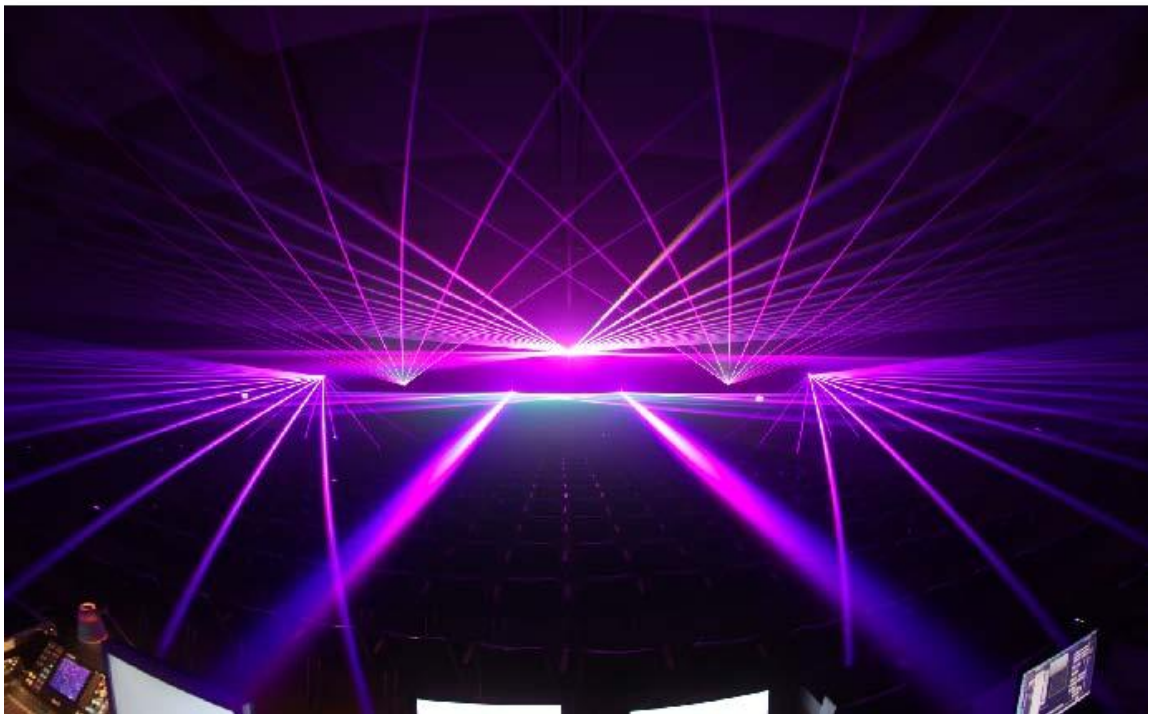


# Manual

# **PHOENIX<sup>4</sup>** **LIVE**



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## Introduction

### Software concept

PHOENIX4 LIVE was designed and programmed for laser jockeys in clubs and discos, as well as for all live performers at raves and concerts. The entire structure and philosophy of Phoenix 4 has been developed into a powerful laser control program. Phoenix 4 is focused on a simple and intuitive user guidance that enables even inexperienced users to get familiar with the software within approximately 1 hour. More experienced laser jockeys can create a live laser show within a few minutes, even without reading the manual.

### Hardware concept

For PHOENIX4 LIVE an affordable USB interface has been developed, that suits monochrome and full color standard ILDA (RGB) laser projectors. It does not matter which country your laser comes from -Europe, China, USA- it is only important, that it is 100% ILDA compatible.

The USB LIVE V1 interface emits 3 colors + intensity signals. By using the optional available cable adaptor it is possible to realize DMX input / DMX output. Because of the limited color displaying possibilities of the USB Micro V1 interface, it is possible, that gas lasers with color crystals or several diodes cannot be steered correctly. For the more professional clientele we recommend the deployment of the PHOENIX-NET interface. These interfaces have 6 color channels + intensity as output. When using the USB interface, the scanners are driven by 12 Bit in contrast to the network interface which is driven by 16 Bit, which can result in a more accurate display of the figures. Because the LAN interface is more comfortable to use and can be steered well via WLAN, switching to the professional solution is profitable for most users.

The latest addition to the hardware family of Phoenix is the Micro USB V2 Interface. This is a completely new developed interface, which replaces evolutionary the USB Micro V1-interface and also provides an increased range of functions. What remains is the easy connection to the PC by a plug-and-play USB device. Added to that, is an improved X/Y resolution of 16 bits to realize finer movements.

Also new is the ability to control laser projectors with 6 colors or 5 color + intensity that are also controlled with 16 bit resolution. In addition optically isolated Neutrik DMX In /DMX Out / DMX-through connectors are installed at the interface, which replaces an optional DMX adapter, which would be required to control external devices with Phoenix or to let Phoenix be controlled by external devices. A special feature is also provided by the stand-alone interface animation and DMX player, on which you can save animations from Phoenix on the player, to get them output by a keyboard key or an external DMX controller.

## General

You can always find the latest information, free updates and tips about PHOENIX4 LIVE on our website <http://www.phoenix-showcontroller.de/en>. Please download the latest update kit before every re-install to be up to date from the start.

So as not to miss any news or updates you can also sign up for our „Update Alarm“ newsletter on:

<http://www.phoenix-showcontroller.de/support/update-lasersoftware/>

On the chat forum [www.laserfreak.net](http://www.laserfreak.net) there are special discussion boards for PHOENIX4 and PHOENIX4 LIVE users to exchange information and experiences. For additional help, software trainings, ideas or even criticism, we remain at your disposal at [support@phoenix-showcontroller.de](mailto:support@phoenix-showcontroller.de) at any time. Furthermore, we are constantly offering training and also admissions by Internet (PC Remote Controller). Watch for announcements in o.g. Forum and come back to our homepage from time to time. For a personal introduction, please contact us directly by email or phone.

## Hardware requirements

All the specifications mentioned below are the minimum requirements for PHOENIX4. For all versions dated before the 01.04.10 these requirements are the optimum. The development is progressing continuous and may increase the requirements.

As of: 01.04.2010:

- Windows PC with Windows XP, VISTA, Windows 7 (32 Bit & 64 Bit) and Windows 8 (32 Bit & 64 Bit) (not suitable for virtual operating system or Mac platforms)
- min. 2 GHZ (Rec.: Dual Core 2x2 GHZ), 2GB RAM internal memory (Rec. 4GB), 10 GB hard disc, 128MB graphic board (Rec. 256MB) with OpenGL and DirectX 9.0 (or higher)
- 15" Monitor with min. XGA (1024x768) - Resolution (Rec. 1240x1024)
- Keyboard, Mouse (Rec. Touchscreen)

### Optional:

- External DMX-Controller
- Midi-appliance z.B. MIDI-Keyboard, MIDI-Controller etc.
- Akai APC 40 (<http://www.akaipro.com/apc40>)
- ProLight Laser Harp (<http://www.laser-harp.com/>)
- Joysticks
- Touchscreen

## Installation

**Information:** Do not connect the USB-interface until the PHOENIX4 LIVE software is completely installed, otherwise the required drivers may not be found.

## Software

After inserting the CD or after downloading the latest CD-Kit from our website

<http://www.phoenix-showcontroller.de> and unpacking the ZIP-archive, open up the „Setup.exe“ and follow the Windows prompts on your screen. Install PHOENIX4 on your hard drive.

After installing the software you can run the software over the „PHOENIX Showcontroller“ icon on your desktop.

**Please note:** On Windows Vista and Windows 7 based systems the software must be installed by a user with administrator status. Please confirm administrator status by clicking „Yes“ in the occurring window.

The Phoenix link on your desktop is already assigned to the user with administrator status.

## Screen resolution

With Windows 7 and Vista please check your screen adjustments. Never use the **zoom function** as this could cause displacement of the screen elements. Thus making PHOENIX4 LIVE and PHOENIX4 PRO/PROPLUS more difficult to use.

### Windows 7

Open your screen resolution by pressing „start“, then „Control Panel“ and „Display“ and click on „Adjust resolution“.

Please select the option „**Smaller 100% (standard)**“. Texts and elements will be displayed in normal size.

Click on „Apply“. It is possible that you have got to close all programs and restart Windows. The changes will be applied as soon as you restart Windows.

### Windows Vista

Change settings by clicking „start“, then „Control Panel“, on „Display“ and then „Adjust“. Click on the left hand side on „Adjust font size“. If you are prompted to enter your administrator password or confirm, please enter your password or confirm.

In the next pop-up window (DPI scale) click on „**Standard Scale (96 DPI)**“, then click „OK“.

To display the changes, close all program and restart Windows.

## Hardware installation of Phoenix USB Micro Interface

Install the Interface **AFTER** the software has been successfully installed! Installation of the PHOENIX MICRO-USB Interface.

### Driver installation

Please only install the interface **after** a successful software kit installation.

The drivers are available in the ZIP archive at the directory **“Interface Drivers”** if you downloaded the installation kit from the website: <http://www.phoenix-showcontroller.de/support/downloads/>

If you used the CD for the installation, that is included in the delivery, the drivers are available in the root of the CD in the directory **„Interface Drivers“**.

**After** a successful software installation the drivers are always available in the Phoenix Showcontroller subdirectory **„Interface Drivers“**:

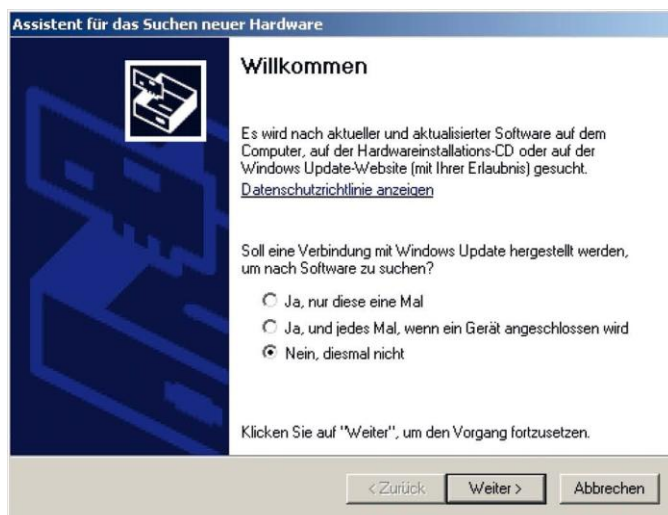
#### Windows 32 Bit:

„C:\program files\PHOENIX Showcontroller\Interface Drivers“

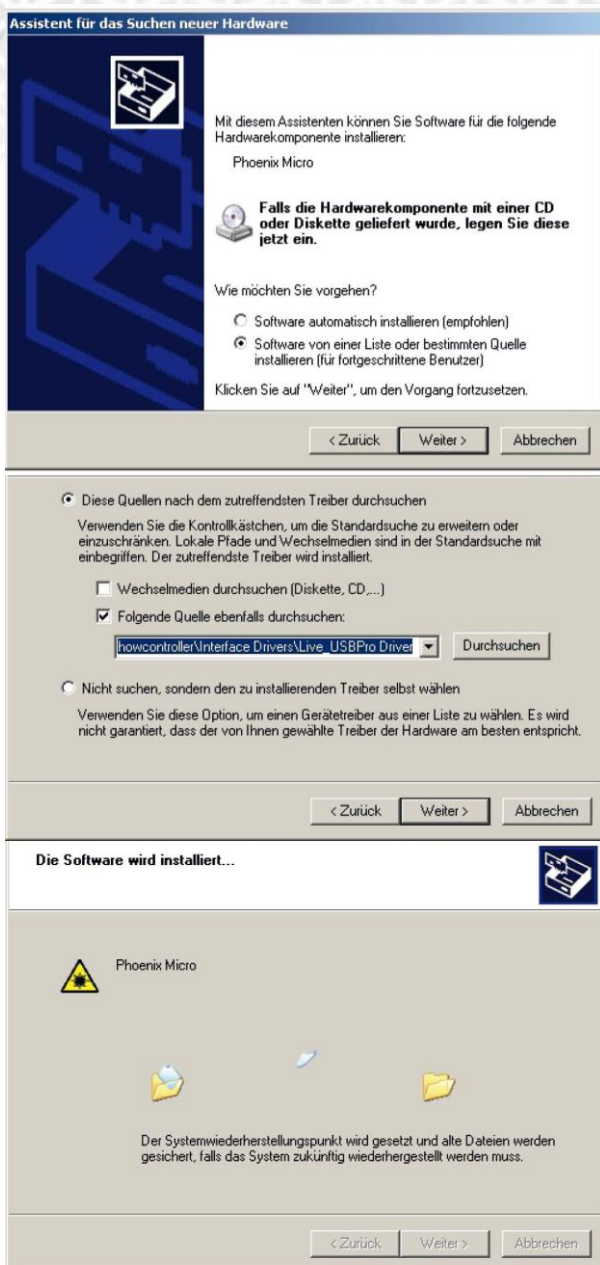
#### Windows 64 Bit:

„C:\program files (x86)\PHOENIX Showcontroller\Interface Drivers“

## Installation of the Phoenix USB Micro V2 Interface at Windows XP



1. Plug in the USB-cable in the interface and connect the other end of it with the PC.
2. The windows installation dialog opens.
3. Answer the question „Shall windows connect to Windows update, to find software“ with the option „NO, not this time“ and click on “next >”. “



4. At the next question for „What you want to do?“ answer with the option selection „Install software from a list or specific location (Advanced) „ and click on “Next>”

5. Then tick the checkbox “Browse at following resources:” and click on the „Browse“ button. At the opened window browse to the directory e.g. „...\\program files\\PHOENIX Showcontroller\\Interface Drivers\\ Micro“ and click on “Open”. Then click on the “next>” button.

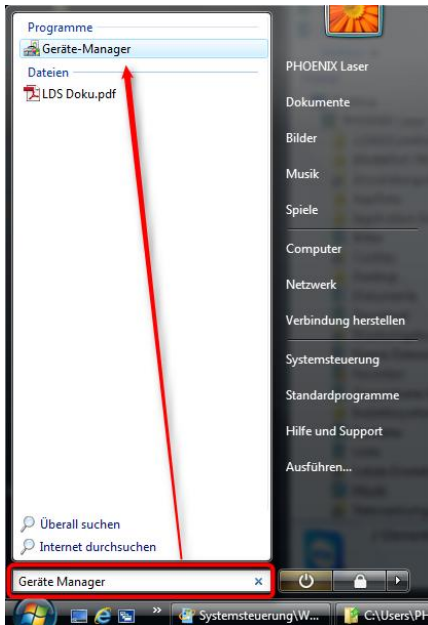
6. The interface is the being installed and can be used afterwards.



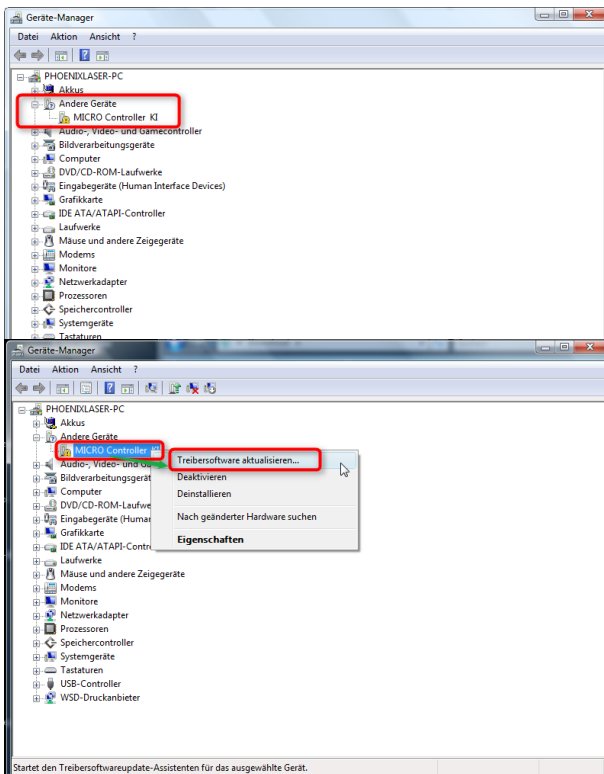
7. After a successful installation you get the confirmation note and then you can close the window with the „Finish“ button.

## Installation of the Phoenix USB Micro V2 interface at VISTA & Windows 7

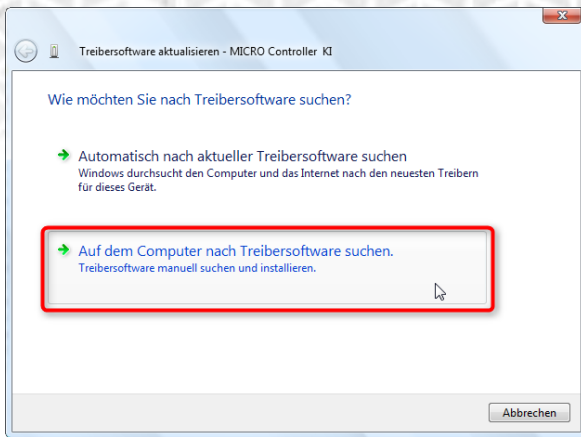
First connect the USB cable with the interface and connect the other end of the cable to the PC. Unfortunately the diver installation workflow has been changed by Microsoft, so that the installation dialog window is not shown automatically any more at many PC. Because of that some additional steps are necessary to install the interface driver.



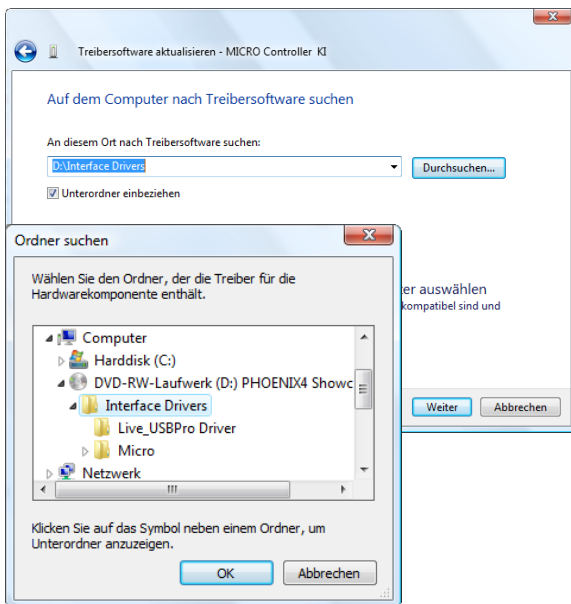
Open the device manager of windows. Click with the left mouse button on the “Start” button and insert the text “device manager” into the input field. After a short time the entry to the device manager is provided at the upper window that you need to click on with the left mouse button. If you get the question to allow this program to be opened, click on „allow“.



At the opened device manager you see a device tree. At the entry “Other devices” you see a device named „MICRO Controller KI“ or „Phoenix Micro“. Click on it with the right mouse button and choose the entry “Update driver” from the context menu.

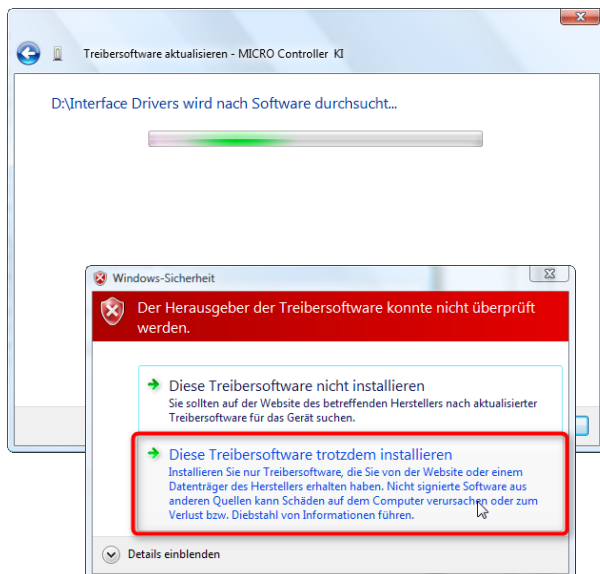


The installation dialog opens and asks for „How do you want to browse for driver software?“. Choose the last option “Browse for driver software at the PC”.

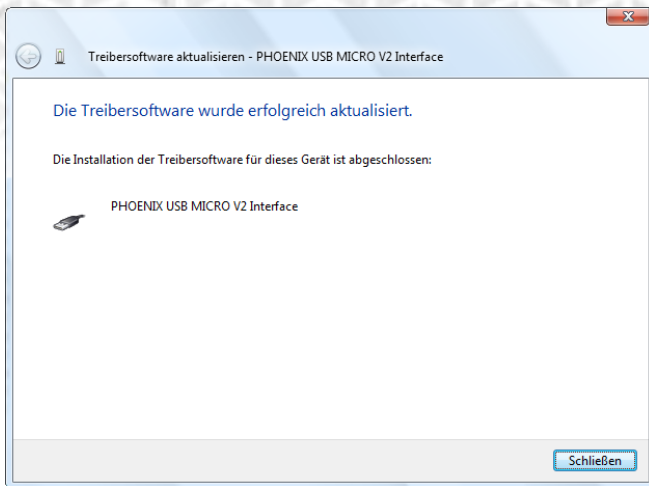


Click on „Browse“ at the next window and choose the directory „Interface Drivers“ from the installation CD or from the downloaded and extracted ZIP archive or from the windows program files directory at „C:\program files \PHOENIX Showcontroller\Interface Drivers“ or.

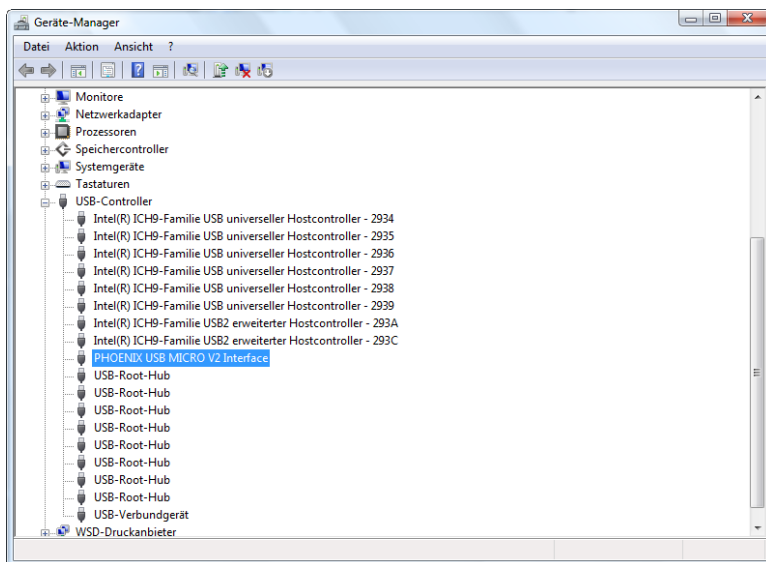
„C:\program files (x86)\PHOENIX Showcontroller\Interface Drivers“. Take care that the „Include subfolders“ checkbox is ticked. Then click on the „Next >“ button.



The installation starts. Maybe a window opens during installation, showing a red colored window “The publisher of the driver software could not be verified.“. Then choose the option „Install the driver anyway“ to continue with the installation.



At last you see the confirmation dialog window for a successful installation and you can close the driver installation window with click on „close“. Close the driver manager window with click on the “X” in the upper right corner.

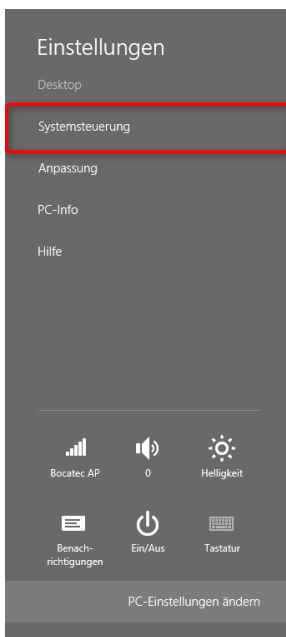


## Installation Phoenix USB Micro V2 Interface at Windows 8

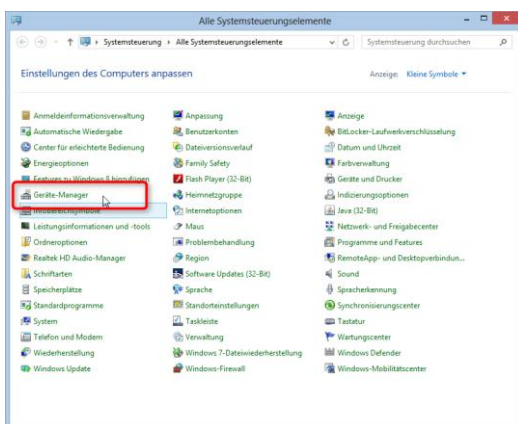
First connect the USB cable with the interface and the other end of it to the PC. Because of the changed driver installation routine at Windows 8, the driver install dialog window is not shown automatically on various PC. Because of that some more driver installation steps are necessary.



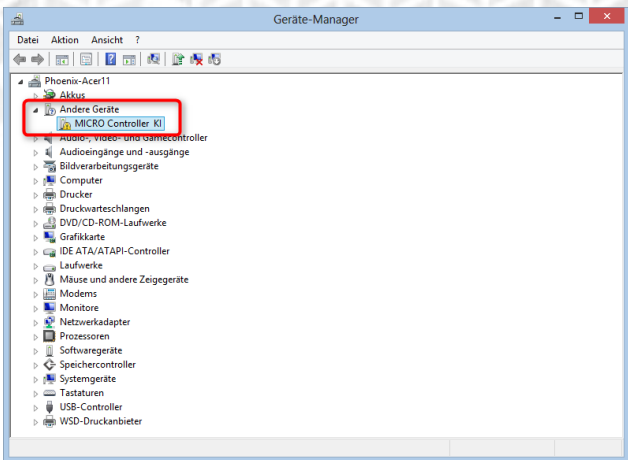
Move your mouse on the tile surface or at the desktop to the right lower corner until the transparent “Charms” menu comes out from the right side. Move the mouse to the „Settings” symbol above that looks like a gear and click on it.



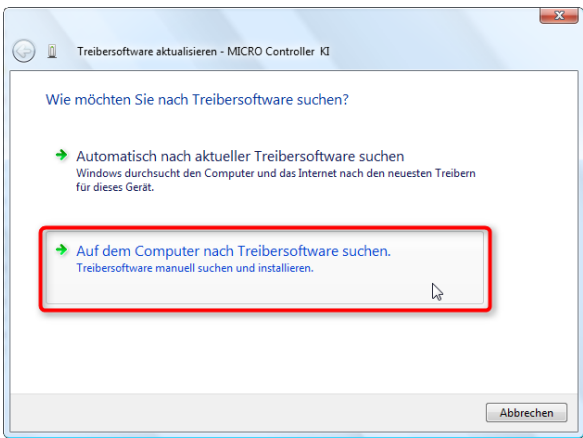
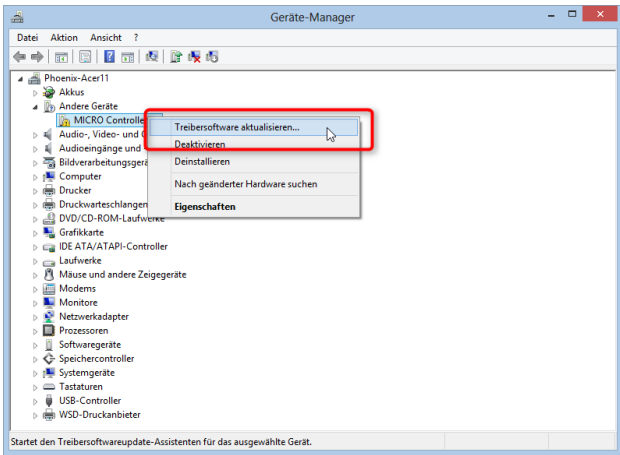
Choose the menu entry „System control”.



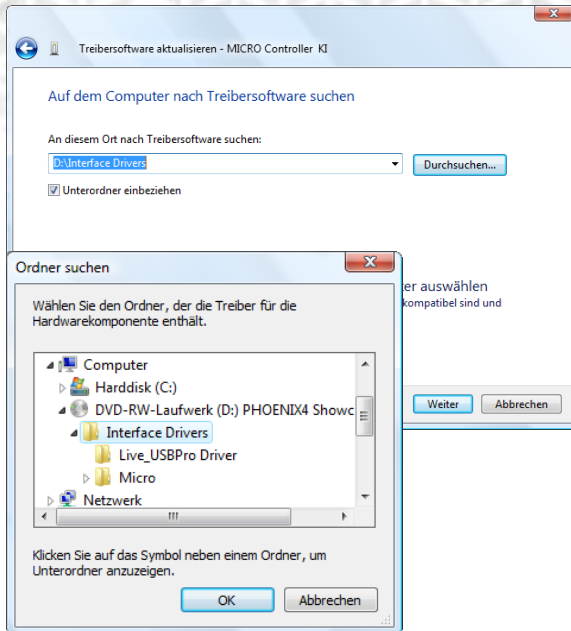
At the opening window you see the „Device Manager” in the first column.



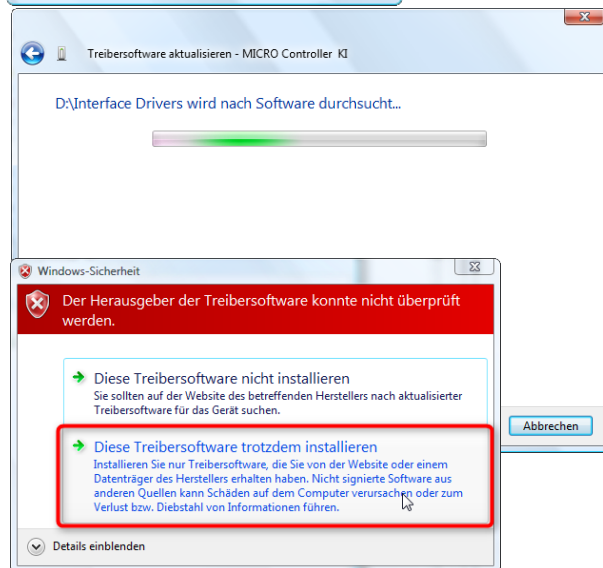
At the opened Device Manager you see a device tree. At the entry „Other devices“ a device named „MICRO Controller KI“ or „Phoenix Micro“ is shown. Click on it with the right mouse button and choose „Update driver“ from the context menu.



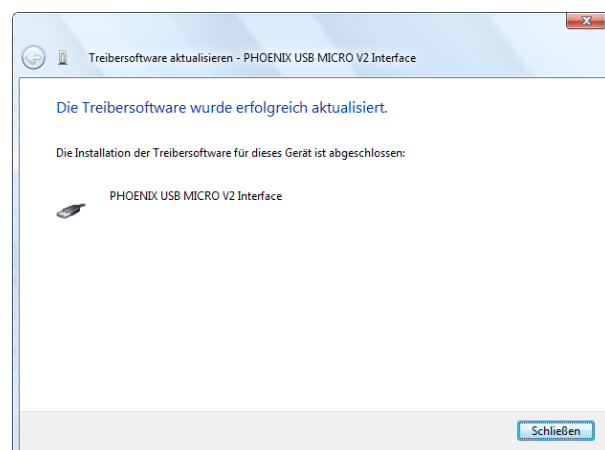
A installation dialog window opens and you get ask „How do you want to search for driver software?“. Choose the last option "Browse my computer for driver software.".



Click on the „Browse...“ button at the next window and choose the directory „Interface Drivers“ from the installation-CD or from the downloaded and extracted ZIP archive or from the windows program files directory „C:\program files\PHOENIX Showcontroller\Interface Drivers“ or „C:\program files (x86)\PHOENIX Showcontroller\Interface Drivers“. Check if the checkbox „Include subfolders“ is ticked. Then click on the „Next“ button.



The installation starts. Maybe you get an installation window that is red colored and it says „The publisher of the driver software could not be verified.“. Choose the option „Install this driver software anyway“ to continue with the installation.

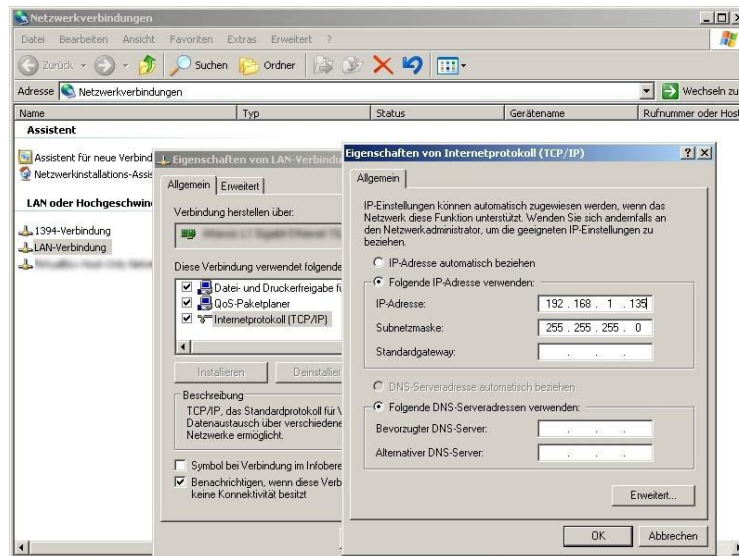


At last you get the notice that the installation has been successful. You can close the driver installation window with click on the „Close“ button then. Close the „Device Manager“ window with click on the X in the upper right corner.

## Activating your PHOENIX-Net-Interface

PHOENIX-Net-Interfaces do not have to be installed separately. As soon as the computer is connected to the internet the interface will be recognized automatically, or you will have to allocate the IP-address manually, depending on the settings in your internet browser.

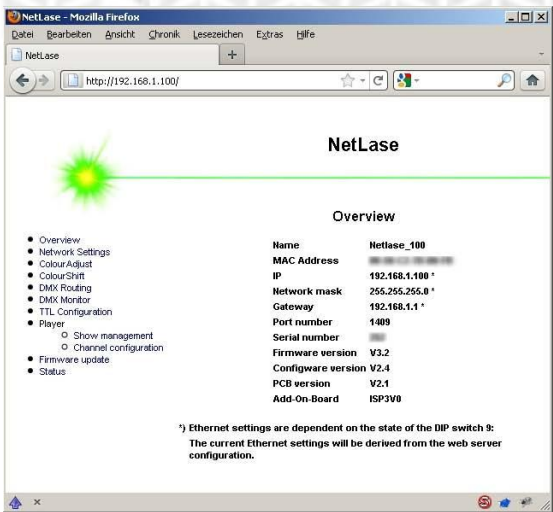
To give the PHOENIX-NET-interface a static IP address proceed as follows:



1) First of all you must allocate a static IP-address to your PC which has to be in the same IP range as the Net-interface, so that they can communicate with each other. For example give your computer the IP address 192.168.1.135 and net mask 255.255.255.0. (All other text gadgets like DNS or WINS remain empty!)

2) The factory setting for the PHOENIX-Net-Interface is the IP-address 192.168.1.100. This can be changed at any time over your internet browser.

- Connect the network cable to your PC. It does not matter whether you use a conventional or a cross-over network cable. The network adaptor will automatically choose the correct connection (Auto MDI/MDIX). Connect the other end of the network cable to the Net-Interface.
- Open up your web browser and type in the following address 192.168.1.100.

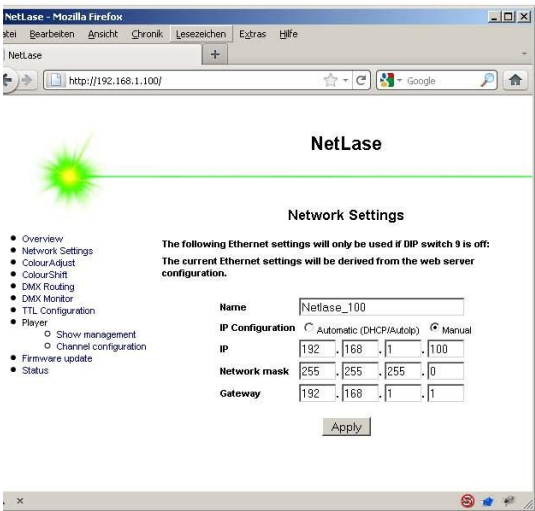


A web page opens up. Please choose the „Network Settings“ from the navigation on the left-hand side.

On the right-hand side you can now change the IP address of the Interface.

After changing the IP-address reset the card by removing the power cable. Wait for 10 seconds before restoring the power.

The configuration of the card is now complete.



3) If the Net interface and your PC are in the same network, PHOENIX will automatically find the Net interface and display it in the „Remapp Interface Settings“ or your hardware check. If this does not happen, please check the network settings of your PC and your network adaptor.

**Please note:** There will be no problem to connect and use Net-Interfaces (Netlase) and USB cards (Phoenix Micro-USB) at the same time on your PC.

## Getting started with PHOENIX4

After the initial installation PHOENIX4 LIVE can be started by clicking on the „Phoenix Showcontroller„ desktop icon. Connect the orange dongle to a USB port. The dongle holds the license and has to stay connected to the computer during use. Disconnecting the dongle while the program is running will result in a warning and the program will close.



**Please keep the license dongle safe.** Losing the dongle would also mean losing your license. After inserting the USB dongle it will be recognized as „HID – Human Interface Device“ and installed automatically.

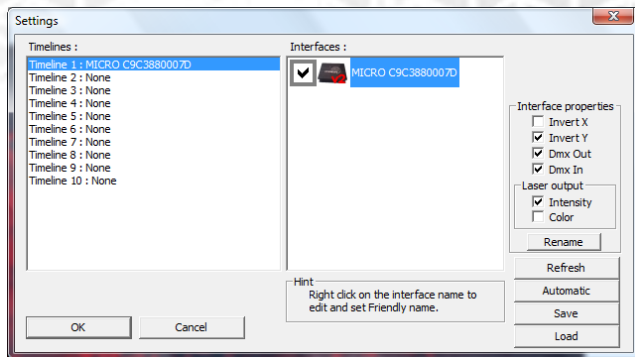
The PHOENIX4-main menu can be opened through the program icon.



Software choice of the start screen:

- **PHOENIX4 PRO:** Starts the PHOENIX4 PRO/PROPLUS – Showcontroller
- **PHOENIX4 LIVE:** Starts PHOENIX4 LIVE
- **PHOENIX4 CAD:** Starts the 3D Picture Editor for your own sketches and graphics.
- **Showplayer:** Calendar for playing shows scheduled (only for Phoenix4 Pro/ProPLUS users).
- **Hardware Check:** Starts the software to check the hardware functions of the interface.
- **PHOENIX4 MEDIA CONVERTER:** An optional software to automatically trace colored graphics
- **OnlineHelp:** Software to start the remote assistance (please get in contact beforehand).
- **Videohelp:** Starts the different video tutorials for the PHOENIX products.

## Remapp Interface

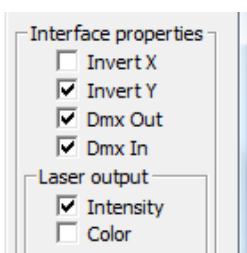


After starting PHOENIX4 LIVE or PHOENIX4 PRO the software will automatically recognize which and how many interfaces are connected to the PC. The „settings“ window will open to allocate the interfaces to the timelines or lasers in the software. In the left you can find the timelines that match the timelines and lasers in the software later. In the list on the right the interfaces recognized by PHOENIX4 will be listed. If the interfaces are marked with a red circle it means that they were connected at the last program start but are no longer connected. Interfaces will be automatically assigned to a timeline if you click on the „automatic“ button (bottom right). If you have connected new interfaces but this does not appear in the list on the right, click on the "Refresh" button above the "Automatic" button.

To allocate the interfaces manually, mark one of the timelines from the list on the left, and then tick the boxes for the desired interfaces, to add them to the timelines or lasers. Several interfaces can be added to one timeline. Through creating these groups all interfaces in the same timeline receive the same signal and have the same output (allows usage as satellites).

The interfaces stay linked to the timelines unless one or more interfaces are removed or added. In this case the interface menu will appear and the changes can be allocated.

The interfaces can be renamed by double-clicking on the interface in the window on the right. The name can be changed at any time through the settings window in PHOENIX4 preferences „Options>Remap Interfaces“.



By choosing an interface from the list on the right, further options are available. At the bottom on the right the output can easily be mirrored, e.g. for the inverted operation of laser projectors as satellites. Furthermore, the DMX-In function can be activated in addition to DMX-out to operate PHOENIX4 LIVE with an external DMX controller.

With Micro USB V2 interfaces, you get more two more radio buttons in the "Laser Output" section to choose between "Intensity" or "Color". You have a 1-3 color laser e.g. RGB, RGBY, RGY, 1 color laser, connected then you should leave the selection on "intensity". If you use a 6 color laser, then set this to the selection of 6 colors.

The assignment of the interfaces to the timelines can be saved by clicking the "Save" button. To load a saved mapping, use the "Load" button.

With the "OK" button you exit the assignment of the interfaces and close the window.

**Note:** PHOENIX4-Showcontroller can manage up to 32 interfaces (with a PHOENIX4 PROPLUS license). With PHOENIX4 LIVE up to 8 interfaces can be operated.

## Laser projector setup

### Setting up the Laser projector in Phoenix4 Live

Depending on the hardware every laser projector needs different settings to optimize the laser output. This begins with optimizing the scan parameters, followed by the color mixing and finally setting up the projection zones.

With the scan parameters the rotating laser beam deflection mirrors are optimized for their intended use (graphic / beamshows). The scan settings comprise among others, the scan speed (speed of the scanner in „kpps“) and important information concerning idle times on the edges (important for the contours).

Due to the varying hardware components it is very difficult to provide standard settings. Every manufacturer recommends different settings. The predefined settings in delivery condition are chosen in that way, that the scanner cannot be damaged. This does not mean that these settings are correct for the individual scanner. To achieve the best possible results, please adjust these settings for your scanner.

The settings for the particular colors of the projector are of elementary importance. Fundamentally the projection type can be determined (RGB, RGY, RGBY, single color and six color) as well as the associated color mapping for an achromatic output. Color casts can be equalized by using varyingly strong diodes or the output efficiency of the single colors can be limited. Not least the start voltage can be adjusted to provide uniform fading out, fading in and superimposing.

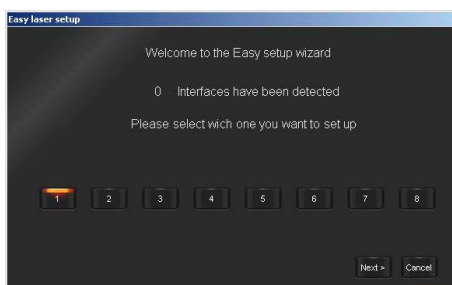
It is essential to define the individual projection zones for every laser being used concerning size, position and output performance. These zones specify the dimensions and the presentation power of the animation. After being setup correctly, the animations are guided by the projection zones. You can allocate the animations to the projection zones in the animation processing window.

### Easy Setup – The quick laser projector basic setup

These fundamental settings can be made through the „EasySetup“ menu of PHOENIX4 LIVE.

After plugging in new interfaces and starting PHOENIX4 LIVE the window „settings“ for the timeline allocation will open. Normally it will suffice if „automatic“ is pressed and the window is closed by clicking „OK“.

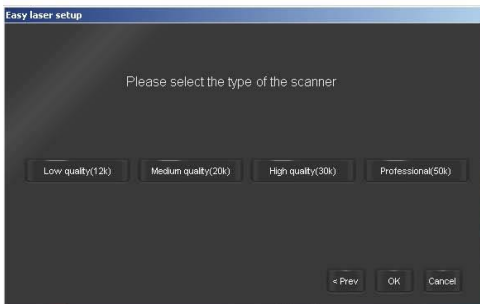
The „EasySetup“ window will open up.



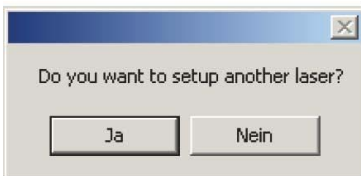
Please choose the laser projector you want to install. The number corresponds with the timeline of one or more interfaces in the Remapp Interface Settings window. Press „next“ to continue.



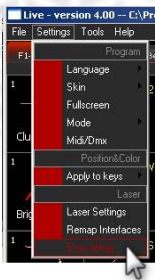
In the next window you set the projector type. Choose a projector by pressing the appropriate button. This is important, because otherwise not all colors can be used in an animation. The selection is RGB, RGY, RGBY, 1 color and 6 color. To proceed to the next setup step press „Next>„



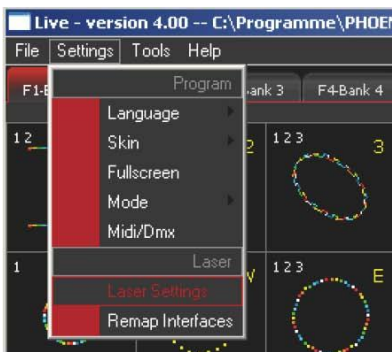
By choosing the scanner type you define a variety of settings that influence the quality and the output. Please choose the performance that matches your actual scanner hardware. Choosing the wrong settings can damage your scanner. There is no liability for the wrong settings. If you are not sure please consult your manual or contact the laser projector manufacturer



After finishing these settings press „OK“. In the opening dialog window you can determine whether the settings are to be used for further projectors. If you have other interfaces corresponding with different timelines press „Yes“. Go through the „EasySetup“ procedure again. Otherwise press „No“. You can now start with your live performance.

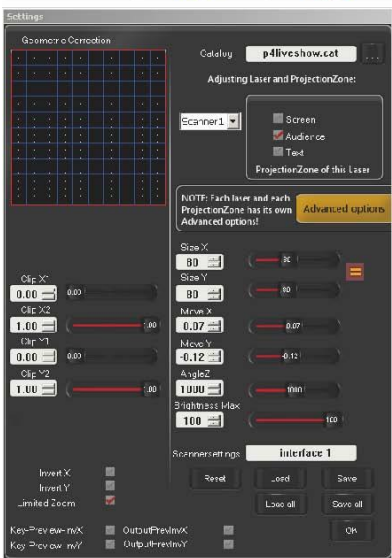


You can change the settings at any time in the „EasySetup“ menu. Go to settings>EasySetup.



After you have gathered more experience in handling the hardware and you would like to optimize the results, take a closer look at the laser settings.

From the surface menu click on „Options>Laser settings“.



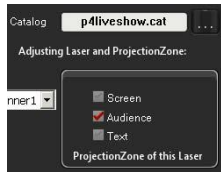
The laser settings window will open. You can then change the laser output by adjusting the settings for clipping, mirroring the output, size, position, rotation and brightness. Please change these basic settings for your event before you change the settings for the scan parameter, because they will interact with each other.

Please choose the scanner (projector) and projection zone (screen, audience, text) you want to adjust.

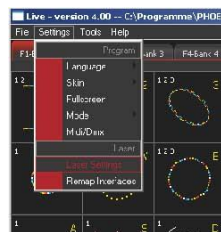
Each scanner or laser has in its projection zone three projection zones in which different values can be deposited.

## Projection zones

To make adjustments to the laser output, it is very important (!) that you understand the operation of the projection zones. Basically it a projection zone is the area of the output, in which the respective laser projection system will be shown. **Each animation** is assigned a projection zone (screen, audience or text) and is presented **as the projection zone specifies it**.

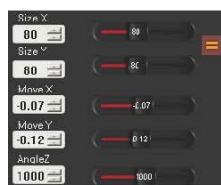


With PHOENIX4 LIVE it is possible to create 3 different worlds for each one of the 8 laser projectors. Creating these worlds is very important. It determines the size, the position and corrects distortions of the output. Animations will be, or are assigned to projection zones and are adjusted by the settings chosen there. If you change the location of your event you will only have to adjust the worlds and all animations will be displayed automatically! Without creating these „worlds“ you will have to reprogram each individual animation.

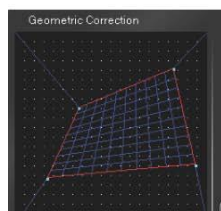


You will find these settings in „Settings“>„Laser Settings“ in the top menu.

A typical projection zone for a screen in a room is „screen“. Here, as for every projection zone, you can adjust the settings for size, position, rotation, clipping and inverting to project the picture correctly.



Especially with screens it is important to adjust the settings for clipping exactly, to make sure, no laser beams are projected outside of the screen! The clipping makes sure the laser beams are cropped on each of its four sides as soon as they fall outside of the screen. Each of the four sides can be adjusted individually.



When projecting your animation onto a slanted surface you can use the 4 point distortion correction to create a graphic rectification. This causes, that a distorted circle still appears round on screen. These adjustments are brought about through the use of a geometric grid. To adjust the projection to the projection zone you can push or pull the corners of the grid into the correct position, whilst displaying a figure or test pattern on your screen.



In the bottom section there are check boxes to mirror (invert) the output around an axis (X/Y). Depending on application of the laser, reflection or retroreflection, static or mobile, the output of animations and text can be aligned and depicted. The Zoom Limitation prevents the animation from being projected outside of the projection zone, and is set as standard.



The checkboxes below allow to mirror the animation, -animation-tiles and 3D preview-around an axis separately and ONLY for the preview. Therefore the output preview can be adjusted to the actual output which is desired for the individual work station.

The entered values will be saved in the active projection zone (here: „screen“).

All projection settings will be saved automatically when saving the LiveShow and are available after re-starting PHOENIX4 LIVE and loading the LiveShow.

**Adjust all three projection zones for all 8 laser projectors in the same manner when required.**



All preferences of the „Laser Settings,, will be saved when saving the LiveShow. In addition you can store the settings separately for the use in different venues or transfer the data to a separate computer. By clicking on „Load“ or „Save“ on the bottom right, you can save the projection settings singularly for each laser projector including the three individual projection zone settings. By using „Load all“ or „Save all“ the laser settings for all 8 lasers will be saved.

**Note:**

Generally saving automatically uses default paths. In order to enable fast retrieval of appropriate backup and configuration files, you should always use the default paths when saving.

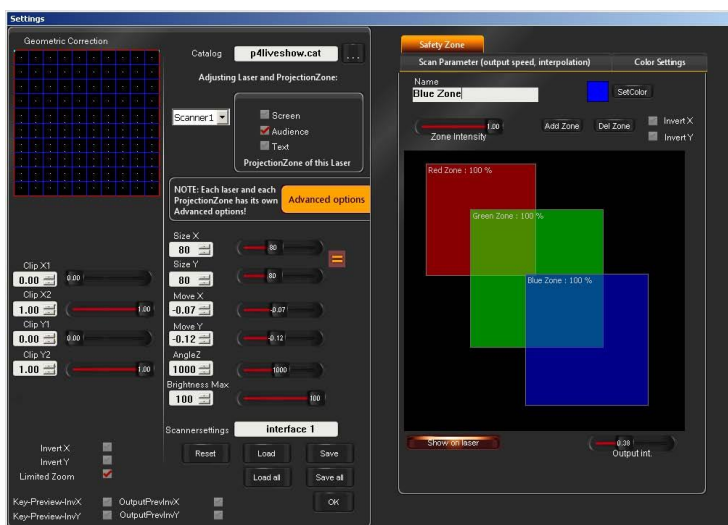
## Safety settings / Safety zones

Safety is a main factor with laser shows! For this reason it is necessary to program different settings before starting. The laser projector has to be set at a minimum height of 3m (this may vary depending on rules and regulations from different authorities, audience scanning may be prohibited). The safety distance to the audience may also vary.

**Important:** Therefore please inform yourself at the responsible authorities and change the standard settings accordingly.

The software contains functions to allow safe operation. However they are not set as standard and must be activated. That's because there is no standard event situation. The safety features also include clipping (reduces audience scanning, provides minimum distance to the audience).

To reduce the output intensity in certain areas without deactivating it completely, the safety zone module can be used.



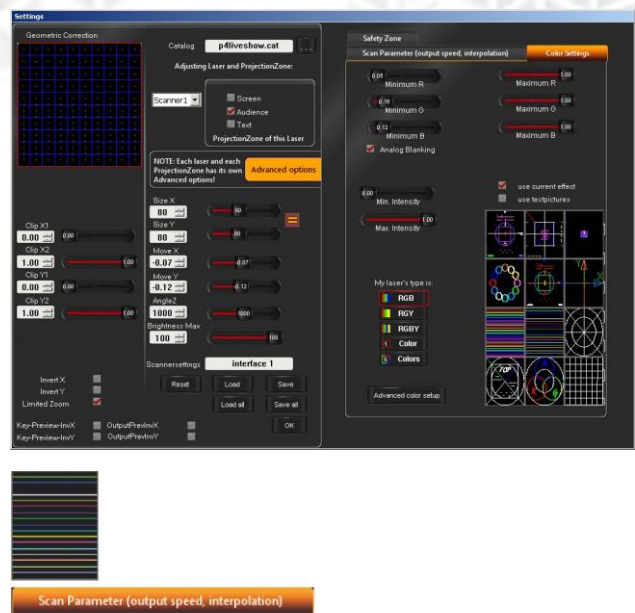
Go to „Laser Settings“, click on „Advanced Options“ then click on the tab „Safety Zone“.

You can modify up to 32 individual zones with different output intensity. The black section marks the maximum output (not the projection zone size).

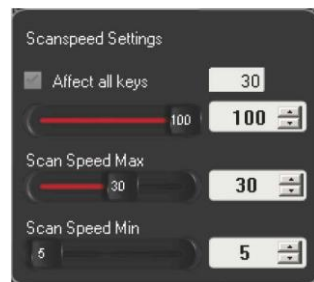
By clicking on the button „Add zone“ a new safety zone with the maximum output size will be created. After clicking onto the projection zone you can adjust the intensity for this area by using the regulator „Zone power“. The value 1.00 means that the zone lets 100% output through. By down-regulating this value, the output intensity for this area will be reduced.

You can change the size of the colored safety zone by dragging it's corners to the size of the protected area. To make the different safety zones more differentiable, they can be colored and named. By clicking on the color field on the top right, the color for your activated safety zone can be determined. You can also give the safety zone a name by typing in the text box. You can also invert the X and Y axis for the safety zone. If safety zones are no longer needed delete them by clicking on „Delete zone“. Overlaying safety zones work additionally. This results in multiple reductions. Two overlaying safety zones each with 50% will result in 25% (50% from 50%). By pressing the button „Laser output“ beneath the safety zone section you can display the safety zones on screen. With the regulator „output power“ the intensity can be adjusted.

## Scanner Settings



Scan Parameter (output speed, interpolation)



To adjust the scanner you need to open the "Advanced Settings" by clicking on the yellow button.

These appear as a side menu.

The adjustment of the scanner can be made best by the test images. On the tab for "Color Settings" you can find some of them in the lower right area. Activate the test pattern output by ticking the checkbox at "test image output" and click on a test image. The different test images are suitable to control and verification of different settings depending on the purpose.

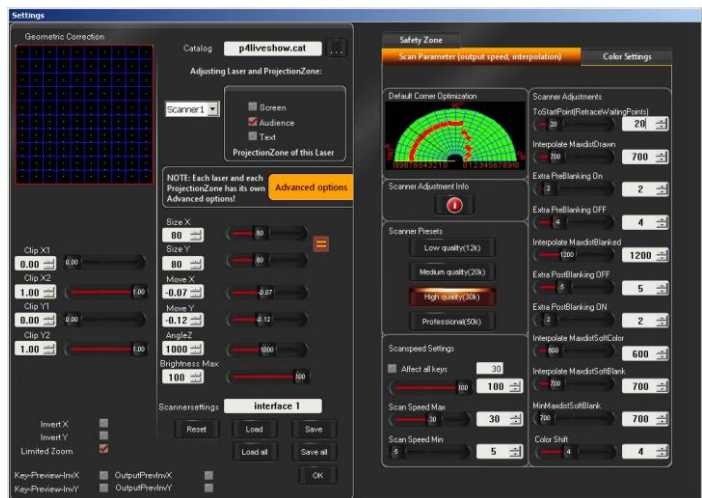
For example the test images with the colorful lines are pretty suitable for the first scanner adjustment.

Change to the tab "Scan Parameters" then.

In the column right at the bottom minimum and maximum scanner speed can be adjusted. Please adjust these, before you adjust the further parameters. The maximum scan speed depends on the performance of your system. Even if you have a laser with a 50K scanner, it does not mean that this output will be permanently achieved. If in doubt, please consult your manual or contact the manufacturer of your laser hardware.

The minimum scan speed should not be below 10Kpps, because due to the longer dwelling time the output intensity will rise and therefore could be hazardous for your environment.

With the scanner presets, located in the middle on the right-hand side, almost good defaults corresponding to the performance of your computer can be adjusted. Please only use the default matching your system! There will be no liability taken for damages resulting from wrong settings.

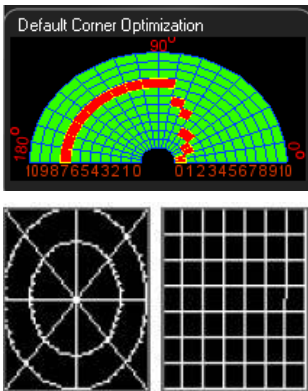




With the controllers on the right-hand side the fine tuning can be made.

By the means of the visible laser projection adjust the picture in such a way, that there is no overshoot at the end of the lines. You will get the biggest effects by adjusting the values for “Extra Preblanking“ and „Extra Postblanking“.

By running the mouse over the info button an info graphic appears, giving you further information on the controllers and settings.



Above you will find the window to optimize the settings for dots, curves and edges for all figures in the animation. With this tool you can see the corners and curves in more detail. By increasing the dots the figures will become brighter, however, exaggerating will result in a flickering animation.

The most suitable test patterns for adjusting the corners are the grid and the circle surrounded by a rectangle.

Scanner settings in detail (only for experienced user)



The settings described here should only change if you really have experience in dealing with laser projectors and the effects of these settings.

ToStartPoint(RetraceWaitingPoints)

This value refers to the number of points for the first visible point drawn.

Interpolate MaxdistDrawn

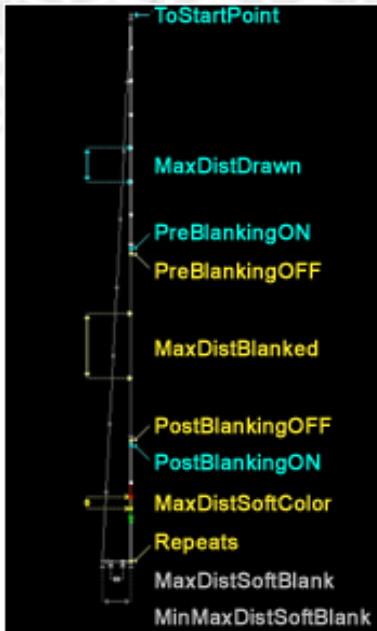
This determined the distance of automatically drawn visible points e.g. in a line. The smaller the distance (value), the more accurate the tracing of the graphic. The limiting factor is the scanner, which can only provide a certain amount of points.

Extra PreBlanking On

A number of visible points which is set at each end of a visible line. More points lead to an accurately positioned end of a line, too many points make the last point at the end of a line shine very bright (HotSpot).

Extra PreBlanking OFF

A number of points which are not visible is placed at the end of a visible line. More points lead to a accurately positioned end of a line, too few points let the last point at the end of a line break out (tail).



### Interpolate MaxdistDrawn

Herewith the distance of automatically set not visible points (Blanked) is determined. e.g. in case of interruption of a line. The smaller the distance (value), the closer the points in the invisible range will be. The limiting factor is the scanner, which can only provide a certain amount of points.

### Extra PostBlanking On

A number of visible points are placed at the beginning of each visible line. More points lead to an accurately positioned beginning of a line, too many points let the first point at the beginning of a line light up bright (HotSpot).

### Extra PostBlanking OFF

A number of points which is set at the end of a non-visible line. More points lead to an accurately positioned beginning of a line, too many points let the first few points at the beginning of a line break out (tail).

### Interpolate MaxdistSoftColor

Sets the minimum distance between points that are used with activated Soft Color option for the transition between two colors at an animation. The smaller the distance, the softer of the color transition from one to the next color will be. (see also Softcolor)

### Interpolate MaxdistSoftBlank

Sets the maximum distance between points that are used with activated Softblank option for an animation for the transition between blanked points and visible points. The shorter the distance the smoother the transition from not visible to visible points will be (eg, for hiding lines). (See also SoftBlank)

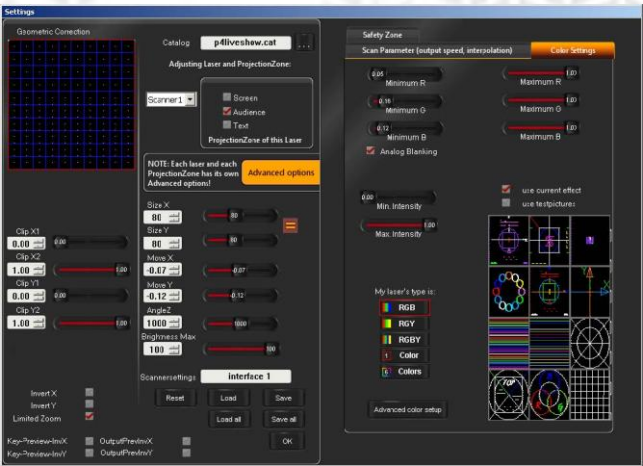
### MinMaxdistSoftBlank

Sets the number of points for the start of the softblanking function. The smaller the value, the earlier the start of the transition from the visible to not visible points will be (eg for disappearing lines).

### Color Shift

The color shift compensates the inequality in the speed of the response behavior of the diodes.

## Color settings

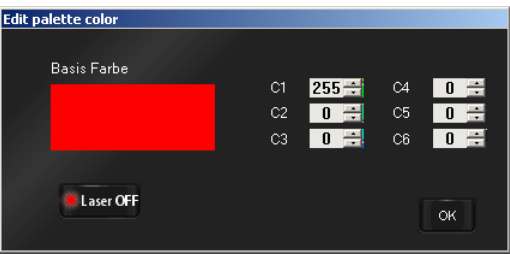
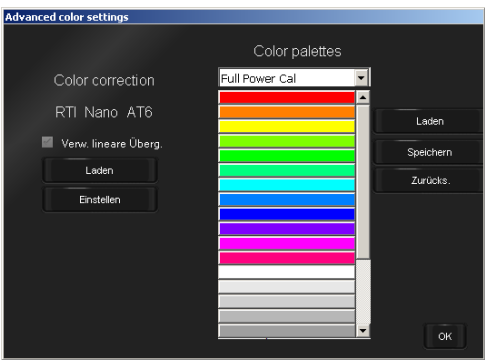


The color settings apply for the particular scanner and do not depend on the projection zones.

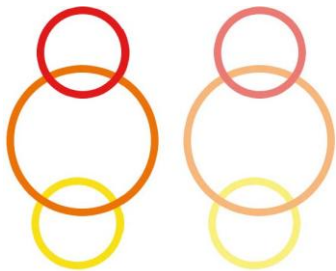
Color adjustments can also be found in „Advanced Options“, >“Laser settings“ on the tab „Color Settings“.



By already prepared templates, the color mix can be adjusted quickly based on the projector type. By selecting this all colors will be set correctly. You can choose between RGB, RGY, RGBY, 1 Color and 6 Color.



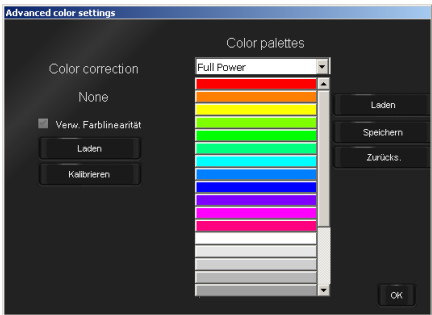
First, make sure that your laser projector is turned on and the projection area is set up, so that color-adjustment is possible (eg that the laser projector is directed to a white surface such as a wall). To fine-tune the colors, you can after selecting the projector-type, click on the "Advanced Color Settings" button. As you see there all "color preferences" are based on color palettes. These can be set individually, of course. To do so, double-click on a color bar that you want to adjust. This will open the "Edit color palette" window on the left showing the color to be adjusted. On the right side you set based on 255 values per color the color mixing ratio. Usually the correspondence is C1 = red, C2 = green, C3 = blue. The colors C4-C6 are built in only in high-priced laser projectors. An often chosen arrangement of colors is C4 = yellow, C5 = cyan, C6 = blue or red. The laser is turned on with the "Laser OFF" or "Laser ON" button. The uppermost is the previous color (if there is one), the middle shows the current color to be adjusted and the bottom color represents the following color.



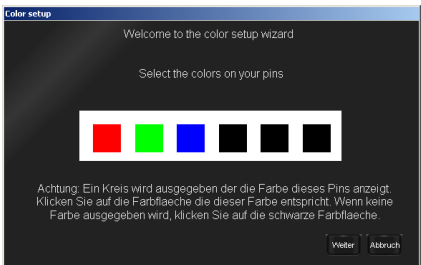
With the "OK" button you assume the changes and close the settings window.

To not to adjust each color of the color bar for the basis of the C1-C6 values, Phoenix offers a comfortable setting assistance, with which the color balance is easy to accomplish. Again, open the "Advanced Color Settings".

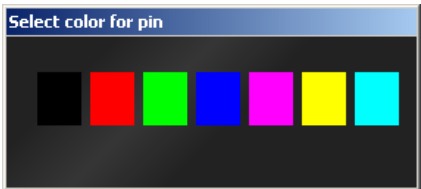
**Attention: The following steps may produce high intensity output. Direct the laser projector so no one and nothing can be harmed or damaged!**



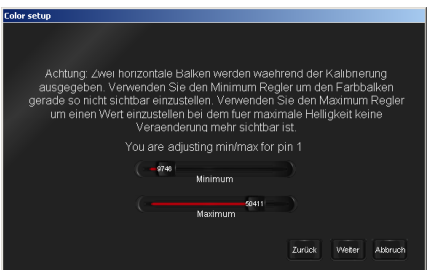
Click on the left side on "Calibrate" next to the color bar. This will open a settings window.



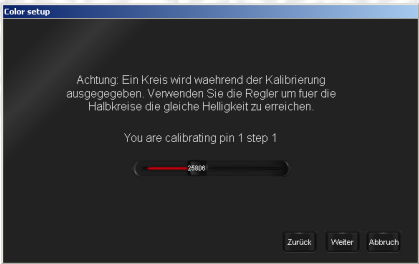
Here you can see, depending on the previously selected projector type 1 to 6 color rectangles. These represent the colors that were installed in the projector. Now when you click on one of the rectangles, a circle in the color which is installed in first place in your projector is output ( connected and switched on laser projector preconditioned).



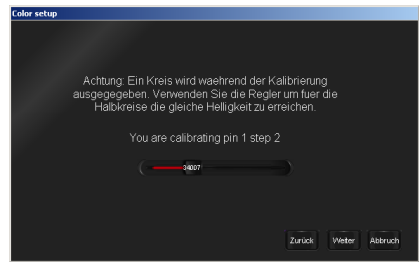
To make a color-correct assignment out of the software, select the color square that corresponds to the color that is output by your laser at the window that has also opened. Also do this for the other colors of your laser projector for all the rectangles from left to right that does not show the correct color order. If no circle is output when clicking on one of the rectangle, select the black rectangle. Then click on "Next".



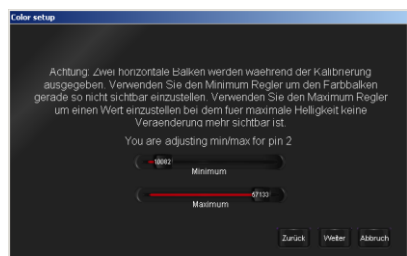
Two horizontal bars in the first color of your laser are output. The top slider "minimum" sets the output for the lower horizontal beam. This must be set by value changes so that it is just NOT visible. Now setup with the lower "maximum" slider the top bar brightness, that there no visible change any more at the point where you increase or decrease the values. Then proceed by clicking "Next".



You get an output with two semi-circles in the color that you currently set. With the slider, you need to set the value so that both circles are shown in the same brightness. Then click "Next."

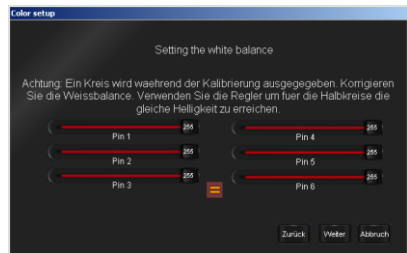


Again, you can see two semi-circles. Also, set them up, so that they are shown in the same brightness and click "Next." Repeat this process once more.



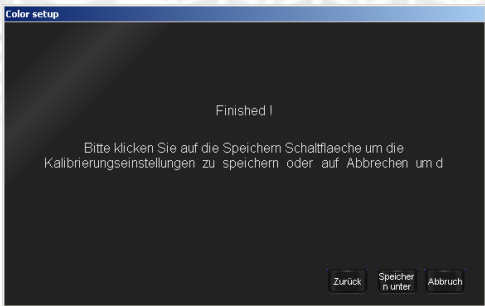
Then you see some beams again, this time shown in the second color of your laser (in the case of an RGB projector). Redo the settings as with the first color.

Now set all the other colors that you have specified in the color selection to the beginning in a same way.

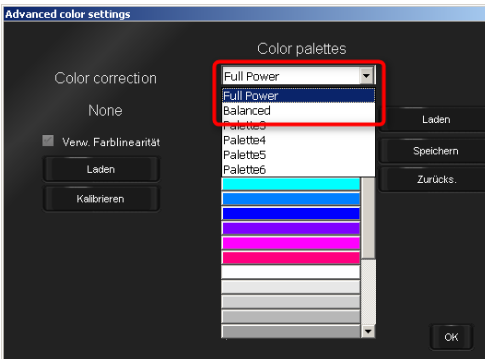


At the end of the single-color calibration, you get a circle with all the colors displayed simultaneously (for an RGB projector, the color white). If you detect color shifts or color variances, you can then adjust each color separately again, so you get a perfect color mixing (RGB laser projectors, the color white). Then click "Next."

Next, you see again two semicircles, where they can influence one of them so that it displays the same brightness and color of the other. Again you will see the sum of all available colors at both circles. Click "Next" and repeat the settings for the two semicircles two more times.



After that the setting for the color palette is completed. Then you have the option to save your settings to an external file by the the "Save As" button, and thus to return to the palettes. Alternatively, click on "Cancel" to discard all currently performed changes to the color balance.

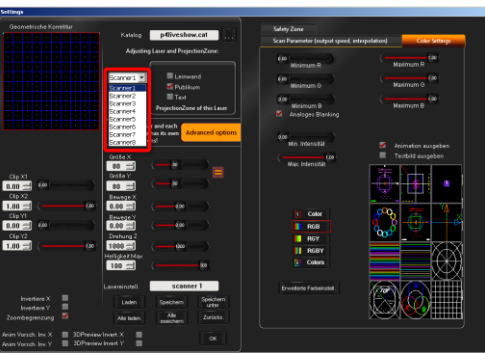


On the basis of this information color palettes were generated in the background that are now available on the right side of the selection, above the colored bars, as a "Full Power Cal" and "Balanced Cal" color palette.



They appear as "palette 1" and "palette 2" etc. in each of the graphics of the animations and are used there by setting the one or the other. By default "Palette 1" ie "Full Power Cal" is assigned to all the animations and graphics.

**Note:** The color calibration must be performed for each laser for a perfect color output. Even if this is of the same type, it does not mean that it behaves like other for the color. Each laser projector has design differences for the type of construction of the diode, which can be reduced to a minimum by the color calibration.



To adjust the other laser in color, close the color calibration window with the "OK" button and select instead of "Scanner1" e.g. "Scanner2" on the left side at "Adjusting and Laser Projection zone". Set the right type of laser projector (1 Color, RGB, RGY, etc) (if not done by the "Easy Setup" already) and click again on "Advanced Color Setup". Rerun all the steps as described above in order to adjust the color of the laser projector.



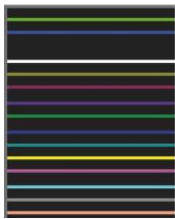
Another opportunity to influence the color output, is to use the controllers for minimum and maximum output power.



The maximum output power for every single color (R-G-B) can be limited with the „maximum“ controller. This can be used for example to reduce the overall output power or to reduce the dominant color, if distortions occur. The value 1.00 equals 100% of the possible maximum output. Reducing the value to e.g. 0.50 means reducing the performance of this color by 50%.



The Start-performance can be varied by using the „minimum“ controllers. Not every built-in diode will show a visible output at 1%, therefore the start-brightness can be set here. Especially for delicate color fade-in and fade out these adjustments can be efficient. It is recommended, to use one or more test pictures for adjustment. First of all choose a test picture, then set all „maximum“ controllers to „0“. Increase the values for every „minimum“ controller consecutively until the test figure is shown in color. For instance for the „minimum R“, the color will be red. Now reduce the value again until the output is no longer visible. This is the correct setting for the „minimum controller“ of this color.



The brightness of some laser projectors can be controlled by setting a separate „intensity“ value. This can mostly be found with single color projectors. Below the „minimum“ and „maximum“ controllers of each color you will find the controller for the „Intensity“ value for this color. Here you can set the start and end brightness as done with the colors.

## Quick start Phoenix4 Live

After configuring the hardware of the lasers, you can start using the program.



To activate the laser output click on the main „Laser ON/OFF“ button. Now the laser output for the (little black Micro-USB) interface is active.



Click on one of the animation tiles to emit the animation over the laser. The active animation stands out against the others through a colored border. If you run the mouse over an animation tile you can see a moving preview. There are 40 animations in each bank.



You can switch between the 22 banks by clicking on the tabs. On each tab 11 banks are displayed. With the last tab „Tab 1 / Tab 2“ you can switch between the banks 1-11 and 12-22.



With the effect controllers you can manipulate the active animation, even during a live show. You can choose between strobe light, speed, color rotation, rotation, movement and zoom effect controllers.



If more than one laser is connected, the live effects can be used for each laser individually. For this purpose activate the button above the effect controllers and choose the desired effect. By clicking on the lock button you can use the effect manipulation for all lasers at the same time.



If you are using several individually controllable projectors, every animation can be displayed by several lasers. The allocation is done by simply choosing the laser for the output. On the animation-tile the actually allocated lasers are displayed by the white numbers in the top left corner.



On the right-hand side you will find further animation functions, such as output synchronization, hold and flash as well as fade in and fade out effects.

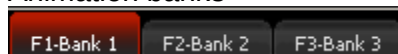
By right-clicking on the animation tiles further options for creating new animations, im- and export, changing graphics, relocating and adapting are shown.



## Phoenix4 Live-Surface



### Animation banks



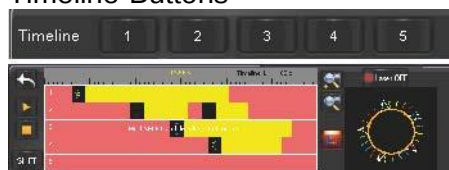
In each „bank“ up to 40 animations can be saved. By simply right-clicking the bank name it is possible to rename the bank. The banks can be called by pressing F1-F11 on your keyboard or you can switch between the banks via DMX-/Midi-Controller.

### Laser animations



Each tile can save and call marquees, DMX-Out commands and any desired figure. After right-clicking on the tile, functions like copy/paste, delete, edit, Im-&export etc. are available.

### Timeline-Buttons



With the 5 timeline buttons it is possible to shift animations from the surface to one of the five animation tracks and play it afterwards. To move an animation click the „Shift,“ button on the timeline control panel or hold down the „Shift“-key on your keyboard. Then you can shift the animation from your surface to the desired timeline by using the „Drag & Drop“ function. The playing time can be changed - as described for the figures (s.a.) - by pulling the starting / ending point. In the preview window on the right the figures are displayed. By clicking the „Laser on/ off“ button the animation will be added to the existing output. The timelines can be saved and reloaded over the menu (Options>Timelines)

(Slider)-Presets



On the five preset buttons settings for the effect controllers can be saved. Defining presets can be very helpful to have quick an simple access to special situations, e.g. an animation shall be equipped with a stroboscope effect which can be utilized short-term at the right moment. For this purpose the position of the first effect controller (stroboscope) must be adjusted to the correct value. Afterwards right-click on one of the preset buttons and hold it for at least 2 seconds to save. By pressing the „Hold / Flash“ button you can choose whether the slider settings shall be kept permanently or just for the time the preset button is pressed.

Large rotary potentiometers



The rotary potentiometers above the controllers show the intensity of the sine waves of the effects. This effect will show ONLY, when the corresponding effect controller is within the array of the sine oscillation. The effect differs depending on the controller (see also 5. Effect controllers). The more the rotary knob is on the right-hand side, the stronger is the sine wave effect. The rotary knob shows up when running the mouse over the icon. If the rotary knob is unactive, the currently set values can be seen in the display around the knob.

|                |                                                                                         |                                                                                                                                                                                                                    |
|----------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stroboscope    | 000 – 010<br>011 – 139<br>140 – 255                                                     | no changes<br>stroboscope slow – fast<br>brightness 0 – 100%                                                                                                                                                       |
| Effect speed   | 000 – 010<br>011 – 255                                                                  | no changes<br>Effect speed 0 – 800%                                                                                                                                                                                |
| Color rotation | 000 – 010<br>011 – 040<br>041 – 070<br>071 – 100<br>101 – 130<br>131 – 160<br>161 – 255 | no changes<br>red<br>green<br>blue<br>yellow<br>white<br>color change slow- fast                                                                                                                                   |
| Rotate X/Y/Z   | 000 – 010<br>011 – 090<br>091 – 120<br><br>121 – 179<br><br>181 – 255                   | 000 – 010 no changes<br>Exact rotating position<br>permanent rotation to the left<br>slow-fast<br><br>Permanent rotation to the right slow – fast<br>sine wave – effect rotates to the right / left<br>slow - fast |
| Move X / Y     | 000 – 010<br>011 – 089<br>090 – 255                                                     | no changes<br>Exact position<br>sine wave movement back and forth slow - fast                                                                                                                                      |
| Zoom           | 000 – 010<br>011 – 199<br>200 – 255                                                     | no changes<br>Exact size<br>sine wave small/large<br>slow-fast                                                                                                                                                     |
| Scan speed     | 000 - 100                                                                               | Attention: The minimum and maximum scan speed have to be adjusted in the Laser Settings.                                                                                                                           |

Laser-Projector-Selection



Selection of the laser projector which should be influenced by the adjustments through the controllers (laser projector 1 - 8 or all (lock symbol)). The selection of laser and effect settings will be saved automatically for every animation.

## Start-Animation



Shows the number of the start animation for the autorun mode (continuous automatic playback of the chosen animation). After pressing the start button the number of the active animation of the actual animation bank will be taken over. Optional you can enter the number over your keyboard. The start frame is linked to the end frame (11) and the autorun function (8).

## Autorun



Switching on / off the autorun function (changing figures). Start and end animation can be adjusted with the buttons start animation (7) and end animation (11). The speed of the autorun can be adjusted with the subjacent controllers. Note: If the BPM function (13) is activated, the animations will be changed in the rhythm adjusted (the time controller for changing the intervalls is out of operation).

## Autorun Loop



If the checkbox is ticked, the animation will be played completely before changing to the next animation. The autorun time settings have no influence at this time.

## Random



If the „random“ button is enabled, the active effects in the autorun mode will be displayed randomly, not sequentially as adjusted.

## End-Animation



The end animation defines the last effect in the sequence of the autorun animation.

## SMS / PDA



Enables / Disables the SMS-4-laser function (s.a. „SMS-4laser“) and the PDA function (s.a. „mobile options“). With the PDA function the main functions of PHOENIX4 LIVE can be remotely controlled via a Windows-Mobile 6.5 device. When clicking on the PDA button, a separate window opens up in which you can select the computers IP address, if more than one network adaptor is connected. After choosing the network adaptor the device will be connected automatically. For further information s.a. „PDA connection“. With the SMS function (SMS-4-laser) SMS messages can be transmitted as marquees directly to the laser via a connected modem (mobile phone or UMTS stick). For further information s.a. chapter „SMS-4-laser-function“.

## BPM On/Off



Enables / Disables the BPM-function (Beats-Per-Minute). If the BPM function is enabled, the active animation will run in an infinite loop started by the beat of the music (mode 2), or the speed for the iterations will be adapted to the adjusted beat (mode 1). With the BPM function activated, it is important to also adjust the beat of the music by using the „Tap“ button or the spacebar of your keyboard. The beat speed will be ascertained by the time passing between two keystrokes. To adjust the beat correctly to the music, the „TAP“ button should be pressed at least 10x following the beat of the music (enabled BPM function provided).

## Position



This allows positioning the animation in x- and y-axis. Hold the left mouse key whilst relocating the d-pad. Alternatively the arrow keys can be used. By clicking anywhere on the blue area, the animation will be placed in it's original position (X=0, Y=0). The checkboxes below invert the movement of the output for the changed position.

## Preview



Enables / Disables the preview mode for the animations (the mode is standardly enabled which can be seen by running the mouse over the icon or with autorun function). Due to the fact that the preview mode needs a bit more computing power, the feature can be disabled for underperforming PC's (press preview button).

## Man / Auto BPM



Selection whether entering the BPM beat is done manually or automatically (in accordance with the input at the sound card).

## Tact



Defines the instant time of action (e.g. starting a figure) in the BPM mode, provided the BPM (13) mode is enabled.

Example: a circular animation shall be re-started 4 times during one cycle. The value for „Tact“ has to be adjusted to  $\frac{1}{4}$ . If the animation shall only be seen once at every 8th beat you must adjust the value to 8. The duration of an effect (e.g. visible output) can be adjusted through the value „effect time“.

## Effect time



This value defines for how long an animation in the BPM mode will be displayed. Example: Every 8th beat the effect shall be shown for further 4 beats. Adjust the value (animation re-start) under „Tact“ to 8 and the value for effect time to 1 ( $(4 * (\frac{1}{4}))$ ).

## Master brightness



Adjustments for laser output brightness for all animations.

## Master speed



Influences the global speed of ALL animations.

## Laser ON / OFF



Enables / Disables the laser output. The interface has to be switched on, if the DMX In / Out function shall be used.

For selected animation

☒ Affect all running

If the checkbox is ticked, the selected laser projectors (for animation output) refer to the selected animation only. If the checkbox is not ticked, the laser projector selection is valid for all animations chosen hereinafter.

Affect current key

☒ Affect current key

By ticking this checkbox the settings of the „color picker wheel“ and the position of the d-pad will effect all selected animations (e.g. using „Multieffect Hold“)

Select laser projectors



Selects laser projectors for animation output.

Blending speed



Adjusts duration for blending from one animation to the next. Works only with „Fade in / out“ or „Zoom in/ out“ feature enabled.

Fade in/ out



Fades in / out the brightness of an animation when activating or deactivating another animation.

Zoom in / out



Fades in / out the brightness of an animation when activating or deactivating another animation and also changes the size of the animation. (both buttons are enabled)

Deactivate all animations



Deactivate (deselect) all active animations

Hold / Flash



**Hold:** The animations stay active until they are selected again or another animation is chosen.

**Flash:** The animations are only active for as long as the animation is selected „active“ (e.g. left mouse click)

Multieffect Hold



If the button is enabled up to 10 animations can be activated and displayed at a time. If the function is disabled, the animation selected last, stays active

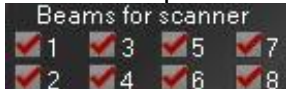
Preview



Activates the 3D preview for the Open GL in an enlarged window by clicking on the „3D preview“ button.

An output can be seen in the preview mode, if at least one laser is selected (s.a. Laser-Projector-Selection). By clicking on the beginning of a laser output (white dot) and dragging whilst holding the left mouse key down, the position of the output within the preview window can be defined.

Scanner output



Enables / Disables the beam simulation for every single scanner in the preview.

Colour picker spectrum

When the checkbox is ticked, the animation will be displayed in the color chosen by running the mouse over the desired area of the color spectrum, whilst holding down the left mouse key.



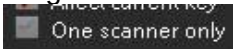
#### Global DMX



#### Laser Chase



#### Single laser



After activating the DMX out checkbox, a DMX or MIDI device can be switched on / off directly from the surface by using the 10 (global) DMX buttons. Channels can be allocated in the „Direct DMX“ window. Right-click one of the buttons and choose „Edit“. For further details s.a. „Effects in detail - DMX effects“ below.

After ticking the checkbox, all selected scanners will be switched on and off consecutively which causes a chaser light effect. The speed of the „chaser light“ can be adjusted with the effect controller below.

If this checkbox is ticked, only one laser at a time can be selected. Allocating two or more laser projectors to one animation is impossible.

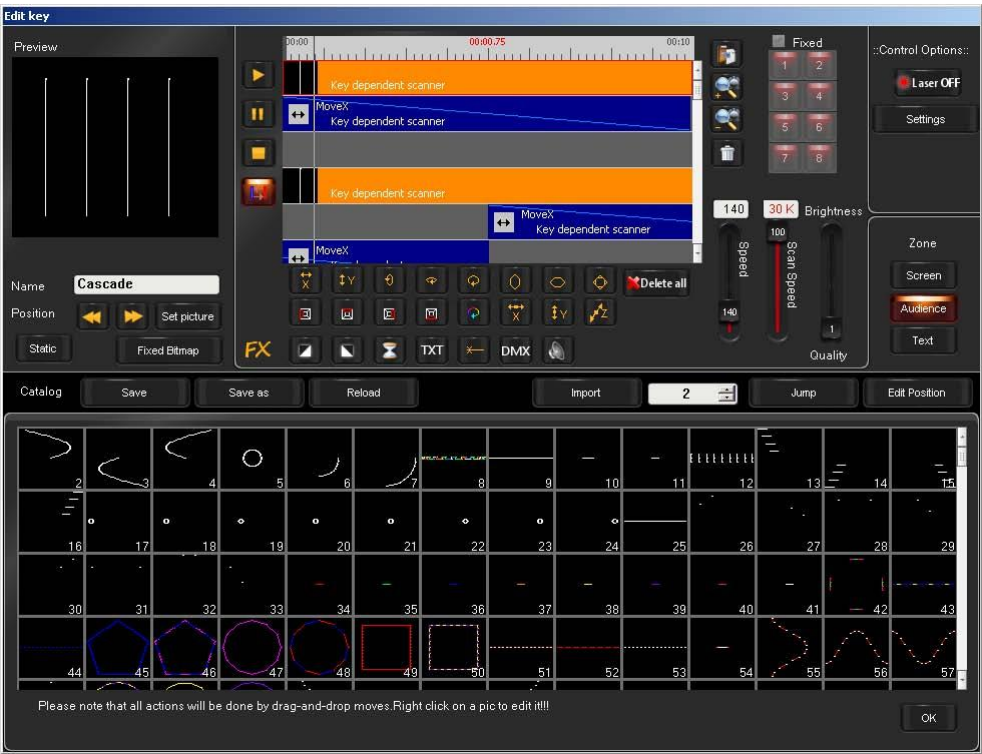
## Quick start - creating a laser animation (Edit Mode)

The animations cannot only be selected or played. All included animations can be changed to your requirements. To change an existing animation or create a new animation right-click one of the tiles on the surface.

Select „Edit“ from the appearing context menu.



The appearing window is divided into two sections, upper section for animations, lower section catalog.

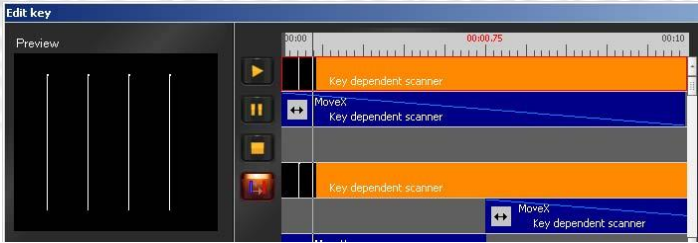


The figure catalog can be browsed by scrolling with the mouse wheel or using the scrollbar.



You can go directly to the line in which a figure is placed, by entering the position number of the figure and confirming by pressing the „Jump“ button.

To use a figure out of the catalog mark the desired figure and pull it from the lower window using „Drag’n’Drop“ to the track in the upper window, whilst holding the left mouse button down.



The figure will now turn into an animated cartoon consisting of just one frame, i.e. the figure will be shown for the complete playing time of the timeline. By using the controllers on the left-hand side (beside the tracks) the playback in the preview window leftmost can be started. The visual indicator running over the tracks shows the actual playback position of the frame (single picture) in the animated cartoon.



In addition to that, the animation can be displayed with the laser by switching on the output (Master laser ON provided). Changing the effects or the animated cartoon affects the output straight away.



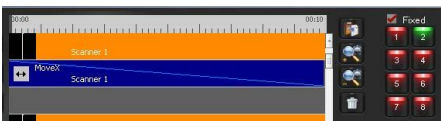
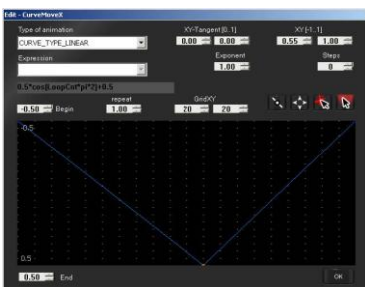
The playback speed can be adjusted by adjusting the length of the timeline (duration of the complete animation) or by adjusting the playback speed.



The length of the animation can be adjusted by pulling or pushing at the start or ending point whilst holding the left mouse button down. By clicking on the middle section, holding the left mouse button down, the position of the animation in the tracks as well as amongst the tracks can be adjusted.



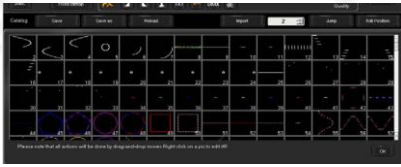
To convert the animated cartoon into an animation use the effects below the tracks. For further details and functionality of these effects please read chapter „Animation effects in detail“. The effects can be added to the tracks by „Drag ‘n Drop“. They will always affect the overlaying elements. This applies to animated cartoons as well as to some of the effects itself (e.g. Pivot Point (central point)). Length and position of the effects can also be adjusted. By double-clicking on the effect the attributes will be displayed as well as the values (in the form of curves) for the settings of the effect. More information concerning effect settings can be found in the chapter „Curve manipulation“.



By clicking on an animation and the appending (sub) effects and ticking the checkbox „Fixed“ the animation and its effects will be allocated to the selected laser. This prevents that the animated cartoon will be shown on any other laser than the selected. The

allocation can only be changed when adapting the animation. Choosing another laser projector for the animation output on the main surface does not affect the allocation of the animation, once the checkbox is ticked. This means, you can emit an animation consisting of different animated cartoons and laser allocations spreaded on several projectors. Within an animation single animated cartoons can be allocated fix, whilst the others are at free disposal and can be allocated to any other laser.

## Catalog in detail



The catalog and the Live Show are symbiotic. Whilst the Live Show saves all settings for the lasers and surface as well as the settings for the effects and the animated cartoons, the catalog contains the figures for the visible output. It can be displayed in different ways: mainly in the editing screen for animations, but also in the sections animated cartoons or effects. The basic functions such as navigating and using / editing figures, can be found in all displays.



The catalog to be used for the LiveShow can be found in a central place in „Laser settings“. It provides the basis for animated cartoon referencing for the animated cartoon animations in the LiveShow and the laser output.



By entering a catalog number in the input field above the catalog display and clicking on „Jump“, the position or the correlating line will be displayed. Alternatively the catalog can be browsed by scrolling with the mouse wheel or using the scrollbar.

To use a figure the tile can be pulled using Drag'n'Drop (mark the tile, hold down left mouse button, pull) to it's destination. In the animation screen this destination can be a track, in the animated cartoons features it can also be the „first“ or „last“ picture.



Right-clicking on a figure in the catalog opens the „Basic Picture Editor“ and takes over the selected figure for further processing.

The figures can be added directly to the catalogue by using the „Import“ button. Enter the position number in the input field and click on the „Import“ button. The import dialog window opens. The program supports the import of „ILDA“, „Phoenix PHO“ and „Phoenix PIC“ files. If the files contain multi-frame-animations, i.e. several figures in one file, the following positions of the catalog will be overwritten. After importing the data a separate window asks you to save the catalog.

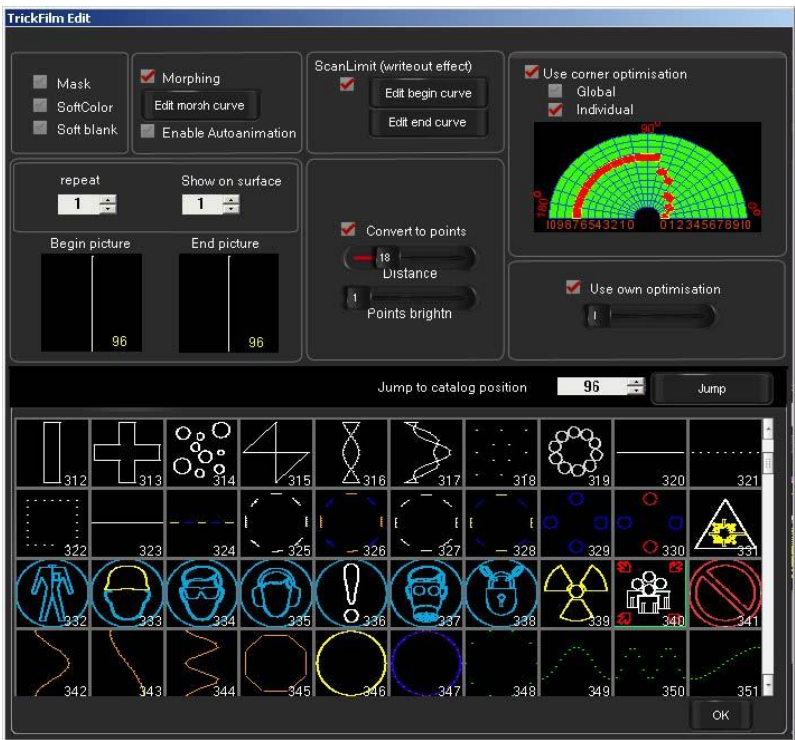


The „Save“ buttons enable you to save the catalog, even if you are not asked to save by a separate window. „Save“ overwrites the recently used catalog with the current changes. The button „Save as“ allows to save the catalog under the same or a different name. In case that the catalog has been changed and saved with another program, e.g. PHOENIX4 CAD, the catalog can be loaded by pressing the button „Reload“ to have the changes available in the catalog display.

## Animated cartoon features in detail

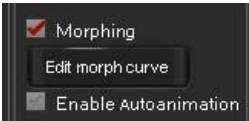
By double-clicking on the animated cartoon it is possible to change the attributes. The window is divided into a settings section (top) and a catalog section (bottom). Here you can compile a complete animated cartoon out of single pictures, provided a sequence of single pictures exists.

You can assign a start frame as well as a final frame to your animated cartoon ( standardly the same figure is used for start and final frame).



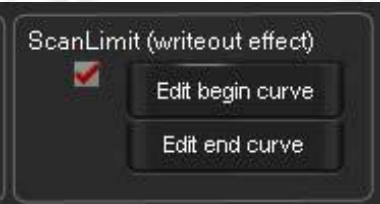
Having a sequence of single pictures, you now can pull the first and the last picture from the catalog, by using Drag'nDrop, onto the „Begin“ and „End“ picture buttons. As a result your animated cartoon consists now of „Begin“ picture, all other single pictures of the sequence and the „End“ picture.

### Morphing about several pictures:

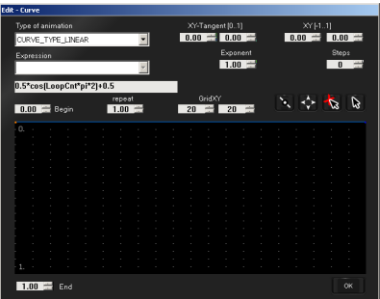


If this function is enabled, the pixels of the first picture (start frame) are morphed to the corresponding pixels of the last picture (end frame). If the auto animation is enabled, all pictures in between will be taken into account, i.e. morphing will take place from one picture to the next subsequently. Using the option „Edit morph curve“ enables you, to determine exactly the course of morphing. This allows to morph back and forth. For further information please see chapter „Curve animation“

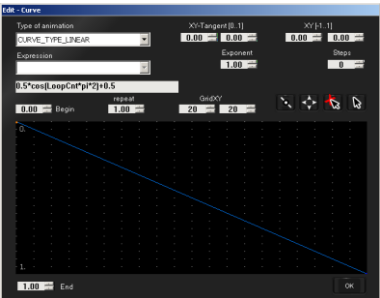
## Scanlimit function (sketching figures)



If this function is enabled, the figure will be drawn dot to dot. There are no further adjustments necessary. The figure will be drawn from the first to the last dot within the animation time and finishes automatically as soon as the figure is completed. This makes it easy to make e.g. a logo appear slowly.



„Start“ and „End“ define how the starting point and the ending point of the picture / animation are shown. Standardly the value for „start“ is preset on „0“, i.e. that the first point of the drawing is shown from the start until the end. If you change the value to „1“ at the end, the first dots will vanish subsequently towards the end of the drawing.



The same applies to the settings for the end of a curve. On the left you can see, a linear progress from the value „0“ at the beginning to the value „1“ at the end. This means, that as time goes by, more and more ending points will be drawn until the end, when all points are visible.

You can imagine this function like drawing a line around a contour with a thread. The beginning of the thread stays at the starting point all the time whereas the end of the thread moves along the contour until it reaches the ending point of the figure and the whole figure is visible.

## Repeat



„Repeat“ effects that an animated cartoon, e.g. an animated cartoon with several frames, will be played repeatedly. Entering for example the value „2“ means that the animated cartoon will be shown twice in the time given. As an effect it will be animated twice as fast as usual.

## Layers



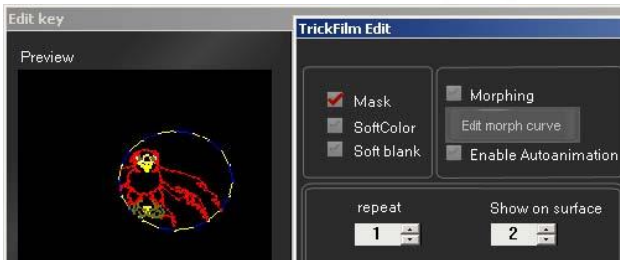
Phoenix4 Live is equipped with 32 layers. The higher the value of a layer, the higher-ranking is the animated cartoon, if more than one animated cartoon is played at the same time.

Example: You show a graphic (e.g. an animated phoenix) on the screen. Now you add an animated cartoon (e.g. a dancing woman). Under normal circumstances the lines of the phoenix would now show through the picture of the woman.

If you enter for the layer of the dancing woman the value „2“ you prioritize the layer over the layer with the phoenix. In the example given, the woman now dances in front of the phoenix and covers the lines of the phoenix in the superimposing areas.

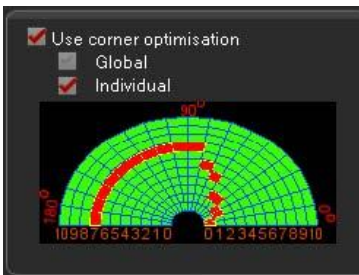
## Mask

The „Mask“ function is correlated to the „Layers“. The higher the value for a layer, the higher is the ranking. Using the „Mask“ function in contrast, does not cover the second animated cartoon, it masks (cuts out) it.



Example: The first animated cartoon object -a circle- wanders from the left to the right. Enter „2“ as value for the layer and tick the checkbox „mask“. The value for the second object -a phoenix- is set on „1“. Because of the mask function of the circle the phoenix will only be shown inside the circle.

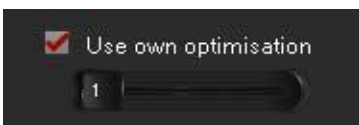
## Corner optimization



You can choose between global corner optimization and individual corner optimization. The global corner optimization can be adjusted in „Laser settings“. It influences all animated cartoons with global corner optimization preset. The individual corner optimization overwrites the global standard presets and enables you to optimize the corners of every single animated cartoon individually.



The graphic shows on the horizontal axis the number of points to be set. Along the arc the degree values are shown. By clicking on the graphic you can set marks to define the number of dots on a certain angle in the animated cartoon. The angles are relative to each other, i.e. degree values from angle to angle.



Additionally, you can use the individual optimization (tick the box „Own optimization“). This causes, that some of the figures have sharper contours and the output appears brighter. Depending on the type of animated cartoon, it is possible that the changes are not visible or start flickering. This

is due to the fact, that the settings made here overwrite the settings to optimize the brightness (s.a. „Animation effects in detail“).

## Convert to points



With this function you can convert the figure in such a way, that only it's points will be displayed. Only the visible points will be used. The number of points can be defined by using the „distance“ controller. You cannot display less than the number of points required for drawing. By using „Point brightness“ it is possible to intensify the output.

## Soft color



If this function is enabled the color transition of the figures is much smoother when fading in / out. The colors „morph“ so to say. To adjust the settings for this function go to „Laser Settings,, an use the controller „Interpolate MaxdistSoftColor.

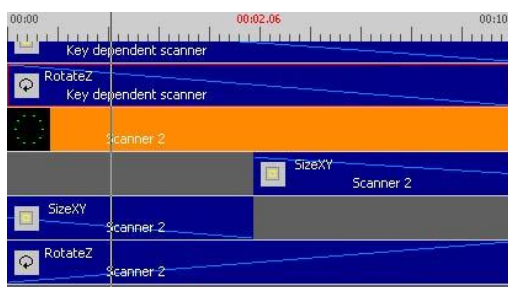
## Soft blank



Using „Soft blank“ all line ends will fade out smoothly. This effect is especially suitable for displaying faces, etc. The impression of this effect can be varied by using the controllers „Interpolate MaxdistSoftBlank,, and „MinMaxdistSoftBlank in the „Laser settings“.

Note: This reduces the brightness of the picture drastically!

## Animation effects in detail



Effects can be applied via Drag ´n Drop. Simply pull the effect symbol below the figure onto the timeline. The effect only refers to the animated cartoon / figure above it. Just like the figures, the effect length can be adjusted by pulling at the start or the end of the effect.

Double-clicking on the effect itself opens the „Curve“ window or other menus for further adjustments. For further information on curves, please see chapter „curve manipulation“.

### Move X/Y/Z



Moves the animated cartoon / figure along the correlating axis. (s.a. „CURVE manipulation“)

### Rotate X, Y, Z



Makes the animated cartoon / figure rotate around the correlating axis. (s.a. „CURVE manipulation“)

### Size X, Y



Changes the size of the animated cartoon / figure (s.a. „CURVE manipulation“)

### DMX



With this function a simple (!) DMX output can be realised, e.g. fog machine on / off, screen up / down, etc. It is only suitable to a limited extent for complex light control! For further information on DMX programming, please see chapter „DMX in detail,,

### Clipping



Cuts off the corresponding side of the animated cartoon / figure. (s.a. „CURVE manipulation“)

### Pivot X, Y, Z



Shifts the centre of the animated cartoon along the corresponding axis (X, Y, Z). (s.a. „CURVE manipulation“)

### Fade in / out



Fade in / out Fades in / out the figures

### Time



Displays the system time of the PC over the laser (analog or digital). The clock hands can be replaced by own symbols / figures. (s.a. „ClockEvent in detail“)

### TxT



Display texts with your laser. Various settings for fonts, colours, animations, number of letters, etc. give you a wide range of illustration facilities. (s.a. „TXT in detail“)

## Single beams



With this effect single beams, e.g. for mirrors can be created. The position and further features can be defined in the beam table which can also be activated over this effect. (s.a. „Beams and beam table in detail“)

## Color change



A color effect that can color the figure in different ways (s.a. „ColorChange in detail,,“):

**Colour change:** According to the defined color transitions the complete figure changes it's color.

**Recolor:** When reaching a color transition the figure will statically be recolored, following the figure's points.

**Change color transition:** When reaching a color transition the figure will be recolored continuously, following the figure's points. New colors for the color transitions can be defined by clicking on the handles, choosing a color by clicking on the color field and clicking on „apply“.

**Picture:** The figure is colored by a picture which can be loaded by clicking on the button „Load picture“.

## Audio effect



This effect allows to play audio files whilst the animation is running. WAV and MP3 files of unlimited length can be played. The speed of the animation has no influence on the playback speed of the audio file. Combined with the timelines, small laser shows can be created. (s.a. „Audio effects in detail,,“).

## Loop animation



If this button is enabled, the animation will be repeated continuously, as long as the animation is activated. If the loop button is deactivated, the animation will only be shown once, even if the animation itself is still active (this is important e.g. for countdowns, which shouldn't be repeated!)

## Animation speed



With the speed controller you define the speed of the animation. The speed can be varied between 0% and 800% (standard: 100%).

## Scan rate



With this controller you can increase or reduce the scan speed of the figure. The available scope in kpps can be defined under „Laser settings“>„Scan parameters“. Please set an appropriate value (not too high), otherwise the durability of your scanner can be shortened. If the value is too low, the output might flicker and the intensity is too high. Before opening an animation for edit, choose the laser you want to adjust on the main surface (above the effect controllers), if you are operating more than one laser at a time.

**Attention:** If the value for the scan rate is too low (<10kpps) the dwelling time of the laser at one point increases which results in increasing intensity!

## Brightness optimization



By using this controller, the brightness of the complete animation can be increased. This is realized through a higher number of points in the animation. Depending on the number of animations and their complexity, this can result in a brighter output or flickering animations. These adjustments can be made for every animated cartoon separately. It overwrites the brightness settings of the animation editing (s.a. „animated cartoon characteristics in detail“).

Static

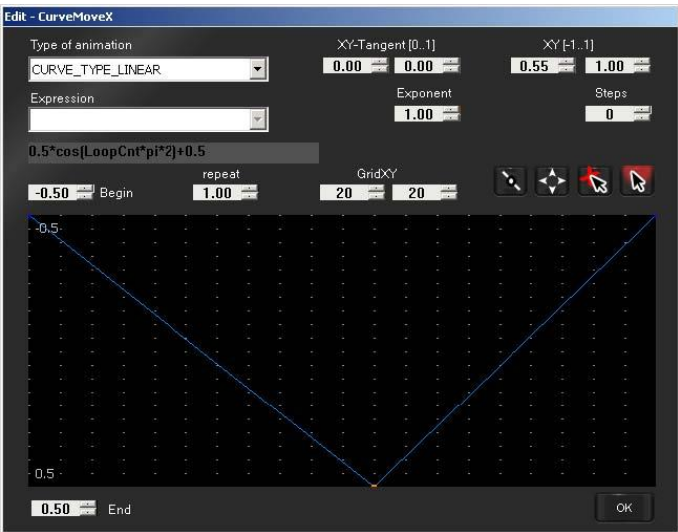


With this function enabled a figure can be shown permanently. The „Multiple Effect“ function has no influence. The „Static“ function can be used e.g. for displaying logos permanently.

CURVE manipulation

The „Curves“ are the most powerful instrument to change settings in PHOENIX4 LIVE. They can be found in different places in the program, to change amongst others e.g. movement, rotation, morphing.

All curve windows are based on the same principle:



On the Y-axis (ordinate) you can vary the settings between two values. On the X-axis (abscissa) the processing time is shown, i.e. while running from left to right the values are changed permanently. The current values at a certain time are expressed by the blue curves / straight lines.



The scope can be defined by entering values for „Begin“ and „End“.



The start / end node can be defined by entering values for X / Y (shift along the axis (X/Y))



The nodes line up with the grid which can be adjusted in it's accuracy.



By using „Steps“ a curve can be equipped with rigorous edges to allow quick changes of the values.



„Repeat“ copies the complete course of the curve and splits it over the length of the effect.

It is important to know, that changes made in the curve window always affect the effect in it's full length. If e.g the effect has a duration of 10 seconds the curve settings will affect the effect for 10 seconds.

The nodes, respectively the following lines (to the next node) which describe the curve can be of a different type.

Choice of curve types:

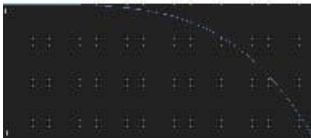
„CURVE\_TYPE\_LINEAR,,

Linear curve, i.e. a straight line



„CURVE\_TYPE\_EXPONENTIAL,,

Exponential curve (change of the exponentials)



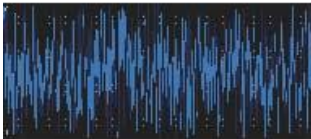
„CURVE\_TYPE\_SPLINE,,

Flat mathematical curve (change of the tangent)



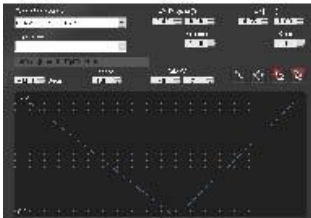
„CURVE\_TYPE\_RANDOM,,

Random curve shape



„CURVE\_TYPE\_EXPRESSION,,

Another powerful function. The expression of this function depends on the selections in the adjoining window.



To make changes to a curve you have got to choose the corresponding button first:



Set curve nodes on the curve



Delete curve nodes from the curve.



Move curve nodes or curve

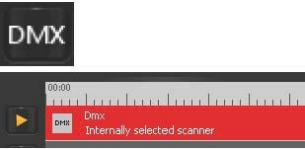


Move curve node or curve with a constant value

Afterwards the values can be changed by clicking on the curves or the curve nodes.

# DMX effect in detail

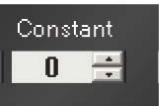
The DMX effect gives you the opportunity to realize DMX output easily.



This effect has got to be pulled on one of the overlying timelines (just like the other effects). Double-clicking the effect afterwards opens the „DMX settings“ window. Here you can adjust a DMX-out signal with up to 24 different DMX channels with either static or changeable values. You can adjust the channel, the type of value change and the interface for the output.



Adjust the DMX channel on which the signal should be transmitted.



With „Constant“ you can define a fix value (0-255) which will be emitted when the type of value change „constant“ is chosen (but only then!).



„Interface“ defines the interface on which the channel should respond and emit the corresponding values. Each of the 8 interfaces is able to communicate in a separate 512 DMX channel universe with DMX devices.



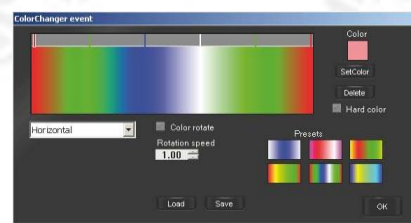
Here the type of value change can be determined. You can choose between „Off,, „Constant,, (send a constant value -> s.a. „Constant,,) and „Curve,, (s.a. „CURVE manipulation,,)



With the buttons at the bottom right DMX settings can be saved for further effects or saved settings can be adapted to this effect. If the checkbox „Always on“ is ticked the runtime of the effect conforms with the interval. This means for the „global DMX“ buttons on the surface a runtime of 10 seconds. If the DMX function is used as DMX out, runtime and speed depend on the runtime of the effect. If the checkbox is not ticked runtime and interval can be adjusted by entering values in the input fields in milliseconds (1000 = 1sec).



## Color change in detail



By using the color change effect a figure can be colored quickly.



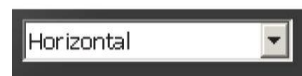
In the upper section of the color field, new color markers (handles) can be added by clicking on the grey section. A color marker can be marked (white edging) and relocated using the mouse. The adjusted color follows the color change. By using the „Delete“ button all markers can be deleted except the outer ones.



By using the color gradients a predefined color gradient can be applied easily. The gradients can be adjusted by changing the marker or it's position.



To change the color underneath the color marker click on the corresponding marker. A separate window for color selection will open. Click on the color field and choose a color by clicking on it. Apply the color by pressing „Set Color“.



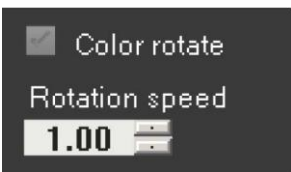
If the checkbox is ticked the crossover between two colors is rough (a nice effect on waves and circles).

**Recolor** colors the complete figure evenly according to the set color gradient, if the checkbox „Color rotate“ is ticked.

**Horizontal** colors the complete figure according to the set color gradient from the left to the right , if the function „Color rotate“ is activated.

**Vertical** colors the complete figure according to the set color gradient from the top to the bottom or vice versa, if the function „Color rotate“ is activated.

**Length** colors the figure along the outline from dot to dot consecutively, according to the set color gradient, if the function „Color rotate“ is activated.



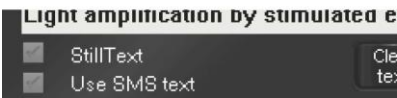
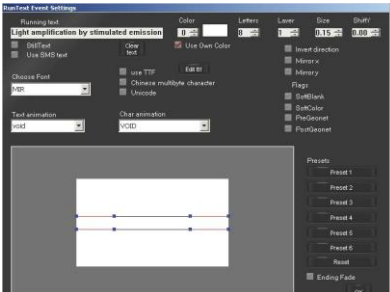
**Color rotate** activates the continuous color change of a figure.

„Rotation speed“ defines the speed of the color change. Negative values invert the direction of the color rotation.

The buttons „Save“ saves the settings for reuse, the button „Load“ recalls saved data.

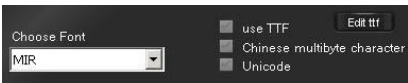
# TXT im Detail

With the text effect you can easily display marquees on screen. Different typefaces and animated symbols liven your text.



Enter your text in the input field. If you tick the checkbox „Still“ your text will be displayed as still text, starting from the middle of the screen. The button „Delete text“ deletes the text from the input field.

If you want to use the function „SMS4Laser“ the checkbox „SMS4Laser“ must be ticked. For further information read chapter „SMS4Laser“.



„Choose Font“ allows you to choose from a great number of laser optimised fonts (even a 3D font is available). Alternatively activate the checkbox „Use TTF“ to use one of the pre-installed TTF's (True Type Font). To finally choose the font click on „edit TTF“. If you are using a TTF font with chinese ideographs, please tick the box „chinese multibyte character“. For fonts using another skript style (e.g. Cyrillic) activate the „Unicode“ checkbox as well.



Tick the checkbox „use own color“ to color your text / font. Afterwards you can choose one of 16 colors by entering the color number in the input field „color“.

With „letters“ the number of letters shown at a time can be adjusted.

„Layer“ defines the layer of your text. This can be used for fading or masking effects.

„Size“ defines the size of the single letters.

„Shift Y“ changes the position of the text along the Y-axis.



Ticking the checkbox „invert direction“ changes the direction of the marquee.

Ticking the checkbox „Mirror X“, mirrors the marquee over the X-axis. The direction of movement stays the same.

Ticking the checkbox „Mirror Y“ mirrors the marquee over the Y-axis. The direction of movement stays the same.



You cannot only animate the marquee, but also the single letters. When choosing a graphic rendition from the drop down menu (Char. animation) the changes will be shown straight away.

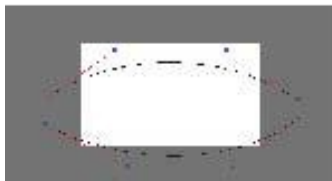


„Softblank„ & „Softcolor„ defines whether the marquee can be influenced by color gradients or fade in / out effects.

„PreGeonet„ and „PostGeonet„ defines, if the font will be influenced by a preset geometric adjustment.



In the drop down menu „word animation“ you can choose one of five animation types for displaying the text.



On the editing surface for the text path, the upper and lower base line of the text to be displayed, are shown as curves. The starting and ending points as well as the shape of the curve can be adjusted by using the handles. The white area represents the visible sector of the output. The surrounding grey area allows to edit the path outside the visible sector. The starting and the ending point of the curve determine the horizontal start and end of the animation output. The position of the handle determines the horizontal orientation of the letters. The length of the handle defines the speed of the incoming letters. The farther the baselines diverge, the more are the letters stretched horizontally. Double-clicking on the area discards all changes.



The 6 preset buttons contain predefined movement paths. With the preset buttons it is possible, to display three-dimensional looking marquees quickly. By clicking on the path it will be transferred to the editing surface and can be adjusted individually. Clicking on the „Reset“ button will discard all changes (just like double-clicking on the area). If the checkbox is ticked, the marquee will be faded in / out at the beginning / end.

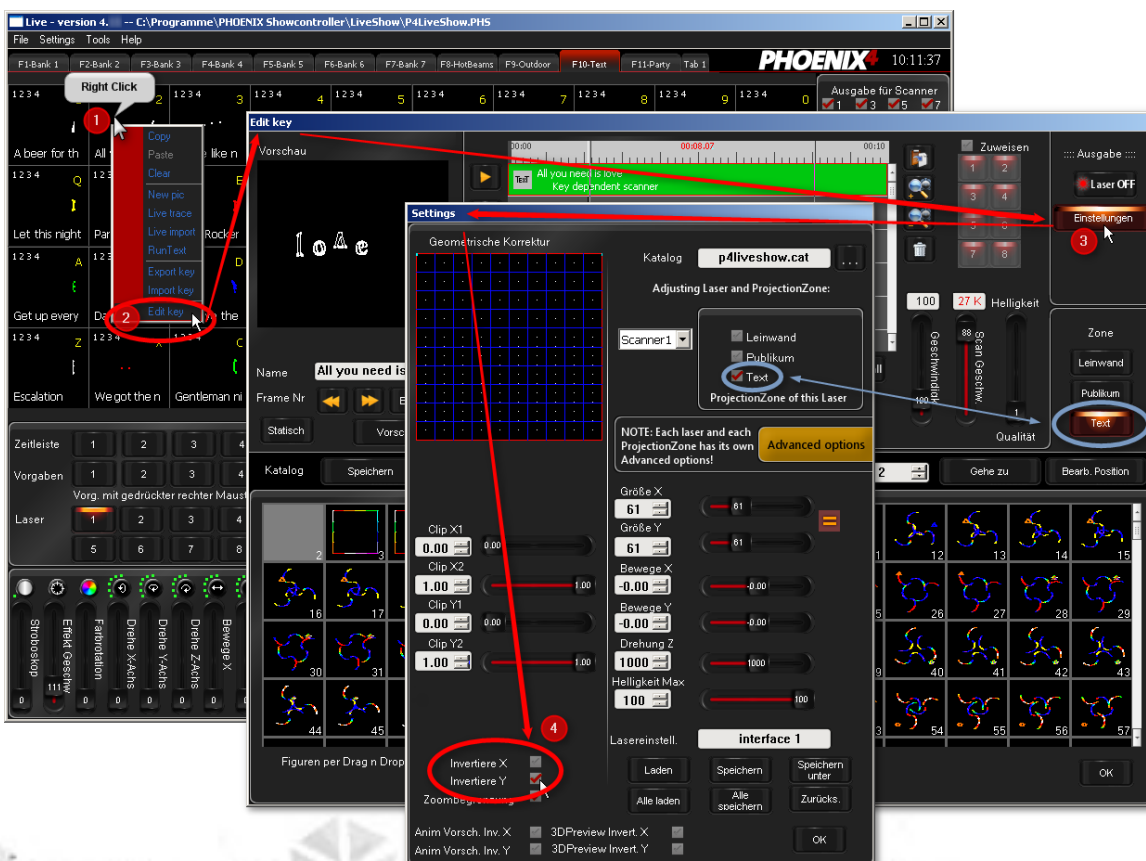
## Runtext direction / orientation

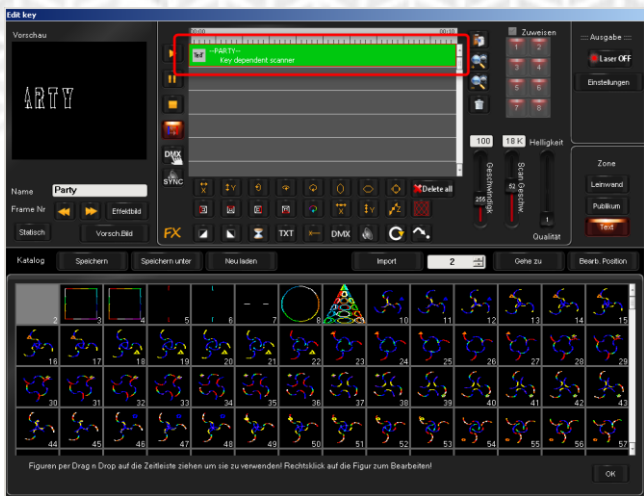
The text representation (as well as all graphics and animation) can be used as a rear projection as well as a front projection. Therefore, you have to have the ability to run the text display from left to right, as well as to mirror the representation of X and Y axis (/ invert).

Basically, the text presentation is based on the corresponding projection zone. I.e. The projection zone determines in which direction the text is output (also see projection zones). Have you added the text as an animation using the context menu of the surface, then this is automatically assigned to the projection zone "Text". Did you create a new animation about the "Edit key" function of the right-click menu, the animation is usually assigned to the projection zone "Audience".

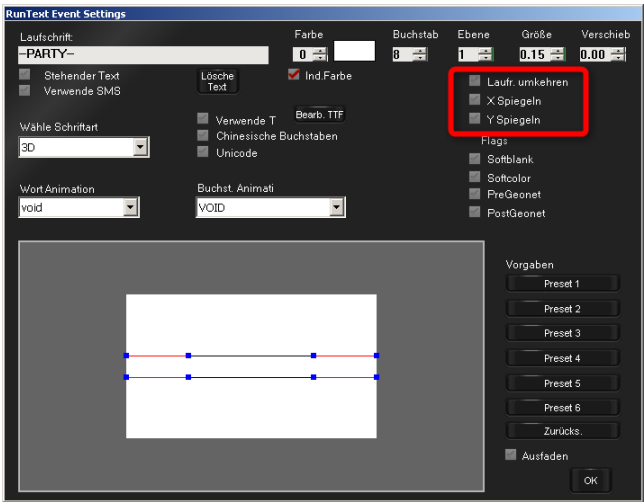
In order to possibly invert the output of the text so that the text is readable, click with the right mouse button on the tile with the text animation at the surface. From the context menu, select the entry "Edit Key". Very on the right side at "Zone" you can now see by the selected button, to which projection zone the animation is assigned. Do you want to change the assignment, click on the appropriate projection zone.

In order to change the assignment, click on the "Settings" button above the projection zone assignment. The "Laser Settings" open up. In the upper right area the right projection zone as "Text" is selected then. All changes here will have an influence on all of the animations which are assigned to this projection zone (Text). In the lower right, you see the two checkboxes "Invert X" and "Invert Y". If you now tick this, the animation is mirrored by the corresponding axis. By this you should get a combination that represents the writing in proper orientation through your laser.



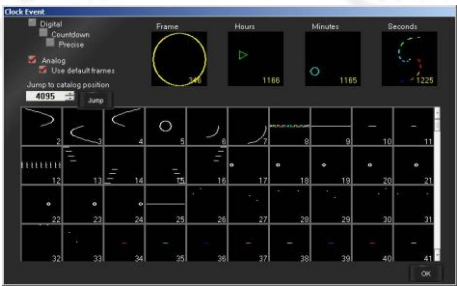


If the text output should be still reversed, despite this setting, then, back in the "Edit Key" window, click twice with the left mouse button on the light green text effect on one of the tracks



The text properties window opens that you have already used to create the runtext. On the right side you have some more checkboxes like "Mirror X" and "Mirror Y" as well as a "reverse scrolling " function with whom you definitely will find a combination that produces a readable text representation.

## Clock Event in detail

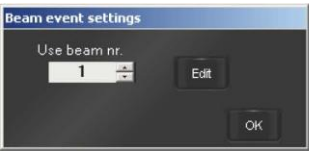


The „Clock Event,, effect displays the system time of the PC on screen. The time can be displayed either analog or digital. Instead of displaying the time, you can also show a countdown. The countdown is based upon the length of the effect. By ticking the checkbox „Precise“ the countdown can be defined more precisely (up to several decimal places).

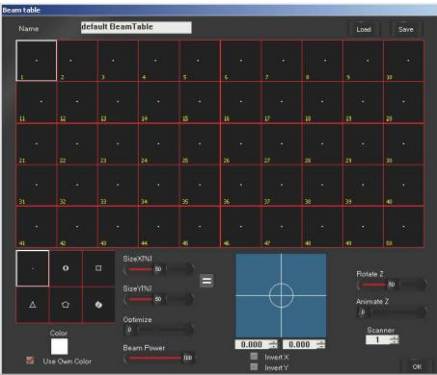
To display the time analog, tick the checkbox „Analog“. If the box „Use default frames“ (below analog) is not ticked, it is possible to allocate a figure each for „Frame,, „Hours,, „Minutes,, and „Seconds“. Simply pull the figure chosen via Drag’n’Drop onto the corresponding tile.

## Single-Beams and beam table in detail

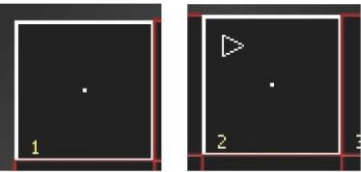
**Note: Never use beams among the audience! Single beams should not be operated in areas where rays could hit the audience directly or by immediate reflection.**



Double-click the beam effect on an animation track. A separate window for choosing the beam number opens up. This number belongs to a correlating single beam in the beam table. The beam table can be opened by pressing the „Edit“ button.



In the beam table all settings for the single beam characteristics can be made. Because the single beam effect corresponds to a set beam, you will only have to change the characteristics e.g. the position of the beam, when changing the venue. All previously created animations, that share this beam number, will work as if they were created for the new venue.



The beam table tiles show a preview of the characteristics of the single beam. After clicking on the tile, a small triangle in the top left corner shows that the beam is now emitted. For an actual laser output it is necessary, to activate the button „Laser on / off“ on the main surface.



By using the D-pad and the numeric input fields underneath, the single beam can be positioned more precisely. The checkboxes below invert the X-/Y-axis. This results in a contrary shift of positions.



The color of the single beam can be defined by clicking on the color field and selecting a color. The checkbox „Use own color“ must be ticked.

Scanner  
1

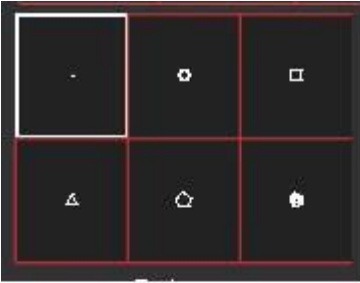
You must define the interface for the laser output here. The single beam cannot be assigned to another laser projector via the main surface.

Optimize  
17

„Optimize“ varies the number of simultaneously emitted points at a time. With this function you can also prevent flickering animations, if several lasers are operated at the same time.

Beam Power  
100

Define the intensity for every single beam by using the „Beam power“ controller.



Besides the single points, different figures can be used for the Single Beams. Projected onto mirror balls these figures have a much more extensive effect and the intensity of the reflections is reduced.

SizeX[%]  
50  
SizeY[%]  
50  
=

The size of the figures can be adjusted by using the „Size X / Y“ controllers. This can be done individually for each axis or collectively for both axes after clicking on the „=“ button.

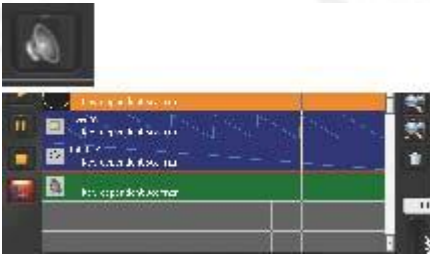
Rotate Z  
50  
Animate Z  
0

But not only the size of the figures can be changed, you can also add rotation. For a fix rotation use the „Rotate Z“ controller. To create an ongoing clock-wise rotation use the „Animate Z“ controller.

Name default BeamTal  
Load Save

A fully set up beam table can be named and saved for reuse or backup. For naming use the input field, to save or reload use the adequate buttons in the top section of the beam table (as shown on the left-hand side).

## Audio effects in detail



The „Audio effect“ allows you to emit simultaneously an animation and a WAV or MP3 file. This feature can be used either on the timeline of a laser show or as a short effect in an animation. This turns for example the ProLight LaserHarp into an extraordinary visual and auditive experience. The runtime of the audio file depends on the length of the effect. If the audio file is shorter than the complete animation the playback stops at the end of the audio effect and starts again when the effect starts again. If the audio file and the animation are of the same length the runtime depends on the settings.



The attributes can be changed in a separate window. Open this window by clicking on the audio effect on the animation track. The option „restart“ starts the audio file again as soon as the animation starts again. The option „Single Play“ plays the audio file till the end, even if the animation has restarted in between times. For this option the audio file and the complete animation have to be of the same length.

## Quick-Timelines in detail

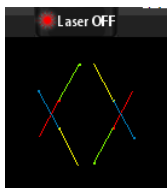
In Phoenix4 Live you can create small laser shows with audio playback on up to 5 tracks. And that simply by "drag and drop". The tracks of the timeline will be output simultaneously with the direct output of the animation tiles.

Just add audio to the timeline, add some the finished animation from the surface and adjust them to your length of the music.

## Quick-Timelines creation



Click on one of the 5 buttons that opens a timeline with 5 tracks..



You just need to activate the extra "Laser On / Off" button. The preview below allows you to view your laser show in advance.



There are two ways to add animations the tracks. For one, the "Shift" button on the lower left can be clicked in the open timeline. As long as this is active now, animations can be added to the tracks. During this time, no (!) other animation can be selected from the surface for output. Instead of activating this function permanent, the "shift or caps lock" on your keyboard can be temporarily pressed and then animation can be drawn to the tracks.



Once a timeline is opened the time marker starts to move. With the timeline control on the left side, the time marker can be started (again), be stopped or paused.



The magnifying glass icons lengthen and / or shorten the total duration of the timeline.



If the time marker reaches the end of the timeline, the tracks are repeated by default and the time marker returns to the beginning (loop). If the timeline should be played only once, then the repeat function is has to be turned off. This is done by disabling the "repeat" button.

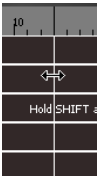


For a small laser show your work begins with the selection of music. Have you found a suitable music, add it to the timeline. Each timeline can have its own music.



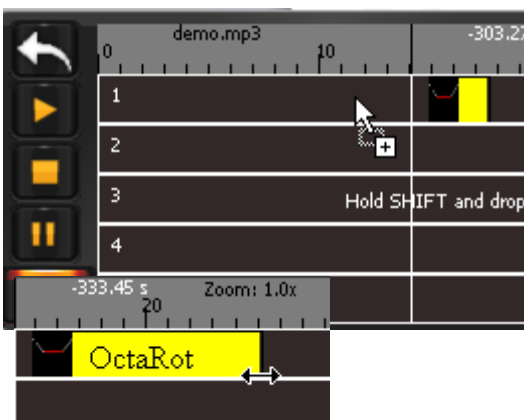
The music connection to the timeline is done by clicking on the audio icon in the lower right corner of the Timeline. It opens the audio assignment. From there, click the "..." button in order to select the music. Supported formats are "MPEG-1 Layer 3 (MP3)" and "WAV".

Additionally, you can choose one more option "Repeat" or "Play Once" after the music assignment. With "Repeat", the music restarts when the time marker is in the loop and is reset to the beginning of the timeline. If "Play Once" is active, the entire piece of music will continue, even if the time marker in the loop starts again at the beginning.



At the started (!) timeline you can place the time marker on the track freely, to look at the effect of a particular time in your small laser show. Just hold down the left mouse button on one of the tracks and the time marker will follow to this position.

If you move the mouse on the scale above the tracks and use the middle mouse wheel, you can zoom into the timelines. This way you can place the individual animations and accurate even at a long total time. Did you zoom into the timeline, you can move the visible time by holding down the left mouse button and moving the mouse.



The animations are dragged with active "Shift" function, by hold down left mouse button directly from the tile surface to the tracks. There, you can then move and place the animation inside (!) a track by clicking at its center and moving the mouse.

If the cursor is at the beginning or end of an animation, you can change the output duration of the animation . To do that click at this point with the left mouse button on the animation bar and drag the mouse to the right or left. The animation will be later output on as long as the time marker moves over the animation.

If you want to change the playback speed of the animation, you must leave the timeline and deactivate "Shift" function. Only then you can, after choosing the animation, the relevant properties such as playback speed, color change, etc.. The changes are applied directly to the animation that you have added to the timeline. A renewed track assignment is not necessary.



The scale above the tracks provides you additional information such as the name of the currently assigned music, the current time position of the time marker, the zoom level, the selected timeline and the total duration of the timeline.

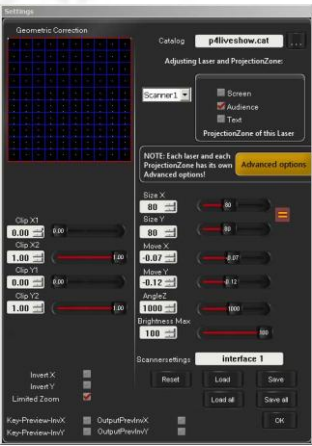


With the "Quit dialog" icon on the left top of the timeline, the timeline is closed. A currently output show of a timeline is stopped immediately.



In the "Tools" menu, you will find entries for "timelines" with which you can save or reload the 5 timelines. All 5 tracks are always loaded and saved at once with the all the stored settings / shows.

## Allocate animations to a projection zone



A projection zone is a certain area in a room where the laser output shall be displayed. A projection zone can be e.g. a screen, the audience (if not prohibited by safety regulations) or a text zone (which often is a screen as well). The projection zone does not necessarily have to be an even surface, it can also be a curved surface, e.g. a ball.

The beam or the animated graphics should only be seen in this markedoff area without any distortions. Therefore the projection zone has to be adjusted first, i.e. size, position, clipping, etc, so that the allocated animation will be displayed correctly. These adjustments can be made in the „Laser Settings“ (s.a. chapter „Projection zones“).

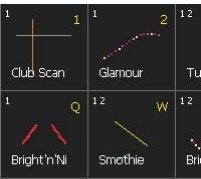


For each laser these three projection zones are available, which can be adjusted perfectly to the individual venue.



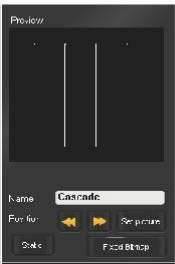
The animation will be allocated to a certain projection zone when creating or editing the animation. If you create a new animation, allocate it straight away to one of the projection zones. This ensures that the animation will be displayed correctly during the show. Please choose either „Screen“, „Audience“ or „Text“.

## Reference picture



On the surface the animations will be represented by a reference picture, which shows an animated preview when running the mouse pointer over it.

The reference picture will be selected automatically, but can also be replaced by a more suitable picture. Therefore click at the right moment on the button „Fixed bitmap“ while the animation is playing. The picture shown when clicking the button will now be used as stationary preview picture. If the animation is paused, the preview can be shifted frame by frame by using the arrow keys underneath the preview window, to simplify the selection of the preview picture. You can also name the picture to make differentiation between quite similar pictures easier. The name will be shown at the bottom edge of the picture.



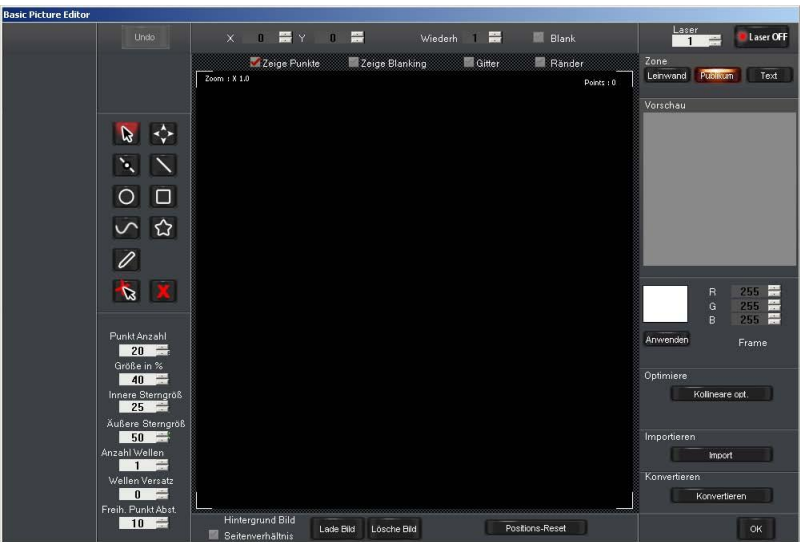
Alternatively you can use a pixel picture element in \*.bmp, \*.png or \*.jpg as preview picture. This can make recognition easier for animations which consist of only one DMX effect and therefore have no preview.

## Create figures with the BasicPictureEditor

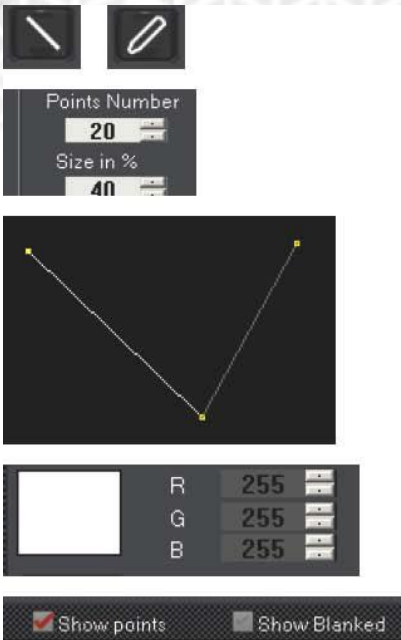


To create a new figure right-click the animation tile to display the context menu. Choose the option „New pic“.

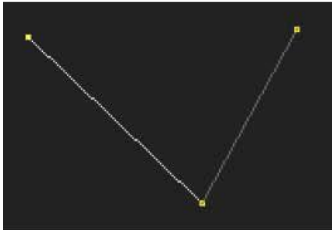
The Basic Picture Editor opens up.



The figure can be changed or new figures can be added by using the toolbar on the left. To use features like „Draw“, „Select“ or „Shift view“ the corresponding button on the toolbar has to be activated.



To draw a new figure you have different tools at your disposal. Most common are the line tool and the freehand tool. Below the toolbar the characteristics of the tools and the drawn figure are displayed (s.a. „BasePicEdit in detail“).



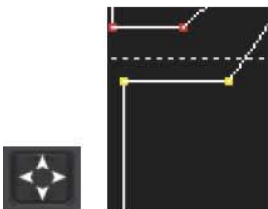
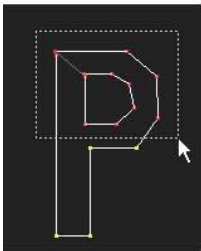
After selecting the line or the freehand tool you can plot dots by clicking on the drawing board. A left click creates visible dots, a right-click blanks (invisible) dots. The blanked dots are necessary, if the figure shall be interrupted somewhere, because the figure itself can only be drawn in a continuous line.



The color of the line depends on the selected color settings. These can be changed on the right-hand side.



The visibility of the plotted dots and blanked lines can be adjusted by ticking the checkboxes „Show points“ and „Show blanked“. If the mouse pointer is placed next to a dot, the dot will be marked by a circle around it. Clicking on the drawing board (nowhere near a point), holding the left mouse button down and moving the mouse creates a selection frame which allows to mark several dots at once. Clicking outside the frame deletes the selection. Dots can be added to your selection by holding the shift key down and clicking on the dot you want to add. If you click on a line between two dots the complete figure up to the next blanked line will be selected.



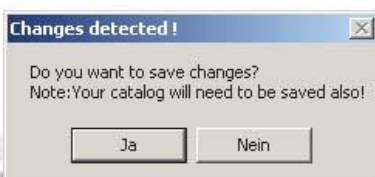
The „Shift view“ tool allows you to select parts of the drawing board. Especially if you are using a background image this feature simplifies retouching the contours. By using the mouse wheel the view can be enlarged / reduced. The actual size of the complete figure will not be affected.



The „Select“ and „Relocate“ tool can also be used for scaling by using the mouse wheel. Select the parts of the figure -or respectively the whole figure- you want to change. The selected area can now be enlarged or reduced.



By pressing „OK“ the process will be finished.



In the appearing pop-up window you will be asked, if you want to save the changes made. Please note, that the catalog must be saved separately, by saving the catalog itself or the complete LiveShow.

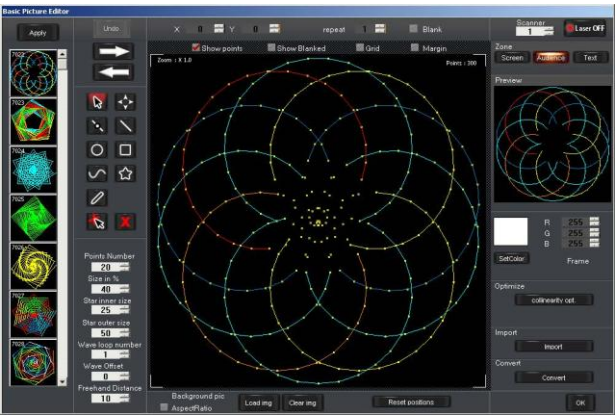
## Edit an animation

Editing an existing animation resembles creating a new animation.



To open an existing animation right-click the animation tile and open the context menu. Please choose „Edit“.

Right-click in the catalog on the figure you want to edit.



The Basic Picture Editor opens up. The editing of an animation is done in the same way as creating a new animation. It differs in the way the catalog excerpt is displayed. On the left-hand side you will now see 200 following pictures. Saving the adapted figure is also different. For saving an adapted figure you have to allocate the figure to a memory cell in the figure list on the left. Click on one of the catalogue spaces on the left (for overwriting an existing figure choose an occupied space).

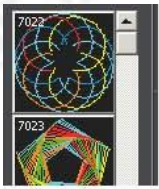


The tile frame will be marked by a red frame. Then click on the arrow going from right to left (above the toolbar) to transfer the picture from the editor to the catalogue. The arrow going from the left to the right transfers a marked picture from the catalogue to the editor.



After saving your changes the figure in the catalog will be marked by a little star in the top right corner. This shows that the figure has been changed. To take over the changes finally, either click the „Apply“ button above the catalog list (the star should disappear then) or „OK“.

## BasePicEdit in detail



Shows the figure catalog list. Existing figures can be selected or new figures can be saved.



To load an existing figure to the editor click the arrow button pointing to the right after choosing an animation. To save the animation in the catalog press the arrow button pointing to the left.



Turns the laser on / off for preview purposes (providing the laser is turned on on the main surface).



Chooses one of the 4 lasers for preview output.



Chooses the projection zone for the preview.



Shifts the viewing mode of the editor; helpful for retouching / tracing. Allows zooming in / out.



This button (below the drawing table) resets display and zoom factor and discards all changes.



Selects or shifts points. Figure scaling via mouse wheel is possible.



Add dots to a line. The added dot will be placed right in the middle between two existing dots on that line.



Add dots to create linked straight lines. A left-click creates visible dots, a right-click blanks (invisible) dots.



Freehand tool: Clicking on the drawing table creates dots. A left-click creates visible dots, a right-click creates blanks dots.



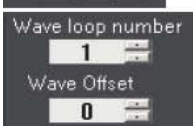
„Freehand distance“ (below the toolbar) defines the density of the dots when drawing.



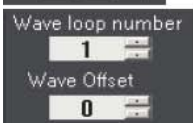
Creates a wave.



„Points number“ defines the number of dots that should be used for the wave.



„Size in%“ defines the pulse height of the wave. „Wave loop number“ adjusts the wave frequency.



The phase can be adjusted by using „Wave offset“.

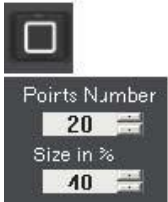




Creates a star.

The number of pikes is defined by „Points number“.

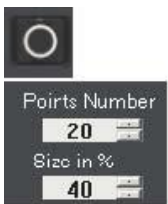
The overall size of the figure is defined by „Star inner size“ and „Star outer size“



Creates a rectangle.

„Points number“ increases the number of dots on the rectangle.

The overall size of the rectangle is defined by „Size in %“



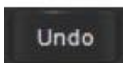
Creates a circle.

„Points number“ increases the number of dots on the circle.

The overall size of the circle is defined by „Size in %“.



Deletes all dots or the complete figure in the editor.



Deletes selected dots in the editor.



Discards the last changes made.



To save a figure the corresponding frame in the catalogue must be marked and the „apply“ button must be pressed. For tracing / retouching a picture can be loaded in the background. „Load img“ allows you to load either a JPG, BMP or PNG file. By pressing „Clear img“ the picture will be deleted from the background.



Shows dots or blanked lines on the editing surface. Shows grids and margins on the editing surface.



Displays the characteristics of a dot, they can be edited here. Information about the characteristics of a dot are only available when a dot is marked. This does not work, if several points are marked by creating a selection frame. X and Y define the coordinates of the dot and can be changed by entering different values. „Repeat“ creates several dots in the chosen position. This can be helpful to „sharpen“ the edges of a figure or to use hotspots in a figure. „Blank“ changes the characteristics of a dot from visible to invisible.



„Collinearity opt.“ reduces the number of dots in order to get the optimum parameter for a practically flicker-free output.

With „Import“ you can open laser formats such as ILDA, PHO, PIC and PFF. After importing, they will be automatically transferred to the editor.

„Convert“ contains the „Media Converter - Live version“. The „Media Converter“ is a tracing program which allows you to convert pixel-based logos, graphics, etc. into laser optimized figures. For further information on how to use this program, please read chapter „Media Converter in detail“.

**Note:** When closing the window by clicking „OK“, the figure will not be saved automatically. You have to choose a memory cell in the catalog list on the left-hand side before clicking „OK“ to save the figure and finish editing.

DMX-In & Midi-In



Controlling the software via external devices

PHOENIX4 functions and effects can be controlled via external MIDI- or DMX controllers. Open the preferences window by clicking on „Options“ >MIDI/DMX Settings“ on the menu bar.

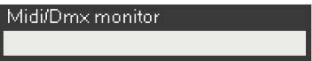
How to connect MIDI devices



To control PHOENIX4 via a MIDI device, connect the MIDI device via USB to your PC. Most of the USB MIDI devices have their own drivers or install themselves as „USB Audio Device“. Failing this, the corresponding driver (provided by the manufacturer of your USB device) must be installed. If the device is installed correctly, it will be shown in the options list of the MIDI settings. Maybe a restart of PHOENIX4 is required.

To use your device tick the checkbox „Use MIDI input“.

After entering the start values, the functionality of the external MIDI device can be tested straight away. The values will be displayed in the „Midi“ DMX monitor“.



## How to connect DMX devices



To use a DMX device via PHOENIX MICRO-USB Interface you will need a DMX adaptor cable, which has to be bought separately. If you are using the network interface PHOENIX NET the DMX in and DMX out ports are provided.



Before you can use DMX in and DMX out, a few settings have to be adjusted. In the top menu bar („Settings>Remap interfaces“) the function „DMX“ must be activated for the interface. Click on the interface in question, then tick the checkboxes „DMX in“ and „DMX out“ on the right-hand side (properties). Due to performance reasons only enable this function if really needed. DMX-In can only be activated for 1 interface. DMX-Out can be used for every interface connected to your system.



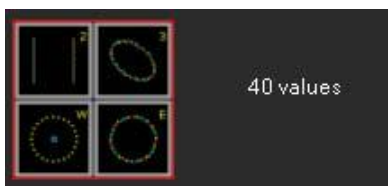
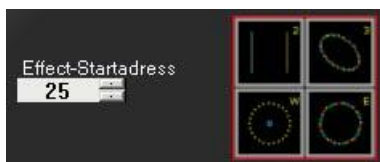
To use DMX-in the function must be enabled („Settings>DMX/MIDI,“) and the starting addresses must be defined.

The master „Laser ON/OFF“ button must be switched on. This enables the DMX function on the interface. Please note, that the „Laser on / off“ function can only be switched off via DMX, not on.

Finally activate the „DMX-in“ button. Now you can operate the system via your external DMX controller.

To use the DMX-out port, tick the checkbox „DMX-out“. Due to performance reasons both functions are disabled by default.

## DMX / MIDI settings



To adjust the channels you can define a start address for every element (e.g. a set group of controllers). The total number of channels needed, is defined by the element. It is displayed next to the picture on the right-hand side. The value „25“ for „Effect start address“ means, that the first animation starts on DMX channel 25 /MIDI note C#1 (value> allocation of notes; s.a. „MIDI note table“). In this manner channels can be allocated to most of the control buttons on the surface. Define start addresses for all elements, one after the other.

Beside the symbols you will find the number of automatically created values for this element.

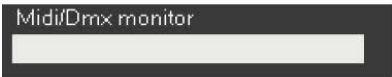


The banks will change based on fix values for the channel or the MIDI note:

|              |               |                 |                 |
|--------------|---------------|-----------------|-----------------|
| 00-05 Bank 1 | 36-41 Bank 7  | 72-77 Bank 13   | 108-113 Bank 19 |
| 06-11 Bank 2 | 42-47 Bank 8  | 78-83 Bank 14   | 114-119 Bank 20 |
| 12-17 Bank 3 | 48-53 Bank 9  | 84-89 Bank 15   | 120-125 Bank 21 |
| 18-23 Bank 4 | 54-59 Bank 10 | 90-95 Bank 16   | 126-127 Bank 22 |
| 24-29 Bank 5 | 60-65 Bank 11 | 96-101 Bank 17  |                 |
| 30-35 Bank 6 | 66-71 Bank 12 | 102-107 Bank 18 |                 |



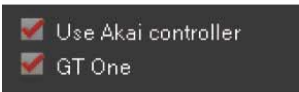
To avoid unnecessary computing processes, please enable DMX-in / MIDI-in only when really needed!



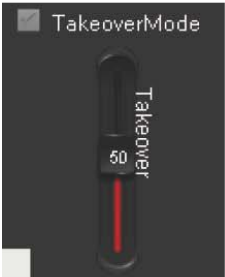
If a MIDI / DMX device is connected and the function is enabled, the channel and the respective value will be shown.



Some devices use a bidirectional communication, e.g. BCF2000, to realize automatic steering of the faders. If this is the case, the checkbox „MIDI out“ must be ticked and the device must be entered in the input field (Drop down menu).



To use the AKAI APC40 MIDI controller in the AKAI mode, the checkbox „Use AKAI controller“ must be ticked (s.a. „Phoenix Live Modes,,). To use a „GT One,, MIDI controller (available in Asia), the checkbox „ GT One“ must be ticked.



If you are using a DMX or MIDI controller and enable the „Takeover mode“, the manual effect fine-tuning through the effect controllers on the main surface is more gentle. Because the values are saved automatically when changing an animation, there can be great differences e.g. concerning effect speed, etc. between the animations. To avoid abrupt changes in value you can define a value range by using the „Takeover“ controller, in which the effect controller regulates the value of the applied effect on it's own.



Resets all MIDI / DMX start values to the default values.



DMX and MIDI settings can be saved in separate files and reloaded. You can define different presets for different devices.

**Note:** PHOENIX4 LIVE listens on all 16 MIDI channels simultaneously, if MIDI-In is activated. The MIDI channels correspond to the DMX channels, but are called MIDI notes or CC commands. When using MIDI controllers for operating your system, MIDI notes must be used for the buttons or the selection of animations (min. value is 64). The sliders can be controlled by CC commands on the corresponding channel.

| Midi Noten |     |     |     |     |     |     |     |     |     |     |     |       |  |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|--|
|            | C   | C#  | D   | D#  | E   | F   | F#  | G   | G#  | A   | A#  | H (B) |  |
| -1         | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11    |  |
| 0          | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23    |  |
| 1          | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35    |  |
| 2          | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47    |  |
| 3          | 48  | 49  | 50  | 51  | 52  | 53  | 54  | 55  | 56  | 57  | 58  | 59    |  |
| 4          | 60  | 61  | 62  | 63  | 64  | 65  | 66  | 67  | 68  | 69  | 70  | 71    |  |
| 5          | 72  | 73  | 74  | 75  | 76  | 77  | 78  | 79  | 80  | 81  | 82  | 83    |  |
| 6          | 84  | 85  | 86  | 87  | 88  | 89  | 90  | 91  | 92  | 93  | 94  | 95    |  |
| 7          | 96  | 97  | 98  | 99  | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107   |  |
| 8          | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119   |  |
| 9          | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |     |     |     |       |  |

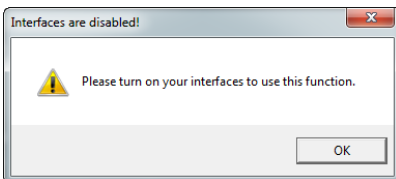
## Upload of animation (Phoenix USB Micro V2 Interface)

The new Phoenix Micro USB V2 Interface is able to save animations for the laser and DMX output on an included 2GB Micro SD card. This interface is included by default in the Phoenix4 Live set or/and in Phoenix4 Pro / Pro Plus kit and can also be purchased in the Phoenix shop (<https://shop.phoenix-showcontroller.de>) and from your dealer. For the basic operation of the interface as a standalone laser and DMX Show Player please refer to the Phoenix USB Micro Interface manual that can be downloaded from the Phoenix4 Show Controller website (<http://www.phoenix-showcontroller.de/en/support-en/manuals/>).

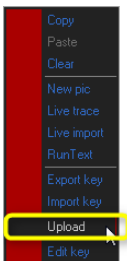
Animations can only be saved on the interface by Phoenix4 Live. Adding animations in any other way is not provided. The laser animation as well as the DMX data are uploaded and used for output.



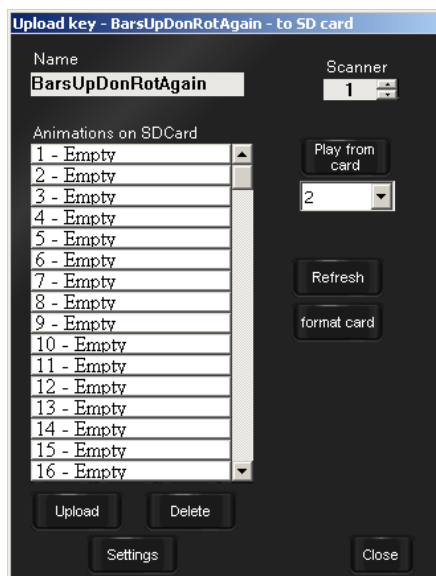
After starting Phoenix4 Live, you must turn on the "Laser ON / OFF" button, as otherwise you are not able to upload animations to the interface.



A corresponding message remind you if the laser ON / OFF button is not currently activated.



Click with the right mouse button on the animation that you want to upload and select "Upload" from the context menu.

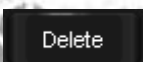


To upload the selected animation to the interface, click on a position in the left list e.g. "1 - Empty" and click on the "Upload" button.

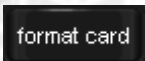
The animation is prepared for the upload then and uploaded to the SD-card of the interface. The upload process is indicated after a short while (depending on the length of the animation) by a continuous flashing of the red LED at the interface.

The animation is successfully uploaded to the card when the "Upload" button is no longer active and the red LED on the interface stops flashing.

The overall upload time can vary with the complexity and length of the animation. Avoid unnecessary clicks in Phoenix4 Live during the upload process. Windows might otherwise incorrectly assume that the application has stopped responding and closes it.



To delete individual animations of the SD-card, click on the entry to be deleted from the list and then select the "Delete" button.



To remove all animations at once from the interface, click on the "Format Card" button in the middle area on the right side.



To change the name of the animation on the SD-card, you can enter it in the field "Name" at the top left. This name is automatically taken from the animation. After uploading the name appears at the numeric index in the list e.g. "1 - BarUpDownFlashbar". If you want to change the name of animation itself in the software, you need to do this when editing the animation (see reference image).



To play an animation directly from the players out of the software, you can select it by clicking in the left column, e.g. "1 - BarUpDownFlashbar" and click on "Play from interface". Below this, you specify the number of repetitions, the animation should be played from the SD card or from the interface. Because of performance reasons the interface cannot be used as a live output device while it is active as a player. Therefore, do not choose too many repetitions for testing, as you have to wait until the interface has finished its output before it can use it again in Phoenix4 Live. The output directly from the SD-card is done with the default parameter, which are also used in "standalone mode". This "default" settings have to be set at the "Upload Settings" menu, which is described in detail further below.



Did you connect multiple Phoenix USB Micro V2 interfaces, you can select to which of the interfaces the animation should be uploaded at the "Laser" field.



If you have changed interface at the "laser" field and want to see in the left list which animations are stored on the SD card for this interface, then click the "Update" button.



To exit the animation Uploader, click on the "Close" button.

## Default settings player mode (Phoenix USB Micro V2 Interface)

The Phoenix USB Micro V2 interface can use internally definable default settings in "standalone mode" (Player), as well as get them set by an external DMX controller. Which settings should be used is decided in the moment of connecting a power supply. If a DMX controller is connected at that moment, the values send by it are used for the settings. If no DMX controller is connected, the internal set settings are used. The internal default settings can be changed with Phoenix4 Live.

The Phoenix USB Micro V2 interface must be at the "live" mode (not "standalone mode" (player)) for configuration.

Make sure that the laser output is enabled in the software and click on the right mouse button on any animation tile. The "Upload key" box opens in which you need to click on the "Settings" button. In that "Upload Settings" window, you will now find a number of options affecting the output.

|            | DMX Offset(if 0 default used) | Default |
|------------|-------------------------------|---------|
| Animation  | 1                             |         |
| Bank       | 2                             | 1       |
| Intensity  | 3                             | 255     |
| X Position | 4                             | 127     |
| Y Position | 5                             | 127     |
| Size       | 6                             | 127     |
| X Rotation | 7                             | 0       |
| Y Rotation | 8                             | 0       |
| Z Rotation | 9                             | 0       |
| Speed      | 10                            | 200     |
| Color1     | 11                            | 0       |
| Color2     | 12                            | 0       |
| Color3     | 13                            | 0       |
| Color4     | 14                            | 0       |
| Color5     | 15                            | 0       |
| Color6     | 16                            | 0       |

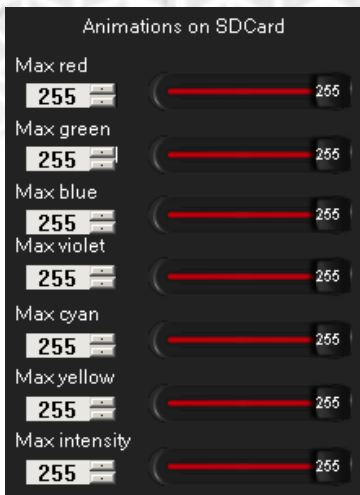
DMX base 0

In the right "standard" column you can change the default settings that are used in the "standalone mode" if no DMX controller is connected. On the left side you see the corresponding function that is altered by the values. The value range can be changed from 0 (0%) to 255 (100%).

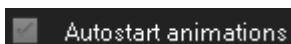
|            | DMX Offset(if 0 default used) | Default |
|------------|-------------------------------|---------|
| Animation  | 1                             |         |
| Bank       | 2                             | 1       |
| Intensity  | 3                             | 255     |
| X Position | 4                             | 127     |
| Y Position | 5                             | 127     |
| Size       | 6                             | 127     |
| X Rotation | 7                             | 0       |
| Y Rotation | 8                             | 0       |
| Z Rotation | 9                             | 0       |
| Speed      | 10                            | 200     |
| Color1     | 11                            | 0       |
| Color2     | 12                            | 0       |
| Color3     | 13                            | 0       |
| Color4     | 14                            | 0       |
| Color5     | 15                            | 0       |
| Color6     | 16                            | 0       |

DMX base 0

The left column is used when the output properties are set by an external DMX controller. There you can assign individual channels to the functions described on the left side. In that context, the "DMXOffset" setting is used with which you can do a channel shift for all DMX channels at once.

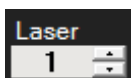


Global settings to adjust the individual color and intensity power (brightness) in standalone mode are done with the sliders on the right side.

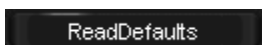


The activated "animation autostart" checkbox causes, that when establishing a power supply via USB or external power supply without a data connection to a PC (for more details refer to the manual for the Phoenix USB Micro V2 Interface), the laser and DMX output of the first animation stored on the interface is directly started.

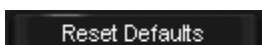
**Warning:** If this function is active on startup or still after a reboot of a PC and the USB cable is still connected on the PC, the automatic output starts a short time after the data connection has been broken down to the PC. This happens at all interfaces for which the operation as a separate laser and DMX player with output of the first animation has been set. A live operation or configuration change of the interface not possible in this mode. To switch this function off and use the Phoenix USB Micro V2 as a live interface again, connect the USB cable to the computer until after the operating system is up or disconnect the USB connection for a short time and restore it. Since the interface is recognized by Windows and a data connection is established, it is available as a live interface for the use with Phoenix4 Live and Phoenix4 Pro / ProPlus then. To use the interface directly as a live interface, make sure that the „animation autostart" feature is disabled.



Do you want to change the default settings of another interface as the first mapped to the timeline, so change the "Laser" setting to the desired here.



To read the values set on the interface, use the "ReadDefaults" button.



The default values are set with the "Reset Defaults" button, to return to the default values in the window. Do not forget to write these values finally to the interface.



With the "Write Std. values" button the values set from the window is written to the interface. The values remain on the interface even when the power supply is disconnected.

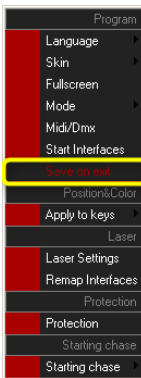
## Further useful function

### Turn on interface on start



To begin with your live show immediately after starting the software or if the software is operated from an external DMX console, it may be necessary that the interface is turned on from the beginning. This can be easily prepared by activating the corresponding menu entry at "Settings> Start Interfaces"

### Disable saving show reminder



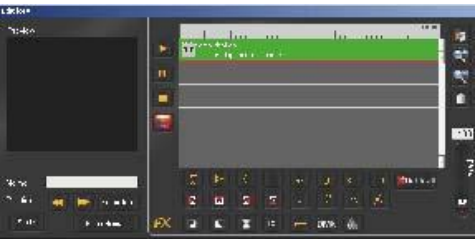
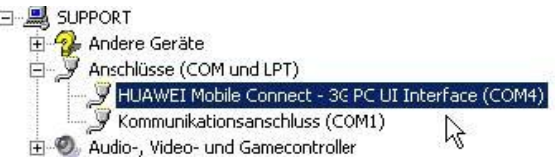
For security reasons you will be asked whether the changes to the current Live show should be saved when exiting Phoenix4 Live. If the software is used for hiring or at situation where a change in the existing Live show is undesirable, this function can disabled in the menu. At menu "Settings> Save on Exit" remove the check mark in front of the menu item.

## SMS-4-Laser

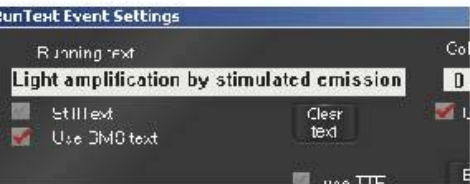
With the SMS function (SMS-4-laser) SMS messages can be transmitted as marquee directly to the laser via your mobile phone or any other SMS capable modem (USB UMTS stick) (s.a. list of supported hardware below). Different tools and aids are available.

First of all you have got to connect the modem (e.g. mobile phone or USB UMTS stick) to your computer. Check the connection in „System>Control panel>Device manager“, if necessary.

Then create a new text animation.



Open an animation and pull a text effect onto the timeline for editing.



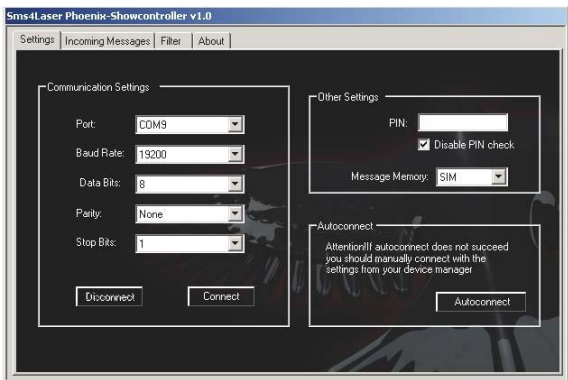
Double-click the effect and tick the checkbox „Use SMS text“ in the appearing window.



Close the „Run text event“ window and the „Edit“ window. Then click on the „SMS“ button on the main surface.

**Important:** Do not close the „SMS4Laser“ window. Otherwise you cannot use this function. To end the function, click the „SMS“ button again.

The SMS4Laser settings window opens up.



Connect the modem by defining the correct COM-Port. You can either search for the correct COM-Port automatically by pressing „Autoconnect“ or entering the data for „Port“, „Baud Rate“, „Data Bits“, „Parity“, and „Stop Bits“. For further information consult the manual of your mobile phone.

If there is a preset PIN on your SIM card, make sure the checkbox „Disable PIN check“ is not ticked. Enter your PIN in the input field



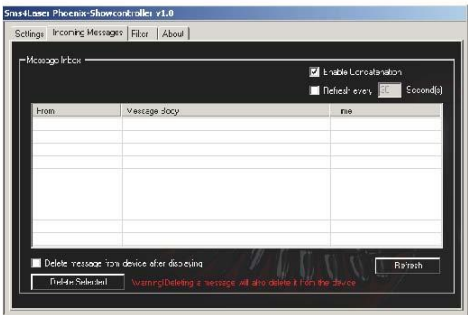
If there is a SIM PIN on your card. If so, try to remove the PIN from your mobile phone card. For further details contact

**Note:** S

your mobile service provider or the manufacturer of the modem.

„Message Memory,, defines which memory should be used for the messages. This can either be the SIM card or the phone memory.

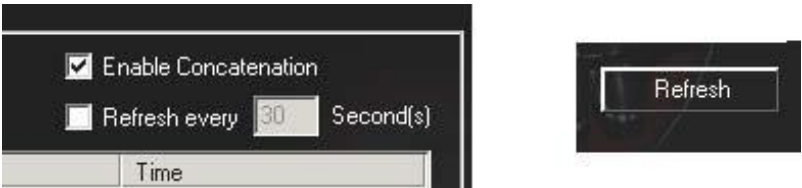
Pop-up windows confirm the selection of the correct comport and the successful connection.



If the connection was successful, all messages in the defined memory can be seen in the message inbox when clicking on the tab „Incoming messages“.

If the function „Refresh every XXX seconds“ is enabled, the modem memory will be checked for new messages periodically. Alternatively you can check the modem memory manually by clicking on the „Refresh“ button on the bottom right.

If the checkbox „Enable Concatenation,, is ticked, all incoming messages will be interlinked.

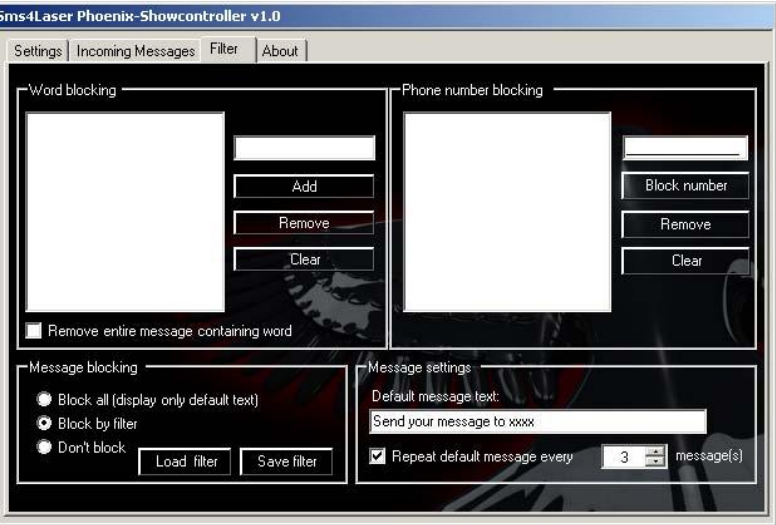


The messages will be displayed in the list one below the other. The checkbox at the beginning of every line indicates, whether the message has already been sent to the laser or not. If the message shall be displayed once again, tick the checkbox in front of the message.

| From                         | Message Body | Time              |
|------------------------------|--------------|-------------------|
| <input type="checkbox"/> +49 | Lasst er     | 11.04.20 16:08:56 |
| <input type="checkbox"/> +49 | HALLO        | 13.05.20 21:39:46 |
| <input type="checkbox"/> +49 | Alles gu     | 07.07.20 22:42:27 |
| <input type="checkbox"/> +49 | Geht, e      | 22.06.20 14:56:17 |
| <input type="checkbox"/> +49 | Das wir      | 14.05.20 12:17:55 |
| <input type="checkbox"/> +49 | Meine c      | 15.05.20 01:30:08 |
| <input type="checkbox"/> +49 | Hab wie      | 13.05.20 21:11:38 |
|                              |              |                   |
|                              |              |                   |
|                              |              |                   |

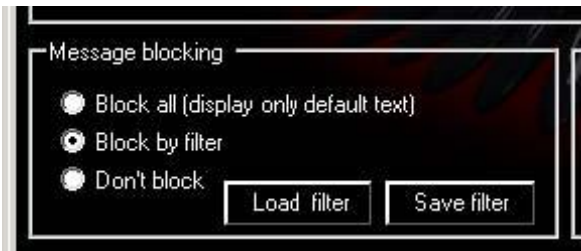


In the section below the list (bottom left) you can define whether the messages shall be deleted straight away, after they have been displayed or after ticking the checkbox in front of the message and pressing the „Delete Selected“ button.



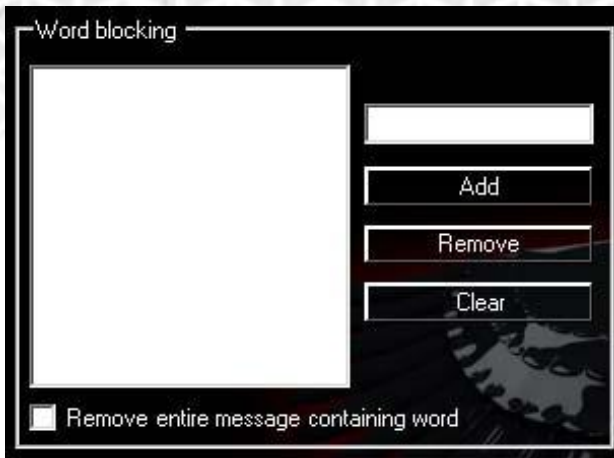
To finish your settings, define a filter.

Click on the tab „Filter“. It comprises different functions to block undesired contents or complete messages.



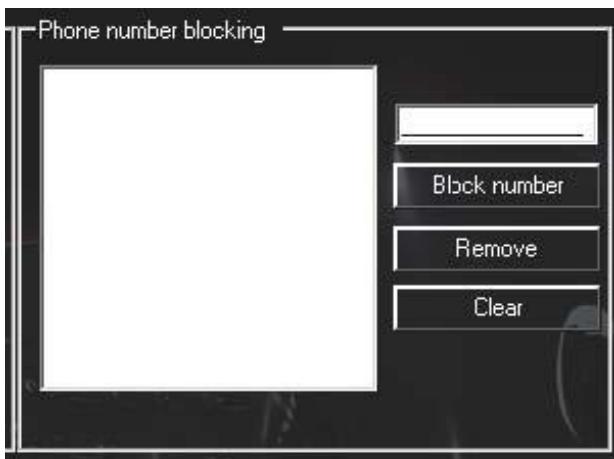
With the „Message Blocking,, settings general standards can be defined, e.g. whether all messages shall be blocked (except for the default message), only the messages shall be displayed that are in line with filter settings or if all messages shall go through.

All filter settings can be saved as file by clicking on the „Save filter“ button, and reloaded by clicking on the „Load filter“ button.



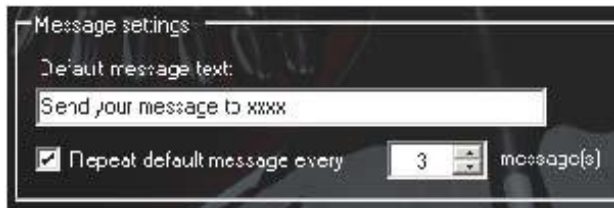
By entering words in the input field and clicking on the „Add“ button, these words will be added to the filter. The incoming messages will be checked for these words. Words can be deleted from the list by marking them and clicking on the „Remove“ button. The list can be deleted completely by pressing the „Clear“ button.

If the checkbox below the word blocking window is ticked, the complete message containing a word of the list, will be deleted straight away. As a standard feature only the word will be deleted from the message.



With the „Phone number blocking“ filter one or more telephone numbers can be blocked. Enter the number in the input field and add it to the list on the left by clicking on „Block number,. By clicking on „Remove the marked number will be deleted from the list. By clicking on „Clear“ the complete list will be deleted.

On the bottom right you can enter a default message, e.g. „Send your message to XXX“. Below the text box you can define the interval for repeating the default message between the other incoming messages.



All incoming messages will now be displayed by the laser as marquees, with regard to the settings.

**Supported modems:****Enfora:**

SA-EL, SA-G, SA-GL

**Falcom:**

Twist, Swift, Samba 55, Samba 75

**iTegno:**

WM1080A, WM1080A1I, WM1080A1E, 3000, 3232E, 3232I, 3898

**Multitech:**

MTCBA-G-F1, MTCBA-G-F2, MTCBA-G-F4, MTCBA-G-UF1, MTCBA-G-UF2, MTCBA-G-UF4

**Nokia:**

N12, N30, N32, 6100, 6210, 6220, 6310, 6310i, 6610, 6820(Bluetooth), 8250, 8910

**Siemens:**

A65, AC75, AC45, C35, C45, ES75, M35, M45, MC35, MC35i, MC45, MC55, MC65, MC75, S35, TC35, TC35i, TC45, TC65

**SIMCOM:**

SIM100S, SIM100T

**Sony Ericsson:**

T226, T230, T238, T290, T310, T610, T630, T637, T68, T68i, K310, K320, K500, K510, K600, K700, K750i, K800i, W810, W900, S700, S710, V800, W300, W550, W600, W700, W800i, W810, W900, Z500, Z600, Z1010, GC75, GC79, GC83, GC85, GC89

**Teltonika:**

T-ModemUSB, T-ModemCOM

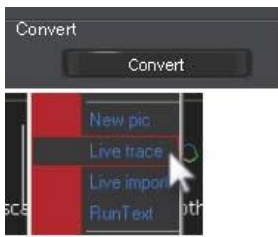
**Wavecom:**

Fastrack M1206B, Fastrack M1306B, Integra, WMOi3

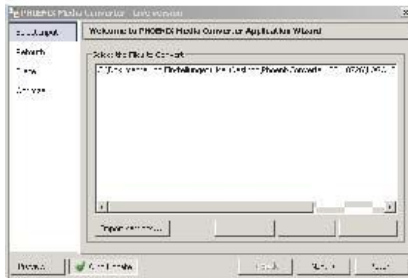
## Media Converter Live Version

PHOENIX4 LIVE contains a program for converting pixel-based pictures into laser optimized figures - the „PHOENIX4 MEDIACONVERTER - Live version“. The Media converter can be displayed over the BasicPictureEditor.

The import functions of the Live version are- in contrast to the optional (against payment) available PHOENIX4 MEDIACONVERTER -limited. The „PHOENIX4 MEDIACONVERTER -Live version“ can only convert pixel-based pictures (JPG, GIF, BMP, PNG...) and transfer them to the PHOENIX4 LIVE catalog. The optional Media Converter can also convert vector graphics (SVG), video files (MPG, AVI (no FLV, MP4)), laser files (ILDA) and flash files (SWF) into laser optimized figures. All other functions of the „PHOENIX4 MEDIACONVERTER - Live version“ and the PHOENIX4 MEDIACONVERTER are identical.



The MediaConverter Live Version can be displayed via the BasicPicture Editor by clicking on „Convert“ or directly via the context menu on the main surface by choosing „Live trace“.



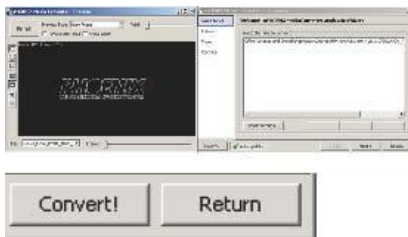
The Media Converter Wizard is structured in such a way, that a laser optimized figure can be created from import till output in only four steps by using the menu on the left-hand side.

„**Select Import**“ - Allows the import of single pictures or (similar) pictures in a folder.

With „**Retouch**“ you can adjust the template, which is the basis for the conversion.

„**Trace**“, contains all features to trace the template.

With „**Optimize**“, you give your conversion the final touch.



In the „Preview“ window you can follow up the changes immediately. Changes due to a change of the settings will be displayed after a short calculation time.

After finishing the settings click on „Convert!“ . If the conversion was successful a pop-up window appears. Click on „Return“ to close the Media Converter and return to the preceding surface. This might be the main surface of PHOENIX4 LIVE or the BasicPictureEditor depending on your starting point.

## MediaConverter in detail



The preview for following-up the alterations opens up as soon as the Media Converter-Live version is opened. If this does not happen, it can be opened by clicking the „Preview“ button in the Media Converter window. If „Auto Update“ is enabled, all changes of the settings can be seen straight away in the preview. For under-performing PCs this function can be disabled. If the function is disabled the preview can be updated by clicking on „Refresh“.

The preview for the changed settings is displayed in the central area. In the top left corner you will find information on the number of frames (for multi-frame figures) and the actual number of dots (points).

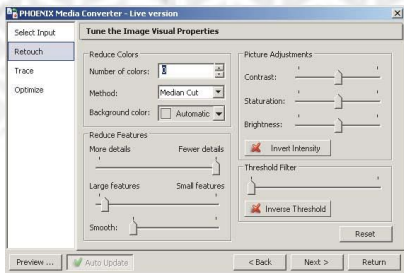
By ticking the corresponding checkboxes the dots and blanked lines can be displayed as well.

The „Preview Type“ defines the display. The preview type switches depending on the processing stage (Select Input, Retouch, Trace, Optimize). If the „point“ controller is not at the far right, only a part of the dots (points) will be displayed in the preview. This also helps to check the course of the characters.

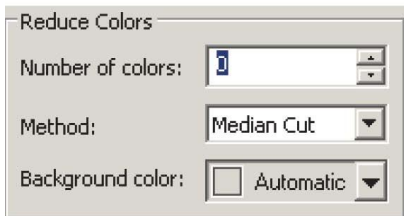
The masking tools help you to differentiate between important and unimportant details. You can choose between rectangle, circle and freehand. The following two tools define whether the selection includes or excludes the details to be traced.

The last two tools are the undo button, which takes back changes step-by-step and the delete button, which deletes the complete masking.

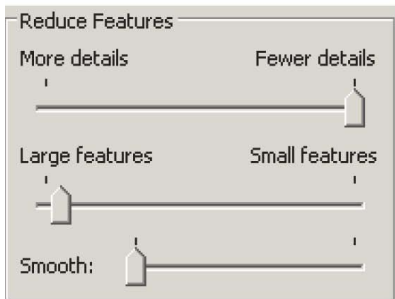
With the select input menu you can choose whether you want to open single files, complete folders or clear the list.



In the „Retouch,, menu it is the aim to adjust the template in such a way, that it provides a good basis for the „Trace“ menu. Different settings help the converter to emphasize the important details and at the same time reduce the unimportant ones.

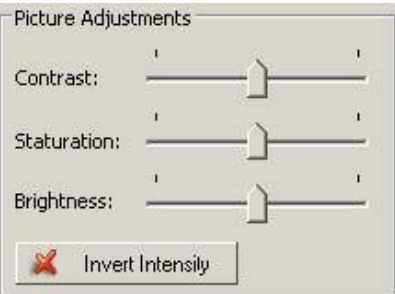


The „Number of colors“ defines the number of colors to be applied for the template. This helps the detail reduction algorithm (which can be selected under „Method“) to set up good starting material. The „Background Color,, helps, to set the template apart from the background.



This section controls the algorithm, which blurs the picture and cleans it from pixel noise and interferences. Not using this feature might end in a badly traced picture or a picture with too many details. The upper two controllers steer the noise reduction. It is the aim of this function to blur the parts of the picture where pixel noise is visible, but at the same time have no effect on the complex areas, which contain the desired details. The top controller determines the quantity of noise that shall be removed, whilst the middle controller steers the size of the details, which shall remain.

The „Smooth“ controller influences the power of the blurring filter. This filter blurs adjoin pixels in order to reduce the entirety of details. Therefore a bilateral filter is used, which has a great influence on surfaces, but has no effect on the edges.

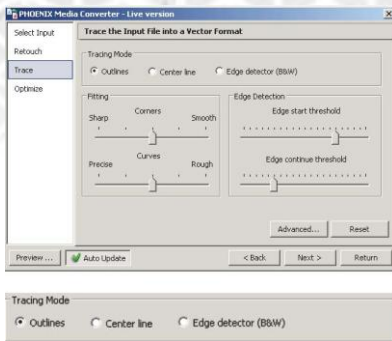


Contrast, Saturation, Brightness  
As the name implies, these filters allow the usual picture adjustments. The „Contrast“ controller defines the ratio between bright and dark areas. „Saturation“ defines the intensity of the colors and allows to change the picture from colored to black-and-white. „Brightness“ defines the general brightness of the picture.

Invert Intensity  
„Invert intensity“ reverses the intensity of all pixels. This means, dark pixels become brighter whilst light pixels become darker to the same extent.



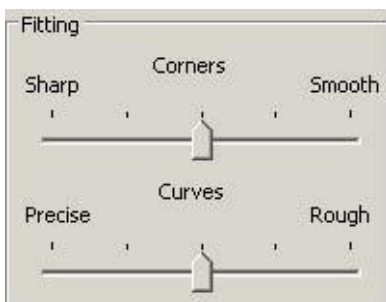
Threshold Filter  
This filter erases areas of the picture which contain information that lies either below or above an adjustable threshold value. Ticking the „Inverse Threshold“ checkbox inverts the direction.



## Trace Menu

The options in this menu control the tracing procedure of the pixel picture. The applied algorithms try to extract information on vectors from the pixel picture. Therefore the algorithm searches for contours, edges and other details. After detecting these details, they will be adapted to basic geometric elements like lines and spline curves.

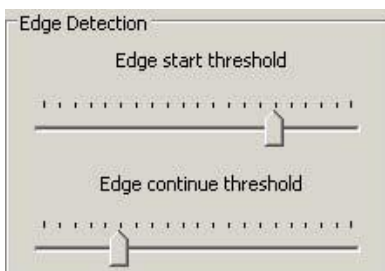
The option „Edge detector (B&W)“ defines whether the vector assimilation of a contour shall be created around the edges of the contour (in actual fact there will be two lines around the contour) or shall be positioned centrally through the contour. The last option activates the edge detection algorithm. This detection uses the „Canny“ edge detection. In this mode the converter will only create black-and-white pictures.



When using the trace mode, the application will create a number of lines or curves along the detail.

An important part of the procedure is the decision, whether an edge needs to be created between two curves or not. The result of creating too many edges is a well traced contour, but this also means that (in terms of the number of dots) the figure will be too complex which shows the unevenness of the pixel based template. Not enough edges result in the complete opposite, which means important details of the original template will be missing in the traced vector picture.

Once the number of edges is defined, the converter has to create curves which are assimilated to the detected edges. Similar to the other options the exact adjustment and the resulting complexity are directly related.



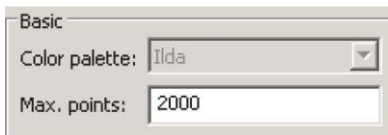
Both controllers adjust several values at once. Furthermore these settings can also be adjusted in the „Advanced settings“. In the edge detection mode two basic values can be adjusted. The top controller defines the threshold value concerning the detection of new edges. The bottom controller defines whether an edge will be traced to the next pixel or not.

This trace mode works better, if the preset values are not too extreme. It is advisable to switch-off the color reduction filter and use the „Smoothing“ Filter from the „Retouch“ menu only.



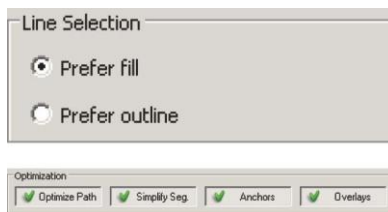
## Optimize menu

If the vector equivalent of a template has been created by tracing a pixel picture or by morphing a vector picture it will be converted into a laser picture path. During this conversion several adjustments can still be made to optimize the result.



Only the standard ILDA color range can be used.

The parameter „Max Points“ defines the maximum number of dots for every imported frame of an animation. The application applies different methods to satisfy the defined number of dots even for large animations or pictures with more dots. First of all the anchor points will be reduced. If this is not enough, the precision of the curves will be reduced. If there are still too many dots, the frame will be clipped (omit points deliberately) until the defined number of dots is achieved.



A laser cannot display the inner area of a figure accurately. Therefore the figure will only be displayed by its outer line. The „Line Selection“ is used to put the focus either on the outline or the inner area of the figure.

„Optimize Path“ activates the algorithm which rearranges the visible path of the visible segments in order to optimize the path of the laser.

If „Simplify Segments“, is activated, the application can delete a few dots of the traced figure in order to reduce the total number of dots of a frame. The algorithm is able to detect the dots with the lowest influence on the picture details. These dots will be deleted first.

Because of the physical limitation of the laser scanners it is advisable to add dots in critical places in order to avoid / reduce deformation of the figure due to fast scanner movements. You can add these dots after activating the „Anchors,“ button.

A template can consist of several parts and forms which overlay each other. Without processing the overlays all figures will be traced independently of each other, which results in an unnatural look. If the „Overlays,“ option is activated, the program computes the overlays and simulates the correct appearance by deleting parts which are quite likely invisible.

As an additional feature you can use the „Overlay“ mask (accessible via the preview window).



Convert!

Return

The global option „Point Density“ steers the standard distance between the dots in the resulting picture. The actual distance can vary depending on the picture, the applied options, etc..

To start the conversion after adjusting all settings press the „Convert!“ button. A progress bar shows the status / completion of the conversion.

When the conversion is finished, click on „Return“ to close the Media Converter and return to the preceding surface. This can be the main surface of PHOENIX4 LIVE or the BasicPictureEditor depending on your starting point. If you are returning to the BasicPictureEditor, you can carry on editing your new figure.

## PHOENIX-Mobile-Option

The „Mobile-Option“ allows the user to create interactive real-time laser animations via a standard Windows Mobile 6.5 PDA or a Windows Mobile 6.5 mobile phone. A free iOS version (iPhone/iPad) is also available. The animation, the laser selection and the effect controllers are available. Just sit at the bar and relax whilst steering your lasers via your mobile phone (WLAN) precisely accurate. You can even steer DMX commands for fog machines, screens, etc.!

The handling is quite simple. For windows mobile 6.5: After setting-up the IP-address on your PDA / mobile phone and your PC execute the PHOENIX4 program on your device. All animations will be transferred to your device within seconds and the laser show can be started. For iOS: Just setup the control template at the iOS device, install a MIDI bridge at the control PC and set up the communication.



Note: PHOENIX4 LIVE and a Windows Mobile 6.5 device / iOS device are required. For further information contact your PHOENIX dealer!

## Menu description

- File
  - Show
    - New (creates a new LiveShow - All animations & banks will be reset)
    - Load (loads an existing LiveShow)
    - Save (saves the opened LiveShow)
    - Save as (saves the opened LiveShow under a different name)
  - Bank
    - New Bank (creates a new tab with empty animation tiles)
  - Startup Show
    - Default Show (name of the show that will be started when starting PHOENIX4 LIVE )
  - Exit
    - Quit (ends PHOENIX4 LIVE)
- Settings
  - Program
    - Language (language selection)
    - Skin (changes the surface optically)
    - Fullscreen (switches over to full screen mode)
    - Mode (switches between the Phoenix Live standard surface, the AKAI APC40 mode and the ProLight HarpMode)
    - MIDI/DMX (settings for connecting external MIDI/DMX controllers)
    - Start Interfaces (switches on the laser output for the interface on startup )
    - Save on exit (shows the 'save show' confirmation dialog window)
  - Position&Color
    - Apply to All Keys (changes of position and color affect all lasers)
  - Laser
    - Laser Settings (settings for lasers and scanners)
    - Remap Interfaces (allocation of interfaces to the lasers in PHOENIX4 LIVE)
  - Protection
    - Protection (allows to protect access to menus by password)
  - Starting chase
    - Starting chase (New selected keys will be output random on pre-selected lasers)
- Tools
  - Beamtable (adjusting the beam table)
  - Timelines (loading and saving timelines)
  - Timelines (loading and saving matrix movement patterns)
  - 3D (opens PHOENIX4 3D VISUALIZER , real-time visualization)
  - Monitor
    - Brightness (dims the brightness of the monitor)
  - Scanner
    - Easy Setup (quick setup of laser hardware & adjustment to the software)
- Help
  - About (information about Phoenix)
  - Manuals
    - English (English manual / operating instructions for PHOENIX4 LIVE)
    - German (German manual / operating instructions for PHOENIX4 LIVE)
    - French (French manual / operating instructions for PHOENIX4 LIVE)
    - Italian (Italian manual / operating instructions for PHOENIX4 LIVE)
    - Spanish (Spanish manual / operating instructions for PHOENIX4 LIVE)

- Russian (Russian manual / operating instructions for PHOENIX4 LIVE)
- Get Support
  - Online-Technical Support (opens the remote maintenance service (prior agreement required))
- Perform Update
  - -Update (opens the online-updating service to update PHOENIX4 LIVE)

## Tips, tricks and trouble-shooting

### No laser output

- The wrong interface is selected in the PHOENIX4-settings; -> Settings>Remap Interfaces
- The interface is not installed properly. Please check the hardware in your devices manager (no exclamation mark in front of the device name)
- The USB license dongle is missing / not connected
- The laser projector is not connected to the interface.

### Reinstallation

- Deinstall the „Phoenix Showcontroller,, software using the Windows deinstallation dialogue (Windows XP = System>Software, Windows Vista & 7 = program )
- Important: Delete the remaining program folder „Phoenix Showcontroller,, from the Windows program folder (Windows XP = Program files/ Phoenix Showcontroller, Windows Vista & 7 (32 Bit) = programme files/Phoenix Showcontroller, Windows Vista & 7 (64 Bit) = program files (x86)/Phoenix Showcontroller)
- Download the latest PHOENIX4 kit from the website (<http://www.phoenix-showcontroller.de/support/downloads/>)
- Reinstall PHOENIX4 (see chapter „Installation“)

### Saving the live show

- To save a live show click on „File>Save Show,, (main menu bar) and save it to a secure place.
- The LiveShow file contains the program settings and the animation presets.
- The corresponding figure catalogue has to be saved separately. It can be found in the Phoenix program folder e.g. „../program files/Phoenix Showcontroller/CAT,, . Save the catalogue in the same place as the live show.
- If in doubt, create a backup copy of the CAT folder

### Problems with Windows VISTA and Windows 7

- Sometimes VISTA tries to install the drivers for the interface automatically and does not ask for the manufacturer's drivers if problems occur. Therefore please check your devices manager. If the interface is not installed correctly, please repeat steps mentioned in chapter „Installation“, b) Hardware (at the beginning of the manual).
- If the software cannot be started, try to execute the exe-file with administrative privileges. (rightclick the „Phoenix Showcontroller Icon,, ->“Execute as administrator,,)

### The output flickers or does not look right

- Are the scanners adjusted properly?
- Are the min. / max. scan speed settings correct?

-Is your laser projector able to display the adjusted number of dots?

### **The preview windows do not work properly**

- and / or are translucent / or the CPU capacity is nearly 100%.

-Install the latest driver for your graphics card as well as drivers for OpenGL. If the preview mode still does not work, your graphics card is not able to display 3D visualizations under OpenGL. This often occurs on low range laptops with onboard graphic chipsets. Unfortunately we cannot take remedial action in this case.

### **Problem report / improvement suggestions**

You discovered an error in the software? You have a good idea to improve the product? We are open for criticism and suggestions and endeavor to put good ideas into action.

E-mail us at [support@Phoenix-Showcontroller.de](mailto:support@Phoenix-Showcontroller.de)

THANK YOU for purchasing PHOENIX4 LIVE! We hope you enjoy the functionality of this program...



# Attachment

## ILDA Signal / Interface-Connection-Plan

For *PHOENIX* NET-Interfaces

| Signal Name         | Pin | Note                                      |
|---------------------|-----|-------------------------------------------|
| X+                  | 1   | -5 to +5V                                 |
| Y+                  | 2   | -5 to +5 V                                |
| Intensity/Blanking+ | 3   | 0V to 5V                                  |
| Interlock A         | 4   | Connected to PIN 17 in the interface card |
| Red+                | 5   | 0V to 5V                                  |
| Green+              | 6   | 0V to 5V                                  |
| Blue+               | 7   | 0V to 5V                                  |
| Deep blue+          | 8   | 0V to 5V                                  |
| Yellow+             | 9   | 0V to 5V                                  |
| Cyan+               | 10  | 0V to 5V                                  |
| DMX-out +           | 11  | DMX Output +Signal                        |
|                     | 12  |                                           |
| Shutter             | 13  | 0V / +5V                                  |
| X                   | 14  | -5V to +5V                                |
| Y                   | 15  | -5V to +5V                                |
| Intensity/Blanking  | 16  | GND                                       |
| Interlock B         | 17  | Connected to PIN 4 in the interface card  |
| Red                 | 18  | GND                                       |
| Green               | 19  | GND                                       |
| Blue                | 20  | GND                                       |
| Deep blue           | 21  | GND                                       |
| Yellow              | 22  | GND                                       |
| Cyan                | 23  | GND                                       |
| DMX-out minus       | 24  | DMX-out minus                             |

For **PHOENIX** USB Micro V1 Interface:

| Signal Name             | Pin | Notes                                     |
|-------------------------|-----|-------------------------------------------|
| X+                      | 1   | -5 to +5V                                 |
| Y+                      | 2   | -5 to +5 V                                |
| Intensity/Blanking+     | 3   | 0V to 5V                                  |
| Interlock A             | 4   | Connected to PIN 17 in the interface card |
| Red+                    | 5   | 0V to 5V                                  |
| Green+                  | 6   | 0V to 5V                                  |
| Blue+                   | 7   | 0V to 5V                                  |
|                         | 8   |                                           |
|                         | 9   |                                           |
| DMX-in +                | 10  | DMX-Input (plus-signal)                   |
| DMX-out +               | 11  | DMX-Output (plus-signal)                  |
|                         | 12  |                                           |
| Shutter                 | 13  | 0V /+5V                                   |
| X                       | 14  | -5V to +5V                                |
| Y                       | 15  | -5V to +5V                                |
|                         | 16  | GND                                       |
| Interlock B             | 17  | Connected to PIN 4 in the interface card  |
| Red                     | 18  | GND                                       |
| Green                   | 19  | GND                                       |
| Blue                    | 20  | GND                                       |
|                         | 21  |                                           |
|                         | 22  |                                           |
| DMX-in                  | 23  | DMX - Input (minus-signal)                |
| DMX-out                 | 24  | DMX - Output (minus-signal)               |
| Ground (also for DMX !) | 25  | GND (for LASER and DMX)                   |

For **PHOENIX** USB Micro V2 Interface

| Signal Name             | Pin | Notes                                 |
|-------------------------|-----|---------------------------------------|
| X+                      | 1   | -5 to +5V (or 0 to 10V)               |
| Y+                      | 2   | -5 to +5 V (or 0 to 10V)              |
| Intensity/Blanking+     | 3   | 0V to 5V (connected with PIN 10)      |
| Interlock A             | 4   | Connected mit PIN 17 in the interface |
| Red+                    | 5   | 0V to 5V                              |
| Green+                  | 6   | 0V to 5V                              |
| Blue+                   | 7   | 0V to 5V                              |
| Color 4+                | 8   | 0V to 5V                              |
| Color 5+                | 9   | 0V to 5V                              |
| Color 6+                | 10  | 0V to 5V                              |
| DMX-out +               | 11  | DMX-Output (plus-signal)              |
|                         | 12  |                                       |
| Shutter                 | 13  | 0V /+5V                               |
| X                       | 14  | -5V to +5V (or 0 to 10V)              |
| Y                       | 15  | -5V to +5V (or 0 to 10V)              |
| Intensity/Blanking      | 16  | GND (connected to PIN 23)             |
| Interlock B             | 17  | Connected tot PIN 4 in the interface  |
| Red                     | 18  | GND                                   |
| Green                   | 19  | GND                                   |
| Blue                    | 20  | GND                                   |
| Color 4                 | 21  | GND                                   |
| Color 5                 | 22  | GND                                   |
| Color 6                 | 23  | GND                                   |
| DMX-out                 | 24  | DMX - Output (minus-signal)           |
| Ground (also for DMX !) | 25  | GND (for LASER and DMX)               |