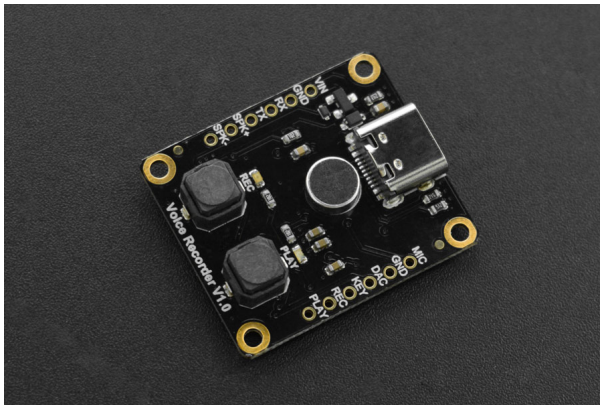


**SKU:DFR0745 (<https://www.dfrobot.com/product-2185.html>)**

---



(<https://www.dfrobot.com/product-2185.html>)

## Introduction

---

Wanna buy a simple & practical voice recorder? This one is right for you! The voice recorder module supports 4 controlling modes Arduino, AT command, on-board buttons and ADKEY, and multi-segment voice recording. You can directly press the on-board buttons to record or play voice without using a controller. Moreover, the 16MB storage on the module can store up to 40 minutes voice recording and the recorded files can be copied to your computer via the type-C interface.

## Features

---

- Support about 40 minutes voice recording
- Support multi-segment voice recording
- Voice recording/playing via on-board buttons

- Onboard 5W power amplifier
- Support analog U-disk

## Application

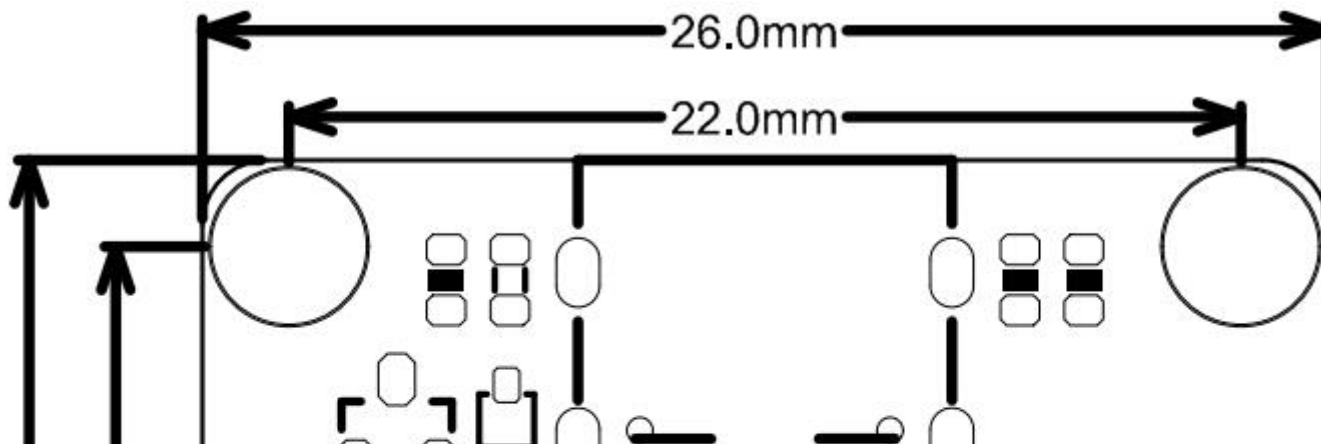
---

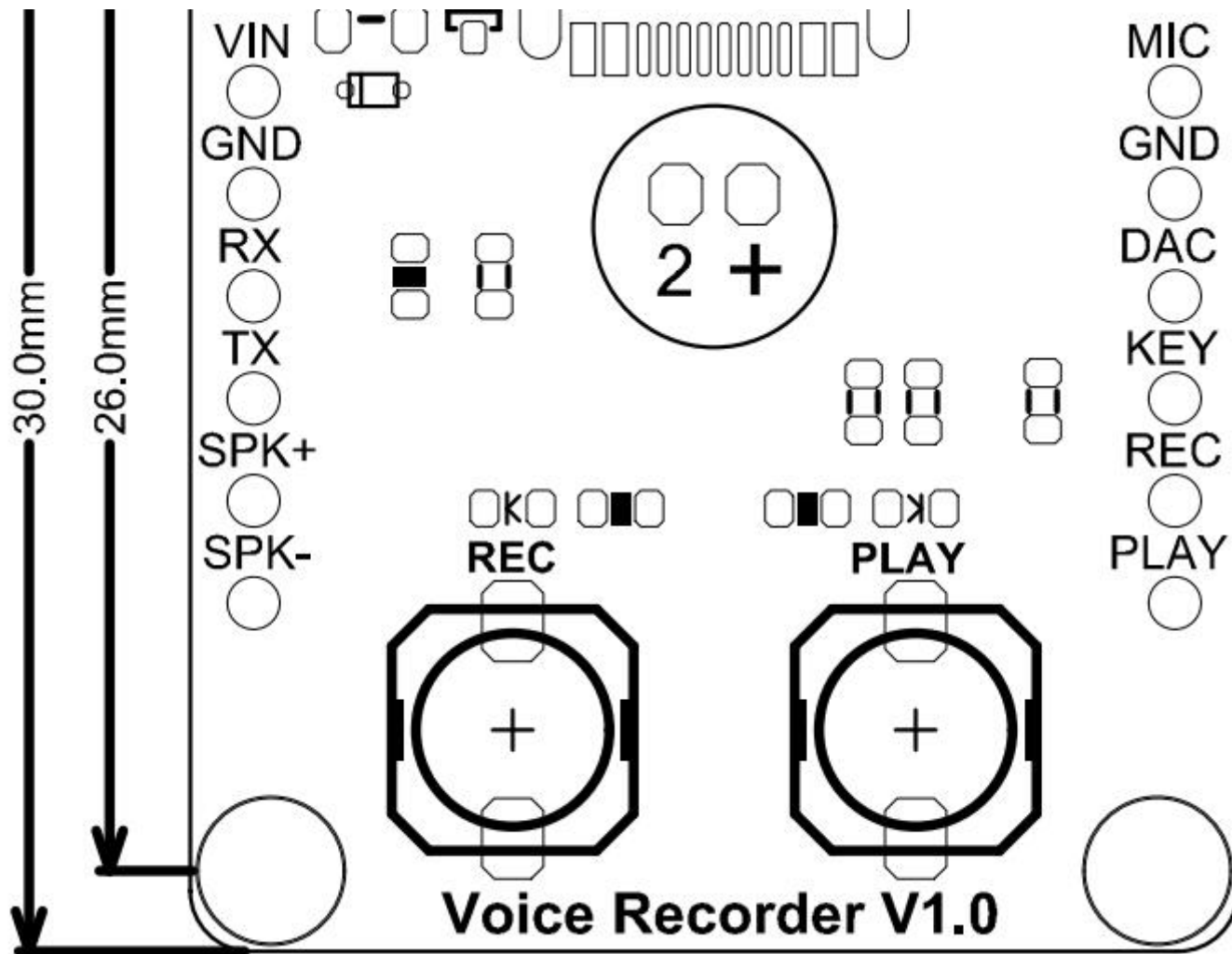
- DIY Plush Toys
- Handmade Personalized Gift
- Event Voice Memo

## Specification

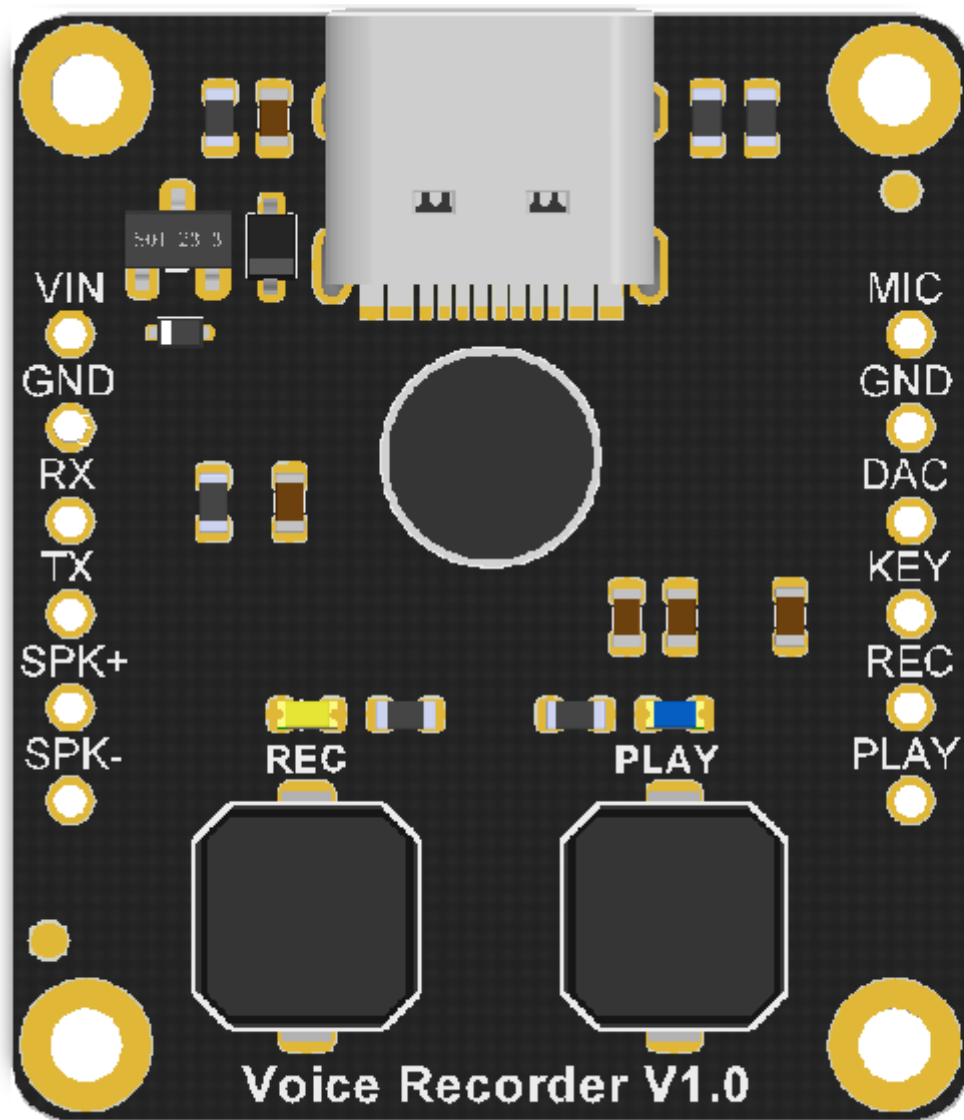
---

- Operating Voltage: 3.3~5V
- Operating Current: >10mA
- Storage: 16MB
- Sampling Rate: 48kbs
- Communication: UART
- Dimension: 26×30mm/1.02×1.18"

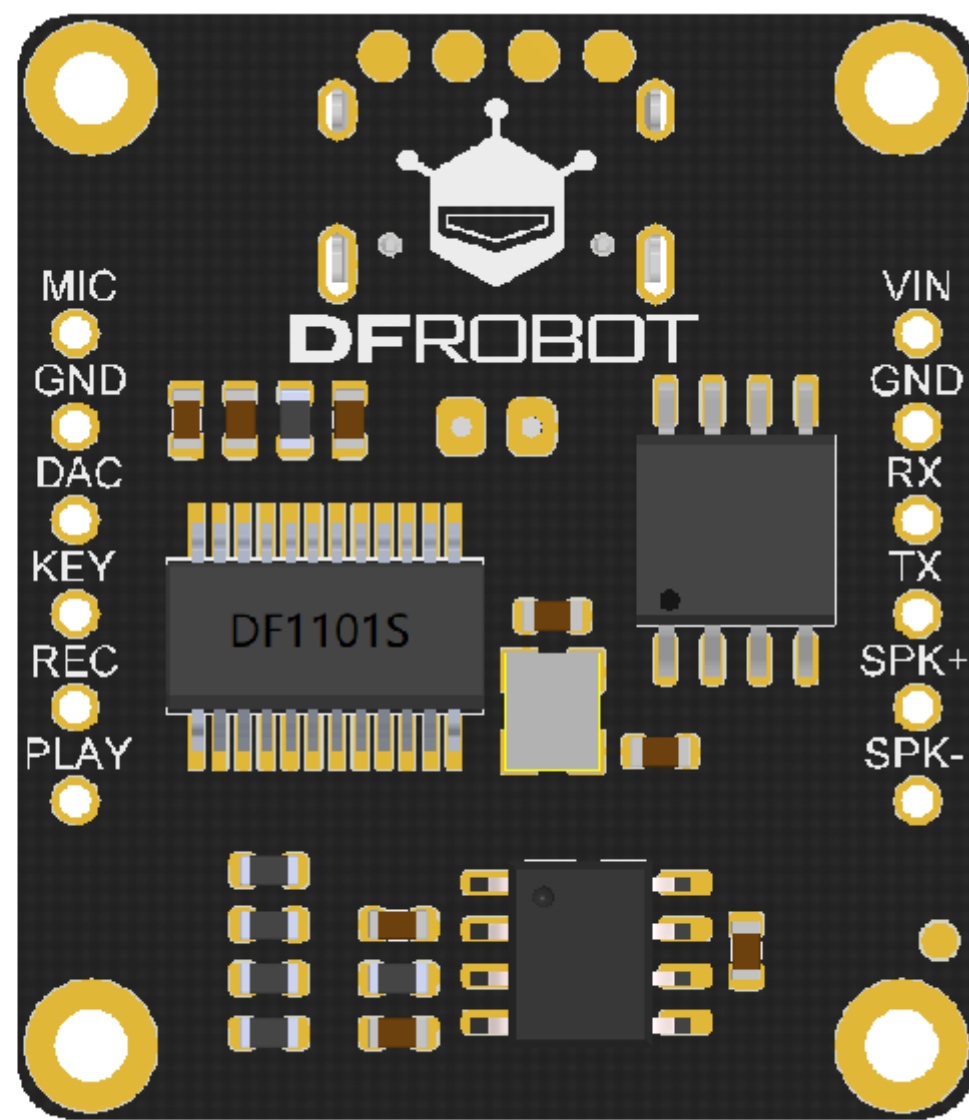




Board Overview



**TOP**



**BOTTOM**

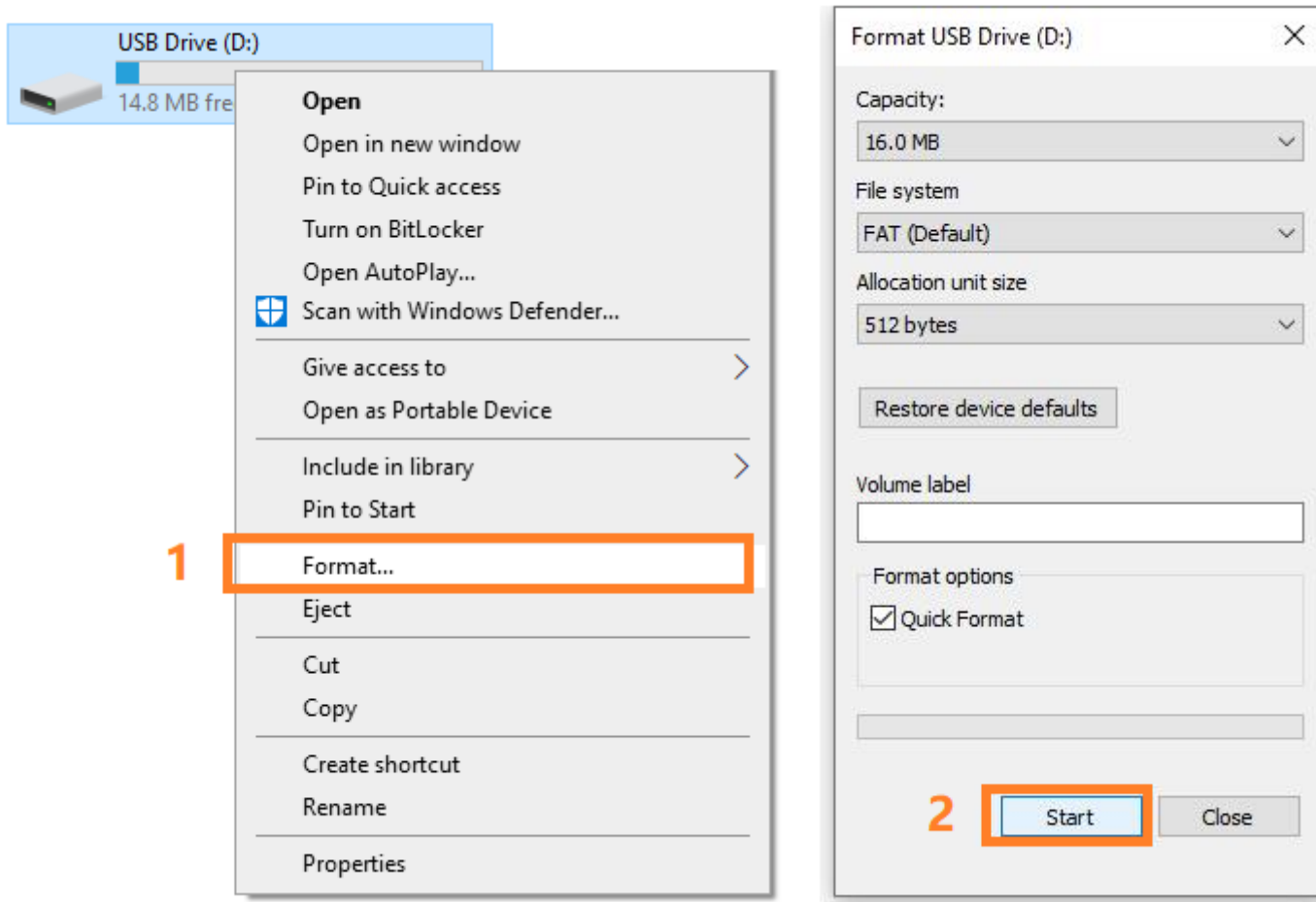
NO.	Slikscreen	Function
1	VIN	+

2	GND	-
3	RX	UART Receive
4	TX	UART Transmit
5	SPK+	Speaker Output +
6	SPK-	Speaker Output -
7	PLAY	Function Button
8	REC	Function Button
9	KEY	ADAKY
10	DAC	DAC Output
11	GND	-
12	MIC	Microphone Input

## Tutorial

---

When using for the first time, you need to connect the voice recorder module to a computer via an USB cable and format it.

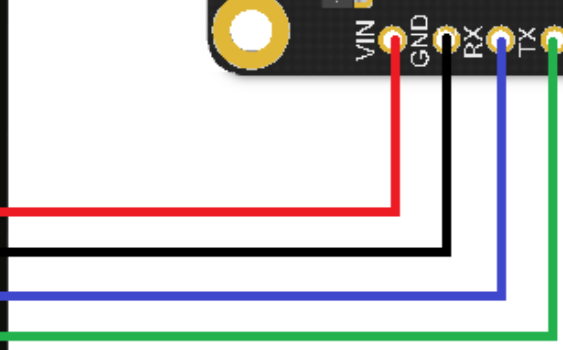
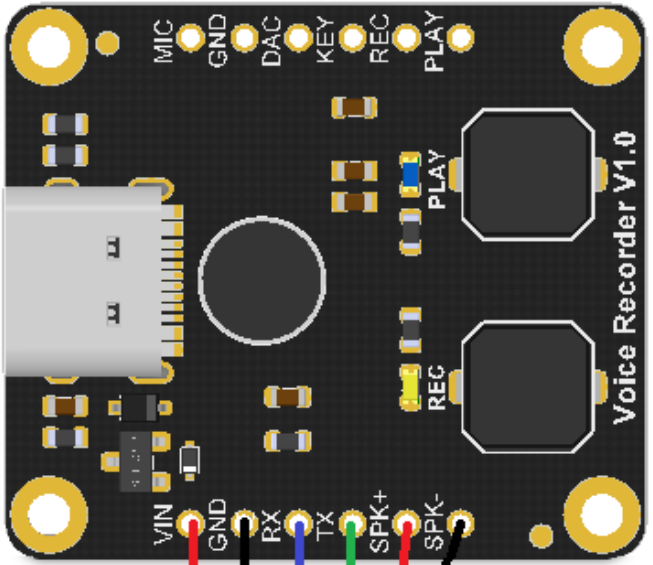
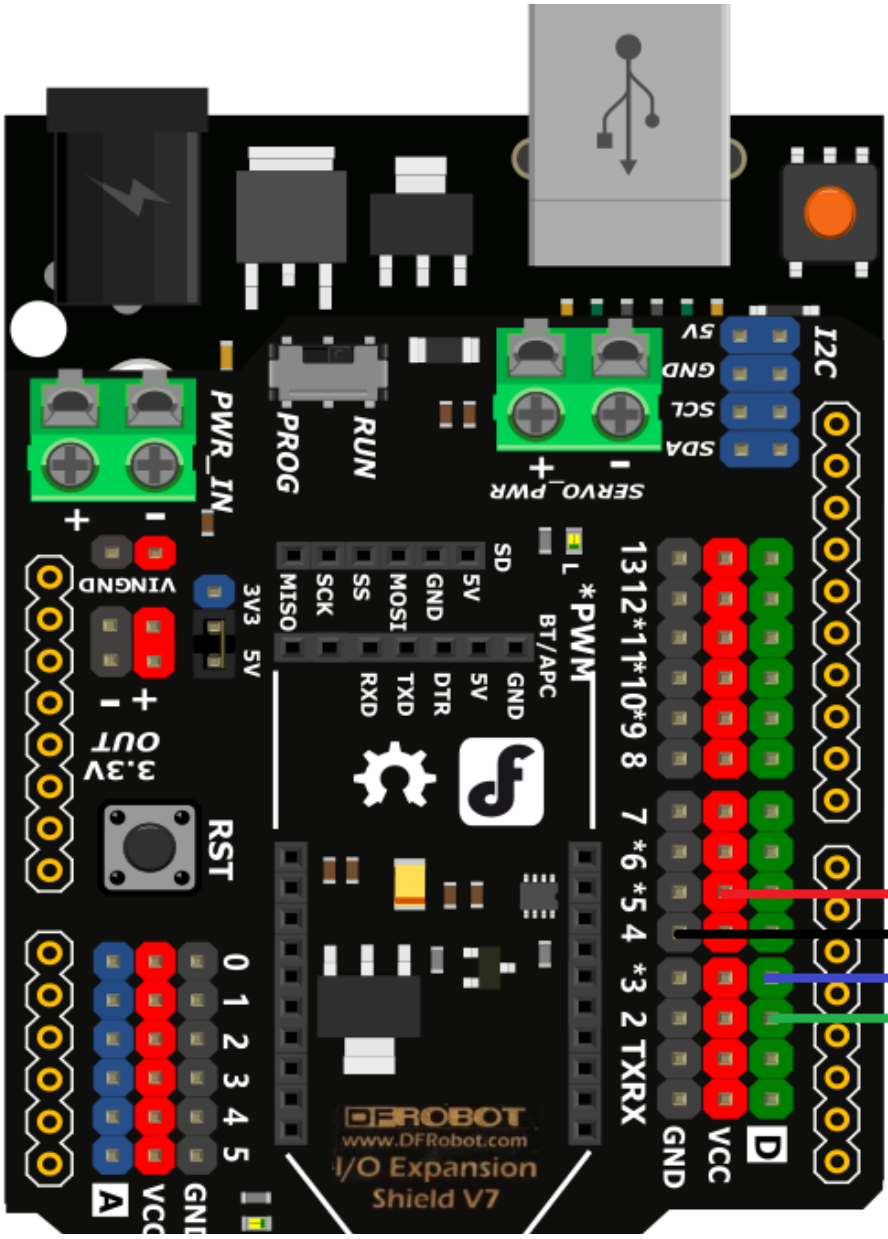


## Requirements

- Hardware
  - DFRduino UNO R3 (<https://www.dfrobot.com/product-838.html>) (or similar) x 1
  - Voice Recorder Module- Breakout x1

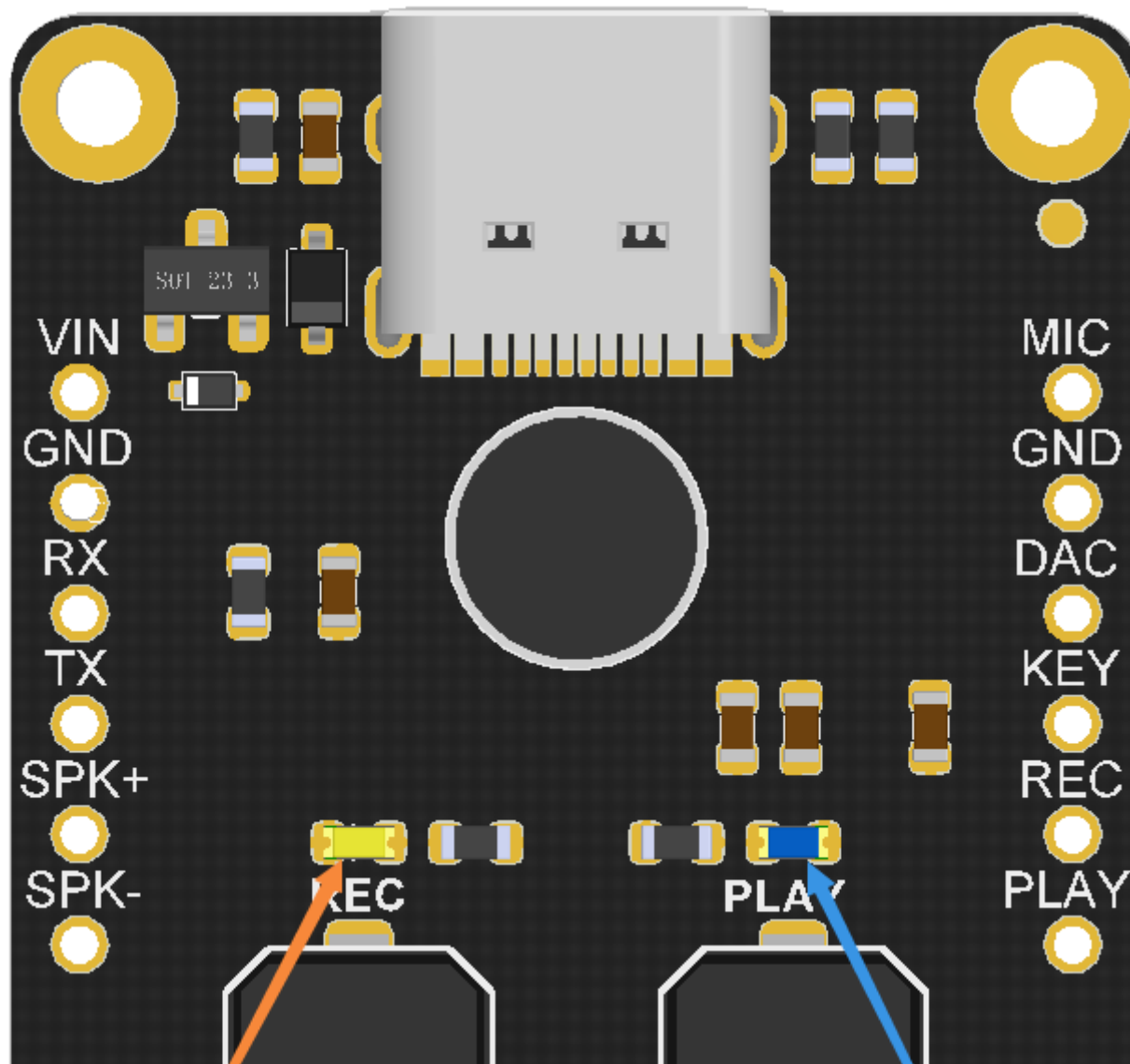
- Stereo Enclosed Speaker-3W 8Ω x1
- Jumper Wires
- **Software**
  - Arduino IDE (<https://www.arduino.cc/en/Main/Software>)
  - Download and install the **DFRobot\_DF1101S Library and Sample Code** ([https://github.com/DFRobot/DFRobot\\_DF1101S](https://github.com/DFRobot/DFRobot_DF1101S)) (About how to install the library? (<https://www.arduino.cc/en/Guide/Libraries#.UxU8mdzF9H0>))

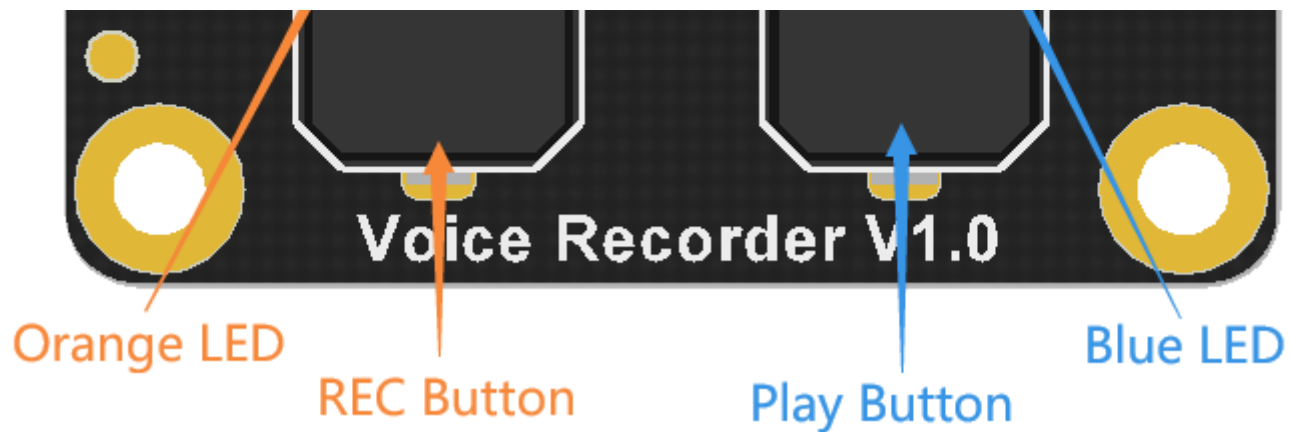
## Connection Diagram





## Indicator Description





Status	Orange LED	Blue LED
Slave Mode	OFF	OFF
Recording Mode	Quick Flash	OFF
Recording..	ON	OFF
Recording Pause	Slow Flash	OFF
Playing	OFF	ON
Playing Pause	OFF	Slow Flash
Switching	OFF	Flash Twice

## Button Controlling

- Record

1. In slave mode, press the REC button to enter recording mode, then the orange LED will flash quickly (press the Play button to exit the recording mode).
2. Under the recording mode, press the REC button to start recording, and the orange LED keeps ON (Press the REC button to pause or

continue ).

3. In recording or recording paused, press the Play button to save and exit the recording mode.

- Play

1. In slave mode, press the Play button to enter the music mode, then the blue LED will flash slowly (press the REC button to exit the music mode).

2. Under the recording mode, press the Play button to start playing, and the blue LED keeps ON (Press the Play button to pause or continue).

3. In playing, press the Play button for 2 seconds to switch the previous song (the blue LED flashes twice).

4. In playing or playing paused, press the REC button to exit the music mode.

## Software Controlling

- API Function List

```
/**
 * @brief Set baud rate(Need to power off and restart, power-down save)
 * @param 9600,19200,38400,57600,115200
 * @return true or false
 */
bool setBaudRate(uint32_t baud);
```

```
/**
 * @brief Set playback mode
 * @param ePlayMode_t:SINGLECYCLE,ALLCYCLE,SINGLE
 * @return true or false
 */
bool setPlayMode(ePlayMode_t mode);
```

```
/**
 * @brief Set indicator LED(Power-down save)
 * @param true or false
 * @return true or false
 */
bool setLED(bool on);
```

```
/**
 * @brief Set prompt tone(power-down save)
 * @param true or false
 * @return true or false
 */
bool setPrompt(bool on);
```

```
/**
 * @brief Set volume
 * @param vol:0-30
 * @return true or false
```

```
    ~ @return true or false
*/
bool setVol(uint8_t vol);

/**
 * @brief Set working mode
 * @param eFunction_t:MUSIC,RECORD,UFDISK
 * @return true or false
 */
bool switchFunction(eFunction_t function);

//bool operation( );
/**
 * @brief Next
 * @return true or false
 */
bool next();

/**
 * @brief Last
 * @return true or false
 */
bool last();

/**
 * @brief Play(in music mode) or Record (in recording mode)
 * @return true or false
 */
bool start();

/**
 * @brief Playing Pause(in music mode) or recording pause(in recording mode)
 * @return true or false
 */
bool pause();

/**
```

```
* @brief Save the recorded voice
* @return true or false
*/
String saveRec();

/**
 * @brief Delete the currently-playing file
 * @return true or false
 */
bool delCurFile();

/**
 * @brief Play the file of specific path
 * @param The designated path
 */
void playSpecFile(String str);

/**
 * @brief Play the file of specific number(only valide for the default file name),
 * @ play the first one if there is no file designated.
 * @param File name number: 0-999
 */
void playSpecFile(int16_t num);

/**
 * @brief Get volume
 * @return vol
 */
uint8_t getVol();

/**
 * @brief Get playback mode
 * @return ePlayMode_t
 */
ePlayMode_t getPlayMode();
```

## Sample Code 1 - Recording

Power on the module then it enters the recording mode. Start recording after 2 seconds and save the recorded voice file 5 seconds later. Print the file name repeatedly at the serial port.

```
/*!
 * @file record.ino
 * @brief Recording
 * @n Experiment Phenomenon:Power on the module then it enters the recording mode.
 * @n Start recording after 2 seconds and save the recorded voice file 5 seconds later.
 * @n Print the file name repeatedly at the serial port.
 * @copyright Copyright (c) 2010 DFRobot Co.Ltd (http://www.dfrobot.com)
 * @licence The MIT License (MIT)
 * @author [fengli](li.feng@dfrobot.com)
 * @version V1.0
 * @date 2020-07-16
 * @get from https://www.dfrobot.com
 * @url https://github.com/DFRobot/DFRobot_DF1101S
 */
#include <DFRobot_DF1101S.h>
#include <SoftwareSerial.h>

SoftwareSerial df1101sSerial(2, 3); //RX TX

DFRobot_DF1101S df1101s;

String RECFileName; //Recording file name

void setup(void){
  Serial.begin(115200);
  df1101sSerial.begin(115200);
  while(!df1101s.begin(df1101sSerial)){
    Serial.println("Init failed, please check the wire connection!");
    delay(1000);
  }
  /*Set baud rate, power-down data save, need to power down and restart*/
  //df1101s.setBaudRate(115200);
}
```

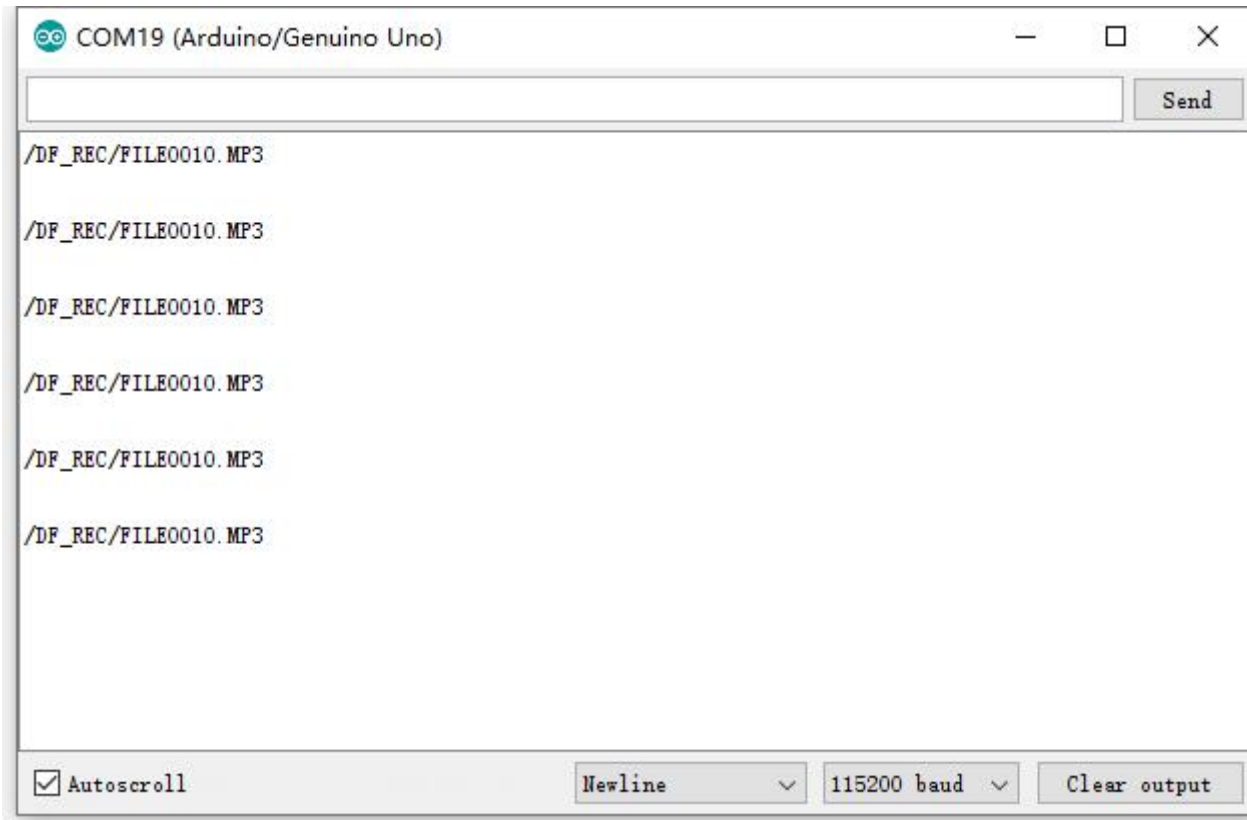
```
//df1101s.setBaudRate(115200);
/*Open LED prompt, power-down save*/
//df1101s.setLED(true);
/*Open voice prompt, power-down save*/
//df1101s.setPrompt(true);

/*Enter Recording mode */
df1101s.switchFunction(df1101s.RECORD);
/*Wait for the end of prompt tone*/
delay(2000);
/*Start recording*/
df1101s.start();
/*Pause*/
//df1101s.pause();
delay(5000);
/*Save*/
RECFileName = df1101s.saveRec();
}

void loop(){
  Serial.println(RECFileName);
  delay(1000);
}
```

## Result 1





## Sample Code 2 - Playing

Power on the module then it enters the music mode. Start playing the previously-recorded file, pause 3s later, play the next song 3s later, play the last song 3s later, and play the file of specific number(FILE0000) once 3s later.

```

/*!
 * @file play.ino
 * @brief Playing
 * @n Experiment Phenomenon:Power on the module then it enters the music mode.
 * @n          Start playing the previously-recorded file, pause 3s later,
 * @n          play the next song 3s later, play the last song 3s later,
 * @n          and play the file of specific number(FILE0000) once 3s later.
 * @copyright Copyright (c) 2010 DFRobot Co.Ltd (http://www.dfrobot.com)
 * @licence The MIT License (MIT)
 * @author [fengli](li.feng@dfrobot.com)
 * @version V1.0
 * @date 2020-07-16
 * @get from https://www.dfrobot.com
 * @url https://github.com/DFRobot/DFRobot\_DF1101S
 */
#include <DFRobot_DF1101S.h>
#include <SoftwareSerial.h>

SoftwareSerial df1101sSerial(2, 3); //RX TX

DFRobot_DF1101S df1101s;
void setup(void){
  Serial.begin(115200);
  df1101sSerial.begin(115200);
  while(!df1101s.begin(df1101sSerial)){
    Serial.println("Init failed, please check the wire connection!");
    delay(1000);
  }
  /*Set volume to 20*/
  df1101s.setVol(20);
  Serial.print("VOL:");
  /*Set volume*/

```

```

/*Get volume*/
Serial.println(df1101s.getVol());
/*Enter music mode*/
df1101s.switchFunction(df1101s.MUSIC);
/*Wait for the end of prompt tone*/

delay(2000);
/*Set playback mode to "repeat all"*/
df1101s.setPlayMode(df1101s.ALLCYCLE);
Serial.print("PlayMode:");
/*Get playback mode*/
Serial.println(df1101s.getPlayMode());
}

void loop(){
  /*Start*/
  df1101s.start();
  delay(3000);
  /*Pause*/
  df1101s.pause();
  delay(3000);
  /*Next*/
  df1101s.next();
  delay(3000);
  /*Last*/
  df1101s.last();
  delay(3000);
  /*Play the specific file(FILE0000) in recording files once*/
  df1101s.playSpecFile(1);
  while(1);
  /*Delete the currently-playing file*/
  //df1101s.delCurFile();
}

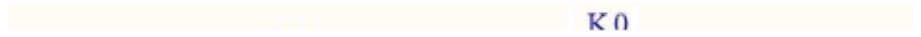
```

## Result 2

## ADKEY Controlling

Key	Resistor in Series	Click	Long-press
-----	--------------------	-------	------------

K0	0R	Pause & Play	
K1	3K	Last	Volume +
K2	6.2K	Next	Volume -
K3	9.1K	Switch Play Mode	
K4	15K	REC	
K5	24K	PLAY	
K6	33K	Volume -	Volume -
K7	51K	Volume +	Volume +
K8	100K	Switch Working Mode	
K9	220K	Delete Currently-playing File	



K 0

**NOTE:**

1. "\r\n" is omitted in all the commands below, and you need to add it to the end of the command in actual use. For example "AT+VOL=5\r\n", designate volume to "5".

2. Default serial baud rate: 115200

- Recording:

1. AT+FUNCTION=2 //Enter recording mode

2. AT+REC=RP // Start Recording

3. AT+REC=SAVE //Save recorded file

- Playing:

1. AT+FUNCTION=1 //Enter music mode

2. AT+PLAY=PP //Playing

```
/**
 * @brief Test connection
 */
AT //Test connection

/**
 * @brief Volume control(volume degree: 0-30)
 * @param -n:Volume-n
 *          +n:Volume+n
 *          n:Designate volume to n
 *          ?:Query volume
 */
AT+VOL=-5 //Volume-5

AT+VOL=? //Query volume
Return: VOL = [10] //Current volume is 10

/**
 * @brief Function switch
 * @param 1: Music mode
 *          2: Recording mode
 *          3: Slave mode
 */
AT+FUNCTION=1 //Switch to music mode

/**
 * @brief Playing mode control
 * @param 1: Repeat one song
 *          2: Repeat all
 *          3: Play one song only
 *          ?: Query current playing mode
 */
```

```
~/
AT+PLAYMODE=1 //Switch to repeat one song

AT+PLAYMODE=? //Query current playing mode
Return: PLAYMODE =1 //Current playing mode: repeat one song

/**
 * @brief Playing control
 * @param PP: Play & Pause
 * NEXT:Next song
 * LAST:Last song
 */
AT+PLAY=NEXT //Next song

/**
 * @brief Play the file of the designate number (default file name) or specific file once
 * @param n: Play the music file with name number n()(0-999), play the first file if there is no one.
 * File path: play the file of specific path
 */
AT+PLAYFILE=5 //Play FILE0005.mp3 once
AT+PLAYFILE=/DF_REC/test.MP3 //Play test.mp3 under DF_REC once

/**
 * @brief Delete the currently-playing file
 */
AT+DEL

/**
 * @brief Recording control
 * @param RP:Record & Pause
 * SAVE:Save the recorded file
 */
AT+REC=SAVE //Save the recorded file

/**
 * @brief Set baud rate(power-down save, valid after repowering on)
 * @param 9600, 19200, 38400, 57600, 115200

```



```
*/
AT+BAUDRATE=115200 //Set baud rate to 115200

/**
 * @brief Prompt tone ON/OFF commands (power-down save)
 * @param ON, OFF
 */
AT+PROMPT=ON //Enable prompt tone

//LED prompt ON/OFF commands(power-down save)
/**
 * @brief LED Prompt ON/OFF commands(power-down save)
 * @param ON, OFF
 */
AT+LED=ON //Enable LED prompt
```

## FAQ

---

1. When entering the music mode, the module will play from the last audio file.

For any questions, advice or cool ideas to share, please visit the **DFRobot Forum** (<https://www.dfrobot.com/forum/>).

## More Documents

---

- Schematics Diagram (<https://dfimg.dfrobot.com/nobody/wiki/d1dce8183832bcabd81830d0848b16ad.pdf>)
- Dimension Diagram (<https://dfimg.dfrobot.com/nobody/wiki/51a97ae6dd6b60daa25cd0f2630ab92c.pdf>)
- DF1101S Datasheet (<https://dfimg.dfrobot.com/nobody/wiki/aabeb59ba5614eb1e33acab00ea98d4e.pdf>)



Get **Voice Recorder Module-Breakout** (<https://www.dfrobot.com/product-2185.html>) from DFRobot Store or **DFRobot Distributor**.

(<https://www.dfrobot.com/index.php?route=information/distributorslogo>)

**Turn to the Top**

