



Release Notes

Radio Consoles, Routers & VisToolMK2

Release: 7.0

Date: March 31th, 2022

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Introduction

This document applies to the following products and components:

- diamond & Power Core
- ruby & Power Core
- configuration software On-Air Designer
- VisTool MK2
- sapphire
- sapphire compact
- crystal
- crystalCLEAR
- Nova17 MK2, Nova 29
- SoP Explorer

In this document, you will find information about feature enhancements, bug fixes and known issues in the latest official software version 7.0 and previous releases. It also provides content information on patch releases, which are published from time to time for bug fixing purposes in between regular releases.

We strongly recommend to read this document carefully before you decide to update your system.

Before you start

Before you start

Please ensure to have all necessary software components and tools available before you start the update.

We strongly recommend to always use both software versions provided by Lawo AG, OnAir-Designer and VisTool and not to mix different software packages of our releases.



Update of diamond surface modules with SoP Explorer!

Please use always the Wizard functionality in the SoP Explorer to update diamond surface modules. It is important to follow the correct update procedure which the SoP explorer automatically does.



Updating VisTool configuration files (version <6.6) to 6.6 or any later patch level: Backup your snapshots if you use VisTool to handle your snapshots!

Restructuring the snapshots, the Power Core is now only saving and loading partial snapshots. To work with the new snapshots, it is necessary to load all snapshots after the upgrade of the Power Core and save them again.

Please be aware:

In order to have the possibility to downgrade your system, you need to backup your snapshots before upgrading your system. VisTool snapshots are stored on the VisTool runtime PC. They are stored in the "Visconfigurations.mdb", the file defined in VisTool Editor's "Global Settings" (via the Snapshots field). Usually the default file path (C:\ProgramData\DSA\VisToolMK2\database\Visconfigurations.mdb) is used so that data can be stored independently on each VisTool PC. Alternatively, if you wish to share snapshots between VisTools, then you can create a shared file location.

If you are using a SQL database instead, please backup your SQL database.



New database for VisTool (>6.6.0.41) in use!

Stored database projects > 6.6.0.41 can not be loaded with VisTool versions older than 6.6.0.41.



OnAir-Designer version higher than 6.6.0.37 requires a VisTool version higher than 6.6.0.83.



diamond multi access - auto mix: after firmware update to On-Air Designer 7.0.0.6, the configuration converted to the latest state MUST be downloaded once, so that the default settings for the release flags of access group 1 become effective.

 **diamond multi access - VCAs: after firmware update to On-Air Designer 7.0.0.6, the configuration converted to the latest state MUST be downloaded once and reviewed, to make sure VCAs are configured correct.**

 **Extension of the adjustable EQ frequencies**


For ruby and diamond the number of adjustable EQ frequencies is extended: from 60 to 272

Snapshots are now saved in the new frequency format. Old snapshots are converted to the new frequencies when loaded.

For networking systems with VisTool snapshot application with make sure that all power cores have a corresponding firmware version.

A VisTool version $\geq 6.6.0.159$ is required.

We strongly recommend to always use both software versions provided by Lawo AG, OnAir-Designer and VisTool and not to mix different software packages of our releases.

 **Changes with improving extension screen button RGB to 192 buttons + 8 VCAs in Power Core**

Due to the change, the check box "R3LAY only" must be moved. If this is used in an existing project, it has to be activated again after converting the project (applies only to Power Core).

 **Do not update a sapphire surface with 6.6 or any later patch level**

Please do not update your sapphire surface attached to a sapphire master card with the SoP Explorer until you made all the changes being described in "for_sapphire.zip", please note the included pdf file "How_To_Upgrade_sapphire.pdf".

 **Incompatibility of configuration files**

Please note that configuration files created with versions < 4.0 have to be converted to run with versions 4.0 or higher. That happens automatically when an older configuration file is opened with the current version. A copy of the original file before conversion will be created. Shall the configuration be moved from a sapphire MKI mastercard to a MKII mastercard, another conversion is needed. A conversion tool called "zirkon migrate" can be optionally installed when installing the software. (Please note that this conversion tool needs the .NET framework 4.0 installed on the PC.) Migrating an older configuration to a version 4.0 or higher using "zirkon migrate" will not cover all configured items. Manually checking the migrated configuration is strongly recommended. Also, please refer to the "Known Issues" chapters before migrating.

 **crystal and zirkon console frames cannot be downgraded from 4.0 to 3.x**

ATTENTION: Please note that crystal and zirkon console frames cannot be downgraded once they have been upgraded to 4.0. There is **no way** to downgrade your system on site. If a downgrade is necessary, an RMA is required and the console has to be shipped to the company.



Order of updates

ATTENTION! Because of the incompatibility of configuration files you must ensure that the firmware of the mastercard(s) is updated before you transfer the converted configuration files to the mastercards.



New Windows services for DMS and CAN implemented

The structure of the drivers has been changed to support Windows10®. Therefore it is essential that you check your custom applications that communicate with the CAN- or DMS-service for compatibility.

Especially on closing the application you have to take care that the application is correctly terminated. The new CAN-Service does not support the PCI- or ISA- CAN-Card.

History

- **Release Notes 7.0**

Includes On-Air Designer 7.0.0.6 and VisTool MK2 7.0.0.40

- **Release Notes 7.0, V7.0/1**

Includes On-Air Designer 7.0.0.6 and VisTool MK2 7.0.0.40

Important note for "Multi access: Access PPM for all access groups"

Contacting the Support Department

Before you plan to carry out a software update for your system, please make sure, it is beneficial for your setup. An update should be done if

- your systems requires bug fixing.
- a new feature is provided and you want to make use of it.
- the update is recommended by your Lawo partner.

Please refer to the release notes provided with a release to find out, what's new and which fixes have been made. Please check the "Known Issue" chapter to find out, which topics have been left open.

If you intend to update and *you are still not sure*, please contact our service department in due time. You will be supplied with the necessary documentation and software. If necessary, you can coordinate a date for telephone support if required. Telephone support can be given in the common office hours (Mon – Fri 9:00 – 17:00 hrs CET, Berlin time zone). In case you require further support or remote assistance, please contact our service department, too.

Please check our website, where we provide all necessary tools. <http://www.lawo.de/en/support/service-support/service-contact.html>

Call to: [+49 \(0\) 72 22 1002-4000](tel:+490722210024000)

Email to: support@lawo.com

Your e-mail should include the following information:

- Name and phone number of the contact person as well as the time when this person is available.
- Number and type of the systems.
- If available: name and project number of the system(s).
- Current software versions of the diamond / ruby / crystal / sapphire / zirkon / Nova17 systems (see web browser).
- Access information for current TeamViewer version.
- The configuration file of the system and a screen shot of a running SOP Explorer showing the system.

diamond

How to set up a diamond with a Power Core

diamond and Power Core communicate via IP, therefore each diamond has at least one connector board.

In all network connections where the diamond is involved, the final result of the involved parameters needs to be as follows: speed: 100 Mbit/s, duplex mode: full duplex.

More than 1 diamond frame may relate to a Power Core via 2 possibilities:

- 1) Each diamond frame connects via multicast with the Power Core or
- 2) The first diamond frame connects via Multicast or Unicast with the Power Core and the second diamond frame is daisy-chained via CAN A (high-speed CAN).

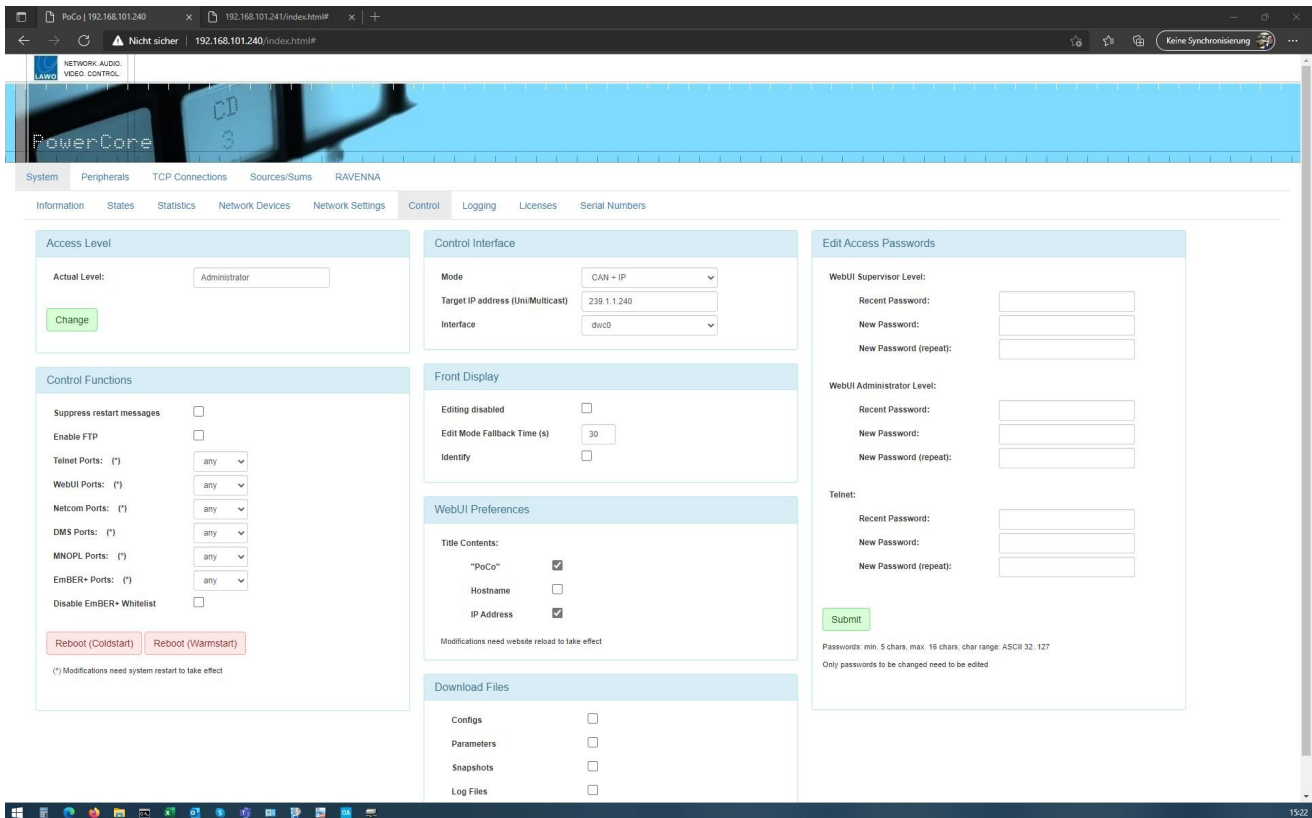
If you have a diamond frame wider than 4 modules, the frame behaves like 2 diamond frames. There are 2 connector boards on the backside of the frame and either each one is connected via Multicast to the Power Core, or one board is connected via IP and both connector boards are connect via CAN A (please see TFT's during boot up for IP or CAN connection).

Note, the length of CAN A bus must not exceed 13m including the internal wiring.

CAN B bus is used to connect KSC panels at the connector board of a diamond frame; or the KSC panel can be connected with the CAN connector of the Power Core.

The control interface of the devices provides access to all necessary parameters to connect diamond with Power Core.

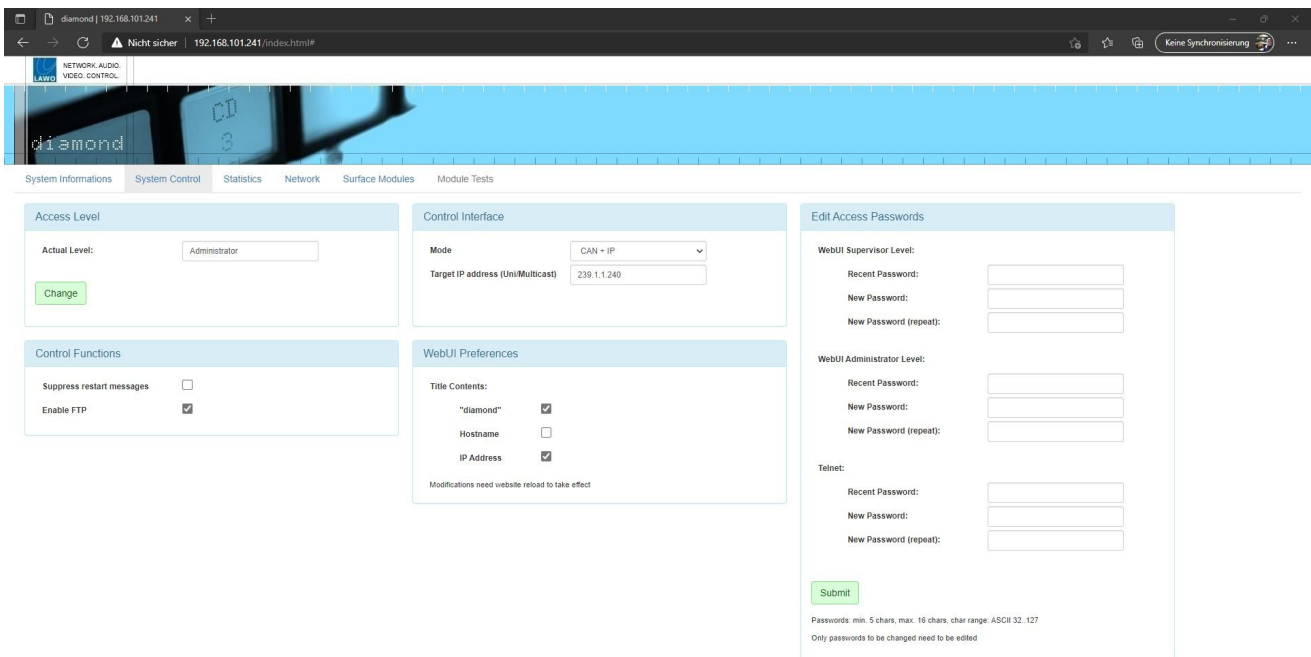
The Power Core control interface can be reached via the IP, shown on the device, default IP: 192.168.101.240.



In the tabs "System" and "Control", the communication can be established via Unicast or Multicast. The setting needs to match with the according setting in the Power Core.

- Same Multicast address in all devices which belong to 1 console (diamond frame(s) and Power Core, default multicast IP is 239.1.1.240) or
- Unicast between the diamond surface to the Power Core by entering the IP of the Power Core in the diamond and vice versa.
- The default interface is dwc(0).
- The UDP port is 6040.

The diamond control interface can be reached via the IP, shown on the device on top of the connector board during boot up: default IP is 192.168.101.241.



In the tab "System Control" the communication can be established via Unicast or Multicast. The setting needs to match the according setting in the Power Core.

- Same Multicast address in all devices which belong to 1 console (diamond frame(s) and Power Core) or
- Unicast between the diamond surface to the Power Core by entering the IP of the Power Core in the diamond and vice versa.
- The UDP port is 6040.

How to set up the address in diamond modules

In the control interface of the diamond, tab "Surface Modules", each panel can be configured to its individual CAN bus slot and can be identified.

The address' needs to be set according to the surface configuration in the OnAir-Designer.

Mode of diamond modules

The module directly above the connector board that is connected to the Power Core needs to be set to mode "CAN+IP".

All other diamond modules in the frame(s) needs to be set to "CAN".

Note: during start up, each diamond module displays in the TFT's its IP address and its slot address.

Changes can be configured in the control interface of the diamond in the tab "Surface Modules"

Special functions of a diamond module

The following special functions are given:

Hit the **first three buttons** in the upper left corner and power down the module, keep the buttons pressed and power on the module. After booting up the module is set to the default IP 192.168.101.241 and still has the same mode and slot address. Please reboot the module again.

Hit the **first two buttons** in the upper left corner and power down the module, keep the buttons pressed and power on the module. After booting up the module keeps its IP, the slot and mode are set to zero. Please reboot the module again and use the control interface to configure the slot and mode.

Configuration of diamond surface in OnAir-Designer

It is not allowed to have a central module and a combo module in the same DSP access group.

Power Core

Note on network settings

When setting up your network, please note the following settings for your switch in order to run a smooth network:

For all network connections where the Power Core is involved, please set the parameters as follow: speed: 1 Gbit/s, auto negotiation : off, duplex mode: full duplex.

Adding additional I/O cards to your Power Core

If you want to add additional I/O cards to your Power Core, please proceed as follows:

- Use a PH 1 or PHILIPS #1 screw driver.
- Unscrew all screws of the existing I/O cards and blind plates in the Power Core.
- Remove the blind plate on the slot where you want to add the I/O card.
- Insert the new I/O card.
- Make sure the new I/O card and the other I/O cards do not overlap with their front plates.
- Make sure all front plates are closely applied to the Power Core housing.
- Hand-tighten the screws of all I/O cards.

Release 7.0, Version 7.0.0.6

New / Enhancement

- New Ravenna parameter: RX Cross-Joining disable**

The Power Core sends IGMP joins for all streams by default on both Ravenna interfaces. This is to ensure that streams can be received even if the networks at the input are swapped.

However, this simplification can lead to duplicate traffic on the network port if the networks are routed against each other. The Ravenna parameter "RX Cross-Joining Disable" can be used to disable this behavior: IGMP Joins for the first interface are only sent via ra(0), for the second interface only via ra(1).

- Multi access: VCAs only to appear on the assigned access groups**

Can now be configured under System/Definition for Power Core MAX, to which access group the VCAs are assigned to.

IMPORTANT: after firmware update, the configuration converted to the latest state MUST be downloaded and reviewed, to make sure VCA groups are configured correct!

Audio	Colors	Logic	Madi	OAC	Serial	TCP	Alarm	EmBER+	Ravenna	Project	AccessGrp 1	Matrix AccGrp 1	AccessGrp 2	Matrix AccGrp 2
AUX24							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux25							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux26							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux27							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux28							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux29							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux30							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux31							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Aux32							Hide <input type="checkbox"/>			AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>
Parameter		VCA Groups												
VCAGrp 1		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 2		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 3		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 4		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 5		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 6		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 7		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>
VCAGrp 8		AccessGrp 1 <input checked="" type="checkbox"/>					AccessGrp 2 <input type="checkbox"/>			AccessGrp 3 <input type="checkbox"/>		AccessGrp 4 <input type="checkbox"/>		SnapshotClass <input type="text" value="0"/>

- Multi access: Aux Fader Enable only affects the configured access group**

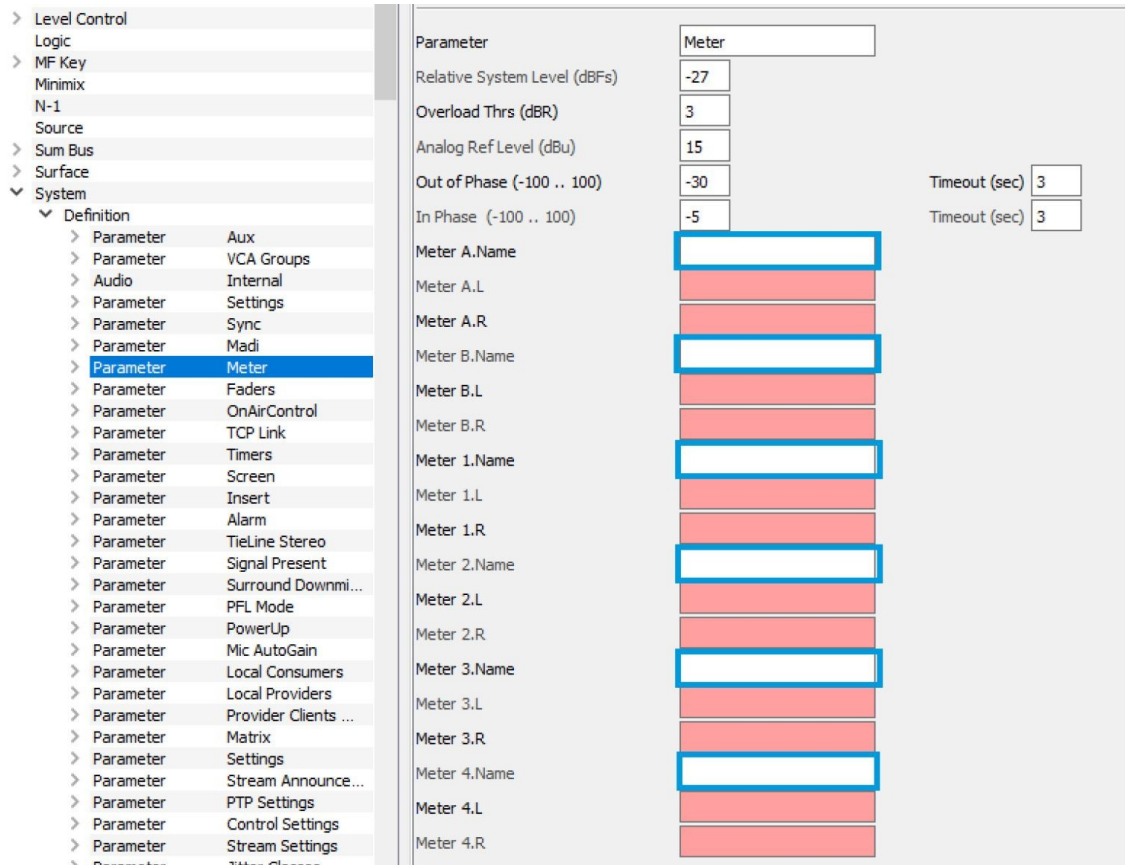
Unlike ruby, "Aux / Fader Enable" in diamond can also be configured for access groups 2-4.

Name	Value	Audio	Colors	Logic	Mad	OAC	Serial	TCP	Alarm	EmBER+	Ravenna	Project	AccessGrp 1	Matrix AccGrp 1	AccessGrp 2	Matrix AccGrp 2	AccessGrp 3	Matrix AccGrp 3	AccessGrp 4	Matrix AccGrp 4	
Parameter	Aux																				
Screen Button Text 1	Empty																				
Screen Button Text 2	Empty																				
Aux Mode Sequence	Pre - Post - Off																				
Aux1									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux2									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux3									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux4									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux5									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux6									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux7									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux8									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux9									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux10									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux11									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux12									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux13									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux14									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux15									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux16									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux17									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux18									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux19									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux20									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux21									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux22									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux23									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux24									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux25									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux26									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux27									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux28									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux29									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux30									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux31									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1
Aux32									Hide				AccessGrp 1	AccessGrp 2	AccessGrp 3	AccessGrp 4	SnapshotClass	0	Fader Enable		AccessGrp 1

- **Multi access: Access PPM for all access groups**

For Access Groups 2 to 4, input and output meters per access group are available. For diamond, the input / output meters are always available and named accordingly in the VisTool editor under PPM index "Access", they are named accordingly: "Access N Input/Output".

For Ruby, the definition meters A,B,1 to 4 are used as access meters if the names of the definition meters are empty. In VisTool the meters are listed under PPM Index "Meter".



IMPORTANT: All meter names must be removed. If there still is a name in meter 1 to 4 then the access meters for all access groups will not work.

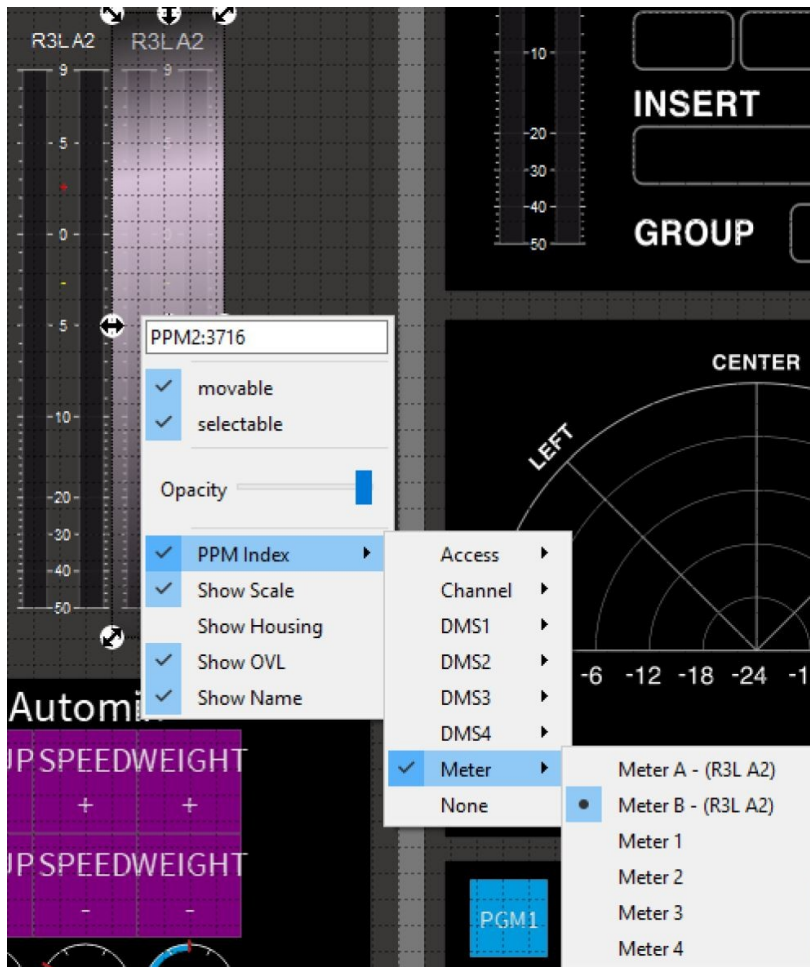
The assignment of PPM channels in VisTool is name-based. So that existing projects are not destroyed, the original names "Meter A/B/1-4" must be retained.

An intuitive naming regarding the access channels is therefore not possible!

The assignment is:

- Meter A: Access 2 Input
- Meter B: Access 2 Output
- Meter 1: Access 3 Input
- Meter 2: Access 3 Output
- Meter 3: Access 4 Input

- Meter 4: Access 4 Output



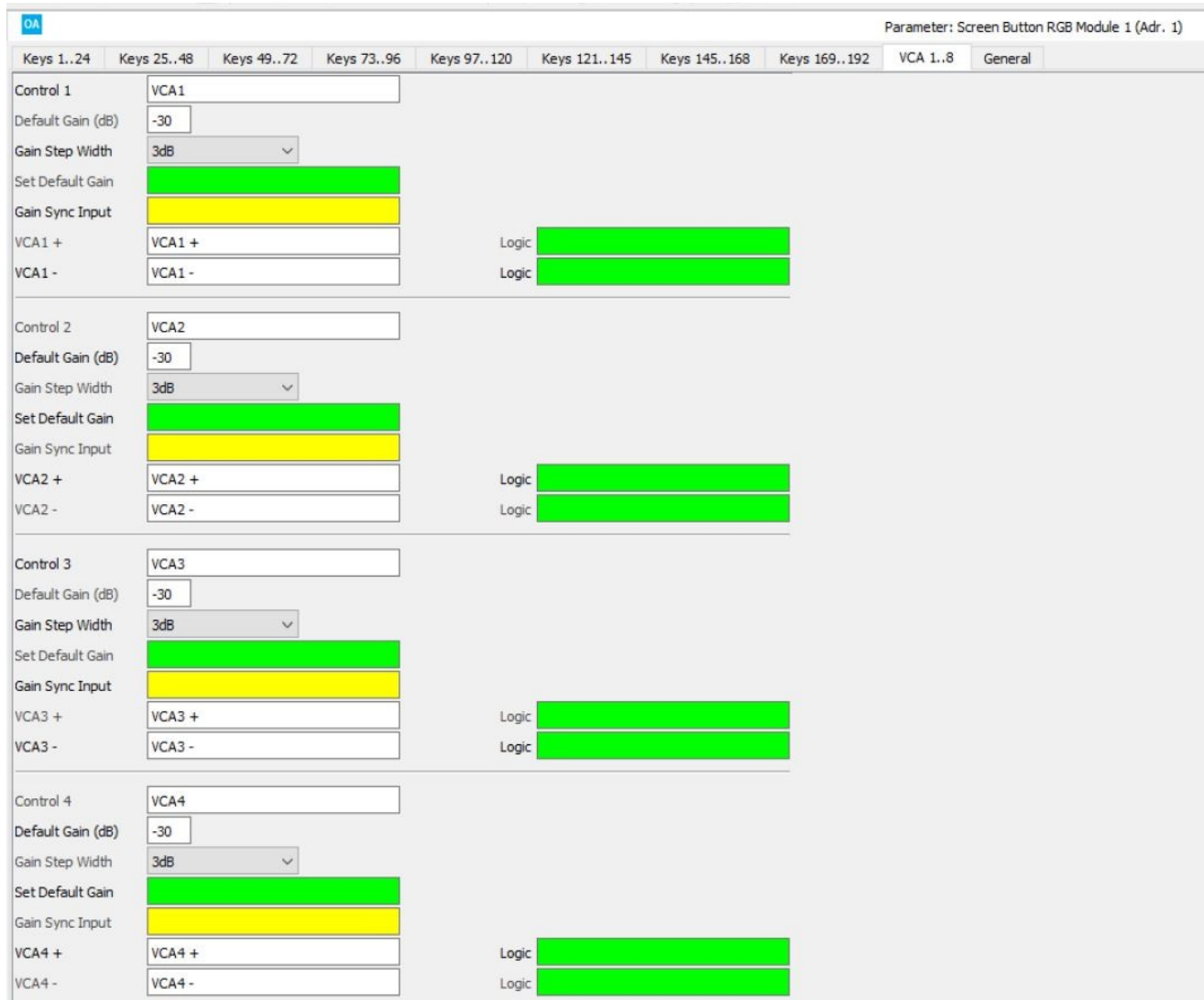
- **Extension Screen Button RGB to 192 buttons + 8 VCAs**

The Screen Button RGB element is extended to 192 keys (for Power Core). 4 additional VCAs (Value, +, -) to set gain values via VisTool analog to the control panel VCAs.

Pushing the "+" or the "-" button changes the gain accordingly.

Pushing both at the time sets the value back to default.

ATTENTION: Due to the change, the check box "R3LAY only" must be moved. If this is used in an existing project, it has to be activated again after converting the project (applies only to Power Core).



- **Extension fader modules with logic outputs: Layer 1/2 active**

The fader modules have two new logic outputs per fader "Ch. N Layer 1 active" and "Ch. N Layer 2 active" which are located in the tree under "General" (The parameter "General" must have a name to be selected in the tree).

- **diamond: aux / bus pre switchable, when encoder touch is active**

For diamond, to switch a bus in the bus menu on pre, the encoder must be touched while the the bus button is pressed.

The bus keys in the bus menu toggle:

- without encoder touch: post - off
- with encoder touch: pre - post - off (if pre as choice is allowed in the configuration)

- **Extension of the adjustable EQ frequencies**

For ruby and diamond the number of adjustable EQ frequencies is extended: from 60 to 272

Snapshots are now saved in the new frequency format. Old snapshots are converted to the new frequencies when loaded.

For networking systems with VisTool snapshot application make sure that all power cores have a corresponding firmware version.

A VisTool version $\geq 6.6.0.159$ is required.

We strongly recommend to always use both software versions provided by Lawo AG, OnAir-Designer and VisTool and not to mix different software packages of our releases.

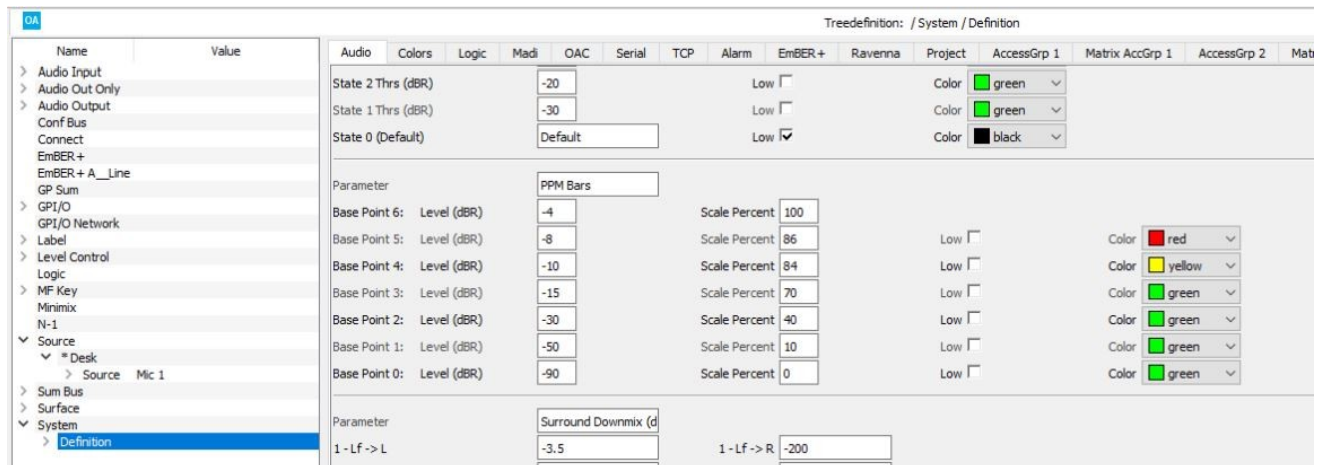
- diamond: 32 aux buses configurable**

For diamond 32 aux buses can be configured.

Treedefinition: / System / Definition																
Audio	Colors	Logic	Madi	OAC	Serial	TCP	Alarm	EmBER+	Ravenna	Project	AccessGrp 1	Matrix AccGrp 1	AccessGrp 2	Matrix AccGrp 2	AccessGrp 3	
Parameter	Aux															
Screen Button Text 1	Empty															
Screen Button Text 2	Empty															
Aux Mode Sequence	Pre - Post - Off															
Aux1							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux2							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux3							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux4							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux5							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux6							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux7							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux8							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux9							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux10							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux11							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux12							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux13							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux14							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux15							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux16							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux17							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux18							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux19							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux20							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux21							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux22							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux23							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux24							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux25							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux26							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux27							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux28							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux29							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux30							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux31							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst
Aux32							Hide <input type="checkbox"/>				AccessGrp 1 <input checked="" type="checkbox"/>		AccessGrp 2 <input type="checkbox"/>		AccessGrp 3 <input type="checkbox"/>	AccessGrp 4 <input type="checkbox"/> Snapst

- **diamond: surface PPM bars**

Besides the source names, diamond fader / combo module represents one peak meter per fader. The colors and thresholds of the peak meters can be configured under "System/Definition/Parameter = PPM Bars".



- **diamond: key colors for basic functions configurable**

Under the "Colors" tab, the key colors for basic functions can be configured:

- "Aux Menu "Off"/"Pre"/"Post" Color", moved from audio to colors tab
- "VCAGrp Menu "Off"/"On" Color", color of MF1a-2b keys when VCA group menu is active
- "Menu Label Color follows Key Color", color of MF1a-2b labels with activated "Aux/VCA/insert menu follows key color
- "Aux Menu Label Color", color of MF1a-2b labels with activated "Aux" menu as selected
- "VCA Group Label Button Color", color of MF1a-2b labels with activated "VCA" menu as selected
- "Insert Menu Label Color", color of MF1a-2b labels with activated "Insert" menu as selected
- "Access Key "Off"/"Access"/"Assign" Color", defines the color of the "Access" key
- "Layer 2 Key "Off"/"On" Color", defines the color of the "Layer 2" key

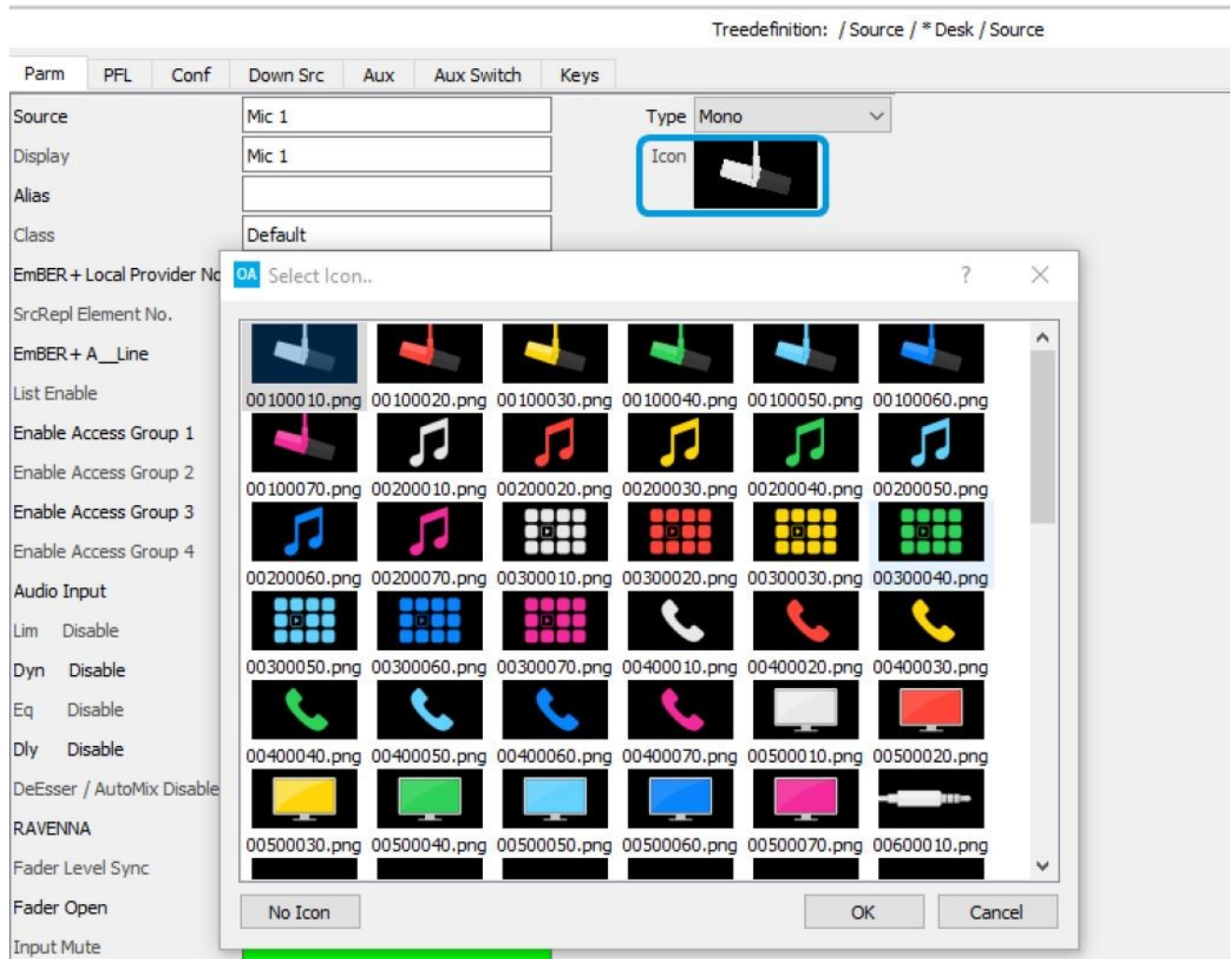
All colors can also be set to "Low" (= dimmed).

- **diamond: source icons configurable**

For each source and sum, an icon can be configured that is displayed above the name of the source or sum in the control panel display.

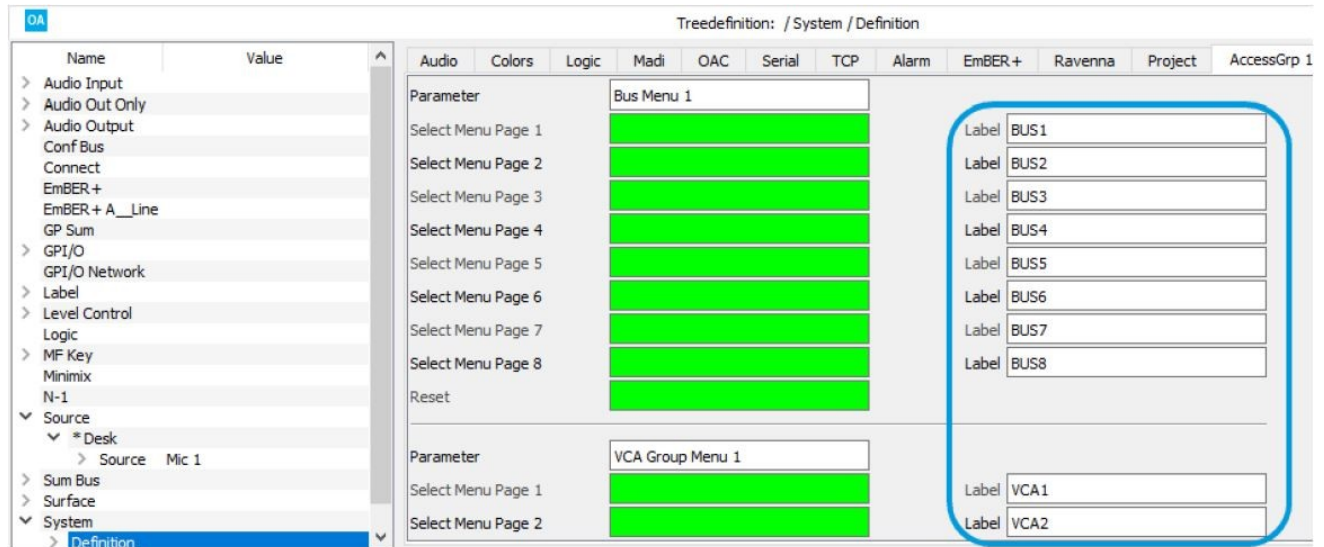
Under "System/Definition/Parameter = Faders N" the icons can be (de)activated globally.

By default configured icons are displayed.



- **diamond: bus / VCA menu labels configurable**

For the bus and VCA menus names can be configured under "System/Definition/Parameter = Bus Menu N", which are displayed in the combo or central module.



- **diamond: use of combo modules**

Simultaneous use of a combo and a central module of the same access group is not allowed. In addition to the combo module with central module functions, a monitor combo module can also be configured on slots 12-15, which offers more MF keys without central module functionality.

The faders must be assigned separately to an Access Group, as with a fader module.

For referencing, e.g. for fader mappings, the combo modules are considered as a full-fledged fader module, where only faders 1, 2 (Layer 1) and 5, 6 (Layer 2) are used.

When using reference sources, fader mapping is necessary to use the combo modules, since the combo modules can only be configured from slot 12 upwards.

Source	Direct Out	Module	PFL1 Swap	Channel Mapping	Snapshots	MF Key Mapping	VisChan1	VisChan2	Keys 1..8	Keys 9..16	VCA1	VCA2	VC
Default Map :	Activate												
Map 1:	Activate					1.1 113	1.2 114		2.1 117		2.2 118		
Map 2:	Activate					1.1	1.2		2.1		2.2		
Map 3:	Activate					1.1	1.2		2.1		2.2		

- **diamond: control interface**

diamond control modules can only be connected to the Power Core via network (UDP), since diamond uses a faster CAN bus. The CAN interface of the Power Core is only used for key panels and GPIO extenders.

The control interface address is configured on the Power Core website under "System/

Control" from supervisor access level (standard IP address: 192.168.101.240).

diamond control panels each have an IP module that can also be configured via the website (standard IP address: 192.168.101.241).

The communication within a control unit and further diamond modules takes place via high speed CAN bus.

Further control panels and key panels can be connected to the control panel via the external, low speed CAN bus B (note the cable length of the CAN A bus: max. 13m including internal CAN A bus).

The control interface address is configured via the Diamond website under "System Control" from supervisor access level.

When using multicast, any number of key pads can be connected to a Power Core.

For this purpose, the same group address is configured for the Power Core and the key pads.

When using Unicast, only one operating device can be connected to a Power Core (per IP).

For this purpose, the IP address of the remote terminal is configured for Power Core and operating device. Further operator panels can be connected to the control panel via CAN in this constellation. (Note cable length)

Mode: "Can" / "IP" / "Can+IP" selection of interfaces for communication.

Attention: "Can+IP" must also be configured on the operating unit to use the internal CAN bus.

The UDP port used is currently fixed at 6040, the standard multicast IP address is 239.1.1.240.

- **diamond: DeEsser independent of dynamics**

The DeEsser works for diamond regardless of whether dynamics are enabled or not.

- **diamond: "System/ Definition" meter 1 to 4 and meter A & B removed**

- **screen matrix: consider mono alias**

The mono alias is not displayed in a mono source destination, but the stereo label is. For mono sources / destinations, the mono alias is taken into account as the label.

- **Screen matrix: visualization of inconsistent switching states of a stereo matrix destination**

If a stereo sink is connected with different signals for L/R, the label of the sink is displayed in blue.

This is the case if the stereo source is connected with

- two different mono sources
- one stereo source on one "leg", another source or mute being connected on the other.

- **VisTool: Aux fader enable only acting on defined access group**

- **Project parameter display in tree (System\Project)**

The configured project parameters (System / Definition) are displayed in the Ember+ tree.

- **Ravenna query 8: Empty stream name to signal signal that no stream is assigned**

If the name is left empty, the "Connected" output becomes active if no stream is assigned. This means that you can now also query specifically for "Mute/not Assigned".

The already existing output "Mute" is always inactive as soon as streaming is in progress, no matter which source is currently available.

The "Mute" output is active when a stream is assigned but not (stably) received.

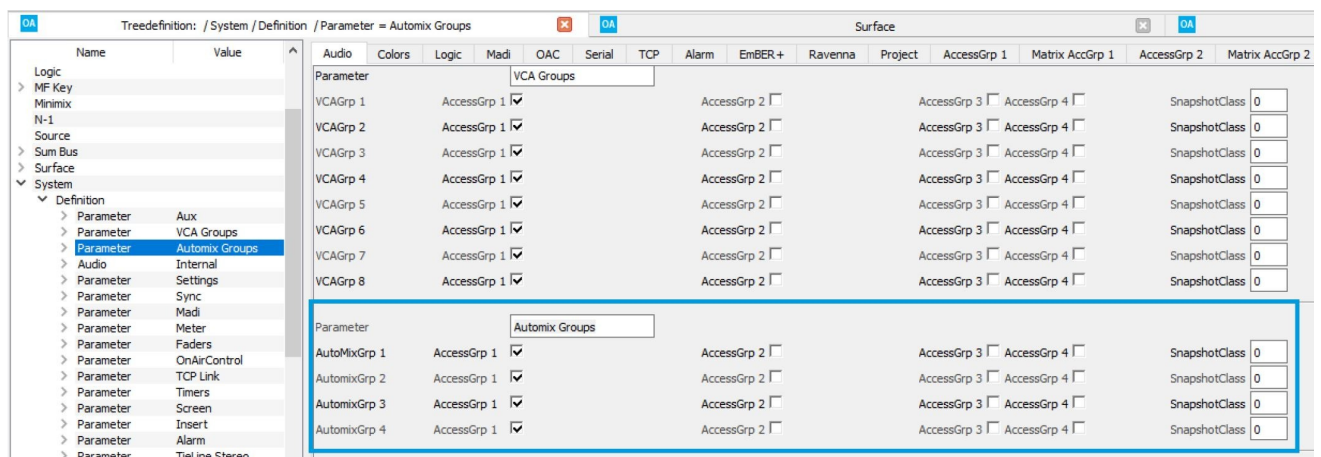
- **Multi Access: To assign auto mix groups to access groups**

It can be configured for which Access groups an auto mix group is available. (System/Definition/Parameter = Automix Groups).

The snapshot class can be used - analog to the aux buses - to control the behavior when loading a snapshot in another access group.

When changing the access group of a source, the auto mix group number is corrected if necessary.

IMPORTANT: after firmware update, the configuration converted to the latest state MUST be downloaded once, so that the default settings for the release flags of access group 1 become effective!



Fixed Bugs

- **Bus/sums DSPs are not loaded from snapshots (#21164)**
- **"MTX QRY" does not supply values after cold start if connection type is "MNOPL" (#21330)**
- **ConfBuses are closed in "Hot Fader" mode, when they are assigned to a fader (#21367)**
- **A_line integration: GPIOs work the wrong way around (#21336)**
- **More than 32 delays can be configured for summing buses in On-Air Designer (#21418)**

There are no more than 32 mono equivalent DSP blocks for an "XL" or "MAX" license in the Power Core.
- **VisTool faders are not set to -infinity when being unassigned and if "Hot Fader" mode is activated (#21433)**
- **No N-1 formation after unassigning a conference sum (#21434)**
- **Server Based Timer: no working preset in count down if time is greater than 4:15 (#21518)**
- **dwc(1) timing issues lead to massive FCS errors in LACP mode (#21631)**
- **AUX1 is not handled correctly in snapshots (#21687)**
- **Server based timer reset considers prefix not (#21343)**
- **"Make Before Break (MBB)" in combination with matrix server leads to doubled destiantions on multi-assign in start phase (#21716)**
- **VCA fader jumps to 0dB when loading snapshots if aux enable (control of aux levels via faders) is activated (#21719)**
- **Power Cores with a runtime of more than 6 to 8 months constantly report "Has been Restarted" (#21720)**
- **In rare cases VCA groups are not initialized (#21758)**
- **Audio in summation matrix is not adjusted after loading a snap shot (#21759)**
- **Fader module aux key colors in VisTool are not updated after loading a snapshot. (#21761)**
- **Alarm element does not send alarms after cold start (#21846)**
- **"Aux fader enable" acts on all access groups (#21933)**
- **For channels with Pro Tools sources, a selection in the assign menu is not possible (#21806)**
- **GPI is not negated when neg is configured (#21838)**
- **Server based timer does not send an update in the counter variable if the preset time is changed and the timer is not running (#21979)**

- **Server based timer cannot be started in down mode down mode if the preset time is smaller than the alarm time. (#21980)**
- **Watchdog in Startphase (#21981)**
- **IO Card signal feedback removed (#21993)**
- **diamond: VisTool access keys (VisChan) get no color after cold start if no control panel is active (#21966)**
- **diamond: User labels are not displayed after assigning a source (#21995)**
- **Screen button RGB encoder 5-8 are not operable via VisTool (#22039)**
- **diamond control panel: In the test mode only the RGB Stripe can be placed statically on the TFT display, if Power Core is not connected (#22068)**
- **diamond: fader notch is active after power cycle (#22099)**

Known Issues

- **Screen Button RGB: "R3LAY only" must be reactivated after conversion if required (#21404)**

Due to the extension of the "Screen Button RGB" element to 192 keys (see enhancements), the check box "R3LAY only" must be moved. If this is used in an existing project, it must be re-activated after conversion of the project (applies to Power Core only).

- **Conference buses cannot be assigned to faders in Power Core MAX (#21664)**
- **"VisChan Aux" do not get an update if no "ParmControl" element is configured (#21929)**
- **Inserts > 8 can not be selected on the control panel (#22103)**

Only insert 01 - 07 can be selected on the control unit, although e.g. 16 are configured. After insert 07 an empty list appears.

All of them can be seen via Ember+.

On-Air Designer

Release 7.0, Version 7.0.0.6

New / Enhancement

- **Units to values**

To the input options in the On-Air Designer now the corresponding units are named.

- **Support for 710/20 revision 2 with new SoP file in SoP Explorer**

- **New Ravenna parameter: RX Cross-Joining Disable**

The Power Core sends IGMP joins for all streams by default on both Ravenna interfaces. This is to ensure that streams can be received even if the networks have been swapped at the input. However, this simplification can lead to duplicate traffic on the network port if the networks are routed against each other.

The Ravenna parameter RX Cross-Joining Disable can be used to disable this behavior: IGMP Joins for the first interface are only sent via ra(0), for the second interface only via ra(1).

- **New features: "Save column as substitutions" and "Save as substitution and use in column"**

By right-clicking on a parameter, two new functions can be selected in the context menu:

1. "Save column as substitutions"

All parameters of the column are substituted. The substitutions are used for the respective parameter as with "Save as Substitution".

2. Save as substitution and use in column"

A substitution is saved. This substitution is used in all parameters of the column (for example usable for fast configuration of Ravenna stream parameters).

The functions act only on the visible tab of the selected element. For elements with multiple tabs, the function must be executed multiple times if necessary. Basically, only elements of the same parameter type are substituted (comboboxes with different choices like Ravenna Stream Size have different parameter types).

The functions are optimized for use in inputs and outputs of the tree definition. In other views (e.g. "System / Definition") the result of the substitution may differ from the expected because different parameter types can occur in the same column.

- **New features: "Update global substitutions"**

When using a global project, the function "Update global substitutions" can be triggered via the menu bar under Command. global substitutions" can be triggered via the menu bar under

Command.

All used substitutions, from elements with fixed addressing, of the global project will be used at the same position in the current project. A manual "use global substitution" can thus be omitted for many substitutions. many substitutions.

Elements with fixed addressing are audio I/Os, MF keys, surface, GPIO, "System / Definition".

Only elements configured in the current project are considered (panels, screen, surface).

Substituted reference fields are NOT taken over (audio / logic / level / aux / Ravenna).

Substitutions of free elements (logic / connect / source / sum / minimix / Ember+) can NOT be taken over.

- **diamond integration in OnAir-Designer**

Fixed Bugs

- **System core graphic is hidden when "Show all Hardware" is inactive (#21683)**
- **Installer: Changed program and start menu folder are not applied for Sop Explorer and Migrate (#21509)**
- **Treedefinition tab switch does not work after switching the active unit (#21222)**
- **Selection of combo boxes via "ALT" & mouse wheel no longer works, now "SHIFT" & mouse wheel is used (#21564)**
- **Substitution display is not updated for "stereo" (#21441)**
- **View jumps after Combo Box adjustment (Ravenna Stream Size) (#21491)**
- **OnAir-Designer freezes after "Transfer Config" (#21510)**
- **Show All Hardware inactive: Right panel is not displayed / display area is calculated incorrectly (#21688)**

Known Issues

From release 6.6:

- **Static Ravenna streampool source names are not allowed to have more than 28 characters (#20773)**

sapphire, sapphire compact, crystal, Nova17, Nova29

VisTool MK2

Release 7.0, Version 7.0.0.40

New / Enhancement

- **Request for easier control of Luci Studio**

A JSON object string, which is attached to [JsonObject], is decomposed and if a (string) name matches the user-selectable parameters ModifierName-01 to ModifierName-08, it is written to the corresponding OUT-1 to OUT-08.

Conversely, a JSON object is formed from the inputs of IN-01 to IN-08 with the names of the "ModifierName". The entry "remove outer brackets" is there to remove the outer object brackets (see LUCI)

So: jsonObject input -> OUT-01 to Out-08

And: IN-01 to IN-08 -> JsonObject Output

If it is valid: only if a ModifierName is set, the In, respectively out is also used.

If a ModifierName is set, but no string (or an empty one) is present, then it is not taken over into the JsonObject.

Example:

ModifierName-01 = "P1"

ModifierName-02 = "P2"

IN-01 = "Marius"

IN-02 = "Mustermann"

Generates the following output : {"P1" : "Marius", "P2" : "Mustermann"}

But:

IN-01 = ""

IN-02 = "Mustermann"

Generates the following output : {"P2" : "Mustermann"}

- **Receiving V_Line thumbnails by gadget server via Ember+**

The thumbnails from the gadget server can be placed on a box in the VisTool Editor as of 6.6.0.16 (via drag and drop from the Ember+ tree).

- **Manual min / max values for rotary encoder and slider configurable**

About the properties:

manual-min

manual-max

manual-step

The value range of encoders and sliders can be adjusted manually.



The value range supplied by the provider is ignored in this case.

The configured min and max values must lie within the value range of the provider.

If the provider uses a factor, the min and max values must be calculated using the factor.

(for example factor 32, dB min=-128 -> manual-min=-4096)

The functionality can be used with Ember+ protocol or DMS.

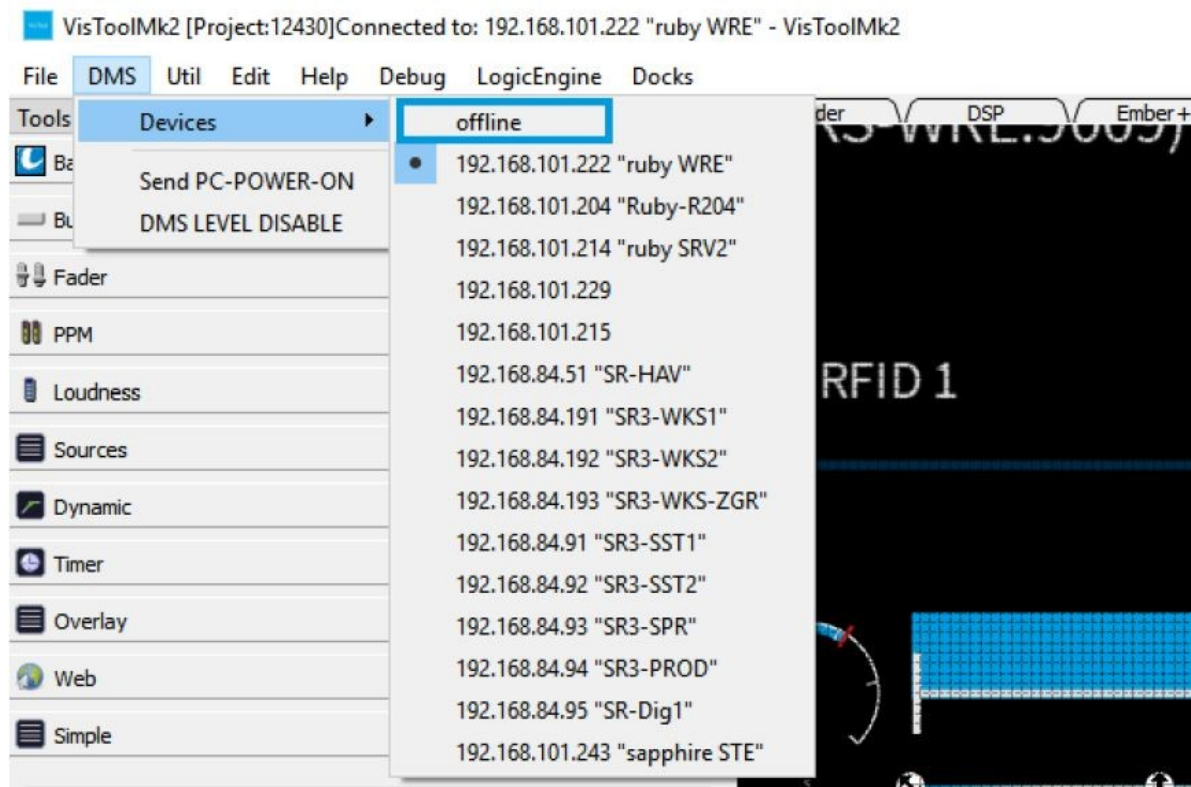
Properties 	
Property	Value
ClassName	VisTool.Element.Slider
EmberParameter	@ruby-wre/Ruby/Sources/MUSIK/DS..
deadzone	8
sensitivity	360
Name	Slider~2
> Pos	(88,00 / 124,00)
ZValue	1
> Size	196,00 x 64,00
Rotation	0
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Opacity	1
manual-min	-10
manual-max	0
manual-step	0,5
> Anchor	(0,00 / 0,00)
> bar color	 [0, 154, 221] (255)
bar position	top
ColorMap	default
DmsHidelfNoAccess	<input checked="" type="checkbox"/> True
enable mousewheel	<input checked="" type="checkbox"/> True
hide on empty dms text	<input type="checkbox"/> False
indicator auto length	<input checked="" type="checkbox"/> True
indicator auto width	<input checked="" type="checkbox"/> True
indicator length	16
indicator width	2

- **[DMS->Devices->Ignore Messages] becomes [DMS->Devices->offline]**

The menu item [DMS->Devices->Ignore Messages] will be renamed to [DMS->Devices->offline] and causes now that also no more messages are sent.

Earlier [DMS->Devices->Ignore Messages], incoming messages were not displayed (no effect), but messages were sent.

From now on [DMS->Devices->offline] no outgoing messages will be passed to the DMS service.



- **Ember+ management port - customization of the DMS connection at runtime**

The Ember+ management port is an Ember+ provider that can be used to customize the station ID and DMS connection of a VisTool session at runtime.

In addition, "GPIOs" (Boolean, Integer, Real, String) can be configured, which can be used to control external trades (for example other VisTool sessions).

The Ember+ port can be defined for the VisTool editor under global settings (EmberManagement port), if the editor has been started with administrator rights.

If the port is not defined, the management port is not available.

Per VisTool session the Ember+ port can be assigned under optional parameter "EmberManagementPort". A port must be one-to-one on a computer.

To use the management port within the same VisTool session the automatically generated Ember+ device "self" can be used. This is always the configured management port of the respective session on localhost (or the editor).

All adjustments by registry entries are evaluated only once, at program start.

The following parameters can be adjusted via the management port:

Station ID:

The EmberManagementPort (/VisToolMk2/Management/Station Id) can be used to adjust the station ID of the running VisTool session.

DMS connection:

Two modes are available to switch the DMS connection:

The mode is controlled by the registry entry EmberManagementFlags (bit1):

The registry entry must be created manually if required (EmberManagementFlags - REG_DWORD).

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\DSA\VisToolMk2\EmberManagementFlags (Editor)

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\DSA\VisToolMk2\Session-n
\EmberManagementFlags (session)

- Mode 1: Switching of the first DMS connection.

(Default: EmberManagementFlags not present / bit1 = 0):

If the session/editor was started with administrator rights, the IP address of the first DMS connection can be entered via the EmberManagementPort (/VisToolMk2/Management/Target Ip) to adjust the IP address of the first DMS connection (CONN-ADR-1). The usage is only allowed if localhost is used as DMS proxy host.

The change of the IP address takes about 30 seconds, after that all parameters are received again by the Power Core. A new switching is prevented during this time (/VisToolMk2/Management/Target Ip isOnline = false).

The active host is displayed in the Ember tree under /VisToolMk2/Project/Target Host.

The "isOnline" status in combination with the target host can be used with the help of the logic engine for signaling the successful switch over.

- Mode 2: Switching the DMS proxy host.

(EmberManagementFlags bit1 = 1):

If the session/editor has been started with administrator rights, it is possible to adjust the DMS proxy host via the EmberManagementPort (/VisToolMk2/Management/DMSProxyHost).

The configured DMS connections must be identical on both hosts. After the change the corresponding DMS connection will be used on the selected host.

Switching again is prevented for about 30 seconds (/VisToolMk2/Management/DMSProxyHost isOnline = false).

The active host is displayed in the Ember tree under /VisToolMk2/Project/Target Host.

The "isOnline" status in combination with the target host can be used with the help of the logic engine for signaling the successful switchover.

GPIOs

Under /VisToolMk2/Project/gpio/[Boolean|Integer|Real|String] there are input/output

possibilities available, which can pass information to other VisTool sessions or trades via Ember+.

For example, they can be used (via the logic engine) to mini-/maximize, control the display of overlays or simply exchange strings for display.

By default 8 GPIO channels are created. The number of available channels can be changed by a manually registry entry (EmberGPIOCount - REG_DWORD).

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\DSA\VisToolMk2\EmberGPIOCount
(Editor)

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\DSA\VisToolMk2\Session-n
\EmberGPIOCount (Session)

- **Timeout for Ember+ connections to remote providers now configurable**

New entry in the registry (or via SessionManager):

Registry value "NoTrafficTimeout.Ember" REG_DWORD(32)

This sets the value in seconds (valid range 4...120 seconds), when the device is considered as not active.

- **Loudness control additionally controlled by logic and Ember+**

Configurable via Logic: Box and Logic.SetPressedSync

- **Enable page key - (dis)enable page switching per page up / page down keys**

Setting "EnablePageKey" to false, the keys

- Pos1,
- Page Up,
- Page Down and
- End

are no longer functional in runtime and test mode.

- **Text colors depending on status (color) - font color maps**

From now on, the text colors can be configured for an element box depending on font color maps.

A color map can be selected via the property "FontColorMap" (default is a new color map default-font). Thus for each background color also the associated font color can be adjusted.

"use FontColorMap" is controlling if the color map is used.

For existing projects the "use FontColorMap" is inserted as false into the element. (for compatibility reasons of existing projects)

If a new element (box) is inserted, "use FontColorMap" is active by default.

STAR

Properties - VisToolMk2

Property	Value
ClassName	VisTool.Element.Box
Name	Ch.1 MF3 START
Design	None
ButtonType	None
UserText	
Pos	(624,00 / 560,00)
ZValue	1
Size	64,00 x 64,00
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Glass Look	None
Metal Frame	4
Opacity	1
Roundness-X	0
Roundness-Y	0
TextAlign	Center
Font	A [Arial, 12]
ColorMap	WRE
FontColorMap	WRE-font
use FontColorMap	<input checked="" type="checkbox"/> True
Color	[127, 127, 127] (255)
ColorNone	[136, 136, 136] (255)
ColorOff	[2, 253, 99] (255)
ColorPost	[253, 253, 20] (255)
ColorPre	[253, 2, 20] (255)
FontColor	[255, 255, 255] (255)
FontColorNone	[255, 255, 255] (255)
FontColorOff	[255, 255, 255] (255)
FontColorPost	[255, 255, 255] (255)
FontColorPre	[255, 255, 255] (255)
manual-min	nan
manual-max	nan
manual-step	nan
(Blink Simulation)	<input type="checkbox"/> False
Anchor	(0,00 / 0,00)
Channel Index	None
DateFormat	dd.MM.yyyy
DisplaySnapshotName	<input type="checkbox"/> False
Glow On Press	<input type="checkbox"/> False
hide on empty dms text	<input type="checkbox"/> False
InternalFlags	0
Logic.setPressedSynced	<input type="checkbox"/> False
Mf Key Text	default
multipage Object	<input type="checkbox"/> False
Reassignable	None
TextAppearance	Normal

Properties - VisToolMk2

Property	Value
ClassName	ColorMap
Name	WRE
Black	[160, 160, 164] (255)
Red	[255, 0, 0] (255)
Green	[0, 154, 221] (255)
Yellow	[255, 255, 0] (255)
White	[255, 255, 255] (255)
Blue	[0, 0, 255] (255)
Magenta	[255, 0, 255] (255)
Cyan	[0, 255, 255] (255)
Black Dim	[80, 80, 82] (255)
Red Dim	[127, 0, 0] (255)
Green Dim	[50, 49, 48] (255)
Yellow Dim	[127, 127, 0] (255)
White Dim	[127, 127, 127] (255)
Blue Dim	[0, 0, 127] (255)
Magenta Dim	[127, 0, 127] (255)
Cyan Dim	[0, 127, 127] (255)

Properties - VisToolMk2

Property	Value
ClassName	ColorMap
Name	WRE-font
Black	[255, 255, 255] (255)
Red	[0, 0, 0] (255)
Green	[50, 49, 48] (255)
Yellow	[0, 0, 0] (255)
White	[0, 0, 0] (255)
Blue	[255, 255, 255] (255)
Magenta	[0, 0, 0] (255)
Cyan	[0, 0, 0] (255)
Black Dim	[255, 255, 255] (255)
Red Dim	[255, 255, 255] (255)
Green Dim	[227, 227, 227] (255)
Yellow Dim	[255, 255, 255] (255)
White Dim	[255, 255, 255] (255)
Blue Dim	[255, 255, 255] (255)
Magenta Dim	[255, 255, 255] (255)
Cyan Dim	[255, 255, 255] (255)

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Release Notes

Properties - VisToolMk2


Property	Value
ClassName	VisTool.Element.Box
Name	Ch.1 MF3 START
Design	None
ButtonType	None
UserText	
> Pos	(624,00 / 560,00)
ZValue	1
> Size	64,00 x 64,00
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Glass Look	None
Metal Frame	4
Opacity	1
Roundness-X	0
Roundness-Y	0
TextAlign	Center
> Font	A [Arial, 12]
ColorMap	WRE
FontColorMap	WRE-font
use FontColorMap	<input checked="" type="checkbox"/> True
> Color	[127, 127, 127] (255)
> ColorNone	[136, 136, 136] (255)
> ColorOff	[2, 253, 99] (255)
> ColorPost	[253, 253, 20] (255)
> ColorPre	[253, 2, 20] (255)
> FontColor	[255, 255, 255] (255)
> FontColorNone	[255, 255, 255] (255)
> FontColorOff	[255, 255, 255] (255)
> FontColorPost	[255, 255, 255] (255)
> FontColorPre	[255, 255, 255] (255)
manual-min	nan
manual-max	nan
manual-step	nan
(Blink Simulation)	<input type="checkbox"/> False
> Anchor	(0,00 / 0,00)
Channel Index	None
DateFormat	dd.MM.yyyy
DisplaySnapshotName	<input type="checkbox"/> False
Glow On Press	<input type="checkbox"/> False
hide on empty dms text	<input type="checkbox"/> False
InternalFlags	0
Logic.setPressedSynced	<input type="checkbox"/> False
Mf Key Text	default
multipage Object	<input type="checkbox"/> False
Reassignable	None
TextAppearance	Normal

Properties - VisToolMk2

Property	Value
ClassName	ColorMap
Name	WRE
> Black	[160, 160, 164] (255)
> Red	[255, 0, 0] (255)
> Green	[0, 154, 221] (255)
> Yellow	[255, 255, 0] (255)
> White	[255, 255, 255] (255)
> Blue	[0, 0, 255] (255)
> Magenta	[255, 0, 255] (255)
> Cyan	[0, 255, 255] (255)
> Black Dim	[80, 80, 82] (255)
> Red Dim	[127, 0, 0] (255)
> Green Dim	[50, 49, 48] (255)
> Yellow Dim	[127, 127, 0] (255)
> White Dim	[127, 127, 127] (255)
> Blue Dim	[0, 0, 127] (255)
> Magenta Dim	[127, 0, 127] (255)
> Cyan Dim	[0, 127, 127] (255)

Properties - VisToolMk2

Property	Value
ClassName	ColorMap
Name	WRE-font
> Black	[255, 255, 255] (255)
> Red	[0, 0, 0] (255)
> Green	[50, 49, 48] (255)
> Yellow	[0, 0, 0] (255)
> White	[0, 0, 0] (255)
> Blue	[255, 255, 255] (255)
> Magenta	[0, 0, 0] (255)
> Cyan	[0, 0, 0] (255)
> Black Dim	[255, 255, 255] (255)
> Red Dim	[255, 255, 255] (255)
> Green Dim	[227, 227, 227] (255)
> Yellow Dim	[255, 255, 255] (255)
> White Dim	[255, 255, 255] (255)
> Blue Dim	[255, 255, 255] (255)
> Magenta Dim	[255, 255, 255] (255)
> Cyan Dim	[255, 255, 255] (255)



- **Native control of matrices (Ember, KPF protocol)**

Matrix crosspoint's (Ember, KPF protocol) are now to be set natively in VisTool, without the detour via screen matrix elements of the hardware (Power Core).

Analogous to the previous control via hardware, the control via buttons shall be realized:

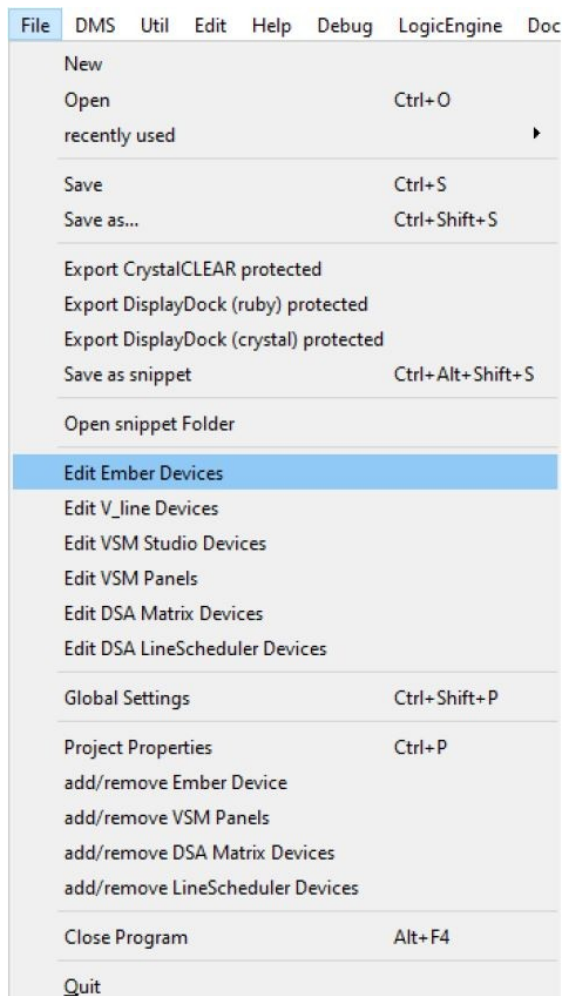
- Src n (Source)
- Dst n (Destination)
- DstSrc n (Label of the connected source of a destination)

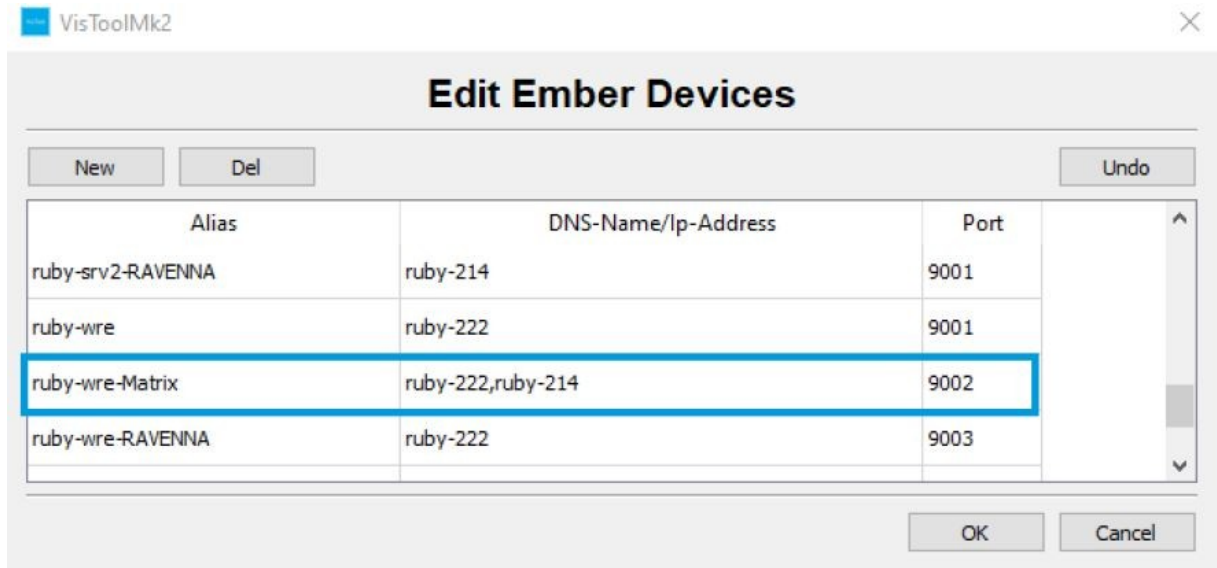
The crosspoint is set as soon as a source is selected and then the destination is clicked.

Due to the native integration of matrices in VisTool, different matrices (CAN/KPF and Ember +) can be addressed directly from VisTool. Additional (CAN) network drivers are not required. The connection is established directly by the VisTool.

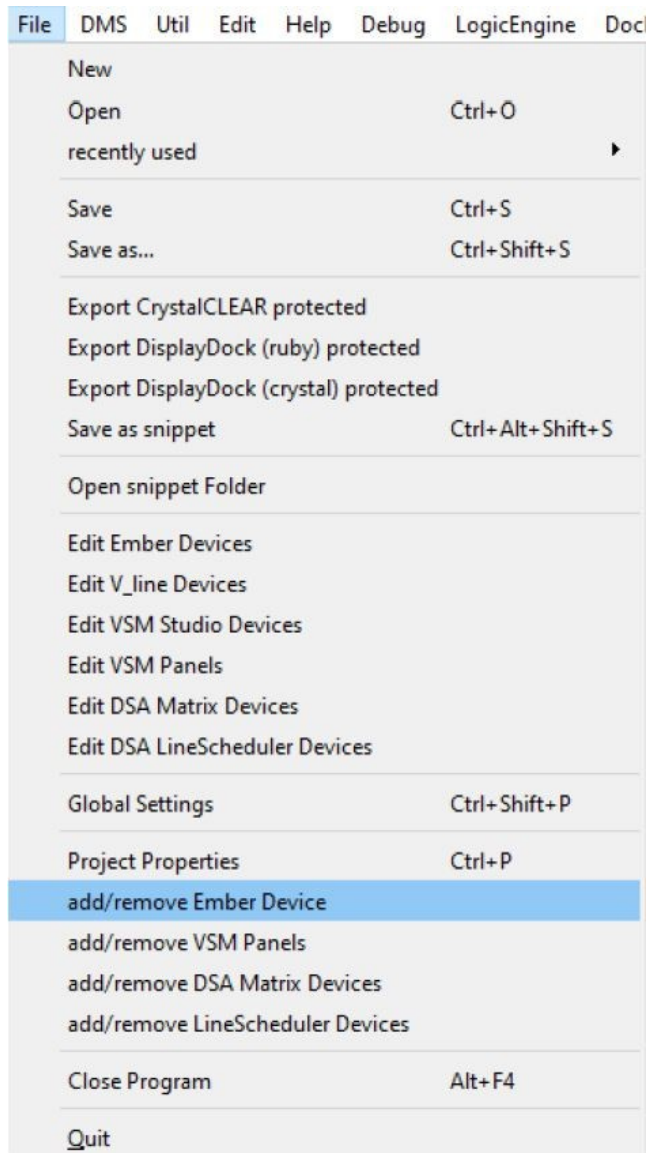
For Ember+ matrices

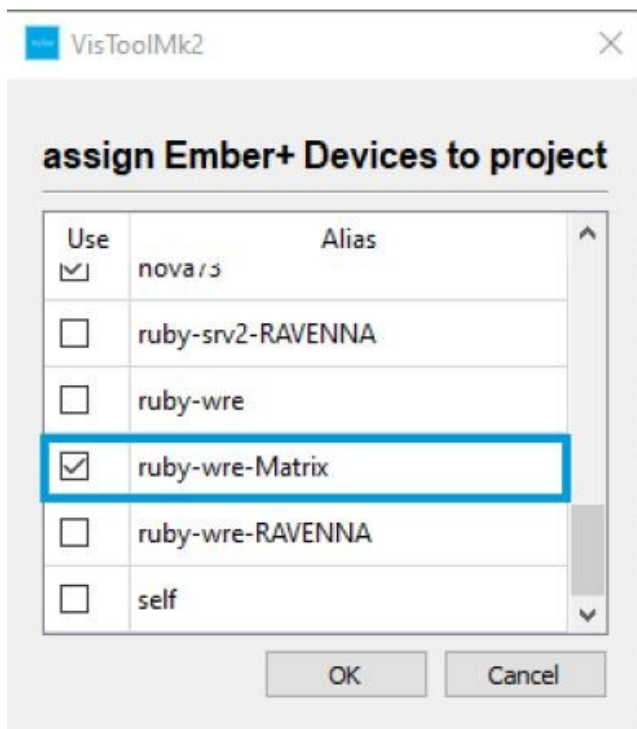
First of all an Ember+ device has to be created ("File - Edit Ember Devices"). Redundant systems can be specified as one device with two IP addresses separated by a comma (",").



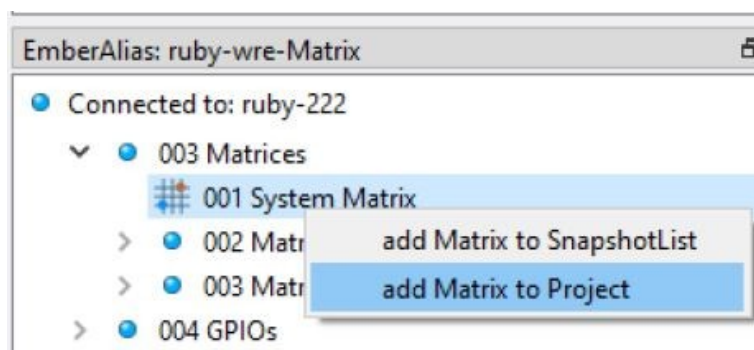


The device must be marked for use in the project ("File - add/remove Ember Device").



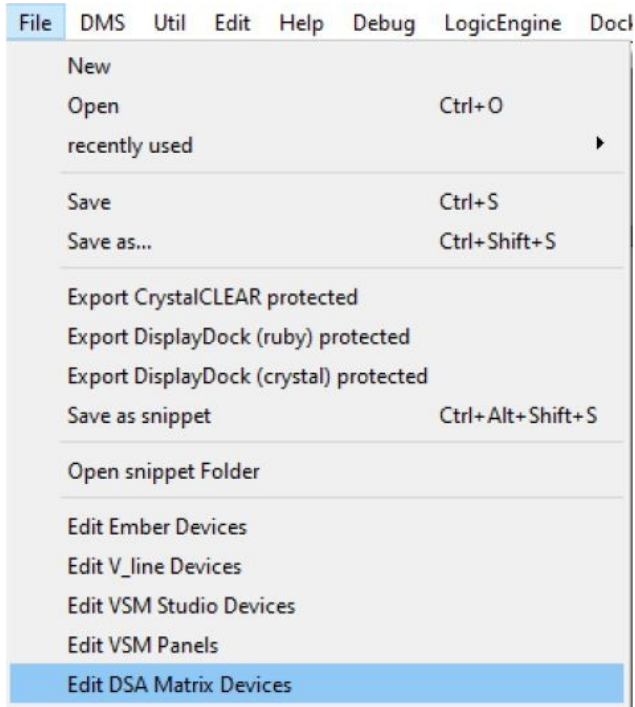


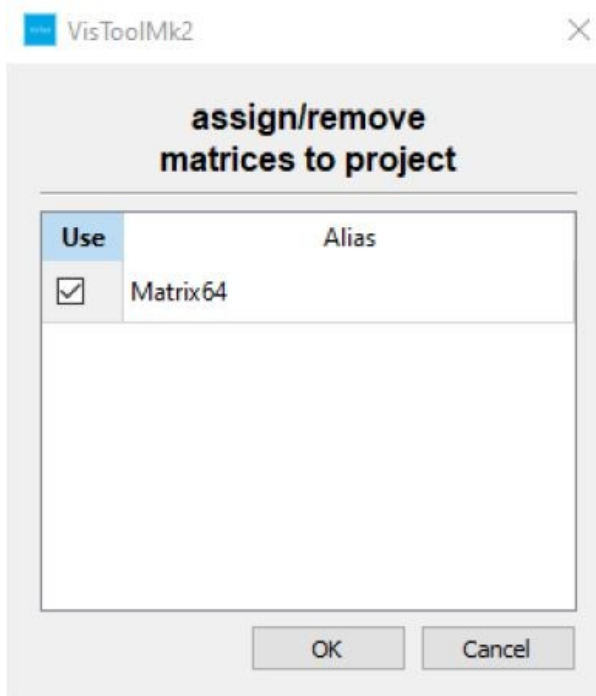
Ember matrices of a used Ember provider, which are to be interconnected by VisTool, must be defined in the provider tree for use in the project ("add Matrix to Project").



DSA (CAN / KPF) matrices:

First a DSA matrix device must be created ("File - Edit DSA Matrix Devices"). Redundant systems can be specified as one device with two IP addresses separated by a comma (",").





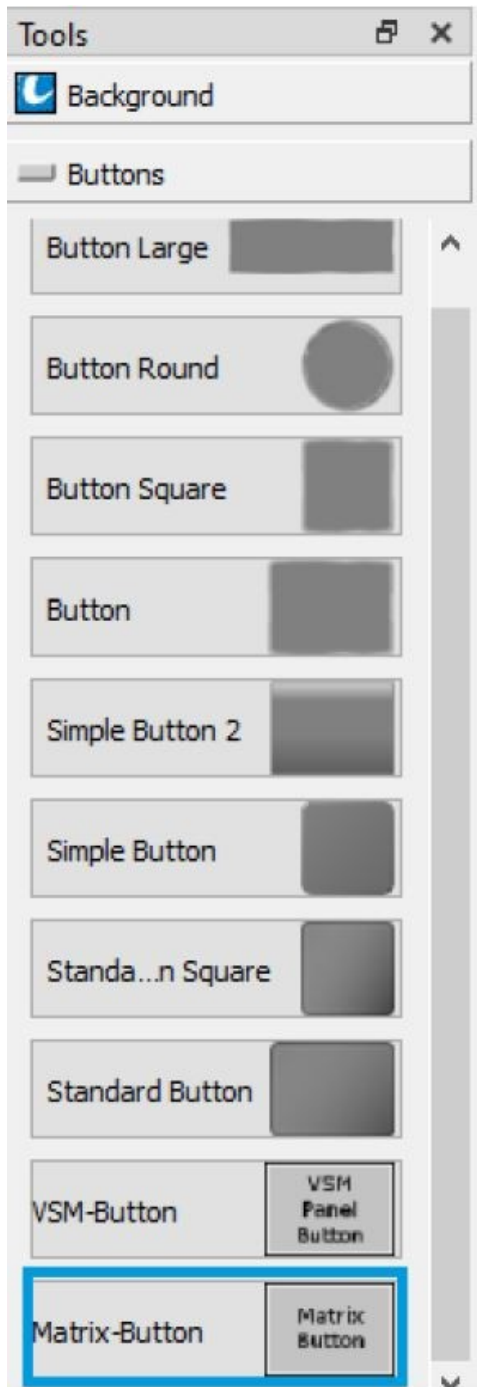
Control

The new "matrix button" (matrix button for native control of matrices) is used to natively control matrices.

Alternatively, the "MatrixConnect" element is available in the logic engine (New logic element: MatrixConnect for native control of matrices).

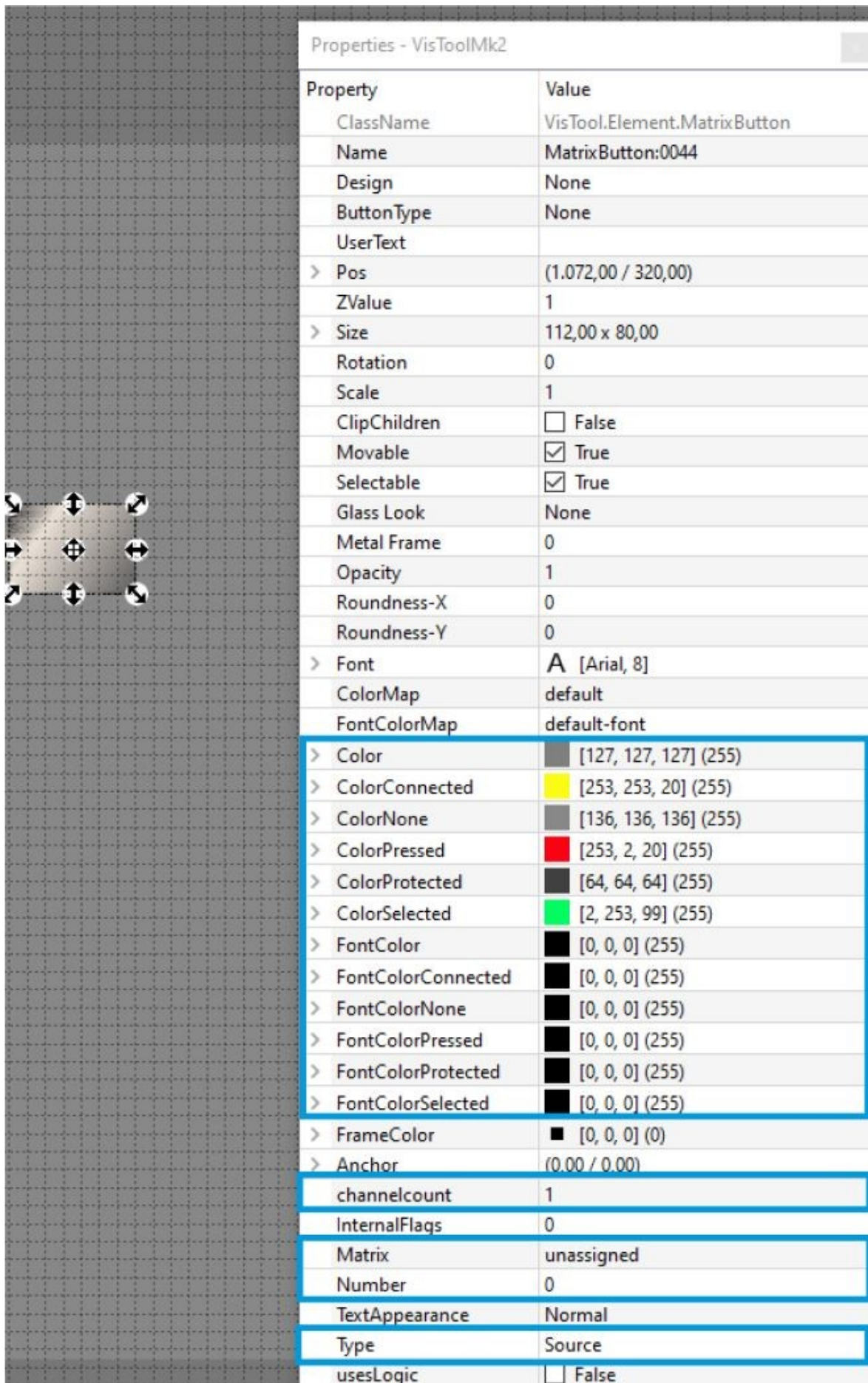
- **New element: Matrix button for native control of matrices**

New Matrix button to control matrices.
















After setting up a matrix (like in: Native control of matrices (Ember, KPF protocol) it can be controlled by matrix buttons among other things.

The matrix button is configured via the properties. Beside the usual design settings there are special properties:



The screenshot shows the VisToolMK2 interface. On the left, a grid of buttons is visible, with one button highlighted in a light yellow color. On the right, the 'Properties - VisToolMk2' panel is open, displaying a list of properties for the selected button. The properties are organized into sections, with some sections expanded. The 'Color' section is highlighted with a blue border.

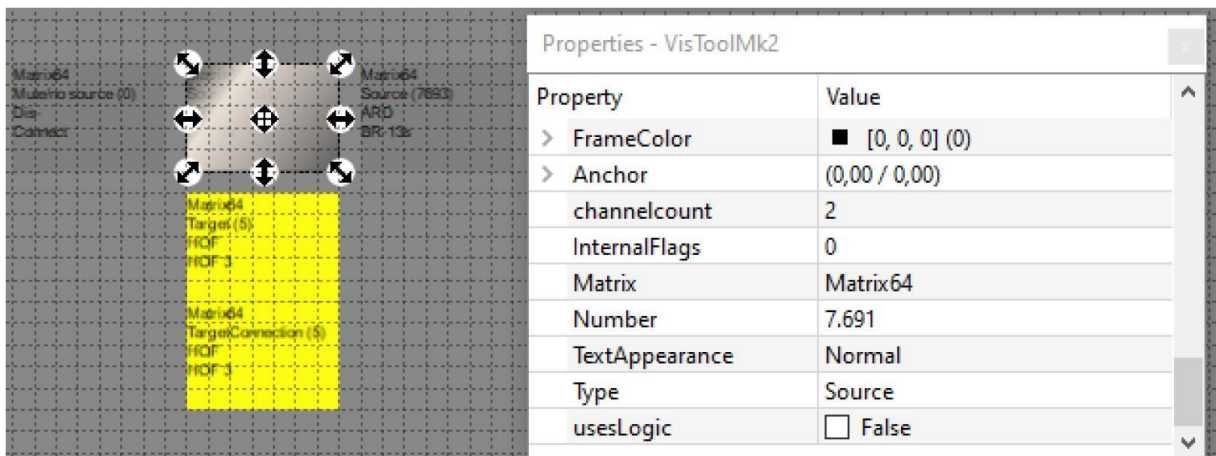
Property	Value
ClassName	VisTool.Element.MatrixButton
Name	MatrixButton:0044
Design	None
ButtonType	None
UserText	
> Pos	(1.072,00 / 320,00)
ZValue	1
> Size	112,00 x 80,00
Rotation	0
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Glass Look	None
Metal Frame	0
Opacity	1
Roundness-X	0
Roundness-Y	0
> Font	A [Arial, 8]
ColorMap	default
FontColorMap	default-font
> Color	 [127, 127, 127] (255)
> ColorConnected	 [253, 253, 20] (255)
> ColorNone	 [136, 136, 136] (255)
> ColorPressed	 [253, 2, 20] (255)
> ColorProtected	 [64, 64, 64] (255)
> ColorSelected	 [2, 253, 99] (255)
> FontColor	 [0, 0, 0] (255)
> FontColorConnected	 [0, 0, 0] (255)
> FontColorNone	 [0, 0, 0] (255)
> FontColorPressed	 [0, 0, 0] (255)
> FontColorProtected	 [0, 0, 0] (255)
> FontColorSelected	 [0, 0, 0] (255)
> FrameColor	 [0, 0, 0] (0)
> Anchor	(0.00 / 0.00)
channelcount	1
InternalFlags	0
Matrix	unassigned
Number	0
TextAppearance	Normal
Type	Source
usesLogic	<input type="checkbox"/> False

Matrix: Selection of the matrix to be controlled

Type:

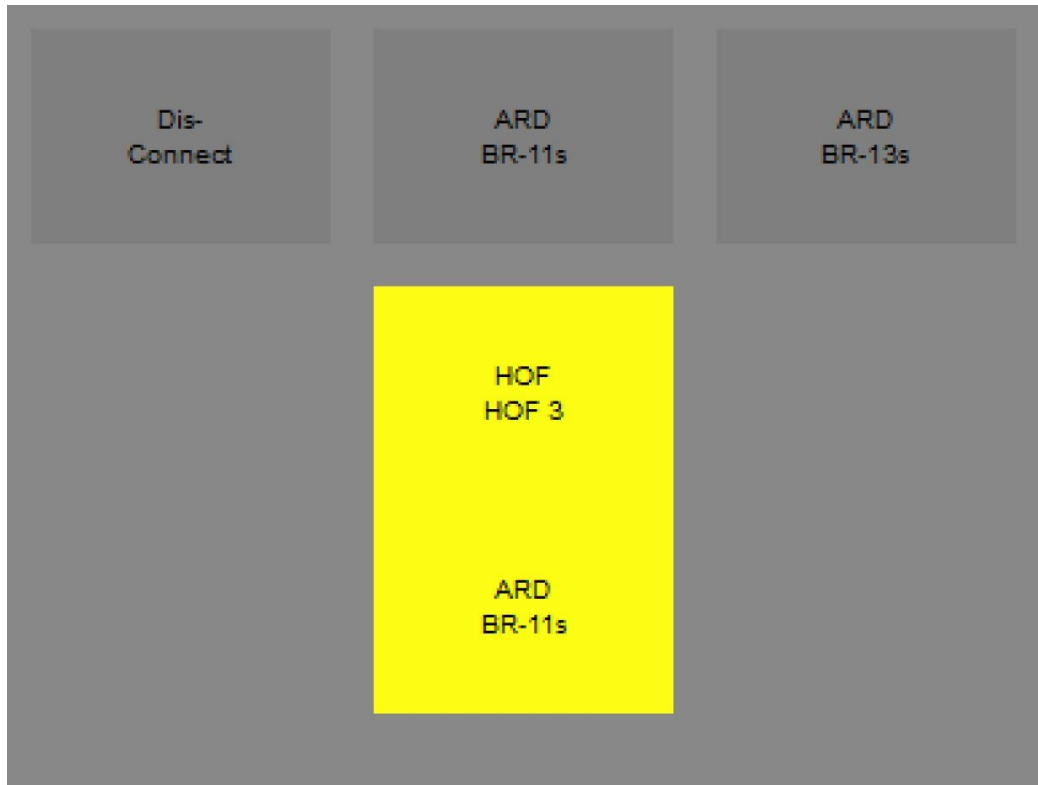
- Source: Button represents a matrix source
- Target: button represents a matrix target
- Target connection: shows the connected source for a target (DestSrc in screen matrix elements)
- Mute /No Source: disconnect when assigned to a target
- Disconnect:
- Connect:
- Number: Source/Target ID (behaves analogously to the configuration of the control of matrices in OnAir-Designer)
- ChannelCount: Number of channels to be connected
- Button-/Fontcolors for all states

In the editor the matrix button shows the configuration and if available the group and name. In runtime and test mode, group and name are displayed in two lines (may differ for Ember+ matrices).



The screenshot shows a grid-based editor interface. On the left, there are several matrix elements represented by icons with arrows. One element is highlighted in yellow. On the right, a 'Properties - VisToolMk2' panel is open, displaying a list of properties and their values.

Property	Value
> FrameColor	■ [0, 0, 0] (0)
> Anchor	(0,00 / 0,00)
channelcount	2
InternalFlags	0
Matrix	Matrix64
Number	7.691
TextAppearance	Normal
Type	Source
usesLogic	<input type="checkbox"/> False



Matrices are basically connected analog to the screen matrix elements (without Take Button).

First a source is selected, then the sink that is to be wired. After selection of the sink, the connection is switched.

The mute source behaves like any other source.

With multi-channel buttons (channel count > 1) the IDs following the configured ID are also switched.

When connecting multi-channel sources to sinks with different format:

a) channel count of the source is smaller than sink: the channels of the source are repeated several times.

For example: source 2ch, sink 6ch. Switching to the sink: 1,2,1,2,1,2

b) channel count of the source is greater than sink: only the first channels of the source are used.

For example: source 6ch, Sink 4ch. The sink is switched to: 1,2,3,4

- **New logic element: Matrix connect for native control of matrices**

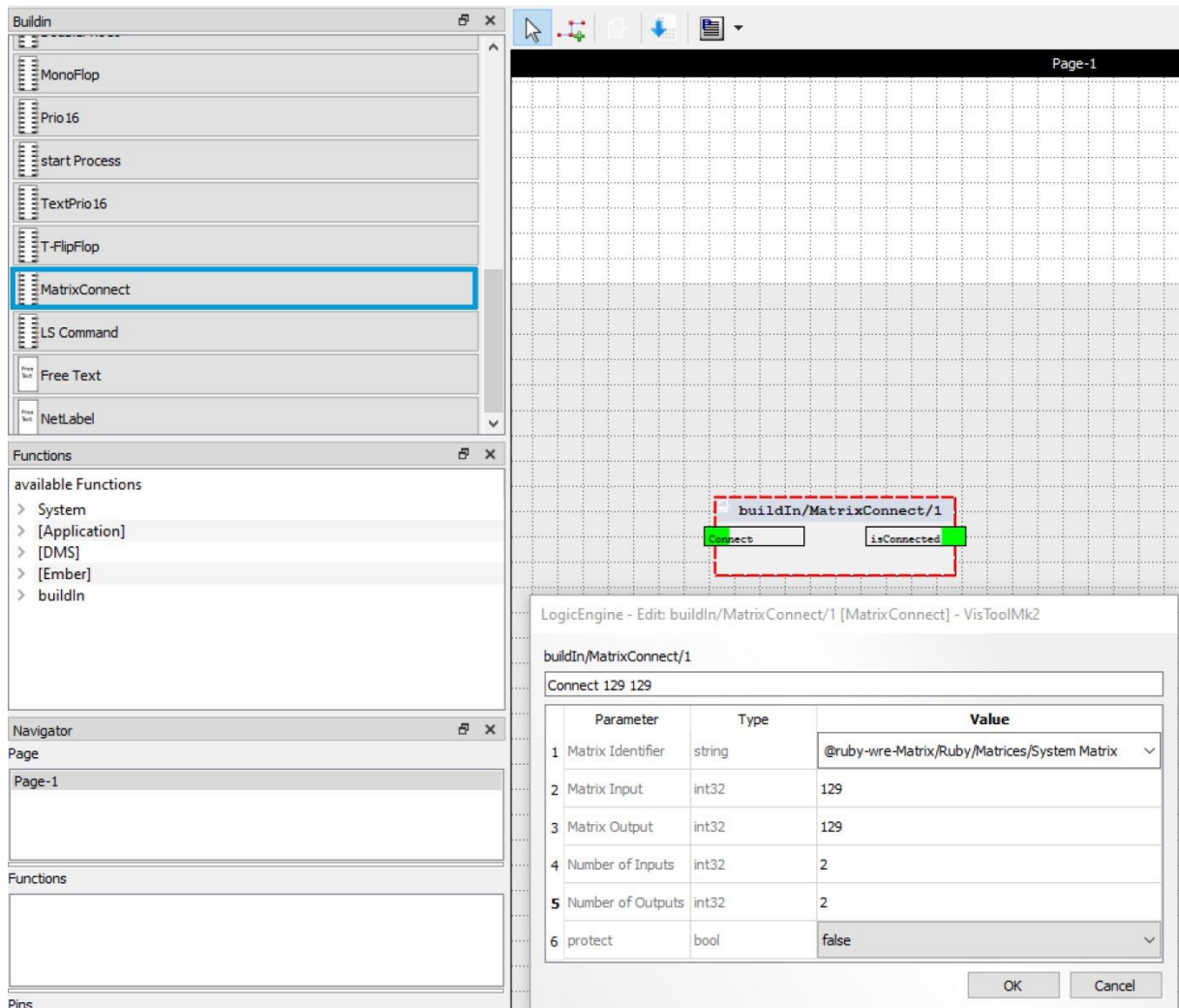
The new "MatrixConnect" logic element can be used to control matrices. After a matrix has been set up it can be controlled via the Logic Engine.

The "MatrixConnect" element works analogously to the "Matrix Multi Connect" element.

The element contains the following parameters:

1. matrix identifier: selection of the matrix to be controlled (to be configured beforehand).

2. matrix input: ID of the first matrix input
3. matrix output: ID of the first matrix output
4. number of inputs: number of inputs to be connected
5. number of outputs: number of outputs to be connected
6. protect: protect the sink (if supported by the matrix)



For multi-channel connects (number of inputs / outputs > 1), the IDs following the configured IDs are also connected.

When connecting multi-channel sources to sinks with different formats, the following is done:

- a) Number of inputs is smaller than number of Outputs: The channels of the source are repeated several times.

For example: Source 2ch, sink 6ch. On the sink is switched: 1,2,1,2,1,2

- b) Number of inputs is greater than number of Outputs: Only the first channels of the source are used.

For example: Source 6ch, sink 4ch. The sink is switched to: 1,2,3,4

- **New logic element: LS command**

The Line Scheduler command element from OnAir-Designer should also be configurable via the logic engine directly in VisTool.

The functionality of the (VisTool) LS command element corresponds to that of the element in the OnAir-Designer.

VisTool establishes a direct connection to a matrix server.

Configurable are:

Matrix Server: Selection of a configured Matrix Server

Action: Selection of the action on a positive edge on input

Macro / Template No.: Number of the Line Scheduler trigger (Template / Macro)

Tag 1-4: Configurable strings to control the merge show function

Inputs:

In (in boolean): configured action

On/Off: (de-) activate template/macro

Tag 1-4: dynamically set the tags

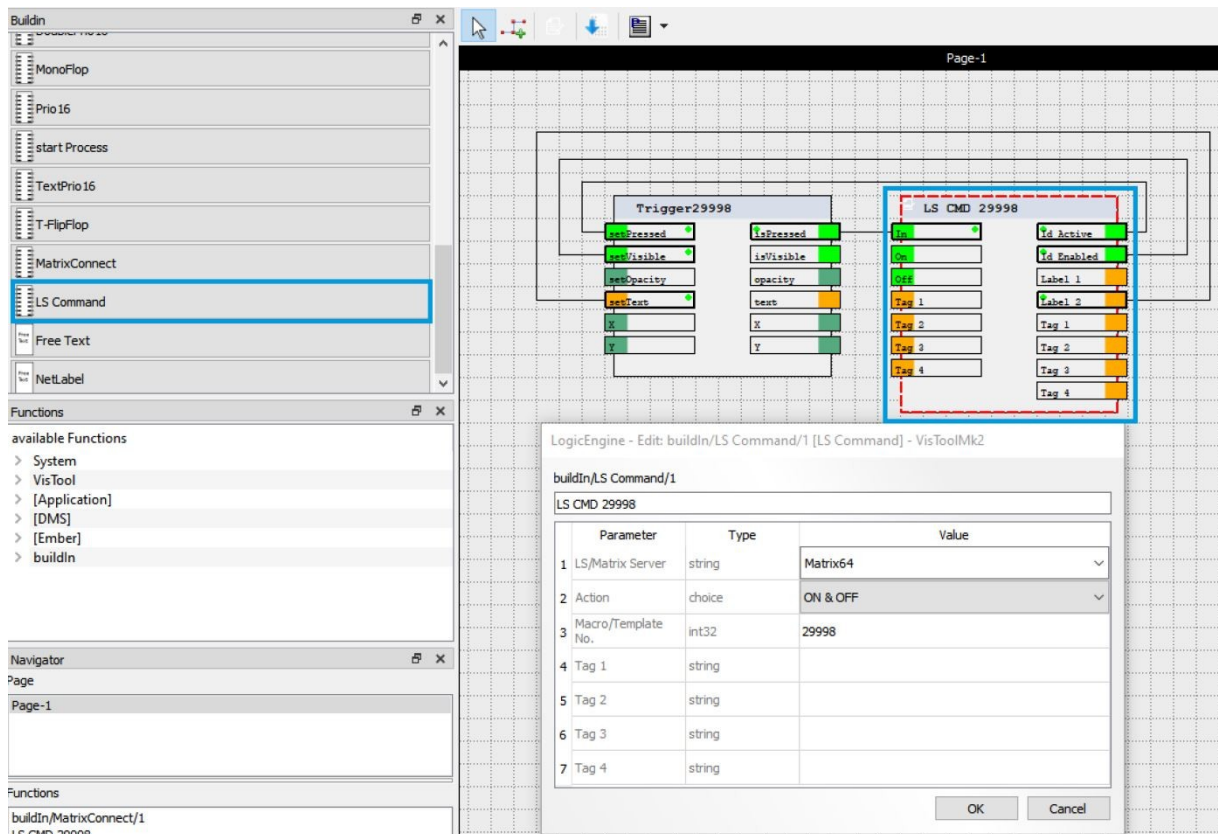
Outputs (feedback from LineScheduler):

ID active: Trigger (template/macro) active

ID enabled: Trigger (template/macro) configured

Label 1/2: LS key label

Tag 1-4: active tags



- Process changes of the minimum and maximum parameters of Ember+ at runtime (encoder and slider)**
- New VisTool database version**

VisTool uses a new database version (1.19) as of version 6.6.0.41 on. Therefore projects saved with a version > 6.6.0.41 can no longer be opened with earlier VisTool versions.
- Support for Ember+ providers with multiple main nodes**

As of 6.6.0.37, Ember+ providers whose Ember+ tree has multiple major nodes are supported.

(For example Nova73)
- New selection marker: None (only the object's border of the object is displayed)**

As of 6.6.0.41 "none" can be selected under global settings, "Selection Highlight".

This means that the area of selected elements is not highlighted. Only the border of the objects will be highlighted.

This can improve performance, especially when working remotely.

- **Support for Ember+ providers with multiple main nodes**

As of 6.6.0.37, Ember+ providers whose Ember+ tree has multiple major nodes are supported.

(For example Nova73)

- **Optimization of Ember tree management**

Ember tree management has been optimized to achieve better performance with large trees.

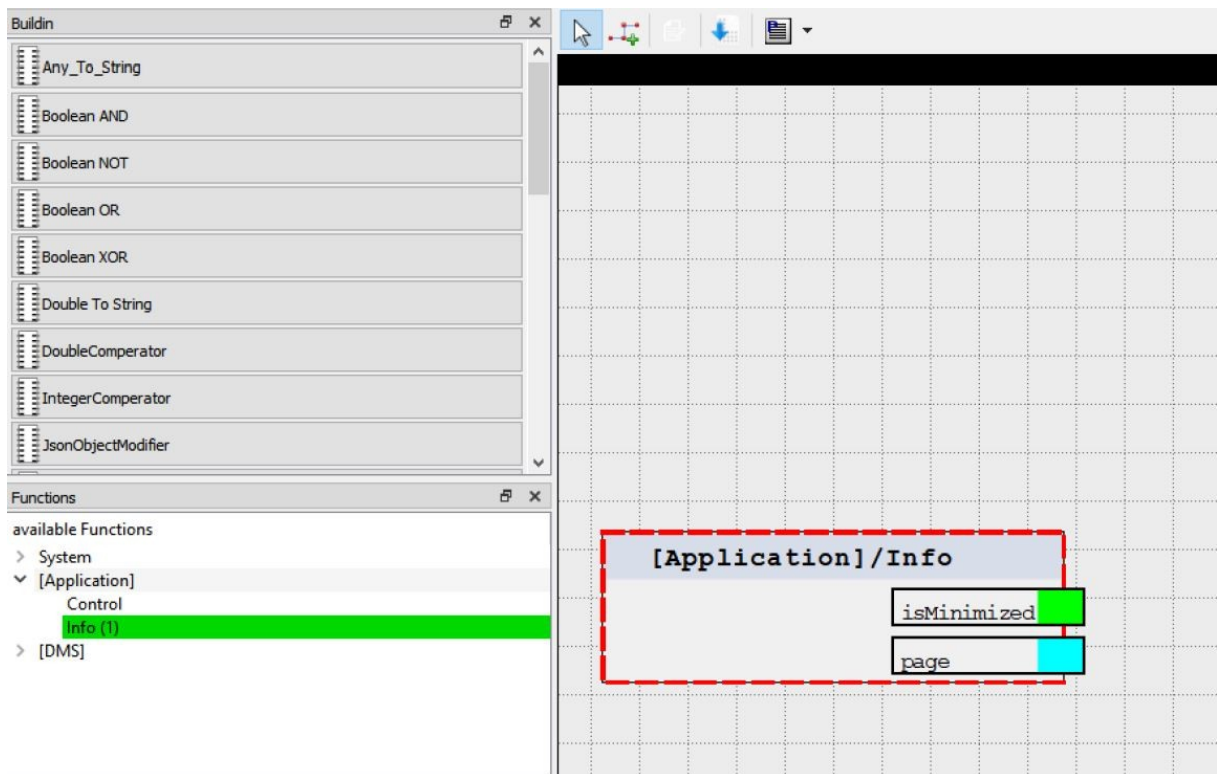
- **Performance improvement when drawing the element "Box"**

The drawing of the box element is accelerated as of 6.6.0.41.

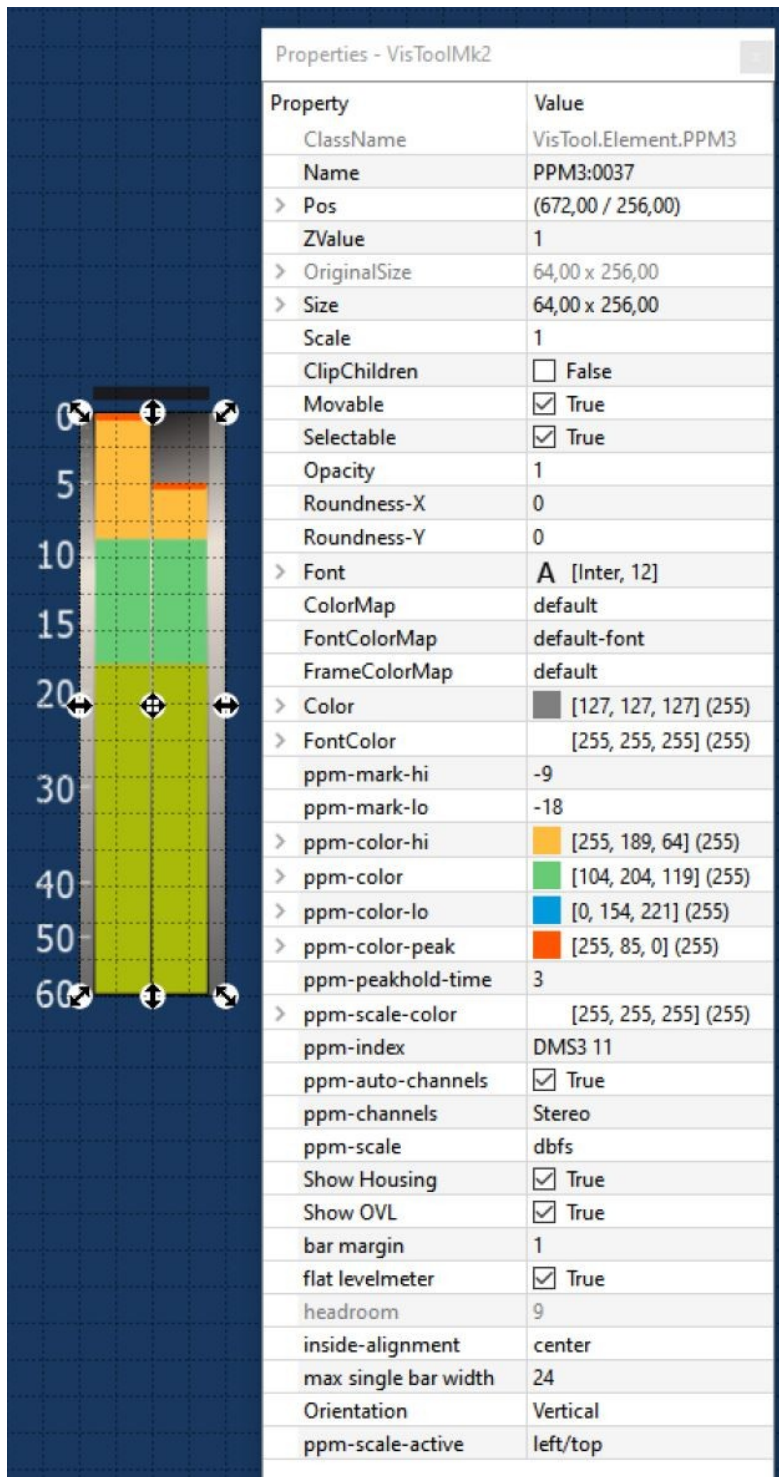
In projects with many boxes on a page, this leads to a significant performance improvement.

- **VisTool pages and application logic**

Using the logic you can determine which VisTool page is active.



- **New design for PPM (LUX PPM)**



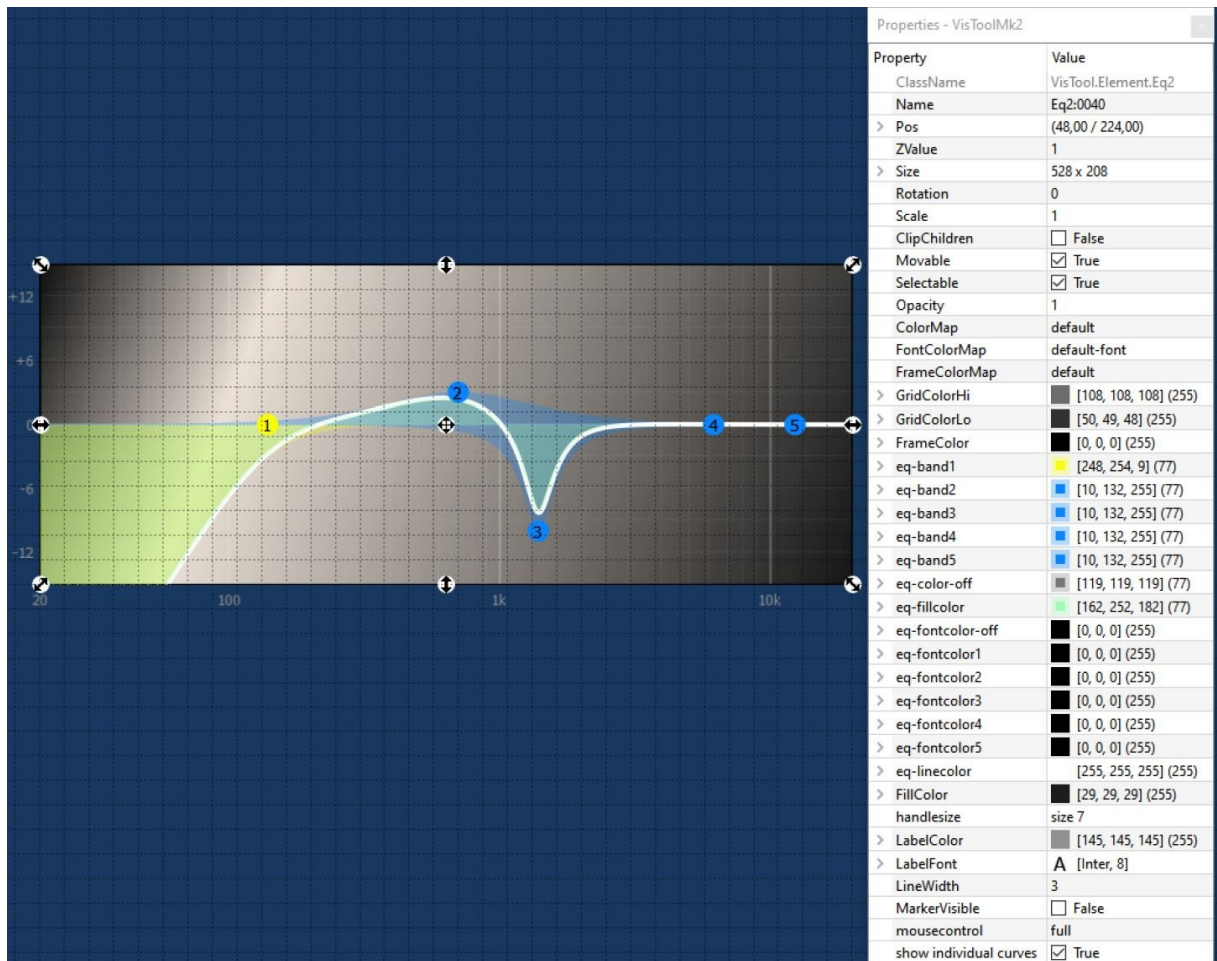
Property	Value
ClassName	VisTool.Element.PPM3
Name	PPM3:0037
> Pos	(672,00 / 256,00)
ZValue	1
> OriginalSize	64,00 x 256,00
> Size	64,00 x 256,00
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Opacity	1
Roundness-X	0
Roundness-Y	0
> Font	A [Inter, 12]
ColorMap	default
FontColorMap	default-font
FrameColorMap	default
> Color	■ [127, 127, 127] (255)
> FontColor	[255, 255, 255] (255)
ppm-mark-hi	-9
ppm-mark-lo	-18
> ppm-color-hi	■ [255, 189, 64] (255)
> ppm-color	■ [104, 204, 119] (255)
> ppm-color-lo	■ [0, 154, 221] (255)
> ppm-color-peak	■ [255, 85, 0] (255)
ppm-peakhold-time	3
> ppm-scale-color	[255, 255, 255] (255)
ppm-index	DMS3 11
ppm-auto-channels	<input checked="" type="checkbox"/> True
ppm-channels	Stereo
ppm-scale	dbfs
Show Housing	<input checked="" type="checkbox"/> True
Show OVL	<input checked="" type="checkbox"/> True
bar margin	1
flat levelmeter	<input checked="" type="checkbox"/> True
headroom	9
inside-alignment	center
max single bar width	24
Orientation	Vertical
ppm-scale-active	left/top

Properties:

- "ppm-mark-hi": boundary between ppm-color-hi and ppm-color (in dBFs!)
If ppm-mark-hi is not set ("nan") the configured headroom of the hardware is used.
- "ppm-mark-lo": border between ppm-color and ppm-color-lo (in dBFs!)
If not defined ("nan") only two colors are used: ppm-color-lo/-hi.

- "ppm-color (-hi/-lo)": color of the different areas
"ppm-color-lo" is replaced for DMS channels by the color configured in OnAir-Designer.
- "ppm-color-peak": color of the peak display
- "ppm-peakhold-time": time period in seconds in which the peak hold display shows the last maximum level reached.
- "ppm-auto-channels": Evaluation of the number of channels received via DMS
Relevant if - for example with sources - the number of channels changes during operation.
- "bar margin": distance of the bars from the edge of the LUX PPM element in pixels
- "inside-alignment": position of the bars inside the LUX PPM element
- "max single bar width": maximum width of the single bars
Relevant if - for example with sources - the number of channels changes during operation.
- "ppm-scale": selection of the scale
- "ppm-scale-active": position of the selected scale.

- **New design for equalizer (LUX EQ)**

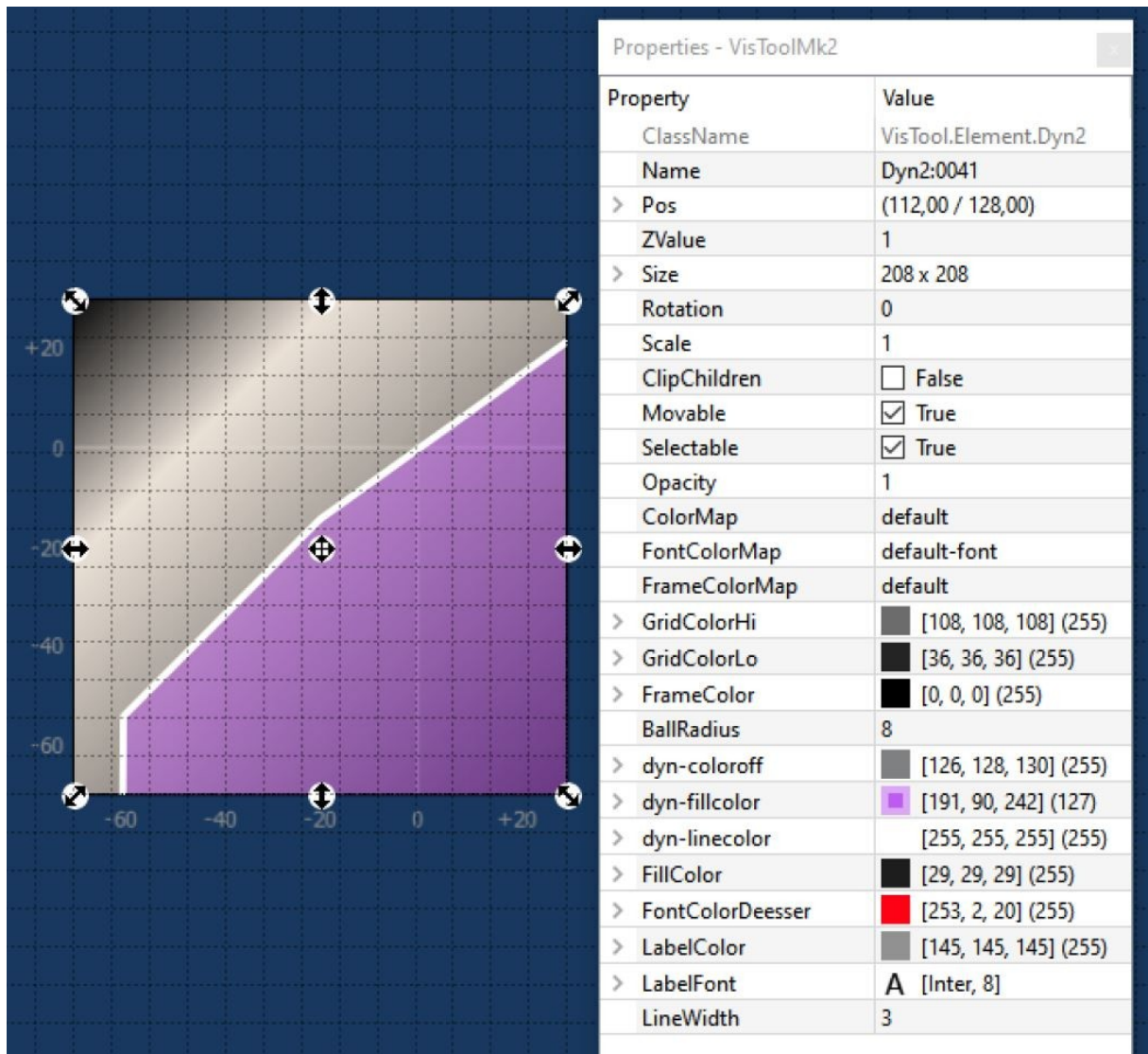


Properties:

- "GridColor (-Hi/-Lo)": color of the grid for main and auxiliary lines
- "eq-bandN": color of the point of the respective EQ band (Alpha is not evaluated for the point)
With "show individual curves" activated, the color is used for the fill.
- "eq-color-off": color of the curve / points, with EQ switched off.
- "eq-fillcolor": fill the resulting curve.
- "eq-fontcolor-off": font color with EQ switched off
- "eq-fontcolorN": font color of the individual EQ bands
- "eq-linecolor": color of the resulting frequency response
- "FillColor": background color
- "handlesize": size of the EQ point (relevant for mouse/touch operation) size 1 > size 7
- "LabelColor": color of the scale
- "LabelFont": font setting of the scale









- "LineWidth": width of the line for the resulting frequency response
- "MarkerVisible": display of a vertical line for the set frequencies in the configured color of the respective band
- "mousecontrol": activates the mouse / touch control:
 - "full": mouse control possible
 - "if active": mouse control possible if element is activated
 - "disabled": mouse control not possible
- "show individual curves": in addition to the resulting curve, also showing the curves of the individual bands (including filling)

- **New design for dynamics (LUX Dynamics)**



The screenshot displays a 2D plot on a dark blue grid. The x-axis ranges from -60 to +20, and the y-axis ranges from -60 to +20. A white line represents a characteristic curve, starting at (-60, -60) and ending at (0, 0). The area below the line is filled with a purple-to-white gradient. A small black ball is positioned on the curve at approximately (-20, -20). The plot is surrounded by a dark blue border with white control handles (arrows and a crosshair) for moving and resizing the element.

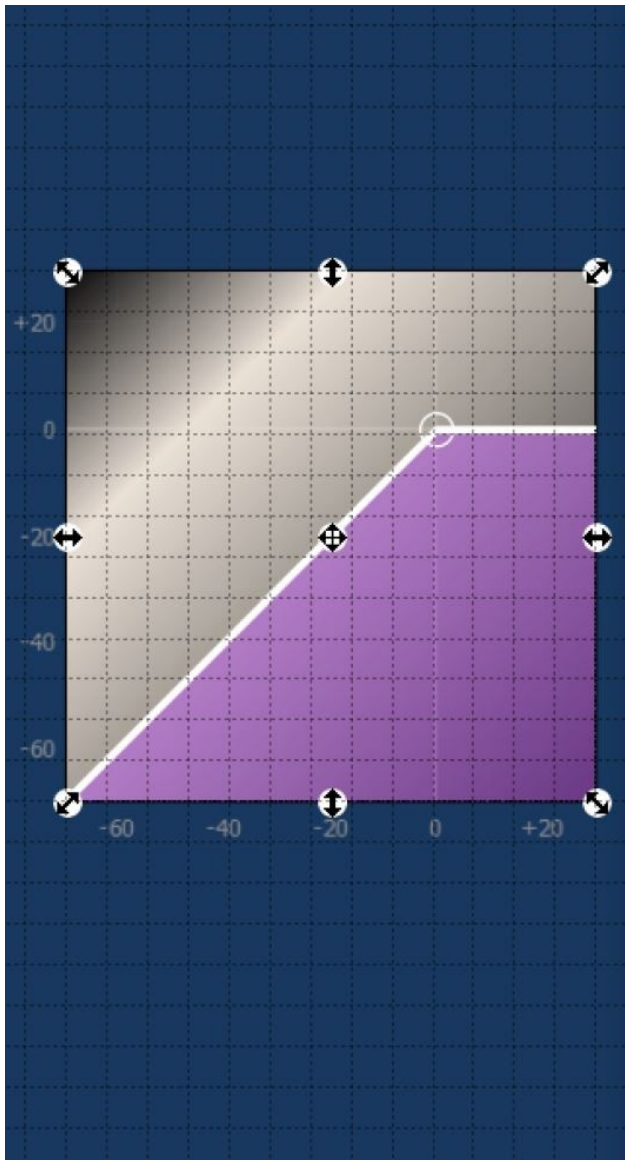
Properties - VisToolMk2

Property	Value
ClassName	VisTool.Element.Dyn2
Name	Dyn2:0041
> Pos	(112,00 / 128,00)
ZValue	1
> Size	208 x 208
Rotation	0
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Opacity	1
ColorMap	default
FontColorMap	default-font
FrameColorMap	default
> GridColorHi	 [108, 108, 108] (255)
> GridColorLo	 [36, 36, 36] (255)
> FrameColor	 [0, 0, 0] (255)
BallRadius	8
> dyn-coloroff	 [126, 128, 130] (255)
> dyn-fillcolor	 [191, 90, 242] (127)
> dyn-linecolor	[255, 255, 255] (255)
> FillColor	 [29, 29, 29] (255)
> FontColorDeesser	 [253, 2, 20] (255)
> LabelColor	 [145, 145, 145] (255)
> LabelFont	A [Inter, 8]
LineWidth	3

Properties:

- "GridColor (-Hi/-Lo)": color of the grid for main and auxiliary lines
- "Ball Radius": size of the balls to visualize the resulting levels (in pixels)
- "dyn-coloroff": color of the line when dynamics are switched off
- "dyn-fillcolor": color of the fill below the line
- "dyn-linecolor": color of the line and the ball with activated dynamics
- "FillColor": background color
- "FontColorDeesser": color of the ball to indicate the resulting level by DeEsser/AMix
- "LabelColor": color of the scale
- "LabelFont": font setting of the scale
- "LineWidth": Width of the characteristic curve

- **New design for limiter (LUX Limiter)**



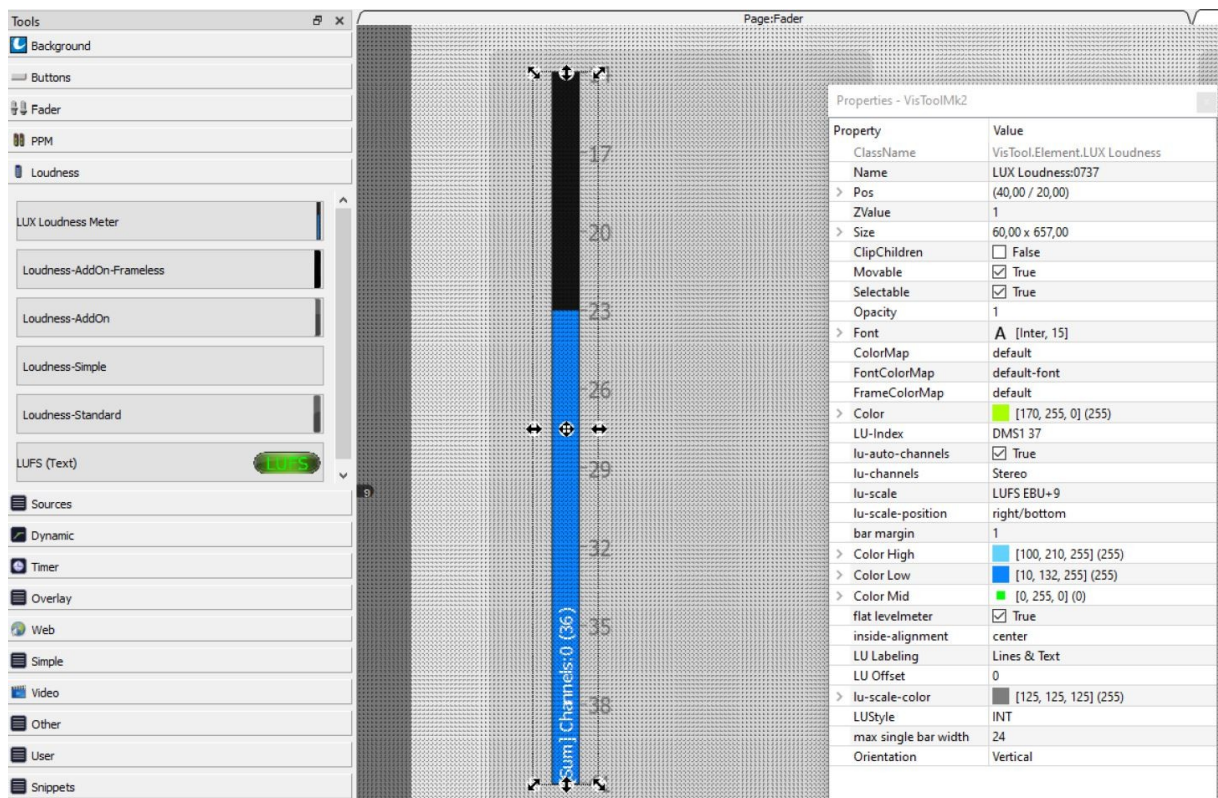
Property	Value
ClassName	VisTool.Element.Limiter2
Name	Limiter2:0042
> Pos	(112,00 / 112,00)
ZValue	1
> Size	208 x 208
Rotation	0
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Opacity	1
ColorMap	default
FontColorMap	default-font
FrameColorMap	default
> GridColorHi	■ [108, 108, 108] (255)
> GridColorLo	■ [36, 36, 36] (255)
> FrameColor	■ [0, 0, 0] (255)
BallRadius	8
> FillColor	■ [29, 29, 29] (255)
handlesize	size 7
> LabelColor	■ [145, 145, 145] (255)
> LabelFont	A [Inter, 8]
> lim-coloroff	■ [126, 128, 130] (255)
> lim-fillcolor	■ [191, 90, 242] (127)
> lim-linecolor	[255, 255, 255] (255)
LineWidth	3
mousecontrol	full

Properties:

- "GridColor (-Hi/-Lo)": color of the grid for main and auxiliary lines
- "Ball Radius": size of the balls to visualize the resulting levels (in pixels)
- "FillColor": background color
- "handlesize": size of the EQ point (relevant for mouse/touch operation) size 1 > size 7
- "FontColorDeesser": color of the ball to indicate the resulting level by DeEsser/AMix
- "LabelColor": color of the scale
- "LabelFont": font setting of the scale
- "lim-coloroff": color of the line when the limiter is switched off
- "lim-fillcolor": color of the fill below the line

- "lim-linecolor": color of the line and ball when limiter is activated
- "LineWidth": Width of the characteristic curve
- "mousecontrol": activates the mouse / touch control:
 - "full": mouse control possible
 - "if active": mouse control possible if element is activated
 - "disabled": mouse control not possible

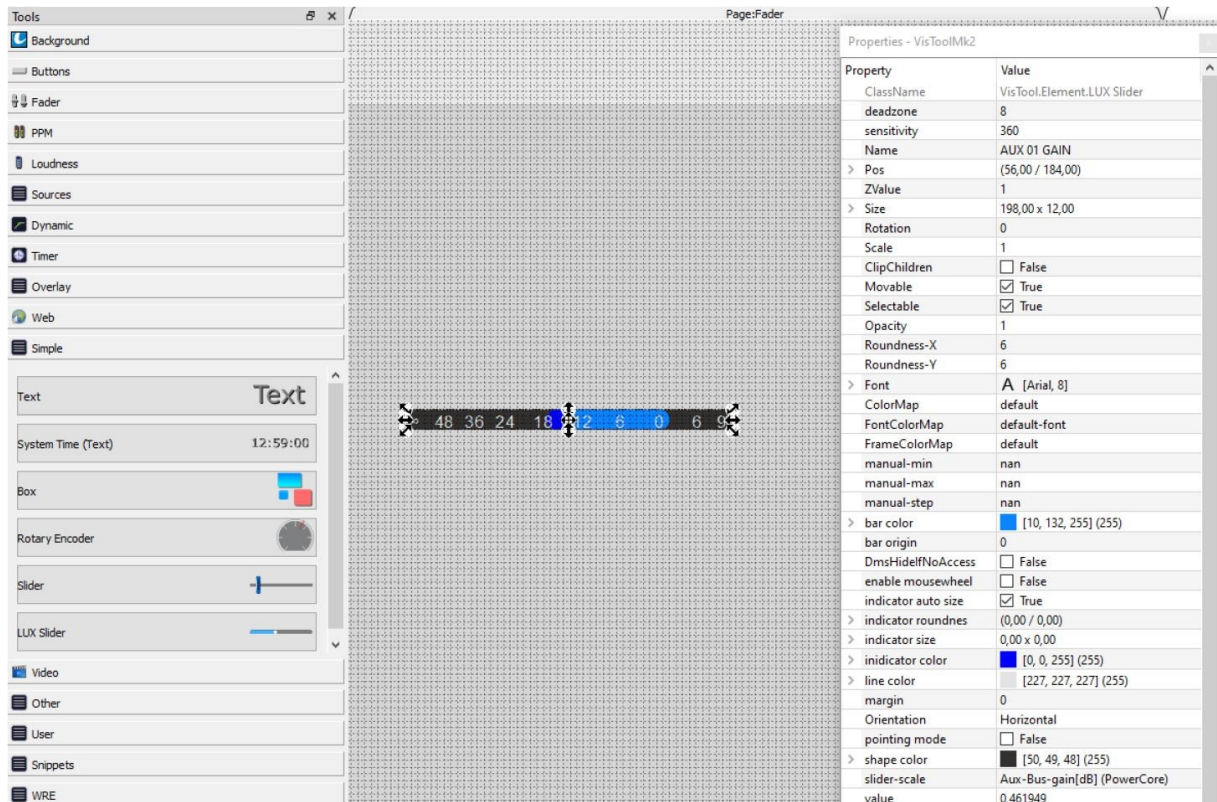
- **New design for loudness meter (LUX loudness meter)**



Properties:

- "color": currently without function
- "LU-Index": Selection of the displayed DMS channel
- "lu-auto-channels": use received channel number from transmitting device
- "lu-channels": selection of the desired number of channels (will be overwritten if lu-auto-channels is activated)
- "lu-scale": selection of the scale to be displayed
- "lu-scale-position": position of the scale
- "bar margin": distance of the bars to the margin
- "Color High": color of the scale above the target value
- "Color Low": color of the scale below the target value
- "Color Mid": color of the scale at the target value (Per Default Alpha = 0)
- "flat levelmeter": disables 3d display
- "inside-alignment": position of the bars inside the element
- "LU Labeling": currently without function
- "LU Offset": configurable offset of the origin of the configured scale
- "lu-scale-color": color of the selected scale

- "LUStyle": measurement method
- "max single bar width": maximum width of the single bars. Not relevant for loudness meter
- "Orientation": defines the orientation. Attention, the dimensions must be adjusted manually
- **New design for slider (LUX slider)**



The screenshot displays the VisTool MK2 development environment. On the left, a 'Tools' palette lists various UI components, with 'LUX Slider' selected. The central workspace shows a 'Page:Fader' containing a LUX slider control with a scale from 48 to 9 and a blue indicator. On the right, the 'Properties - VisToolMk2' panel lists the following properties:

Property	Value
ClassName	VisTool.Element.LUX Slider
deadzone	8
sensitivity	360
Name	AUX 01 GAIN
Pos	(56,00 / 184,00)
ZValue	1
Size	198,00 x 12,00
Rotation	0
Scale	1
ClipChildren	<input type="checkbox"/> False
Movable	<input checked="" type="checkbox"/> True
Selectable	<input checked="" type="checkbox"/> True
Opacity	1
Roundness-X	6
Roundness-Y	6
Font	A [Arial, 8]
ColorMap	default
FontColorMap	default-font
FrameColorMap	default
manual-min	nan
manual-max	nan
manual-step	nan
bar color	[10, 132, 255] (255)
bar origin	0
DmsHideIfNoAccess	<input type="checkbox"/> False
enable mousewheel	<input type="checkbox"/> False
indicator auto size	<input checked="" type="checkbox"/> True
indicator roundnes	(0,00 / 0,00)
indicator size	0,00 x 0,00
indicator color	[10, 0, 255] (255)
line color	[227, 227, 227] (255)
margin	0
Orientation	Horizontal
pointing mode	<input type="checkbox"/> False
shape color	[50, 49, 48] (255)
slider-scale	Aux-Bus-gain[dB] (PowerCore)
value	0,461949

Properties:

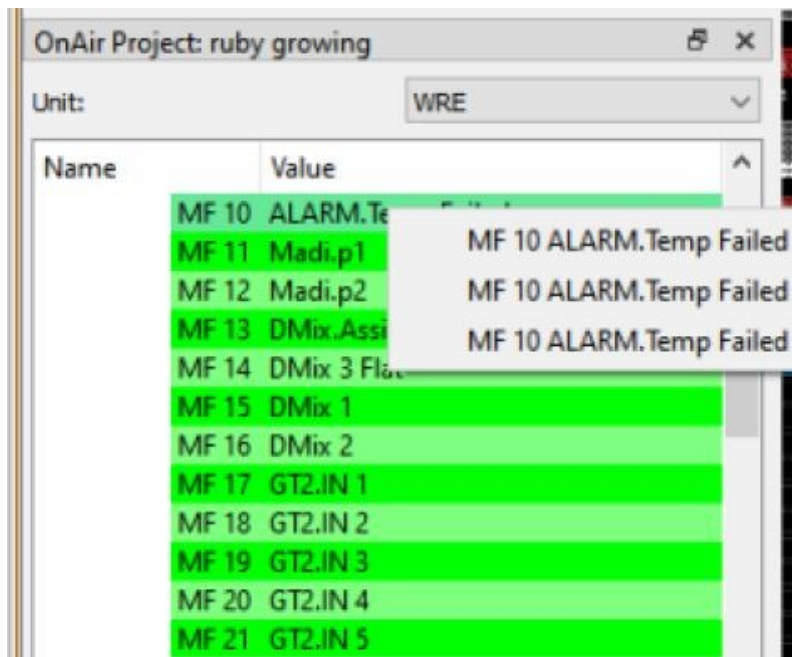
- "manual-min/max": sets the value range of the slider. Usable if an Ember+ provider does not provide minimum and maximum values, or if the control range should be limited
- "manual-step": sets the step size for adjustable values
- "bar color": color of the bar (deviation from the origin)
- "bar origin": sets the origin
- "DmsHideIfNoAccess": hides the slider if it is not available (e.g. ParmControl elements with access off)
- "enable mousewheel": enables mouse wheel operation
- "indicator auto size / roundness / size": currently without function
- "indicator color": color of the pointer
- "line color": color of the scale

- "margin": defines a distance in pixels between bar and margin / indicator
- "Orientation": defines the orientation. Attention, the dimensions must be adjusted manually
- "pointing mode": enables level jumps during operation, no relative change is performed during operation. change of the value is performed
- "shape color": background color
- "slider scale": selectable scaling

- **Slider / Box: Manual Min / Max / Step for DMS**

After setting up the Manual Min / Max / Step (Slider / Encoder) properties for Ember+, the Manual Min / Max / Step (Slider / Encoder) properties are now also available for DMS.

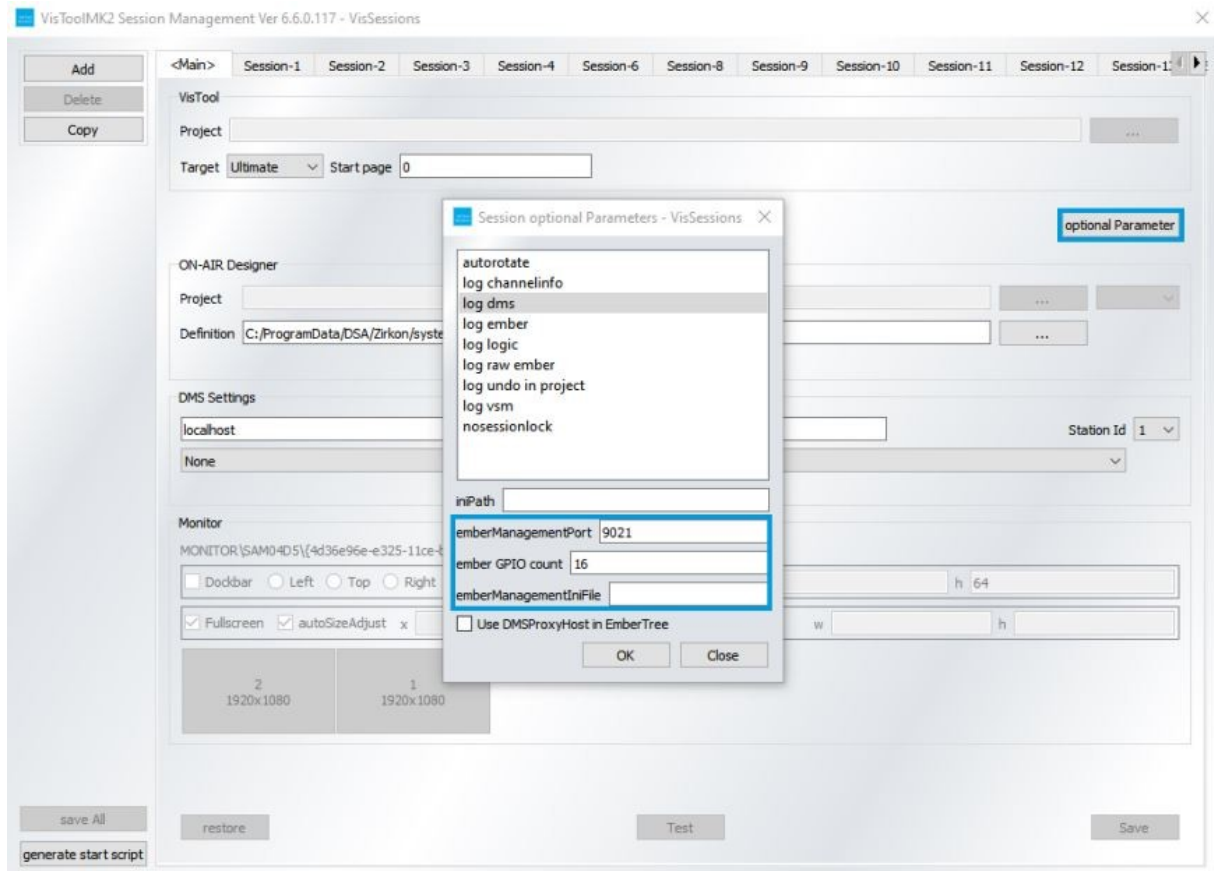
- **Function to find used MF keys in the VisTool project**



Right-clicking on an MF Key in the OnAir project tree lists all uses of the MF key in the editor (uses in the Logic Engine are not listed here). Clicking on an element in the list, the corresponding page is displayed and the object is highlighted.

- **Ember+ GPIO count (emberManagementPort) configurable by session manager**

The number of GPIOs available via the Ember+ management port is now configurable via the session manager per session and for the editor (<Main>).

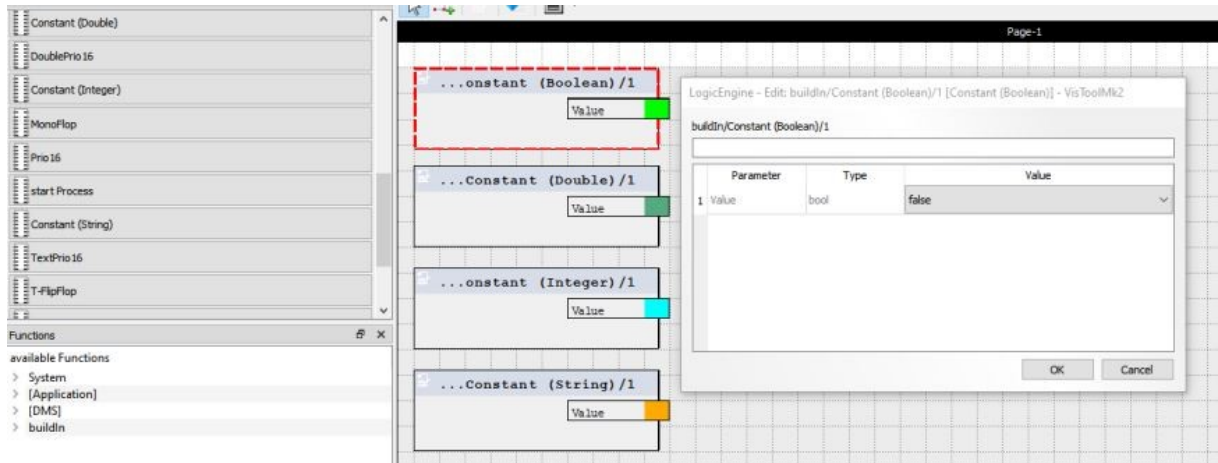


- **New logic elements: constants**

The new logic elements:

- constant (boolean)
- constant (integer)
- constant (double)
- constant (string)

allow the definition of constants within the logic engine.



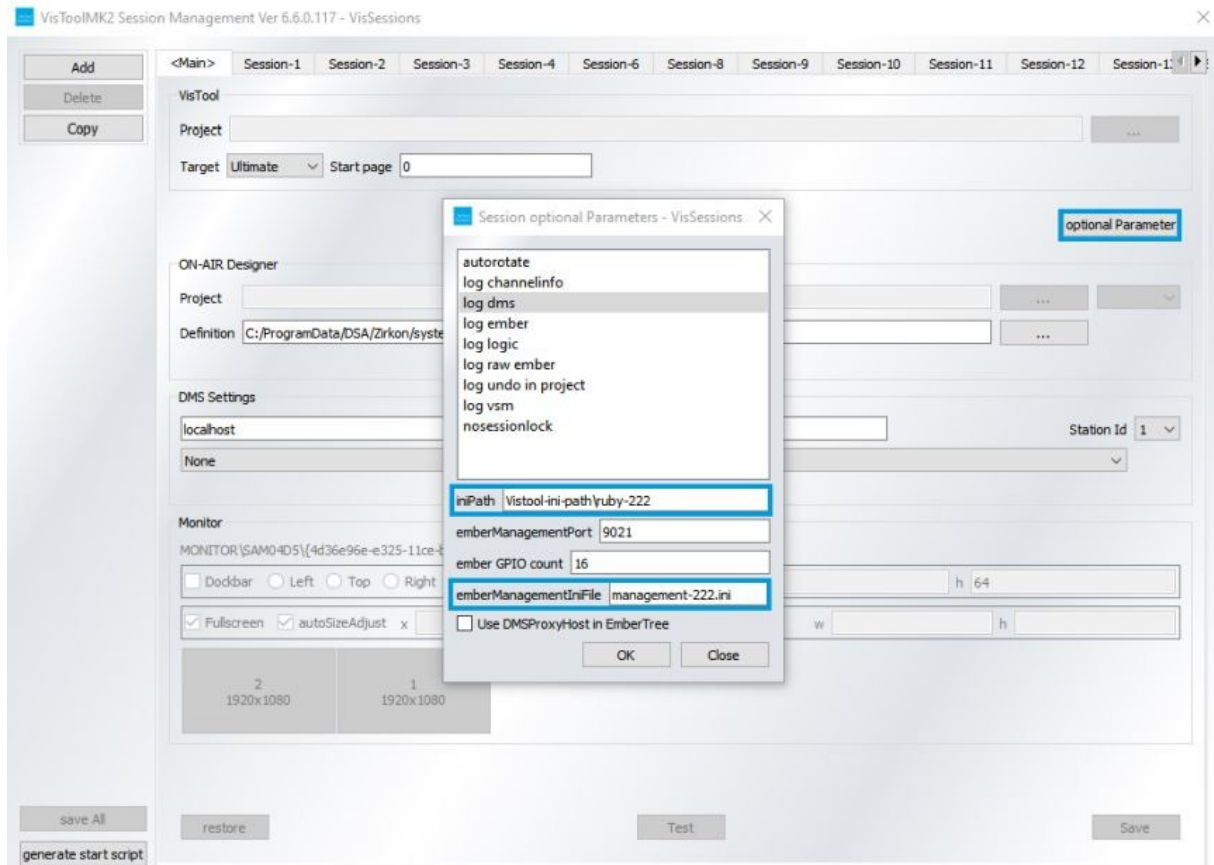
The Edit Window is opened by pressing F2.

- **New function: EmberManagementIniFile**

The EmberManagementIniFile can be used to fill the values of the EmberManagementPort GPIOs initially.

Via the Session Management (optional parameter) the location of the file can be defined.

If a file is defined but not available, the file is created with default values when VisTool is started.



The file can be entered as a relative or absolute path.

Relative paths refer to

- C:\ProgramData\DSA (if no iniPath is defined)
- The iniPath (if an iniPath is defined)

- **Support of extended EQ frequencies for Power Core**

- **New logic element: D-flip-flop**

The logic element D-flip-flop (boolean / integer) is permanently connected to the system clock. It delays the output by one clock.

- **Pixmap extended with animated GIFs**

Animated GIFs should be used instead of web elements which requires more resources.

- **Aux fader enable acting on defined access groups**

Aux fader enable only affects the access group configured in OnAir-Designer. In contrast to ruby, aux fader enable can also be configured for access groups 2 to 4.

- **New logic element: Timer**

The timer element can be used to build time controlled logic.

The element has the following inputs:

- "start" (boolean)
- "stop" (boolean)
- "periodic" (boolean)
- "time" (integer - 1/100s)

The element has the following outputs:

- "timeout" (boolean)
- "isActive" (boolean)

Mode of operation:

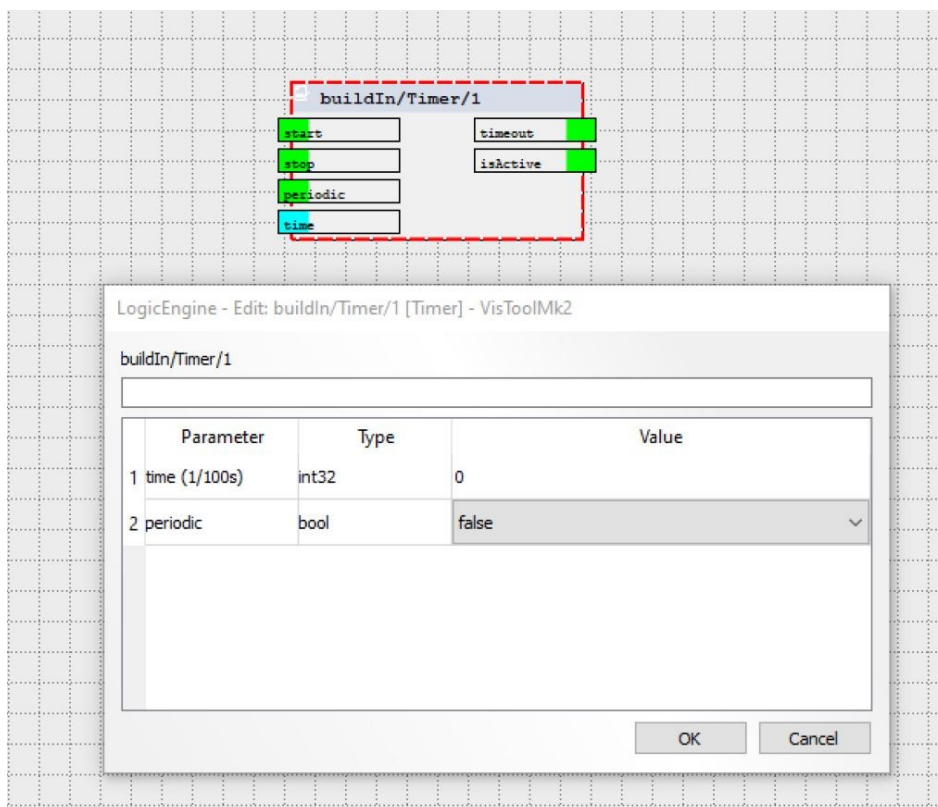
The start time is defined via time (alternatively via logic input or as parameter). With a positive edge on start, "isActive" becomes active as long as the timer is up.

After the preset time has elapsed, there is a pulse on the output "timeout" and "isActive" becomes inactive.

A positive edge on "stop" stops the timer ("timeout" is not active).

At the next start the timer starts again from the beginning.

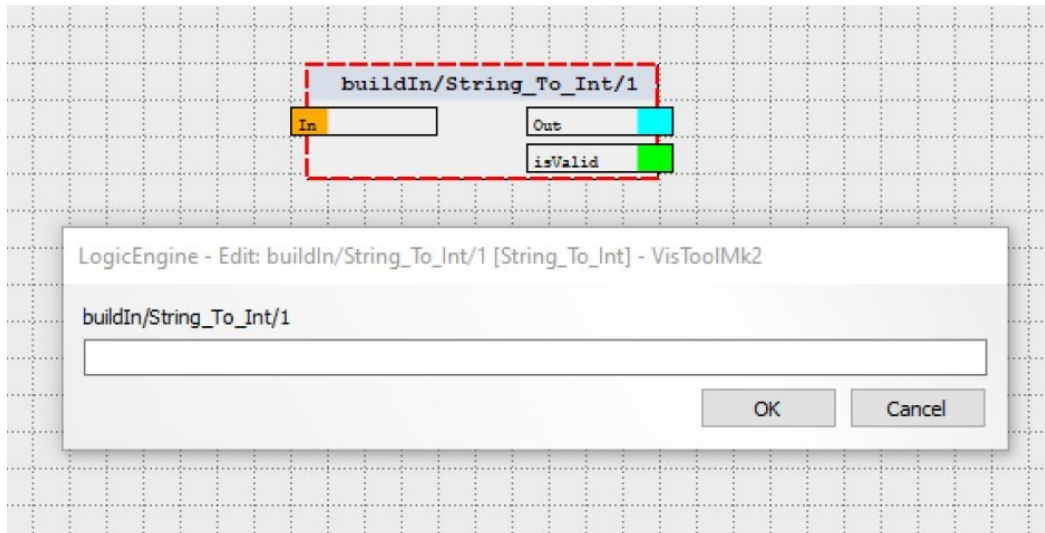
If "periodic" is active (alternatively definable with a logic input or as parameter), the timer starts periodically from the beginning until it is stopped by "stop".



- **New logic element: String_To_Int**

The new logic element "String_To_Int" converts a string into an integer value.

Valid are strings that contain only one integer. For invalid values the output "isValid" is inactive and the integer output is '0'.



- **Extension Matrix Connect Element**

The Matrix Connect element has been extended by additional inputs and outputs.

A Matrix Server version $\geq 5.0.0.1$ is required to use the additional elements.

The elements are used to control and visualize Line Scheduler (LS) jobs.

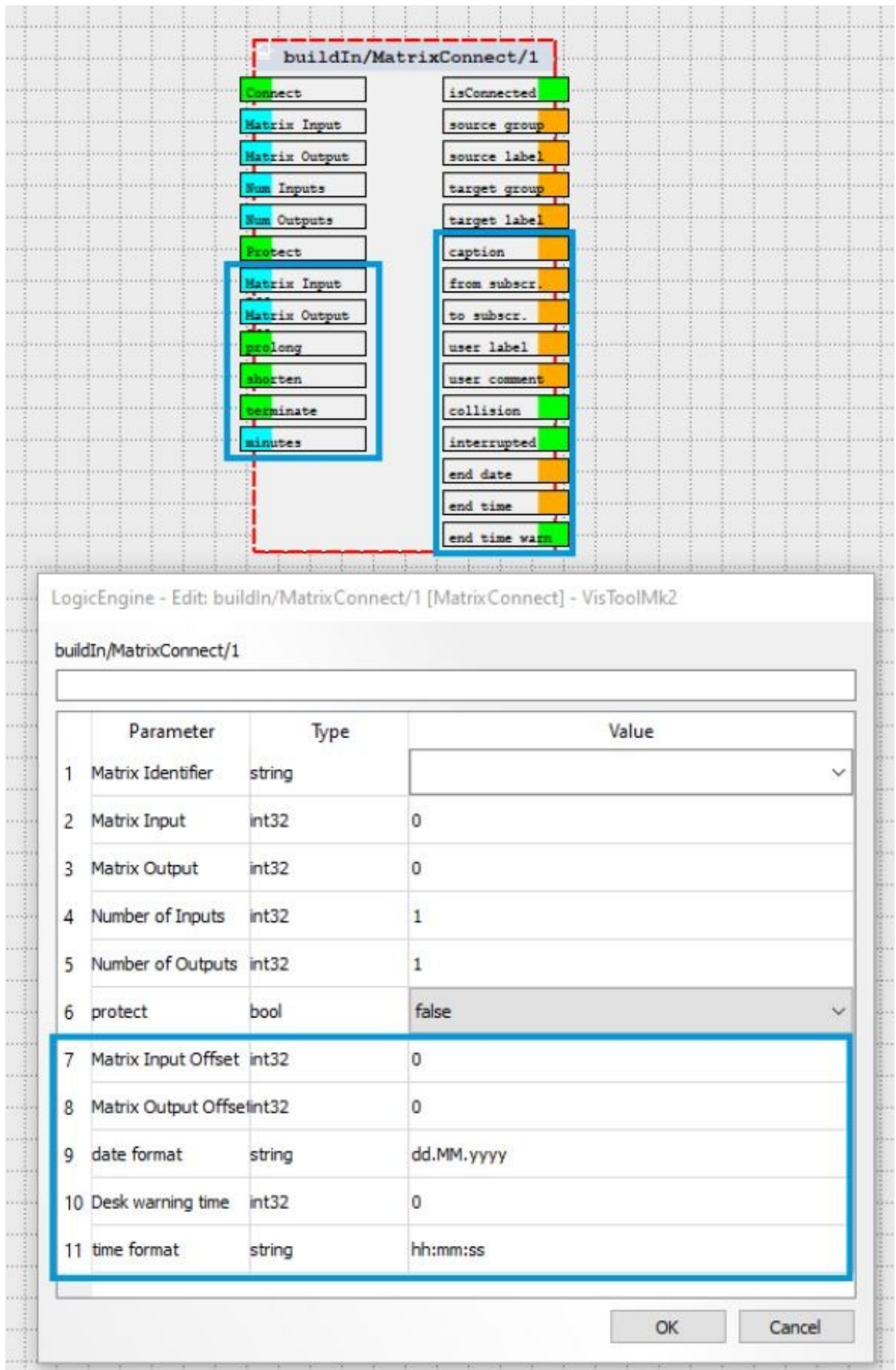
Inputs:

- Matrix In-/Output Offset: the offset is added to the matrix input/output. This can be used for fast switching of different units with the same configuration
- prolong / shorten / minutes: prolongation / shortening of the scheduled end time of the selected (LS order) by the configured time (minutes) / time present at the input
- terminate: end of the selected Line Scheduler order

Outputs:

- caption: name of the active LS order
- from / to subscriber / user label / comment / end date / end time /collision / interrupted: data of the active LS order
- end time warn: will be active, if the configured warning time (Desk Warning Time) is underrun

The date and time format can be configured.



The image shows a 'buildIn/MatrixConnect/1' block in the VisTool MK2 interface. The block has two columns of parameters. The left column includes: Connect, Matrix Input, Matrix Output, Num Inputs, Num Outputs, Protect, Matrix Input, Matrix Output, prolong, shorten, terminate, and minutes. The right column includes: isConnected, source group, source label, target group, target label, caption, from subscr., to subscr., user label, user comment, collision, interrupted, end date, end time, and end time warn. A blue box highlights the second 'Matrix Input', 'Matrix Output', 'prolong', 'shorten', 'terminate', and 'minutes' parameters in the left column. Below the block is a dialog box titled 'LogicEngine - Edit: buildIn/MatrixConnect/1 [MatrixConnect] - VisToolMk2'. The dialog box contains a table with the following data:

	Parameter	Type	Value
1	Matrix Identifier	string	
2	Matrix Input	int32	0
3	Matrix Output	int32	0
4	Number of Inputs	int32	1
5	Number of Outputs	int32	1
6	protect	bool	false
7	Matrix Input Offset	int32	0
8	Matrix Output Offset	int32	0
9	date format	string	dd.MM.yyyy
10	Desk warning time	int32	0
11	time format	string	hh:mm:ss

The dialog box also has 'OK' and 'Cancel' buttons at the bottom right.

Fixed Bugs

- Loudness control start/stop does not work if measurement was started via Restart (#20572)
- Gain of EQ band 5 (HiSh/LPF) can not be adjusted graphically (#20605)
- Channel PPMs show level after cold start although no source is assigned to the fader (#20637)
- Color of predefined user text "Channel - Name" is not reset after ACCESS (#20645)
- An overlay, which is a child of an overlay, cannot be controlled by an overlay key (#20654)
- After double-clicking on an EQ element, any other element, which is on that page, moves the curve of the EQ (#20655)
- Properties- position for box overlay elements was not updated when moving (#20920)
- Crash of multiple VisTool sessions on a PC (#20928)
- Source labels and fader position are not reset for empty faders after Power Core cold start (#20932)
- Ember+ data (matrix crosspoint's) are not loaded for combined snapshots (Ember+ & DMS) (#20955)
- Crash when logging in via touch control (#20960)
- Inconsistent predefined user text status (#20962)
- Ember+ snapshots are not loaded after a reconnect of the control system (#21012)
- DCM Login does not allow connection after a longer runtime (#20967)
- RFID login: RFID user and user in Power Core asynchronous (#21044)
- DCM login: current user and user in Power Core asynchronous (#21045)
- VisTool editor crashes when deleting JPEG Ember+ stream parameter in the VisTool editor (#21061)
- Ember+ devices cannot be deleted (#16708)
- User pre defined texts are partly not visible if project is opened via "File" "Open" (#21087)
- Ember+ snapshots are not always loaded when automatic login is used (#21092)
- PPM labels using Ember.PeakMeter resources are not updated when resources are deleted (#21096)
- DMS fader modules Aux 1 - 20 keep their colors, when switching to a new IP via DMS proxy host and the the new fader is unassigned (#21102)
- If an Ember+ device is added to the project which contains a matrix that contains sub nodes, VisTool crashes (#21106)

- **The "ParmControl" labels for the input mode, as well as "Panning" are scattered in the context menu (#21139)**
- **Project databases in old Access 97 .mdb format (#21168)**

It's about:

 - vistool_MKII_sapphire.mdb
 - vistool_MKII_sapphire_VX.mdb
 - vistool_crystal.mdb
 - crystalCLEAR.mdb

already converted had been:

 - visConfigurations.mdb
 - crystalCLEAR_vis.mdb
 - vis_Standard_Configuration_Crystal.vistool.mdb
 - vis_Standard_Configuration_ruby.vistool.mdb
- **Error messages in VisTool editor when zooming in with large factor (#21182)**
- **Command line parameter "--useSyncUpdate" (#21183)**

The command line parameter "--useSyncUpdate" or "-y" can now have a parameter. The number specifies the fixed number of FPS that VisTool should generate. Without specification 20 is assumed.

This can be used to set a fixed update rate. The (default) value of 20 corresponds to the update of the level messages from the DMS system. It can lead to a significant increase in performance in connection with web elements.
- **Ember+ format is not evaluated (#21227)**
- **Rounding error with Ember+ increment and decrement button in connection with Power Core (#21296)**

Works for fader with 1 db steps for values > -60 dB (below that, the resolution of the fader is > 2dB).
- **VisTool exits if the magnification is too high (#21389)**
- **Logic engine editor crashes when you add an Ember+ parameter with "Factor" (#20047)**
- **Configuration update via VisTool RP Admin no longer possible (#20617)**
- **Logic Engine does not provide any values when the runtime is started (#20816)**
- **Multi page objects: page switching stuck, keys remain pressed during page switching (#21211)**
- **1000 separator is not hidden when editing (#21446)**
- **VisTool crashes if you right-click in the logic engine on a "free text" (#21502)**

- **SVGs look blurry when scaled (#21505)**
- **Slider: display of db scale depends on bar position (#21525)**
Please check carefully if the behaviour of the bug effects your project?
- **Overlay color is overwritten by color map when controlled by MF key (#21526)**
- **If a box is child of another element, the system functions assigned to the box do not work via "Logic.SetPressedSync" (#21624)**
- **Clip children no longer works (#21651)**
- **Logic engine AddOn license is queried despite logic engine elements being deleted (#21166)**
- **Multipage overlays are not displayed after page switching (#21652)**
- **Logic engine statuses are not displayed for boxes on multi page objects after page switching (#21653)**
- **crystal snapshots are not [correctly] loaded (#21702)**
- **"Enable mouse wheel" on sliders without function (#21708)**
- **Create new project when VisTool is maximized, results in small, frame less window (#21749)**
- **Changes to the DMS service will result in loss of channel information of running VisTool instances (#21764)**
- **Logic engine: Modify only possible via F2 and no longer with the right mouse button (#21765)**
- **LUX PPM and LUX loudness meter change ppm scale color in editor only after updating the element (#21776)**
- **When copying a multi page object with references to other pages, the references are lost (#21803)**
- **Projects with dockbar are not displayed correctly on primary monitor for full screen pages (#21827)**
- **VSM failover lasts 45 seconds when config is unloaded (#21841)**
- **Rotation of graphics does not work (#21867)**
- **VisTool crashes when LUCI Studio is started (#21875)**
After changes to Ember+ functions on the provider side, the configuration of the logic engine may have to be adjusted.
- **Web element does not initialize reliably when URL is configured and the URL logic input is used (#21916)**
- **Crash when using elements in Z layer over a graphical EQ element (#21973)**

- **VisTool does not open as Window Position (#22001)**
Affected only sessions with $W < 640$ or $H < 480$.
- **Window size is wrong on monitors to the left or above the primary screen incorrect when VisTool is started as dockbar (#22008)**
- **No PC power on after reconnect of the DMS proxy after short interruption (of the VPN) (#22028)**
- **Ember+ peakmeter are not displayed (#22041)**
- **Texts are not reliably processed in the logic engine when the "Testmode" is not processed reliably (#22073)**
- **Ember parameters do not get correct values from logic engine when starting the logic engine (#22074)**

Known Issues

- **PPM3: If page size is the same size as screen resolution, the middle black bar is missing in PPM 3. (#21654)**
- **Slider / Slider 2 "UseDB" value sends wrong values (#22117)**

The problem always exists when "useDb" is active.

If a slider is assigned with the "MotordB" value of a Power Core fader via Ember+ and the check box "UsedB" is set, the fader jumps to +9 instead of 0.

The problem can be worked around by un-checking the box and assigning the scale "dB Power Core" to the fader.

Possible workarounds are:

1. For faders you can use "Motor Position" instead of "MotordB" value.
2. For all other values - e.g. "Aux Gain" - use the "Slider2". instead of the slider. In this case "useDb" must be deactivated and a slider scale - e.g. motor fader / db value (Power Core) - must be selected.

However, this may change the appearance of the element.

Compatibility

- For networking systems with VisTool snapshot application with make sure that all power cores have a corresponding firmware version.

A VisTool version $\geq 6.6.0.159$ is required for release version 7.0.

We strongly recommend to always use both software versions provided by Lawo AG, OnAir-Designer and VisTool and not to mix different software packages of our releases.

- VisTool MK1 is compatible with release 4.0 in all products except sapphire master card MKII.
- VisTool MK1 is not compatible with release 4.2 or higher in all products.
- sapphire master card MKII (947/62 and 947/65) will only run with VisTool MK2.
- VisTool MK2 is compatible with all current Lawo Radio OnAir products running release 4.0 and 4.2. This includes zirkon, which does run release 4.0 and 4.2, but will not support releases higher 4.2.

Using a VisTool MK1 configuration with VisTool MK2

VisTool MK2 can open and convert VisTool MK1 configurations. Please note that manual corrections will be necessary to the converted version. Since VisTool MK2 is complete rewrite of the application, some parameters cannot be copied 1:1, and have to be corrected manually.

Please reserve some time to make these corrections and check resulting configuration properly.