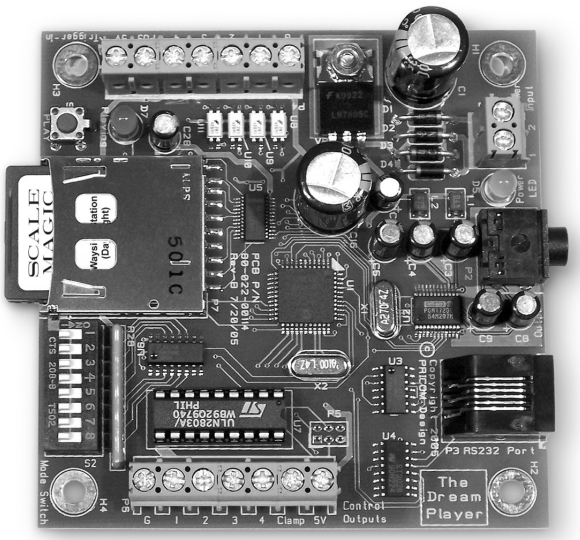
The Scale Magic™ Dream Player

Model Railroad Sound



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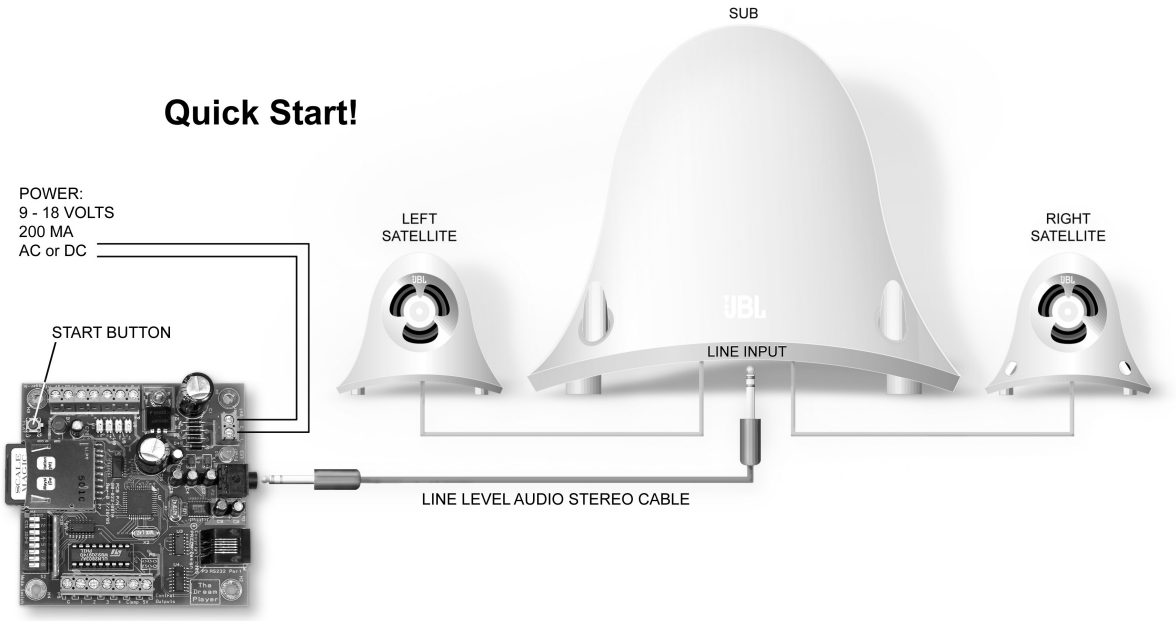
Dream Player Quick Start:
Start listening immediately! You might as well be listening while you read. Connect any power supply from 9 –18 volts (200mA), AC or DC to the 'power in' terminals, connect the 'line level output' to an amplified speaker system (preferably a small amplified computer 'media system'), turn it WAY down, and hit the 'Start Button'…



Your **Scale Magic™ Dream Player** comes ready to run from the factory. It is already loaded with the Scale Magic™ scene you ordered, and all switches are preset for recommended operation of that scene.

If your scene has both Day and Night versions, closing trigger input 1 to ground (or hitting the 'start button' on the circuit board) will begin playing the day track (track 1). Closing trigger input 2 to ground will begin playing the Night track (track 2). You can cue back and fourth between these two tracks at any time, the currently playing track will fade out and the other track will then begin playing. For quick start cueing, you can simply short the desired trigger input (**1** or **2**) to ground (**G**).

Now you can listen while you read on. And for goodness sakes, have fun listening!

Care & Feeding of your Scale Magic™ Dream Player

Introduction

Your new Scale Magic™ Dream Player is indeed ready to run. But it is ready to do a lot more, if you need it to! As you read along you will find that the player is quite capable of both listening to and talking to the layout (and people!) around it. You will discover that the Dream Player can be set up to act, interact, and adapt in almost any practical layout situation.

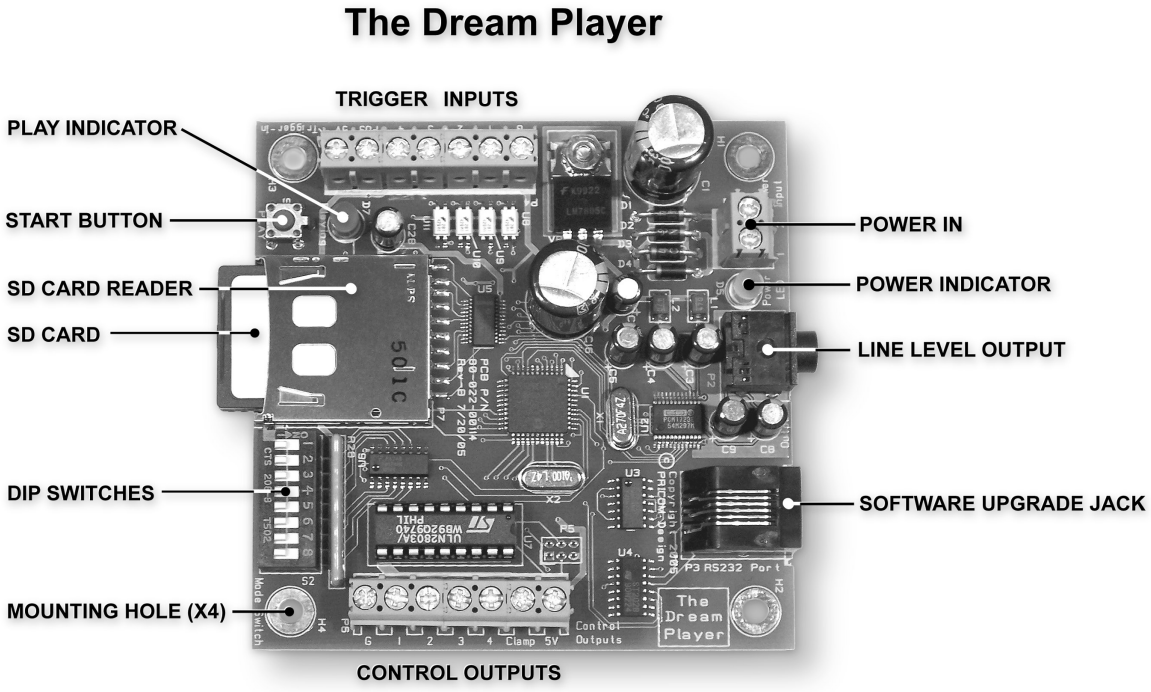
For instance, you may wish to have your Dream Player start playing automatically when power is applied. Or you might wish to have your Scale Magic™ sound under DCC control. Or, you might wish to coordinate the day and night tracks with layout lighting, or have the player coordinate the lighting for you. The Dream Player is up to the task, and likely, any other practical or creative occasion that you can imagine for you pike's operations. If you can dream it up, the Player will be delighted to accommodate. The versatility of the player will become apparent, as you read along.

The Dream Player's designer, software engineer, and creator are all Bob Scheffler, of PRICOM Design. Bob has built almost unlimited creative application potential into this player. For instance, its trigger inputs, control outputs, and its play modes can all be set by the user with switches. What do you want your dream player to do within your layout? Chances are the Dream Player can already do that… or it might be taught to, with user downloadable software updates!

But the player is ready to run, and if you wish, installation can be as simple as connecting a button or two. The Dream Player is designed and engineered from its concept to be a model railroad sound player… Scale Magic™ Soundtracks are audio engineered for playback on small speakers mercilessly hidden in a layout's scenery… and to sound huge even at tiny scale volume levels. You've been engineered for success!

You can read everything you need to know about audio systems and layout applications in the accompanying Scale Magic™ Sound Owner's Manual. But for now, lets just get you a bit more familiar with that new Dream Player…

Dream Player Nomenclature:



Trigger Inputs:

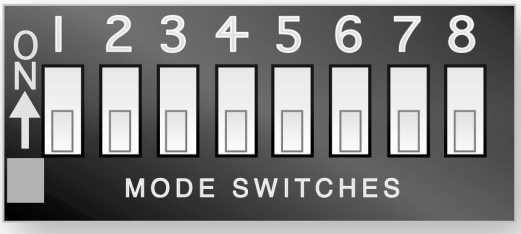
The Dream Player trigger inputs are accessed through a seven position terminal strip at the top of the circuit. Tracks on the player can be cued by almost any external events imaginable through these connections. (See: Trigger Input Wiring, page 6)

Control Outputs:

An additional seven position terminal strip at the bottom provides access to the control outputs. The player can coordinate external events relative to the way it plays tracks. (See: Control Output Connections, page 8)

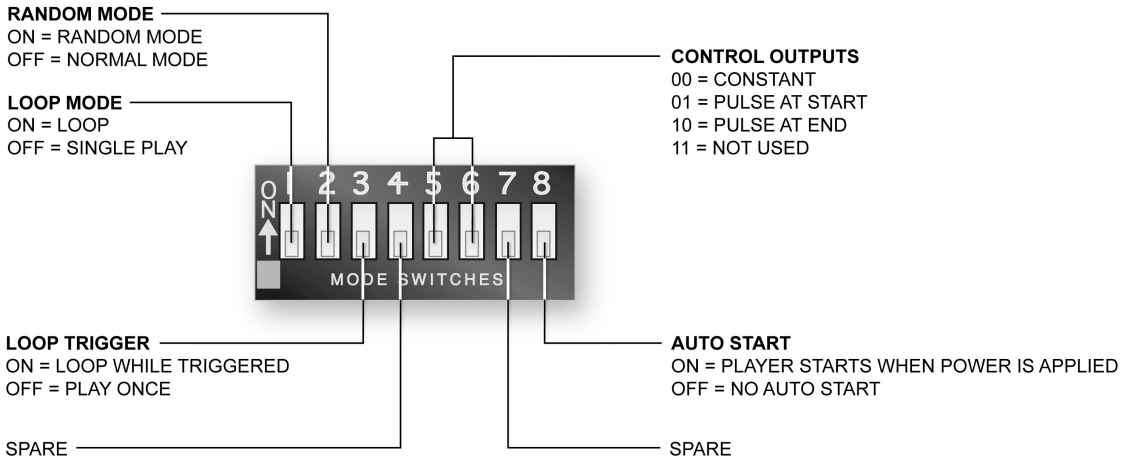
DIP Switch Bank

Your Dream Player has a bank of eight DIP switches. These switches allow the user to exhibit a great deal of specific control over the ways in which audio tracks are played, and over the input and output functions. (see: next page)



Dream Player switch settings:

Use these switches to set ‘Play Mode’, and ‘Control Output’ characteristics.



Switch 1 (Loop Mode) = ON for Loop Mode, OFF for single play
(Track will play continuously until another track is selected)

Switch 2 (Random Mode) = ON for Random Mode, OFF for normal mode
(Random track is selected when Trigger #1 is activated)

Switch 3 (Loop Trigger) = ON for ‘Loop While Trigger’, OFF for ‘Single Play While Trigger’
(Selected Track will loop as long as trigger is activated)

Switch 4 = Spare

Switches 5, 6 = joint control of ‘Output Control’ signals.

00 = Each output will be constantly active during play of it’s track

01 = Each output will PULSE at the START of each track

10 = Each output will PULSE at the END of each track

11 = not used yet

Switch 7 = Spare

Switch 8 (Auto Start) = ON for Auto Start
(Plays when power is applied)

5 - 6 CONTROL OUTPUT SETTINGS

NOTE: 0 = OFF 1 = ON

00 = CONSTANT

01 = PULSE AT START

10 = PULSE AT END

11 = NOT USED

Loop Play Notes:
Setting Switch -1 ON will enable the Loop Play mode. Using Loop Play, when any one of the 4 tracks are triggered, that single track will continue to loop and play until another track is triggered or the player is stopped.

Random Play Notes:
Setting Switch -2 ON will enable the Random Play mode. Using Random Play, when trigger input #1 or trigger input #2 are triggered, a random track from 1 to 4 is selected and played.

Loop AND Random Play Together:
When Loop Play AND Random Play are selected at the same time by setting Switch-1 ON and Switch-2 ON, some special things can happen. Trigger Input #1 causes the Dream Player to randomly select a track 1 to 4, and play this track one time. At the completion of the track play, another possibly different track is selected, and played one time. This process will continue until the player is stopped.

Using Trigger Input #2 will cause the Dream Player to chose a random track 1 to 4, and continue to loop that single track until the player is stopped.

Loop While Trigger Notes:
Setting Switch-3 ON will enable the Loop While Trigger mode. Using Loop While Trigger allows the triggered track to continuously play as long as the trigger signal is present. Once the Trigger Input has been removed, the current track will play to completion and then stop. Loop While Trigger can be combined with the Loop and Random Play modes to cause random tracks to be played as long as the Trigger is present.

Auto Start:
When switch 8 is on, player will auto-start track #1 on the Player when power is applied. If Switch 8 is off, player does not auto-start. When auto starting, if Track 1 is in LOOP mode (sw1= ON), it will loop forever. If Track 1 is in SINGLE mode (sw1= OFF), Auto Start will play Track-1 once.

Dream Player LED status:
Power LED (D5) = On as long as power is supplied to Player

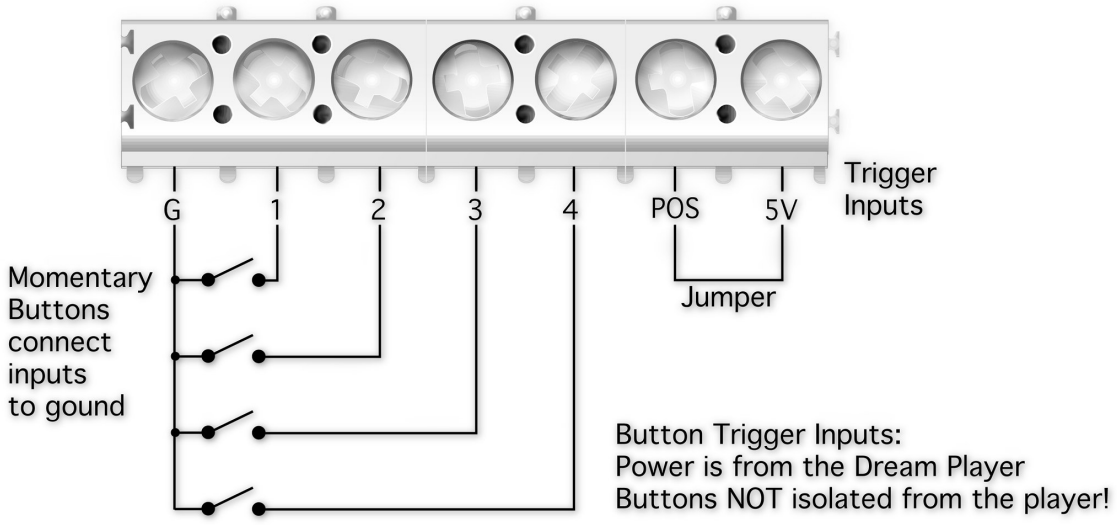
Playing LED (D7) = On when Playing any Track. Fast Blink indicates file error on card. A file error could be a sample rate or format that the Dream Play cannot understand. It could also indicate a bad file, or a bad file name.

Trigger Inputs

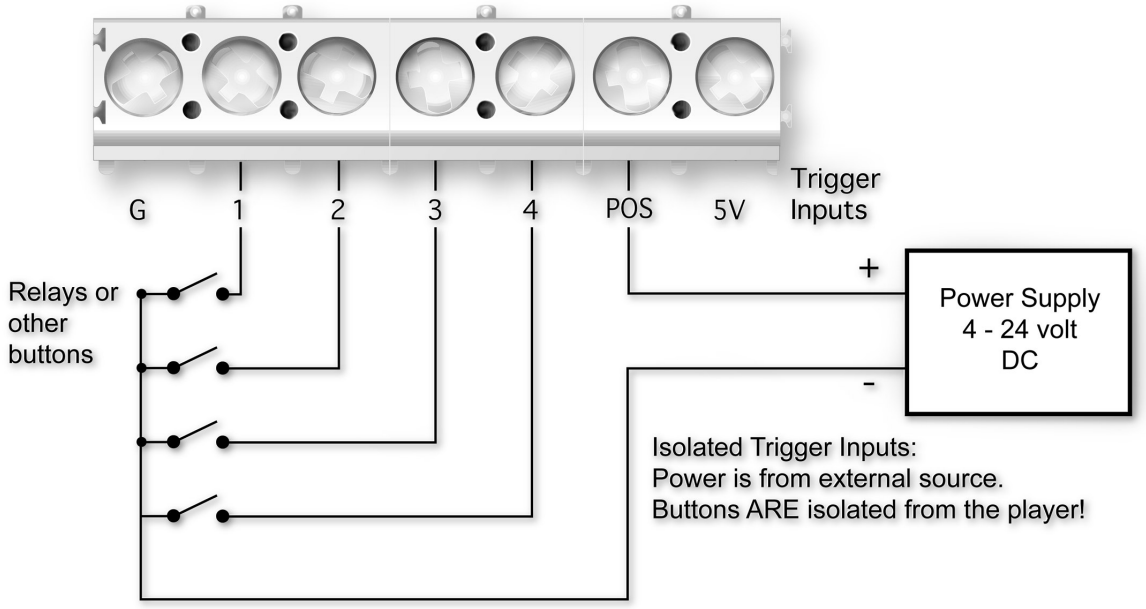
Button and Trigger Input Functions:

- At an idle state, pressing the "PLAY" button on the PCB will cause track-1 to play.
- While Playing, pressing the "PLAY" button will cause the current track to fade out and stop. Fade time is about 5 seconds.
- While idle, any trigger input connected to GND, will cause that track to play (if on the card). Trigger 1 will start File-1, etc.
- While Playing, triggering any trigger input will cause the current file to fade out, and the new file to begin once the fade is complete.
- While playing, if the same trigger is connected to GND as the file currently playing, the file will fade out and playback will stop. This gives a "START/STOP" function to each button for the 4 tracks.

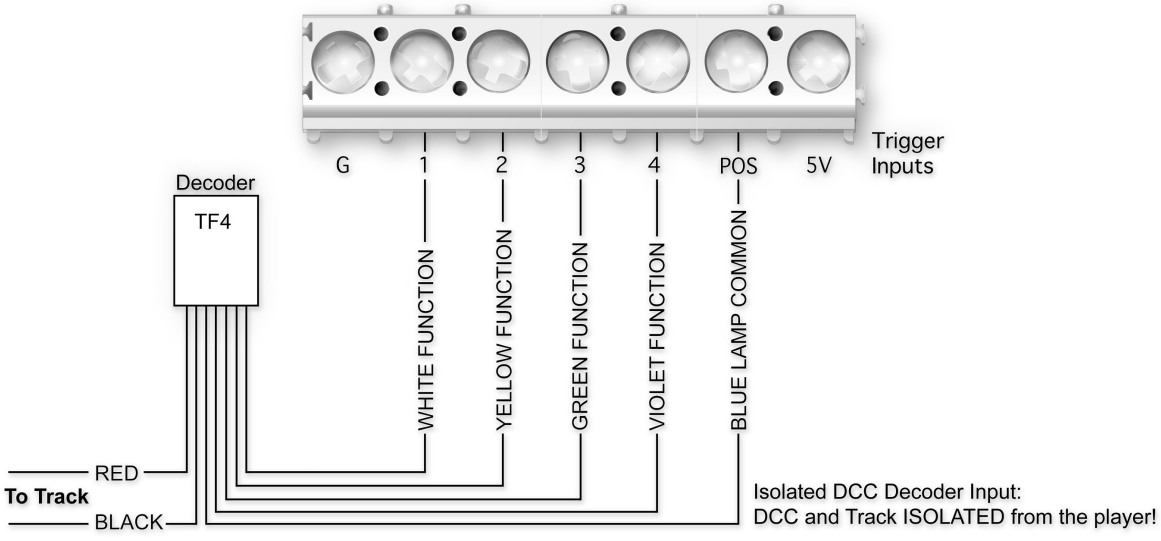
Button Trigger Inputs:



Isolated Trigger Inputs:

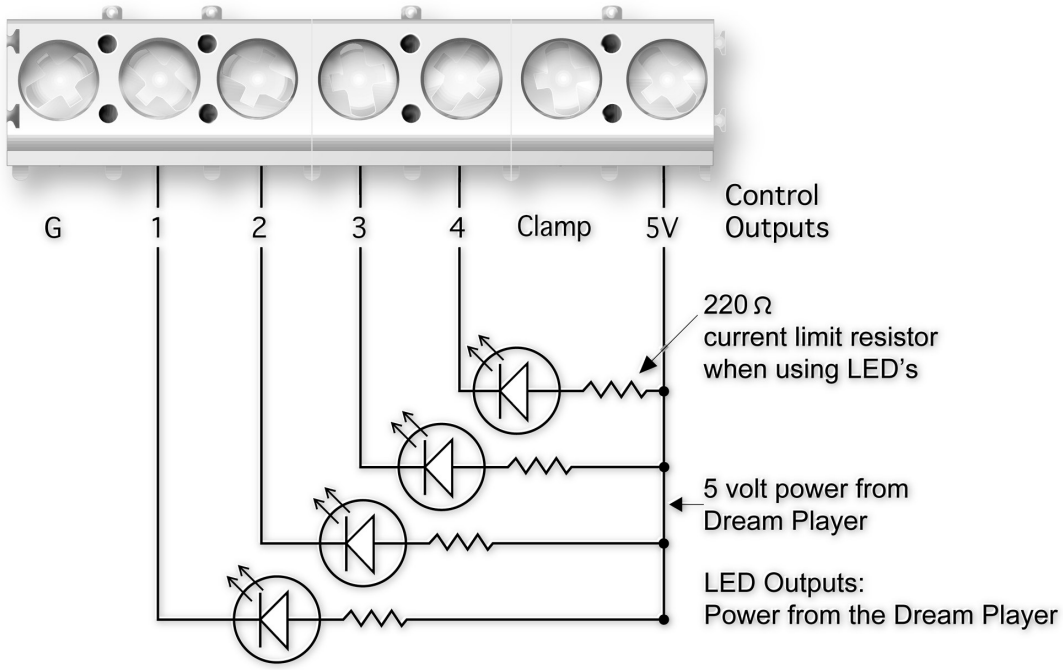


DCC Decoder Trigger Inputs:

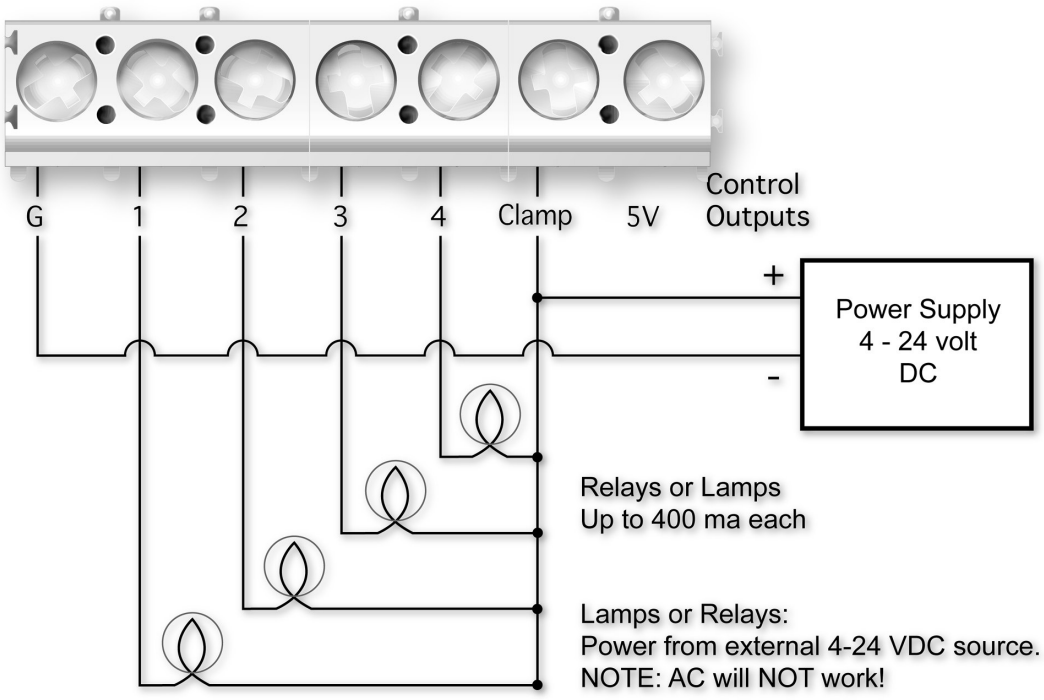


Control Output Connections

LED Output Control:



Lamp/Relay Output Control:



Some SD Card Enginear's Notes:

The Dream Player can play any standard .wav file, but it can only recognize and play a file name that begins with a numeral.

The file names are as follows:
1anyname.wav …is for track one
2anyname.wav …is for track two
3anyname.wav …is for track three
4anyname.wav …is for track four

A file need not have the suffix '.wav'.

You can use ANY name for a file, BUT it will only play if the first character in the name is a 1, 2, 3, or 4… each number indicates the trigger input that will cause that file to play.

Copying files to a SD card:

- A file does not have to be called 'xxxxx.wav', it actually can have any name, as long as it starts with a 1, 2, 3 or 4.
- Even if the file is not called .wav, it MUST be a WAV file format. If not, the Playing LED will flash fast to indicate a file problem.
- All files must exist in the ROOT folder of the card. You can have sub-folders, but don't name any of them starting with 1, 2, 3 or 4. The Dream Player will only look in the ROOT folder for its files. Sub-Folder will not be looked in.
- You may rename any file on the card without any problems. The system will use your renamed file name instead of the original.
- If you delete ANY FILE on the card, ALL files must be deleted and copied back onto the card. The technical gritty of this is that you can delete the file, but NOT copy a new one in its place. The reason is that each File has to exist in sequential locations on the SD card. If you delete a file, and copy a new one on the card, the new file will fill in any holes on the card, and the file will be 'fragmented' and not occupy sequential addresses on the card.
- The symptom of not obeying the sequential file rule above is that while playing a track, you may get sections of audio from another track in its place. The best rule is to delete ALL files when you delete ANY file on the card.
- You can add files without problems, but you cannot just delete one file, and copy a new one in its place.
- You can rename files at any time. This will only change the Folder Entry, and not the File Data itself. The Dream Player will follow any long file name, and any number of renames, it just has to have the file data on the card sequentially.
- Never FORMAT or RE-FORMAT an SD Card. If you want to wipe out the card, just delete all the files. That's plenty good enough!

Operating Software Upgrades:

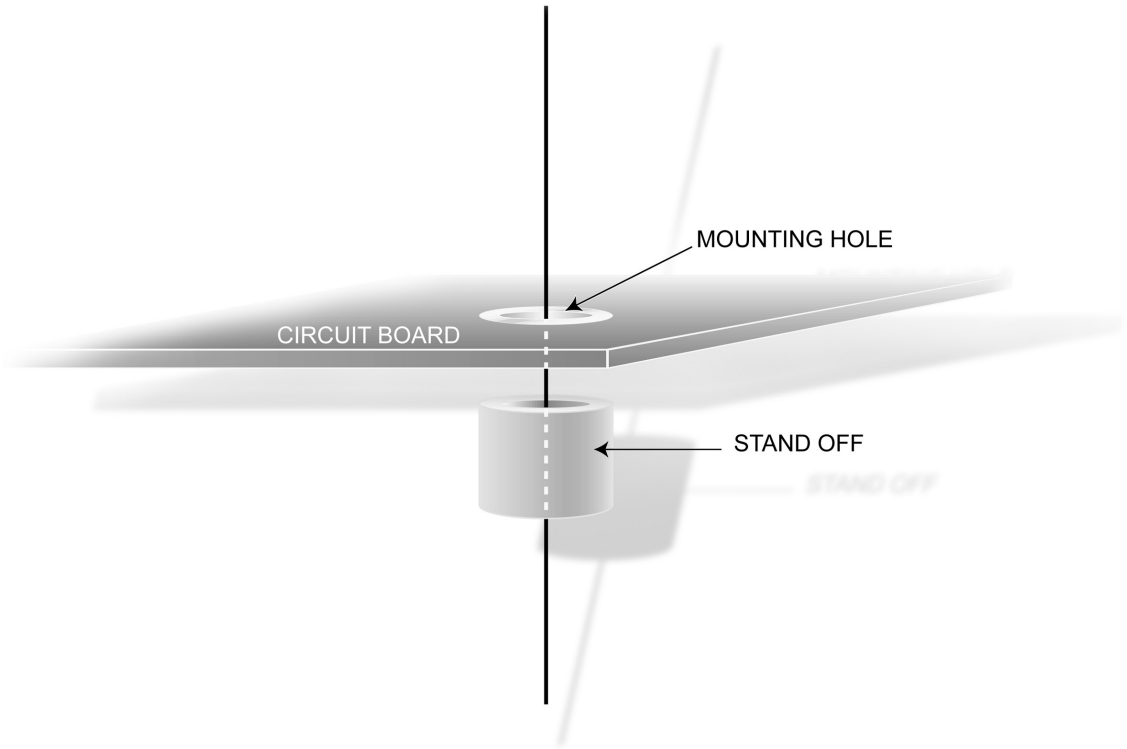
For further information on software updates, please visit our web site :
www.pricom.com
There you can find separate instructions on how to upgrade the software in your Dream Player.

Enginear's Operational Notes:

- When you apply power it may take 2-4 seconds for the Auto-Start to happen, the Dream Player needs to 'boot' and read the card before it can start.
- When you first stick an SD card in, it will take a few seconds for the Dream Player to read the file structure before playback can start.
- If you stick a SD card in, and hit the Play button right away, the playback will start after the card has initialized (2-4 seconds).
- You can insert and remove the SD card with power applied without any problems.
- You can remove the SD card at any time, even during playback without causing any problems.
- You can change the DIP switch settings at any time, the next time a playback is started (Play button, or any trigger input) the switches will be read and take effect.

Mounting you Dream Player:

There are four holes located in the four corners of the Dream Player circuit board. Whenever possible, mount your Dream Player with the standoffs provided. And always tighten mounting hardware by hand (avoid using power screwdrivers or drills, they can easily damage the circuit board!).



Dream Player Specifications:

Power Input:	7-24V AC or DC Connection using 2 position terminal strip Current consumption approximately 200mA
Trigger Input:	4 Inputs for Switches or Contact Closures Connection using 7 position terminal strip Pull any input to GND with switches, relays, etc.
Trigger Output:	4 Outputs for relays, lamps, LEDs, other player trigger inputs Connection using 7 position terminal strip Pulls to GND. Outputs rated for 200mA each
Audio Output:	Line Level Analog Audio Output Connection using 3.5mm (1/8”) Stereo Jack Allows direct connection of amplified ‘media speakers’
Audio Formats:	8bit or 16bit, mono or stereo
Sample Rates:	16KHz, 22.05KHz, 24KHz, 32KHz, 44.1KHz, 48KHz
Output Level:	3V Peak-To-Peak Maximum
Level Control:	256 step digital output level/volume control
Storage Device:	SD or MMC FLASH Card 64MB up to 2GB 64MB card stores 6 minutes of Stereo 44.1KHz 16bit audio 512MB card stores 48 minutes of Stereo 44.1KHz 16bit audio 1GB card stores 94 minutes of Stereo 44.1KHz 16bit audio 2GB card stores 188 minutes of Stereo 44.1KHz 16bit audio
Storage Format:	FAT-12 or FAT16 formatted cards (standard)
Audio File Format:	Standard WAV files placed in the root folder of the card

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We encourage you to send us your application ideas and how you implemented them. These will be posted on our web site, along with ideas and examples from others. Have an idea for a special use? Who knows, maybe someone else already did it. Check it out!