

## **Dec\_2Mot\_10LED\_Audio\_6Ftn** Dual motor drive, Audio Output, 10 LED 8 Function

This is a “mobile/function” decoder that adds audio play to dual motor control and LED functions. Audio tracks or clips are stored on a micro SD card for playing, in a folder labeled mp3, with tracks named 0001.mp3, 0002.mp3, etc. F0 is configured as an on/off LED function, F1-F5 play audio tracks 1-5 respectively. Setting the Config CV for a Pin to 6 makes it an Audio play track function, at a volume set in the next CV, playing the audio track/clip specified by the value of the third CV.

Example: DCC function F2 will play track 2 (set in CV42) at volume 22 (set in CV41 – volume range is 0-30).

```
{30, 0},    //F0 Config 0=On/Off,1=Blink,2=Servo,3=DBL LED Blink,4=Pulsed,5=fade,6=Audio
```

```
{35, 6},    //F1 Config 6=Audio  
{36, 22},   // Rate Audio=Volume(0-30)  
{37, 1},    // Audio Track/Clip#
```

```
{40, 6},    //F2 Config 6=Audio  
{41, 22},   // Audio=Volume(0-30)  
{42, 2},    // Audio Track/Clip#
```

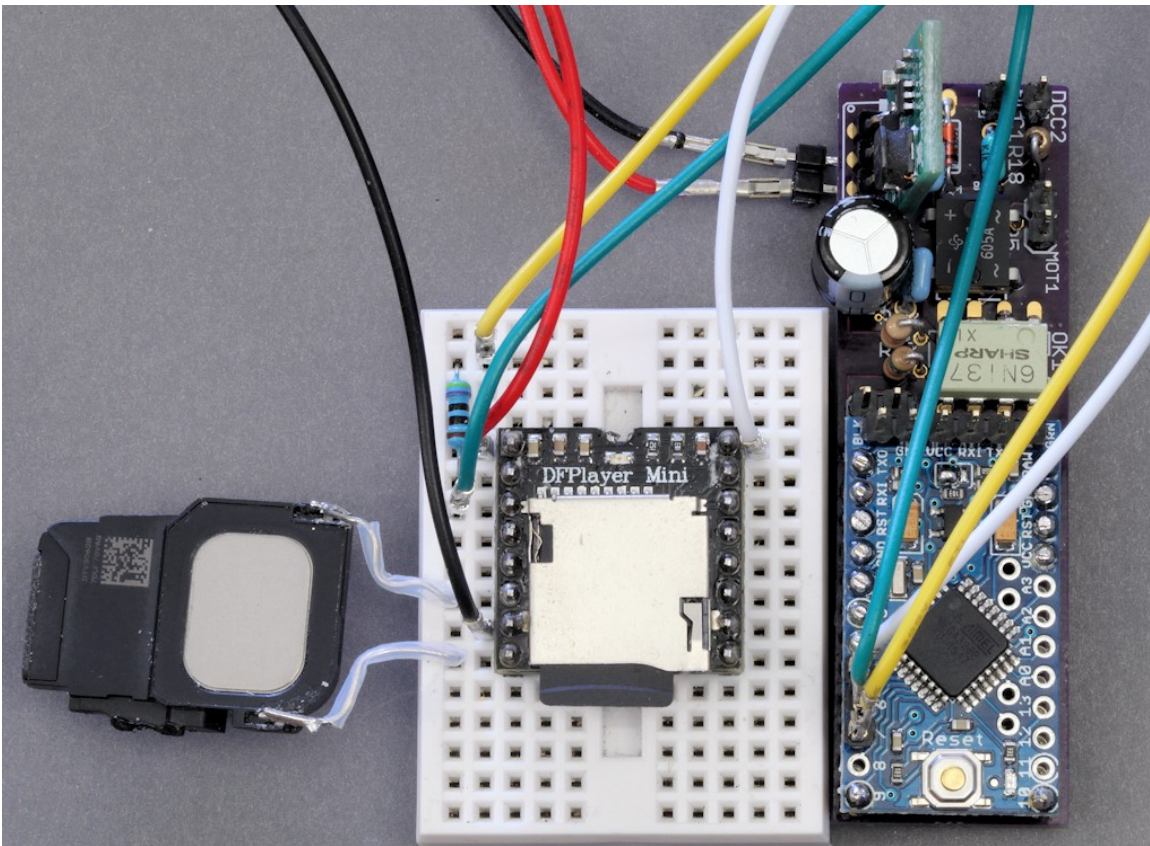
```
{45, 6},    //F3 Config 6=Audio  
{46, 22},   // Audio=Volume(0-30)  
{47, 3},    // Audio Track/Clip#
```

```
{50, 6},    //F4 Config 6=Audio  
{51, 22},   // Audio=Volume(0-30)  
{52, 4},    // Audio Track/Clip#
```

```
{55, 6},    //F5 Config 6=Audio  
{56, 22},   // Audio=Volume(0-30)  
{57, 5},    // Audio Track/Clip#
```

```
{60, 7},    //F6 Config 6=Audio  
{61, 22},   // Audio=Volume(0-30)  
{62, 6},    // Audio Track/Clip#
```

F6 plays a random selection in random order of tracks 1-6. F7-F9 control LEDs on Pro Mini Digital Pins 11-13. Simple speed control is made via throttle speed setting for two motors. Motor selection is via motor select Function 13 (Motor1) and Function 14 (Motor2). Motor speed for each can only be changed if the corresponding Function is on (F13 and/or F14). Motor speed is maintained if the corresponding motor select function is off. Thus, each motor can be controlled independently and run at different speeds. The other functions are configurable but are preset for LED on/off control.



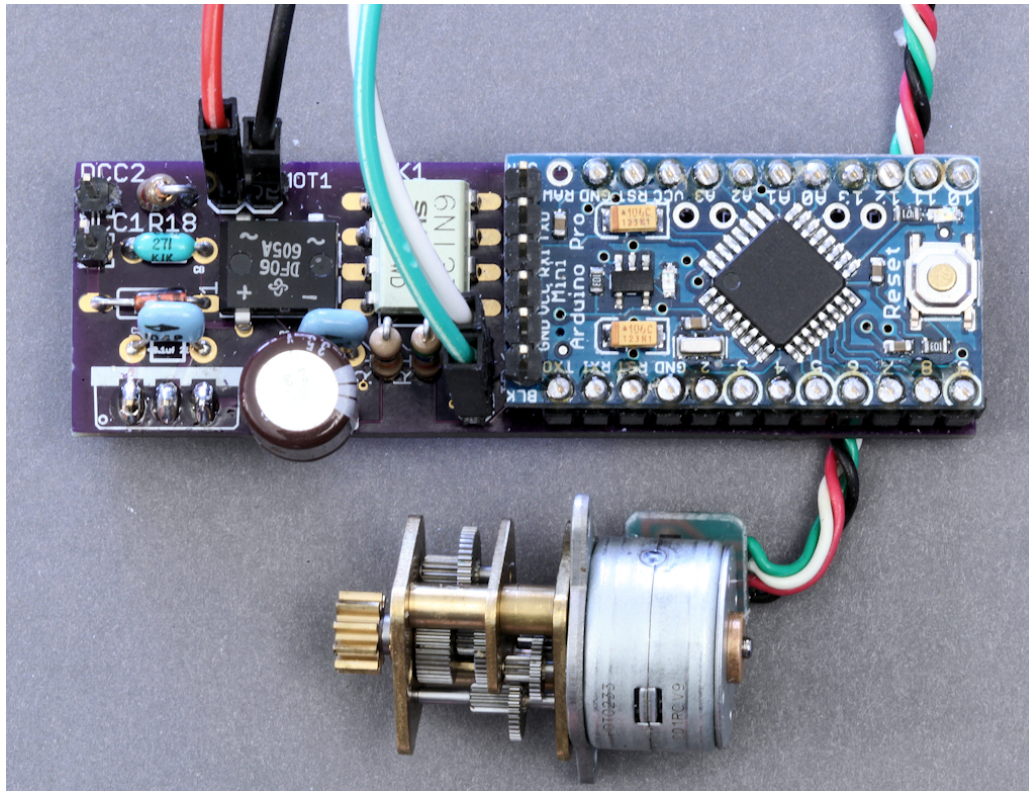
DFPlayer module connections

#### DFPlayer Audio Module Wiring to Decoder (Dec\_2Mot\_10LED\_Audio\_6Ftn)

DFPlayer Pin	Other	Pro Mini Pin
1		+5 Volts / VCC
2	470 Ohm ¼ Watt Resistor	D7
3		D6
6	8 Ohm Speaker	
7		GND (Ground)
8	8 Ohm Speaker	
16		D5

#### Dec\_Stepper\_8Ftn Single Stepper Motor Control

This is a “mobile/function” decoder that controls a single four wire stepper motor (5/12 Volt) via throttle speed setting and a multiplier which can be set in CV121. Stepper speed is pre-set in the sketch but can be changed. The library also supports setting acceleration/deceleration for the stepper. The other functions are configurable but are preset for LED on/off control. No servo motor control is available. Steppers whose coils need less than 500 ma can be accommodated. Each coil of the stepper attaches to MOT1 and MOT2. You may have to reverse the connections of one or the other until you get the connections right. The number of steps moved is set by the speed setting multiplied by the contents of CV 121. Every **Off** to **On** activation of F2 will move the stepper the specified number of steps, in the direction set by the DCC speed direction.



Stepper motor connections to decoder (Dec\_Stepper\_8Ftn)