Soundrecorder ISD1820

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1. Einführung

Sehr geehrter Kunde,

vielen Dank, dass sie sich für unser Produkt entschieden haben.

Im folgenden zeigen wir Ihnen, was bei der Inbetriebnahme und der Verwendung zu beachten ist.

Sollten Sie während der Verwendung unerwartet auf Probleme stoßen, so können Sie uns selbstverständlich gerne kontaktieren.

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2. Verwendung mit einem Arduino

2.1 Anschluss des Moduls

Schließen Sie das Aufnahmegerät, wie im folgenden Bild, bzw. in der folgenden Tabelle, zu sehen ist, an die PINs des Arduinos an.

Arduino	ISD 1820
5V	VCC
GND	GND
13	P-E
12	REC

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2.2 Installation und Verwendung

Kopieren Sie den folgenden Beispielcode bitte vollständig auf Ihren Arduino.
Nach erfolgreichem Übertragen wird das Modul abwechselnd eine 10-sekündige Aufnahme starten und diese im Anschluss wiedergeben.

```
int aufnahme = 11;
int abspielen = 13;

void setup()
{
  pinMode(aufnahme, OUTPUT);
  pinMode(abspielen, OUTPUT);
}

void loop()
{
  digitalWrite(aufnahme, HIGH);
  delay(10000);
  digitalWrite(aufnahme, LOW);
  delay(5000);
  digitalWrite(abspielen, HIGH);
  delay(100);
  digitalWrite(abspielen, LOW);
  delay(10000);
}
```


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3. Verwendung mit einem Raspberry Pi

3.1 Anschluss des Moduls

Schließen Sie das Aufnahmegerät, wie im folgenden Bild, bzw. in der folgenden Tabelle, zu sehen ist, an die PINs des Raspberry Pis an.

Raspberry Pi PIN	ISD 1820
5V (PIN 2)	VCC
GND (PIN 6)	GND
BCM 14 (PIN 8)	P-E
BCM 15 (PIN 10)	REC

3.2 Installation des Systems

Sollten Sie bereits ein aktuelles Raspbian-System auf Ihrem Raspberry verwenden, so können Sie diesen Schritt überspringen und sofort mit Schritt 3 fortfahren.

Installieren Sie auf Ihre SD-Karte mit Hilfe des „Win32 Disk Imager“-Programms das aktuelle Raspbian Image, welches Sie unter dem folgenden Link zum Download finden.

3.3 Verwendung

Sobald Sie die Installation abgeschlossen und das System gestartet haben, öffnen Sie die Terminal-Konsole und führen Sie folgende Kommandos aus:

```
sudo nano ISD1820.py
```

In dem sich nun öffnenen Fenster geben Sie bitte folgenden Code vollständig ein.
Ihre Eingabe können Sie mit der Tastenkombination Strg+O speichern und den Editor mit Strg+X verlassen.

```
from time import sleep
import RPi.GPIO as GPIO

GPIO.setwarnings(False)
GPIO.setmode(GPIO.BCM)

pe=15
rec=14

GPIO.setup(pe,GPIO.OUT)
GPIO.setup(rec,GPIO.OUT)
GPIO.output(pe,0)
GPIO.output(rec,0)

def aufnahme():
      sleep(3)
      print("Aufnahme startet")
      GPIO.output(pe, 1)
      sleep(10)
      GPIO.output(pe, 0)
      sleep(5)
      print("Aufnahme beendet")

def abspielen():
      print("Wiedergabe startet")
      GPIO.output(rec, 1)
      sleep(1)
      GPIO.output(rec, 0)
      sleep(10)
      print("Wiedergabe beendet")

while True:
      aufnahme()
      abspielen()
```

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4. Support

Wir sind auch nach dem Kauf für Sie da. Sollten noch Fragen offen bleiben oder Probleme auftauchen stehen wir Ihnen auch per E-Mail, Telefon und Ticket-Supportsystem zur Seite.

E-Mail:	service@joy-it.net
Ticket-System:	http://support.joy-it.net
Telefon:	+49 (0)2845 98469 – 66 (11- 18 Uhr)

Für weitere Informationen besuchen Sie unsere Website:

www.joy-it.net

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HOW TO USE ISD1820 VOICE RECORDER AND PLAYER

by mybotic

INTRODUCTION

Voice Record Module is base on ISD1820, which a multiple message record/playback device.It can offers true single chip voice recording, no volatile storage, and playback capability around 10 seconds. This module is easy to use which you could direct control by push button on board or by Microcontroller such as Arduino, STM32, ChipKit etc. From these, you can easy control record , playback and repeat and so on.

SPECIFICATION

1. Push button interface, playback can be edge or level activated

2.Automatic power down mode

3.On chip 8[redacted] speaker driver

4. Signal 3.3V Power Supply

5.Can be controlled both manually or by MCU

6.Record up to around 10 seconds of audio

7. Dimensions: 37 x 54 mm

Step 1: STEP 1:MATERIAL PREPARATION

In this tutorial, you will need as following below:

1 ISD1820-Voice Recorder Module

2.Speaker 8[redacted] 0.5W

3.Connector

Step 2: STEP2:PINOUT DETAILS

1. **VCC**– 3.3V power supply

2. **GND**– Power ground

3. **REC** – The REC input is an active HIGH record signal. The module starts recording whenever REC is HIGH. This pin must remain HIGH for the duration of the recording. REC takes precedence over either playback (PLAYL or PLAYE) signal.

4. **PLAYE** – Playback, Edge activated: When a HIGH going transition is detected on continues until an End of Message (EOM) marker is encountered or the end of the memory space is reached.

5. **PLAYL** – Playback, Level activated, when this input pin level transits for LOW to HIGH, a playback cycle is initiated.

6. Speaker Outputs – The SP+ and SP pins provide direct drive for loudspeakers with impedances as low as 8■■

7. **MIC** – Microphone Input, the microphone input transfers its signals to the on chip preamplifier.

8. **FT** – Feed Through: By connecting the mini jumper, this mode enable the Microphone to drive the speaker directly.

9. **P E** – By connecting the mini jumper, Play the records endlessly.

Step 3: STEP3:CONNECT THE SPEAKER TO THE ISD1820

Connect the speaker 8■ 0.5W to the SP1 pin.

Step 4: STEP4:PIN CONNECTION

In this tutorial, arduino uno is used to give power supply to the module.

1.Connect Vcc to 3.3V on Arduino Board.

2.Connect GND to GND on Arduino Board.

3.Connect USB to Arduino Board.

Step 5: STEP5:START TO REC,PLAYE AND PLAYL

Record Operate Guide

1. Push **REC** button then the **RECLED** will light and keep push until record end.

2. Release the **REC** button

3. Select Playback mode: **PLAYE**, just need push one time, and will playback all of the record and until the pre-record sound end ; **PLAYL**, you need always push this button until you want to stop playback record or end ; When short **P E** jumper the record will playback repeatedly until jumper off or power down.

4. **FT** mode, when short FT jumper, that means all of you speak to MIC will direct playback to Speaker.

Step 6:

ISD1820 Voice Recorder
Module User Guide

Rev 1.0, Oct 2012

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1 Introduction

Voice Record Module is base on ISD1820, which a multiple-message record/playback device. It can offers true single-chip voice recording, no-volatile storage, and playback capability for 8 to 20 seconds. The sample is 3.2k and the total 20s for the Recorder.

This module use is very easy which you could direct control by push button on board or by Microcontroller such as Arduino, STM32, ChipKit etc. Frome these, you can easy control record , playback and repeat and so on.

2 Feature

- Push-button interface, playback can be edge or level activated
- Automatic power-dwon mode
- On-chip 8Ω speaker driver
- Signal 3V Power Supply
- Can be controlled both manually or by MCU
- Sample rate and duration changable by replacing a single resistor
- Record up to 20 seconds of audio
- Dimensions: 37 x 54 mm

3 Application

Typical schematic list as follows.

If you want change record duration, an external resistor is necessary to select the record duration and sampling frequency, which can range from 8 – 20 seconds (4-12kHz sampling frequency). The Voice Record Module of our provide default connect 100k resistor by short cap. So the default record duration is 10s.

ROSC	Duration	Sample Rate	Bandwidth
80KΩ	8 secs	8. 0KHz	3. 4KHz
100KΩ	10 secs	6. 4KHz	2. 6KHz
120KΩ	12 secs	5. 3KHz	2. 3KHz
160KΩ	16 secs	4. 0KHz	1. 7KHz
200KΩ	20 secs	3. 2KHz	1. 3KHz

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1. **VCC**– 3.3V power supply
2. **GND**– Power ground
3. **REC** – The REC input is an active-HIGH record signal. The module starts recording whenever REC is HIGH. This pin must remain HIGH for the duration of the recording. REC takes precedence over either playback(PLAYL or PLAYE) signal.
4. **PLAYE** – Playback, Edge-activated: When a HIGH-going transition is detected on continues until an End-of-Message (EOM) marker is encountered or the end of the memory space is reached.
5. **PLAYL** – Playback, Level-activated, when this input pin level transits for LOW to HIGH, a playback cycle is initiated.
6. **Speaker Outputs** – The SP+ and SP- pins provide direct drive for loudspeakers with impedances as low as 8Ω.
7. **MIC** – Microphone Input, the microphone input transfers its signals to the on-chip preamplifier.
8. **FT** – Feed Through: This mode enable the Microphone to drive the speaker directly.
9. **P-E** – Play the records endlessly.

Record Operate Guide

1. Push REC button then the RECLED will light and keep push until record end.
2. Release the REC button
3. Select Playback mode: PLAYE, just need push one time, and will playback all of the record or power down ; PLAYL, you need always push this button until you want to stop playback record or end ; When short P-E jumper the record will playback time a time until jumper off or power down
4. FT mode, when short FT jumper, that means all of you speak to MIC will direct playback to Speaker.

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4 Power Amplifier Circuit

If you want extern power amplifier circuit to Speakers, you can use LM386, D2283, D2322, TA7368, MC34119 etc amplifier IC. Note, SP+ or SP- is you do not want to use, must vacant, do not connect to GND. Used LM386 power amplifier circuit as below:

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