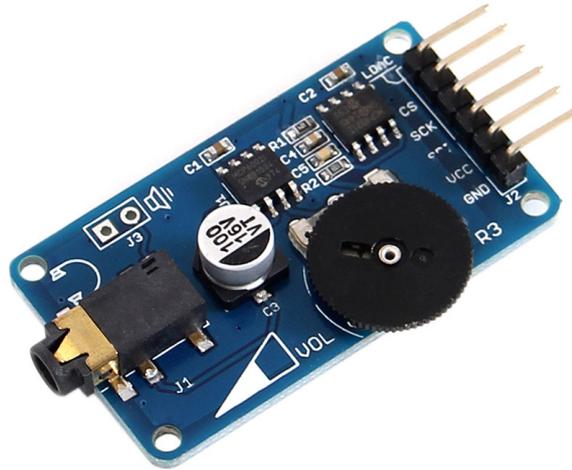
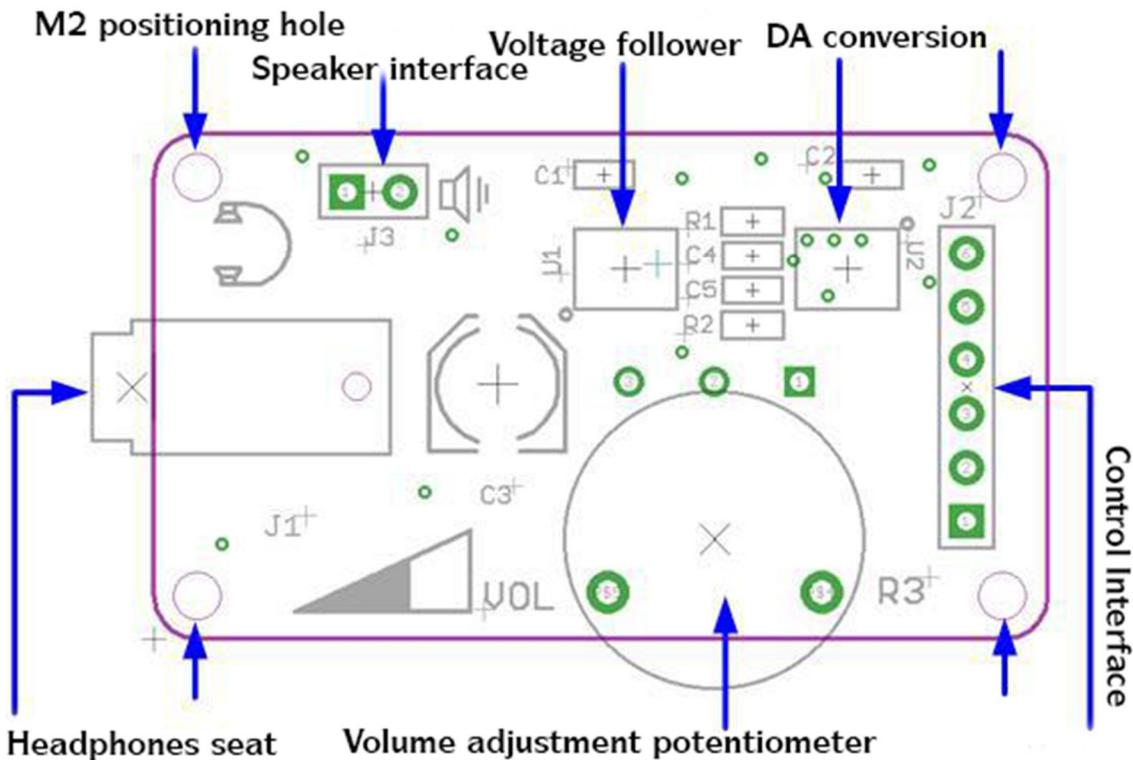


# *Arduino Module MP3 PLAYER*

## *User Manual*



Wav Player of the interface module as follows:



**Control Interface :** A total of six pins (GND, VCC, SDI, SCK, CS, LDAC), GND is ground, VCC for the power supply, and the remaining four signal input / output pins.

**DA conversion :** converting circuit based MCP4921 12-bit DA.

**Volume adjustment potentiometer :** to increase the volume reorientation should dial potentiometer (volume control) to the semi-circle above, in order to hear more clearly.

**Voltage follower** : to enhance load capacity DA conversion output signal to drive the headphones.

**Speaker interface** : can connect 8Ω / 0.5W of small speakers, but the volume is small.

**Headphones seat** : plug in headphones to hear the wav audio playback effect.

**Positioning holes** : 4 M2 screw positioning holes with a diameter of 2.2mm, the module to facilitate the installation location, to achieve inter-module combination.

**Experimental Equipment :**

An Arduino compatible board Catduino (not familiar with open-source hardware can be interpreted as Atmega328P microcontroller development board) and a mini USB cable;

1 Wav player module

1x 2G Micro SD card ( **formatted as FAT32** )

1 x Micro SD card reader module

1 x Arduino sensor expansion board

15x 20cm female for female Dupont line

**Experimental Procedure :**

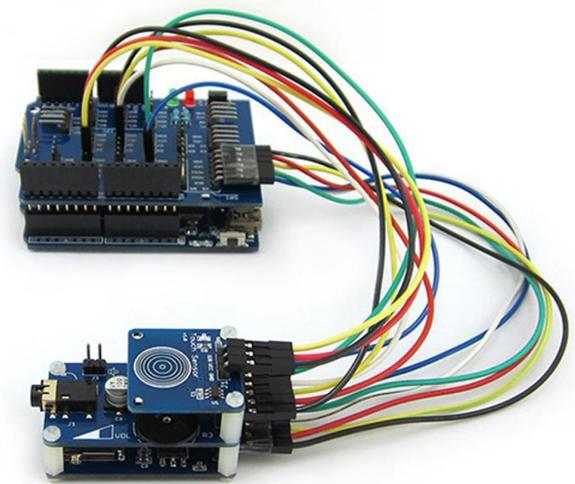
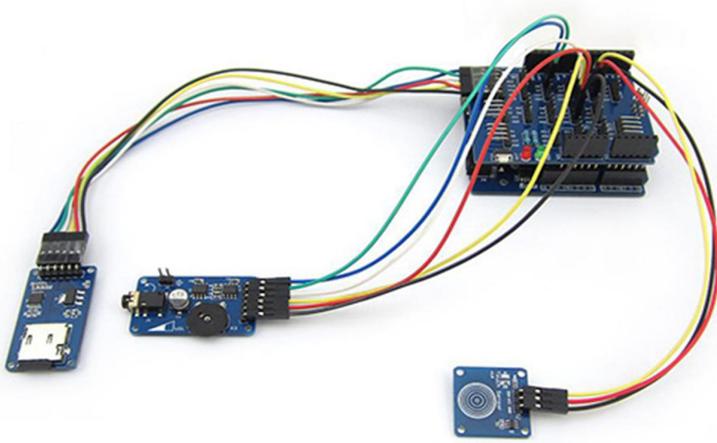
(1) Base Shield directly into the motherboard Catduino

(2) The mother Dupont line touch sensor module, Wav player module, Micro SD card reader module and Base Shield connection with 15 mother up in the following table, shown below:

Base Shield	Cable	Jog-type touch sensor module
GND	Black line	GND
VCC	Red line	VCC
D2 (external interrupt)	Yellow Line	SIG

Base Shield	Cable	Wav Player Module
GND	Black line	GND
VCC	Red line	VCC
D6	Yellow Line	SDI
D7	White line	SCK
D4	Green Line	CS
D5	Blue Line	LDAC

Base Shield	Cable	Micro SD Card Module
GND	Black line	GND
VCC	Red line	VCC
MISO	Yellow Line	MISO
MOSI	White line	MOSI
SCK	Green Line	SCK
SS	Blue Line	CS



(3) from the software download 1EDXvV the module Arduino1.0 version of the above apply to packages WavSpeakerforArduino1.0 +, and then directly extract the folder where Wave HC copied to the .. \ arduino-1.0 \ libraries directory under the Play With Name folder copied to your project directory, such as .. \ Arduino-1.0 \ My Project, and then close all Arduino IDE window.

(4) with a mini USB to Catduino linking **the Catduino VCC on the selector switch to 5V**

(5) and then to the .. \ Arduino-1.0 \ under MyProject \ Play With Name directory open .ino file to open Wav player module demonstrates a routine use, as shown below:

A screenshot of the Arduino IDE interface. The window title is "PlayWithName | Arduino 1.0". The menu bar includes "File", "Edit", "Sketch", "Tools", and "Help". The toolbar shows icons for running, saving, and other functions. The sketch editor displays the following code:

```
//Demo for the project of WAV Speaker
//by Catalex
//catalex.taobao.com
//Demo Function: It will play a .wav file with the name in the root directory
//             the micro SD card.And if you touch the Touch Sensor, it will p
//             or pause:
#include <WaveHC.h>
#include <WaveUtil.h>

SdReader card; // This object holds the information for the card
FatVolume vol; // This holds the information for the partition on the card
FatReader root; // This holds the information for the volumes root directory
FatReader file; // This object represent the WAV file for a pi digit or peri
WaveHC wave; // This is the only wave (audio) object, since we will only
/*
 * Define macro to put error messages in flash memory
 */
```

The status bar at the bottom indicates "1" and "Arduino Duemilanove w/ ATmega328 on COM4".

Serial selected, the control board name, click the Burn button, you can burn. After successful programming, you can click on the toolbar serial debug button, the file name to view the print out of the root directory. The program implements micro SD card player named love.wav files, touch your finger to the sensitive area of the touch sensor module, it will pause playback, touch again will then play as a play / pause key functions.

In the directory .. \ arduino-1.0 \ can see libraries WaveHC \ under \ examples more experimental routines, such as daphc routines can play all wav files on the SD card inside, PiSpeakHC routines read out pi π (including decimal point after 59), wherein the digital audio wav file that is decimal (available from network disk download piwav.zip and decompression) should be stored to the SD card.

**Amend playing file** , you can modify the loop () function, but the name (without extension) can not be more than eight characters, as at the red line of FIG.

```

////////////////////////////////////// LDOP

void loop()
{
  playcomplete("love.wav");//should be 8.3 file name format.so the name
                               //should not be more that 8 characters
}

```

**About playing .wav files** : 16 or less, mono, 22.1kHz sampling rate below wav audio file formats,

You can Baidu or google some ready wav file, it can also format factory (FormatFactory) software will transfer some of the mp3 file format into wav file, you can also get some software to wav synthesizer tones by some text.

