NetControl2 User Manual

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1. Introduction

1.1 Overview

NetControl is feature-rich software which enables the user to control and parameterize DFM's audio devices in a very simple and intuitive way. All devices connected by Ethernet IP based network can communicate with the software.
To provide a smart way for controlling networks with even tens or hundreds of nodes NetControl offers extended features like offline edit, hierarchical grouping of devices and building up virtual system which could be later automatically merged with real system.
The software works in two modes, manufacturer and user mode. The manufacturer mode is password protected and allows the manufacturer to edit extended device features.
Limited accessibility can prevent any changes by end-users that could cause bad sounding or even damages the example of which can be the settings for Speaker Presets done in the field.

NetControl offers also the possibility to adjust software look in accordance to your cooperation identity by simply editing the XML GUI description files.

NetControl can be used as manufacturer or normal user. When starting NetControl2 the software is normally in the user mode. In user mode user has limited accessibility and not all parameters of the device are shown (for example the output part for certain devices). To create speaker and libraries you should switch to the manufacturer mode. To enter this mode you need a special password. You receive this password when you get your manufacturer id.

Requirements
The minimum requirement for the PC is as following:
Supporting Operating System:

- Windows XP
- Windows ME
- Windows Vista
- Windows7
- Windows8

Processor:

- Minimum Dual Core with 2GHz

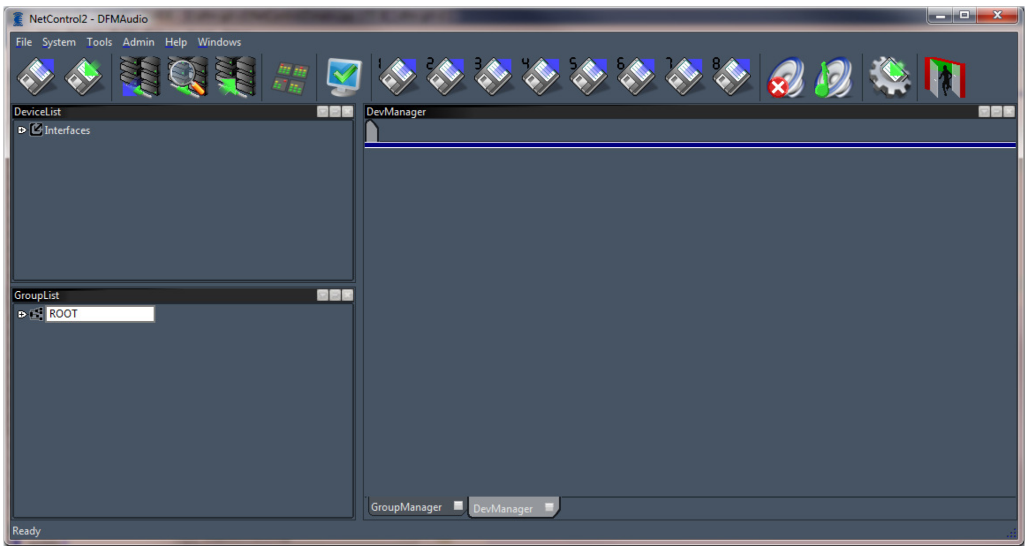
RAM:

- Minimum 500MB free Memory for NetControl2

2. First Step

2.1 Starting NetControl2

When you start NetControl2, it will open a window like the following.
On top there is the name of application and the manufacturer. The next line is the menu bar with following entries:
File|System|Tools|Admin|Help|Windows
Right under you can find the toolbar.



2.2 NetControl Main Windows

In the main view of NetControl there are 5 frames with as following:

- DeviceList
- GroupList
- DevManager
- GroupManager
- MessageLogging

2.2.1 DeviceList

In "DeviceList" lists all physical devices that has found on the Network and added to the Network. Here you can see if the device is connected or disconnected, device name and icon. User can select number of possible commands by right clicking on the device.

2.2.2 GroupList

In "GroupList" or System View shows the devices in the system and grouping. Here you can create groups, add virtual devices. You can also add real devices by dragging them from the Interface (in DeviceList) and adding to system root or a group in System View.

2.2.3 DevManager

In “DevManager” you can edit and observe parameters of the currently selected device.

2.2.4 GroupManager

In “GroupManager” the parameters of the currently selected group is shown. Modifying the parameters here will affect all the devices within this group.

2.2.5 MessageLogging

“MessageLogging” is a console to show Logging and debugging information for the user.
The Info shown in this window includes Error, Warning, Info, and debugging messages.
In Manufacturer setting (Admin->Settings->Debug Level) the admin user can decide what type of messages to be shown in Logging window.

The main look can be different as you can show or hide the windows. Check section “Windows” for more information.

2.3 Menu Bar

In the menu bar you have the following entries:

File

Import System:

Imports a system definition from a file (open .dsy file)

Export System:

Exports a system definition to a file (saved as .dsy file)

System definition refers to all the devices added and the grouping under “GroupList”.

Device->Export Preset to File:

Exports current parameters of this device to a Preset file (as .cprs file)

Device->Import Preset from File:

Imports parameters for this device from a Preset file

Exit:

Closes the program

Preset refers to set of parameters of a specific device. In NetControl Preset files are saved as encrypted .cprs files.

System

Clear System:

Removes the current system definition from “GroupList”

Edit System Shortcuts:

Specify 8 predefined System settings already exported as .dsy file.

Import System 1...8:

Import the system 1…8 from file defined in System Shortcuts

Tools

Network View:

Opens the Network View dialog to see available UDP devices (Devices+PCs) in a specific Network

Dante GUI:

Opens the window to manage Dante devices (available from V2.2)

Updater:

Opens the window in order to update device firmware as well as Preset and Speaker libraries

Library Overview:

Shows a list of predefined devices, their types and the current firmware version as well as defined Preset and Speaker libraries

Edit Library:

Here you can create or edit Preset or Speaker libraries

Auto Renamer:

Settings for renaming devices of the same name

User Settings:

Holds user configurable settings

User Mode:

Switches between different user modes

Admin (Not accessible in user mode)

En/Decrypt:

Encrypt and decrypt XML files

Settings:

Manufacturer settings to define user accessibilities, Special merging settings, and debugging mode setting

Help

About:

Software version

Software Manual

Opens the Software Manual in pdf

Logging (available in manufacturer mode)

Save, clear the logging window

Windows

Setting for NetControl Environment to open/close and in general to manage the different windows within NetControl

2.4 Toolbar

Export System:
Exports a system definition to file

Import System:
Imports a system definition from file

Receive Config from Network:
Reads the system structure from the network devices

Scan Network:
Scans the network for devices

Send Config to Network:
Sends virtual system setting to physical devices

Meter Bridge:
Window showing the main parameters and status of all the physical devices in system

Default Layout:
Sets the windows to the default layout

Import System 1…8:
Import the system 1…8 from Files defined in System Shortcuts

Mute:
Mutes all devices

UnMute:
Unmutes all devices

Export Device Param:
Exports the actual parameter settings on the devices

Exit:
Closes the program

3. User Mode

3.1 Working with Devices

In User Mode you can set Parameters for physical devices and also add virtual devices and set parameters for them. You can also merge and group devices.

3.2 Working with Physical Devices

When a physical device is connected to network and holds an IP-address you can scan the network for the devices on the network and add a device or devices to NetControl. For more detail refer to "Scanning for Physical Devices" section.
When you add a device to NetControl you might be inform by software to update firmware, Preset or Speaker Library. It is recommended to proceed to update before working with the device. Updating will be explained in next sections.
When the device is added to NetControl it appears in "DeviceList" window under "Interfaces". By right clicking on the "Interface" icon you have access to following commands.

Interface Commands

Scan Network:
Opens the Menu to scan the network for physical devices

Remove All:
Removes all the physical devices from "DeviceList" window

Disconnect All:
Disconnects from all the physical devices in "DeviceList" window

Reconnect All:
Reconnects to all the physical devices in "DeviceList" window

By right clicking on the single devices added to "DeviceList" window you will have access to device specific commands. Some of these commands are also accessible via tool bar or menu bar.

Device Commands

Edit:
Opens the window to see device type, IP-address, device name, and Serial number - Device name can be also modified here

Remove Device:
Removes this physical device from "DeviceList" window

Disconnect:
Disconnect from this physical device

Reconnect:
Reconnects to this physical device

Set DeviceType:
Opens the window to modify device type
Only available in Manufacturer mode
Clear Group Parameters:
Removes all group parameters for this device
Export Preset to File:
Exports current parameters of this device to a Preset file (as .cprs file)
Import Preset from File:
Imports parameters for this device from a Preset file
Export Device Setting:
Exports special setting parameters of this device as a Device Setting file (as .cset file)
Import Device Setting:
Imports setting parameters for this device from a Device Setting file
Export Speaker to File:
Exports output parameters of available channels to Speaker file (as .cspk file)
Only available for Controller devices
Update Firmware:
Updates the firmware of the device

When a device is connected the device indicator will be green and otherwise red. When the device is online it can be only modified via NetControl and not directly on device. This is indicated by a "C" sign (connected) on the device display.
It is recommended to drag and drop physical devices to "GroupList" window (System View) for the group parameters to be applied on device.

3.3 Working with Groups

General

In NetControl you can create unlimited number of Groups in GroupList Window. You can have a group hierarchy of maximum 2 Levels. In a group you can edit Gain, Mute, Delay and the filter settings of the input section of a device.

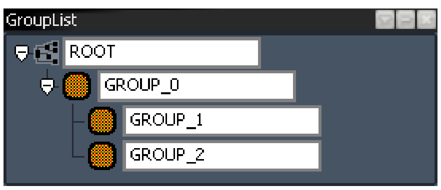
System View (GroupeList) allows creating and managing your system. Devices can be added from the DeviceList window by "drag and drop". It's also possible to add virtual devices to your system which could be later merged with real devices. To add a virtual device right click on the root group and select the device type you want to add. By right clicking on virtual or physical devices in GroupList you can access to device specific commands explained in previous chapter.

It's recommended to add all devices that you work with to the system. Even if only one device is used, it should be always added to the system. Only by adding a device to the root group of the system all group settings would be applied.

3.3.1 Using Groups

In order to create a group, right click on a group or main group symbol and then click on "Add groups->Group4Channel/Group2Channel" depending on the number of input channels on your device. By drag and drop with left mouse button you can also move groups.

A very useful feature of the NetControl is the possibility to build up hierarchical groups. This creates a smart controlling ability for plenty of devices even in complicated setups. Since there are devices with 2 and 4 input channels there are also 2 and 4 channel groups. A group hierarchy can be built up in two levels (maximum two level nesting) but only with one sort of group (Group4Channel or Group2Channel). Please take care to add devices based on number of inputs to right groups, otherwise you will have wrong and unpredictable group setting values.



For each group and subgroup you can apply different delay, gain and IIR settings (in GroupManager). The delay and gain settings of group hierarchy will sum up together as total group setting. This value will add up to delay and gain settings of indivitual device to build the final value (Summery). The IIR filter settings are independent since there are different bands for each group and subgroup.

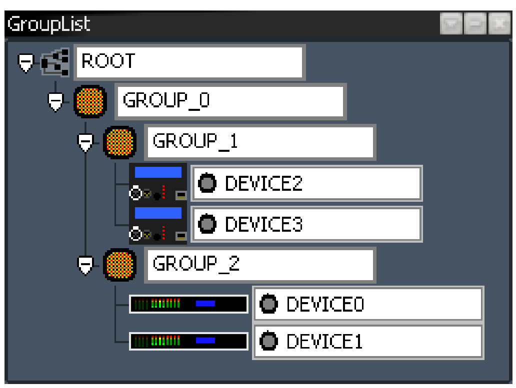
It's not allowed to have different kinds of groups (4-channel and 2-channel) in one group hierarchy (group and subgroup).

It's allowed to have 2-input channel devices in a 4-channel group and it's also allowed to have 4-input channel devices in a 2-channel group. Please avoid to do this as the results would be unpredictable.

In order to move a device from one group to another first move it to the system root.

To add a device from the network to a group you can use "drag and drop" functionality. Virtual devices can be added by right click on the group and selecting the desired device. To change group or device names right click on the group or device and select "edit". To remove devices or groups use the right click on the group or device and select "remove".

3.3.2 Group View



3.4 Creating Virtual Systems

With NetControl you can create offline system and later merge this setting with real devices.

In the GroupList you can create groups (and subgroups) and add virtual devices.

3.5 Merging Device Manually

To merge a physical (real) device with a virtual device you can drag a physical device over a virtual device of the same type. The settings of the physical device will be updated to those set on virtual device. When the physical device is already in the system you cannot merge.
If any preset is selected from the preset library for virtual device, on merging the same preset would be selected on the real device and parameters would be updated to this preset. Make sure that the real device has the updated preset library.

If you choose Preset0 ("--------") which indicates "No Preset Selected" on virtual device, on merging all parameters (preset parameters) will be sent to real device. Real device still holds the same preset number but with new parameters from the virtual device.

3.6 Auto-merge / "Send Config to Network"

The System will be updated according to virtual system setting and the virtual devices will be merged to physical equivalents if exist.

3.7 Retrieving System from Device /"Receive Config from Network"

The System will be updated according to physical devices existing in the Network and the corresponding setting.

4. Scanning for Physical Devices

4.1 General

In the scan system menu you can scan for new devices. The currently available devices in NetControl won't be affected.

In the Connectors table all PC-Interfaces are shown. Here you can see the IP-Address of your interfaces (can be one or more) and the network mask.
The PC and the devices should be in the same network area. To modify the IP-address of the devices in NetControl double click on the device in Network View in window (Tools -> Network View).

All found devices by scanning are shown in the "Scanned table". By pressing add all devices are connected. When "Add only selected" is marked, only the selected devices are added.

4.2 Scanning

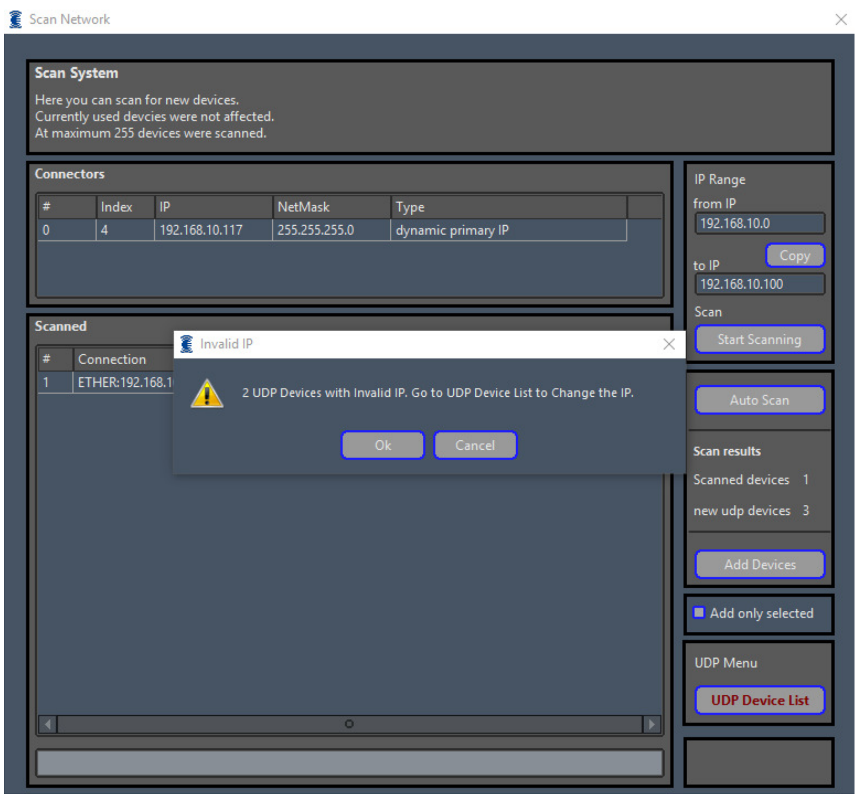
In order to scan for a new device, click "Scan Network".
The scanning in NetControl2 works with TCP/IP or UDP this means that the PC on which NetControl2 is running needs a valid IP-Address. The devices have to be in the same IP-Address area as the PC.

There are two methods for device scanning. For quick scan of the available UDP devices click "Auto Scan" and for a normal scan select "Start Scanning". The quick scan detects devices faster and it detects only the devices of the right ID.
The normal scan takes longer as it tries to connect all devices in the given IP-range. For normal scanning procedure you need to specify the IP range.

Auto Scan

Auto Scan uses UDP scan to connect to all devices. The IP-range is ignored. The UDP Scan can only connect devices in the same IP-area than the NetControl2 and devices which hold the right Manufacturer ID.
In order to change device IP, open “Network View” directly or click “Network View” under Tools from the menu.

After scanning the network the software might inform you that some UDP devices on the Network have invalid IP and therefore they might not be shown in scanning results. Invalid IP address can refer to IP out of valid IP-area (connectors IP) or identical IP between devices or a device and a PC on the Network. Clicking Ok to be redirected to “Network View” to check the IPs and change them.



Start Scanning

In the input boxes, “From IP” and “To IP” you can select the IP range for searching the devices. By clicking on “Start Scanning” only the devices in the selected area are scanned.

After devices are scanned by “Auto Scan” or “Start Scanning” the “Add Device” button appears (before it is invisible) and you can add the devices to your system.

5. Device Parameter Setting in NetControl

5.1 “DevManager” window

For any physical or virtual device added in NetControl you can modify parameters in “DevManager” window. Physical and virtual devices in system are available under tabs in Device manager window. The parameters available for modification differ according to device type as well as user mode. For some devices (e.g. Controller devices) certain parameters, such as output setting is only available in Manufacturer mode. Here we discuss parameter setting tabs mostly common for all devices. For more specific device setting please refer to specific device user manual.

Below you can see the main view of C3 device in NetControl.

In below image you can see main tab for a Controller device in NetControl. The output section is not directly available as in EQ device (image above). For Controller devices the output parameters other than gain, phase and mute can be set via loading speakers in User mode.

5.2 Input Section

This section which concerns input parameters of devices differs according to device type but it is available both in user and manufacturer mode for all devices.

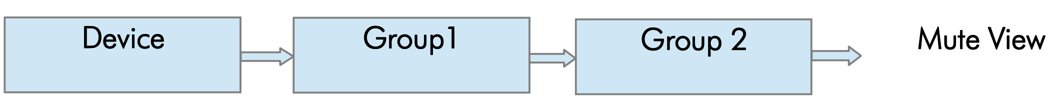
5.2.1 Device View Main Tab

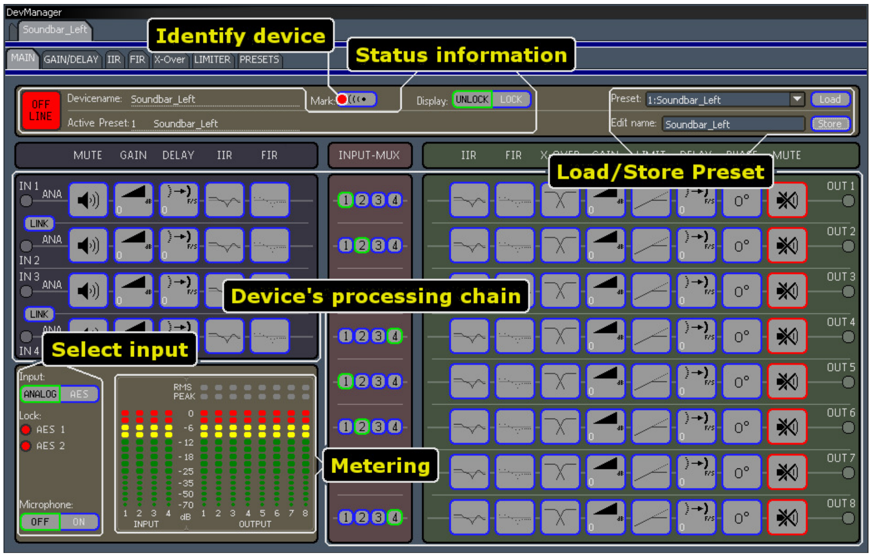
The main tab view gives you a brief overview of the device. It shows In and Out levels, channel mutes, the selected preset, status signals and a block diagram of the device processing chain. You can switch to different views by clicking on the boxes in the block diagram or by selecting different tabs.

Controls for loading and storing device presets are located on the upper right side.

⚠

The mute LEDs above the level meters show a resulting mute signal from group and device settings (see graphic below). A channel is only active if the channel is enabled in both group- and device settings. The connection line between the boxes shows the channel status only for the device settings (red=mute, green=active).This means by muting on the group level a channel can be muted even if the connection line is green.

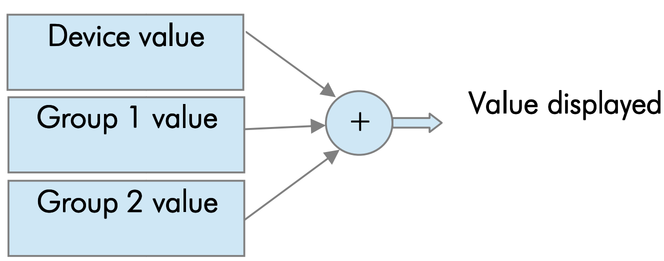


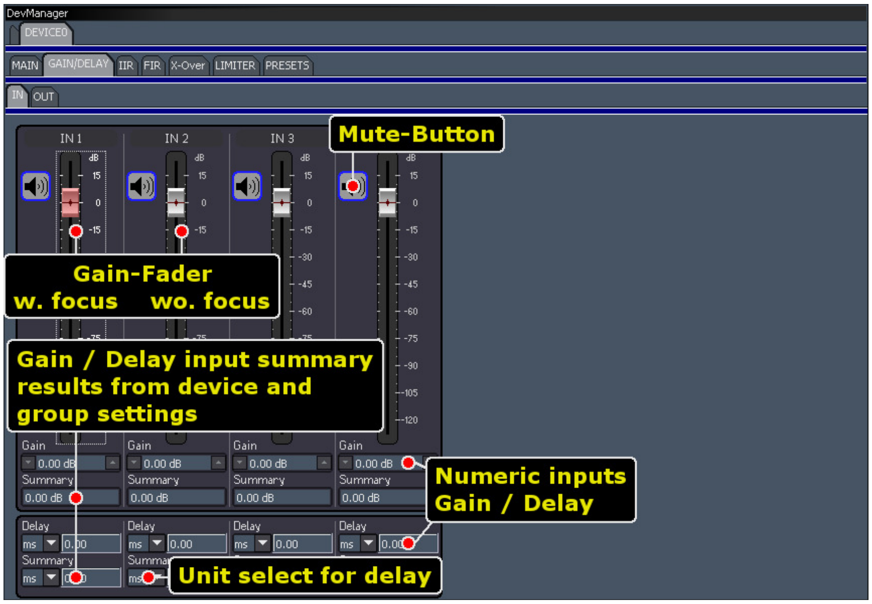


Using the Load/Store Preset controls, you can load (make active) an existing preset. To do so select a preset from Preset drop-down list and click "Load" button.
To store the current settings as a preset on the device select an empty preset slot from the drop-down menu, enter a name in "Edit name" and click "Store". Selecting an existing preset in drop-down list and storing will overwrite all preset parameters.
All the presets on the device are available and can be loaded under "Presets" tab.

5.2.2 Device View Gain/Delay - IN Tab

The "IN" tab allows modifying the device input gain and input delay. It shows also the total resulting input delay and gain. The results are calculated from device and group settings in the following way:

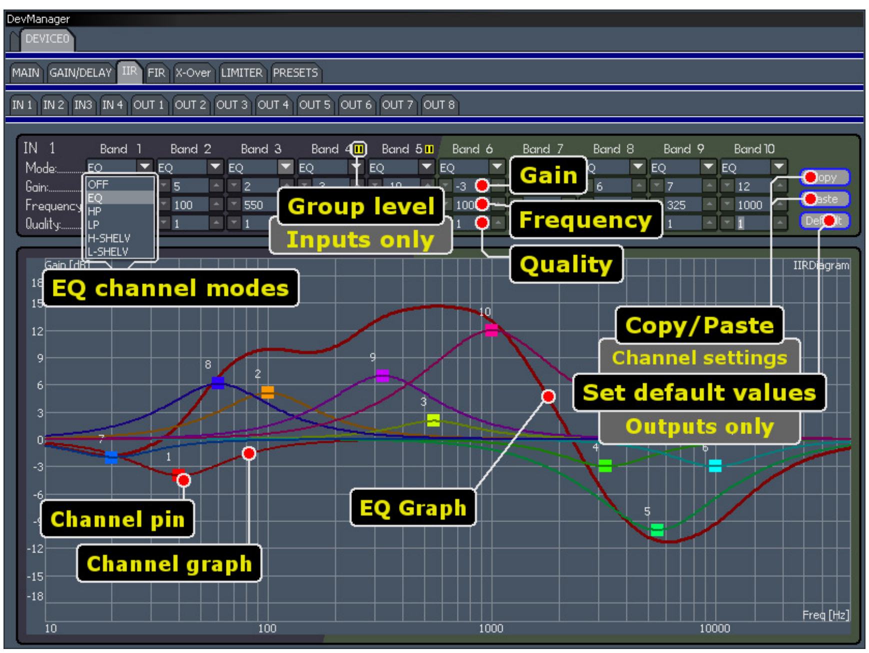




5.2.3 Device View IIR - IN Tabs

In this tab the input IIR filters can be modified. There is one tab for each input of the device. For each input there are 10 IIR filters available.

There are devices which have more than 10 input IIR filters per input (e.g. C3 devices with 15 bands). Filters from 11 upwards could only be controlled over group settings and are not shown in the Device View input IIR Tab.



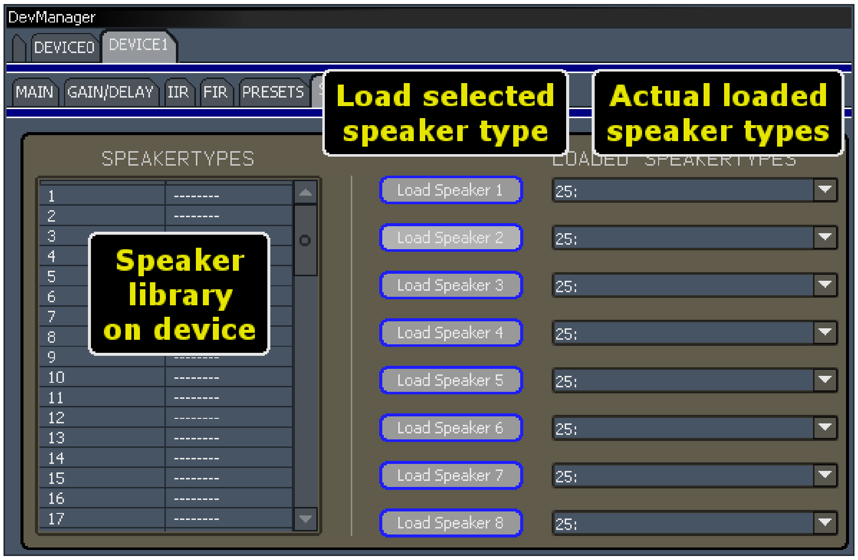
Filters which are marked with ▮▮ or ▮ symbol are shared with group filter. Be aware, that you can modify these filters in the "Device View", but your settings could be probably overwritten by group settings.
(▮▮=2nd Group, ▮=1st Group)

5.2.4 Device View Preset Tab

Here new Presets can be loaded on device. To Load a Preset, click on the corresponding Preset button. To store a Preset choose the desired number, type in a describing name and press store.

5.2.5 Device View Speaker Tab

This tab is only available for Controller devices. Here speaker Presets can be loaded. Speaker Presets are added as a Speaker Library on the device. Choose the desired Speaker Preset, for each output in the drop down lists on the right hand side and click load.

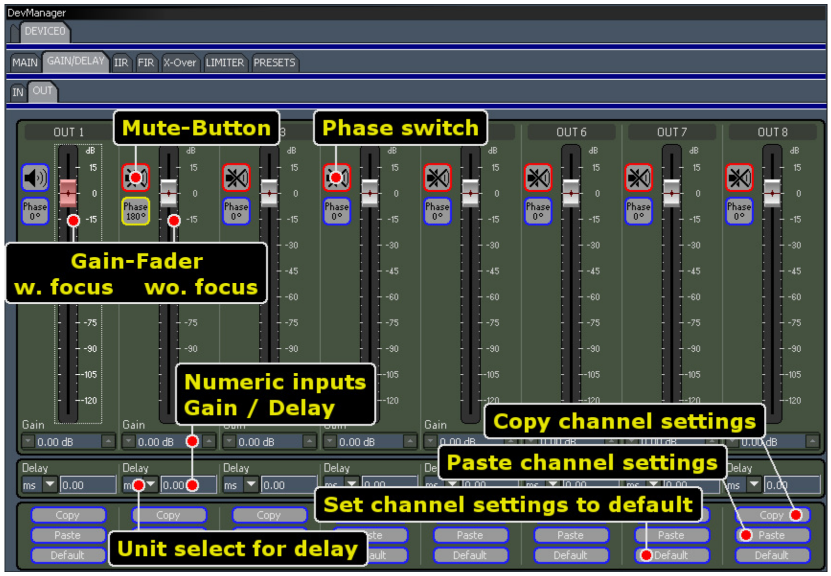


5.3 Output Section

This section which concerns the devices on the output section differs according to device type as well as user mode. For EQ devices this section is available under the same tabs as the input section with label "OUT". For Controller devices on the other hand this section is not available in user mode. For Controller devices the output is situated under "Speaker Setting" tab in Manufacturer mode. For controller devices output settings can be modified in manufacturer mode and saved as Speaker Presets and Library. The speaker Presets and Library can be then used in user mode by end-user to apply predefined parameter settings for the output section.

5.3.1 Device View Gain/Delay - Out Tab

The Out tab is available for all devices in manufacturer mode. In user mode the output is only available for EQ devices.
For the Controller devices there is no "Out" tab available as it is replaced by "Speaker Setting" tab in Manufacturer mode in order to save output settings in Speaker Presets and libraries. Second image shows a Controller device in NetControl. The output section is available only in Manufacturer mode and under "Speaker Setting". You can use Copy and Paste buttons to copy all settings of output section from one channel to another or even from one device to other. You can use Default button to set all output settings to default values.

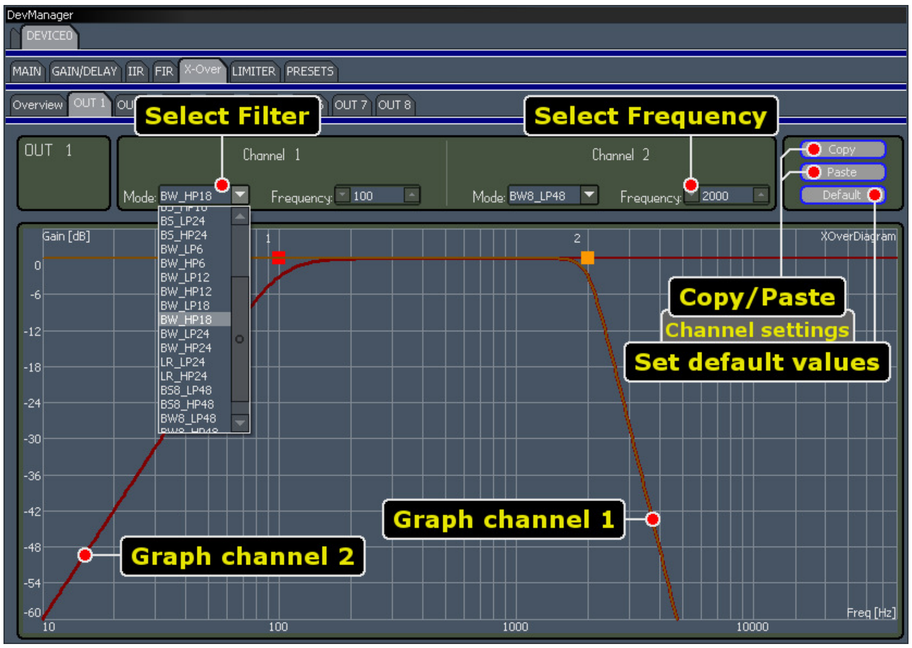


5.3.2 Device View IIR - OUT Tabs

In this tab the output IIR filters can be modified. There is one tab for each output channel of the device. The IIR filter setting for output is exactly the same as input section. Refer to IIR IN Tab section.

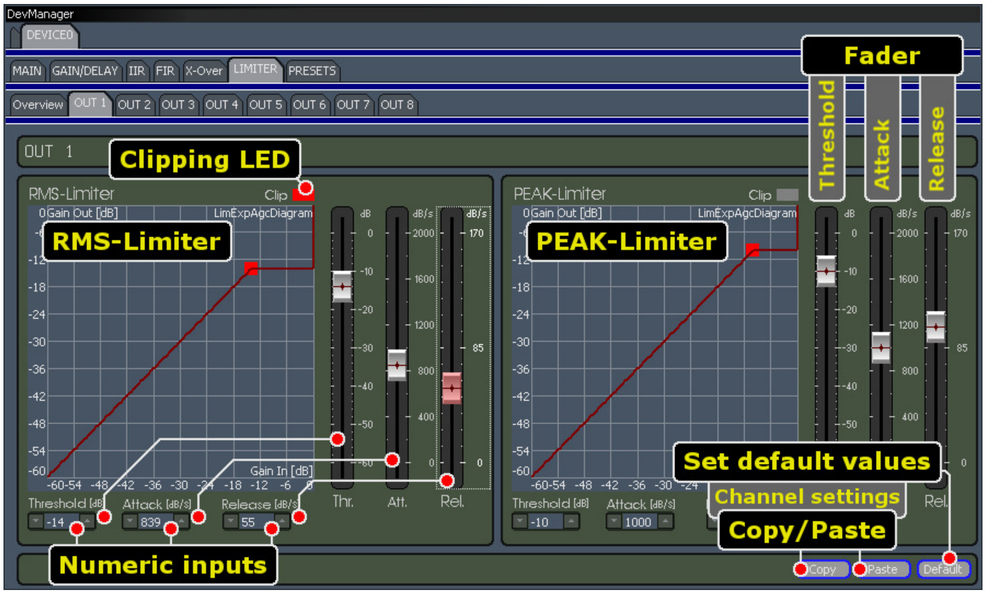
5.3.3 Device View X - Over Tab

There are up to two X-Over filters with different characteristics for each output. Like Out-Gain/Delay and Out-IIR settings the settings are only available in manufacturer mode for controller devices (they are not group controlled).

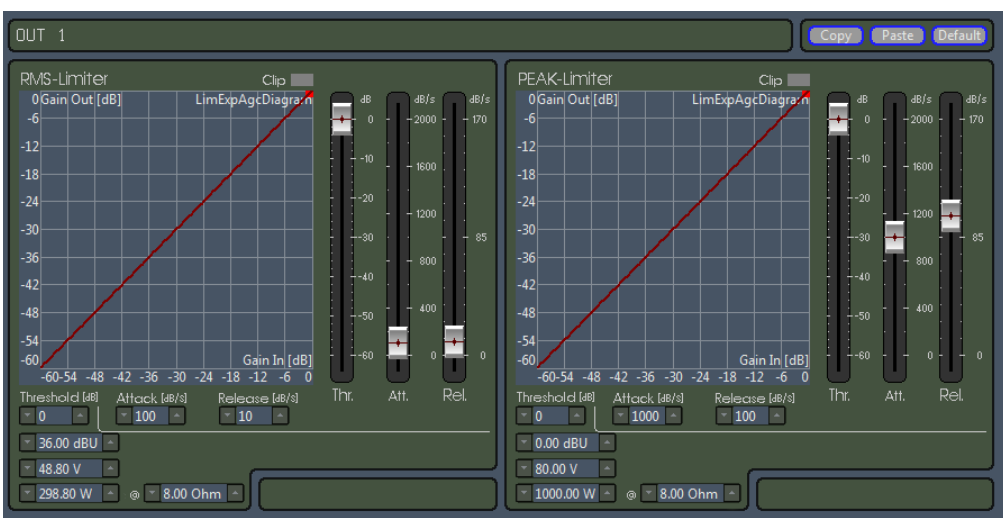


5.3.4 Device View Limiter Tab

Up to two limiters could be set for each output. One could be configured as a long term RMS limiter and the other as short time peak limiter. The attack value is given in dB per second which allows configuring attack time and ratio by only one parameter.



In older version of NetControl the limiter threshold values were measured and sent to DSP in dBFS. In New version of the NetControl the threshold values are converted to dBU for convenience. The corresponding output voltage, power and resistance can be also used as extra parameters for enhanced setting of threshold value in practice.



5.4 System Settings

For physical and virtual devices you might find “system Settings” tab in DevManager.

Under this tab specific parameters of device can be seen or modified. The contents under this tab are different from one device to another and between manufacturer and user mode.
Certain parameters can be only modified in manufacturer mode. In this tab you can set or observe number of parameters such as system setting or amplifier setting. For detailed information please refer to manual of the specific device.
Some of the parameters under this tab can be exported as part of Device Setting file (*.cset) which can be loaded on devices of the same type.

6. Special Menus/Dialogs

6.1 Network View

In this dialog box (Tools -> Network View) you find all the devices NetControl2 detects in real-time via UDP. This includes all the PCs, DFM devices or any device holding an IP on the Network of the selected adaptor. The devices or PCs holding the same IP address will be highlighted for better detection by the user. The dialog will indicate if device holds valid or invalid IP address. You can change the IP-Address in this dialog. You can use notify function to distinguish devices visually in the network.

6.1.1 IP Change

You can modify the IP-Address of a single device or group of devices. There are three ways to change IP-address of a device.

- Single device IP change
- Auto IP Change:"Auto"
- Expert IP Change:"Expert"

Double click on a specific row to change the IP address of a device.
By clicking "Auto" IP change the system will select valid IP address for all devices automatically. This will automatically change IP-address of a device or devices with the invalid IP-address to a valid free IP starting from IP address 1 in the adaptor range.
Using "Expert" IP change function you can select to change IP of a group of devices starting from a specific IP-address.

6.1.2 Notify Function

You can send and receive "Notify Signal" to and from devices uniquely distinguished by their MAC address even if they hold identical IP. "Notify Signal" can come in handy specially when there are devices with Identical IPs or devices without display. Using "Notify Signal" option user can distinguish single device when many devices are available.

6.2 Update Dialog

In this dialog box (Tools -> Updater) you see the firmware, Preset Library and Speaker Library of the devices in the DeviceList (only physical devices). You can also update the firmware and libraries. This means loading the library and containing presets on the device. Select a device from the list and click on "Library", "Speaker", or "Firmware" in order to update the device. When the existing firmware, Preset Library or Speaker Library on device is not the latest version, the corresponding item will be highlighted as red and otherwise will be shown in green. The name of the Preset or Speaker Library used for update is the one with exact same name of the device type and is available under device home folder.
When you are adding a physical device to NetControl, software checks if device need any update and informs the user. It is recommended to update the device before working with it.

6.3 Library Overview

In this dialog box (Tools -> Library Overview) you see the current versions of all the supported device types and the corresponding firmware version as well as the Preset and Speaker libraries.

6.4 Windows

Here you can dock or undock the windows and group them. When you close the application automatically the current setting is stored.

It may happen that you open NetControl2 and no windows are shown. In this case open "Windows ->All" from the menu bar and select "Dock All -> Left". Now you see four windows on the left side of the screen.
By clicking on the window name you can move the windows and reorder them.

In "Windows-> Manage Windows" you can modify the settings of the available windows the way suits you best. You can also save the current layout. The layouts would be available under "Windows -> Layouts".

6.4.1 Set Default Layout

By clicking on the "Default Layout" icon on the toolbar the layout is changed to the default setting.
If no default layout is defined, nothing will be changed. To change the default setting check section "Modify Default Layout".

6.4.2 Modify Default Layout

By clicking on the "Default Layout" icon on the toolbar the layout is changed to the default setting. You can modify the default setting by clicking on "Windows->Manage Windows" on the menu bar. Click on the save button and set the name to "default" in order to be identified as the default Setup. You can save layouts with other names that will be available under "Windows->Layouts" and can be chosen by clicking.

6.5 Edit Library

Using Edit Library you can define Preset and Speaker libraries for the device.

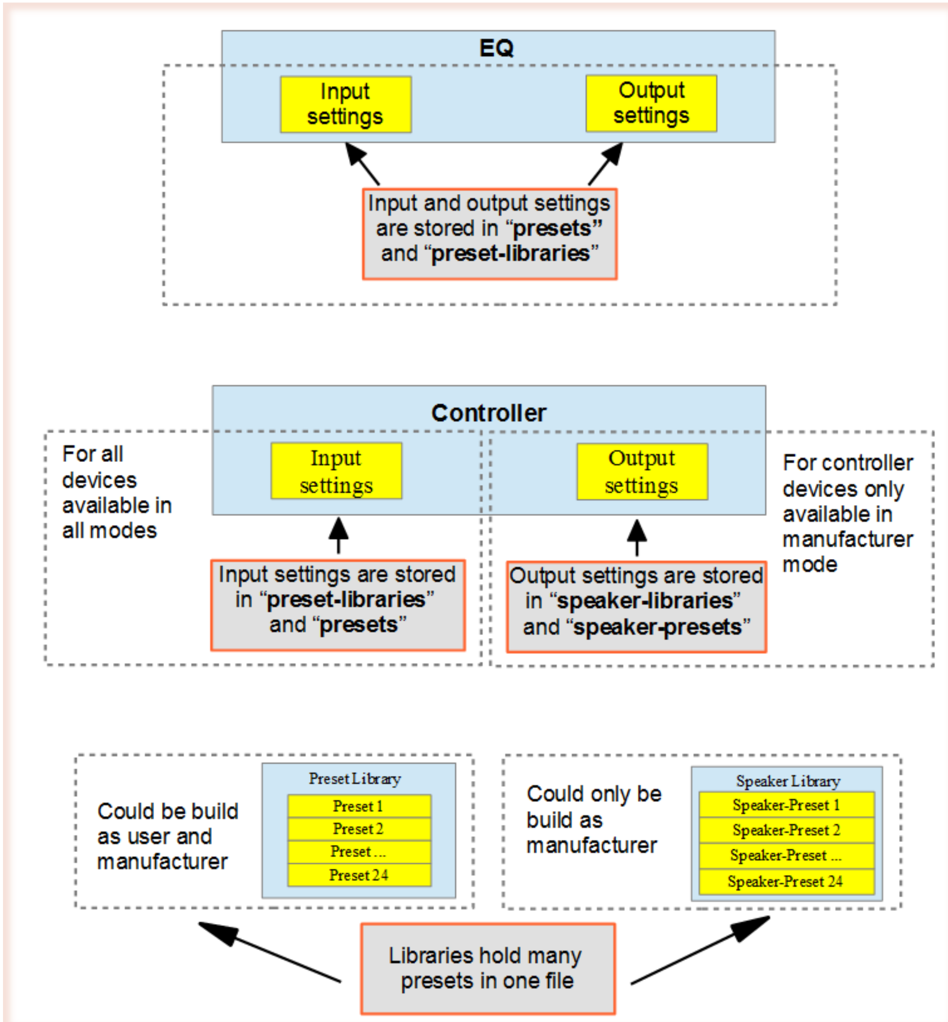
⇨ **See section Creating Preset and Speaker Libraries**

7. Presets

Hereafter the Preset, Speaker Preset, and libraries for EQ and Controller will be clarified in detail.

7.1 Basics

Generally there are two different kinds of devices, **Controller** and **EQ** devices. All settings are available for EQ devices in both manufacturer and user mode. For Controller devices however the output section is only available in manufacturer mode. Regarding this there are also two different kinds of libraries and Presets [Presets and Preset Libraries] and [Speaker Presets and Speaker Libraries]. There are no Speaker Libraries available for EQ devices. The definition of Preset and Preset Libraries differ between EQ and Controller devices. Presets store all settings for the input and output section for EQ devices, whereas Presets for Controller devices store only the settings for the input section. See graphics below.



7.2 Exporting Preset to File

To save Presets to a local file right click on the device to which your settings have been applied. In the popup menu choose "Export to Preset". In the next menu choose the directory and a file name for the Preset. The Preset file is saved with .cprs file extension. The Preset file of device should be saved in the device specific folder.

This works for real and virtual devices in both Network and System View. It is also the way used for building Preset Libraries.

7.3 Exporting Speaker to File

To save a Speaker to a local file right click on the device to which your settings have been applied. In the popup menu choose "Export to Speaker" and select one of the available output channels to be saved. In the next menu choose the directory and a file name for the

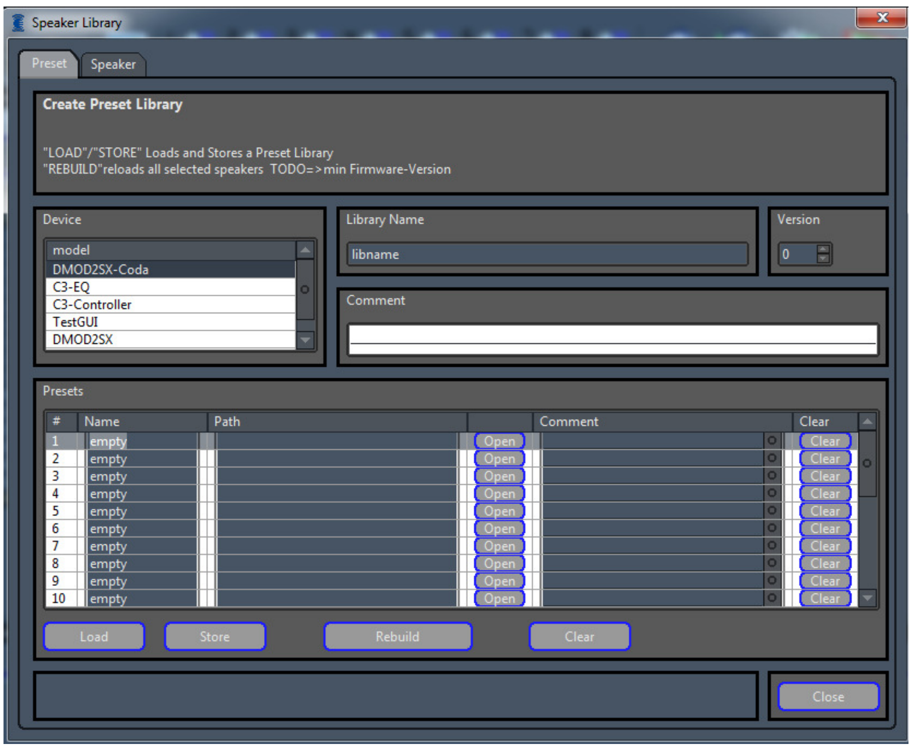
Speaker Preset. The file is saved with .cspk file extension. Save the Speaker file to device folder.

This works only for real and virtual Controller devices in both Network and System View. Note that Speaker Preset contains setting of one single output channel.

Speaker is defined only for Controller devices.

7.4 Edit Library

To create and modify Libraries open the Dialog Box "Tools->Edit Library".



7.5 Creating Preset Library

Libraries are a smart way to manage your Presets in a single file. This means Libraries are a collection of different Preset files. If you have more than one device it could be very annoying to update each single Preset, instead you just update the library file and all your Presets are automatically updated.
To build a Preset Library you have to Export the presets which should be included in the library to a local file. Then click on the "Tools -> Edit Library" and select Preset tab.
The Preset Library window opens. First select the device type, name and version for the library. For each slot in the library you can define a preset file by clicking on the open button. Choose your Preset file in the file dialog. In the comment column a comment for

the Preset could be added. When all desired Presets are loaded, click on the "Store" button.

Note:
From NetControl V2.2 you can add Device Preset file (*.cset) in the first row as preset 0 or STP (System Preset). This file holds the device system parameters as part of preset library.

⚠ By loading a new library into a device, the old Presets will be overwritten. If the library contains empty slots the old Presets will remain.

7.6 Creating Speaker Library

7.6.1 Building Speaker Preset

There are slight differences between building Speaker Presets and building Presets.

- ⇨ Speaker Presets are only available for controller devices
- ⇨ Speaker Presets store only the output settings of a single output channel
- ⇨ Speaker Presets could only be Exported to a local files
- ⇨ Manufacturer mode has to be run to create them

To create a Speaker Preset select a controller device and apply the desired settings for a particular speaker to the output section. Then right click on the device and select "Export to Speaker" and select the output channel. Choose a file name and where to export the Speaker Preset.

7.6.2 Building Speaker Libraries

The process for creating Speaker Libraries is mainly the same as for Preset Libraries. Just click on the "Tools-> Edit Library" and select Speaker tab and the Speaker Library window appears.
The window looks similar to the Preset Library window.
Generally it is recommended to fill all slots. If you have designed less Speaker Presets than available slots just define a default Speaker Preset to fill up the remaining slots. It would better for the default Speaker Preset to not route any inputs to outputs. This can be done by clicking "Load Default Speaker" and selecting the default Speaker.

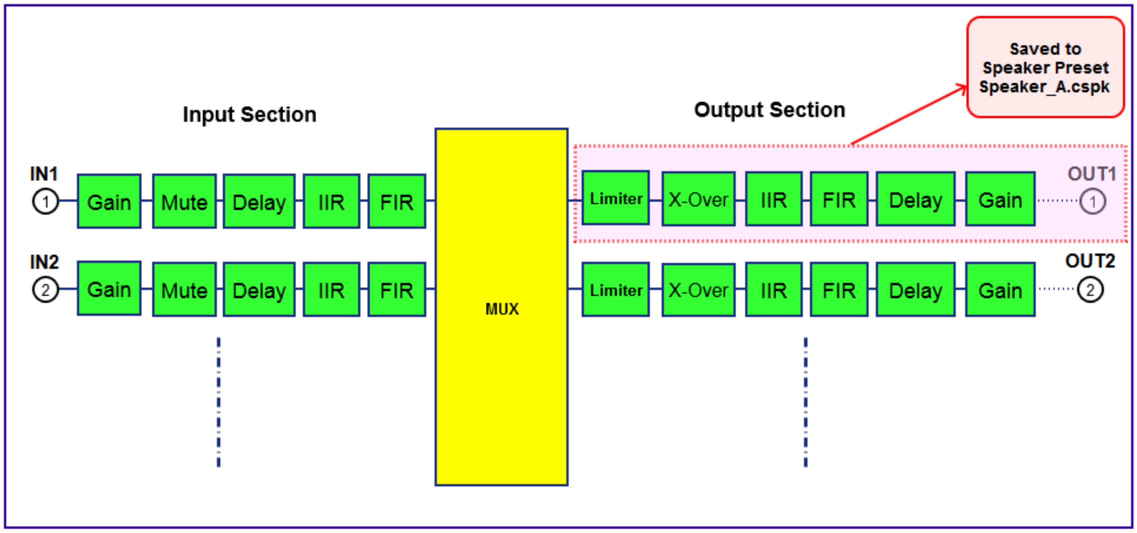
To work offline with the Speaker Library the Library file name must match with the device type name. For example a "C3-Controller" library must be named "C3-Controller" and saved to the sub-directory of the device.

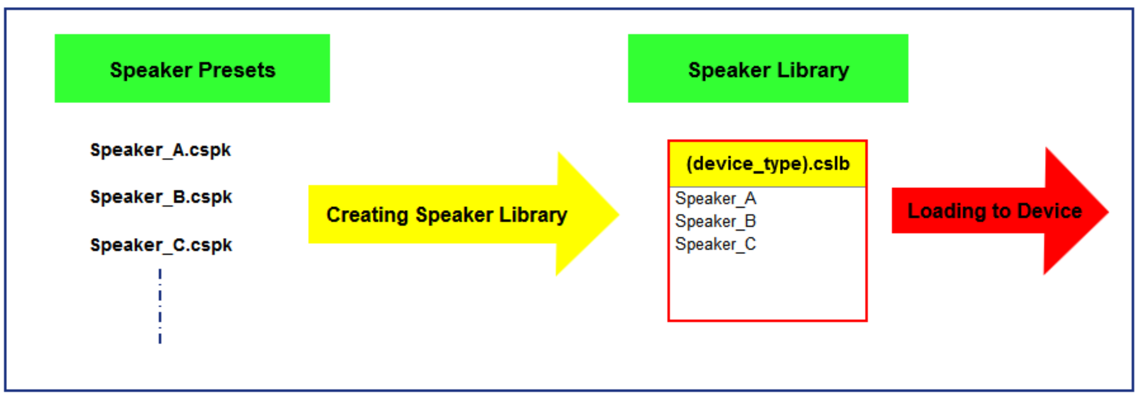
7.7 Speaker Library and Speaker Preset

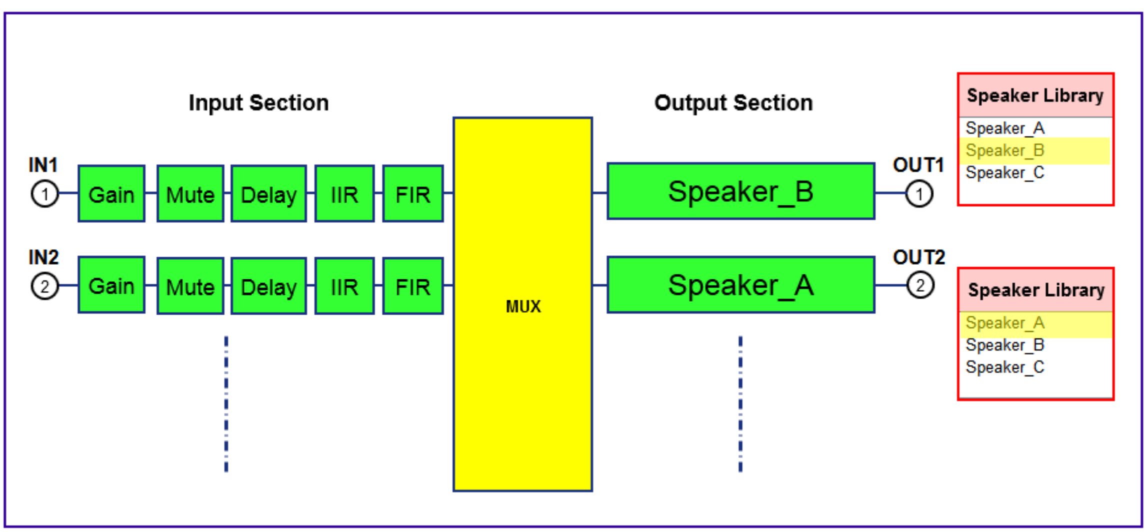
For Controller devices the Output settings cannot be set directly on the device by the end-user. On the device the end-user can just select one of the speaker presets saved as part of a speaker library by the manufacturer. The speaker presets and library would be created in NetControl and loaded on the device as a single speaker library containing all speaker presets. As a manufacturer you have to load speaker library on the device in manufacturer mode. This is done by updating the Speaker Library in Tools -> Updater.

Using the NetControl in Manufacturer mode different output settings including Gain, delay, Limiter, X-Over, IIR filter, FIR Filter or other parameters depending on the device type, can be modified for each single output to test the effect directly on device but for permanently applying the setting you should save setting as speaker files and speaker library. Parameters that are exported to a speaker preset are limited to one single output as selected.
In the next page you can see how settings of the output1 as an example are saved as a speaker file with .cspk extension. In Order to create a speaker file modify any output setting and save to speaker by right clicking on device and selecting “Export to speaker”. Create more speaker files by modifying the parameters of same or other outputs and saving each output as speaker files with different names.

In the next step the library is created from speaker files and loaded to device in manufacturer mode. Third picture shows how the output setting can be only applied for each output by selecting speaker presets from the speaker library.


Saved to
Speaker Preset
Speaker_A.cspk
Input Section
Output Section
IN1
IN2
Gain
Mute
Delay
IIR
FIR
MUX
Limiter
X-Over
IIR
FIR
Delay
Gain
OUT1
OUT2


Speaker Presets
Speaker Library
Speaker_A.cspk
Speaker_B.cspk
Speaker_C.cspk
Creating Speaker Library
(device_type).cslb
Speaker_A
Speaker_B
Speaker_C
Loading to Device


Input Section
Output Section
Speaker Library
Speaker_A
Speaker_B
Speaker_C
IN1
IN2
Gain
Mute
Delay
IIR
FIR
MUX
Speaker_B
Speaker_A
OUT1
OUT2
Speaker Library
Speaker_A
Speaker_B
Speaker_C

7.7.1 Benefits of Using Speaker and Library

Benefits of Using Speaker Preset and Speaker Library for Controller devices

- The User can select one of many available Speaker settings (Speaker Presets) from Speaker Library for any output on device.
- The Speaker selection for outputs is independent of the Preset selected on device. The reason is that the Preset just keep track of loaded speaker for each output referring to corresponding speaker file. Refer to output-speaker arrangement at the end of this section as a concrete example of speaker preset and speaker library application.
- The flexible structure of Preset in relation to Speaker settings, facilitate the modification on output setting for OEM. The manufacturer can adjust the output frequency characteristics without the obligation to make any change to Presets on the device. Manufacturer can simply modify the Speaker Library and update it on the device.

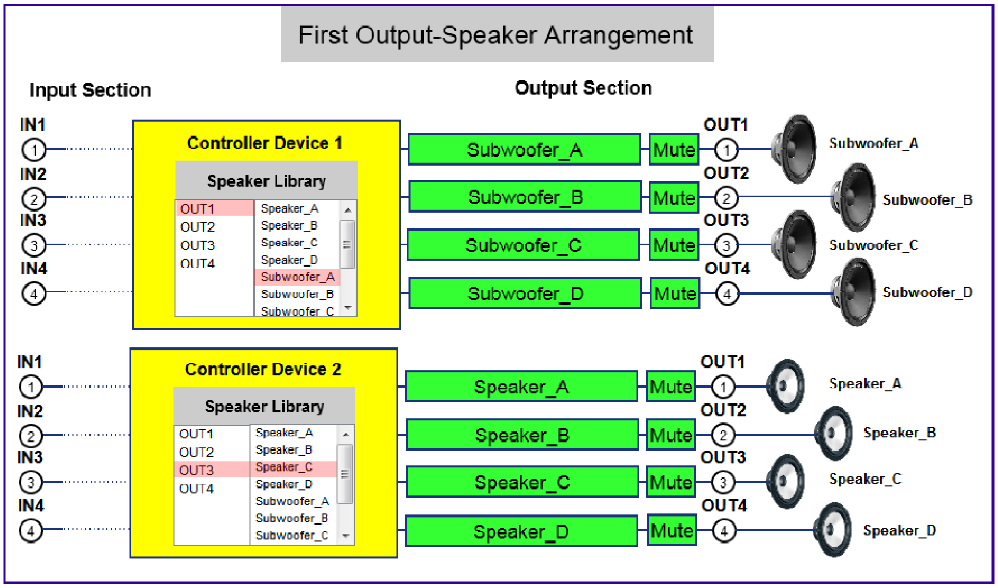
The Preset Library and the Speaker Library (Only for C3-Controller, DMOD3C, DMOD3P-WS) can be easily loaded (Updated) on the device. After Creating the Library follow the procedure below:

1. Connect to the device
2. Open Tools -> Updater
3. Select your device in the list
4. To load Preset library click "Library" and for Speaker library (for applicable devices) click "Speaker". Confirm the update message. The Libraries are now loaded on the device.
5. Disconnect and Reconnect to device and check the new device libraries under Preset and Speaker tab.
6. You can now select different Presets or speakers for device in NetControl or directly on device.
7. Note that updating Preset and Speaker Libraries on device are independent of each other. You can load (update) Preset or Speaker Library anytime separately and this won't affect the other.

7.7.2 Output-Speaker arrangement

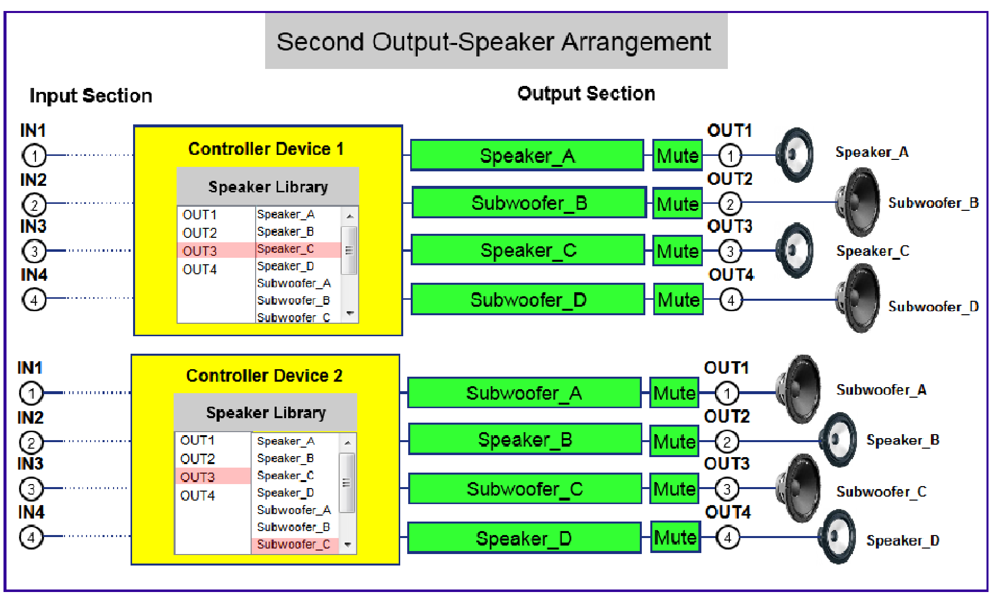
As soon as the manufacturer update the device Speaker library containing different Speaker presets (output settings) according to available Loudspeakers, the end-user can then arrange outputs according to connected loudspeakers the way suits him the best.

In below graphics two different output-speaker arrangements are shown. In the first figure two 4-output Controller devices are connected to 8 loudspeakers. In the Second one the arrangement is modified by the user. The end-user select different speaker Presets from speaker Library according to connected loudspeakers. This can be done by the end-user directly on the device or in NetControl user mode.



Rearranging the Output_Speaker

The user can modify the Output-Speaker routing on **Device** or in **NetContorl**

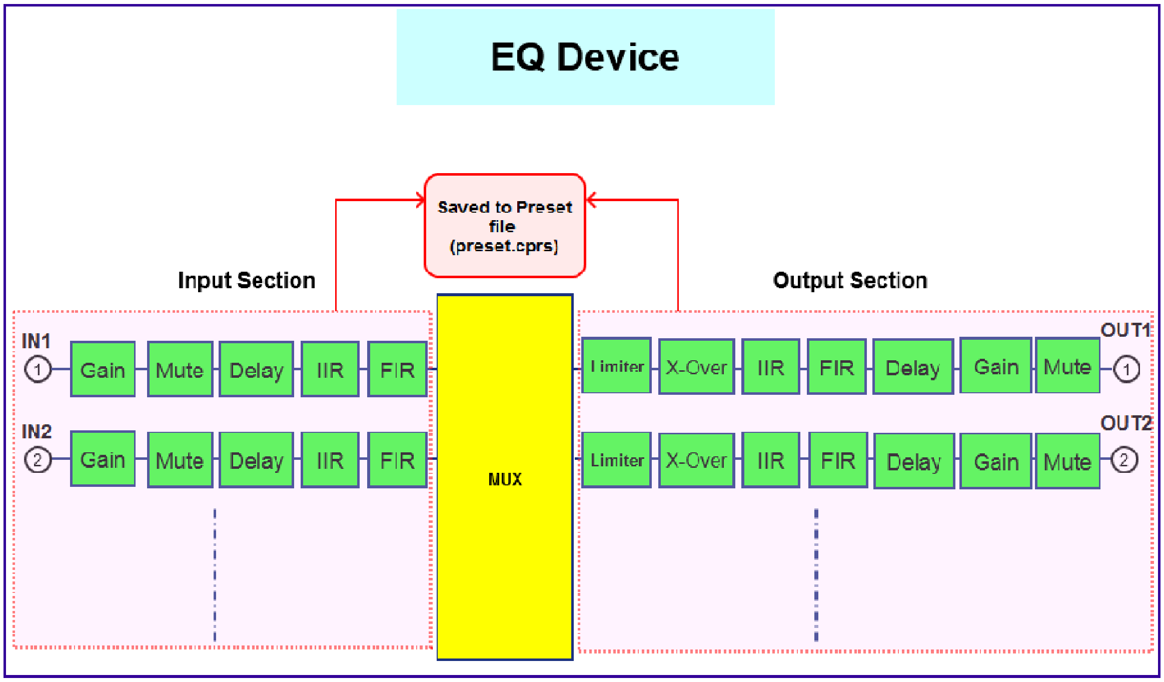


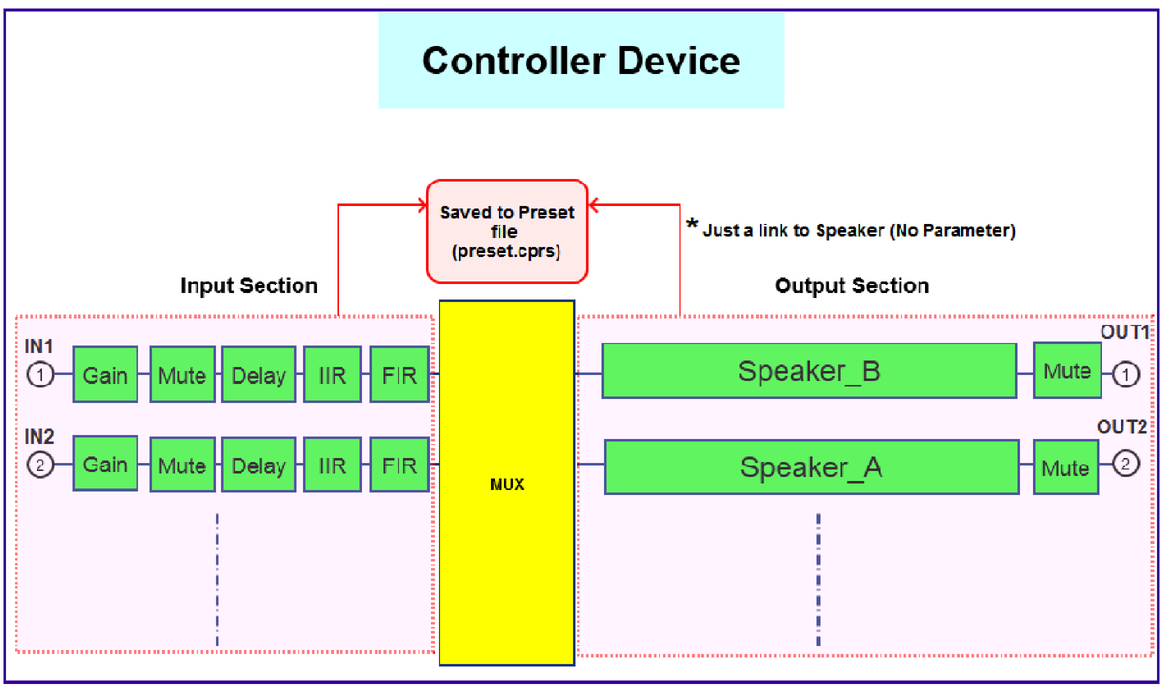
7.8 Preset and Preset Library

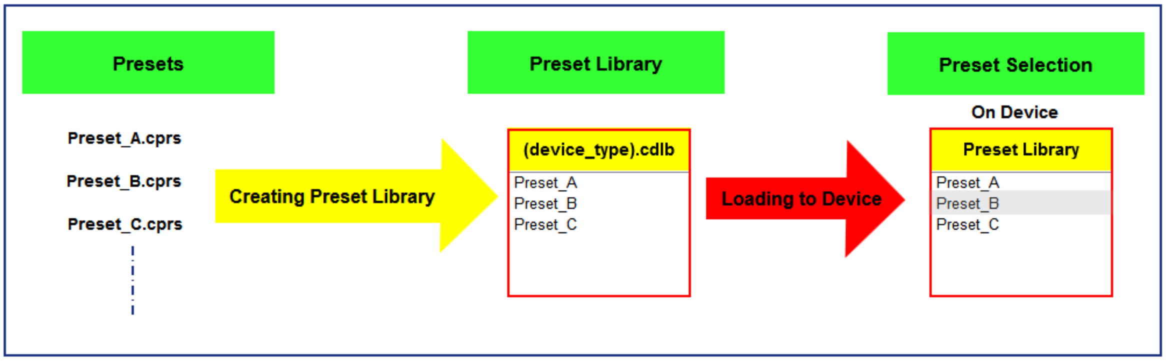
The parameters saved in preset files differ for Equalizer and Controller devices. As shown in below graphics, for Equalizer device all input and output parameters with exception of group parameters are saved in preset file. But for the Controller devices the parameters in preset file is limited to input setting, a link to selected output speaker file and output mute setting.

In the third graphic you can see how the preset library is created in general, loaded on the device and any preset in preset library can be then selected on the device.

For Controller devices there is a separate memory location for Speaker library. When loading the Preset on the Controller device first the Preset and links to speaker files will be loaded and in the next step the speakers.


EQ Device
Saved to Preset file (preset.cprs)
Input Section
Output Section
IN1
IN2
Gain
Mute
Delay
IIR
FIR
MUX
Limiter
X-Over
OUT1
OUT2


Controller Device
Saved to Preset file (preset.cprs)
* Just a link to Speaker (No Parameter)
Input Section
Output Section
IN1
IN2
Gain
Mute
Delay
IIR
FIR
MUX
Speaker_B
Speaker_A
OUT1
OUT2


Presets
Preset Library
Preset Selection
On Device
Preset_A.cprs
Preset_B.cprs
Preset_C.cprs
Creating Preset Library
(device_type).cdlb
Preset_A
Preset_B
Preset_C
Loading to Device
Preset Library
Preset_A
Preset_B
Preset_C