

ON-AIR Designer

User Guide

Version: 6.6.0/2

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www.lawo.com/lawo-downloads

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Table of Contents

1. Introduction	4
2. Product Overview	5
3. Installation & Setup	7
4. Basic Operations	12
5. Configuring a Single Unit	38
6. Transferring Configuration Data	71
7. Configuring Multiple Units	78
8. Using the Device Configuration Wizard	88
9. Appendices	94

1. Introduction

Welcome to the **ON-AIR Designer**.

About this Manual

This document describes how to install and use the **ON-AIR Designer**.

It provides a general guide to the operation of the software, with screenshots taken from different products. You can find more information about specific configuration options in your product manual.

Look out for the following which indicate:

Notes - points of clarification.

Tips - useful tips and short cuts.

Attention - alert you when an action should *always* be observed.

Lawo User Registration

For access to the **Downloads** area and to receive regular product updates, please register at:

www.lawo.com/registration.

2. Product Overview

The **ON-AIR Designer** is Lawo's software application for configuring radio on-air systems. The configuration defines key aspects of the system such as the audio mix engine, routing matrix and so on. In each case, the available resources vary depending on the product and its license. Resources defined by the configuration include:

- **Inputs and Outputs** can be named to clearly identify connections to external equipment.
- **Sources** can be named and defined for mono, stereo, 5.1 or 5.1/2ch operation. Special sources can be created for DAW control (via the Mackie-HUI™ protocol) and VCA grouping.
- **Summing Buses** can be named and defined for mono, stereo or 5.1 operation.
- **Signal Processing** can be applied to sources and/or summing buses. Options include EQ, Dynamics, Limiter, Delay, De-essing and Automix.
- **Control Surface Layout** – the configuration defines which sources can be assigned to fader strips, and whether the console supports a second layer and virtual fader mappings.
- **MF Key Functions** – the configuration defines the function and color-coding of all MF Keys (on the control surface, VisTool and any external key panels).
- **External Control Functions** – the configuration defines how the system responds to external control functions such as GPI signals and radio automation systems (RAS).
- **Conditional Functions** can be programmed using logic elements such as OR, AND, NOT, etc.
- **Other Functions** include customized routing, mixing, metering and networking.

Where is the Configuration Data Stored?

During editing, each project is stored on your computer as a **.db3** file. Whenever you transfer a project to the DSP Core, the **.db3** database is first compiled to create a binary **.cfg** file that can be read by the system. It is this file which is read by the DSP Core in order to load the configuration. The binary version is non-editable and cannot be opened by the ON-AIR Designer. Therefore, it is recommended to maintain the **.db3** file on your PC to allow for changes and additions.

Power Core and sapphire/Nova17 allow you to store an editable version of the configuration on the device itself. All other products store the binary version only.

Once the transfer is complete, the DSP Core will cold start. At the end of the boot-up, the system reads the new configuration data.

Modifying the Configuration

The simplest way to customize a system is to modify the existing configuration or a standard template. To do this, you will need a copy of the latest configuration or template as a **.db3** file. You can then use the ON-AIR Designer software to open, edit and save the file; and transfer the modified configuration back to the system.

If you plan to use VisTool with your device, then it is a good idea to edit the VisTool and ON-AIR Designer configurations in parallel. Please refer to the separate "VisTool MK2 User Guide" for more details on editing a VisTool project.

Configuring Multiple Systems

Using local and/or global substitutions, it is possible to apply the same configuration parameters to multiple systems. This makes it easy to maintain the configuration for a large installation as, if something changes, the change need only be applied once.

Backwards Compatibility

Configurations designed using the previous configuration tool "zirkon.exe" are compatible with the ON-AIR Designer, and can be used without restrictions. Hence, the ON-AIR Designer supports two project file types:

- **.db3** - is the new file type supported by systems running Version 6.0.0.x or later.
- **.mdb** - is the previous file type used by "zirkon.exe", and is required for systems < Version 6.0.0.x.

.db3 is recommended, as **.mdb** files do NOT support substitutions and are slower when loading and saving data.

If you open a **.mdb** file, then it will be automatically updated so it can be stored using the new **.db3** file format.

Please note that the modification of a configuration for the product Zirkon is no longer supported (as of Version 6.0.0.x).

3. Installation & Setup

This chapter describes how to install the software and connect the configuration PC to the Lawo system.

Topics include:

- [PC Requirements](#)
- [Installing the Software](#)
- [Uninstall & Updates](#)
- [Connecting Your PC to the Lawo Control System](#)

3.1 PC Requirements

To install and run the ON-AIR Designer, your PC must meet the following requirements:

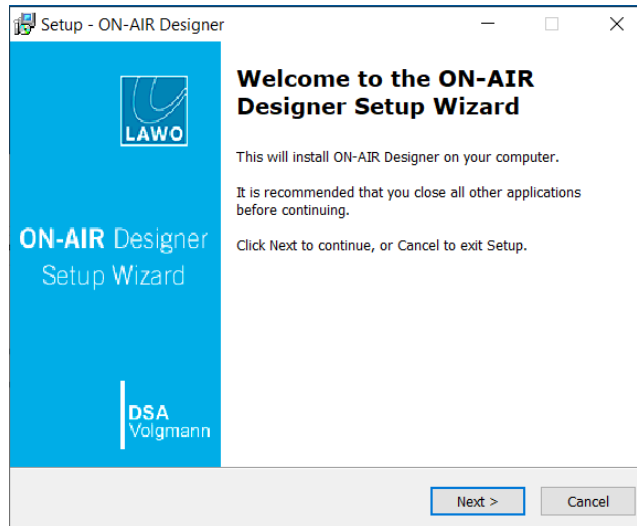
- Windows 7, 8 or 10 operating system. Note that Windows 10 LTSC (Long Term Servicing Branch) for Enterprise installations is not supported.
- Core-I5 (or higher) CPU
- 2GB RAM, minimum

If you are planning to install VisTool MK2 on the same machine, then please also refer to the VisTool MK2 requirements (included in the "VisTool MK2 User Guide").

3.2 Installing the Software

The latest version of the **onair-designer.exe** installer is available from the **Downloads** area at www.lawo.com (after **Login**).

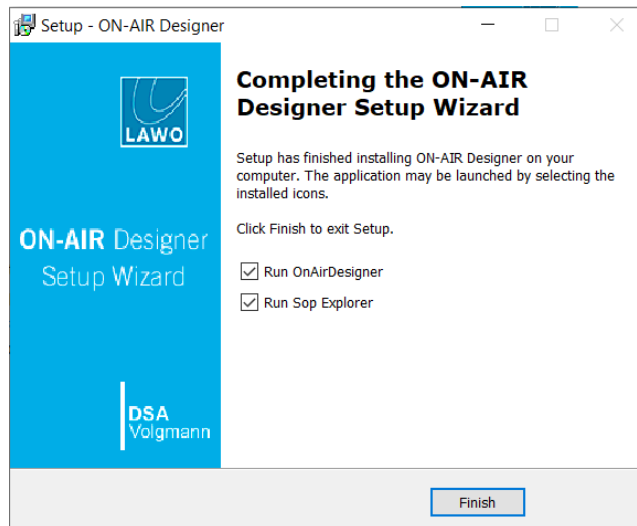
1. Copy the installer onto your PC.
2. Double click on the installer icon to start the 'ON-AIR Designer Setup Wizard':



3. Follow the Wizard's instructions accepting the default options provided.
4. When you reach the 'Summary' window, check the options and click **Install** - the software is installed onto your computer; this may take a few minutes.

By default, files are installed in the location: 'C:\Program Files\OnAirDesigner'.

5. When the installation is complete, the following window will appear:



It is recommended to leave the default "Run" options selected and click on **Finish**. You can now use **SoP Explorer** to check the firmware revisions of the system, and **ON-AIR Designer** to transfer a configuration.

If you have any problems with the software installation, please contact your local Lawo representative or email support@lawo.com.

3.3 Uninstall & Updates

ON-AIR Designer can be uninstalled in the usual Windows manner: from the "Uninstall or change a program" Control Panel, select **ON-AIR Designer** and click **Uninstall**.

You can update ON-AIR Designer to a new software version by following the normal installation procedure described above. There is no need to remove an older version of the application.

To ensure proper functionality, it is mandatory that the software version of the system matches the software version of the configuration tool. Otherwise the configuration may contain options which are not supported by the Lawo system (and functionality may be ignored). To make sure everything runs smoothly, first run the installer (to update ON-AIR Designer) and then use SoP Explorer to check and update the firmware running on the hardware components.

Once both the system and ON-AIR Designer are running the same release, you can open (and convert) the configuration project to take advantage of any new options and features.

When you open a project created using an earlier definition, you can choose whether to convert the project or not. This allows you to maintain configurations for systems running different versions. See [Converting Projects](#).

3.4 Connecting & Configuring the PC

To configure a Lawo device, the PC must have a valid network connection to the device's control system.

1. Start by connecting the PC's LAN port *directly* to the device's control port (the exact labeling will vary).

For simplicity, it is best to use a direct connection. This can be modified later to connect via a network. Please refer to your product manual for cabling and network requirements.

2. Configure the network settings for the PC's LAN port as follows. The exact steps vary depending on your OS version.

The IP Address must be unique, and set within the same range as that of the device's control port. The Subnet Masks should be identical.

The default settings for Lawo radio devices are:

- **IP Address** = 192.168.101.240
- **Subnet Mask** = 255.255.255.0
- **Gateway** = 0.0.0.0

Test the connection by opening a web browser application and typing in the default IP address = **192.168.101.240**. If the connection is successful, then the Web UI home page will appear.

If there is a problem opening the page, then first check your web browser. Then check the network cabling and IP settings of the configuration PC and Lawo device.

If you are connecting via a larger network, you may need to consult your network administrator to gain access to the Lawo device.

4. Basic Operations

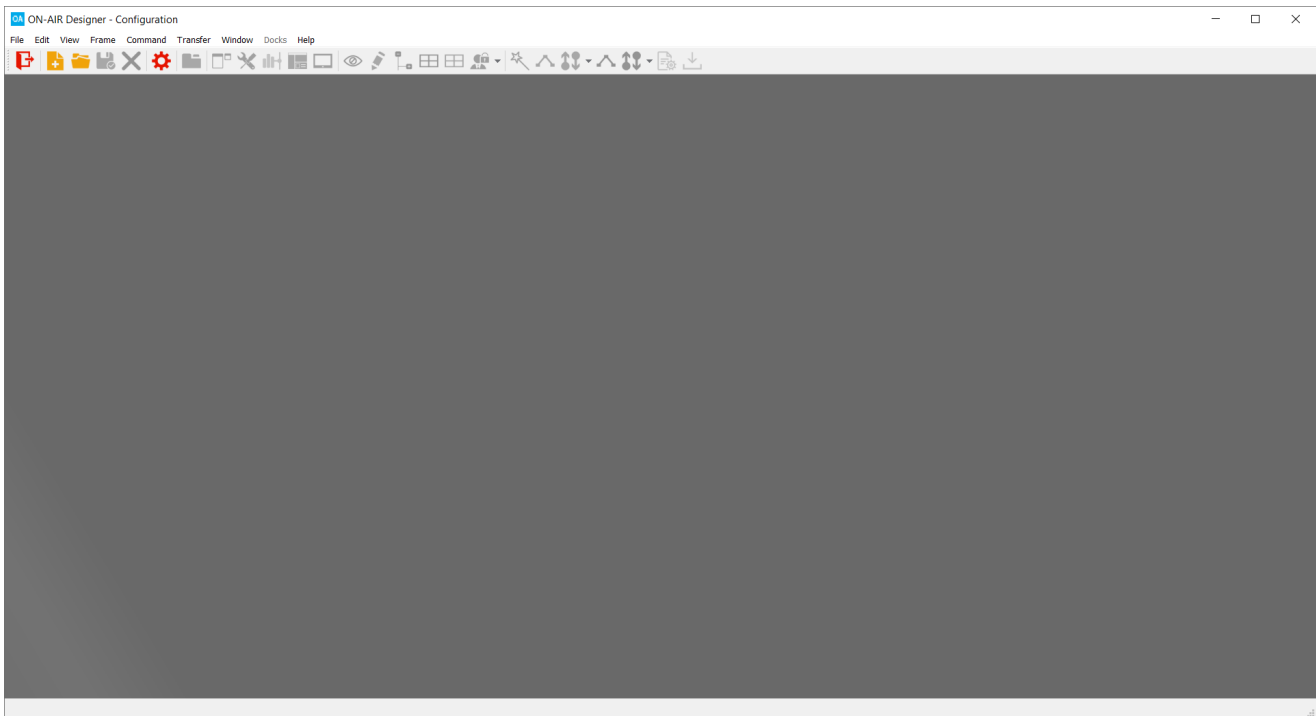
This chapter describes the basic operating principles of the software.

Topics include:

- [Starting the Application](#)
- [File -> New](#)
- [File -> Open](#)
- [Saving the Project](#)
- [The Main Operating Windows](#)
- [Arranging the Workspace](#)
- [The Main Menus](#)
- [Toolbar](#)
- ['Project' Window](#)
- [Checking the Network Communication](#)
- [Options](#)
- [Closing the Project & Software](#)

4.1 Starting the Application

1. Select **ON-AIR Designer** from the Windows START menu - the application opens with a blank operating window.




At the top of the page you will find the [main menu](#) and [toolbar](#).

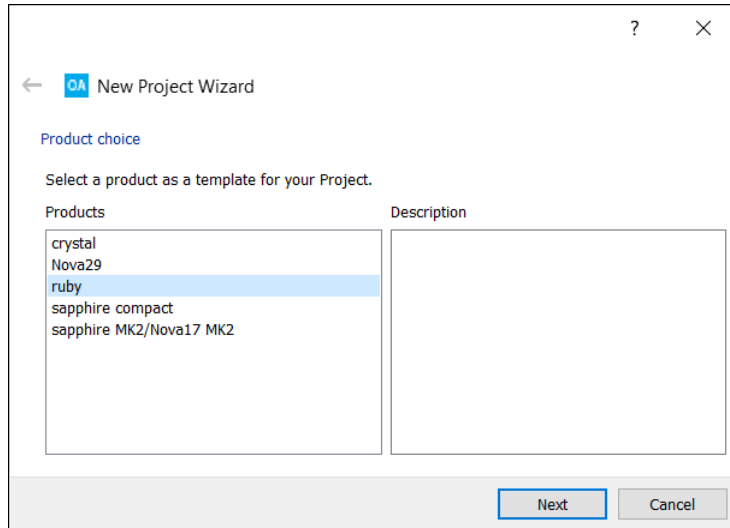
To start working with the software, you can either create a new project or open an existing one.

Multiple projects can be open at the same time.

4.2 File -> New

To create a new project:

1. Select **File -> New** from the top menu bar, or click on the  Toolbar icon, or use the keyboard shortcut (**CTRL + N**) - the 'New Project Wizard' opens.

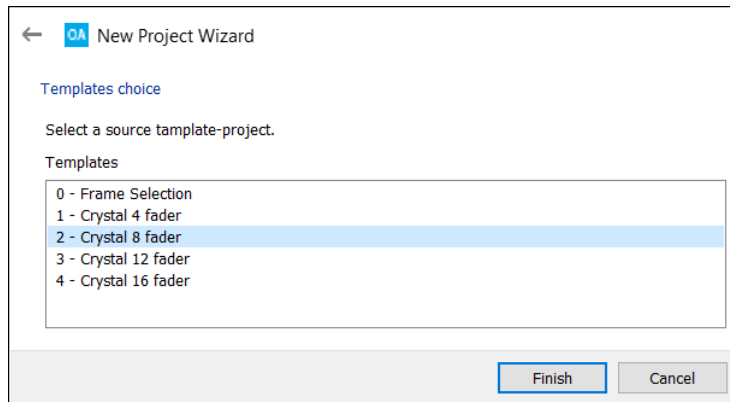


2. Select a product and click on **Next**.

For **ruby/Power Core** and **sapphire/Nova17**, skip straight to step 3.

For **crystal, Nova29** and **sapphire compact**, you have the opportunity to select a template.

crystal - Templates choice



- Choose one of the templates to open a standard configuration (recommended).
- Or, choose option **0 – Frame Selection** to configure the "frames" manually (as described in step 3).

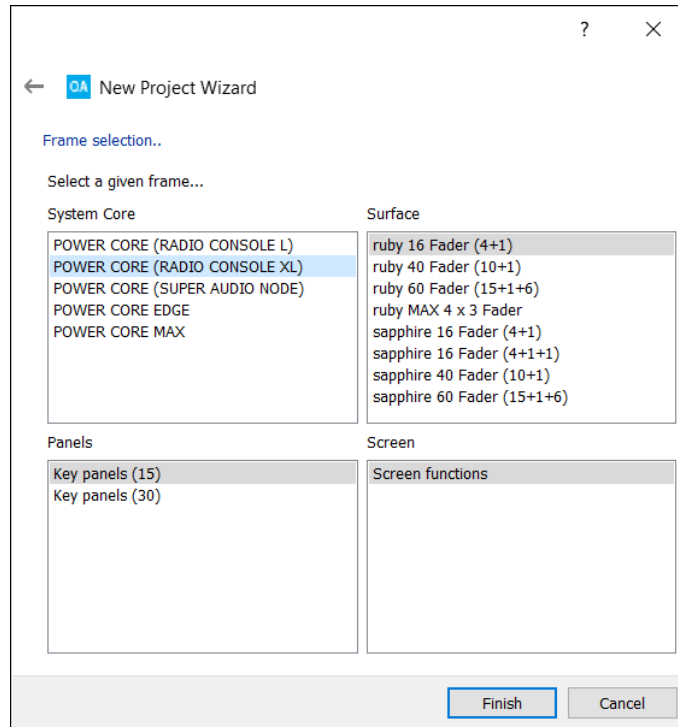
Usually it is best to choose a template, as this will automatically configure some of the main system elements: inputs, outputs, sources and summing buses. If you choose option **0**, then all elements must be programmed from scratch.

Note that the **Nova29** supports only two templates:

- **1 - nova29, no default names** - defines a simple configuration with MAD1 ports 1 to 16 set for 64-slot transmission and no redundancy. Sync options are set for internal sync and 48kHz operation.
- **2 - nova29, with default names** - as above but with default names for the MAD1 inputs and outputs.

3. If you selected option **0**, or are configuring a **ruby/Power Core** or **sapphire/Nova17**, then the 'Frame' options must be defined manually.

ruby - Frame selection



The four 'Frame' areas define the System Core, Surface, Panels and Screen functions.

For the **System Core**, the options are product specific. For ruby, Power Core is available in a choice of licensed packages; please select the license which has been purchased. For sapphire/Nova17, you can choose either the 3RU or 6RU DALLIS frame; please select the correct frame size. For crystal and sapphire compact, there is only one option available: the Compact Engine.

For the **Surface**, select the maximum control surface size required. Where applicable, the numbers in brackets indicate the number of Fader Modules + Central Modules (full mode) + Central Modules (monitor mode). For example, the **ruby 16 Fader (4+1)** option can be used for a 4-, 8-, 12- or 16-fader surface with a single Central Module. If more faders are fitted, or you have more than one Central Module, then a larger **Surface** option must be used.

Under **Panels**, select the maximum number of key panels connected to the system.

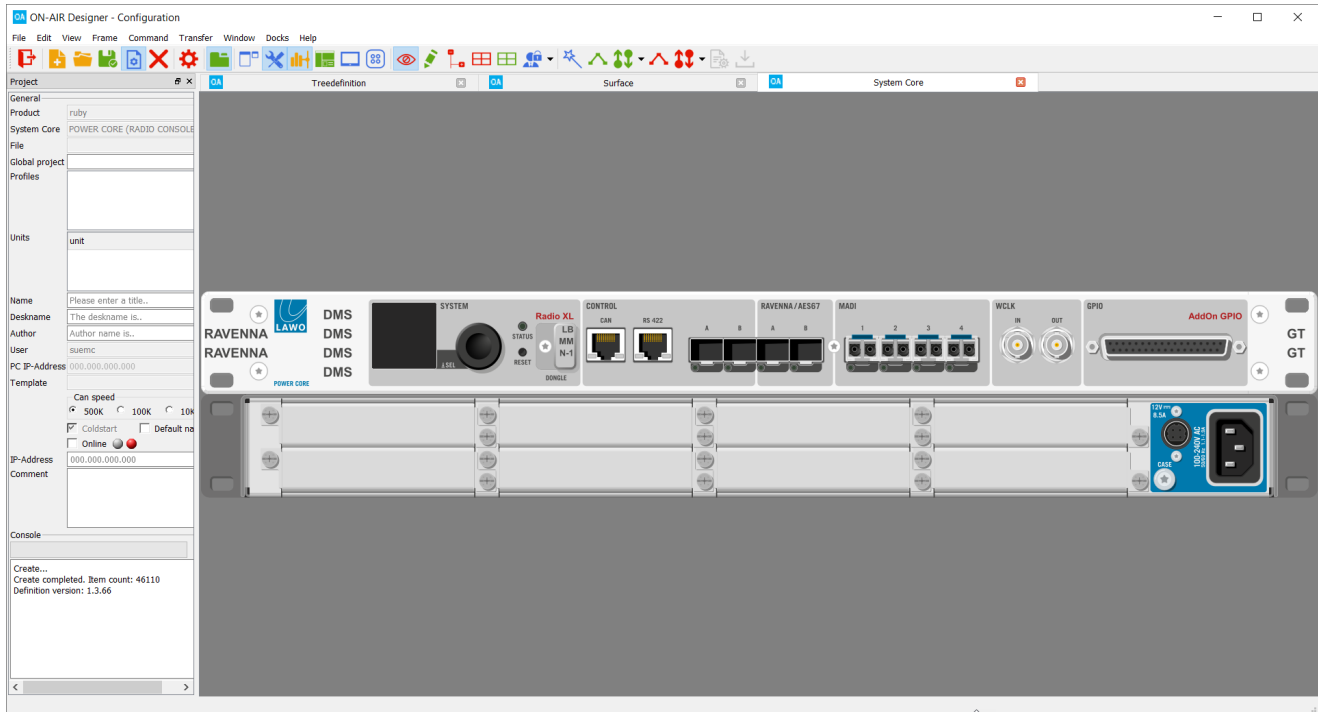
The **Screen** option is always set to **Screen functions** to support VisTool functions.

The specification can be changed later (via [Frame -> Change Frame](#)). For example, if you upgrade the license for ruby/Power Core, you can change the **System Core** frame to unlock the additional resources.

- Once you have selected a template or specified the 'Frame', click on **Finish**.

The software creates the new project. Depending on the product and its specification, a number of windows will open. In our example, we can see the 'Project' window (on the left), plus the 'System Core' (in the central working area).

ruby New Project



It may take a few seconds to build the new project. During this time the status is shown in the "progress" bar (below **Console** in the 'Project' window).

The next logical step is to define the properties in the [Project](#) window.

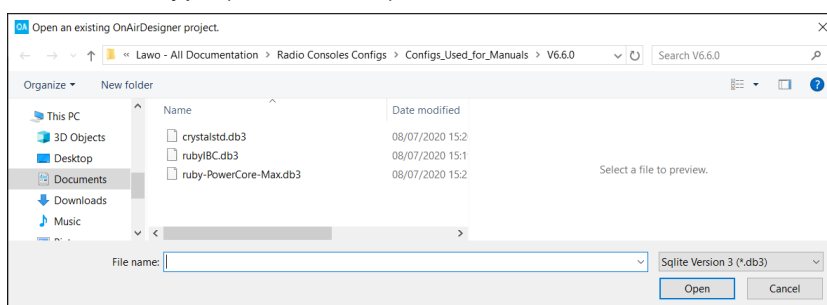
4. Basic Operations

4.3 File -> Open

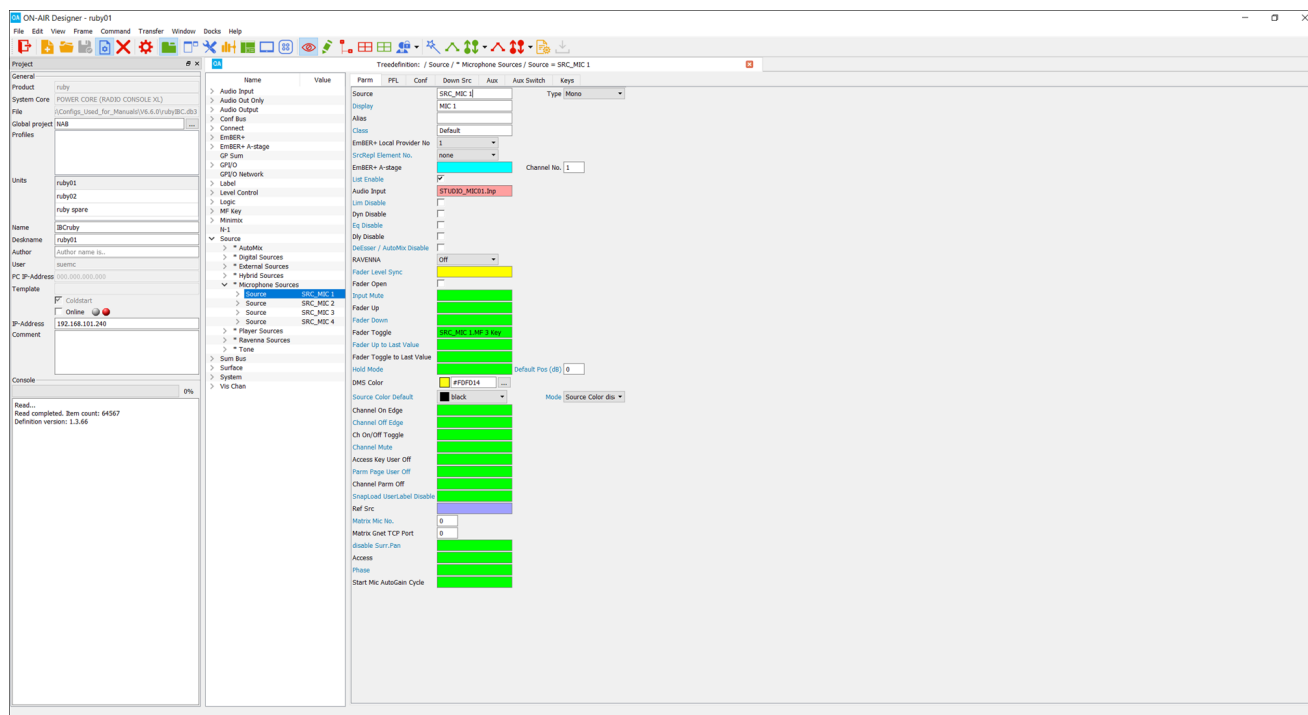
To open an existing project stored on your computer:

1. Select **File -> Open** from the top menu bar, or click on the Toolbar icon, or use the keyboard shortcut (**CTRL + O**).
2. Select your project file and click on **Open**.

If you cannot see the file, check the **Files of type** option at the bottom of the dialog box; you may need to change this to see the correct file type (**.db3** or **.mdb**).



The project opens, with the same workspace layout and docking options as at the last file save.



If the configuration was created using a different definition version, then you may be asked if you wish to convert the project. Note that it may take a few seconds to open the project. During this time the status is shown in the "progress" bar (below **Console** in the 'Project' window).

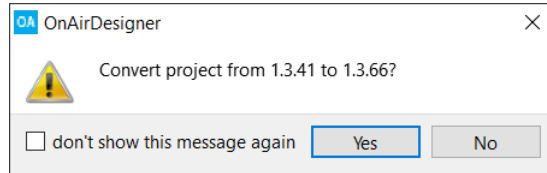
If you see an error stating that the project is already open then navigate to the project folder (using Windows Explorer) and delete any "projectname.txt" files. Then try opening the project again.

On Power Core and Nova17, a copy of the project file is stored on the DSP Core. To download it to your computer, use [Load Project from unit](#).

4.3.1 Converting Projects to the Current Release

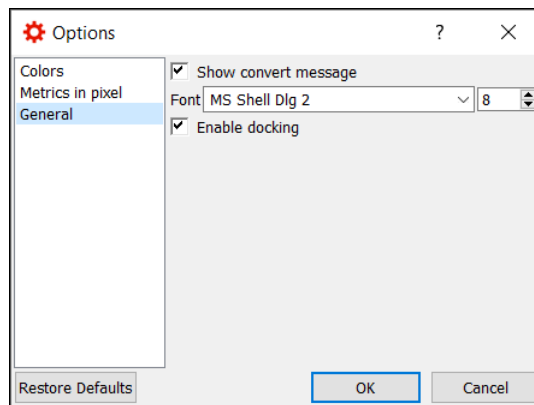
When you save a configuration, the definition version of the **ON-AIR Designer** is stored along with the project in the same folder (in a file named "projectname.def"). This means that when you open a project, the versions can be compared.

If a project was created using an earlier definition, then you will be asked if you wish to convert the project:



Select **Yes** to proceed, or **No** to work with the older version. (You will need to choose **No** if the system you are configuring is running an older version of software.)

If you select "don't show this message again" then, in future, this message will not appear, and projects will automatically convert to the current **ON-AIR Designer** release. This will speed up all subsequent "File -> Open" operations. You can re-activate the message later from the software [options](#) - use the **Show convert message** checkbox (under the **General** tab):



By leaving the message enabled, you will be able to choose **Yes** to convert some projects and **No** for others (to configure systems running a different software release).

Whenever a project is converted, the software creates a copy of the original file (before conversion) and stores this in the project folder (using the suffix "_before_convert"). This allows you to re-open the original project if necessary.

4.4 Saving the Project

At regular intervals you should save the project, and also use "save as" to keep a copy of the project at different revision stages. This will allow you to test the configuration and revert to an earlier version if necessary. The screenshots below are taken from Power Core, but the procedure is identical for all on-air systems.

➤ File -> Save

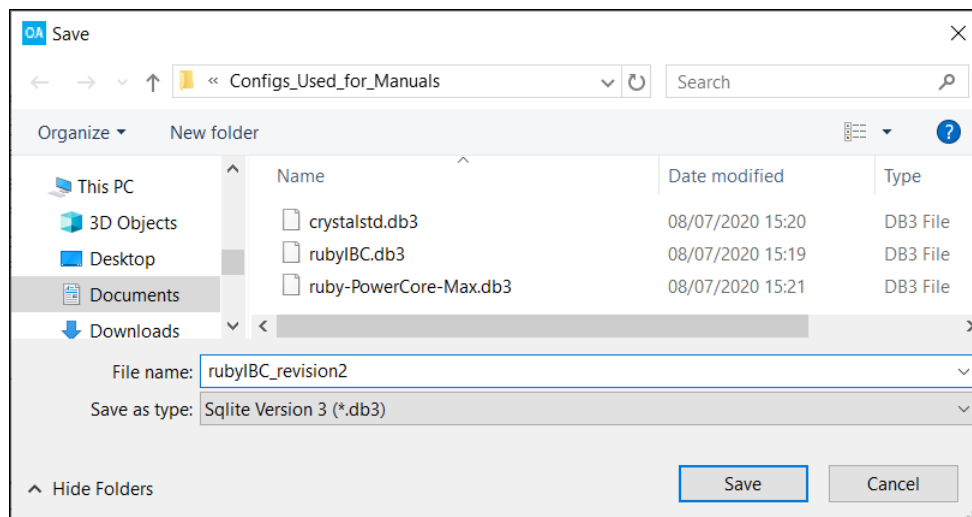
Select **File -> Save** from the top menu bar, or click on the  Toolbar icon, or use the keyboard shortcut (**CTRL + S**).

This overwrites the existing project (as specified in the "File" field in 'Project' window).



➤ File -> Save As

1. Select **File -> Save As** from the top menu bar, or use the keyboard shortcut (**CTRL + SHIFT + S**) - the "Save" dialogue box opens.




2. Choose a new folder location, enter a different file name, or select a different file type (using the **Files of type** option at the bottom of the dialog box).
3. Then click on **Save** to save the project:

The default file type is **.db3** unless you specify otherwise. See [Backwards Compatibility](#).

A project containing substitutions cannot be saved as a **.mdb** file.

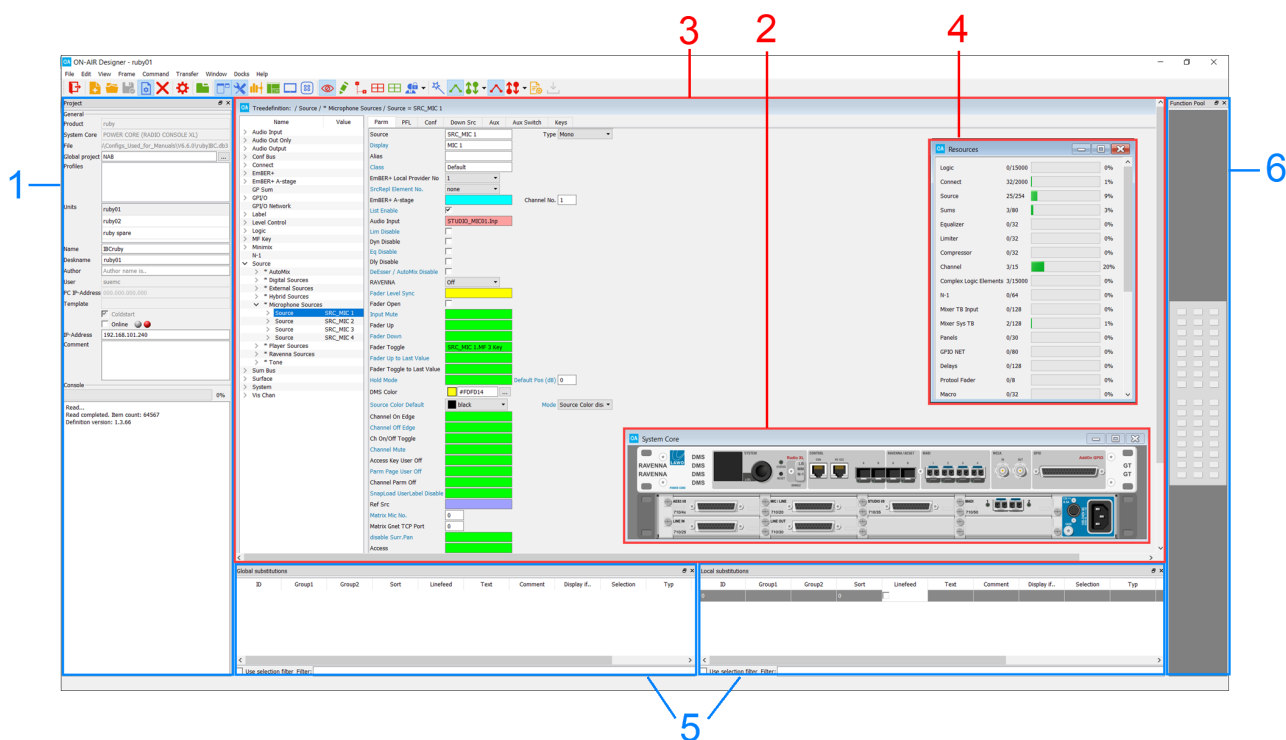
4.5 Closing the Project & Software

1. To close the active project, select **File** -> **Close** from the top menu bar, or click on the  Toolbar icon.
2. To close the complete application (and all active projects), select **File** -> **Exit** from the top menu bar, or click on the red cross (at the top right of the headline bar).

In either case, if you have made a change since the last save, then you will be asked if you wish to save or ignore the changes:

- Select **Save** to overwrite the current project.
- Select **Ignore** to close the project or software without saving.
- Select **Cancel** to cancel the operation and continue editing.

4.6 The Main Operating Windows



To edit a project, you will need the following docking panels and windows.

1 Project

The 'Project' window defines the main properties for the Lawo system such as its **IP-Address**. It can also be used to add multiple units to the project (to work with substitutions).

2 Frames

Each of the four 'Frame' windows defines a system component: the System Core, Control Surface, Key Panels and Screen (for VisTool functions). In each case, you will see a graphical representation - in our example, of the System Core. Double-click or right-click on the images to configure the relevant options - for example, to define a connector's inputs and outputs, or add an expansion card.

3 Tree Definition

From the 'Tree Definition' you can specify all the elements of the system, from sources and buses to MF Keys and logical functions. The 'Tree Definition' gets its name from the tree-like structure on the left hand side. Each of the branches can be opened by double-clicking on a branch name or on the arrows beside the branch. Once open, you will see all the available parameters for the selected element - in our example, for a Source named MIC 1. Right-click on a branch to insert a new element.

4 Resources

The 'Resources' window can be used to check the amount of DSP resource used by the project. The counters will vary depending on the System Core frame selection.

5 Substitutions

If you are configuring more than one unit, use the 'Global' and 'Local' substitution windows to individualize parameters as required. In the other configuration windows, a substituted parameter is indicated by a colored frame and grey background.

6 Function Pool (ruby only)

The 'Function Pool' can be used to move a function or prepare MF Keys before positioning them on a Central Module. This is ideal if you know what functionality is required, but are not yet sure of the MF Key layout.

Inputs & Outputs

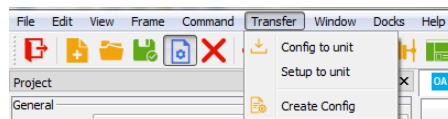
In addition, the **Inputs** and **Outputs** windows can be used to view and edit IO parameters in list form.

ID	Slot	Info	Layer	Group	Name	Type	Mono Alias	Matrix enable	Gain	Gain Reset	Default stream
1	Line In Card Slot 1	Input 1		Studio	TV	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Line In Card Slot 1	Input 2		Studio	TV	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Line In Card Slot 1	Input 3		Studio	AF-An	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Line In Card Slot 1	Input 4		Studio	AF-An	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Line In Card Slot 1	Input 5		Studio	Res1a	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Line In Card Slot 1	Input 6		Studio	Res1a	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Line In Card Slot 1	Input 7		Studio	Res2a	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	Line In Card Slot 1	Input 8		Studio	Res2a	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	Mic / Line Card Sl...	Input 1		St-Mic	Mod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10	Mic / Line Card Sl...	Input 2		St-Mic	Comod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	Mic / Line Card Sl...	Input 3		St-Mic	Gast1	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12	Mic / Line Card Sl...	Input 4		St-Mic	Gast2	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13	Mic / Line Card Sl...	Input 5		St-HS	Mod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
14	Mic / Line Card Sl...	Input 6		St-HS	Comod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
15	Mic / Line Card Sl...	Input 7		St-HS	Gast1	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
16	Mic / Line Card Sl...	Input 8		St-HS	Gast2	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
41	AES3 I/O Card Sl...	Input 1		Studio	Effekt ret	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
42	AES3 I/O Card Sl...	Input 2		Studio	Effekt ret	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
43	AES3 I/O Card Sl...	Input 3		Studio	AF-Dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
44	AES3 I/O Card Sl...	Input 4		Studio	AF-Dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
45	AES3 I/O Card Sl...	Input 5		Studio	TV IN dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
46	AES3 I/O Card Sl...	Input 6		Studio	TV IN dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
47	AES3 I/O Card Sl...	Input 7		Studio	Res1d	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
48	AES3 I/O Card Sl...	Input 8		Studio	Res1d	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
49	AES3 I/O Card Sl...	Input 1		Studio	HavP1A	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
50	AES3 I/O Card Sl...	Input 2		Studio	HavP1A	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
51	AES3 I/O Card Sl...	Input 3		Studio	HavP1B	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
52	AES3 I/O Card Sl...	Input 4		Studio	HavP1B	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
53	AES3 I/O Card Sl...	Input 5		Studio	HavP1C	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
54	AES3 I/O Card Sl...	Input 6		Studio	HavP1C	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
55	AES3 I/O Card Sl...	Input 7		Studio	HavP1D	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
56	AES3 I/O Card Sl...	Input 8		Studio	HavP1D	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
129	MADI Port Front 1	Input 01		ZGR1_2	Wahl1a	L			<input type="checkbox"/>	<input type="checkbox"/>	
130	MADI Port Front 1	Input 02		ZGR1_2	Wahl1a	R			<input type="checkbox"/>	<input type="checkbox"/>	
131	MADI Port Front 1	Input 03		ZGR1_2	Wahl1b	L			<input type="checkbox"/>	<input type="checkbox"/>	
132	MADI Port Front 1	Input 04		ZGR1_2	Wahl1b	R			<input type="checkbox"/>	<input type="checkbox"/>	
133	MADI Port Front 1	Input 05		ZGR1_2	Wahl1c	L			<input type="checkbox"/>	<input type="checkbox"/>	
134	MADI Port Front 1	Input 06		ZGR1_2	Wahl1c	R			<input type="checkbox"/>	<input type="checkbox"/>	

Transfer Menu

Once editing is complete, the configuration data must be transferred from your computer to the Lawo system.

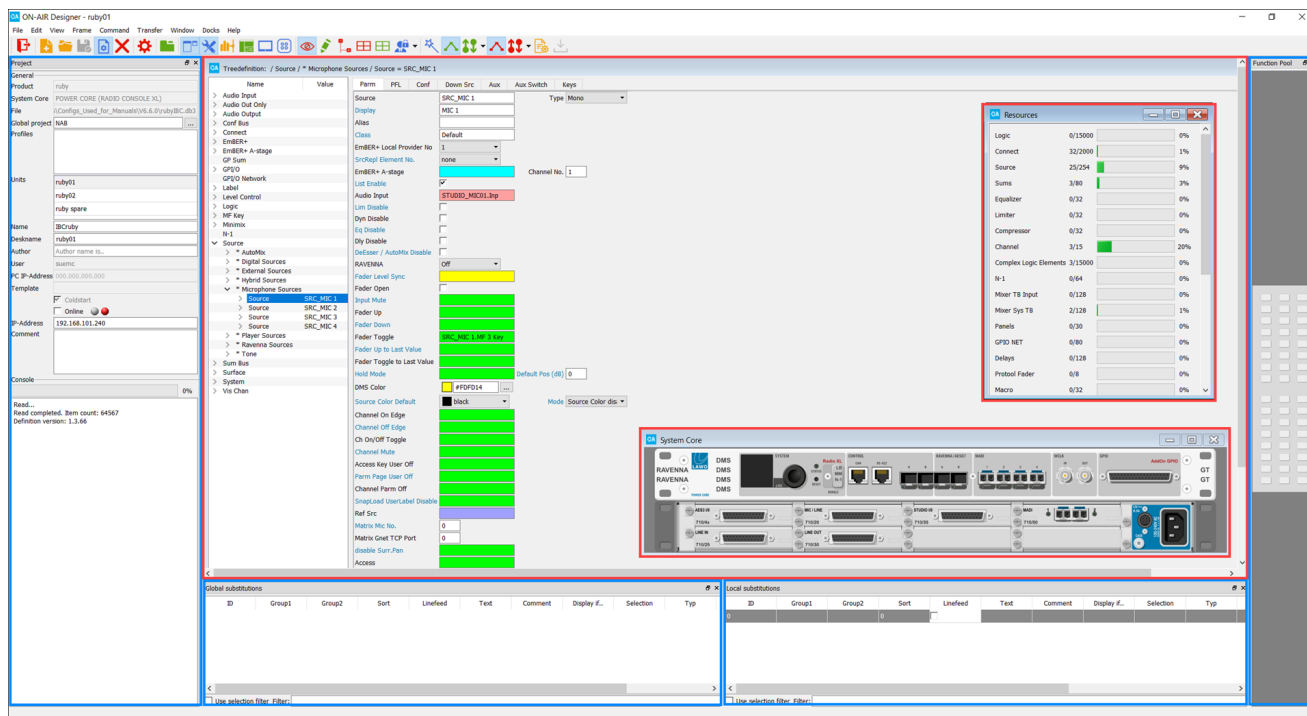
Under the **Transfer** menu, you can choose to transfer the "Setup" data (the project properties) and/or the "Config" data (the configuration itself).



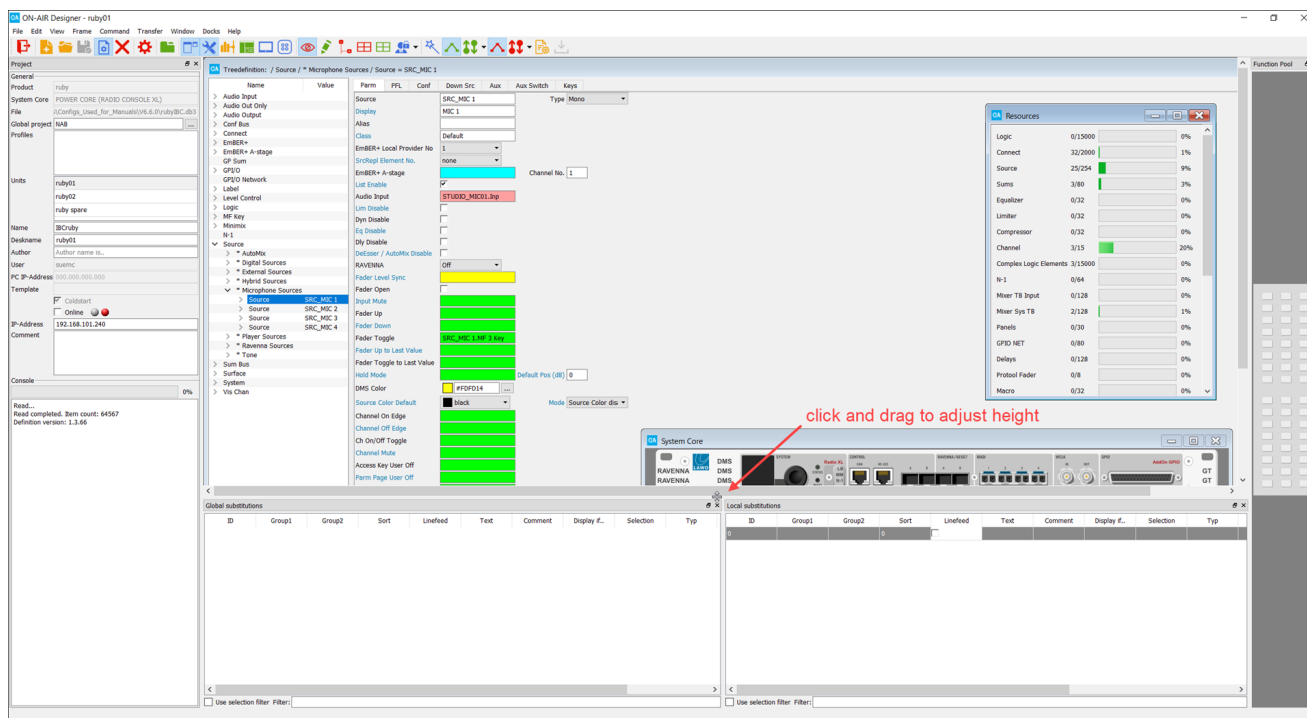
4.7 Arranging the Workspace

The workspace includes three docking areas (left, right and bottom) plus a central working area where configuration windows can be either floating or stacked. Note that when you save a project, you will save the current layout.

In the example below, the 'Project', 'Substitution' and 'Function Pool' panels are all docked (shown in blue), while the 'Tree Definition', 'System Core' and 'Resources' windows are floating in the central workspace (shown in red).



➤ Click and drag on a boundary edge to increase or decrease the size of a space. In the example below the height of the bottom docking area has been increased:



4.7.1 Docking Panels

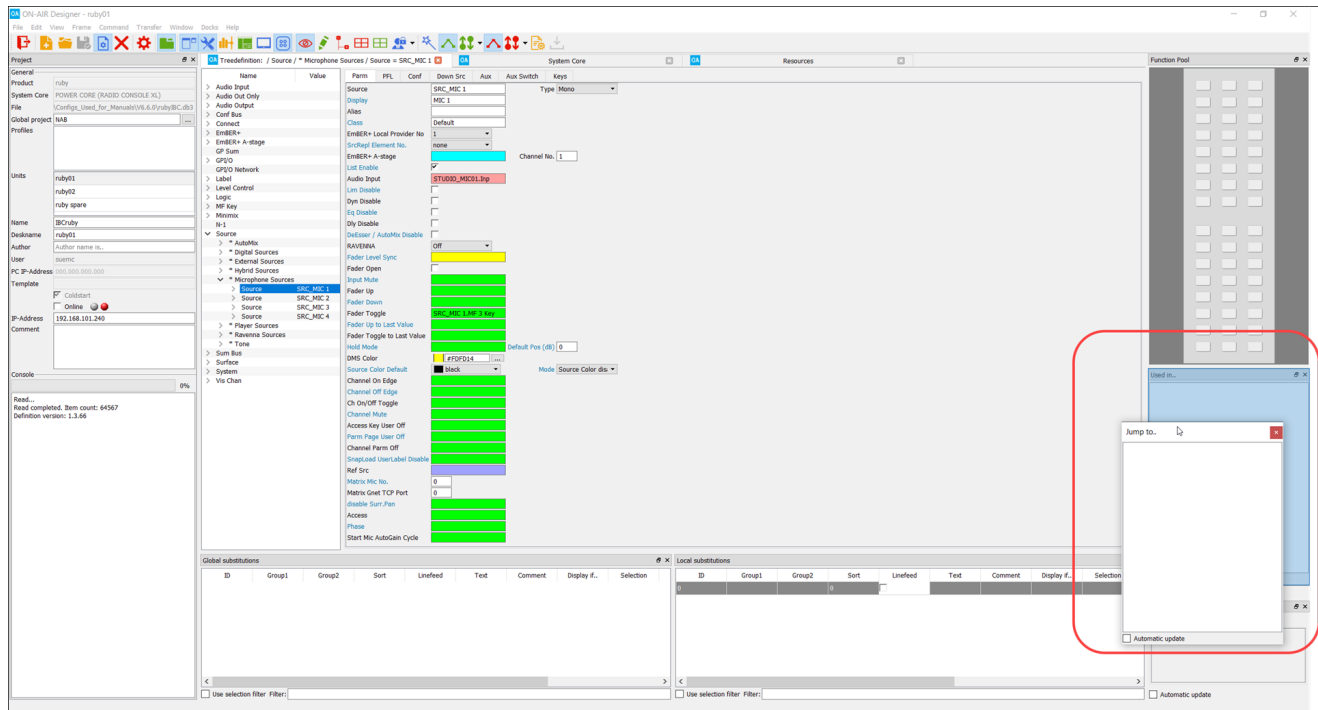
Each of the following panels can be docked, floating or hidden from view.

	Toolbar icon	Main Menu	Docking Position
The 'Project' window		Docks -> Project	Left
'Function Pool'		Frame -> Function Pool	Right
'Jump to'	none	Docks -> Jump to..	Right
'Used in'	none	Docks -> Used in..	Right
'Parameter Line'	none	Docks -> Parameter Line	Right
'Local Substitutions'		Docks -> Local Substitutions	Bottom
'Global Substitutions'		Docks -> Global Substitutions	Bottom

Where more than one panel can share the same space, the panels can be arranged in any order or combined to create a stack. To change the current location or behaviour, click and drag on the panel's headline bar to release it from the docking area, and then do one of the following.

- To create a floating window, release the panel anywhere above the workspace. The panel becomes a floating window which can be resized and positioned in the usual manner. If you lose a panel from view, click on the Toolbar icon to "Dock tools".
- To dock the panel in a new position, release it into a permitted space. Not all panels can be docked in all positions and so a blue background appears when a valid area is reached. When you release the panel, it will fill the available space.
- If a panel is released on top of an existing panel, then this creates a stack. In this instance, use the tabs at the bottom of the area to select the options in the stack.

'Jump to' released on top of 'Used in' to create a stack



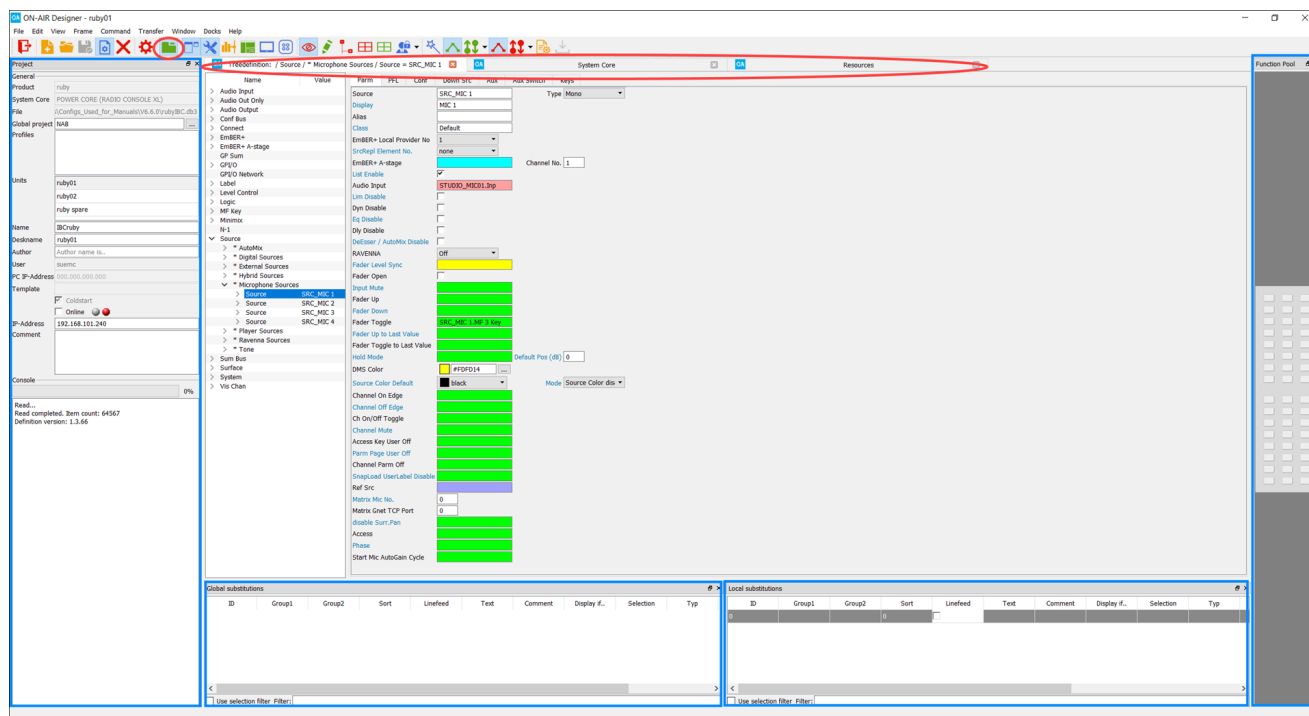
4.7.2 Tabbed View

Each of the remaining configuration windows appear in the central workspace. They can be opened and closed using either a toolbar icon or main menu option. Note that the 'Tree Definition' can be opened multiple times (to access different branches of the system). All open windows can be either stacked (in **Tabbed View**) or floating (**Tabbed View** off).

➤ Click on the Toolbar icon, or select **Window -> Tabbed View**, to change the view.

In **Tabbed View**, all open windows are stacked. Use the tabs at the top of the workspace to switch between them - the selected window fills the central workspace.

Central Workspace: Tabbed View

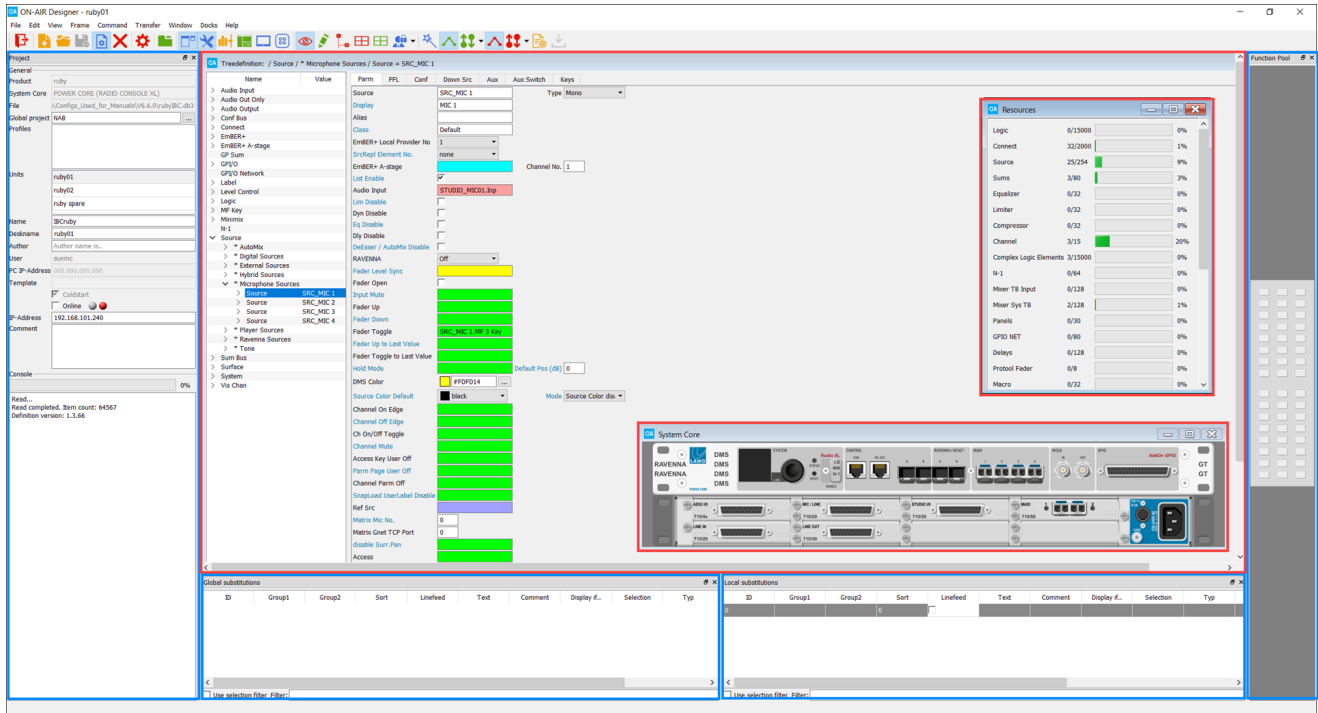


You can click and drag on the tabs themselves to change their order if you wish.

If **Tabbed View** is not selected, then all open windows are floating. A floating window can be resized and positioned anywhere in the central workspace.

- Click and drag on the headline bar (at the top of the window) to move it.
- Click and drag on the left, right or bottom boundary lines to resize.
- Click on the buttons at the top right to minimise, maximize or close a window.

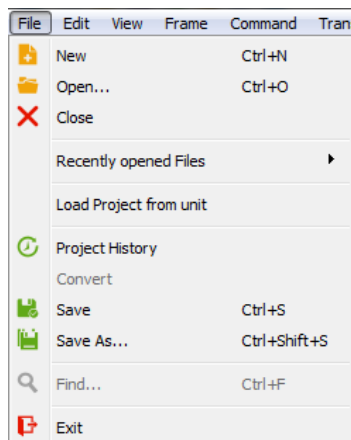
Central Workspace: Floating Windows



If you lose a floating window from view, then select **Window -> Cascade** or **Window -> Tile** to re-arrange the view.

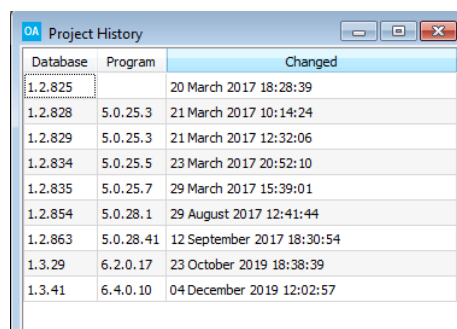
4.8 The Main Menus

4.8.1 File



Use the **File** menu to:

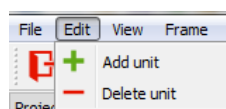
- **New** - create a [new](#) project.
- **Open** - [open](#) an existing project.
- **Close** - [close](#) the active project.
- **Recently opened Files** - lists all the recently saved projects; click to open one.
- **Load Project from unit** - [loads](#) a project stored on the unit (ruby & sapphire only).
- **Project History** - shows the history of the project file:



Database	Program	Changed
1.2.825		20 March 2017 18:28:39
1.2.828	5.0.25.3	21 March 2017 10:14:24
1.2.829	5.0.25.3	21 March 2017 12:32:06
1.2.834	5.0.25.5	23 March 2017 20:52:10
1.2.835	5.0.25.7	29 March 2017 15:39:01
1.2.854	5.0.28.1	29 August 2017 12:41:44
1.2.863	5.0.28.41	12 September 2017 18:30:54
1.3.29	6.2.0.17	23 October 2019 18:38:39
1.3.41	6.4.0.10	04 December 2019 12:02:57

- Database - the system definition version.
- Program - the ON-AIR Designer software version used to create the file.
- Changed - the date when the configuration file was last saved.
- **Save** and **Save as** - [Save](#) a configuration.
- **Find** - perform a [search](#) on the 'Tree Definition' window.
- **Exit** - [quit](#) the ON-AIR Designer software.

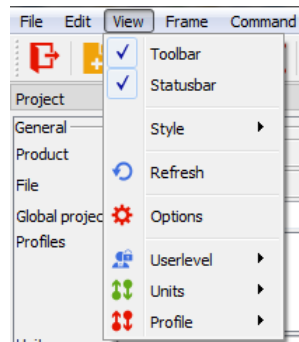
4.8.2 Edit



Use the **Edit** menu to:

- **Add unit / Delete Unit** - add or delete a unit from the project, see [Configuring Multiple Units in a Project](#).

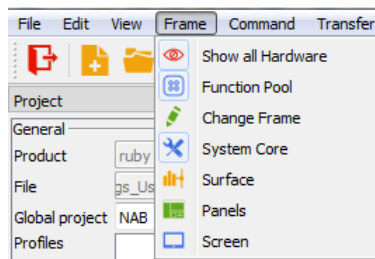
4.8.3 View



Use the **View** menu to:

- **Toolbar** – show or hide the [Toolbar](#).
- **Statusbar** – show or hide the status bar at the bottom of the ON-AIR Designer.
- **Style** – select a display style.
- **Refresh** – refresh the screen.
- **Options** – open the [options](#) dialogue box.
- **Userlevel** – select a [user level](#) to access different configuration options.
- **Units** – select a unit (if [multiple units](#) have been defined).
- **Profile** – select a profile (if profiles have been loaded from the [Global project](#)). If no Profiles exist, or a Global project has not been specified, then there is nothing to select.

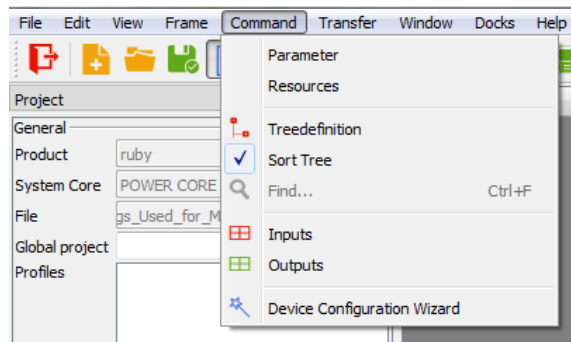
4.8.4 Frame



Use the **Frame** menu to:

- **Show all Hardware** - show or hide unused panels or surfaces for a better overview of the configured hardware.
- **Function Pool** - show or hide the [Function Pool](#) (ruby only).
- **Change Frame** - [change](#) the frame specification.
- [System Core](#) - show or hide the DSP Core.
- [Surface](#) - show or hide the control surface modules.
- [Panels](#) - show or hide any optional key panels.
- [Screen](#) - show or hide any 'virtual' panels which will be operated via VisTool.

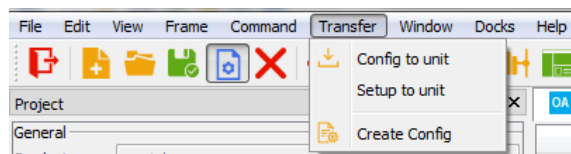
4.8.5 Command



Use the **Command** menu to:

- **Parameter** – open the [parameter](#) window for the selected 'Frame' module (when viewing the Surface, System Core, etc).
- **Resources** – open the [Resources](#) window.
- **Tree Definition** – opens a [Tree Definition](#) window.
- **Sort Tree** – when ticked, elements within the 'Tree Definition' window are sorted alphabetically.
- **Find** - perform a [search](#) on the 'Tree Definition' window.
- **Inputs / Outputs** – open the [Inputs](#) or [Outputs](#) list.
- **Device Configuration Wizard** - open the device configuration wizard.

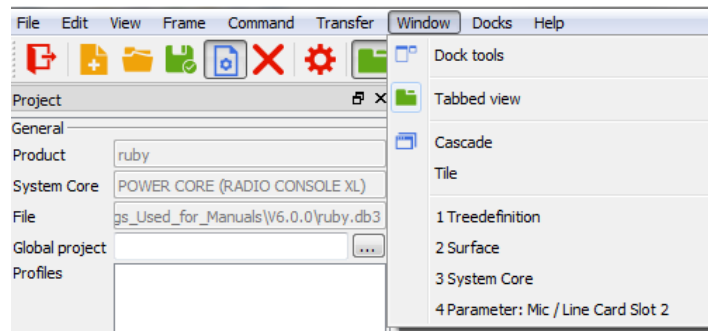
4.8.6 Transfer



Use the **Transfer** menu to:

- **Config to unit** - [transfer](#) the active configuration to the unit.
- **Setup to unit** - [transfer](#) the 'Setup' parameters to the unit.
- **Create Config** – [create](#) the compiled configuration files without performing a transfer.

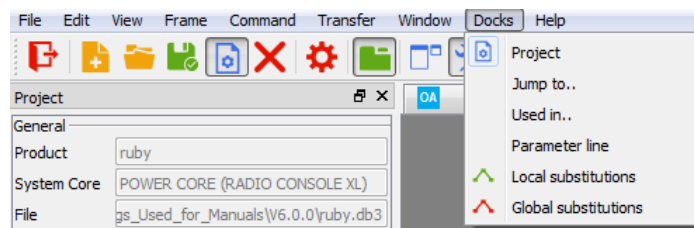
4.8.7 Window



Use the **Window** menu to:

- **Dock Tools** - reset any floating windows to their last known [docking](#) positions.
- **Tabbed View** - switch between [Tabbed View](#) and floating windows.
- **Cascade / Tile** - control the view when using [floating](#) windows.
- **1, 2, ...** - all open windows are listed in the lower part of the menu. If a window has been minimized or hidden, then click on its name to bring it back into view.

4.8.8 Docks



Use the **Docks** menu to show or hide the [docking panels](#):

- **Project**
- **Jump to..**
- etc.

4.8.9 Help



Use the **Help** menu to select:







- **Info** - check the release version of the **ON-AIR Designer**.

4.9 Toolbar




The toolbar icons provide fast access to a number of functions. If you cannot see the toolbar, then check that it is enabled in the [View](#) menu.











The first few icons perform file-based operations:

-  **Exit** - [close](#) the ON-AIR Designer software.
-  **New** - create a [new](#) configuration.
-  **Open** - [open](#) an existing configuration.
-  **Save** - [save](#) the current configuration to your PC.
-  **Project** - show/hide the '[Project](#)' window.
-  **Close** - [close](#) the current configuration.











The next set of icons define the software's options and views:

-  **Options** - open the [Options](#) dialogue box.
-  **Tabbed View** - switch the [view](#).
-  **Dock Tools** - reset all panels to their last known [docking](#) positions.

The next series of icons provide fast access to different aspects of the configuration:


-  **System Core** - show/hide the '[System Core](#)' window.
-  **Surface** - show/hide the '[Surface](#)' window.
-  **Panels** - show/hide the '[Panels](#)' window.
-  **Screen** - show/hide the '[Screen](#)' window.
-  **Function Pool** - show/hide the '[Function Pool](#)' (ruby only).
-  **Show all Hardware** - show/hide any unused panels or surfaces for a better overview of the configured hardware.
-  **Change Frame** - open the '[change frame](#)' window.
-  **Tree Definition** - open a new '[Tree Definition](#)' window. If you click on the icon more than once, then multiple windows will open.

The remaining icons are:

- 
Inputs - open the [Inputs](#) list.
- 
Outputs - open the [Outputs](#) list.
- 
User Level - select a [user level](#) to access different configuration options.
- 
Device Configuration Wizard - open the device configuration [wizard](#).
- 
Local Substitutions - open the '[Local Substitutions](#)' window.
- 
Units - click to select a unit (if multiple units have been [defined](#)); all windows update to show the parameter values for the selected unit.
- 
Global Substitutions - open the '[Global Substitutions](#)' window.
- 
Profile - click to select a profile (if profiles have been loaded from the [Global project](#)). If no Profiles exist, or a Global project has not been specified, then there is nothing to select.
- 
Create config - click to [create](#) the complied configuration.
- 
Config to Unit - click to [transfer](#) the active configuration to the unit.

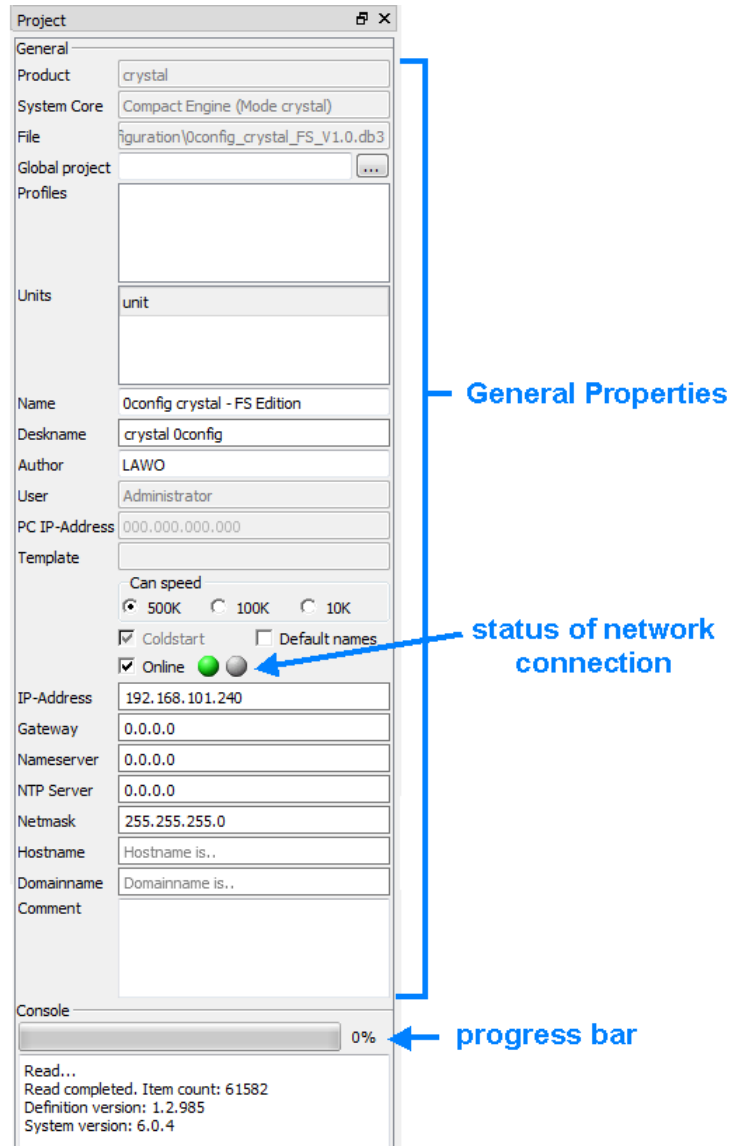
4.10 'Project' Window

The 'Project' window defines the main properties for the system. It can also be used to make an **Online** connection to the Lawo system, and view the progress of operations such as load, save and transfer.

1. Click on the  Toolbar icon to show or hide the 'Project' window.

The window can be floating or docked. See [Arranging the Workspace](#).

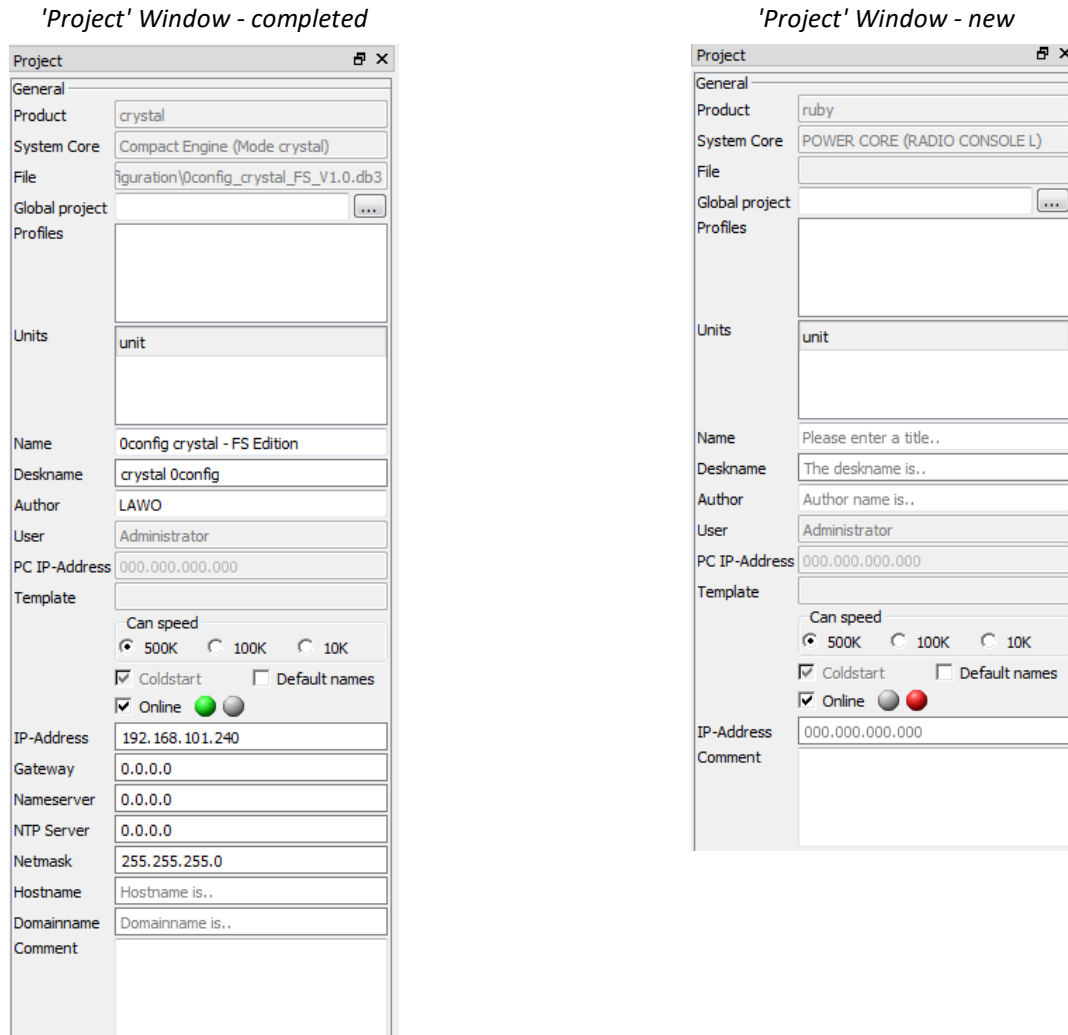
The 'Project' Window



General Properties

If you have opened an existing configuration, then most of the properties should be complete. If you have created a new configuration, then many of the fields will be empty.

If you are configuring more than one unit, then any substituted fields are indicated by a grey background. These cannot be edited directly. Instead use the ['Substitution'](#) windows to individualize the parameters.



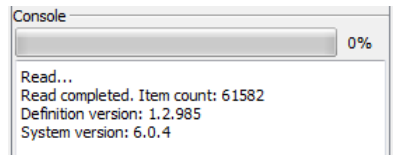
Each of the property fields should be completed as follows:

- **Product** - this line is completed automatically. It shows the product type (selected when the configuration was created using [File -> New](#)).
- **System Core** - this line is completed automatically. It shows the DSP Core (selected when the configuration was created using [File -> New](#)).
- **File** - this line is completed automatically when you save the project. It shows the file path where the project is stored. Use [File -> Save As](#) to change the file name or location.
- **Global project** (optional) - click to define a [Global project](#) (to apply global settings such as metering schemes).
- **Profiles** (optional) - this area lists any Profiles stored in the [Global project](#). If no Profiles exist, or a Global project has not been specified, then the area remains blank.
- **Units** - multiple units of the same product type can be added to a project. Right-click to **Add** or **Delete** a unit; then use this field to switch between units. By default, all parameters apply equally to all units. If this is not desirable, then you can individualize parameters using [substitutions](#).

4. Basic Operations

- **Name** - enter a project title.
- **Deskname** - enter a desk name to identify the unit. This name is transferred to the Lawo system when you use [Transfer -> Setup to Unit](#).
- **Author** (optional) - enter the name of the configuration author.
- **User** - this line is completed automatically. It shows the registered user of the configuration PC (for information purposes).
- **PC IP-Address** - this line is completed automatically. It shows the IP address of the configuration PC (useful for avoiding IP conflicts).
- **Template** - this line is completed automatically. It shows the name of the template (selected when the configuration was created using [File -> New](#)).
- **Can speed** - enter the CAN bus speed for the system. The default is **500K**. This *MUST* match the CAN bus speed stored on each control surface module or key panel.
- **Coldstart** - this line is completed automatically. It shows whether the system will perform a warm start or cold start after a transfer of configuration data. For **crystal**, **ruby**, **sapphire compact** and **sapphire/Nova17**, the option is ticked (i.e. the system will cold start); for **Nova29**, the option is not ticked (i.e. the system will warm start).
- **Default names** - select this checkbox to apply default names whenever you add a new IO card to the project.
- **Online** - select this checkbox to open a network connection to the selected unit. The two indicators show the connection [status](#). Leave the **Online** box unticked to work offline.
- **IP-Address** - enter the IP Address of the selected unit. If **Online** is ticked, the connection status will update.
- **Comment** (optional) - use this field to add notes about the project.

Console



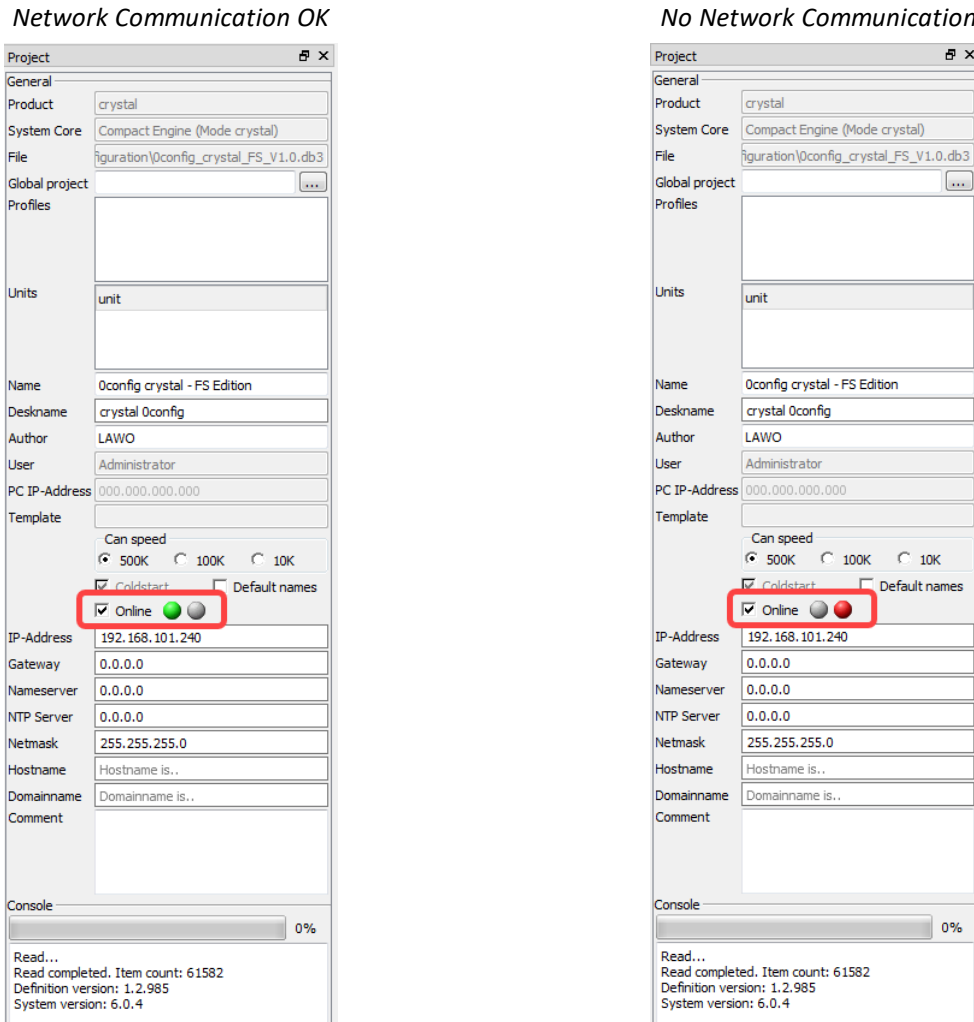
The horizontal bar at the bottom of the 'Project' window shows the progress of operations such as open project, save project, transfer config to unit, etc.

The text area below shows what is currently occurring and provides confirmation when a operation is complete.

4.11 Checking the Network Communication

You can check the network connection to the Lawo system by opening a project and ticking the **Online** checkbox.

The two indicators show the connection status: green = valid connection; red = not connected; yellow = the device firmware needs updating.




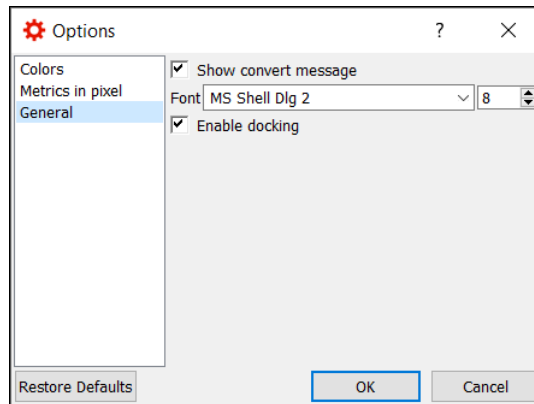
If there is a valid network connection (green indicator), then the 'Console' text area displays the **System version**.

If the firmware needs updating (yellow indicator), then use SoP Explorer to update the device firmware.

If there is a problem with the network connection (red indicator), then check the network cabling and IP settings of both the configuration PC and Lawo system. See [Connecting Your PC to the Lawo Control System](#). If everything looks correct, try running a Windows PING test.

4.12 Options

1. Select **View** -> **Options** from the top menu bar, or click on the  Toolbar icon to open the 'Options' dialogue box:



The options are divided into the following categories:

- **Colors** - define the field color-coding used by **ON-AIR Designer**.
 - **Metrics in pixel** - define the default sizing of windows such as the Tree Definition.
 - **General:**
 - **Show convert message** - see [Converting Projects to the Current Release](#).
 - **Font** - defines the font and text size used by **ON-AIR Designer**.
 - **Enable Docking** - enables or disables docking, see [Arranging the Workspace](#).
2. In each case, make a selection and then click on **OK** to confirm.
 3. To restore all options to the factory defaults, click on **Restore Defaults**.

5. Configuring a Single Unit

This chapter describes how to edit the configuration for a single unit.

It is divided into three sections:

- [Hardware Configuration \(Part I\):](#)
 - [Surface](#)
 - [System Core](#)
 - [Panels](#)
 - [Screen](#)
 - [Function Pool](#)
 - [Change Frame](#)
- [Hardware Configuration \(Part II\):](#)
 - [The 'Tree Definition'](#)
 - [Inserting Elements](#)
 - [Naming Elements](#)
 - [Editing Parameters](#)
 - [Working with Control Signals](#)
 - [Programing an MF Key](#)
 - [Swapping MF Keys](#)
 - [Copying Elements](#)
 - [Deleting Elements](#)
 - [Grouping Elements](#)
 - [Searching the 'Tree Definition'](#)
 - [Changing the User Level](#)
 - [Editing IO Parameters \(in List Form\)](#)
 - [Using Copy/Paste & Swap](#)
 - [Other Keyboard Shortcuts](#)
- [Monitoring Resources:](#)
 - [The 'Resources' Window](#)
 - [Jump to...](#)
 - [Parameter Line](#)

5. Configuring a Single Unit

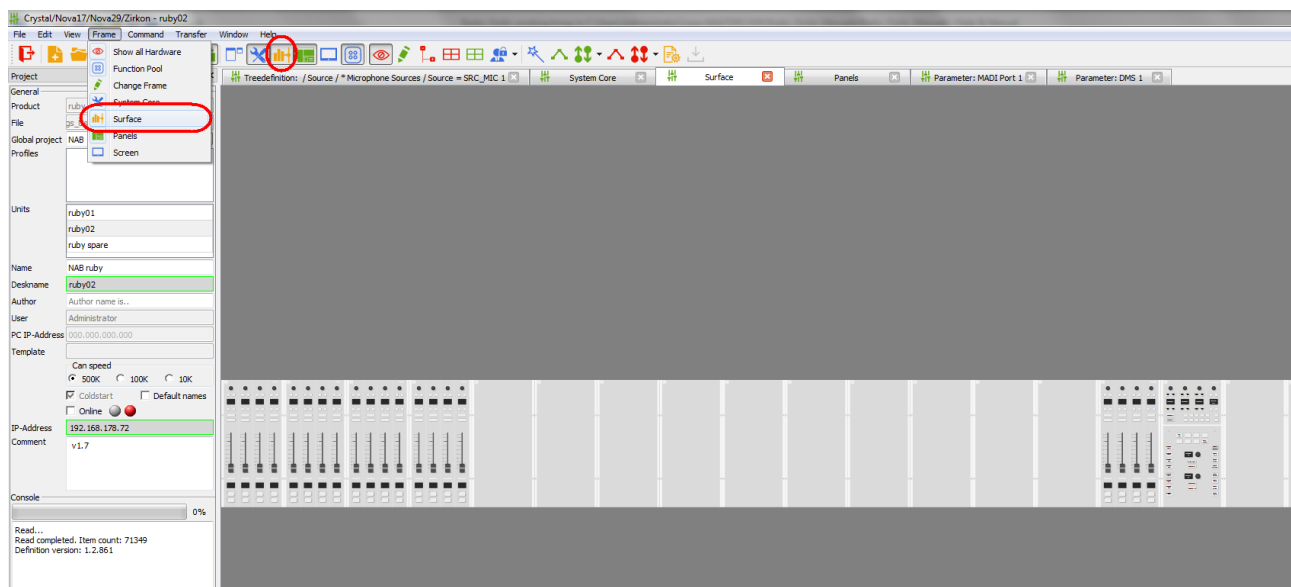
5.1 Hardware Configuration (Part I)

5.1.1 Surface

The Surface configuration defines the control surface modules and their parameters. The example below describes a ruby surface. Other surfaces are configured in a similar manner.

1. Click on the Toolbar icon, or select **Frame -> Surface**, to open the window:

Surface Configuration Window



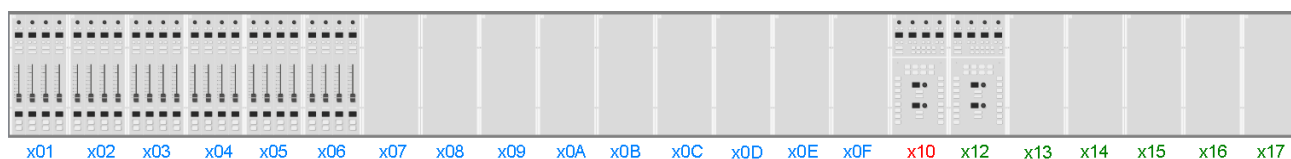
The maximum size of the control surface is defined by the ['Frame Selection'](#).

For larger frames like the one above, you may need to scroll left or right to see all the modules. To see the complete surface (as shown above), click on the Toolbar icon, or select **Frame -> Show All Hardware**. This will show (or hide) any unused panels or surfaces.

You can zoom in (or out) on by pressing and holding CTRL while scrolling your mouse-wheel.

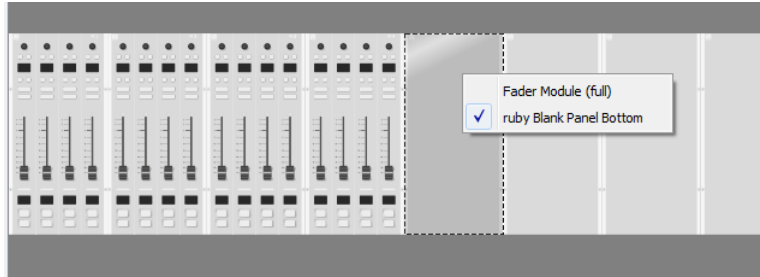
Each module position represents a CAN bus address within the frame. This is a unique hexadecimal address which defines the role of each module.

Can Bus Addresses (ruby)



- To add or change a module, right-click on a slot and choose an option from the list.

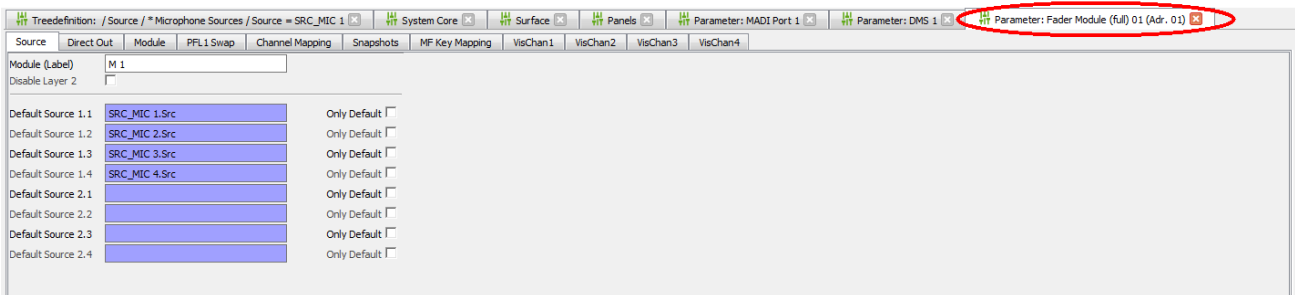
Fader Module Assignment (ruby)



Note that the **Surface** configuration will not necessarily look like your physical console, as it is the CAN bus address assigned to each module which is important.

- Double-click on a module to open its parameter window.

Fader Module Parameters (ruby)



The same parameters can be accessed by opening the "Surface" branch of the 'Tree Definition'.

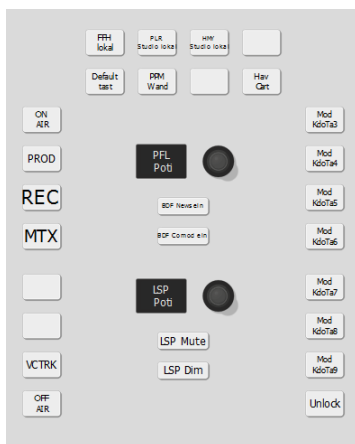
MF Key Swap

Return to the 'Surface' configuration window, and notice that on the Central Module you will see the MF Key labels for all configured functions.

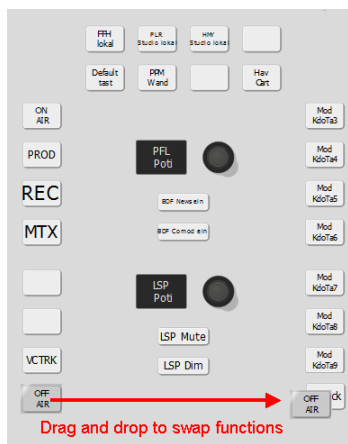
Drag and drop an MF Key to swap the button functions - an arrow will appear when a valid "drop" position is reached.

This operation always swaps the functionality so you will never "lose" any of your existing programming. All connected logic is included in the swap.

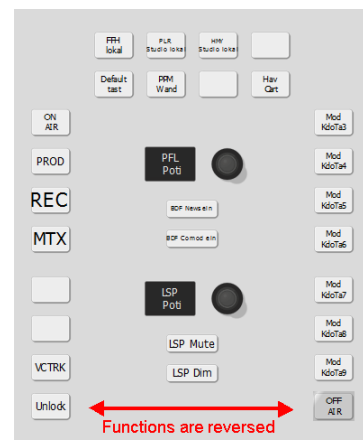
Central Module - before swap



Swap in Progress



Central Module - after swap



5. Configuring a Single Unit

5.1.2 System Core

The 'System Core' configuration defines the plug-in cards and IO parameters for the DSP Core. The example below describes Power Core. Other cores are configured in a similar manner.

1. Click on the Toolbar icon, or select **Frame -> System Core**, to open the window.

System Core Configuration



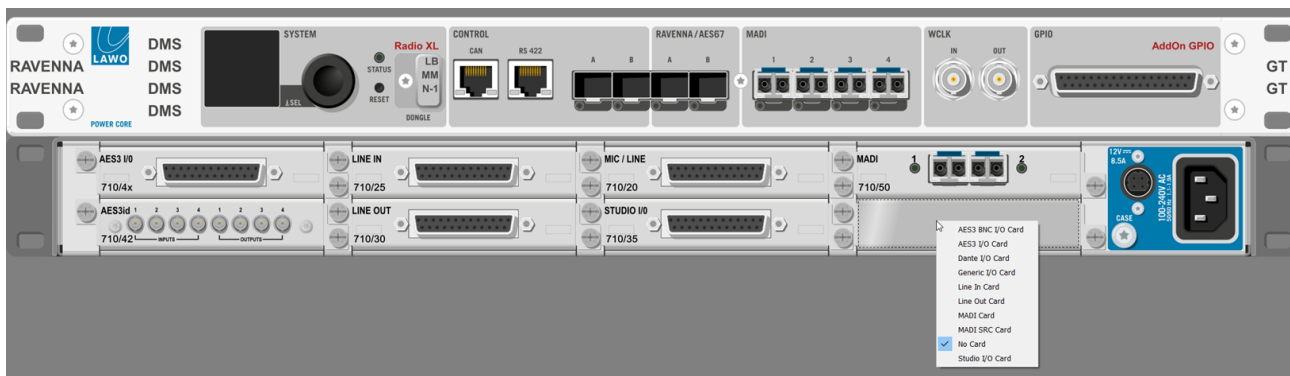
You can zoom in (or out) on by pressing and holding CTRL while scrolling your mouse-wheel.

For Power Core, the main license defined by the ['Frame Selection'](#) is printed above the DONGLE icon (e.g. **Radio XL**). If any add-on licenses are enabled, then these are highlighted in red (e.g. **AddOn GPIO**).

Double-click on the text **RAVENNA**, **DMS** or **GT** to open parameter windows for:

- **RAVENNA** - the RAVENNA inputs and outputs.
- **DMS** - used for VisTool metering or to create audio loopbacks.
- **GT** - used to send GPIO-over-audio.

2. To add or change a plug-in card, right-click on a slot and choose an option from the list:



When you have completed the assignments, the on-screen 'Frame' should look identical to your DSP Core.

3. Double-click on an IO card or connector to access the input and output parameters.

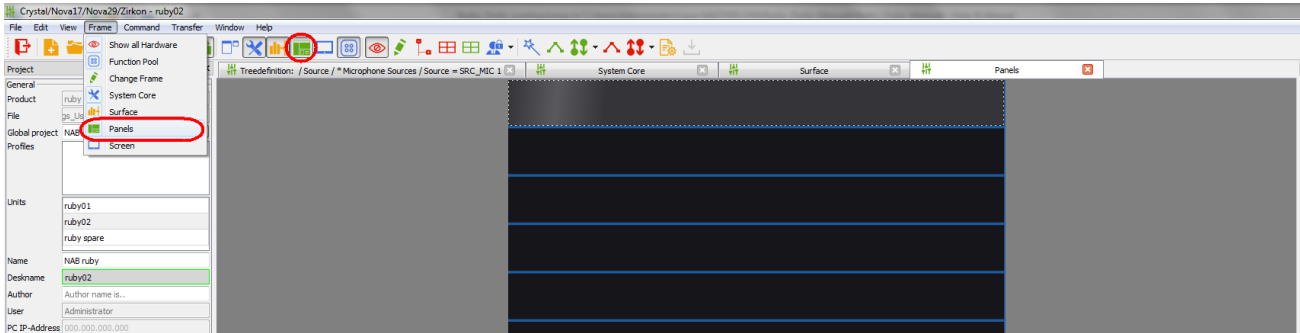
The same parameters can be accessed by opening the "Audio Input" and "Audio Output" branches of the 'Tree Definition', and selecting the appropriate IO card.

5.1.3 Panels

The "Panels" configuration defines any key panels connected to the system and their parameters.

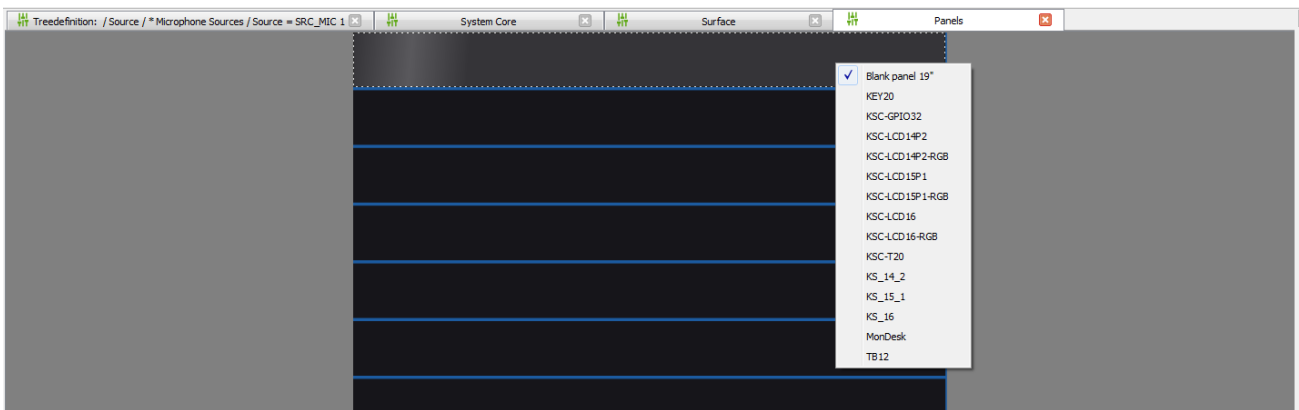
1. Click on the Toolbar icon, or select **Frame -> Panels**, to open the window:

Panels Configuration Window



If this is a new configuration, then you will see a series of blank 19" frame panels. The maximum number of key panels is defined by the '[Frame Selection](#)'.

2. Right-click on an empty panel slot to assign a key panel:



3. Repeat to assign all the key panels connected to your system.

Panels Configuration (example)



Each slot position from top to bottom represents a CAN bus address. This is a unique hexadecimal address which defines the role of each panel within the system.

You can zoom in (or out) on by pressing and holding CTRL while scrolling your mouse-wheel.

The MF Key labels are shown for all existing functions. Drag and drop an MF Key to swap the button functions - an arrow will appear when valid "drop" position is reached. This works in the same way as the Central Module MF Key swap described [earlier](#).

4. Double-click on a panel to open its parameter window.

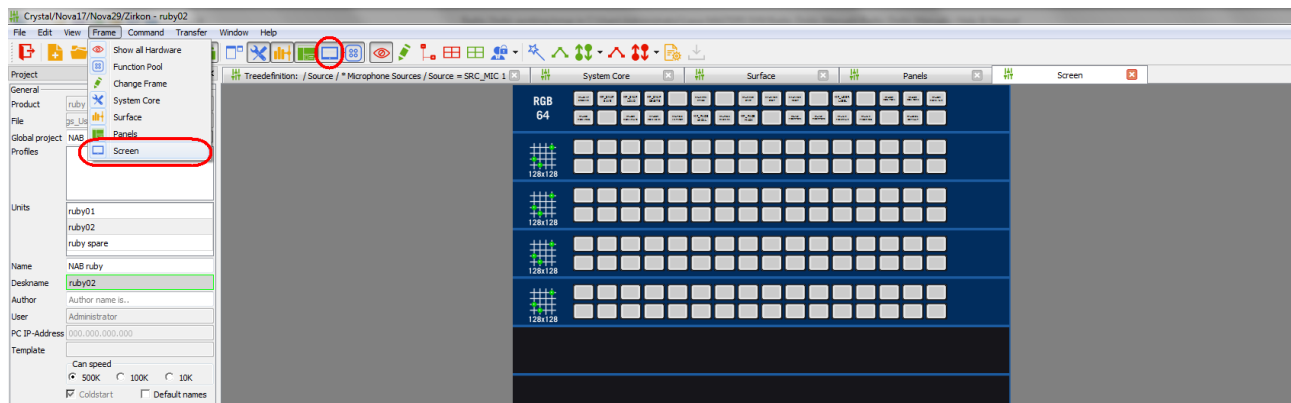
The same parameters can be accessed by opening the "Panel" branch of the 'Tree Definition'.

5.1.4 Screen

The Screen configuration can be used to create virtual control panels which will be operated from VisTool.

1. Click on the  Toolbar icon, or select **Frame -> Screen**, to open the window:

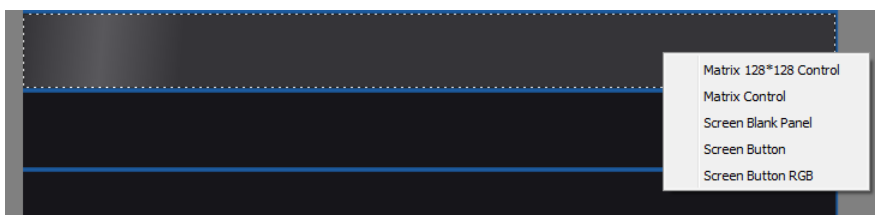
Screen Configuration Window



You can zoom in (or out) on by pressing and holding CTRL while scrolling your mouse-wheel.

The MF Key labels are shown for all existing functions. Drag and drop an MF Key to swap the button functions - an arrow will appear when valid "drop" position is reached. This works in the same way as the Central Module MF Key swap described [earlier](#).

2. Right-click on an empty panel slot to assign a Screen Panel:

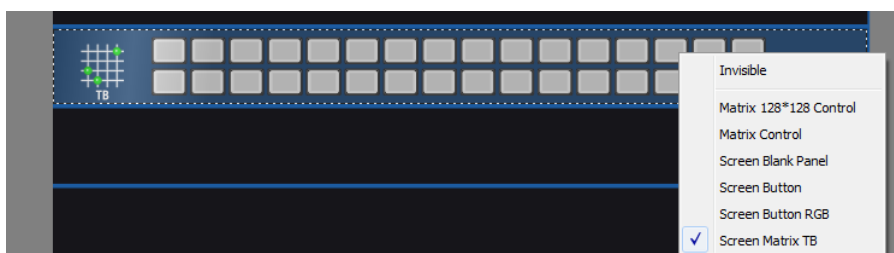


The available options are:

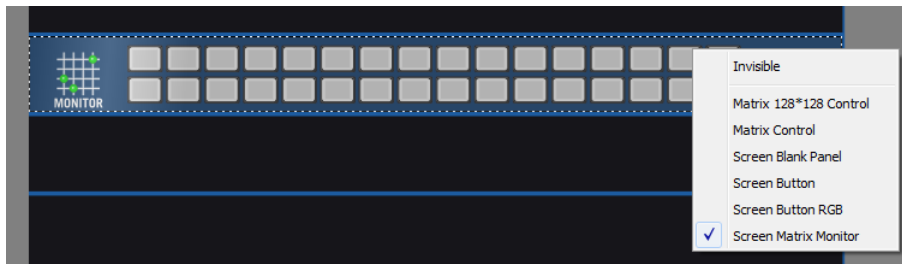
- **Matrix 128 * 128 Control** - an XY matrix panel of 128 x 128.
- **Matrix Control** - an XY matrix panel of 90 x 30 (switched in pages).
- **Screen Blank Panel** – a blank panel (to replace an existing panel).
- **Screen Button** – 32 MF Key functions.
- **Screen Button RGB** – 64 MF Key functions with self-labeling, RGB buttons.

3. Scroll down to the lower slots and notice that some additional options become available:

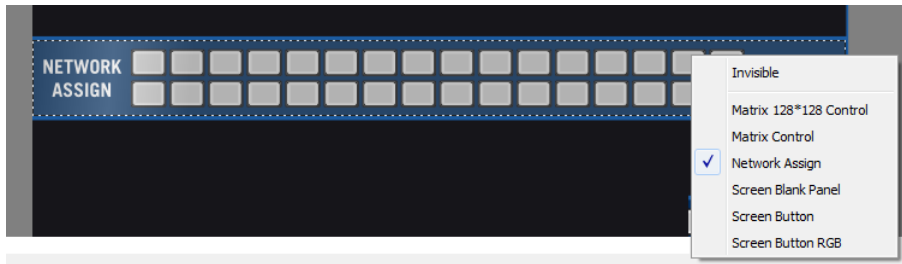
Slot 11: Screen Matrix TB - a talkback switching panel, with 32 buttons:



Slot 12: Screen Matrix Monitor - a monitor matrix control panel, with 32 buttons:



Slot 13: Network Assign - a network assign control panel, with 32 buttons:



Slot 14: Screen Src Assign - a fader strip assign control panel, with 32 buttons:



Slot 15: Parm Control - a DSP control panel, with 32 buttons:



4. Double-click on a panel to open its parameter window.

The same parameters can be accessed by opening the relevant branch of the 'Tree Definition':

- "Logic" - for Matrix Control, Network Assign, Screen Src Assign or Parm Control.
- "MF Keys" for Screen Buttons.

5. Configuring a Single Unit

5.1.5 Function Pool

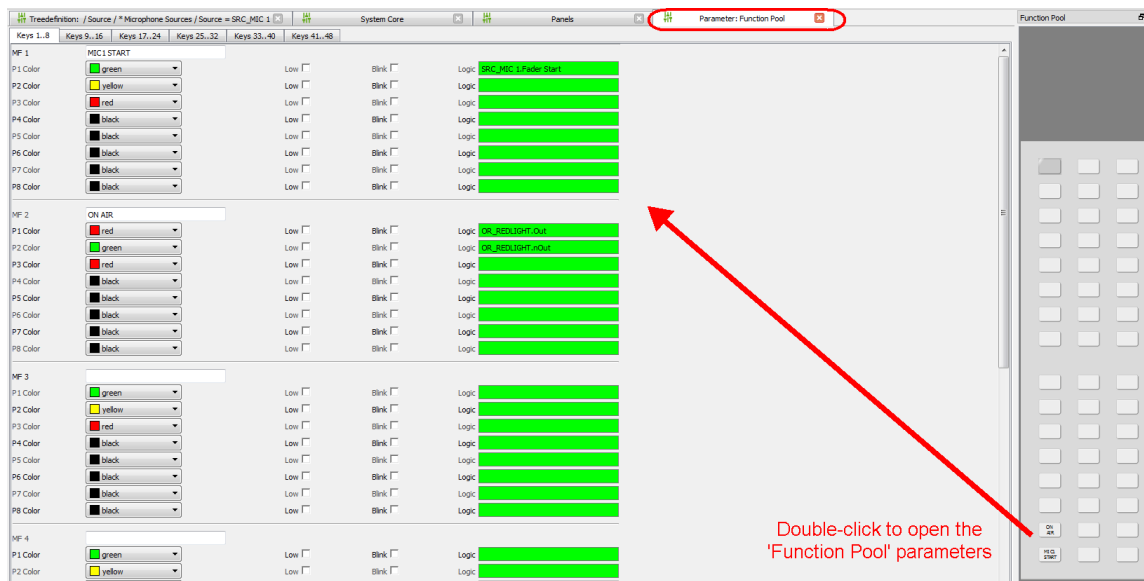
The Function Pool is available only for **ruby**. It can be used to prepare MF Keys before positioning them on a Central Module, or to move a function by swapping it to and from the 'Function Pool' panel. This is ideal if you know what functionality is required, but are not yet sure of the MF Key layout. The same parameters can be accessed from the 'Tree Definition'.

1. Click on the Toolbar icon to show or hide the 'Function Pool'.

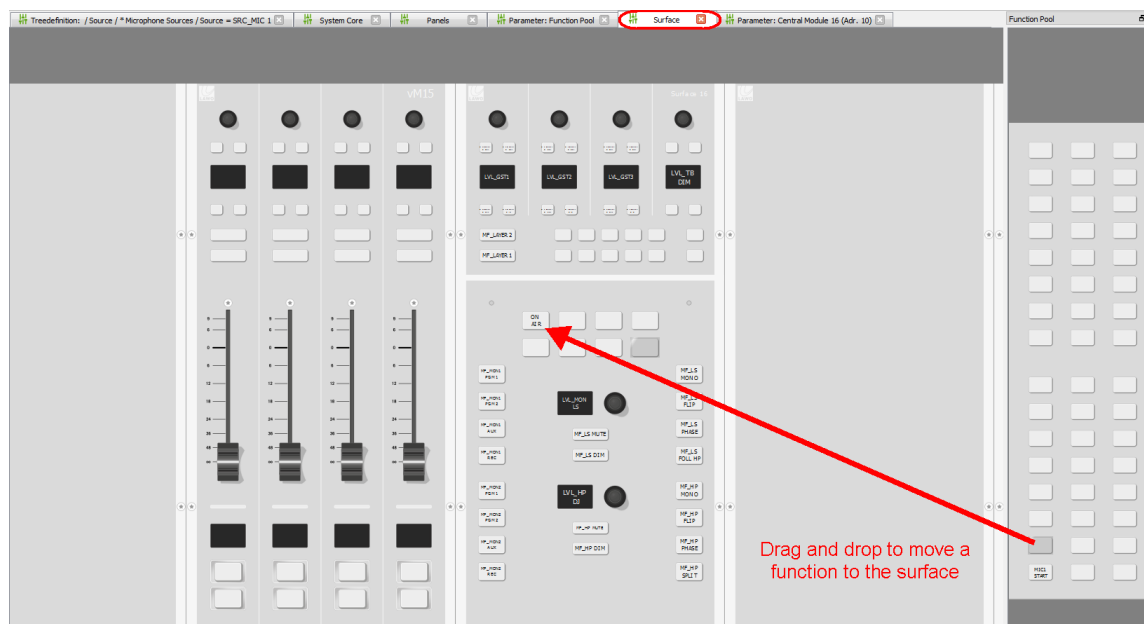
The window can be floating or docked to one side (left or right). See [Arranging the Workspace](#).

2. Double-click on any MF Key in the window to open the Function Pool parameter window.

This shows all the dummy MF Keys available. Each one can be programmed in the [usual](#) manner:



3. Now open the [Surface](#) configuration and drag and drop the MF Key from the Function Pool to the Central Module - an arrow will appear when a valid "drop" position is reached.



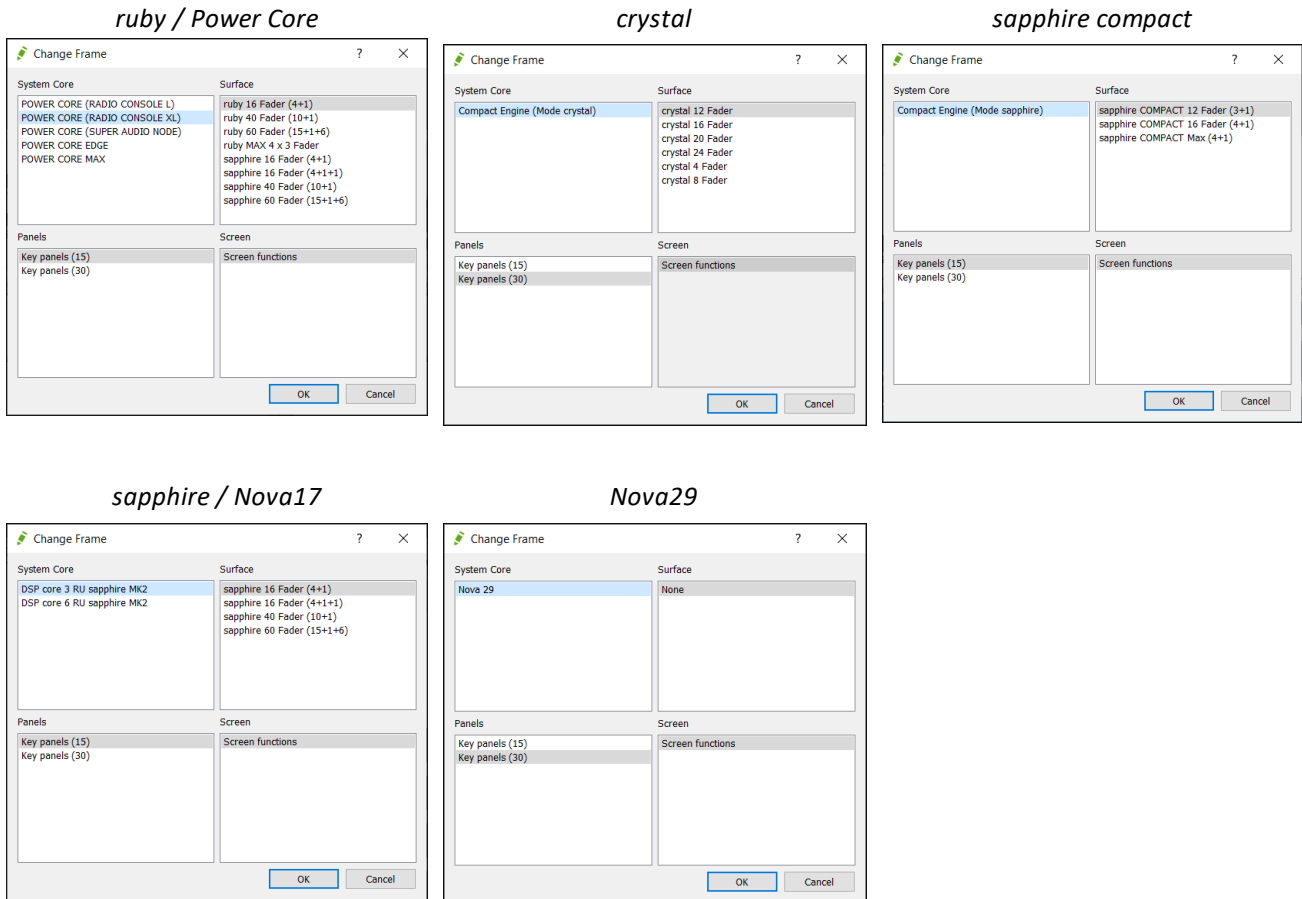
You can use the same drag and drop technique to move functions to and from the Function Pool panel. This allows you to easily rearrange an existing MF Key layout.

5.1.6 Change Frame

The 'Change Frame' window can be used to change the maximum specification of the system.

The options vary depending on the product specified when the project was created (via [File -> New](#)). All products supported by the ON-AIR Designer are shown below.

1. Select **Frame -> change frame** to open the window.



Here you can change the specification of any component: **System Core**, **Surface**, **Panels** or **Screen**.

2. If you change an option, click on **OK** - the software now loads the new configuration.

It may take a few seconds to load the new data. During this time the status is shown in the "progress" bar (below **Console** in the '[Project](#)' window).

If the change lowers the specification of an existing configuration, then parameters are loaded to the available resources.

5.2 Hardware Configuration (Part II)

5.2.1 The 'Tree Definition'

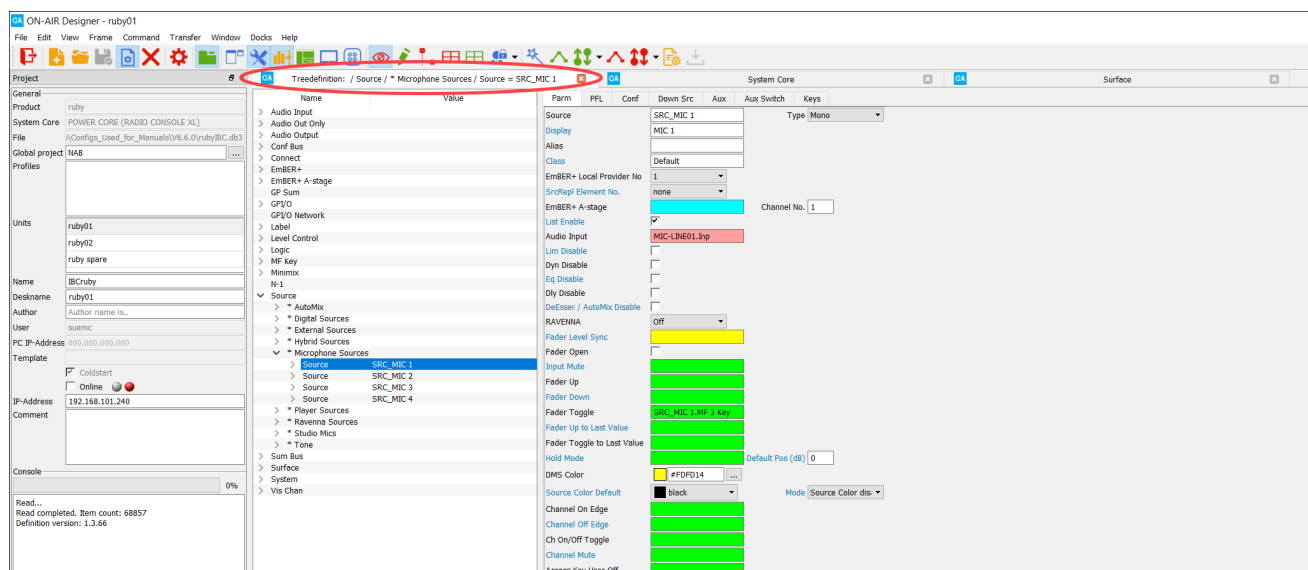
The 'Tree Definition' is used to define the system's elements and their parameter options.

1. Click on the Toolbar icon, or select **Command -> Tree Definition**, to open the window.

The 'Tree Definition' can be opened multiple times to access different branches of the system. The window(s) can be floating or tabbed. See [Arranging the Workspace](#).

Below is an example from a ruby console.

Tree Definition: Source -> Parameter branch (Power Core)



'Treedefinition'

The 'Tree Definition' gets its name from the tree-like structure on its left hand side. Each of the branches can be opened by double-clicking on a branch name or on the arrows beside the branch. Once open, you will see all configured elements.

Some elements are automatically added to the 'Tree Definition'. Others, such as **Source**, **Sum Bus** and **Logic** elements must be inserted. Right-click on a branch to Insert, Copy or Delete an element. In our example, the **Source** branch is open; the sources have been organised into groups named **AutoMix**, **Digital Sources**, etc. Within the **Microphone Sources** group, 4 mono sources have been added.

Select **Command -> Sort Tree** to sort the elements alphabetically.

Parameter Area

When you open up a branch of the tree and select an element, its parameter options appear on the right hand side. In our example, we can see the parameters for the source named **SRC_MIC 1**.

Some parameters are linked to other elements within the configuration - for example, the source's **Audio Input** and control functions such as **Fader Toggle**. Note that these fields are color-coded to indicate the expected signal type: pink for an audio input or output; green for a logical function; etc.

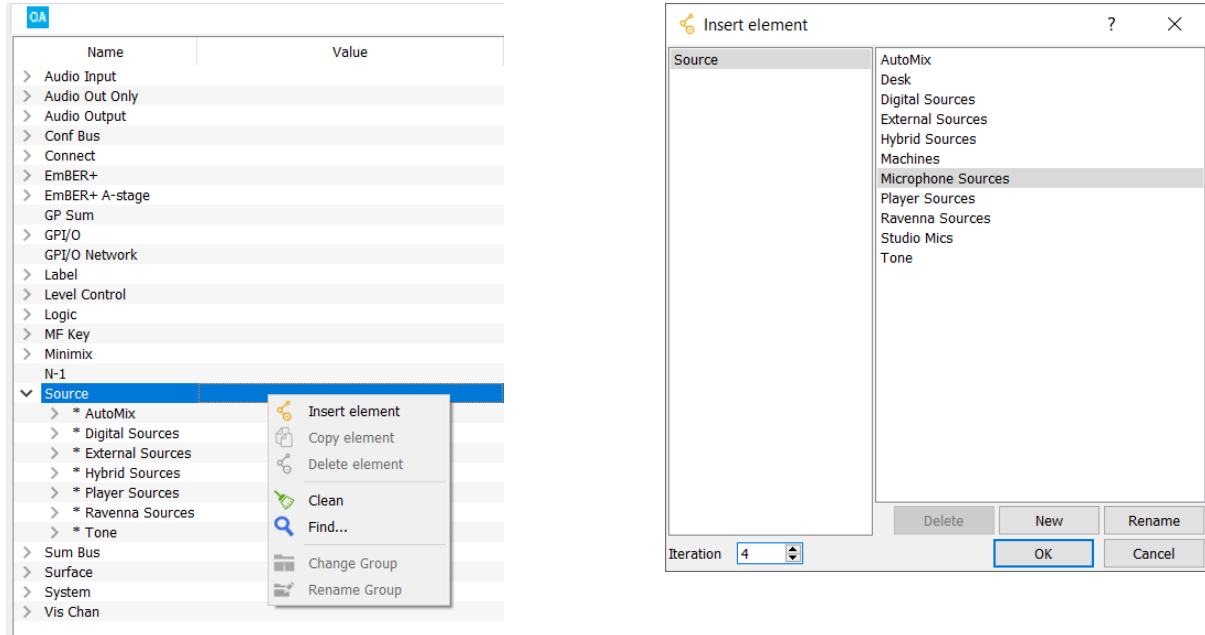
For some elements, there will be more than one page of parameters. If so, these are accessed by tabs at the top of the window - in our example, **Parm**, **PFL**, **Conf**, **DownSrc**, **Aux**, **Aux Switch** and **Keys**.

5.2.2 Inserting Elements

To add a new element to the project:

1. Right-click on a branch within the 'Tree Definition' and choose **Insert Element**.

Note that the selected branch defines the options which appear. So, a right-click on the **Connect** branch opens a selection of "Connect" elements; a right-click on the **Source** branch opens the source elements; and so on.



2. Select the type of element you want to add (e.g. **Source**).
3. On the right, place the element within a Group, for example **Microphone Sources**.

Select **New** if you wish to create a new [Group](#).

4. Enter the number of elements of the same type you wish to create in the **Iteration** box.
5. Then click on **OK** - the new element(s) are added to the 'Tree Definition' under your selected Group category.

5. Configuring a Single Unit

5.2.3 Naming Elements

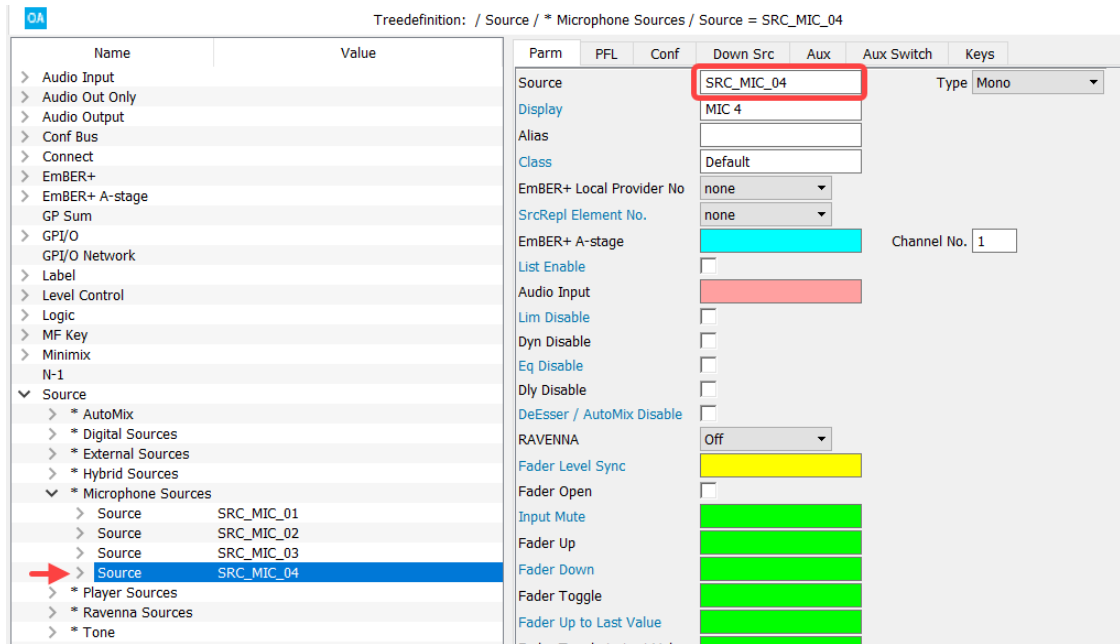
After adding an element to the 'Tree Definition', you must name it. It is this reference name which will be used to link to other elements within the configuration.

Reference names *MUST* be unique. Choose your reference names carefully so that you can easily locate functions as the configuration grows.

For our example:

1. In the **Source** field, enter a reference name.

Once entered, the Reference name appears beside the element in the 'Tree Definition':



The screenshot displays the 'Tree Definition' on the left and the configuration parameters for the selected element on the right. The 'Tree Definition' shows a hierarchy of elements, with 'Source SRC_MIC_04' selected. The configuration panel on the right shows various parameters for this source, with 'SRC_MIC_04' entered in the 'Down Src' field.

Name	Value
> Audio Input	
> Audio Out Only	
> Audio Output	
> Conf Bus	
> Connect	
> EmBER+	
> EmBER+ A-stage	
GP Sum	
> GPI/O	
> GPI/O Network	
> Label	
> Level Control	
> Logic	
> MF Key	
> Minimix	
N-1	
√ Source	
> * AutoMix	
> * Digital Sources	
> * External Sources	
> * Hybrid Sources	
√ * Microphone Sources	
> Source SRC_MIC_01	
> Source SRC_MIC_02	
> Source SRC_MIC_03	
> Source SRC_MIC_04	
> * Player Sources	
> * Ravenna Sources	
> * Tone	

Param	PFL	Conf	Down Src	Aux	Aux Switch	Keys
Source			SRC_MIC_04			Type Mono
Display			MIC 4			
Alias						
Class			Default			
EmBER+ Local Provider No			none			
SrcRepl Element No.			none			
EmBER+ A-stage						Channel No. 1
List Enable						
Audio Input						
Lim Disable						
Dyn Disable						
Eq Disable						
Dly Disable						
DeEsser / AutoMix Disable						
RAVENNA			Off			
Fader Level Sync						
Fader Open						
Input Mute						
Fader Up						
Fader Down						
Fader Toggle						
Fader Up to Last Value						

You can use the copy and paste [shortcuts](#) to speed up the naming process for multiple elements.

5.2.4 Editing Parameters

The parameters for the selected element are edited on the right hand side of the display; the available parameters depend on the product and [user mode](#):

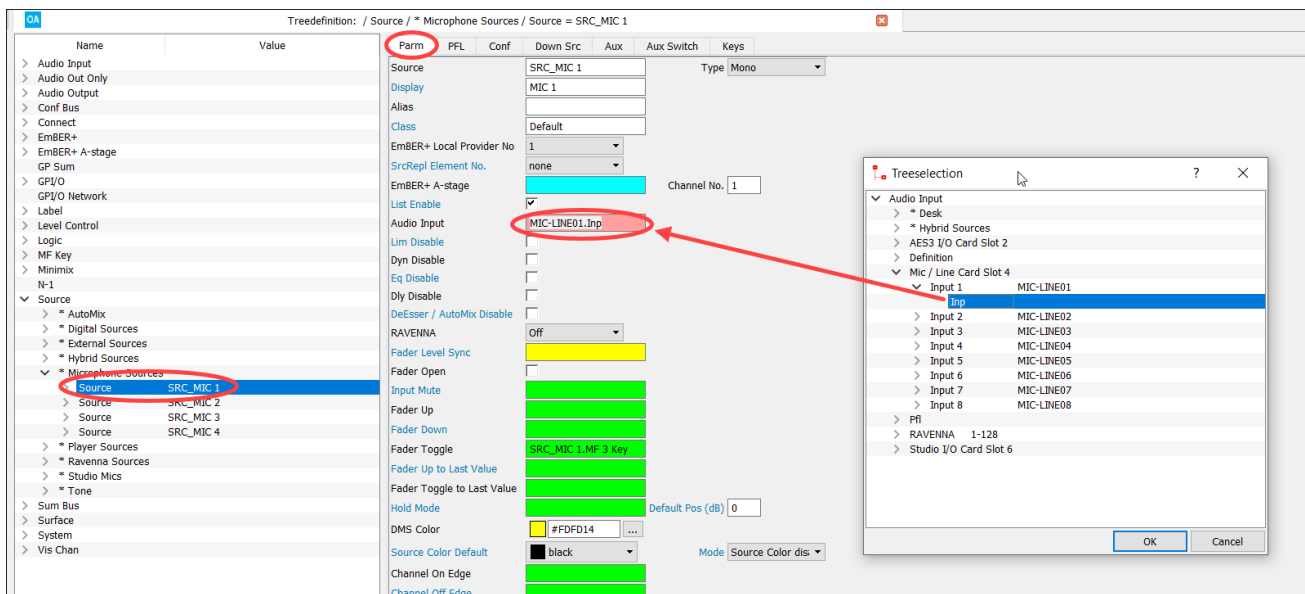
The parameter entry boxes are color-coded to indicate the expected signal type: white for a text entry, value or checkbox; green for a logical function; pink for an audio signal; and so on.

1. For white entry boxes, either type in the text or value required, or tick the checkbox to enable the option. Press Backspace on your PC keyboard to remove any unwanted text.

You can use the copy and paste [shortcuts](#) to speed up the data entry.

5. Configuring a Single Unit

- For colored entry boxes, double-click inside the box to open a 'Tree Selection' window - in our example, we have double-clicked inside the pink **Audio Input** box.
- Open the branches of the 'Tree Selection' to choose an input:



- Select **OK** to confirm - the 'Tree Selection' window closes and the parameter box updates to show your assignment.
- To remove a linked entry, click anywhere inside the entry box and press **DEL** on your PC keyboard.

'Tree Definition' Color-Coding

When you double-click on a colored entry box in the 'Tree Definition', different options appear in the 'Tree Selection' depending on the parameter you are assigning. For example, you will see only audio signals when assigning a pink field; only control signals when assigning a green field; and so on. In each case, the color of the entry box indicates the expected signal type:

- Green** = a logical function.
- Pink** = an audio input or output.
- Blue** = a source.
- Brown** = a summing bus.
- Yellow** = a level or balance function.
- Orange** = a label.
- Turquoise** = an Ember+ element.
- Magenta** = the state of another element.

5.2.5 Working with Control Signals

When programming logical functions (green parameter entry boxes), it is important to understand the control signals available from the 'Tree Selection':

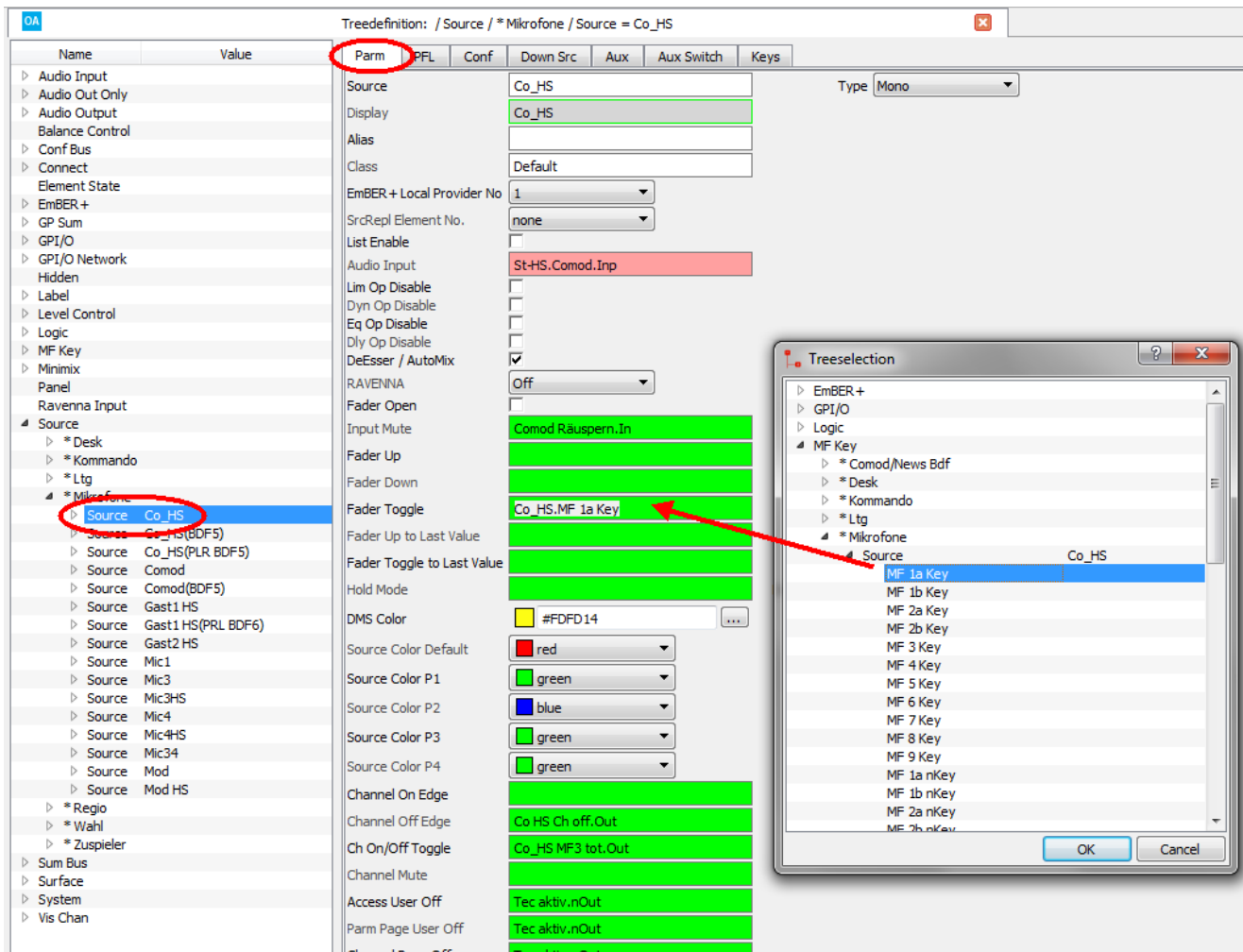
➤ Control Inputs

Logical functions can be triggered from any input control signal:

- **GPIO** – any GPI.
- **MF Key** – any MF Key including those on a key panel or VisTool screen display.
- **Logic** – a logical element such as an OR gate, AND gate, Toggle Flip Flop.
- **Surface** – the alarm contact from any module within the Surface.
- **Panel** – the alarm contact from any key panel.
- **Definition** - a pre-defined logical trigger from the "System -> Definition" branch of the 'Tree Definition'.

The following example shows how to configure an MF Key to open and close a fader.

1. Select the **Source** from the 'Tree Definition' and double-click in its green **Fader Toggle** box to open the 'Tree Selection' window.
2. Then select the desired control signal - in our example, the Source's **MF 1a Key** - and **OK**:



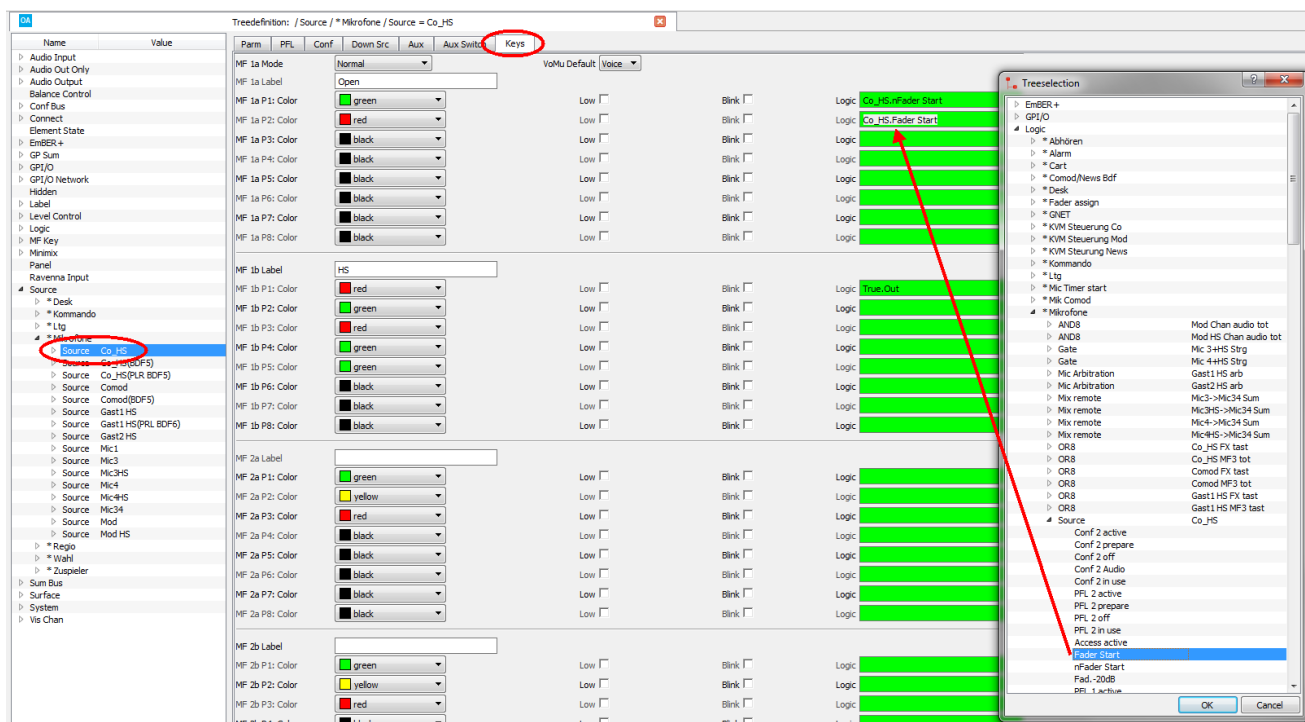
Once this configuration is transferred to the system, you will be able to open and close the Source from the fader strip's MF Key 1a.

5. Configuring a Single Unit

➤ Control Outputs

Most elements offer control outputs. These reflect the status of the element and may be used to configure a return operation - for example, to light the fader start MF Key when the Source fader is open.

1. With the same **Source** selected, select the **Keys** tab to view the Source's MF Key lamps and labels. For each MF Key, you may define up to 8 key states labeled **P1** to **P8** – **P1** is lowest priority; **P8** is highest priority.
2. Double-click on one of the key state **Logic** boxes to open a 'Tree Selection' window.
3. In the 'Tree Selection', open the the **Logic** -> "Source Group" -> "Source Name" branch and assign the source's **Fader Start** control signal:



4. Now select a color for this state by clicking on the drop-down **Color** menu - we have selected **red**.

In this example, we have created an MF Key which will open the fader, and turn red when the fader is open.

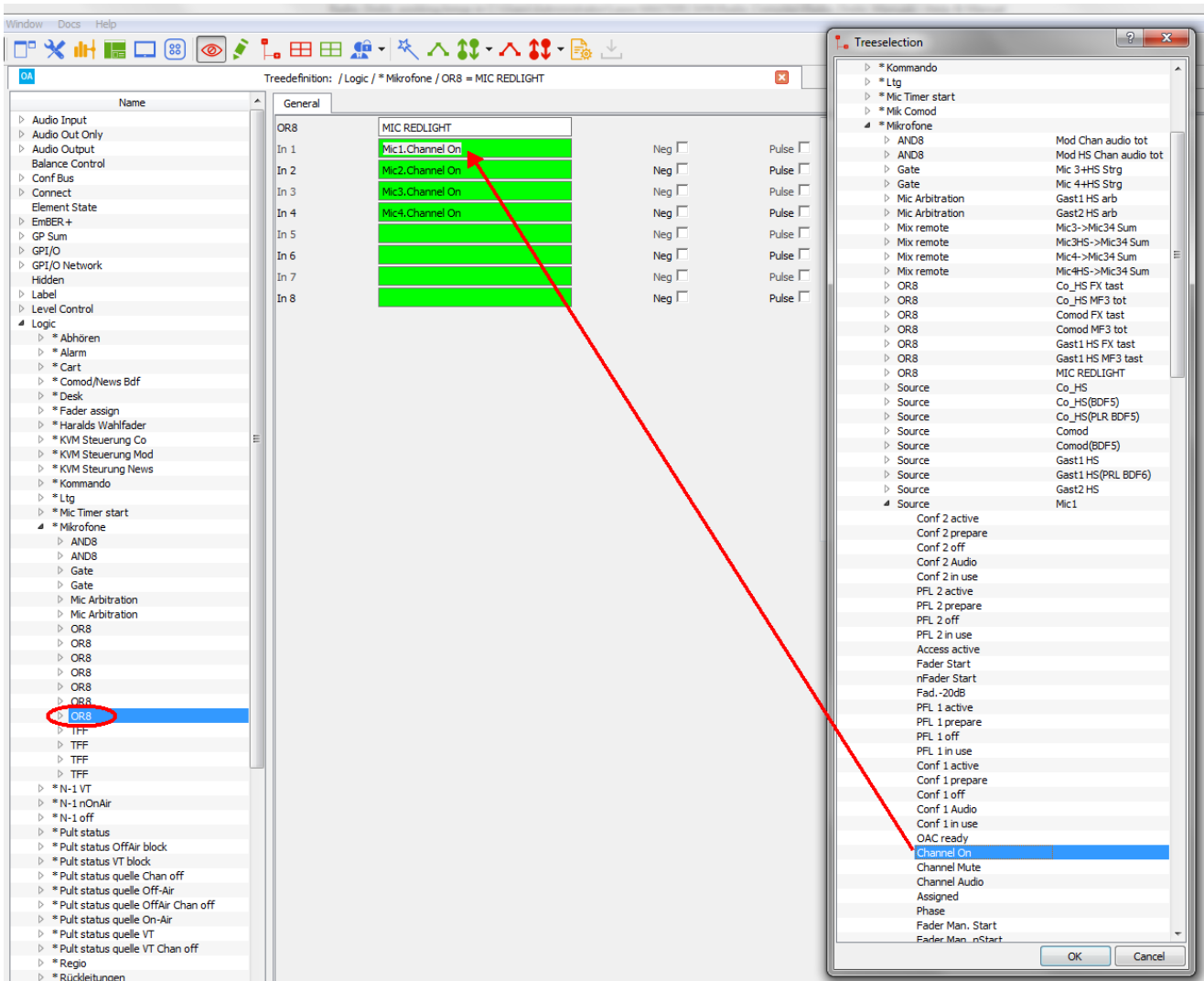
Note that the MF Key's **P1** state has also been configured so that the key lights in green when the fader is closed (using **nFader start**).

➤ Logic Elements

Sometimes you may want a function to be triggered from the logical result of a number of other conditions. For example, to trigger an external red light if any one of a number of Sources is "on-air".

For this application, you could use the OR8 Logic element as follows:

1. First [insert](#) and [name](#) an **OR8** element under the **Logic** branch of the 'Tree Definition'.
2. Double-click in the **In 1** box to open a 'Tree Selection' window.
3. In the 'Tree Selection', open the the **Logic** -> "Source Group" -> "Source Name" branch and assign the source's **Channel On** control signal:



4. Repeat to assign the **Channel On** control signals from the other microphone Sources.

5. Configuring a Single Unit

5. Assign the output of the Logic -> OR8 to the red light - for example, via a GPIO card:

The screenshot shows the ON-AIR Designer software interface. On the left, a tree view shows the configuration structure under 'GPIO Port GPIO Slot'. 'GPIO 5' is selected and highlighted in blue, with its value 'Mic ON' also highlighted. A red circle highlights the 'GPIO' label in the top left of the main configuration area. The main configuration area shows eight GPIO slots (GPO 1 to GPO 8) with their respective names and logic outputs. GPO 5 is configured with the name 'Mic ON' and the logic output 'MIC REDLIGHT.Out'. A red arrow points from this logic output to the 'Treeselection' dialog box on the right. The 'Treeselection' dialog shows a tree view of logic elements, with 'OR8' selected and its output 'MIC REDLIGHT' highlighted. The 'Out' and 'nOut' options are also visible in the dialog.

Once the configuration is transferred to the system, when any of the four MIC Source faders are open, the red light should illuminate!

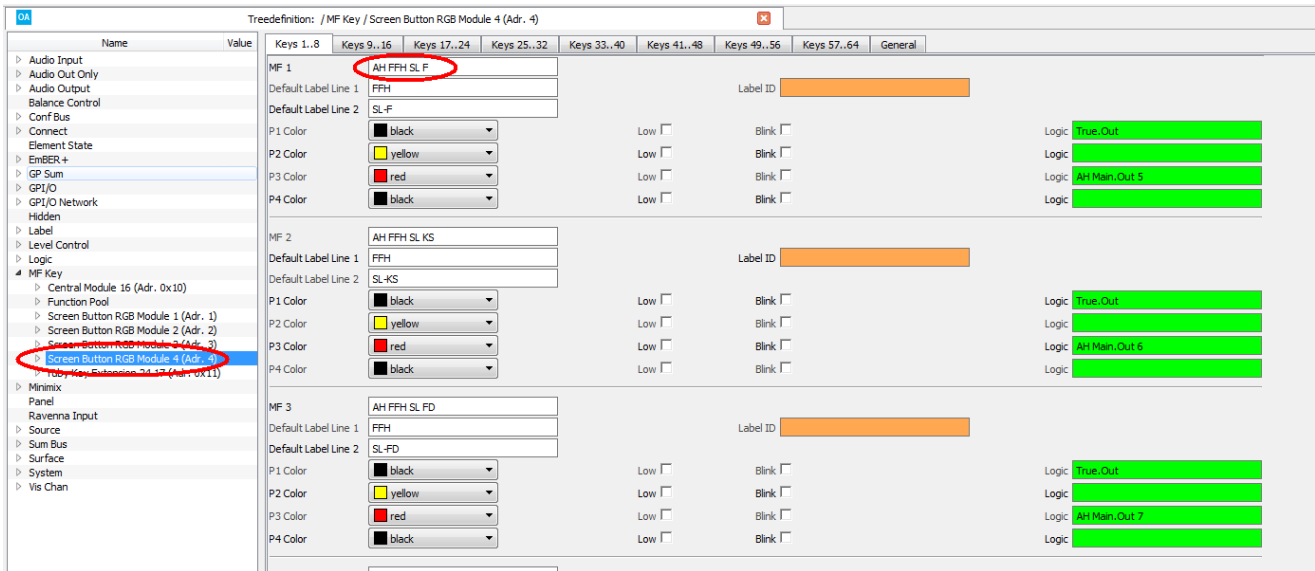
Logic elements can be connected together to create exactly the right control signal for a function. It is a good idea to regularly save, transfer and test your configuration to avoid feedback loops within the programming.

5.2.6 Programing an MF Key

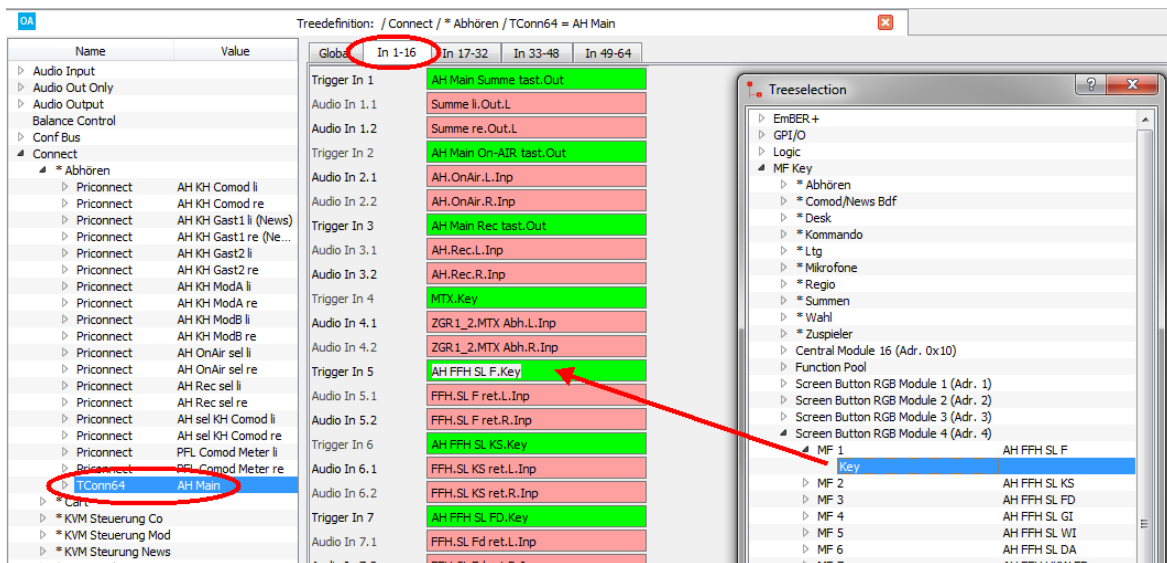
MF Keys are programed in a similar manner to other control signals. In each case, you must name the MF Key, then program its functionality, and then define how the key will light.

The example below shows how to create a monitor source selector using a TConn64 element.

First, each of the monitor source selector MF Keys must be named - in our example, the selections are to be made via VisTool and so the MF Keys can be found under a **Screen Button RGB Module** element:

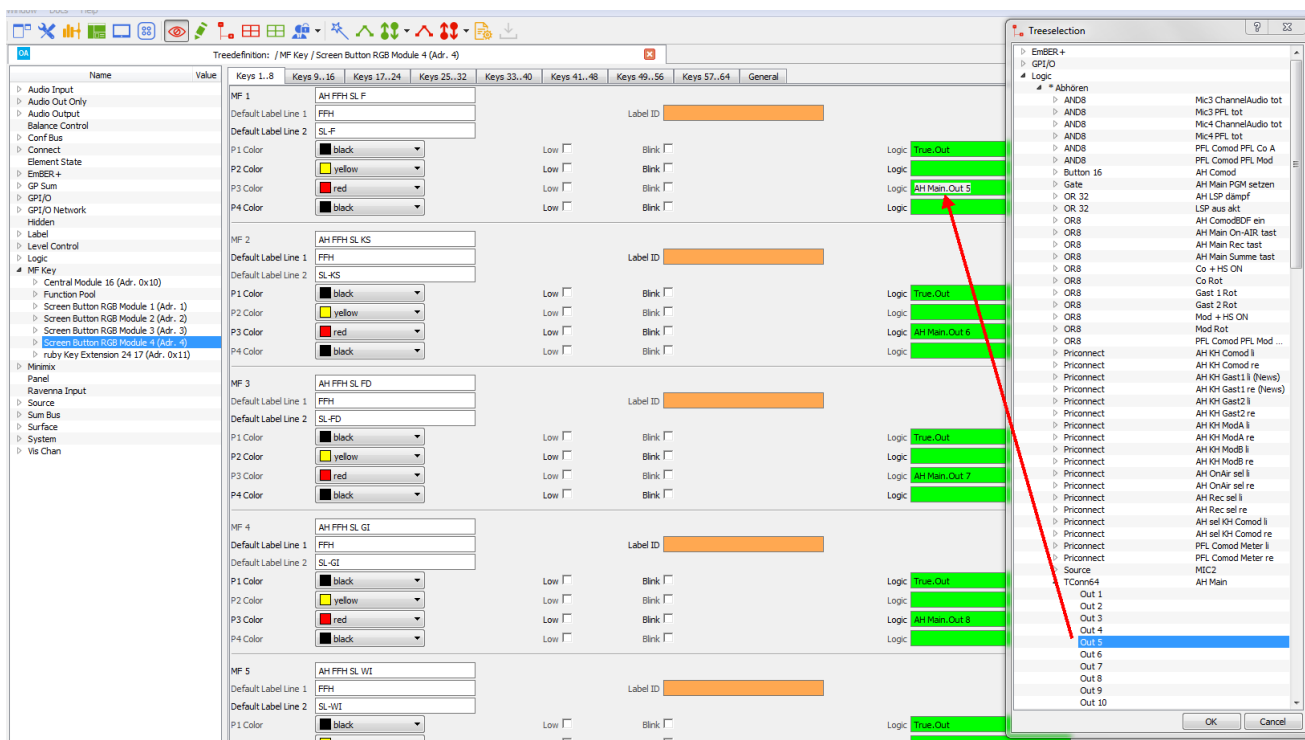


Once the MF Keys are named, they can be assigned to a function - in our example, to the input **Trigger** of a **TConn64**:



5. Configuring a Single Unit

The output of the **TConn64** can then be assigned to light the MF Key lamp:



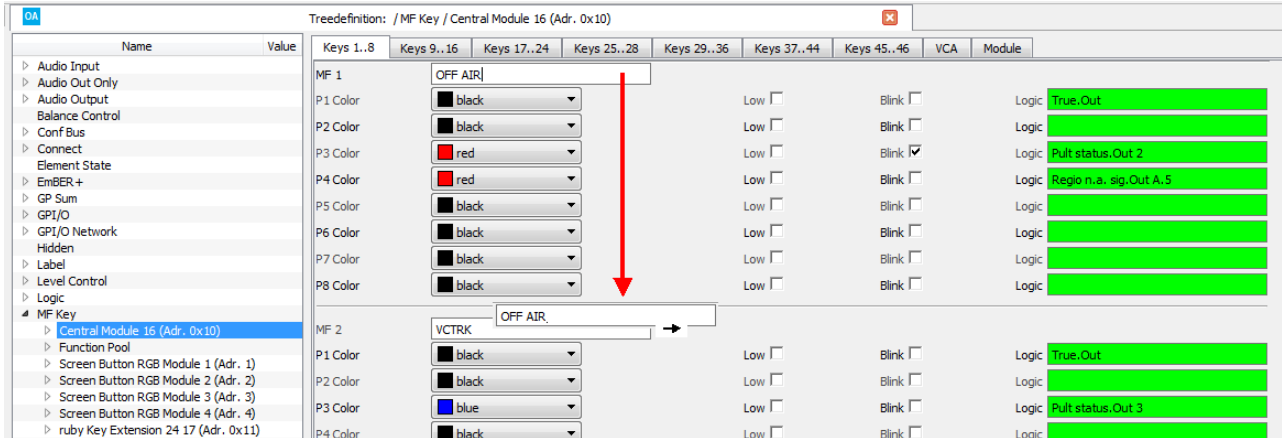
This example will route a pair of audio inputs to the **TConn64** output when the corresponding VisTool MF Key is active, and light the MF Key in red.

In our example, a **TRUE.Out** control output has been assigned to the MF Key's **P1** state.

5.2.7 Swapping MF Keys

MF Key functions can be swapped by dragging and dropping on the MF Key name fields - an arrow will appear when a valid "drop" position is reached:

MF Key - swap in progress



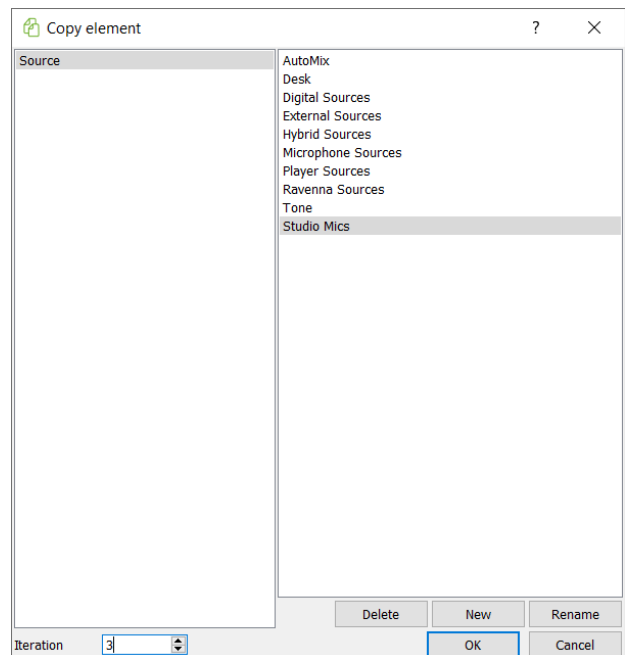
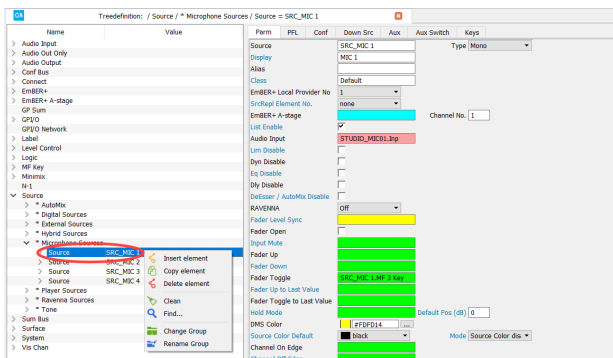
Alternatively, you can use the F11 and F12 [keyboard shortcuts](#) as follows: select the first MF Key name field and press F11 (to mark the active MF Key). Then click on another MF Key name field and press F12 - this swaps the two MF Key functions.

In both cases, all connected logic is included in the swap.

5.2.8 Copying Elements

If you have a number of elements (e.g. Sources) which require similar parameters, then **Copy Element** can save a lot of programming time.

1. First insert, name and configure the element with all the common parameters you wish to copy.
2. Then right-click on the element in the 'Tree Definition' and choose **Copy Element**:

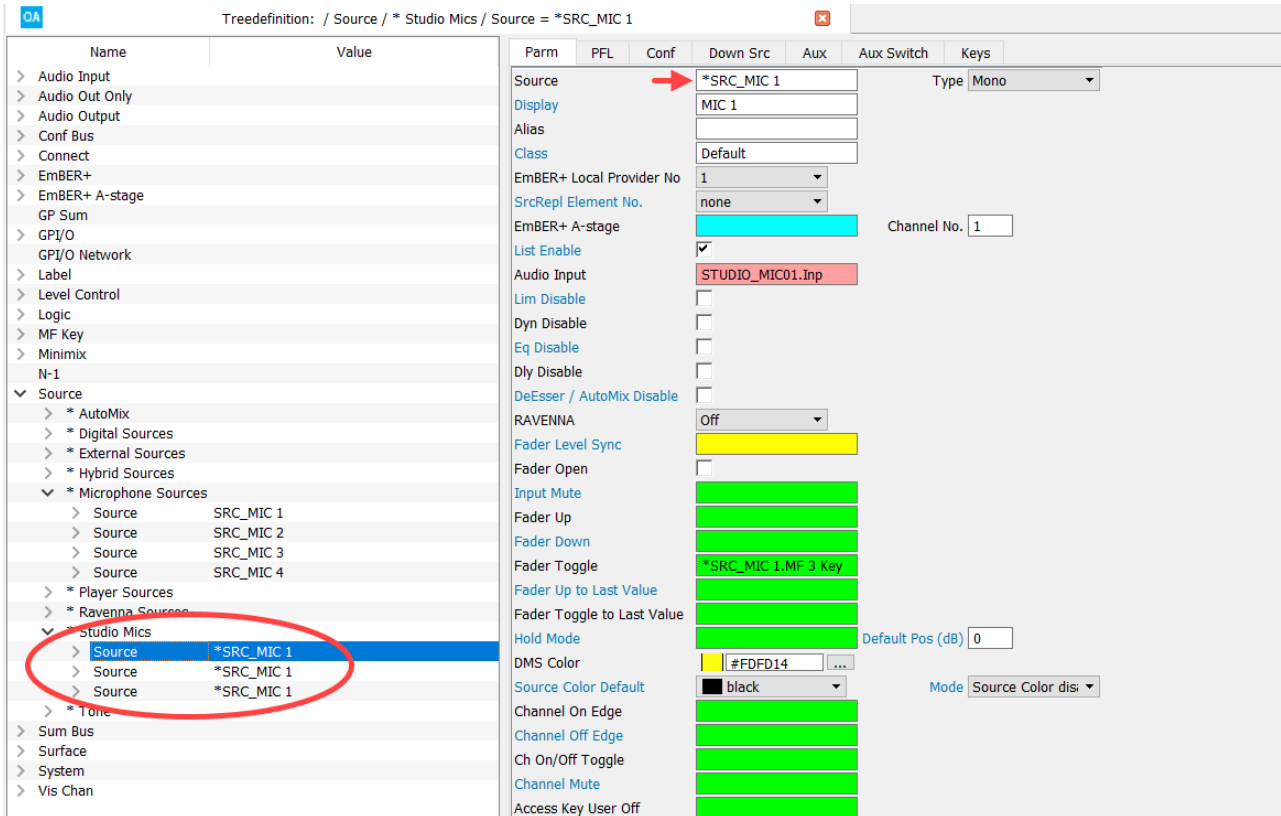


3. Select a Group for the new elements, for example **Studio Mics**.
4. Enter the number of copies you wish to make in the Iteration box, for example **3**.

5. Configuring a Single Unit

- Click on **OK** - the copied elements now appear under your chosen group category.

Note that the copied elements are marked with an * to distinguish them from your original element.



The screenshot displays the ON-AIR Designer software interface. On the left, a tree view shows the hierarchy of elements, with 'Studio Mics' expanded to show three copies of 'SRC_MIC 1' marked with an asterisk (*). The right pane shows the configuration for the selected '*SRC_MIC 1' element. The 'Source' field is set to '*SRC_MIC 1', and the 'Display' field is set to 'MIC 1'. The 'Audio Input' is set to 'STUDIO_MIC01.Inp'. The 'Channel No.' is set to '1'. The 'Type' is set to 'Mono'. The 'Fader Level Sync' is set to 'Off'. The 'Fader Toggle' is set to '*SRC_MIC 1.MF 3 Key'. The 'Default Pos (dB)' is set to '0'. The 'Mode' is set to 'Source Color dis'. A red arrow points to the 'Source' field, and a red circle highlights the three copied elements in the tree view.

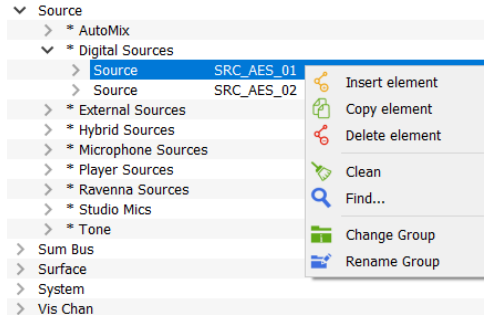
- Your first task is to change the Reference name for each copy - this updates both the element name and any referenced fields.
- You can now make individual changes to the copies.

5.2.9 Deleting Elements

Elements can be deleted individually or in multiples.

➤ To delete an individual element:

1. Right-click on the element in the 'Tree Definition' and choose **Delete Element**:



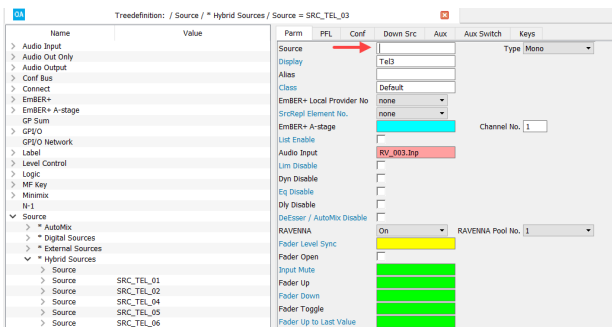
2. Confirm by clicking on **Yes**, or select **No** to cancel.

➤ Deleting Multiple Elements

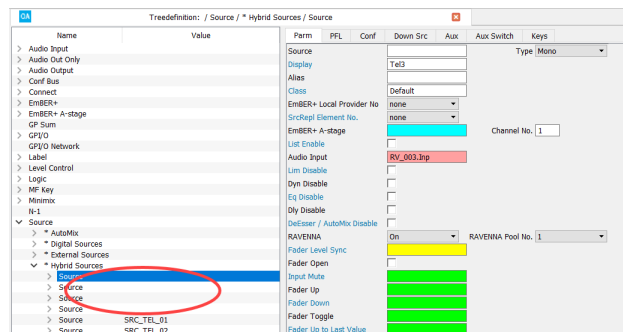
The **Clean** function can be used to delete multiple elements. It works by deleting all elements within the 'Tree Definition' which are unnamed.

1. First select each element and clear its Reference name from the parameter area.
2. Repeat for all the elements you wish to delete:

Reference Name cleared



Reference Names cleared for multiple Sources



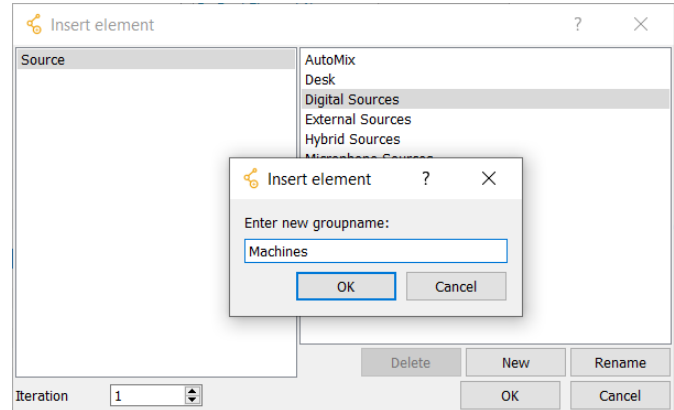
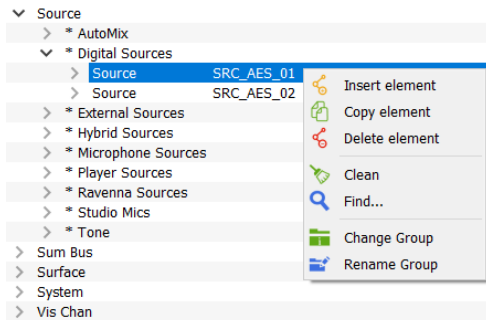
3. Then right-click on any element in the 'Tree Definition' and choose **Clean**.
4. Confirm the operation by clicking on **Yes** - the system will now delete all unnamed elements.

5.2.10 Grouping Elements

Grouping elements will help you find functions quickly and easily once the configuration begins to grow.

➤ To add a new group:

1. Right-click on any element in the 'Tree Definition' and choose **Insert element** - the 'New element' window opens.
2. Select **New** and enter the new group name:



3. Select **OK** to confirm.

➤ To delete an existing group:

1. Open the 'New Element' window as described above.
2. Select the group you wish to delete and click on **Delete**.
3. Confirm by clicking on **Yes** or select **No** to cancel.

If the group already contains elements it is not possible to delete the group.

➤ To rename an existing group:

1. Right-click on an element in the group you wish to edit and choose **Rename Group** - a dialogue box opens.
2. Enter the new name for the group and confirm the change by clicking on **OK**.

Alternatively, you can open the 'New Element' window as described above and use the **Rename** function.

➤ To change the group of an existing element:

1. Right-click on the element in the 'Tree Definition' and choose **Change Group** - the 'New element' window opens.
2. Select the new group and confirm the change by clicking on **OK**.

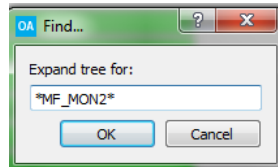
5.2.11 Searching the 'Tree Definition'

The **Find** function can be used to search the 'Tree Definition' by name. It is very useful for finding elements or functions within a larger configuration.

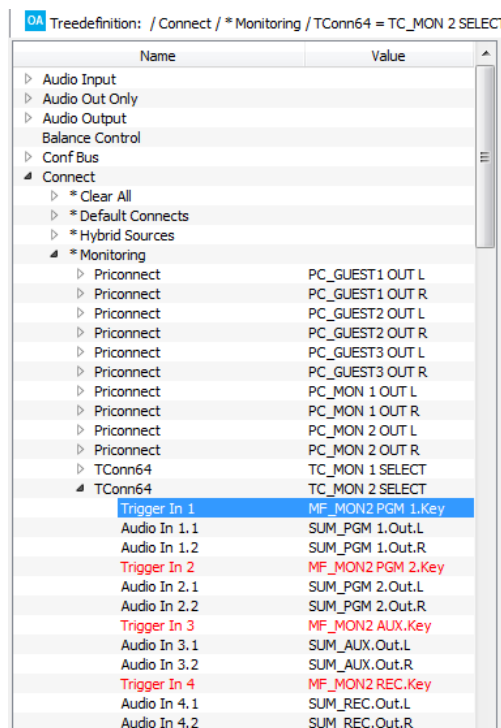
1. Right-click on any element in the 'Tree Definition' and choose **Find**, or select **File -> Find** from the top menu bar, or use the keyboard shortcut (**CTRL + F**) - the 'Find..' dialogue box opens.

The **Find** function cannot be selected unless there is an open 'Tree Definition' window.

2. Enter the name you wish to search for including the wildcard character (*) - for example: *MF_MON2*:



3. Click on **OK** - the system now searches and all matches are highlighted in red:




4. You can now select a match to interrogate the element further.

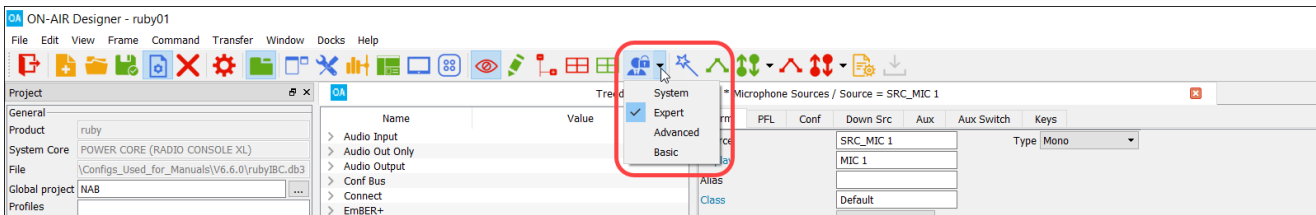
Note that the current search remains active until you re-open the 'Find' dialogue box and clear its contents.

5.2.12 Changing the User Level

The user level affects what options you see within the ON-AIR Designer. There are four possibilities:

- **Basic** is the default user level. It allows you to make minor changes to the configuration like renaming a source label. All other configuration options are locked.
- **Advanced** provides a higher level of access and unlocks more configuration options.
- **Expert** provides full access to all configuration options.
- **System** is used by Lawo engineers to test new configuration options.



1. To check or change the user level, click on the on the  Toolbar icon - a tick is displayed beside the current mode:



If the user level is set to **System** or **Expert**, it is possible to break the system's functionality. Therefore, your system warranty may be affected if you choose to use either of these modes.

5.2.13 Editing IO Parameters (in List Form)

The **Command -> Inputs** and **Command -> Outputs** windows can be used to view and edit IO parameters in list form. This is often easier than using the 'Tree Definition'.

1. Select **Command -> Inputs** (or **Outputs**) from the top menu bar, or click on the  (or ) Toolbar icon.

The 'Inputs' (or 'Outputs') list opens:

ID	Slot	Info	Layer	Group	Name	Type	Mono Alias	Matrix enable	Gain	Gain Reset	Default stream
1	Line In Card Slot 1	Input 1		Studio	TV	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Line In Card Slot 1	Input 2		Studio	TV	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Line In Card Slot 1	Input 3		Studio	AF-An	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Line In Card Slot 1	Input 4		Studio	AF-An	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Line In Card Slot 1	Input 5		Studio	Res1a	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Line In Card Slot 1	Input 6		Studio	Res1a	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Line In Card Slot 1	Input 7		Studio	Res2a	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	Line In Card Slot 1	Input 8		Studio	Res2a	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	Mic / Line Card Sl...	Input 1		St-Mic	Mod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10	Mic / Line Card Sl...	Input 2		St-Mic	Comod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	Mic / Line Card Sl...	Input 3		St-Mic	Gast1	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12	Mic / Line Card Sl...	Input 4		St-Mic	Gast2	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13	Mic / Line Card Sl...	Input 5		St-HS	Mod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
14	Mic / Line Card Sl...	Input 6		St-HS	Comod	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
15	Mic / Line Card Sl...	Input 7		St-HS	Gast1	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
16	Mic / Line Card Sl...	Input 8		St-HS	Gast2	M		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
41	AES3 I/O Card Sl...	Input 1		Studio	Effekt ret	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
42	AES3 I/O Card Sl...	Input 2		Studio	Effekt ret	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
43	AES3 I/O Card Sl...	Input 3		Studio	AF-Dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
44	AES3 I/O Card Sl...	Input 4		Studio	AF-Dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
45	AES3 I/O Card Sl...	Input 5		Studio	TV IN dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
46	AES3 I/O Card Sl...	Input 6		Studio	TV IN dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
47	AES3 I/O Card Sl...	Input 7		Studio	Res1d	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
48	AES3 I/O Card Sl...	Input 8		Studio	Res1d	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
49	AES3 I/O Card Sl...	Input 1		Studio	HavP1A	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
50	AES3 I/O Card Sl...	Input 2		Studio	HavP1A	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
51	AES3 I/O Card Sl...	Input 3		Studio	HavP1B	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
52	AES3 I/O Card Sl...	Input 4		Studio	HavP1B	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
53	AES3 I/O Card Sl...	Input 5		Studio	HavP1C	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
54	AES3 I/O Card Sl...	Input 6		Studio	HavP1C	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
55	AES3 I/O Card Sl...	Input 7		Studio	HavP1D	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
56	AES3 I/O Card Sl...	Input 8		Studio	HavP1D	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
129	MADI Port Front 1	Input 01		ZGR1_2	Wahl1a	L			<input type="checkbox"/>	<input type="checkbox"/>	
130	MADI Port Front 1	Input 02		ZGR1_2	Wahl1a	R			<input type="checkbox"/>	<input type="checkbox"/>	
131	MADI Port Front 1	Input 03		ZGR1_2	Wahl1b	L			<input type="checkbox"/>	<input type="checkbox"/>	
132	MADI Port Front 1	Input 04		ZGR1_2	Wahl1b	R			<input type="checkbox"/>	<input type="checkbox"/>	
133	MADI Port Front 1	Input 05		ZGR1_2	Wahl1c	L			<input type="checkbox"/>	<input type="checkbox"/>	
134	MADI Port Front 1	Input 06		ZGR1_2	Wahl1c	R			<input type="checkbox"/>	<input type="checkbox"/>	

Here you will see all inputs (or all outputs) including any loopbacks.

The ID number on the left is fixed and is the unique matrix number for the input (or output).

Any grey boxes are for reference only and cannot be adjusted. White boxes allow you to click and edit a parameter value.

2. Click on a white parameter field to edit its value - some options allow text entry; others offer a drop-down menu or an enable/disable checkbox.
3. Click into another field, press TAB or press ENTER to confirm the new entry.

The parameter options are identical to those available from the IO branches of the 'Tree Definition': "Audio Input" and "Audio Output".

You can use [keyboard shortcuts](#) to speed up the data entry.

5. Configuring a Single Unit

Resizing & Sorting the Lists

1. Click and drag on the column width to resize a column.
2. Click on the column heading to sort the list - when a sort is active, the column heading is color coded.

Keeping clicking on the column heading to cycle through the options:

- Sort list alphabetically from A to Z
- Sort list in Reverse, alphabetically from Z to A
- Sort list off.

You can click on more than one column heading to sort by multiple fields:

Command -> Inputs (Sorted by Slot AND Name)

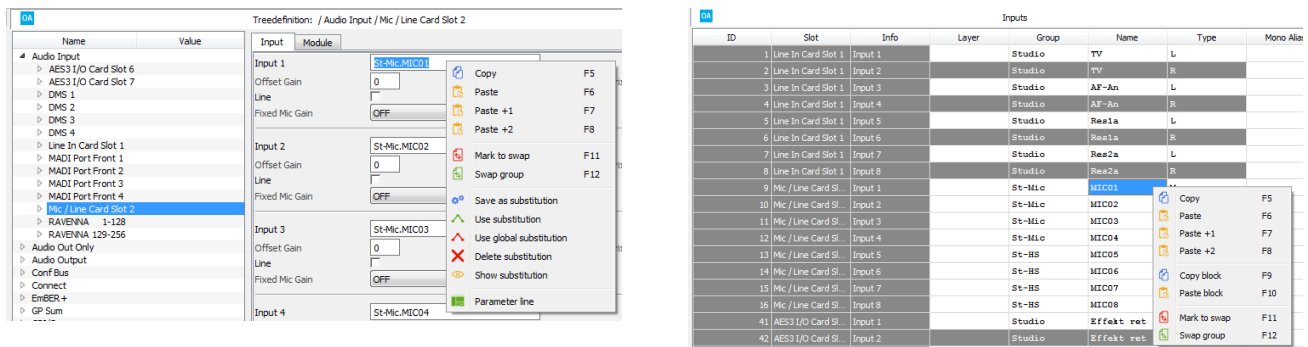
ID	Slot	Info	Layer	Group	Name	Type	Mono Alias	Matrix enable	Gain	Gain Reset
43	AES3 I/O Card Sl...	Input 3		Studio	AF-Dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
44	AES3 I/O Card Sl...	Input 4		Studio	AF-Dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
41	AES3 I/O Card Sl...	Input 1		Studio	Effekt ret	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
42	AES3 I/O Card Sl...	Input 2		Studio	Effekt ret	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
47	AES3 I/O Card Sl...	Input 7		Studio	Res1d	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
48	AES3 I/O Card Sl...	Input 8		Studio	Res1d	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
45	AES3 I/O Card Sl...	Input 5		Studio	TV IN dig	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
46	AES3 I/O Card Sl...	Input 6		Studio	TV IN dig	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
49	AES3 I/O Card Sl...	Input 1		Studio	HavP1A	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
50	AES3 I/O Card Sl...	Input 2		Studio	HavP1A	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
51	AES3 I/O Card Sl...	Input 3		Studio	HavP1B	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
52	AES3 I/O Card Sl...	Input 4		Studio	HavP1B	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
53	AES3 I/O Card Sl...	Input 5		Studio	HavP1C	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
54	AES3 I/O Card Sl...	Input 6		Studio	HavP1C	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
55	AES3 I/O Card Sl...	Input 7		Studio	HavP1D	L		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
56	AES3 I/O Card Sl...	Input 8		Studio	HavP1D	R		ON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1709	DMS 1	Loopback 45		Modis	Mon1	M			<input type="checkbox"/>	<input type="checkbox"/>
1717	DMS 1	Loopback 53		Coms	Mon1	M			<input type="checkbox"/>	<input type="checkbox"/>
1725	DMS 1	Loopback 61		News	Mon1	M			<input type="checkbox"/>	<input type="checkbox"/>
1710	DMS 1	Loopback 46		Modis	Mon2	M			<input type="checkbox"/>	<input type="checkbox"/>
1718	DMS 1	Loopback 54		Coms	Mon2	M			<input type="checkbox"/>	<input type="checkbox"/>

3. Click on all colored column headings to turn sorting off - the lists revert to sort by ID.

5.2.14 Using Copy/Paste & Swap

The copy/paste and swap functions can be used to speed up data entry in the 'Tree Definition' and 'Command -> Inputs/Outputs' lists.

To view the available functions, right-click on a property field (in the Tree Definition) or cell (in the Inputs/Outputs lists).



Copy & Paste Cells

The following keyboard shortcuts can be used to copy and paste individual cells:

- F5: Copy active cell (Inputs/Outputs) or field (Tree Definition).
- F6: Paste the copied content to the active cell; you must select the destination cell first. Following the paste, the next cell of the same type becomes active. Press F6 repeatedly to copy the same content to multiple cells.
- F7: Like F6, but the last number in the copied string is increased by one. This is useful for entering incremental names such as MIC01, MIC02, MIC03.
- F8: Like F7, but the last number in the copied string is increased by two. This is useful for dealing with stereo elements - for example, to incrementally assign the left audio channels of a Priconnect.

Copy & Paste Blocks

The following keyboard shortcuts can be used to copy and paste a block of cells in the Inputs/Outputs lists. Note that this function is not available in the Tree Definition.

- F9: Copy a marked block of cells (in the Inputs/Outputs list).
- F10: Paste the copied block relative to the active cell (to the right and down).

To mark the block, either click and drag across the block using your mouse. Or, click in the first cell; press and hold SHIFT, and click in the last cell - the marked block is highlighted. You can select cells across multiple columns if you wish.

When using F10, the copied block is pasted from the active cell across cells to the right and downwards. Therefore, take care to select the upper leftmost cell before pressing F10.

5.2.15 Other Keyboard Shortcuts

The following keyboard shortcuts can be used to speed up other operations:

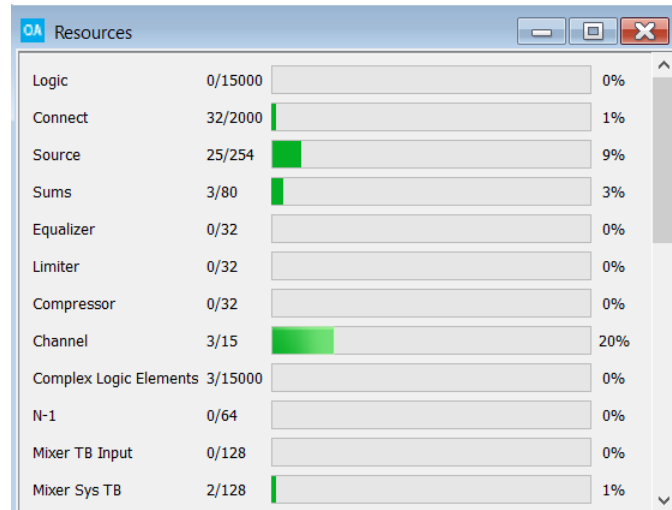
- CTRL + O: [Open](#) Project.
- CTRL + SHIFT + O: Open Last Project
- CTRL + N: [New](#) Project
- CTRL + F: [Find](#) (Tree Definition)
- CTRL + S: [Save](#) Project
- CTRL+ SHIFT+ S: Save As
- CTRL + double-click on reference field: Show active reference in 'Tree Selection'.
- SHIFT + double-click on reference field: repeats the last entry.

5.3 Monitoring Resources

5.3.1 The 'Resources' Window

The 'Resources' window can be used to check the DSP resources used by the project.

1. Select **Command -> Resources** to open the window.



The counters show how many resources are left out of the maximum available. The maximum numbers vary depending on the product.

If, during programming, you try to add a resource which exceeds any of the limits above, the software will warn you with a 'No resources available' pop-up.

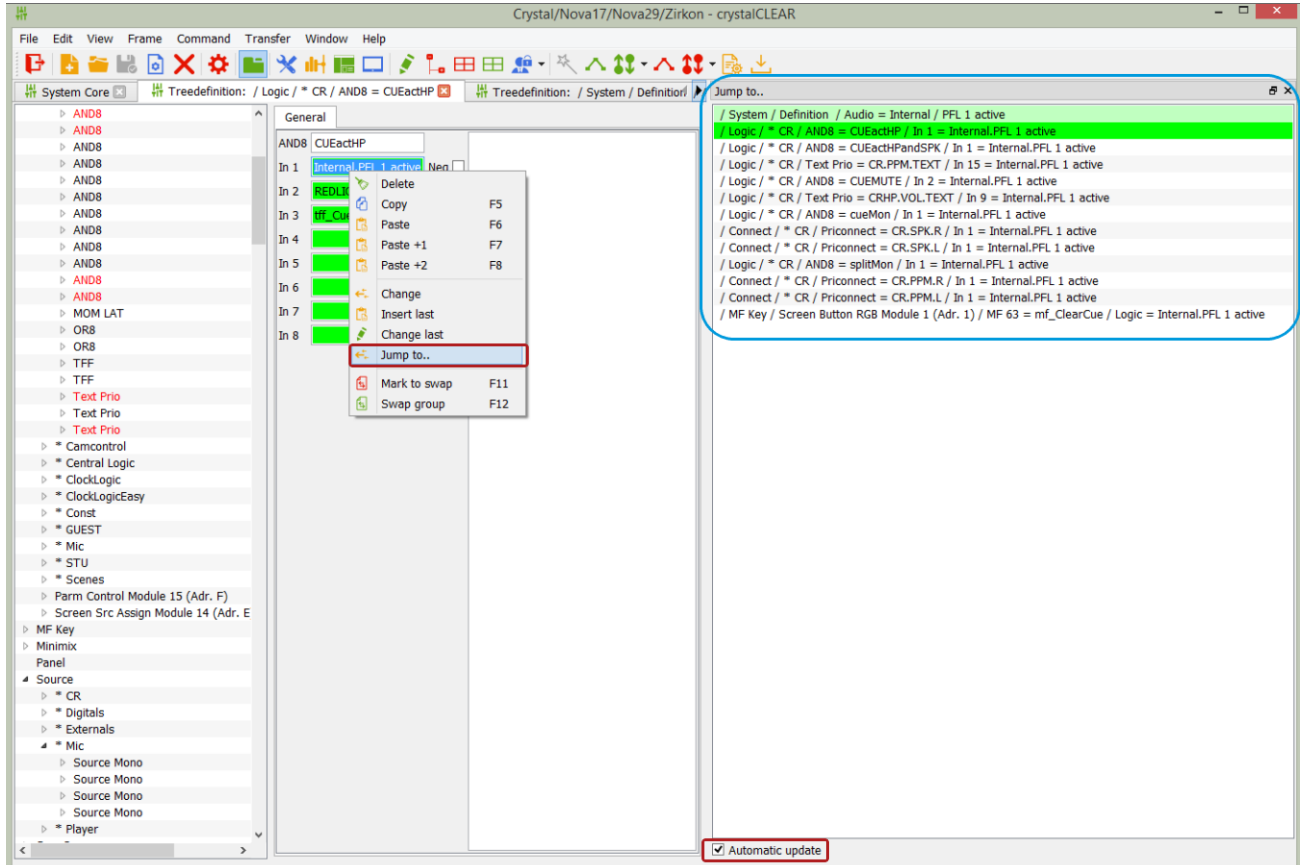
5. Configuring a Single Unit

5.3.2 Jump to...

The "Jump to.." function can be used in the 'Tree Definition' to find all occurrences of a reference including its connections.

1. Right-click on a reference field and choose **Jump to..** - the 'Jump to' docking panel appears.

The window can be floating or docked in any position. See [Arranging the Workspace](#).



The **Jump to..** list shows the origin of the reference (in light green); the selected reference (in dark green); plus all other usages (in white).

Note that any elements containing the reference are also highlighted in the 'Tree Definition' (in red).

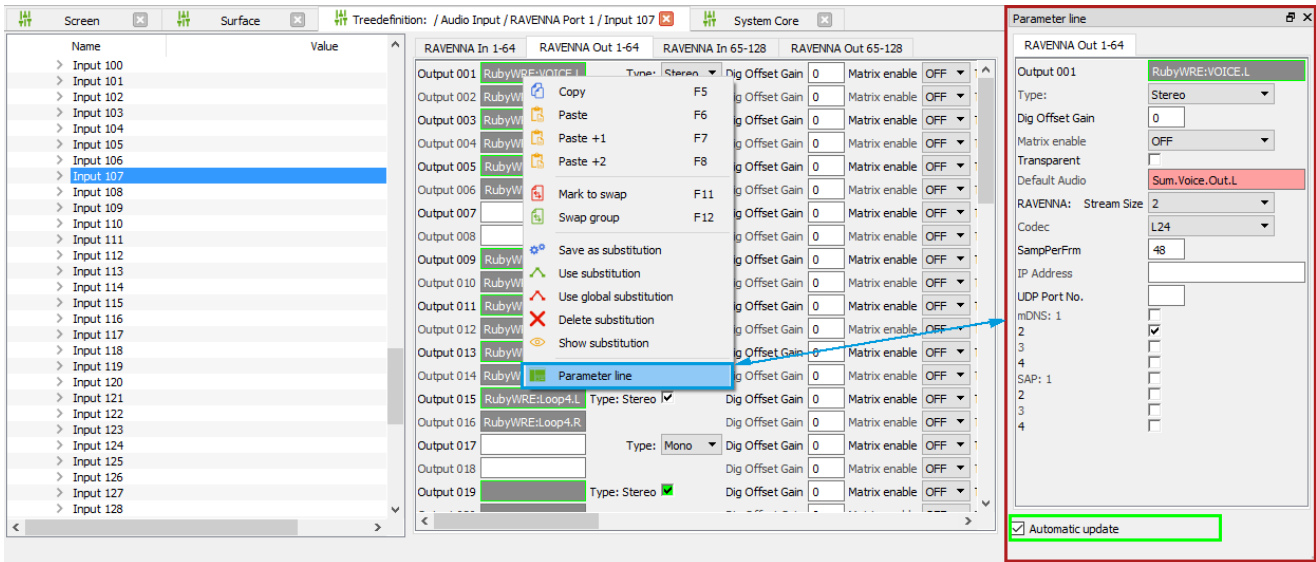
2. Click on an entry in the list to "jump to" the element containing the reference.
3. You can use the **Automatic update** option to update the **Jump to..** list as follows:
 - **Automatic update** (on) = the **Jump to..** list updates when you select a different reference.
 - **Automatic update** (off) = the **Jump to..** list does not update and continues to list all entries for the initial reference.

5.3.3 Parameter Line

You can use the **Parameter Line** function in the 'Tree Definition' to open a single docking panel containing all available options for a parameter. This is helpful when editing parameters with lots of options such as RAVENNA outputs.

1. Right-click on the parameter you wish to interrogate and choose **Parameter Line** - the 'Parameter line' docking panel appears.

The window can be floating or docked in any position. See [Arranging the Workspace](#).



The docking panel shows *all* the options for the selected parameter. In our example, this makes the RAVENNA output options more visible and avoids having to scroll left and right across the parameter line.

2. You can use the **Automatic update** option to automatically update the **Parameter line** docking panel:
 - **Automatic update** (ticked) = the docking panel updates to show the parameter in focus.
 - **Automatic update** (not ticked) = the docking panel does not update and continues to show the initial selection.

6. Transferring Configuration Data

This chapter describes how to transfer the configuration to a unit.

Topics include:

- [Preparation](#)
- [Transfer -> Setup to unit](#)
- [Transfer -> Config to unit](#)
- [Load Project from Unit](#)
- [Transfer -> Create Config](#)

6.1 Preparation

To check your programming you will need to transfer the configuration data to the Lawo system. If the System Core is a Compact Engine, Nova29 or Nova17, you must transfer the setup data first and then the configuration. For the System Core is a Power Core, the transfer of setup data is optional.

During the transfer, you can choose to save the project file onto the DSP Core (if your system supports this). This allows you to store the system configuration on the unit, and load it to another computer at a later date.

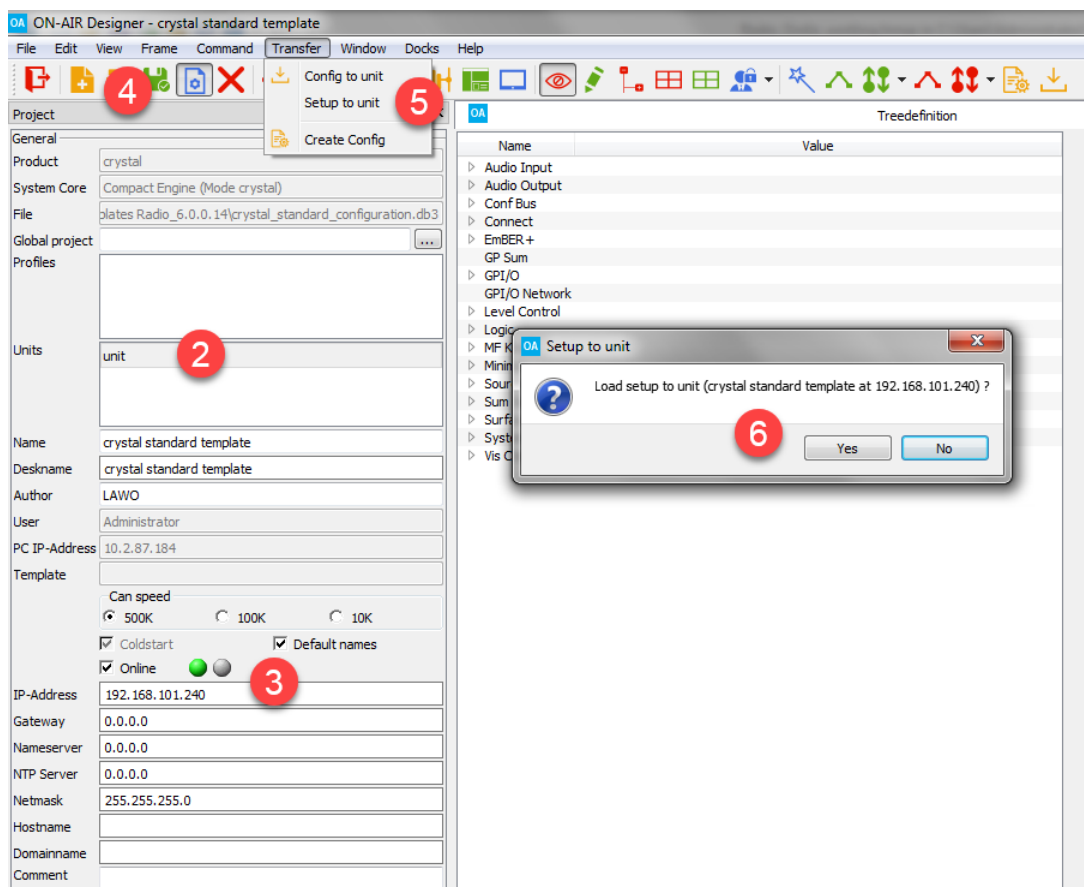
Please note:

- If the project contains more than one unit, then you must repeat the transfer for each unit.
- At the end of the transfer, the DSP Core will cold start. Therefore, you should make sure that the system is NOT in use before starting the transfer.
- The transfer will replace the existing configuration stored on the control system. Please make sure you have a backup of the existing project before proceeding.
- When running with a firewall, it may be necessary to allow Firewall access for the ON-AIR Designer, before you can transfer data from your computer.
- You must save your project before transferring configuration data (to allow the required binary files to be created).

In all cases, the first steps are to connect the configuration PC to the Lawo control system and check the network communication. See [Connecting Your PC to the Lawo Control System](#) and [Checking the Network Communication](#).

6.2 Transfer -> Setup to unit

This function transfers the setup parameters defined in the 'Project' window to the selected unit. The screenshot below is taken from crystal, but the procedure is identical for all radio on-air systems.



1. Start by opening the project you wish to transfer.
2. In the 'Project' window, select the unit from the **Units** field (if multiple units are configured).
3. Then tick the **Online** checkbox and make sure that you have a valid network connection to the device - the green **Online** indicator should be lit.

If the red indicator is lit, then check the IP address of the device and edit the **IP-Address** field to match - the **Online** indicators will update. See [Checking the Network Communication](#).

4. If any changes have been made to the setup parameters, then these must be saved before the transfer.

Use either **File -> Save** or **File -> Save As** to [save](#) the project. You can use any file name and location, as long as the file type (.db3) remains unchanged.

5. Select **Transfer -> Setup to unit**.

If the option is greyed out, then there is no network communication to the device. Go back to step 3 until this is resolved.

6. A confirmation box appears. Check the details and select **Yes** to start the transfer.

The software now compiles the necessary files and transfers them to the device. The progress is shown in the **Console** status area at the bottom of the 'Project' window. Once the transfer is complete you will see the lines **File loaded to unit** and **Sending restart**. The device will now go offline while it restarts. This is perfectly normal but may take a few seconds. All systems perform a cold start, except for the Nova29 which warm starts (to keep all matrix crosspoints in place).

7. At the end of the reboot, the new setup parameters are loaded and the transfer is complete.

If your computer's firewall prevents the transfer, then change your firewall settings and retry.

6.2.1 Editing the System IP Address

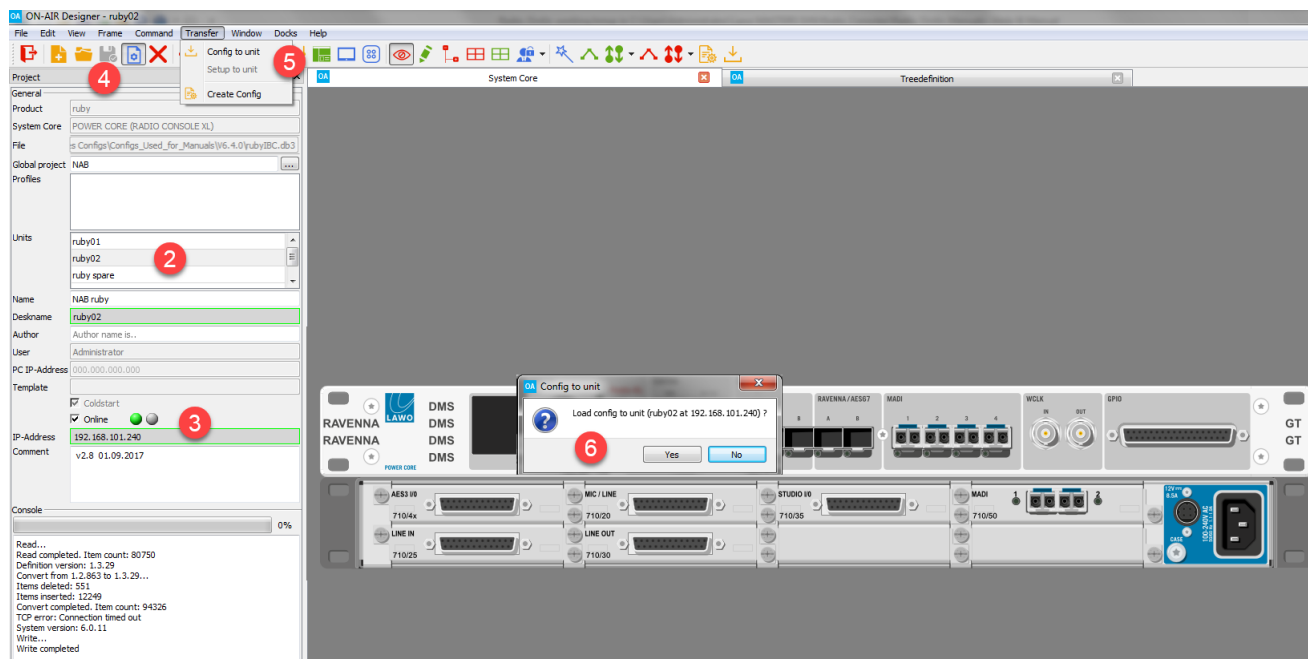
If the System Core is a Compact Engine, Nova29 or Nova17, you can use the ON-AIR Designer setup data to change the system IP address. (Note that, for Power Core, the system IP address must be edited using either the front panel controls or Web UI).

1. Repeat steps 1 to 3 from the [Transfer -> Setup to unit](#) topic to establish a valid network connection to the device - the green **Online** indicator should be lit.
2. Enter the new value into the **IP-Address** field and leave your cursor within the field - the field turns red.
3. Save, close and re-open the project - the IP address field should be white.
4. Now continue with steps 5 to 7 from [Transfer -> Setup to unit](#) - the transfer will include the new IP address.

Note that once you have changed the system IP address, you may need to edit your PC's TCP/IP settings to re-establish a connection to the device.

6.3 Transfer -> Config to unit

This function transfers the configuration parameters to the selected unit. The screenshot below is taken from Power Core, but the procedure is identical for all radio on-air systems.



1. Start by opening the project you wish to transfer.
2. In the 'Project' window, select the unit from the **Units** field (if multiple units are configured).
3. Then tick the **Online** checkbox and make sure that you have a valid network connection to the device - the green **Online** indicator should be lit.

If the red indicator is lit, then check the IP address of the device and edit the **IP-Address** field to match - the **Online** indicators will update. See [Checking the Network Communication](#).

4. If any changes have been made to the configuration, then these must be saved before the transfer.

Use either **File -> Save** or **File -> Save As** to [save](#) the project. You can use any file name and location, as long as the file type (.db3) remains unchanged.

5. Select **Transfer -> Config to unit** from the top menu bar, or click on the  Toolbar icon.

If the option is greyed out, then there is no network communication to the device. Go back to step 3 until this is resolved.

6. A confirmation box appears. Check the details and select **Yes** to start the transfer.

The software now compiles the necessary files and transfers them to the device. The progress is shown in the **Console** status area at the bottom of the 'Project' window. Once the transfer is complete you will see the lines **File loaded to unit** and **Sending restart**. The device will go offline while it restarts. This is perfectly normal but may take a few seconds. All systems perform a cold start, except for the Nova29 which warm starts (to keep all matrix crosspoints in place).

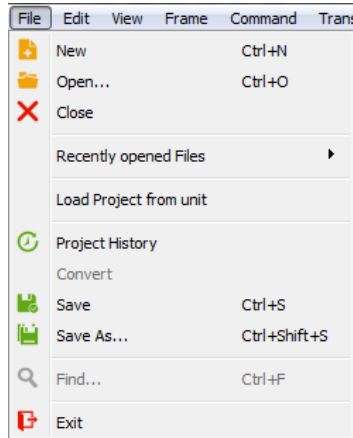
7. At the end of the reboot, the new configuration data is loaded and the transfer is complete.

If your computer's firewall prevents the transfer, then change your firewall settings and retry.

6.4 Load Project from Unit

For Power Core and Nova17, a copy of the project file is stored on the DSP Core. This allows you to download it onto your computer at a later time.

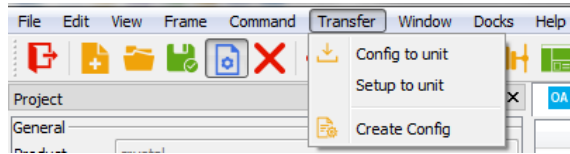
1. Select **File** -> **Load Project from unit**:



If this option is greyed out, then there is no network communication between your PC and the control system.

2. A pop-up appears - enter the IP Address of the control system, and press the TAB key to establish the connection.
3. Then select **OK** - the project file is downloaded from the unit.
4. To save the project, use [Save As](#) and enter an appropriate filename in the usual manner.

6.5 Transfer -> Create Config



This menu option (and Toolbar icon) will compile the necessary configuration files, without performing a transfer to the system.

7. Configuring Multiple Units

This chapter describes how to apply the same configuration parameters to multiple units.

Topics include:

- [Introduction](#)
- [Adding & Deleting Units](#)
- [Navigating Between Units](#)
- [Individualizing the Parameters of a Unit](#)
 - [Adding a New Substitution](#)
 - [The Local Substitutions List](#)
 - [Linking a Substitution to an Existing Parameter](#)
 - [Deleting a Substitution from a Parameter](#)
 - [Other Functions](#)
- [Using Global Substitutions](#)
 - [Removing Global Substitutions](#)
 - [Transferring Global Substitutions](#)
 - [What to do if the Global Project is Missing](#)

7.1 Introduction

Using local and/or global substitutions, it is possible to apply the same configuration parameters to multiple systems. This makes it easy to maintain the configuration for a large installation as, if something changes, the change need only be applied once.

Local Substitutions

Firstly, it is possible to define multiple units in the same project file so that, by default, all configured parameters apply equally to all units without exceptions. Specific parameters can then be individualized by adding them to the 'Local Substitutions' list. For example, to define a different IP-Address, Deskname, etc.

Please note that the hardware configuration (**Frame** -> **Surface**, **Frame** -> **System Core**, etc.) cannot be individualized, and so local substitutions can only be used for systems of the same product type. As most parameters are applied equally, this feature is ideal if you have several units requiring a similar feature set.

Global Substitutions

Secondly, it is possible to create a global project and link this to multiple project files. As each linked project can support a different hardware configuration, this allows you to apply global settings to different product types.

The global project is a normal ".db3" configuration in which multiple units and their parameters can be defined. Within each linked project, you may then use 'Global Substitutions' instead of local ones. Providing the substituted parameters are of an equal type, the settings from the global project will be applied.

It is recommended that the global project be built and maintained at the beginning of the configuration process, and that it stores only the global parameters. Global substitutions are ideal for installation-wide settings such as color schemes, metering schemes and system levels.

Substitutions are supported from **Version 6.0.0.x** onwards. A project containing substitutions must be saved as a **.db3** file.

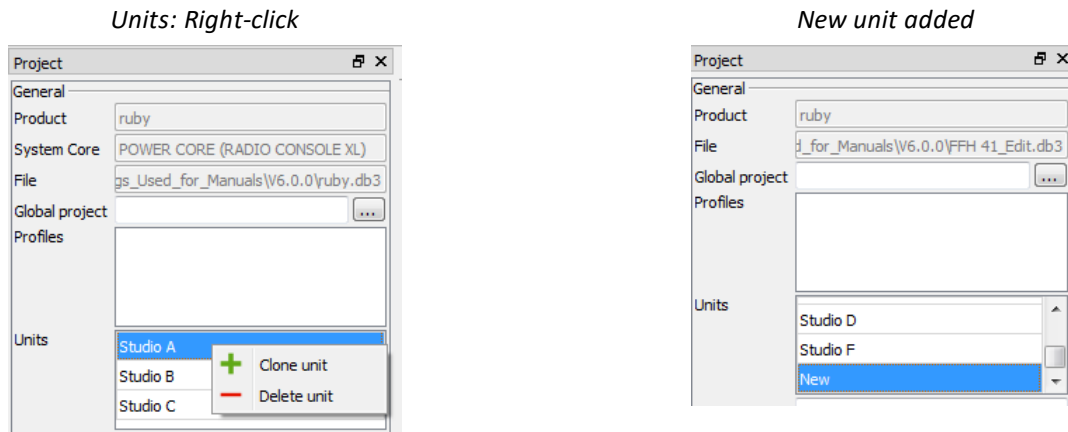
7.2 Adding & Deleting Units

Multiple units can be added to, or deleted from, the project via the [Project](#) window.

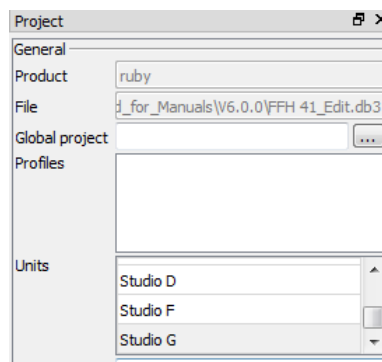
➤ To add a new unit:

1. Right-click anywhere inside the **Units** field and select **Clone unit** - the new unit is added to the bottom of the list.

Note that you may have to scroll down the list to locate its entry.



2. Double-click on the Unit name (**New**) to enter a more descriptive name - in our example, **Studio G**:

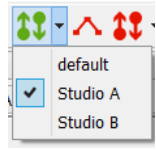


➤ To delete an existing unit:

1. Right-click on the unit you wish to delete (e.g. **Studio G**) and select **Delete unit** - the unit is removed from the project.

7.3 Navigating Between Units

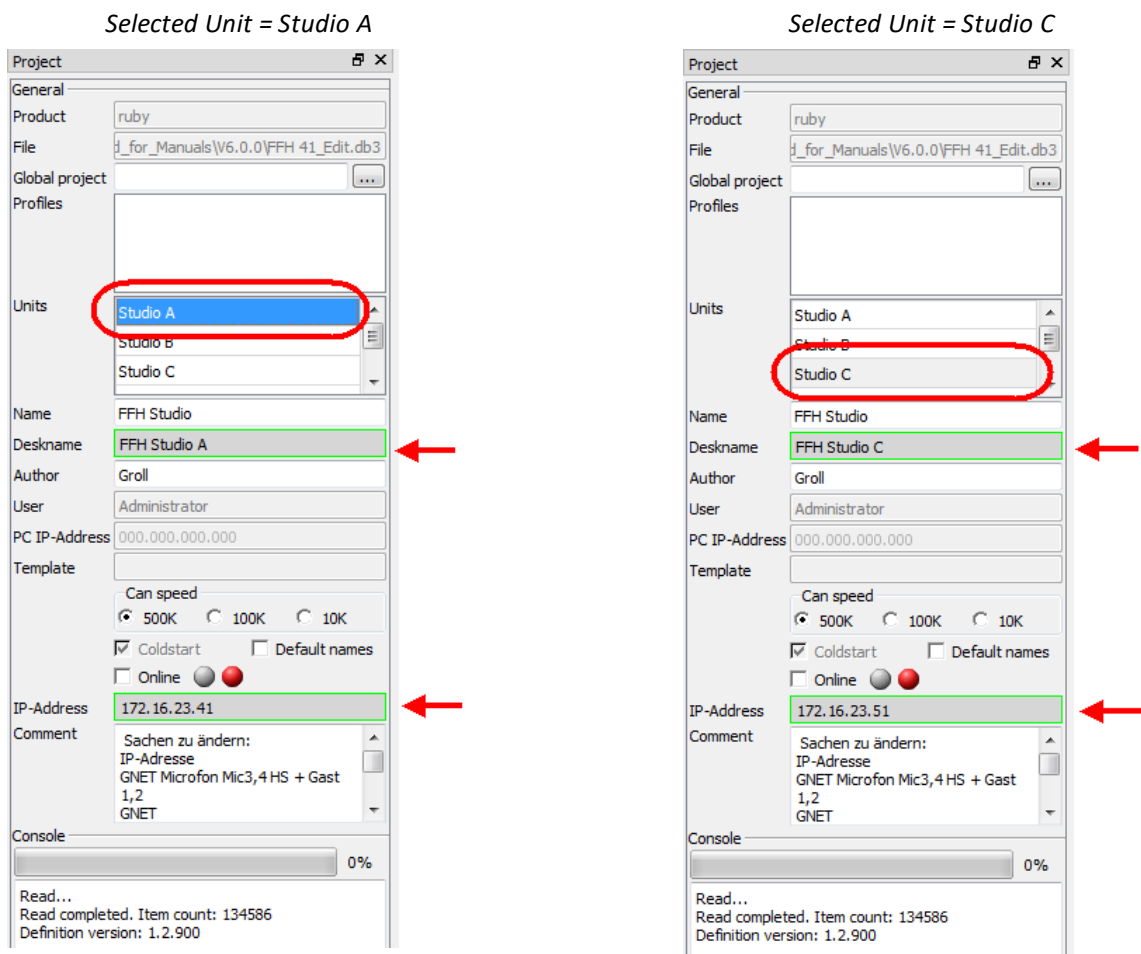
Once multiple units have been defined, there are two ways you can switch to a specific unit: either click on a name in the 'Project' window **Units** field (shown below), or select a unit from the Toolbar:



Any substituted parameters within the 'Project' or 'Tree Definition' windows will update.

If you have yet to add any substitutions, then you will see no difference when you navigate between units.

If substituted parameters have been defined, then these are indicated by a grey background and a colored frame. In our example below, the unit's **Deskname** and **IP-Address** have been individualized:



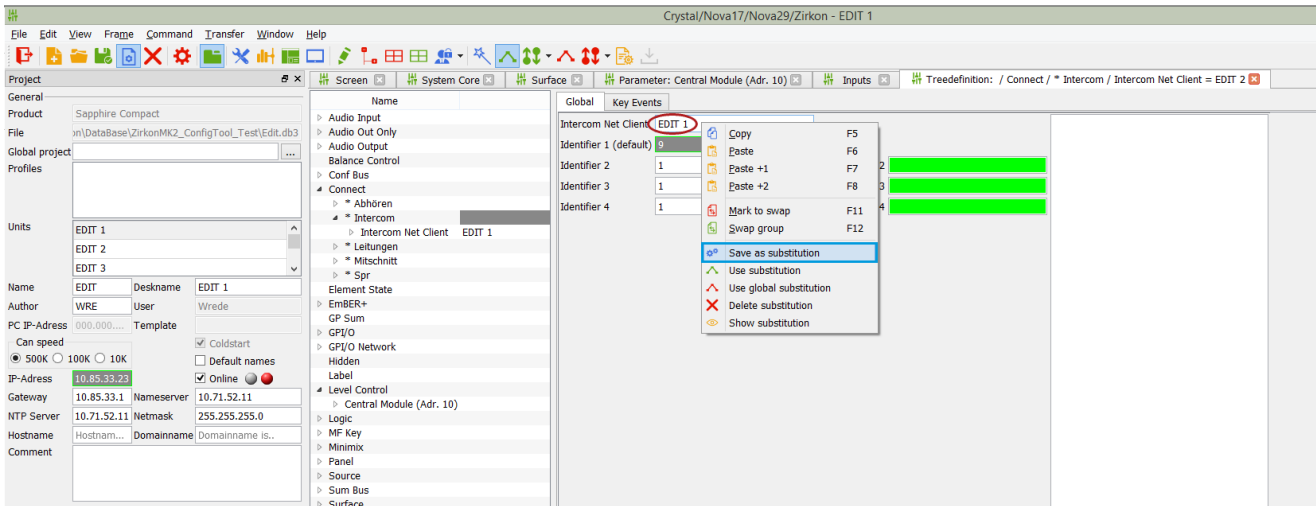
7.4 Individualizing the Parameters of a Unit

Within the 'Tree Definition' you can individualize any parameter.

Within the 'Project' window, the following parameters can be individualized: Deskname, IP-Address, Netmask, Gateway, Nameserver, NTP-Server, Hostname and Domainname.

7.4.1 Adding a New Substitution

1. Right-click on the desired parameter and select **Save as substitution**:



2. If you open the 'Local Substitutions' docking panel, you will see a new line:

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Typ	Validierung	Default	EDIT 1	EDIT 2	EDIT 3	EDIT 4
25	Logic	SU POOL	0	<input type="checkbox"/>	Src 29		Koppefeldnummer	None	413	477	413	413	477
26	Logic	SU POOL	0	<input type="checkbox"/>	Src 30		Koppefeldnummer	None	415	479	415	415	479
27	Logic	SU POOL	0	<input type="checkbox"/>	Src 31		Koppefeldnummer	None	417	481	417	417	481
28	Logic	SU POOL	0	<input type="checkbox"/>	Src 32		Koppefeldnummer	None	419	483	419	419	483
29	Logic	SU POOL	0	<input type="checkbox"/>	Src 33		Koppefeldnummer	None	409	473	409	409	473
30	MF Key	Screen Button RGB Module 6 (Adr. 6)	0	<input type="checkbox"/>	Default Label Line 1		Typ für LCD Text	None	EDIT 1	EDIT 2	EDIT 1	EDIT 1	EDIT 2
31	Connect	* Intercom	0	<input type="checkbox"/>	Intercom Net Client		Texteingabe	None	EDIT 1	EDIT 1	EDIT 1	EDIT 1	EDIT 1

7.4.2 The Local Substitutions List

1. Click on the Toolbar icon to open the 'Local Substitutions' list.

The window can be floating or docked to one side (top or bottom). See [Arranging the Workspace](#).

The table lists all defined substitutions, where each line equals one substitution. On the right hand side, you will see a column for each defined unit: EDIT 1, EDIT 2, EDIT 3, EDIT 4.

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Typ	Validierung	Default	EDIT 1	EDIT 2	EDIT 3	EDIT 4
25	Logic	SU POOL	0	<input type="checkbox"/>	Src 29		Koppefeldnummer	None	413	477	413	413	477
26	Logic	SU POOL	0	<input type="checkbox"/>	Src 30		Koppefeldnummer	None	415	479	415	415	479
27	Logic	SU POOL	0	<input type="checkbox"/>	Src 31		Koppefeldnummer	None	417	481	417	417	481
28	Logic	SU POOL	0	<input type="checkbox"/>	Src 32		Koppefeldnummer	None	419	483	419	419	483
29	Logic	SU POOL	0	<input type="checkbox"/>	Src 33		Koppefeldnummer	None	409	473	409	409	473
30	MF Key	Screen Button RGB Module 6 (Adr. 6)	0	<input type="checkbox"/>	Default Label Line 1		Typ für LCD Text	None	EDIT 1	EDIT 2	EDIT 1	EDIT 1	EDIT 2
31	Connect	* Intercom	0	<input type="checkbox"/>	Intercom Net Client		Texteingabe	None	EDIT 1	EDIT 1	EDIT 1	EDIT 1	EDIT 1

2. Click in the individual unit fields to individualize the parameter.

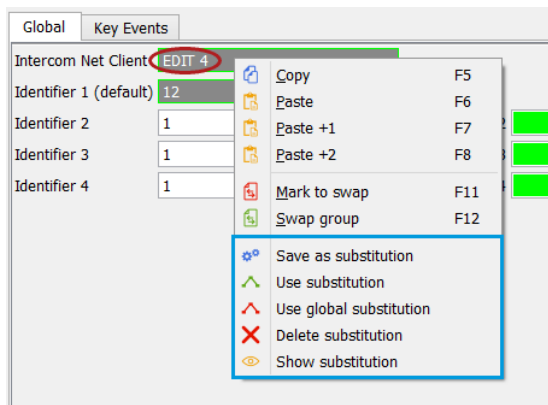
You can use keyboard shortcuts such as F5 (copy) and F7 (incremental paste) to speed up the data entry.

The columns on the left (**Group 1**, **Group 2**, **Sort**, etc.) are used by the Device Configuration Wizard. These are described [later](#).

7.4.3 Linking a Substitution to an Existing Parameter

Having defined a substitution, it can be linked to an existing parameter as follows:

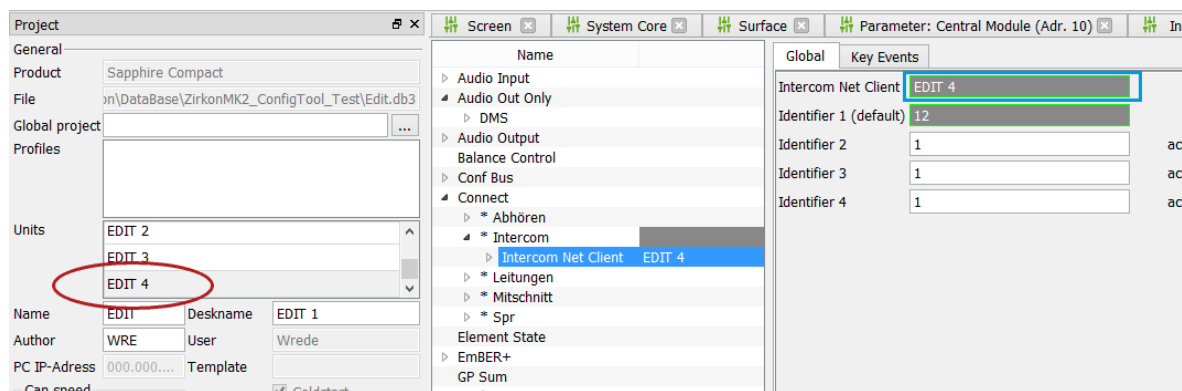
- Either, drag and drop the line from the 'Local Substitutions' window onto the parameter field.
- Or, right-click on the parameter and select **Use substitution**.



Once linked, the substituted parameter is indicated by a grey background and a colored frame, and the value for the selected unit is displayed.

From now on, the value cannot be edited from the parameter field, but should be individualized from the 'Local Substitutions' list as described [earlier](#).

Note that if you switch to a different unit, via the **Units** list in the 'Project' window, then the displayed value will update:

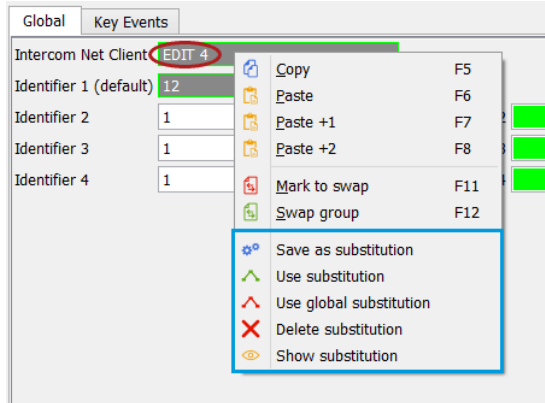


7.4.4 Deleting a Substitution from a Parameter

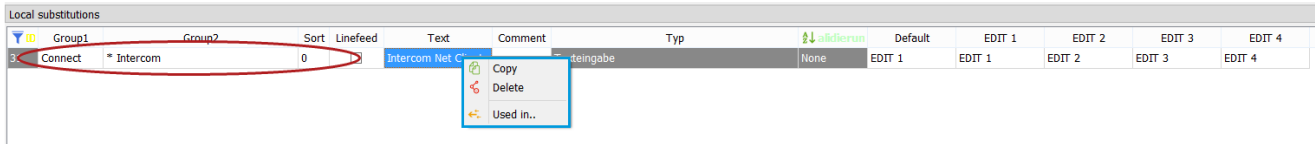
To delete a substitution: right-click on the individualized parameter and select **Delete**. The parameter is removed from the 'Local Substitutions' list and returns to its default value. It can now be edited directly from the 'Tree Definition' or 'Project' window as a normal field.

7.4.5 Other Functions

To interrogate a substitution: right-click on the individualized parameter and select **Show substitution**:



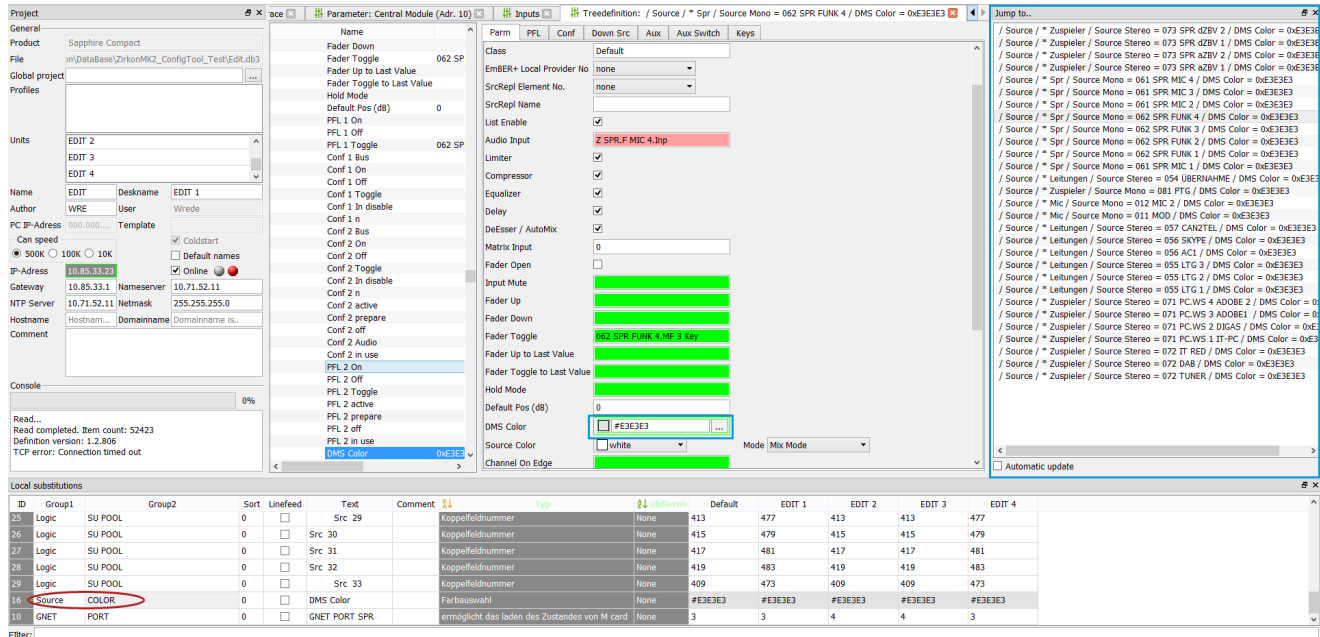
The 'Local Substitutions' list opens and sets a filter to only show the active parameter:



If you right-click on a field, then you can choose:

- **New free** - adds a new substitution.
- **Copy** - duplicates the selected substitution.
- **Delete** - deletes the substitution (as described [earlier](#)).
- **Used in..** - shows all parameters using the selected substitution in the [Jump to..](#) docking panel. You can step through the entries to check or modify the configuration.

Used in.. (example)



7.5 Using Global Substitutions

Global substitutions can be used to apply global settings to several linked project files. They are ideal for installation-wide settings such as color schemes, metering schemes and system levels.

1. Start by creating a normal ".db3" configuration and save all the parameters to be applied globally as local substitutions (as described [earlier](#)).

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Display if..	Selection	Typ	Validierung	Default	unit
0			0	<input type="checkbox"/>								
1	System	Definition	0	<input type="checkbox"/>	Relative Systeme...				Level (dB)	None	-27	-38
2	System	Definition	0	<input type="checkbox"/>	Overload Thrs...				Level (dB)	None	3	17
3	System	Definition	0	<input type="checkbox"/>	Analog Ref Le...				Level (dB)	None	15	24

If you add multiple units, then each unit will appear in the linked project as a separate profile. This can be used to create different sets of global options. For example, to offer a choice of metering schemes.

2. Save the project using a suitable file name. It is a good idea to add the suffix "Global" to indicate a global project file.
3. Now open a project you wish to link, and specify the global project in the 'Project' window.

You can either enter the file path into the **Global project** field, or click on the ... button to open a File Explorer window.

4. Save, close and re-open the linked project file - the list of **Profiles** will update to show the units configured in step 1.

5. Click on the Toolbar icon to open the 'Global Substitutions' list.
6. Drag the ID of the global substitution to the matching target value in your linked project file.

Once linked, the substituted parameter is indicated by a grey background and a red frame, and the value from the selected profile is displayed:

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Display if..	Selection	Typ	Validierung	Default	unit
0			0	<input type="checkbox"/>								
1	System	Definition	0	<input type="checkbox"/>	Relative Systeme...				Level (dB)	None	-27	-38
2	System	Definition	0	<input type="checkbox"/>	Overload Thrs...				Level (dB)	None	3	17
3	System	Definition	0	<input type="checkbox"/>	Analog Ref Le...				Level (dB)	None	15	24

From now on, the value is updated automatically from the global project, and cannot be edited from the parameter field.

If you choose a different profile (from the **Profiles** menu), then the substituted values update. In the example below, the profiles offer a choice of metering schemes: **DIN**, **UK**, **SMPTE**, etc.

7. Repeat steps 3 to 6 for each project file you wish to link.

7.5.1 Removing Global Substitutions

To remove all global substitutions, open the linked project and clear the file path from the **Global project** field.

7.5.2 Transferring Global Substitutions

If you transfer a configuration with global substitutions to a unit, then the linked parameters will carry their values.

The global project itself is not transferred to the DSP Core. And, in the case of Power Core or Nova17, it is not stored on the unit (if you use **Save Project to unit**).

7.5.3 What to do if the Global Project is Missing

When re-opening a configuration that includes a reference to a global project that cannot be found, there are two choices of behaviour - to use the local data or not:

- If you choose **Yes**, then the last settings will be used, but the underlying substitutions are still saved. This means that if the global substitutions are found later (e.g. by altering the **Global project** path), they will be applied.
- If you choose **No**, then the substitutions will be unused and the default values will be applied. You should choose this option only if you want to erase all existing global substitutions from a configuration.

8. Using the Device Configuration Wizard

This chapter describes the Device Configuration Wizard.

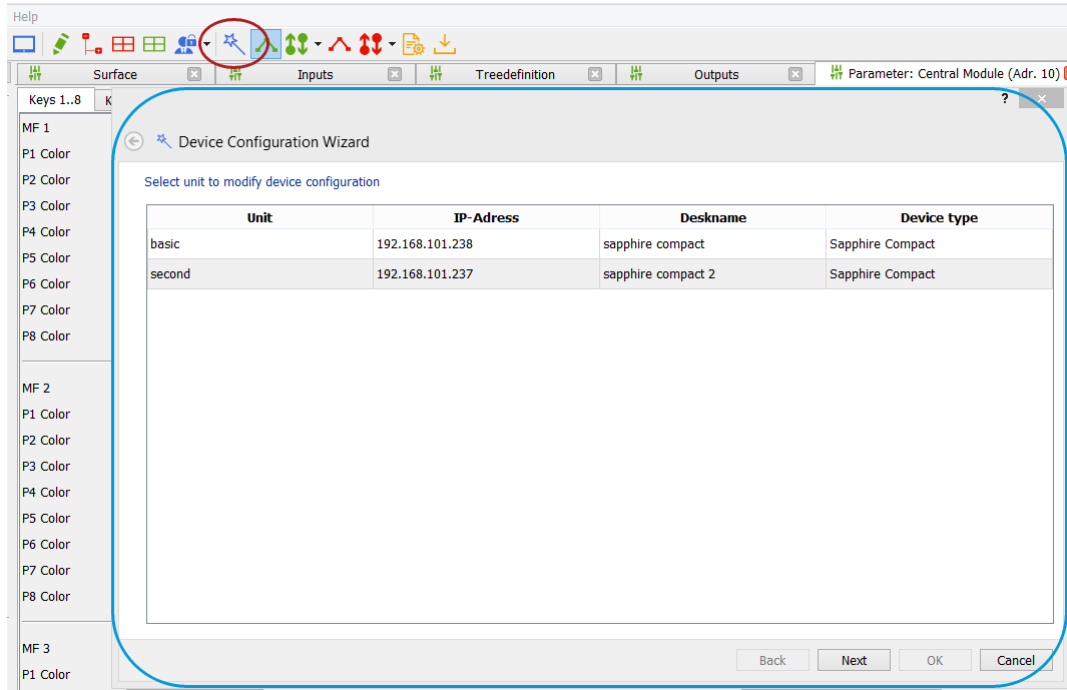
Topics include:

- [End-user View](#)
- [Configuring the Wizard](#)
- [Display if..](#)
- [Selections](#)

8.1 End-user View

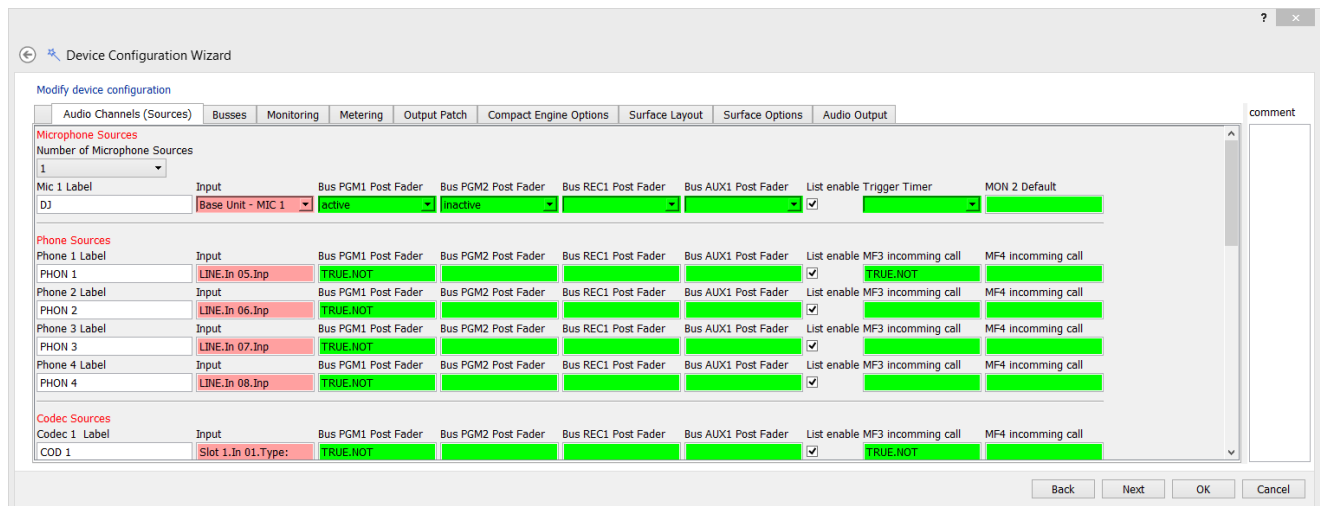
The 'Device Configuration Wizard' provides an alternative way to modify the substituted parameters of a single unit. The wizard is automatically created from the substitution lists. A number of tools allow you to modify the layout of the wizard. The instructions below describe how to open and use the wizard once it has been configured.

1. Select **Command -> Device Configuration Wizard** from the top menu bar, or click on the  Toolbar icon to open the wizard:



2. Select the unit you wish to configure and click on **Next**.

The wizard shows all the defined substitutions for the selected unit only, and organizes the parameters into pre-configured tabs.



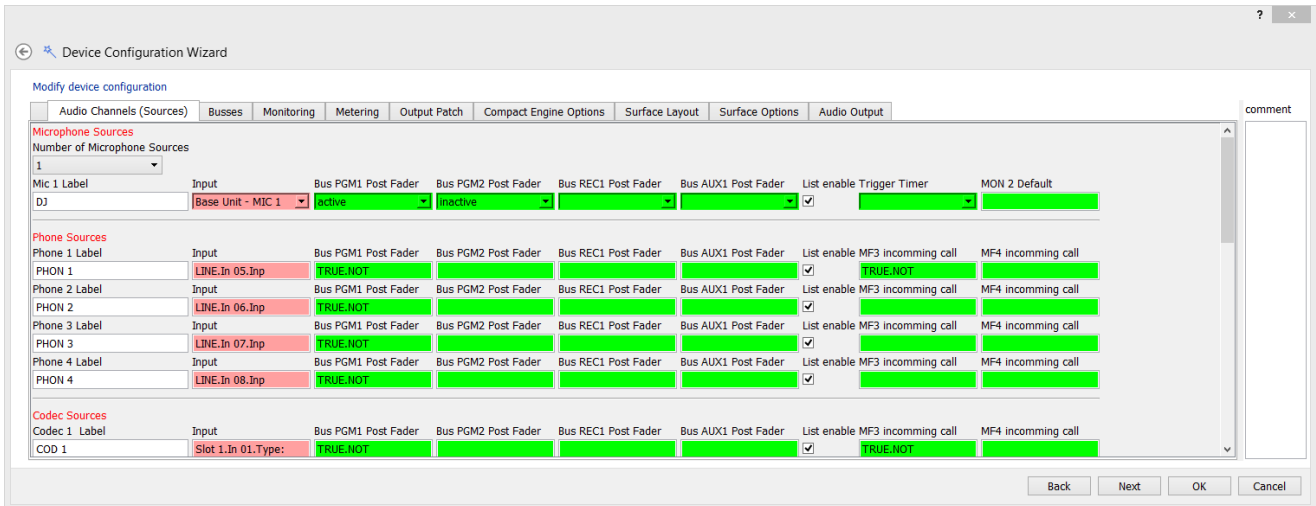
3. Use the tabs to navigate around the configuration.
4. Click on a field to edit its contents.

The fields are color-coded and can be edited in a similar manner to the 'Tree Definition'. See [Editing Parameters](#).

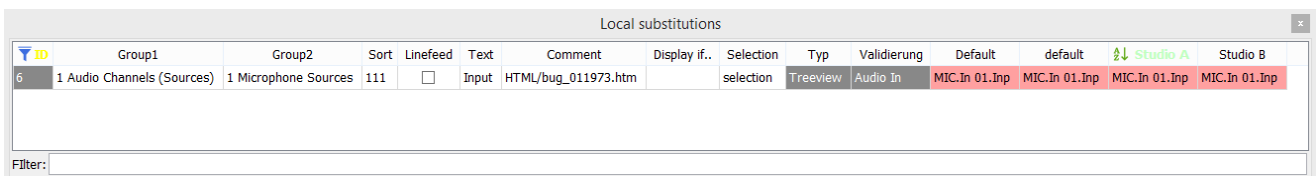
8.2 Configuring the Wizard

It is intended for an expert user to prepare the tabs and parameter fields in advance using the 'Local Substitutions' and/or 'Global Substitutions' lists. The graphics below show how our end-user 'Device Configuration Wizard' corresponds to the 'Local Substitutions' entry for Input 1:

Device Configuration Wizard



'Local Substitutions' - for Input 1



Each of the columns on the left is used to define how the substitution appears in the wizard:

- **Group1** - defines the tab; several parameters may be grouped. A number as a prefix will not be shown in the wizard but may be used to order the Tabs.
- **Group2** - defines the headline; several parameters may be grouped. As above, a prefix may be used for ordering.
- **Sort** - is used to order parameters within the headline. Parameters are ordered according to their **Sort** number (from low to high).
- **Linefeed** - all parameters are shown on one line, unless you enable the **Linefeed** checkbox. If ticked, the substitution will be displayed on a new line.
- **Text** - defines the parameter name shown in the wizard. By default, the text is the parameter name.
- **Display if..** - is used to hide parameters in the wizard which use free substitutions in combination with logical statements. See [Display If...](#)
- **Selection** - is used to limit the selection to a choice of references. See [Selections](#).

8.3 Display if..

Display if.. is used to hide parameters in the wizard which use free substitutions. You can define a condition which controls whether an element is shown in the wizard using $<$, $>$, $<=$, $>=$ or $=$. Or, define several matches using a comma-separated list.

The **Selection** field of a free substitution reference (ID) is used as the logical input. The number refers to the element of the drop-down menu shown in the wizard, while 0 is the first element.

'Local Substitutions' - Display if.. (example)

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Display if..	Selection	Typ	Validierung	Default	default	Studio A	Studio B
849		* Codec Sources	0	<input type="checkbox"/>	MF 1a P2: Color				Farbauswahl...	None	white	white	white	white
864	1 Audio Chan...	1 Microphone Sources	1	<input type="checkbox"/>	Number of Mi...			0;1;2;3;4						
66	1 Audio Chan...	1 Microphone Sources	101	<input checked="" type="checkbox"/>	Mic 1 Label	HTML/bug_00...	864>0		Typ für LCD T...	None	DJ	DJ	DJ	DJ
6	1 Audio Chan...	1 Microphone Sources	111	<input type="checkbox"/>	Input	HTML/bug_01...	864>0	selection	Treeview	Audio In	MIC.In 01.Inp	MIC.In 01.Inp	MIC.In 01.Inp	MIC.In 01.Inp
128	1 Audio Chan...	1 Microphone Sources	151	<input type="checkbox"/>	Bus PGM1 Pos...	HTML/bug_01...	864>0	selection	Treeview	Logic Level	TRUE.NOT	TRUE.NOT	TRUE.Out	TRUE.NOT
129	1 Audio Chan...	1 Microphone Sources	152	<input type="checkbox"/>	Bus PGM2 Pos...	HTML/bug_01...	864>0	selection	Treeview	Logic Level	FALSE.Out		FALSE.Out	
131	1 Audio Chan...	1 Microphone Sources	153	<input type="checkbox"/>	Bus REC1 Pos...	NOT TRUE	864>0	selection	Treeview	Logic Level				
130	1 Audio Chan...	1 Microphone Sources	155	<input type="checkbox"/>	Bus AUX1 Pos...	NOT TRUE	864>0	selection	Treeview	Logic Level				
124	1 Audio Chan...	1 Microphone Sources	161	<input type="checkbox"/>	List enable	activate to sh...	864>0		allgemeine Ch...	None	1	1	1	1
148	1 Audio Chan...	1 Microphone Sources	171	<input type="checkbox"/>	Trigger Timer	Global NOT TRIF	864>0	selection	Treeview	Logic Level		TRUE.NOT		TRUE.NOT
796	1 Audio Chan...	1 Microphone Sources	181	<input type="checkbox"/>	MON 2 Default	Global NOT TRIF	864>0		Treeview	Logic Level				
67	1 Audio Chan...	1 Microphone Sources	201	<input checked="" type="checkbox"/>	Mic 2 Label	Choose Sourc...	864>=2		Typ für LCD T...	None	MIC 2	MIC 2	MIC 2	MIC 2
5	1 Audio Chan...	1 Microphone Sources	211	<input type="checkbox"/>	Input	- Compact En...	864>=2		Treeview	Audio In	MIC.In 02.Inp	MIC.In 02.Inp	MIC.In 02.Inp	MIC.In 02.Inp
132	1 Audio Chan...	1 Microphone Sources	251	<input type="checkbox"/>	Bus PGM1 Pos...	NOT TRUE	864>=2		Treeview	Logic Level	TRUE.NOT	TRUE.NOT	TRUE.NOT	TRUE.NOT
133	1 Audio Chan...	1 Microphone Sources	252	<input type="checkbox"/>	Bus PGM2 Pos...	NOT TRUE	864>=2		Treeview	Logic Level				
135	1 Audio Chan...	1 Microphone Sources	253	<input type="checkbox"/>	Bus REC1 Pos...	NOT TRUE	864>=2		Treeview	Logic Level				
134	1 Audio Chan...	1 Microphone Sources	255	<input type="checkbox"/>	Bus AUX1 Pos...	NOT TRUE	864>=2		Treeview	Logic Level				
125	1 Audio Chan...	1 Microphone Sources	261	<input type="checkbox"/>	List enable	activate to sh...	864>=2		allgemeine Ch...	None	1	1	1	1
149	1 Audio Chan...	1 Microphone Sources	271	<input type="checkbox"/>	Trigger Timer	Global NOT TRIF	864>=2		Treeview	Logic Level				
797	1 Audio Chan...	1 Microphone Sources	281	<input type="checkbox"/>	MON 2 Default	Global NOT TRIF	864>=2		Treeview	Logic Level				
68	1 Audio Chan...	1 Microphone Sources	301	<input checked="" type="checkbox"/>	Mic 3 Label	Choose Sourc...	864>=3,4		Typ für LCD T...	None	MIC 3	MIC 3	MIC 3	MIC 3
4	1 Audio Chan...	1 Microphone Sources	311	<input type="checkbox"/>	Input	- Compact En...	864>=3		Treeview	Audio In	MIC.In 03.Inp	MIC.In 03.Inp	MIC.In 03.Inp	MIC.In 03.Inp
140	1 Audio Chan...	1 Microphone Sources	351	<input type="checkbox"/>	Bus PGM1 Pos...	NOT TRUE	864>=3		Treeview	Logic Level	TRUE.NOT	TRUE.NOT	TRUE.NOT	TRUE.NOT
141	1 Audio Chan...	1 Microphone Sources	352	<input type="checkbox"/>	Bus PGM2 Pos...	NOT TRUE	864>=3		Treeview	Logic Level				
143	1 Audio Chan...	1 Microphone Sources	353	<input type="checkbox"/>	Bus REC1 Pos...	NOT TRUE	864>=3		Treeview	Logic Level				
142	1 Audio Chan...	1 Microphone Sources	355	<input type="checkbox"/>	Bus AUX1 Pos...	NOT TRUE	864>=3		Treeview	Logic Level				
126	1 Audio Chan...	1 Microphone Sources	361	<input type="checkbox"/>	List enable	activate to sh...	864>=3		allgemeine Ch...	None	1	1	1	1
150	1 Audio Chan...	1 Microphone Sources	371	<input type="checkbox"/>	Trigger Timer	Global NOT TRIF	864>=3		Treeview	Logic Level				
798	1 Audio Chan...	1 Microphone Sources	381	<input type="checkbox"/>	MON 2 Default	Global NOT TRIF	864>=3		Treeview	Logic Level				
69	1 Audio Chan...	1 Microphone Sources	401	<input checked="" type="checkbox"/>	Mic 4 Label	Choose Sourc...	864>=4		Typ für LCD T...	None	MIC 4	MIC 4	MIC 4	MIC 4

You can also define, whether an element is used in the configuration by adding a **Display if..** statement to the name of the element in combination with the string "cfg". This permits the configuration to use the whole element, only if the statement is true. Using this feature, you can control which sources are actually used in the runtime (via the source selection list).

'Local Substitutions' - Display if.. (with logical statements)

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Display if..	Selection	Typ	Validierung	Default
21	2 Ravenna Port 1	Input Port 1 Stre...	163	<input type="checkbox"/>	Default Stream 063				EmBER+ Name (...)	None	WKS-WRE:St 02
28	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=2 cfg		TextInput	None	Src.RAV2
29	11 Source	Ravenna	1	<input type="checkbox"/>	No. of Ravenna ...			0;1;2;3;4;5;6;7;8			
30	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=3 cfg		TextInput	None	Src.RAV3
31	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=4 cfg		TextInput	None	Src.RAV4
32	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=5 cfg		TextInput	None	Src.RAV5
33	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=6 cfg		TextInput	None	Src.RAV6
34	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=7 cfg		TextInput	None	Src.RAV7
35	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=1 cfg		TextInput	None	Src.RAV1
36	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=8 cfg		TextInput	None	Src.RAV8
37	11 Source	Ravenna	101	<input checked="" type="checkbox"/>	RAV1 Label		29>=1		LCD Text (6 char)	None	RAV1
38	11 Source	Ravenna	102	<input type="checkbox"/>	RAV2 Label		29>=2		LCD Text (6 char)	None	RAV2
39	11 Source	Ravenna	103	<input type="checkbox"/>	RAV3 Label		29>=3		LCD Text (6 char)	None	RAV3
40	11 Source	Ravenna	104	<input type="checkbox"/>	RAV4 Label		29>=4		LCD Text (6 char)	None	RAV4
41	11 Source	Ravenna	105	<input type="checkbox"/>	RAV5 Label		29>=5		LCD Text (6 char)	None	RAV5
42	11 Source	Ravenna	106	<input type="checkbox"/>	RAV6 Label		29>=6		LCD Text (6 char)	None	RAV6
43	11 Source	Ravenna	107	<input type="checkbox"/>	RAV7 Label		29>=7		LCD Text (6 char)	None	RAV7
44	11 Source	Ravenna	108	<input type="checkbox"/>	RAV8 Label		29>=8		LCD Text (6 char)	None	RAV8
45	1 Global	GNET	0	<input type="checkbox"/>	GNET Dest IP				TextInput	None	192.168.101.242
46	3 Audio Output	AES3 I/O Card SL...	105	<input type="checkbox"/>	Default Audio Ou...			filter	Tree Reference	Audio In	NTP.PPM3.L.Inp
47	3 Audio Output	AES3 I/O Card SL...	106	<input type="checkbox"/>	Default Audio Ou...			filter	Tree Reference	Audio In	NTP.PPM3.R.Inp
48	3 Audio Output	AES3 I/O Card SL...	107	<input checked="" type="checkbox"/>	Default Audio Ou...			selection	Tree Reference	Audio In	Slot2.Loop 1.L.Inp
49	3 Audio Output	AES3 I/O Card SL...	108	<input type="checkbox"/>	Default Audio Ou...			selection	Tree Reference	Audio In	Slot2.Loop 1.R.Inp

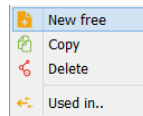
8.4 Selections

In the substitutions lists, the **Selection** column is used to limit the wizard's selections to a choice of references. It can be used in conjunction with Free Substitutions or the 'Tree restriction' dialogue box.

8.4.1 Free Substitutions

Free Substitutions are used to control the visibility of other substitutions.

To create a free substitution, right-click on the substitutions list and select **New free**:



You can now enter a list of strings, separated by a semicolon in the **Selection** column, to define the options available in the Device Configuration Wizard. Other substitutions may then be suppressed if the **Display if...** statement is not true. See [Display If...](#)

'Local Substitutions' - Free Substitutions

Local substitutions

ID	Group1	Group2	Sort	Linefeed	Text	Comment	Display if..	Selection	Typ	Validierung	Default
21	2 Ravenna Port 1	Input Port 1 Stre...	163	<input type="checkbox"/>	Default Stream 063				EmBER+ Name (...)	None	WKS-WRE:St 02
28	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=2 cfg		TextInput	None	Src.RAV2
29	11 Source	Ravenna	1	<input type="checkbox"/>	No. of Ravenna ...	Free Substitution		0;1;2;3;4;5;6;7;8	TextInput	None	
30	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=3 cfg		TextInput	None	Src.RAV3
31	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=4 cfg		TextInput	None	Src.RAV4
32	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=5 cfg		TextInput	None	Src.RAV5
33	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=6 cfg		TextInput	None	Src.RAV6
34	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=7 cfg		TextInput	None	Src.RAV7
35	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=1 cfg		TextInput	None	Src.RAV1
36	11 Source	Ravenna	0	<input type="checkbox"/>	Source		29>=8 cfg		TextInput	None	Src.RAV8
37	11 Source	Ravenna	101	<input checked="" type="checkbox"/>	RAV1 Label		29>=1		LCD Text (6 char)	None	RAV1
38	11 Source	Ravenna	102	<input type="checkbox"/>	RAV2 Label		29>=2		LCD Text (6 char)	None	RAV2
39	11 Source	Ravenna	103	<input type="checkbox"/>	RAV3 Label		29>=3		LCD Text (6 char)	None	RAV3
40	11 Source	Ravenna	104	<input type="checkbox"/>	RAV4 Label		29>=4		LCD Text (6 char)	None	RAV4
41	11 Source	Ravenna	105	<input type="checkbox"/>	RAV5 Label		29>=5		LCD Text (6 char)	None	RAV5
42	11 Source	Ravenna	106	<input type="checkbox"/>	RAV6 Label		29>=6		LCD Text (6 char)	None	RAV6
43	11 Source	Ravenna	107	<input type="checkbox"/>	RAV7 Label		29>=7		LCD Text (6 char)	None	RAV7
44	11 Source	Ravenna	108	<input type="checkbox"/>	RAV8 Label		29>=8		LCD Text (6 char)	None	RAV8
45	1 Global	GNET	0	<input type="checkbox"/>	GNET Dest IP				TextInput	None	192.168.101.242
46	3 Audio Output	AES3 I/O Card Sl...	105	<input type="checkbox"/>	Default Audio Ou...			filter	Tree Reference	Audio In	NTP.PPM3.L.Inp
47	3 Audio Output	AES3 I/O Card Sl...	106	<input type="checkbox"/>	Default Audio Ou...			filter	Tree Reference	Audio In	NTP.PPM3.R.Inp
48	3 Audio Output	AES3 I/O Card Sl...	107	<input checked="" type="checkbox"/>	Default Audio Ou...			selection	Tree Reference	Audio In	Slot2.Loop 1.L.Inp
49	3 Audio Output	AES3 I/O Card Sl...	108	<input type="checkbox"/>	Default Audio Ou...			selection	Tree Reference	Audio In	Slot2.Loop 1.R.Inp

8.4.2 Tree restriction

The 'Tree restriction' dialogue box can be accessed by double-clicking on a **Selection** field. It is used to add elements to the selectable references for the parameter. It can be used in two ways: to create selectable references (for a drop-down list) or to filter the available selections (to limit the options visible in the 'Tree Selection'. You can see if either of these options are active by looking in the **Selection** column of the substitutions list:

- "selection" = the parameter will use selectable references.
- "filter" = the parameter options will be filtered by a Regular Expression.

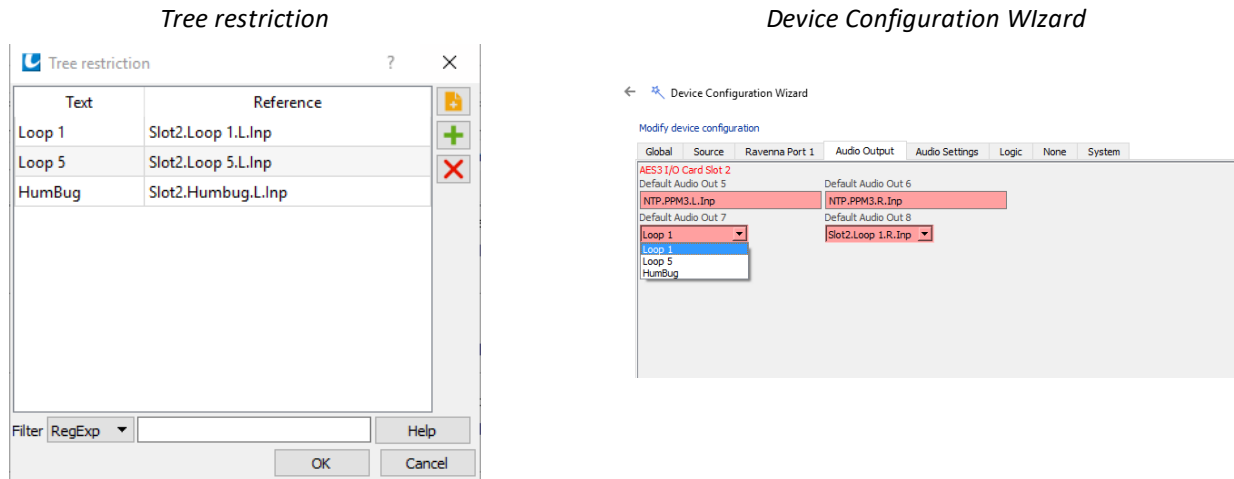
Note that you may use either filters or selections; but a combination of both is not possible.

8. Using the Device Configuration Wizard

Selectable References

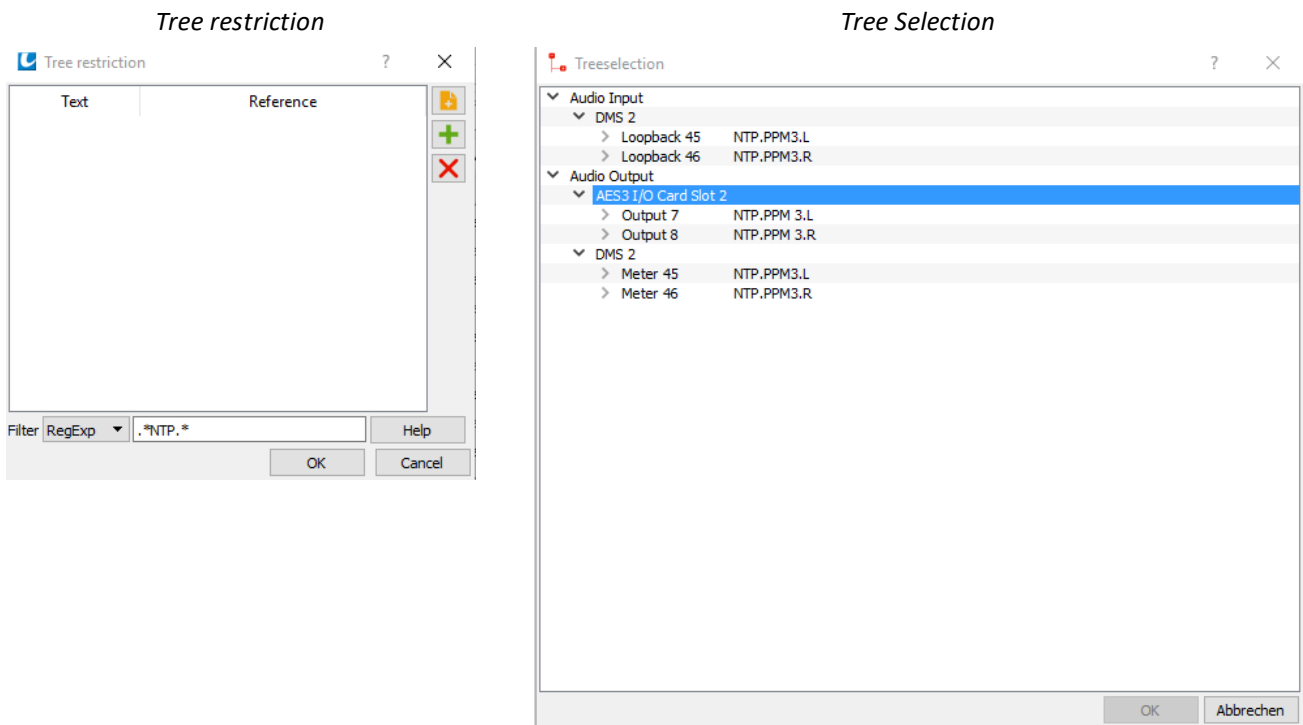
If the 'Tree restriction' list contains elements, then these will be shown as a drop-down menu in the Device Configuration Wizard.

You can add allowed elements to the list using '+', or remove an element using '-'. You can also change the order by dragging and dropping the elements in the list. The **Text** column defines the reference name shown in the wizard. If no text is defined, the **Reference** name is shown.



Filters

The **Filter** field can be used to define Regular Expressions (RegExp) to filter the selectable references. The hierarchical order of the references is maintained, but you can exclude unwanted references from the normal 'Tree Selection'. Both the group/physical name and the configured name can apply to the filters. A help window can be opened using the **Help** button.



9. Appendices

This chapter includes further information which you may find useful.

Topics include:

- [Files & Organisation](#)

9.1 Files & Organization

Configuration Files

The ON-AIR Designer creates configuration files offline and saves them as database files on your computer. A number of different files are created with different suffixes. All files are saved to the same folder as the main project (.db3 file).

.db3 – this is the file which you create when you [save](#) a project, and it is this file you edit using the ON-AIR Designer software.

.mdb – this is the format used by the previous configuration tool. It is supported for [backwards compatibility](#).

.prm – this is the binary file which is created when you perform a [Transfer -> Setup to unit](#). The file contains all the setup parameters for the system and is transferred and stored on the control system.

.cfg – this is the binary file which is created when you perform a [Transfer -> Config to unit](#). The file contains all the configuration settings for the system. It is stored in the "unit" folder of the project directory.

__Kpf.mdb – this is the file which stores source and target names for inputs and outputs which are matrix enabled. It is stored in the "unit" folder of the project directory.

before_convert.mdb – this is a file which is created when the ON-AIR Designer [converts](#) an existing file. It allows you to keep a copy of the original project before conversion.

It is a good idea to create a project folder to store all the files required for a particular system, and to make backup copies of your work to avoid losing any data.

VisTool Files

If you are using VisTool Editor, then this will create a **.vistool** file when you save the VisTool project. It is a good idea to keep the VisTool and ON-AIR Designer projects together, and name the files clearly as you will need both files to configure a VisTool runtime session.

VisTool also uses a file named **Visconfigurations.mdb** file to store any snapshots and user rights created by the VisTool PC. This is created automatically when you install the VisToolMK2 software (in the folder "C:\ProgramData\DSA\VisToolMK2\database\"). The file path can be changed from VisTool Editor's "Global Settings" (via the Snapshots field).

In addition a number of **.ini** files to store other variable such as the list of Ember+ hosts, V__line devices, etc. By default, these are stored in the folder "C:/ProgramData/DSA". The file path can be changed from VisTool's Session Manager (via the 'optional Parameters' .iniPath field).