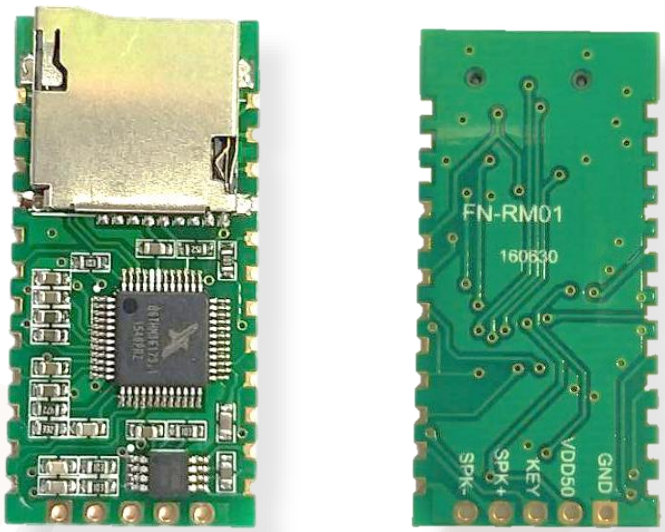
FN-RM01 MP3 Recording Modules



Description:

FN-RM01 is a high-quality MP3 audio recorder and player module, designed and launched by Flyron Technology Co., Ltd. Flexible audio recording modes including MIC recording, Line-in recording and stereo 2-channel Aux-in recording, optional audio recording bit rates, multiple formats of audio files playback supported including MP3, WAV and WMA, and as well as simple communication control modes are the main advantages of this module, which can meet kinds of needs from customers.

Features:

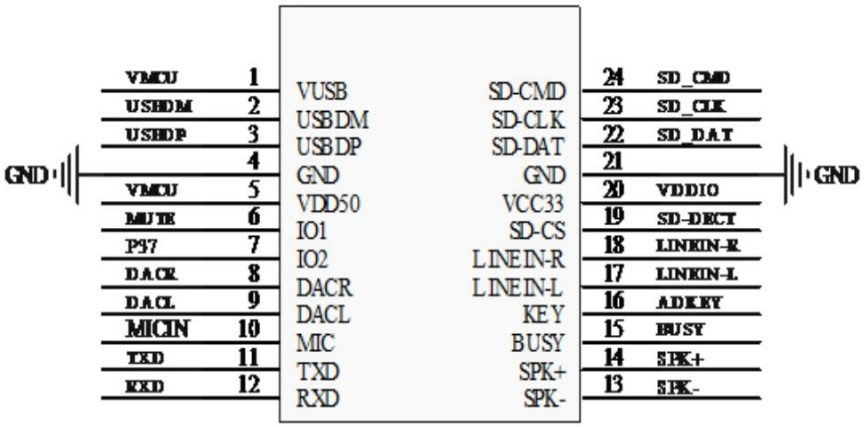
1. Supports microphone(mono), line-in(mono), and Aux-in(stereo) audio recording modes.
2. Supports AD keys control mode (play/pause, next, previous, record, and stop).
3. Supports standard UART serial communication control mode.
4. Supports playback of MP3, WAV, and WMA formats audio files, with great sound quality.
5. Supports up to 48Khz sampling rate and 128Kbps bit rate of high-quality MP3 audio recording.
6. Supports USB sound card mode.
7. Use micro SD card and USB flash drive as the storage devices; supports max 32GB micro SD card and 32GB USB flash drive.

8. Supports FAT or FAT32 file systems.
9. Can freely replace sound files in the micro SD card via USB port.
10. Built-in 1W amplifier that can direct drive 8Ω / 1W speaker.
11. 32 levels adjustable sound volume.
12. DC 5V power supply.

Specifications:

- Audio Formats Supported at Playback Status: MP3: Supports 8K-48KHZ, 8-320Kbps.
  WAV: 8K-44.1KHZ
  WMA: 8K-44.1KHZ
- USB Port USB2.0
- Working Voltage DC3.3-5V
- Rated Current 20-250MA (with load)
- Voltage of IO Port 3.3V TTL level
- Dimensions 37*18*2.7mm
- Operating Temp. -40-85℃
- Humidity 5%-95%

Pin Function:



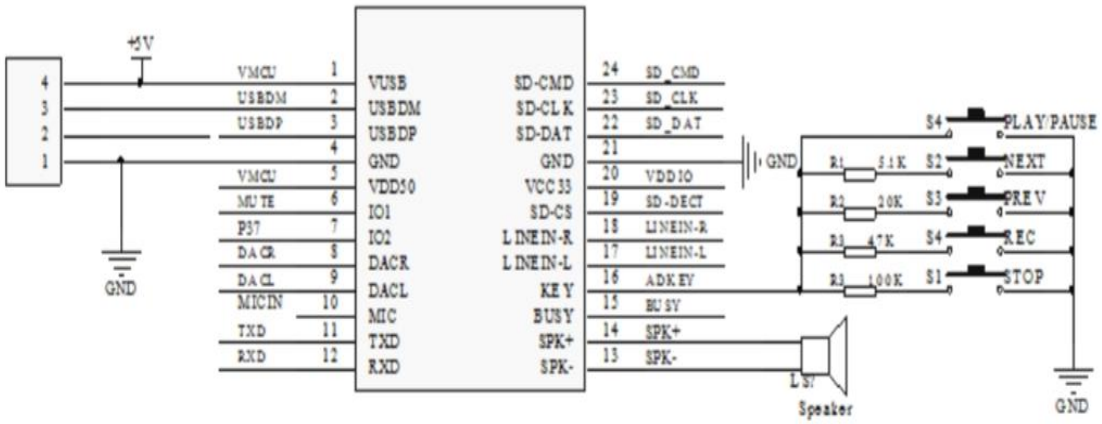
Pin No	Pin Name	Attribute	Description	Note
1	VUSB	PWR	Power supply for USB	DC 5V
2	USBDM	DM	USB communication DM port	
3	USBDP	DP	USB communication DP port	
4	GND	IO	Ground	
5	VDD50	IO	Power supply for audio IC	DC 5V
6	IO1	IO	Used for MUTE control	
7	IO2	IO2	N/A(reserved)	
8	DACR	ANA	DACR audio output	Connect with an external amplifier
9	DACL	ANA	DACL audio output	
10	MIC	AD	MIC voice recording control port	
11	TXD	IO	UART serial output	
12	RXD	IO	UART serial imput	
13	SPI-	ANA	PWM audio output	Directly drive 8ohm 1W speaker
14	SPK+	ANA	PWM audio output	
15	Busy	IO	Busy indication	Low level: playing and recording. High level: standby
16	ADKEY	IO	AD KEY control	

17	LINEIN_L	AD	LINE IN recording left channel	
18	LINEIN_R	AD	LINE IN recording right channel	
19	SD-CS	IO	CS port for communication with SD	
VCC33	PWR	DC 3.3V output	Supply 3.3V power	
GND	GND	Ground		
SD-DAT	IO	DATA port for communication with SD		
SD_CLK	IO	CLK port for communication with SD		
SD_CMD	IO	CMD port for communication with SD		

Mode Of Operation:

- **AD Key Control Mode**

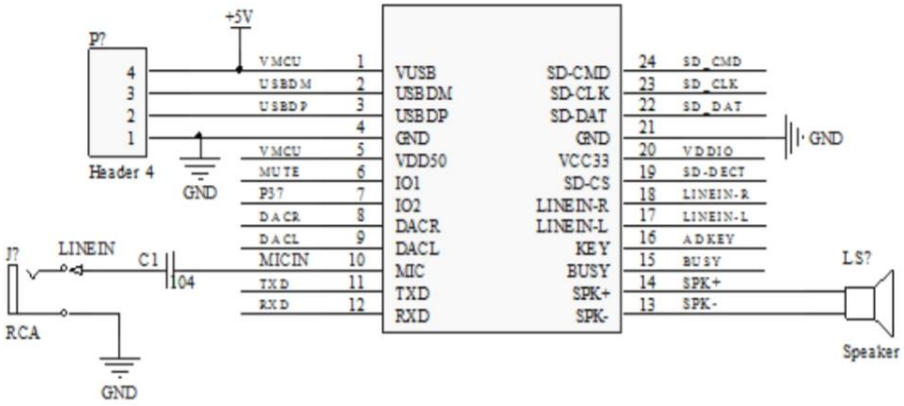
  In order to connect to external buttons easily based on AD key control for users to accomplish button control, we made the solder pads at the bottom of the module as shown above marked with the red box. Through AD key function (the pinout “KEY”) and connecting with specific values of resistors, users can lead out 5 different functional key control as below.



Key	Operation	Function
Play/Pause	Short press	Play/Pause
Next	Short press	For next sound
Previous	Short press	For previous sound
Stop	Short press	Stop playback
Record	Short press	Short press to start recording and short press again to stop recording

- **Serial Control Mode**

  FN-RM01 supports standard UART asynchronous serial control (communication baud rate is 9600bps), working at 3.3V TTL level. Possible to be converted to RS232 level via MAX3232 chip.



Dimensions: