Grove - Serial MP3 Player

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Wiki: http://www.seeedstudio.com/wiki/Grove_%E2%80%93_Serial_MP3_Player

Bazaar: http://www.seeedstudio.com/depot/Grove-Serial-MP3-Player-p-1542.html

Document Revision History

Revision	Date	Author	Description
1.0	Sep 21, 2015	Victor.He	Create file

Document Revision History

Contents

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

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1. Introduction

Grove-Serial MP3 Player is a kind of simple MP3 player device whose design is based on a high-quality MP3 audio chip---WT5001. It can support 8KHZ~44.1 kHz sampling frequency MP3 and WAV file formats. This product has several peripheral ports: a standard UART Grove interface, a dual track headphone jack, an external interface and also a Micro SD card interface. You can control the MP3 playback state by sending commands to module via serial port tools, such as switch songs, change the volume and play mode and so on. It seems a simple module, but it owns such strong function. Want to know how the sound quality? Please come to experience it!

2. Features

- Standard Grove interface

- Asynchronous serial port control play mode

- Busy Indicator

- Reset Button

- Standard Micro SD card Interface

- Support FAT16 and FAT32 file system

3. Interface Functions
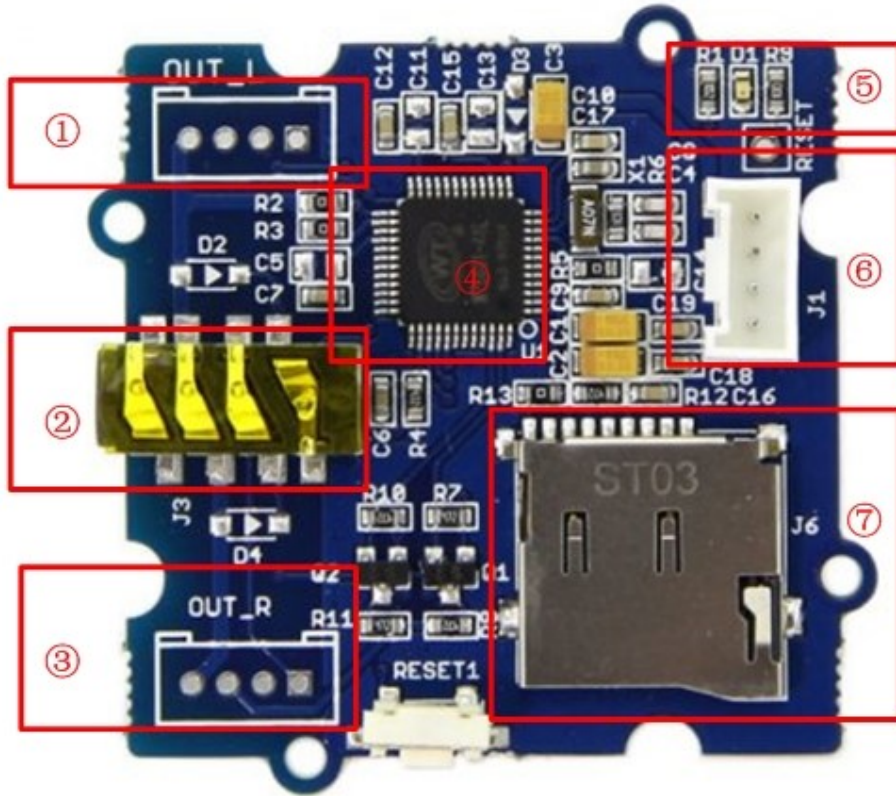
① : Left Channel Grove Interface.

② : Headset Interface:3.5mm headphones

③ : Right Channel Grove Interface.

④ : WT5001

⑤ : LED Indicator : LED is on when music is playing.

⑥ : UART Grove Interface

⑦ : SD Card: micro SD Card(≤2GB)

4. Usage

The Grove - Serial MP3 Play can be controlled by Arduino/Seeeduino. And there is a Serial_MP3 test code for you to use. I believe you can easily get started. For more detailed information, please refer to the following description. The hardware installation:

- Connect Grove - Serial MP3 Play to the Digital 2 port of Arduino/Seeeduino, Notice that you can change the pin number as you like, just make sure corresponding changes the code. Then connect your Arduino/Seeeduino to PC with a USB cable.

- Plug an earphone into Grove - Serial MP3 Play. Now the hardware part has been completed.

- After uploading it, open serial tool to send commands.

- Upload the code below, please click here if you do not know how to upload.

The following code includes play mode parameter. You only need to change the parameter to switch the play mode.

```
/****************************************************************************/
//  Function: control the seeedstudio Grove MP3 player
//      Hardware: Grove - Serial MP3 Player
/****************************************************************************/
#include <SoftwareSerial.h>
SoftwareSerial mp3(2, 3);//modify this with the connector you are using.
void setup()
{
    mp3.begin(9600);
    Serial.begin(9600);
    delay(100);
    if (true ==SetPlayMode(0x01))
    Serial.println("Set The Play Mode to 0x01, Single Loop Mode.");
    else
    Serial.println("Playmode Set Error");
    PauseOnOffCurrentMusic();

}
void loop()
{
    SetPlayMode(0x01);
    delay(1000);
    SetMusicPlay(00,01);
```

```
    delay(1000);
    SetVolume(0x0E);
    while(1);
}
//Set the music index to play, the index is decided by the input sequence
//of the music;
//hbyte: the high byte of the index;
//lbyte: the low byte of the index;
boolean SetMusicPlay(uint8_t hbyte,uint8_t lbyte)
{
    mp3.write(0x7E);
    mp3.write(0x04);
    mp3.write(0xA0);
    mp3.write(hbyte);
    mp3.write(lbyte);
    mp3.write(0x7E);
    delay(10);
    while(mp3.available())
    {
        if (0xA0==mp3.read())
        return true;
        else
        return false;
    }
}
// Pause on/off  the current music
boolean PauseOnOffCurrentMusic(void)
{
    mp3.write(0x7E);
    mp3.write(0x02);
    mp3.write(0xA3);
    mp3.write(0x7E);
    delay(10);
    while(mp3.available())
    {
        if (0xA3==mp3.read())
        return true;
        else
        return false;

    }

}

//Set the volume, the range is 0x00 to 0x1F
boolean SetVolume(uint8_t volume)
```

```
{
    mp3.write(0x7E);
    mp3.write(0x03);
    mp3.write(0xA7);
    mp3.write(volume);
    mp3.write(0x7E);
    delay(10);
    while(mp3.available())
    {
        if (0xA7==mp3.read())
        return true;
        else
        return false;
    }
}

boolean SetPlayMode(uint8_t playmode)
{
    if
(((playmode==0x00)|(playmode==0x01)|(playmode==0x02)|(playmode==0x03))==f
alse)
    {
        Serial.println("PlayMode Parameter Error! ");
        return false;
    }
    mp3.write(0x7E);
    mp3.write(0x03);
    mp3.write(0xA9);
    mp3.write(playmode);
    mp3.write(0x7E);
    delay(10);
    while(mp3.available())
    {
        if (0xA9==mp3.read())
        return true;
        else
        return false;
    }
}
```

Note:

1. SetPlayMode(uint8_t playmode)

The Function is used to set the MP3 Play Mode.

uint8_t playmode: the parameter to change the play mode. Can be 0x00、0x01、0x02 or 0x03.

2. SetVolume(uint8_t volume)

The Function is used to set the MP3 Play Volume.

uint8_t volume: the parameter to change the play volume. The parameter range is 0x00 to 0x1F.

3. SetMusicPlay(uint8_t hbyte,uint8_t lbyte)

The Function is used to set the music index to play, the index is decided by the input sequence of the music

uint8_t hbyte: the high byte of the index;

uint8_t lbyte: the low byte of the index;

4. PauseOnOffCurrentMusic(void)

The Function is used to Pause on/off the current music.

- Now you can hear songs stored in your SD card. And in the playing mode, the D1 indicator is on.

  If in the pause mode, the indicator will blink. More experience is waiting for you！

There is another way to control MP3 play mode via serial tool.In this way, you need a UartSBee to connect MP3 to PC. The hardware installation as show below:
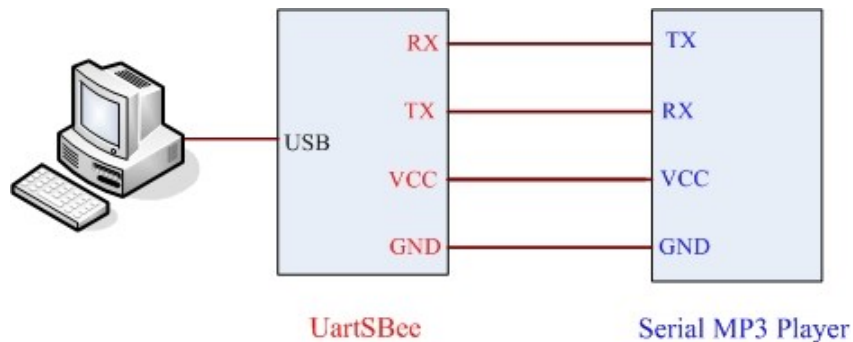
After the connection is completed, open the serial tool to send commands. About the specific commands, please see the reference part!
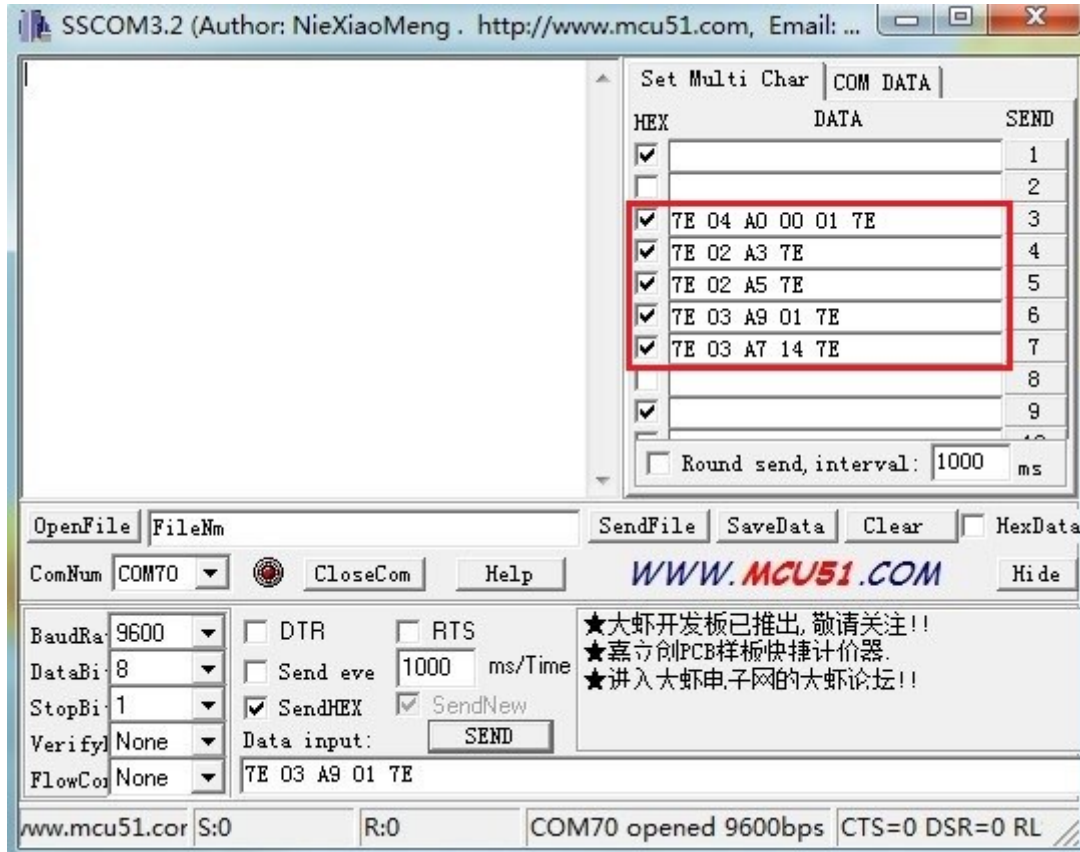
5. Reference

Commonly Command Descriptions:

Command Name	Command Format	Description
Pause	7E 02 A3 7E	The music will stop when you send this command at the first time. After resending this command, it will continue.
Stop	7E 02 A4 7E	This command is able to trigger play the next song, or trigger play the first one if the player is playing the last one.
Next	7E 02 A5 7E	This command is able to trigger play the next song, or trigger play the first one if the player is playing the last one.
Previous	7E 02 A6 7E	This command can trigger play the previous song. Sending this command can trigger playback to the last song when you are enjoying the first one.
Volume control	7E 03 A7 1F 7E	There are 32 volume levels from 00 to 31. 00 is mute, and 31 for the maximum volume.
Assigned play mode	7E 03 A9 XX 7E	XX=00 means playing single without playback(default)
		XX=01 means the single repeated play mode
		XX=02 means that it is all tracks repeated playback mode.
		XX=03 stands for random pattern.

6. Resources

Grove - Serial MP3 Play Eagle File

Grove - Serial MP3 Play Schematic in PDF format

Demo code on github

datasheet WT5001