Audio Player

1. Basic knowledge of Audio Player

The Audio Player has a built-in speech decoder chip, with which MP3, WMA, and WAV formatted music and audio recording files can be played. This module has a speaker and a microphone device. The back is equipped with a TF memory card slot, through which the stored audio data can be read, and the bottom has three holes for fixing the module, as shown in Figure 1.   Its RJ25 base port is marked in white, it needs to be connected to the port with a white mark on the main board.
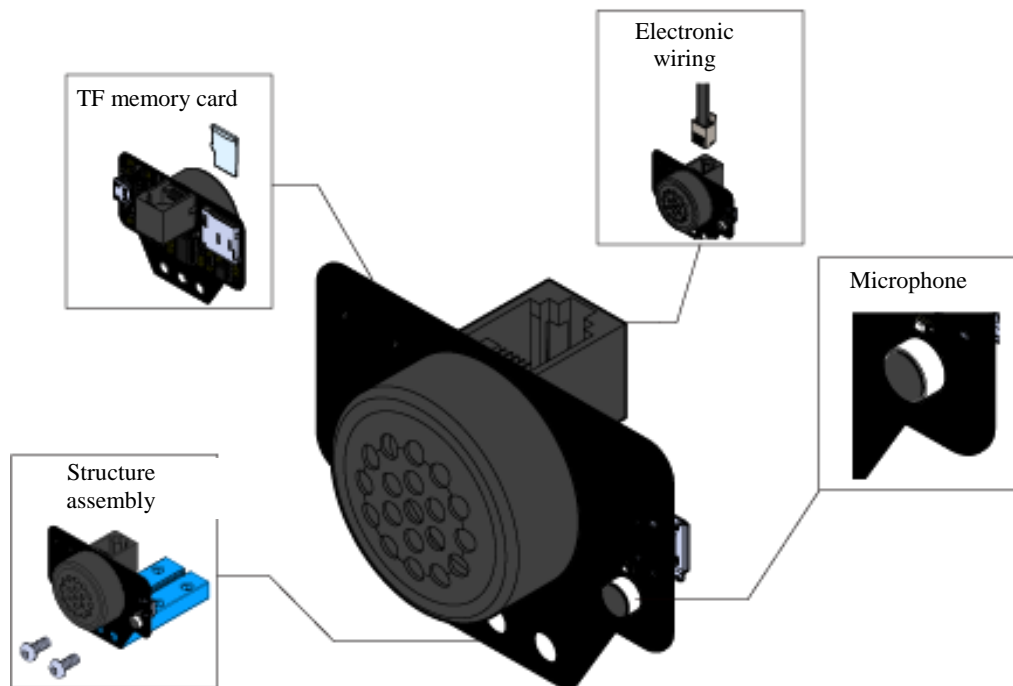
Figure 1. Audio Player

2. Technical Specifications

Working Voltage: 5V DC

Microphone Sensitivity (1khz): 50 – 54 dB

Microphone Resistance: 2.2 kΩ

Microphone Signal-to-Noise Ratio: 58 dB

Speaker Power Rating: 1 W

Speaker Power Resistance: 8±15% Ω

Communication Method: I2C

Highest current: 500 mA

Module Size: 56 × 41 × 28 mm (length × width × height)

3. Function and Properties

The on-board blue LED often shows the music playing state and flashes the recording state.

High sensitivity to sound;

The metal hole area of the module is a reference area which contacts with the metal beam.

With anti - connection protection, the power back connection will not damage the IC.

Support mBlock graphical programming, suitable for users of all ages;

It is convenient to use RJ25 interface.

Modular installation, compatible with Lego series;

The module supports Micro USB to copy audio files directly, and no card reader is needed.

Modules directly support MP3, WMA, WAV files

4. Connection of Hardware

The RJ25 cable of the Audio Player is used to receive the program control from mCore, and the USB line is used for audio data transmission with the computer.

(1) RJ25 cable: Because the port of the Audio Player is white, when using a RJ25 port, it needs to be connected to the port with a white mark on the main board. Taking the main board of mBot as an example, all RJ25 ports on the mCore have white color marks. All the ports can be connected to a color sensor, as shown in Figure 2.
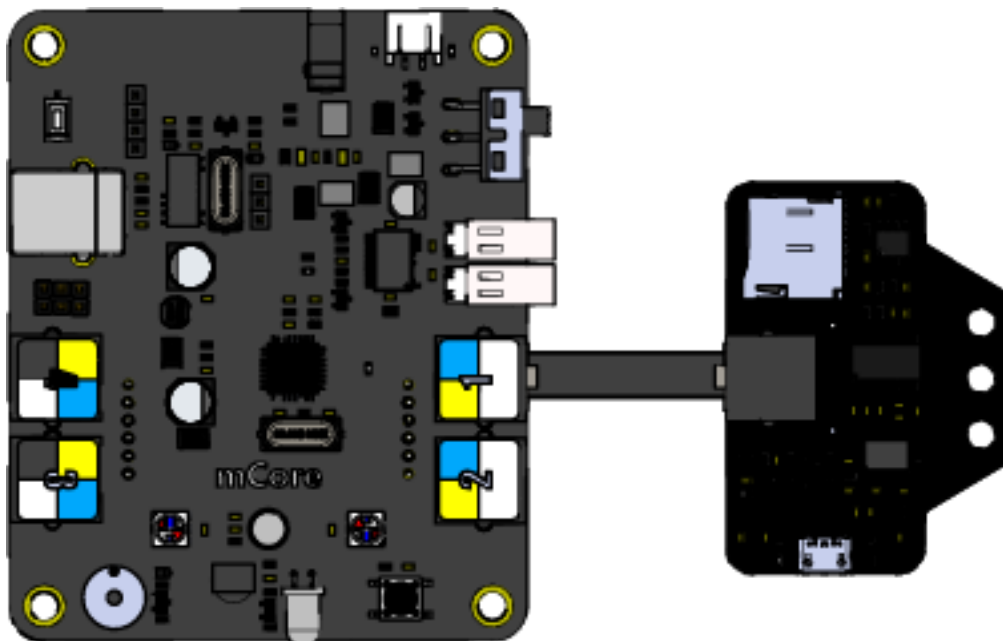

Figure 2. RJ25 cable

(2) USB line: With SD card inserted, the Audio Player can be connected to a computer through the USB data cable for data transmission, as shown in Figure 3. Audio files can be stored in the SD card. The name of the files should be named with English letters plus three digits as far as possible.
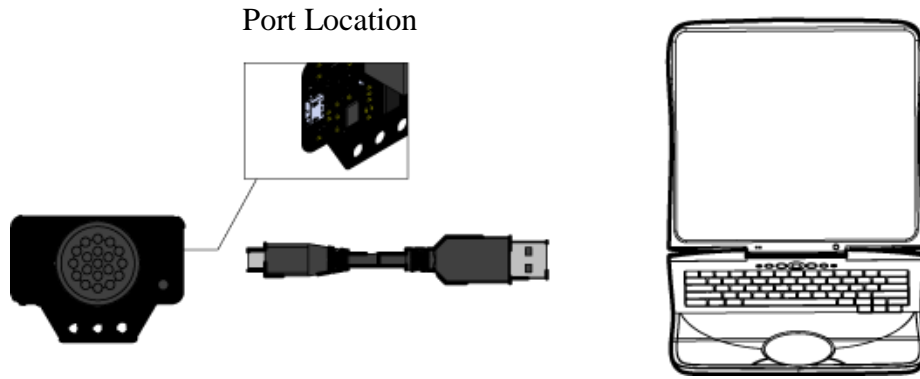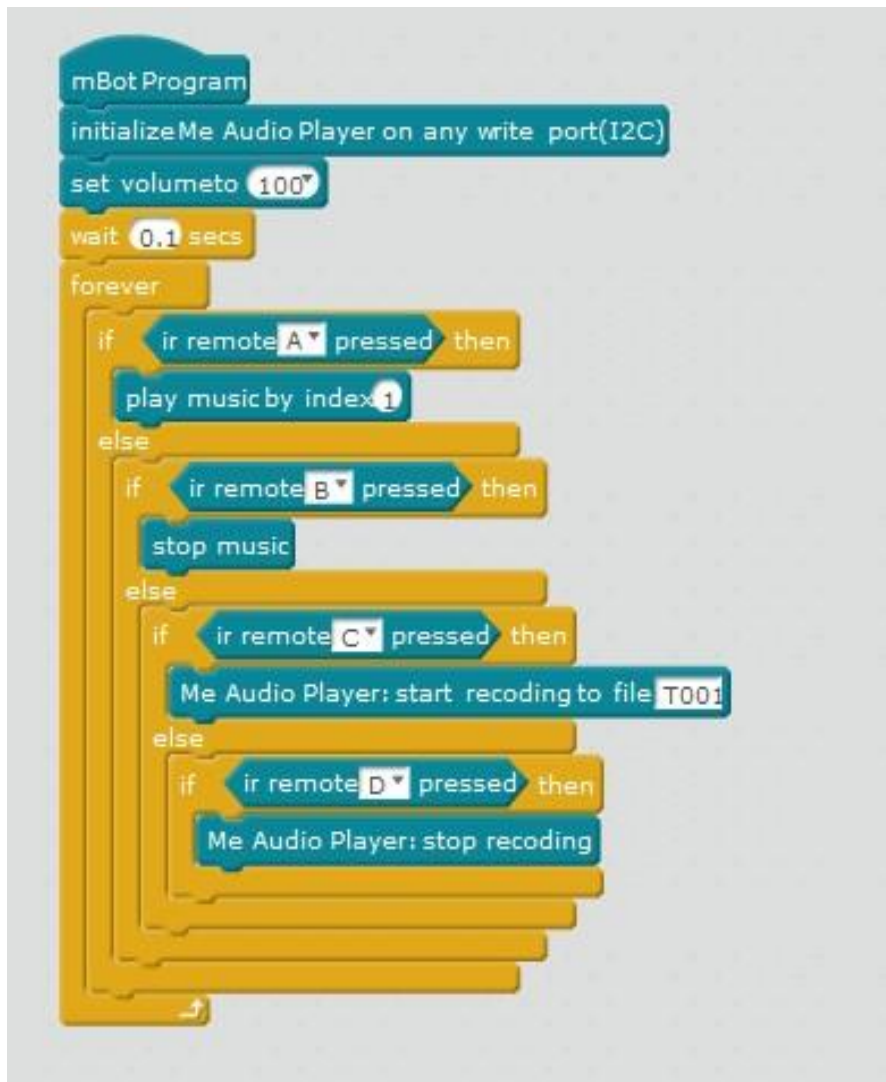
Port Location

Figure 3. USB line

5. Programming Guidance

The Audio Player supports mBlock programming environment. Figure 4 shows the module instructions:

initialize Me Audio Player on any write port(I2C)	Selected port
play music by index 1	Specify audio file index to play
play music by file name	Specify audio file name to play
set music play mode Single	Set play mode: single play, single loop, list loop, shuffle play
play previous music	Play the previous track
play next music	Plays the next track
pause/play music	Pause/resume
stop music	Stop Playing
set volume to 100	Volume setting
volume up	Volume Up
volume down	Volume Down
Me Audio Player: start recoding to file T001	Start recording with the name "T001"
Me Audio Player: stop recoding	Stop recording

Figure 4. Description of Audio Player instructions

The program in Figure 5 can implement the control of various functions of Audio Player through an infrared remote controller.

Figure 5. Audio Player Program and Examples

The Audio Player can be used as a signal output end. After the robot completes some instructions, in order to determine whether to execute the specified instruction, programming of audio output can be added in the specified program.