
MagicVis User Manual

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| REVISION HISTORY |
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Contents

| | | |
|----------|---|----------|
| 1 | MagicQ Visualiser | 1 |
| 1.1 | MagicVis | 1 |
| 1.1.1 | Using the Separate MagicVis Application | 2 |
| 1.1.2 | Using MagicVis with other consoles | 3 |
| 1.1.3 | Using the Visualiser in MagicQ | 3 |
| 1.2 | Using MagicVis | 3 |
| 1.2.1 | Patching Heads in the Visualiser | 4 |
| 1.2.2 | View Vis View | 4 |
| 1.2.3 | Positioning the Heads in the Visualisation | 5 |
| 1.2.4 | Transform Modes | 5 |
| 1.2.5 | Objects | 6 |
| 1.2.6 | Drapes | 7 |
| 1.2.7 | Custom Models | 7 |
| 1.2.8 | Attaching Heads to Objects | 8 |
| 1.2.9 | Modifying Beam Angle and Head Shape | 8 |
| 1.2.10 | Visualising Media Servers | 8 |
| 1.2.11 | Moving Trusses | 8 |
| 1.2.12 | Coloured objects | 9 |
| 1.2.13 | DMX Controlled Camera | 9 |
| 1.2.14 | Removing Visualiser Heads and Objects | 9 |
| 1.2.15 | Changing the Size of the Room | 9 |
| 1.2.16 | Paperwork | 9 |
| 1.2.17 | Converting an Existing MagicQ Show File | 11 |
| 1.2.18 | Converting a MagicQ Grid Into a Visualisation | 11 |
| 1.2.19 | Visualiser Settings | 11 |
| 1.3 | Plot Window | 13 |
| 1.3.1 | Focus Functions | 13 |
| 1.3.2 | Converting the Plot View into a MagicQ Grid | 14 |

| | | |
|----------|---|-----------|
| 2 | Blind Visualisation | 15 |
| 2.1 | Split Visualisation in MagicVis | 15 |
| 2.2 | Automatic Source Selection | 16 |
| 3 | Licensing | 17 |
| 3.1 | Qt | 17 |
| 3.2 | LibPNG | 27 |
| 3.3 | LibJPEG | 29 |
| 3.4 | LibJPEG-Turbo | 30 |
| 3.5 | LibICU | 31 |
| 3.6 | FFmpeg Binary | 38 |
| 3.7 | FFmpeg Library | 44 |
| 3.8 | LibArchive | 53 |
| 3.9 | Zlib | 53 |
| 3.10 | PortAudio | 54 |

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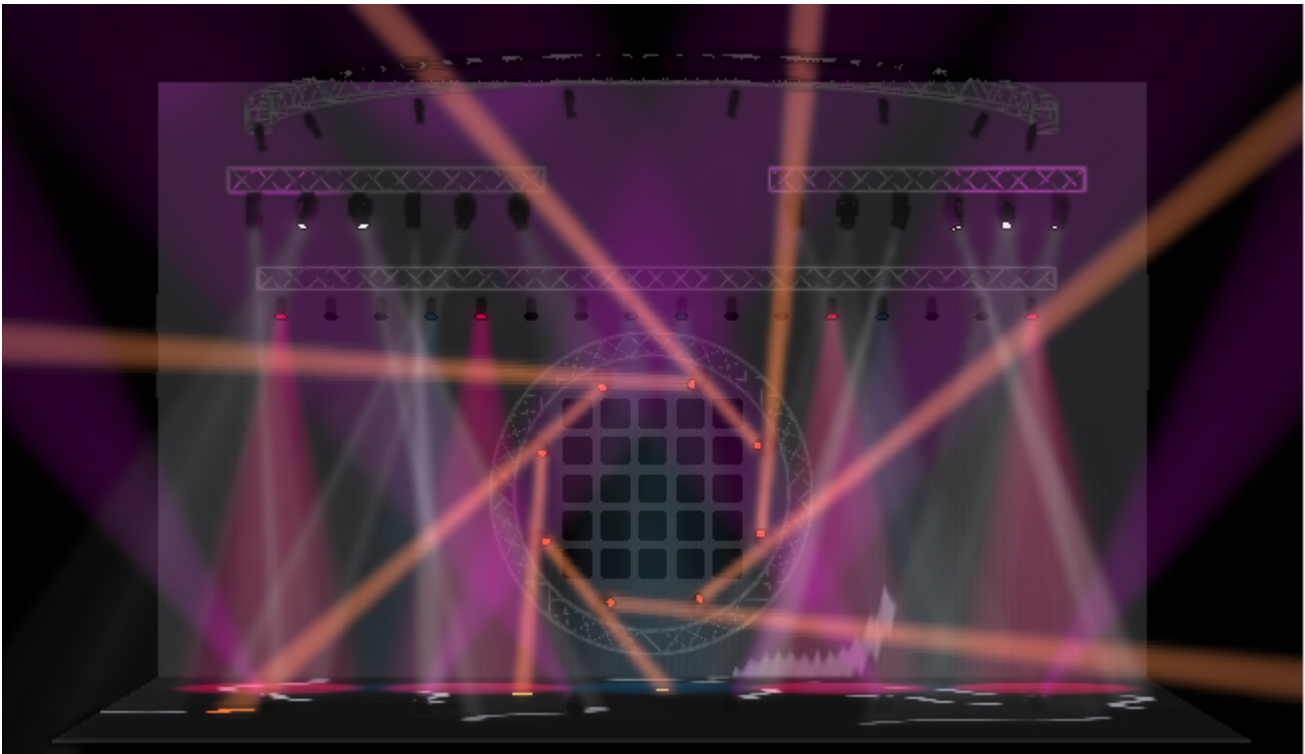
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Chapter 1

MagicQ Visualiser

1.1 MagicVis

MagicQ includes a visualiser called MagicVis available for Windows, Mac and Linux.



MagicVis is available in two versions:

- A standalone application called MagicVis that can connect to a MagicQ console or receive ArtNet or ACN data from other brands of console over a network.
- Part of the MagicQ PC application. This allows the editing and visualisation of a show on one PC.

The MagicVis application enables Lighting Designers to add visualisation to their MagicQ console simply by connecting a network cable and starting the MagicVis application. The graphics and processor intensive visualisation is performed on the attached computer, thus ensuring that the MagicQ console continues to run at full performance.

In order to render the beams MagicVis uses the graphics card in your PC / Mac - the better the performance of your graphics card then the better performance of the visualiser. PCs and Macs with shared graphics memory will perform slowly and will only be

able to render small lighting rigs. A Nvidia or ATI/Radeon graphics card costing £100/£120€/160\$ will make all the difference to your system.

1.1.1 Using the Separate MagicVis Application

The separate MagicVis application can connect to a console or a separate PC running MagicQ software. The show will be automatically loaded from the console over the network.

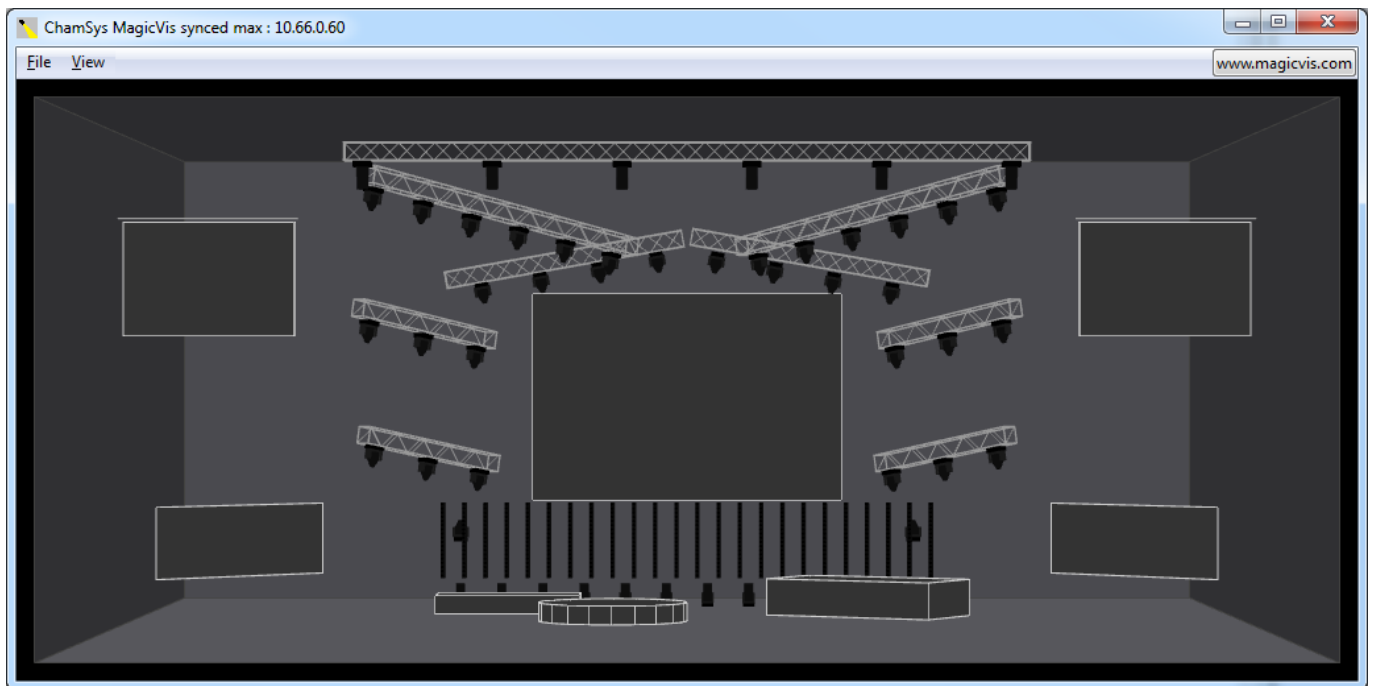
Configure the IP addresses of the both the console and the laptop to be within the same IP address range, e.g. set the console to IP address 2.0.0.1 netmask 255.0.0.0 and the laptop to 2.0.0.2 netmask 255.0.0.0. On the console

setup → VIEW SETTINGS → Multi Console

and ensure that **Enable Remote Control** and **Enable Remote Access** are set to **yes**.

Connect the console and the PC/Mac with an inverted network cable, then start MagicVis. It should find the console automatically and connect. If the name of the console appears in red then make sure that **Enable Remote Control** and **Enable Remote Access** are set to **yes** on the console. If the IP address is red then it is on the wrong subnet.

If MagicVis fails to connect to the console click on *File* → *Settings...* to bring up the *Settings* dialog. Click on the *Network* tab then choose the network adaptor/IP address of the network port that connects to the MagicQ console. Then select the console from the list. If the console does not appear on the list then check the connecting cable.



Initially the title bar in MagicVis will show **searching for consoles**, then **trying to connect** once it has found a console. Once a connection has been made with the console then it will change to say **waiting sync**. Once the show data has been transferred over the connection from the console to the MagicQ vis application then it will change to say **synced**.

If the system continues to say **trying to connect** then check firewalls are disabled. In some systems you may need to disable other network adaptors such as the wireless adaptor. Windows often classifies lighting networks as *public* networks and applies different firewall rules.

Once MagicVis is synced then whenever you load a new show on the console or change the visualiser patch then the changes will automatically appear in the visualiser.

When MagicVis starts it assumes that it will receive DMX data on ArtNet starting from ArtNet Universe 0-0. As soon as MagicVis has a connection with a console it then starts using the DMX protocols and universes in use on that console for each of the patched universes. If the universes are not enabled on the console then the console will send the DMX data directly to the MagicVis using its own MagicVis protocol. This enables MagicVis to be used on a system where the outputs are not enabled.

Note that even when MagicVis is not synced it will visualise according to received ArtNet. ArtNet is sent separately to the connection for show data transfer.

1.1.2 Using MagicVis with other consoles

MagicVis can be used with third-party consoles other than MagicQ. The visualisation show must first be created in MagicQ and then loaded into MagicVis for use with the other console.

Load a MagicQ show file directly into MagicVis by clicking on *File* → *Load Show*. In this mode there is no sync, MagicVis just looks at the incoming ArtNet data for rendering the beams but does not sync the patch.

Tip

Once a show has been loaded using *Load Show* MagicVis will not try to sync with a console.

1.1.3 Using the Visualiser in MagicQ

Run the MagicQ software then go to the *Visualiser* menu in the menu bar and click on *Show Visualiser*. The window can be sized and moved to the required position.



As the Visualiser is integrated with the MagicQ app it is not necessary to set up IP addresses or enable/configure universes.

1.2 Using MagicVis

MagicVis provides five views – Perspective, Top, Side, Front, and Free. The view can be changed either from the *View* menu in the MagicVis window or in MagicQ in the *Patch* window, using Soft Button E.

The Top, Side, Front and Free views are orthographic projections and are wireframe views. The outline of the items in the room and the beams are shown. The Perspective view is fully shaded and the items are coloured and lit. If the camera is moved while in an orthographic view then the view automatically becomes Free.

You can rotate the camera around by pointing the mouse at the visualiser window, clicking and holding then moving the mouse around. Move the camera back and forth with the scroll wheel, or by pressing CTRL and right-clicking. Moving the camera back and forth has no effect in the orthographic views. Hold down SHIFT, click and move the mouse to translate the camera and hold SHIFT and move the scroll wheel to zoom in and out.

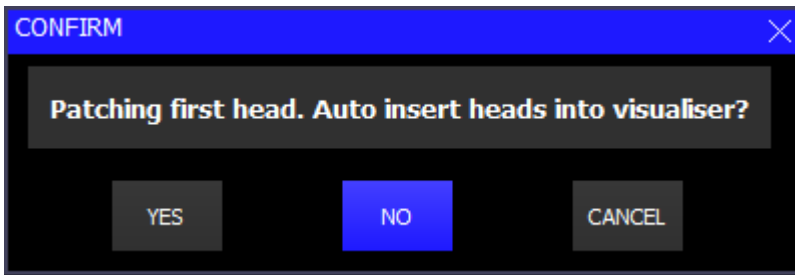
The lighting level of the room can be changed by clicking on *View* → *Dark*.

Tip

The demo show files have visualiser rooms set up. The *ExhibitionDemo* file uses MagicVis extensively and includes MagicHD integration. Use these to see examples of how to create your own MagicVis visualisations.

1.2.1 Patching Heads in the Visualiser

When you patch the first head in your show, MagicQ will prompt you whether you wish to auto insert heads into the visualiser.



Once a head has been patched into your show MagicQ will not prompt you again. If you wish to change the setting then you can enable or disable auto insertion in

setup → VIEW SETTINGS → Mode → Visualiser.

When you patch heads in VIEW HEADS, MagicQ patches the head in the VIEW HEADS view but also generates a visualiser object in VIEW VIS.

Visualiser heads are separate from MagicQ heads – for instance you can have multiple visualiser heads associated with one patched head. You might want to do this if you had two par cans on a single dimmer channel – you would have one Generic Dimmer patched in MagicQ and two visualiser heads.

By default when you patch heads MagicQ creates one visualiser head per MagicQ head. You can add extra visualiser objects for a head using INSERT.

1.2.2 View Vis View

Patch → VIEW VIS

The VIEW VIS view manages the data for the visualiser. There are several different tabs including Selected Heads, Vis Heads, and Attach Objects.

| VIEW HEADS | VIEW CHANS | VIEW DMX | VIEW VIS | VIEW PLOT | VIEW 3D VIS | HANG TYPE | FIT TO OBJECT | AUTO ARRANGE | INSERT SELECTED | VIS SOURCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| PATCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Selected Heads | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Hd name</th> <th>Hd type</th> <th>Hd no</th> <th>Attach</th> <th>X Pos</th> <th>Y Pos</th> <th>Z Pos</th> <th>X Rot</th> <th>Y Rot</th> <th>Z Rot</th> <th>Weight</th> <th>Col Obj</th> </tr> </thead> <tbody> <tr> <td>Key</td> <td>No col</td> <td>001</td> <td>FOH Truss</td> <td>-4.50</td> <td>8.45</td> <td>4.00</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>Key</td> <td>No col</td> <td>002</td> <td>FOH Truss</td> <td>-1.50</td> <td>8.45</td> <td>4.00</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>Key</td> <td>No col</td> <td>003</td> <td>FOH Truss</td> <td>1.50</td> <td>8.45</td> <td>4.00</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>Key</td> <td>No col</td> <td>004</td> <td>FOH Truss</td> <td>4.50</td> <td>8.45</td> <td>4.00</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>Indigo</td> <td>005</td> <td>Rear Truss</td> <td>-4.79</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>R312</td> <td>006</td> <td>Rear Truss</td> <td>-4.38</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>R356</td> <td>007</td> <td>Rear Truss</td> <td>-3.96</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>L27</td> <td>008</td> <td>Rear Truss</td> <td>-3.54</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>R312</td> <td>009</td> <td>Rear Truss</td> <td>-3.13</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>L27</td> <td>010</td> <td>Rear Truss</td> <td>-2.71</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>Indigo</td> <td>011</td> <td>Rear Truss</td> <td>-2.29</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> <tr> <td>PAR 64</td> <td>R312</td> <td>012</td> <td>Rear Truss</td> <td>-1.88</td> <td>7.45</td> <td>-6.60</td> <td>-0.0</td> <td>0.0</td> <td>0.0</td> <td>No</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | | Hd name | Hd type | Hd no | Attach | X Pos | Y Pos | Z Pos | X Rot | Y Rot | Z Rot | Weight | Col Obj | Key | No col | 001 | FOH Truss | -4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | Key | No col | 002 | FOH Truss | -1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | Key | No col | 003 | FOH Truss | 1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | Key | No col | 004 | FOH Truss | 4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | Indigo | 005 | Rear Truss | -4.79 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | R312 | 006 | Rear Truss | -4.38 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | R356 | 007 | Rear Truss | -3.96 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | L27 | 008 | Rear Truss | -3.54 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | R312 | 009 | Rear Truss | -3.13 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | L27 | 010 | Rear Truss | -2.71 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | Indigo | 011 | Rear Truss | -2.29 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | PAR 64 | R312 | 012 | Rear Truss | -1.88 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | |
| Hd name | Hd type | Hd no | Attach | X Pos | Y Pos | Z Pos | X Rot | Y Rot | Z Rot | Weight | Col Obj | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Key | No col | 001 | FOH Truss | -4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Key | No col | 002 | FOH Truss | -1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Key | No col | 003 | FOH Truss | 1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Key | No col | 004 | FOH Truss | 4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | Indigo | 005 | Rear Truss | -4.79 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | R312 | 006 | Rear Truss | -4.38 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | R356 | 007 | Rear Truss | -3.96 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | L27 | 008 | Rear Truss | -3.54 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | R312 | 009 | Rear Truss | -3.13 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | L27 | 010 | Rear Truss | -2.71 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | Indigo | 011 | Rear Truss | -2.29 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PAR 64 | R312 | 012 | Rear Truss | -1.88 | 7.45 | -6.60 | -0.0 | 0.0 | 0.0 | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

In *Selected Heads*, all the visualiser heads for the currently selected heads will be shown in the list. Heads are selected as usual using groups or direct from the keypad. In this view the encoders and soft buttons will apply changes to all the visualiser heads for the selected heads.

In *Vis Heads*, all the visualiser heads are shown. In this view the encoders and soft buttons will apply changes to the visualiser head under the cursor. Use SHIFT/CTRL and the cursor keys to apply changes to multiple heads.

In *Attach Objects*, all the other (non head) objects are shown in a list. In this view the encoders and soft buttons will apply changes to the object under the cursor. Use SHIFT/CTRL and the cursor keys to apply changes to multiple objects.

1.2.3 Positioning the Heads in the Visualisation

When you patch heads they automatically become selected so that in

Patch → VIEW VIS → Selected Heads

you will have direct control of the positioning and orientation of the head using the encoder wheels and soft buttons.

Encoders X, Y and F are used for X,Y and Z positioning.

Pressing the soft buttons X, Y and F increases the position by 1 metre on that axis. Pressing SHIFT + the soft button decreases the position by 1 metre on that axis.

Use fan to spread the position apart on the X,Y, or Z position wheels.

Encoders B, C and D are used for rotation. Pressing the soft buttons B, C and D rotates the heads by 90 degrees around that axis. Pressing SHIFT + the soft button rotates the heads by – 90 degrees around that axis.

You can also enter values directly into the spreadsheet view of the VIEW VIS window.

You can change multiple values at a time by using SHIFT/CTRL and the cursor keys. Use THRU to enter a spread of values e.g. -5 THRU 5 to spread the X position between -5 and 5 metres.

1.2.4 Transform Modes

All items can be positioned and orientated using the encoders as described in the above section, "Positioning the Heads in the Visualisation". The behaviour of the encoders can be changed using the Transform Mode soft button.

There are four modes available: Original, World, Item, and Parent. The labels on the soft buttons will put W, I, or P to remind you what mode you are currently in.

Original: Changing an item's position will move the item relative to the world axis. Changing rotation directly changes the Euler angle of the object. So rotating on the y-axis will turn the object in the worlds y-axis, however rotating on the z-axis rotates an item about its own z-axis.

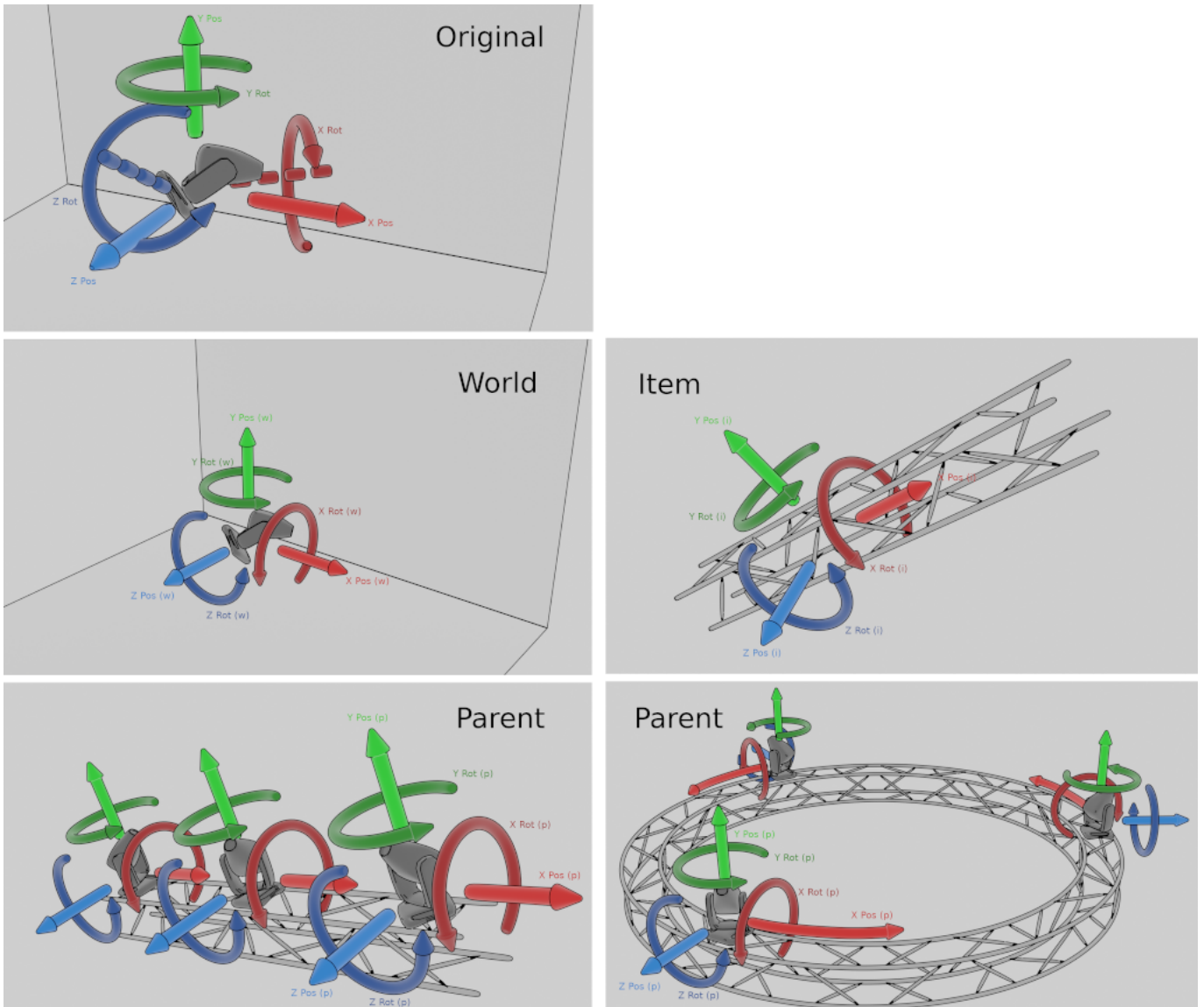
World: Changing an item's position will move the item relative to the world axis. Rotating an item rotates it parallel the world axis.

Item: Changing an item's position will move the item along its own axis, so the direction it moves is defined by its current orientation. Changing an item's rotation will also be relative to its current orientation.

Parent: Items will only move if they are attached to an object. The position and rotation changes will depend on the position, orientation and type of the object they are attached to. Changing the X position will move an item along a truss and changing rotations will always be relative to the point where it is attached to a truss.

Please refer to the following figure below for a more visual explanation.

Also, while in parent mode, encoder button E turns into a Hang Type button, this enables you to toggle the hang type of a head while maintaining its position along the truss.



1.2.5 Objects

| VIEW HEADS | VIEW CHANS | VIEW DMX | VIEW VIS | VIEW PLOT | VIEW 3D VIS | HANG TYPE | FIT TO OBJECT | AUTO ARRANGE | INSERT SELECTED | VIS SOURCE | | | |
|----------------|------------|----------|----------|------------|-------------|-----------|---------------|--------------|-----------------|-----------------|--------|---------|--|
| PATCH | | | | | | | | | | Sel Heads View | | | |
| Selected Heads | | | | | | | | | | Per | | | |
| Vis Heads | | | | | | | | | | Sel Heads Pos Z | | | |
| Attach Objects | | | | | | | | | | 4.00 | | | |
| | Hd name | Hd type | Hd no | Attach | X Pos | Y Pos | Z Pos | X Rot | Y Rot | Z Rot | Weight | Col Obj | |
| | Key | No col | 001 | FOH Truss | -4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | |
| | Key | No col | 002 | FOH Truss | -1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | |
| | Key | No col | 003 | FOH Truss | 1.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | |
| | Key | No col | 004 | FOH Truss | 4.50 | 8.45 | 4.00 | -0.0 | 0.0 | 0.0 | No | | |
| Sel Heads | PAR 64 | Indigo | 005 | Rear Truss | -4.79 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | R312 | 006 | Rear Truss | -4.38 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | R356 | 007 | Rear Truss | -3.96 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | L27 | 008 | Rear Truss | -3.54 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | R312 | 009 | Rear Truss | -3.13 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | L27 | 010 | Rear Truss | -2.71 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | Indigo | 011 | Rear Truss | -2.29 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |
| | PAR 64 | R312 | 012 | Rear Truss | -1.88 | 7.45 | -5.60 | -0.0 | 0.0 | 0.0 | No | | |

In View Attach you can insert many different types of objects, including trusses, pipes, people, simple shapes and commonly found furniture. You can also import custom model files in many different formats.

To create an Object press the INSERT soft button, then select what kind of object is to be created. The object is then created and added to the list. To add a sphere or a cylinder create a *Form* object then go to the *model* column, press Set and select the desired shape.

Enter values in the window for length, width and height. Adding a ' after the number enters the dimension in feet rather than metres – so for 10 feet enter 10'.

Position the truss or pipe as required. Enter a name in the window for the truss or pipe.

After you insert a truss or pipe, then subsequent heads that are patched will be attached to that truss or pipe object. If for example you patch 6 spots after inserting a truss object, then they will be spread out along the length of the truss.

When you create reports, then as well as overall plots, a plot is created for each attach object – enabling the lighting rig to be broken down into separate pipes and trusses.

A texture can be applied to a Form object by entering the name of the texture in the Texture field. The texture should be stored in the bitmaps folder, for example ChamSys.png.

Tip

Create a truss and set the model to **Invisible** to group lights together and create useful plots for them.

For example in the *ExhibitionDemo* show the PixelLines may be rigged on individual vertical pipes but in MagicVis they are all rigged on one invisible truss which is rotated so that when the paperwork is created there is a plot with all the PixelLines on it rotated so that it is obvious how they are laid out.

1.2.6 Drapes

To add a drape to the scene press the INSERT soft button, then select *Drape*. The drape will then be added to the scene. The width, height and depth of the folds can be adjusted as usual, as can the position and rotation. The extra params columns at the end of the table allow fine control over how the drape is rendered. Param 1 controls the size of the wave. This defaults to 0.3m.

Param 2 controls how flat the folds are at the top of the drape. A value of 0 will show them entirely flat at the top, while a value of 1.0 will show the folds at the same depth as they are at the bottom, as though the drape were hung from a track system.

Param 3 sets the randomness of the folds. Real drapes do not hang evenly so the folds are often different sizes. Setting the Param to 0 will make all the folds the same, increasing it will make them vary. The default value is 0.4.

1.2.7 Custom Models

To add a custom model, press the INSERT button, then select *Model*. A model object will be added to the scene; this will be invisible at first, until a model file is chosen for it.

To choose a model file, select the "texture" field; a menu will appear, allowing the selection of any previously imported model, along with an option to import a new model.

To import a new model, select the "Import Model..." button on this dialog. The file manager will appear, prompting for a model file to import. Only supported formats will be shown. Once a file is selected, another dialog will appear prompting for the import settings: whether to use the Y or Z axis for vertical, and what length units are used in the model.

To properly determine these settings, you should ask the person who created the model. As a rough rule of thumb, if the model was created by an artist, the Y axis may be vertical; if it was created by an engineer, the Z axis is more likely. If the wrong value is selected, the model will appear flipped front-to-back and rotated 90 degrees, lying on it's front.

Model objects have a slightly different scaling behaviour than other objects. Their default length, width and height is zero; this means that the object will use it's "native size", using the units specified using the process above.

If only one of length, width, and height is specified, and all other values are set to zero, then the model will be scaled such that that axis takes on the given value in metres; all other axes will be scaled proportionally, preserving the model's shape.

If all three axes are given (none are zero), then all three axes will be scaled independently, to the given values in metres. This will distort the shape of the model if proportional values are not given.

Only specifying two axes (leaving one at zero) is unsupported, and will produce unspecified behaviour.

Tip

It is not recommended to use models with a very high polygon count (also specified as triangle or vertex count); this can lead to a degradation in performance, especially on older hardware, when many lights are active in the scene, or when shadows are enabled.

To avoid this issue, try searching for or requesting "low-poly" models for use in MagicVis. As a rough guide, try to avoid using more than 1000 polygons per model.

1.2.8 Attaching Heads to Objects

Heads can be attached to trusses or pipes at any time. Select the heads you wish to attach using groups or the keypad. Change to VIEW VIS → Selected Heads tab and press the FIT TO OBJECT soft button.

Alternatively in the Vis Heads tab, double click on the Attach field. MagicQ will prompt you with a list of all the attach objects to choose from.

Heads that are attached to an object move with that object – so repositioning that object in the Attach Objects tab will move the object and all the attached heads.

MagicVis supports Hang Types so that Heads can be fitted to Attach Objects in specific orientations. This information is also available in the MagicVis reports. Hang type options are Normal, Bottom rear, Bottom front, Top rear, Top front face up, Top front face forwards, Top boom, and Bottom Boom.

1.2.9 Modifying Beam Angle and Head Shape

In Patch, View Heads it is possible to set specific shapes and beam angles for generic heads. When set these fields override the defaults from the chosen personality. The shape is also shown in the Fixture Patch report.

If you wish to change the beam angle for heads other than generic heads then you must change the Zoom Narrow and Wide in the Params tab of the Head Editor for the chosen personality.

1.2.10 Visualising Media Servers

MagicVis can preview the output from media servers, including MagicHD. First of all make sure that the Media window on the console is displaying a live preview of the media server output. Then, in the *Attach Objects* window add a *Form*. Set the *Model* to *Sheet* and set the *Texture* to *mp* and the number of the media server. The Media Server number can be found in the *Setup, View System, View Media* window.

For example if the media server was the first in the *View Media* window then the *Texture* would be *mp1*. If MagicVis is unable to connect to the media server then the sheet will display "Media Server 1". If there is still no connection after 1 minute then the text will disappear. The preview is done via CFTP so is quite low resolution.

1.2.11 Moving Trusses

To make an attach object movable via DMX patch a Generic Movement head into MagicQ. Then in Patch, View Vis set the attach object for the Generic Movement to be the Attach object to move. Any heads hung from the truss will move along with the truss.

The Generic Movement head has X, Y, Z position and X, Y, Z rotation attributes enabling complete control of the object from within MagicQ. The Generic movement head is a virtual head so it can be unpatched in the MagicQ Patch.

Note

In the *ExhibitionDemo* show file there are 2 moving pipes. Each pipe has a form attached to it on which the MagicHD image is rendered. This provides a nice simulation of moving LED walls.

1.2.12 Coloured objects

In MagicVis it is possible to set a Head item to colour an attach object, for truss warmers or for coloured scenic pieces.

In Patch, View Vis on the Selected Heads or Vis Heads tab page right to get to the Col Apply column and set it to Yes. If there are more than one heads attached to an object with the Col Apply set then it will use the last one in the list.

For RGB Heads the RGB colour will be applied to the object. If the Head only has intensity then the colour of the object will be scaled according to the intensity.

1.2.13 DMX Controlled Camera

The Generic Camera head enables the Visualiser view to be modified from within MagicQ programming. When a Generic Camera is patched in MagicQ and the Mode Attribute is non zero then the Visualiser view comes under the control of the Camera. The Generic Camera head is a virtual head so it can be unpatched in the MagicQ Patch.

To use the Generic Camera select it then press Locate. This will put the camera into perspective mode and place it in the default position. Select the Position window then use the encoders to move it around and rotate the view. To return control to the Visualiser window use Encoder Wheel A to set the mode to Disabled.

The Generic Camera also controls the brightness of the room and of the beams. These attributes can be found in the Beam window.

Tip

FX can be applied to the position and rotation attributes to make the Camera fly around the visualiser and give a dynamic view of your design.

1.2.14 Removing Visualiser Heads and Objects

To remove a visualiser head go to VIEW VIS → Vis Heads and put the cursor on the item. Press REMOVE. Use SHIFT/CTRL and the cursor keys to cursor select multiple visualiser heads for removal. To remove an attach object go to VIEW VIS → Attach Objects and follow the same procedure.

When heads are removed from the visualiser they are not removed from MagicQ patch. Removing heads from the MagicQ patch will remove any associated visualiser heads.

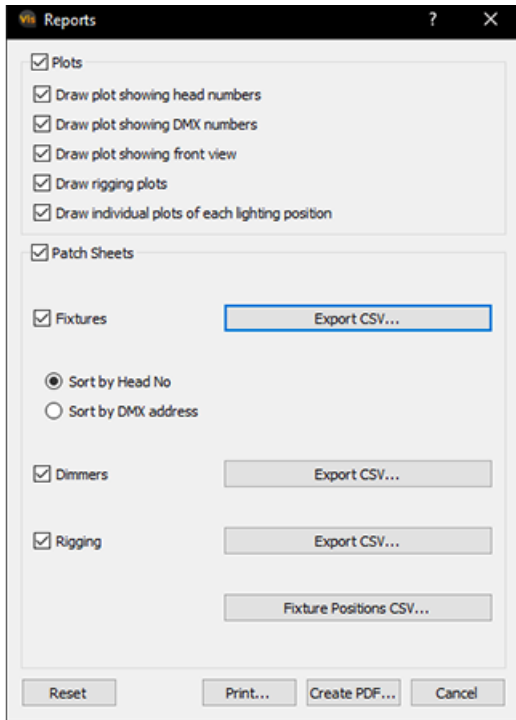
1.2.15 Changing the Size of the Room

It is possible to change the size of the room by adding a Room Object. By default MagicQ uses a room 20 x 20 x 20 metres. If you add a room object then MagicVis will use the dimensions of the room object instead. The datum is always on the floor in the centre of the room.

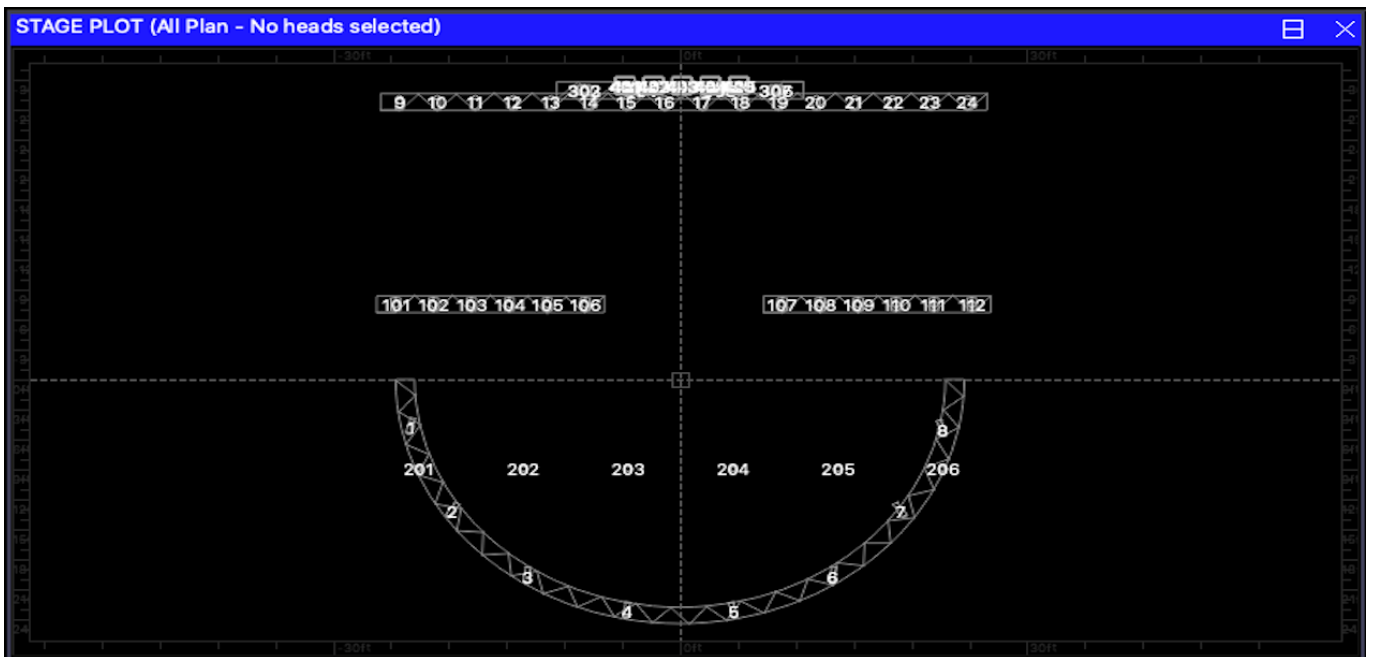
In View Attach, press INSERT. Select the object type **Room** and enter the length, width, and height.

1.2.16 Paperwork

You can use MagicVis to create plots and patch sheets. In the MagicVis window click on *File* → *Paperwork*. This will bring up the Reports window.



You can select what you would like to include and either print it out or create a PDF document. You can also export patch lists into a spreadsheet such as Numbers, LibreOffice Calc or Excel. To do this click on one of the *Export CSV...* buttons, then load the csv file into a spreadsheet. You can then add extra columns or lay out the tables however you like.



The Patch Sheets contain all the heads in the patch, whether or not they are in the Visualiser. Therefore you can create a patch sheet without having to set up heads in the Visualiser.

The Positions table is a list of all the trusses and pipes with trim heights, DMX universes and approximate weights. The given weight is the total weight of the heads and does not include the weight of the cabling, truss or rigging. It is intended to be a tool for estimating total weights and should not be used for rigging calculations.

1.2.17 Converting an Existing MagicQ Show File

Old MagicQ show files can be loaded into MagicQ, but they will not have any visualiser heads defined. It is easy to take heads from an existing show file and create a visualisation.

Select the heads using groups or the keypad. Then go to

Patch → VIEW VIS → Selected Heads

and press the INSERT SELECTED soft button. This creates a visualiser head for each of the selected heads.

If you wish, you can attach the heads to an object using the FIT TO OBJECT soft button.

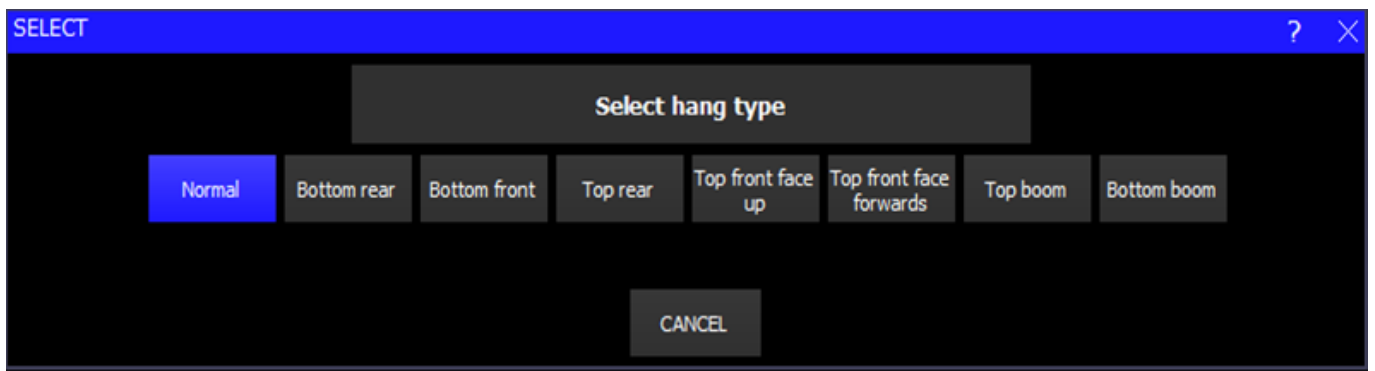
It is also possible to insert all the patched heads in your show file into the visualiser in one step. Make sure no heads are selected, then go to

Patch → VIEW VIS → Vis Heads

and press the INSERT PATCHED soft. This creates a visualiser head for each head in the patch. The heads will be positioned in a grid format.

1.2.18 Converting a MagicQ Grid Into a Visualisation

It is possible to convert a grid from the MagicQ Plan View into a visualisation. In the Output Window, View Plan press SHIFT + ARRANGE VIS. MagicQ will prompt you for the positioning within the visualisation.

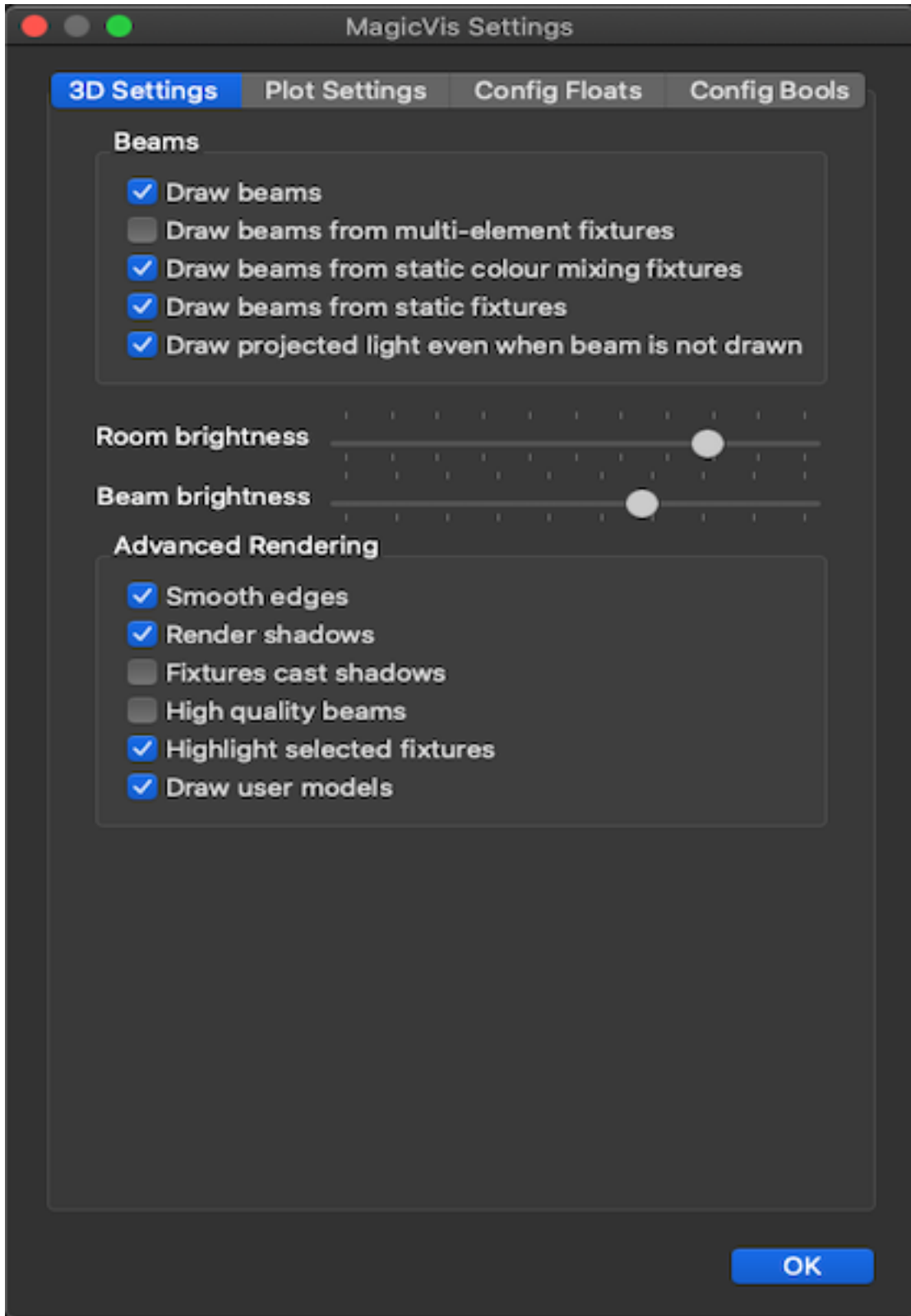


For each of the heads in the grid a visualiser head will be inserted into the visualiser. The positioning will be set according to the position in the grid.

For example if you select Top, then MagicQ will treat the grid as if it is a top view and all the visualiser heads will be positioned at the top of the room at the same height.

1.2.19 Visualiser Settings

MagicVis includes settings for how the visualisation looks.



On systems with lower power graphics cards which are using a lot of LED heads we recommend to turn off drawing of LED Beams.

MagicVis incorporates a new higher quality renderer with improved beams and shadows. To enable the higher quality renderer open MagicVis and go to File, Settings and select "New renderer" from the OpenGL options.

If for any reason the new renderer does not work, then you can revert to the old renderer by opening MagicQ and from the toolbar

select Visualiser, Use old renderer.

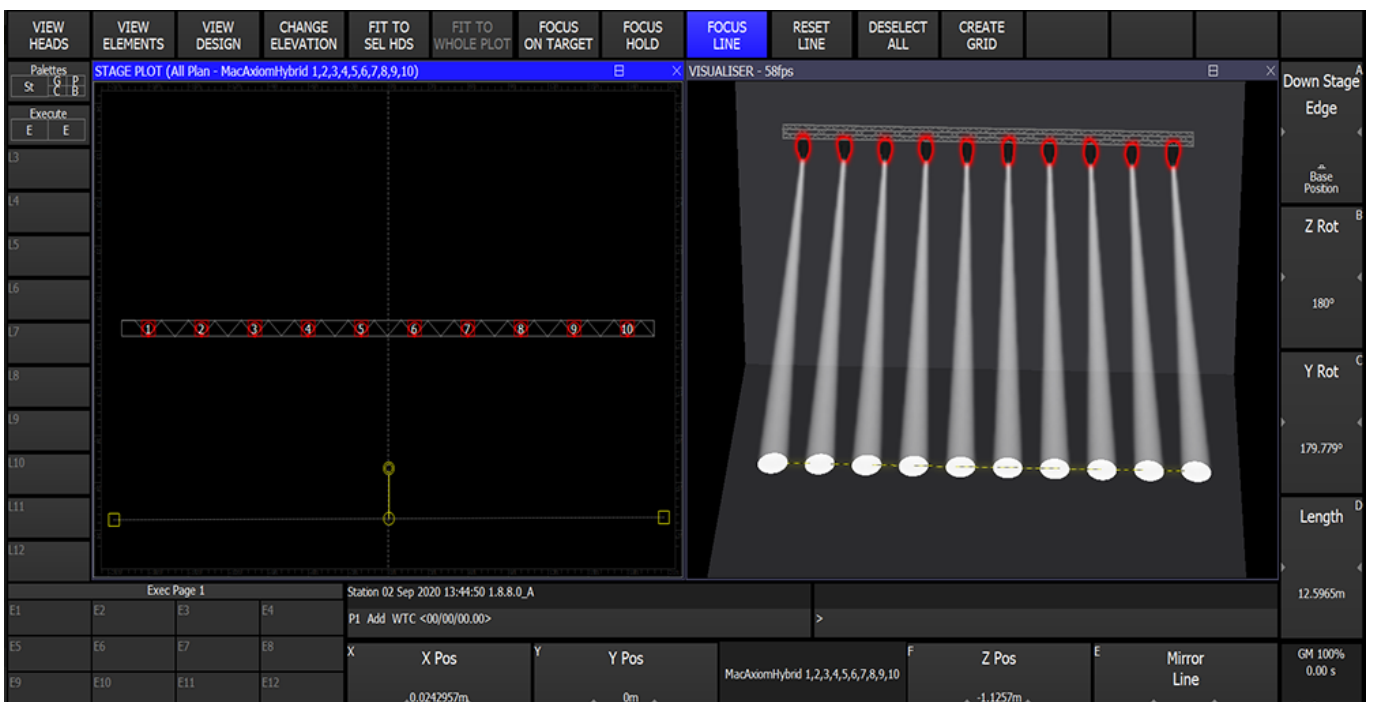
1.3 Plot Window

MagicQ incorporates a Plot Window displaying the position and orientation of heads within the lighting rig. The Plot Window can show Front, Overhead and Side elevations, restricted to either Flown or Floor heads and the view can be moved and zoomed. The view can be restricted to only selected heads or to all heads. Heads can be selected from the plot window either by clicking (touching) individual items or by multi selecting multiple items. The positional information is taken from MagicVis and can be edited in the Patch Window.

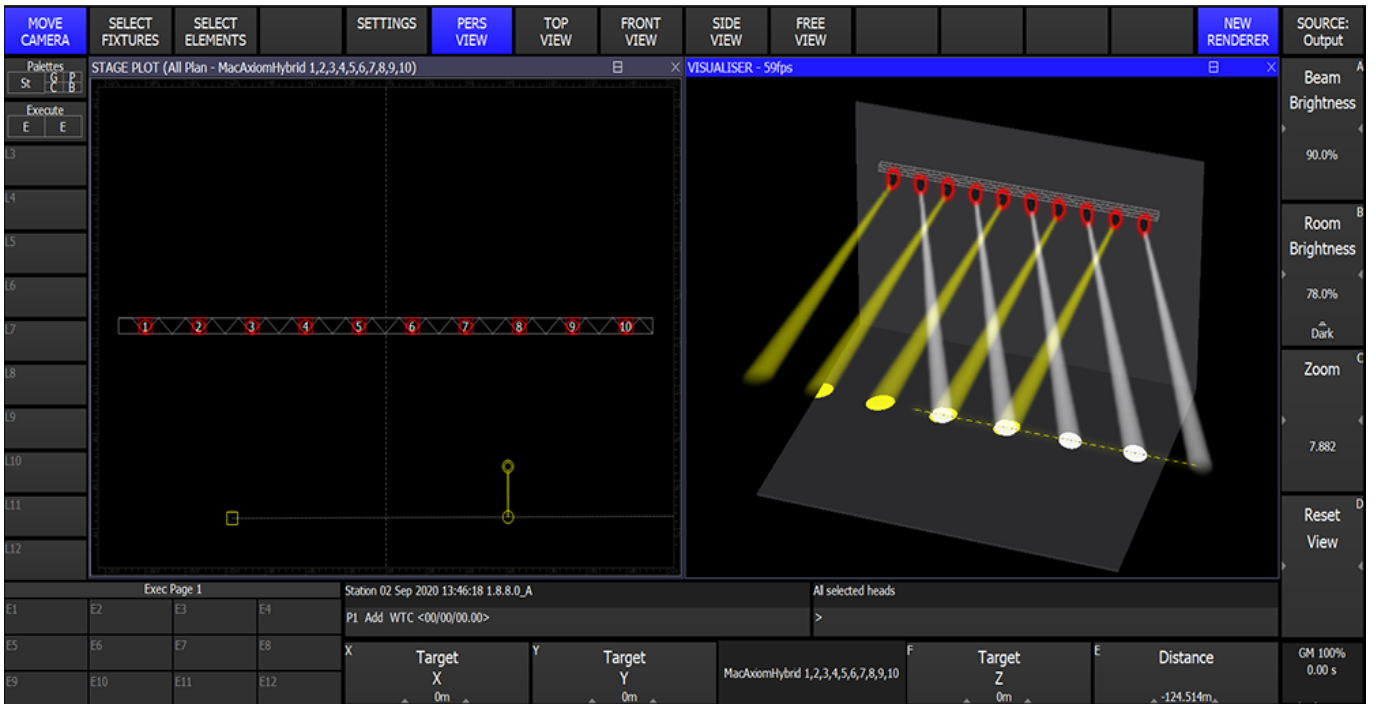
1.3.1 Focus Functions

It is possible to set the pan and tilt of selected heads from the Plot window so that the heads are focused on a point on the stage. To quickly focus the lights on a point press the FOCUS ON TARGET soft button then click on a point on the plot. The selected heads all move around to focus on that point. Click on FOCUS HOLD if you want to move the point around after clicking. On a touch screen you can move your finger around the plot window and the heads follow it. Click on FOCUS HOLD again to stop focusing.

More complicated looks can be created with the FOCUS LINE feature. After selecting some heads and clicking on FOCUS LINE a yellow line will appear on the plot. The heads will be focused along the line. The line will also appear in the 3D visualiser. The line can be moved around either by clicking on the points on the plot window or by using the encoder wheels. The line is initially at stage level but can be raised up using the Y encoder.



FOCUS LINE allows easy creation of even stage washes but it can also be used to create gobo washes on walls and scenery or ACL style beam focuses. Use the Fan menu to change how the beams are distributed along the line. To create a symmetrical ACL style look first focus one side of heads, then select the other side, select FOCUS LINE again and press Encoder E, *Mirror Line*. This will mirror the line over the centre line of the stage so the look is symmetrical.



The *Base Position* is the starting position for the heads before they are panned around to focus on the point. If the head has to pan more than 90° from the base position then it will *flip* the head over. The default base position is directly downstage. If the lights flip while they are moving between positions then a different base position may be required.

To change base positions record a palette with the desired base positions then press and hold encoder button A and select the palette. For example if you have two trusses either side of a catwalk you may want a base position where everything is focused directly onto the catwalk.

Another Base Position option is *Current Position*. This option will allow the heads to spin right round and only flip when they reach the end of their pan. This could be useful for creating specific movements between positions.

1.3.2 Converting the Plot View into a MagicQ Grid

It is possible to convert a plot into a grid using the CREATE GRID soft button in the Plot Window. MagicQ takes the heads from the current view and current filter in the Plot View and creates a new Grid in the Output Window.

MagicQ will only create a grid if it can fit all the heads shown in the current Plot View into a grid where the maximum size corresponds to the maximum number of channels patchable on the console. The number of columns is limited to 1024 whilst the number of rows is limited to the number of channels patchable.

For example on a MQ500M with 256 universes, it is possible to do 362x362, 1024x128 and 1x131,072.

If there are items in the plot that are overlaid over the top of each other then where possible MagicQ will adjust the exact positioning of the item to fit into a unique position in the grid.

We recommend to filter using groups or selected heads to only include the required heads in the new Grid. If the Plot involves a large number of heads close to each other or overlaid over each other then the conversion will not work.

After creating the grid, unused rows and columns can be removed by pressing SHIFT + OPTIMISE GRID in the Outputs, View Grid.

Chapter 2

Blind Visualisation

MagicQ supports Blind Visualisation and Preview Visualisation when used together with MagicVis, Capture or WYSIWYG. This enables a Visualiser to show the contents of the Programmer during BLIND mode or to preview a Playback that is not active on the real outputs.

In Patch, View Vis press the VIS SOURCE Soft button to choose between visualising the console Output, the BLIND programmer, the Programmer Only, the selected Playback, or the next step on the selected Playback.

When set to "Blind Programmer" MagicQ will add the contents of the Programmer to the Output visualisation even when the programmer is in BLIND mode.

When set to "Prog Only" MagicQ will show the contents of the programmer without the current playback state regardless of the Blind state.

When set to "Playback" MagicQ will show in the visualiser the contents of the selected Playback as if the Playback fader was at 100%. Only data from the selected Playback is shown.

When set to "Next GO" MagicQ will show in the visualiser the output of the console as it would appear if GO was pressed on the selected Playback. When the selected Playback has multiple steps then MagicQ always shows the next step in the Visualiser. If the selected Playback is not active then MagicQ will show what would occur if the Playback was activated.

When set to "Output" MagicQ will the console live output.

Blind Visualisation and Preview Visualisation do not affect the normal network outputs such as ArtNet, ACN, or Pathport. Only the DMX stream sent directly to the Visualiser is affected.

When using Capture visualisation, Capture must be connected via CITP universes rather than ArtNet – otherwise Capture will just show the console output.

2.1 Split Visualisation in MagicVis

MagicVis now supports split visualisation where it is possible to show simultaneously both the Live Output and the Blind Visualisation.

In MagicVis select View, Split Screen.

The upper window will always show the Live Output.

The lower window will show the normal MagicQ visualisation - which will depend on the Vis Source option above. When set to "Output" it will show the same as the upper window.

Note that when using stand alone MagicVis, for both the Output and the Blind Preview to work then the console Output must be set to output over the network using a network protocol such as ArtNet, ACN or Pathport - otherwise the Output will not be shown when Blind Preview is in operation.

2.2 Automatic Source Selection

In Setup, View Settings, Mode set the Visualiser option to "Auto insert, auto Previs" for automatic pre visualisation.

When MagicVis is running with the 3D view with Output as the source and BLIND is pressed on the console, then MagicVis automatically changes to split Output/Blind Preview mode so that both the output and Blind programmer can be monitored. When BLIND mode is exited then MagicVis returns to the single 3D view.

When MagicVis is running with the 3D view with Output as the source, and a S button is held on the console then MagicVis will change temporarily to show the contents of the Playback rather than the Output. On releasing the S button MagicVis reverts to showing the Output.

Chapter 3

Licensing

MagicQ consoles use the Debian and Ubuntu Operating Systems. Details and links to sources can be found at <https://www.debian.org/> and <https://www.ubuntu.com/>. The following are distributed alongside the MagicQ application.

Versions prior to v1.5.6.0 of MagicQ the software also used the MicroWindows library, details can be found at <http://www.microwindows.com/>.

Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd".

Demos show files may contain audio and other media. Users are not permitted to extract audio or media files, or to use them for any other purpose except training.

3.1 Qt

<https://qt.io/>

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Version 2.1, February 1999

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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```

```
<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice
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Glenn Randers-Pehrson
glennrp at users.sourceforge.net
December 29, 2016

3.3 LibJPEG

<http://www.ijg.org/>

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3.4 LibJPEG-Turbo

<https://github.com/libjpeg-turbo/libjpeg-turbo>

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3.5 LibICU

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```
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```

`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

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3.7 FFmpeg Library

<https://ffmpeg.org/>

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3.8 LibArchive

<http://www.libarchive.org/>

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3.9 Zlib

<http://www.zlib.net/>

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files <http://tools.ietf.org/html/rfc1950> (zlib format), [rfc1951](http://tools.ietf.org/html/rfc1951) (deflate format) and [rfc1952](http://tools.ietf.org/html/rfc1952) (gzip format).

3.10 PortAudio

<http://www.portaudio.com/>

PortAudio Portable Real-Time Audio Library
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