DNS1500 & DNS3000 Firmware upgrade

The firmware in the DNS1500 and DNS3000 (hereafter referred to collectively as "DNS") can be upgraded using a utility running on a PC or Mac (hereafter referred to collectively as "PC"). The upgrade is performed over an ethernet connection between the PC and DNS, so it is pre-requisite that the PC and DNS can communicate over ethernet. See appendix B for details of how to do this.

> **The upgrade procedure will erase any presets or snapshots stored in the DNS3000.** If you need these to be kept then save them on your PC (as detailed in the user manual) and then load them back into the DNS3000 after completing the upgrade.

> **The start of the procedure for firmware upgrades is different for some early DNS1500 models.** You can tell whether you need to use the special procedure as follows. Shut down the DNS and switch off the main inlet switch at the back of the unit. Hold down the **BYPASS** button and switch on at the back. If the rightmost **green and red** Activity LEDs are **flashing alternately** then you have one of the early DNS1500 units and must use the method in appendix A. If the rightmost **red** Activity LED **flashes alone**, or if the unit boots normally then use the standard procedure.

Switch off the DNS using the switch on the back of the unit.

Step 1: Backing up the existing firmware

Shut down the DNS and switch off using the switch on the back. Hold down the **CHAN1**, **HIGH** and **BYPASS** buttons and switch on the switch at the back. The firmware will be backed up internally. The process is complete when all the activity LEDs are extinguished except the rightmost one, which flashes red (older firmware), or when the unit boots normally (newer firmware). When complete, switch off using the switch at the back.

Step 2: Erasing existing firmware

Shut down the DNS and then turn it off using the switch on the back.

Hold down the **CHAN1**, **LOW** and **BYPASS** buttons and switch on the switch at the back. The firmware will be erased. The process is complete when all the activity LEDs are extinguished except the rightmost one, which will flash red. When complete, switch off using the switch at the back.

Step 3: Reprogramming

Launch the DNS Upgrade Utility and follow the instructions in the wizard. Note that reprogramming the DNS is a two-stage process, and you will be asked to reboot the DNS between stages 1 and 2. When you do this intermediate reboot, the unit will not boot completely (as it is not yet fully programmed). On the DNS3000 all the blue softkeys will light to indicate this partial boot. On the DNS1500 all the blue process buttons and all the Activity LEDs will light. You can then proceed with stage 2 as directed by the wizard.

Step 4: Fader Calibration and Panel Brightness Setup

After programming the DNS you must recalibrate the faders and, if you wish, override the factory default panel brightness settings.

DNS3000
Follow the instructions in the user manual.

DNS1500
This replaces the section "BRIGHTNESS CONTROL" on page 7 of the DNS1500 User Manual v1.00.

Enter SETUP mode by switching on the DNS1500 with the **LOW**, **MID** and **HIGH** buttons held down simultaneously. The DNS1500 will boot and pass audio, but no processing will occur. Instead you can set up the fader calibration and/or brightness as follows:

Fader Calibration: This procedure is only needed when a fader is replaced, or after the firmware has been upgraded. It is achieved with the following three steps:

1. Move all the faders to their lowest position. Press the LOW button.
2. Move all the faders to their highest position. Press the HIGH button.
3. Move all the gain faders to 0dB, and the level fader to -20dB. Press the MID button.

Brightness Setting: The overall brightness is adjusted with the LEVEL fader. The brightnesses of the dim and bright buttons are controlled (within this overall brightness setting) with the leftmost two GAIN faders.
Note: DNS1500 models prior to serial number DNS-5-00370 do not have an overall brightness control, but you can still set the "dim" and "bright" settings as required.

Save the brightness and fader calibration settings by pressing and holding **BYPASS** until the unit shuts down.

Step 5: Backing up the new firmware

When you are satisfied that the new firmware is working correctly you should make a backup of it as follows:

Shut down the DNS and switch off using the switch on the back. Hold down the **CHAN1**, **HIGH** and **BYPASS** buttons and switch on the switch at the back. The firmware will be backed up internally. When the process is complete the DNS will continue to boot as normal.

Appendix A: Early DNS1500 models

Shut down the DNS and then turn it off using the switch on the back.

Hold down the **MID** and **HIGH** buttons and switch on the switch at the back. Wait until the first four Activity LEDs show steady red-green-green-red, and then switch off using the switch at the back.

Now hold down the **CHAN1**, **LOW** and **BYPASS** buttons and switch on at the back. Wait until the rightmost Activity LEDs are flashing red/green alternately, and then switch off using the switch at the back.

Now follow steps 3, 4 and 5 as above.

Appendix B: Network Connection

A successful network connection requires the DNS to be connected using an appropriate UTP ethernet cable, and the DNS requires internal settings (IP address etc.) appropriate to the network in use. This can be achieved in one of two ways, depending on whether you have a network with a DHCP server or not. If you do not know, then follow the instructions as if you do not have a DHCP server.

Network with a DHCP server

On a network with a DHCP server, the DNS will be allocated its ethernet settings automatically. On the DNS3000 you need to ensure that the network configuration is set to "Auto (DHCP)" in the System/TCPIP page.

When performing the upgrade, the DNS and PC should ideally reside on the same ethernet subnet (ie there can be switches and hubs between them, but not routers, gateways or firewalls). If so, then your PC will be able to scan for and find the DNS automatically. If not, then you will have to ascertain the IP address allocated to the DNS and enter this into the upgrade utility by hand. On the DNS3000, the IP address can be found from the System/TCPIP page. In the case of the DNS1500 you will have to find it from the DHCP server.

If the automatic scan does not find the DNS and you cannot find the address it has been allocated by other means, then you must use the method below as if you had no network and no DHCP server.

No network, or no DHCP server

If there is no DHCP available, we aim to create a "mini-network" containing just the DNS and your PC, with a single connection between them. This connection can either be made with a "crossover" cable, or with two standard network cables and a small ethernet hub or switch. There must be no other devices present.

You must hold down the **CHAN2** button (in addition to any others required by the upgrade procedure) **every**

time you boot the DNS during the upgrade procedure. This disables DHCP and the DNS adopts the following default network settings:

Address:	192.168.0.1
Netmask:	255.255.255.0
Gateway:	192.168.0.254

You must then configure the ethernet interface on your PC as follows:

Address:	192.168.0.2
Netmask:	255.255.255.0
Gateway:	192.168.0.254

When the network is configured correctly the DNS will respond to ICMP echo requests (sometimes known as network "pings") to its IP address.