LIGHTS UP!

A free and easy-to-use piece of software to turn your computer into a 48 channel lighting desk for the control of DMX lighting, dimmers and other devices. Version 1.1, April 2011

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Introduction and Instructions by Jonathan Keren-Black

There are various sophisticated professional and semi-professional programs available to control DMX 'heads' or lights from a computer. They rely on some sort of device or 'dongle' which plugs into a USB port and outputs a DMX control signal. The cheapest dongles depend upon a regular control pulse from the computer, and these start at under $100. The Australian manufactured 'ENTTEC' Open DMX USB is considered to be one of the best, and works very well with the **Lights Up!** program. More sophisticated dongles generate their own control pulse, are fully isolated to protect the computer, and are upwards of $200. The ENTTEC Pro DMX USB is again considered to be one of the best of these types. Going up from these are more complex and significantly more expensive devices which may have actual slider dimmers, such as the MagicQ 'wings'.

Most of these programs are extremely powerful and flexible, but are extremely complicated for the novice to set up, learn and use reliably. If you are in the field, and using such programs daily or weekly, they cannot be beaten. Several of them, such as MagicQ, are available in free versions, and some can use the cheapest of dongles.

An alternative way to control the increasingly popular and cost-effective DMX lights and effects is the cheap, stand-alone disco console and again these start at around $100. Be warned that most if not all of these do not seem to give smooth and reliable control, nor allow you to cross-fade manually on a cue from one lighting scene to the next. They are therefore not suitable for stage performance-type uses.

For these situations – small theatres, clubs, schools, churches etc, **Lights Up!** allows truly quick, simple and reliable control of DMX lighting and equipment–in other words, with an Open DMX USB dongle, **you really can control DMX lighting for about $100!**

SECTIONS (below): Page

1) TERMS:

(If DMX is new or unclear to you, you'll need to understand these terms first):

Addresses:

DMX has 512 different addresses , numbered 001 to 512 [actually, since in large installations with devices sometimes needing up to 16 addresses each to control them, 512 has turned out not to be enough, more complex systems now have several 'DMX universes', each having 512 addresses, but that is not relevant to this simple system].

Channels:

A DMX controller has a number of control channels. The **Lights Up!** system has 48 channels, though, as you will find out, they can each address one *or more* of the DMX addresses 001 to 512.

Cues:

A cue for these purposes is 'a lighting scene'. When you hear or see the on-stage cue, you instruct the system to bring about the required lighting cue (lighting scene).

Faders:

Conventional lighting controllers have usually used slide faders, and so most computerized systems, including **Lights Up!**, simulate faders to control the channels.

DMX-controlled Dimmer:

A DMX-controlled dimmer is a device to control a conventional mains-powered lantern. It usually requires one DMX address to control one DMX dimmer circuit.

Heads:

A 'head' is a light, lamp or other single-channel or multi-channel DMX unit.

Starting address:

Each DMX unit or 'head' will have a 'starting address' which you can change and set as required, but the starting address cannot be one of the addresses allocated to another head, unless you want several heads to be doing exactly the same thing at exactly the same time - in which case they need to be identical heads and be set to the same starting address. So for example if you have a head with 6 channels, and its starting address is 01, then it will also 'listen out' for control signals sent to it on addresses 002, 003, 004,

005 and 006. Therefore the next available address is 007. If your next head only has 4 channels, you should set its starting address to 007, and it would then 'listen out' for 007 but also 008, 009 and 010. The next available address is now 011 – and so on.

You will soon need to know which control channels do what – for example on the EL0177 PAR LEDS , the first is the dimmer (but only up to 50% after which it starts controlling the speed of flashing instead!), the second is RED, the third is GREEN, the fourth is BLUE, the fifth is PATTERNS and the sixth is STROBE SPEED. Now you might not want to use the fifth and sixth control channels on this unit, but you still have to remember that they will be 'listening out', and so their input needs to be kept to zero. Therefore, addresses 001-006 must all be reserved solely for this head, so, as explained above, the next unit cannot have a starting address less than 007 (or 1110000(1) on dip-switches) and so on.

Lights Up! has 48 sliders to control any DMX addresses (out of the 512 available). By default, they control the first 48 addresses 001 to 048). You can reallocate them so that you may only need one or two control channels to control each head. Don't forget either that one DMX channel or set of channels can control more than one light or head – each head simply has to be set to the same starting address. So if you have four EL0177 lamp units all set to DMX starting address 001, they can <u>all</u> be controlled by channels 01-04 of the controller (since in this example they don't require any signals to addresses 05, patterns, or 06 strobe–however, we will have to make sure no signal is sent to those 2 channels).

Terminator:

A terminator is a device to put at the end of the DMX cable run, rather than leave the final socket empty. But in short runs at amateur shows, you probably won't need one.

<u>All in all the simple to learn and use **Lights Up!** program can do pretty powerful things!</u>

2) SETTING UP THE DMX OPEN DEVICE:

Installing the ENTTEC Open DMX USB:

Insert the driver disc. When you explore or browse the disc, you'll find a red circle, CDM 20600. Click on this. You should briefly see a small black window (CMD) saying 'installing driver'. (Alternatively click on D2XX Driver install and go through the

process, including the warning messages that 'This type of file can harm your computer', because ENTTEC has not paid lots of money to Microsoft to certify their drivers!).

> Another option is to go to www.enttec.com and select [Downloads] from menu at top. Select [Open DMX USB]. Click on [Drivers Setup (Win 2000/XP/Vista/Win 7)]. A message will come up telling you that this sort of file can be harmful and asking you if you are sure you want to download this driver. Click [Save]. Then click on the button and a warning screen will again ask if you want to run the program or not. Click [Run]. It will quickly download.

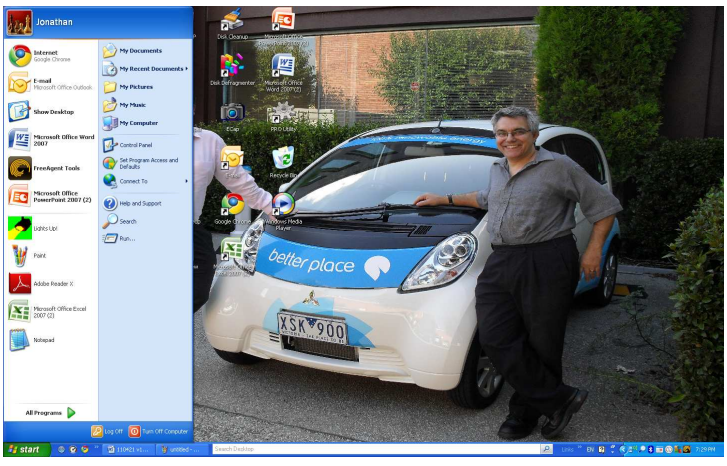
You may now plug the USB connecting lead into an available USB outlet on the computer and into the dongle. The computer should first tell you that it has 'found a new USB serial port', and then report that it is 'installed and ready for use' (if not, try one of the other driver installs above).

Because the DMX standard is 5 pin XLR plugs and socketss, but much of the DMX equipment available uses 3 pin XLRs, and most cables are standard 3 pin to 3 pin (probably actually audio cables), you will probably need a 5 pin to 3 pin adapter.

If using an adapter, plug it into the DMX outlet of the dongle. Now plug at least one fixture into the DMX outlet, so you can check it is all working. Set it to a starting address of 001 (using either dip-switches or other means of setting). On dip-switches this may be 100000000 but there may be a last switch which should also be on, to bring the unit under DMX rather than local control, in which case it would be 1000000001.

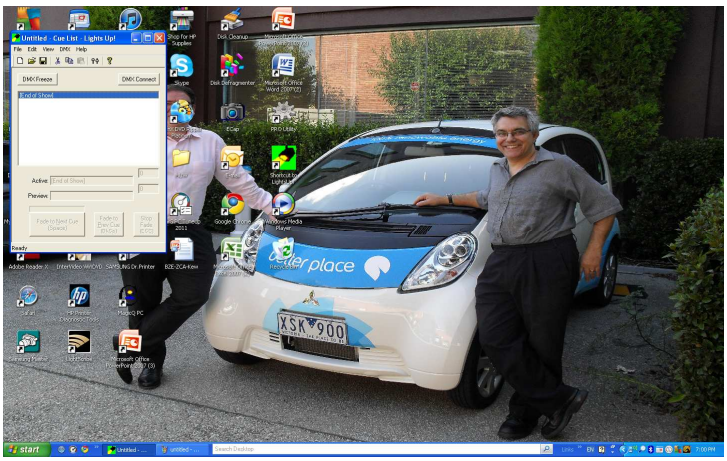
Now locate the SETUP file (computer icon) on the disc included. Double click on it and it will install the **Lights Up!** program from the disc. By default it will put the program into C\program files\TerboSoft\Lights Up!

Left-click 'Start' and the start menu will open, looking something like this:



You should see the green and yellow '**Lights Up!**' icon in the list. Left-click on it to start the program. (You can hold the left-click on the icon and drag it to the desktop to create a shortcut and then double-click on that icon instead if you prefer).

A small Cue List window (the main window of **Lights Up!**) should now be open:



Click the **[DMX Connect]** button – it should remain pressed if it has successfully connected with the DMX (skip this step if you don't have a DMX device installed and you just want to get familiar with the program).

In the following instructions, we have indented the parts you can probably ignore the first time through, but which give more detail about the full operation of **Lights Up!**.

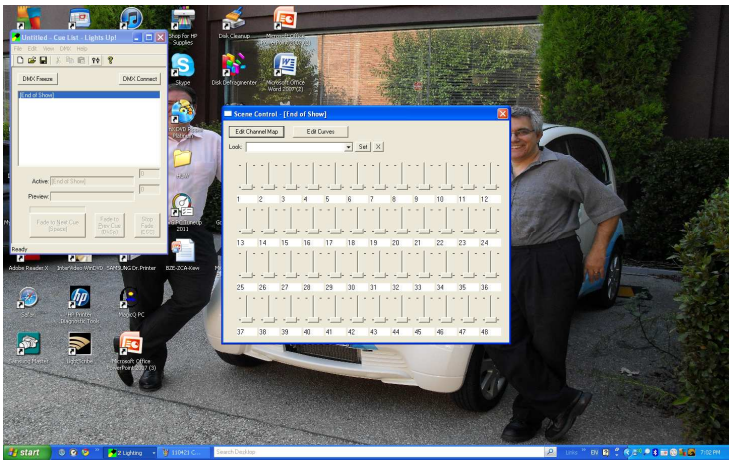
3) SIMPLE PROGRAM STRUCTURE

Cue List - one main window (which opens when you start the program, and shows the name of the file or show you are working on). From this, select and operate the cues.

> **From the main window, you can open 'Scene Control' to set the sliders (click the slider icon or <View>, <Scene Control>).**
>
> > From 'Scene Control', you can [Edit Channel Map] (patch any of the sliders to any DMX address and set a maximum level for each channel).
> >
> > From 'Scene Control' you can also [Edit Curves] for each DMX address, and set maximum and minimum levels for each individual address.
> >
> > > You don't even need to worry about the last two to start with. They offer more flexibility for later. **That's it! Very straightforward.**

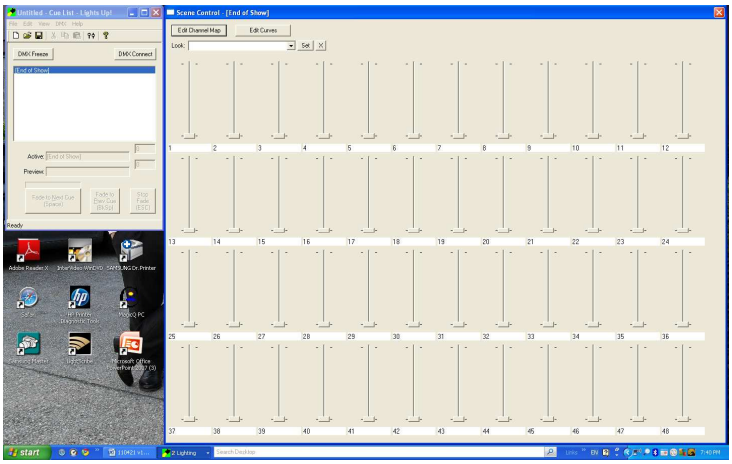
4) SCENE CONTROL

From the main – Cue List – window, click the [mini slider] icon in the toolbar (or select <View>, <Scene Control>).



A new window opens with 48 sliders – if necessary, move it by clicking on the blue bar and dragging it so that it does not overlap the Cue List window.

> You can also make it larger by pointing at each boundary (an arrow will appear) and dragging it. To maximize it on your screen, first drag the Cue list to the top left hand corner, and then open and expand the Scene Control window. In this manner, it can fill the full height and three quarters of the width of your screen, for easiest operation.



By default, the sliders map to DMX addresses 1-48. Play around with them. Using our example EL0177 head, a bit of sliders 1 and 2 gives red, 1 and 3 gives green, etc.

5) CREATING A CUE (a 'cue' is a 'lighting scene')

Whenever you first start the program, this creates a 'new show'.

> If you want to open an existing show, use the [Open File] icon or <File>, <Open> and select the one you require. Here we are first looking at starting a new show.

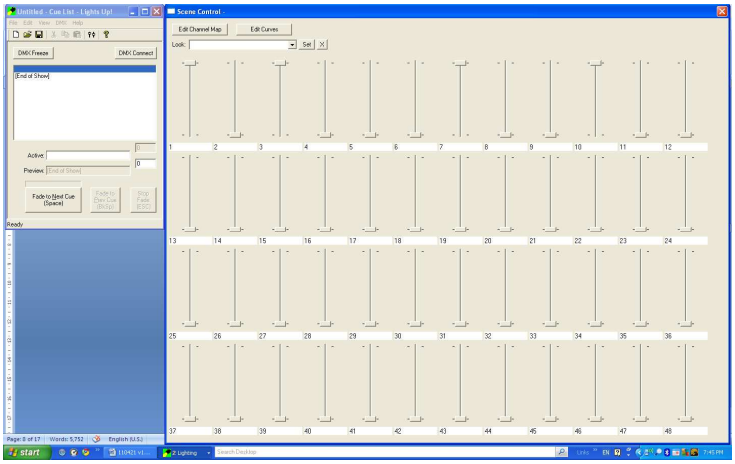
The blue cursor bar says '[End of Show]'. Click in 'Cue List' window, to make it active.

Press the 'Insert' button to create a new cue. An empty blue line appears – this indicates the as-yet unnamed new cue you are now working on.

Select the 'Scene Control' window (the 48 channels of sliders) as above (by clicking on the [sliders] icon or alternatively by clicking <View>, <Scene Control>).

> If your lighting device (head) has 6 channels, you may imagine that, with only 48 channels available, you can only control 8 heads (8 heads x 6 channels each = 48 channels used up). But this is quite wrong for 2 reasons. First of all, as we have mentioned, any number of heads can have the same address, so for example you could have 2 heads for each address (so that would give you 16 heads). But you can also allocate those 48 channels to any of the 512 DMX addresses you wish – as we have already shown, a head may well have addresses you don't need to use, so you can 'skip' these addresses (EDITING THE CHANNEL MAP, section 14 below). So, if we could control all the features we need on a six channel head using only 3 DMX addresses, we could control at least twice as many devices (so that could give you control over 36 heads or more using just these 48 sliders!).

Now adjust the sliders to set the heads the way you want them for this cue.



When you have completed a cue (a lighting scene), you must click back into the main 'Cue List' window before you can add another cue. Moving from the current cue

automatically records the most recent settings of the 'Scene Control' window, so when you press the Insert key, or <Edit>, <New Cue After>, or Shift, Insert, or <Edit>, <New Cue Before>, and the cursor moves to a new cue, the slider settings are recorded for the previous cue. NOTE: when you create a new cue (before or after the current one), the slider settings on the Scene Control remain identical so you can make minor changes to a complex setting rather than having to carefully reconstruct it for each new cue.

If you want to set all sliders to zero, set this up as a 'Look'; see section 14 below.

To set a minimum or maximum level for a particular address, or to adjust the way the fader sends it a signal, see 'EDIT CURVES', section 18 below.

Once you have the heads and devices set as you wish, you can save that lighting scene with a descriptive name, but you can also save it as a 'template' (so that you can instantly recall it and modify it as you wish for other cues)– see 'LOOKS', section 14 below.

NAMING CUES AND CREATING A 'CUE LIST'

You could go through a script and create a list of cues to match, scene by scene, before you start creating the lighting scenes. However, bear in mind that each cue will then be recorded with all sliders set to zero. It is easier to create (and name) a cue, then create its 'lighting scene', and then create the next cue. The new cue will then start with all the settings from the previous cue, which may save you considerable time, and give a more accurate and consistent result.

As above, use the 'Insert' key on the keyboard to create a new cue after the current cue, or 'Insert' key with 'Shift' to create a new cue before the current one. Alternatively select <Edit> and then either <New Cue After> or <New Cue Before>. A new blue line is now highlighted in the window. Since it is identical, it will also have the same name.

NOTE: You can't select a new cue after the [End of Show] cue line!

The new blue line represents the newly created cue with its name (taken from the previous cue). The 'Active' window has the same highlighted in blue. If you type now, the starting name is erased and the new name is entered in locations. If you click in the 'Active' window first, you can keep or modify the starting name. NOTE: You can call cues whatever you like - they can have exactly the same name as other cues, even though they have different slider settings – or they may have numbers, or no name at all.

If you name a cue, for example 'outside the castle – cue 1' and then create a new cue, the blue line (current cue) moves down one position – and it still shows the

name of the previous cue. This could be useful if you want to describe the scene each time, 'outside the castle – cue 2'. For your convenience, if you either start typing or use backspace immediately after creating the new cue, the entire name is deleted both from the cue line and also from the 'Active' window, ready to insert a new cue name. If you wish to erase only part of the name, eg the number at the end of the cue name, use the right arrow once, or set the cursor just after the number or letter you wish to erase. After that, use backspace to erase that number or letter only – you can then adjust the name in the usual way.

You can insert as many cues as you want, typing new names or editing existing ones as above. There is virtually no limit to the number of cues you can create and program.

6) DELETING CUES

From the Cue List menu, you can or delete a cue as well as add a new one:

Selecting <Edit>, <Delete Cue> deletes the cue that the cursor is pointing to. Pushing the 'Delete' key on the keyboard also deletes the current cue (it can't be recovered!).

7) EDITING A CUE

To edit a cue, select it in the cue list. Note that the sliders move to the position set (or last used) for that cue; now adjust the sliders as required.

You can cut, copy and paste a scene with the [CUT], [COPY] and [PASTE] (scissors, pages and clipboard) icons on the toolbar, or using <Edit>, which gives a drop-down menu including <Cut>, <Copy> and <Paste> (but not with mouse clicks alone). Copying includes the Fade In time for the scene but not the Fade Out time (see next section).

To move instantly through the cues you have set or to jump to a particular cue, use the down (or up) keys or select and click on the required cue.

8) CROSS-FADES BETWEEN CUES

In the Cue List window, there are two smaller windows on the lower right hand side, above and below the 'Active Cue' window. They both have '0' in them to start with.

These are the timer controls for fading between cues. Since you can't fade-in to the first cue, or out from the last one, those windows are greyed-out and not available.

You can set the number of seconds required to cross-fade from the previous to the current (active) cue by clicking the upper timer box (ABOVE the active cue) and typing in a number between 0 and 300, and similarly the time to the next cue, by clicking in the timer box BELOW the active cue (initially set to zero), and typing in a number between 0 and 300. You can't leave the cue without having a value between 0 and 300 in each, and you'll get a pop-up warning asking you for a 'positive integer' (ie 0-300) if you try.

> NOTE: Since there is no option to fade-in to the first cue in the list, or out of the final one, if you want a fade-in to the first cue or out of the last, first create a starting and/or ending 'black-out' cue – with all outputs set to zero, as required.
>
> Similarly, if you want to control some house lights, simply add these as the first and final cues – probably before and after the opening and closing black-outs.
>
> NOTE: A fade-out from one scene is also the fade-in to the next (so it is actually a 'CROSS-FADE'). If you set a time from one cue to the next, (eg 6 seconds FADE-OUT time), that time will appear again in the next cue (eg 6 seconds FADE-IN time), as the time from the previous one to that one, and if you change it (eg to 4 seconds FADE-IN time), then when you look again at the previous cue (FADE-OUT time) it will also have changed from 6 to 4 seconds.

NEXT CUE: To start the cross-fade to the next cue, click [Fade to Next Cue] button. If the Cue List window is selected and the title bar bright blue (click in the Cue List window if it isn't selected), then you can also press the Spacebar to progress to next cue.

PREVIOUS CUE: To cross-fade back to the previous cue, click on the [Fade to Previous Cue] button (or, if the Cue List window is selected, use the Backspace key).

During a cross-fade, the window shows progress from the current (Active) to the next cue selected. Once the fade is completed, the cue in the 'Active:' window changes to show the now current cue and the 'Preview:' window shows what is now the next cue.

> The [Stop Fade] button immediately stops the cross-fade, and the progress bars show that it is incomplete. Clicking [Fade to Next Cue] resumes the cross-fade to complete it at the preset speed. Similarly, clicking the [Fade to Previous Cue] button reverses the cross-fade at the preset speed to return to the previous cue (these options will be useful when a cue is commenced too early).

9) SAVING A SHOW

Save your show with the [Save] icon or with <File>, <Save As>...

Don't worry – if you try to close it, it will also ask you if you wish to save it. We suggest you always save with a date code, so for example '110823 West Side Story - matinee' (Using YYMMDD at the beginning of the file-name keeps the files in chronological order, latest last). When you next save it, give it the new date, or, if it is the same date, give it an increasing version number eg 03. That way you can always go back to the previous version if something is changed or goes wrong!

10) OPENING A SAVED SHOW

Click on [Open File] icon, or <File>, <Open>, and select the show you wish to open. Remember that, whenever you first open the program, you must click [DMX Connect].

11) RUNNING A SHOW

Once the power is on to all your heads and devices, the correct version of the show is open and [DMX Connect] is selected, you are ready to run (of course you will have checked before the audience came in that everything is working!).

> NOTE that if the computer running **Lights Up!** goes to sleep during a performance, the DMX signal will stop and the house and stage will go dark! When you wake the computer back up again, the "DMX Connect" button will still appear pressed, but the connection will be broken. You will need to press the "DMX Connect" button **twice** (first to un-select it and then to re-select it). This will restore the connection and the show may continue from the current position.
>
> Obviously you want to ensure this won't happen. To avoid it, make sure that the Power Control scheme for your computer is "Presentation" or "Always On". (On XP, [Start], [Control Panel], [Power Options], and in 'system standby', select 'Never', 'Never'!)

To activate a cue, click on the [Fade to Next Cue] button (it will remain selected and you can subsequently use the space bar instead if you prefer).

If you have the Scene Control window open, you can also manually control the heads for that cue. You will need to click in the Scene Control window to activate it. A wheel controller on the mouse is best. However, you will have to click on the [Fade to Next Cue] button again to activate the next cue – the spacebar will not work until the Cue list window is reactivated. Slider settings will change to the values preset for the next cue.

Bear in mind that any change you have made will be memorized and shown the next time that cue is played, so if for example you have slowly increased a level during the cue in the matinee (eg from ¼ to full), then in the next show, if you leave the computer on and use the program again without reloading it, the cue will start at that increased level, which will not be the same effect intended.

If you loaded a previously recorded show, then of course that original file has not yet been altered. If you have made any changes at all, then when you try to close the program at the end of the performance, you will be asked if you wish to change the program. It would be all too easy to say 'Yes', whereas to preserve the original, you should say 'No' (to make sure changes during this performance do not overwrite the original cue list). We therefore suggest the safeguard of saving the file from the outset as a discrete show – so, as soon as you open it, save it as that performance by using <File>, <Save As> and naming it, eg '110824 afternoon perf'. That way you can safely save changes – which might be useful to review later – without affecting the standard lighting scheme for the show.

This will be enough to get you started - from here on is more advanced and technical!

12) LABELLING THE SLIDERS

You can edit the labels on the sliders in the Scene window, simply by clicking on them and typing. A name can be up to 20 characters long, though not all the letters will be visible at a time; how many depends on the size you have expanded the Scene control window to. We suggest short names, eg 01DIM, 02RED, 03BLU, 05GRN; if they are longer, the channel numbers may not then necessarily be visible without scrolling across.

The slider labels along with the cues, the channel maps, looks, lamp curves (coming shortly) and all other show information is saved in the .sho file when the show is saved.

13) EDITING THE CHANNEL MAP

To see the DMX addresses operated by a channel (slider), select [Edit Channel Map] at the top left of the Scene Control window. All 48 channel labels can be seen, together with the DMX addresses currently allocated to them. The default is that each channel is 'mapped' to the corresponding DMX address, ie channel 1 sends a signal to DMX address 001 and so on. Each address can also be limited to a maximum value (some heads require some of their addresses to be set to a maximum setting, eg 50%), but again there is a default that each goes up to 100%. This is shown as 1%100, meaning 'controlling DMX address 001 up to 100%'. To return all settings (including nos. 21-48 not showing in the window) to the defaults, click the [1:1] button at the bottom left.

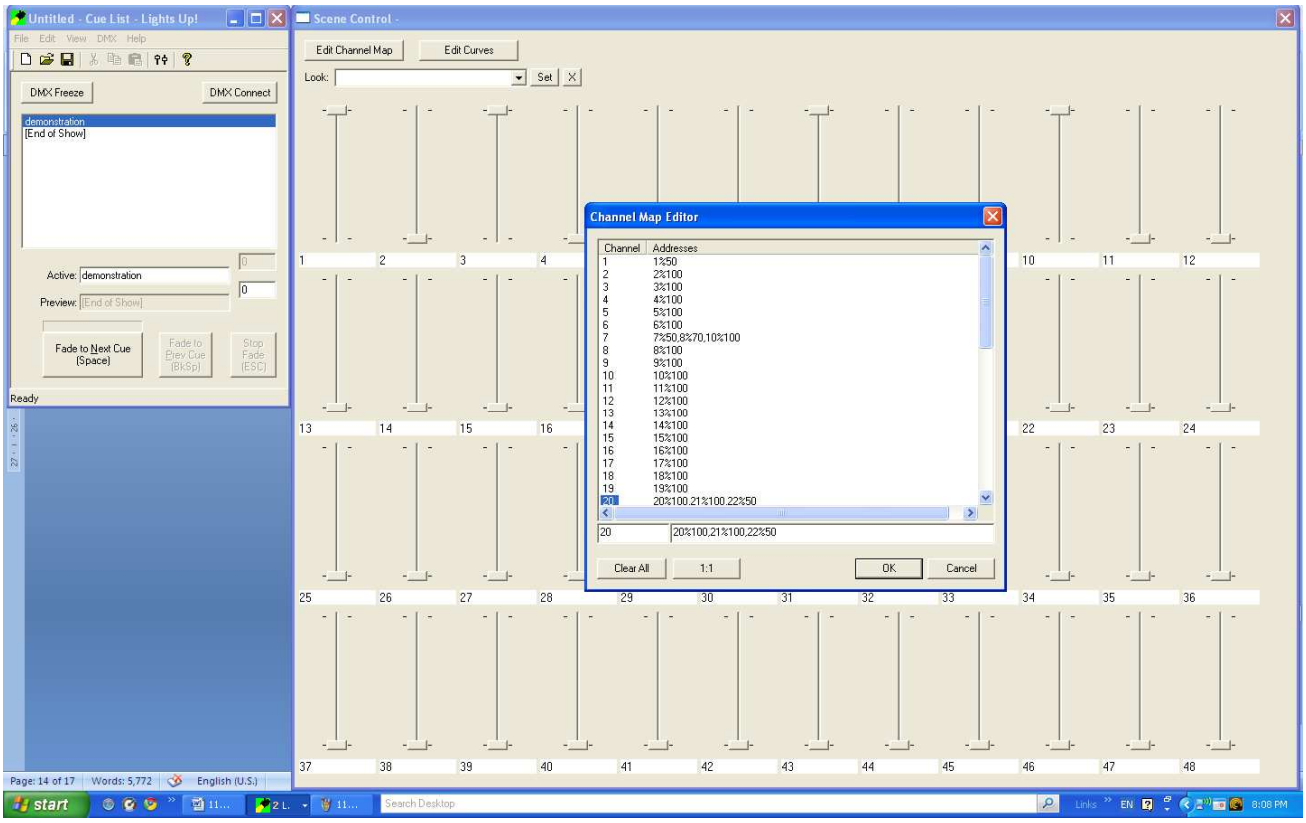
To change or add addresses mapped to a channel, click on the far left of the required channel, and that channel's information will also appear in the windows below. You can then adjust the existing DMX addresses and percentage values – for example, 1%50 means 'the slider for this channel addresses DMX address 001, and full slider travel gives only 50% of its maximum setting'.

This is useful because you can skip channels – for example in the case of our 6 channel lights, if we don't need channels 5 and 6 (which control patterns and strobe on the example head, so we may not want to send any control signals to them), we can simply readdress sliders 5 and 6 from DMX addresses 005 and 006 (their defaults), to any other DMX address up to 512, but in this case let's say 007 and 008 (for the next head).

Even more powerful is the option to add multiple DMX addresses to the same slider. We simply have to separate the values by a comma. So for example we can program slider 5 to be 7%50,10%100 and that will control a second head (starting address 007, or 111000001) to be blue. This means you can have colour control (on one or multiple heads) on one slider – and of course they can be a mix, such as 7%50,8%70,10%100, which would give us a light purple on our example heads – all on one slider!

In the following screen shot, slider 1 has been set to send a maximum value of 50% to DMX address 001. Slider 7 has been set up to control DMX address 007, 008 and 010 at 50, 70% and 100% as above. Slider 8 and 10 are still mapped to DMX addresses 008 and 010. If they are at zero, slider 7 will be the sole control for channels 008 and 010 – if slider 7 is at zero, sliders 8 and 10 will be the sole control for those addresses, but if slider 7 is used at the same time as 8 and/or 10, they will both be sending control instructions to DMX addresses 008 and 010. NOTE that the two signals will be added together – this could cause problems – eg. over 50%, the first channel causes flashing!

Slider 20 has similarly been set up to operate DMX addresses 20, 21 and 22.



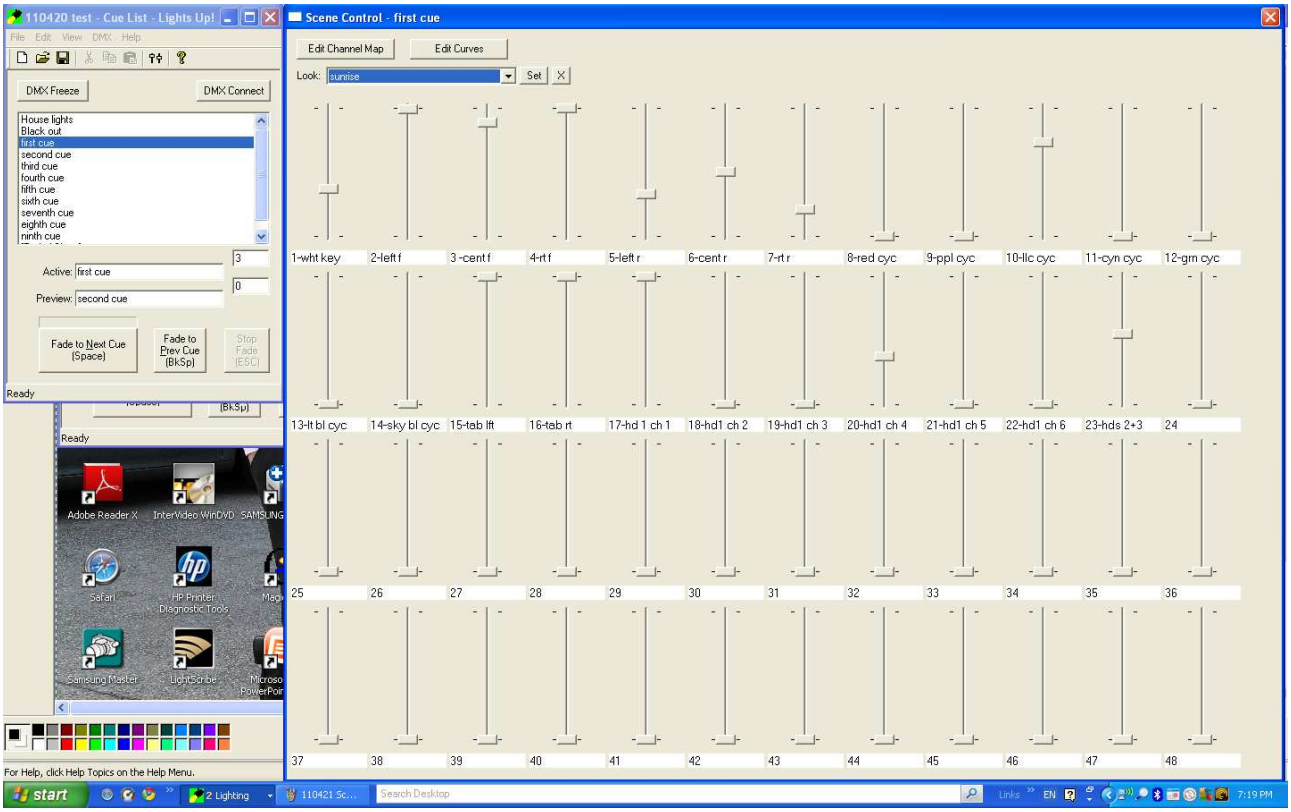
14) 'LOOKS'

'Looks' might be considered as templates of lighting scenes, and are useful for creating a set of slider positions for a lighting scene in a show and then easily applying those looks to newly created cues, either exactly the same as the 'look' selected, or using that 'look' as a basis for some variation of it for the particular cue. A simple example of this is that you may have your house lights set up to run through the controller. So you set your first cue, adjusting the house lights to the intensity (and perhaps colour) you wish, and then save that cue as a 'look' with a descriptive name, eg 'House Lights'. You then program the rest of the cues for the first half, and when you come to the interval, you select 'House Lights' from the 'looks' menu and insert it. You then program all the cues in the second half, and finally end once more with the 'look': 'House Lights'.

To save a cue as a new 'look': Click **[Set]** to the right of the 'Look' window. A new window pops up saying '**Add a new look**'. It invites you to '**Save the current slider settings as a new look named**: ....'. Type in your description of the look, eg 'Sunrise'. If you use a name already programmed, a message will ask if you want to overwrite it. Obviously if you intended to revise the selected 'look' then the answer is 'Yes' - the old 'look' of that name will be overwritten with the revised settings (you can check the exact

name to make sure you over-write it, by clicking on the arrow to the right of the 'Look:' window). Remember that you can't 'undo' if you accidentally erase a look you needed.

Here is a completed cue list with the channels named and a 'look' selected:



To see and select an already programmed 'look': If other 'looks' have already been programmed, you can see their names by clicking on the arrow to the right of the 'Look:' window: they will appear in a drop-down list, and you can select the one you want by clicking on it with the mouse.

As suggested above, you can create a new 'look' (template) based on an existing one; select the existing one you require and then adjust the sliders as required. When you have the scene you want for this new 'look', then click [Set] and type its new name.

REMEMBER that whilst creating a 'Look', you have also been creating a specific cue. Whichever cue is highlighted in the Cue List window will be memorized with the last settings of the Scene Control sliders when you either close the Scene Control window, move to another cue in the Cue List window, or save the show.

15) SETTING UP FOR SIMPLE USE

If you are setting up the system for use by a novice operator, create a 'Basic' file (it might be called 'Basic.sho'), with a number of useful cues, clearly named (eg: 'House lights', 'instant blackout', 'fade to blackout', 'instant all on', 'fade to all on', 'stage left', 'stage right', etc.) and save it on the Desktop (or some other obvious place). Show the novice how to power up the heads, start the computer, double-click the correct 'xxx.sho' file, click DMX connect, and then click on cues in the list as required. They don't need to use the Scene Control sliders or even know that that window exists!

For the next level operator, create a 'yyy.sho' file with the various stage looks attached to single sliders (using Channel Maps) which should be named descriptively, eg 'HOUSE', RIGHT', 'LEFT', 'BLUE', 'GREEN' etc. Show the user the Scene Control panel and how they can drag up individual sliders to manually select each look as required.

16) DMX FREEZE BUTTON

The [DMX Freeze] button, found at the top left of the Cue List window, freezes the control channel outputs at whatever levels they are currently at (the name of the 'live' cue is shown to the right of the DMX Freeze button). Once selected, this allows you to go to any future (or past) cue and, using the faders in the 'Scene Control' window, adjust that cue without affecting the current output. For example if a head has been knocked and is illuminating scenery that you don't want illuminated, you can run forward and cancel that head out of the upcoming cues. Once DMX Freeze is unselected, the cursor automatically returns to position indicating the cue currently showing, as the DMX output becomes live again, with no interruption to outputs. Alternatively, if 'Fade to Next Cue' or 'Fade to Previous Cue' buttons are selected, DMX Freeze is cancelled and the transition from the currently showing cue is immediately commenced.

Example: If you need to insert another complete cue out of sequence (as an extra or change from the next cue programmed – for example the house lights for the intermission may have been omitted!), then click the [DMX FREEZE] button, use the cursor to go to that scene, and use the copy and paste functions to copy the cue into the required position (paste will insert the copied cue immediately above the one selected by the cursor, so if you need it next, click on what is currently the next cue, click paste, and it will insert the copied one before it). Remember to adjust the cross-fade times into and out of the inserted cue, if necessary. Once you click the [DMX FREEZE] button

again to reactivate the DMX, you can then fade into the next cue as soon as required, and from that into the next programmed one, and you're back on track!

Caution: Remember also that any changes will be recorded onto the program – another reason to follow the protocol of saving the current performance, before the show starts, with this specific show name (see section 11 above, 3rd and 4th indented paragraphs).

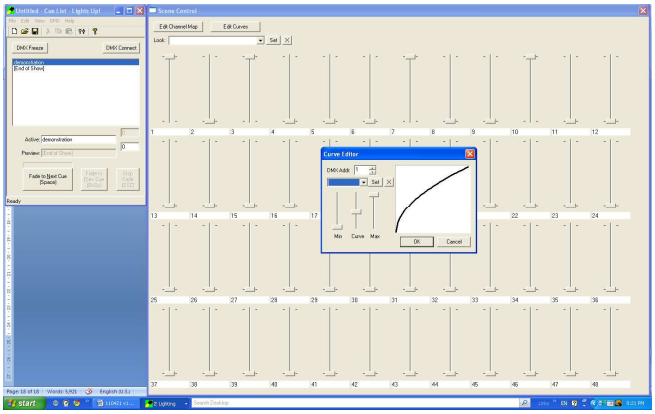
17) EDIT CURVES

Adjusting MAXIMUMS: We saw that you can adjust the maximum levels of any of the channels via the Channel Map (section 13) – but you can also do it this way: for example if your head or device needs its first address 1 to be limited to not above 50%, and you have mapped that address to DMX channel 1, then click on **[Edit Curves]**. Then type in or select the address you wish to adjust in the [DMX Addr:] window. Now adjust the 'Max' slider to the maximum value you require (eg half-way) – this will be shown on the graph - and then click OK. The window closes but the change has been made, and will be retained permanently for that address, until you change it again.

Adjusting MINIMUMS: Minimum settings are set in exactly the same way. A device may need to start at say 50%. This is achieved by adjusting the 'Min' slider

Adjusting CURVES: The middle setting is called 'Curve' and, as you will see from adjusting the middle slider, it changes the shape of the curve so that although starting at 0% and rising to 100%, it does not do it linearly, but rises more rapidly to start with. This may suit some types of head better than the standard linear response.

As with 'Looks', the 'Max', 'Min' and curve shape can be recorded as a standard 'template' shape. Here is a screen shot with the lamp response for channel 1 adjusted.



That's it. Have fun with this powerful little program! JKB 14/06/2011