down (▼) keys followed by the ok/list key will display the full list of tracks contained within the category. Tracks can then be selected for playback by using the up (▲), down (▼) and ok/list keys.

In long lists the handset numeric/text keys can be used to jump through the list alphabetically.

Once playback is underway the NDS display will exit from list mode and revert to normal mode where the handset transport keys (▶▶▶) can be used to control playback. To re-enter list mode for further list browsing and selecting press the handset ok/list key.

During playback, pressing the handset info (▶) key will sequentially display the server name, buffer level, track elapsed time and stream (audio file) information.

**Note:** Buffer level indicates the quantity of stored data within NDS and reflects the ability of the network to provide data at the necessary rate.

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**UPnP™ Audio Interface**

6 NDS UPnP™ Audio Interface

In addition to providing the network connection required for internet radio playback, the NDS network interface enables audio files stored on UPnP™ servers to be streamed and played. NDS must be connected, either wirelessly or via Ethernet cabling, to a network router. If the router provides an internet connection it should incorporate a firewall. If NDS is already connected to a network, begin by selecting the UPnP™ input.

6.1 UPnP™ Servers

UPnP™ servers incorporate a software application that allows NDS, or any other UPnP™ compatible player, to play audio stored and streamed by another device on the network. The UPnP™ server is usually a PC or Mac home computer, although some Network Attached Storage (NAS) drives incorporate a UPnP™ application.

Windows Media™ Player version 11 or above incorporates built in UPnP™ support and a variety of third party UPnP™ applications are also available that are compatible with both Windows and Macintosh operating systems.

In the case of the Windows UPnP™ server the following steps must be taken before music can be streamed to NDS:

- Ensure Windows Media™ Player version 11 or above is installed.
- Enable Windows Media™ Player file sharing. From the Media Player Options dialogue select Library > Configure Sharing... then select Share my media.
- Ensure the firewall is configured to allow file sharing.

6.2 Audio File Compatibility

The audio files stored on the UPnP™ servers attached to the network may be in MP3, M4A, Apple Lossless, AAC, LPCM16/24, FLAC, WMA, WAV, AIFF or Ogg Vorbis formats. Files must be free of any digital rights management playback restrictions such as the Apple iTunes FairPlay system.

6.3 Scanning Servers and Playing Files

When the NDS UPnP™ input is selected a list of available UPnP™ servers on the network will be displayed. The display will automatically enter list mode so the handset up (▲), down (▼) and ok/list keys can be used to browse and select the desired server.

**Note:** Allegro Media Server (shown in the illustrations) is a UPnP™ Media Server application that runs on Apple or Windows PCs and provides access to media files and iTunes library contents from UPnP™ media players such as NDS.
**USB Interface**

### 7 NDS USB Audio Interface

The NDS can play audio files stored on USB memory devices connected to the front panel USB socket. Begin by connecting a USB memory device and selecting the NDS USB input.

#### 7.1 USB Media and File Compatibility

USB memory hardware must be in Windows/DOS format (FAT/FAT32) to be used with the NDS. Macintosh formats are not compatible.

The NDS can play USB audio files in the following formats: MP3, M4A, ALAC, AAC, LPCM16/24, FLAC, WMA, WAV, AIFF or Ogg Vorbis. Files must be free of digital rights management playback restrictions such as the iTunes FairPlay system.

#### 7.2 Browsing and Playing USB Files

With a USB memory device connected, and the NDS USB input selected, the display will enter **list mode** and show the structure of stored audio files. Use the handset **up (▲)**, **down (▼)**, **left (◄)** and **ok/list** key to browse and select items.

**Note:** The USB memory device can be safely connected or disconnected at any time.

Selecting a folder will display the list of files contained within and selecting a single file will begin playback. Playback will continue through any list of files contained within a folder. The order of play can be shuffled (randomised) by pressing the handset **shuffle (🔀)** key.

In long lists of items the handset **numeric/text** keys can be used to search the list alphabetically.

Once playback is underway the NDS display will exit from **list mode** and revert to normal mode where the handset transport keys (▶ ▶ ▶ ▶) can be used to control playback. To re-enter list mode for further list browsing and selection, press the handset **ok/list** key.

During playback, pressing the handset **info (laş)** key will alternately display data stream info and track elapsed time.
Specifications

8 NDS Specifications

Audio Inputs
Sample rates supported: S/PDIF up to 24 bit 192kHz
USB: Front panel socket
UPnP™: Hi-Res UPnP playback up to 24bit/192kHz (WAV and FLAC)
Other inputs: Ethernet

Audio Outputs
Analogue outputs: DIN and RCA
Line outputs fixed [level]: 2.2V rms at 1kHz
Output impedance: 30Ω maximum
Minimum load impedance: 10kΩ
Frequency response: 10Hz – 20kHz, +0.1/-0.5dB
THD+N: <0.1%, 10Hz –18kHz at full level
Phase response: Linear phase, absolute phase correct
Digital outputs (type): S/PDIF, 75Ω BNC

Upgrades
DAC, Hi-Line

Connectivity
Digital inputs: BNC, Coaxial RCA and TosLink
Infra red: RC5
Remote input: 3.5mm jack on rear (RC5)
Remote output: 3.5mm jack on rear (RC5) x2
Ethernet: RJ-45, Cat5E, WiFi
USB: Front panel socket (Max rating: 5V at 1000mA)
USB: Rear panel mini-B socket (for software upgrade/diagnostics only)

Formats
Audio formats supported: Internet radio (Windows Media-formatted content, MP3 streams, MMS)
Playlists (M3U, PLS)
MP3, AAC (up to 320kbit/s, CBR/VBR), M4A, ALAC
Windows Media-formatted content-9 (up to 320kbit/s)
WAV and FLAC (up to 24bit/192kHz via UPnP™ or USB only)
AIFF, LPCM 16/24, Ogg Vorbis
iRadio service provider: vTuner 5* full service

User Control Interfaces
Front panel: Nine button matrix.
Handheld: Remote handset and optional n-Stream App interface for iPhone, iPod touch and iPad models. App downloadable from the iTunes App store.

Power
Power supply options: XP5 XS, XPS or 555PS

Certifications and Licenses
Certifications: vTuner Premium
Licenses: MP3, AAC,

Physical
Dimensions: 87 x 432 x 314mm (H x W x D)
Weight : 13.5Kg

Note: Specifications may be subject to revision.