

***dCS* Network Bridge**  
Network Audio Interface

**User Manual**  
Software Release 1.0x  
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<sup>1</sup> *dCS* is Data Conversion Systems Ltd. Company registered in England No. 2072115.



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## USING THE *dCS* NETWORK BRIDGE FOR THE FIRST TIME

Congratulations on purchasing your *dCS* Network Bridge. This device is designed to stream digital audio data over a network from a NAS drive and present it in a format that is compatible with most DACs.

Before using your unit, please read this section and the Step by Step Guide. This will enable you to set the unit up quickly and safely with your hi-fi system.

From time to time, *dCS* will release updated software that you can install yourself using *dCS Mosaic Control*. Please check our website occasionally to see if new Network Bridge software is available, or consult your dealer.

### What's in the box?

Check that the box contains the following items:

- *dCS* Network Bridge
- Manual
- *dCS Mosaic Control* Quick Reference Guide
- Power cable
- Network Cable
- 2 spare fuses

Notify your dealer as soon as possible if anything is missing or damaged. We suggest that you retain the original packaging for possible future use. If this is not possible, replacement packaging can be ordered from *dCS* or our distributors. Details can be found on our web site at [www.dcsLtd.co.uk](http://www.dcsLtd.co.uk).

### *dCS Mosaic*

*dCS Mosaic* is a carefully assembled collection of hardware and software modules which provide easy and intuitive access to a vast catalogue of digital music. Whether it's high resolution files on a local server or an internet radio station broadcast from a distant land, *dCS Mosaic* ensures that the music you love is only a few convenient taps away. *dCS Mosaic* comprises of three parts.

*dCS Mosaic* is the name for the audio streaming and networked control functionality of *dCS* products.

*dCS Mosaic Control* is the name of the iOS and Android software application for music management and product control.

*dCS Mosaic Processor* is the physical hardware component and associated software that is installed in the *dCS* product to provide streaming functionality.

Please refer to the *dCS Mosaic Control* Quick Reference Guide for further information

## Positioning the unit

Place the unit on a firm, vibration free base, allowing convenient connection to the other parts of your system. To prevent overheating, we recommend that you leave some free space around the unit to allow for ventilation.



The mains supply can be disconnected only from the power switch on the back panel. Make sure this switch is accessible in use.

## Important safety instructions



The following statements are required to comply with U.S. safety standard UL60065.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

## Condensation

If the Network Bridge is cold and is moved into a warm room, condensation will form inside the unit. This interferes with normal operation. Remove the Network Bridge from its packaging and let it stand for 1-2 hours, to allow it to reach room temperature and the condensation to evaporate.

## Safety notice



In the event of the unit developing a fault, please contact your dealer in the first instance.

If you decide to remove safety covers for any reason, disconnect the power cable first. Note that removing covers voids the warranty.

To maintain protection from electric shock, the unit **MUST** be connected to mains earth (ground) via the power cable. Also, unearthed systems do not give the best sonic performance.

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Protect the product from dripping or splashing liquids. Liquid-filled objects such as vases must not be placed on the product.



This product is not suitable for operation at altitudes above 2000m.



This product is lead-free and complies with the RoHS directive.

Before connecting the power cable to the unit for the first time, please check that it has been set to the correct operating voltage for your mains supply. The unit's voltage setting is shown on the serial number label. If this does not match your local supply voltage, **DO NOT** attempt to use the unit. Contact your dealer to have the unit reset. Using the unit with the wrong mains setting for your local supply may result in serious damage to the unit and will invalidate the warranty. Do not attempt to reset the voltage yourself.

We do not recommend the use of mains regenerators. However, if you do wish to use a mains regenerator with variable voltage and frequency, we recommend that you set the voltage to match your local voltage and the frequency to either 50Hz or 60Hz **ONLY**.



Damage caused to your Network Bridge by misuse of a mains regenerator or by a malfunctioning mains regenerator is not covered by the warranty.



Disposal at end-of-life: the symbol indicates that this product should not be treated as normal household waste. It should be recycled, so please take it to an approved collection facility.

## STEP-BY-STEP GUIDE

This section guides you through setting up the unit for basic operation.

### Preliminaries

For digital interfaces, use with cables designed for digital audio:

- for AES/EBU interfaces use 110Ω screened, twisted pair cables fitted with one male XLR connector and one female XLR connector.
- for SDIF-2 or Word Clock interfaces, use 75Ω coax cables fitted with BNC plugs.



SDIF-2 and Word Clock interfaces require a simple DC-coupled connection. The interfaces may malfunction or not work at all if capacitor coupled cables or cables with built-in networks are used.

- for the SPDIF RCA interface, use 75Ω coax cables fitted with RCA Phono plugs.
- for the Network interface, use an RJ45 Ethernet cable, such as that provided with the unit.

Connect the power cable to the power inlet on the rear panel, plug the other end into a convenient power outlet.



Please do not use excessively heavy or inflexible cables as they may damage the connectors.



The cables supplied with the unit are “commercial grade”, because most owners will have their own “audiophile grade” cables or will prefer to make their own cable choices.

Set the power switch beside the mains inlet on the rear panel to the **I** position, the blue LED in the centre of the front panel will illuminate and blink once. The LED stays on for 30 seconds, then starts flashing.



The rear panel power switch is the only mains disconnect device – make sure it is accessible in use.

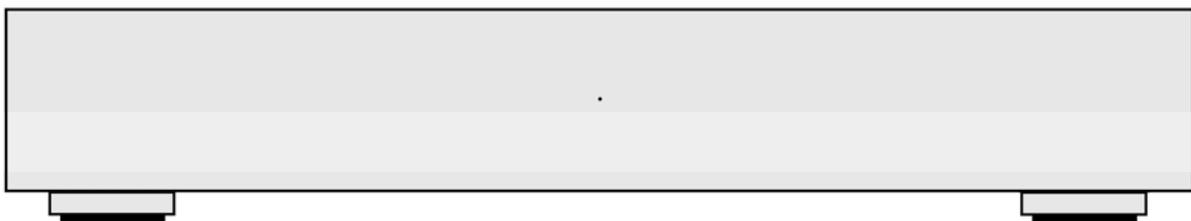


Figure 1 – Network Bridge front panel

## STEP 1 – Connecting an output

Choose one or more of the following sections:

### Connecting the Dual AES Output

The Dual AES interface is most commonly used as it is the output with the highest sample rate capability.

- Check that your DAC is capable of Dual AES operation and is set up correctly.
- Connect the Network Bridge's **AES1** output to the DAC's AES1 input and the Network Bridge's **AES2** output to the DAC's AES2 input, using two XLR cables. Ensure the cables are not swapped.
- Check that the DAC's Dual AES setting is Auto (or On).
- Select the DAC's Dual AES input.
- Note that the *dCS* **Mosaic Control AES Downsampling**, **DSD Downsampling** and **Dual AES Sample Rate** settings must be set to suit your DAC's capabilities – see **Step 3**.

### Connecting a Single AES or SPDIF output

- Connect the Network Bridge's **AES1**, **AES2** or **SPDIF** output to the matching input on the DAC rear panel using a suitable cable.
- Set the DAC to the input you connected.
- Note that the *dCS* **Mosaic Control AES Downsampling**, **SPDIF Downsampling** and **DSD Downsampling** features must be set to suit your DAC's capabilities – see **Step 3**.

### Connecting the SDIF-2 interface

Check that your DAC is capable of SDIF-2 PCM or DSD operation. This interface can output up to 96kS/s or DSD/64.



SDIF (**S**ony **D**igital **I**nter**F**ace) is not the same as SPDIF (**S**ony/**P**hilips **D**igital **I**nter**F**ace) and the two are not compatible.

Please ensure that you connect to the correct BNC sockets.

- Connect the Network Bridge's **SDIF-2 CH1** output to the DAC's CH1 input and the Network Bridge's **CH2** output to the DAC's CH2 input, using two BNC cables.
- Connect the Network Bridge's **SDIF-2 Out** (actually Word Clock out) to the DAC's Word Clock Input.
- Ensure the cables are not swapped.
- Set the DAC to the SDIF-2 input.
- If necessary, set the DAC's Sync Mode to lock to its Word Clock Input.
- Note that the *dCS* **Mosaic Control DSD Downsampling** feature must be set to **On** if your DAC cannot process SDIF-DSD/64 – see **Step 3**.

## STEP 2 – dCS Mosaic Network Connection

The network audio functions of your *dCS* product utilize the *dCS Mosaic* Platform for access to local streaming sources (such as a music server on your network, Roon, or AirPlay) as well as internet services (such as Deezer, Qobuz, TIDAL, and Spotify). The **Network Bridge** makes use of some UPnP components in order to stream music files from a network server.

Enabling network streaming of audio using a **Network Bridge** relies on the presence of standard network infrastructure in your system. A description of the network will not be discussed in this manual but at a minimum the following components are required for system setup: Router, Computer, **Network Bridge**, UPnP server (typically running on a NAS device), Wireless access point (WAP), and *dCS Mosaic Control* running on a compatible phone or tablet.

Please note that *dCS* only supports the use of wired Ethernet for the connections between the **Network Bridge**, the internet router, and the UPnP server.

*dCS* uses MinimServer (<https://www.minimserver.com>) as our internal engineering reference UPnP server and that is the only UPnP server software for which we offer comprehensive support. There are a wide variety of UPnP server software packages on the market and most of them are confirmed to function correctly with *dCS Mosaic Control*, but we have only fully tested *dCS Mosaic Control* with MinimServer.

For assistance with configuring your network for *dCS Mosaic Control* please contact your dealer as they have significant experience in this area and will be able to assist you directly.

### Basic set-up

- Connect the system as shown below (the Dual AES output connection is shown).

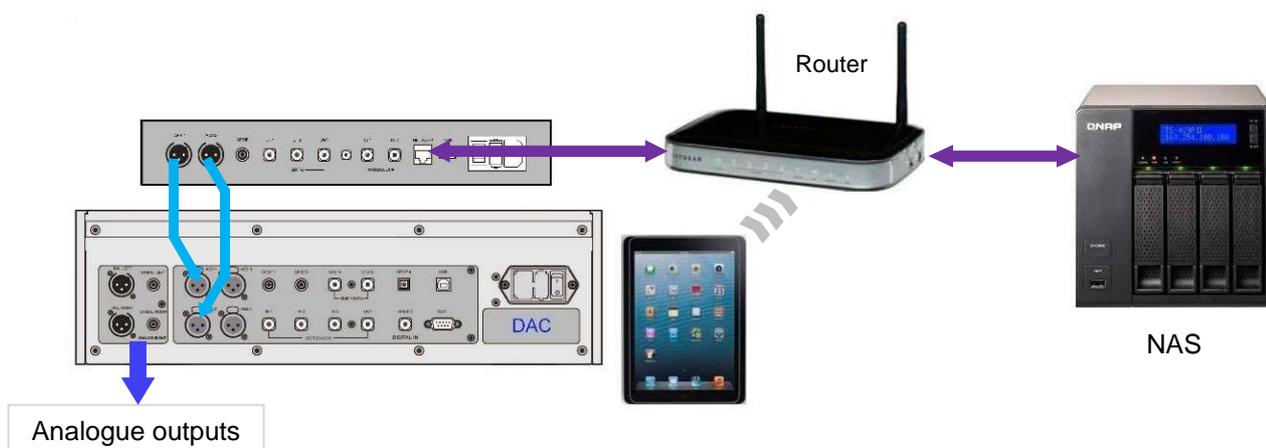


Figure 2 – Basic setup with a Vivaldi DAC

- Download *dCS Mosaic Control* from the app store that is appropriate for your device (e.g. the App Store for iOS devices or Google Play for Android).
- Connect the Network Bridge's **Network** interface to the Ethernet network.
- Connect the control device (e.g. phone or tablet) to the network.
- Launch *dCS Mosaic Control* to locate and control your **Network Bridge**. (Please see the online Mosaic User Guide for full details: <https://dcs.community/mosaic-user-guide> )

### Playing files from a USB flash drive

You can play music from a mass storage device attached to the **USB** port by selecting the USB interface from **dCS Mosaic Control**. Tracks can be selected individually by the app and played in the same way as from a NAS drive. Unlike a NAS drive, the flash drive does not have a computer to manage the content, so there is no search feature and metadata may be limited.

The drive must be formatted as FAT16, FAT32 or un-encrypted NTFS. Drives in other formats are not compatible.



You can use the **USB** interface with a low-power USB HDD if you wish, provided it is in a compatible format. We have used drives with capacities up to 1TB successfully, although the read time can be quite long. For larger capacities, please use a NAS drive connected via a network instead.

### Playing music with AirPlay

When the Network Bridge is connected to a network, music can be streamed from an Apple device via AirPlay to the Network Bridge.



Take care when using AirPlay, as the volume set by the sending device can be very high.

### Using the Network Bridge with Spotify Connect



Spotify lets you listen to millions of songs – the artists you love, the latest hits and discoveries just for you.

If you are a Spotify user, you can control the Network Bridge using your Spotify App.

1. Connect the unit to the same Wi-Fi network as your phone, tablet or PC running the Spotify app.
2. Open the Spotify app and play any song.
3. Tap the song image at the bottom of the screen.
4. Tap the Connect icon. 
5. Pick the Network Bridge from the list.

For further information on how to set up and use Spotify Connect, please visit [www.spotify.com/connect](http://www.spotify.com/connect)

### Licenses

The Spotify Software is subject to third-party licenses found here: [www.spotify.com/connect/third-party-licenses](http://www.spotify.com/connect/third-party-licenses).

Make sure you have checked **Spotify** in the **Preferences > Favourite Inputs** page.

### Using the Network Bridge with Tidal, Qobuz, Deezer and Internet Radio

**dCS Mosaic Control** should be used to play music from online streaming services such as Tidal, Qobuz, Deezer, Internet Radio etc. Please see the **dCS Mosaic Control** Quick Reference Guide and the **dCS Mosaic** user guide (<https://dcs.community/mosaic-user-guide>) for further information.

## Using the Network Bridge with Roon



The Network Bridge is Roon Ready. If you have a Roon account, you need to install Roon server on your NAS drive or in a networked PC. You can then use Roon remote to control playback. Roon requires a fairly powerful processor, so please check the Roon website when choosing a NAS drive.

<https://roonlabs.com/>

## Playing MQA files



MQA (Master Quality Authenticated) is an award-winning British technology that delivers the sound of the original master recording. The master MQA file is fully authenticated and is small enough to stream or download.

Visit [www.mqa.co.uk](http://www.mqa.co.uk) for more information.

The MQA logo is a trademark of MQA Limited and is used under licence.

Network Bridge with network firmware 373 onwards performs the first unfold of MQA data, to either 24/88.2 or 24/96. This can be played directly by any suitable DAC. Rendering to the original sample rate (if higher than 96kS/s) requires a DAC with MQA rendering capability.

When performing MQA playback via the Network, the type of MQA stream is indicated in **dCS Mosaic Control**.



MQA decoding is not possible if the original MQA data has been changed.

In order for the MQA authentication process to work correctly the file's metadata tags need to include codes that the MQA decoder verifies. If you have edited the metadata of your MQA files, then the tags may have become corrupted. This is a very common problem as the tags and artwork provided with the files may not match a listener's preferred metadata tagging convention. This is also a common issue with files ripped from an MQA-encoded CD.

This problem is easily solved using the MQA Tag Renaming Application. When run against files that are exhibiting this issue this application will read the MQA markers in the bit stream and apply the appropriate metadata tags to the files. More information on the Tag Renaming application can be found here:

<https://www.mqa.co.uk/customer/tag435sdf43te>

**STEP 3 – Setting the Network Bridge to match your DAC**

dCS Mosaic location

**SETTINGS > DEVICE**

New units are shipped set for maximum compatibility with a legacy DAC: **DSD Downsampling On, AES & SPDIF Downsampling 96k, Dual AES Sample Rate 176.4k**. Set this way, the system will not give its best performance with a more capable DAC.

This table will help you to set the down-sampling options to suit your DAC.

| Example DAC                                | DAC capability     |          |         | Network Bridge settings |                     |                      |                   |
|--|--------------------|----------|---------|-------------------------|---------------------|----------------------|-------------------|
|  | Single AES / SPDIF | Dual AES | DoP     | AES Down-sampling       | SPDIF Down-sampling | Dual AES Sample Rate | DSD Down-sampling |
| (Basic 24/96)                              | 96                 | No       | No      | 96k                     | 96k                 | 352.8k               | On                |
| Elgar Plus / Delius                        | 96                 | 192      | No      | 192k                    | 96k                 | 88.2k                | On                |
| (Basic 24/192)                             | 192                | No       | No      | 192k                    | 192k                | 352.8k               | On                |
| Puccini Player                             | 192                | No       | DoP/64  | 192k                    | 192k                | 352.8k               | Off               |
|  | 192                | 192      | No      | 192k                    | 192k                | 88.2k                | On                |
|  | 192                | 192      | DoP/64  | 192k                    | 192k                | 88.2k                | Off               |
|  | 192                | 384      | No      | Disabled                | 192k                | 88.2k                | On                |
| Scarlatti / Paganini DAC                   | 192                | 384      | DoP/64  | Disabled                | 192k                | 88.2k                | Off               |
| Vivaldi / Bartok DAC, Rossini DAC / Player | 192                | 384      | DoP/128 | Disabled                | 192k                | 88.2k                | Off               |

Here are some examples of the down-sampling behaviour:

- The Network Bridge settings for the Basic 24/96 DAC would down-sample PCM data at over 96kS/s to either 24/88.2 or 24/96, and down-sample all DSD data to PCM at 24/88.2.
- The Network Bridge settings for the Puccini Player would down-sample PCM data at 24/384 to 24/192, output DSD/64 data as DoP/64 and down-sample DSD/128 data as PCM at 24/176.4.
- The Network Bridge settings for the Vivaldi DAC would not down-sample any data output in Dual AES format. The SPDIF (or single AES) output with DSD/64 data would carry DoP/64 and with DSD/128 data would output down-sampled PCM at 24/176.4.

## STEP 4 – Using a Master Clock

So far, the system has been set up with the Network Bridge in Master Mode. If you are using the SDIF-2 interface, the DAC will lock to a word clock generated by the Network Bridge. The basic Sync Mode for the Network interface is Master Mode because it has an asynchronous Network interface. This is the simplest arrangement, but you can improve the sonic performance by adding a Master Clock to reduce clock jitter.

For best results, use a DAC with two Word Clock inputs, such as the Vivaldi or Rossini DAC, and a Vivaldi Master Clock as shown below. This allows both the Network Bridge and the DAC to remain locked to the Master Clock with files at any sample rate.

- Connect the equipment as shown.

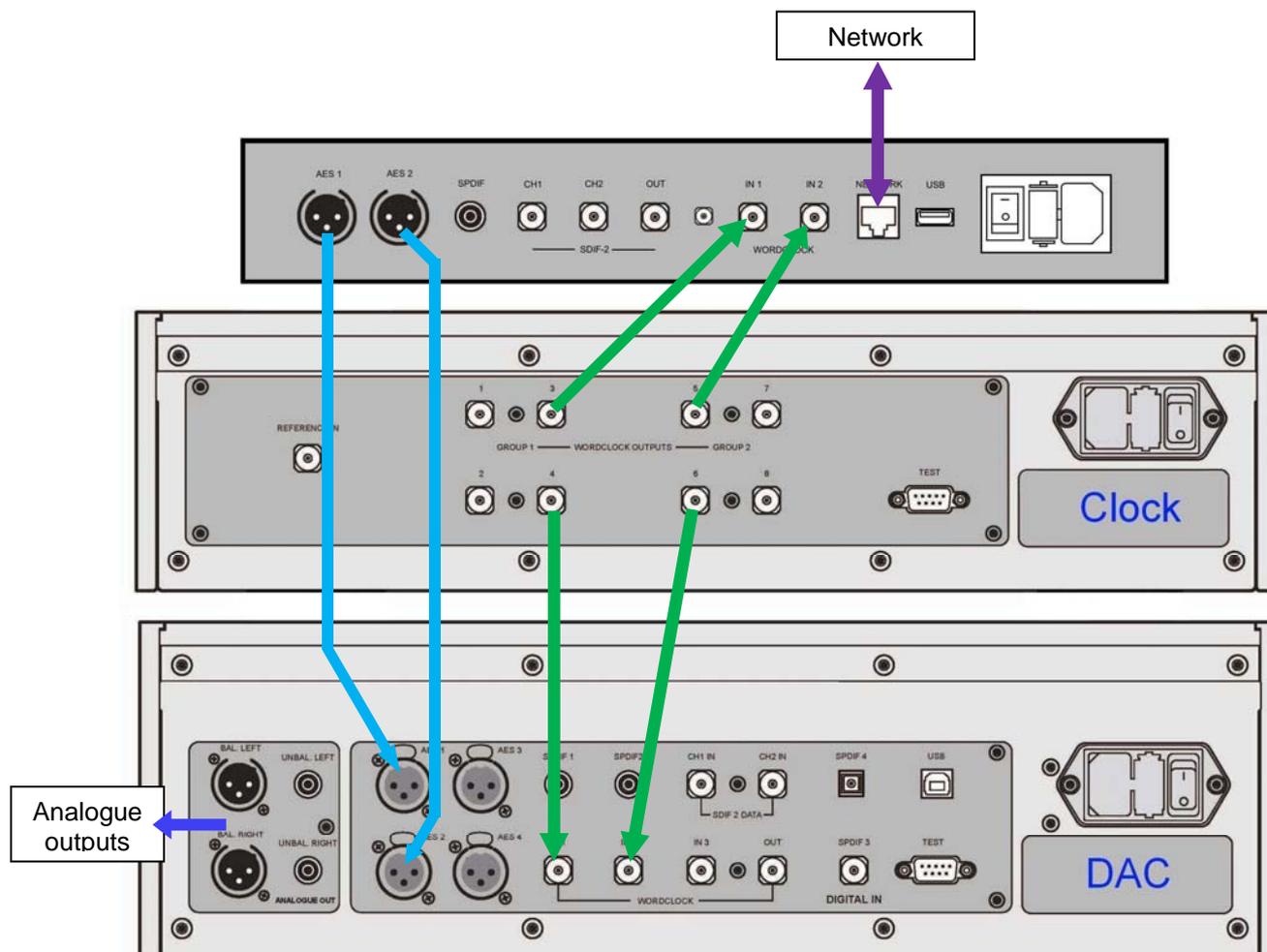
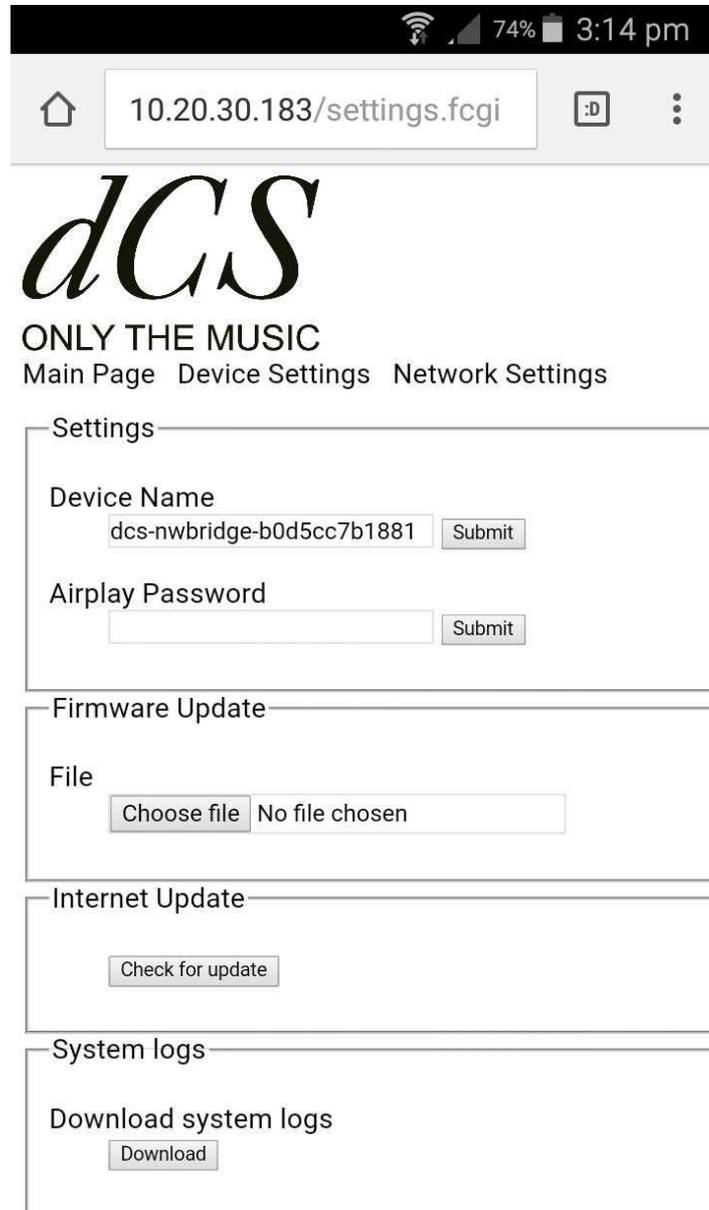


Figure 3 – Using the Network Bridge with a Vivaldi DAC and Master Clock

- Set the Master Clock **Freq1** to **44.1kHz** and **Freq2** to **48kHz**.
- Connect one of the **Clock Group 1** outputs (44.1kHz) to the Network Bridge's **Word Clock In1** input and one of the **Clock Group 2** outputs (48kHz) to the Network Bridge's **Word Clock In2** input. The Bridge will automatically select the Clock input that suits the file and lock to it.
- Connect one of the **Clock Group 1** outputs (44.1kHz) to the DAC's **Word Clock In1** input and one of the **Clock Group 2** outputs (48kHz) to the DAC's **Word Clock In2** input.
- Connect the Network Bridge's **AES1+2** output to the DAC's **AES1+2** input.
- Select the DAC's input to **AES1+2**.
- Set the DAC **Sync Mode** menu page to **Auto** (the "W" icon).
- Set the Clock's **Settings > Dither** menu pages **On** or **Off** as you prefer.
- Use the app to set the **AES Downsampling** to **Disabled** and the **Dual AES Sample Rate** to **88.2k**.

## STEP 5 - Using the web client interface

You can access the web client interface from a web browser running on any device connected to the same network. First, run ipconfig (or a similar utility) and note the IP address of the Network Bridge (10.20.30.183 in this example). Open the web browser and point it to the Network Bridge's IP address. The **Main Page** reports some information about the network. Tap **Device Settings**.



The screenshot shows a mobile web browser interface. At the top, the status bar displays signal strength, Wi-Fi, 74% battery, and 3:14 pm. The address bar shows the URL 10.20.30.183/settings.fcgi. Below the address bar is the dCS logo and the text "ONLY THE MUSIC". Navigation links for "Main Page", "Device Settings", and "Network Settings" are visible. The "Settings" section contains two form fields: "Device Name" with the value "dcs-nwbridge-b0d5cc7b1881" and a "Submit" button, and "Airplay Password" with an empty field and a "Submit" button. The "Firmware Update" section has a "File" field with a "Choose file" button and "No file chosen" text. The "Internet Update" section has a "Check for update" button. The "System logs" section has a "Download system logs" label and a "Download" button.

Here you can:

- Change the **Device Name** so that you can identify different Network Bridges on the network.
- Enter the **AirPlay Password** if necessary.
- Load a Network **Firmware Update** from a file (this is rarely necessary).
- Check if an **Internet Update** is available from the update server on the internet and load it. (This is mainly for owners who are not using the **Mosaic Control** app – see page 22.)
- **Download system logs** to help us support you if the Network Bridge malfunctions.

You can change the dynamic IP address to a fixed address on the **Network Settings** page. Take great care when setting a fixed IP address, as it is possible to lock the Bridge out of the network!

## REAR PANEL

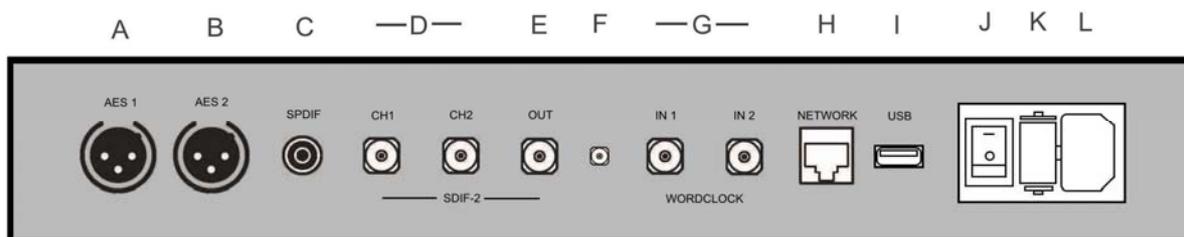


Figure 4 – Rear panel

### AES digital outputs

The **AES1** and **AES2** outputs (A & B) can be used individually at 44.1, 48, 88.2, 96, 176.4 or 192kS/s or DSD/64 in DoP format, or as a Dual AES pair at 88.2, 96, 176.4, 192, 352.8 or 384kS/s or DSD/64 or DSD/128 in DoP format.



Dual AES mode is automatically selected if the file rate is equal to or higher than the rate set in the Mosaic Control's **SETTINGS > DEVICE > Dual AES Sample Rate** section. At lower rates, both AES outputs will carry the same single AES data.

The maximum output rate is set by the Mosaic Control's **SETTINGS > DEVICE > AES Downsampling** section.

### SPDIF digital output

The **SPDIF** output on an RCA connector (C) carries SPDIF data for output rates at 44.1, 48, 88.2, 96, 176.4 or 192kS/s or DSD/64 in DoP format, even if **Dual AES** mode is **On**. The maximum output rate is set by the Mosaic Control's **SETTINGS > DEVICE > SPDIF Downsampling** section.

### SDIF-2 digital interface

The **SDIF-2** interface carries either SDIF-2 PCM data at sample rates up to 96kS/s, or SDIF-2 DSD/64 data. The interface consists of two data inputs labelled **CH1** and **CH2** (D). The Word Clock **Output** (E) must be connected to the DAC to provide clocking for this interface, unless a Master Clock is in use. High sample rate data is automatically downsampled to either 24/88.2 or 24/96.

### WiFi antenna connector

Antenna socket (F) for the internal WiFi feature – this is for possible future development and is not currently supported.

### Word Clock inputs and output

Either of the two **Word Clock In** connectors (G) will accept standard word clock from a master clock at 44.1, 48, 88.2, 96, 176.4 or 192kHz. The clock frequency **MUST** be an exact multiple of the file data rate, otherwise the system will not lock.

Each of the **Word Clock In** inputs may be used individually. To make operation easier, you can connect a 44.1, 88.2 or 176.4kHz word clock to **Word Clock In1** and a 48, 96 or 192kHz word clock to **Word Clock In2**. The unit can then select the clock frequency that is an exact multiple of the file data rate.

The (SDIF-2) word clock **Out** connector (E) carries a word clock at the same frequency as the file data rate, up to 96kHz. You can connect this to the DAC to improve data transmission. This connection is required if the SDIF-2 output is in use.

Word clock is used for synchronisation only, it does not carry digital data.

## Network interface

The **Network** connection on an RJ45 socket (H) allows the Network Bridge to stream music data from the local network as well as from several internet services. The Network Bridge can stream music files at up to 24 bits / 384kS/s or DSD/64 or DSD/128 under the control of **dCS Mosaic Control** (see page 4) running on a suitable handheld device. The Network interface runs in asynchronous mode and is galvanically isolated..



The RJ45 socket's contacts can be damaged by accidentally inserting the wrong connector (e.g. a USB type B or type A). To avoid this, we suggest leaving the dust cover fitted when not in use and connecting the RJ45 cable immediately after removal.

## USB interface

The **USB** 2.0 host interface (I) on an 'A' type connector can stream music files in most popular formats at up to 24 bits / 384kS/s or DSD/128 from a USB Flash Drive. Playback is controlled by **dCS Mosaic Control**. Low-powered USB hard disk drives may be used in the same way.

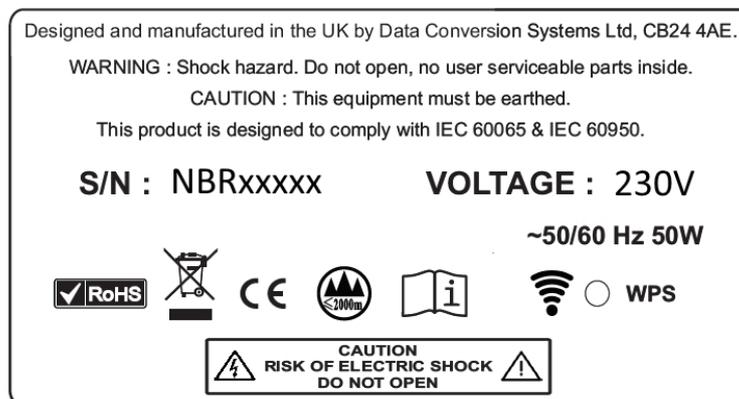
The drive must be formatted as FAT16, FAT32 or un-encrypted NTFS. Drives in other formats are not compatible.

## Mains inlet

Power is connected via a standard IEC320 connector (L), protected by a fuse (K) and isolated by a 2-pole power switch (J).

## Label

The label on the underside of the unit states the unit's serial number (S/N) and the nominal voltage to which the unit is set. It is important to quote the serial number if you need assistance.



WPS is for possible future development.

## SPECIFICATION

|                         |   |
|-------------------------|---|
| <b>Type</b>             | Network streaming bridge  |
| <b>Colour</b>           | Silver or Black.  |
| <b>Dimensions</b>       | 360mm (14.2") wide x 245mm (9.65") deep x 67mm (2.65") high.<br>Allow extra depth for cable connectors.   |
| <b>Weight</b>           | 4.6kg (10.2lbs).  |
| <b>Digital Inputs</b>   | <p>UPnP <b>Network</b> interface on an RJ45 connector streams music files from a NAS or local computer using MinimServer over an Ethernet network, decoding all major formats. The interface operates in asynchronous mode.</p> <p>The Network interface accepts data streamed from an iPad, iPhone or iPod Touch via Apple AirPlay™ at 44.1 or 48kS/s.</p> <p>Supports TIDAL, Qobuz, Deezer, Internet Radio and Podcasts via Airable.</p> <p>The Network Bridge is Roon™ Ready.</p> <p>USB host interface on type A connector operating in asynchronous mode, streams data from a USB flash drive.</p> |
| <b>Digital Outputs</b>  | <p>2x AES/EBU on 3-pin female XLR connectors, each outputs PCM at up to 24 bit 192kS/s or DSD/64 in DoP format. Used as a Dual AES pair, the interface outputs PCM at up to 384kS/s, DSD/64 &amp; DSD/128 in DoP format.</p> <p>1x SPDIF on 1x RCA Phono connector, outputs PCM at up to 24 bit 192kS/s or DSD/64 in DoP format.</p> <p>1x SDIF-2 interface on 2x BNC connectors, outputs PCM at up to 24 bit 96kS/s or SDIF-2 DSD/64.</p>  |
| <b>Word clock I/O</b>   | <p>2x Word clock Inputs on 2x BNC connectors, accept standard word clock at 44.1, 48, 88.2, 96, 176.4 or 192kHz. The data rate can be the same as the clock rate or an exact multiple of the clock rate. Sensitive to TTL levels.</p> <p>(SDIF-2) Word clock Output on 1x BNC connector, carries Word clock at the same frequency as the file rate up to 96kHz.</p>   |
| <b>Data Formats</b>     | <ul style="list-style-type: none"> <li>FLAC, AIFF &amp; WAV – up to 24 bit PCM at 44.1, 48, 88.2, 96, 176.4, 192, 352.8 or 384kS/s.</li> <li>ALAC – up to 24 bit PCM at 44.1, 48, 88.2, 96, 176.4 &amp; 192kS/s.</li> <li>AAC and MP3 - up to 24 bit PCM at 44.1 or 48kS/s.</li> <li>DFF, DSF &amp; DoP – DSD/64 &amp; DSD/128.</li> <li>Apple AirPlay – 44.1 or 48kS/s.</li> </ul>   |
| <b>MQA</b>              | Performs the first unfold of MQA data from the Network and USB inputs.  |
| <b>Conversions</b>      | <p>User-selectable down-sampling to match legacy DACs, set by the App:</p> <ul style="list-style-type: none"> <li>176.4 &amp; 352.8 &gt; 24/176.4 or 24/88.2.</li> <li>192 &amp; 384 &gt; 24/192 or 24/96.</li> <li>DSD/64 &amp; DSD/128 &gt; 24/176.4 or 24/88.2.</li> </ul>   |
| <b>Software Updates</b> | Download and update functionality available via <b>dCS Mosaic Control</b> .   |

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|                          |   |
|--------------------------|---|
| <b>Local Control</b>     | <i>dCS Mosaic Control</i> for Unit Configuration and Music Playback.          |
| <b>Power Supply</b>      | Factory set to either 115/120V (100-120V) or 230/240V (220-240V) AC, 50/60Hz. |
| <b>Power Consumption</b> | 6.5W typical, 50W maximum.  |

These specifications are subject to change without notice.

## MAINTENANCE AND SUPPORT

### Service and maintenance

dCS audio products are designed not to need regular maintenance, and contain no user serviceable parts apart from the mains fuse. If your unit is damaged in any way, please contact your dealer.

### Replacing a blown mains fuse

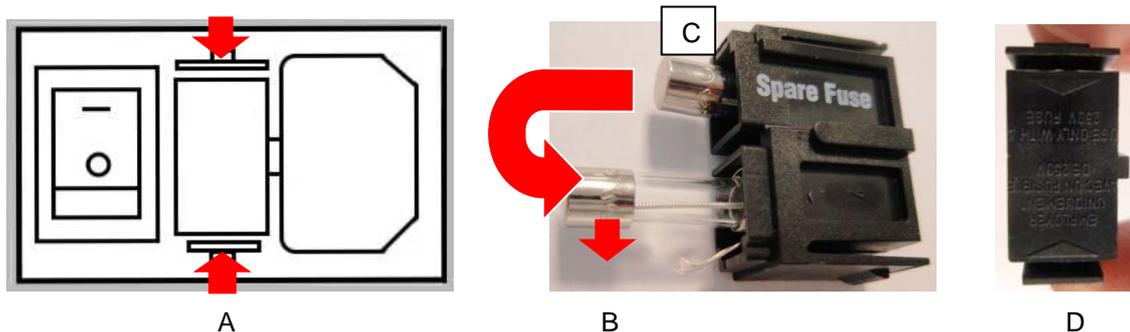
There is a mains fuse below the power inlet, accessible from the outside of the unit. If the fuse blows, it may be changed by the user. The current consumption of the unit is very low, so it only blows if power surges occur, or there is a fault in the unit. Usually power surges cause no other damage, but if the fuse blows repeatedly on replacement, some other damage will have been done and the unit must be returned to dCS for repair.

Fuse type: 20 x 5mm T 1 amp L fuse



If the fuse should fail, it is essential that it is replaced with one of the same type and rating. Failure to do so could result in damage to the unit, risk of fire or electric shock and will invalidate the warranty. Fuse failure is rare!

Referring to the diagram below, remove the power cable, use your fingernails to catch the two tabs of the fuse holder (A), push them together to release the clips and pull the fuse holder out. Pull out the blown fuse from the lower position (B) and discard it. Either move the Spare Fuse (C) to the lower position or fit one of the fuses from the manual pack. Orient the fuse holder as shown (D) and push the holder back into the power inlet so that it clicks home.



### Cleaning the case

The front and back panels of your dCS equipment are machined from very high grade aluminium. Great care has been taken to create the finish of the aluminium throughout the engineering process from the raw solid material to the finished piece.

To remove loose dust or finger marks from the case, we recommend that you use a clean, dry, lint-free cloth.

To restore the finish, we recommend applying small quantities of a lanolin based cleaner, using a clean, dry, lint-free cloth and then wiping off.

Small amounts of glass cleaner containing ammonia may be used to clean other surfaces, but avoid spraying onto the connector contacts.

## Limited warranty

### General

dCS warrants this product against defects in materials and workmanship for a period of 3 years from the date the unit was originally shipped from dCS. If the product is purchased and registered with dCS within 6 months of the date the unit was originally shipped from dCS, we will start the warranty on the purchase date. For units registered later than 6 months from the ship date, we will start the warranty from the ship date unless the registration is supported by the original sales invoice. During the warranty period, dCS will repair or, at our absolute discretion, replace a faulty product. Warranty repairs must only be carried out by dCS or our authorised service agents. Please contact your dealer if your unit requires service.

To register this product, either register online at [www.dcsLtd.co.uk](http://www.dcsLtd.co.uk) or complete the **Product Registration** form within 30 days of the sale and return it to dCS. On receipt of the registration, dCS will add your contact details to our customer database. dCS will use this information for warranty purposes only, we will not contact you directly for reasons relating to sales and marketing.

This warranty applies to the original owner, it is not transferable.

### Warranty exclusions

The Warranty does not cover wear and tear.

The Warranty on this product will be void if:

- the product is misused in any way.
- any unauthorised modifications or repairs are carried out.
- the product is not used in accordance with the Operating Conditions stated in this manual.
- the product is serviced or repaired other than by dCS or our authorised service agents.
- the product is operated without a mains earth (or ground) connection.
- the unit is returned inadequately packed.

dCS reserve the right to apply a service charge if a product returned for warranty repair is found to be operating correctly, or if a product is returned without a returns number being issued.

This warranty covers parts and labour only, it does not cover shipping charges or tax/duty.

Our dealers or distributors are NOT authorised to extend the terms of this warranty, dCS cannot accept responsibility for any attempt to do so.

Products re-sold by dCS on a “used” basis may be subject to reduced warranty terms.

### Obtaining service

Should you encounter a problem, contact your authorised dCS dealer for advice, quoting the model, the full serial number, software version number, and giving a detailed description of the fault. Your dealer will advise you fully on actions that need to be taken and give you a returns number. When returning a unit, the original packaging should be used to avoid transit damage. Replacement packaging sets may be purchased from dCS.

During the Warranty period, there will normally be no charge for parts or labour.

### Operating conditions

- The supply voltage must remain within +/-10% of the A.C. voltage specified on the back panel.
- The supply frequency must be 50Hz or 60Hz.
- Ambient temperature range: 0°C (32°F) to 45°C (113°F), non-condensing.
- Do not install the unit near heat sources such as radiators, air ducts, power amplifiers or direct strong sunlight.
- If in doubt, the easy test is – the unit is happy to work anywhere a human is.

## If you need more help

In the first instance, you should contact your dealer. If they cannot resolve the issue, contact your national distributor.

Manufactured by:

Data Conversion Systems Ltd.  
Unit 1, Buckingham Business Park,  
Anderson Road,  
Swavesey,  
Cambridgeshire. CB24 4AE  
UK

[www.dcsLtd.co.uk](http://www.dcsLtd.co.uk)

This user manual may be downloaded free of charge from our website.

A bound copy of this manual may be ordered from *dCS*.

## Software history

*dCS* products make extensive use of software configurable chips – FPGAs and DSPs. This gives us the ability to update our products to add extra features, update digital interface standards or make performance improvements by loading new software. Occasionally, a hardware upgrade may be necessary also to increase the “capacity” of the electronics, add extra connectors or extra front panel controls.

Please note that not all software updates produce an audible improvement. We recommend that you keep your software up to date.

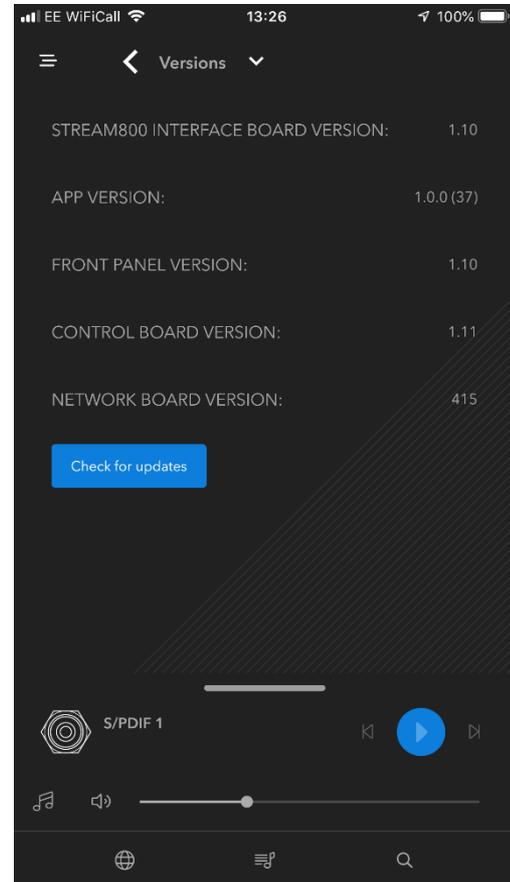
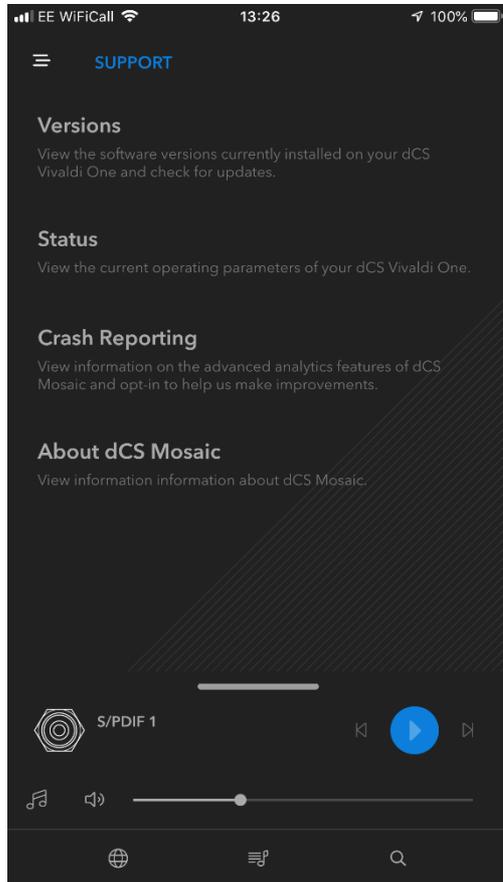
You can check which software is loaded from the *dCS* Mosaic Control app’s **SETTINGS > SUPPORT > Versions** page and tap **Check for Updates** occasionally.

This manual is for **Network Bridge** software version 1.0x.

|            |   |
|------------|---|
| Issue 1.00 | The first issue, with network firmware v315 for Network Bridge app v1.0.0.  |
| Issue 1.00 | Update for MQA, with network firmware v373 for Network Bridge app v1.4.8  |
| Issue 1.02 | With network firmware v406 for Network Bridge app v1.4.9. Improved Room behaviour, improved seek behaviour and corrected update indication. |
| Issue 1.02 | With network firmware v501 and <i>dCS</i> <b>Mosaic Control</b> v1.0.x.   |

## Software update

The Network Bridge v1.00 onwards can be updated from the internet over the network using *dCS Mosaic Control* app. Tap **SETTINGS > SUPPORT > Versions > Check for Updates**. If an update is available, please follow the prompts and then wait until the process is complete.



An update can take 45 minutes, please be patient.  
Please do not switch the unit off until "Please switch off" is displayed.

