# Sound Effect Generator Wizard User's Guide

Revision: V1.00 Date: May 23, 2018

www.holtek.com

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# The Sound Effect Generator Wizard Software

## Introduction

The Sound Effect Generator Wizard software is specially designed to facilitate easy use of the Holtek waveform generator flash MCU series. Its graphical user interface reduces the need to develop program codes. The program codes automatically generated by this software can be directly programmed into the Holtek waveform generator flash MCUs.

The Sound Effect Generator Wizard ensures simple generation of sound effects thus assisting designers to create prototypes and complete their projects in a minimum of time.

## System Combination

The system is mainly composed of both software and hardware:

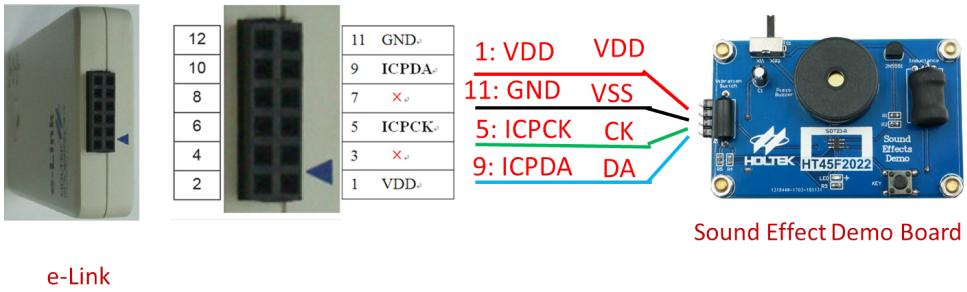
- Software: Sound Effect Generator Wizard
- Hardware: Build your application circuit or use the Sound Effect Demo Board. When you complete the graphic setups in this software, an application circuit is generated automatically. You can then construct the hardware according to the application circuit or you can use the Sound Effect Demo Board.
  - Holtek e-Link: used to program to the MCU.

## Hardware Connection

To download sound effects to the Sound Effect Demo Board, the hardware connection is shown as follows.

The e-Link connects to the Sound Effect Demo Board through the four-wire OCDS interface.

**Hardware Connection**

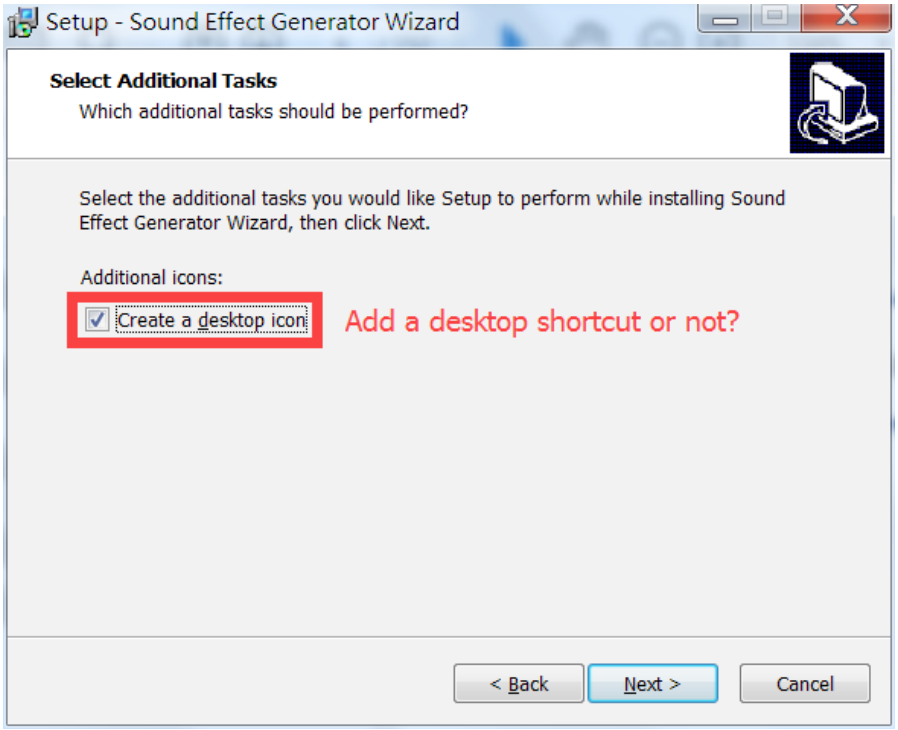



**Pin connection of e-Link and Sound Effect Demo Board**

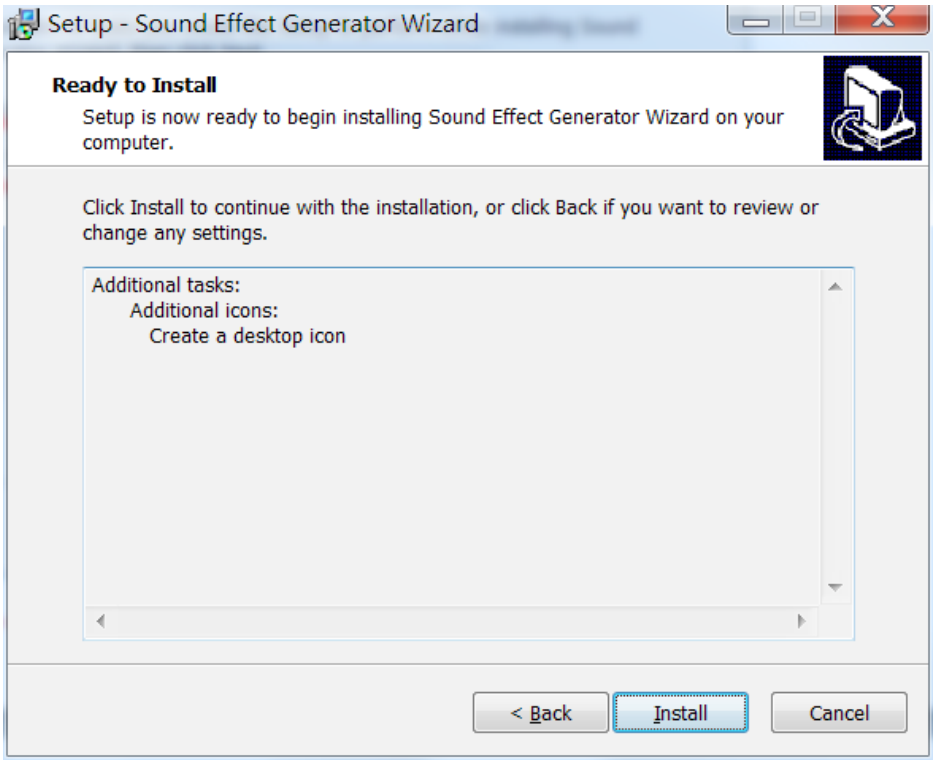
## Software Installation

Step1. Download the Sound Effect Generator Wizard software from the Holtek website [link] Decompress and execute the software.

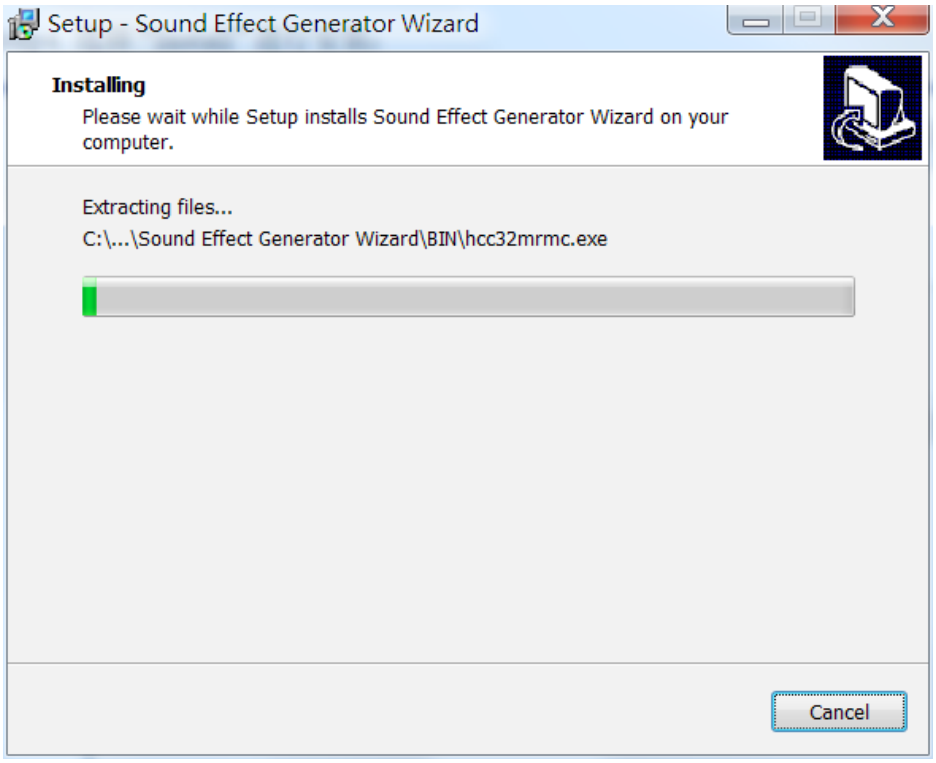
Step2. Click "Next"



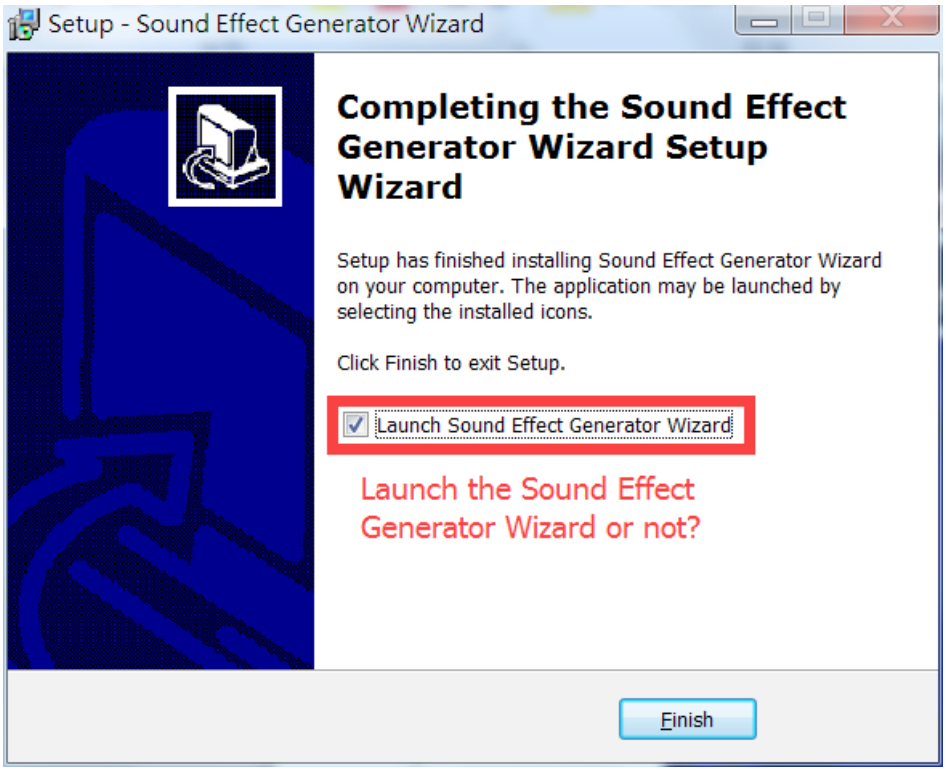
Step3. Click "Next"




Step4. Click "Install" to start installation

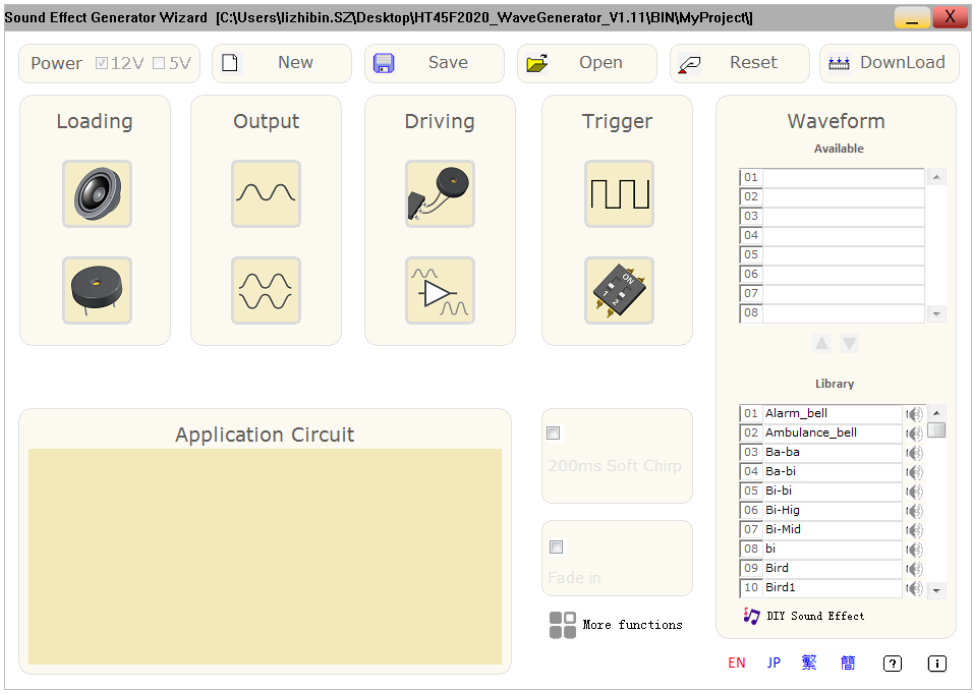


Step5. Click "Finish" to complete the installation.



# Software Operation

## Start Sound Effect Generator Wizard

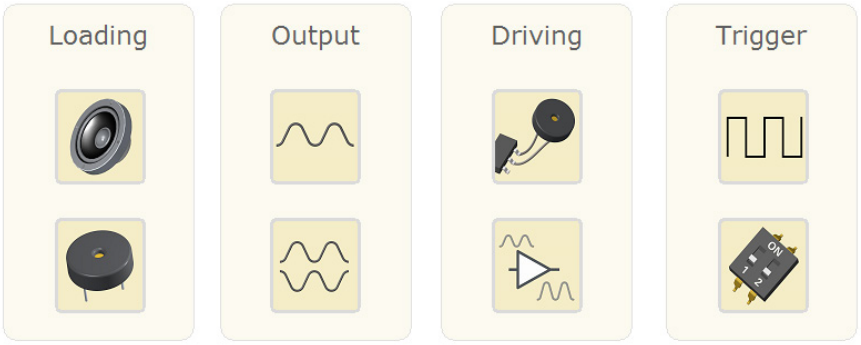



## Create a new project

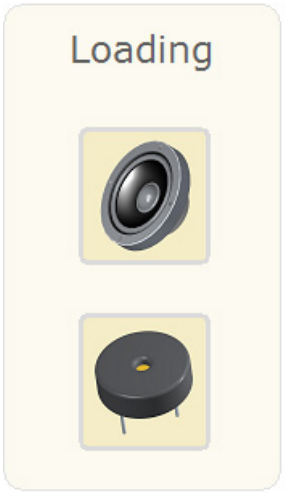
Step1. Select "New"

Step2. Choose a directory to store the project. When completed, the below message is shown.

Step3. Set the following four hardware configurations: Loading, Output, Driving, and Trigger.




- Configure "Loading"

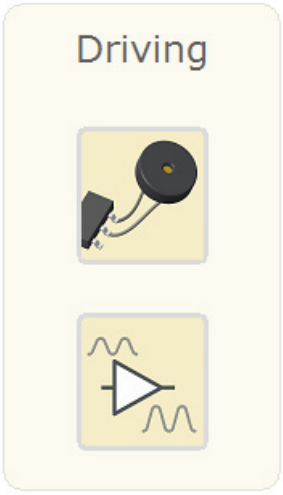



- If the load is a speaker, click
- If the load is a piezo buzzer, click

- Configure "Output"

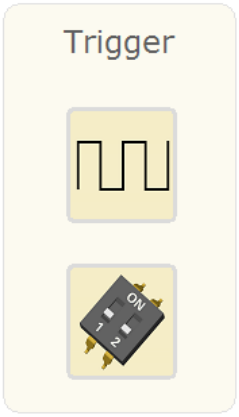
  - If the output signal is single-ended, click
  - If the output signal is complementary, click

- Configure "Driving"



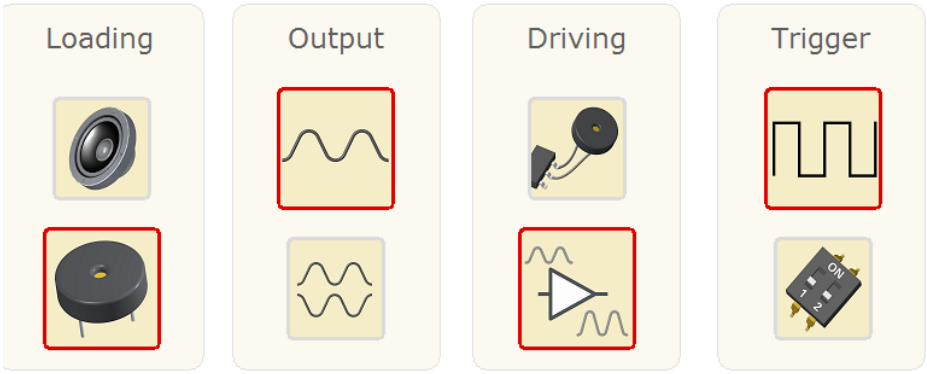

  - If driving is from I/O, click
  - If driving is from amplifier, click

- Configure "Trigger"

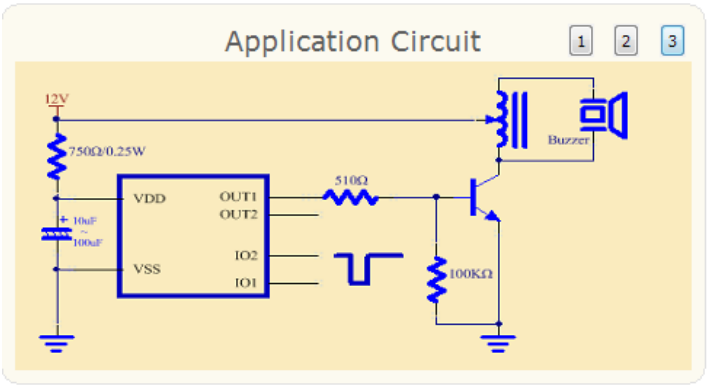



  - If a button is used to switch sounds, click
  - If a DIP switch is used to switch sounds, click

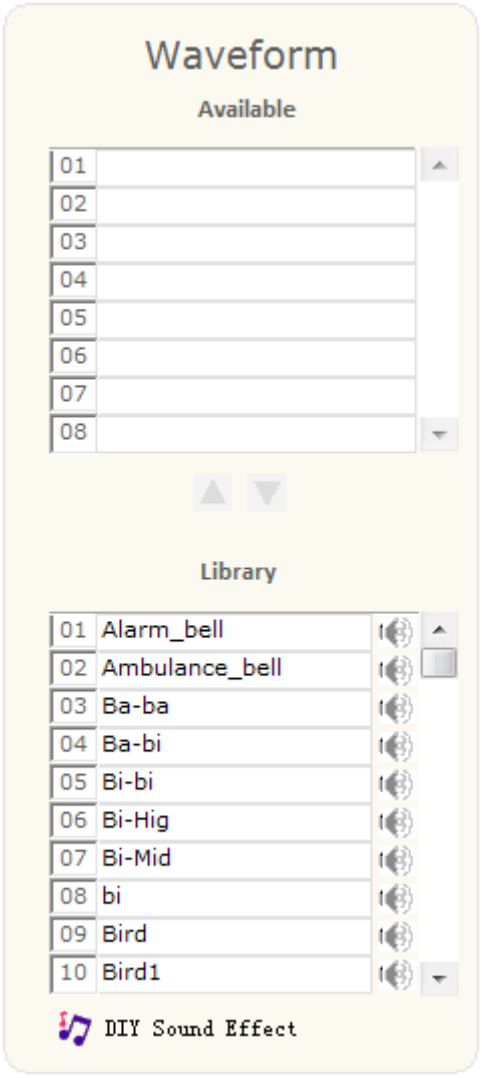
- If the Sound Effect Demo Board is used, configure as shown below.




  - The associated application circuit is generated automatically.



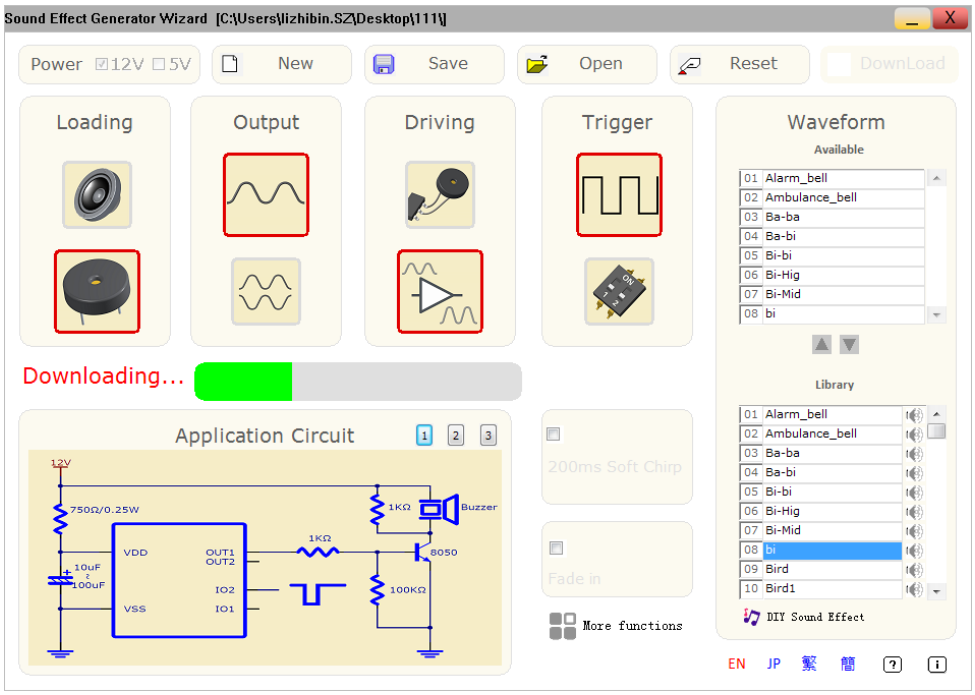
Step3. Select the sounds after completing the configuration.



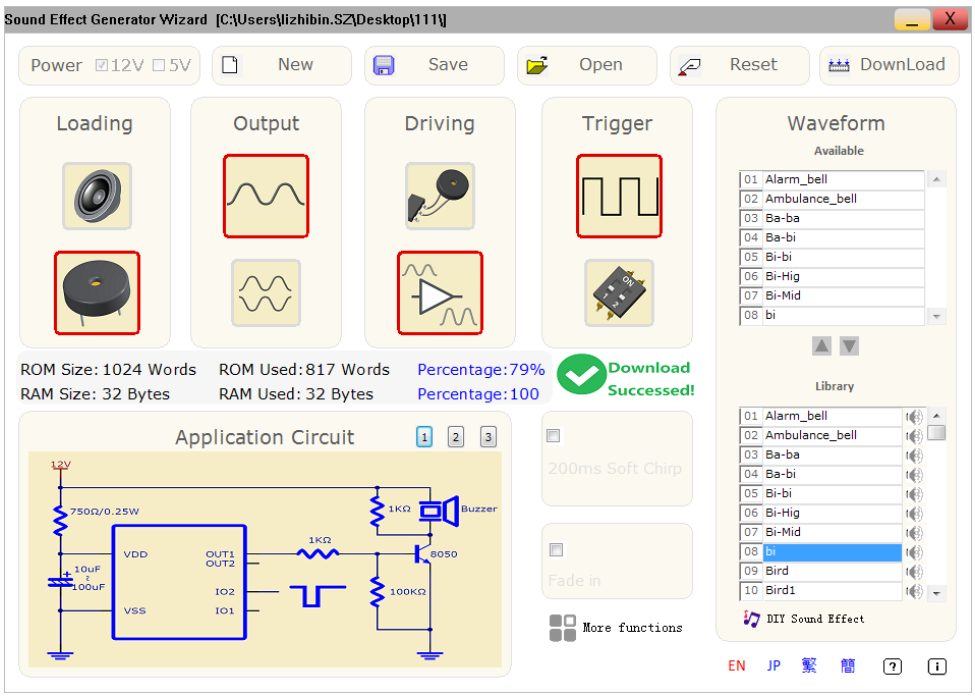

- Double-click the sound in the "Library" to add it to the "Available" list.
  - You may also click the Up/Down triangle icon to add/remove a sound to/from the "Available" list.

Step4. Click "DownLoad" to start programming the Holtek waveform generator flash MCU.

- Ensure that the hardware connection is correct before downloading.



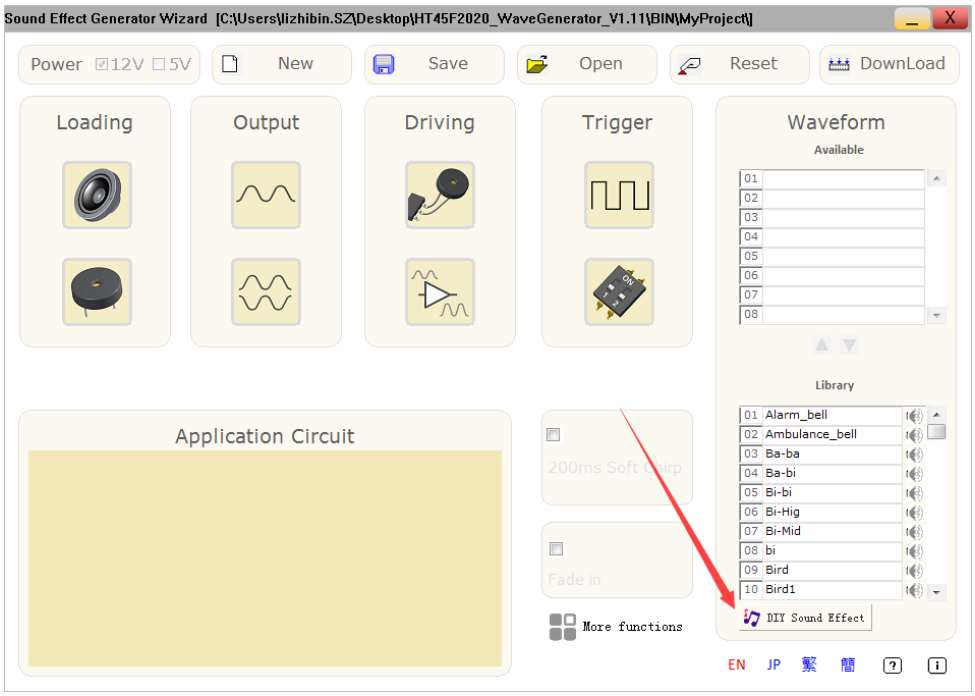

- If successful then the display will be as follows:



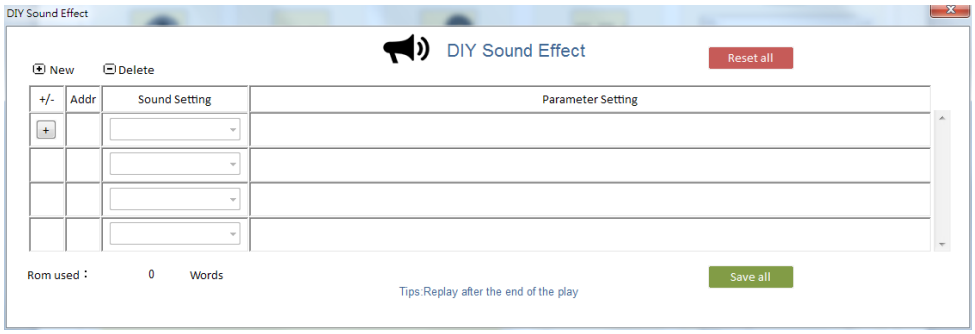
# Design Your Own Sound Effect

## Use "DIY Sound Effect"

Start the software and click "DIY Sound Effect"

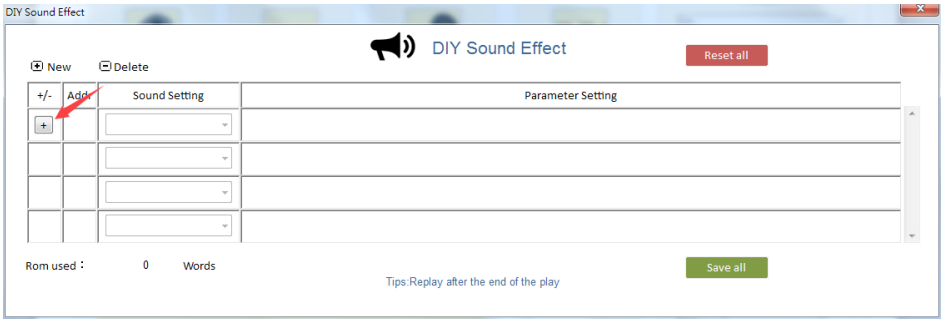



The DIY Sound Effect pop-up window is as follows.

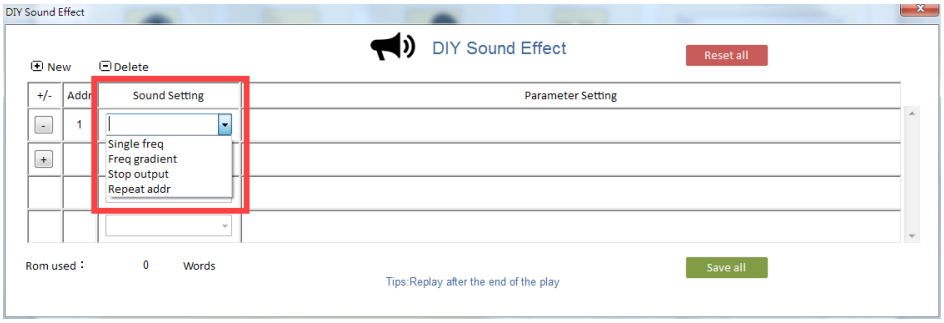


## Create Your Own Sound Effect

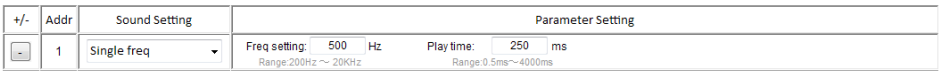
Step1. Click "+" to add a new sound effect setting.



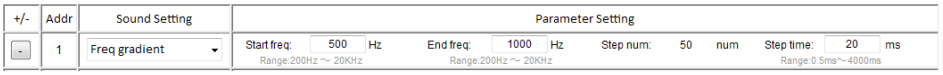

Step2. There are four Sound Setting options:




- Single freq.: set the frequency and the play time length.

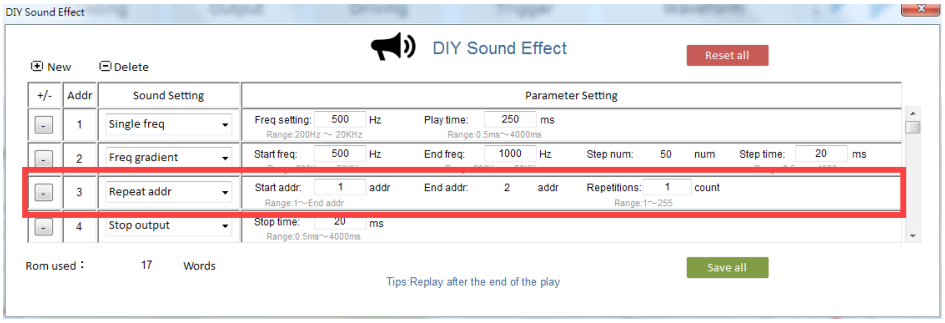



- Freq. gradient: set the start frequency, end frequency, frequency step number and the time duration for each frequency step.



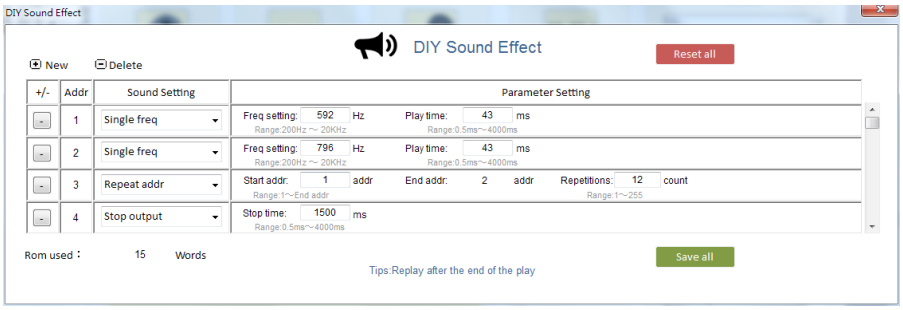

- Stop output: set the time duration after the sound ends playing.

- Repeat addr: set the start address, end address, and repeat play counts.



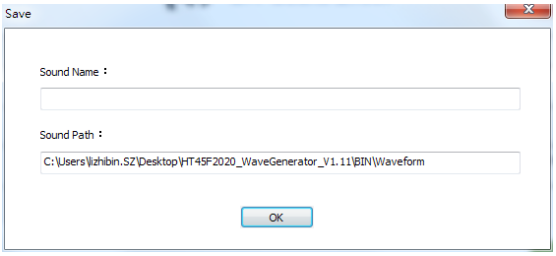
Step3. Example: design a telephone ringtone

- The telephone ringtone is composed of 592Hz and 796Hz ringing alternately with a duration time of 43ms each. It rings repeatedly for 13 times and then stops for 1.5s.

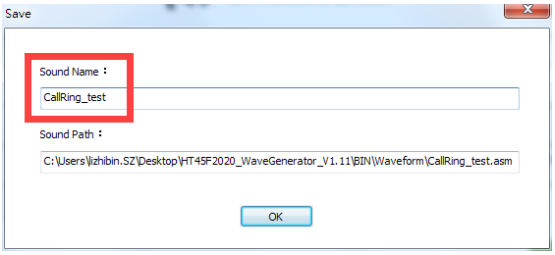



Note that after the sound effect is played once, it starts automatically again from the beginning by default.

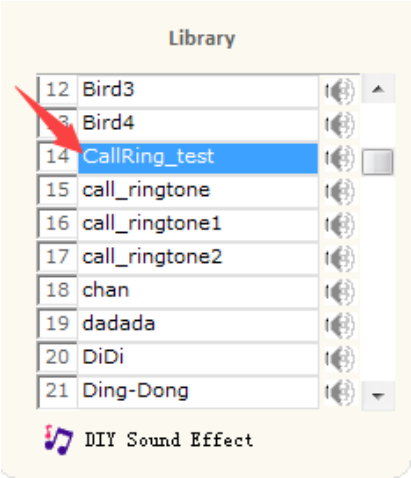
- Click Save all after which the pop up window below will be shown.




- Enter the name in the Sound Name field, for example, CallRing_test. Then, click OK to save the sound.



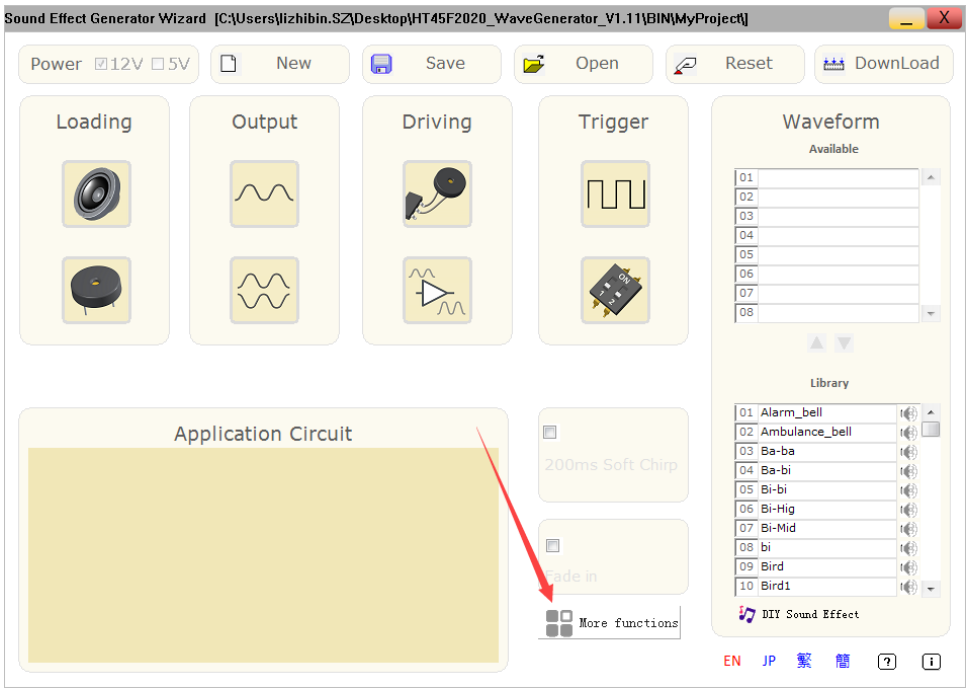
- Close the DIY Sound Effect window, the created "CallRing_test" sound is alphabetically listed in the Library menu.



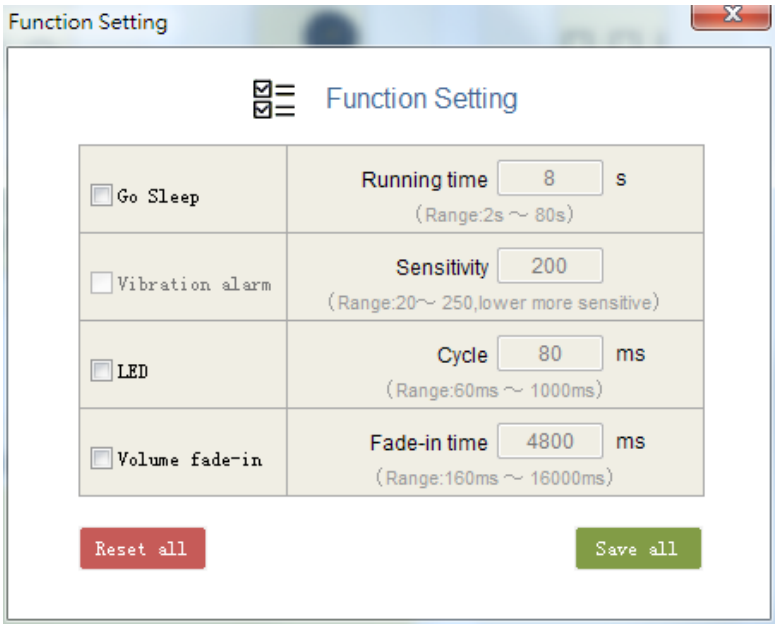

## More Function Settings

### Open "More Functions"

Click "More functions".

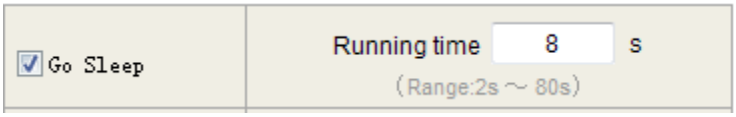


The Function Setting window will then pop up.




## Function Settings

- Go Sleep: Set the sound effect playing duration in a range of 2 to 80 seconds. After this duration the MCU will enter the sleep mode.

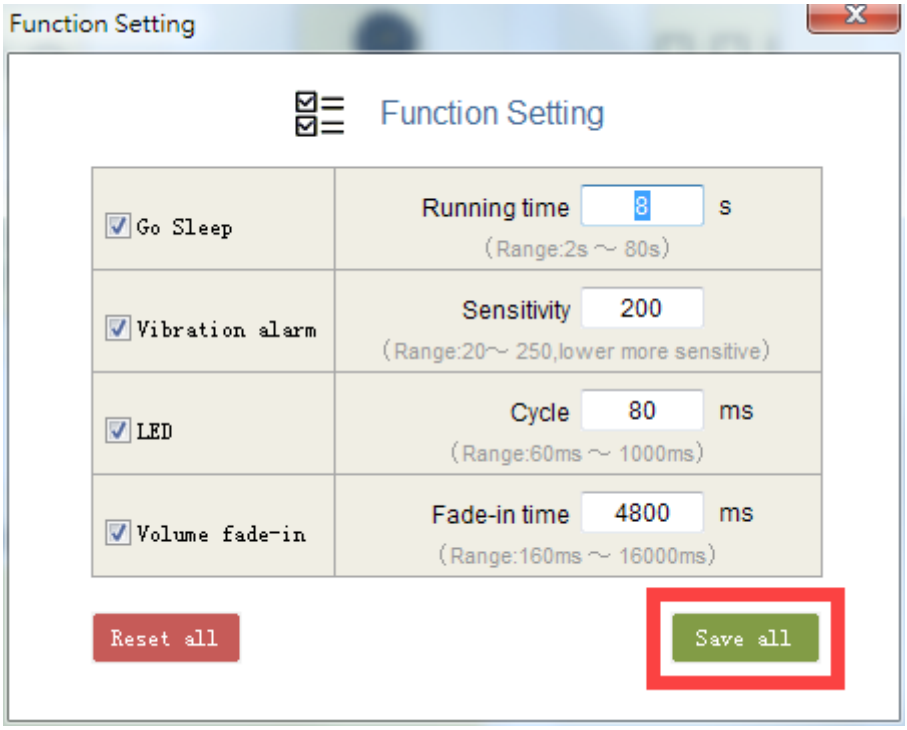



- Vibration alarm: Set the sensitivity of the vibration sensor on the Sound Effect Demo Board. The sensitivity level is from 20 to 250, with the lower number representing higher sensitivity. When a vibration is detected, the MCU will be woken up and start playing the current sound effect. This function should be used with the "Go Sleep" function.

- LED: Set the LED on the Sound Effect Demo Board to flash along with the playing sound effect. The flash cycle time ranges from 60 to 1000 ms.

- Volume fade-in: Set the time period for the sound to increase gradually. The fade-in time ranges from 160ms to 16 seconds.

Click "Save all" to store the settings.




Now the waveform generator MCU can be programmed (the "DownLoad" function) and verified along with the sound effect functions.

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