Installation and Introduction to Programming

LightJockey
Version 2.5 for
Windows 95/98/Me/2000/XP

Installation

To install LightJockey, perform the following steps:

1. "Hardware installation" on page 5
2. "Software installation" on page 34
3. "Hardware configuration" on page 38
4. "Connecting the serial data link" on page 40

This guide assumes that the installation steps will be performed in this order, but this is not a requirement. It is possible to install the LightJockey software first, for example.

Hardware installation

The LightJockey controller software comes bundled with hardware to enable DMX transmission to control DMX-512 fixtures from your PC. This hardware must be installed and configured within LightJockey before use.

Follow the procedure that applies to the operating system that your PC is running:

- "Windows 2000 or Windows XP" on page 5, or

- "Windows 95, Windows 98, or Windows ME" on page 23.

Windows 2000 or Windows XP

Support for Windows 2000 and Windows XP was introduced in LightJockey version 2.0. Ensure that you have the appropriate version, or later, before starting these procedures. The version number is printed on the CD. Updates can be downloaded from the Service pages at http://www.martin.dk

In order to install the required drivers, you must be logged on to Windows 2000 with administrator rights.

LightJockey supports four types of hardware under Windows 2000/XP:

- LightJockey PCI card. Follow the steps under "Installing the LightJockey PCI card on a Windows 2000/XP system" on page 6
- LightJockey 4064 8-bit ISA card. Follow the steps under "Installing the LightJockey 4064 ISA card on a Windows 2000/XP system" on page 8
- LightJockey PCMCIA interface. Follow the steps under "Installing the LightJockey PCMCIA interface on a Windows 2000/XP system" on page 13.

• LightJockey USB interface. Follow the steps under "Installing the LightJockey USB/DMX interface on a Windows 2000 system" on page 13, or "Installing the LightJockey USB/DMX interface on a Windows XP system" on page 17.

Installing the LightJockey PCI card on a Windows 2000/XP system

The LightJockey PCI card comes in two flavors - the PCI 2048 channel version and the PCI 512 channel version. The installation process is identical for both types.

Support for the LightJockey PCI cards was introduced in LightJockey version 2.1. Ensure that you have this version, or later, before starting these procedures. The version is printed on the CD. Updates can be downloaded from the Service pages at http://www.martin.dk

The card can be damaged by static electricity. Release static electric charges before handling the hardware by touching a grounded metal object, and always avoid touching sensitive electronic components.

Installing the card

To install the LightJockey PCI card:

1. Turn off the computer.
2. Disconnect the power cord. Failure to unplug the cord could result in injury to you or damage to the computer.
3. Remove the computer cover.
4. Find an available PCI expansion slot and remove its cover plate from the back of the computer chassis.
5. Holding the card by the bracket and corner, push the card's copper contacts into the expansion slot. Ensure that the card is correctly seated in the PCI slot.
6. Fasten the card to the chassis.
7. Replace the cover and reconnect the power cord.
8. Connect the DMX output cable(s) to the card. There:
    •   Are 2 connectors on the PCI 2048 version: The top connector has DMX output for DMX links 1 and 2; the bottom connector has DMX output for DMX links 3 and 4, or alternatively DMX output for DMX link 3 and input for DMX in.

    •   Is 1 connector in the PCI 512 version, supporting both DMX input and output.

9. Restart the computer. The LightJockey PCI card is Plug and Play compatible. Windows will automatically detect the card once it has been installed and the **Found New Hardware** wizard will start.
10. Use the wizard to locate the `4064PCI.inf` file which is located in the `HardwareDrivers\PCI_ISA` folder on the LightJockey CD-ROM (or in the same sub-folder of the `Martin LightJockey` folder, if you have already installed LightJockey).

11. Once the driver has been installed and Windows has started, right-click on **My Computer**, and then click **Properties** to open the **System Properties** dialog box.
12. Click **Hardware**.
13. Click **Device Manager...** to open the **Device Manager** dialog box.
14. Check that the device `Martin PCI4064: DMX PCI Card` appears under `Martin devices`.
15. Go to the next section, "Installing the PCI/ISA driver" on page 7.

Installing the PCI/ISA driver

Install the PCI/ISA driver:

1. Using Windows Explorer, open the `HardwareDrivers\PCI_ISA` folder on the CD-ROM, or if you have already installed LightJockey, in the same sub-folder of the Martin LightJockey folder.
2. Double-click the **Installer** application to start it. (If the driver has already been installed then a message will appear indicting this).

3. Click **Install Driver**.

4. Click **Locate Card(s)** and any installed LightJockey ISA or PCI cards should appear.
5. It is not necessary to restart Windows. Go to "Software installation" on page 34.

Installing the LightJockey 4064 ISA card on a Windows 2000/XP system

The LightJockey 4064 ISA card comes in two flavors - the 2048 DMX channel Club version and the 512 channel DJ version. The installation process is identical for both types.

The card can be damaged by static electricity. Release static electric charges before handling the hardware by touching a grounded metal object, and always avoid touching sensitive electronic components.

Setting the DIP switch on the card

The card's DIP-switch setting is used to specify the location in memory that will be allocated to the card. This may need to be adjusted. To find out:

1. From the Desktop, right-click **My Computer** and select **Properties** to open the **System Properties** window.
2. Click **Hardware** to open the following page.

3. Click **Device Manager** to open the following window.
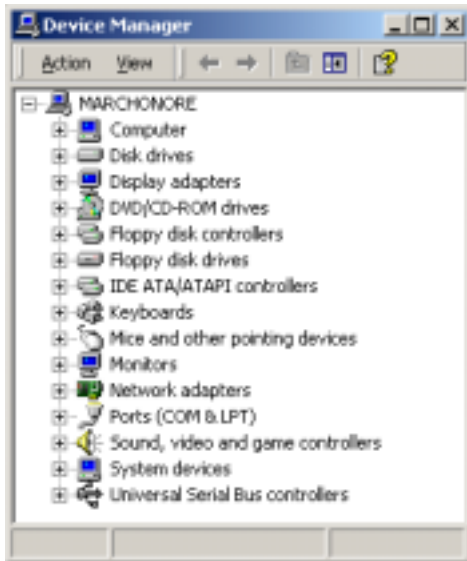
4. Select **View→Resources by type**.
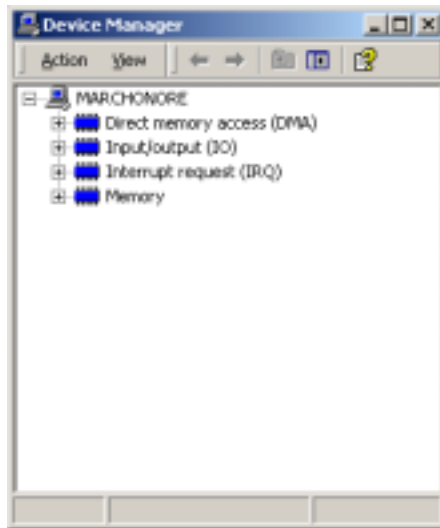
5. Expand **Memory** to view a list similar to the one in the following illustration.
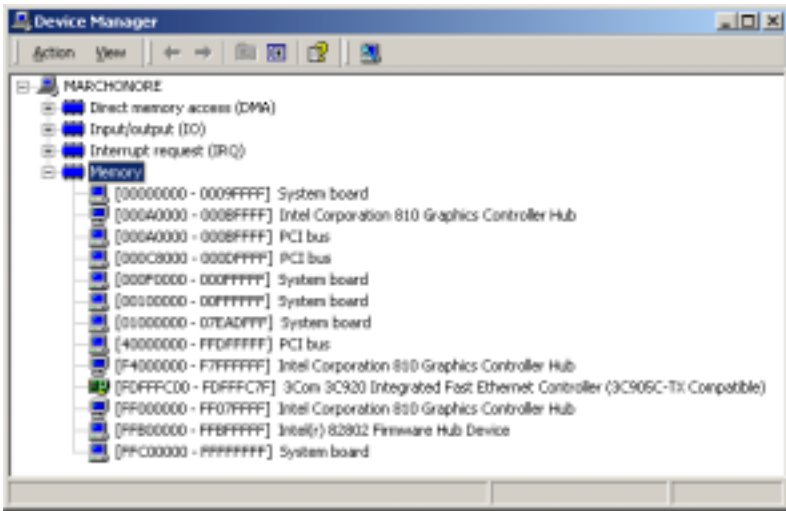
6. If:

• No device is allocated to the memory from 000D2000 to 000D2FFF, the card's default DIP-switch setting (pins 2 and 5 on) will work. You can now go to "Installing the card" on page 12.

• Any device is allocated to the memory from 000D2000 to 000D2FFF, use the following table to locate a free block of memory and to set the DPI-switch pins accordingly:

Block		Address Range	Pins On		Block		Address Range	Pins On
C SEGMENT	C0	000**C0**0000 000**C0**FFF	None		**D SEGMENT**	**D0**	000**D0**0000 000**D0**FFF	5
	C1	000**C1**1000 000**C1**FFF	1			D1	000**D1**1000 000**D1**FFF	1, 5
	C2	000**C2**2000 000**C2**FFF	2			D2	000**D2**2000 000**D2**FFF	2, 5
	C3	000**C3**3000 000**C3**FFF	1, 2			D3	000**D3**3000 000**D3**FFF	1, 2, 5
	C4	000**C4**4000 000**C4**FFF	3			D4	000**D4**4000 000**D4**FFF	3, 5
	C5	000**C5**5000 000**C5**FFF	1, 3			D5	000**D5**5000 000**D5**FFF	1, 3, 5
	C6	000**C6**6000 000**C6**FFF	2, 3			D6	000**D6**6000 000**D6**FFF	2, 3, 5
	C7	000**C7**7000 000**C7**FFF	1, 2, 3			D7	000**D7**7000 000**D7**FFF	1, 2, 3, 5
	C8	000**C8**8000 000**C8**FFF	4			D8	000**D8**8000 000**D8**FFF	4, 5
	C9	000**C9**9000 000**C9**FFF	1, 4			D9	000**D9**9000 000**D9**FFF	1, 4, 5
	CA	000**CA**000 000**CA**FFF	2, 4			DA	000**DA**000 000**DA**FFF	2, 4, 5
	CB	000**CB**000 000**CB**FFF	1, 2, 4			DB	000**DB**000 000**DB**FFF	1, 2, 4, 5
	CC	000**CC**000 000**CC**FFF	3, 4			DC	000**DC**000 000**DC**FFF	3, 4, 5
	CD	000**CD**000 000**CD**FFF	1, 3, 4			DD	000**DD**000 000**DD**FFF	1, 3, 4, 5
	CE	000**CE**000 000**CE**FFF	2, 3, 4			DE	000**DE**000 000**DE**FFF	2, 3, 4, 5
	CF	000**CF**000 000**CF**FFF	1, 2, 3, 4			DF	000**DF**000 000**DF**FFF	1, 2, 3, 4, 5

7. Set the card's DIP switch for the unoccupied memory block by moving the pins indicated under "Pins On" to the ON position. Move all other pins to the off position. Check that the correct DIP switches are ON, and that all other DIP switches are OFF.

8. Close the **Device Manager** window to proceed to "Installing the card" on page 12.

Installing the card

To install the LightJockey 4064 ISA card:

1. Turn off the computer.
2. Disconnect the power cord. Failure to unplug the cord could result in injury to you or damage to the computer.
3. Remove the computer cover.
4. Find an available ISA expansion slot and remove its cover plate from the back of the computer chassis.
5. Holding the card by the bracket and corner, push the card's copper contacts into the expansion slot. Ensure that the card is correctly seated in the ISA slot.
6. Fasten the card to the chassis.
7. Replace the cover and reconnect the power cord.
8. Connect the DMX output cable(s) to the card. There:
- Are 2 connectors on the Club version: The top connector has DMX output for DMX links 1 and 2; the bottom connector has DMX output for DMX links 3 and 4, or alternatively DMX output for DMX link 3 and input for DMX in.

- Is 1 connector in the DJ version, supporting both DMX input and output.

9. You should now restart your computer and go to the following driver installation procedure.

Installing the PCI/ISA driver

The LightJockey 4064 ISA card is not Plug and Play compatible. It is not possible for Windows to automatically detect the card once it has been installed. A driver installation program is supplied on the LightJockey CD-ROM.

1. Using Windows Explorer, open the HardwareDrivers\PCI_ISA folder on the CD-ROM, or if you have already installed LightJockey, in the same sub-folder of the Martin LightJockey folder.
2. Double-click the **Installer** application to start it. (If the driver has already been installed then a message will appear indicting this).

3. Click **Install Driver**.

4. Click **Locate Card(s)** and any installed LightJockey ISA or PCI cards should appear.
5. It is not necessary to restart Windows. Go to "Software installation" on page 34.

Note that once the card is installed it may not show up in the Windows 2000/XP **Device Manager**. This can occur because of a driver problem, but will not prevent the LightJockey or the LightJockey 4064 card from functioning correctly. If this occurs, make a note of the memory address range that the card uses and when installing new devices in the future, ensure that they do not use memory in this range.

Installing the LightJockey PCMCIA interface on a Windows 2000/XP system

The LightJockey PCMCIA interface provides two 512 channel DMX links. One link may be used as a DMX input. For installation, please refer to the LightJockey PCMCIA Adapter QuickStart User's Guide. Once you have installed the PCMCIA interface go to "Software installation" on page 34.

Note that although the LightJockey PCMCIA interface is a "hot plug" interface (able to be removed while Windows is running), do not remove and re-insert the interfaces while LightJockey is running as the interfaces will not be re-initialized correctly. To re-initialize the interfaces, restart LightJockey.

Installing the LightJockey USB/DMX interface on a Windows 2000 system

There are three types of LightJockey USB/DMX interface:

1. Original LightJockey USB/DMX
2. LightJockey USB/DMX II-in
3. LightJockey USB/DMX II-out

Up to four LightJockey USB/DMX out (original models or version II) and one LightJockey USB/DMX II-in interfaces can be connected to a PC. LightJockey version 2.5, or higher, is required.

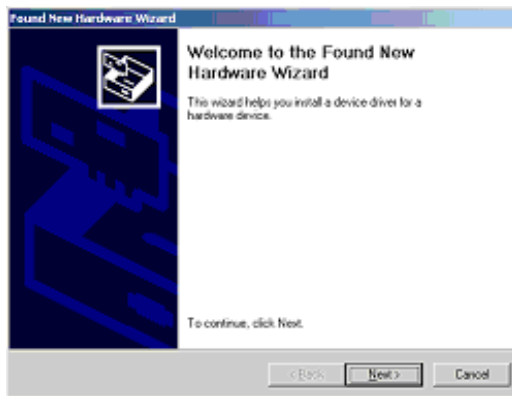**Note regarding the Location of the USB driver**

The guidelines in this section refer to the 'location of the USB driver' in several places. The exact location of the driver files will depend on if what the installation is. If:

1. The driver has been downloaded as a separate update, the driver files will be located where they were unzipped to on the hard drive.
2. LightJockey is installed/updated from a CD the driver are located on the CD in \HardwareDrivers\USB2\
3. The driver is updated from a downloaded release of LightJockey, run LightJockey once to unpack compressed files. The driver files are now located in <LightJockey Installation>\HardwareDrivers\USB2\

Before the LightJockey USB/DMX interface can be used with LightJockey, you must install the correct USB device driver. Note that each of the three types of LightJockey USB/DMX interface has their own driver:

•   Martin USB/DMX Interface (Unified Driver)
•   Martin USB/DMX Interface II - DMX Out (Unified Driver)
•   Martin USB/DMX Interface II - DMX In (Unified Driver)

1. Turn on the PC with all the interfaces attached.
2. Once Windows has detected an interface, the **Found New Hardware Wizard** will appear, prompting for a driver for a EZ-USB device.

3. Click **Next**.

4. Select **Search for a suitable driver for my device,** and then click **Next**.
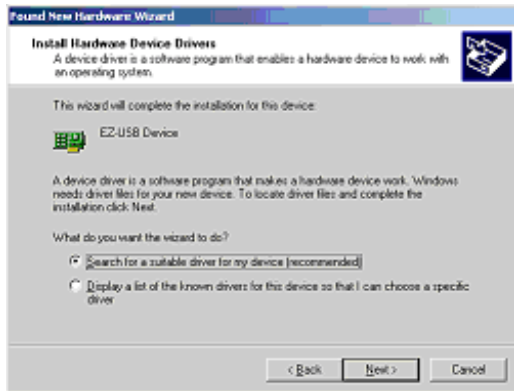
5. Select **Specify a location** and click **Next**.
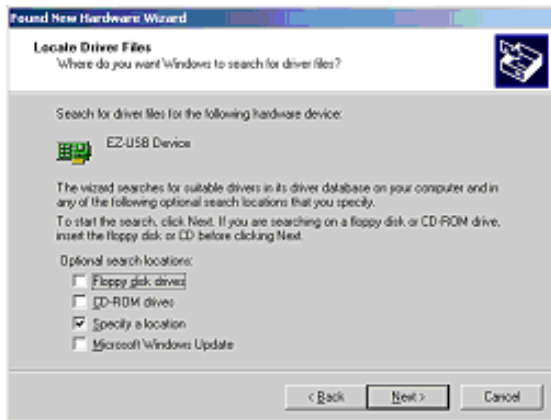
6. Click **Browse** to locate the folder with the driver. Click **OK**.

7. If a suitable driver is found in the folder, the Wizard will list the driver name and location. Check this information to ensure that the correct driver has been found. Click **Next**.
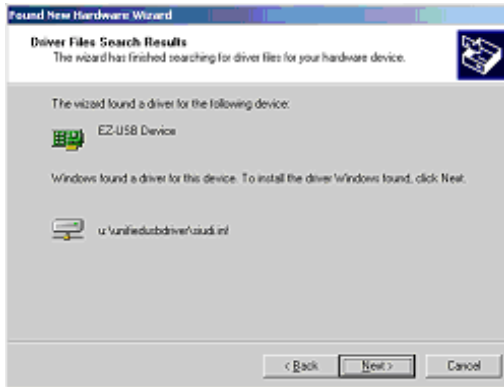
8. Windows will now install the driver, check that the device name has been updated.
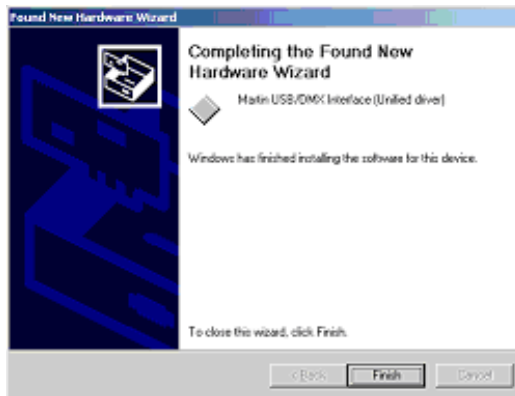
9. Click **Finish** and if additional LightJockey USB/DMX interfaces are present then repeat this procedure from step 2 until a driver for each has been installed.
10. To ensure that the drivers are properly installed and in working order open the device manager by right-clicking **My Computer**, select properties from the popup menu. Select the **Hardware** tab, and then click **Device Manager**.

11. Expand the **Universal Serial Bus Controllers** entry and check that the correct driver is displayed (without an exclamation mark, as this indicates that there is a problem.
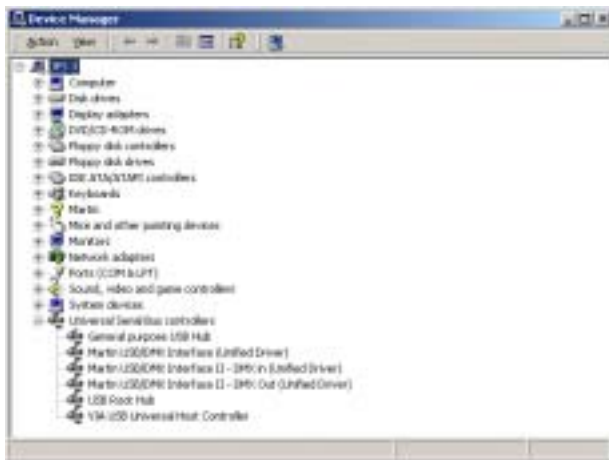
To ensure that LightJockey routes DMX data to the correct interface when operating with multiple LightJockey USB/DMX interfaces, always connect:

• *All USB/DMX interfaces to the USB port(s) on the PC before applying power to the PC. This includes a first time setup and configuration.*
• *Each USB/DMX interface to the same physical USB port on the PC.*

Installing the LightJockey USB/DMX interface on a Windows XP system

There are three types of LightJockey USB/DMX interface:

1. Original LightJockey USB/DMX
2. LightJockey USB/DMX II-in
3. LightJockey USB/DMX II-out

Up to four LightJockey USB/DMX out (original model or version II) and one LightJockey USB/DMX II in interfaces can be connected to a PC. LightJockey version 2.5, or higher, is required.

Note regarding the Location of the USB driver

The guidelines in this section refer to the 'location of the USB driver' in several places. The exact location of the driver files will depend on if what the installation is. If:

1. The driver has been downloaded as a separate update, the driver files will be located where they were unzipped to on the hard drive.

2. LightJockey is installed/updated from a CD the driver are located on the CD in \HardwareDrivers\USB2\
3. The driver is updated from a downloaded release of LightJockey, run LightJockey once to unpack compressed files. The driver files are now located in <LightJockey Installation>\HardwareDrivers\USB2\

Before the LightJockey USB/DMX interface can be used with LightJockey, you must install the correct USB device driver. Note that each of the three types of LightJockey USB/DMX interface has their own driver:

•   Martin USB/DMX Interface (Unified Driver)
•   Martin USB/DMX Interface II - DMX Out (Unified Driver)
•   Martin USB/DMX Interface II - DMX In (Unified Driver)

1. Turn on the PC with all the interfaces attached.
2. Once Windows has detected an interface, the **Found New Hardware Wizard** will appear, prompting for a driver for a EZ-USB device).

3. Select **Install from a list or specific location**, then click **Next**.

4. Select **Don't search, I will choose the driver to install**, click **Next**.
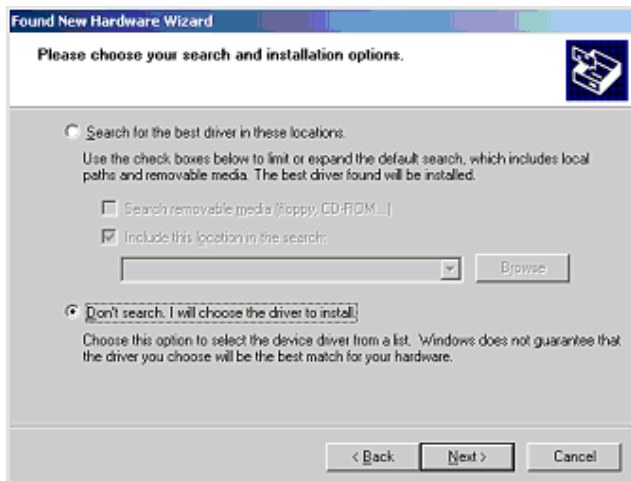
5. In the list of hardware types, select **Universal Serial Bus controllers** and click **Next**.
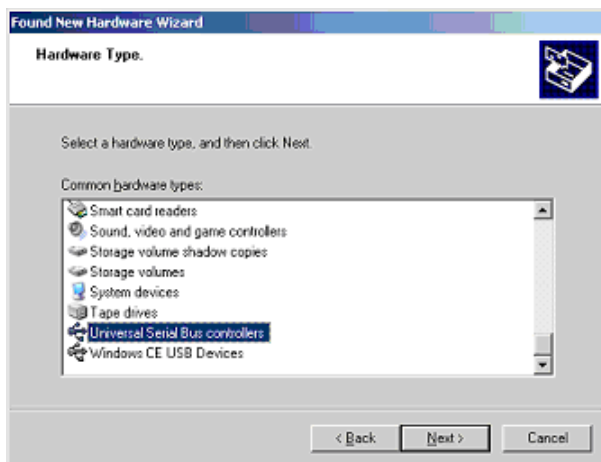
6. Click **Have Disk**.
7. Click **Browse** to locate the folder with the driver and then click **OK**.

8. If a suitable driver is found in the folder, the Wizard will list the driver name and location. Check this information to ensure that the correct driver has been found. Click **Next**.
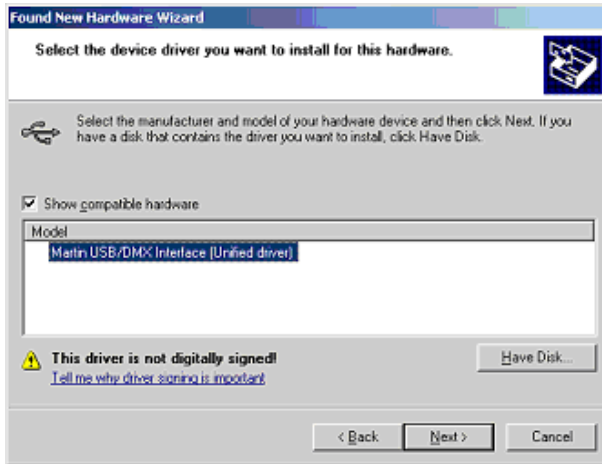
9. A warning may appear, stating that this driver has not been digitally signed (checked by Microsoft). Click **Continue Anyway** to continue.

10.   Windows will now install the driver. Check the finishing dialog identifies the device correctly.

11.   Click **Finish** and if additional LightJockey USB/DMX interfaces are present then repeat this procedure from step 2 until a driver for each has been installed.
12.   To ensure that the drivers are properly installed and in working order open the device manager by right-clicking **My Computer**, select properties from the popup menu. Select the **Hardware** tab and then click **Device Manager**.
13.   Expand the **Universal Serial Bus Controllers** entry and check that the correct driver is displayed (without an exclamation mark, as this indicates that there is a problem.

To ensure that LightJockey routes DMX data to the correct interface when operating with multiple LightJockey USB/DMX interfaces, always connect:

- *All USB/DMX interfaces to the USB port(s) on the PC before applying power to the PC. This includes a first time setup and configuration.*
- *Each USB/DMX interface to the same physical USB port on the PC.*

Windows 95, Windows 98, or Windows ME

The LightJockey supports five types of hardware under Windows 95/98/ME:

- LightJockey PCI card. See "Installing the LightJockey PCI card on a Windows 95/98/ME system" on page 23.
- LightJockey 4064 8-bit ISA card. See "Installing the LightJockey 4064 ISA card on a Windows 95/98/ME system" on page 25.
- LightJockey parallel port interface. See "Installing the LightJockey ADP parallel port interface on a Windows 95/98/ME system" on page 28.
- LightJockey PCMCIA interface. See "Installing the LightJockey PCMCIA interface on a Windows 95/98/ME system" on page 29.
- LightJockey USB interface. See "Installing the LightJockey USB/DMX interface on a Windows 95/98/ME system" on page 29.

Installing the LightJockey PCI card on a Windows 95/98/ME system

The LightJockey PCI card comes in two flavors - the PCI 2048 channel version and the PCI 512 channel version. The installation process is identical for both types.

Support for the LightJockey PCI cards was introduced in LightJockey version 2.1. Ensure that you have this version, or later, before starting these procedures. The version is printed on the CD. Updates can be downloaded from the Service pages at http://www.martin.dk

The card can be damaged by static electricity. Release static electric charges before handling the hardware by touching a grounded metal object, and always avoid touching sensitive electronic components.

Installing the card

To install the LightJockey PCI card:

1. Turn off the computer.
2. Disconnect the power cord. Failure to unplug the cord could result in injury to you or damage to the computer.
3. Remove the computer cover.
4. Find an available PCI expansion slot and remove its cover plate from the back of the computer chassis.
5. Holding the card by the bracket and corner, push the card's copper contacts into the expansion slot. Ensure that the card is correctly seated in the PCI slot.
6. Fasten the card to the chassis.
7. Replace the cover and reconnect the power cord.
8. Connect the DMX output cable(s) to the card. There:
   - Are 2 connectors on the PCI 2048 version: The top connector has DMX output

for DMX links 1 and 2; the bottom connector has DMX output for DMX links 3 and 4, or alternatively DMX output for DMX link 3 and input for DMX in.

- • Is 1 connector in the PCI 512 version, supporting both DMX input and output.

9. Restart the computer. The LightJockey PCI card is Plug and Play compatible. Windows will automatically detect the card once it has been installed and the **Found New Hardware** wizard will start.
10. Use the wizard to locate the 4064PCI.inf file which is located in the HardwareDrivers\PCI_ISA folder on the LightJockey CD-ROM (or in the same sub-folder of the Martin LightJockey folder, if you have already installed LightJockey).
11. Once the driver has been installed and Windows has started, right-click on **My Computer**, and then click **Properties** to open the **System Properties** dialog box.
12. Click **Hardware**.
13. Click **Device Manager...** to open the **Device Manager** dialog box.
14. Check that the device Martin PCI4064: DMX PCI Card appears under Martin devices.
15. Go to the next section and install the PCI/ISA driver.

Installing the PCI/ISA driver

Install the PCI/ISA driver:

1. Using Windows Explorer, open the HardwareDrivers\PCI_ISA folder on the CD-ROM, or if you have already installed LightJockey, in the same sub-folder of the Martin LightJockey folder.
2. Double-click the **Installer** application to start it. (If the driver has already been installed then a message will appear indicting this).

3. Click **Install Driver**.

4. Click **Locate Card(s)** and the newly installed card should appear listed in the window.
5. Restart Windows.
6. Go to "Software installation" on page 34.

Installing the LightJockey 4064 ISA card on a Windows 95/98/ME system

The LightJockey 4064 ISA card comes in two flavors - the 2048 DMX channel Club version and the 512 channel DJ version. Note that no drivers are required to operate the ISA card under Windows 95,98 or ME.

The card can be damaged by static electricity. Release static electric charges before handling the hardware by touching a grounded metal object, and always avoid touching sensitive electronic components.

Setting the DIP switch on the card

The card's DIP-switch setting may need to be adjusted. To find out:

1. From the Desktop, right-click **My Computer**.
2. Select **Properties → Device Manager → Properties**.

3. Select **Memory** to view a list similar to the one in the following illustration.

Computer Properties

View Resources | Reserve Resources

○ Interrupt request (IRQ)   ○ Direct memory access (DMA)
○ Input/output (I/O)   ● Memory

Setting	Hardware using the setting
00000000 - 0009FFFF	System board extension for PnP BIOS
000A0000 - 000AFFFF	Cirus Logic 5430/40 PCI
000B0000 - 000BFFFF	Cirus Logic 5430/40 PCI
000C0000 - 000C7FFF	Cirus Logic 5430/40 PCI
000C8000 - 000C8FFF	System Reserved
000CA000 - 000CAFFF	System Reserved
000E0000 - 000FFFFF	System board extension for PnP BIOS
00100000 - 027FFFFF	Unavailable for use by devices.

OK   Cancel

4. If no device is allocated to the memory from 000D2000 to 000D2FFF, the card's
    default DIP-switch setting (pins 2 and 5 on) will work and you can proceed to
    "Installing the card" on page 28.

Otherwise, select an unoccupied memory block with the help of the following table:

	Block	Address Range	Pins On		Block	Address Range	Pins On
	C0	000**C0**000 000**C0**FFF	None		**D0**	000**D0**000 000**D0**FFF	5
	C1	000**C1**000 000**C1**FFF	1		D1	000**D1**000 000**D1**FFF	1, 5
	C2	000**C2**000 000**C2**FFF	2		D2	000**D2**000 000**D2**FFF	2, 5
	C3	000**C3**000 000**C3**FFF	1, 2		D3	000**D3**000 000**D3**FFF	1, 2, 5
	C4	000**C4**000 000**C4**FFF	3		D4	000**D4**000 000**D4**FFF	3, 5
	C5	000**C5**000 000**C5**FFF	1, 3		D5	000**D5**000 000**D5**FFF	1, 3, 5
C SEGMENT	C6	000**C6**000 000**C6**FFF	2, 3	**D SEGMENT**	D6	000**D6**000 000**D6**FFF	2, 3, 5
	C7	000**C7**000 000**C7**FFF	1, 2, 3		D7	000**D7**000 000**D7**FFF	1, 2, 3, 5
	C8	000**C8**000 000**C8**FFF	4		D8	000**D8**000 000**D8**FFF	4, 5
	C9	000**C9**000 000**C9**FFF	1, 4		D9	000**D9**000 000**D9**FFF	1, 4, 5
	CA	000**CA**000 000**CA**FFF	2, 4		DA	000**DA**000 000**DA**FFF	2, 4, 5
	CB	000**CB**000 000**CB**FFF	1, 2, 4		DB	000**DB**000 000**DB**FFF	1, 2, 4, 5
	CC	000**CC**000 000**CC**FFF	3, 4		DC	000**DC**000 000**DC**FFF	3, 4, 5
	CD	000**CD**000 000**CD**FFF	1, 3, 4		DD	000**DD**000 000**DD**FFF	1, 3, 4, 5
	CE	000**CE**000 000**CE**FFF	2, 3, 4		DE	000**DE**000 000**DE**FFF	2, 3, 4, 5
	CF	000**CF**000 000**CF**FFF	1, 2, 3, 4		DF	000**DF**000 000**DF**FFF	1, 2, 3, 4, 5

5. Set the card's DIP switch for the unoccupied memory block by moving the pins indicated under "Pins On" to the ON position. Move all other pins to the off position. Check that the correct DIP switches are ON, and that all other DIP switches are OFF.
6. Close the **Device Manager** window.
7. You can now install the card in your computer. See "Installing the card" on page 28.

Installing the card

1. Turn off the computer.
2. Disconnect the power cord. Failure to unplug the cord could result in injury to you or damage to the computer.
3. Remove the computer cover.
4. Find an available ISA expansion slot and remove its cover plate from the back of the computer chassis.
5. Holding the card by the bracket and corner, push the card's copper contacts into the expansion slot. Ensure that the card is correctly seated in the ISA slot.
6. Fasten the card to the chassis.
7. Replace the cover and reconnect the power cord.
8. Connect the DMX output cable(s) to the card. There:

*   Are 2 connectors on the Club version: The top connector has DMX output for DMX links 1 and 2; the bottom connector has DMX output for DMX links 3 and 4, or alternatively DMX output for DMX link 3 and input for DMX in.

*   Is 1 connector in the DJ version, supporting both DMX input and output.

Note that once the card is installed it may not show up in the **Device Manager**. This can occur because of a driver problem, but will not prevent the card from functioning correctly. If this occurs, make a note of the memory address range that the card uses and when installing new devices in the future, ensure that they do not use memory in this range.

Installing the LightJockey ADP parallel port interface on a Windows 95/98/ME system

The parallel port interface enables Windows 95/98 laptops and PCs without an ISA expansion slot to send DMX through the parallel port. The interface provides 512 DMX channels on one link.

1. Disconnect the PC and remove the power cord to avoid risk of injury.
2. Insert the ADP interface into the 25-pin parallel port and fasten it with the 2 screws. Check that the interface is properly seated in the parallel port.
3. If a keyboard or PS/2 mouse port is not in use, connect the male PS/2 connector to the port. (Use a PS/2 to DIN adapter if required.) If there are no free ports, disconnect one and connect the male PS/2 connector from the interface. Then connect the keyboard or mouse to the female PS/2 connector.
4. Go to "Software installation" on page 34.

Note that:

*   As the parallel port does not deliver sufficient electrical current for DMX transmission, the interface takes power from a keyboard or PS/2 mouse port.

- If the status LED of the interface is not lit, there is no power from the keyboard or PS/2 mouse port. Disconnect the cables and repeat the installation procedure.
- On certain PCs, especially laptops, it may be necessary to enable both the parallel port and the power supplying keyboard or PS/2 mouse port in order to use the DMX ADP. Please consult your PC documentation for details if the adapter fails to work.
- Laptop users should disable power-saving functionality as this can cause the DMXADP interface to malfunction.

Installing the LightJockey PCMCIA interface on a Windows 95/98/ME system

The PCMCIA interface provides two 512 channel DMX links. One link may be used as a DMX input. For installation, please refer to the PCMCIA Adapter QuickStart User's Guide. Once you have installed the PCMCIA interface go to "Software installation" on page 34.

Installing the LightJockey USB/DMX interface on a Windows 95/98/ME system

There are three types of LightJockey USB/DMX interface:

1. Original LightJockey USB/DMX
2. LightJockey USB/DMX II-in
3. LightJockey USB/DMX II-out

Up to four LightJockey USB/DMX out (original model or version II) and one LightJockey USB/DMX II in interfaces can be connected to a PC. LightJockey version 2.5, or higher, is required.

Note regarding the Location of the USB driver

The guidelines in this section refer to the 'location of the USB driver' in several places. The exact location of the driver files will depend on if what the installation is. If:

1. The driver has been downloaded as a separate update, the driver files will be located where they were unzipped to on the hard drive.
2. LightJockey is installed/updated from a CD the driver are located on the CD in \HardwareDrivers\USB2\
3. The driver is updated from a downloaded release of LightJockey, run LightJockey once to unpack compressed files. The driver files are now located in <LightJockey Installation>\HardwareDrivers\USB2\

Before the LightJockey USB/DMX interface can be used with LightJockey, you must install the correct USB device driver. Note that each of the three types of LightJockey USB/DMX interface has their own driver:

- Martin USB/DMX Interface (Unified Driver)

- Martin USB/DMX Interface II - DMX Out (Unified Driver)
- Martin USB/DMX Interface II - DMX In (Unified Driver)

1. Turn on the PC with the interfaces *attached*.
2. Once Windows has detected an interface, the **Found New Hardware Wizard** will appear, prompting for a driver for a EZ-USB device.

3. Click **Next**.
4. Select **Search for best driver for your device**, and then click **Next**.

5. Select **Specify a location** and click **Browse** to locate the folder containing the driver. Then click **Next**.

6. If a suitable driver is found in the folder, the Wizard will list the driver name and location. Check this information to ensure that the correct driver has been found. Click **Next**.


7. Wait while Windows re-builds the driver database, and then click **Finish**.
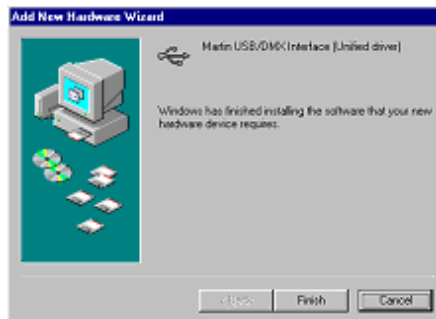
8. If additional LightJockey USB/DMX interfaces are present then repeat this procedure from step 2 until a driver for each has been installed.

9. To ensure that the drivers are properly installed and in working order open the device manager by right-clicking **My Computer**, select properties from the popup menu, then select the **Device Manager** tab.
10. Expand the **Universal Serial Bus Controllers** entry and check that the correct driver is displayed (without an exclamation mark, as this indicates that there is a problem.
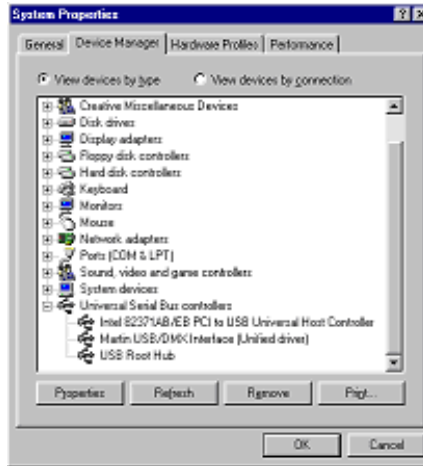
To ensure that LightJockey routes DMX data to the correct interface when operating with multiple LightJockey USB/DMX interfaces, always connect:

• *All USB/DMX interfaces to the USB port(s) on the PC before applying power to the PC. This includes a first time setup and configuration.*
• *Each USB/DMX interface to the same physical USB port on the PC.*

Notes on removing the PCI/ISA driver

You can remove this driver using the **Installer** application but it is a generic Windows driver that might be used to drive other types of hardware in the PC. **Removing the driver may cause other types of hardware to stop functioning. Do not remove the driver unless you are certain that it is not needed for other types of hardware.**

To remove the driver:

1. Using Windows Explorer, open the HardwareDrivers\ISA\W2K folder on the CD-ROM, or if you have already installed LightJockey, in the same sub-folder of the Martin LightJockey folder.
2. Double-click the **Installer** application to start it.

3. Click **Remove Current Driver**.
4. Click **Close**.

Software installation

The LightJockey CD uses the Windows auto-start feature to launch the setup program when the CD-ROM is inserted. If this feature is disabled and installation does not start automatically double-click on the Launch.Exe program located in the root of the CD-ROM.

If you have already installed LightJockey, then go to "Hardware configuration" on page 38.

To install on a PC without CD-ROM drive:

1. Copy the contents of the DiskX directories to individual 1.44 MB floppy disks.
2. Insert the floppy disk with the Disk1 contents into the PC.
3. Run setup.exe.

Follow the installation procedure:

1. Once the installation program starts the following window will appear

2. Click either **Install LightJockey** *x.x* + **Offline Visualizer** or **Install LightJockey** *x.x* to install with, or without, the Offline Visualizer (OV). The OV is a scaled down version of the offline module from Martin Show Designer (MSD) that has been integrated into LightJockey. The OV offers real-time animation of fixtures in a black-box environment. For more information refer to the LightJockey online help.

3. The following window will appear.
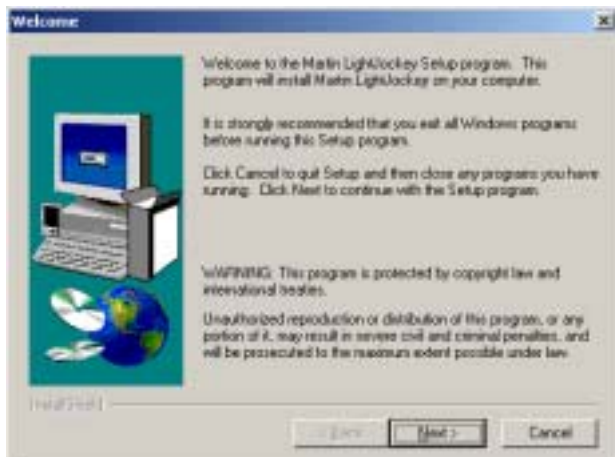
4. Click **Next**.

5. If the **Destination Directory** is appropriate click **Next**. Otherwise specify a another one using the **Browse** button, selecting the appropriate directory, and pressing **Next**.

6. Accept the default program folder, or select another from the list.
7. Click **Next**.

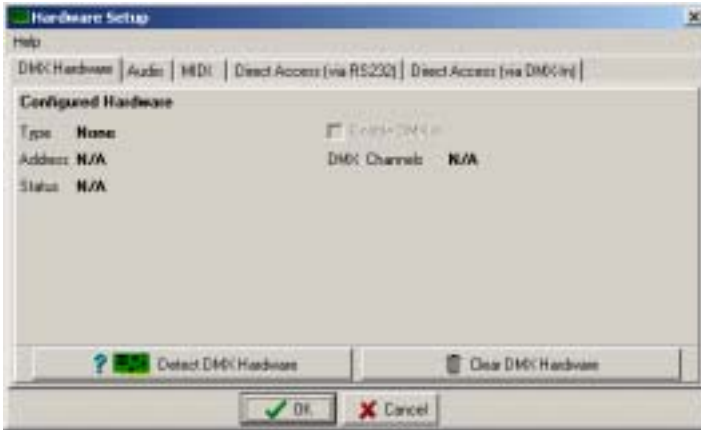8. Review the settings and click **Next** to continue.

9. Click **Finish**.
10. Start LightJockey by clicking on the LightJockey icon located in the programs folder in the Windows start menu.
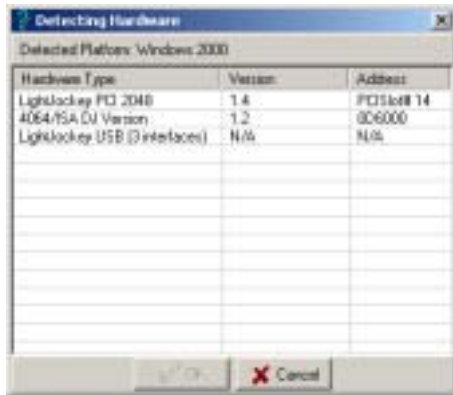11. Follow the steps under "Hardware configuration" on page 38.

Hardware configuration

Start LightJockey, and from the LightJockey main window:

1. Click **Setup→Hardware**.

2. Click **Detect hardware**. LightJockey searches for available hardware and lists all hardware found. The search may take up to 20 seconds.

3. Select the appropriate hardware by clicking on it in the list.
4. Click **OK** to return to the **Hardware Setup** window. Note that some interfaces support settings that can be configured from the tabs in this window, such as selecting the DMX refresh rate. Normally the highest DMX rate should be selected

as lowering the DMX rate may cause some fixtures to respond less smoothly during high fade times.
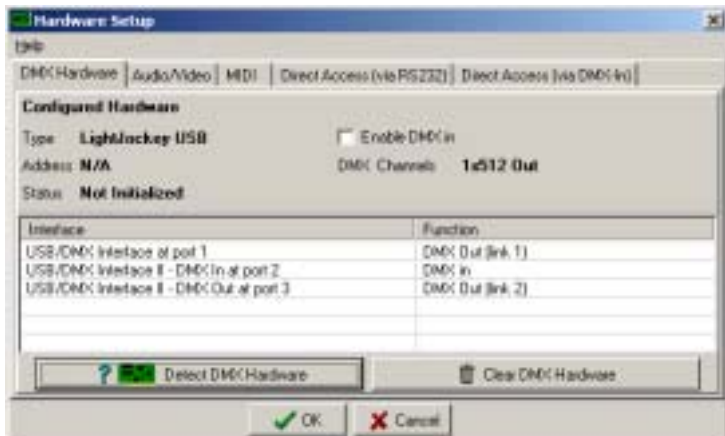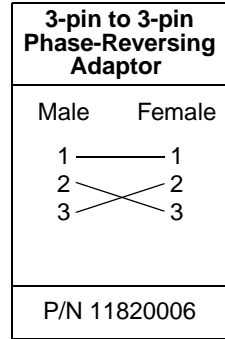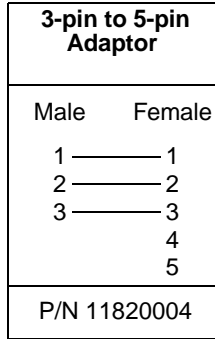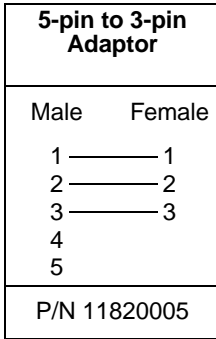

5. Restart LightJockey when prompted.

6. Follow the steps under "Connecting the serial data link" on page 40.

Connecting the serial data link

The pin-out of the 3-pin DMX connectors is compatible with the DMX-512 standard, i.e., pin 1 to shield, pin 2 to cold (-) and pin 3 to hot (+). As some devices have 5-pin connectors, or 3-pin connectors with reversed polarity on pins 2 and 3, the following adaptor cables may be required.

5-pin to 3-pin Adaptor	3-pin to 5-pin Adaptor	3-pin to 3-pin Phase-Reversing Adaptor
Male Female	Male Female	Male Female

1 ———— 1
2 ———— 2
3 ———— 3
4
5
	1 ———— 1
	2 ———— 2
	3 ———— 3
	           4
	           5
		1 ———— 1
		2 ⤫ 2
		3 ⤫ 3

P/N 11820005	P/N 11820004	P/N 11820006

Always remember to terminate the end of a data link with a 120.ohm terminating plug.

Interface XLR cable connections

LightJockey PCI 512 and 4064 ISA DJ cards

These cards are supplied with a SUB-D to XLR cable. DMX out is through the female XLR and DMX in is through the male XLR.

LightJockey PCI 2048 and 4064 ISA Club cards

These cards are supplied with three SUB-D to XLR cables. The

• D-SUB to 2 x female XLR should be used in the top SUB-D connector for 2 x DMX out

• Second 2 x female XLR should be used in the lower SUB-D socket if the card is configured with 4 x DMX out.

• Male plus female XLR cable if the card is configured to receive DMX in. Male plus female XLR cable should be used in the lower D-SUB socket if the card is configured to receive DMX in.

DMX out is through the female XLR and DMX in is through the male XLR.

DMXADP interface

Connect a 3-pin XLR to the female XLR output of the interface.

PCMCIA interface

When using:

- 1 PCMCIA interface, outputs for links 1 and 2 are located as displayed on the breakout box.
- 2 PCMCIA interfaces, outputs for links 3 and 4 are located on the breakout box connected to the second PCMCIA card.

USB interface

Connect the data link to the 3-pin XLR on the USB interface.

Connecting to fixtures

1. Connect the controller's output to the first fixture's data input. For a DMX fixture with 5-pin input, use a cable with 3-pin male and 5-pin female XLR connectors. For a DMX fixture with 3-pin input, use a cable with 3-pin male and female connectors. For a Martin RS-485 protocol fixture, use a phase reversing cable with 3-pin male and female connectors.
2. To connect additional fixtures, connect the output of the fixture closest to the controller to the input of the next fixture. When connecting a DMX fixture to a Martin fixture with pin 3 cold (-), use a 3-pin phase-reversing adaptor.
3. Terminate the link. Insert a male 120 ohm XLR termination plug in the output of the last fixture on the link. The termination plug, which is simply a male XLR connector with a 120 ohm, 0.25 watt resistor soldered between pins 2 and 3, "soaks up" the control signal so it does not reflect back down the link and cause interference.

Tips for building a trouble-free serial link

- Use shielded twisted-pair cable designed for RS-485 devices. Standard microphone cable is not designed for use in serial links and often causes unpredictable performance.
- Never use a "Y" connector to split the link. To split the serial link into branches use a splitter such as the Martin 4-Channel Opto-Isolated RS-485 Splitter/Amplifier. If a splitter/amplifier is used, terminate each branch of the link.
- Do not overload the link. Up to 32 devices may be connected on a serial link. If a splitter/amplifier is used, up to 32 devices may be connected on each branch.

Introduction to programming

This part of the guide explains the controller's basic features and philosophy to help you start programming. Information about new and advanced features is located in the on-line help system.

Tip: As you go through this introduction, pay attention to how the Off/Snap/Fade control effects sequence execution.

If you have programmed with the Martin 3032, you will find the LightJockey similar in many ways. Fade times and the Off/Snap/Fade control, however, will be new to you.

This guide assumes that you are familiar with Windows. As you experiment with the controls, be aware that clicking with the left and right mouse buttons often does different things.

You do not need to have actually have any fixtures connected to perform the exercises, although it is recommended. The examples are based around two Mac 600 fixtures, but in theory you should be able to replicate the same cases with most other Martin MAC-series fixtures.

Identifying the controls

This section describes the LightJockey controls. Note that screens and buttons may differ from those shown here depending on software version that is being used.

Main screen

Main menu
Seq & Cue Toolbars
Cue List Toolbar
Offline Visualizer
Fixture Toolbar
Page tabs

Fixture icons

LightJockey Desktop

Control windows

Status bar

Sequence toolbar

1. Sequence name field
2. View Sequence Control button
3. New/Clear Sequence button
4. Save Sequence button
5. List of Sequences button
6. Scene number field (current scene : total scenes)

Cue toolbar

1. Cue name field
2. View Cue Control button
3. New/Clear Cue button
4. Save Cue button
5. List of Cues button

Cue List toolbar

1. Current Cue List name field
2. Toggle Cue List control button
3. New/Clear Cue List button
4. Save Cue List button
5. List of Cue Lists button
6. Background Cue Control button
7. Static Control button
8. CD control button
9. MCX (Direct Access) button
10. 2518 Direct Access button
11. DMX In button
12. MIDI In button
13. 2532 Direct Access button

Fixture toolbar
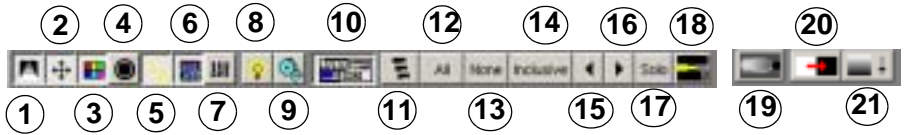
1. Intensity button
2. Movement button
3. Color button
4. Gobo button
5. Beam button
6. Effect button
7. Levels/Extended Controls button
8. Lamp button
9. Reset button
10. Hide/Show Fixture Controls button
11. Fixture Groups button
12. Select All Fixtures button
13. Deselect All Fixtures button
14. Fixture Selection Mode button (**Inclusive** or **Exclusive**)
15. Previous Fixture button
16. Next Fixture button
17. Fixture Solo button
18. Followspot button
19. Smoke Control button
20. Blackout button
21. Master Intensity button

Configuring fixtures

The first step after setting up the hardware is to select and address your lighting fixtures in the Fixture Configuration window, which you open by choosing **Setup→Fixture Configuration** from the main menu.

Example: Configure 2 MAC 600s

1. Click **Setup→Fixture Configuration** from the main menu.
2. Click MAC 600 (mode 2/4) from **Available Fixture**.
3. Drag and drop it onto line **No** 1.
4. Add another fixture of the same type to line **No** 2.
5. For each of the two fixtures in the list: Click **Auto Address**, click **Find Addresses**, and then click **OK**. Addresses can also be set manually in the **DMX Address** field at the bottom of the screen. Regardless of the method that you use, the DMX addresses and modes (that affect the number of DMX channels that are used) set in the actual fixtures must match those in the LightJockey fixture configuration in order for communication between the LightJockey and the fixture to function. Refer to the fixture user manual for guidance.

6. Click line number 1 to select the first fixture in the list. Type Left in **Fixture User Name** (located at the lower-left of the window). Repeat this process for the second fixture in the list, assigning it the name, Right.
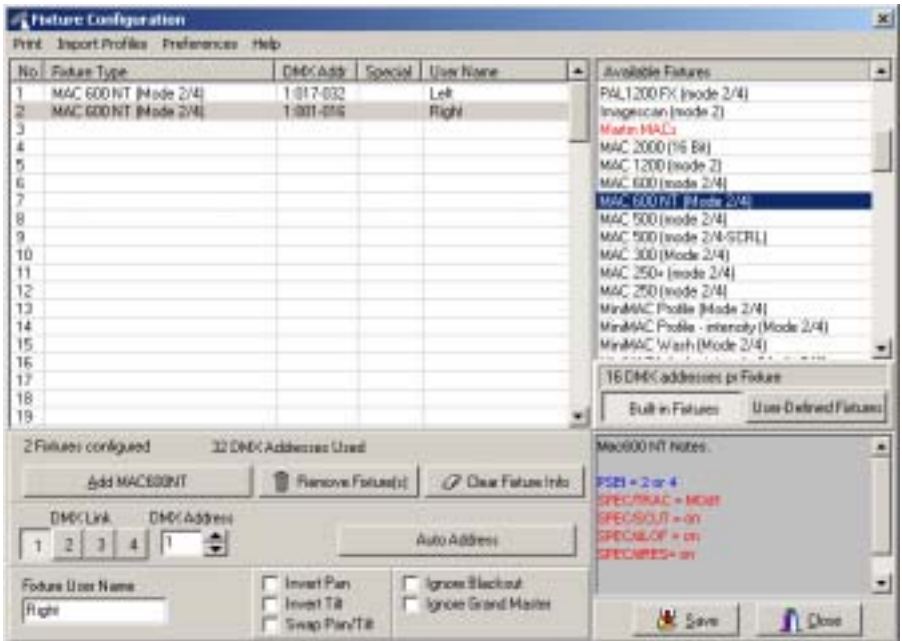
7. Click **Save**. If you are prompted to Clear data for new fixtures?, click **Yes** and when the subsequent confirmation window appears, click **OK**.
8. Click **Close** to return to the LightJockey desktop where the **Unassigned Fixtures** dialog box will appear.

Configuring the desktop

Lighting fixtures are represented by icons on screen. To create and place icons, you drag fixtures from the Unassigned Fixtures list to the desktop. Icons may be organized any way you like on multiple pages or "tabs."

Menus for arranging the desktop and icons, etc., pop up if you right-click on the desktop and icons.

Example: Place 2 MAC 600s on desktop

1. The list of unassigned fixtures is displayed on the desktop automatically. (If at any point you close it, re-open the list by clicking **View**→**Unassigned Fixtures**.
2. Drag the MAC 600s from the list and drop them on to the desktop.
3. Right-click the desktop.
4. Click **Icons**→**Auto Arrange...**.
5. Click **OK**.

Striking lamps

Most Martin fixtures with discharge lamps, also known as arc lamps, must be struck (turned on) from the controller. There are three ways to do this:

1. Use the LightJockey's automatic lamp-strike feature. This is recommended and is described in the next example.
2. Program a "lamp on" cue. This is not recommended because Martin fixtures use the same DMX channel for lamp and shutter control. The lamp-on command will be overridden by any higher-priority sequence with a shutter command. If you choose to program a "lamp on" cue, turn on the lamps one at a time with 3 - 5 second intervals to avoid excessive voltage drop and current draw.
3. Strike a lamp manually by selecting it, clicking the Lamp button on the fixture toolbar, and then clicking **Power On** in the **Lamp Control** dialog box. Depending on the fixture, this dialog box may also be used to turn off the lamp.

Example: Strike MAC 600s

1. Perform the steps in the previous examples to configure 2 MAC 600s and place them on the LightJockey desktop.
2. Click **System→Auto Strike Lamps** from the main menu.

3. Click **Stop** once the LightJockey has been through the cycle once or twice and the lamps have struck.

Programming cues

Cue building blocks

A light show is typically divided into *cues* that you program and then play back from the list of available cues. The LightJockey also supports cue playback from the Martin 2532 Direct Access Controller, which is available as an accessory.

A cue points to up to 12 *sequences* that all run together at the same time, i.e., in parallel.

A sequence is made up of *scenes*. Scenes run one after the other, i.e., in sequence, and can have different lengths (scene times).

Later on you will program a cue with 3 sequences. The sequences have 1, 3, and 2 scenes, respectively, with scene times as shown below. With the default loop settings, once a sequence finishes, it loops back to the start and repeats for as long as you play the cue.

Seq.	Scene action, number and time			
1	* 1:1	*Open shutter. Open dimmer 20% (1 s)		
2	C in, Y out 1:3 (3 s)	M in, C out 2:3 (3 s)	Y in, M out 3:3 (3 s)	
3	Fast pan 1:2 (2 s)	Slow pan 2:2 (15 s)		

Bottom to top cue execution

It is essential that you understand how sequences are executed within a cue. Picture it as if the LightJockey takes effects one at a time and looks for instructions at the *bottom* of the cue. *If the effect's Off/Snap/Fade control is set to Snap or Fade, the controller executes the instructions in the sequence and then moves to the next effect. If the effect's control is Off, it looks for instructions in the next higher sequence.* The LightJockey continues up the cue until it finds a Snap or Fade command.

If an effect is programmed in two sequences *at the same time*, the controller executes the instruction closer to the bottom. If an effect does not behave as predicted it is probably being controlled by a sequence lower in the cue.

In the example cue that follows, you open the shutter in the "20% dimmer" sequence - the top sequence - and close it in scene 1 of the "Pan" sequence - the bottom sequence. Sequence 3 has priority so the shutter closes during scene 1 and opens again in scene 2, where the shutter control is Off. If you move "20% dimmer" below "Pan," however, "20% dimmer" has priority and the shutter stays open all the time.

Outline of programming steps

The basic steps for programming a cue are outlined below and explained in more detail in the following sections.

I.   **Create new cue.**

II.   **Program up to 12 sequences.**

     A.   **Create new sequence.**

     B.   **Program up to 999 scenes.**

          1.   Add scene. (Scene 1 is added automatically.)

          2.   Program fixtures. Repeat as necessary.

              a)   Select fixtures.

              b)   Set desired effects.

              c)   Set effects to snap or fade.

          3.   Set fade and scene time.

     C.   **Save sequence.**

     D.   **Add sequence to cue.**

III.   **Save cue.**

Creating new cues

To program a cue you can either create a new one or load an existing one onto the desktop using Windows techniques such as dragging and dropping. The cue on the desktop is called the *current cue*.

Click the New/Clear Cue button on the **Cue** toolbar to create a new cue and clear the current one. A gray **Cue** field indicates a new (empty) cue. It turns yellow when a sequence has been added to the current cue.

The action of the current cue is dynamically represented in the control windows. The pan/tilt cursor, for instance, moves back and forth to show a pan movement. This allows you to see the effects of your programming without actual fixtures.

Creating and editing sequences

Just like cues, you program sequences by creating new ones or loading existing ones onto the desktop. The sequence on the desktop is known as the *current sequence*.

To create a new sequence and clear the current one, click the New/Clear Sequence button on the Sequence toolbar . The Sequence name field changes from yellow to gray to indicate a new sequence; it turns yellow as soon as an instruction is programmed.

To edit an existing sequence, drag it from the List of Sequences to the desktop. Save changes by clicking "Save Sequence" instead of "Save as New Sequence" in the save dialog.

The action of the current sequence is displayed differently from the action of the current cue. *The controls for effects programmed in the current sequence do not move.* This is to make programming easier. The pan/tilt cursor, to take the previous example, stops moving when you load the movement sequence onto the desktop. To "see" the sequence run, add it to the current cue and clear it from the desktop.

Selecting fixtures

Fixtures must be selected before they can be programmed. *The icon caption field is light or dark red when a fixture is selected and blue when it is not selected.* Click on fixture icons to select and deselect them.

If you want to program a group of identical fixtures, say 2 MAC 600s, to do exactly the same thing, you can select and program them together. When you want to program fixtures to do different things, you must select and program them individually. (The effects generator is a little different.) Of course you can program some effects together and some effects individually.

Usually, you will program fixtures of different types separately, but some effects, such as pan and tilt, may be programmed at the same time.

Programming effects

You control and program effects using slide bars, palettes, buttons, etc., in the fixture control dialog boxes, which graphically represent each effect.

Control dialog boxes are opened and closed using the buttons on the Fixture toolbar. There is an individual button for each control window as well as a master "Show Fixture Controls" button that opens and closes all the commonly used control windows. Once open, the windows may be dragged anywhere on screen.

Setting the Off/Snap/Fade control

Most controls have an **Off/Snap**/**Fade** button. Some controls, such as Lamp Control, have **Off** and **Snap** only. In the default setting, the button is red and **Off.** One click makes it a yellow **Snap** button. Two clicks makes it a green **Fade** button.

Leave the button on Off (the default) unless you are programming a command. When an effect's **Off/Snap**/**Fade** button is Off, the control sends no instructions, allowing a lower-priority sequence to control the effect.

Click the **Off/Snap**/**Fade** button to **Snap** to move the effect at maximum speed.

Click the **Off/Snap**/**Fade** button to **Fade** to fade the effect in or out using the fade time.

Setting scene and fade times

A scene lasts for a period of time known as the *scene time. Fade time* is the period of time over which an effect moves if its **Off/Snap**/**Fade** control is set to **Fade**. (If the control is set to **Snap**, the effect changes "instantly" at maximum speed.)

Scene and fade times are entered in the Sequence Control dialog box, which is shown below.

Adding, inserting, and deleting scenes

A sequence can have anywhere from 1 to 999 scenes. Scenes are added, inserted, or deleted by clicking buttons in the **Sequence Control** dialog.
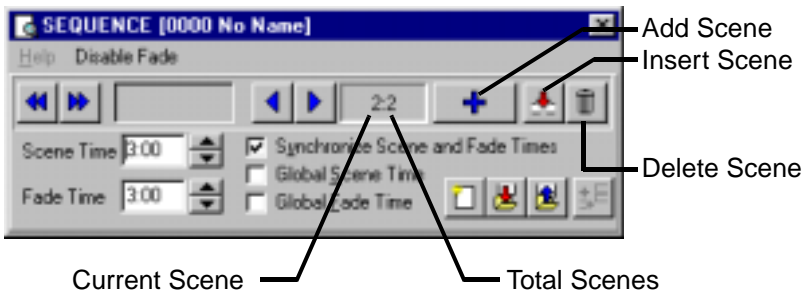
Saving sequences

Sequences are named and saved using the **Save Sequence** dialog box. The dialog box also has several check boxes that can be selected to speed up programming.

Click **Save Sequence** to save changes to an existing sequence or **Save as New Sequence** to create a new sequence from the current sequence.
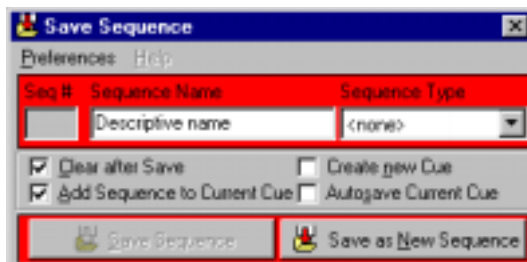
Adding sequences to a cue

Windows techniques such as drag and drop can be used to add, delete, and rearrange items in LightJockey lists. One way to add a sequence to a cue is to open the list of available sequences (click List of Sequences on the Sequence toolbar), open the Cue control window (click View Cue Control on the Cue toolbar), and drag the sequence to the desired position in the cue. See also "Step 2: Add sequence to cue" on page 56.

Saving cues

Cues are named and saved using the **Save Cue** dialog box. Click the Save Cue button on the Cue toolbar, or on the **Cue [*Cue-Number Cue-Name*]** dialog box, to open the **Save Cue** dialog box. Click **Save Cue** to save changes to an existing cue or **Save New Cue** to create a new cue.

Example: Programming a cue

This example demonstrates the steps, concepts, and displays involved in programming. It is designed to be programmed "blind" without fixtures attached.

The screen shots show how your screen should look if you follow the steps correctly. Note, though, that the color palette is hidden in the Colors control window and that Show Special is disabled in the Intensity Control window. These options are selected in the windows' Preferences menu.

Step 1: Program shutter/dimmer sequence

In this step you program a sequence to open the shutters and set the dimmers to 20%.

1. Configure 2 MAC 600s and place them on the desktop if you have not done so.
2. Locate the **Cue** field on the Cue toolbar. *Be careful not to confuse the Cue toolbar (**Cue**) with the Cue list toolbar (**C-L**).*
3. If the field is yellow, click the New/Clear Cue button. A new (empty) cue is indicated by a gray **Cue** field.
4. Locate the Sequence toolbar and click the New/Clear Sequence button if the **Seq** field is yellow.
5. Click both MAC 600s to select them. *The fixture icon caption is blue when the fixture is not selected and light or dark red when it is selected.*

6. Click the Show Fixture Controls button on the Fixture toolbar.
7. Arrange the control windows by dragging them on the LightJockey desktop.

   Since you will not be using beam control in this example, close the Beam dialog box to make more room on the LightJockey desktop. Individual dialog boxes controls can be opened and closed as needed by clicking buttons on the Fixture toolbar.

8. In the **Intensity** dialog box click **Shutter Closed**.

   Three things happen: **Shutter Closed** changes to **Shutter Open**, the shutter Off/Snap/Fade button automatically changes to **Snap**, and the **Seq** field in the Sequence toolbar changes from gray to yellow, indicating a change to the new sequence.

9. Click and drag the **Intensity** level to 20%.
10. Click the dimmer **Off**/**Snap**/**Fade** button twice until it is labelled **Snap**.

Shutter control — Shutter Open
Dimmer Off/Snap/Fade — Strobe Off
Dimmer level (% open) — Intensity 20.0%
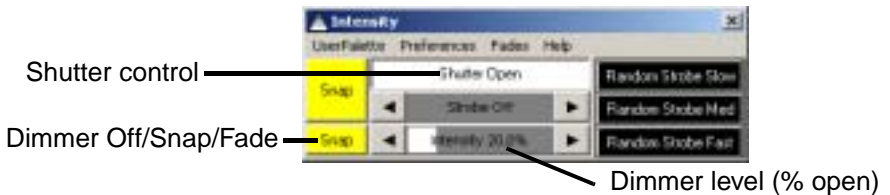
11. Verify that your **Intensity** control looks like the one above and that the **Off**/**Snap**/**Fade** buttons in all the other open control dialog boxes appear as **Off**.
12. Click the Save Sequence button in the Sequence toolbar.
13. Type "20% dimmer" in the dialog's Sequence Name field.
14. Click **Save as New Sequence** or press Enter.
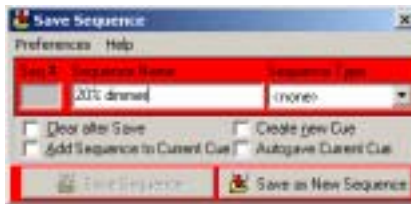
Step 2: Add sequence to cue

1. Click the List of Sequences button on the Sequence toolbar. The **Select Sequence (Drag To Target)** dialog box appears.
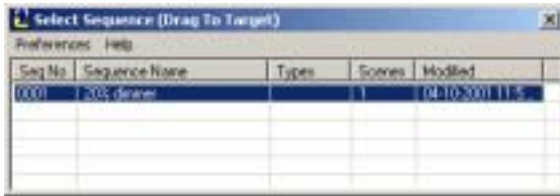
2. Click the Toggle Cue Control button on the Cue toolbar. The **Cue [0000 No name]** dialog box appears.
3. Drag the "20% dimmer" sequence to position 1 in the **Cue [0000 No name]** dialog box. (If drag mode is not enabled, click **Preferences→Drag mode**.) The Cue name field changes from gray to yellow.
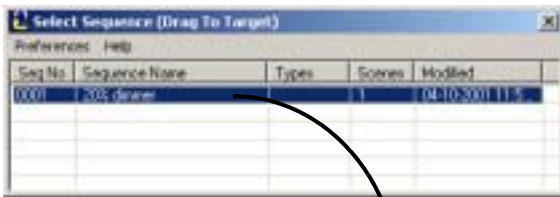

Drag and drop sequences to cues.

Step 3: Program color sequence

The next sequence is a CMY (cyan, magenta, yellow) color chase with 3 scenes. In the first scene, cyan fades in and yellow, which comes in scene 3, fades out. In the second scene, cyan fades out and magenta fades in. Finally, magenta fades out and yellow fades in. The scene and fade times for each scene is set to three seconds for a smooth continuous effect.

1. Close the **Select Sequence (Drag To Target)** and the **Cue [0000 No name]** dialog boxes.
2. Click the New/Clear Sequence button on the Sequence toolbar.
3. Make sure both MAC 600s are selected: a fixture is selected when the icon label is either light or dark red.
4. Click the **Cyan** fader in the **Colors** dialog box, and drag it to 100%. The associated **Off**/**Snap**/**Fade** button automatically changes to **Fade**.
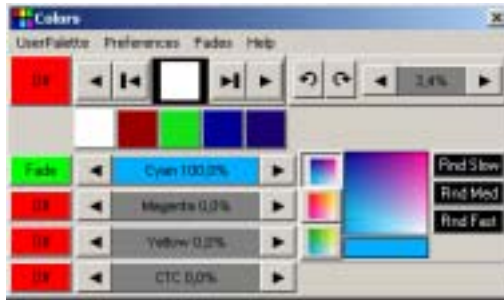
5. Click **Seq** (Toggle sequence control) on the Sequence toolbar. The **Sequence [0000 No name]** dialog box appears.
6. Click **Synchronize Scene and Fade Times**.
7. Set the **Scene Time** and **Fade Time** to 3:00 (3 seconds).
8. Click the Add Scene button.

Add Scene
Insert Scene
Delete Scene
Current Scene
Total Scenes
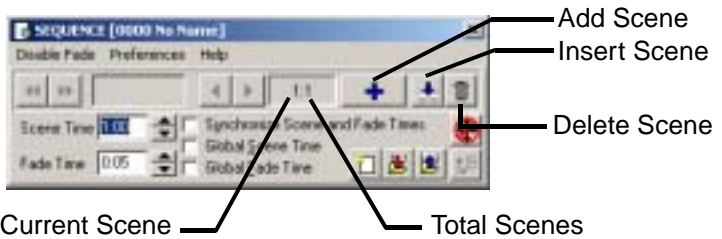
9. In the **Colors** dialog box, click and drag the **Cyan** fader to 0% and click and drag the **Magenta** fader to 100%.
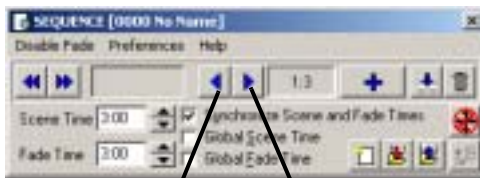
10. In the **Sequence [0000 No name]** dialog box, click the Add Scene button

11. In the **Colors** dialog box, click and drag the **Magenta** fader to 0% and the **Yellow** fader to 100%.
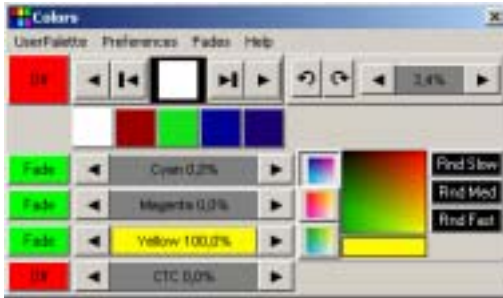
12. To modify scene 1 so that it fades out yellow, click the Next Scene button in the **Sequence [0000 No name]** dialog box, to reach scene 1 (of 3)


Previous Scene   Next Scene

13. In the **Colors** dialog box, click and drag **Yellow** to 0%. Click the associated **Off**/**Snap**/**Fade** button until it is set to **Fade**.

14. Click the Save Sequence button in the **Sequence [0000 No name]** dialog box or toolbar. The **Save Sequence** dialog box appears.
15. Click **Clear after Save** and **Add Sequence to Current Cue**.
16. Type CMY chase in **Sequence name**.
17. Click **Save as New Sequence** or press Enter to save, clear, and add the sequence to the current cue.
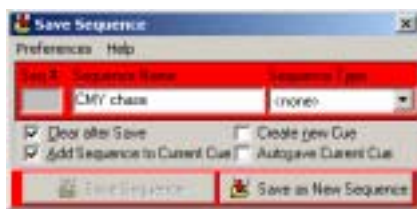
18. Notice that the CMY faders in the **Colors** dialog box are now moving as the sequence is performed.

Step 4: Program movement sequence

The LightJockey has a sophisticated effects engine for generating movements. This is described in detail in the on-line help.

In this sequence you program each fixture individually to move in opposite directions.

1. On the LightJockey desktop, click to select the Left MAC 600 (selection is indicated by a red label) and deselect the Right MAC 600 (non selected fixtures appear with blue labels).
2. If the **Movement 16 Bit** dialog box is not open, click the Movement button on the Fixture toolbar.
3. Using the **Movement 16 Bit** dialog box, click and drag the round white movement cursor to the middle of the top-right quadrant.

4. Click the **Pan Off**/**Snap**/**Fade** and the **Tilt Off**/**Snap**/**Fade** buttons until they are set to **Snap**.
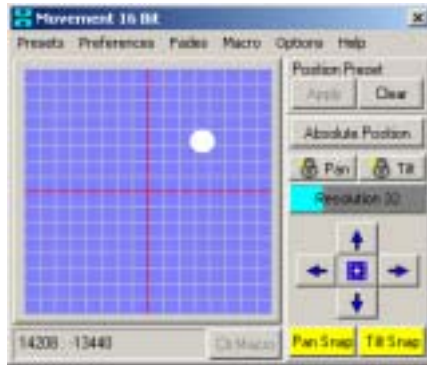
5. On the LightJockey desktop, click to deselect the Left MAC 600 and select the Right MAC 600.
6. Using the **Movement 16 Bit** dialog box, click and drag the round white movement cursor to the middle of the top-left quadrant.
7. Click the **Pan Off**/**Snap**/**Fade** and the **Tilt Off**/**Snap**/**Fade** buttons until they are set to **Snap**.
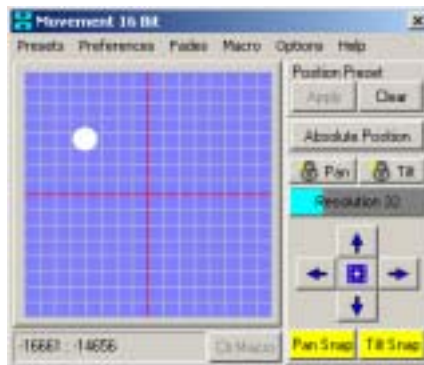
8. In the **Sequence [0000 No name]** dialog box (which can be opened by clicking the **Seq** button on the Sequence toolbar), set the **Scene Time** to 2:00. Note that if the **Synchronize Scene and Fade Times** check box is checked, then the **Fade Time**

will automatically be set to 2:00 seconds as well. Here it makes no difference because the effect is programmed to snap.

9. Click the Add Scene button in the **Sequence [0000 No name]** dialog box.
10. Set the scene and fade times to 15 seconds.

11. Using the **Movement 16 Bit** dialog box, click and drag the round white movement cursor to the middle of the top-right quadrant.
12. Click the **Pan Off**/**Snap**/**Fade** buttons until it is set to **Fade**.
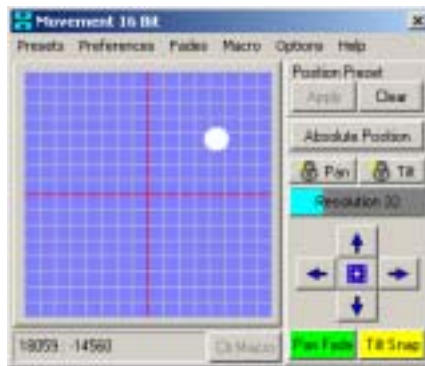
13. On the LightJockey desktop, click to deselect the Right MAC 600 and select the Left MAC 600.
14. Using the **Movement 16 Bit** dialog box, click and drag the round white movement cursor to the middle of the top-left quadrant.

15. Click the **Pan Off**/**Snap**/**Fade** buttons until it is set to **Fade**.
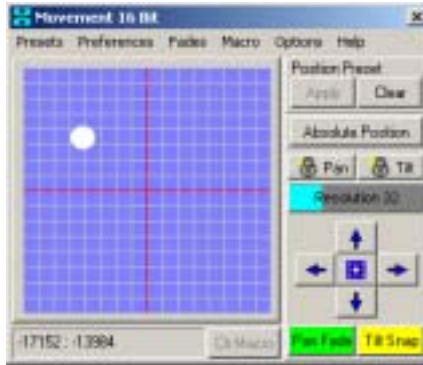
16. Click the Save Sequence button on the Sequence toolbar. The **Save Sequence** dialog box appears.
17. Type Pan in **Sequence Name**.
18. Click **Save as New Sequence** or press Enter.
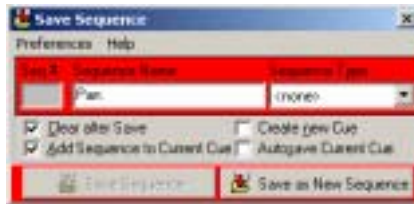
When you select the Left Mac 600 the round white movement cursor should move slowly from left to right. The opposite will occur when you select the Right Mac 600.

Step 5: Edit movement sequence

Here you edit the pan sequence to black out both fixtures in the first scene.

1. Click the List of Sequences button on the Sequence toolbar. The **Select Sequence (Drag To Target)** dialog box appears.

2. Click and drag the Pan sequence and drop it on to the LightJockey desktop.

3. Close the **Select Sequence (Drag To Target)** dialog
   box. Notice that the cursor in the Movement control
   stopped moving and the name of the sequence is
   displayed in the Sequence name field.

   SEQ Pan

4. In the **Sequence [0000 No name]** dialog box (which
   can be opened by clicking the **Seq** button on the Sequence toolbar), click the Next
   Scene button to advance to scene 1.

5. Select both MAC 600 fixtures on the LightJockey desktop.
6. Click the **Shutter Closed**/**Open** button in the **Intensity** dialog box (which can be
   opened by clicking the Intensity button on the Fixture toolbar) so that it changes to
   Shutter Closed.
7. If necessary, click the shutter **Off**/**Snap**/**Fade** button (the top one of the two) so that it
   is set to **Snap**.

8. Click the Save Sequence button on the Sequence toolbar. The **Save Sequence**
   dialog box appears.
9. Click **Save Sequence** or press Enter. A confirmation dialog box appears.
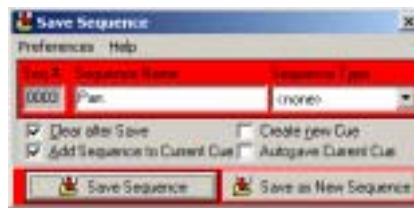
10. Click **OK** to confirm.

Step 6: Save the cue

Cues are handled much like sequences.

1. Click the Save Cue button on the Cue toolbar. The **Save Cue** dialog box appears.
2. Type M600 CMY pan in **Cue Name**.

3. Click **Save New** or press Enter.

Step 7: Edit the cue

This step demonstrates how sequence order effects cue playback. Look at the Intensity control: the shutter closes for 2 seconds because of the command in the pan sequence. This sequence has the highest priority because it is closest to the bottom. When you put the 20% dimmer sequence underneath the pan sequence, the 20% dimmer sequence takes priority and keeps the shutter open all the time. With a little planning, you can create different looks using the same sequences just by changing their order.

1. Click the New/Clear Cue button on the Cue toolbar to clear the cue from the LightJockey desktop. (This is not required; it helps demonstrate how to load cues.)
2. Click the List of Cues button on the Cue toolbar. The **Select Cue [Page 1]** dialog box appears.
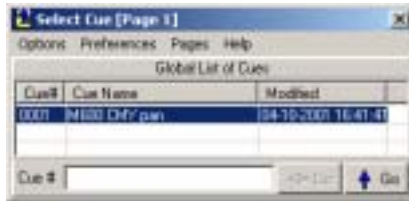
3. Click and drag the M600 CMY pan cue and drop it on to the LightJockey desktop. Its name appears in the **Cue** field and the cue begins to run.

4. Close the **Select Cue [Page 1]** dialog box to clear space on the LightJockey desktop.

5. Click the **Cue** (Toggle Cue Control) button on the Cue toolbar. The **Cue [0001 M600 CMY pan]** dialog box appears.
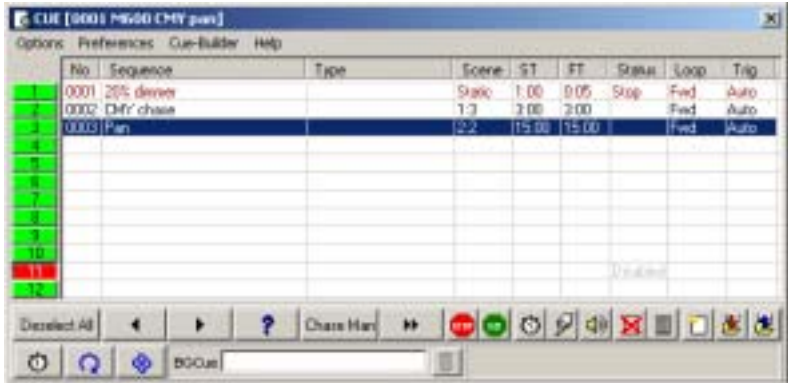
6. Click and drag the 20% dimmer sequence from position 1 and drop it on to position 4. A pop-up menu appears.
7. Select **Move Sequence**.

8. Click the Save Cue button. The **Save Cue** dialog box appears.

9. Click **Save Cue**. A confirmation dialog box appears.
10. Click **OK**.
11. If you now look at the **Intensity** dialog box, note that the shutter now stays open all the time.

Additional cue operations

When editing cues, the current sequence has highest priority. Normal cue execution resumes when the current sequence is cleared. Note too that to synchronize the sequences in the current cue, you must clear the cue and reload it onto the desktop.

- To create a new cue and/or clear the current one, click the New/Clear Cue button on the Cue toolbar.
- To load a cue, click the List of Cues button on the Cue toolbar, and then click and drag the cue from the **Select Cue [Page 1]** dialog box and drop it on the desktop. Click the **Cue** (Toggle Cue Control) button on the Cue toolbar to open the **Cue [*Cue-Number Cue-Name*]** dialog box. This dialog box is used to add, remove, rearrange, and loaded cues.
- To adjust cue timing, click the **Cue** (Toggle Cue Control) button on the Cue toolbar to open the **Cue [Cue-Number Cue-Name]** dialog box. Click on the Cue Time Control button at the lower-left of the dialog-box. The cue master fader adjusts times (as a percent) for all sequences set to CUE time. Setting a sequence fader to another value overrides the master cue fader.

2532 Direct Access Controller

The LightJockey supports the Martin 2532 Direct Access Controller, which can be used to play back cues and sequences.

1. Connect the 2532 to a serial (COM) port on the LightJockey computer.
2. Apply power to the 2532.
3. Click **Setup→Hardware Setup...** to open the **Hardware Setup** dialog box.
4. Click **Direct Access (via RS323)**.
5. Click **Enabled**.

6. Click the appropriate **COM** port.

7. Click **OK**. A window will appear advising that LightJockey will need to be restarted for the changes to take effect.
8. Click **Yes**. LightJockey will shut down and then re-start.
9. Click the 2532 Direct Access button on the Cue List toolbar to open the **2532 Direct Access** dialog box. For more information see the on-line help.