



# USER MANUAL



# About

**Spotrack TrACME** is a visual tracking system that allows moving lights to be used as followspots.

Controlling the lights is intuitive, and the following motion is smooth, precise and accurate.

The operator follows the performer on screen using a mouse and Spotrack causes the moving lights to converge on the performer.

The operator can be located in a backstage area, or wherever convenient, following the performance via a full stage view from the **Spotrack TrACME** camera.

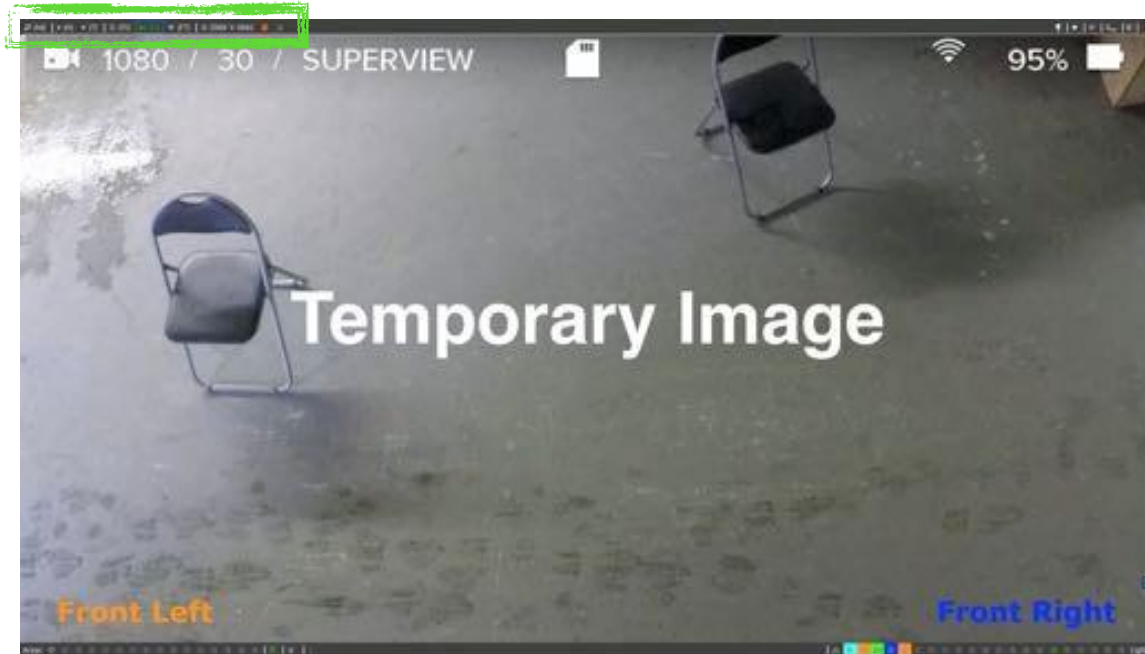
# Basic Operation

- Power on the computer, wait for Windows™ to start and the Desktop to be shown
- Double click the **Spotrack TrACME** icon on the desktop, the software starts;



The splash screen shows the version number as well as license status and product version

- The **Spotrack TrACME** software initialises and the view of the stage is displayed;



The main software functions are in the top right hand corner of the screen.

# Tracking

- Press the key T or click in the tool bar as shown;



- Any connected and calibrated lights now follow the mouse pointer.
- Press the key T or click in the toolbar again to stop tracking



using the keyboard shortcuts is always recommended, as tracking (and other functions) can be turned on and off without causing the lights to move

# Magnifier

- Type M or click in the tool bar where shown;



- The area under the mouse pointer is displayed enlarged;



- Type M or click in the toolbar again to hide the magnifier



# Image Enhancement

- If the image is too dark, type F5 or click in the tool bar where shown

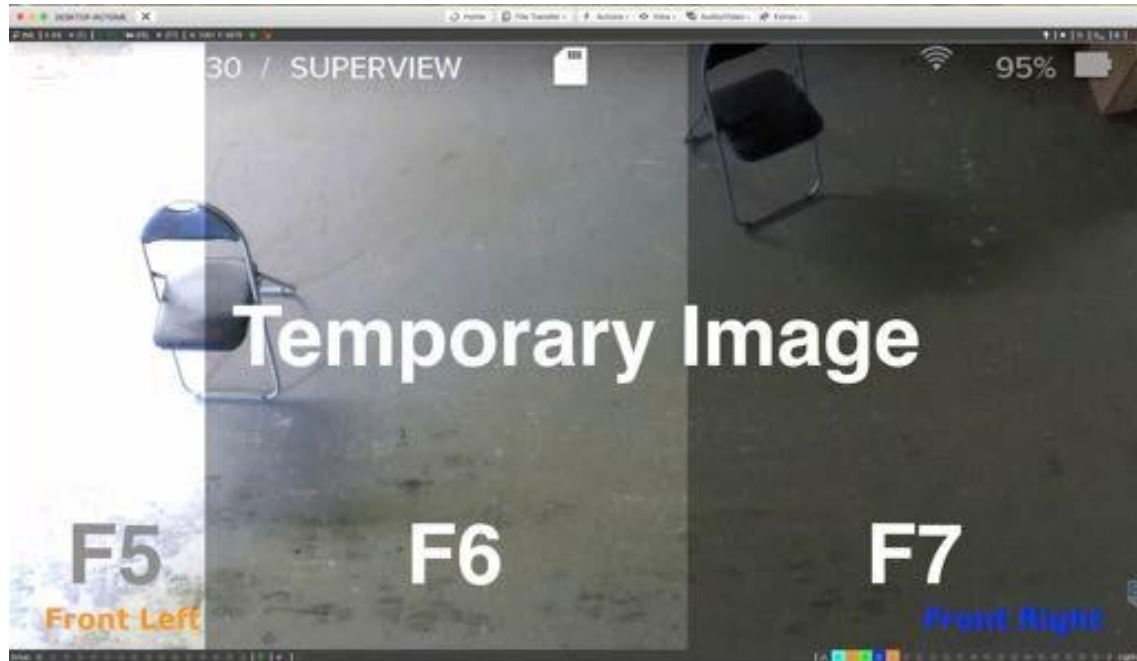


- If the image is too bright type F7 or click in the tool bar where shown



- Type F6 or click in the tool bar where shown to return the image to normal





# Height Compensation

- Type H or click in the tool bar where shown;

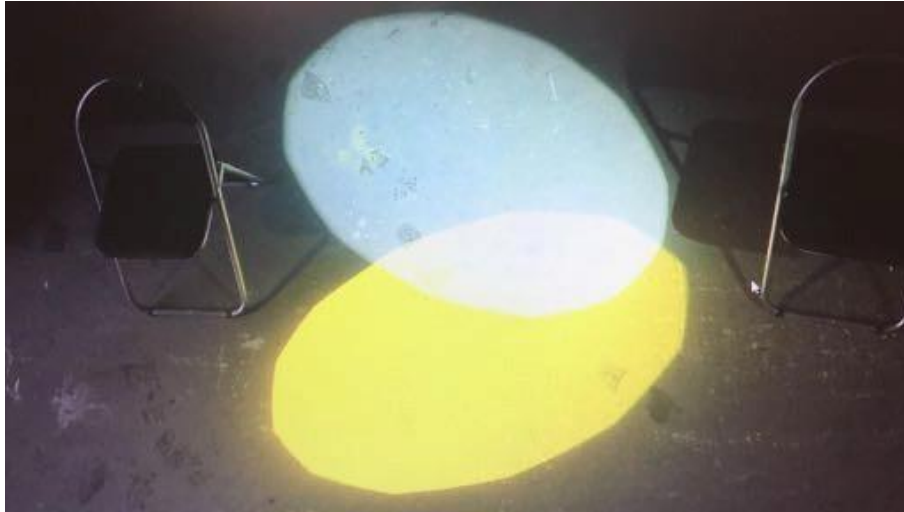


- the indicator shows how much height compensation is applied



the height compensation is saved as long as the software is running, each time the compensation is turned on the starting value is the last used value.

- Type H or click in the tool bar again to turn off the height compensation;



# Status Information

- The current cursor position is shown in the toolbar;




- The performance status is shown with an indicator;



a red indicator shows that frames may be being lost from the camera, a green indicator shows that everything is OK, hold the mouse over the indicator for more information.

- The ArtNet™ status is shown with an indicator;



 the indicator shows whether or not ArtNet™ data is being received, and if so how much time has passed since the last valid packet, hold the mouse over the indicator for more information. Double click the indicator to see the live universe state.



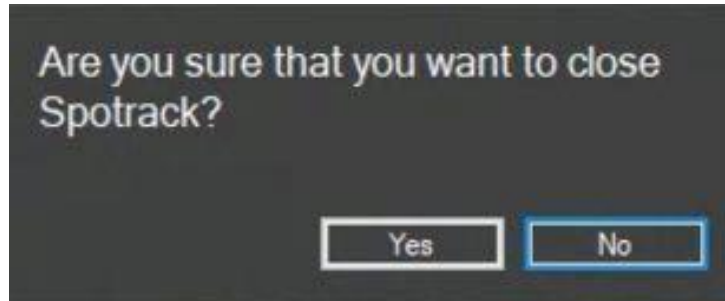
# Shutdown Spotrack TrACME

- After the performance click ✖ in the top right of the screen



Spotrack TrACME can only be closed if **Tracking** is turned off!

- Confirm that Spotrack should close by clicking **Yes**



- If necessary continue to shut down Windows™

## Setup & Calibration



# Setup Spotrack TrACME

Prior to tracking **Spotrack TrACME** must know;

- on which ArtNet universes data is received, and transmitted

These instructions assume a fresh, clean system with no prior configuration.



## Check Camera View

Ensure that the complete performance area is visible to the camera, and that the camera is mechanically locked off and unable to be moved by vibrations etc.



Once the camera view is correct, click in the bottom toolbar to store a check image;



# Configure ArtNet

Data from the lighting desk which controls the lights is input to **Spotrack TrACME** which then takes over the positioning of the lights during tracking.

To configure the ArtNet;

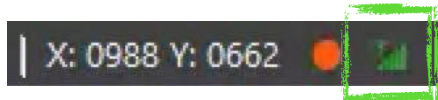
- open the **Configuration** by clicking the button in the top right of the screen;





normally the **Subnet** value will be 0. Note that the input and output values must conform with the **Ethergate** configuration (if used). Other options are described in later sections of this manual.

- click **Apply** when done, the config closes and a moment is needed to reload.
- check the ArtNet status shows data being received



## Add a Moving Light

Each Moving Light must be added to **Spotrack TrACME** so that it can be calibrated and controlled. The light must have a minimum functionality of Pan and Tilt control.



8 bit pan and tilt (one channel each) is supported, but follow spot accuracy will be significantly limited.

To add a moving light;

- open the **Lights** by clicking the button in the top right of the screen;



- Click the field beside **Marker Color** to select a color to represent this light;
- Enter the **Name** to be used for the light



👉 the color is used in the DMX Universe view, and in other places in the User Interface to represent this light, so it is recommended to use different colours for different lights.

- For each channel choose the correct function from the list;
- Set the **Number of Channels** as required for this light (e.g. 31)
- the relative channel number (in this case **1**)
- the current value of the channel (in this case **128**), which is also shown on the slider



if ArtNet data is being received on this channel, the live value is displayed. By double clicking the channel it is possible to set a manual value (used to check the function)

- the defined function of the channel (in this case **Unused**)

The function may be one of the following;


Function	Use	Function	Use
Unused	No function	Zoom	Zoom low byte (coarse)
<b>Pan</b>	<b>Pan low byte (coarse)</b>	ZoomFine	Zoom hi byte (fine)
<b>PanFine</b>	<b>Pan hi byte (fine)</b>	Iris	Iris low byte (coarse)
<b>Tilt</b>	<b>Tilt low byte (coarse)</b>	IrisFine	Iris hi byte (fine)
<b>TiltFine</b>	<b>Tilt hi byte (fine)</b>	Dimmer	Dimmer low byte (coarse)
PanTiltSpeed	No function	DimmerFine	Dimmer hi byte (fine)
Focus	Focus low byte (coarse)	Shutter	No function
FocusFine	Focus hi byte (fine)	Strobe	No function



only **Pan** and **Tilt** are required for **Spotrack TrACME** operation, **Focus**, **Zoom**, **Iris** and **Dimmer** can all be automatically controlled if defined and calibrated.



Each **light** is represented by a tile, containing the following information;


 a *.Spot* file will be created which can be imported to save time creating a second example of the same light.

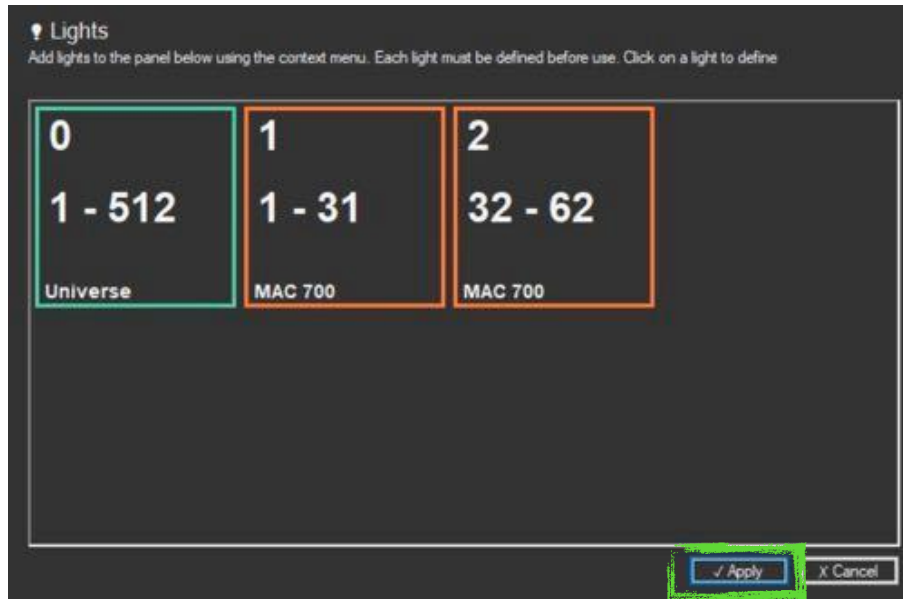
Calibration of the light is only possible when it has been added to **Spotrack TrACME**

- the **Light** number (in this case **1**)

 light numbers are important if you intend to use **Spotrack TrACME Remote**

- the channels used for this light in the DMX universe (in this case **1-31**)
- the name given to the light (in this case **MAC 700**)
- the color identifying the light (in this case **Orange**)

- Add any remaining lights required, then click **Apply**;
- Click on the new light to open the **Configure Light** panel.
- Click  to **Open** a file and then click apply.



The lights are added to the bottom toolbar;



👉 the number of lights possible depends on the product version and may be 1, 3 or 20.

Once the lights have been stored, it is possible to proceed with **Calibration**.

# Configure Calibration

To configure the Calibration;

- open the **Configuration** by clicking the button in the top right of the screen;



- choose the required **Calibration Complexity**;



See **Configuration** for more details.

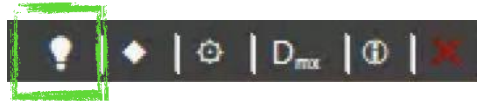
- click **Apply** when done, the config closes and a moment is needed to reload.

# Calibrate a Moving Light

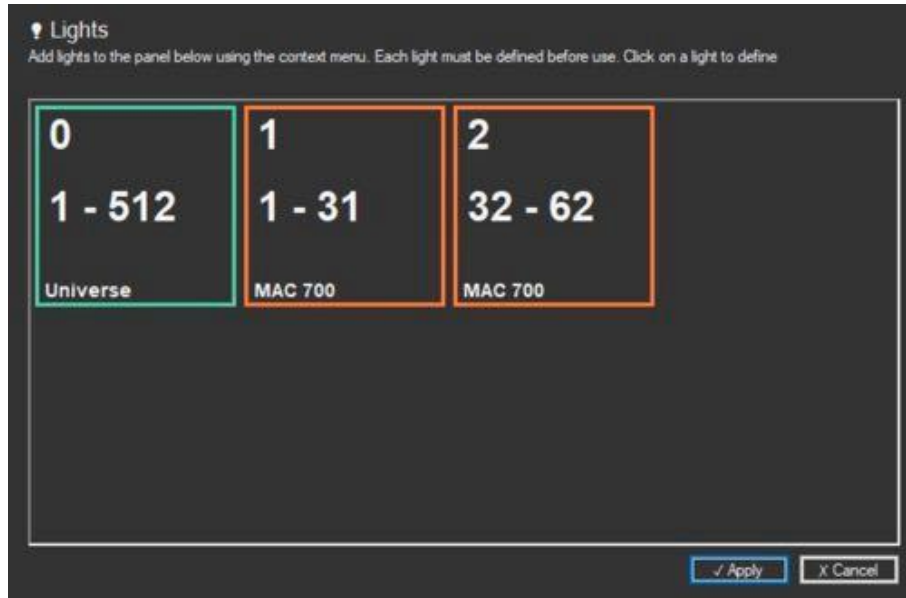
Each Moving Light must be calibrated with **Spotrack TrACME** so that it can be controlled.

To calibrate a moving light;


- open the **Lights** by clicking the button in the top right of the screen;



- Click on the light to be calibrated (for example **1**);



- the **Configure Light** panel is displayed as before, click **Calibrate Light**;

 it is useful if before clicking **Calibrate Light** the desk is used to position the light on the stage.

The **Calibration Panel** is displayed, and the first target is marked on screen;










The **Calibration Panel** includes sliders for the features of the light that can be calibrated;

👉 you can also use the Mouse or the sliders directly to move the light, the easiest

👉 if **Pan** is moving in the wrong direction, type X to invert. Likewise for **Tilt** type Y

👉 if using the desk, then the Mouse should not be used

- position the light as accurately as possible at the first target then type **Enter**;
- collect the next point

If the calibration point is occluded by the panel,   Click  or  to move the panel out of the way, click  to return to the center of the screen.

👉 remember to type M to turn off the mouse movement before clicking, if used.

👉 the more precise the calibration points the better the performance will be when

tracking.



if required click # to save the *.spot* file with the calibration data, this can be used if more than one **Spotrack TrACME** may use the same light / camera combination during the performance.





if using Spotrack TrACME for the first time, it can be useful to **Apply** after the first light is calibrated and check the tracking.



Check the camera and tracking before each performance, allowing time to recalibrate if necessary, in case the camera has moved. Movement of the camera, or the lights, will invalidate the calibration data.

## Advanced Tools



# Areas

An **Area** is used to delineate an area of the stage.

**Areas** are used by **Macros** to then modify the values of the DMX universe when the tracking enters the area.

**Spotrack TrACME** allows the user to define up to sixteen areas.

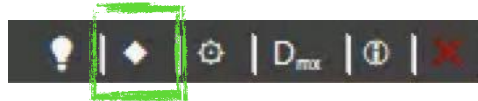


# Macros

A **Macro** is triggered by an area and overrides the DMX output of **Spotrack TrACME** to produces some creative effect.

One area can trigger more than one macro.

- open the **Macros** by clicking the button in the top right of the screen;



# Corners

Corner marks can be overlaid on the video display to aid orientation of the operator.

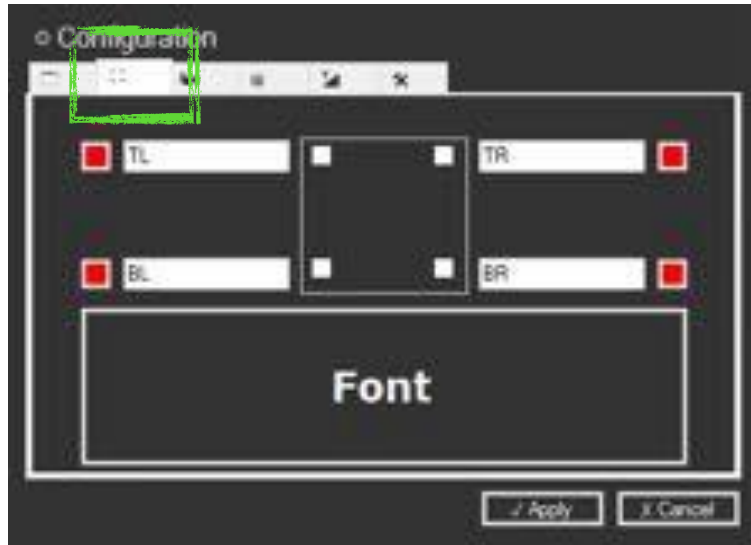
They are defined in the **Configuration**.

To setup **Corners**;

- open the **Configuration** by clicking the button in the top right of the screen;

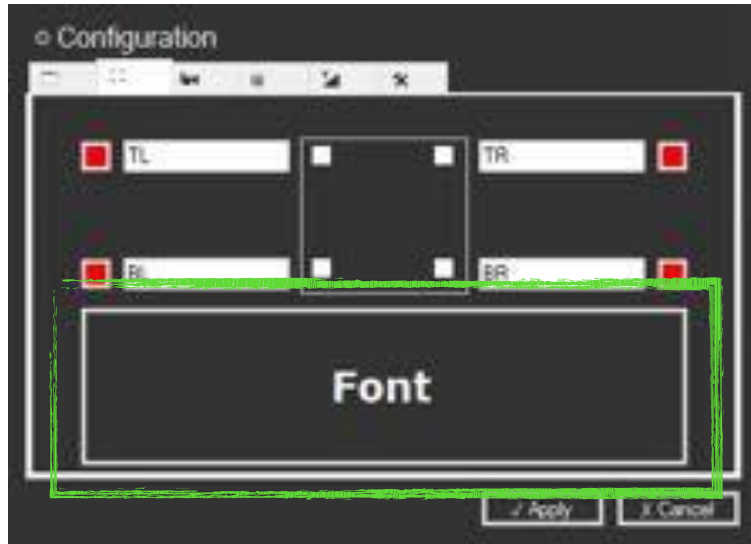


- select the ArtNet tab in the configuration;

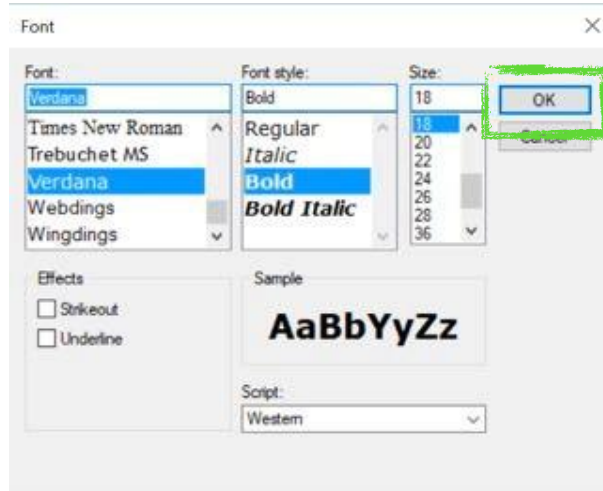




- press the **Font** button to setup the text style for all corners (and **Director** messages);

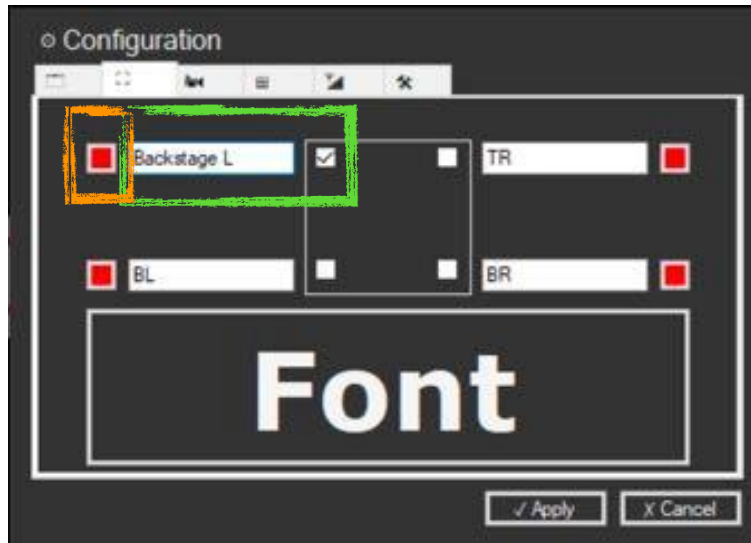


- select the **Font**, **Style** and **Size** required, and click **OK** when done;



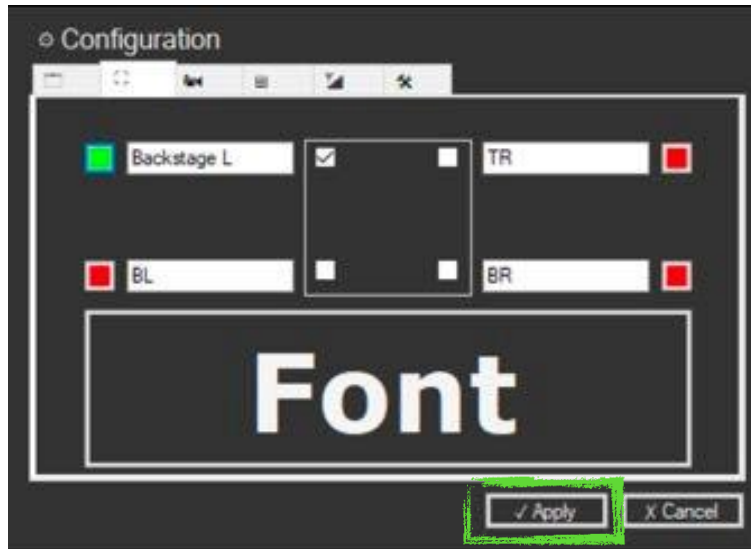
👉 you can use any Font installed on the system, non Western character sets are also supported, provided the relevant OS packs are installed.

- in the corner(s) required enter the Text and activate;



- if required click the **colour** swatch (**orange**) to change the text colour (using the same panel as we used in **Lights**, and **Macros**)

- Click **Apply**;



- the **Corner** is displayed as specified;



👉 each corner can have a different colour, but they will always have the same font

👉 the font specified will also be used for **Director** messages

👉 the colour specified for the top left corner will be used for **Director** messages



# DMX Panel

The DMX panel shows the live value of every channel in the universe, as well as an overview of which channels are allocated.

- open the **DMX Panel** by clicking the button in the top right of the screen;



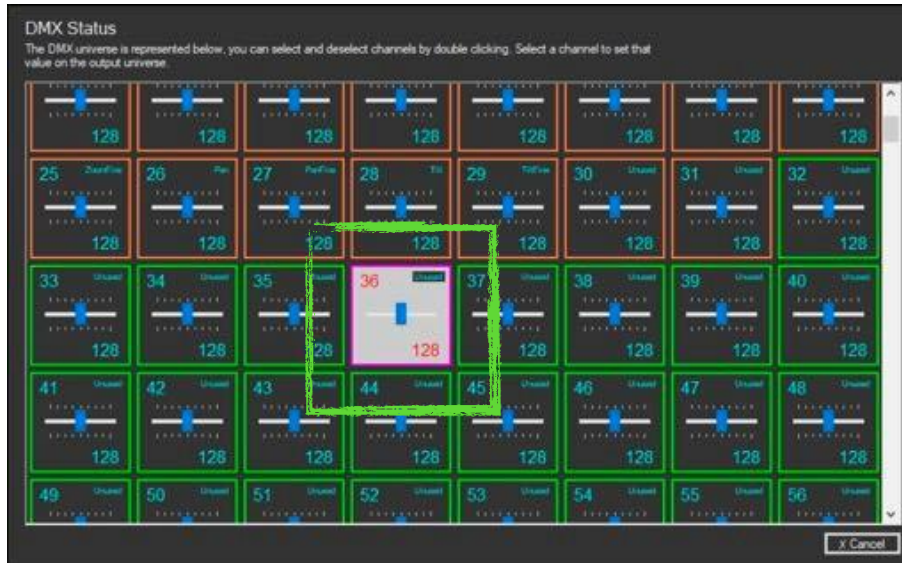
the DMX Panel is displayed;



☝ each channel is shown as a tile, with the **Channel Number**, the **Value**, the **Function** if defined, and is coloured according to the lamp to which it is allocated.



- double click any channel (it will be shown inverted) to set a value manually;

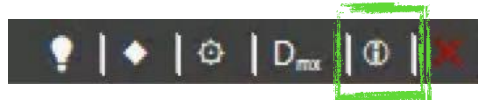


👉 the manual values will be preserved on the output universe as long as the **DMX Panel** remains open, to revert to the input value just double click the tile once more.

# About

The **About** panel shows the current version number of the software, as well as other information.

- open the **About Panel** by clicking the button in the top right of the screen;



The panel is displayed;



it contains the following information;

- the product type
- the version number and build (in this case **2018.1 Build 15**)
- the status
- how long **Spotrack TrACME** has been running (in this case about **16 hours**) and the number of frames of video displayed in that time.
- Click **OK** to dismiss the panel.

## Director and Remote

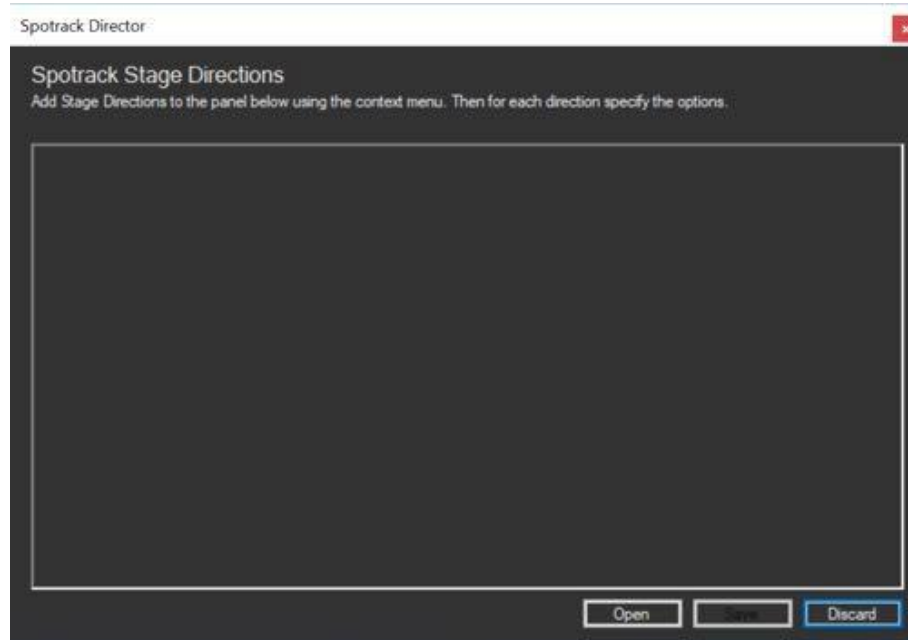
# Director

Spotrack **Director** provides the ability to display messages to the operator of Spotrack based on a pre-configured message list and the value of one channel on the universe. By setting a pre-determined value to the channel, the message is displayed.

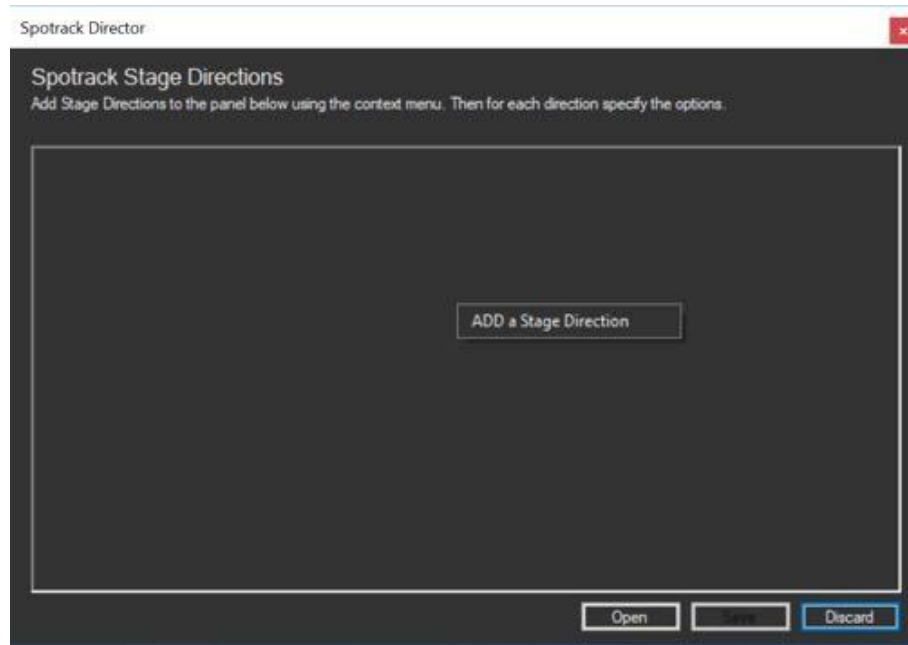
The message list is created using the **Spotrack Director** application, and then imported into **Spotrack TrACME** .



- Double click the **Spotrack Director** icon on the desktop, the software starts;



- Right click and choose **ADD a Stage Direction**;





- A tile is added for the first direction (be default with **Direction ID 1**)

Spotrack Director

### Spotrack Stage Directions

Add Stage Directions to the panel below using the context menu. Then for each direction specify the options.

Direction ID	Icon	Message	Display Location
1		<input type="text" value="Enter the message here..."/>	

Open Save Discard



Each tile contains the following information;



- the **Direction ID** (in this case **1**)



when the Director DMX channel value is **1** this message will be displayed.


- the **Icon** (in this case 辰)

- the **Message** to be displayed on screen












the message may be in any language your OS allows you to type in.

- the **Display Location** at which the message should be displayed (here **Centre**)

- the  button allows you to delete a message

The **Icon** may be one of the following;









Icon	Description	Function	Use
	Warning Triangle / Caution	→	Arrow pointing right
	<b>Phone</b>	↘	Arrow pointing down and right
	<b>Clock</b>	↓	Arrow pointing down
	<b>Thumbs up</b>	B	Arrow pointing down and left
	<b>Thumbs down</b>	←	Arrow pointing left
	Headset / Headphones	↖	Arrow pointing up and left
	Clapper Board		Happy face
↑	Arrow pointing up	1	Sad face
	Arrow pointing up and right		

- Add all the messages required (maximum of 255), and click **Save**;

Spotrack Director

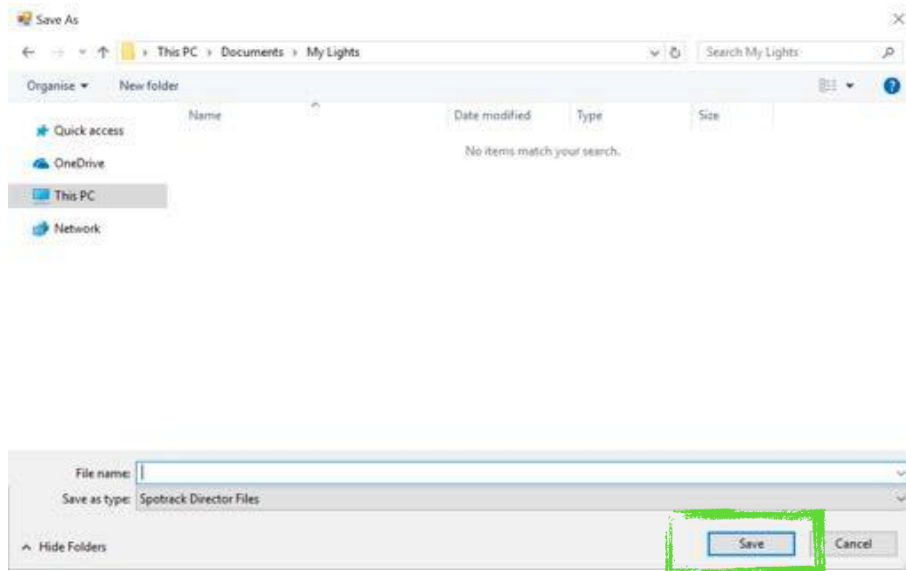
### Spotrack Stage Directions

Add Stage Directions to the panel below using the context menu. Then for each direction specify the options.

Direction ID	Icon	Message	Display Location
1		Attention the show is about to start	
2		Cell phones OFF please	
3		Headset check please	
4		Performer will enter from the left	

Open Save Discard

- Choose a file location, specify a **File name** and click **Save**;



- Spotrack Director can then be closed by clicking **Discard**.



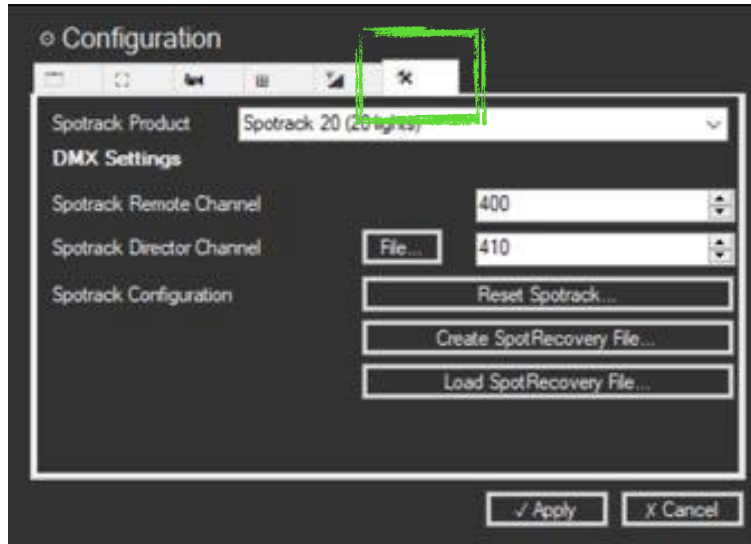
the Director file can be opened and modified if needed.

The Director file can now be imported in Spotrack;

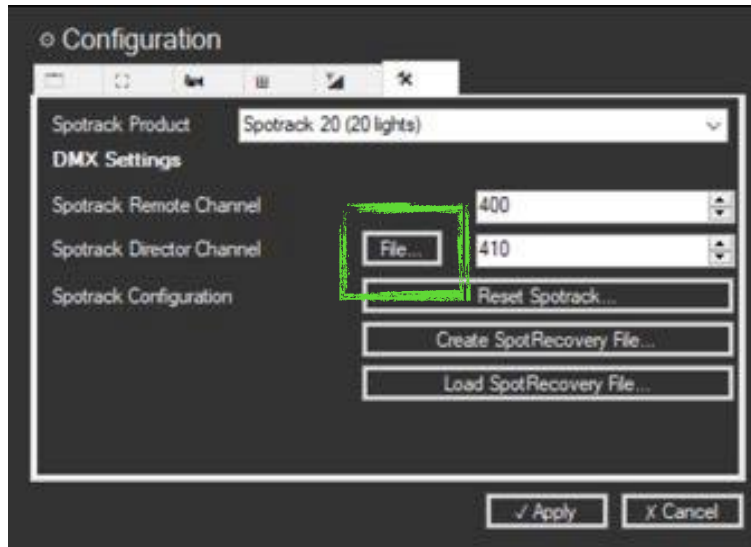
- open the **Configuration** by clicking the button in the top right of the screen;



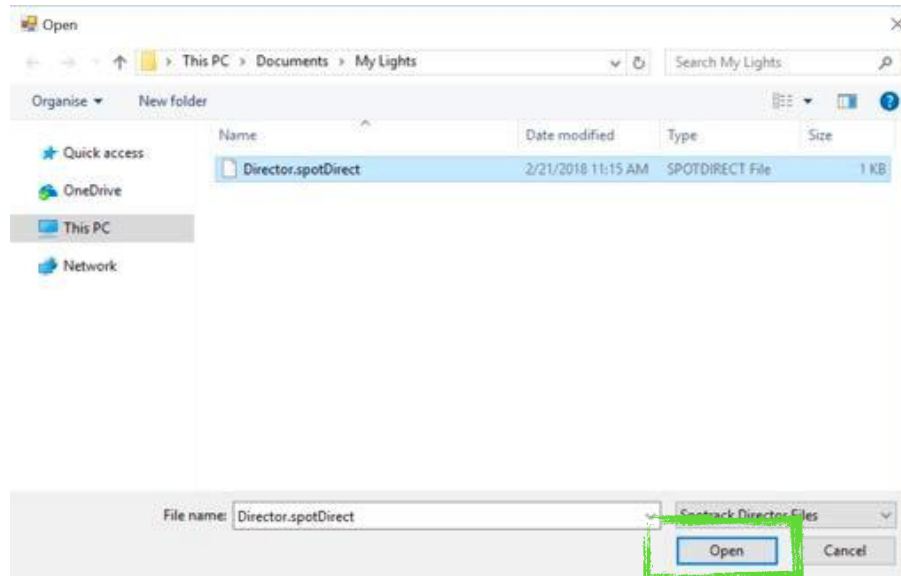
- select the General tab in the configuration;



- click **File** next to **Spotrack Director Channel**;

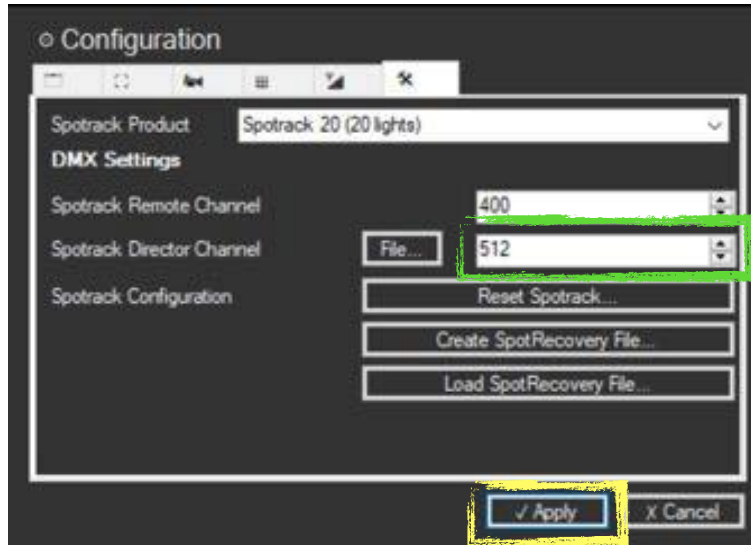


- locate the .spotDirect file and click **Open**;





- set the DMX channel which will be used to specify the message and click **Apply**;



the Director messages will only be available after restarting Spotrack TrACME .

When a DMX value is received on the specified channel, matching a message, that message is displayed;



The Director display behaves as follows;

Director Channel Value	Meaning
<b>0</b>	No message is displayed. If a message was currently displayed, it will be displayed for ~3 seconds more.
<b>&gt;0</b>	If a message exists with this ID it will be displayed. It will remain on screen as long as the value is held.  If a message does not exist with this ID it behaves as <b>0</b>

# Remote

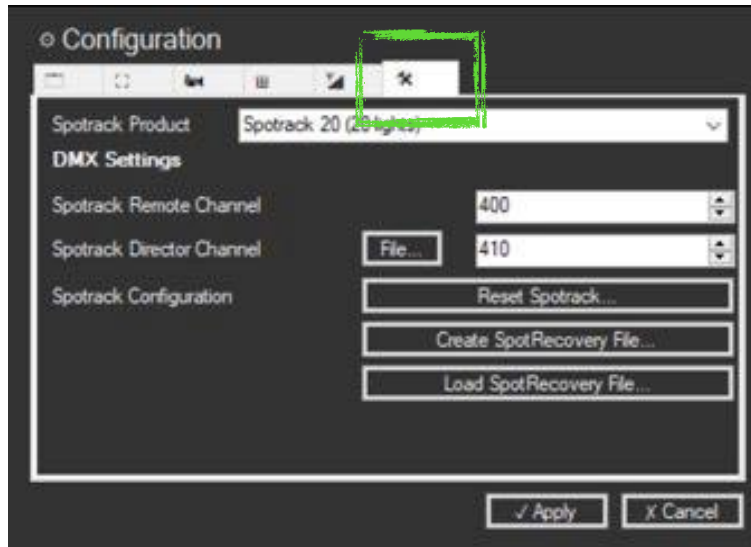
Spotrack TrACME **Remote** allows the tracking of individual configured lights to be turned on and off by the value of a specified channel.

To setup **Remote**;

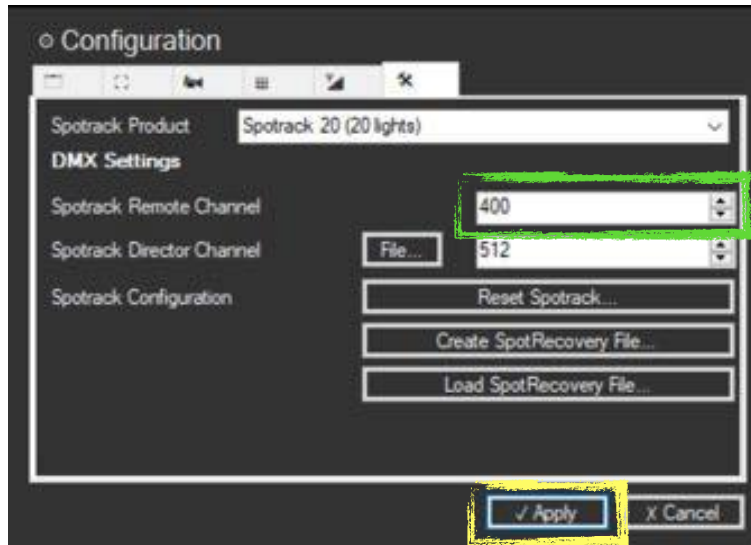
- open the **Configuration** by clicking the button in the top right of the screen;



- select the General tab in the configuration;



- set the base DMX channel which will be used to specify the message and click **Apply**;



👉 Always allow enough channels for the maximum number of lights.

Remote is switched on using the button in the bottom right toolbar;



the button turns green to indicate **Remote** is active;



👉 click the button again to turn off **Remote**, all lights will then be used.



Offset from Base Channel	Channel ID when Remote Channel = 400	Value	Effect
0	400	$\leq 127$	Light 0 - tracking off
0	400	$>127$	Light 0 - tracking on
1	401	$\leq 127$	Light 1 - tracking off
1	401	$>127$	Light 1 - tracking on
2	402	$\leq 127$	Light 2 - tracking off
2	402	$>127$	Light 2 - tracking on
3	403	$\leq 127$	Light 3 - tracking off
3	403	$>127$	Light 3 - tracking on



this continues for all lights (Channel ID 420 in the example)



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