ISD1820 - Voice Recorder

DESCRIPTION:

This 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.

Feature

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

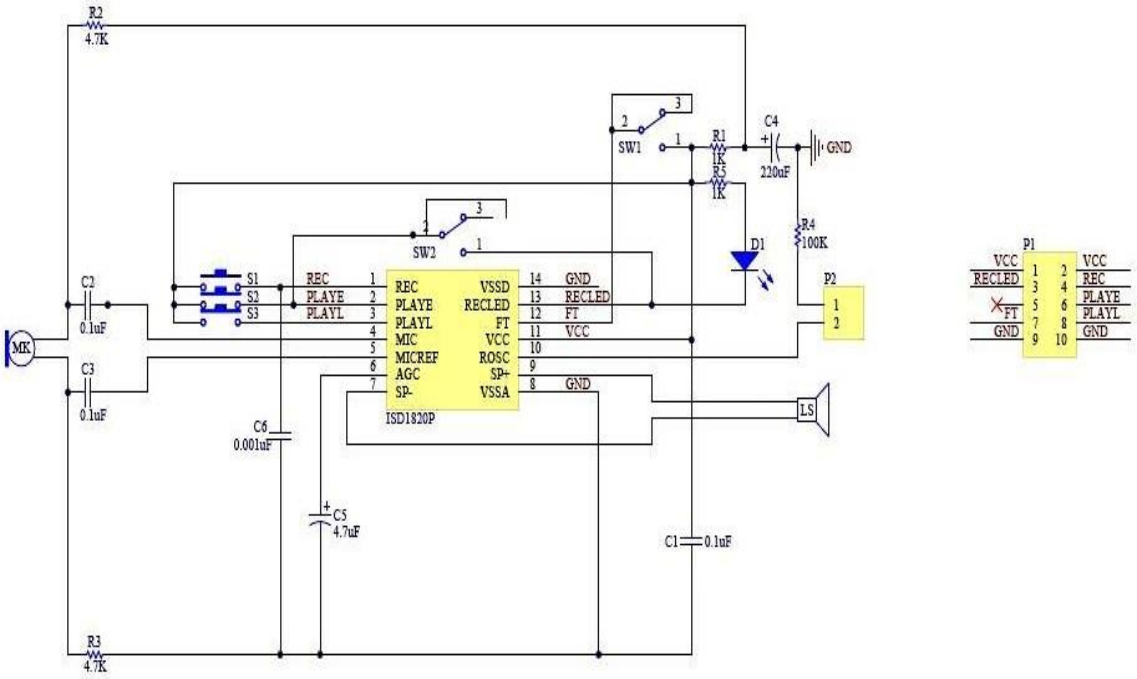
Application Ideas

- Toys
- Alarm

Cautions

VCC is signal of 3.3V, do not exceed this range, otherwise it by destroyed the module.

Schematic



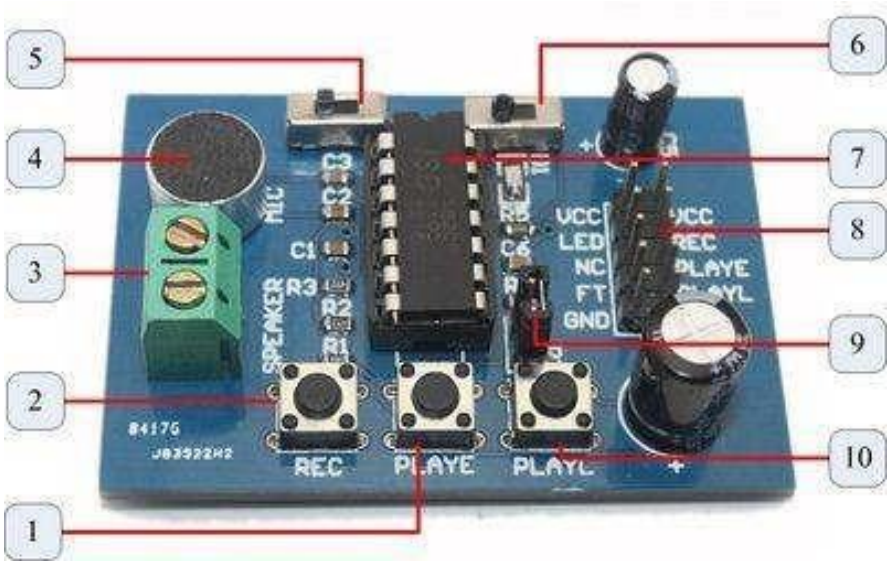
Specification

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

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 through P2 by short cap. So the default record duration is 10s.

Pin definition and Rating



Number	Descriptions
1	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. Upon completion of the playback cycle, the device automatically power down into standby mode Take PLAY LOW during a playback cycle will not terminate the current cycle. This pin has an internal pull-down device. Holding this pin HIGH will increase standby current consumption.
2	REC - The REC input is an active-HIGH record signal.The device records 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. If REC is pulled HIGH during a playback cycle, the playback immediately ceases and recording begins. A record cycles is completed when REC is pulled LOW. An End-of-Message(EOM) marker is internally recorded, enabling a subsequent playback cycle to terminate appropriately. The device automatically power down to standby mode when REC goes LOW. This pin has an internal pull-down device. Holding this pin HIGH will increase standby current consumption.
3	Speaker Outputs - The SP+ and SP- pins provide direct drive for loudspeakers with impedances as low as 8⊃. A single output may be used, but for direct-drive loud-speakers, the two opposite-polarity outputs provide an improvement in output power of up to four times over a single-ended connection will require an AC-coupling capacitor between the SP pin and the speaker. The SP+ pin and the SP- pin are internally connected through a 50K⊃resistance.When not in playback mode, they are floating.

4	MIC - Microphone Input, the microphone input transfers its signals to the on-chip preamplifier. An on-chip Automatic Gain Control (AGC) circuit controls the gain of the preamplifier. An external microphone should be AC coupled this pin via a series capacitor. The capacitor value, together with an internal 10Kつresistance on this pin, determines the low-frequency cutoff for the 1800 passband.
5	REPLAY - loop play the record.
6	FT - Feed Through: This mode allows use of the speaker drivers for external signals. The signal between the MIC and MIC_REF pins will pass through the AGC, the filter and the speaker drivers to the speaker output SP+ and SP-. The input FT controls the feed through mode. TO operate this mode, the control pins REC, PLAYE and PLAYL are held LOW at Vss. The pin FT is held HIGH to Vcc. For normal operation of record, play and power down, the FT pin is held at Vss. The FT pin has a weak pull-down to Vss.
7	ISD1820 - IC chip
8	Lead Out IO - VCC LED NC FT GND / VCC REC PLAYE PLAYL GND
9	P2 - default short connection ROSC to 100kつresistance, that's means record duration is 10s
10	PLAYL - Playback, Level-activated, when this input pin level transits for LOW to HIGH, a playback cycle is initiated. Playback continues until PLAY is pulled LOW or an End-of-Message (EOM) marker is detected, or the end of the memory space is reached. The device automatically powers down to standby mode upon completion of the playback cycle. This pin has an internal pull-down device. Holding this pin HIGH will increase standby current consumption.