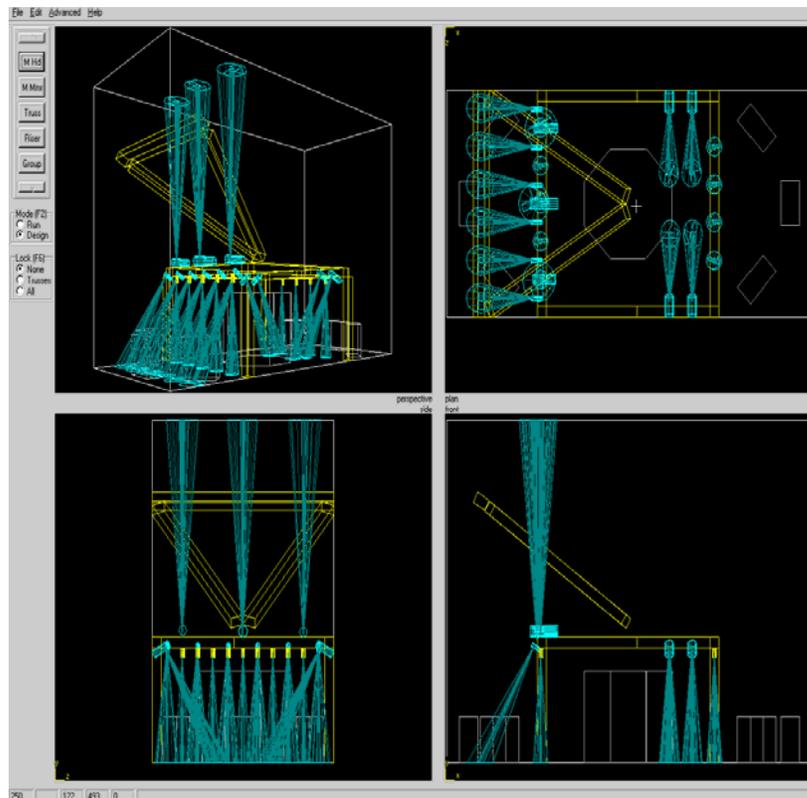# Visualiser and VizWiz

Operator's Manual

Version 7.10

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The latest version of this manual (in Microsoft Word For Windows revision 97) can be downloaded from the Internet at www.avolites.com

The small print :

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Revision history
created Aug 28 98
Added edit screen shot 29 Aug 98
Added and merged JS features file 3 Sept 98
Added undo lock etc forLDI98
Included wizard manaul 12
updated for version 6 RS 16 Nov 99

Updated 1/11/2006 by Alex

Visualiser

Visualiser

1. Introduction

1.1 Quick start

You want to get started, so here is a quick check list to getting the Visualiser up and running:

1> Install the DMX reader card and connect a DMX cable from your desk to the DMX input on the PC card you have just installed. The bottom connector is line 1.
Or
2> Plug the special serial cable into the serial port on your computer
3> Install the software
4> Connect up your desk to the DMX input and patch up some fixtures
5> Click on the Visualiser icon
6> From the Design menu select Advanced, then Preferences
7> Select Card if you have installed the DMX reader circuit board and select RS232 if you intend to use the RS232/DMX connection (you can select one or other or both, but do not select CARD if an Avolites DMX reader card is not installed since this may cause Windows to become unstable.)
8> Exit the preferences menu
9> Left Click on either the Moving Head or Moving Mirror buttons depending on the fixture you wish to use
10> On the drop down FIXTURE TYPE selection box select the fixture you wish to place in the Visualiser
11> Click OK
12> Right Click on the Moving Mirror or Moving Head box to highlight it
13> Left click on the plan view to drop the fixture into the theatre
14> Press F2 to go live
15> Press F5 to turn on DMX, (you can select DMX card or RS232/DMX depending on which options have been selected in the preferences menu)
16> On your console select some fixtures and turn on the lamp channel of these.

You are up and running.

1.2 Useful Tips for those who don't want to read the Main Manual

Right clicking is used extensively to open up the properties for anything.

If you are going to add a number of the same objects into a theatre (such as trussing), set up its default properties first.

You can set up the default properties for any object by left clicking on the fixture, truss or riser buttons.

Once the default properties dialogue is open, you can use the ADD ONE button in conjunction with OFFSET TO NEXT DEVICE to place a number of fixtures offset by a fixed distance.

DMX addresses are auto incremented starting at address 1 or the address placed in the DMX box. (This works in the same way as Avolites desks).

Left clicking and Dragging creates a Rubber band selection box, which is used for Zoom, placing objects at equal distant and placing objects in a straight line.

You can alter what the four editing views display by left clicking on the title (Perspective, Plan, Front etc.)

You should read the section on page 30 regarding Vis Wizard which is used to create and update the .vis files.

You can resize the edit panels by left dragging from the centre of the panel divider line. If you do this you may wish to set the display to show different scales in each panel, by right clicking outside of the theatre outline and deselecting 'same scale in all elevations'. (If the theatre properties dialogue is brought up you have not clicked outside of the theatre. Try in the corner of a panel.

If you have difficulty in selecting an object because it is very close (or on top) of another double left click to open a list of objects near where you have clicked.

Locking objects is very useful to prevent accidental selection. This can be global, by using the lock radio buttons or individually from the object properties dialogue box.

If you always use a particular fixture, select this fixture as the default fixture and save the theatre as the Default theatre. The fixture will be set whenever you load a new theatre. Do the same for other settings such as truss and riser size, the theatre dimensions and viewpoint positions.

If you need to patch a desk or check how you have patched the Visualiser, use the Create Report function from the Edit Menu, this will be saved in the Theatre folder unless you specify differently and if you have MS Excel installed will open with this. Otherwise you can use any word processor to open the file. When patching fixtures you may find it useful to enter the Handle number in the fixture propertied dialogue box. This will then be printed out in the report. The latest generation of Avolites console software will read the report file and automatically patch and train the console for tracking.

If you are using the RS232/DMX cable then the Visualiser can be used to preview memories and chases as well as showing which fixtures are selected in the programmer etc.

Objects are positioned in space using the co-ordinates, Width, Depth and Height.

CHAPTER TWO

2. What can it do?

The Visualiser is a tool for defining a theatre setup in terms of lights, trusses and risers. It can function stand alone, or with any DMX lighting console, however specific functions allow it to communicate with Avolites control desks. If you are familiar with these you will find the way fixtures are patched is vary similar.

The Visualiser, above all, was designed to be easy and fast to use, allowing you to try out ideas and inventions without having to have physical fixtures and a large rehearsal space with the associated costs.

It will allow you to maximise your expensive rehearsal time by ensuring you have a show before you ever see a piece of real truss or a fixture.

When used in conjunction with an Avolites console which supports the RS232/DMX output as fixtures are selected for editing on the console they will be identified on the Visualiser[1], and when previewing memories on the console they will be previewed on the Visualiser screen.

2.1 What PC is needed to run Visualiser

The software runs on Windows 95, 98, 2000, NT or XP. The software communicates with the Avolites desk via a proprietary Avolites interface card. Which receives 2 DMX lines (1024 channels), or using a special cable which connects to the MIDI ports on an Avolites console and a serial port on the computer.

For good performance, the computer should run at least at 200 MHz. It should include a graphics card supporting DirectDraw in hardware with at least 8MB of video RAM. System RAM should be at least 64MB. Available hard disk space should be at least 10MB. Visualiser has run on much slower machines but performance is reduced, in particular rendered mode may not work and the screen refresh frequency may be well below 5 times a second which can be considered the minimum acceptable for animated effects.

---

[1] For fixtures to be highlighted the handle number must be entered on the Visualiser. This can be entered from the fixture dialogue box, or using the report function and importing the report.

3. Run Mode

The software always starts in Run Mode. In Run Mode, you can load a Theatre, change the view, and change some of the screen cosmetics. In RUN mode you cannot modify the theatre, to do this you must select Design Mode by pressing F2, clicking on EDIT on the menu bar or selecting DESIGN from the tool bar.

You can start and stop DMX and stop DMX by pressing F5 or by selecting the appropriate input from the toolbar. Initially the Visualiser starts up with DMX stopped. Depending on how the settings have been set in the Preferences menu pressing F5 scrolls through the input data options.

3.1 Main Menu Bar

3.1.1 File Menu:

Open Theatre Brings up File Open dialogue for loading a previously saved Theatre.

Exit This Auto saves the theatre and terminates the program

3.1.2 Edit Menu

Run Mode In this mode the Visualiser responds to input signals, generally these are from DMX, either from the DMX card or through the RS232 DMX connection.

Design Mode Design Mode allows you to place fixtures, trusses and risers into the theatre.

3.1.3 Help Menu

Release Notes This displays release notes, it is worth checking this because it will contain features added after the creation of this manual.

About This displays the software revision number in status bar at the bottom of the screen.

3.2 Radio Buttons

The radio buttons can be adjusted with the mouse or by using function buttons.

3.2.1 Views

These buttons select from 3 fixed and 6 user-defined views. User defined views are programmed in design mode.

Tip: once selected with the mouse, you can use the cursor buttons to change views.

3.2.2 Smoke

The Smoke level determines how strongly you see light cones. You can move the small fader or set a level from the keyboard. You can also quickly change the smoke level using the [F4] button.

3.2.3 Mode

This button selects either RUN or DESIGN. In design you can move objects about in the theatre, in RUN mode fixtures respond to DMX, providing the DMX has been turned on. (See below or press [F5].)

3.2.4 Render

This selects the RUN mode. This can be Wire Frame or Solid. Wire frame is fast, Solid will probably be slower. You can switch between Wire and Rendered by using the [F3] button.

3.2.5 DMX

This radio button turns on and off the DMX input. The Visualiser always powers up with DMX OFF. You can turn on and off DMX by using the [F5] button. The five options are OFF, RS232, CARD, SIMULATOR, TESTER. RS232 or CARD may be greyed out or not shown if they are not available. Availability is set through the Preferences menu, in Design mode.

4. Design Mode

Left click on any of these boxes to set up the default properties within the dialogue box shown below.
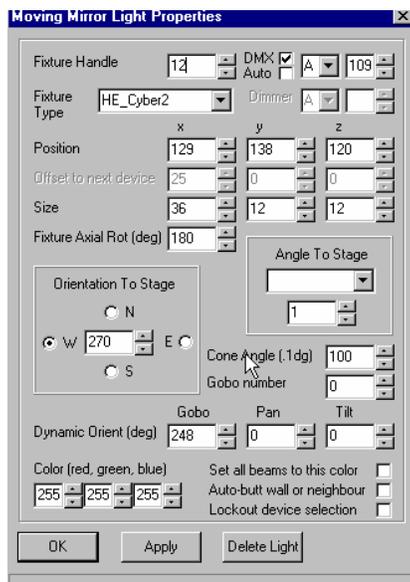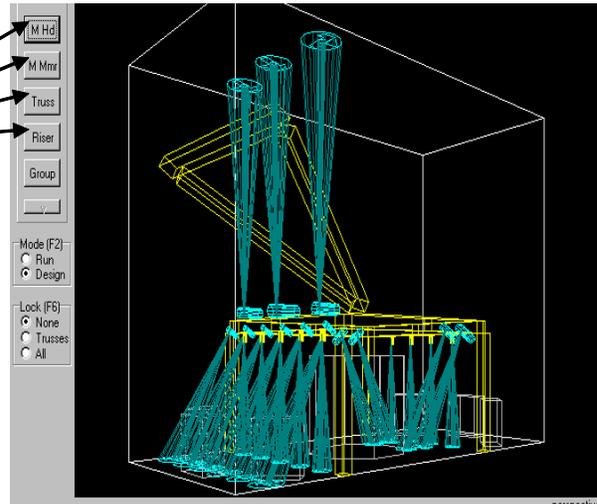
In Design Mode all animation ceases. You have access to the properties of the theatre and all it contains, and can add and delete fixtures using simple intuitive mouse and keyboard operations. Theatres can be loaded and saved in Design Mode. In general, the following mouse actions are used:

Left-click to make a selection;

Left-click and drag to move a fixture or surround fixtures;

Right-click to edit properties;

Double Left-click to display a list from which a selection can be made.

4.1 Main Menu Bar

4.1.1 File Menu

New Theatre Load the default theatre.

Open Theatre Brings up File Open dialogue for theatre selection

Save Theatre Save theatre to name of last loaded file, If none loaded, brings up File Save As dialogue.

Save Theatre As Default This option saves the current theatre as the default theatre, this will then be loaded whenever the Visualiser is started.

Save Theatre As Brings up File Save dialogue.

Save View Brings up a dialogue for saving the current perspective view. This can also be named.

Export Report Generate a synopsis of the fixtures in the theatre. The synopsis is saved in a comma-separated (CSV) text file that can be imported easily into Excel and other spreadsheets.

Import Report Imports a report in CSV format. Can be exported, modified and re-imported.

Exit Autosaves the theatre and terminates the program.

4.1.2 Edit Menu

Run Enters Run Mode

Design This has no function other than to confirm that you are in Design Mode.

Undo Use this to Undo moves etc. It is very useful and well worth using the keyboard shortcut which is CTRL + Z. (hold down the CTRL button and press Z.) The undo buffer is virtually limitless, actions are kept from when the program is first started, the only limit is the size of your hard disk.

Redo The opposite of Undo, if you undid it wrongly use Redo to put it back. Again well worth learning the shortcut which is the same as Undo but with shift pressed.

> *The above are so useful because you never need worry about trying something out, which is the purpose of Visualiser.*

4.1.3 Advanced

You should not need to go in here much if at all. Except initially to set up the method you are using to receive DMX.

DMX Simulator Brings up dialogue for editing DMX simulator channel assignments. The simulator is intended for simple testing purposes.

The DMX simulator provides 100 channels of cyclic fading of DMX channels. Each row is used to drive a set of channels through values ranging from a minimum to a maximum on a fixed time cycle. The start channel and end channel specify the set of DMX channels to be controlled.

The minimum and maximum values specify the range of values the DMX channels through which the DMX channels should sweep.

The cycle time specifies the time to drive the channels from the minimum to the maximum and back to the minimum again. Any row whose start channel is –1 is ignored.

Refresh Fixture This removes all overrides and restores all fixtures to their default settings which are loaded from the personality and extension files.

4.1.4 Preferences
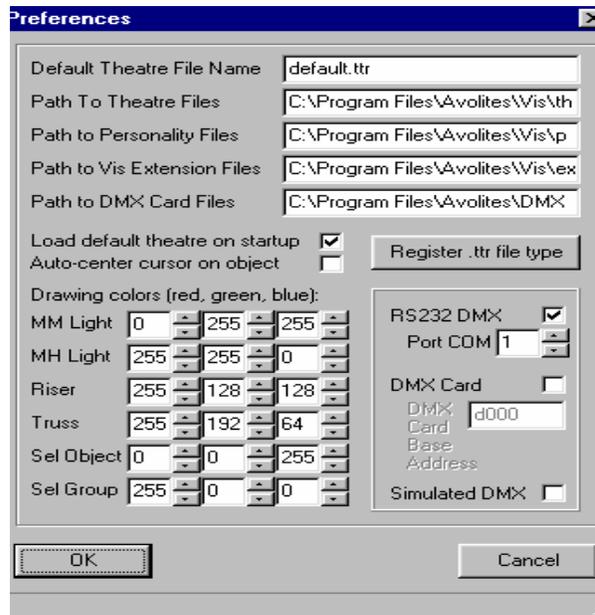
This dialogue allows selection of paths to theatre files, personality files, personality extension files, and DMX reader card firmware files. These should be changed with caution. If set incorrectly, the Visualiser will not be able to locate these files, and will not function correctly.

Click on "Register .ttr file type" to associate theatre files with the Visualiser application, if the file type is registered, double-clicking on a theatre file will start the Visualiser with that theatre.

Auto-centring the cursor will cause the cursor to find the centre of any fixture selected on a Panel. This is useful for moving the centre of a fixture to a precise location, but may otherwise prove to be confusing, and should normally be turned off.

In the preferences dialogue box you can select which of the DMX sources these you wish to enable and setup.

Do not select card unless you have the DMX card fitted in your computer or it may become unstable.

The DMX card base address is also selectable. This is the paragraph address of the DMX card's memory block. The default is d000, and this corresponds to the real mode segment: offset address d000:0000, or the absolute address d0000. Care must be taken with this setting. An incorrect setting could result in memory corruption. Note: the present version only works at the default address.

You can also select the colour of various different object within the Visualiser. These colours are made up of red, green and blue colour mixing.

4.1.5 Files

A number of files are required by the Visualiser. These are placed in folders for ease of use. All files are kept in plain text and can be edited with a text editor such as Notepad. If you use an editor like MS Word be careful to save in Plain Text format.

Theatre files These files have the extension 'ttr' and store all the information for a particular show within them.

Default theatre This is a Theatre file which is loaded on startup. You can save the dimensions and basic rig you use every day in this file and it will always be there for you when you start up.

Autosave theatre This is a special theatre file into which your show is saved every few seconds. Should the system fail for any reason you can usually recover from where this happened by loading this file.

Log File (Log.txt) This file contains history information on what the Visualiser has been doing and any errors that may have occurred and been fixed by the Visualiser software. You may need to delete this file every few months if you are using Visualiser extensively. The file may be opened with any text editor.

Report File This file is generated by the Visualiser when Export report function is used. It is in CSV format which can be read by spreadsheets such as MS Excel and databases such as Access. It can also be viewed by a text file editor such as Notepad. The Report file can be imported to Avolites consolse equipped with appropriate software allowing automatic patching and graphics tablet training.

The Report file can be edited and imported. This makes it very easy, for instance, to change the patch or the exact position of objects etc.
It would be quite possible to import from third party CAD applications fixture positions. Report files have the extension 'csv'.

Personality files These have the extension 'r20' and are exactly the same files used by Avolites '2000' control desks.

Personality extension files These files have the extension 'vis'. They have additional information regarding the fixture, such as Gobo information, which way Pan and Tilt move as the DMX level increases etc. A wizard is provided for creating these files as required.

Gobo library This file, generally named DEFAULT.GLB contains all the information in it to draw a particular gobo.

Color library This file, generally named DEFAULT.CLB contains information on how to produce a particular colour relating to Red, Green and Blue values.

Executable files The Visualiser program files themselves. They have the extension 'exe'. There may also be files with the extension 'dll' which are required by Windows itself.

Text files These are documentation files with the extension 'txt'. You can read them with Notepad or any other Word Processor.

Firmware files These files are used by the DMX reader card.

4.2 The Fixture Palette

Five fixture buttons are provided:

- Moving head light
- Moving mirror light
- Truss
- Riser
- Group(A group is not strictly a fixture, but a collection of fixtures that is manipulated as a single fixture.)

The simplest fixture action is to right-click on a button (arming the fixture type), then left-click on one of the four graphic panels (to add a fixture of that type). For a simple fixture (light, truss, riser), the fixture is added to the theatre at the cursor location.

4.2.1 Left-clicking on a simple fixture button

This allows modification of the properties of the default fixture of that type. The default fixture is set from the drop down fixture list.

The default fixture is used as the model for all fixtures of that type subsequently added to the theatre.

Fixtures can now be added by:

Closing this box, right clicking on the button (to arm it) then clicking on one of the four Panels.

Or

Fixtures can be added to the theatre from the default properties dialogue by pressing the "Add One". Fixtures added using the "Add One" are separated by the offset in the "Offset to next device" fields.

Note that the fixture position is set from the last time a fixture was added by clicking in one of the Panels. You can therefore place the first fixture in the correct position, then open up the dialogue set the offset positions for subsequent fixtures, then use the Add One function to add additional fixtures.

4.2.2 Fixture Dialogue Properties

Left-clicking on a Fixture Palette button brings up the properties dialogue for the default (i.e. model) fixture of that type.

Right-clicking on a specific fixture brings up the properties dialogue for that actual fixture.

The dialogue box provides for selection of position, size, orientation, colour and other quantities the most important being:

Fixture type The fixture type is selected from a drop down list of available personality files, these being identical to that used for Pearl 2000, Azure 2000 and Sapphire 2000. (An additional file for each fixture is also required and a wizard is available as a separate application for creating this.).

Auto-butt An object can be set to auto-butt. This causes it to be attracted to other close objects or walls. When the object is placed in proximity of another object or wall, it will then close any small gaps and butt against the wall or other object. Auto-butt also ensures that objects do not overlap.

DMX Address This is the base address for the selected fixture, or the address of the next fixture to be placed. It is auto-incremented each time a fixture is placed and follows the same rules as an Avolites desk.

4.3 Panels

In RUN mode one panel is presented, in Design Mode 4 panels presented.

Each panel represents a view. Allocation of a view to a panel is changed by clicking on the view name (near the middle of the screen).You can, for example, have the same view, but one zoomed in two of the Panels,

By default, the screen area is divided equally for each Panel. The division may be changed by left button dragging from the centre of the separation bar between the panels.

4.3.1 Panels Mouse control

Left click If a device is armed, left-clicking on a view will add a device of that type to the theatre.

Left-click and drag on an object causes that object in the theatre to be moved.

Double left click When it is difficult to select a specific device, double-clicking near the device will bring up a selection dialog for devices in the vicinity of the cursor. When the desired device is selected, it can be opened, or the selection window closed and the device dragged.

Right Click Right-clicking in a view has a variety of functions.

If there is a device near the cursor location, the device's properties dialog is displayed

If there is no device near the cursor, but the cursor is within the theatre walls, the properties dialog for the theatre walls is displayed.

If the cursor is outside the theatre walls, the properties dialog for the view is displayed.

Left drag Dragging from anywhere on a Panel where no object is located causes a rubber box to appear. When the cursor is lifted, a dialog appears for entering the function of the rubber box. The options are:

- **Zoom** Zooms into the selected area. Left clicking on any unoccupied place in a Panel will unzoom. Left clicking on the grey Panel border will unzoom all panels.

- **Group** This places all the objects in a Group, which has its own properties including DMX control. (If you wish to move a group which is under DMX control, you should first turn off the DMX tick box for that group, move it, then turn back on the DMX, otherwise it will spring back as soon as DMX is turned on!)

- **Snap** This allows you to straighten up a set of fixtures. You can straighten up all the lights in the rubber box or all the risers in the rubber box.

  You can always snap the fixtures to a line. The software selects the best-fit straight line for the objects selected, but at intervals of 15 degrees. You can select to put the fixtures at equal distances along the line, or to preserve the current spacing.

If the rubber box contains just one truss, you also have the option of snapping the fixtures (lights or risers) to the truss. This is always done evenly.

4.4 Status Bar

The status bar has five displays.

The first three numbers indicate the cursor co-ordinates W, D, and H.

The fourth number displays the time to refresh the window. (The lower the number the faster the screen updates will be)

The final number on this line indicates the number of updates per second. (The larger the number the faster the screen updates will be. The smallest number that can be displayed is 0 and this means that the screen update takes more than one second.)

The remainder of the status bar gives prompt information, such as when the cursor is Armed and therefore ready to place an object.

Click on the status bar to remove the last message.

4.5 Groups

Groups may be created using the rubber box, or by clicking the group button and then clicking one of the four view panes. A device may then be added to or subtracted from the group by left-clicking it.

4.6 Theatre Properties

To access the theatre properties right click within the bounds of the theatre. This dialogue allow you to enter theatre dimension and various other settings for a theatre including colours of walls. These colours are only shown if rendering is enabled in run mode.

4.7 Display Properties

By right clicking outside a theatre the Display Properties box is shown which has 6 alterable integer values which change the way the theatre is viewed. By pressing the up or down button the view of the theatre will change.

By altering the width view point position the viewpoint will rotate around the theatre horizontally. By altering the width viewpoint orientation the viewpoint will rotate around the theatre vertically.

By altering the depth view point position the viewpoint will move nearer or further away to the theatre. If the depth view point position is altered below the depth of the theatre then the view will be totally distorted and will not be understandable. By altering the depth viewpoint orientation the viewpoint will rotate clockwise or anticlockwise

By altering the height view point position the viewpoint will move up or down from its current position. By altering the height viewpoint orientation the theatre rotates clockwise or anticlockwise. If the value of the height viewpoint orientation is out of the range of -280 and 54 then the view will be totally distorted and will not be understandable.

The following settings are recommended to view a theatre most effectively, to obtain the theatre size right click within the theatre:

	Viewpoint Position	Viewpoint Orientation
Width	0.3 x Theatre width	0
Depth	1.5 x Theatre depth	0
Height	0.5 x Theatre height	-45

4.8 Setting and Saving Views

There are six user defined views. As well as three fixed views. (Front, Plan and Side).

The perspective view can be modified using the Theatre Properties dialogue, by right clicking outside of the actual theatre. (Try right at the edge of the perspective panel if you find this difficult).

Once a view is set, you can save it for future use by from the File Save View function. From this function you can also set a name for the view by clicking in the text box presented.

You select a view from the View Radio buttons when in RUN mode.

The Zoom value in the top left panel is also reflected in Run Mode.

4.9 Locking objects

Lock prevents accidental movement of an object. You can lock individual objects by setting the lock option in the objects dialogue box. (Right click on the object.) Or you can use the global lock radio buttons. Use the mouse or [F6]. These allow 3 levels, no lock, Truss and everything. The global lock works independently to the individual locks.

4.10 Moving the position of objects and groups using DMX

You can move the position of objects using DMX. This allows you to experiment with moving trusses etc.

Either an individual object or a Group of objects can be moved with DMX. When an object is moved with DMX the DMX input value gives the ABSOLUTE position within the theatre, however when a Group is moved the DMX value represents a relative movement from the position the group was in when DMX was enabled. We generally find that the Group movement gives the easiest control of position since a DMX output of 0 leaves the group in the position it was placed.

4.10.1 DMX allocation for moving objects and Groups

12 DMX channels are required organised as 6, 16 bit pairs and are used as follows:

DMX channel	Usage
1 & 2	Moves object in West to East direction
3 & 4	Moves object in North to South direction
5 & 6	Sets object height
7 & 8	Rotates object in horizontal plane
9 & 10	Rotates object in floor plane
11 & 12	Rotates object in vertical plane

A personality is available from Avolites to allow easy patching of Object and Groups.

When using this Personality 16 bit movement on the wheels will be preferable. On the Sapphire 2000/Pearl 2000/Azure 2000 consoles select the Pan and Tilt bank, then press Press the Pan and Tilt button again. Its LED should then flash, indicating 16 bit movement. This will then be applied to all wheel parameters the Pan and Tilt button is pressed twice again.

4.10.2 Group movement by DMX

Within the objects being moved must be at least one piece of truss. If you need more than one piece of truss to be moved you should group all but one, then group a single truss piece with the first group.

The single truss piece has a rotation position which is marked as a percentage of its Width axis length. By default this is set at 50%. This rotation position marks where the centre of rotation will take place.

Drag the group into its neutral position. Now open up the group dialogue box, (right click on the group). And click the DMX tick box. Select the correct DMX address.

Object movement uses a 'signed' DMX value; a negative number moves the object in the reverse direction, a positive number in the forward direction.

4.10.3 Individual object movement by DMX

In this case the 16 bit DMX values represent the absolute position from the zero point: up left corner at floor height, when viewed from the **audience**.

Truss and Riser Property boxes have a DMX selector tick box. This should be enabled and the appropriate DMX channel selected. The position of these objects will then be determined by the incoming DMX value.

4.11 Function Key Shortcuts

F2 Switched between EDIT and RUN mode

F3 Switches between wire frame and rendered view.

F4 Sets the SMOKE level in 25% increments.

F5 Turns ON and OFF the DMX reader card.

F6 Locks movement of objects.

4.12 Clearing the Default theatre

You may wish to clear the default theatre so when you load a new theatre a totally blank space is created. You can easily do this by firstly ensuring the default theatre file is set to `default.ttr` from the Advanced Preferences menu. Then opening the theatre folder (using the Windows Explorer or your preferred folder viewer) and deleting the `default.ttr` file.

CHAPTER FIVE

5. Troubleshooting

5.1 Adding Static Light

If you wish to add a light that is neither moving head or moving mirror then there is no button to do so. You will find that all the static lights are listed under moving head lights. These will work as you would expect static lights to behave.

5.2 Scrambled Theatre

The theatre properties and the display properties of the theatre are values which are very dependant upon each other. If you attempt to move the display of a theatre within the bounds of the theatre itself the theatre will become scrambled and unintelligible. To fix this you must reset the display properties of the theatre by right clicking outside the bounds of the theatre in design mode. The appropriate values are listed on page 21.

5.3 Known Problems

Solid rendering is only partially implemented.

DMX auto-increment is always enabled when DMX is enabled, whether or not it is selected.

Spots and cones from lights outside the theatre walls are not always correctly displayed.

Fixtures do not select on the screen when using the RS232 DMX. This is not actually a problem, it means that the fixture handle numbers have not been set in the Visualiser.

If you find a problem it is worth looking at the log file, this may reveal what has happened and relaying this to Avolites will be appreciated.

5.4 On starting it crashes

This is almost always caused by a damaged ttr, vis or r20 file, and it is easy to find out which.

Open the Log.txt file in the vis folder. Look at the last entry in this file. This will probably be a .vis file. Go to the Extensions folder and move this file to your desktop. Restart Visualiser, if all is well then the file that was removed will need reinstalling.

5.5 Further Assistance

If you run into difficulty feel free to contact Avolites for help, however please make sure your program has been registered and you have the following in your possession.

1   Manufacturer's data sheet for the fixtures you are using. You may need to fax this to Avolites.

2   The Visualiser software revision.

CHAPTER SIX

6. Definitions

N, S, E, W North, South, East, East. These relate to the compass points on the stage, with Up Stage being north.

Depth plane This refers to the North South direction

Height plane This refers to the height from the stage floor.

Width plane This to the East West plane.

The Plan, Front and Side Views in the edit panels have a small indicator to show which planes it represents, in terms of W, D and H.

VizWiz

7. Overview

The VizWiz is a tool for creating Visualiser extension files. These describe fixture features that are beyond the scope of the .r20 file syntax. Examples are the rotation speed for gobos, strobe rates etc. The Extension files are named *.vis. The vis file is stored in ASCII text and can be viewed and edited with a text editor such as notepad. Manual editing of these files is not encouraged.

This program is not a wizard in the conventional sense. It does not direct the user through a sequence of simple dialogs. Rather, it displays the properties of a fixture in the standard Windows Explorer tree form, allowing the user to edit the various properties. Generally the information presented will be in a similar order to that shown in the manufacturer's data sheet; you should therefore work through this channel by channel.

7.1 Installing

The program is installed at the same time as the Visualiser. No additional installation is necessary.

During installation, certain files are registered to automatically open the Windows NOTEPAD application. This makes inspection of files easy. The following files are registered to Notepad once VisWiz has been run: vis, r20, glb, clb. Therefore clicking on any of these will cause NOTEPAD to open them.

7.2 What you need before attempting to create a vis file

Make sure you have the fixture data sheet. Look at it and if necessary convert levels from percentages to 0 to 255 it is far easier to do this before running the Wizard. Use appendix 2 for this.

CHAPTER EIGHT

8. Starting VisWiz

From the Start menu select Programs, then Visualiser, then VisWiz, or click on the VisWiz icon.

You can now select the fixture file you wish to work with from the drop down fixture list. Note the paths to the r20 and vis files are listed and you can alter these if required.

Having selected the fixture you need to expand it out by clicking on the + sign in the main window next to DMX USAGE

You are now presented with a list of DMX channels and how they have been defined in the r20 file.

Opening up each + sign gives further information on that parameter.

A main window provides the canvas for listing and editing fixture properties. A warning dialog alerts the user if unsaved data is about to be lost.

The standard Windows File Save Dialog is used for selecting output file names.

8.1 Startup

The Wizard reads the Visualiser file location settings stored in the registry, and uses these to determine where to find .r20 and .vis files. (These settings are shared with the Visualiser itself and this ensures that the correct files are edited.) All fixtures from these sources are always loaded into the PC's memory. Therefore if any manual changes are made (for instance using Notepad) you must restart VisWiz for these changes to be loaded.

8.1.1 Displaying Fixture Properties

Initially, no fixture is selected. To select a fixture to work on, pull down the "Name of fixture" list and select one

Fixtures are listed in alphabetical order of the Fixture Name, not file name.

The properties of the selected fixture are shown in the main area of the Wizard's main window. Properties are displayed hierarchically in standard 'Windows Explorer' tree form. Nodes of the tree are opened by double-clicking a title, or left-clicking a (+) box. Nodes are closed by left-clicking a (-) box.

8.2 Editing

A tree node is selected by left-clicking on the node text. Once selected, the node can be edited.

The available editing actions are:

- Modify
- Add
- Delete

8.2.1 Add and Delete

Attributes are normally added or removed by **right-clicking** on a list item. The "Select Action" dialog is displayed. This allows selection of actions that are appropriate at that node. Not all actions are available at every node. The available actions are always a subset of the following:

- Add a new Attribute/DMX channel
- Add a new Value spec
- Add a new Speed spec
- Add a new Strobe spec
- Add a new Range
- Delete this node

A new Range can also be added using the direct "Add Range" button in the main window. This is especially useful when entering a list of values such as colours, or gobos.

8.2.2 Modify

Settings are modified by typing into the fields near the bottom of the window. These fields are only enabled when the selected node is editable.

8.3 The Modify Dialogue

The modify dialogue boxes which are below the main window, allow the settings to be entered and altered.

The following DMX range settings can always be edited when a DMX range is selected:

- Low DMX
- High DMX
- Low Output
- High Output

The following setting is available when editing a colour wheel or gobo range:

- Colour/Gobo name

Use this to select a particular gobo or colour. The information for the colours and gobos is stored in the default.clb (default Colour LiBrary) and the default.glb (default Gobo LiBrary) files which are stored in the extensions folder. You can quite easily define your own colours and gobos. Both files are documented and double clicking on them will open them with notepad.

The Low and High DMX and the Low and High Output contain the most important information.

This is saying between the DMX values the channel should do the following.

For example, for a gobo rotation channel:

- Low DMX = 0
- High DMX = 127

- Low Output = 0

- High Output = -360

This means that between 0 and 50% rotate the gobo from 0 to −360 degrees. The negative sign means anti-clockwise.

The following units are used

Dimmer level 0 = off

Dimmer level 255 = maximum

Shutter   This requires a Strobe specification when 0 = always on, 1 = always off, 2 = any number is in flashes per minute.

Speed   In Revolutions per Minute (RPM)

8.4 Advanced Settings

Normally, only DMX range information can be modified. However there are times when a more complicated set of rules needs to be applied to a channel. The Advanced setting gives the ability to do this. If "Advanced" is pressed, additional DMX channel and mode information can be modified.

The following additional settings are available when editing a Value, Speed or Strobe spec with the Advanced option enabled:

- Channels

- Intel/Motorola

- Unsigned/Signed

- Apply/Cancel

- If (Channel, Min, Max)

- Mask

The most important of these is If. This allows a particular setting to be conditional on the level of any DMX channel.

The picture below shows how the IF statement is used to control the response of the Gobo 2 Rotate channel.
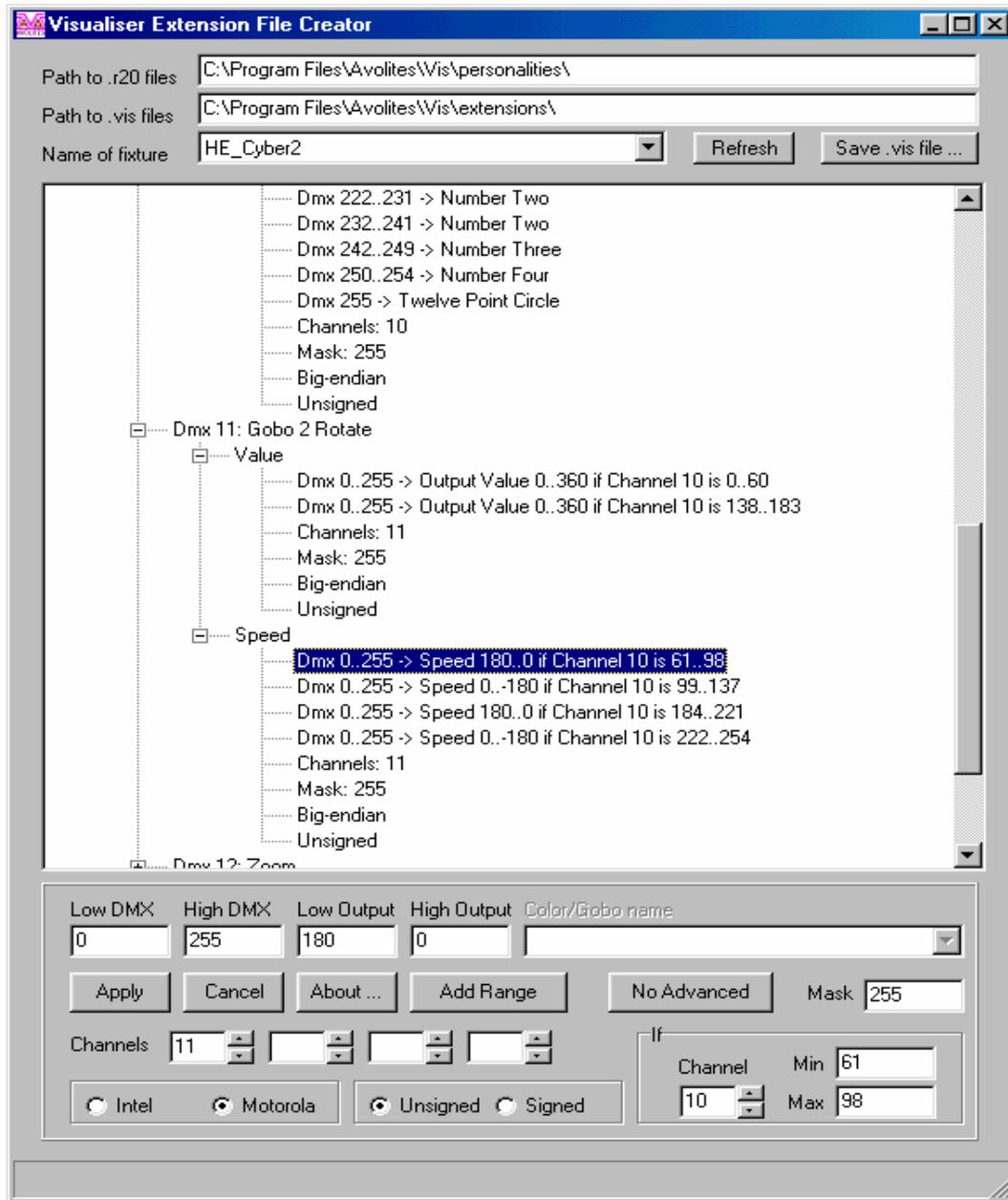
8.5 Apply

Press "Apply" to save the edited settings into the holding array of fixtures. Note that the updated fixture is not written to disk.

Press "Cancel" to undo changes and revert back to the values in the holding array.

8.6 Save .vis file

Press "Save .vis file" to save an edited fixture to disk. The file dialog that is displayed shows the directory and name of the fixture from which it was loaded. These can be changed if it is desired to write the fixture to a different file.

8.7 Warning Dialogues

A warning dialog is displayed if changes have been made, but one of the buttons "Apply", "Cancel" or "Save .vis file" was not pressed. The dialog provides the following choices:

- Discard changes, continue action
- Apply the changes, continue action
- Cancel action

8.8 Status Messages

Status messages are displayed in the Status Bar at the bottom of the main window. The status text can be cleared by left-clicking on the box.

8.9 The Refresh button.

This refreshes the DMX listing. Occasionally edits may be made which do not appear correctly here because of inter-channel dependencies. The Refresh button re-computes these.

CHAPTER NINE

9. Troubleshooting

9.1 Known Problems

Editing of RGB colour channels (requiring three adjacent DMX channels) does not work correctly.

The "Color/Gobo name" field is not always disabled when editing a non-colour/gobo channel.

Cancel does not always restore edited settings correctly. It is preferable to reload from disk.

Sometimes the inter-channel dependencies are not correctly computed, resulting in ranges being incorrectly displayed. In particular this may happen when adding Strobe to the dimmer channel. Use the Refresh button to re-compute these.

9.2 Further Assistance

If you run into difficulty feel free to contact Avolites for help, however please make sure your program has been registered and you have the following in your possession.

2   Manufacturer's data sheet for the fixture. You may need to fax this to Avolites.

2   The Visualiser software revision.

10. Appendix 1: Visualiser Definitions

10.1 Value

Every DMX channel will have a VALUE associated with it.

Under the VALUE there will be one or more RANGE settings.

The channel type (Dimmer, Shutter Pan Tilt etc) defines the units of measurement the VALUE setting is expecting.

Value	Unit
Iris	Ratio 0 to full
Dimmer (Intensity)	Ratio 0 to full
Zoom	Degrees
Gobo Orientation	Degrees
Gobo Wheel	Gobo name as defined in default.glb
Color RGB	Ratio 0 to full
Color Wheel	Colour name as defined in default.clb
Pan	Degrees
Tilt	Degrees

In addition to VALUE, SPEED or STROBE can be applied to any DMX channel.

10.2 Range

Range levels are applied to VALUE, SPEED or STROBE

Value	Range levels
Iris	0 (fully closed) to 1 (fully open)
Dimmer	0 (full off) to 255 (full on)
Zoom	0 (fully closed) to (any positive angle)
Gobo Orientation	0 to (any positive or negative angle)
Gobo Wheel	Number of gobos
Color RGB	0 to 255 for each colour
Color Wheel	number of colours
Pan	-(max pan) .. +(max pan)
Tilt	-(max tilt) .. +(max tilt)

10.2.1 Iris examples

Value

DMX 0..255->0.4..1

> This means that the minimum Iris value will be 0.4 of the maximum value, which is 25 degrees or as set by the Value in the Zoom channel.

Generally Speed or Strobe are not applied to the Iris channel. However, if they were to be applied the units would be open/closures per minute.

10.2.2 Dimmer

Value

DMX 0..15->0..0

> Up to level 15 the dimmer is off

DMX 16..127->0...255

> The dimmer fades from level off to full between DMX levels 16 and 127.

Strobe (Shutter)

DMX 128..255->30..240

> Dimmer strobes at 30 flashes per minute at DMX level 128 up to 240 flashes per minute at a DMX level of 255.

Speed is not normally applied to a dimmer channel.

The units for Strobe and Speed are flashes per minute and range from 0 to any number. However there are two special numbers relating to Strobe:

> a level of 1 means no strobe (ie shutter open), and

> a level of 0 means Shutter closed, (no light comes out of the fixture).

These levels are used to implement Shutter open and Closed. If a level is not defined the Strobe level is assumed to be 1.

Note: when the Strobe channel is implemented on a channel separate from the dimmer channel you should see section 10.2.3 for details on how to link the channels together.

10.2.3 Linking a Strobe or Shutter channel to the dimmer channel

This note applies to fixtures which use a separate DMX channel for the Shutter and Strobe.

When the r20 file is loaded a DMX channel will be defined as Shutter. Initially this channel is not linked to the dimmer channel and the following procedure must be followed to do this.

> *1> Note the DMX channel.*
> *2> Delete the Shutter node.*
> *3> Open the Dimmer channel and right click the Value.*
> *4> Add a STROBE channel, setting the DMX channel to the DMX channel previously noted.*
> *5> Click Refresh, to re-compute the channel dependencies. You will now find that there are two channels called Dimmer, but with different*
> *6> DMX channels associated with them. One of these will have the Value settings and the other will contain STROBE, but no Range settings – yet.*
> *7> Add the Strobe Ranges as required. Don't forget 1 is open, 0 is closed and other numbers are flashes per minute.*

10.2.4 Zoom

VALUE

DMX 0..255->12..30

Zoom units are in degrees. The above value statement maps the Zoom channel range to be from 12 to 30 degrees.

Speed and Strobe are not normally applied to Zoom. If they were to be required the units would be in Cycles per minute.

10.2.5 Gobo Orientation

This is may also be called Gobo Index. It defines the rotational angle at which a gobo is placed within the gobo holder.

VALUE

DMX 0..64 -> -180 ... 0

DMX 65..127 -> 0 ... 180

> The first 64 counts moves the gobo in an anticlockwise direction, the next 64 counts moves it in a clockwise direction

DMX 128 .. 255-> 0 ... 360

SPEED

DMX 128 .. 192 -> -180 0

DMX 192 ... 255 -> 0 180

This rotates the gobo firstly anticlockwise, then clockwise with a maximum speed of 180 revolutions per minute

10.2.6 Colour wheel and Gobo wheel

VALUE

DMX 0 ... 10 -> White , or Twelve Point Circle

DMX 11 ... 20 -> Blue, or Number One

DMX 21 ... 30 -> Green or Square

DMX 31 ... 40 -> Red or Triangle

SPEED

DMX 128 .. 192 -> -180 0

DMX 192 ... 255 -> 0 180

> Speed is in revolutions per minute, Strobe is not likely to be of use on these channels. For Colour wheels and Gobo wheels speed takes the number of ranges in the Value definitions and assigns these equal times for each cycle.

10.2.7 Colour RGB

This is mapped from the R20 file and normally will not require any alterations.

10.2.8 Pan and Tilt

These are mapped from the R20 file. It may however be necessary to correct the direction of movement. For 16 bit channels there will be two entries. When changing the movement direction change both entries.

11. Appendix 2: Percentage to 0..255 conversion

0	0	38	97	76	194
1	3	39	99	77	196
2	5	40	102	78	199
3	8	41	105	79	201
4	10	42	107	80	204
5	13	43	110	81	207
6	15	44	112	82	210
7	18	45	115	83	212
8	20	46	117	84	215
9	23	47	120	85	217
10	26	48	122	86	220
11	28	49	125	87	222
12	31	50	128	88	225
13	33	51	130	89	227
14	36	52	133	90	230
15	38	53	135	91	232
16	41	54	138	92	235
17	43	55	140	93	237
18	46	56	143	94	240
19	48	57	145	95	242
20	51	58	148	96	245
21	54	59	150	97	247
22	56	60	153	98	250
23	59	61	156	99	252
24	61	62	158	100	255
25	64	63	161		
26	66	64	163		
27	69	65	166		
28	71	66	168		
29	74	67	171		
30	77	68	173		
31	79	69	176		
32	82	70	179		
33	84	71	181		
34	87	72	184		
35	89	73	186		
36	92	74	189		
37	94	75	191		