

D NET

D-Net
User Manual
Revision 1.2



www.nstaudio.com

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THANK YOU

Thank you for choosing to download D-Net, by NST Audio, for your application. Please spend a little time reading through this manual, so that you can obtain the best from the software.

All NST products are carefully designed and engineered for cutting-edge performance and world-class reliability. If you would like further information about this, or any other NST product, please do not hesitate to contact us.

COMPATIBILITY

D-Net is compatible with Windows Vista, 7, 8, 10 and Mac OSX.

INSTALLATION

The latest version of D-Net is available for download from the software page of the NST Audio website www.nstaudio.com

Save the download to a known location and run the file from there.

Your computer may warn you or ask you about running installation file; accept / ignore any warnings or choose the 'More Info' link from within the warning dialogue box to proceed.

Read and follow the on-screen instructions to complete the installation.

Various shortcuts will be placed on your computer allowing you to launch the software from there.

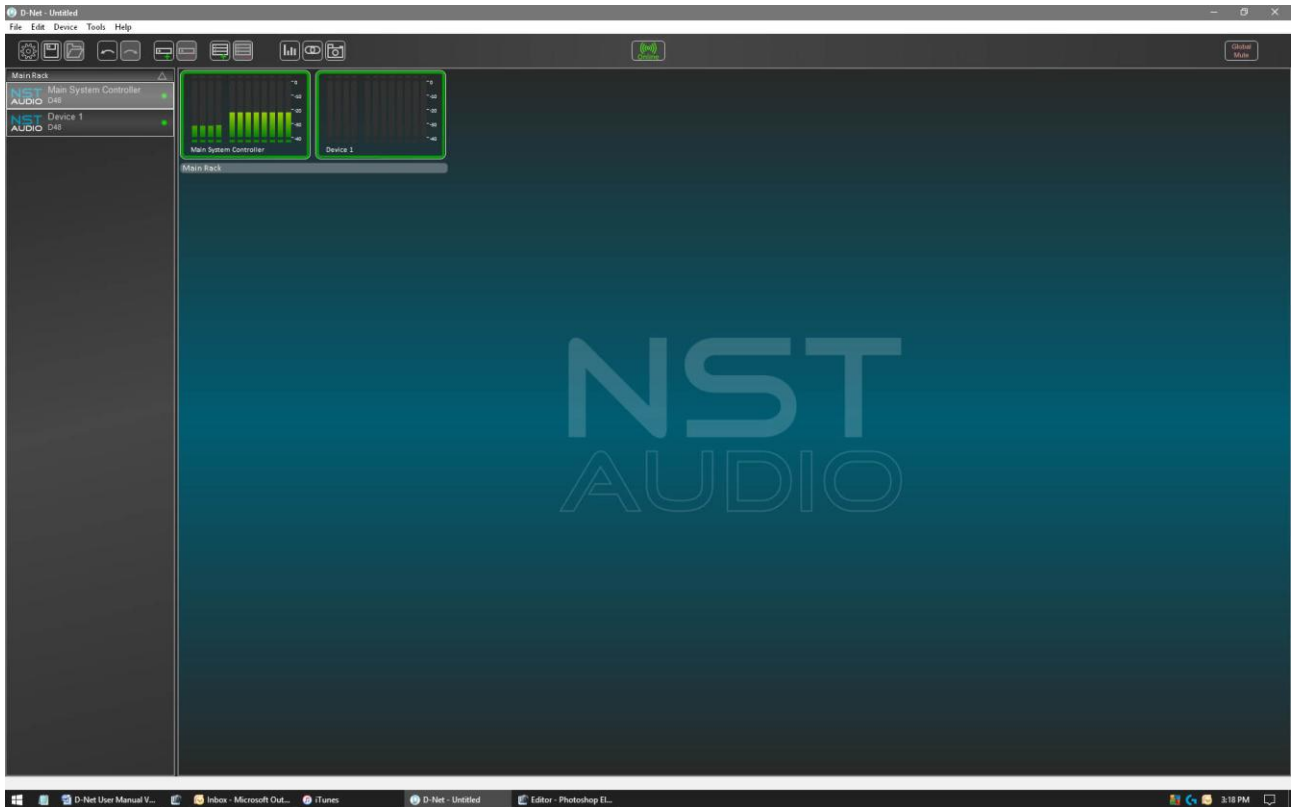
OVERVIEW

D-Net is an Ethernet based computer control platform that gives you the ability to not only control all the devices on a network, but also to store preset memories and configure systems offline.

With Mac and an Apple iPad app too, you can control your system the way that suits you.

USB connection is also available on some devices, allowing quick connection to a single device.

MAIN SCREEN OVERVIEW



The default view of D-Net will look similar to the image above.

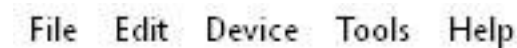
The very top of the application will show the application name, followed by the current file name, if one is in use.

Below this is the menu bar that allows various features to be accessed detailed later in the manual.

Below this is the toolbar that allows quick access to common commands and features, detailed later in the manual.

To the left of the screen is the 'Virtual Rack' that shows all the devices in the current system. The devices can be named, rearranged and placed into various racks – double clicking a device in the rack will open a detailed window allow adjustment of all parameters, detailed later in the manual.

The main part of the application's screen is home to the System Monitor page. This shows all current devices along with real-time metering - double clicking a device in this screen will open a detailed window allow adjustment of all parameters, detailed later in the manual.



The Menu Bar is pictured above* and allows the commands and features to be accessed.

[*The menu bar on a Mac will differ slightly from this, but contain all the same functions]

The toolbar functions, from left to right, are as follows:

File

New: Starts a new D-Net (*.NST) file. This option is only available while offline.

Save: Saves the current system to file.

Save As...: Saves the current to file, asking for a file name to be entered.

Open: Opens a dialogue box allowing location and opening of existing D-Net (*.NST) files.

{Last Used Files}: This section of the menu shows the last used files, allowing for quick access.

Exit: Quits the D-Net application offering an opportunity to save the current system to file.

Edit

Undo: Reverts the last change made to its previous state. Note, this button can be pressed multiple times to undo multiple changes.

Redo: Cancels the last undo command and reverts the setting to its previous state. Note, this button can be pressed multiple times to redo multiple changes.

Cut: Removes any highlighted text, including parameters, and places it in your computers Clipboard.

Copy: Copies any highlighted text, including parameters, and places it in your computers Clipboard.

Paste: Pastes the contents of your clipboard into the selected name or parameter box.

Device

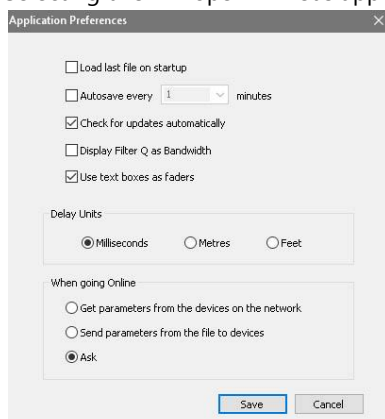
Add>: Opens a menu, when the mouse pointer is hovered over it, allowing new devices to be added to the current system.

Go Online: Toggles between online and offline modes.

Tools

Application Settings....

Selecting this will open D-Net's application settings.



Load Last File on Startup...: Checking this option will cause D-Net to automatically load the last D-Net (*.NST) that was used, when the application is opened.

Autosave Every x Minutes: Checking this option save the current file every x minutes, depending on what time is selected from the drop down menu options.

Check for Updates Automatically: Checking this option will cause D-Net to check the NST Audio software server for any updates / newer versions of the application and give the option whether to download and update the software.

Display Filter Q as Bandwidth: Checking this option will cause D-Net to display all filter width parameters in bandwidth instead of the default Q.

Use text boxes as faders: This option either disables or enables the use of text boxes as faders. If enabled, the cursor can be used to select a text entry box and then dragged up and down to adjust the value.

Delay Units: Gives the option of displaying delay parameters in either Milliseconds, Metres or Feet.

When Going Online: Gives options for how D-Net behaves when selecting the Online function.

Get Parameters from the Devices on the Network: Selecting this option will cause D-Net to automatically retrieve the current settings, and any stored presets, from all connected devices when online is selected.

Send Parameters from the File to Devices: Selecting this option will cause D-Net to automatically send the parameters, and any stored presets, of all defined devices to connected units when online is selected.

Ask: Selecting the option (on as default) will cause D-Net to ask whether to send or retrieve settings, and any stored presets, to or from connected devices.

Help

Check for Updates: Selecting this will connect to NST Audio's software server to check for any available updates.

Quick Start Guide: Selecting this will open the D-Net quick start guide PDF file.

About D-Net...: Selecting this will open a dialogue box displaying the application version number and other details.



The toolbar in D-Net allows quick access of common commands and displays system information.

The toolbar functions, from left to right, are as follows:

Application Preferences Button: Opens the application preference options screen.

File Save Button: Saves the current file or asks for a file name if the current settings have not previously stored.

File Open Button: Opens a dialogue box to allow locating of *.NST files. Note, this button will be greyed out / disabled while online – go offline to enable opening of files.

Undo Button: Reverts the last change made to its previous state. Note, this button can be pressed multiple times to undo multiple changes.

Redo Button: Cancels the last undo command and reverts the setting to its previous state. Note, this button can be pressed multiple times to redo multiple changes.

Add Device Button: Opens a drop-down menu allowing a device to be added to the system.

Delete Device Button: Deletes the currently selected device. Note, this button will be greyed out / disabled while online – go offline to enable deletion of devices.

Add Rack Button: Adds a rack to the virtual rack, located on the left of the main screen.

Delete Rack Button: Deletes a rack from the virtual rack, located on the left of the main screen. Note, a device must be present in the rack for it to be deleted.

Show System Monitor Button: Displays the default overview screen, showing monitoring of all devices.

Show Link Manager Button: Displays the Link Manager screen, detailed later in the manual.

Show System Snapshot Manager Button: Displays the System Snapshot screen, detailed later in the manual.

Online / Offline Button: Toggles between online and offline modes.

Global Mute Button: Toggles a system wide mute to all connected devices when online.

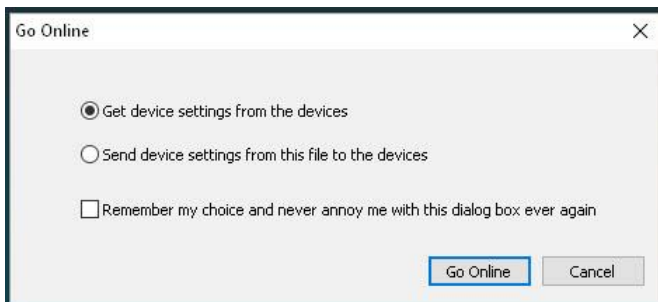
To connect D-Net to NST Audio devices, you will need a Cat5 cable or USB A to B style connector cable.
To connect to multiple NST Audio devices, you'll need a network switch – these are available in varying port sizes, depending on how many devices you wish to connect to simultaneously.

There are two ways to go online / connect to devices:

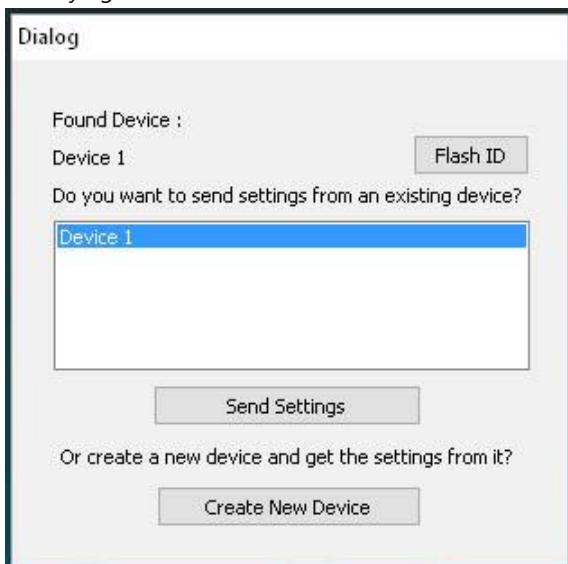
You can either retrieve settings and presets from connected devices, or you can define devices and presets offline and send the settings to connected devices.

To SEND settings to connected devices, define devices in D-Net, using the Device menu or toolbar Add Device button, and input the settings required.

Use the Device menu to go online, or use the toolbar Online button – choose to 'Send device settings from this file to the devices'.

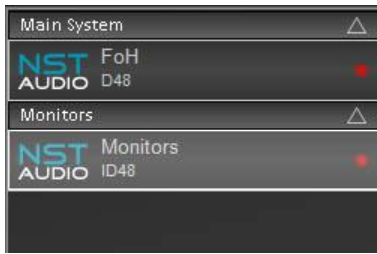


If D-Net finds a matching device, it will ask whether to send the settings to the device, and also give options for identifying the device:



To RETRIEVE settings from connected devices, use the Device menu to go online, or use the toolbar Online button – choose to 'Get device settings from to the devices'.

D-Net will then search for connected devices and display the devices found, along with their current settings and any stored presets.



The Virtual Rack shows all connected or defined devices.

If a device shows a red light, it is not connected (or hasn't been discovered yet) or D-Net is offline. This is also reflected on the main system monitor screen, whereby the device will have a red border.

If a device shows a green light, it is connected correctly when D-Net is online. This is also reflected on the main system monitor screen, whereby the device will have a green border.

Devices may show a yellow exclamation mark (!) accompanied by a message, such as alerting the user there is a firmware update available for the device. This is detailed later in the manual.

Double clicking devices in the rack will open the devices main window, allowing editing of all parameters, including the device name, detailed later in the manual.

Devices can be dragged and dropped up and down to reorder them as desired.

Devices can also be placed into new rack sections – add new racks by using the toolbar button.

Racks can be renamed by double clicking on them, entering a desired name and pressing return.

Clicking on the triangle, located at the right of each rack, will collapse or expand the rack – this is useful when large quantities of devices are in use and the virtual rack becomes large.

The rack names are also displayed under the devices in the main system monitor screen.

DEVICE EDITING

To edit a device's settings, double click a device either in the rack or in the main system monitor screen.

An NST Audio D48 device will be used from here on in, as it's one of the comprehensive devices, thus it will cover all the parameter editing you will come across.

At the top of this device window, the title bar will show the device type and then the device name – the device name can be edited by double clicking the text to the right of the NST logo.

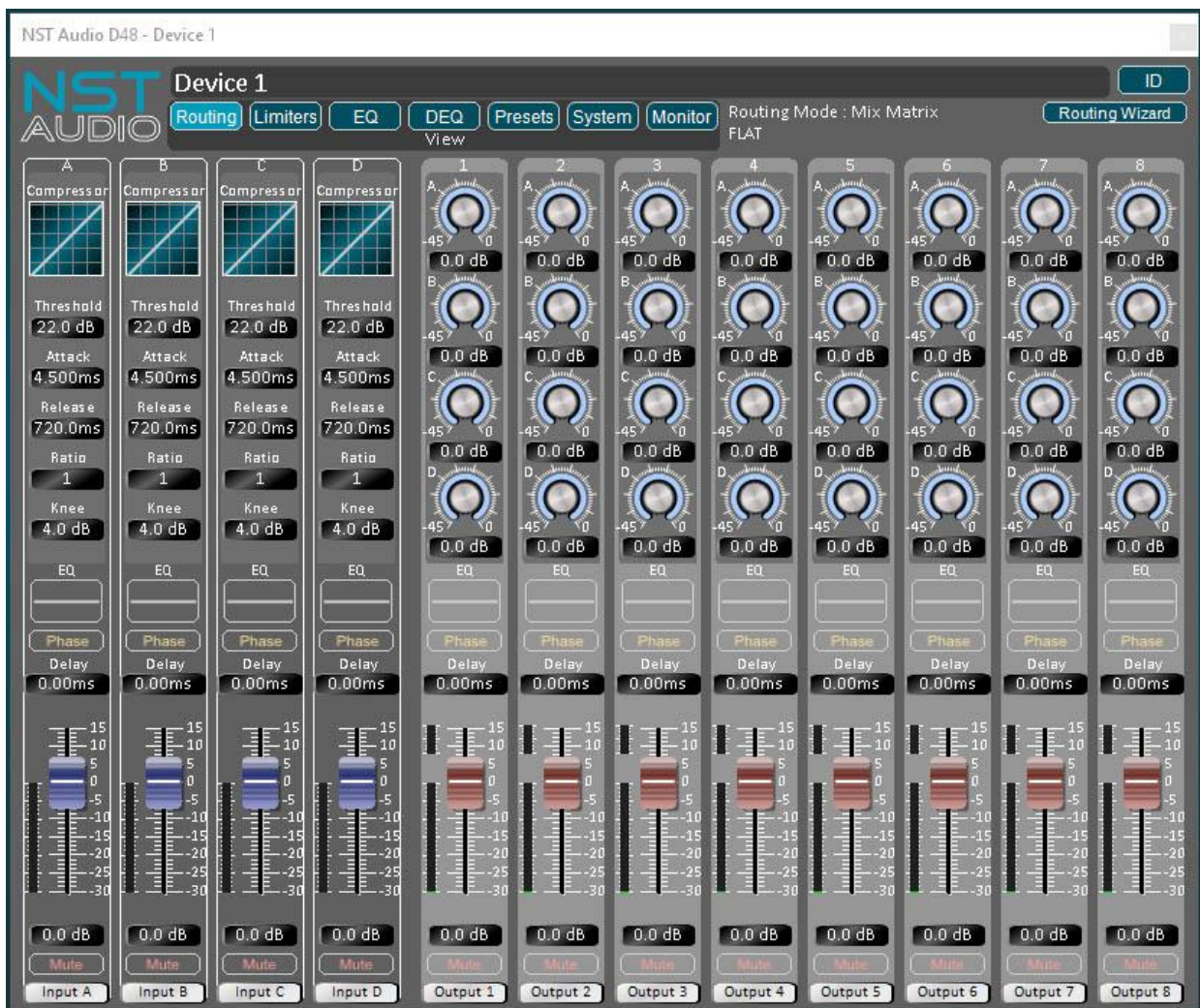
The left-hand of this panel shows the input section – the right shows the output channels and routing.

All parameters can be edited by dragging the cursor up and down, while holding down the left mouse button, originating over the desired parameter – direct text entry is also possible by clicking on the relevant box. Faders and control knobs work this way too!

Alternatively, you can select a parameter, e.g. delay, which will highlight the parameter box and then use the up / down cursor keys to adjust the parameter or press the enter key to enable editing by direct text entry.

Pressing the TAB key will move to the next parameter – press the enter key again to enter values.

ROUTING PAGE



Input Compressors

Threshold: Adjusts the input compressor's threshold (where it starts to come into effect).

Attack: Adjusts the compressors attack time (How fast the compressor reacts once the threshold has been exceeded).

Release: Adjusts the compressors release time (How fast the compressor releases compression once the threshold has been exceeded).

Ratio: Adjusts the ratio of compression once the threshold has been exceeded (I.E a ratio of 2 will halve the signals level

above the threshold – so if the threshold is exceeded by 6dB, the compressor will limit this to 3dB).

Knee: Adjusts the 'knee' of the compressor / how hard the compressor reacts at the threshold. Higher knee values will give a softer compression around the threshold.

PLEASE NOTE: Fast attack and release times may cause excessive distortion – it is recommended that an attack time of 45ms and release time of 750ms is used for general broadband signal.

Input EQ Preview Window

This graphic shows any input EQ in effect – click the window to directly access the input EQ for that channel.

Input Delay

Adjusts the input delay from between 0ms to 1.3 seconds. The unit can be changed to metres or feet via the Application Settings found in the Tools menu on the menu bar.

Tip: you can enter delay values in metres (m) or feet (') and D-Net will convert these automatically to ms.

Also, holding down the shift key, while using the cursor keys to adjust delay, will alter the delay in 1/10th steps.

Input Gain

Adjusts the input channel gain by either dragging the fader or dragging your cursor over the gain text box.

Note that you can select / highlight the gain value box and use the cursor up and down keys to adjust the gain.

Input Mute Button

Toggles the channel mute – the channel is muted when the button illuminates in red.

Input Phase Button

Toggles the channel phase – the channel is 180 degrees out of phase when the button illuminates in yellow.

Input Channel Name

Double click the channel name to edit. The channel name will also be shown on devices with an LCD screen.

The right-hand side of this screen shows the output settings and routing...

The routing mode can be either a matrix mixer or routing grid. (Routing options can be accessed through the routing wizard, located at the top right of this screen).

Assuming the matrix mixer is in use, like the picture shows, channel levels can be adjusted dragging the rotary controls up and down to adjust level, or double clicked to mute or un-mute the input feed.

Matrix levels can also be directly entered by double clicking the text value under each matrix rotary control.

Output EQ Preview Window

This graphic shows any output EQ in effect – click the window to directly access the output EQ for that channel. This will be covered in more detail later in the manual.

Output Delay

Adjusts the input delay from between 0ms to 1.3 seconds. The unit can be changed to metres or feet via the Application Settings found in the Tools menu on the menu bar.

Tip: you can enter delay values in metres (m) or feet (') and D-Net will convert these automatically to ms.

Also, holding down the shift key, while using the cursor keys to adjust delay, will alter the delay in 1/10th steps.

Output Gain

Adjusts the output channel gain by either dragging the fader or dragging the cursor over the gain text box.

Note that you can select / highlight the gain value box and use the cursor up and down keys to adjust the gain.

Output Mute Button

Toggles the channel mute – the channel is muted when the button illuminates in red.

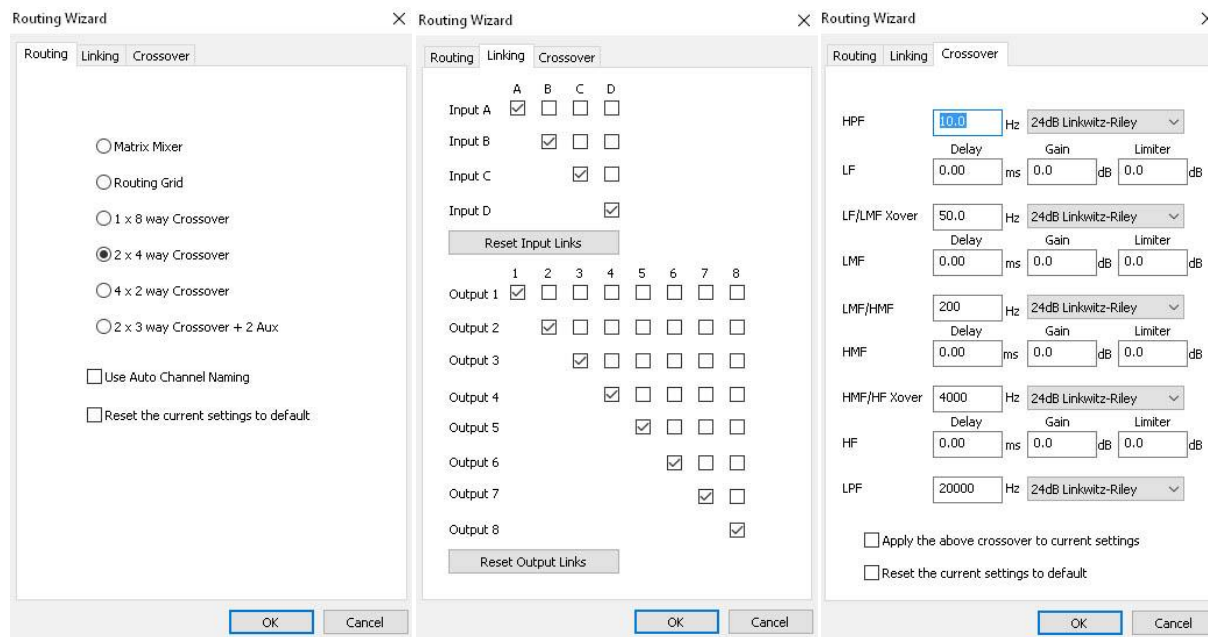
Output Phase Button

Toggles the channel phase – the channel is 180 degrees out of phase when the button illuminates in yellow.

Output Channel Name

Double click the channel name to edit. The channel name will also be shown on devices with an LCD screen.

Pressing the Routing Wizard button, located at the top right, will open a 3-tab window allowing various routing options, linking controls and a quick crossover setup page.



Routing Tab:

Choose between manual routing, Matrix Mixer mode or Routing Grid mode, or predefined crossover routing.

The Use Auto Channel Naming check box will automatically generically name the outputs depending on the routing selected.

The Reset the Current Settings to Default check box will reset the current settings to default with the routing selected.

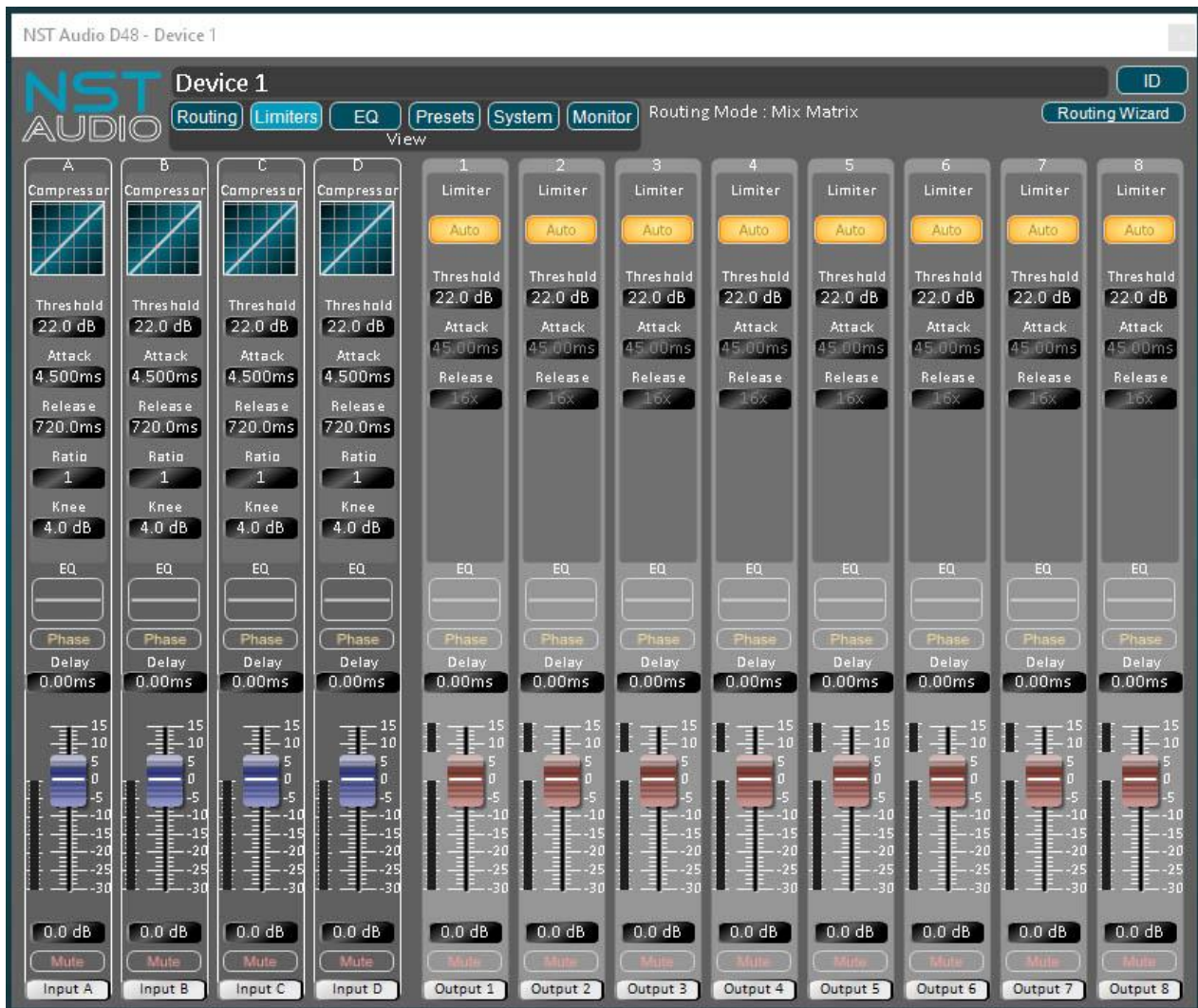
Linking Tab:

This page allows input or output channels to be linked together, so any parameter changes will be immediately reflected onto the linked channels in real time.

NOTE: The left-hand channels are used to make the initial link, so if say output 1 and output 5 are linked, the settings from output 1 will be initially copied to output 5; they will then track together here on in.

Crossover Tab:

This page allows for quick initial crossover setups – enter the various desired parameters and check the Apply the Above Crossover to Current Settings box and select OK.



Clicking on the limiter button will show the output limiters instead of the routing.

Auto

Auto mode (on by default) will automatically set the limiter attack and release times based on the output channel's High Pass Filter frequency.

Threshold

Adjusts the point at which the limiter comes into effect.

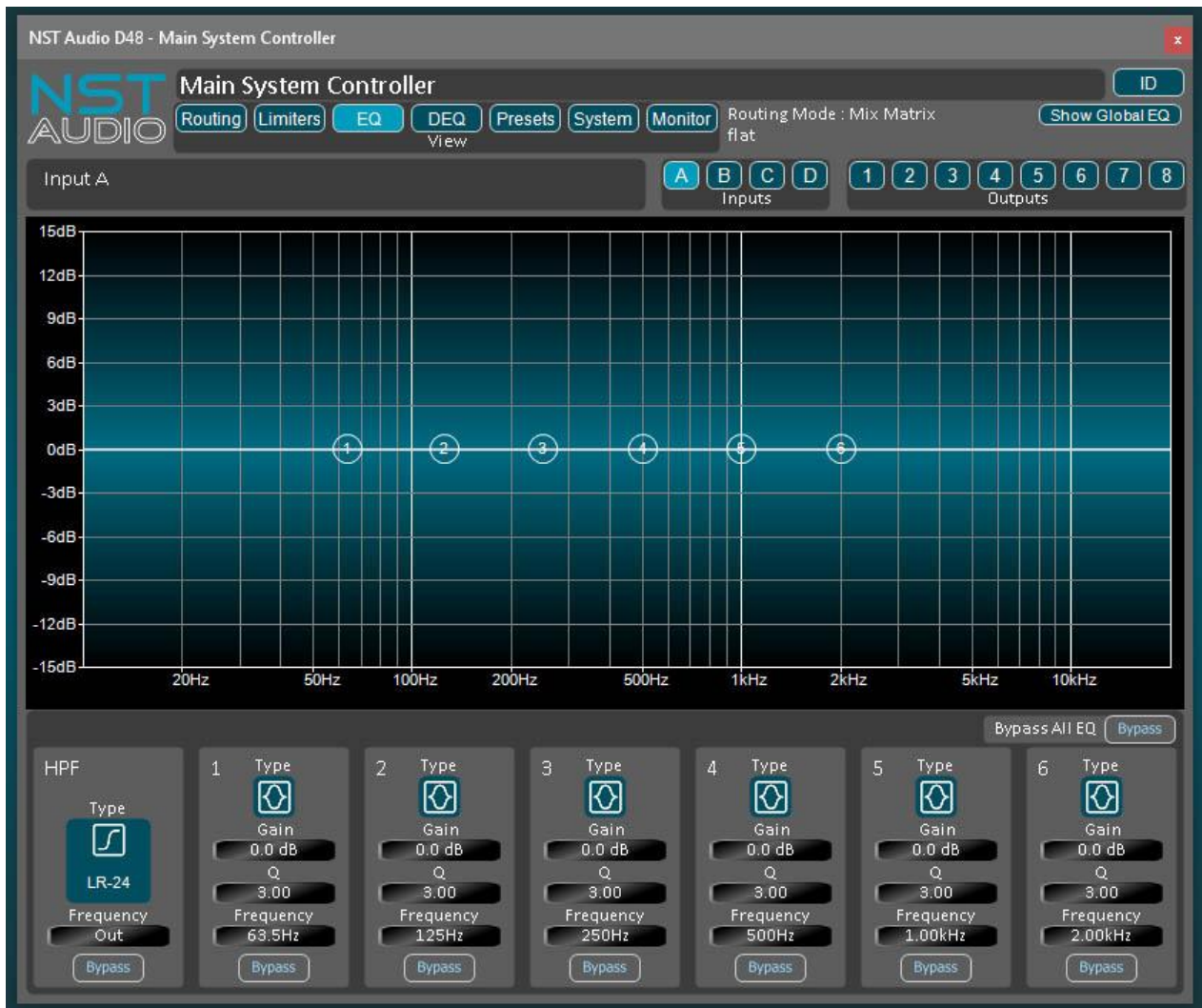
Attack

The attack time can only be edited in manual mode (Auto off) - Adjusts the limiter's attack time (How fast the limiter reacts once the threshold has been exceeded).

Release

Adjusts the limiter's release time (How fast the limiter releases once the threshold has been exceeded).

Note: The output meters are directly related to the limiter settings – the limiter threshold is represented by the 0dB mark and the ballistics of the meter are governed by the attack and release times. Once the threshold is exceeded, the gain reduction meter will show above the meter.



Clicking on the EQ buttons gives access to all the input EQ parameters.
Use the input, A, B, C, D access buttons to edit the desired channel's EQ.

Input HPF:

Clicking on the type box will allow selection of available filter shapes.

The frequency can either be typed in directly, by double-clicking on the frequency box, or the filter can be dragged by clicking and holding down the left mouse button on the frequency box, and dragging up and down to adjust.

Input PEQs:

Each input has 6 parametric EQs – these can be edited by either be double-clicking on the frequency, Q or gain box, and entering the desired parameter, or the filter can be dragged by clicking and holding down the left mouse button on the frequency box, Q or gain, and dragging up and down to adjust.

Alternatively, the filter node, on the EQ graph, can be dragged around in real-time.

To change the EQ filter type, bypass the filter, by clicking on the filter's bypass button, and then clicking on the type box – this will then show the available filter types.

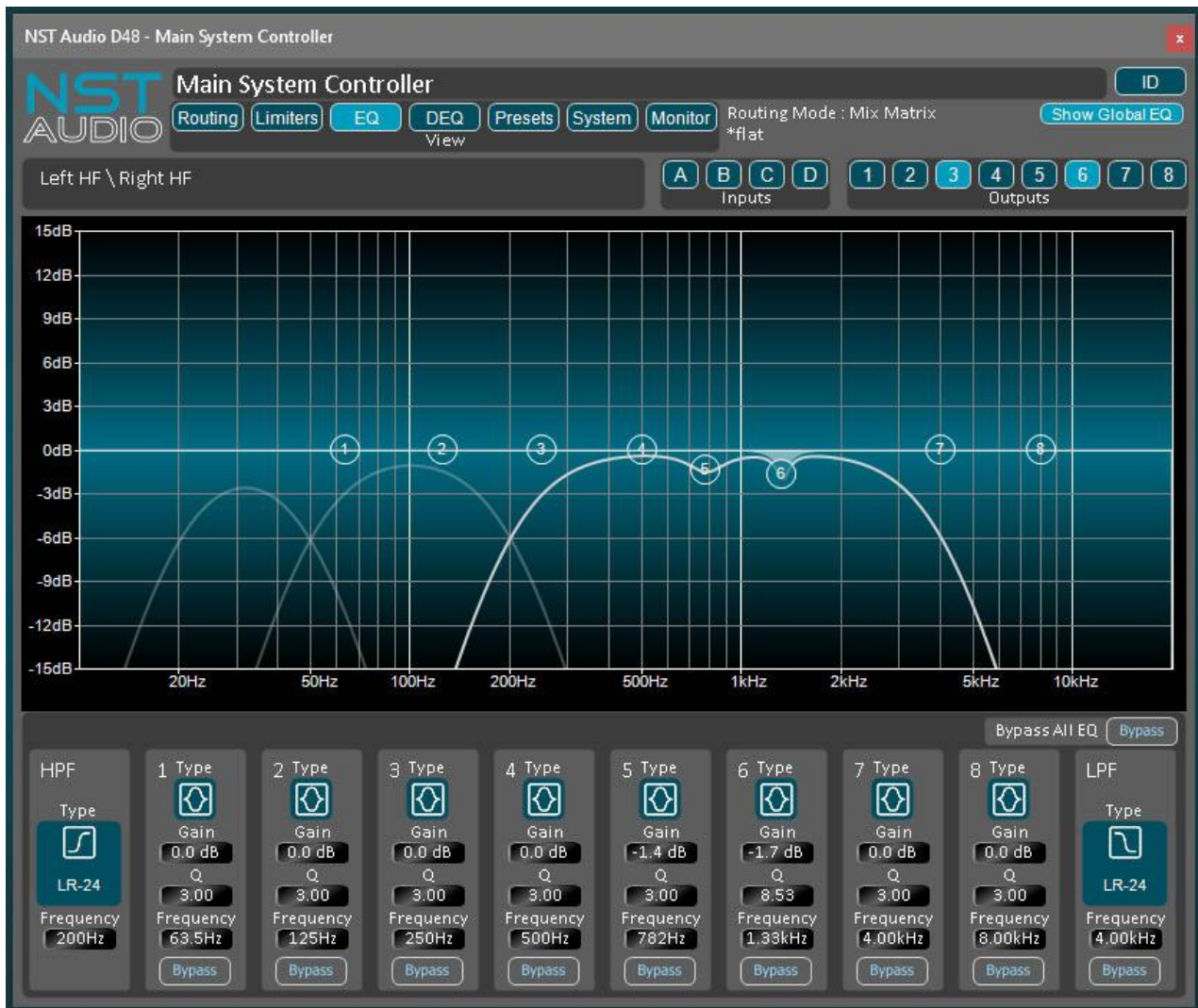
Note: Double clicking on the EQ graph will toggle the phase response display. The top of the screen is plus 180 degrees, while the bottom is minus 180 degrees.

Show Global EQ button:

This function toggles showing any other input EQ present on other input channels on the background of the EQ graph.

Bypass All EQ button:

This function toggles the bypasses on all EQ, on the selected channel. (This does not bypass HPF and LPF filters).



Clicking on the EQ buttons gives access to all the output EQ parameters.

Use the output 1, 2, 3, 4, 5, 6, 7, 8 access buttons to edit the desired channel's EQ.

Output HPF and LPF:

Clicking on the type box will allow selection of available filter shapes.

The frequency can either be typed in directly, by double-clicking on the frequency box, or the filter can be dragged by clicking and holding down the left mouse button on the frequency box, and dragging up and down to adjust.

Note: The HPF does not have a bypass feature for safety reasons.

Output PEQs:

Each input has 8 parametric EQs – these can be edited by either be double-clicking on the frequency, Q or gain box, and entering the desired parameter, or the filter can be dragged by clicking and holding down the left mouse button on the frequency box, Q or gain, and dragging up and down to adjust.

Alternatively, the filter node, on the EQ graph, can be dragged around in real-time.

To change the EQ filter type, bypass the filter, by clicking on the filter's bypass button, and then clicking on the type box – this will then show the available filter types.

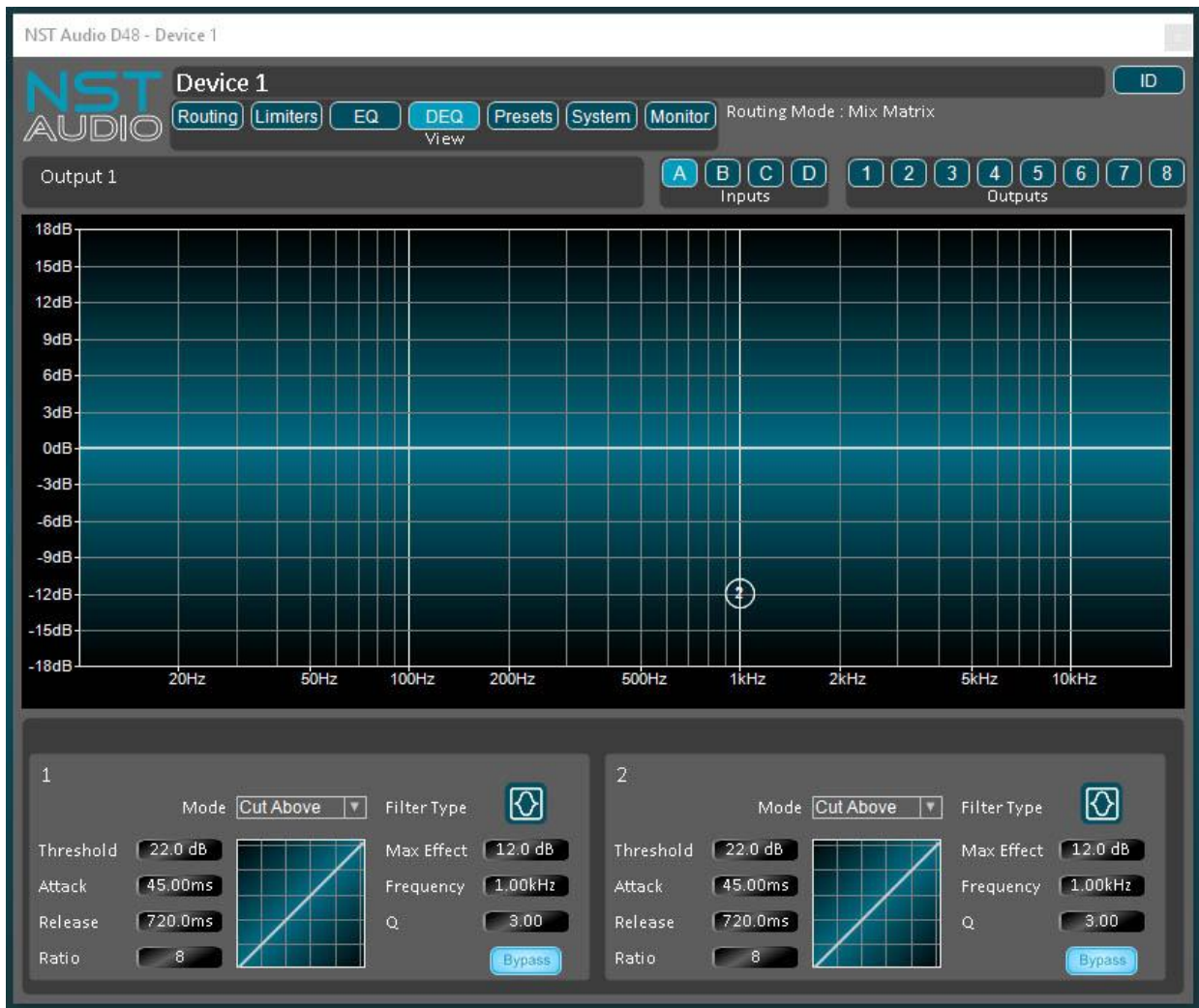
Note: Double clicking on the EQ graph will toggle the phase response display. The top of the screen is plus 180 degrees, while the bottom is minus 180 degrees.

Show Global EQ button:

This function toggles showing any other input EQ present on other input channels on the background of the EQ graph.

Bypass All EQ button:

This function toggles the bypasses on all EQ, on the selected channel. (This does not bypass HPF and LPF filters).



Clicking on the DEQ button gives access to all the input and output DEQ parameters.

*Note: Dynamic EQ filters are only available when the unit is in 48kHz sampling mode (see System Page).

Use the input A, B, C, D and output 1, 2, 3, 4, 5, 6, 7, 8 access buttons to edit the desired channel's DEQ.

Each input and output channel has two DEQ filters - these can be edited by either be double-clicking on any of the parameter boxes, and entering the desired setting, or the parameters can be dragged by clicking and holding down the left mouse button on the settings box and dragging up and down to adjust.

Alternatively, the filter node, on the DEQ graph, can be dragged around in real-time.

Note: If your mouse has a wheel, this can be used to edit the Q whilst dragging a DEQ node.

To change the DEQ filter type, bypass the filter, by clicking on the filter's bypass button, and then click on the type box – this will then show the available filter types.

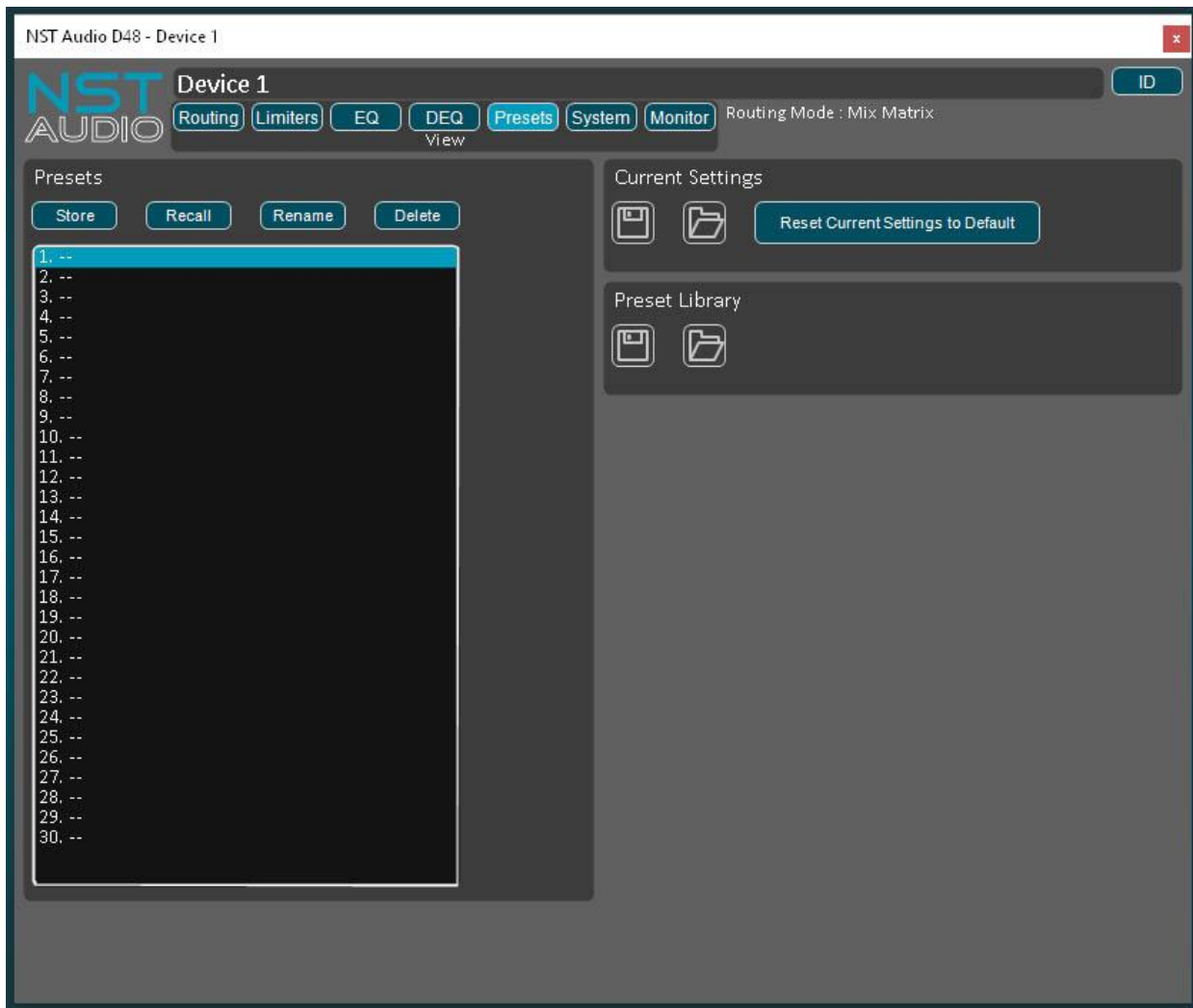
Each DEQ filter can be put into one of four modes:

Cut above – This mode will attenuate the set frequency when the filter's threshold has is exceeded.

Cut Below – This mode will attenuate the set frequency when the signal is lower than the filter's threshold.

Boost Above – This mode will amplify the set frequency when the filter's threshold has is exceeded.

Boost Below – This mode will amplify the set frequency when the signal is lower than the filter's threshold.



Clicking on the Presets button will show the presets settings - Up to 30 presets (memories) can be stored in each device.

Presets:

To store a preset, choose a number allocation and then press the Store button.

This will save the device's current parameters to memory, including in the device, if online.

Double click the preset or use the Rename button to edit the name of the preset.

To recall a preset, choose a number allocation and then press the Recall button.

This will recall the saved parameters from memory, including on the device, if online.

Note: all outputs will mute upon a preset recall – this is for safety reasons, as there's potential to damage speaker components, if a wrong preset with incompatible settings were to be recalled.

Current Settings:

Current settings can be saved to file, for back up or distribution purposes.

Use the disk icon to save settings to file.

Use the folder icon to locate and open previously saved files.

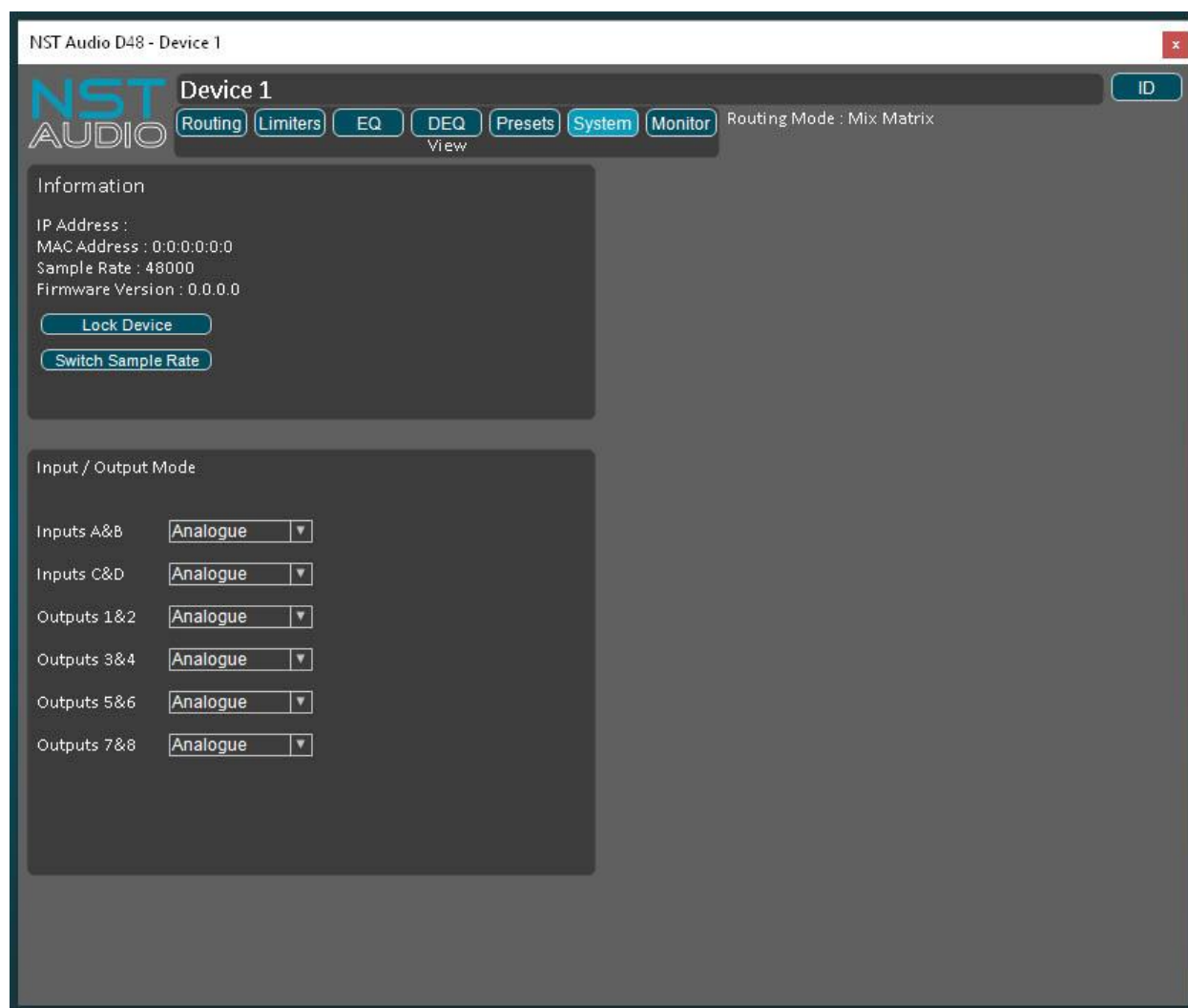
Reset Current Settings to Default – the button resets the current parameters to default.

Preset Library:

The entire preset library (shown on the left) can be saved to file, for back up or distribution purposes.

Use the disk icon to save settings to file.

Use the folder icon to locate and open previously saved files.



Clicking on the System button will show the device's System settings.

Information:

This section shows the IP and MAC address of the device, and the sample rate it is running at and the firmware version. To switch sample rates between 49kHz and 96kHz, use the Switch Sample Rate button. (You will need to reboot the physical device after switching sample rate).

NOTE: If using 96kHz sample rate, DEQ filters and 48dB crossover slopes will not be available.

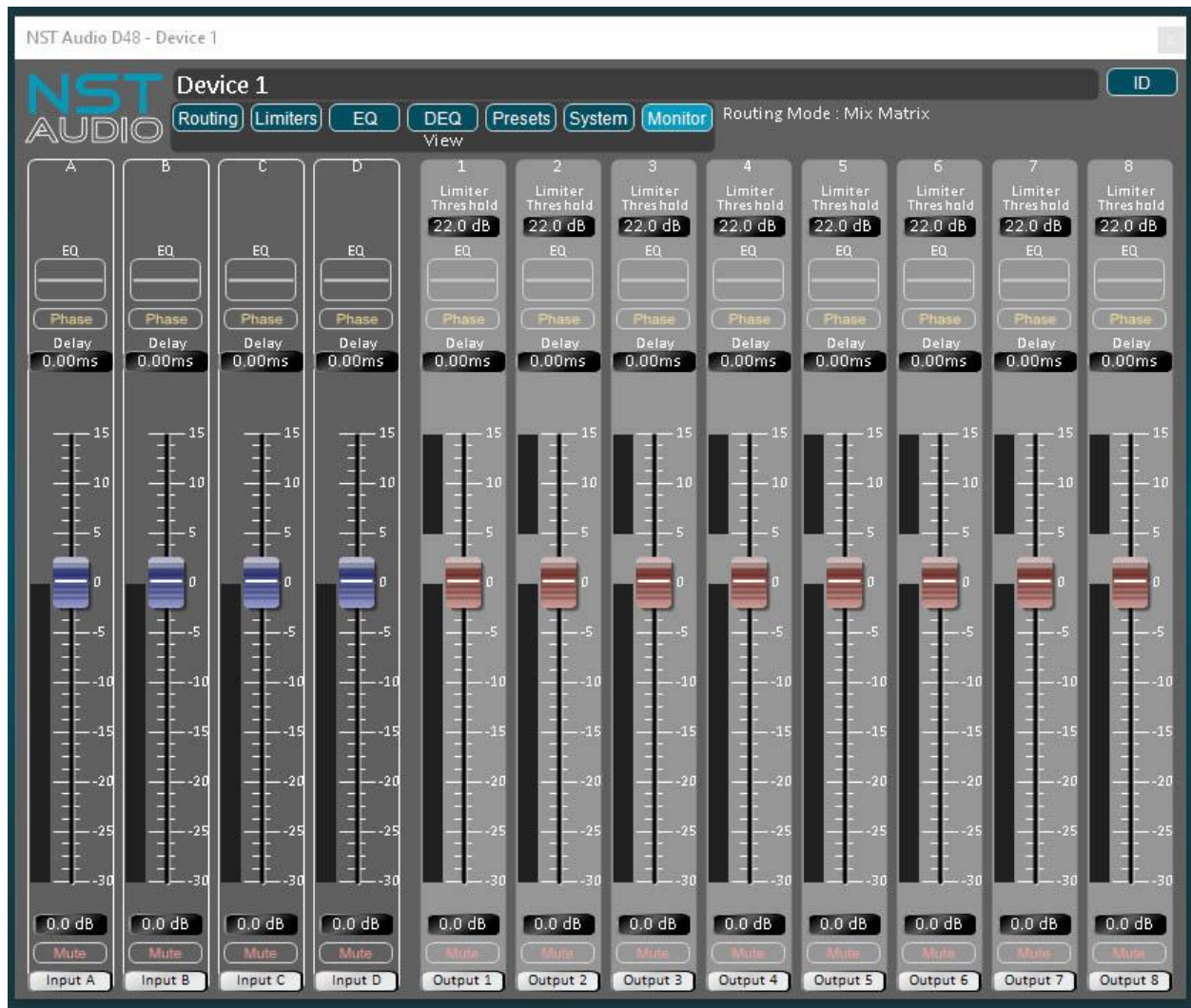
Lock Device button – this will lock the device (and physical unit if online) with a 4-digit password. You will be given the option to allow preset recalls from the front panels and then password confirmation will be required.

Once the device has been closed, it cannot be opened without entering the password – the device will still appear on the system and show metering on the System Monitor page.

NOTE: The physical unit will also be locked – see the product user manual regarding locking on the device.

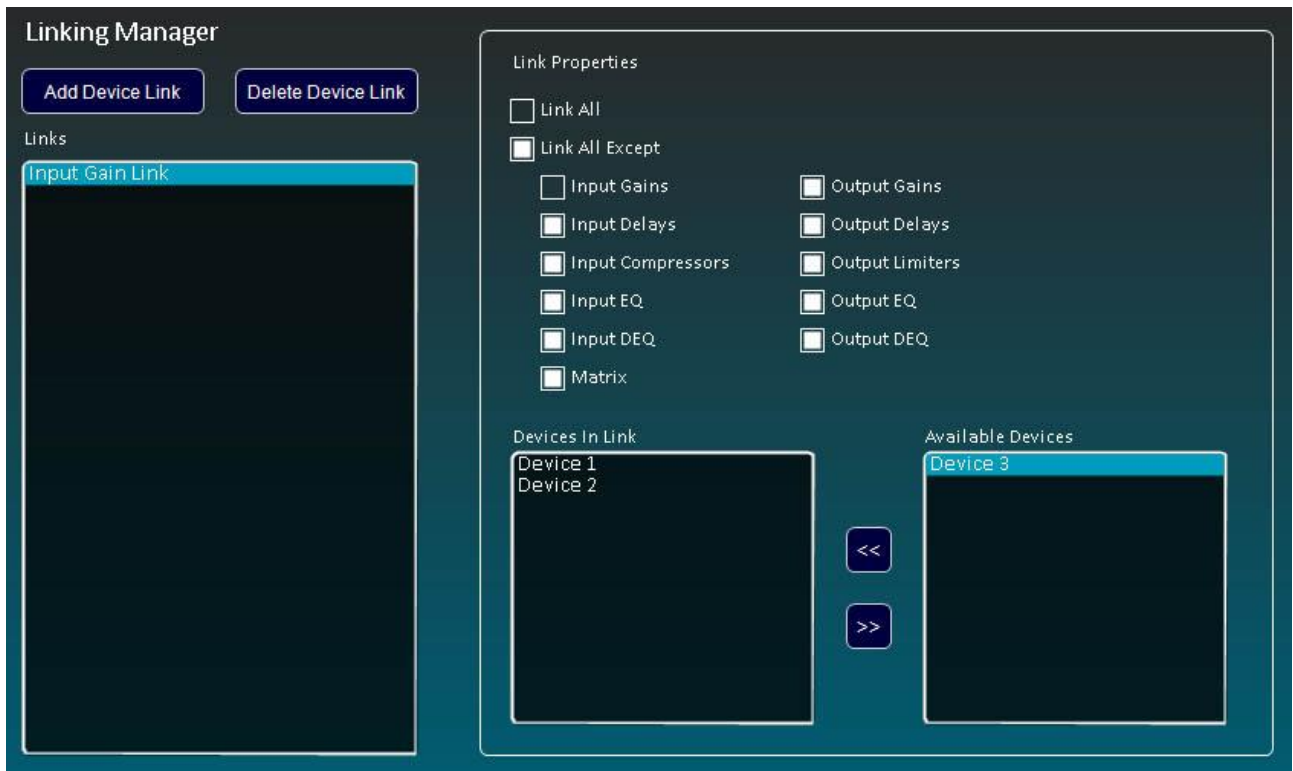
Input / Output Mode:

This section allows inputs and outputs to be either analogue or digital or a mixture. Please refer to the product user manual for wiring specifications.



Clicking on the Monitor button will show a large monitor page.

This page has no exclusive controls; it's just a more visual page showing larger metering and access to common controls.



Linking Manager allows various parameter groups to be linked across multiple devices – this allows parameters specified in the link to be adjusted in real time on any device in the link - all devices in the link will respond together immediately to the desired parameter setting.

To access the Link Manager, click on the chain link icon on the toolbar.

To set up a link, press the Add Device Link button.

This will cause a link name to appear in the Links window - double click the device link to rename it, if desired.

Now choose the parameter group to link from the Link Properties section.

Link All will link all the parameters across specified devices.

Link All Accept will link only the parameter groups not selected from the options given.

Now choose which devices are to be contained within the link, by selecting a device in the right-hand Available Devices window and clicking on the << button to add it to the link window to the left. (Devices can be removed from a link by selecting it in the left Devices In Link window and clicking on the >> button).

Repeat this for all devices you wish to be contained in the link.

Once a link has been added, the chain link icon on the toolbar will glow green.

The example shown above will link the input gains on Device 1 and Device 2.

Note that you can set up multiple links, by clicking on the Add Device Link button to add another.

PLEASE NOTE: This feature does not allow for any offsets, so if any parameter in the link is adjusted, all devices 'jump' to this value initially!



System Snapshots store all of the current settings on all devices defined to memory within the current D-Net (*.NST) file. This allows quick storing and recalling of settings across the entire current system.

(Note that System Snapshots are not stored or sent to connected devices; the feature is specific to the D-Net software, so remember to save your file!).

To access System Snapshots, click on the camera icon on the toolbar.

To store a System Snapshot, click on the Store button – this will store all current settings to this snapshot.

Double click a snapshot to rename it if desired.

To store multiple System Snapshots, click on the Store button again, whereby you will be prompted whether to create a new snapshot or overwrite the snapshot highlighted in the snapshot list.

To recall a snapshot, click on the snapshot you wish to recall and then click the Recall button.

To delete a snapshot, click on the snapshot you wish to delete and then click the Delete button.

Once a System Snapshot is stored, the camera icon on the toolbar will glow green.

PLEASE NOTE: System Snapshots recall seamlessly and instantaneously, so please be aware of recalling a snapshot that may contain parameters or routing that may damage your equipment.



To quickly copy channel settings, or save them to file, right mouse click on an output channel in either the Routing page or Monitor page. Right click an output channel again to paste or load the settings into the channel selected. Alternatively, the entire device can be copied and then pasted into another. Once a channel has been copied, and another channel is right clicked, the paste options are shown as below:



CONTACT

If you have any questions or comments about the information contained within this manual, or require further assistance, then please do not hesitate to contact us at www.nstaudio.com

Thank you

The NST Audio team