



# **FN-W101 Triggerable MP3 Audio Player/Wall Speaker User's Manual**



*Version: V2.0*

*Release Date: Jan. 8th, 2019*

## 1. Features

- ✧ 4 trigger inputs available and triggered by negative pulse/GND(low level signal).
- ✧ Equipped with a high quality audio decoder chip that is able to decode MP3 and WAV audio formats.
- ✧ Built-in a 4MB flash memory by default, which is able to store total of 4 minutes long MP3 files of 128Kbps.
- ✧ Supports max. 32GB micro SD card.
- ✧ Load audio files to the internal flash memory/SD card through the micro USB port based on PC like using a USB flash drive.
- ✧ Supports multiple functions/trigger modes.
- ✧ The function/trigger mode of each input can be set individually through a configuration file.
- ✧ Can be controlled by buttons, switches or relays.
- ✧ Built-in a 10Watts class D amplifier and a 5Watts speaker for a great sound output.
- ✧ Adjustable sound volume through the small blue potentiometer.
- ✧ Wide power input(9-24V DC) and stable performance.
- ✧ Industrial grade design and strong anti-jamming capability.

## 2. Electrical parameters

- ✧ Working voltage: DC 9V-24V
- ✧ Working current:  $\leq 400\text{mA}$  (Input: DC12V)
- ✧ Power Consumption:  $\leq 5\text{W}$
- ✧ Flash memory size: 4MB(possible to be extended)
- ✧ Audio format: MP3/WAV

## 3. Dimensions





## 4. Operation Guide

### 4.1. Set Work Mode

There are 7 main trigger modes(from "0" to "6") and 5 assistant work modes(from "7" to "B") available for users to set in a configuration file according to the actual needs

Each of the parameters from "0" to "B" represents a corresponding work mode, which can be set individually for each of the 6 trigger inputs. See the details below.

Parameter	Corresponding Trigger Mode
0	Pulse Interruptible
1	Hold and Play in Loop
2	Pulse Non-interruptible
3	Hold and Play Once
4	All in Loop
5	Play Next in Associated Folder
6	Single in Loop
7	Play/Pause
8	Previous
9	Nex
A	Vol+
B	Vol-

### Detailed Explanations on the Main Trigger Modes 0-6

- **Pulse Interruptible:** In this mode, a single negative pulse will start playback. It is possible to interrupt the playback by pressing the same button used to activate. Once playback is interrupted, it will automatically restart the audio file immediately. It's also possible to interrupt the play back by pressing any of the other 3 buttons. Once playback is interrupted, it will automatically start the sound that is associated with the button pressed.
- **Hold and Play in Loop:** In this mode, the negative pulse must be held/maintained to the sound module trigger for audio file to complete. The audio file will only playback while button, or negative pulse, is held/maintained during playback. Once the button being held, or negative pulse, is removed, the playback will be stopped/cancelled. Once the button is kept holding, when the playback of the audio file is finished, it will start to play it repeatedly(loop playback).
- **Pulse Non-interruptible:** In this mode, a single negative pulse will start playback. It's not possible to interrupt the playback by pressing the same button or the other buttons. Once an audio file is triggered, the audio file will not be able to be interrupted/cancelled during playback. The playback will only end when the audio file has played its entirety.

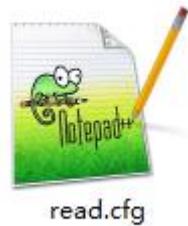
- **Hold and Play Once:** In this mode, the negative pulse must be held/maintained to the sound module trigger for audio file to complete. The audio file will only playback while button, or negative pulse, is held/maintained during playback. Once the button being held, or negative pulse, is removed, the playback will be stopped/canceled. Once the button is kept holding, when the playback of the audio file is finished, it will not start to play it again.
- **All in Loop:** In this mode, a single negative pulse will start playback. Press the button and it's able to play all the audio files in the storage device one by one in loop. During playback, if the the same button is pressed again, the playback will be stopped. In addition, if the associated trigger input is shortened with GND first, the player will automatically play the audio files one by one in loop once it is powered on.
- **Play Next in Associated Folder:** In this mode, a single negative pulse will start playback. Every time press the button and it's able to play next audio file and stops when the audio file is finished in the associated folder. During playback, if the the same button is pressed again, the playback will be interrupted and it will activate the next audio file at the same time. In this mode, as many as 100 audio files can be loaded into the folder.
- **Single in Loop:** In this mode, a single negative pulse will start playback. Press the button and it's able to play the associated audio file in loop. During playback, if the the same button is pressed again, the playback will be stopped.

Any of these 12 work modes can be set for any of the 6 trigger inputs through a configuration file named "read.cfg", which comes from a text file(.txt) originally. In the configuration file, each digit that represents the work mode is associated with one trigger input, so there are total of 6 digits that associate 6 trigger inputs respectively. Please refer to the two steps below on how to build a configuration file successfully.

1). Build a new text file on computer and enter the corresponding number like "001133" that represents the input 1 and input 2 will be set with the trigger mode "Pulse Interruptible", input 3 and input 4 will be set with the trigger mode "Hold and Play in Loop" , input 5 and input 6 will be set with the trigger mode "Hold and Play Once". Refer to the image below.

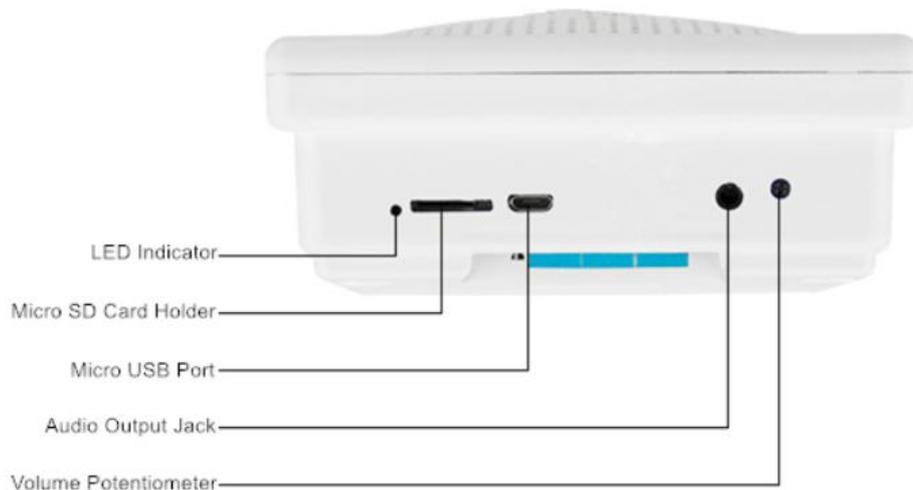


2). Save it and change the file name "xxx.txt" to "read.cfg". Please make sure your computer shows filename extensions. The extension ".txt" must be changed to ".cfg", otherwise the file is not workable. Refer to the image below.



## 4.2. Audio Files Loading

See the image below. There is a micro USB port on the device, and users can connect it to computer through an Android phone purposed USB cable to load audio files and configuration file. If there is a micro SD card inserted onto the device, the micro SD card will be detected and displayed on PC working as a USB flash drive. If there is no micro SD card, the built-in flash memory will be detected and displayed on PC working as a USB flash drive.

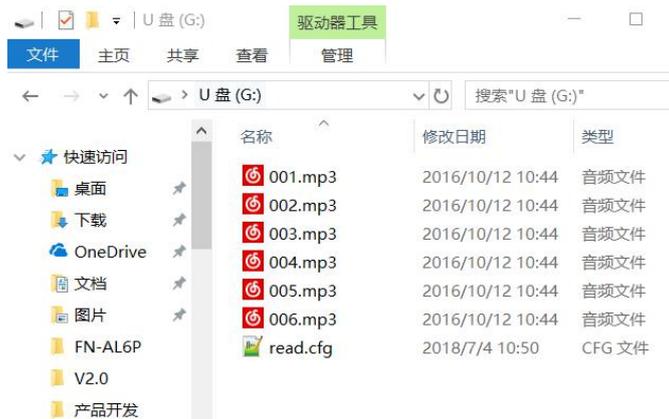


### 4.2.1. Files Loading Method for Trigger Mode 0-4, 6

Except for the trigger mode 5(Play Next in Associated Folder) that supports multiple audio files, all of the other 6 main trigger modes(0-4, and 6) work based on one-on-one control. 6 audio files need to be directly stored in the root directory of the flash memory/micro SD card. No folders can be in the 'root directory'. The arrangements of the audio files are managed by a physical indexing sequence. In other words, the file that is to be loaded first in the storage device will be associated with input 1. The last file to be loaded in the storage device will be associated with input 6. In order to guarantee a correct 'one-on-one' order, please refer to the following steps.

- 1). Build a new folder on the computer and put the 6 audio files into this new folder.
- 2). Rename the audio files from 001.mp3/wav to "006.mp3/wav", and make sure they are ranked from "001.mp3/wav" to "006.mp3/wav" in order.
- 3). Connect the equipment with computer through the USB cable, and you will see a removable disk.
- 4). Delete the sample audio files pre-loaded at factory for testing purpose.
- 5). Back to the folder and select all of the 6 audio files in the folder.
- 6). Right click on the first file (001.mp3/wav) and choose "Send to removable disk".
- 7). This should send the 6 audio files to the memory in a correct sequence.
- 8). Put the prepared configuration file into the root directory together with audio files and then refresh.

Refer to the image below.



9). Safely remove the USB cable from computer.

10). Apply power to the equipment and push any of 6 buttons to play back a corresponding sound.

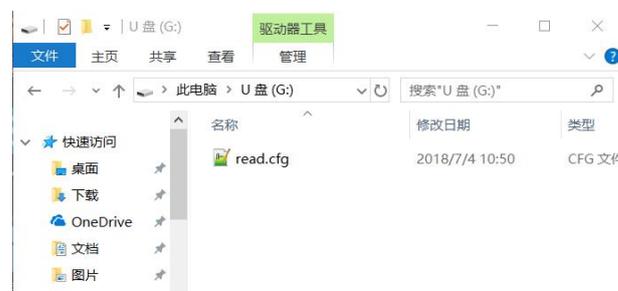
**Notes: 1). If the total of 6 audio files is less than 4Mbytes, it's fine to directly use the built-in flash memory. If they are larger than 4Mbytes, please use a micro card instead. Even though you use a micro SD card to load audio files, the configuration file must be saved into the built-in flash memory first. The configuration file saved in micro SD card is not workable. Please just save audio files only in micro SD card.**

**2). Any of the 5 assistant work modes(from "7" to "B") can be set for any of the 6 trigger inputs as well when using this file loading method. It's also fine all of these 5 assistant work modes are set at the same time for 5 of 6 trigger inputs.**

#### 4.2.2. Files Loading Method for Triggering Mode 5

The trigger mode 5(Play Next in Folder) is a special feature of this device that is able to meet some special applications. In this mode we suggest users directly use a micro SD card to store the audio files. When building the configuration file, please fill in the number "555555". In this way all of the 6 trigger inputs will be worked in mode 5(Play Next in Folder). It's also fine if you just want the first 3 trigger inputs to be worked in mode 5, and the latter 3 trigger inputs to be worked in the other modes like filling in the number"555012". Let's take all of the 6 trigger inputs to be worked in mode 5 as example. Please refer to the steps below on how to load the audio files.

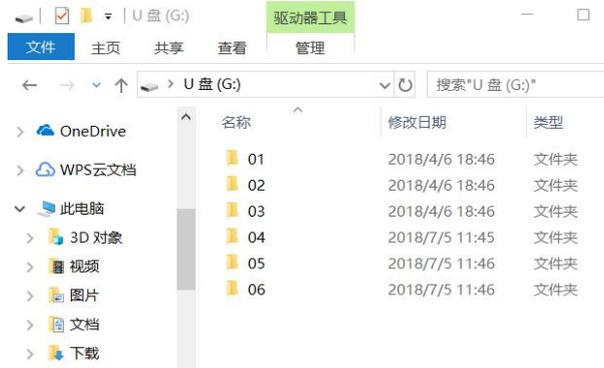
1). Firstly connect the device(without micro SD card) to computer using an Android phone purposed USB cable, and copy the ready configuration into the flash memory of the device. See the image below.



2). Safely remove the device/built-in flash memory from computer.

3). Insert the micro SD card onto the device and connect the device again to computer. Now the the micro SD card will be detected on computer. Make sure it's empty. If not, please get it emptied.

4). Build 6 new folders in the micro SD card and rename them 01, 02, 03, 04, 05, and 06. The first trigger input will be associated with the folder 01, the second trigger input will be associated with the folder 03,...and the sixth trigger input will be associated with folder 06. Refer to the image below.



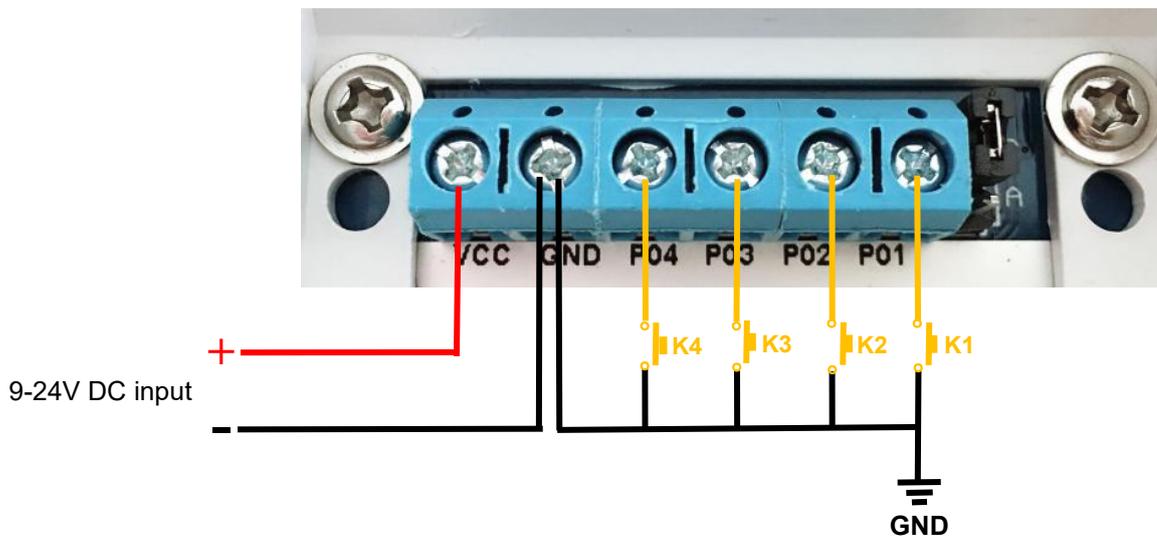
5). Respectively copy audio files from computer to the related folder. The audio files in the folders can be renamed as 001.mp3/001.wav, 002.mp3/002.wav, 003.mp3/003.wav.....It also works if you don't change the names.

6). Safely remove the device/micro SD card from computer.

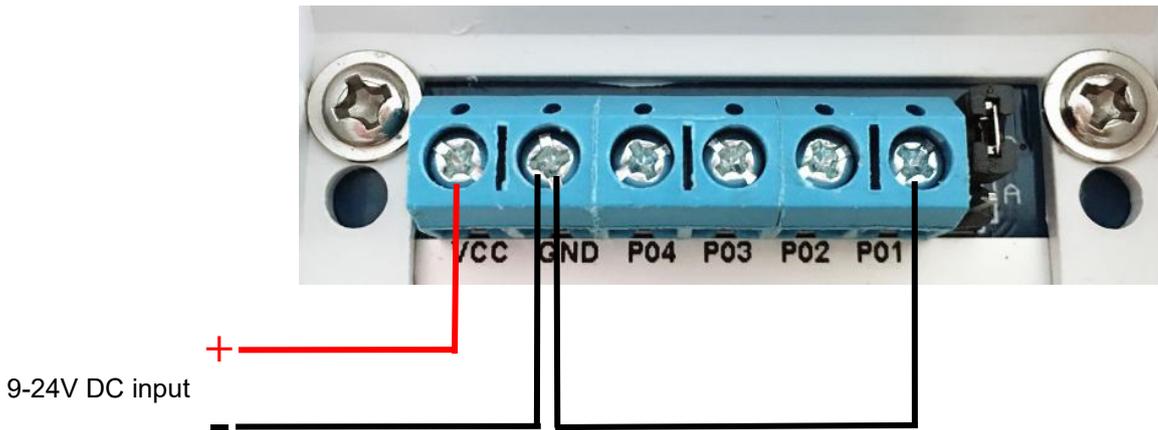
7). Apply power to the equipment and push any of 6 buttons to play back a sound from the associated folder.

### 4.3. Examples of Wiring Connection

#### 4.3.1. Reference for Normal Use



#### 4.3.2. Reference for Automatic Loop Playback When Powered Up



This wiring method is for those customers' reference, who need the player to play the sound messages automatically in a loop once it's powered up. Besides, to achieve this function the trigger mode in the configuration file must be "4" for the first trigger input only.

**5. Relation table between flash capacity and time duration supported based on different bit rates of MP3 files**

Time unit: second

Capacity \ Bit rate	Capacity	
	4Mbytes	8Mbytes
16Kbps	2022	4045
24Kbps	1309	2618
32Kbps	906	1812
64Kbps	477	955
96Kbps	325	651
128Kbps	246	493
160Kbps	194	389
192Kbps	161	323
256Kbps	120	241
320Kbps	95	191