

DMXPlayBack *mk2*

User Manual



ENTTEC

www.enttec.com

Package Contents

Your DMXPlayBack package should contain these items:

- DMXPlayBack MK2 (Part No. 70014)
- DB9 to DB9 1.8m cable (Part No. 79103)
- 2 x mounting brackets (Part No. 79105)
- ShowEditor for Windows™ software on the Enttec CD-ROM (Part No. 79106)
- DC power pack (Part No. 79104)
- This user manual (Part No. 79107)

If any item is missing or damaged, please contact your supplier immediately.

To be sure that you are using the latest revision of ShowEditor software with your DMXPlayBack MK2, please visit the **Downloads** section of the Enttec website at www.enttec.com to get the current version.

DMXPlayBack *mk2*

User Manual

Firmware V0.7 Software V2.0.5

Table of Contents

User Manual	1
Package Contents.....	2
Table of Contents.....	3
Warranty	6
Contacting ENTTEC	6
Getting Support.....	6
Glossary of DMXPlayBack Terms.....	7
Typographic conventions used in this manual	7
Getting to know your DMXPlayBack MK2.....	8
Features.....	8
Layout.....	9
Fast track guide to the DMXPlayBack MK2.....	10
Capturing a Scene.....	11
Storing a Scene	11
Renaming a Scene	12
Modifying an existing Scene	12
Modifying channel levels	12
Saving the Scene list.....	13
Loading a Scene list.....	14
Creating a new Scene list.....	14
Creating a Show.....	15
Adding Scenes to a Show	16
Setting Fade and Delay times	16
Show Options	16
Show run times	16
DMX Channels Used.....	17
Compressing the Show	17
Memory Usage	17
Saving the Show	18

Loading a Show into ShowEditor.....	18
Loading Shows into the DMXPlayBack	19
Loading the current Show.....	19
Loading multiple shows.....	20
Erasing All Shows from the DMXPlayBack	21
Starting a Show.....	22
Starting a Show from ShowEditor.....	22
Starting a Show on DMXPlayBack Power Up.....	22
Starting a Show on Switch Closure	22
Starting a Show with the DMXPlayBackRemote.....	22
Starting a Show via RS232 commands.....	23
Monitoring Show playback	23
Stopping a Show	24
Stopping a Show from ShowEditor	24
Stopping a Show via RS232 commands.....	24
Creating a new Scene with ShowEditor	25
Defining the Patch	25
Saving the Patch	27
Loading a Patch into ShowEditor.....	27
Building a Scene using the ICBF Inspector	27
Fixture selection	27
Intensity attributes	28
Colour attributes	29
Beam attributes	30
Focus attributes.....	31
Storing a Scene	32
Renaming a Scene	32
Modifying an existing Scene	32
Saving the Scene list.....	33
Loading a Scene list.....	33
Creating a new Scene list.....	33
Installing ShowEditor and DMXPlayBack.....	34
Installing ShowEditor.....	34
Connecting the DMXPlayBack MK2.....	34
Power supply	34
RS232	34
DMX Out.....	35

DMX In.....	35
Powering up the DMXPlayBack MK2.....	35
Connecting ShowEditor to a DMXPlayBack.....	36
Testing the RS232 link.....	37
Setting up DMXPlayBack.....	38
DMX Startup frame.....	38
Show Replay Options.....	38
Power up Show.....	39
Switch Close Show.....	39
Updating the Firmware in the DMXPlayBack MK2.....	39
Failed Firmware Update.....	40
Self Test.....	44
Appendix 1 - RS232 Commands.....	46
RS232 Commands supported by the DMXPlayBack MK2.....	46
Appendix 2 - Connector Pinouts.....	47
DMX OUT.....	47
DMX IN.....	47
Using the remote switch.....	47
RS232.....	47
Appendix 3 - FCC Declaration.....	48
Appendix 4 - EEC Declaration.....	50

Warranty

ENTTEC warrants that the product that it manufactures will be free from defects in materials and workmanship for a period of one year from the date of shipment from an authorised ENTTEC wholesaler. If the device proves defective within the warranty period, ENTTEC will repair or replace at its sole discretion, the defective hardware. If the failure is due to an operator error, the user accepts the responsibility to pay any costs incurred in the diagnosis of the hardware, parts or shipping from our service facility.

ENTTEC makes no warranty of any kind, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose. In no event shall ENTTEC be liable for indirect, special or consequential damages.

Opening the case of the unit voids the warranty as described above.

Contacting ENTTEC

Email: contact@enttec.com
Telephone: +61 3 9819 2433 GMT+10
Facsimile: +61 3 9819 2733
Postal Address: ENTTEC Pty Ltd
PO Box 282
Kew
Vic 3101
Australia

Getting Support

If you require support for the DMXPlayBack MK2 or the ShowEditor software, please visit the Support area of our website at www.enttec.com. There you can fill out a support request ticket for prompt assistance with your enquiry.

Glossary of DMXPlayBack Terms

Fixture: A DMX512-controlled device connected to the DMXPlayBack. In ShowEditor a fixture can be either a multi-channel luminaire or effects device, or it can be a single dimmer channel. In ShowEditor a 12 channel dimmer rack is considered to be 12 single-channel fixtures.

Patch: The allocation of DMX512 channels to the fixtures installed on the DMX512 network.

Scene: A recording or snapshot of the DMX512 levels in a lighting state.

Show: A sequence of scenes that form a lighting presentation.

Fade time: The time taken for an incoming scene to reach its recorded levels.

Delay time: The time for which the current scene remains static before the fade to the next scene begins.

Typographic conventions used in this manual

Buttons: Software button names and menu command options appear in a special typeface. Eg. The name of the Windows™ "Start" button is printed as *Start*.

Data boxes: The names of the boxes where data is entered appear in a different typeface. Eg. The name of the "Delay" entry box is printed as *Delay*.

Getting to know your DMXPlayBack MK2

Thank you for purchasing the DMXPlayBack MK2. At Enttec we are proud of our products and we hope you will enjoy using them as much as we enjoy designing and building them.

The DMXPlayBack MK2 is a DMX512 recording and playback tool that captures snapshots of the lighting scenes produced by a control system. The DMXPlayBack then plays the captured scenes back in any desired sequence or combination, with selected scene fade in/out times and pauses between each scene.

The accompanying ShowEditor software controls and configures the DMXPlayback. It can be used to modify the recorded scenes or to build entire new lighting scenes. In addition to setting up and loading show sequences, ShowEditor can configure DMXPlayback for either remote control or stand-alone operation.

ShowEditor allows you to store a library of shows in a database on your computer or on removable media. These can be loaded into the DMXPlayBack unit and played when required.

Features

The DMXPlayBack MK2 provides:

- Full 512 channel universe of input and output
- Scene capture from the DMX512 input
- Up to 12 Shows
- Up to 65,535 Scenes
- Up to 65,535 Scenes per Show
- Fade times and delay times (0 to 100 minutes in 0.1sec steps)
- DMX512 data compression to optimise memory usage
- Data stored indefinitely in non-volatile flash memory
- Show replay can be triggered on:
 - ◆ power up
 - ◆ DMXPlayBackRemote
 - ◆ external switch closure
 - ◆ remote serial command

Layout

The DMXPlayBack MK2 case is 1 Rack Unit (44.45mm) in height, 241mm (9.5 inches) wide and 105mm deep. Two devices of this size can be mounted side-by-side in a standard 19 inch equipment rack using the optional Rack Mounting Kit available from Enttec.



DMXPlayBack front panel

- 1 **LCD status display window**
Indicates operational status and Show information.
- 2 **DB9 RS-232 socket**
Serial data connector for programming and control.
- 3 **Power switch**



DMXPlayBack back panel

- 4 **Power input socket (2.1mm)**
Accepts AC or DC inputs in the range 7V – 16V and a minimum current of 200mA.
- 5 **XLR 5pin Female**
DMX512 Output. Connects to your DMX512 network of fixtures, dimmers, etc.
- 6 **XLR 5pin Male**
DMX512 Input. Connects to a DMX512 lighting controller. (Pin 4 is used for the remote switch function)

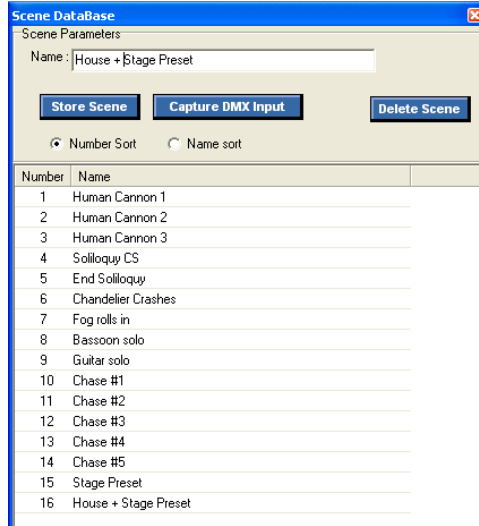
Fast track guide to the DMXPlayBack MK2

To record and replay a show on a DMXPlayBack MK2:

- Install and configure the ShowEditor software on your Windows™ computer.
(see *Installing ShowEditor* on page 34)
- Connect the DMXPlayBack to your computer, a power supply and the DMX512 control network.
(see *Connecting the DMXPlayBack MK2* on page 34)
- Capture and edit the lighting scenes from your presentation. (see *Capturing a Scene* on page 11)
- Build a show from the scenes.
(see *Creating a Show* on page 15)
- Download the show to the DMXPlayBack
(see *Loading Shows into the DMXPlayBack* on page 19)
- Configure the triggering options on the DMXPlayBack
(see *Show Replay Options* on page 38)
- Trigger your show.
(see *Starting a Show* on page 22)
- Watch it run.
(see *Monitoring Show playback* on page 23)

Capturing a Scene

The data appearing at the DMX In port may be captured and saved by opening the *Scene DataBase* window and clicking on the *Capture DMX Input* button. The text on the button will flash momentarily whilst the DMX512 snapshot is being processed.



The message "*DMX captured*" will be displayed in the status window near the top of the screen and the *DMX Output* window will display the levels in the captured Scene.

The Scene will also be transmitted from the DMX Out port on the DMXPlayback.

Scenes can also be created directly in ShowEditor without the need for an external lighting controller. (See *Creating a new Scene* on page 25)

Storing a Scene

The *Store Scene* button writes the Scene currently displayed in the *DMX Output* window, to the Scenes database. Each Scene is assigned a sequential number by ShowEditor as it is created.

The name assigned to the Scene is the text currently in the **Name** box. If that name has already been used, a prompt will appear asking if you want to overwrite the current Scene with that name.

By selecting **YES** the contents of the **DMX Output** window will replace the existing Scene of that name. Selecting **NO** will create a new scene with a different number, but the same name. Although a Scene name may contain up to 48 characters, only the first 16 characters are displayed in the LCD status window of the DMXPlayBack.

Renaming a Scene

To rename a Scene, right-click on the Scene name in the Scene DataBase list and enter the new name into the text box.

Modifying an existing Scene

- ◆ Select the Scene to edit from the Scene DataBase list. The contents of the Scene will be displayed in the **DMX Output** window and transmitted from the DMX Out port on the DMXPlayBack. This enables live scene editing.
- ◆ Modify the channel levels of the Scene (see below).
- ◆ Select **Store Scene**, then **YES** when prompted for permission to overwrite the existing scene.

The modified version of the Scene will automatically replace all instances of that Scene in the current Show.

Modifying channel levels

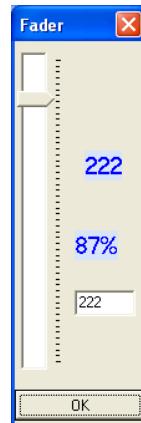
The level of any DMX channel can be changed at any time by double-clicking on the current level in the **DMX Output** window. When the **Fader** window appears, the level may be set by either moving the slider to the required level or entering a new decimal DMX level (0-255) into the **Level** box.

As the level setting in the *Fader* window is retained between appearances, several channels can be set to the same level, by double-clicking on each channel in turn, then clicking on the level slider to move the channel to the indicated level.

Note: Although changed levels are both displayed in the *DMX Output* window and transmitted from the DMXPlayBack, they are not actually stored in the Scenes database or the Show unless the *Store Scene* button has been pressed.

The screenshot shows the 'DMX Output' window with a grid of 20 channels. The 'Display values as percentages' option is selected. The grid contains the following data:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
41	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
61	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
81	0%	0%	0%	88%	88%	0%	0%	0%	0%	0%	0%	0%	0%	89%	89%	0%	0%	0%	0%	0%
101	0%	0%	0%	89%	89%	0%	0%	0%	0%	0%	0%	0%	0%	89%	89%	0%	0%	0%	0%	0%
121	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
141	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
161	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
181	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
201	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
221	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
241	0%	0%	0%	0%	0%	0%	0%	0%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
261	0%	0%	0%	55%	0%	0%	0%	0%	55%	0%	0%	0%	0%	55%	0%	0%	0%	0%	0%	0%
281	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%
301	0%	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%
321	0%	0%	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%	0%	54%	0%	0%	0%	0%	0%	0%
341	0%	0%	0%	0%	0%	54%	54%	54%	54%	54%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
361	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
381	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
401	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
421	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
441	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
461	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
481	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
501	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



Saving the Scene list

To retain the Scene list for later use, select *Scene* then *Save Scene Database* from the top level ShowEditor menu. The default location for the Scene database file is the folder containing the ShowEditor program, but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

The name of the file can be any valid Windows file name ending in ".db", but at start-up ShowEditor automatically attempts to load the file "scene.db" from the ShowEditor folder.

Loading a Scene list

To use an existing Scenes list, select **Scene** then **Open Scene Database** from the top level ShowEditor menu. The default location for the Scene database file is the folder containing the ShowEditor program, but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

When it is launched, ShowEditor automatically attempts to load the file "scene.db" from the ShowEditor folder.

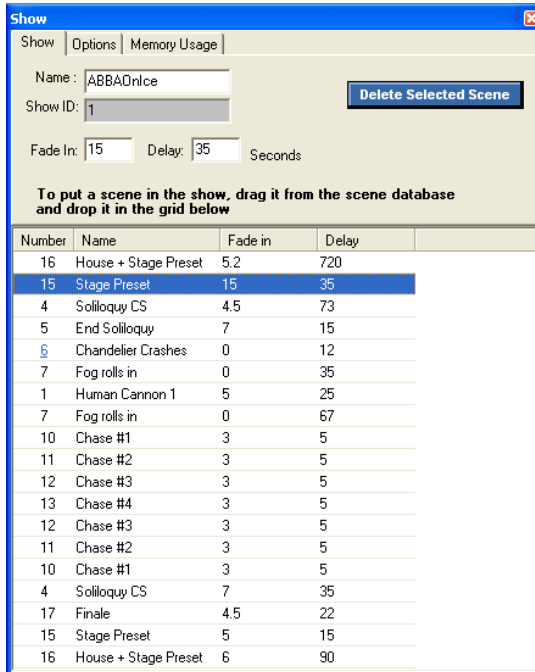
Creating a new Scene list

To create a new, blank Scene list, select **Scene** then **Open Scene Database** from the top level ShowEditor menu. When prompted for the name of the Scene database to open, enter a name not previously used. A new empty database will be created, as will a database file in which to store it.

Creating a Show

A DMXPlayBack Show is a sequence of Scenes separated by Delay times. The transition between successive Scenes is a timed Fade.

To create a new blank Show, select **Show** then **New Show** from the top level ShowEditor menu. The **Show** window will be opened and a Show ID number will be allocated automatically by ShowEditor.



A name for the Show (up to 10 characters in length) may be entered into the **Name** box. This will be used as the default Show file name and will be displayed in the LCD status window of the DMXPlayBack.

Adding Scenes to a Show

Scenes are added to a Show by clicking on them in the ***Scene DataBase*** window, then dragging them into the ***Show*** window and dropping them on the required point in the Show sequence. The levels in the Scene will be shown in the ***DMX Output*** window and transmitted by the DMXPlayBack.

Any Scene may be added to a Show any number of times.

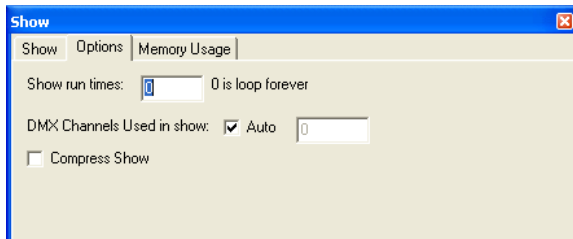
A Show may contain up to 65,535 Scenes.

Setting Fade and Delay times

Delay and Fade times are set by selecting a Scene in the ***Show*** window, then entering the required times into the ***Fade In*** and ***Delay*** boxes. Times may be any duration from 0 seconds to 6000 seconds (100 minutes) in steps of 0.1 seconds. Longer Delay (or Fade) times can be achieved through repetitions of a Scene.

Show Options

The ***Show Options*** window defines how the DMXPlayBack handles replaying a Show.



Show run times

The number entered in the ***Show run times*** box sets the number of times the Show will be repeated each time it is triggered. The value entered may be any number between zero and 255. An entry of zero will cause the show to repeat continuously.

DMX Channels Used

ShowEditor stores DMX values *only* for channels between 1 and the number entered into the **DMX Channels Used in Show** box. It is strongly recommended to set this value to the maximum of 512.

If the **Auto** box is ticked, ShowEditor will store either:

- ◆ All 512 DMX values if the **Capture DMX Input** function is used, or
- ◆ Only DMX values for the channel range covered in the current system Patch.

To conserve memory in DMXPlayBack, Channels Used in Show value may be set to the highest DMX channel number allocated in a system. Entering an incorrect value may result in some DMX values not being stored.

The number selected has no effect on the number of DMX slots generated by the DMXPlayBack, as it always outputs a full packet of 512 slots.

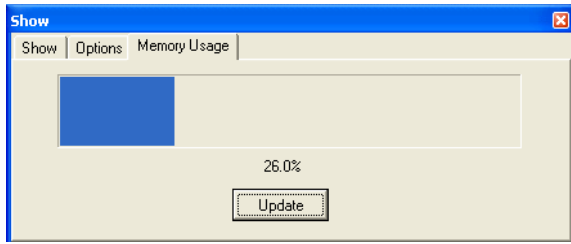
Compressing the Show

To reduce the amount of memory required to store a Show in the DMXPlayBack, the data can be compressed using a process similar to the one used in GIF and TIFF images. It is beneficial in almost all circumstances to enable Show compression by ticking the **Compress** box.

Note: If the **J** (jump scene) or **L** (load scene) serial commands are being used for RS232 control in a custom installation, compression should be disabled.

Memory Usage

The **Memory Usage** window shows how much memory in the DMXPlayBack is occupied by the Shows currently loaded.



Selecting **Update** interrogates the DMXPlayBack to check the current level of memory usage.

Saving the Show

To retain the Show for later use, select **Show** then **Save Show** from the top level ShowEditor menu. The default location for the Show file is the folder containing the ShowEditor program, but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

The name of the file can be any valid Windows file name ending in ".shw", but at start-up ShowEditor automatically attempts to load the file "show.shw" from the ShowEditor folder.

Loading a Show into ShowEditor

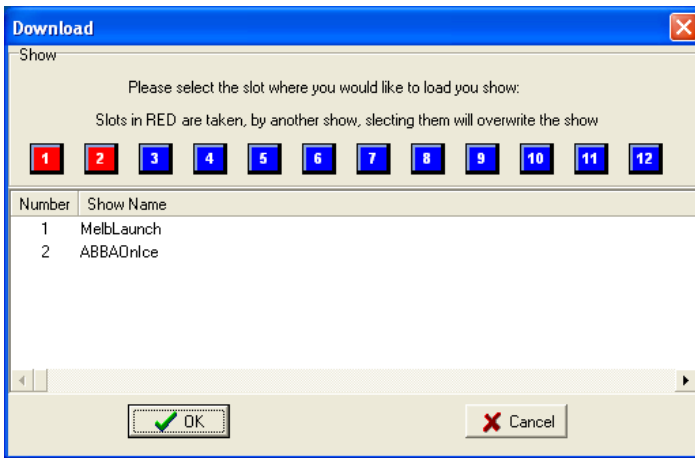
To use an existing Show, select **Scene** then **Open Show** from the top level ShowEditor menu. The default location for the Show file is the folder containing the ShowEditor program (normally *C:\Program Files\ShowEditor MK2*), but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

When it is launched, ShowEditor automatically attempts to load the file "show.shw" from the ShowEditor folder.

Loading Shows into the DMXPlayBack

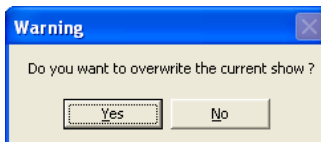
Loading the current Show

The DMXPlayBack has storage slots for up to 12 Shows. To load the current Show, select the **Download Show** button in the main ShowEditor window or **Show** then **Download Show** from the top level menu. After downloading the current status from the DMXPlayBack (this may take up to one minute), the **Download** window will open.



A list of the currently loaded Shows is displayed, together with a row of 12 slot allocation buttons. (Slots in use have a red button.) Selecting one of these buttons allocates the memory slot into which the current Show will be loaded.

The colour of the selected slot allocation button changes to yellow, and if the slot is already in use, a confirmation window will open.



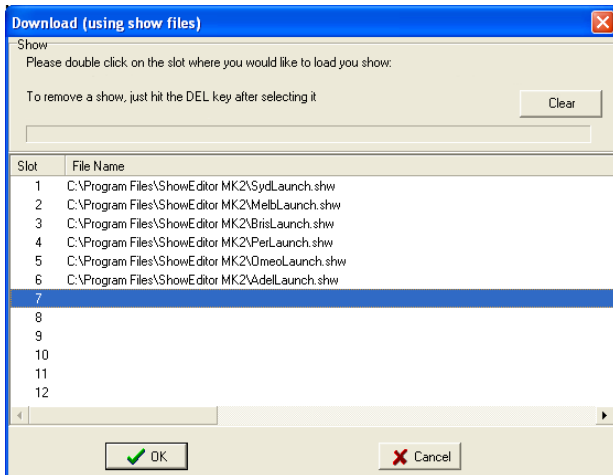
Selecting **Yes** allows the existing Show in that slot to be overwritten.

After selecting the **OK** button, the current Show is then downloaded into DMXPlayBack. The status of the transfer is indicated by a progress bar that will appear in the bottom of the Status window.

On the DMXPlayBack, the LCD status screen will display the number of Shows stored in its memory.

Loading multiple shows

To load up to 12 Shows simultaneously, select **Show** then **Download Multiple Shows** from the top level ShowEditor menu.



In the **Download** window, Shows are allocated to slots by selecting the slot number, then double-clicking on it to bring up a the Show file selection window. The default location for selecting Show files is the folder containing the ShowEditor program (normally *C:\Program Files\ShowEditor MK2*), but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

All slot allocations may be cleared at once with the **Clear** button. Individual slot allocations may be cleared with the **Del** key or modified by double-clicking on the slot number and selecting a different Show file.

After selecting the **OK** button, the selected Show files are successively

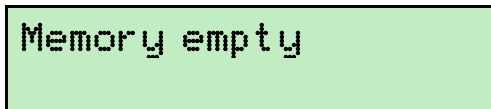
downloaded into DMXPlayBack. The status of each Show transfer is indicated by a progress bar that will appear in the bottom of the Status window.

On the DMXPlayBack, the LCD status window will display the number of Shows stored in its memory.

Erasing All Shows from the DMXPlayBack

To erase all Shows from the DMXPlayBack, select **Show** then **Erase DMXPlayBack** from the top level ShowEditor menu.

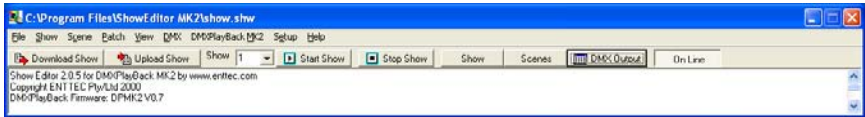
When erasure is complete, the LCD status window on the DMXPlayBack will display:

A rectangular LCD status window with a light green background and a black border. The text "Memory empty" is displayed in a pixelated, monospaced font, centered within the window.

Memory empty

Starting a Show

Starting a Show from ShowEditor



Select the slot number of the required Show from the drop-down list in the ShowEditor main window, then select the **Start Show** button from either the main window or the **Show** option in the main menu.

Starting a Show on DMXPlayback Power Up

If a Power Up Show has been configured, the DMXPlayback will start the show immediately after being powered up.

(See *Power up Show* on page 39).

Starting a Show on Switch Closure

If a Switch Close Show has been configured, the DMXPlayback will start that show whenever the switch function is triggered by making an electrical connection between Pin4 (Switch) and Pin1 (Ground) of the DMX In connector on the rear of the DMXPlayback.

(See *Switch Close Show* on page 39).

Starting a Show with the DMXPlaybackRemote



Using Enttec's DMXPlaybackRemote unit, Shows loaded in a DMXPlayback may be triggered by:

- Pressing a button combination on the front panel (all 12 Shows)
- Pressing a button combination on an infrared remote control (all

12 Shows)

- Closing a switch between terminals on the remote triggering connector (Shows 1-6 only)

Visit the Enttec website www.enttec.com or contact your Enttec dealer for more information about the DMXPlayBackRemote.

Starting a Show via RS232 commands

Every function on the DMXPlayBack, including starting and stopping Shows, capturing Scene snapshots and loading Show files, can be controlled via the RS232 serial port.

The complete RS232 protocol definition document is available from the *Download* section of the Enttec website at www.enttec.com.

Monitoring Show playback

The LCD status screen on the DMXPlayBack displays full details of the Show currently being played.

A screenshot of a green LCD screen with black text. The top line displays 'ABBAonIce' and the bottom line displays 'Fde: 11.5s 75%'.

```
ABBAonIce
Fde: 11.5s 75%
```

The top line of the window displays the name of the Show, alternating every two seconds with the name of the current Scene.

A screenshot of a green LCD screen with black text. The top line displays 'House + Stage Fr' and the bottom line displays 'Fde: 11.5s 91%'.

```
House + Stage Fr
Fde: 11.5s 91%
```

During a Fade, the bottom line displays "Fde", the Fade Time in seconds and the progress of the fade as a percentage.

```
House + Stage Pr  
Dly: 120.0s 18%
```

During a Delay the bottom line displays "Dly", the Delay Time in seconds and the progress of the delay as a percentage.

Stopping a Show

Stopping a Show from ShowEditor

To stop the running Show select the ***Stop Show*** button from either the main window or the ***Show*** option in the main menu.

Stopping a Show via RS232 commands

Every function on the DMXPlayBack, including starting and stopping Shows, capturing Scene snapshots and loading Show files, can be controlled via the RS232 serial port. (See *Appendix 1 - RS232 Commands* on page 46)

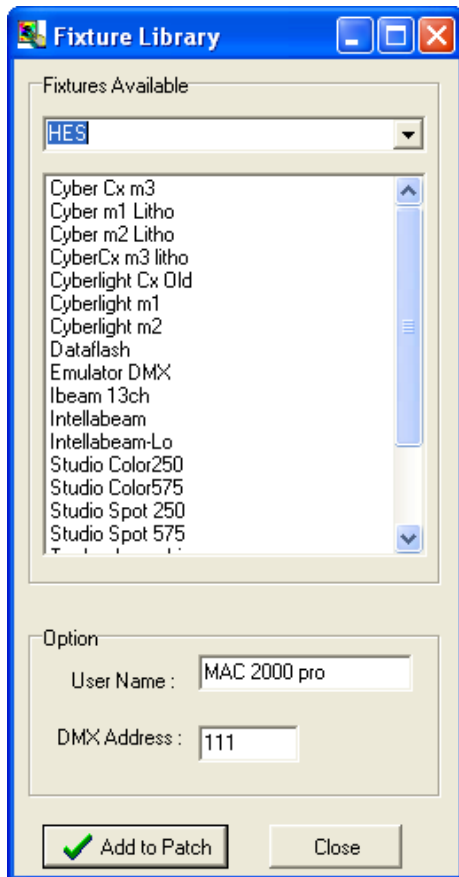
The complete RS232 protocol definition document is available from the *Download* section of the Enttec website at www.enttec.com.

Creating a new Scene with ShowEditor

A new Scene can be created by directly setting levels in the **DMX Output** window (see *Modifying an existing Scene* on page 12) or by defining a system Patch from the **Patch** window then building the Scene with the **ICBF Inspector**.

Defining the Patch

The Patch window displays the current list of DMX slots assigned to Fixtures in ShowEditor.



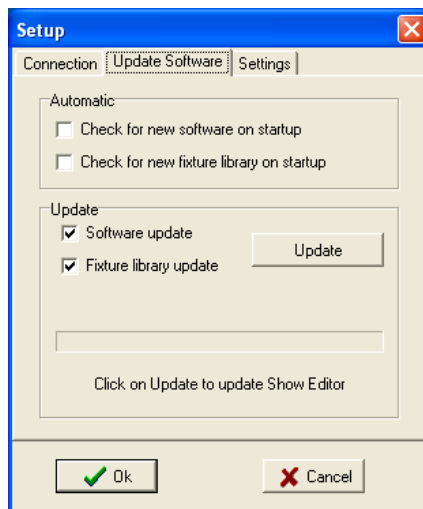
In ShowEditor a Fixture can be either a multi-channel luminaire or effects device, or it can be a single dimmer channel. A 12 channel dimmer rack should be treated as 12 separate single-channel Fixtures.

Fixtures are added to the Patch using the **Add** button which opens the **Fixture Library** window to allow selection of Fixtures from ShowEditor's library.

Unless the **DMX Address** box is changed manually, each new Fixture is automatically added to the Patch list, immediately after the last slot allocated to the previous Fixture. Multiple fixtures can be added by repeatedly selecting the **Add to Patch** button.

The Patch can be cleared completely by selecting **Patch**, then **New** from the main ShowEditor menu.

Additional Fixtures are regularly added to the library, which can be updated using the **Update Software** options available under **Setup** in the main ShowEditor menu.



Should you need to build a custom fixture library, instructions are available from the support knowledgebase on the Enttec website.

Saving the Patch

To retain the Patch for later use, select **Patch** then **Save** from the top level ShowEditor menu. The default location for the Patch file is the folder containing the ShowEditor program (normally *C:\Program Files\ShowEditor MK2*), but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

The name of the file can be any valid Windows file name ending in ".ini". At start-up ShowEditor attempts to load the default patch file "patch.ini" from the ShowEditor folder.

Loading a Patch into ShowEditor

To use an existing patch, select **Patch** then **Load** from the top level ShowEditor menu. The default location for the Patch file is the folder containing the ShowEditor program (normally *C:\Program Files\ShowEditor MK2*), but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

Building a Scene using the ICBF Inspector

The **ICBF Inspector** enables the setting of **Intensity**, **Colour**, **Beam** and **Focus** attributes of a fixture, although not every fixture has attributes in all categories.

Fixture selection

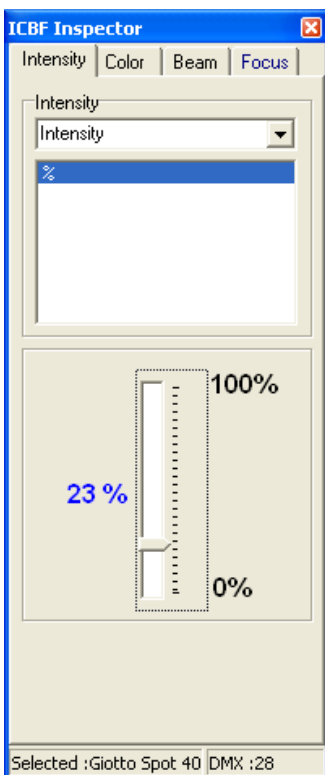
The ICBF Inspector controls the attributes of all currently selected Fixtures. Fixtures may be selected either singly or in groups.

- ◆ All Fixtures are selected by clicking on the **All** button.
- ◆ All Fixtures are de-selected by clicking on the **None** button.
- ◆ When the **Invert** button is clicked, all Fixtures currently selected are de-selected, while all previously de-selected Fixtures become selected.

- ◆ Multiple Fixtures are selected by holding down a "**Ctrl**" key while clicking on Fixtures with the left mouse button.
- ◆ A continuous range of Fixtures is selected by left-clicking on the Fixture at one end of the range, then holding down a "**Shift**" key while left-clicking on the Fixture at the other end of the range.

A selection of fixtures can be retained for later use by defining them as a Group using the **Save** button in the **Groups** panel. All members of a Group are selected by selecting the Group name.

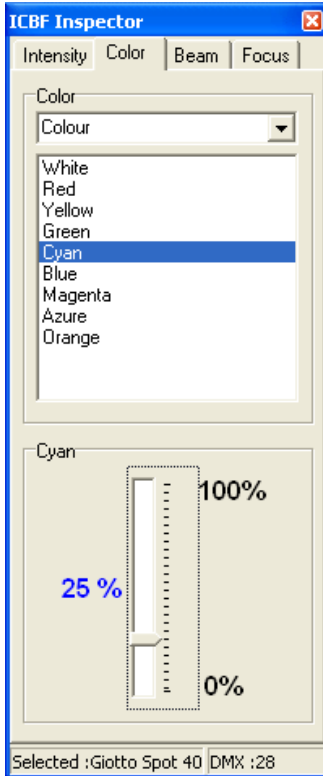
Intensity attributes



A drop-down list of Intensity attributes for the current Fixture is available at the top of the window. These may include such parameters as intensity (dimming), lamp strike or device On and device Off.

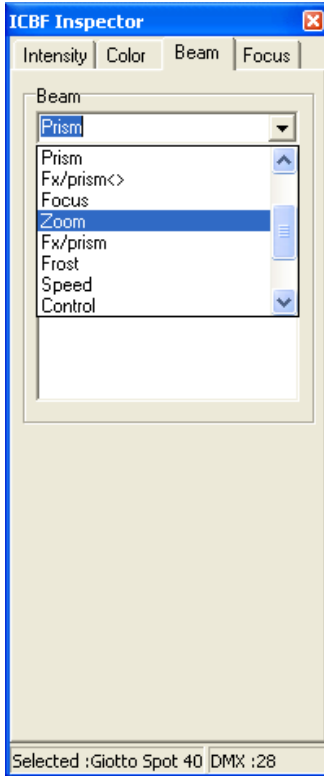
Parameters appear either as a list of available options, or as a slider for adjusting continuously variable attributes.

Colour attributes



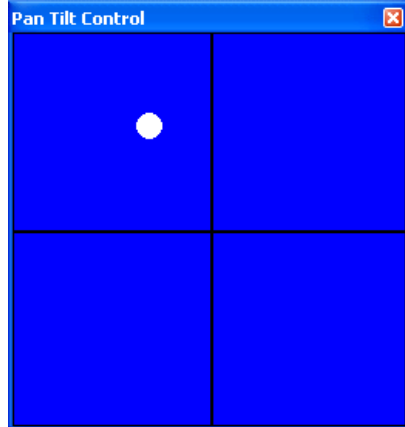
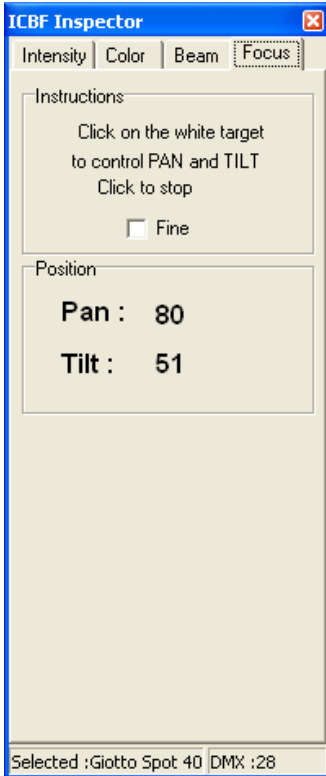
A drop-down list of Colour attributes for the current Fixture is at the top of the window. These may include such parameters as colour selection lists, colour wheel positions, wheel rotation speeds and colour mixing intensities. Parameters appear either as a list of available options, or as a slider for adjusting continuously variable attributes.

Beam attributes



A drop-down list of Beam attributes for the current Fixture is at the top of the window. These may include such parameters as, zoom settings, beam focus, gobo selection lists, strobe functions and rates, gobo rotation speeds and prism selection and rotation speed. Parameters appear either as a list of available options, or as a slider for adjusting continuously variable attributes.

Focus attributes



If the current Fixture has pan and tilt capabilities, the Pan Tilt Control window will appear. Adjustments are made by controlling the position of the white cursor dot in the target window.

Control of the cursor is taken by a single left-click on the white dot. The cursor will then track the mouse on the control screen, until control is relinquished with a further single left-click.

The ***Fine*** box in the ***ICBF Inspector*** window selects between coarse and fine adjustment modes.

Storing a Scene

The ***Store Scene*** button in the ***Scene Database*** window writes the Scene currently displayed in the ***DMX Output*** window, to the Scenes database. Each Scene is assigned a sequential number by ShowEditor as it is created.

The name assigned to the Scene is the text currently in the **Name** box. If that name has already been used, a prompt will appear asking if you want to overwrite the current Scene with that name.

By selecting ***YES*** the contents of the ***DMX Output*** window will replace the existing Scene of that name. Selecting ***NO*** will create a new scene with a different number, but the same name. Although a Scene name may contain up to 48 characters, only the first 16 characters are displayed in the LCD status window of the DMXPlayBack.

Renaming a Scene

To rename a Scene, right-click on the Scene name in the Scene DataBase list and enter the new name into the text box.

Modifying an existing Scene

- ◆ Select the Scene to edit from the Scene DataBase list. The contents of the Scene will be displayed in the ***DMX Output*** window and transmitted from the DMX Out port on the DMXPlayBack. This enables live scene editing.
- ◆ Modify the channel levels of the Scene.
- ◆ Select ***Store Scene***, then ***YES*** when prompted for permission to overwrite the existing scene.

The modified version of the Scene will automatically replace all instances of that Scene in the current Show.

Saving the Scene list

To retain the Scene list for later use, select ***Scene*** then ***Save Scene Database*** from the top level ShowEditor menu. The default location for the Scene database file is the folder containing the ShowEditor program, but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

The name of the file can be any valid Windows file name ending in ".db", but at start-up ShowEditor automatically attempts to load the file "scene.db" from the ShowEditor folder.

Loading a Scene list

To use an existing Scenes list, select ***Scene*** then ***Open Scene Database*** from the top level ShowEditor menu. The default location for the Scene database file is the folder containing the ShowEditor program, but it can be any valid folder, including a network file server or a removable storage device such as a flash memory device or a portable media player.

When it is launched, ShowEditor automatically attempts to load the file "scene.db" from the ShowEditor folder.

Creating a new Scene list

To create a new, blank Scene list, select ***Scene*** then ***Open Scene Database*** from the top level ShowEditor menu. When prompted for the name of the Scene database to open, enter a name not previously used. A new empty database will be created, as will a database file in which to store it.

Installing ShowEditor and DMXPlayBack

Installing ShowEditor

To install ShowEditor for Windows™, double-click on the supplied installer file and accept the default program folder "C:\Program Files\ShowEditor MK2" or enter the location of your preferred folder.

A ShowEditor folder will now be found in the *Programs* list available from the Windows *Start* button.

In that folder there will now be a ShowEditor icon. By right-clicking on this icon and selecting *Send to*, then *Desktop*, a shortcut for ShowEditor will be created on your Windows desktop.

It is preferable to have the DMXPlayBack linked to the computer before launching ShowEditor.

Connecting the DMXPlayBack MK2

Power supply

The DMXPlayBack requires a low voltage supply (nominally 9V DC) from the included power pack unit. This should be plugged in to an appropriate mains outlet and the Power Supply socket on the back of the DMXPlayBack.

The DMXPlayBack must be connected to the power supply and switched on before attempting to establish DMX512 or Serial Data links.

RS232

The DMXPlayBack is controlled and configured through an RS232 serial link to a computer running the ShowEditor software.

The supplied serial data cable can be used to connect the RS232 socket on the DMXPlayBack to the serial port on the ShowEditor computer. It is advisable to keep a record of which serial port has been used.

If there are no serial ports on the ShowEditor computer, it is possible to use a USB to RS232 adaptor to make the connection. Most varieties of adaptor work reliably, most of the time. Those based on FTDI's USB chip have proven to be the most stable. Be sure to install the adaptor and its driver software **exactly** as described in the product documentation.

Due to the wide variety of USB to RS232 adaptors available, Enttec are unable to offer technical support for these devices when used with DMXPlayBack MK2.

DMX Out

The DMX Out socket is connected to the network of DMX512 devices that are to be controlled by the DMXPlayBack MK2.

It is not necessary to have any connection to the DMX Out socket while programming the DMXPlayBack.

DMX In

The DMX In socket is connected to the DMX512 controller whose output is to be captured by the DMXPlayBack.

It is not necessary to have any connection to the DMX In socket while playing back Shows from the DMXPlayBack.

Powering up the DMXPlayBack MK2

When the DMXPlayBack is switched on, the backlight on the LCD status display illuminates, and after a short pause for an internal system test, the Startup Frame will be output, and the LCD window will briefly display a message similar to:

```
DMXPlayBack MK2
DPMK2 V0.7
```

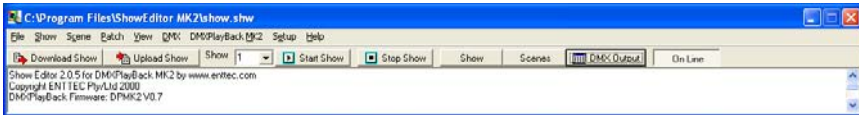
The version number *VX.X* indicates the version of firmware (internal operating software) installed in the DMXPlayBack unit. If nothing is configured to run at Startup, the number of Shows currently stored in DMXPlayBack's memory will be displayed.

```
0 shows in mem
```

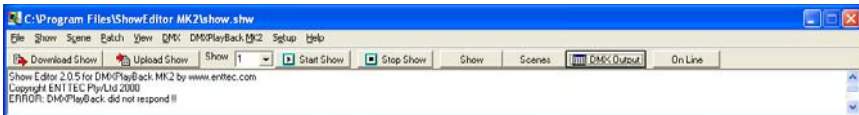
If there is a Show in memory configured to run at Startup, the display will then display the name of the running Show.
(See *Monitoring Show playback* on page 23)

Connecting ShowEditor to a DMXPlayBack

When ShowEditor is launched, it attempts to contact a DMXPlayBack over the selected RS232 serial link. The first time ShowEditor is run, it tries to connect via COM 1 (communications port No. 1). If it succeeds, the **On Line** button will be selected and the status window will display information about the version of firmware installed in the DMXPlayBack.



If ShowEditor is unable to connect to a DMXPlayBack the **On Line** button will not be selected and an error message will be displayed in the status window.



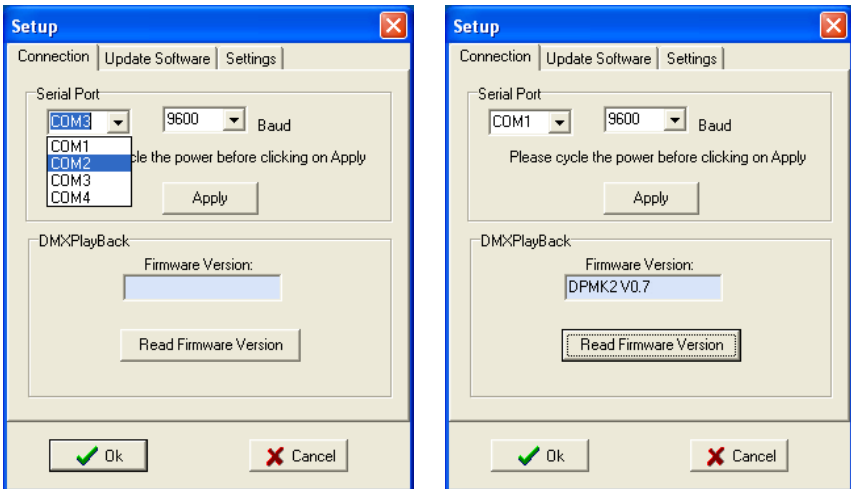
To configure communications between ShowEditor and the DMXPlayBack, select **Setup** from the main program menu. In the Setup window, select which Serial Port is connected to the

DMXPlayBack and what data rate (in Baud) should be used.

While a higher data rate will make uploads and downloads faster, the default speed of 9600 Baud is the most reliable. If communications at higher speeds become intermittent, it is advisable to reduce the baud rate to 9600 Baud, and switch the DMXPlayBack off, then on again, to re-synchronize the link.

Testing the RS232 link

To confirm that there is a working data link to the DMXPlayBack, click on the **Read Firmware Version** button.



If text appears in the Firmware Version window, then the link is working and programming can now proceed.

If any other message appears:

- Check that the DMXPlayBack is switched on and running.
- Confirm that the RS232 cable is connected at each end.
- Check that the correct Serial Port has been selected.
- If a high data speed has been selected, try a lower Baud rate.
- Switch the DMXPlayBack off, then switch it on again, to give the devices an opportunity to re-synchronize the link.

Setting up DMXPlayBack

DMX Startup frame

On Startup the DMXPlayBack continuously outputs a specific Startup Scene, unless it is configured to automatically run a Show.

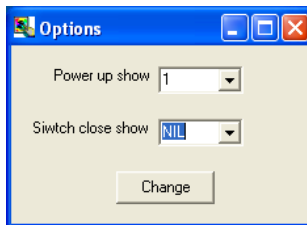
To set the Startup Scene:

- Select the required Scene from either the **Show** or **Scene Database** window for display in the **DMX Output** window.
- Modify the Scene, if necessary, by selecting the channels in the **DMX Output** window to set new levels.
- Select **DMXPlayBack MK2** then **Set Startup frame**, from the main ShowEditor menu.

The current contents of the **DMX Output** window are copied to the Startup frame of the DMXPlayBack. The status of the transfer is indicated by a progress bar that will appear in the bottom of the Status window.

Show Replay Options

DMXPlayBack can be configured to play a specific Show automatically whenever it is powered up. It can also be set up to play back a specific Show every time an external switch is closed.



Power up Show

To set the Show file that will be played whenever the DMXPlayBack is switched on:

- Select **DMXPlayBack MK2** then **Options**, from the main menu.
- In the **Power up Show** box, select the number of the Show to be played or NIL if this function is not required.
- Click on the **Change** button to send the new setting to the DMXPlayBack.

Switch Close Show

To set the Show file that will be played whenever the external switch function is triggered:

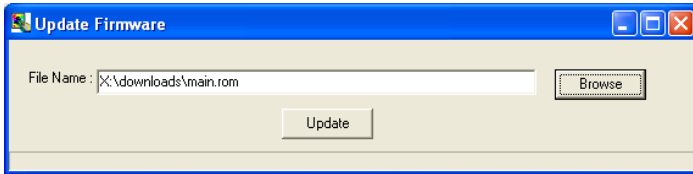
- Select **DMXPlayBack MK2** then **Options**, from the main menu.
- In the **Switch close Show** box, select the number of the Show to be played or NIL if this function is not required.
- Click on the **Change** button to send the new setting to the DMXPlayBack.

Note: The switch function is triggered by making an electrical connection between Pin4 (Switch) and Pin1 (Ground) of the DMX In connector on the rear of the DMXPlayBack.

Updating the Firmware in the DMXPlayBack MK2

From time to time new versions of the firmware (internal operating software) for the DMXPlayBack MK2 may become available, to add features or fix an operational problem that has been discovered. Updates are made available from the **Downloads** section of the Enttec website at www.enttec.com.

After checking that the firmware available from the Enttec website has a higher version number than that currently installed in the DMXPlayBack MK2 (see *Testing the RS232 link* on page 37), download it and extract the file **main.rom** from the Zip archive.



To install the update:

- Select **DMXPlayBack MK2** then **Update Firmware**, from the main menu.
- Enter the file path and file name for the update file in the **File Name** box, or locate the file using the **Browse** button.
- Select the **Update** button to load the file into the DMXPlayBack.
- The status of the update is indicated by a progress bar that will appear in the bottom of the Status window.
- The DMXPlayBack should be switched off, then re-started, before further use.

Failed Firmware Update

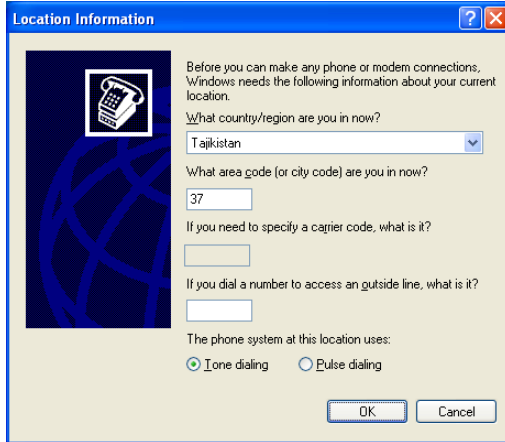
In the unlikely event that the DMXPlayBack does not run when re-started after a firmware update, it is necessary to force the unit into its Boot mode, then repeat the update process.

This requires sending a stream of the character "Y" to the RS-232 port on the DMXPlayBack using HyperTerminal, Windows' built-in serial communications program.

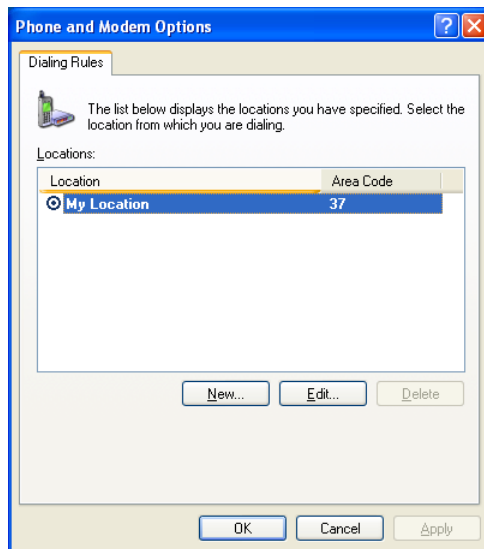
Launch HyperTerminal from **Start/ Programs/ Accessories/ Communications/ HyperTerminal**.

If this is the first time that HyperTerminal has been run you will be prompted to enter your country name and city code.

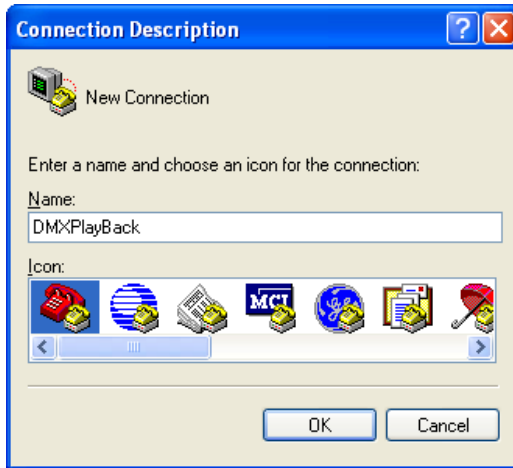
As this information is not required for connection to the DMXPlayBack, select the **OK** button to proceed.



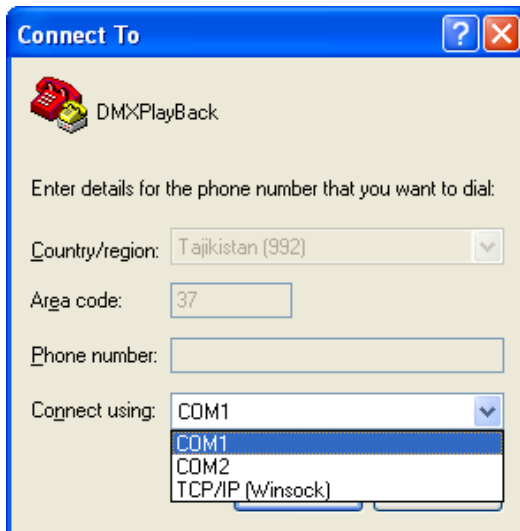
When prompted for your dialling location, once again select the **OK** button to proceed, as this information is not required.



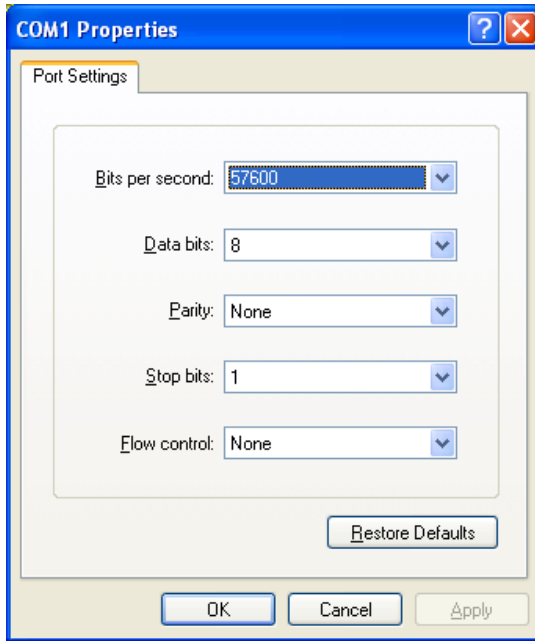
To retain the connection configuration for possible re-use, enter an easily identifiable name for the connection.



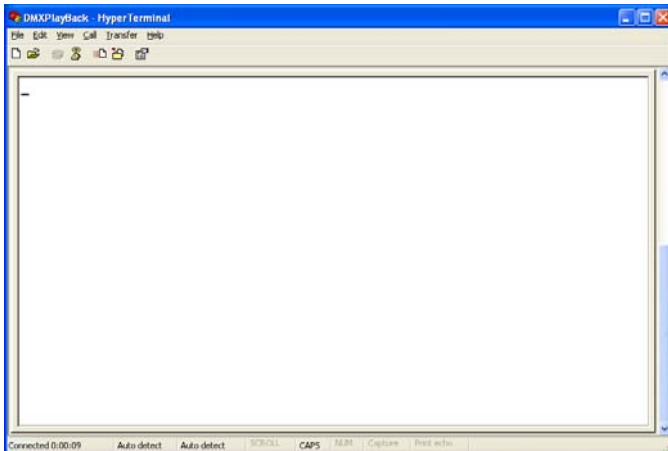
Select the name of the communications port where the DMXPlayBack is connected on your computer.



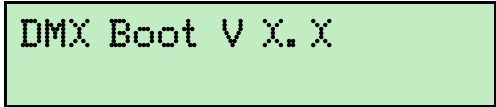
Communications properties should be set to **57,600 bits per second**, with **8 data bits**, **no parity bit** and **1 stop bit**. Flow control should be set to **none**. Select **Apply**, then select **OK**.



In the main terminal window, press the **Caps Lock** key on your keyboard, then hold down the **Y** key whilst switching on the DMXPlayBack.



The DMXPlayBack comes up in Boot mode and LCD screen displays.



Return to ShowEditor and repeat the procedure described in *Updating the Firmware in the DMXPlayBack MK2* on page 39.

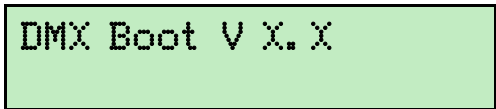
Self Test

The DMXPlayBack has an extensive internal system test routine that can be initiated from ShowEditor. Running the full test set requires a loopback cable, which is just a standard DMX512 XLR 5 pin male to female lead.

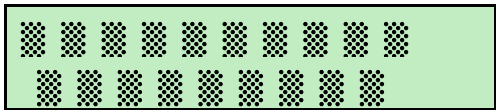
To start the process:

- Stop any running Show.
- Remove any DMX connections.
- Select **DMXPlayBack MK2** then **Self Test**, from the main menu.

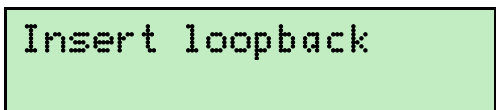
The LCD screen will then display



Followed by a series of alternating blocks in changing patterns.

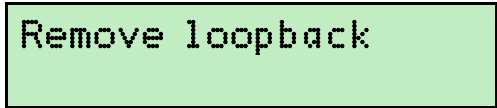


The screen will then prompt for the loopback cable to be connected between the DMX In and DMX Out ports.



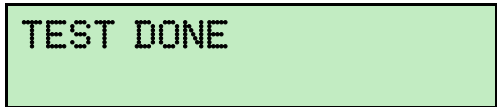
Once the DMX ports have been tested, the screen then prompts for the

loopback cable to be removed, to allow the test cycle to continue.



Remove loopback

When the test process has been successfully completed, the screen will read.



TEST DONE

The DMXPlayBack should be switched off, then re-started, before further use.

Should any other screen messages be displayed, please visit the Support area of our website at www.enttec.com and fill out a support request ticket detailing the error message.

Appendix 1 - RS232 Commands

RS232 Commands supported by the DMXPlayBack MK2

Command Description	Command Letter
Read RAM Command	D
Write RAM Command	W
Version Command	V
DMXBuff Command	X
Fade Command	F
EEProm Command	E
Show Command	H
Reset Command	Z
DMX Read Command	C
Jump Scene Command	J
Set Speed Command	R
Load Scene Command (V2.22)	L

Every function on the DMXPlayBack, including starting and stopping Shows, capturing Scene snapshots and loading Show files can be controlled via the RS232 serial port. The complete RS232 protocol definition document is available from the *Download* section of the Enttec website at www.enttec.com.

Appendix 2 - Connector Pinouts

DMX OUT

Pin 1	Ground
Pin 2	Data -
Pin 3	Data +
Pin 4	NC
Pin 5	NC

DMX IN

Pin 1	Ground
Pin 2	Data -
Pin 3	Data +
Pin 4	Switch [*]

Using the remote switch

*The switch function is activated by making an electrical connection between Pin 4 (Switch) and Pin 1 (Ground) of the DMX Input.

RS232

Pin 2	TX
Pin 3	RX
Pin 5	Ground

Appendix 3 - FCC Declaration

Federal Communications Commission (FCC) Declaration of Conformity

Responsible Party: ENTTEC Pty Ltd
PO Box 282,
Kew, Vic, 3101
Australia

declares that the products DMXPlayBack MK2, DMXPlayBackRemote, comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

* In order to maintain compliance with FCC regulations shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

Appendix 4 - EEC Declaration

We

ENTTEC Pty Ltd
PO Box 282,
Kew, Vic, 3101
Australia

declare under our sole responsibility that our product DMXPlayBack MK2 conforms to the requirements of Council Directives 89/336/EEC and 73/23/EEC and therefore complies with the requirements of Council Directive 73/23/EEC, (The Low Voltage Directive) on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits as amended by Article 13 of Council Directive 93/68/EEC

- EN 55103-1
- EN 50103-2
- EN 60065/AS 3650

Signed Nicolas Moreau

Date: 10/10/2000

Position: Technical Director