

Light-O-Rama



uMP3g3

**miniDirector with MP3 Player
LOR Network and DMX Universe Capable**

User Manual
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Introduction

The Light-O-Rama uMP3g3 miniDirector with MP3 player is a compact, powerful show director designed to take the place of your PC. It directs a network of LOR controllers or a DMX universe while simultaneously playing MP3 audio files. Three trigger inputs allow shows to be started by external events like switch closures or motion detectors.

The Windows Showtime software is used to design and build *Sequences* (light/servo controller commands that may be choreographed to audio/music.) These user created sequences and/or pre-programmed musical sequences available from LOR and other vendors are then arranged into *Shows*. These *Shows* are transferred to an SD card. The SD card is inserted into the miniDirector, which then directs the LOR controllers or DMX fixtures in your display and plays any associated audio. Interactive Christmas and Halloween displays are possible using the trigger inputs.

What's in the Box

Your *uMP3g3* includes a 2GB (or larger) SD card and a user's manual. This manual is also available at www.lightorama.com ► Support ► uMP3g3 User Manual.

Hardware Utility Version

If your Hardware Utility has a LOR MP3 tab on the upper left, you will be able to put a show on the SD card of your miniDirector. If you want to put more than one show on the SD card, you must have Hardware Utility version 1.5.8 or later. If you want to use the trigger inputs, you must have Hardware Utility version 1.6.4 or later. If you want to drive a DMX universe or use a 500K LOR network, you must have Hardware Utility version 3.11.3 or later.

The version of the Hardware Utility appears in the title bar to the right of "Light-O-Rama Hardware." If the version number is less than what you require or there is no version number at all, then you need a new Hardware Utility.

The latest software version is available for download at www.lightorama.com ► Support ► Sn Download. Make sure your license covers the latest version, if not, the bottom of the page lists past versions. You can determine your license level using the *Retrieve License* link on the software download page. You can get the first five characters of your license key from the Sequence Editor by clicking Help and then About.

Click the **Download Now** button for the latest version or click the version number that your license permits. Run the downloaded executable to install the software.

Important Considerations

The miniDirector is normally powered by the nearest Light O Rama controller or a USB485B PC adapter. Use a 50' or less CAT5 LAN cable to connect the miniDirector to either of these devices. Longer cables may have an unacceptable voltage drop.

The miniDirector is NOT weatherproof.

The miniDirector can also be powered through its power barrel input from a 12vdc power adapter. See the *Attaching an External Power Supply* section for more information.

SD cards must be formatted FAT16 or FAT32. LOR recommends class 4 or higher for best performance.

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

Individual MP3 audio files are limited to 23 hours.

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

Songs (audio files) for use with the miniDirector must be encoded as MP3 files. Constant Bit Rate (CBR) at 128K bits/second is best.

500K LOR Network speed and DMX Universe support require version 5.28 or later firmware.

DMX Universe Output

To use the uMP3g3 to drive a DMX universe, the sequences must only have a DMX universe in them. If there is a LOR Network in the sequence, it will take precedence over the DMX universe.

Hardware Description

Front Panel

The picture below shows the front panel of the miniDirector.



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 LED

- Blinks once per second if the miniDirector is powered but no SD card is inserted.
- Steady on during an active show. Blinks off during the show if the network speed is too slow to handle the complexity of the show.
- Steady on if the miniDirector is connected to the Hardware Utility – no SD card should be inserted when connected to the Hardware Utility.

- Blinks two short on pulses and then one off pulse repeatedly if the miniDirector is waiting for a trigger input to start a show.
- Blinks rapidly if the SD card is invalid or defective.
- Blinks one long on and a short off repeatedly if in the bootloader. This means that the firmware is not loaded. See the *Updating the Firmware* section to load firmware.

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 amplified (powered) speakers or an amplifier with regular speakers.

Rear Panel

The following picture shows the back panel of the miniDirector.



RJ45 Network Connection

Use this connector to connect to your LOR controllers, a wireless unit, a Windows PC through an RS485 adapter or a DMX universe using the LOR

RJ45 to XLR3 female adapter available in the store under accessories.

Terminal Block Pins

The six pin screw terminal block allows you to connect show triggers for interactive displays and to power external trigger accessories like motion detectors.

Pin	Description
1	Start show 1
2	Start show 2
3	Start show 3
4	Ground
5	+5 volts DC output
6	+9 volts DC output

Shows 1, 2 and 3 Trigger Inputs

The trigger inputs (pins 1, 2 and 3) are internally pulled up to +5 volts DC by a resistor and must be connected to ground (pin 4) by a switch.

A trigger signal must be at least 11 milliseconds long to guarantee that the miniDirector will detect it.

When the show is copied to the SD card using the Hardware Utility, you can select whether the trigger switch input for that show is to be normally open (default) or normally closed. A normally open switch closes the circuit when you activate it; a normally closed switch opens the circuit when you activate it. Most motion detectors have normally closed switches and open the circuit when motion is detected.

Power Input Reasons

Normally, power is supplied by the attached LOR controller(s) through the RJ45 jack. There are a number of reasons why you may want to use an external power supply with the miniDirector:

- the miniDirector is more than 50' from the nearest controller or the controller is an older model that cannot supply enough power
- the miniDirector is connected to a PC without using a USB485B powered adapter or an attached LOR controller (I.e. using a USB485 or SC485 adapter)
- the miniDirector is on a timer or switch to start and stop the show
- the miniDirector is used with an RF-V5 wireless unit, so it is not connected to a controller which would power it.
- The miniDirector is used to drive a DMX Universe.

Attaching an External Power Supply

The power connector on the back of the miniDirector is designed to accept a 2.1mm ID, 5.5mm OD power barrel with center positive 12 VDC. 1 amp is more than enough current from the power adapter.

When the power barrel is used, the miniDirector is disconnected from the network power on the RJ45 jack. This allows the power adapter to be put on a timer to control the show times without having to also put all the controllers on the timer.

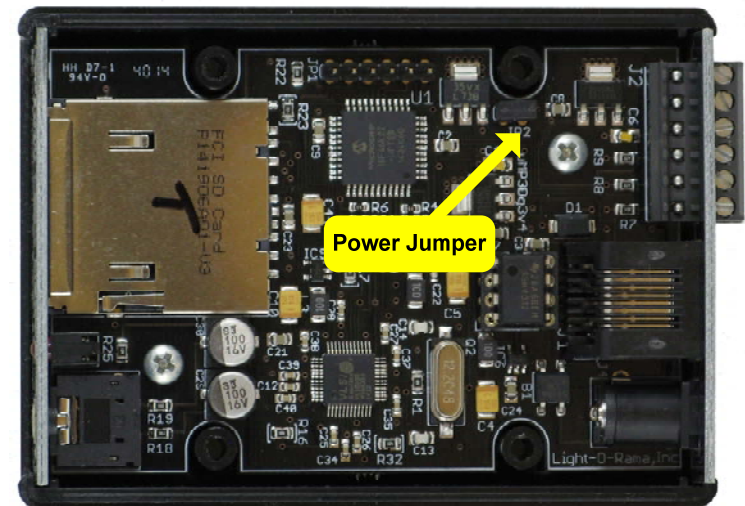
If the miniDirector's firmware is to be updated and you do not have a USB485B or a controller to power it, use an external power adapter.

Power Jumper

The Power Jumper is in place by default and is not normally removed. If you need to access the Power Jumper, remove the four screws from the bottom of the case and lift the top half of the case off.

Removing the jumper disconnects the the power barrel input from the RJ45 connector.

If the miniDirector is only connected to an RFV5 wireless unit, this jumper must remain in place to pass the power from the power adapter to the wireless unit.



Show Programming Overview

There are two ways to create an SD card with shows on it for the miniDirector.

1. Simple Show Builder – this application creates a single, non-interactive show. It is simple and intuitive to use.
2. Hardware Utility – this application allows access to the full capabilities of the miniDirector. Multiple shows with interaction are possible.

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

The miniDirector does not have a real time clock. Any scheduling information specified during show creation will be ignored. This includes playing shows once per hour or half hour.

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 your miniDirector. It allows you to create one show consisting of a list of musical and non-musical sequences without using the Hardware Utility. This show can not use interactive triggers and any scheduling information will be ignored by the miniDirector because it does not have a real time clock.

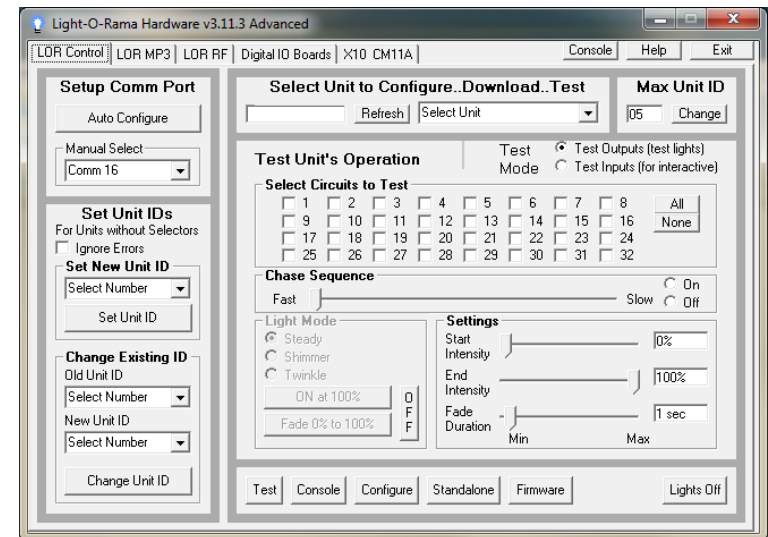
The *Simple Show Builder* process takes only a few minutes in a small number of self-explanatory screens. The Simple Show Builder is accessible from the LOR Light Bulb menu.

Show Programming (Hardware Utility)

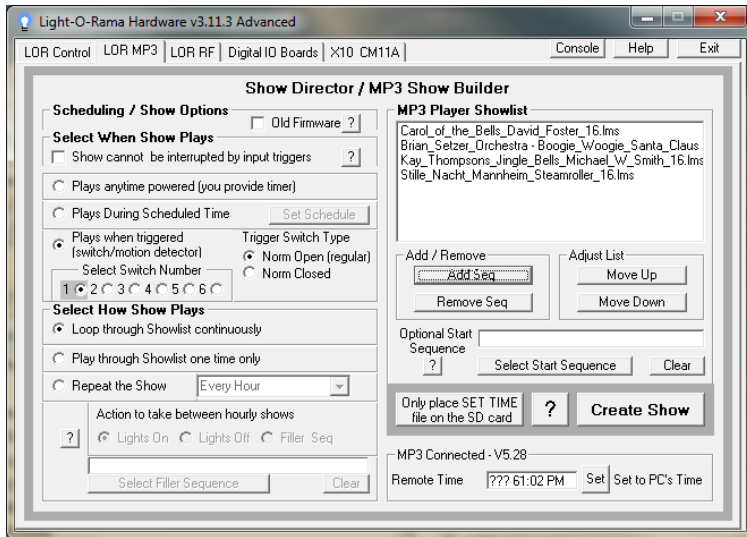
This section describes show programming for the miniDirector with Light O Rama Hardware Utility (HWU). See the section *Hardware Utility Program* for version dependencies.

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:



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

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

In the *Select When Show Plays* section, select “Show cannot be interrupted by input triggers” if you do not want a triggered show to interrupt the show you are currently building.

How shows are played:

- Only one show can play at a time.
- If a show is marked as “Plays when triggered,” it will not play until it is triggered.
- Shows not assigned to a trigger will be searched in order from lowest numbered to highest numbered and the lowest numbered show will play.

- You specify whether this show plays continuously once it starts or one time only in the *Select How Show Plays* section. Chose one of *Loop through Showlist continuously* or *Play through Showlist one time only*.
- You can specify whether a show can be interrupted or not. The default is to allow a show to be interrupted by another show being triggered. A triggered show cannot be interrupted by its own trigger.
- When a triggered show ends, the miniDirector scans for the lowest numbered, untriggered show and starts it, if present.
- If toggle switches are used as triggers, e.g. to select one of three shows, you must not turn on two triggers at once. If more than one trigger is ‘on,’ the miniDirector will jump instantly between the triggered shows continuously, so no show will actually play.

In the *Select When Show Plays* section, chose one of the following:

- *Plays anytime powered* – This show will not be using an interactive trigger input. You will get to name this show later.
- *Plays when triggered* – This show will be using an interactive trigger input. The show will be automatically named by the trigger input you assign to it.

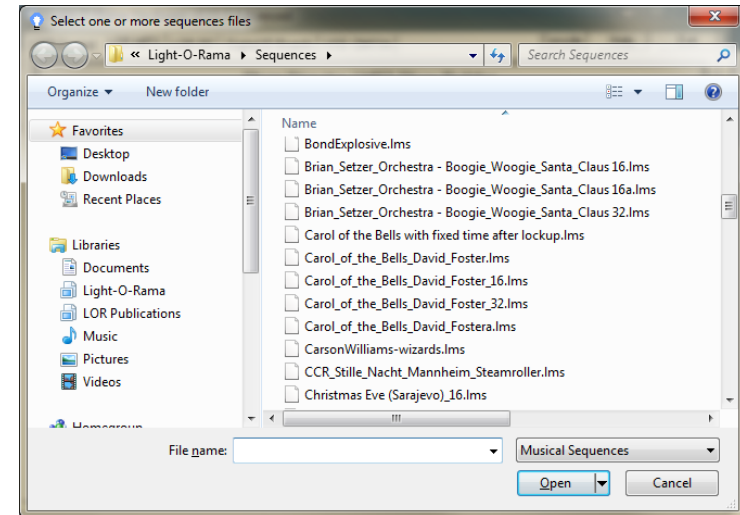
If you select “Plays when triggered” in the *Select When Show Plays* section, two additional options will appear:

1. **Select Switch Number** – This assigns one of the three (3) input triggers available on the miniDirector to this show and also sets the show name to Show0n, where 'n' is the trigger switch number. Do not use switch numbers 4, 5 or 6. These are not available on the miniDirector.
2. **Trigger Switch Type** – This selects whether you are using a normally open (NO) or normally closed (NC) switch to trigger this show. Push buttons and pressure mats are usually NO, but motion detectors are usually NC.

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

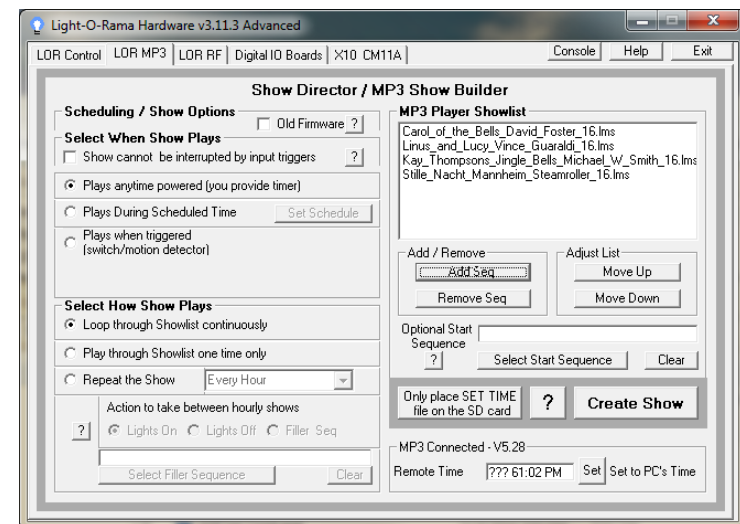
- **Add Sequence** button to select a sequence to add to this Showlist
- **Remove Sequence** button to delete the selected sequence from the Showlist
- **Move Up** button to move a selected sequence up in the Showlist
- **Move Down** button to move the select sequence down in the Showlist

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:

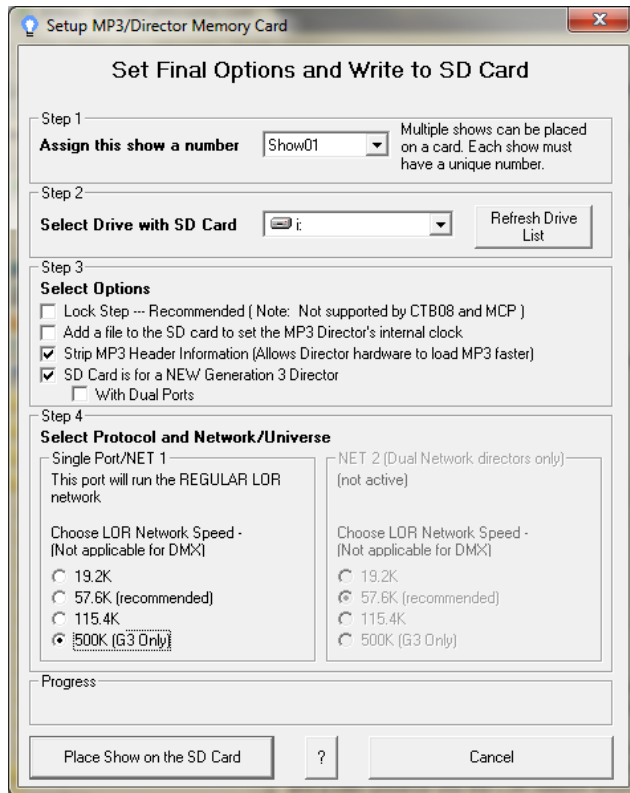


Choose a sequence from this list and click the **Open** button. The sequence will be added to your show.

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



Because this show was assigned to trigger switch 1, its name has been forced to Show01.

Options available:

- *Lock Step* – This option causes the miniDirector 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

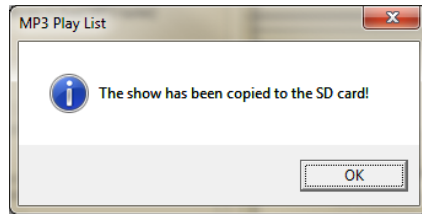
the communication line delays when you have a large number of controller/channels. This is a recommended setting. This option is not supported by CTB08, MC-P cards, Cosmic Color devices and requires firmware version 3.0 or above for 16 channel controller cards.

- *Add file to SD card to set the MP3 player's internal clock* – This option will be ignored because the miniDirector has no real time clock.
- *Strip MP3 Header Information* – Eliminates extraneous information (which is often quite large) to speed up the miniDirector's loading of audio files.
- *SD Card is for NEW Generation 3 Director* – Use this option to enable 500K or DMX.
- *LOR Network Speed* – Use these radio buttons to select the RS485 communications line speed.

Important Note: When using interactive shows, all shows should have the same communications speed. If the speed changes from show to show, there will be a 5 second pause to resynchronize between shows. If the speed is the same, a triggered show will start in less than a second.

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 or SD card writer into the PC, do it now and click the **Refresh Drive List** button.

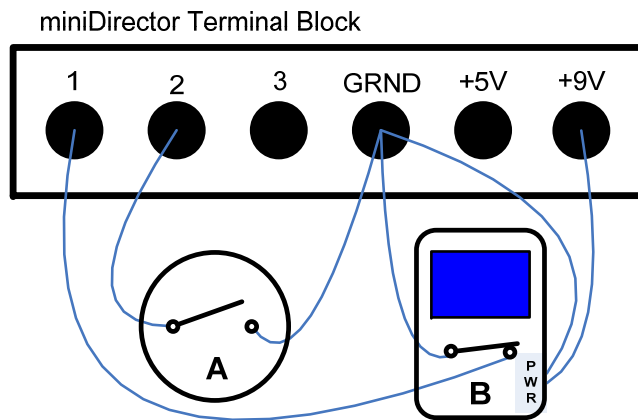
Finally, click the **Place Show on the SD Card** button to write the current Show to the SD card. You will see this window when it is done:



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

Interactive Trigger Connections

The following diagram shows the connections for a momentary contact switch (A) and a motion detector (B) to a miniDirector. 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 previous 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 Firmware

You must have:

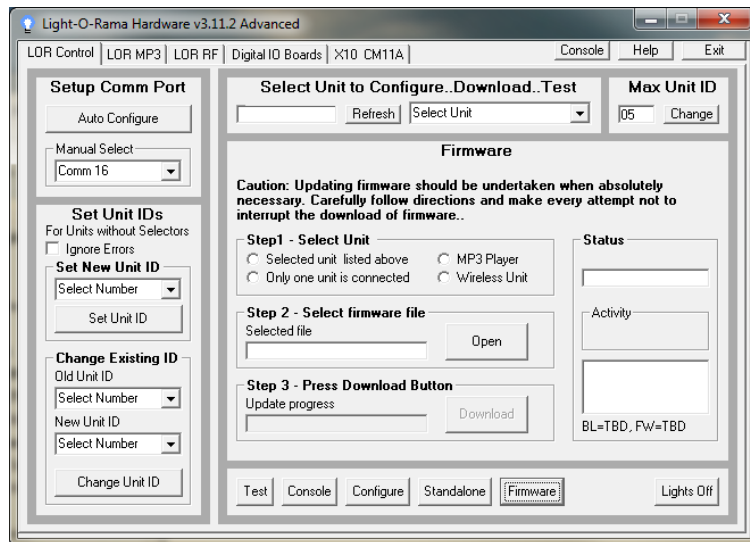
- Hardware Utility version 1.5.8 or later, see the section *Hardware Utility Version*
- **No** SD card in the miniDirector
- The miniDirector powered (see the **Power Input** section) and connected to the PC via one of the RS485 adapters – Do not use wireless

Get the latest firmware. www.lightorama.com ► Support ► Firmware Updates. Right-click the **Download** button in the uMP3g3 line and save the firmware file. Note the location of the firmware .lhx file.

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.

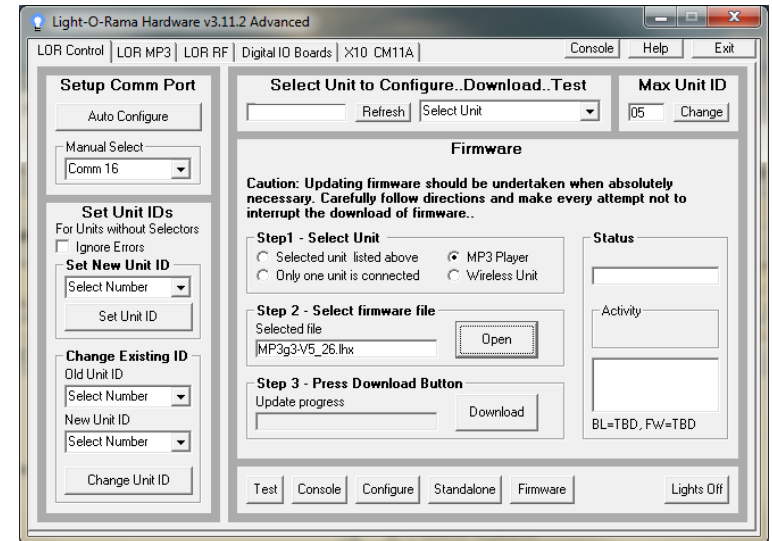
Start the **Hardware Utility** by right-clicking the Light-O-Rama Control Panel light bulb and selecting **Hardware Utility** from the menu.

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. 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 – 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 minDirector will reboot.

Specifications

Dimensions	2 5/8"W x 1 1/8"H x 3 3/4"D
Storage	Up to 8 GB SD card (Class 4 or higher recommended for best performance)
Power input	50 milliamps, 9 volts DC RJ45 network cable from controller(s) – or – Power barrel connected to 12 vdc power adapter
Interactive trigger inputs	3 (Shows 1, 2 and 3) Each configurable for Normally Open (NO) or Normally Closed (NC) switches
Power output	Terminal block +5 volts DC (max 200 milliamps) +9 volts DC (current set by power source, max 1 amp)

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