Description:
This digital FM stereo radio circuit board module has built-in DSP digital noise processing. When there is no signal, it will automatically mute and get rid of the noise of traditional FM radio.

Product Introduction:
1>. Output Power:500mW (driving earphone);3Wx2 (driving loudspeaker)
2>. Frequency Response Range:50Hz-18KHz
3>. Receiving Frequency Range:87.0MHz-108.0MHz (campus broadcast power off);76.0MHz-108.0MHz (campus broadcast power on)
4>. Equivalent Noise:>=30dB
5>. Power Supply Voltage:3.0V-5.0V
6>. Power Supply Current:1000mA (max volume);60mA (minimum volume)
7>. Sound Track;stereo

Features:
1>. Adopt DSP And FM PLL Technique
2>. LCD Display
3>. 30 Levels Digital Volume Adjustment
4>. Power Off Automatic Memory Previous Data
5>. Loudspeaker/Earphone Output Automatic Shift
6>. Adopt Quartz Crystal Stabilizing Frequency
7>. Adopt Audio DSP To Analyse Audio Signal
8>. Adopt Incremental Digital Rotary Encoder To Adjust Volume And Frequency
9>. 30 Levels Digital Volume Adjustment Range
10>. Support Serial Port Communication Control

Note:
1.The supply voltage is strictly prohibited to exceed the supply voltage range of this module.
2. Do not touch the rear of the module when working, so as not to affect the normal work of this module or cause the short-circuit module to burn out.

Instruction:
1>. Power supply
Corresponding door module (marked on the PCB).

"-" E "+" are the anode and the supply cathode (battery). The power supply is recommended for the battery or other stabilized power supply. It is not possible to use a power supply without filter (for example as a mobile phone charger, mobile power supply, and other switching power supply), otherwise, the interference caused by power supply will affect the normal work of this module. The normal operating voltage of this module is 3.0-5.0 V, not exceeding this range. At maximum module volume, the maximum power supply current is around 1A, which requires the battery for enough output current.

2>. Antenna
The FM_ANT port is used to connect the FM antenna. To better receive the FM signal, it is recommended to extend the antenna with a length of 75 centimeters.

3>. Headphone / speaker output
This module is with 3WX2 channel audio amplifier. If the horn is needed, access the speaker port. We recommend using 4 Ω / 3 w speakers. if the headset is plugged in, the audio will automatically switch to the channel headphone, and the channel speaker will be closed automatically.

4>. Volume
Turn the VOL encoder to adjust the volume, while the LCD display shows the volume of the series.

5>. Frequency regulation

Turn the FRE to adjust the reception frequency, while the LCD display shows the current frequency, and press the encoder handle for the mute / non-mute switch.

6>. Mute
Press the VOL knob to switch the mute / non-mute button down.

7>. AMCAP switch
Long press the FRE knob to turn on or off the AMCAP, the LCD subtitle display ON means to turn on the AMCAP, and means to turn off the AMCAP.

8>. AMCAP threshold adjustment (when the AMCAP switch is on)
Briefly press the FRE knob for AMCAP interface threshold adjustment, it is possible to adjust the threshold movement of the AMCAP according to the specific use situation. The adjustment range is 0-20. The higher the value is, the higher the threshold is, the easier the weak signal is to be silent. The other way around.

9>. Serial port (without serial port control)
The reserved interface control module of the serial port at TTL level. TTL serial port and this communication module need to connect the module of the UART_RX, UART_TX and GND (the corresponding position of PCB is marked). You can use the external MCU or the serial port of the computer to send the module control command related functions. Note: because the serial port of the computer is not at TTL level, connect the communication computer, it is necessary to connect the RS323 level TTL power leveling device or the USB CABLE serial port at TTL level to communicate with this module. This operation requires professionals.

10>. User settings
This module can set the backlight state according to user specific usage. When the power is off, press the FRE button to turn on, and the B0 indicates that the backlight is always bright. B0 indicates that the backlight is closed for 20 seconds, and the setting is effective after restarting. Change the Status Settings to repeat this step to move on. The backlight has no operation for 20 seconds.

11>. Stereo / mono terminal switch.
Stereo / mono terminals are used to set the reception mode of the FM module. This terminal is suspended for Stereo reception mode, and it is a single channel reception mode.

FM with squelch AT receiver module instruction set:
Transmission speed: 38400 TTL level

No.	First name	Example	Of instructions	Range	Return position
1	Current frequency point set	A + FRE = 875	Current frequency point is 87.5 MHz	870-1080 MHz	Current frequency point / ERR
2	Frequency point 0.1MHZ	A + FRED			Current frequency point
3	Frequency point + 0.1 MHZ	A + FREU			Current frequency point
4	Pause paly / Contiune game	A + PAUS			PLAY / PAUS / ERR
5	Set the volume	A + VOL = 15	Tidal volume is 15	00-30	VOL / ERR value
6	VOL-	A + VOLD	VOL-1		VOL / ERR value
7	VOL +	A + VOLU	VOL + 1		VOL / ERR value
8	Backlight time set (S). 00 means light off, 01 normally means up.	A + BANK = 10	Backlight is 10 s light off	00-99	VALUABLE BANK / ERR
9	Turn DSP squelch on and off	A + SN = 1	Turn on squelch	0 (off) -1 (on)	SN_OFF / SN_ON
10	Threshold squelch set	A + SN_THR = 10	Set squelch threshold is 10	00-20	SN_THR value / ERR (Set when SN _ ON)
11	Factory reset data	A + CR	Factory reset data: 1: VOL = 30 // 2: SN_OFF // switch off DSP squelch 3: SNTHR = 10 // reset squelch threshold is 10 4: FRE = 875 // of Frequency is 87.5 MHZ BANK = 20 // Backlight delay 20 s		OK
12	Returns the current state of the form	A + RET			VOL = 10 // volume 10. FRE = 875 // the frequency is 87.5 MHZ. PLAY / PAUS // static state. BANK_OFF (BANK_ON) // backlight time (1 normally open, 0 constant, or delay X s)

Connection Picture:

Connect With Antenna

Encoder:Volume Adjustment

Power Input

Power/Mute Indicator Light

Loudspeaker R Channel

Loudspeaker L Channel

Encoder:Frequency Adjustment

Antenna Interface

USB Sound
Card
Interface

UART
Serial Port

Earphone/
Audio Output

Muting Signal Output Interface

Stereo/Mono Setting

Installation Hole 3mm