

MAX98357 I2S Class-D Mono Amp

18 February 2024 08:45

- # Decodes into analog (I2S DAC)
- # Amplifies (Amp)
- # Takes Digital input → Not analog.
- # Reg voltage 2.7 V - 5.5V DC
- # Default gain → 9dB.
- Can be set up to give 3dB, 6dB, 9dB, 12dB or 15dB.

- # Speaker Output
- Speaker Imp $> 4\Omega$
- 330 kHz PWM output



I2S pins
used to receive audio data

LRC
(Left right clock)
tells the amp when data is
for left channel or right
channel.

BCLK
(Bit clock)
tells the amp when to
read data from data
pin.

DIN
(Data In)
It receives the data for
L/R channel. which is
controlled by LRC

Gain / SD

Gain setting for
3dB, 6dB, 9dB, 12dB
15dB.

- 15dB if a 100K resistor is connected between GAIN and GND
- 12dB if GAIN is connected directly to GND
- 9dB if GAIN is not connected to anything (this is the default)
- 6dB if GAIN is connected directly to Vin
- 3dB if a 100K resistor is connected between GAIN and Vin

Default → 9dB.

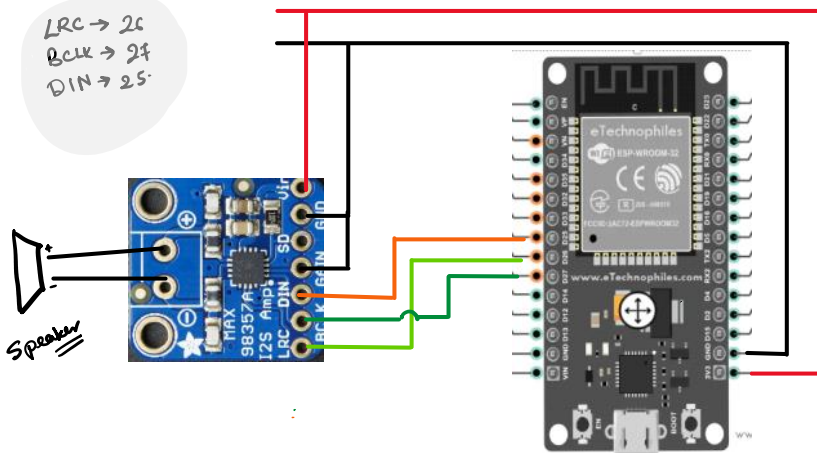
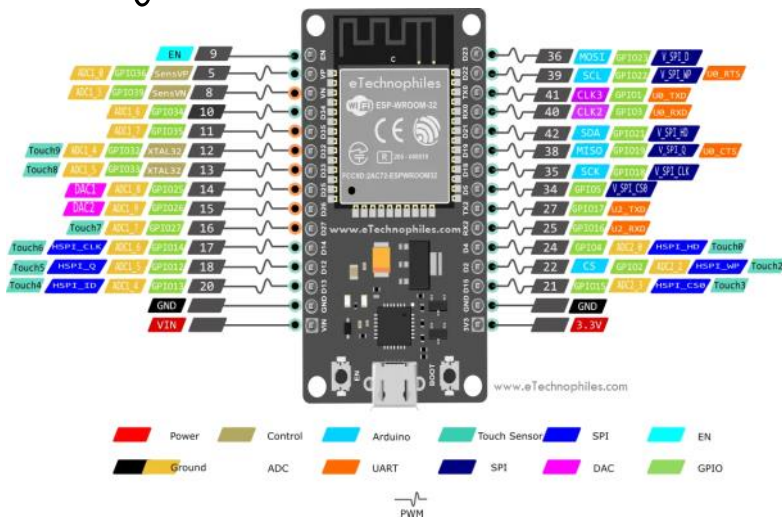
SD / MODE

Shut down mode.

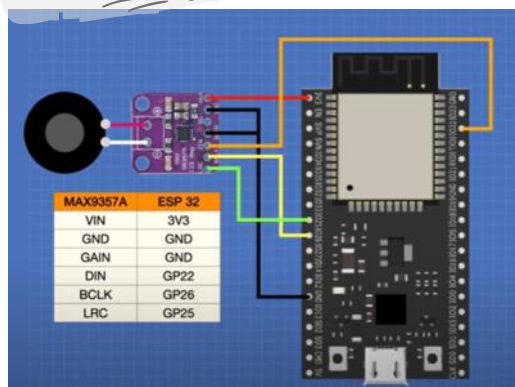
Setting which channel
is output.

- If SD is connected to ground directly (voltage is under 0.16V) then the amp is shut down
- If the voltage on SD is between 0.16V and 0.77V then the output is (Left + Right)/2, that is the stereo average.
- If the voltage on SD is between 0.77V and 1.4V then the output is just the Right channel
- If the voltage on SD is higher than 1.4V then the output is the Left channel.

Connecting it with ESP32



Alternatively -



Test Code.

Audio.h Library

```
12 // Include required libraries
13 #include "Arduino.h"
14 #include "WiFi.h"
15 #include "Audio.h"
16
17 // Define I2S connections
18 #define I2S_DOUT 22
19 #define I2S_BCLK 26
20 #define I2S_LRC 25
21
22 // Create audio object
23 Audio audio;
```

Required library.

Defined pins

```

12 // Include required libraries
13 #include "Arduino.h"
14 #include "WiFi.h" ← Required library.
15 #include "Audio.h"
16
17 // Define I2S connections
18 #define I2S_DOUT 22
19 #define I2S_BCLK 26
20 #define I2S_LRC 25 → Defined pins
21
22 // Create audio object
23 Audio audio;
24
25 // Wifi Credentials
26 String ssid = "YOURSSID";
27 String password = "YOURPASSWORD";
28
29 void setup() {
30
31     // Start Serial Monitor
32     Serial.begin(115200);
33
34     // Setup WiFi in Station mode
35     WiFi.disconnect();
36     WiFi.mode(WIFI_STA);
37     WiFi.begin(ssid.c_str(), password.c_str());
38
39     while (WiFi.status() != WL_CONNECTED) {
40         delay(500);
41         Serial.print(".");
42     }
43
44     // WiFi Connected, print IP to serial monitor
45     Serial.println("");
46     Serial.println("WiFi connected");
47     Serial.println("IP address: ");
48     Serial.println(WiFi.localIP());
49     Serial.println("");
50
51     // Connect MAX98357 I2S Amplifier Module
52     audio.setPinout(I2S_BCLK, I2S_LRC, I2S_DOUT); ←
53
54     // Set the volume (0-100)
55     audio.setVolume(10);
56
57     // Connect to an Internet radio station (select one as desired)
58     //audio.connecttostream("http://vis.media-ice.musicradio.com/CapitalMP3");
59     //audio.connecttostream("mediaserv30.live-nect MAX98357 I2S Amplifier Module
60     //audio.connecttostream("www.surfmusic.de/m3u/100-5-das-hitradio,4529.m3u");
61     //audio.connecttostream("stream.1a-webradio.de/deutsch/mp3-128/vtuner-1a");
62     //audio.connecttostream("www.antenne.de/webradio/antenne.m3u");
63     //audio.connecttostream("0n-80s.radionetz.de:8000/0n-70s.mp3");
64     //audio.connecttospeech("Hello, 'en"); ← connecttospeech for tts output
65 }

```

```

66
67 void loop()
68 {
69     // Run audio player
70     audio.loop();
71 }
72
73
74

```

```

void audio_info(const char *info) {
    Serial.print("audio_info: "); Serial.println(info);
}

```

To debug
Audio info can be
shown in Serial
monitor.

Get the link
here.

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Bollywood | Free
Internet Radio |
TuneIn](#)

↑ Inspect
↓ Search for blank.mp3
↓ Then search jp-jplayer-(n-1)