

The Dream Player LITE

User Manual

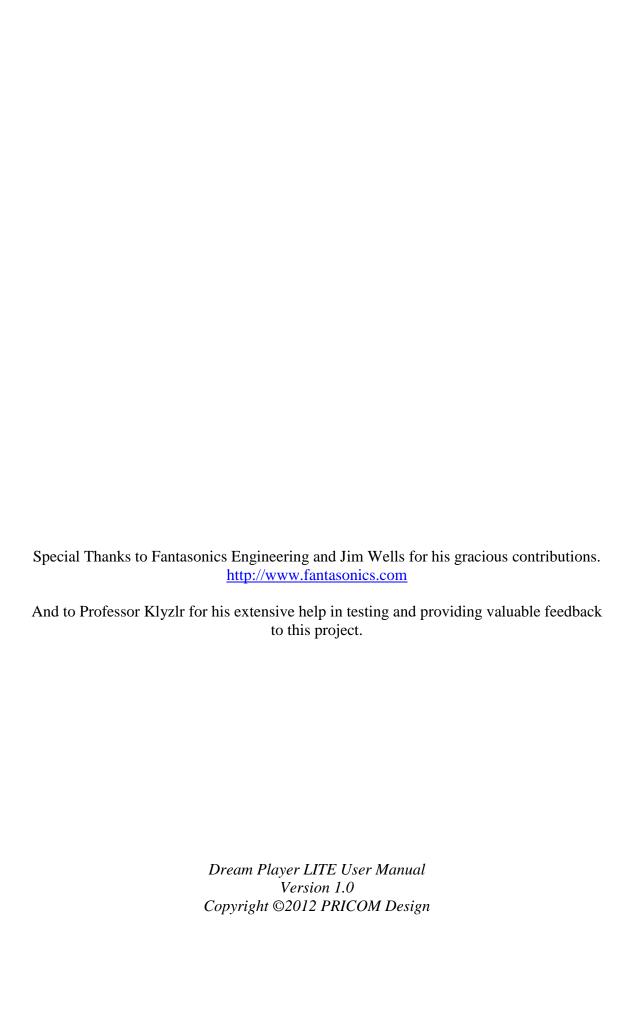


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1 Overview

Congratulations!

You have just received an extraordinary little device.

The Dream Player LITE is packed full with an extensive array of features and measuring only 2 by 2 ½ inches, this is truly the best item of its kind.

Your sound files are stored on a microSD Card readily available at any electronics store as well as through PRICOM Design. We have tested sizes ranging from 512MB-16GB from a variety of manufactures and have success with them all. This means you could have 25 hours of CD quality music playing in your project using a 16GB SD Card. Also by using a microSD Card you are able to mount the board to anything and anywhere, and easily change out or update the sounds that the device plays. What about quality? The LITE plays exceptionally high quality 44.1 KHz, stereo, 16bit, WAV Files.

You may also control the LITE via external controls such as a button, and also control Output devices such as LED's with it.

A real big feature of the Dream Player LITE is its low power consumption. Only drawing some 50ma it can last 4 hours on one 9V battery charge. And even longer on 4 AA batteries.

Another exiting feature of the Dream Player LITE is the "CONFIG file" that is stored on the SD Card. With this file you may change the characteristics of the Player. Things such as how long a fade out can be? Should it be 5 seconds? 1 second? None at all? Would you like the sound file to play only while you hold a button? How about starting the track when the button is released and stop playing when pressed again? These are just a handful of configurations that you may have, the beauty of it all is that you may change it at anytime and to your exact situation.

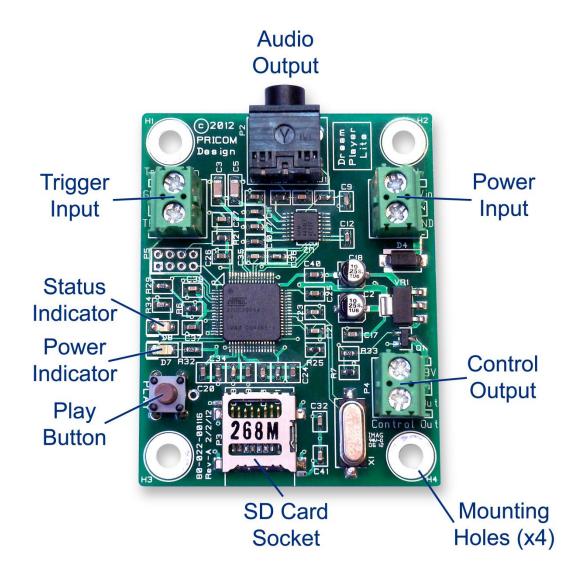
Also included with your LITE is a CD containing sample Audio Files, sample CONFIG File, the complete User's Manual, and several other items to make your experience as enjoyable as possible.

So read within to learn about the many exciting features of The Dream Player LITE.



2 Using the Dream Player LITE

The following pages describe the configuration and operation of the Dream Player. Many possible configurations are possible, but you can keep it as simple, or make it as complicated as you wish. The Dream Player LITE was designed for every level of designer.





2.1 Power Indicator

Quite simply, this LED will be lit whenever there is power supplied to the Power Input terminals. It is also used to indicate the status of firmware updates as discussed later in on in this manual.

2.2 Status Indicator

This LED will be lit when the Dream Player is currently playing an Audio Track or busy reading the SD Card. If there are troubles loading the SD Card, or a bad WAV file was encountered this indicator will flash.

Upon power up, when you insert an SD Card into the SD Card Socket, the status indicator will blink once for every file on the SD Card then turn off. If you push the PLAY button while the SD Card is initializing, the Dream Player will begin playing the first audio track once the initialization is complete.

The status indicator will also rapidly blink when a firmware update is in progress, as described later.

2.3 PLAY Button

To play the first Track on the SD card at any time, you can simply hit the PLAY button. If you press the PLAY button when the Dream Player is already playing, the sound will fade out and stop, or whatever you have your settings on the CONFIG file may be.

2.4 Trigger Input

This input is the way to control the activities of the Dream Player LITE. In its factory state, when the LITE is idle, the trigger input will cause the track to play. While the Dream Player is playing a track, any kind of trigger input will cause the current track to fade out.

Now any of the above mentioned scenarios may be customized using the CONFIG file as described latter in this manual.

2.5 Audio Output

Audio is supplied by the Dream Player LITE by means of a standard 1/8 inch stereo jack. You may use any standard powered computer speakers as described in the preceding section. You can also directly drive non-powered speakers, i.e. headphones.



2.6 Power Input

The LITE may operate off of 6-12V DC and will draw about 50ma. The polarity is important on this board and to prevent any accidents we created the LITE with an onboard diode that will prevent power from getting to other areas of the board should power be supplied in the reverse order. The simplest way of telling whether or not proper power has been established to the LITE is to look at the power indicator LED. If it is ON then you have correct power established, if no LED then, well; no power.

2.7 Control Output

As its name implies, you may use this function on the Dream Player LITE to control outputs such as LED's, Relays, etc... There is more to learn in section 3.4.

2.8 SD Card and Socket

Your Audio content, CONFIG File, and any firmware updates are loaded onto a micro SD FLASH Card, and then inserted into the SD Card Socket. The connector used on the Dream Players is unique in that the card is loaded from the top and not from the front like standard connectors. One major feature of this style is that it ensures that the card does not accidently fall out when the device is mounted.

To load the card into the connector, simply insert the card into the socket from the top and while pushing down with your finger pull towards yourself, you will feel it when it is secure. If the card is not properly fitted into the socket it will actually pop back up, the only the time the card remain down is when it is correctly inserted into the connector.

2.9 Creating WAV Files

Any suitable sound editor can be used to create WAV files. The Dream Player LITE will play Stereo, 16-bit samples, at a 44.1KHz sample rate. This is the same format used for CD Players and is quite standard.

Note: The Dream Player LITE can NOT play MP3 files or other non-way files.

Please visit the PRICOM Design web site (<u>www.pricom.com</u>), for some ideas and tips on creating your own WAV Files.

Although not necessary, we recommend numbering your files once you load them onto the SD Card. The Dream Player LITE will understand the numbers '1', '2', '3', or '4' when placed in front of the file name. These numbers indicate to the Dream Player what 'track' they are. If you do not number the files then the LITE will use the oldest track on



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the card as it considers this one the "original" and in most situations was likely written to the card first, so it is safe to assume that this track was intended as track 1.

You can name your files anything you want. For your convenience, you can name the files something sensible like "Mountain Day.wav" on your computer, and then rename the file once it is on the SD Card. A good file name is something like "1-Mountain Day.wav" which would be treated as Track-1 and would be started with The Trigger Input on the Dream Player LITE. You may have 4 audio files on the card for use in random mode. Note that the only time you will have the opportunity to have all four tracks play is in Random mode.

During normal operation the LITE will only play track one when the on-board button is pressed or is triggered from an outside source via the trigger inputs.

2.10 Loading the SD Card

In order for the Dream Player to receive its files, they must be copied onto the mircoSD Card. Any standard SD Card reader attached to any computer can be used. The Dream Player will accept any brand of SD Card, in any capacity from 512MB up to 16GB.

Simply copy your wav files onto the root folder of the SD Card. The Dream Player will not look in any sub-folders or sub-directories for its files, only the root folder. After you copy files onto the SD Card, any file can be renamed at any time. Unlike previous Dream Player's the LITE will accept fragmented cards, meaning you do not have to delete all files off the card before loading your news ones on. For example if you had 4 tracks on your card and you wanted to change track 2 you can simply delete the old track and put the new one on the card, without having to delete and then rewrite ALL the files.



3 Connections

The following section provides detailed instructions for connecting your Dream Player LITE. To get started quickly, all you need to do is connect the Power Input, and the Audio Output. Then when you are ready, you can get more advanced and use the Trigger Inputs and Control Outputs.

3.1 Power Input

The Dream Player LITE accepts only DC power input from 6-12 Volts and will draw about 50ma when playing audio. Power may be provided by means of a plug in wall-transformer or any DC power supply will do quite nicely as well. The wall-transformer is our suggested method and you may obtain these from just about any electronics store as well as directly from us here at PRICOM.

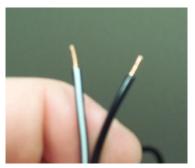
If you do end up purchasing a wall-transformer, chances are that it comes with a plug-in end. You may simply cut it off and attach it to the LITE as shown in the photos on the right. If you are looking for portability, the LITE may also be run of a 9V battery for about 4 hours and longer with 4 AA batteries.

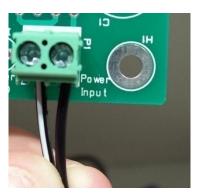
The polarity does matter on this board, and the LITE has an on board diode to prevent accidently 'frying' the board if the wires should happen to be connected in the incorrect orientation. If this should happen you will simply not see the green Power LED light up when power is applied. If successfully wired, you will see that the Green LED illuminates.

You may operate multiple LITE's with one power supply. Just ensure that you allow about 50ma of power consumption for each device to be powered plus a little extra. For example 3 LITE's can be successfully operated on a 9V 200ma wall-transformer supply.











3.2 Audio Output Connector

The Dream Player LITE will drive any audio amplifier or powered speakers or media speakers that are typically used on a computer. A very nifty feature of The Dream Player LITE is that it *can* directly drive non-powered or conventional speakers without an amplifier, headphones or ear buds for example.

Prices of media speakers are quite reasonable and you may obtain then from practically every computer store and electronic outlet. Depending on the quality and volume you are



trying to achieve, these speakers can be purchased anywhere from \$15-\$50, or as high as \$100+. We have found that many of the \$35-\$50 speakers sound terrific for any application and meet most of our customer's needs just fine, and some of them are quite small and easy to conceal. Choose your speakers wisely as the best audio you can get is often times limited by the quality of the speakers you choose. If you are at a loss for what speakers to get, we offer some reviews of speakers we have purchased on-line with some links to how you may purchase them. Please visit www.pricom.com

To connect the speakers to the Dream Player LITE, you simply plug-in the stereo plug from the speakers into the Audio Output jack on the Dream Player. You can insert as many extensions as needed to accomplish your wiring. These extensions are 1/8" stereo cables, and sometimes are sold as headphone extension cables. Again many electronic stores will sell this item.



To avoid 'blowing something up' set the volume on the speakers' pretty low to start with, and then adjust as appropriate for your sounds and speaker setup. All sounds are clearly not created and mixed on equal levels, and we would hate for you for blow a good set of speakers after start-up. To state the obvious, start low and work your way up from there.



3.3 Trigger Input Terminal Strip

Unlike other audio playback devices the Dream Player LITE allows the user or another device to trigger the audio stored on the LITE

This input is established by simply attaching the desired device to the 2 Position Terminal Strip labeled "Trigger In" located on the left side of the board. That is the side with the button, *not* the one with two Terminal Strips on it. See the illustration on page 2.)

This feature enables the user to use many options to trigger the sound board. Buttons, switches, relays, etc... Anything that can change from an open state to a closed state, or vice-versa as described in the 'CONFIG' section.

An example of this would be, you may wire up a button to the Input terminal strip and when pressed the Dream Player LITE will play your sound file and when pressed again it will stop playing.

The trigger input is not isolated, so be careful of what you connect to this input. A switch or relay contact closure is the best solution. With that in mind since sharing a common ground between the LITE and any trigger devices can create some noise on the audio output. Just another reason we would like you to consider putting relays or similar in your set-up to prevent this. If you do end up using a relay make to also use a clamping diode.

A simple description of the Input positions is listed below.

Terminal	Name	Description
1	GND	Power supply ground
2	Trigger	Trigger Input



3.4 Control Output Terminal Strip

In addition to being able to control the playback of the Dream Player LITE with an external source the LITE may also control outputs such as LED's or switches.

The LITE provides the full voltage supplied to it and can use that power to drive what may be connected to it. So if you use a 9V 200ma wall-transformer then 9V will be provided to the device that you attach to the LITE.

The Control Outputs of the LITE are not isolated in any way from the Audio Ground of the Dream Player. Why is that important? Because sharing a common ground between an Audio Playback system and any other system can, and usually does, create ground loops and noises such as 'buzz' and 'hum'. As we said earlier you may use a relay or similar to prevent some of this noise. Just remember if you do end up using a relay make to also use a clamping diode.

Terminal	Name	Description
1	9V	Convenience power supply (5VDC)
2	Out	Control Output

3.5 Mounting Holes

The Dream Player can be mounted to any non-conducting surface using the supplied mounting holes. Although there are not any components on the back of the LITE, using some form of stand-off would be advisable to keep from breaking anything and more importantly avoid any unwanted short circuits. The mounting holes are electrically isolated however, and using steel screws is fine, but please do be careful not to over tighten them.



4 Introducing the CONFIG File

Upon first glance the CONFIG file looks intimidating but is pretty self explanatory, and easy to use. The below screen is as it appears directly off a PRICOM Design supplied microSD Card, downloaded off our website, or from the included CD. If for some reason you neglect to put the CONFIG file onto your SD Card this is the standard configuration that the LITE would revert to.

```
Config File Sample-Dream Player for v1.2.txt - Notepad
                                                                                          - - X
File Edit Format View Help
This is the sample PRICOM Design Configuration File for the Dream Player - Lite Editi
This supports DreamPlayer-Lite Edition only, not used in the DreamPlayer-Classic
      To comment out a line and have it ignored, place a # at the beginning of the line Case is NOT sensitive, we used upper and lower case to make the setting readable
       Settings are read at power-on, and only apply until power is removed The DreamPlayer looks for any file that starts with "Config" and ends with ".TXT" So a file named "Config-002323213113.txt" or "Config-MainLine.txt" will work perfectly
# General Modes Setup Here #
                    # automatically start at Power On
# LoopMode makes the Dream Player Loop at end of track
# sets the Random Track Mode (plays random one of the 4 tracks)
# sets the Random Track Mode (plays random one of the 4 tracks)
#(not available on the LITE) Each track has 4 random sub-tracks
#(Not available on the LITE)plays the background track until a trigger
# AutoStart
# LoopMode
# RandomMode
# MultiRandomMode
# BackgroundMode
#End of Line#
```



Using your Dream Player LITE

We will just go ahead and simply go down the list of what we can do with this awesome little file.

First off;

To make a Function ACTIVE, remove the # from in front of it. If a feature is not applicable to your situation and you do not need it, simply insert a # in front of the name.

You may name the file whatever you want just so long as it starts with "Config" and ends with .txt. For example "config-bobsstuff.txt", "config.txt" and "config-thisismysampletestfile.txt" would all work.

If you load two CONFIG files onto the same card the first one loaded will be the one the LITE will use.

As stated in the opening remark in the comment box. This CONFIG File must be less than 4KB long. We have a limited about of memory space that we can dedicate to reading this specific file and 4KB happened to be that number. In its original condition and as it is displayed above it measures about 3.01KB. But the above includes a lot of text and to make the file do its job you should not have to mess with the text at all. So space should not be too much of an issue. Just don't go writing any excessively long comments to yourself.

Overall the nice thing is that if for some reason you forget what a particular function does, the description is found in the file and will pretty much just explain itself.

So enough housekeeping let's get into what each one does.



4.1 General Mode Setup

Feature	Description
Auto Start	The file will begin to play automatically as soon as the power is
	applied to the device.
Loop Mode	Will continuously loop the sound until an outside trigger stops it (a
	button for example).
Random Mode:	Will randomly select from up to 4 files the SD card, will only play the randomly selected file once. This is very nifty to pair with the Loop
	Mode.

If you want your device to start playing while continuously looping 4 randomly selected tracks as soon you give it power your file would look like this.



4.2 Trigger Input Configuration

Feature	Description
Loop While Trigger	Just as its name implies this feature will make the LITE continue to
	loop the file and play it over and over so long as the button/input is
	active. If you are using a button as your input, then if you press and
	hold the button the file will play continuously. Release the button and
	the file will play to the end and then stop.
High Trigger	Instead of playing the file when the trigger input is closed, this reverses
	the trigger logic so that it plays when open. With a button as an
	example of input then the file will play when the button is released
	"open" and then stop playback when you press the button "closed".
	This is a great option for motion detectors.
NO Retrigger	Once a file is playing the trigger input is ignored until the file has
	completed playing. Also great for motion detectors.*
Toggle Trigger	Using the toggle trigger feature allows you to switch between two files
	on the same device. Switching between a Daytime track and a
	nighttime track is a good example. This is done by using a switch
	connected to the trigger input. Now it has to be a switch, a button will
	not work.

*This would be perfect if you put the LITE in a high traffic area where people may be pushing the button quite often and complete playback of the audio track is essential. With this feature you may elect to have the LITE ignore all outside triggers until the track finishes. This means you could have a thousand people walk by and push the button but the sound will continue to play for the person that initially played that track regardless of what people ask of it.



4.3 Control Output Setup

You may want to control some LED's, motors, or some other form of "action" items. In this section of the CONFIG file you may select whether you want the output item to be active as long as the file is playing or only at the beginning or end of the track.

Feature	Description
Control Begin	When the track starts playing and you have this feature enabled, the
	output device will be active for the specified amount of time as defined
	in the later configuration file then stop for the remainder of the track.
Control End	Just the opposite of the Control Begin (funny how that works). That
	means that the output device will become active for the specified
	amount of time <i>after</i> the file plays.
Control Play	The control output will simply stay active as long as the file is playing.
Control Pulse Time	You may define exactly how long the output is active. Times are
	defined in Milliseconds and if our math is right 1000MS amounts to 1
	full second, you can actually set your output to pulse for just 1MS.
	Doubtful it will be of any interest flashing an LED for 1MS, but maybe
	one of you has the application that requires such a rapid output. If both
	Control Begin and End features are disabled then the pulse time is not
	used



4.4 Audio Mode Configuration

The last category is the audio output preferences. This section allows you to make a few simple adjustments to adapt the LITE to your specific situation. Your project may require a quicker fade than the default settings or maybe you need instant stoppage of playback, and what if the output seems too loud? You may change the settings here to suite your needs very specifically.

Feature	Description
No Fade	One of the most self explanatory features in the file. If you want the LITE to fade leave this feature disabled with a # in front of it. If you want the audio to instantly stop instead of fading then activate the feature.
Fade Time	A neat feature of this CONFIG file is that you may customize the fade time exactly to the millisecond that you need. You may use anything from 1MS to 65000MS. If you have No Fade enabled then the fade time is irrelevant.



5 Firmware Updates

5.1 Updating Your Firmware

One very special feature of the Dream Player LITE is the convenience of updating firmware, no cables needed. Revisions of firmware are loaded onto the microSD Card which allows you to load any critical updates to the firmware without having to totally dismantle your project to get the unit to your computer.

5.2 Downloading the Firmware Update

When firmware updates become available we will announce it on our website www.pricom.com. On the download's page find the updated version of firmware and click the download link.

The firmware updates are a special PRICOM Design file called PDI, which means your machine will most likely not recognize the format and so you will be prompted with a box asking if you want to Find, Save, or Cancel.

You will want to SAVE the file, and to a folder somewhere that makes sense and you can find it, "PRICOM Downloads" would be a good example.

After you save the file to your machine you may simply load it onto your microSD Card.

5.3 How to Update Your Firmware

To initiate the firmware update process just follow the steps below.

- 1. Power off the Dream Player LITE.
- 2. Remove the mircoSD Card.
- 3. Load the Card into your computer.
- 4. Copy the PDI File onto the card.
- 5. Insert the card back into its position on the Dream Player LITE.
- 6. (important) Hold down the onboard button while reapplying power.
- 7. Reapply power to the LITE.
- 8. The two LED's will flash four times to indicate the unit is in update mode.
- 9. You may stop holding down the button at this point.
- 10. The Red LED will rapidly strobe while the update is taking place.
- 11. Generally the update takes only a few seconds and upon completion of the update the LED will stop flashing, and you are ready to go.

Note: Remember to hold down the button when reapplying power to the unit.

Otherwise the LITE will not look for the Firmware.



6 Problems & Support

Our goal is a product that is robust and trouble-free for you, however in the real-world, problems unfortunately do arise.

6.1 Help, I broke it!

If you are not happy, then we are not happy! If you have a mishap with your Dream Player, please let us know. Contact us at the e-mail below if you have questions or problems. Generally the problems end up being simple fixes that can be diagnosed and repaired by you the user with help from us here.

6.2 E-mail

If you are experiencing trouble with your Dream Player, please let us know. We are here to help you, and want your experience to be creative and fun. If you need help of any kind, please contact us via e-mail. The support e-mail address is Help@pricom.com.

6.3 Web Site

The PRICOM web site is where we will post any upgrades, updates, and improvements. Please be sure to check for Hardware and Software updates. www.pricom.com



7 Dream Player Specifications

Power Input: 5-12V DC

Connection using 2 position terminal strip Current consumption approximately 50mA May also use 9V battery or 4AA batteries

Trigger Input: 1 Input for Switches or Contact Closures

Connection using 2 position terminal strip

Trigger Output: 1 Output for; Lamps, LEDs, and other trigger able devices

Connection using 2 position terminal strip Pulls to GND. Output rated for 200mA

Audio Output: Line Level Analog Audio Output

Connection using 3.5mm (1/8") Stereo Jack

Allows direct connection of amplified 'media speakers'
May also use non-powered speakers, such as headphones

Audio Formats: 16bit, stereo

Sample Rates: 44.1KHz

Output Level: 3V Peak-To-Peak Maximum

Storage Device: micro SD FLASH Card 64MB up to 16GB

Files use about 10MB/minute. 64MB holds about 7 minuets 1GB about 100 minuets 2GB about 3 hours 16GB about 25 hours

Storage Format: FAT, FAT32 formatted cards (standard)

File Format: Standard WAV files placed in the root folder of the card



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