

# Animated Lighting Software Overview



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## Software Overview

### 1) Dasher Pro™ and Animation Director™ overviews

Many people have asked the question about the differences between Animation Director™ and Dasher Pro™. The simplest answer is that Dasher Pro™ only works with grids while Animation Director™ will let you work with grids as well as let you write code in ACL and download your shows to a Monster Brain™.

### 2) Installing the software

Take the provided CD and install the software on your computer by executing the following steps:

1. Insert the CD into your CD-ROM drive. The setup program should automatically begin. If it doesn't, click on the Start button, select Run, and type in **D:\setup.exe**. Substitute the 'D' for the letter your computer uses for your CD-ROM drive.
2. Follow the instructions on the screen. It is advisable to use the suggested defaults when installing the software.

After the software has been installed you shouldn't need to reboot.

Run the software by clicking the Start button, selecting Programs, Animated Lighting, and then the software you wish to use.

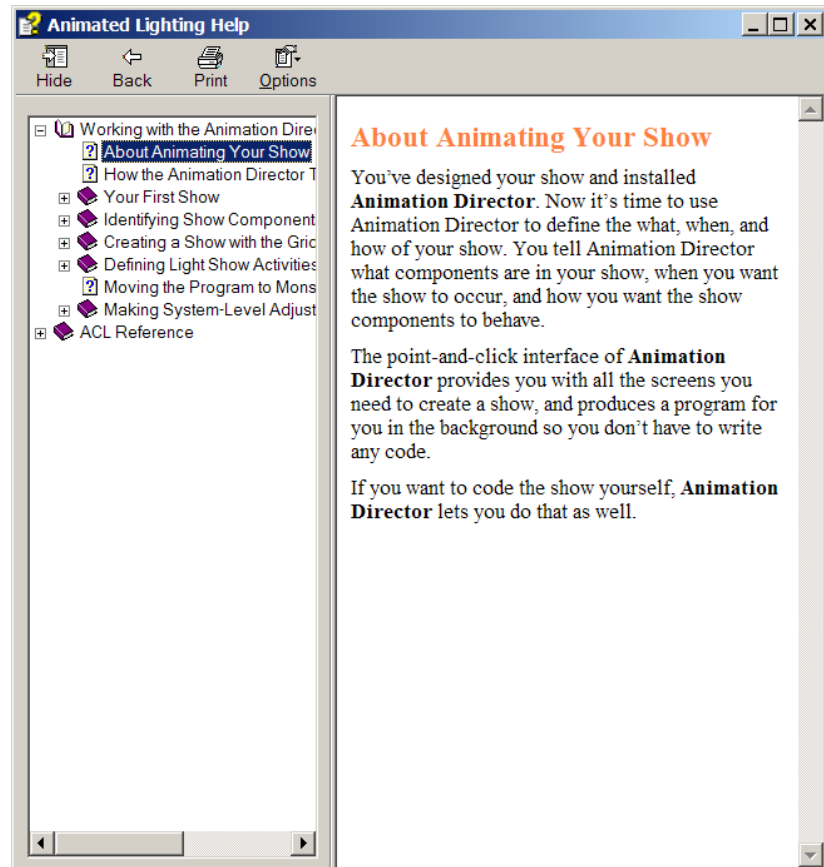
Please note the version number on the splash screen (the screen that appears when the software is starting) as you will be asked for this information when you contact Animated Lighting™ for assistance. This information is also available within the application by going to the Help menu and selecting the About menu option.



## Software Overview

### 3) Help

Before we get started programming, check out the included help information by pressing the F1 key. You should see the following window appear:



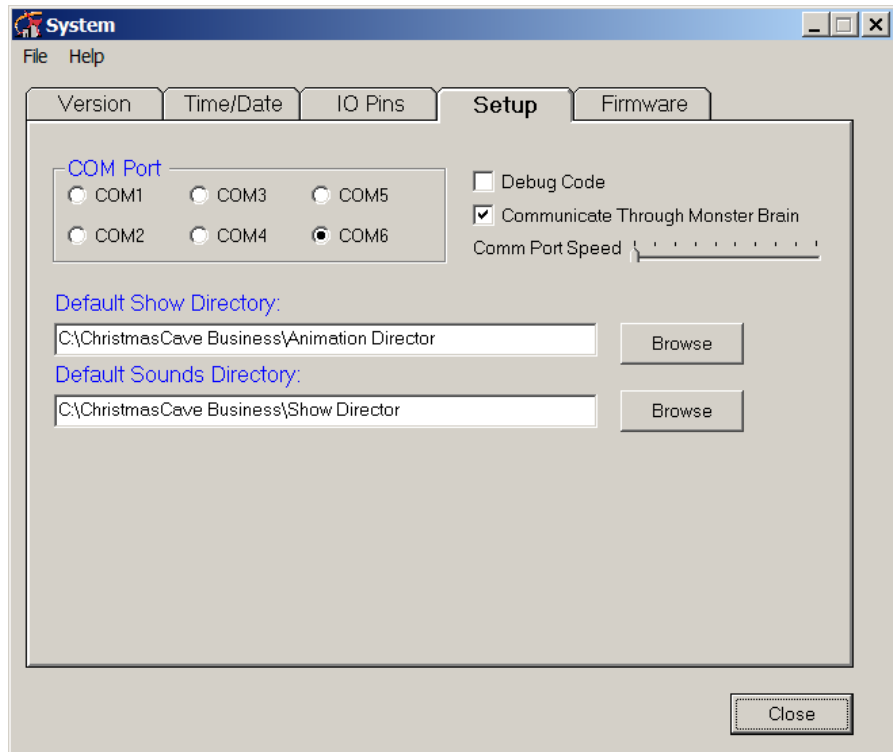
Click on the various topics on the left to bring up the associated information on the right.



## Software Overview

### 4) Configuring the software

The first thing a person needs to do after installing the software is to set it up. This is accomplished by clicking on the System button on the left side of the screen and then selecting the Setup tab. Then select the COM port you will be using on your computer and select the subdirectories of where you want the various files you will be working with to be stored. Finally, click the Close button to close the window and return you to the main Animation Director screen.



You should only need to do this once unless you change COM ports or file locations.

At this point we need to connect the computer to your Animated Lighting™ hardware. You can use a standard 9 pin serial cable to go between your computer's serial port to the DB9 port on the Monster Brain™ or you can use serial adapters and cat5 network cable to accomplish the same thing.



## Software Overview

Other connectivity options are available (i.e. you can connect your computer directly to devices) but for the sake of simplification we are assuming a Monster Brain™ is involved.

After configuring your COM port, select the Version tab at the top of the window and then click the 'Get Version' button. The Monster Brain™ should return it's firmware's version number, available memory and auto run flag status. If this happens then you have successfully established communication between the computer and the hardware. If there is a problem getting the version information from the Monster Brain, verify that there is power to the Monster Brain™ and that the heartbeat LED (Red LED) is blinking.

If you aren't successfully communicating with the hardware please refer to our troubleshooting guide located in Appendix B.



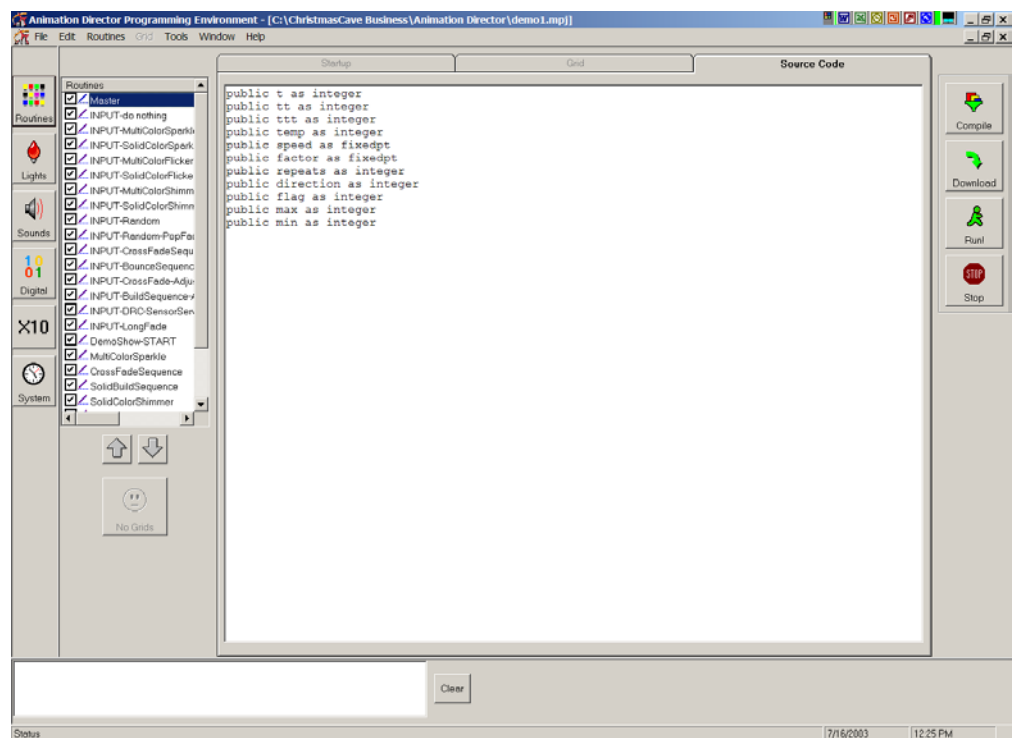
## Software Overview

### 5) Moving around in the software

You will notice there are different buttons on the left side of your screen.

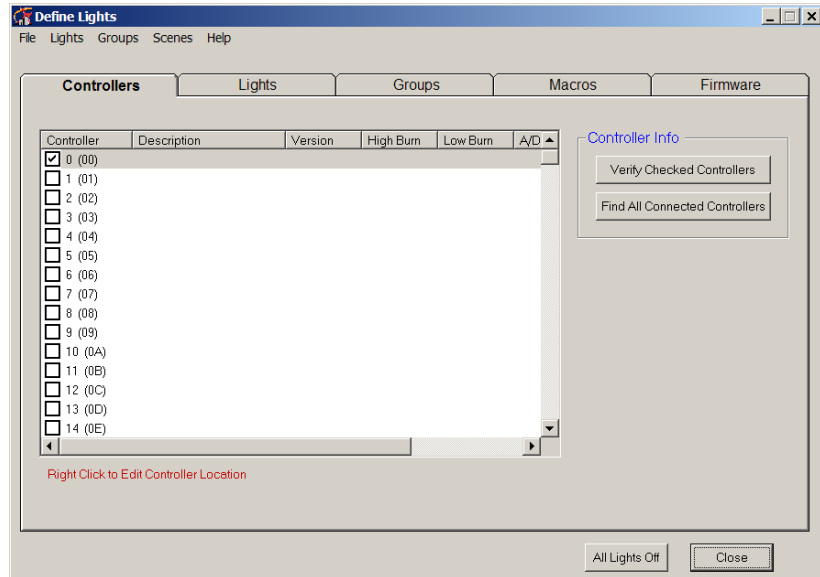


Clicking the Routines button will take you to screens where you can create and edit Startup, Grid, and code routines. Here is a sample screen shot:

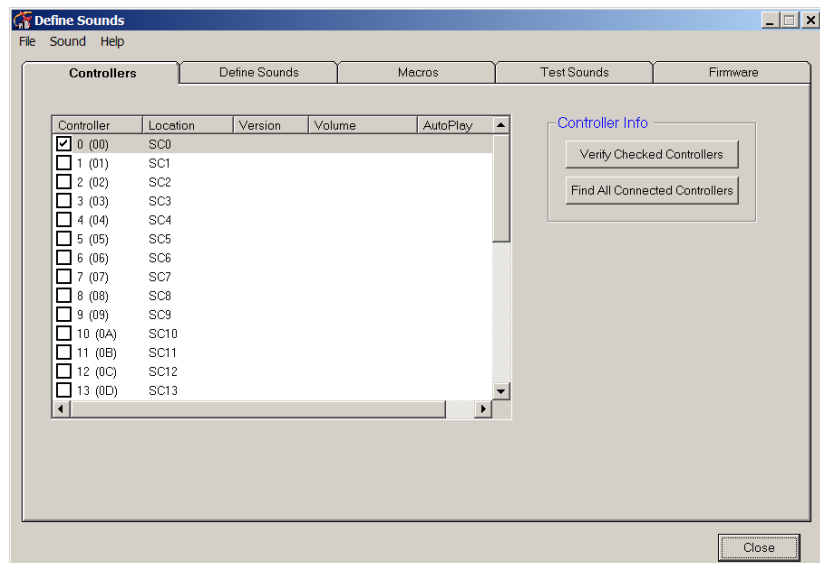


## Software Overview

Clicking the Lights button takes you to a window where you can define different properties of your lights, including naming them, selecting colors, and grouping them. You can also use this window to your lights to ensure they are working and can update the firmware on the LC units you have. A sample screen shot:

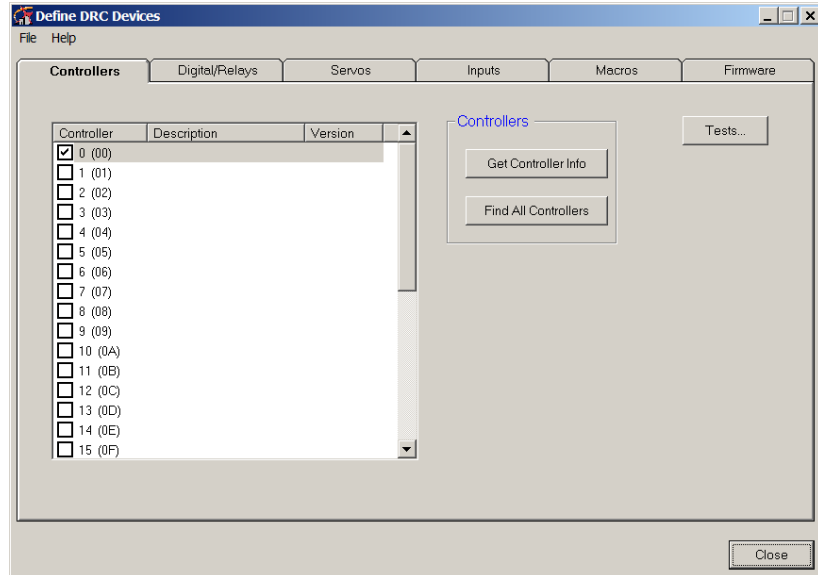


Clicking the Sounds button takes you to a window where you can work with different sound files and your SC-1 Sound Controller hardware. You can also use this window to update the firmware on the SC units you have. Here is a sample screen shot:

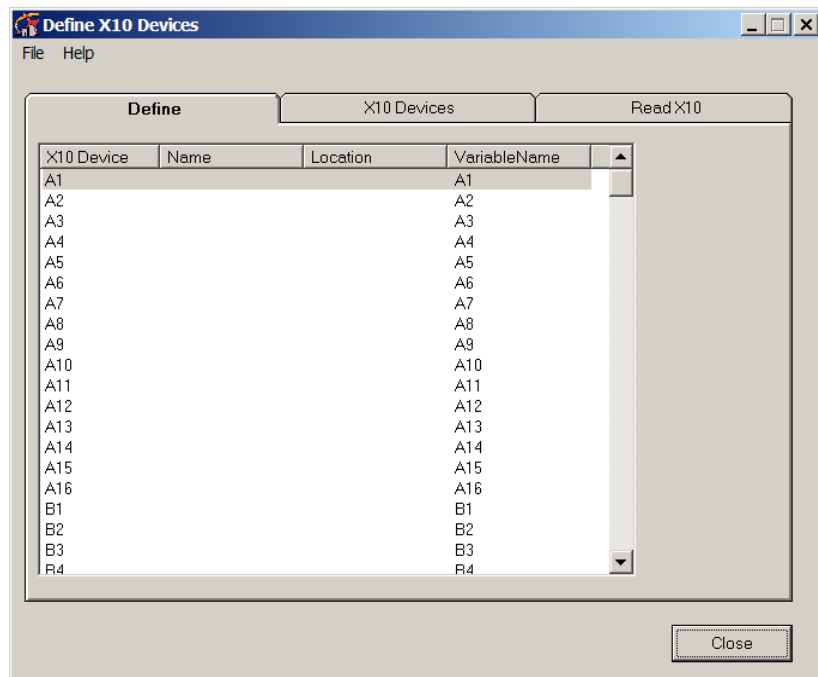


## Software Overview

Clicking the Digital button takes you to a window where you can work with different aspects of your DCR hardware. You can read the different inputs, test the various outputs, and update the firmware on the DCR units you have. Once again, a screen shot:



Clicking the X10 button takes you to a window where you can work with different aspects of your X10 hardware. You can test the various outputs. Here is a sample screen shot:



## Software Overview

The System screen was where we configured the software to use a specific COM port and directories to store your files.

At this point if you aren't successfully communicating with the hardware please refer to our troubleshooting guide located in Appendix B.




## Software Overview

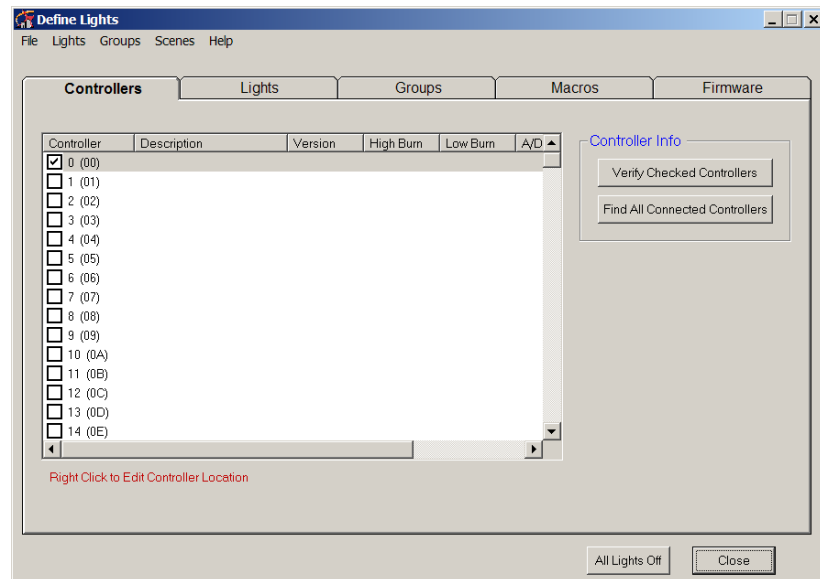
### 6) Creating a Show

In this section we will take you through the process of creating a Show using the Animation Director™ software. We will define different terms and lighting effects as we come across them.

Start a new show by clicking the File menu. A Show can contain multiple routines that include different types of effects and lighting patterns.

The first step in creating a new show is telling AD how many light controllers or other devices will be connected to the system (NOTE: one LC-64 = four LC-16's). You can select how many LC units you have available by clicking the Lights button  on the left side of the screen and then selecting the check boxes next to the Light Controller addresses you have. You will need to set different addresses on each controller (refer to Appendix C for a table of switch settings and the addresses they represent).

If you are connected to the Monster Brain and Light Controllers you can click the 'Verify Checked Controllers' or 'Find All Connected Controllers' buttons to make sure all controllers are connected to the system and you can communicate with them.



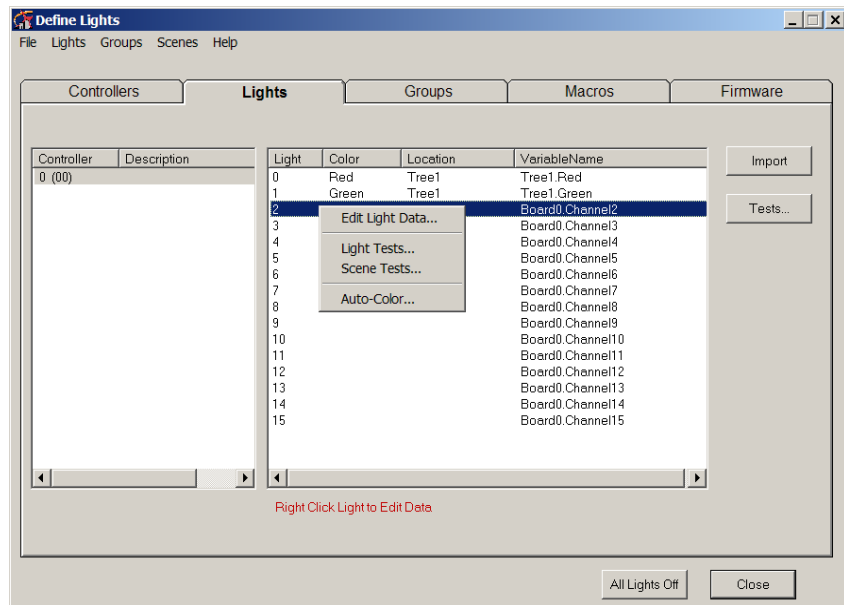
# Software Overview

## Channels

You can label a channel according to color and location to make it easier to reference in the future without having to memorize what lights are connected to each channel of your Light Controllers.

Click on the Lights tab at the top of the window. Next, right-click on each channel you wish to work with, select 'Edit Light Data' and proceed to define the name and color. It is helpful to use a naming convention when labeling the various channels (such as tree1.red, tree1.green, etc) so they are easier to recall later.

There is a special feature called 'Auto Color' that allows you to label the color of the lights if they are connected to your controller in a patterned order.



# Software Overview

## Groups

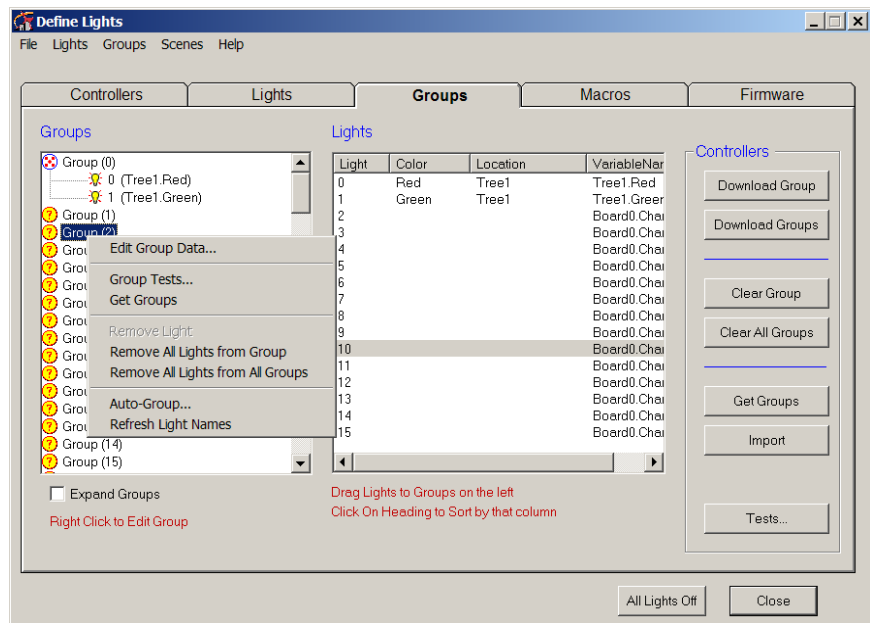
You can group channels by color or location/zone. This allows you to turn on multiple channels using one command.

Click on the Groups tab at the top of the window. There is an Auto-Group function available by right clicking the desired group and selecting the 'Auto-Group' function. This function allows you to create groups by color and/or location.

You can also create groups by dragging lights from the 'Lights' box on the right to the desired group in the 'Groups' box on the left. You can change the name of the group by right clicking on the group and selecting 'Edit Group Data'.

Whenever you create new groups or modify current groups, you must download new group information to the light controllers. When downloading new groups you should first clear the previous group information.

Up to 120 groups can be created and stored in any light show, regardless of the number of Light Controllers.



## Software Overview

### Configuring the Startup Routine

You can modify the Startup Routine so that your show will start and stop at specified times of the day and week. You can also have your show start on the occurrence of an event like a digital input, analog input or an X10 input. A digital input can be any device that is on or off, like a door matt switch or motion detector. An analog input is a variable input that changes its value, like a light sensor or pressure sensor. You can have the show loop continuously when the power is on and the Monster Brain™ is running by selecting 'Always'.

The screenshot shows the 'Startup' configuration window. On the left, a 'Routines' list has 'Startup' selected. The main area is divided into several sections:

- Trigger Conditions:** Includes checkboxes for 'Days of Week' (checked), 'Digital Input', 'Analog Input', 'X10 Command Received', and 'Always'.
- When Triggered:** Includes radio buttons for 'Loop Continuously' (selected), 'Play Once', and 'Randomize'.
- Initialize:** Includes a checked checkbox for 'Groups'.
- Days of the Week:** A table with columns for day, start time, and end time. All days from Sunday to Saturday are checked, with both start and end times set to 5:00pm and 11:59pm respectively.
- X10 Received:** A dropdown menu set to 'A1' and radio buttons for 'On' (selected) and 'Off'.
- Digital Inputs:** Radio buttons for 'Monster Brain Board' (selected) and 'DRC Board', a dropdown menu for 'DRC0 Input0', and radio buttons for 'Input goes On' (selected) and 'Input goes Off'.
- Analog Inputs:** Radio buttons for 'Monster Brain Board' (selected) and 'DRC Board', a dropdown menu for 'DRC0 Analog0', radio buttons for 'Goes Above' (selected) and 'Goes Below', and a text field for 'Analog Trigger Value' containing '512'.



## Software Overview

### Creating a grid routine

A grid routine is one of the methods used to program the Monster Brain™ using a graphical interface. A grid routine allows you to program which channels to turn on and off at different points in time. A new grid routine can be created by selecting the Routines menu and then selecting 'Add New Grid Routine'. The grid routine configuration window is shown below. You can label the routine according to its function or sequence of events when you create it or by double clicking the label in the 'Routines' box later.

When you create a new grid routine you need to specify the number of columns and the default duration for each column. You can also specify an audio/music file for the computer to play while the grid is running. You can use the Audio Wizard to synchronize your lights to the beat of the music you have chosen.

**Add New Routine**

Routine Name  
NewRoutine  
Add  
Cancel

Grid Properties  
Columns: 60  
Time Per Column: 1 Secs

Optional Song  
 Don't Change Columns  
 Change Column Count To Match Song Length  
 Change Column Time To Match Song Length  
Clear Song  
Browse

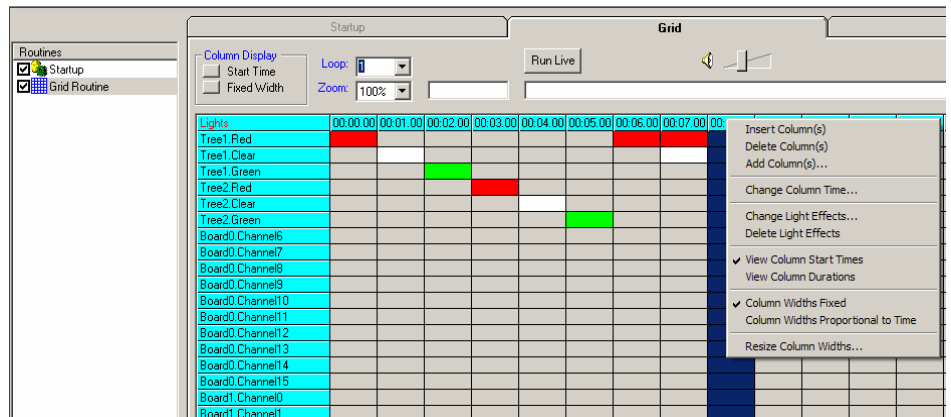


# Software Overview

## Modifying a grid routine

Once you have created a grid routine you can modify it so that individual lights turn on at precise times in the show. When you look at a grid you will notice that the top row of the grid is the time when that column will ‘play’ during playback. Also notice the labels of the lights and groups that you have created listed in the left-most column.

By clicking areas inside the grid you can specify when certain lights or groups turn on and off. You can drag the column separators to increase or shorten the length of time for a light sequence within a routine. You also can manually set the time for each column by right clicking the column heading and selecting ‘Change Column Time’.



## Software Overview

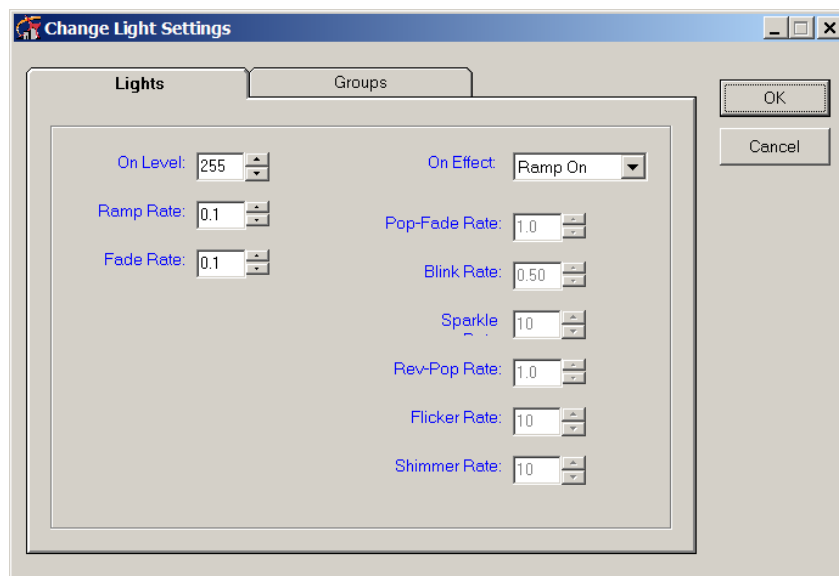
### Levels, Styles and Effects

Using Animation Director™, you can modify how lights turn on and off and how long it takes for a light to turn on and off. First you must set up the time for light to ramp and fade when different effects are used. You must also specify the level that the lights will turn on to.

- *On Level*: Specifies the intensity level of the lights when turned on using an effect.
- *Ramp Rate*: Specifies the time it will take to turn on a light or group of lights to the chosen on level.
- *Fade Rate*: Specifies the time it will take to turn a light or group of lights off.

Animation Director™ also gives you three different types of styles to use with your lighting show: set, fade, and add. The “style” setting is used to control how lights that already on are affected when new lights are being turned on.

- *Style Set*: This style turns off lights instantly that are not on in the following column.
- *Style Fade*: This style turns off lights at the determined fade rate that are not on in the following column.
- *Style Add*: This style adds lights to the lights that are already on from previous columns.



## Software Overview

Animation Director™ gives you seven different types of effects to use with your lighting show: ramp, blink, pop fade, rev pop fade, sparkle, flicker, and shimmer. Each of these effects has settings you can modify to tailor the appearance of the effect. You can modify these settings by right-clicking the column header of the column in which you would like a new effect to occur. Different effects use different combinations of ramp, fade, and special rates.

- *Ramp*: The ramp effect turns on the output of the light controller to the specified level. The Ramp effect uses the ramp rate when turned on, and the fade rate when turned off.
- *Blink*: The blink effect turns on and off a light on the output of the light controller at a specified rate. The Blink effect uses the ramp rate, fade rate, and blink rate.
- *Pop Fade*: The pop fade effect turns on the light or group of lights instantly then fades to off at the specified fade rate. The Pop Fade effect uses the Pop Fade rate.
- *Rev(erse)-Pop Fade*: The rev-pop fade effect turns an already on light off instantly then ramps back to the on level. The Rev-Pop Fade effect uses the rev-pop rate.
- *Sparkle*: When used with an individual light, the sparkle effect will pop fade the light at random times. When used with a group, the sparkle effect will pop fade individual lights in a group at random times. The Sparkle effect uses the sparkle rate.
- *Flicker*: The Flicker effect makes the light or group of lights appear to look like a burning candle. When used with groups the lights will flicker individually. The Flicker effect uses the flicker rate.
- *Shimmer*: The Shimmer effect varies the intensity of the lights connected to the light controller. When used with groups the shimmer effect the light will shimmer simultaneously. The Shimmer effect uses the shimmer rate.

When you change the style or effect of a column, all subsequent columns will use that style and effect until a new style and/or effect is defined along with set levels and rates.

Columns that have been modified from default settings will be highlighted in yellow, indicating a change in brightness level, style, effect, or rate.



## Software Overview

Once you have finished your grid routine you can test it by clicking the 'Run-Live' button. If selected an audio/music file to be associated with the grid it should start playing as well.

### 7) Lab: Create grid routines

#### Grid One

1. Create a grid routine
2. Select what lights you want on and off
3. Select Run-live and watch the outputs

#### Grid Two

1. Create a grid routine
2. Select what lights you want on and off
3. Select what effects you'd like to have in at least two different columns
4. Select Run-live and watch the outputs

#### Grid Three

1. Create a grid routine, selecting an audio file to use with the grid
2. Run the Audio Wizard to time the grid to the audio file
3. Select what lights you want on and off
4. Select Run-live and watch the outputs
5. Convert grid to code by opening Routines and then selecting Change Grid to Source Code
6. Examine code



## Software Overview

### Creating a code routine

A code routine is another one of the methods used to program the Monster Brain™ by writing ACL code. A new code routine can be created by selecting the Routines menu and then selecting ‘Add New Code Routine’.

Animation Control Language (ACL) provides you with a comprehensive set of commands and functions to create a show from scratch and control every aspect of it along the way.

Please review the material provided in the ACL Reference of the help system included with Animation Director™ is Help system and refer to the examples to get a feel for how routines are constructed to provide the least amount of coding with the optimal affect.

In general, as you construct your program:

Define and declare variables and constants first.

In each routine:

Define the behavioral attributes first (such as the trio of level, rate, and effect for lights).

Construct your control structure.

Identify the target show component.

Whenever you turn on a component, don't forget to also turn it off.

Incorporate delays to establish activity lengths, time between activities in the routine, and time between routines.



## Software Overview

### 8) LAB: Create code routines

#### Code Routine 1

1. Create a code routine
2. Type in the following code in the code window:

```
light.setonlevel(255)  
light.setrate(alrateramp, 0)  
light.setrate(alratefade, 0)  
light.setoneffect(aleffectramp)  
light.alloff
```

Infinite

```
Light.on(0)  
Delay_seconds(1)  
Light.off(0)  
Delay_seconds(1)
```

3. Compile the routine
4. Download the routine to the Monster Brain™
5. Click the Run button and watch the outputs



## Software Overview

### Code Routine 2

1. Create a code routine
2. Type in the following code in the code window:

```
public t as integer

light.setonlevel(255)
light.setrate(alrateramp, 0)
light.setrate(alratefade, 0)
light.setoneffect(aleffectramp)
light.alloff

infinite

For t=0 to 3
  Light.on(t)
  Delay_seconds(0.3)
  Light.off(t)
  Delay_seconds(0.3)
Next t
```

3. Compile the routine
4. Download the routine to the Monster Brain™
5. Click the Run button and watch the outputs



## Software Overview

### Code Routine 3

1. Create a code routine
2. Type in the following code in the code window:

```
public t as integer

light.setonlevel(255)
light.setrate(alrateramp, 0)
light.setrate(alratefade, 0.4)
light.setoneffect(aleffectramp)
light.alloff

infinite

For t=0 to 7
  Light.on(t)
  Delay_seconds(0.2)
  Light.off(t)
  Delay_seconds(0.2)
Next t
```

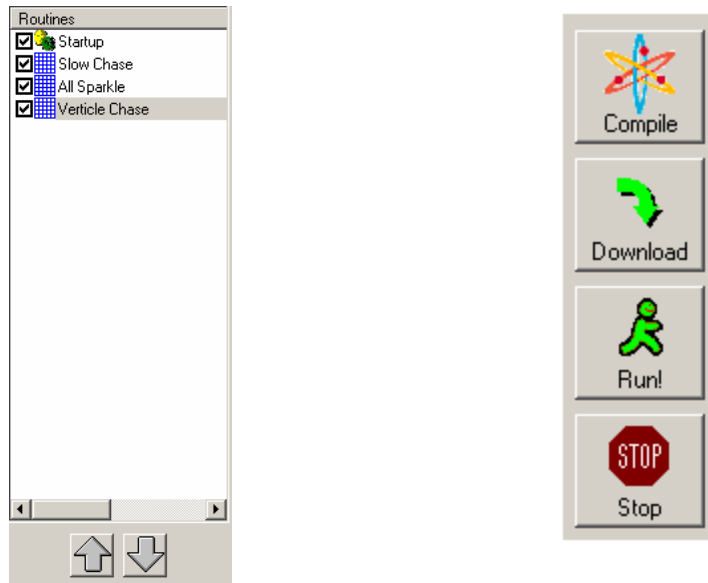
3. Compile the routine
4. Download the routine to the Monster Brain™
5. Click the Run button and watch the outputs



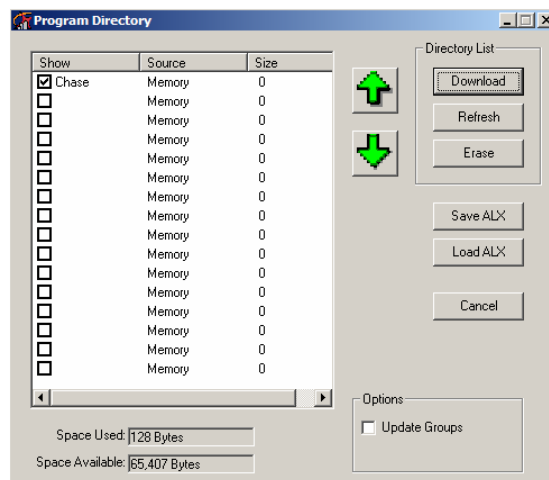
## Software Overview

### Programming the Monster Brain™


When you are ready to give the show a try you can program the Monster Brain™ with the show. Do this by checking the boxes of all the routines you would like in your finished show and click the 'Compile' button on the right side of the screen.



Once the show compiles without any errors you can download it to any one of the 16 directories available. Click the Download button on the right-side of the screen, select a directory, and then click download.



## Software Overview

You may want to check the current time in the Monster Brain by clicking the 'Get Date/Time from MB' button on the Time/Date tab of the System window . If the time and date are incorrect click the 'Get Computer Time' button and then the 'Set Date/Time' button to correct the situation.

After downloading to the Monster Brain™, click the 'Run' button on the right side of the screen your show will start running.

In case of a power outage you can set the 'Auto-Run Flag' so when power is restored your light show will run automatically. If this flag is not set the Monster Brain™ will wait for a 'Run' command before it starts running the Startup routine (and hence your show).

You can set the 'Auto-Run flag' by opening the 'Tools' menu and clicking on the 'Set Auto-Run' selection.

NOTE: Time and Date information may be lost during a power outage unless a backup battery is used.



## Software Overview

### 9) Typical programming cycle

Once you have taken the initial steps of creating different routines you may find yourself in a cycle:

- Note errors and fix them
- Compile
- Download
- Run
- Repeat until everything works as planned

This is a normal part of creating shows and is to be expected. As you work with the technology and gain experience creating shows this cycle will shorten considerably.

### 10) Completing a project (start to finish)

In summary, the steps a person would follow to complete a project from start to finish are:

#### Pre-bid phase

- View location of display and generate display ideas
- Take measurements and create drawings
- Calculate loads
- Select your hardware and layout channels
- Handle mounting issues

#### Installation phase

- Installation
- Testing
- Weather-proofing

#### Software phase

- Set-up and define channels
- Group channels
- Programming cycle



# Appendix A

# Sample load calculation spreadsheet

<b>Bulb and Wattage Calculations</b> <i>(all measurements are in feet unless otherwise noted)</i>														
for C7 bulbs use 5 watts per bulb for C9 bulbs use 7 watts per bulb														
<b>Straight line</b>														
length of side (in feet)	bulb spacing (in inches)	number of lines	number of bulbs per shape	total	wattage per bulb	per shape	total	amperage at 120VAC per bulb	per shape	total	amperage at 240VAC per bulb	per shape	total	
1	12.00	1	1.00	1	7	7.00	7.00	0.06A	0.06A	0.06A	0.03A	0.03A	0.03A	
<b>Rectangle outline</b>														
height	width	bulb spacing (in inches)	number of shapes	number of bulbs per shape	total	wattage per bulb	per shape	total	amperage at 120VAC per bulb	per shape	total	amperage at 240VAC per bulb	per shape	total
1	1	12.00	1	4.00	4	28.00	28.00	28.00	0.06A	0.23A	0.23A	0.03A	0.12A	0.12A
<b>Triangle outline</b>														
length of side (in feet)	bulb spacing (in inches)	number of shapes	number of bulbs per shape	total	wattage per bulb	per shape	total	amperage at 120VAC per bulb	per shape	total	amperage at 240VAC per bulb	per shape	total	
1	12.00	1	3.00	3	7	21.00	21.00	0.06A	0.18A	0.18A	0.03A	0.09A	0.09A	
<b>Circle outline</b>														
diameter (in feet)	bulb spacing (in inches)	number of shapes	number of bulbs per shape	total	wattage per bulb	per shape	total	amperage at 120VAC per bulb	per shape	total	amperage at 240VAC per bulb	per shape	total	
1	12.00	1	3.14	3.14	7	21.99	21.99	0.06A	0.18A	0.18A	0.03A	0.09A	0.09A	



## Set-up and Troubleshooting Guide

### General issues:

- Hit Reset button on all LC's
- Make sure RS-232/485 connections are in place
- Check address switches
- Be sure all controllers are plugged in
- Reset all controllers
- Check to see that the heartbeat LEDs on all of the controllers and the Monster Brain are blinking
- Verify that all controllers are connected in a daisy chain fashion
- Check to see that all controllers have unique addresses
- Push the test button on the light controllers to verify that all connections are made properly and in order

### Enclosure issues:

- Make sure that power is disconnected when making connections
- Be sure that all connections are water proof to prevent shorts
- Use a strain relief to prevent wires from being pulled out the bottom of the enclosure
- After connecting lights to a controller, push the test button to see that lights are connected in order
- You may need to drill a hole in the bottom of the enclosure to route network cables to multiple controllers

### If running a show:

- Check to see that the Monster Brain's Heartbeat LED (Red) and Run LED (Green) are blinking
- Check to see if the light controllers are receiving commands (the green LED flashes on a light controller when a command is received)
- If using a 'Startup Routine' be sure that the Monster Brain's clock is set.
- Make sure your trigger conditions are met.



## Appendix C

## Animated Lighting's Controller Addressing

Use the following chart for setting the address switches of your controllers (A1, A0)

NOTE: the LC-64 is considered to be four 16 channel light controllers so addressing will vary.

Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value	Controller Number	Address Value
0	00	32	20	64	40	96	60	128	80	160	A0	192	C0	224	E0
1	01	33	21	65	41	97	61	129	81	161	A1	193	C1	225	E1
2	02	34	22	66	42	98	62	130	82	162	A2	194	C2	226	E2
3	03	35	23	67	43	99	63	131	83	163	A3	195	C3	227	E3
4	04	36	24	68	44	100	64	132	84	164	A4	196	C4	228	E4
5	05	37	25	69	45	101	65	133	85	165	A5	197	C5	229	E5
6	06	38	26	70	46	102	66	134	86	166	A6	198	C6	230	E6
7	07	39	27	71	47	103	67	135	87	167	A7	199	C7	231	E7
8	08	40	28	72	48	104	68	136	88	168	A8	200	C8	232	E8
9	09	41	29	73	49	105	69	137	89	169	A9	201	C9	233	E9
10	0A	42	2A	74	4A	106	6A	138	8A	170	AA	202	CA	234	EA
11	0B	43	2B	75	4B	107	6B	139	8B	171	AB	203	CB	235	EB
12	0C	44	2C	76	4C	108	6C	140	8C	172	AC	204	CC	236	EC
13	0D	45	2D	77	4D	109	6D	141	8D	173	AD	205	CD	237	ED
14	0E	46	2E	78	4E	110	6E	142	8E	174	AE	206	CE	238	EE
15	0F	47	2F	79	4F	111	6F	143	8F	175	AF	207	CF	239	EF
16	10	48	30	80	50	112	70	144	90	176	B0	208	D0	240	F0
17	11	49	31	81	51	113	71	145	91	177	B1	209	D1	241	F1
18	12	50	32	82	52	114	72	146	92	178	B2	210	D2	242	F2
19	13	51	33	83	53	115	73	147	93	179	B3	211	D3	243	F3
20	14	52	34	84	54	116	74	148	94	180	B4	212	D4	244	F4
21	15	53	35	85	55	117	75	149	95	181	B5	213	D5	245	F5
22	16	54	36	86	56	118	76	150	96	182	B6	214	D6	246	F6
23	17	55	37	87	57	119	77	151	97	183	B7	215	D7	247	F7
24	18	56	38	88	58	120	78	152	98	184	B8	216	D8	248	F8
25	19	57	39	89	59	121	79	153	99	185	B9	217	D9	249	F9
26	1A	58	3A	90	5A	122	7A	154	9A	186	BA	218	DA	250	FA
27	1B	59	3B	91	5B	123	7B	155	9B	187	BB	219	DB	251	FB
28	1C	60	3C	92	5C	124	7C	156	9C	188	BC	220	DC	252	FC
29	1D	61	3D	93	5D	125	7D	157	9D	189	BD	221	DD	253	FD
30	1E	62	3E	94	5E	126	7E	158	9E	190	BE	222	DE	254	FE
31	1F	63	3F	95	5F	127	7F	159	9F	191	BF	223	DF	255	FF



## Appendix D

### Updating software and product firmware

Occasionally there will be an update of Animated Lighting's Software, Animation Director or Dasher Pro. These updates are distributed to customers of Animated Lighting who have purchased Animation Director or Dasher Pro. These updates are distributed for the purpose of adding features and fixes to Animated Lighting products and demonstrate Animated Lighting's willingness to make their product more robust and easy to use.

When installing a new version of Animation Director or Dasher Pro, it is recommended you update the firmware in your hardware to ensure proper operation. By following the proper procedures below, your PC's software and your hardware will all be updated.

#### **Installing Animation Director™ from CD:**

1. Insert the Animation Director™ CD into your PC.
2. If an installation window doesn't open automatically, start the installation by browsing for your CD-ROM drive, and double click the 'SETUP.exe' file.
3. Follow the setup instructions to install the software.

#### **Installing Animation Director™ update from e-mail:**

1. Download the attachment from the update e-mail to a known location on your PC.
2. Unzip the 'disk1.zip' file you downloaded.
3. If an installation window doesn't open automatically, start the installation by browsing for the 'disk1' folder you unzipped and double click the 'SETUP.exe' file.
4. Follow the setup instructions to install the software.



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### Updating the firmware on your Monster Brain™:

1. Connect the PC to the Monster Brain™ using a DB9 serial cable.
2. Apply power to the Monster Brain™.
3. Start Animation Director™.
4. Click the 'System' button on the Animation Director™ desktop.
5. In the 'System' window, under the 'Setup' tab, select which COM port you use to connect to the Monster Brain™. Also check the box next to 'Communicate Through Monster Brain.'
6. In the 'System' window, under the 'Firmware' tab, click 'Browse' to find the firmware file for the Monster Brain™. (*MonsterBrain.ehx*) It will be located where you installed Animation Director™. If you installed Animation Director™ to the default location it will be in: "C:\Program Files\Animated Lighting\Animation Director\Firmware."
7. Once you have located the correct file, *MonsterBrain.ehx*, click 'Open' to load the file.
8. Click 'Download' to update the firmware in the MB. You should see numbers cycling verifying new firmware is being downloaded. The Monster Brain's LEDs will also be flickering indicating it is receiving the new firmware.
9. If the firmware was loaded correctly the Monster Brain's Heartbeat LED will blink. If there is an error, make sure the above steps were performed correctly.



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### Updating the firmware in your Light Controller using a Monster Brain™:

1. Connect the PC to the Monster Brain™ using a DB9 serial cable.
2. Connect the Monster Brain™ to the Light Controller using a CAT5 cable.
3. Apply power to the Monster Brain™ and the Light Controller.
4. Start Animation Director™.
5. Click the 'System' button on the Animation Director™ Desktop.
6. In the 'System' window, under the 'Setup' tab, select which COM port you use to connect to the Monster Brain™. Also check the box next to 'Communicate Through Monster Brain.'
7. In the 'System' window, under the 'Version' tab, click 'Get Info' to verify communication with the Monster Brain™. If version information is not returned, check for proper connection with the PC and the Monster Brain™ and that the Monster Brain™ is running current firmware.
8. Close the 'System' window.
9. Click the 'Lights' button on the Animation Director™ Desktop.
10. In the 'Define Lights' window under the 'Controllers' tab, check the addresses of the controllers you have connected in your system.
11. In the 'Define Lights' window under the 'Firmware' tab, click 'Browse' to find the firmware file for your light controller(s). (*LC16-xxx.ehx*, where xxx is the version number of the firmware, for example: LC16-500.ehx) It will be located where you installed Animation Director™. If you installed Animation Director™ to the default location it will be in: "C:\Program Files\Animated Lighting\Animation Director\Firmware."
12. Once you have located the correct file, *LC16-xxx.ehx*, click 'Open' to load the file.
13. In the 'Define Lights' window under the 'Firmware' tab, check the addresses of the Light Controller(s) to be updated.
14. Click 'Download' to update the firmware in your Light Controller(s). You should see numbers cycling verifying new firmware is being downloaded. The Light Controller's LEDs will also be flickering indicating it is receiving the new firmware.



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15. If the firmware was loaded correctly the Light Controller's Heartbeat LED will blink. If there is an error, make sure the above steps were performed correctly.

### **Updating the firmware in your Light Controller without using a Monster Brain™:**

1. Connect the Light Controller to the PC using the DB9 serial cable.
2. If using a CONV-1, RS-232 to RS-485 serial converter, connect the PC to the CONV-1 using a DB9 serial cable. Connect the CONV-1 to the Light Controller(s) using a CAT5 cable.
3. Apply power to the Light Controller and the CONV-1, if using a serial converter.
4. Start Animation Director™.
5. Click the 'System' button on the Animation Director™ Desktop.
6. In the 'System' window, under the 'Setup' tab, select which COM port you use to connect to the Light Controller. Also un-check the box next to 'Communicate Through Monster Brain.'
7. Click the 'Lights' button on the Animation Director™ Desktop.
8. In the 'Define Lights' window under the 'Controllers' tab, check the addresses of the controllers you have connected in your system.
9. In the 'Define Lights' window under the 'Firmware' tab, click 'Browse' to find the firmware file for you light controller(s). (*LC16-xxx.ehx*, where xxx is the version number of the firmware, for example: LC16-500.ehx) It will be located where you installed Animation Director™. If you installed Animation Director™ to the default location it will be in: "C:\Program Files\Animated Lighting\Animation Director\Firmware."
10. Once you have located the correct file, *LC16-xxx.ehx*, click 'Open' to load the file.
11. In the 'Define Lights' window under the 'Firmware' tab, check the addresses of the Light Controller(s) to be updated.
12. Click 'Download' to update the firmware in your Light Controller(s). You should see numbers cycling verifying new firmware is being downloaded. The Light Controller's



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LEDs will also be flickering indicating it is receiving the new firmware.

13. If the firmware was loaded correctly the Light Controller's Heartbeat LED will blink. If there is an error, make sure the above steps were performed correctly.

