DC-MP3

Show Director with MP3 Player

User Manual
September 27, 2007
V1.05

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Introduction

The Light-O-Rama Director Card with MP3 Player (LOR DC-MP3) is a compact, powerful show director designed to take the place of your PC. It directs a network of LOR controllers while simultaneously playing MP3 files. The on-board real time clock with power-fail backup can be used to schedule your shows. Six trigger inputs allow shows to be started by external events.

The Windows Showtime software is used to design and build *Sequences* (light controller commands that may be choreographed to music.) These user created sequences and/or pre-programmed musical sequences available from LOR are then arranged into *Shows*. These *Shows* are transferred to an SD card, along with the scheduling and trigger information. The SD card is inserted into the DC-MP3, which then directs the LOR controllers in your display and plays any associated music.

Note

To obtain the full functionality of the DC-MP3 you must have firmware version 3.00 and Light O Rama Hardware Utility version 1.6.4 or later. See the sections *DC-MP3 Firmware Versions* and *Hardware Utility Version* for more information.

What's in the Box

Your *DC-MP3* includes a USB SD card reader/writer, a 128 MB (or larger) SD card and a user's manual. This manual is also available at www.lightorama.com ► Support ► DC-MP3 User's Manual.

If you purchased an LOR1602MP3, which is a 16 channel lighting controller with an internal DC-MP3. The DC-MP3 is mounted on a plate inside the controller. Remove the bottom two screws from the front cover and lift off the cover to expose the DC-MP3. See the following picture:

DC-MP3 Firmware Versions

Firmware Version	Determining Version	Scheduling Supported	Interactive Supported
1.0	E, R & C LEDs do not chase when the DC-MP3 is powered up, the LEDs just flash	No	No
2.0	E, R & C LEDs chase **three** times when the DC-MP3 is powered up	Yes	No
3.0	E, R & C LEDs chase **four** times when the DC-MP3 is powered up	Yes	Yes

If the firmware version in your DC-MP3 does not support show scheduling, you will have to check the *Old Firmware* box on the *LOR MP3* tab when using the Hardware Utility to build your shows. You will not be able to use the DC-MP3's real time clock to schedule shows. If you want to use the scheduling features, you must update the firmware in your DC-MP3 to at least 2.0. See the *Updating DC-MP3 Firmware* section for instructions.

If the firmware version in your DC-MP3 does not support trigger inputs, and you want to use the interactive features, you must update the firmware in your DC-MP3 to 3.0. See the section *Updating DC-MP3 Firmware* for instructions.

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Hardware Utility Version

If your Hardware Utility has an *LOR MP3* tab on the upper left of the LOR Control window (initial window) you will be able to put a show on an SD card for your DC-MP3. If you want to use the show scheduling features, you must have Hardware Utility version 1.5.8 or later. If you want to use interactive trigger inputs in your show, you must have Hardware Utility version 1.6.4 or later. The version of the Hardware Utility appears in the title bar to the right of "Light-O-Rama Hardware." If the version you have does not support the features you want to use or there is no version number at all, then you need a new Hardware Utility.

The latest version is available for download at www.lightorama.com ► Support ► Software Downloads. Click the **Download** button to the left of the Hardware Utility and run the installer.

Important Considerations

The DC-MP3 is normally powered by the nearest Light O Rama controller or a USB485B PC adapter. Use a 50' or less CAT5e LAN cable to connect the DC-MP3 to either of these devices. Longer cables may have an unacceptable voltage drop that may cause erratic operation of the DC-MP3.

SD cards must be formatted FAT16 (or just FAT)

SD cards supplied by LOR will already be formatted FAT16 and ready for use.

Not all brands of SD cards will work with the DC-MP3. Lexar Media and SimpleTech are known to work.

Individual MP3 songs are limited to 10 minutes. After 10 minutes the song will continue to play, but control of the lights will not continue. This does not mean that the DC-MP3 can only control a 10 minute show, only that no song(MP3 file) in your show can be longer than 10 minutes.

A 128 MB SD card can hold approximately one hour of MP3 audio and controller commands.

Songs (audio files) for use with the DC-MP3 must be encoded as MP3 files. Constant Bit Rate (CBR) at 128K bits/second is best. See www.lightorama.com ► Support ► "How to and considerations: Ripping CDs to MP3s"

The backup power for the DC-MP3's real time clock will keep the clock going for at least three days. The DC-MP3 must be powered for 15 minutes to fully charge the backup capacitor. The real time clock is needed only for scheduled shows. In this case, the DC-MP3 is always powered, so the backup power capacitor is only needed to survive power failures.

Component Locations
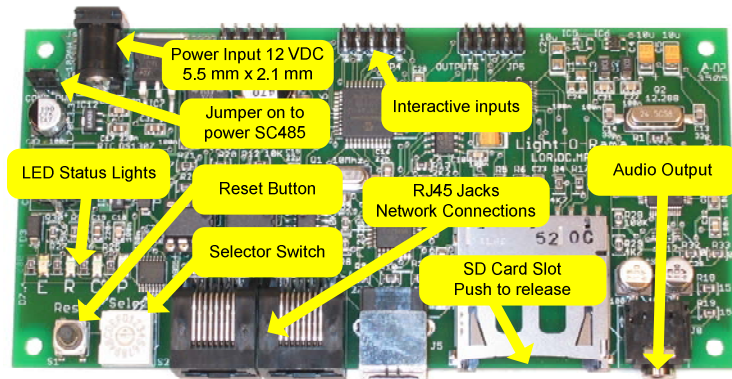
Power Input

Normally, power is supplied by the attached controller via the RJ45 jack(s.) This barrel connector can be used to supply power if

- the DC-MP3 is more than 50' from the nearest controller or the controller is an older model that cannot supply enough power

- the DC-MP3 is to be connected to a PC without using a USB485B powered adapter or an attached lighting controller (I.e. using a USB485 or SC485 adapter)

- the DC-MP3 is to be put on a timer or switch to control it (See the *Jumper* section below in this case)

Use a 12 VDC power brick to supply external power to DC-MP3 if needed.

Audio Output

This is a standard 1/8" stereo mini-jack. It supplies line-level output. You can directly plug headphones or FM transmitter into this jack. Use an amplifier to drive speakers.

Jumper

This jumper is put in place for two reasons

1. The DC-MP3 is connected to a PC via an SC485 adapter and therefore needs to supply power to SC485

2. The DC-MP3 is to be powered by the nearest controller, the normal case

This jumper is removed when the DC-MP3 is to be controlled by an external timer or switch and is therefore powered through the power barrel.

Reset Button

Press the Reset button to reset the DC-MP3 or whenever you change the Selector Switch to have the change take effect.

SD Card Slot

The SD card is inserted into the SD card slot with the gold connectors facing down. Press the card into the slot until it "clicks" into place. To remove the card, press the card into the slot and it will spring eject.

Status LEDs

There are four LEDs on the left side of the card above the Reset Button and Selector Switch. These LEDs are used as follows:

E   Steady blink if there is no SD card inserted into the DC-MP3.

Steady ON if the Hardware Utility is attached to the DC-MP3 – no SD card may be inserted while communicating with the Hardware Utility.

Blink twice, pause, blink twice, pause, … if the show selected by the Selector Switch does not exist.

Fast blink if the selected show is not present on the SD card or the SD card is invalid

Random blink during a show (SD card inserted) if the DC-MP3 falls more than a tenth of second behind in getting lighting controller commands out on the RS485 network link.

R   Steady blink if the DC-MP3 is waiting for a scheduled show to start.

Blink twice, pause, blink twice, pause, … if waiting for an input trigger to start a show and/or waiting for a scheduled show.

C   Not currently used except during startup to indicate the firmware version present in DC-MP3.

P   This green LED is lit when the DC-MP3 is powered.

See the *DC-MP3 Firmware Versions* section for an explanation of how these LEDs are used to indicate the firmware version.

Selector Switch

[Remember to press the Reset button after moving the Selector Switch to notify the microprocessor]

With firmware version 1.0 or later firmware and an old firmware format SD card, this switch controls the RS485 communications data rate.

0   19,200 bits/second
1   57,600 bits/second
2   115,200 bits/second

Use the slowest speed that successfully runs your show. If the speed you select is not fast enough to run your show, the red **E** LED will blink during the show. This indicates that the DC-MP3 has fallen at least one tenth of second behind in getting controller commands out on the RS485 network link.

Version 2.0 and later firmware sets the communications rate via the Hardware Utility when creating the SD card to run your show(s.) The Selector Switch is not used.

Version 3.0 firmware uses the Selector Switch in the following manner:

Positions '1' through '9' select that particular show. Only the selected show will run. If the selected show has a scheduled time, it will only run during that time period. If the selected show is set to run anytime, it will start as soon as the DC-MP3 has initialized (about 5 seconds.)

Position 'A' allows all shows to run as per their schedules.

While interactive is active, any show not associated with a trigger will run as scheduled, these may be interrupted by shows 1-6 being triggered.

Triggered shows do not follow scheduled times. They run when triggered. A triggered show does follow the rules for run once or run continuously. If you set a triggered show to run continuously, then you will not be able to stop it without resetting the DC-MP3 once it has been triggered.

Position 'F' is used to manually set the clock. See the section *Setting the DC-MP3's Clock*.

Positions '0,' 'B, ' 'C,' 'D' and 'E' are not currently used and are treated the same as position 'A.'

Interactive Inputs

The 'INPUTS' header at the top center of the circuit board can be used to trigger shows with momentary contact switches or motion detectors. Both +10 volts DC and +5 volts DC are provided at this connector to power external sensors (like motion detectors.)

The following diagram shows the input header pin assignments:
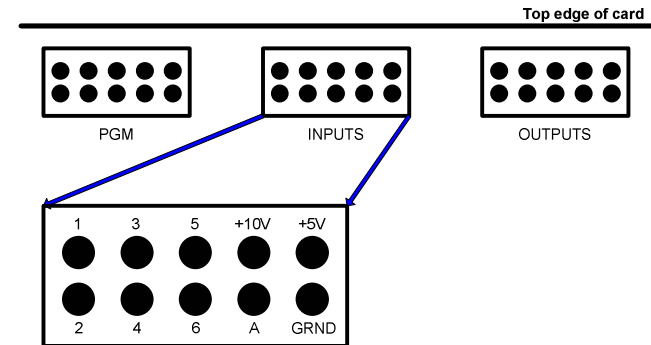
To use these pins to trigger show(s), the selector switch must be set to 'B.' See the *Selector Switch* section for more information on how triggered shows behave.

The input pins ('1' through '6') are pulled to +5v with a on-board resistor. One or more of these input pins is connected to the GRND pin through your trigger switches.

These inputs can be configured by the Hardware Utility for normally open switches (NO,) meaning that the switch closes the circuit when activated or normally closed switches (NC,) meaning the switch opens the circuit when activated. Most motion detectors contain NC switches.

Pin 'A' is for future use and should not be connected to anything.

RJ45 Network Connections

Use either of these connectors to connect to your controllers and/or a Windows PC through an RS485 adapter.

Setting the DC-MP3's Clock
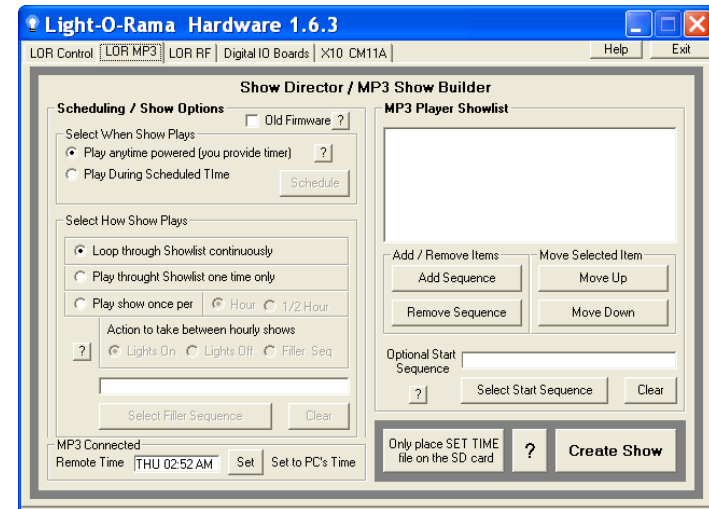
Clock Set with Hardware Utility

This section describes how to use the **Hardware Utility** to set the DC-MP3's real time clock via the RS485 adapter. You must have the following:

- At least version 2 of the DC-MP3 firmware, see the section *DC-MP3 Firmware Versions*

- Hardware Utility version 1.5.10 or later, see the section *Hardware Utility Version*

- **No** SD card in the DC-MP3

- The DC-MP3 powered (see the *Power Input* section) and connected to the PC via one of the RS485 adapters

Start the LightORama Control Panel if it is not running by clicking **start ► All Programs ► LightORama ► Light-O-Rama Control Panel**. The Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and selecting **Hardware Utility** from the menu.

Click the LOR MP3 tab. You will see the following window:

The section at the lower left of the window will say "*MP3 Connected*" and display the MP3 player's current time in the *Remote Time* box. Click the **Set** button to set the MP3 Player's time to the PC's time.

Clock Set via SD Card

This section describes how to use the **Hardware Utility** to set the DC-MP3's real time clock via the SD Card. You must have:

- At least version 2 of the DC-MP3 firmware, see the section *DC-MP3 Firmware Versions*

- Hardware Utility version 1.5.10 or later, see the section *Hardware Utility Version*

- The USB SD card reader/writer plugged into a USB port on your PC with the SD card in it, or have the SD card in your machine's built in reader/writer

Start the LightORama Control Panel if it is not running by clicking **start ► All Programs ►**

LightORama ► Light-O-Rama Control Panel. The Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and selecting *Hardware Utility* from the menu.

Click the **LOR MP3** tab.

Click the **Only place SET TIME file on the SD Card** button. You will see the following window:
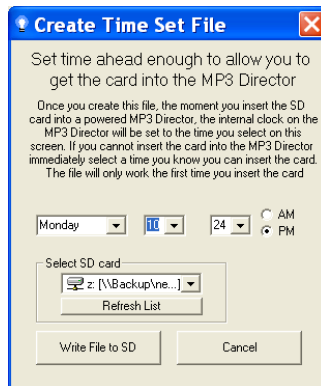
Set the time you want to put on the SD card and select the SD card drive from the *Select SD card* drop-down menu. Click the **Write File to SD** button.

Put this card in the DC-MP3 to set its real time clock. When the SD card is placed in the DC-MP3, the E, R & C LEDs will chase for about 10 seconds while the time is being set. The time is only set the first time the SD card is inserted into the DC-MP3.

Note that the DC-MP3 should be powered up for at least 15 minutes to insure that the backup capacitor for the real time clock is fully charged.

Clock Set Manually

This section describes how to set the DC-MP3's real time clock manually. You must have:

- At least version 2 of the DC-MP3 firmware, see the section *DC-MP3 Firmware Versions*

- **No** SD card in the DC-MP3

Note the current position of the Selector Switch so you can put it back after setting the time.

Set the Selector Switch to 'F' and briefly press the Reset button

The red **E** LED will come on steady to indicate Time Set Mode.

The yellow **R** LED will blink a number of times that corresponds to the time field being set.

Set Day of Week: yellow **R** LED blink pattern is 1 blink, pause, repeat. Use the Selector Switch to set the day of the week. Sun=1, Mon=2, Tue=3, Wed=4, Thu=5, Fri=6, Sat=7. Briefly press Reset Button.

Set First Digit of Hour: yellow **R** LED blink pattern is 2 blinks, pause, repeat. This is a 24 hour time so the hour will be a number between 00 and 23. Midnight is 00, 1 AM is 01, noon is 12, 4 PM is 16. Use the Selector Switch to set the first digit of the hour and briefly press the reset button.

Set Second Digit of Hour: yellow **R** LED blink pattern is 3 blinks, pause, repeat. Set the Selector Switch to the second digit of the hour and briefly press the reset button.

Set First Digit of Minute: yellow **R** LED blink pattern is 4 blinks, pause, repeat. Minutes range

from 00 to 59. Set the Selector Switch to the first digit of the minute and briefly press the reset button.

Set Second Digit of Minute: yellow **R** LED blink pattern is 5 blinks, pause, repeat. Set the Selector Switch to the second digit of the minute and briefly press the reset button.

The E, R and C LEDs will chase a number of times to indicate that the time has been successfully set.

Place the Selector Switch back in its original position and press the Reset button.

Show Programming Overview

There are two ways to create an SD card for the DC-MP3.

1. Simple Show Builder – this application creates a single, scheduled, non-interactive show. It is simple and intuitive to use.

2. Hardware Utility – this application allows access to the full capabilities of the DC-MP3. Multiple shows with scheduling and interaction are possible.

The next four sections explain how to use these tools to create show(s) on the SD card.

There are three *Hardware Utility* version sections. The first one describes programming the DC-MP3 where scheduling and interactive trigger inputs are supported. The second one is for older versions of the Hardware Utility and/or DC-MP3 firmware where trigger inputs are not supported, but scheduling is. The final Hardware Utility section describes programming the initially released DC-MP3 whose firmware only supported one unscheduled show.

Show Programming (SimpleShowBuilder)

Simple Show Builder is a Light O Rama application that greatly simplifies the creation of a show on the SD card for the DC-MP3. It allows you to create one scheduled show consisting of a list of musical and non-musical sequences without using the Hardware Utility. This show can not use interactive triggers.

Your DC-MP3 must have firmware version 2.0 or later. See the *DC-MP3 Firmware Versions* section

for information on determining and upgrading your firmware.

The *Simple Show Builder* process takes only a few minutes in a small number of self-explanatory screens. *Simple Show Builder* is available for download at www.lightorama.com ► Support ► Software Downloads. Click the **Download** button to the left of *Simple Show Builder* and run the installer.

Use Windows Explorer to run the *Simple Show Builder* by double clicking it. The path to it is usually:

C:\Program Files\Light-O-Rama\LORSimpleShowBuilder.exe

## *Show Programming (Hardware Utility >1.6.4)*

This section describes how to use Hardware Utility versions 1.6.4 and later to set up, schedule and configure the input triggers for shows on the DC-MP3. You must have:

- At least version 3 of the DC-MP3 firmware, see the *DC-MP3 Firmware Versions* section.

- Hardware Utility version 1.6.4 or later, see the *Hardware Utility Version*s section.

- The USB SD card reader/writer plugged into a USB port on your PC with the SD card in it, or have the SD card in your machine's built in reader/writer

- It is not necessary to have the DC-MP3 connected to your PC to transfer a set of shows to the SD card

Start the LightORama Control Panel if it is not running by clicking **start ► All Programs ► LightORama ► Light-O-Rama Control Panel**. The

Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and then selecting *Hardware Utility* from the menu. You will see the following window:
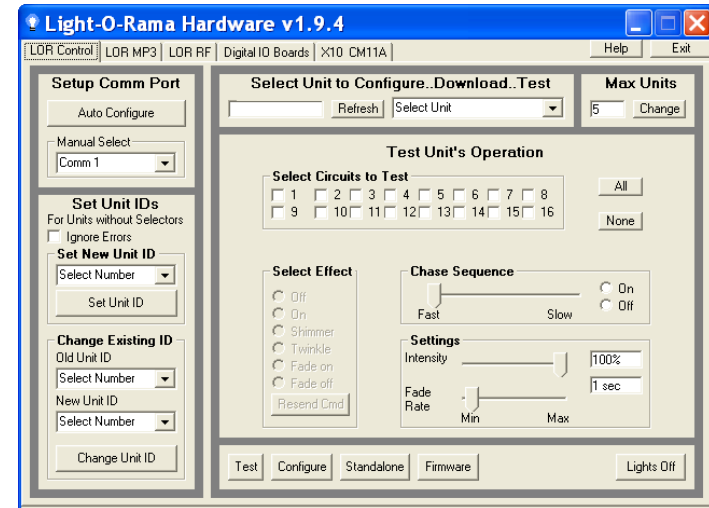
Click the LOR MP3 tab on the upper left and you will see this window:
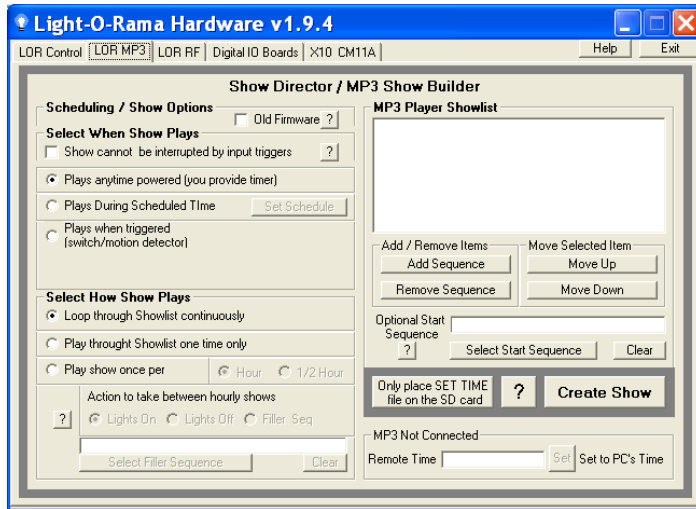
Make sure the **Old Firmware** box in the *Scheduling / Show Options* section is NOT checked.

You can build up to nine (9) shows, their names are Show01, Show02, … Show09. Use this window to set up a single show.

In the *Select When Show Plays* section, check "Show cannot be interrupted by input triggers" if you don't want other trigger activated shows to be able to interrupt this show. A triggered show can not be interrupted by its own trigger.

Under the *Select When Show Plays* section choose one of the following options:

- *Plays anytime powered* – This show will be one in possibly a list of shows that will play when the DC-MP3 is powered. No trigger or schedule is needed to start this show.

- *Plays During Scheduled Time* – This show will play using a schedule you will set. When you select this radio button, a "Set Show

Options" window will pop up to allow you to set the schedule for this show.

- *Plays When Triggered* – This show will play when its trigger input is activated. You have a choice of six trigger inputs to assign to the show and a choice of whether the trigger switch is normally open or normally closed. When you select one of the trigger inputs (1, 2, 3, 4, 5 or 6) the Show number is forced to that switch number. I.e. Show03 will be used for trigger input 3.

Plays Anytime Show

If you select this option, you will not be using either scheduling or triggering for this show. Skip to the *Adding Sequences to the Show* section.

Scheduled Show

If you select "Plays During Scheduled Time," you will see this window:
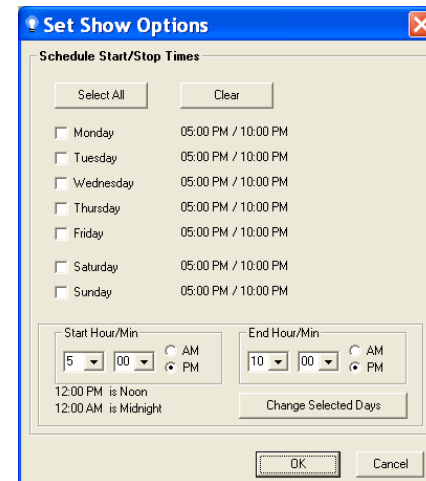
These are the default scheduling parameters. Click the boxes next to any days for which you wish to change the start/end times. Use the *Start Hour/Min* and *End Hour/Min* sections to select the times you want. Click the **Change Selected Days** button to change the start/end times for the selected days.

To prevent the show from running on a particular day set the *Start Hour/Min* and the *End Hour/Min* to the same value.

To have shows run back to back, set the start time of the second show to the end time of the first show.

Only one show can play at a time. If you schedule two or more shows during the same time period, precedence is given to the lowest numbered show.

When you are satisfied with your schedule, click the **OK** button,

Use the ***Select How Show Plays*** section to choose how the show will play during the scheduled time periods. If you select…

- *Loop though Showlist continuously* – Sequences in the show play in order and repeat continuously from the start time until the end time.

- *Play through Showlist one time only* – Sequences in the show play in order one time unless the time period is less than the show's length.

- *Play show once per hour* or *½ hour* – Sequences in the show play once per hour or half-hour.

If you select either of *Play through Showlist one time only* or *Play show once per hour* or *½ hour*, then you must choose what to do while the Showlist is not playing during the scheduled time period. Use the *Action to take between shows* section to select one of:

- *Lights On* – all lights will be on between shows

- *Lights Off* – all lights will be off between shows

- *Filler Seq* – runs this sequence between shows. This can only be an animation sequence. Click the **Select Filler Sequence** button to pick an animation sequence to use between playing the Showlist sequences.

Note that if you have more than one unscheduled, untriggered show and you want them to play in order when no scheduled or triggered show is playing, don't use "Play through Showlist one time only." If you use this option, you will have specified what to do when the show ends (Lights on, Lights Off or Filler Sequence.) These options will prevent the next unscheduled, untriggered show from starting.

Skip down to *Adding Sequences to the Show.*

Triggered Show

If you select "Plays when triggered," you will see this window:
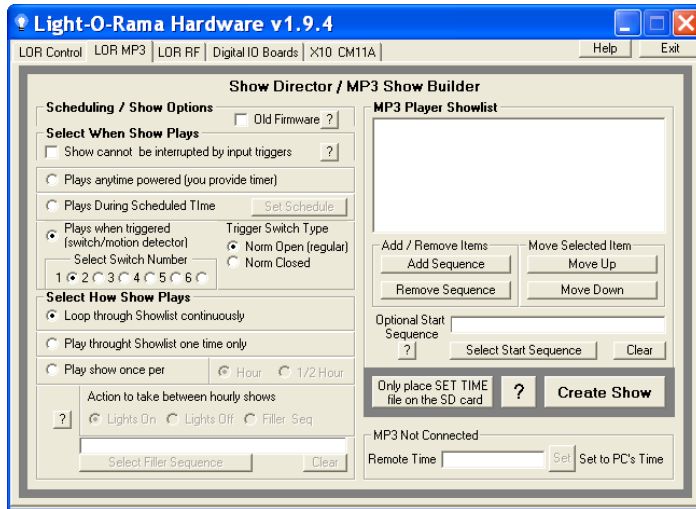
Notice that two new option sections have appeared, *Select Switch Number* and *Trigger Switch Type*. Select one of the six radio buttons under "Select Switch Number" to assign an input trigger to this show. Select the radio button under "Trigger Switch Type" for the switch type that you will be using to start this show, either a normally open switch or a normally closed switch. See the *Interactive Inputs* and *Interactive Trigger Connections* sections for more information on input triggers.

Triggered shows do not obey schedules. They run when triggered.

Use the **Select How Show Plays** section to choose how the show will play when triggered. If you select…

- *Loop though Showlist continuously* – Sequences in the show play in order and repeat continuously.
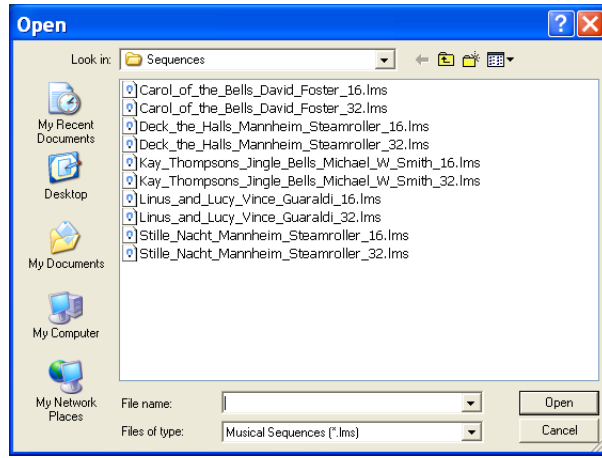
- *Play through Showlist one time only* – Sequences in the show play in order one time.

- *Play show once per hour* or *½ hour* – This is ignored for triggered shows.

Adding Sequences to the Show

Use the *MP3 Player Showlist* section to add sequences to the show.
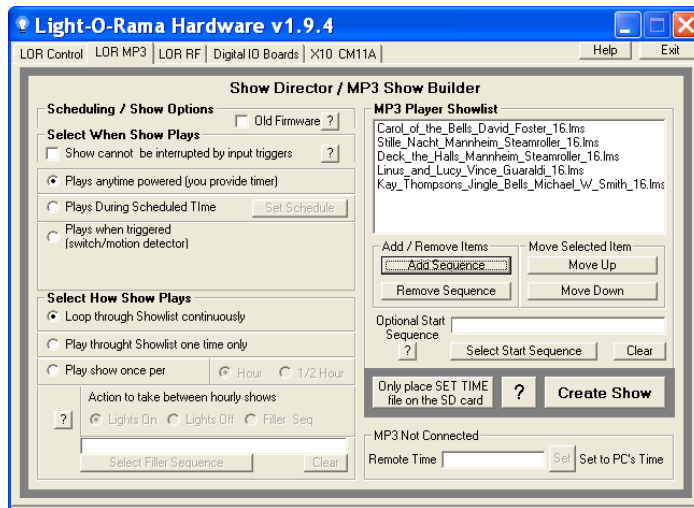
- **Add Sequence** button to select a sequence to add to this Showlist

- **Remove Sequence** button to delete the selected sequence from the Showlist

- **Move Up** button to move a selected sequence up in the Showlist

- **Move Down** button to move the select sequence down in the Showlist

For example, click the **Add Sequence** button and you will see a *Open* file box listing the sequences loaded on you PC. The sequence file *Open* window follows:

Choose a sequence from this list and click the **Open** button. The sequence will be added to your show.

Repeat this process until all the sequences you want in your show have been added. In the following example, five sequences (and any associated music files) have been added to the show:

When the Showlist has been constructed, you may use the *Optional Start Sequence* section to select a sequence that will start this show. This can be an animation only or musical sequence. This sequence runs at the start of the show. For Loop Continuously and Play Showlist Once, this sequence plays once. For scheduled shows, Play show once per… this sequence plays at the start of each hourly/half-hourly show.

Now that this show has been setup, you must select some final options and transfer this show to the SD memory card. Click the **Create Show** button and you will see the following window:
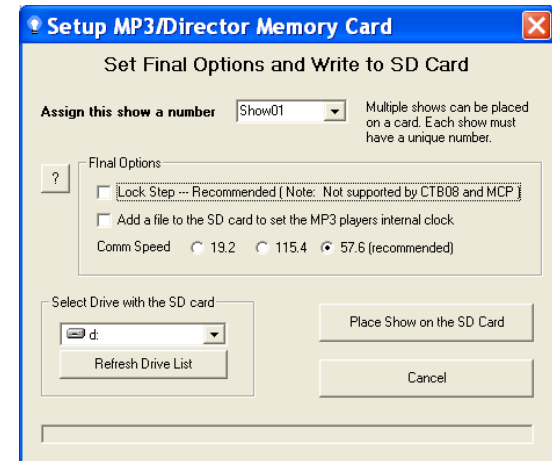
If this show is started by a trigger input, the show number will be grayed out and assigned by the trigger input number. For "plays anytime" and scheduled shows, you can pick a show number from the *Assign this show a number* drop-down menu.
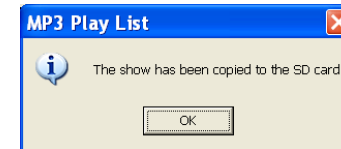
Use the Final Options section to select the following:

- *Lock Step* – This option causes the DC-MP3 to send all controller commands ahead of time for the next time slice and then give a global "everybody do their commands" command. This has the effect of eliminating the communication line delays when you have a large number of controller/channels. This is a recommended setting. This option is not supported by CTB08 and MC-P cards and requires firmware version 3.0 or above for 16 channel controller cards.

- *Add file to SD card to set the MP3 player's internal clock* – This option puts a file with the current time on the SD card. The MP3 player will set its real time clock to this time when the SD card is inserted into the player for the first time. Don't take too long to transfer the card! The MP3 player should be powered up for at least 15 minutes before using this option so that the backup capacitor will be fully charged and can keep the real time clock going when power is removed from the MP3 player.

- *Comm Speed* – Use these radio buttons to select the RS485 communications line speed. Use the slowest speed that successfully runs your show. If the speed you select is not fast enough to run your show, the red **E** LED will light. This indicates that the DC-MP3 has fallen at least one tenth of second behind in getting controller commands out on the RS485 network link.

Use the *Select Drive with the SD card* section to choose the SD card. The drop-down menu will default to the first removable drive on your system. If

you forgot to plug the SD card/SD card writer into the PC, do it now and click the **Refresh Drive List** button.

Finally, click the **Place Show on the SD Card** button to write the current Show, Schedule and possibly current time to the SD card. You will see this window when it is done:

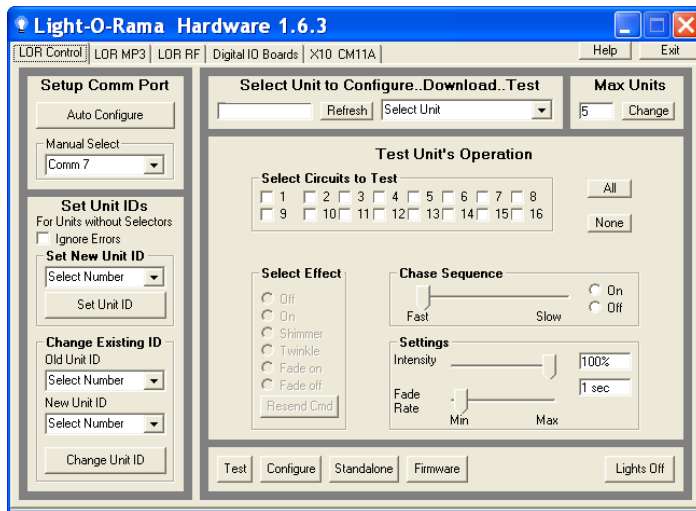Repeat the above process for each show to be transferred to the SD card.

Show Programming *(Hardware Utility <1.6.4)*

This section describes how to use older Hardware Utility versions (1.5.8 to 1.6.3) to set up and schedule show(s) for the DC-MP3. These Hardware Utility versions do not support the trigger inputs. You must have:
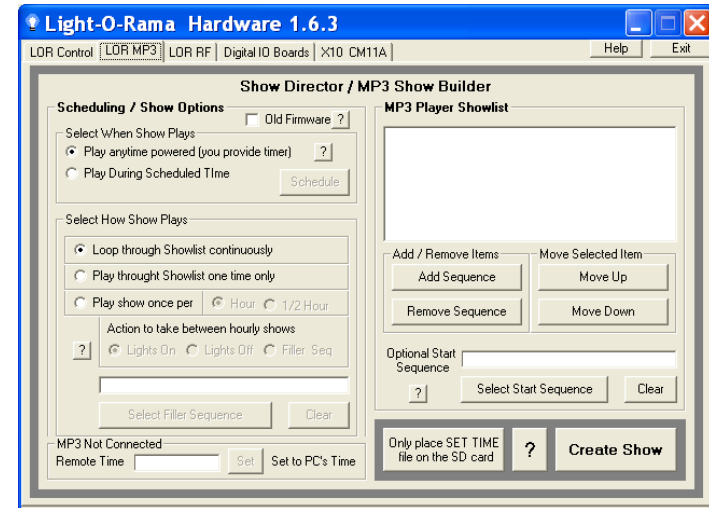
- At least version 2 of the DC-MP3 firmware, see the section *DC-MP3 Firmware Versions.*

- Hardware Utility version 1.5.8 or later, see the *Hardware Utility Version* section.

- The USB SD card reader/writer plugged into a USB port on your PC with the SD card in it, or have the SD card in your machine's built in reader/writer.

- It is not necessary to have the DC-MP3 connected to your PC to transfer a set of scheduled shows to the SD card.

Start the LightORama Control Panel if it is not running by clicking **start ► All Programs ► LightORama ► Light-O-Rama Control Panel**. The Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and then selecting *Hardware Utility* from the menu. You will see the following window:

Click the LOR MP3 tab, you will see this window:

Make sure the **Old Firmware** box in the *Scheduling / Show Options* section is NOT checked.

You can build and schedule up to nine (9) shows, their names are Show01, Show02, … Show09. Use this window to set up and schedule a single show. When you click the **Create Show** button later, a new window will pop up allowing you to name this show and set some other options.

Only one show can play at a time. If you schedule two or more shows during the same time period, precedence is given to the lowest numbered show.

The *Select When Show Plays* section provides two options:

1. *Play anytime powered* – you will have to provide a timer or switch to control power to the DC-MP3

2. *Play During Scheduled Time* – you select the days of the week and time period during those days that the show plays

If you select *Play During Scheduled Time* then the *Set Show Options* window will pop up. You can get this window back later to make additional changes by clicking the **Schedule** button. The *Set Show Options* window follows:
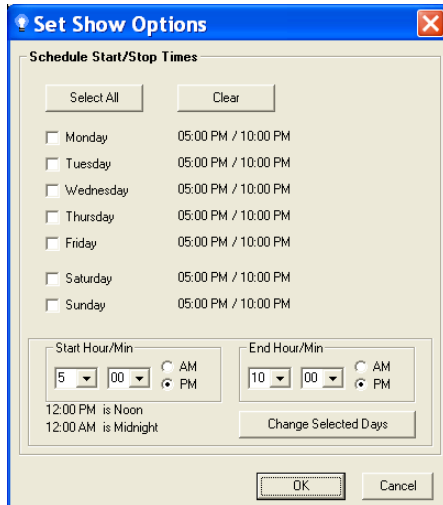
These are the default scheduling parameters. Click the boxes next to any days for which you wish to change the start/end times. Use the *Start Hour/Min* and *End Hour/Min* sections to select the times you want. Click the **Change Selected Days** button to change the start/end times for the selected days.

To prevent the show from running on a particular day set the *Start Hour/Min* and the *End Hour/Min* to the same value.

To have shows run back to back, set the start time of the second show to the end time of the first show.

When you are satisfied with your schedule, click the **OK** button,

Use the *Select How Show Plays* section to choose how the show will play during the scheduled time periods. If you select…

- *Loop though Showlist continuously* – Sequences in the Showlist play in order and repeat continuously from the start time until the end time.

- *Play through Showlist one time only* – Sequences in the Showlist play in order one time unless the time period is less than the Showlist length.

- *Play show once per hour* or *½ hour* – Sequences in the Showlist play once per hour or half-hour.
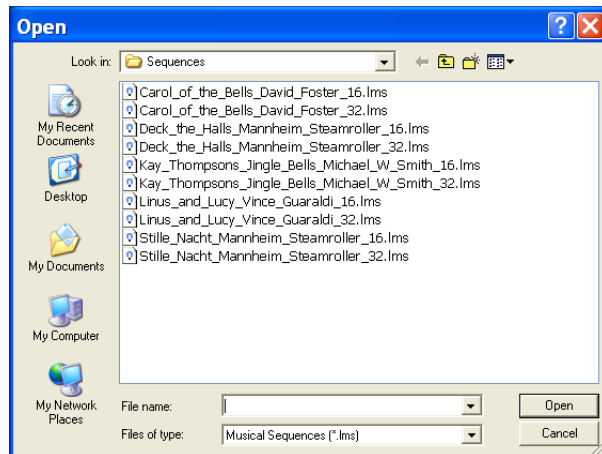
If you select either of *Play through Showlist one time only* or *Play show once per hour* or *½ hour*, then you must choose what to do while the Showlist is not playing during the scheduled time period. Use the *Action to take between shows* section to select one of:

- *Lights On* – all lights will be on between shows

- *Lights Off* – all lights will be off between shows

- *Filler Seq* – runs this sequence between shows. This can only be an animation sequence. Click the **Select Filler Sequence** button to pick an animation sequence to use between playing the Showlist sequences.

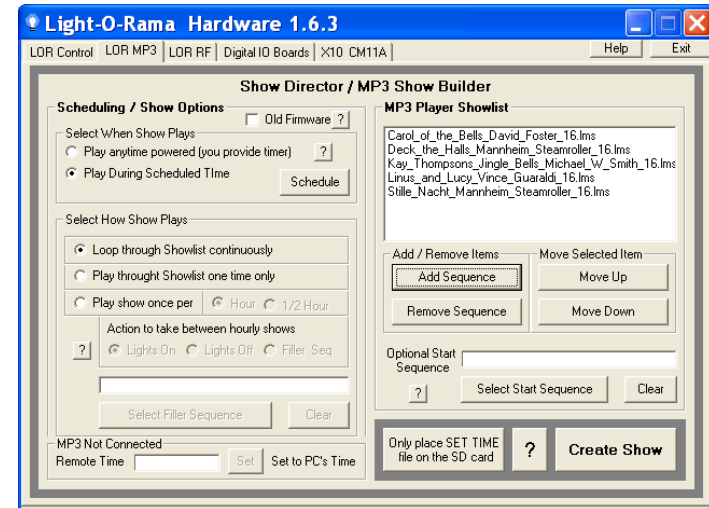Use the *MP3 Player Showlist* section to add sequences to the show:

- **Add Sequence** button to select a sequence to add to this Showlist

- **Remove Sequence** button to delete the selected sequence from the Showlist

- **Move Up** button to move a selected sequence up in the Showlist

- **Move Down** button to move the select sequence down in the Showlist

For example, click the **Add Sequence** button and you will see a *Open* file box listing the sequences loaded on you PC. The sequence file *Open* window follows:
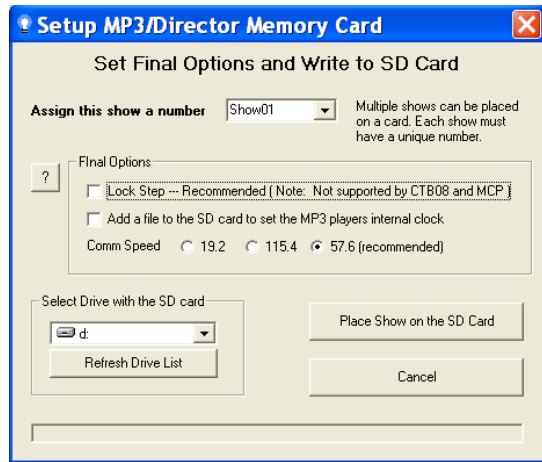

Choose a sequence from this list and click the **Open** button. The sequence will be added to your show.

Repeat this process until all the sequences you want in your show have been added. In the following example, five sequences (and any associated music files) have been added to the show:

When the Showlist has been constructed, you may use the *Optional Start Sequence* section to select a sequence that will start this show. This can be an animation only or musical sequence. This sequence runs at the start of the show. For Loop Continuously and Play Showlist Once, this sequence plays once. For Play show once per… this sequence plays at the start of each hourly/half-hourly show.

Now that this show has been setup and scheduled, you must select some final options and transfer this show to the SD memory card. Click the **Create Show** button and you will see the following window:

Pick a Show number from the *Assign this show a number* drop-down menu.

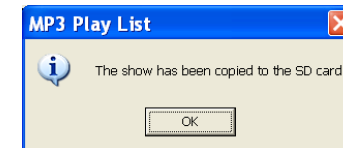Use the Final Options section to select the following:

- *Lock Step* – This option causes the DC-MP3 to send all controller commands ahead of time for the next time slice and then give a global "everybody do their commands" command. This has the effect of eliminating the communication line delays when you have a large number of controller/channels. This is a recommended setting. This option is not supported by CTB08 and MC-P cards and requires firmware version 3.0 or above for 16 channel controller cards.

- *Add file to SD card to set the MP3 player's internal clock* – This option puts a file with the current time on the SD card. The MP3 player will set its real time clock to this time when the SD card is inserted into the player for the first time. Don't take too long to transfer the card! The MP3 player should be powered up for at

least 15 minutes before using this option so that the backup capacitor will be fully charged and can keep the real time clock going when power is removed from the MP3 player.

- *Comm Speed* – Use these radio buttons to select the RS485 communications line speed. Use the slowest speed that successfully runs your show. If the speed you select is not fast enough to run your show, the red **E** LED will light. This indicates that the DC-MP3 has fallen at least one tenth of second behind in getting controller commands out on the RS485 network link.

Use the *Select Drive with the SD card* section to choose the SD card. The drop-down menu will default to the first removable drive on your system. If you forgot to plug the SD card/SD card writer into the PC, do it now and click the **Refresh Drive List** button.

Finally, click the **Place Show on the SD Card** button to write the current Show, Schedule and possibly current time to the SD card. You will see this window when it is done:

Repeat the above process for each show to be transferred to the SD card.

## Show Programming (DC-MP3 firmware 1.0)

This section describes how to transfer your show to the DC-MP3 for the older firmware that does not

support scheduling. You may also use this method of setting up a show if you don't intend to use scheduling.

Start the LightORama Control Panel if it is not running by clicking **start ► All Programs ► LightORama ► Light-O-Rama Control Panel**. The Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and selecting *Hardware Utility* from the menu.

You will see this window:
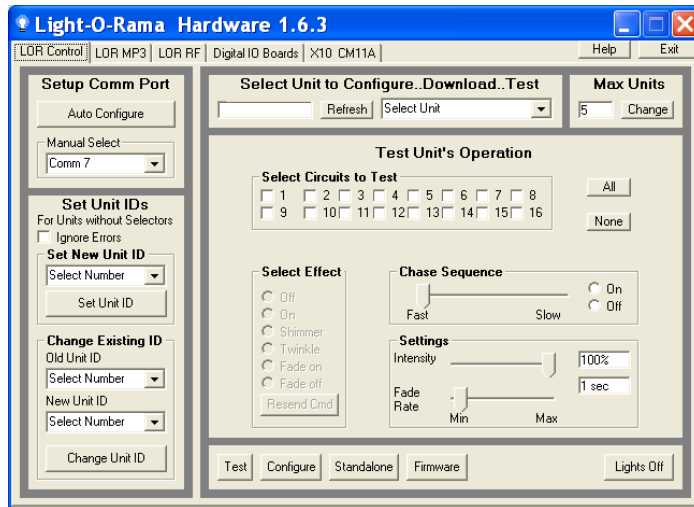
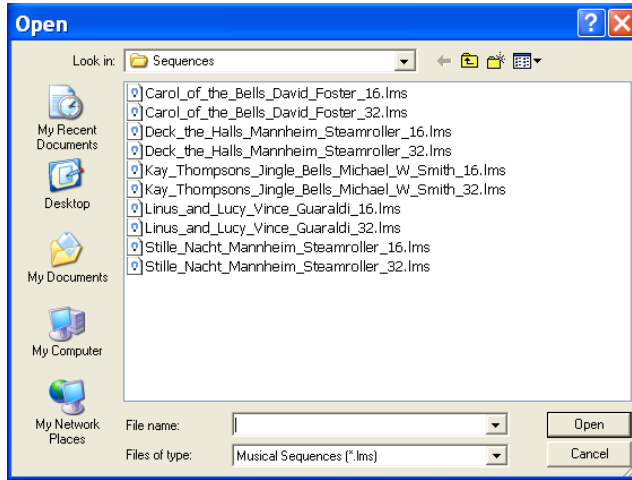Click the LOR MP3 tab, you will see this window:
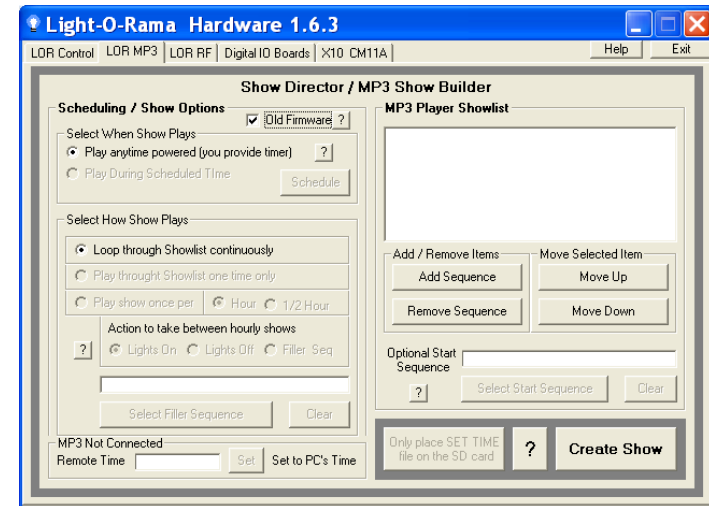
Make sure the **Old Firmware** box in the **Scheduling / Show Options** section is checked. Options that are not available with the older firmware will be grayed out.

Use the *MP3 Player Showlist* section to add sequences to the show.
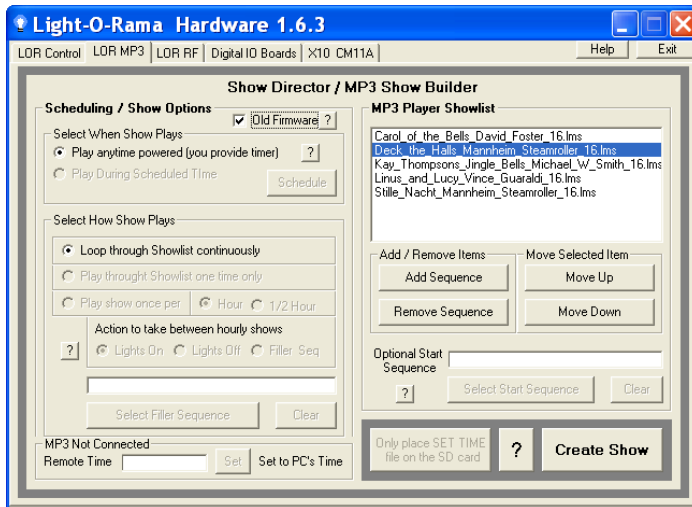
- **Add Sequence** button to select a sequence to add to this Showlist

- **Remove Sequence** button to delete the selected sequence from the Showlist

- **Move Up** button to move a selected sequence up in the Showlist

- **Move Down** button to move the select sequence down in the Showlist

For example, click the **Add Sequence** button and you will see a *Open* file box listing the sequences loaded on you PC. The sequence file *Open* window follows:

Choose a sequence from this list and click the **Open** button. The sequence will be added to your show.

Repeat this process until all the sequences you want in your show have been added. In the following example, five sequences (and any associated music files) have been added to the show:

When you are satisfied with your show, click the **Create Show** button and you will see this window:
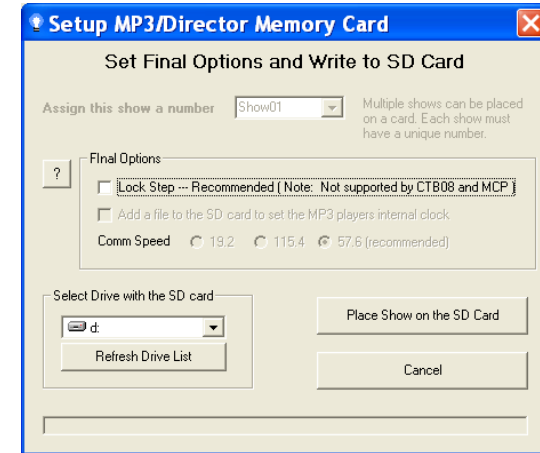
Use the Final Options section to select the following:

- *Lock Step* – This option causes the DC-MP3 to send all controller commands ahead of time for the next time slice and then give a global "everybody do their commands" command. This has the effect of eliminating the communications line delay when you have a large number of controller/channels. This is a recommended setting. This option is not supported by CTB08 and MC-P cards and requires firmware version 3.0 or above for 16 channel controller cards.

- *Comm Speed* – Use these radio buttons to select the communications line speed. Use the slowest speed that successfully runs your show. If the speed you select is not fast enough to run your show, the red **E** LED will light. This indicates that the DC-MP3 has fallen at least one tenth of second behind in

getting controller commands out on the RS485 network link.

Use the *Select Drive with the SD card* section to choose the SD card. The drop-down menu will default to the first removable drive on your system. If you forgot to plug the SD card/SD card writer into the PC, do it now and click the **Refresh Drive List** button.

Finally, click the **Place Show on the SD Card** button to write the current Show, Schedule and possibly current time to the SD card. You will see this window when it is done:

Interactive Trigger Connections

The following diagram shows the connections for a momentary contact switch (A) and a motion detector (B) to the DC-MP3 input header. The push button is connected to trigger input 2 and the motion detector is connected to trigger input 1. The push button is a normally open switch, meaning it closes the circuit when activated. The motion detector is a normally closed switch, meaning it opens the circuit when activated.
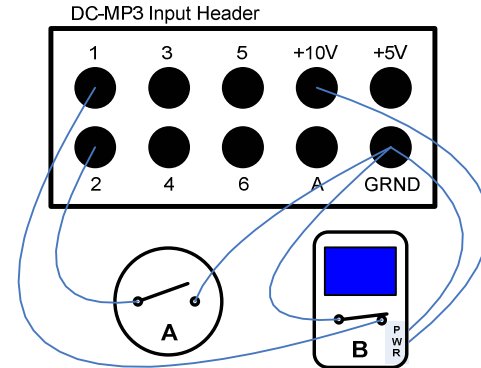
The picture above shows both trigger switches in their 'off' (untriggered) position.

The Hardware Utility would be used to configure Show02 for the push button ('A') as follows:

- "Plays when triggered" selected
- "Select Switch Number" would have radio button '2' selected
- "Trigger Switch Type" would have radio button "Norm Open" selected.

Show01 for the motion detector ('B') would be configured as follows:

- "Plays when triggered" selected
- "Select Switch Number" would have radio button '1' selected
- "Trigger Switch Type" would have radio button "Norm Closed" selected.

Updating the DC-MP3 Firmware

You must have:

- Hardware Utility version 1.5.10 or later, see the section *Hardware Utility Version*

- **No** SD card in the DC-MP3

- The DC-MP3 powered (see the *Power Input* section) and connected to the PC via one of the RS485 adapters – Do not use wireless

Get the latest firmware. www.lightorama.com ► *Support ► Using the Hardware – Documentation and Firmware* section. Click the **Firmware** button in the DC-MP3 line and run the firmware installer. Note the name of the firmware .lhx file. The normal location of firmware files is C:\Program Files\Light-O-Rama\Firmware.

Start the LightORama Control Panel if it is not running by clicking *start ► All Programs ► LightORama ► Light-O-Rama Control Panel*. The Light-O-Rama light bulb icon will appear in the system tray on the lower right of your screen.

Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and selecting *Hardware Utility* from the menu.

Click the **Firmware** button in the **LOR Control** tab and you will see this window:
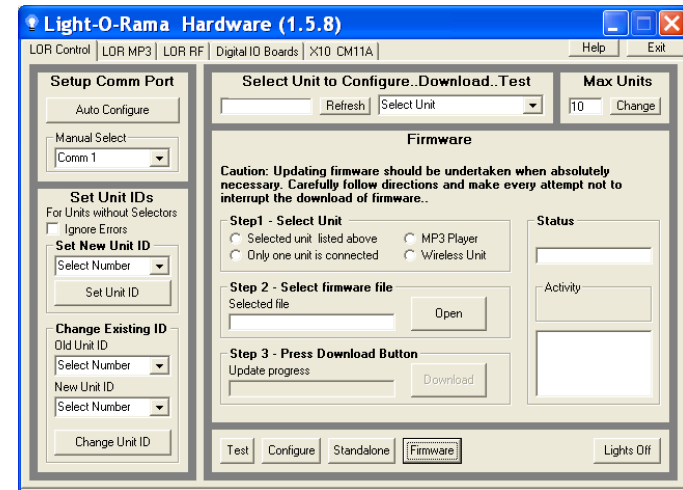
In **Step 1 – Select Unit**, choose the **MP3 Player** radio button.
In **Step 2 – Select firmware file**, click the **Open** button. You may see this window:

Note the instructions in the box and click **OK**. Click the **Open** button again if necessary to get the *Open* file box.

Use the *Open* file box to select the firmware file. This is the .lhx file you saved in the Firmware folder. Click the **Open** button. The window will look like this:
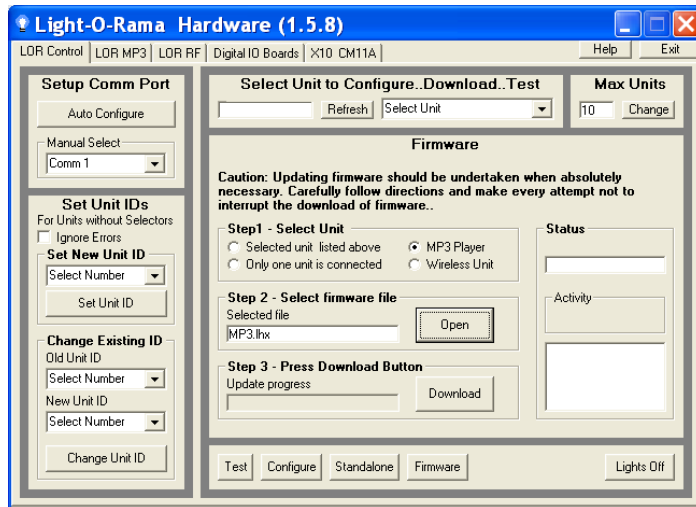
In **Step 3 – Press Download Button**, click the **Download** button. If the DC-MP3 currently has the original firmware, press the Reset button on the DC-MP3. Versions 2.0 of the firmware and later do not require pressing the reset button on the DC-MP3 – the firmware download will start automatically.

The *Update progress* bar will fill from left to right. When the new firmware is loaded, the *Status* will change to "Successful" and the DC-MP3 will reboot.

The E, R and C LEDs will chase briefly to indicate new firmware and then the E and P LEDs will remain lit.

Troubleshooting

Run-time error '68':

On some PCs there is a problem with the program runtime support when referencing a removable media drive with no disk/CD/floppy in it. If you click the **Create Show** button on the *LOR MP3* tab and see this window:

Put a disk/CD/floppy in all removable media drives.

Some PCs may see this error if you forget to put the SD card in the reader/writer.

Can't Use COMnn Port

Only one Windows application can use the COM port at a time. For example, if you are running the Sequence Editor and start the Hardware Utility, the Hardware Utility will not be able to use the COM port.

Specifications

Dimensions	5 3/8"W x 3/4"H x 3 "D
Storage	Up to 2 GB SD card (Lexar Media, Simple Tech)
Power input	50 milliamps, 9 to 12 volts DC RJ45 network cable from controller(s) – or – Power barrel to external power supply
Interactive trigger inputs	6 (Shows 1, 2, 3, 4, 5 and 6) Each configurable for Normally Open (NO) or Normally Closed (NC) switches
Power output	Input header +5 volts DC (max 200 milliamps) +10 volts DC (set by power source, max 500 milliamps)

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