# A、Module characteristics

◆ Sound formation：MP3/WAV
◆ Support FAT file system
◆ Supports sample rate (KHz):8/11.025/12/16/22.05/24/32/44.1/48
◆ 24-bit DAC output, internal hard-DSP decoding, non-PWM output, dynamic range support 90dB, SNR support 85dB
◆ Multiple control modes, UART serial mode, one-line serial port mode, AD button control mode
◆ Fully support TF card, U disk And SPIFLASH
◆ Support USB sound card, card reader, HID control
◆ Support SPIFLASH simulation into U disk, directly update the voice in SPIFLASH like U disk
◆ Support the following function control mode ：Last song, next song, play, pause, stop, song selection .
◆ It supports the following access to information, play track number, total tracks and total catalog tracks.
◆ Support various information queries and easily obtain the current status of the voice chip
◆ Supports the specified track insertion, that is, you can pause the currently playing music, play the inserted tracks, and return to the original track breakpoint after playing
◆ Support Chinese and English path insertion, in addition to the specified track insertion, it also supports the specified path insertion, sending the inserted path can be achieved
◆ Support for cross-drive character insertion, such as insert content stored in SPIFLASH
◆ Supports the specified Chinese and English path playback, without knowing the serial number of the content to be played, and directly sending the path where it is located
◆ Intelligent combination playback is supported, song combination in a specific folder can be combined by sending the title of the track
◆ Support for 30-level volume adjustment
◆ Support 5 kinds of EQ adjustment
◆ Support 7 playback mode controls, can adapt to different applications
◆ Support cycle times to be set, more applications, more user-friendly
◆ Support system deep sleep, the current is as low as 600 microamps after sleep, can wake up by one-line string and command IO
◆ Support specified time fast forward and backward
◆ Support for repeating at specified time periods
◆ Support for specifying playback from the specified point in time

◆ Support external input audio and MP3 audio mixing, External input, MP3 output and MP3 mixing, these three output switches

◆ Dedicated BUSY signal output indication.

◆ Support various status change information returns, such as device insertion, etc

Mature instructions and instruction parsing to make the application more stable

Dedicated matching host computer, quick to get started, easy to debug, automatic command generation

## B、 Applied to the following locations

1、Car navigation voice broadcast;

2、Road transportation inspection and voice prompts of toll stations;

3、the railway station, bus station security check voice prompts;

4、Voice prompts for power, communication and financial business halls;

5、The voice prompt is verified by the vehicle entrance and exit channels;

6、Voice prompts for public security frontier inspection channels;

7、Multi-way voice alarm or device operation guidance voice;

8、electric sightseeing car safe driving voice notice;

9、Automatic alarm of mechanical and electrical equipment failure;

10、fire alarm prompts;

11、automatic broadcast equipment, scheduled broadcast;

12、treadmill voice navigation;

## C、 Update voice description

The JQ8900-16P selects the SOC program, integrates a 16-bit MCU, And an ADSP dedicated to audio decoding. It uses hard decoding to ensure the stability and sound quality of the system.The compact size is more suitable for embedding other products.

SPI-flash Change voice content

The advantage of this chip is the flexibility to replace the voice content in the SPI-flash,It saves the trouble of replacing the voice of the traditional voice chip in the traditional voice chip. SPI FLASH is directly simulated into a USB flash drive, which is very convenient as a copy of the USB flash drive.Make product development and production easily and simply.The one-line serial port

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control mode and RX232 serial port control are optional, Provides more selectivity for research and development.

Connect the USB data cable to the chip and plug it into the computer. The computer will recognize it automatically, as shown below:

| 可移动磁盘 (H:) | 可移动磁盘 | 3.96 MB | 3.85 MB |

And then double-click on the new disk and copy the sound you want to place.

## D、 Hardware parameter

| Name | Parameter |
|------|-----------|
| MP3 file format | 1、 Support all bit rates 11172-3 and ISO13813-3 layer3 audio decoding |
| | 2、 Supports sample rate (KHz):8/11.025/12/16/22.05/24/32/44.1/48 |
| | 3、 Support these sound effects: Normal、 Jazz、 Classic、 Pop、 Rock |
| USB port | 2.0(standard) |
| UART port | Standard serial port, TTL level |
| Input voltage | DC3.3-5.2V; IO level 3.3V |
| Rated current | Standby current: 500uA; working current: 10MA |
| Size | 20.32*15.5mm |
| Work temperature | -40℃~85℃ |
| Humidity | 5%~95% |

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# E、 Module pin description
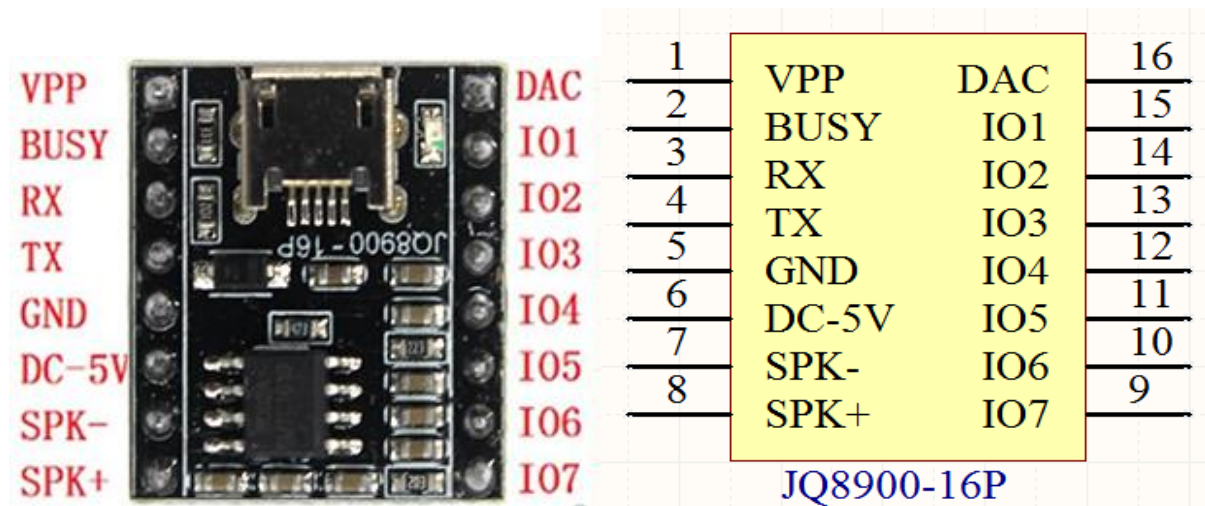


| Pin NO. | Pin name | Function description | Remarks |
|---------|----------|---------------------|---------|
| 1 | VPP | One-line serial port control pin | |
| 2 | BUSY | Play indicator light | High when audio output is available, no audio output is low |
| 3 | RX | UART serial data input | 3.3V TTL level |
| 4 | TX | UART serial data output | 3.3V TTL level |
| 5 | GND | ground | Power ground |
| 6 | DC-5V | Module power input | < 5.2V |
| 7 | SPK- | horn+ | Connect passive speakers below 3W/8R |
| 8 | SPK+ | horn- | |
| 9 | IO7 | Trigger input port7 | Trigger to ground |
| 10 | IO6 | Trigger input port6 | Trigger to ground |
| 11 | IO5 | Trigger input port5 | Trigger to ground |
| 12 | IO4 | Trigger input port4 | Trigger to ground |
| 13 | IO3 | Trigger input port3 | Trigger to ground |
| 14 | IO2 | Trigger input port2 | Trigger to ground |
| 15 | IO1 | Trigger input port1 | Trigger to ground |

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| 16 | DAC | Audio output | External amplifier |
|----|-----|--------------|---------------------|

## F、IO port button trigger mode description

The IO port button triggers the naming rule for playing file names.

Named by 5 digits，such as 00001、00002......00007
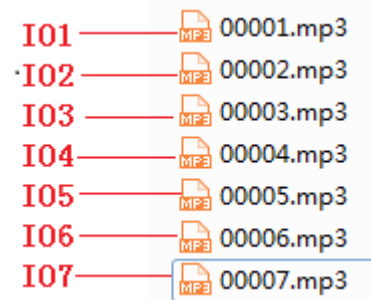


There are 7 trigger IO ports in the chip,it can support up to 19 segments of voice trigger playback,
7 IO ports for one-to-one trigger playback and 3*4 matrix mode.

| IO1 to the ground | IO1 short circuit to ground to play voice 1 | IO4-IO1 | IO4 short circuit to IO1 to play voice 11 |
|---|---|---|---|
| IO2 to the ground | IO2 short circuit to ground to play voice 2 | IO4-IO2 | IO4 short circuit to IO2 to play voice 12 |
| IO3 to the ground | IO3 short circuit to ground to play voice 3 | IO4-IO7 | IO4 short circuit to IO7 to play voice 13 |
| IO4 to the ground | IO4 short circuit to ground to play voice 4 | IO5-IO1 | IO5 short circuit to IO1 to play voice 14 |
| IO5 to the ground | IO5 short circuit to ground to play voice 5 | IO5-IO2 | IO5 short circuit to IO2 to play voice 15 |
| IO6 to the ground | IO6 short circuit to ground to play voice 6 | IO5-IO7 | IO5 short circuit to IO7 to play voice 16 |
| IO7 to the ground | IO7 short circuit to ground to play voice 7 | IO6-IO1 | IO6 short circuit to IO1 to play voice 17 |
| IO1-IO3 | IO1short circuit to IO3 to play voice 8 | IO6-IO2 | IO6 short circuit to IO2 to play voice 18 |
| IO2-IO3 | IO2 short circuit to IO3 to play | IO6-IO7 | IO6 short circuit to IO7 to play voice 19 |

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| | voice 9 | | |
|---|---|---|---|
| IO3-IO7 | IO3 short circuit to IO7 to play voice 10 | | |
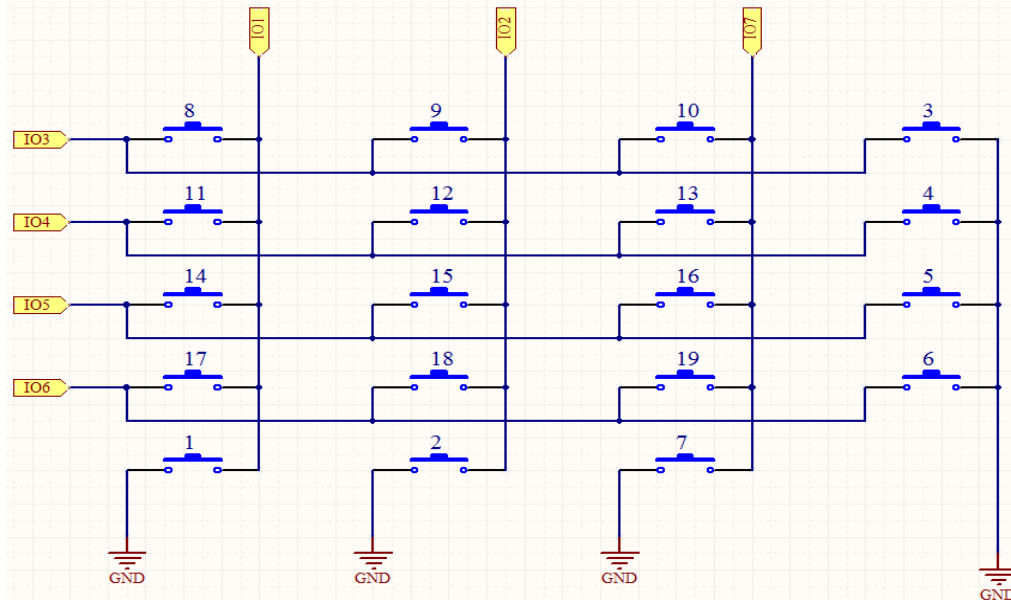


Note: When using matrix playback mode, only 19 voice files can be stored in memory at most. If more than 19 voice files are stored, they will be scrambled.

<span style="color:red">Play mode description</span>

Other playback modes can be configured by the software provided by our company, as shown



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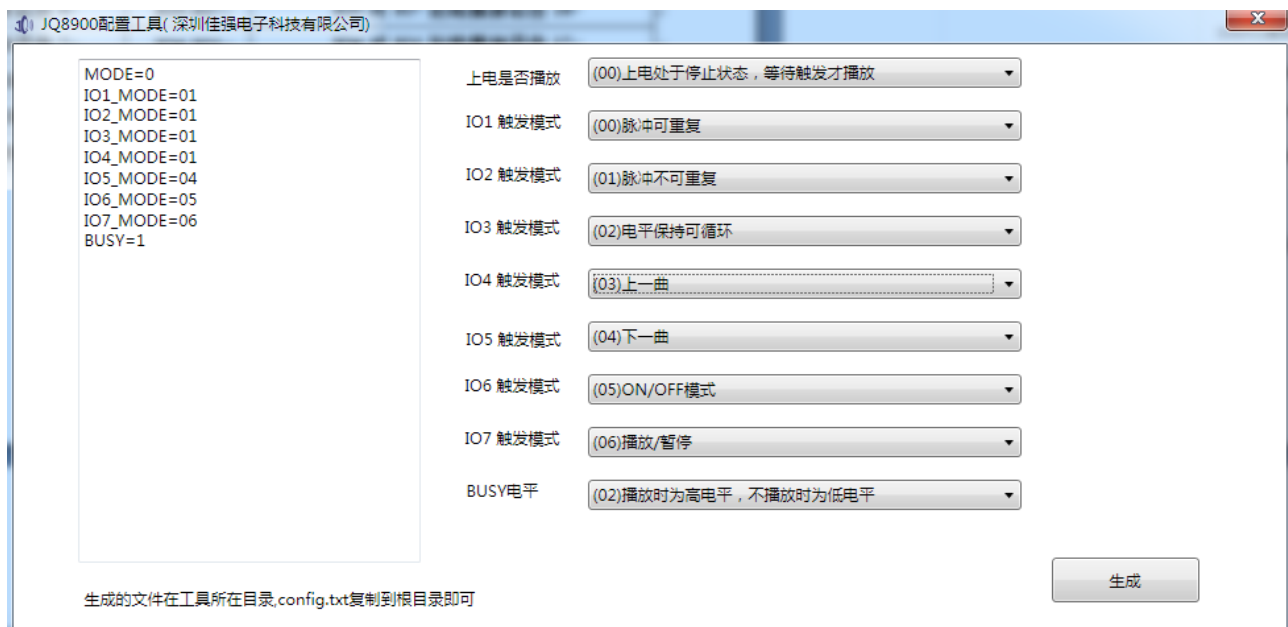
After configuring each IO port, click Generate to automatically generate a config.txt file in the directory where the software is located, and then copy the config.txt file to the memory.

| Playback mode | Functional description |
|---|---|
| Pulse repeatable | Playback starts as soon as the button is pressed, no matter how long it takes to play once. During playback, pressing the button interrupts the currently playing voice and executes a new command. |
| Pulse is not repeatable | Playback starts as soon as the button is pressed, no matter how long it takes to play once. During the playback process, pressing the button is invalid, and pressing the button after the playback is completed will be effective. |
| Level keep loopable | Press the button to start playback, press it all the way to play it, if it is released, it will stop playing immediately. |
| Level non-retentive | Press the button to start playing, and keep playing until you press it. After releasing, the current voice will stop playing after playing. |
| Last song | Pressing the button will play the last song and loop accordingly. |
| Next song | Pressing the button will play the next song and loop accordingly. |
| Volume plus | Press the button and the volume will increase. |
| Volume minus | Press the button and the volume will decrease. |
| ON/OFF mode | Press the button to play, then press stop, and then cycle. |
| Play/pause | Press to play, press pause, then press to play from breakpoint. |
| Last song/volume minus | Short press to play the last track, long press the volume to decrease. |
| Next song/volume plus | Short press to play the next song, long press the volume to increase. |
| Last song/Fast Backward | Short press to play the last track, long press to fast backward. |
| Next song/Fast Forward | Short press to play the next song, long press fast forward. |

## G.One-line serial communication agreement

sda is the data sending port to send the voice address.Send low first.The example below sends 89H.

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| and(HEX) | Function | Description | |
|---|---|---|---|
| | NO.0 | The numbers 0-9 can be used for functions that require numbers, such as selecting a song, setting the volume, setting the EQ, setting the loop mode, setting the channel, setting the inserted track, and sending the function command after the number first. | |
| | NO.1 | | |
| | NO.2 | | |
| | NO.3 | | |
| | NO.4 | | |
| | NO.5 | | |
| | NO.6 | | |
| | NO.7 | | |
| Control | NO.8 | | description： |
| | NO.9 | | |
| | Clear number | Clear the number is sent | |
| | Selection confirmation | With digital implementation | |
| | Set the volume | | |
| | Set the EQ | | |
| | Set the Loop mode | | |
| | Set the passage | | |
| | Set up interstitial tracks | | |
| | Play | | |
| | Pause | | |
| | Stop | | |
| | Last | | |
| | Next | | |
| | Last directory | | |
| | Next directory | | |
| | Select SD card | | |
| | Select U disk | | |
| | Select FLASH | | |
| | System sleep | | |

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0x00~0x09：Represent numbers only:0~9.

0x0a： Single-byte control instruction to clear the last received number.

0x0b~0x10:For multi-byte control instructions, it needs to be used with 0x00~0x09.

0x11~0x1c:For single-byte control instructions, only one control command needs to be sent.

One-line serial port MP3 file naming rules：

The file name must be 5 digits, which is the track number of the file.The selection and playback instruction (0xb) is identified by this number. As shown in the figure below.
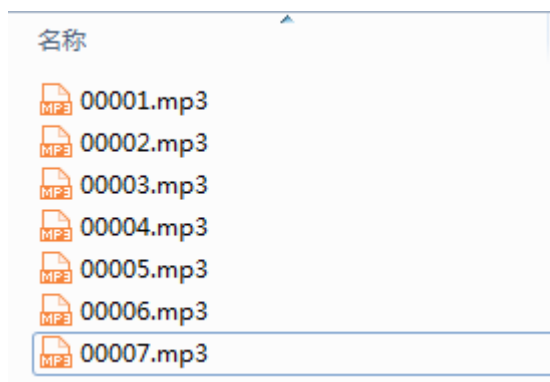


If you use other forms of naming, you cannot play the file using the song play command. The file needs to be placed in the root directory, that is, open the disc character.

E. g1：Set the volume to 20

The steps are as follows:

empty the number - > volume 20 - > "set volume" control instructions.

Send the code :0x0A->0x02->0x00->0x0C

The sending function of single chip computer is as follows:

SendData(0x0a);

SendData(0x02);

SendData(0x00);

SendData(0x0c);

Before using multibyte control instructions，It's better to send "empty number" instructions before sending new numbers.

E.g2：Choice No. 2 Plays

The steps are as follows:

Clear the number - > track number - > "Selection and Play" control instructions.

Send the code ： 0x0A->0x02->0x0b

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The sending function of single chip computer is as follows:

SendData(0x0a);

SendData(0x02);

SendData(0x0b);

Choice No. 15 Plays

SendData(0x0a);

SendData(0x01);

SendData(0x05);

SendData(0x0b);

E.g3：Start playing

The steps are as follows:

"Start playing" control instructions.

Send the code :　　　0x11　　Just send a 0x11.

The sending function of single chip computer is as follows:

SendData(0x11);

C51 Send subfunction description：Delay1us delay function needs to be modified for different frequencies and types of MCU.

void Delay1us ( int T )//Delay function

{

　　while ( T-- );

}

void SendData ( u8 addr )//Send function.

{

　　u8 i;

　　EA = 0;/*Turn off interrupts when sending to prevent interrupts from affecting timing　*/

　　sda = 1;/*Start pulling up　*/

　　Delay1us ( 1000 );

　　sda = 0;/*Start guide code*/

　　Delay1us ( 2200 );/*The delay here is at least greater than 2 ms, and the parameter delay is 310 Ms.　*/

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```
    for ( i = 0; i < 8; i++ ) /*A total of 8 bits of data    */
    {
        sda = 1;
        if ( addr & 0x01 ) /*3:1 Represents data bit 1, each bit represented by two pulses    */
        {
            Delay1us ( 500 );
            sda = 0;
            Delay1us ( 210 );
        }
        else                    /*1：3 Represents data bit 0, each bit represented by two pulses
*/
        {
            Delay1us ( 210 );
            sda = 0;
            Delay1us ( 500 );
        }
        addr >>= 1;
    }
    sda = 1;
    EA = 1;//Resume interrupt
}
```

One-line Serial Port Instructions and Notices:

1、Because it is to test the pulse width ratio, it is recommended to debug it with oscilloscope for the first time.

2、The delay requirement of boot code is greater than 2MS, and 4MS delay is recommended.

3、Pulse proportional cardinality can be recognized at 2-5, for example, 4:1 will be recognized as 1.

4、Function sending process suggests closing interrupts to avoid affecting waveform accuracy.

5、The delay between two bytes is recommended to be more than 10MS.

6、Delay1us（）；Function is based on the customer's own MCU to write, based on the actual test.

7、Instructions are single-byte operations. For example, the previous song only needs to send 0x14.

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8、Operations of song selection: First, the corresponding number of tracks is issued, then the song selection confirmation is issued (0x0B). Others that need digital cooperation can be operated in this way.

## H.Two-wire Serial Communication

Two-wire serial port is the specified path to play

1、The two-line serial path supports Chinese and English numerals, etc. It is recommended that folder names and file names should not be too long. It is generally recommended that customers adopt the combination of two characters plus * method.

2、If the folder or file name is alphabetic, all capitals are required.

3、Notice that there is no point in front of the format. Notice that the last three question marks and letter input methods need to be switched to English.

4、The corresponding instructions can be generated by the host computer.

For example: /广告/小米手机.mp3, can be in the following format

/广告*/小米*???, A folder representing the first two words of "广告",* is wildcard,

"小米*???" The first two words of the document are "小米", and the last three? The format of symbol is not limited. This chip supports MP3 and WAV formats.

/ABCD*/ASSD*???

/测试*/ADSS*???

Two-wire Serial Port Combination Playback

Composite playback is a combination of file names. File requirements are stored in the "ZH" folder. The name of the file to be combined can be changed to the name of two bytes. Generally, it is recommended to use digital representation.

Such as：01.mp3,02.mp3,It can also be named with two letters or a Chinese character.

Full duplex serial communication is used in chip communication.

Baud Rate 9600, Data Bit: 8, Stop Bit 1, Check Bit N

1.Communication Format

Start Code - Instruction Type - Data Length (n) - Data 1 - Data n - Sum Check (SM)

Instruction Code: Fixed to AA

Instruction type: Used to distinguish instruction type

Data length: the number of bytes of data in an instruction

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Data: Relevant data in instructions. When the length of data is 1, it means that only CMD has no data bits.

Sum check: 8 bits lower than the sum of all previous bytes, that is, 8 bits lower when the starting code is added to the data

Data format: Sending data or commands, high 8-bit data before, low 8-bit after

## 2.Communication mechanism

1. As slave processing, we default to wait for power on. All playback operations are controlled by the host.

2. Slave computers will not initiate communication on their own initiative. All communications are initiated by the host.

3. Serial port is 3.3V TTL level. If the host system is 5V level, please series 1K resistance in the middle.

4. If not specified, all data in the protocol are hexadecimal data.

## 3.Agreement

Following is the data definition that this chip returns and recognizes

Play State Definition: System Power-on is in Stop State

00 (stop) 01 (play) 02 (pause)

Disk Character Definition: Stop after Switching Disk Characters

USB:00     SD:01     FLASH:02     NO_DEVICE：FF

Volume: Volume is 31, 0-30, power-on default is 20-level

Play Mode Definition: Power-on defaults to single stop

Whole Circle (00): Play the whole track in sequence, and then play it in circle after playback

Mono Loop (01): Always Loop the Current Track

Single Stop (02): Stop playing the current track once

Total Random (03): Random Play of Tracks in Characters

Catalog Loop (04): Play the tracks in the current folder in sequence, and play them in a loop after playing. The catalog does not contain subdirectories

Random Directory (05): Play in the current directory randomly, the directory does not contain subdirectories

Catalog sequential playback (06): Play the tracks in the current folder in order, stop after playback, the directory does not contain subdirectories

Sequential Play (07): Play the whole track in sequence and stop after play

EQ definition：  NORMAL(00)  POP(01)  ROCK(02)  JAZZ(03)    CLASSIC(04)

Power-on default EQ is NORMAL(00)

DAC Output Channel Definition: Power-on defaults to MP3 Play Channel (00)

MP3 Play Channel (00): Play MP3 Channel, DAC Output Sound for Music Play Sound

AUX Channel (01): DAC's output sound is the input sound of P26 and P27

MP3+AUX(02): AUX channel MP3 is opened at the same time, DAC output sound is music playback sound and mixed output of P26, P27 input sound.

Definition of Combination Play: Combination Play is a combination of file names. File requirements are stored in the "ZH" folder. The name of the file to be combined can be changed to the name of two bytes. Generally, it is recommended to use digital representation. For example: 01.mp3, 02.mp3, can also be named with two letters or a Chinese character.

4. Communication command

Query playback status (01)

Directive: AA 01 00 AB

Return: AA 01 01 playback status SM

Note: You can query the current playback status at any time.

Play(02)

Directive：AA 02 00 AC

Return：null

Note: Any time this command is issued, the current track will be played from scratch.

Pause(03)

Directive：AA 03 00 AD

Return：null

Stop(04)

Directive：AA 04 00 AE

Return：null

Last song(05)

Directive：AA 05 00 AF

Return：null

Next song(06)

Directive：AA 06 00 B0

Return：null

Designated tracks(07)

Directive：AA 07 02 High repertoire and low repertoire SM

Return：null

For example: AA 07 02 00 08 BB Specifies the playback of the eighth current disc symbol, with the number of tracks ranging from 1 to 65535

Specify Disk Character, Specify Path Play(08)

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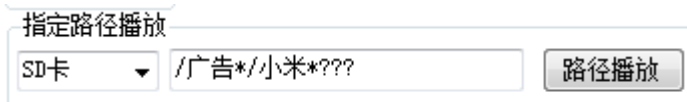
Directive：AA 08 Length disc path SM

Return：null

Description: Length = disc length + path length = 1 + path length

For example: /广告/小米手机.mp3, can be in the following format

/广告*/小米*???, A folder representing the first two words of "广告",* is wildcard，

"小米*???" The first two words of the document are "小米", and the last three? The format of symbol is not limited. This chip supports MP3 and WAV formats.

Mould taking by upper computer ,The data are as follows:



The instructions generated by the host computer are:0xAA, 0x08, 0x10, 0x01, 0x2F, 0xB9, 0xE3, 0xB8, 0xE6, 0x2A, 0x2F, 0xD0, 0xA1, 0xC3, 0xD7, 0x2A, 0x3F, 0x3F, 0x3F, 0x77,

<span style="color:green">Query the current online disc character(09)</span>

Directive：AA 09 00 B3

Return： AA 09 01 disc character SM

Note: Online disc characters are distinguished by bits:USB:BIT(0)    SD:BIT(1)    FLASH:BIT(2)

This function can know the current online disc character. Before switching the disc character, it is recommended to query the online disc character first.

<span style="color:green">Query the current player character(0A)</span>

Directive：AA 0A 00 B4

Return：AA 0A 01 disc character SM

<span style="color:green">Switch to the specified disc character(0B)</span>

Directive：AA 0B 01 disc character SM

Return：null

Description: Character switching instruction, if the current Character is online, you can switch to the corresponding Character to wait for playback. After switching, the track is No. 1. It is recommended to check whether the Character is online before switching.

For example:

AA 0B 01 00 B6 switch to U disk and stop after switch

AA 0B 01 01 B7 switch to TF card and stop after switch

AA 0B 01 02 B8 switch to FLASH card and stop after switch

<span style="color:green">Query the General tracks(0C)</span>

Directive：AA 0C 00 B6

Return：AA 0C 02 High total track and low total track SM

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Query the current track(0D)

Directive：AA 0D 00 B7

Return：AA 0D 02 High track and low track SM

Last folder directory(0E)

Directive：AA 0E 00 B8

Return：

Note: After switching, the first one in the folder will be played.

Next folder directory(0F)

Directive：AA 0F 00 B9

Return：

Note: After switching, the first one in the folder will be played.

End play(10)

Directive：AA 10 00 BA

Description: This instruction can terminate the current operation ahead of time, will terminate the current play, if it is in the plug-in, etc., will end the plug-in ahead of time and return to the original state.

Inquire the first track of folder directory(11)

Directive：AA 11 00 BB

Return：AA 11 02 High track and low track SM

Description: Number of the first song in the current catalogue

Search for folder directory catalogs(12)

Directive：AA 12 00 BB

Return：AA 12 02 High track and low track SM

Note: This track does not contain the number of files in the subdirectory

Volume Setting(13)：

Directive：AA 13 01 VOL SM

Return：null

For example: AA 1301 14D2 sets the volume to level 20

Volume plus(14)：

Directive：AA 14 00 BE

Return：null

Volume minus (15)：

Directive：AA 15 00 BF

Return：null

Designated episode(16) ：

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Directive：AA 16 03 disc character High track and low track SM

Return：null

For example:AA 16 03 00 00 09 CC    No. 9 on the socket U disk

Description:Return to the insertion point after the insertion and continue playing.

Specified Path Interpolation(17) ：

Directive：AA 17 Length disc path SM

Return：null

Description: Length = disc length + path length = 1 + path length



The instructions generated by the host computer are:0xAA, 0x17, 0x10, 0x02, 0x2F, 0xB9, 0xE3, 0xB8, 0xE6, 0x2A, 0x2F, 0xD0, 0xA1, 0xC3, 0xD7, 0x2A, 0x3F, 0x3F, 0x3F, 0x87,


End of the broadcast：

Directive：Use End Play Instruction

Return：null

For example:    In the process of sowing, sowing can be finished ahead of time.

Setting cycle mode(18)：

Directive：AA 18 01 cycle mode SM

Return：null

For example: Set to single stop:    AA 18 01 03 C6

Set the number of cycles(19)：

Directive：AA 19 02 High frequency and low frequency SM

Return：null

Description: This instruction is only valid and sequential when the playback mode is full cycle, single cycle and directory cycle.

For example:AA 19 02 00 06 CB Cycle 6 times

EQ setting(1A)

Directive：AA 1A 01 EQ SM

Return：null

For example:AA 1A 01 02 C7            Set EQ to ROCK

Combination play(1B)

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Directive：AA 1B length Track 1 name is high byte, track name is low byte.... Track n name is high byte, track n name is low byte SM

Return：null

For example:AA1B04303130328C,File name "01", "02" song combination play

Description:File name combination is much more convenient, more accurate than file number group, and is not restricted by copy order.

End Combination Play(1C)

Directive：AA 1C 00 C6

Return：null

Description:End the combination playback and return to the pre-combination playback status.

Set up channel(1D)

Directive：AA 1D 01 channel SM

Return：null

Query short file names of songs(1E)

Directive：AA 1E 00 C8

Return：AA 1E Short File Name Length Short File Name SM

Selections do not play(1F)

Directive：AA 1F 02 High track and low track SM

Return：null

Repetition control(20)

Directive：AA 20 04 Beginning minutes,beginning seconds    ending minutes,ending seconds    SM

Return：null

End of repetition(21)

Directive：AA 21 00 CB

Return：null

Fast backward at specified time(22)

Directive：AA 22    02 Time 8 bits high and time 8 bits low SM

Return：null

Description:The unit is seconds.

Fast forward at specified time(23)

Directive：AA 23    02 Time 8 bits high and time 8 bits low SM

Return：null

Description:The unit is seconds.

Get the total time of the current track(24)

Directive：AA 24 00 CE

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Return：AA 24 03 hour minute second SM

Open Play Time Send(25)

Directive：AA 25 00 CF

Return：AA 25 03 hour minute second　SM

Description:Turn on playback time send, time update will automatically return
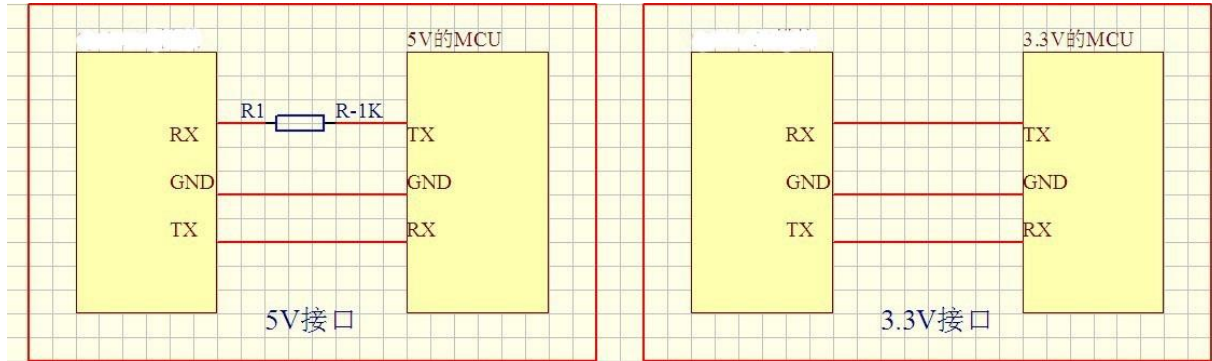
Turn off playback time sending(26)

Directive：AA 26 00 D0

Return：null

Description:Turn off playback time sending

Special supporting upper computer, fast start, convenient debugging.Instructions are automatically generated as follows:
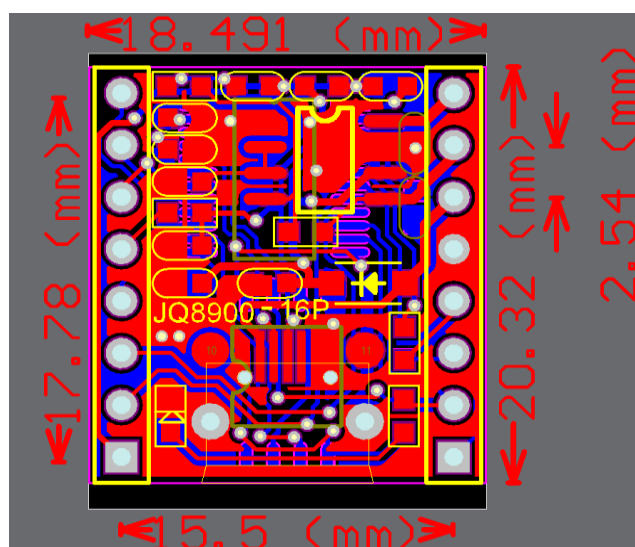


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# 1、serial port



The chip's serial port is 3.3V TTL level, so the default interface level is 3.3V.If the system is 5V. It is suggested that a 1K resistor be connected in series to the docking interface of the serial port.This can meet the general requirements, if applied to strong electromagnetic interference occasions, please refer to the "Notes" instructions.The chip has been tested normally in 5V and 3.3V systems, and everything is normal. They are all connected directly, without a series of 1K resistors.

## J、 Module schematic diagram

MP3主控IC

功放

SPI LASH

USB

模块引脚图
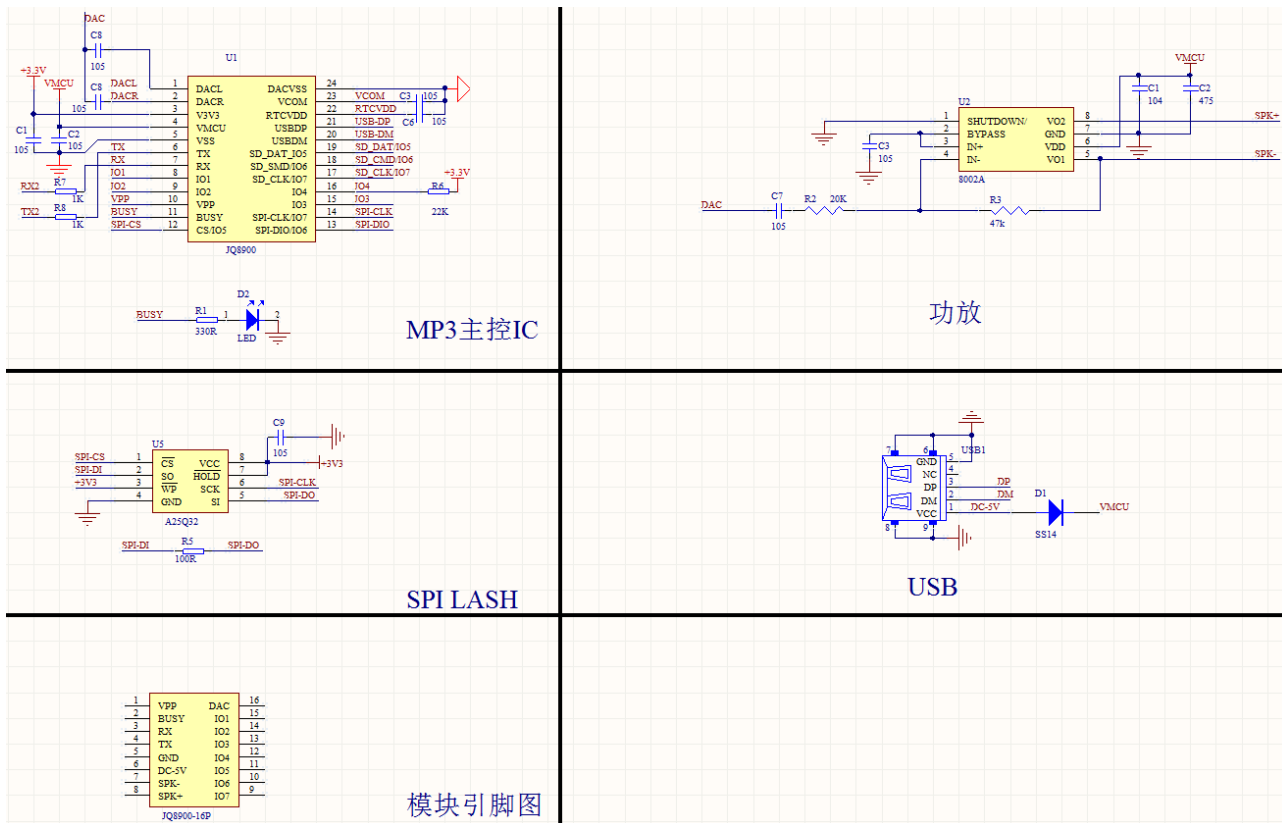
## K、JQ8900-16P Module Packaging Dimension Diagram

18.491 （mm）

17.78 （mm）

20.32 （mm）

2.54 （mm）

15.5 （mm）

JQ8900-16P

# L、Asked questions frequently

For the first time, it is suggested to use the matching "serial debugging tool", which can debug the functions of the module and obtain the corresponding functional instructions.

1. How to judge the quality of the module?

When the module is powered on, the LED flashes and then goes out. If the power-on LED is not bright, please check whether the power supply voltage is normal. The supply voltage is between 3.3 and 5.2, and 5.0V is recommended.

2. What should serial connection pay attention to?

TX and RX of PC serial port need to be crossed and connected with module, that is, RX of PC serial port to module and TX of PC serial port to module.

The IO level of this module is 3.3V. If the IO of the single chip computer connected to it is 5V, it is necessary to connect a 1K resistance between the TX of the single chip computer and the RX of the module. Otherwise, the module may work abnormally.

3. Serial connection is correct but can't play?

After the module connects to the computer through the USB cable, it is in the U-disk mode. At this time, it does not accept any control instructions. Please switch to other power supply.

4. The module says 32M. Why is 4M inserted into the computer?

Flash copywriting in voice industry is based on "unit". The storage unit of computer is "byte", "bit" and "byte" are eight times the relationship, that is, 1 byte = 8 bits, so the 32M of our voice module is displayed on the computer as 4M.

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Shenzhen Jiaren Science&Technology Co., Ltd.　　Address:Office 712, Weiteng Technology Building, 91 Jingnan Road, Buji Subdistrict, Longgang District,Shenzhen City,Guangdong Province,China　Tel：0755-28685464　Tel：+8615816591967(Wechat)　　QQ：769503664