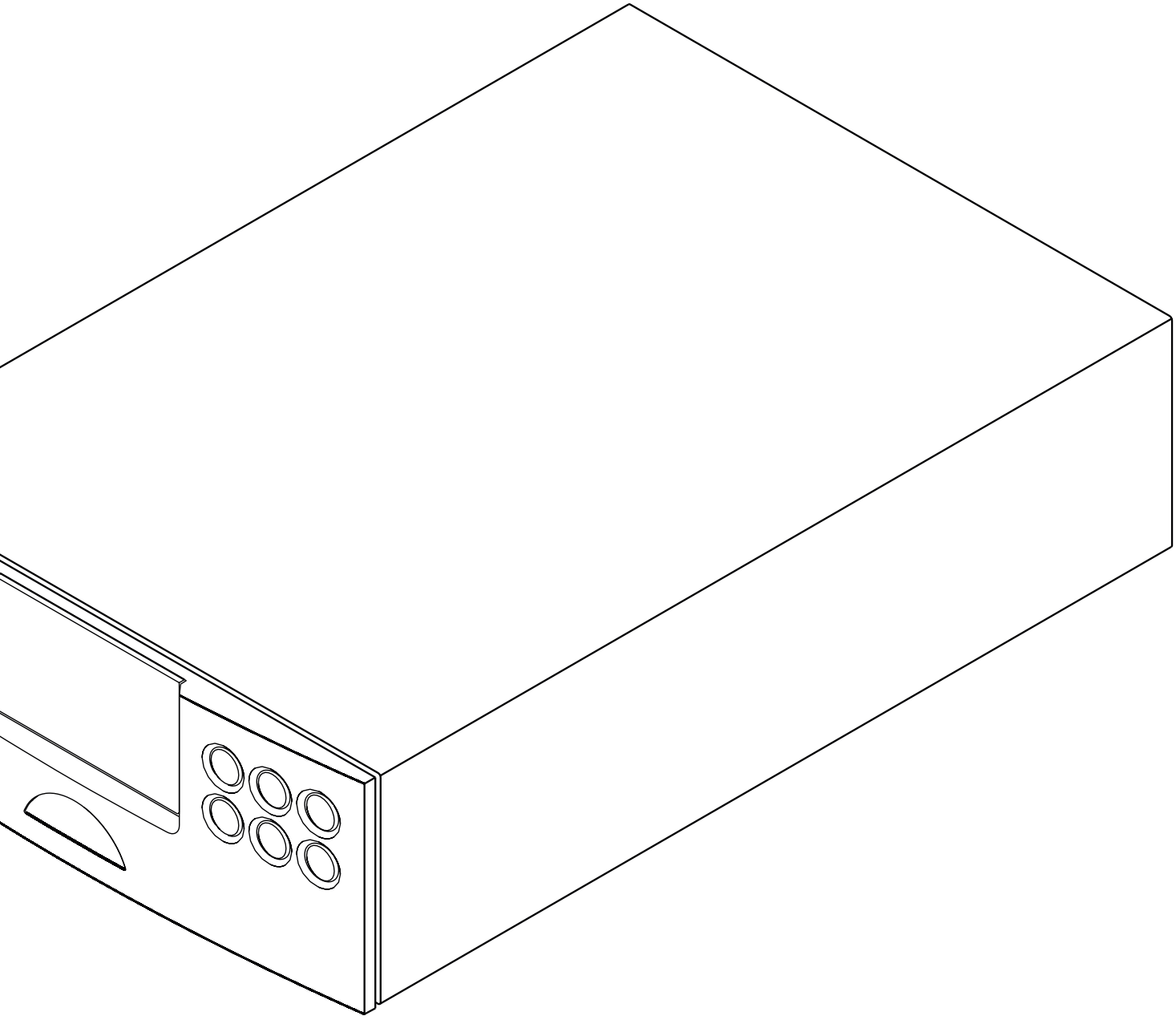
naim

world class sound...



REFERENCE MANUAL
DAC-V1 DIGITAL TO ANALOGUE CONVERTER / PREAMPLIFIER

Contents

Note: *This manual is Issue No. 1 and describes the operation of DAC-V1 units running software release version 1.5.*

Introduction

1 Introduction

The DAC-V1 is a technologically advanced digital to analogue converter and preamplifier that will repay time and effort spent on installation and setup. This is especially true if your DAC-V1 is to be used as a computer audio output device. We strongly recommend that you read this manual carefully as it is unlikely that your DAC-V1 will reach its full performance potential if you do not do so.

After the Section 1 introductory paragraphs below, the manual is divided into the following sections:

Section 2: Computer audio via the DAC-V1
Section 3: DAC-V1 Installation and Connection
Section 4: DAC-V1 operation
Section 5: DAC-V1 setup
Section 6: DAC-V1 specifications

Important

If your DAC-V1 is to be used with a computer running Windows OS, the DAC-V1 Driver application MUST first be installed and configured in the Windows Sound Control Panel before the DAC-V1 is connected and switched on. See Section 2

1.1 DAC-V1 Basics

The DAC-V1 is a six input digital to analogue converter and audio preamplifier designed to handle audio from S/PDIF digital sources or directly from a computer USB interface. When connected to a computer via USB, the DAC-V1 will behave as an external sound output device and be accessible to a wide variety of audio playback applications.

The DAC-V1 incorporates stereo DIN and RCA phono analogue outputs, a front panel 6.3mm jack headphone output, and a volume control. DAC-V1 operation and setup is achieved via its front panel controls and the supplied remote handset.

1.2 DAC-V1 Audio Inputs

The DAC-V1 provides six audio inputs:

- The DAC-V1 USB input is an "asynchronous" interface that enables the connection of USB equipped computers for playback of digital audio files. When the computer's sound output parameters are set appropriately, a wide variety of audio playback applications can be used potentially to provide very high sound quality analogue audio output from the DAC-V1 to a downstream power amplifier or preamplifier.

Section 2 of this manual covers the configuration of Windows and OSX audio playback applications to ensure that audio quality via the DAC-V1 USB input is optimised.

- DAC-V1 inputs 1 to 5 are S/PDIF format digital audio inputs. These inputs are intended for the connection of digital audio sources such as CD players, audio streamers and hard disk players. S/PDIF audio signals at up to 24 bit and 192kHz resolution can be handled by the DAC-V1. The DAC-V1 offers a variety of S/PDIF digital input connection socket types as follows:

S/PDIF Input 1:	BNC coaxial
S/PDIF input 2:	RCA phono coaxial
S/PDIF Input 3:	TosLink optical
S/PDIF Input 4:	RCA phono coaxial
S/PDIF Input 5:	TosLink optical

1.3 DAC-V1 Audio Outputs

The DAC-V1 provides an analogue audio output intended for the connection of a downstream power amplifier or preamplifier, and a 6.3mm (1/4 inch) stereo jack socket headphone output.

DIN and RCA phono socket options are provided for the DAC-V1 preamplifier/power amp output. If the option is available on the amplifier input, DIN socket connection should be used in preference to RCA phono socket connection. The DAC-V1 DIN and RCA phono socket options should not be connected or used simultaneously. No damage will occur through simultaneous use, however DAC-V1 audio performance will be degraded.

The DAC-V1 headphone output is able to drive the majority of headphone types. The 6.3mm jack socket, rather than the smaller 3.5mm jack socket, provides more reliable connection and potentially higher sound quality. Most high-quality headphones are supplied with an adaptor that enables use with either 3.5mm or 6.3mm jack sockets.

1.4 DAC-V1 Volume Control

DAC-V1 output volume can be controlled using either the front panel volume control or the remote handset **vol+** and **vol-** keys. Volume level is shown in the DAC-V1 display.

If the DAC-V1 is connected via USB to a computer, depending on the functionality of the audio playback application, the DAC-V1 volume and handset keys may be able to control application output volume, and track playback (play/pause, and next/previous). See Section 5.2.4.

If your DAC-V1 is to be connected to a further "downstream" preamplifier, the DAC-V1 output volume should be fixed by selecting the **Fixed Output** option in the Preamp Out setup menu (see Section 5.2.2). If headphones are used with the DAC-V1 while Fixed Output is selected, volume control will be restored while the headphones are plugged-in.

1.5 DAC-V1 BitPerfect Analysis

Digital audio output data from computer audio playback applications can sometimes be compromised by software configuration and setup. For example, high-sample rate data may by default be re-sampled to a lower rate, or data bit-depth may be reduced by software based volume control.

The DAC-V1 incorporates a BitPerfect analysis routine, used in conjunction with downloadable test files, that enables the integrity of data output from a computer to the DAC-V1 to be analysed. BitPerfect analysis tests the configuration of audio playback applications to help ensure optimum audio quality. Use of BitPerfect analysis is described in Section 5.3.

2 Computer audio via the DAC-V1

The default audio playback applications for Windows and OS X computers are usually Windows Media Player and iTunes. However, a wide variety of alternative applications can be used which may provide enhanced functionality and superior audio performance.

This section of the manual covers selection of a DAC-V1 as the default USB connected sound output device on Windows and OS X computers. It then continues to describe the fundamental principles for optimising the performance of Windows and OS X audio playback applications when using the DAC-V1.

Due to the rapidly changing nature of software development it is not practical to include within this manual definitive and up-to-date setup information for every audio playback application that might potentially be used with the DAC-V1. This being the case, further and updated information on the use and optimisation of audio playback applications with the DAC-V1 can be found at: www.naimaudio.com/knowledge-base. We recommend that the following section of this manual is read in conjunction with the DAC-V1 Knowledge Base and that you periodically search the Knowledge Base for updated information on audio playback applications.

The Naim Forum at http://forums.naimaudio.com/forums can also be a useful resource of information on optimising computer audio playback.

Important

This section of the manual partly describes the behaviour of the DAC-V1 following switch-on. Please however read Section 3 on installation before switching on your DAC-V1

2.1 Configuring Windows OS

It is important that Windows OS is appropriately configured for audio playback and that the DAC-V1 Windows Driver application is installed before the DAC-V1 is connected and switched on.

2.1.1 Windows Driver Installation

The DAC-V1 Windows Driver can be downloaded from: **www.naimaudio.com/hifi-products/pdt-type/DAC-V1**

Note: *The DAC-V1 Driver application is compatible with 32bit and 64bit versions of Windows 7 and Windows 8.*

Note: *A Windows OS computer running multiple user accounts will require a separate installation of the DAC-V1 driver application for each account.*

Download the file, double-click on the DAC-V1 Driver icon and carefully follow the installation instructions.

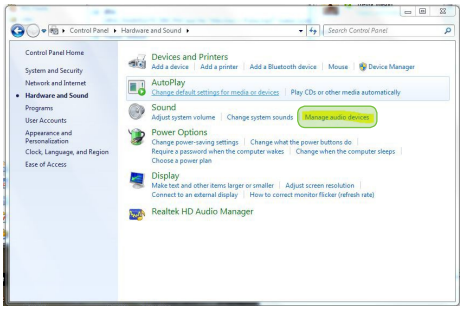
Once the DAC-V1 Windows Driver is installed, and once the DAC-V1 is connected via USB and switched on, the Windows Sound Control Panel can be configured to select the DAC-V1 as the default audio output device.

Section 2.1.2 below describes configuration in **Windows 7** and Section 2.1.3 describes configuration in **Windows 8**.

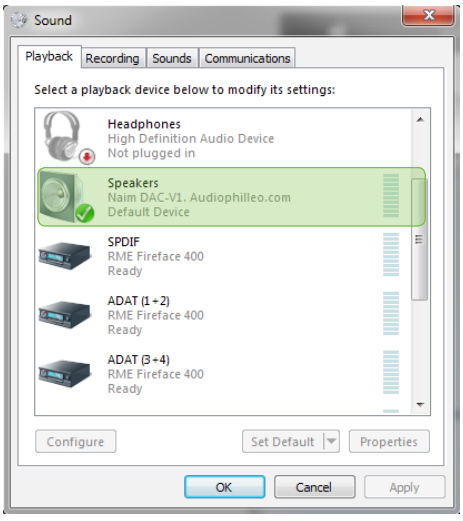
2.1.2 Windows 7 Sound Control Panel Configuration

The Windows 7 screen images and captions following illustrate and describe selection of the DAC-V1 as the sound output device.

- Open the Windows **Hardware and Sound** Control Panel and select **Manage audio devices**.



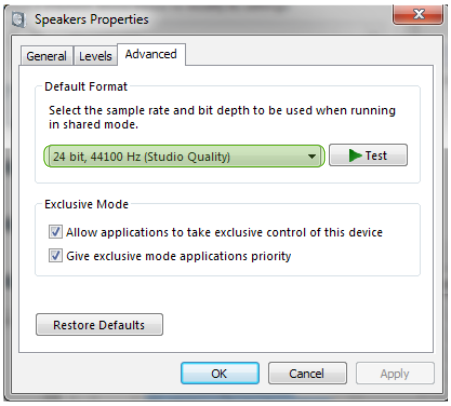
- Under the **Playback** tab of the Sound control panel select the DAC-V1 as the default device. Click on **Properties** to open the DAC-V1 properties pane.



Windows is a registered trademark of Microsoft Corporation in the United States and other countries.
OS X is a trademark of Apple Inc., registered in the U.S. and other countries.

- Under the **Advanced** tab the sample rate and bit depth can be set to match the audio files to be played. Select 24 bit, 44100Hz as the default. Also ensure that, "Allow applications to take control of this device" is selected. Click on **OK** to confirm the selected options.

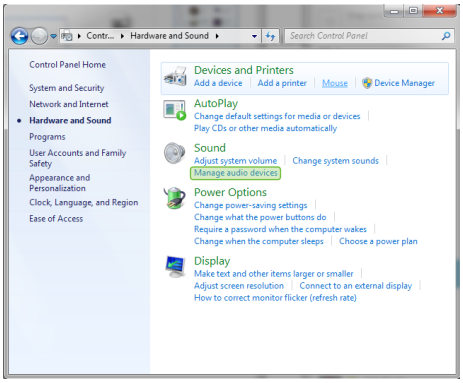
Note: *The Windows 7 Sound Control Panel does not by default support the full range of DAC-V1 sample rates.*



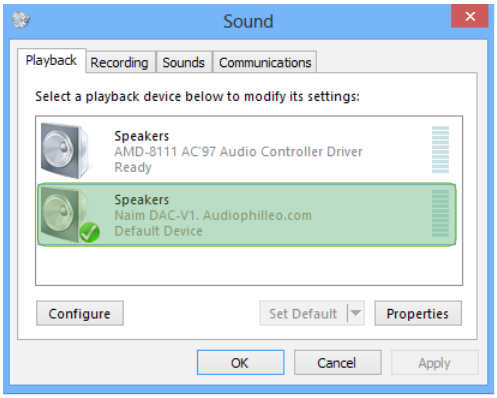
2.1.3 Windows 8 Sound Control Panel Configuration

The Windows 8 screen images and captions following illustrate and describe selection of the DAC-V1 as the sound output device.

- Open the Windows **Hardware and Sound** Control Panel and select **Manage audio devices**.

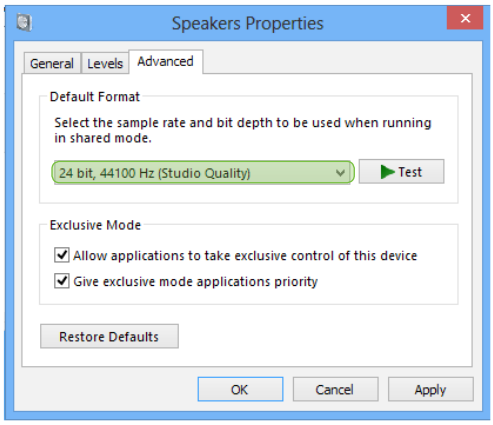


- Under the **Playback** tab of the Sound control panel select the DAC-V1 as the default device. Click on **Properties** to open the DAC-V1 properties pane.



- Under the **Advanced** tab the sample rate and bit depth can be set to match the audio files to be played. Select 24 bit, 44100Hz as the default. Also ensure that, "Allow application to take control of this device" is selected. Click on **OK** to confirm the selected options.

Note: *The Windows 8 Sound Control Panel does not by default support the full range of DAC-V1 sample rates.*



2.2 Configuring Mac OS X

It is important that Mac OS X is appropriately configured for audio playback via the DAC-V1 however, no driver or extra software installation is necessary.

Note: *The DAC-V1 will only function correctly with Mac OS X versions 10.7.x (Lion) and above.*

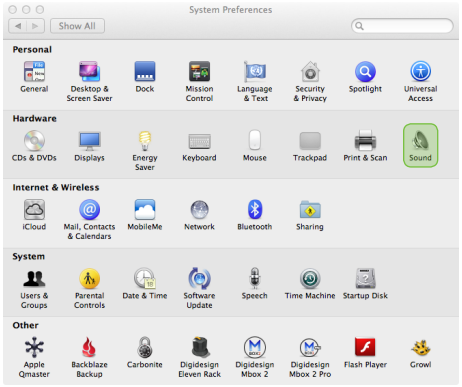
Note: *When an OS X computer is first connected to a DAC-V1, it may ask for specific key-stokes to be sent to identify the "keyboard" layout. This is because the DAC-V1 behaves in part like a multimedia keyboard that can send volume, play, pause, next, and previous commands to the computer. The DAC-V1 keyboard setup menu enables the appropriate identifying "key-strokes" to be sent. See Section 5.2.6 for more information.*

2.2.1 OS X Sound System Preferences setup

Once the DAC-V1 is connected via USB and switched on, the OS X Sound System Preferences can be configured to select the DAC-V1 as the default audio output device.

The OS X screen images and captions following illustrate and describe selection of the DAC-V1 as the sound output device.

- Open the OS X **System Preferences** and click on **Sound** (located at the end of the Hardware row).



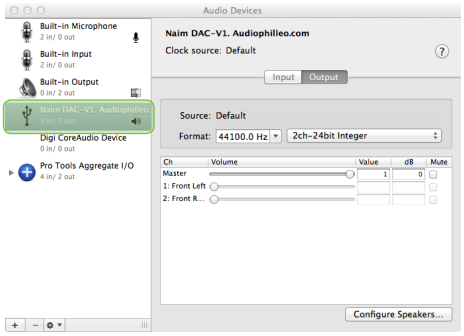
- Open the OS X **Sound** System Preferences select **Output** and click on DAC-V1 in the list of output devices. Confirm the selection by closing the System Preferences pane.

2.2.2 OS X Audio MIDI Setup

In addition to the setup of OS X Sound System Preferences, an OS X application called **Audio MIDI Setup**, usually found in the User/Application/Utilities folder, should be configured appropriately for use with the DAC-V1.

The OS X screen images and captions following illustrate and describe configuration the OS X Audio MIDI Setup application when the DAC-V1.

- Go to User/Applications/Utilities, find the **Audio MIDI Setup** application and double-click on its icon to start it. If no application window opens go to the **Window** menu and select **Show Audio Window**.
- Ensure that the DAC-V1 is selected in the list of available audio devices and that the **Output** tab is highlighted. Drop-down menus beneath the Output tab enable the selection of **sample rate** and **bit depth** to match the audio files to be played. Select 24 bit, 44100Hz as the default.



Note: *The need to configure OS X Audio MIDI Setup is dependent on the audio playback application used. If iTunes is used, Audio MIDI Setup should be configured as described above, however some alternative OS X audio playback applications, BitPerfect for example, do not access Audio MIDI Setup during audio playback so its configuration is unnecessary. DAC-V1 playback application notes that cover more detailed OS X configuration, including the Audio MIDI Setup application, can be found at: www.naimaudio.com/knowledge-base*

Note: *The BitPerfect audio playback application is available from the Apple App Store.*

Note: *To configure Audio MIDI Setup to have computer alert audio played through the DAC-V1, ctrl-click or left-click on the DAC-V1 in the list of hardware and make the appropriate selection.*

2.3 Configuring Playback Applications

Once Windows or OS X is appropriately configured for the DAC-V1, the audio playback application to be used to select and play specific audio files or playlists should be configured to optimise audio quality.

The paragraphs below describe the configuration of Windows Media Player and iTunes for optimum sound quality when used with a DAC-V1. Numerous alternative audio playback applications are also available however that may provide enhanced functionality and superior audio performance. Configuration of many of these for use with the DAC-V1 is covered in the DAC-V1 section of the Naim Knowledge Base at: www.naimaudio.com/knowledge-base.

2.3.1 Configuring Windows Media Player

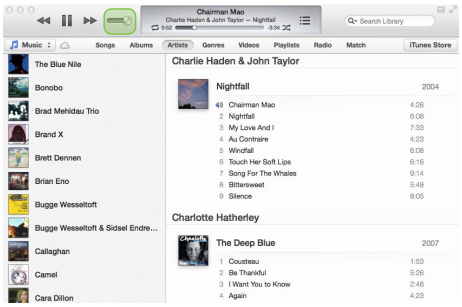
The screen image and caption below illustrates and describes configuration of Windows Media Player for optimum sound quality.

- In order to ensure that Windows Media Player plays files at their full resolution (bit depth) the **volume** slider should be set to maximum.

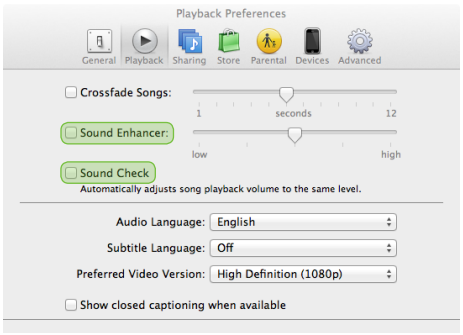
2.3.2 Configuring iTunes

The screen images and captions following illustrate and describe configuration of iTunes running in either Windows OS or OS X for optimum sound quality.

- In order to ensure that iTunes plays files at their full resolution (bit depth) the **volume** slider should be set to maximum.



- In the iTunes **Preferences** pane select Playback and ensure that **Sound Enhancer** and **Sound Check** are un-checked.

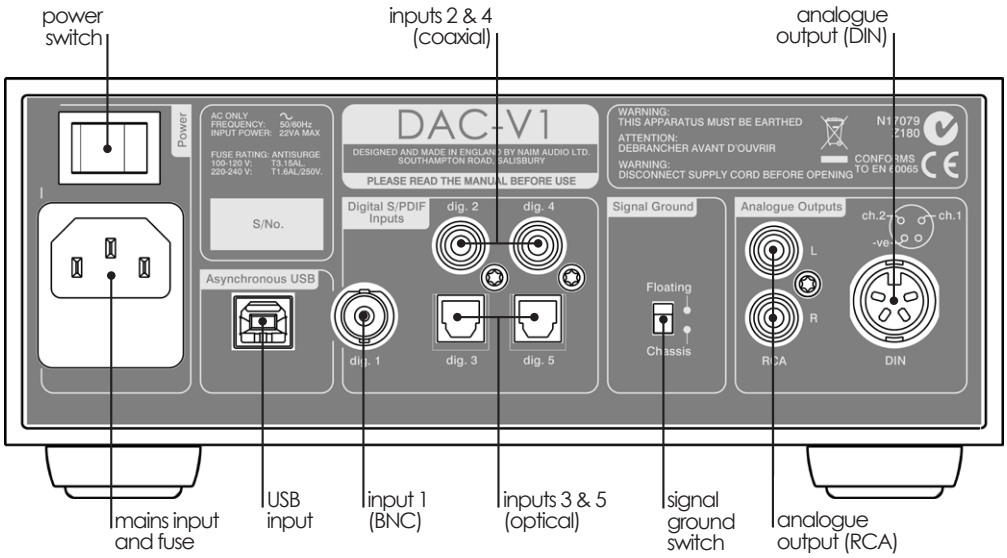


3 DAC-V1 Installation and Connection

Your DAC-V1 should be installed on a desk or equipment stand intended for the purpose. Ensure it is well ventilated, and do not stand it directly on top of another item of electronic equipment. It should be installed in its final location before connecting cables or switching on. The DAC-V1 has no standby mode and is intended to be left switched on.

Connecting the DAC-V1 to mains power and to a variety of audio peripherals and sources is described in the following paragraphs. Diagram 3.1 illustrates the DAC-V1 rear panel connection sockets.

3.1 DAC-V1 Rear Panel Connections



3.2 Mains Power Connection

Check that the **mains** supply specified on the DAC-V1 rear panel is appropriate for your territory. Connect the DAC-V1 to the mains using the supplied cable (or a Naim PowerLine) but do not switch it on until all other connections have been made and, if appropriate, the DAC-V1 Windows OS driver application has been installed on the USB connected computer (see Section 2).

3.3 Audio Inputs and Outputs

3.3.1 Audio Signal Inputs

The DAC-V1 provides one asynchronous USB digital input and five S/PDIF digital stereo inputs. Connection to the inputs is made via a variety of socket types:

Input	Type	Socket
USB	Asynchronous USB	USB Type B
dig. 1	S/PDIF Digital	Coaxial (BNC)
dig. 2	S/PDIF Digital	Coaxial (RCA phono)
dig. 3	S/PDIF Digital	Optical (TosLink)
dig. 4	S/PDIF Digital	Coaxial (RCA phono)
dig. 5	S/PDIF Digital	Optical (TosLink)

Always use high quality interconnect cables to connect sources to DAC-V1 inputs.

For optimum audio performance the USB connection from the computer to the DAC-V1 should be direct rather than via any "hub" device. The USB cable used should be no longer than 3m.

3.3.2 Audio Signal Outputs

The DAC-V1 provides both DIN and RCA phono analogue outputs for connection to a "downstream" amplifier. If the option is available on the pre or power amplifier, DIN socket connections should be used in preference to RCA phono sockets. The DIN and RCA phono socket options should not be connected or used simultaneously.

Always use high quality interconnect cables to connect to DAC-V1 outputs.

3.3.3 Headphone Output

The DAC-V1 incorporates a front panel 6.3mm stereo headphone socket. Inserting a headphone plug will mute the DAC-V1 signal outputs. Removing the headphone plug will restore the signal outputs.

3.4 Signal Ground Switch

The DAC-V1 is fitted on its rear panel with a **Signal Ground** switch offering two positions: **Chassis** or **Floating**. Select the **Chassis** position unless the DAC-V1 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. The DAC-V1 digital inputs are isolated from the mains earth regardless of the Signal Ground switch.*

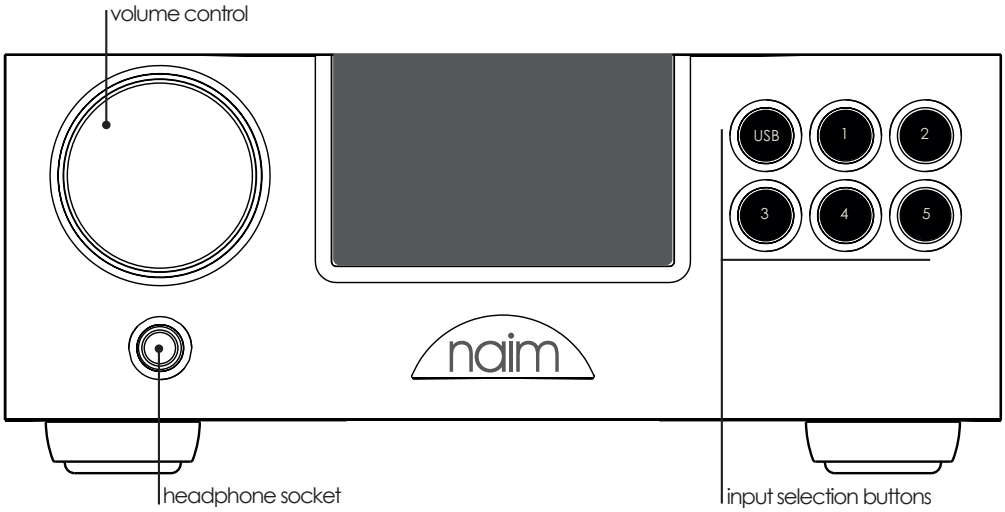
Note: *All Naim CD players are earthed so the Signal Ground switch should be set to floating if one is connected in the system via an analogue input.*

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

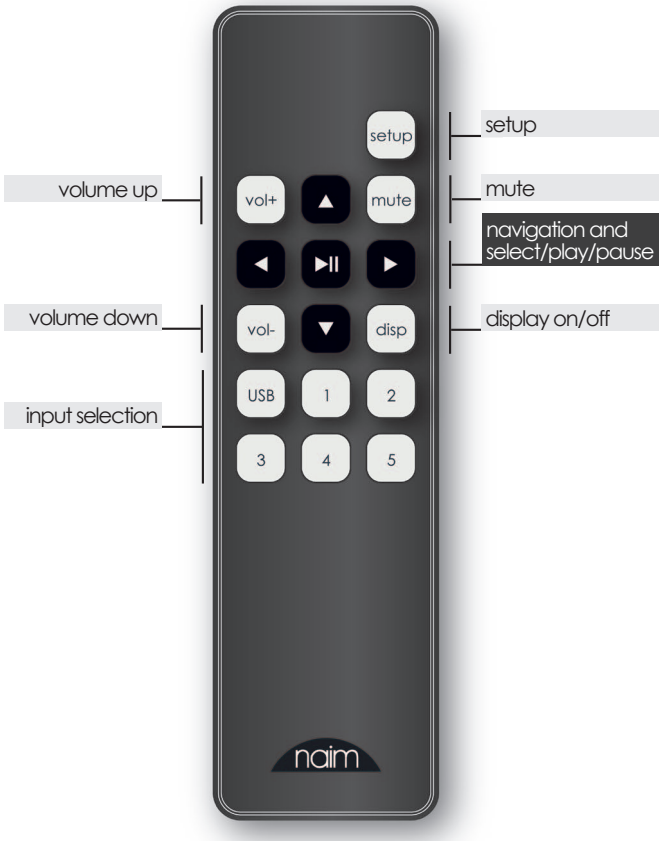
4 DAC-V1 Operation

Basic DAC-V1 volume control and input selection can be carried out from either the front panel controls or from the supplied remote control handset. More advanced DAC-V1 operation and configuration requires navigation through a menu-based user interface using the remote handset setup and navigation keys.

4.1 DAC-V1 Front Panel



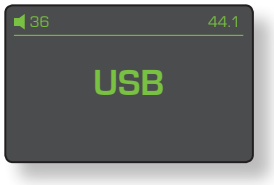
4.2 DAC-V1 Remote Handset



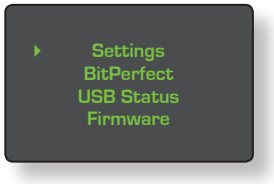
DAC-V1 Operation

4.3 DAC-V1 Display

During normal operation the DAC-V1 front panel display shows the input selected, the current volume level and the sample rate of the input signal. Volume control adjustments are also temporarily displayed.



In setup mode, accessed by pressing the handset **setup** key, the DAC-V1 front panel display shows the four top level setup menu items. DAC-V1 setup mode is described fully in Section 5. To leave setup mode press the handset **setup** key.



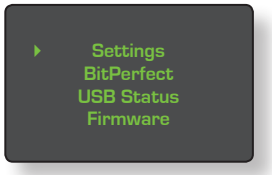
5 DAC-V1 Setup

Pressing the handset setup key switches the DAC-V1 into setup mode where a variety of configuration parameters can be selected and adjusted. To navigate around the setup menus use the handset navigation (◀ ▶ ▲ ▼) keys. To select menu items use the handset play/pause key (⏯). To leave setup mode press the handset setup key.

DAC-V1 volume and input selection controls will continue to operate in setup mode.

5.1 The Setup Mode Menu

The top level DAC-V1 setup menu provides four items:



Settings: Provides access to six menus covering input naming, preamp output options, headphone setup, USB volume control, display behaviour and keyboard identification. Use of these menus is described in Section 5.2

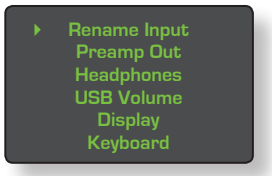
BitPerfect: Enables the use of test WAV files located on the USB connected computer to ensure that the playback application and USB connection provide optimum sound quality. A full description of the BitPerfect test procedure can be found in Section 5.3

USB Status: Displays DAC-V1 USB input connection data and information. See Section 5.4.

Firmware: Displays DAC-V1 operating firmware details and provides options for default reset and firmware update. The DAC-V1 firmware update procedure is described in Section 5.5.1

5.2 The Settings Menu

The Settings menu provides access to six setup menus:



5.2.1 Rename Input

The Rename Input menu enables a descriptive name, chosen from a preset list, to be assigned to each DAC-V1 input.

Select **Rename Input** from the Settings menu then scroll up or down the list of inputs and select the one to be renamed. Scroll down the subsequent list and select the desired name. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

5.2.2 Preamp Out

The Preamp Out menu provides options to select Fixed Output, Left/Right Balance, and Maximum Volume.

Select **Fixed Output** from the Preamp Out menu if your DAC-V1 is to connected to a further downstream preamplifier (rather than a power amplifier). Confirm fixed output in the following menu. A green tick confirms that fixed output is engaged. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

The fixed output option sets DAC-V1 volume at an appropriate output level for Naim preamplifier or integrated amplifier analogue inputs.

Ensure that the downstream preamplifier volume control is set at a low value when fixed output is initially engaged.

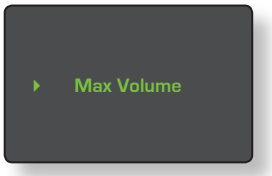
Note: *If headphones are used with the DAC-V1 while Fixed Output is engaged, volume control will be restored while the headphones are plugged-in.*

To adjust DAC-V1 channel balance select **L/R Balance** from the Preamp Out menu. Use the handset ▲ and ▼ keys to set the desired balance. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

To specify a DAC-V1 maximum volume select **Max Volume** from the Preamp Out menu. Use the handset ▲ and ▼ keys to set the desired maximum volume. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

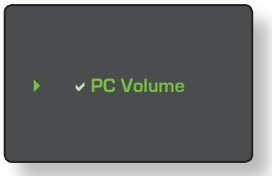
5.2.3 Headphones

The Headphones menu enables a maximum headphone volume to be specified. Select **Max Volume** from the Headphones menu. Use the handset ▲ and ▼ keys to set the desired maximum volume. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.



5.2.4 USB Volume

The USB Volume menu enables the DAC-V1 to manage computer system volume control over USB.



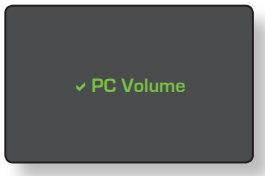
To engage USB Volume control select **PC Volume** from the USB Volume menu. Before PC Volume is engaged some advisory text is displayed:

Configuration Warning

High volume levels that can damage speakers may occur if the system is misconfigured. Read the user manual before continuing.

Press the front panel USB button to continue.

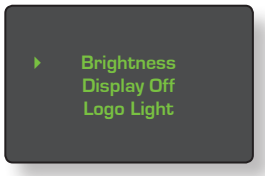
Before pressing the USB input button to confirm PC Volume, ensure that both the computer system volume control and the DAC-V1 (or "downstream" preamplifier) volume controls are set appropriately.



A green tick is shown alongside PC Volume in the DAC-V1 display when PC Volume is engaged. To disengage PC Volume press the handset play/pause (⏯) key.

Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

5.2.5 Display



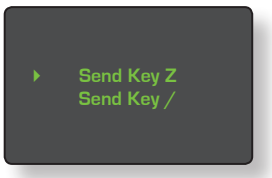
The Display menu provides options to adjust the DAC-V1 display brightness, set the display-off time delay and set the front panel logo illumination in response to mute or un-mute commands.

Select **Brightness** from the Display menu to adjust the display brightness. Use the handset ▲ and ▼ keys to set the desired brightness. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

Select **Display Off** from the Display menu to adjust the length of time the DAC-V1 display remains on after a control adjustment is made. Use the handset ▲ and ▼ keys to set the desired time. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

Select **Logo Light** from the Display menu to configure the DAC-V1 logo illumination behaviour in response to mute commands. Use the handset ▲ and ▼ and play/pause (⏯) keys to select either **Off if muted** or **On if muted**. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

5.2.6 Keyboard



The Keyboard setup menu is provided to enable USB connected OS X computers correctly to identify the control characteristics of the DAC-V1.

The DAC-V1 behaves in part like a multimedia keyboard that can send volume, play, pause, next, and previous commands to the computer. When an OS X computer is first connected to a DAC-V1, it may ask for specific key-stokes to be sent to identify the "keyboard" layout. The DAC-V1 keyboard setup menu enables the appropriate key-strokes to be sent.

Use the handset ▲ and ▼ and play/pause (⏯) keys to select either **Send Key Z** or **Send Key /**. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

5.3 The BitPerfect Menu

The DAC-V1 BitPerfect test routine enables analysis of the capabilities and configuration of computer audio playback applications to ensure that they pass audio data to the USB output at the maximum possible resolution.

Note: *This description of BitPerfect testing is not comprehensive. For more information and guidance visit the Naim Knowledge Base at: www.naimaudio.com/knowledge-base.*

Note: *Due to their inherent characteristics, particularly when running on Windows systems, iTunes and Windows Media Player cannot be guaranteed to perform as bit perfect playback applications in all circumstances. Further information on alternative playback applications can be found in the Naim Knowledge Base.*

Using the BitPerfect routine involves playback from the audio application of specially configured WAV test files. There are BitPerfect test files available for a range of bit depth and sample rates. The BitPerfect test files can be downloaded from:

http://www.naimaudio.com/hifi-products/pdt-type/dac-v1

5.3.1 Running BitPerfect Tests

To run a BitPerfect test follow the steps below.

- Download the BitPerfect test files and import them into the audio library used by the audio playback application you wish to test.
- Ensure that the volume of control of the audio playback application is set to maximum.

Note: *Take care when returning to normal DAC-V1 use that all system volume controls are set appropriately.*

- Ensure that the audio sample rate and bit depth specified in the Windows Sound Control Panel or OS X Audio MIDI Setup application matches the sample rate and bit depth of the BitPerfect test file to be used. See Sections 2.1.2, 2.1.3 or 2.2.2.

Note: *If iTunes or Window Media Player are used for audio playback they must be quit and restarted every time the sample rate or bit depth is changed.*

Note: *If alternatives to Windows Media Player or iTunes are used for audio playback, the Windows Sound Control Panel or OS X Audio MIDI Setup application bit depth and sample rate settings may not be relevant.*

- Select BitPerfect from the DAC-V1 setup menu and then play the desired BitPerfect test file in the audio playback application. The DAC-V1 display will show the test progress and display the results when it is finished. No other audio file must be playing when BitPerfect is selected from the DAC-V1 setup menu.

Before the BitPerfect begins some advisory text is displayed:

USB BitPerfect Test

Play the BitPerfect audio test file. Test statistics will be displayed when the test audio is identified by the DAC-V1.

Make sure the playback application volume is set to maximum and that its sample rate setting matches the test audio file. Audio output is disabled in during BitPerfect tests. If errors are detected the following statistics are displayed:

1. Bad Sample percentage: The percentage of audio samples that were not the expected value.

2. Max Error: The maximum error between an actual and expected sample value.

3. Bad Samples: The total number of bad samples.

Note: *The DAC-V1 will automatically mute its outputs while BitPerfect tests are underway.*

Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

5.3.2 BitPerfect Test Analysis

If the DAC-V1 reports errors when the BitPerfect test is complete make the following checks.

- Ensure that the bit depth and sample rate of the BitPerfect test file matches the bit depth and sample rate specified in the Windows sound control panel application (see Sections 2.1.2 or 2.1.3), or the OS X Audio MIDI Setup application (see Section 2.2.2).
- Ensure that the volume control of the playback application is set to maximum.
- Ensure that the USB cable used to connect the computer to the DAC-V1 is less than 3m long and is of good quality.

If BitPerfect errors still persist once the above checks have been made the errors may be inherent in the audio playback application. If iTunes or Windows Media Player in particular was used as the playback application for the BitPerfect test try using an alternative. Information on alternative playback applications can be found in the Naim Knowledge Base at: www.naimaudio.com/knowledge-base.

5.4 The USB Status Menu

The USB Status Menu displays a range of USB connection parameters and statistics that can aid in diagnosis should BitPerfect analysis not result in a perfect result.

Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

Note: *Pressing and holding DAC-V1 front panel USB input button for 2 seconds will display the USB Status. Press and hold the USB button again to exit the USB Status screen.*

5.5 The Firmware Menu

The Firmware menu provides options to display the installed firmware, to return the DAC-V1 to its default settings, and to engage the firmware update procedure.

Select **About** from the Firmware menu to display the currently installed firmware version. Use the handset ◀ key to return to the previous menu or the **setup** key to return to the top level setup menu.

Select **Set Defaults** from the Firmware menu to return the DAC-V1 to its default settings. All user settings such as input names will be lost. Press the USB input key to confirm default settings. The DAC-V1 will exit setup mode and re-start automatically when its default settings are restored. Some advisory text is displayed when Set Defaults is selected:

Set Defaults

All user settings will be lost and the DAC-V1 will be returned to its defaults.

Press the front panel USB button to continue.

Select **Update** from the Firmware menu to engage the DAC-V1 firmware update procedure. The latest DAC-V1 firmware, formatted as a WAV file, can be downloaded from:

http://www.naimaudio.com/hifi-products/pdt-type/dac-v1

The firmware update procedure is described in the following section.

5.5.1 Firmware Update

To update your DAC-V1 firmware follow the steps below.

Note: *Your DAC-V1 and audio playback application should be confirmed BitPerfect at 24bit/44.1kHz before you carry-out the firmware update procedure.*

- Download the latest firmware WAV file and import it into the audio library used by your preferred audio playback application.
- Select **Update** from the Firmware menu. Some advisory text is displayed:

Firmware Update

Play the firmware update audio file with a bitperfect player. Progress will be displayed while the file is playing. Ensure that:

1. The playback application volume is set to maximum.

2 The sample rate and bit depth used is 44.1kHz/24bit.

Do not switch-off or disconnect the DAC-V1 while firmware update is underway.

- Play the update WAV file in your audio playback application. The DAC-V1 will automatically identify the WAV file as a firmware update and enter its firmware update mode.

Note: *The DAC-V1 will automatically mute its outputs while a firmware update is underway.*

Do not switch-off or disconnect your DAC-V1 while firmware update is underway.

- The DAC-V1 will exit setup mode and re-start automatically when firmware update is complete.

DAC-V1 Specifications

6 DAC-V1 Specifications

Audio Outputs:	4-pin DIN, 2 x RCA Headphone (6.3mm TRS jack)
Output Levels:	Variable or 2.1V RMS fixed
Frequency Response:	10Hz to 20kHz +0.1dB/-0,5dB
Total Harmonic Distortion:	<0.002%
Digital Inputs:	1 x asynchronous USB (type B socket) 5 x S/PDIF (1 x BNC, 2 x RCA Phono, 2 x TosLink optical)
Input Format Support:	USB: 44.1kHz to 384kHz (16 to 24 bit) S/PDIF: 32kHz to 192kHz (up to 24 bit)
Mains Power:	100V, 115V or 230V, 50/60Hz
Power Consumption:	<22VA
Dimensions (H x W x D):	87 x 207 x 314mm
Weight:	4.3kg
Finish:	Black

Note: *Specifications may be subject to revision.*

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Part No. 12-001-0207 Iss. 1M