

aSPI28W

User Guide

USB writer for aMTPxxM series

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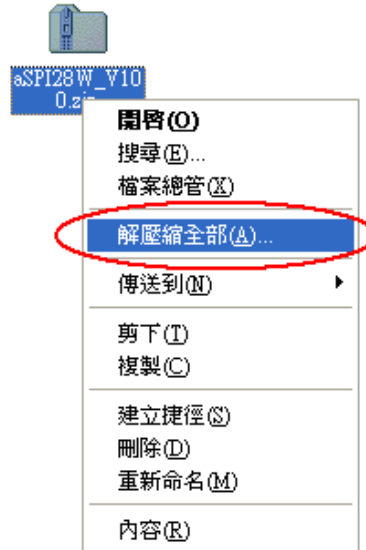
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sales@aplusinc.com.tw

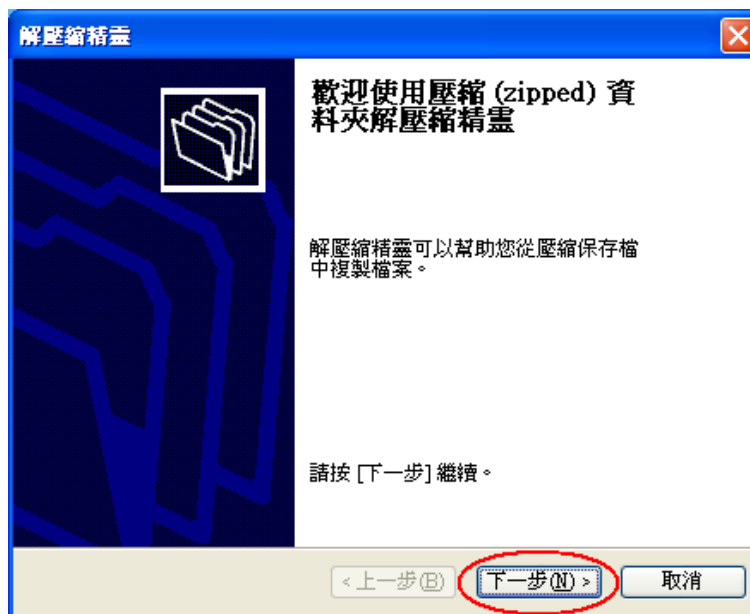
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■ Install Software In Windows XP

1. Right-click on the aSPI28W zip file, and click [Extract All...] .



2. Click [Next] .



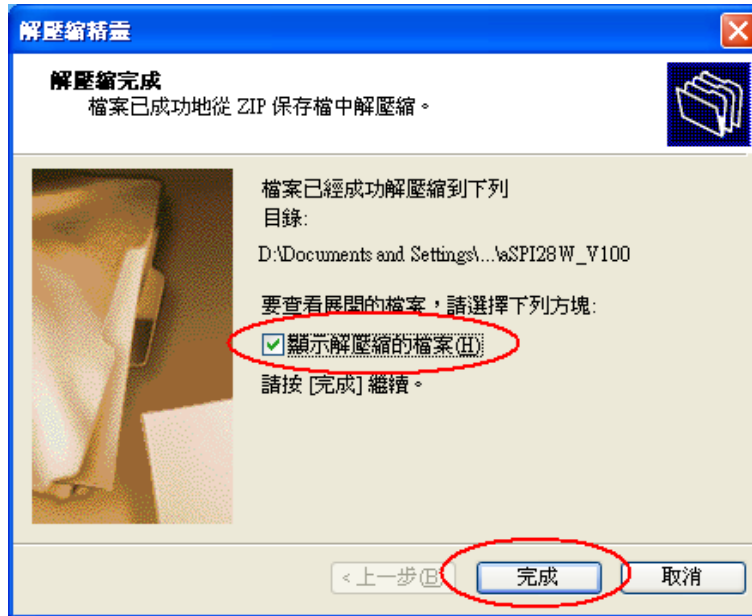
3. Click [Next].



4. Windows will start to extract files.



5. Select [Show extracted files] , then click [Finish] .

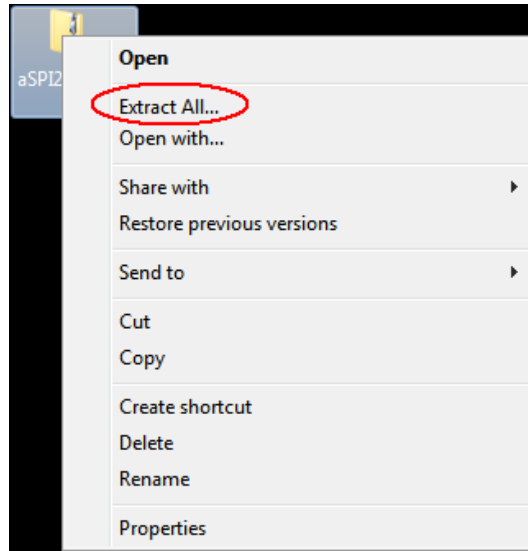


6. Windows will extract all files in the same directory with the zip file.

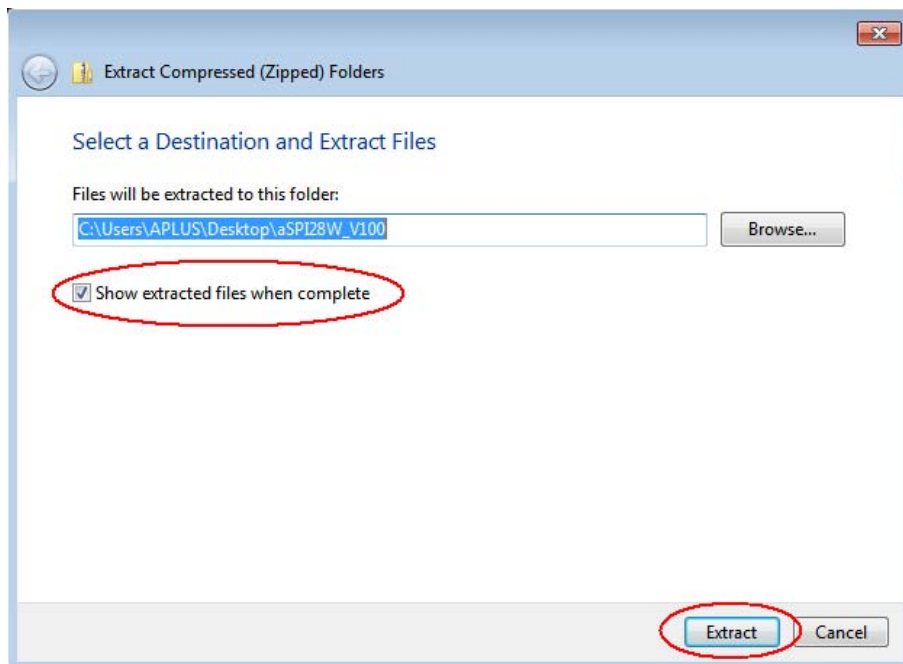


■ Install Software In Windows 7

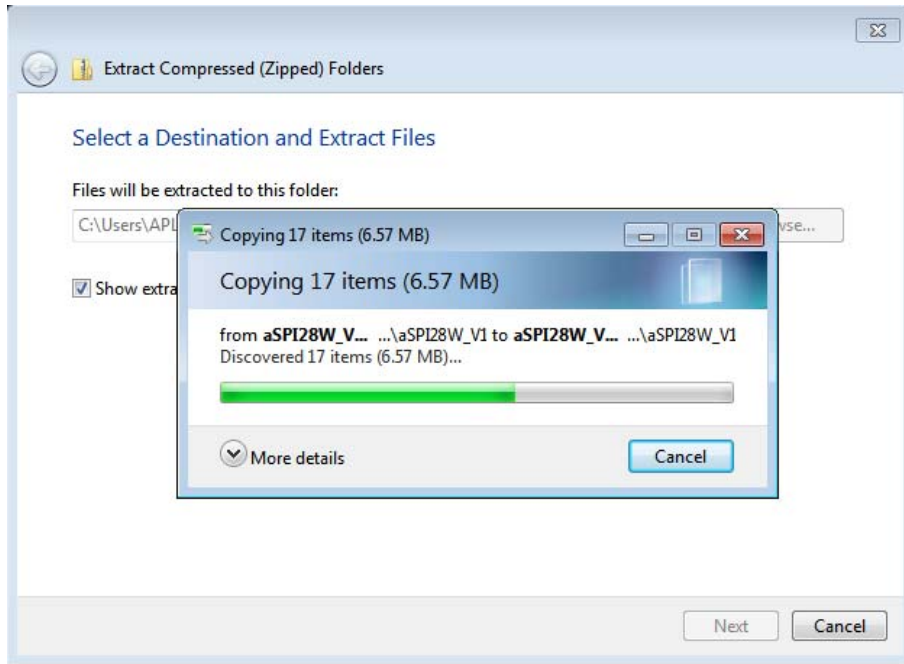
1. Right-click on the aSPI28W zip file, and click [Extract All...] .



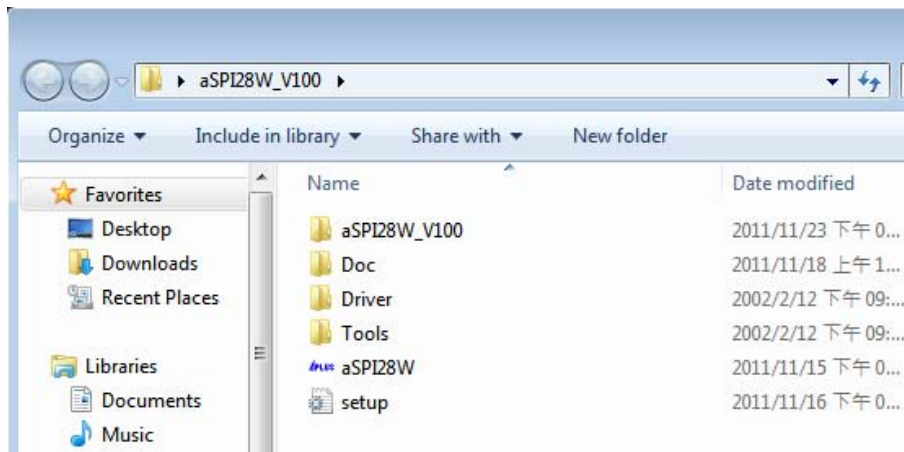
2. Select [Show extracted files when complete] , then Click [Extract] .



3. Windows will start to extract files.

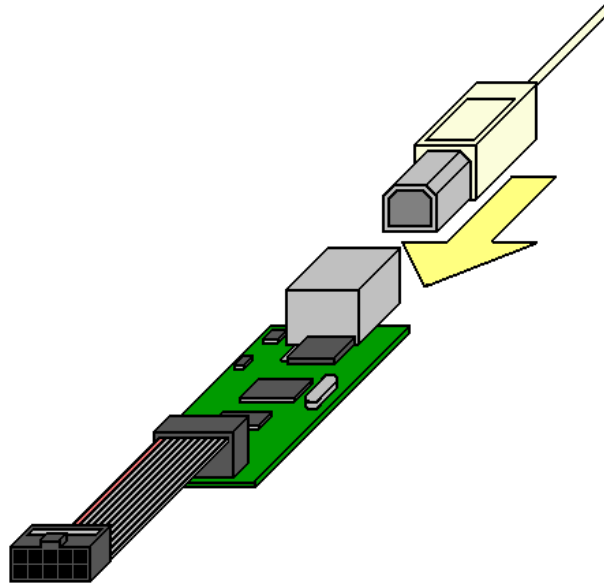


4. Windows will extract all files in the same directory with the zip file.

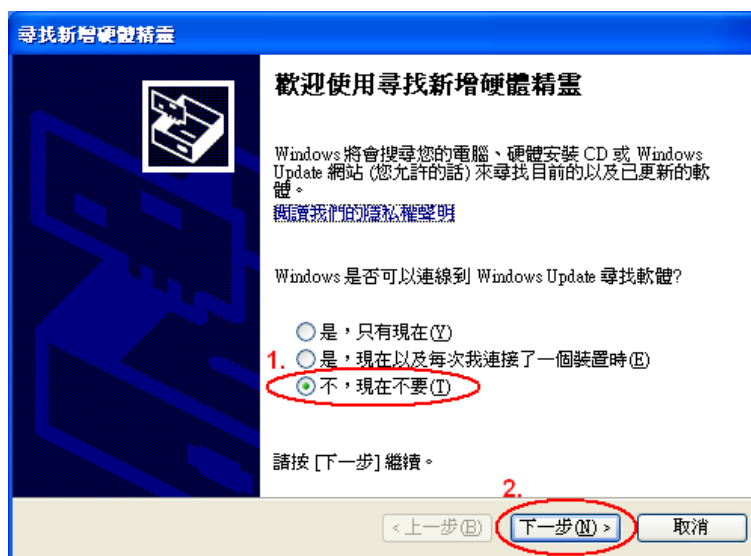


■ Install Driver In Windows XP

1. Connect aSPI28W to your computer by USB cable.



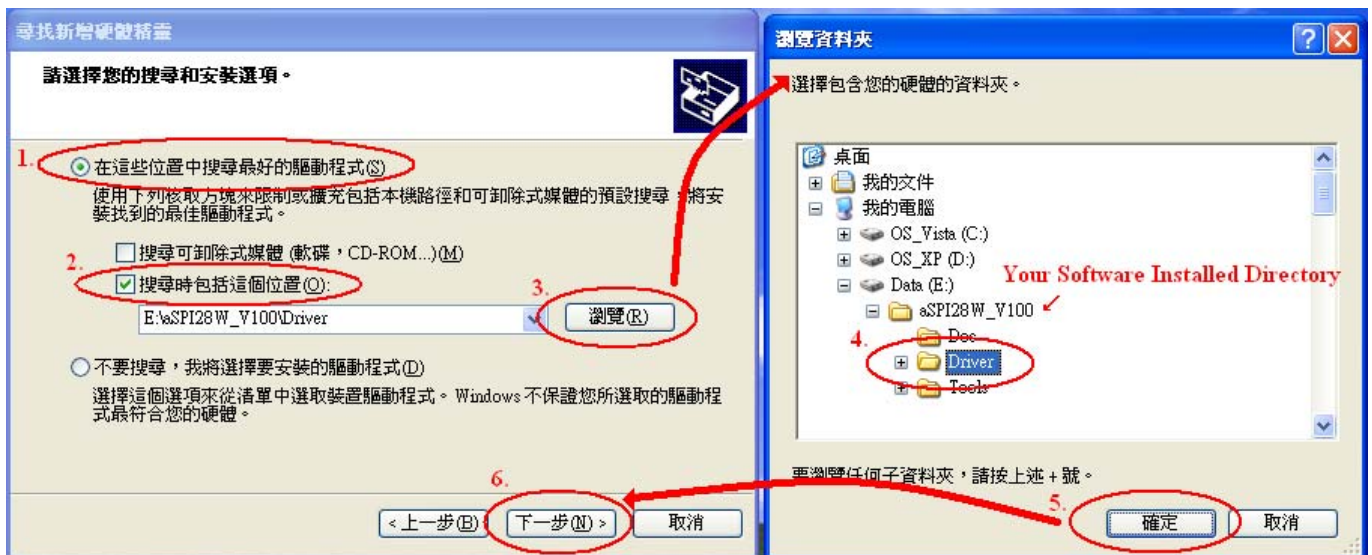
2. When first time connect aSPI28W to the computer, windows will show “Found New Hardware Wizard” windows, select [No, not this time], then click [Next].



3. Select [Install from a list or specific location (Advanced)], then click [Next].



4. Select or click and follow below graph to assign the driver.



5. Windows will copy the driver to your PC and start to install.

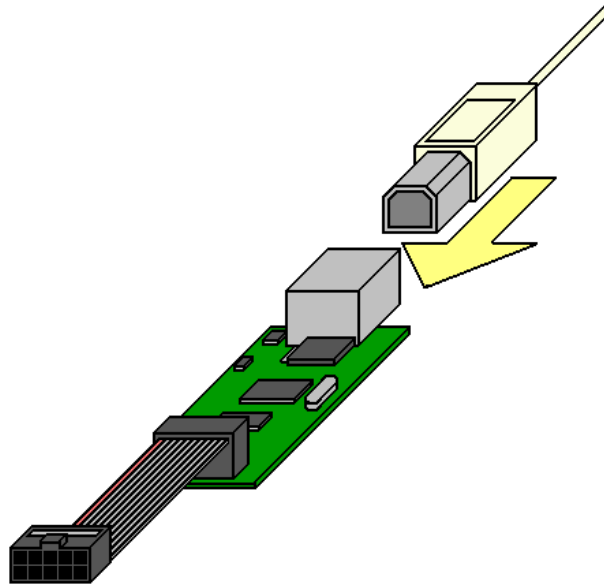


6. Click [Finish] to end of install driver.

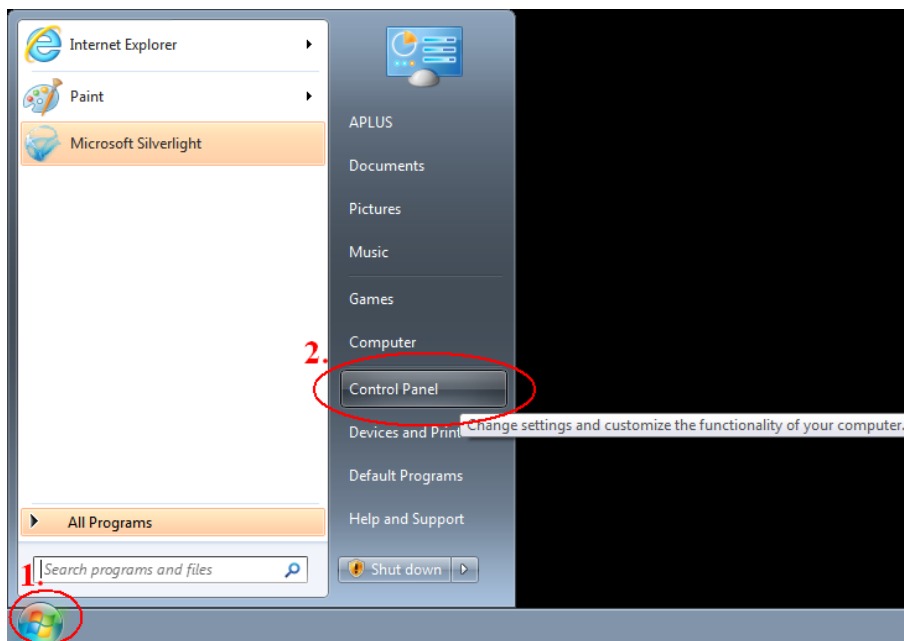


■ Install Driver In Windows 7

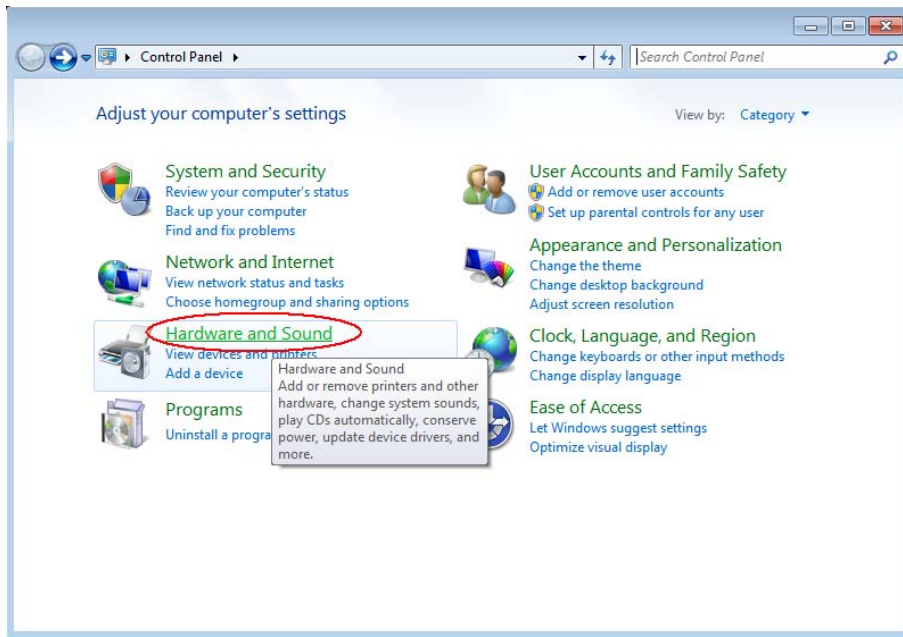
1. Connect aSPI28W to your computer by USB cable.



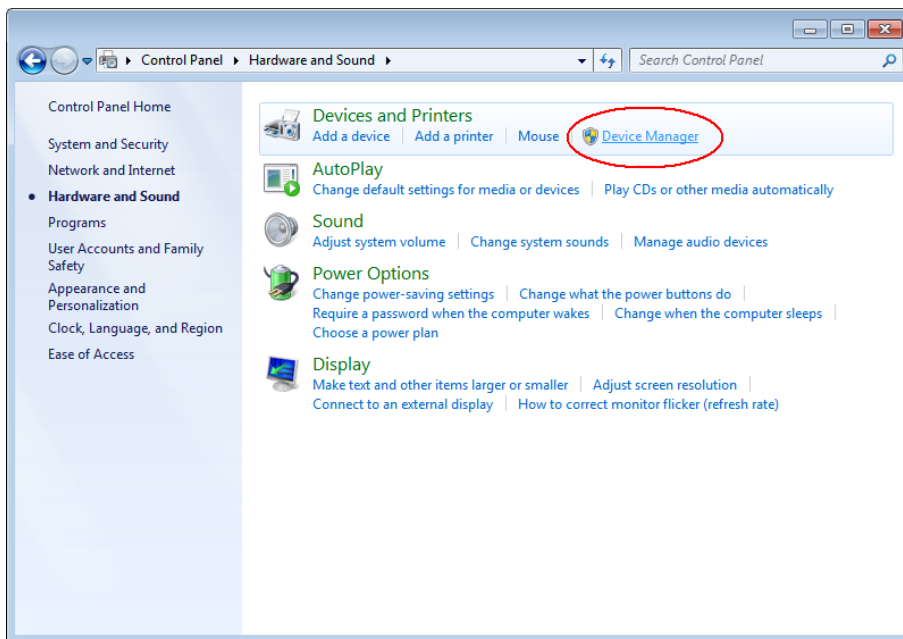
2. Click and follow below graph to open [Control Panel] .



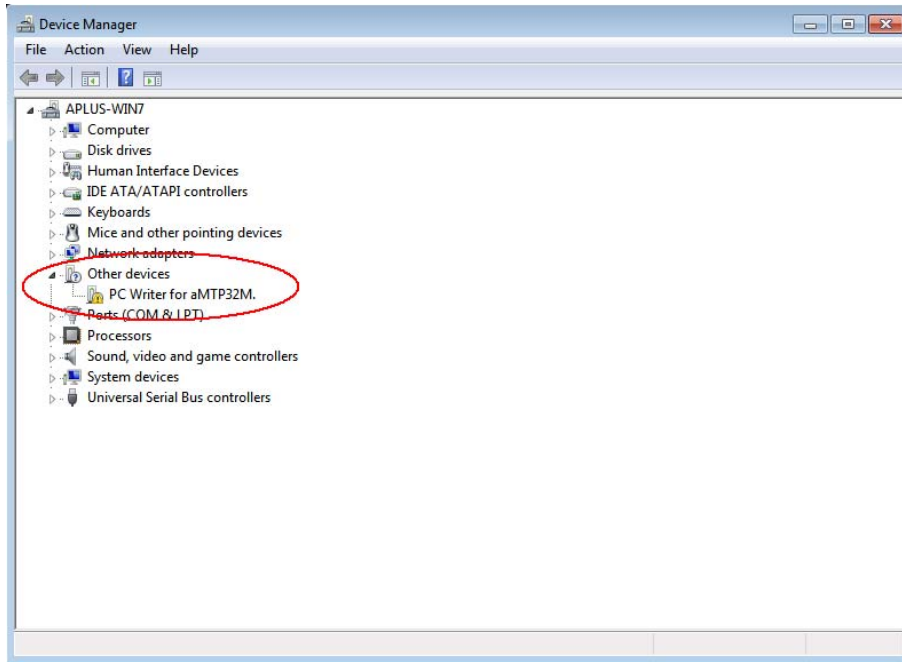
3. Click and follow below graph to open [Hardware and Sound] .



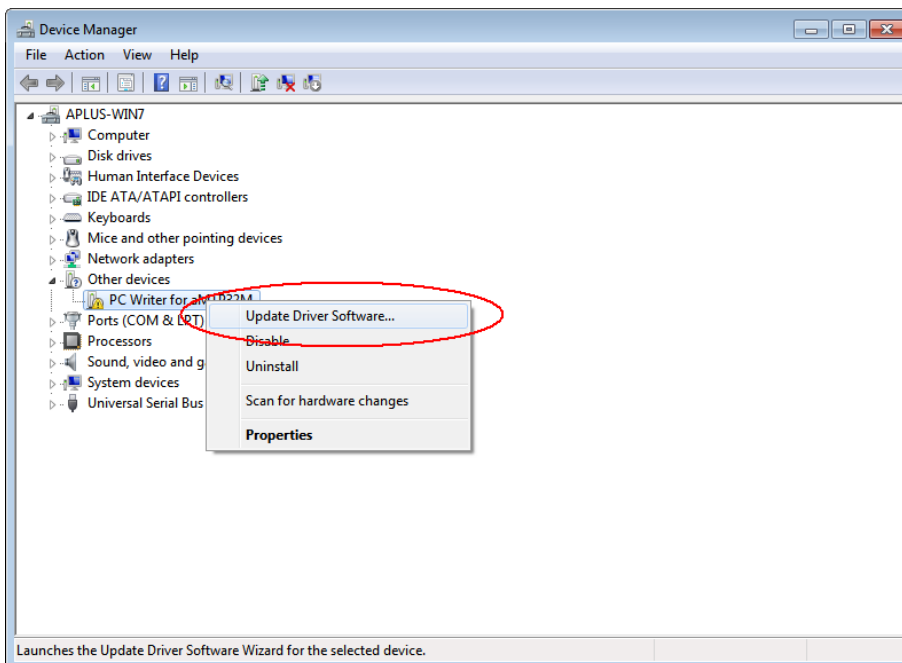
4. Click and follow below graph to open [Device Manager] .



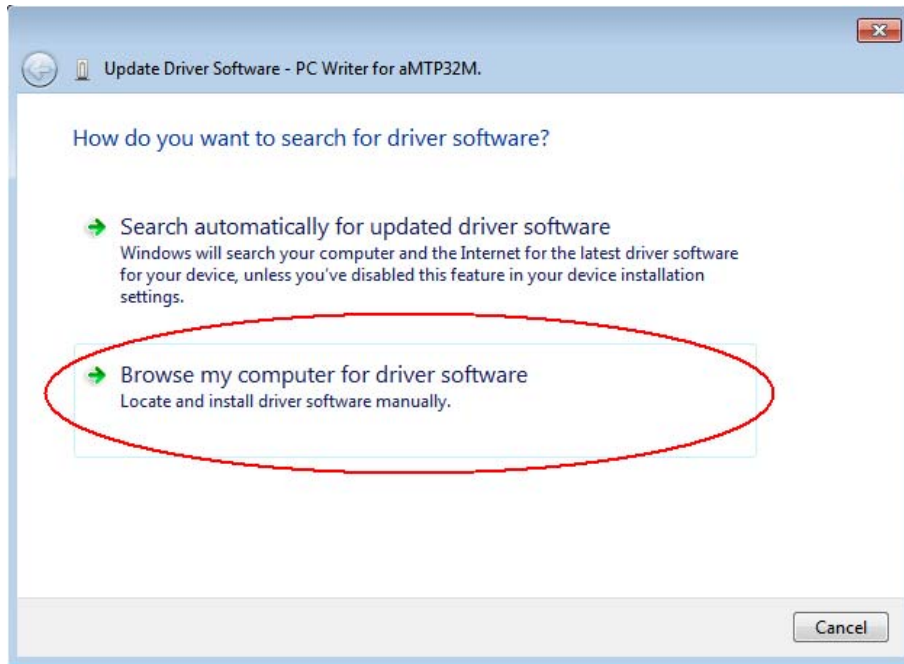
5. You can find aMTP32M in the list.



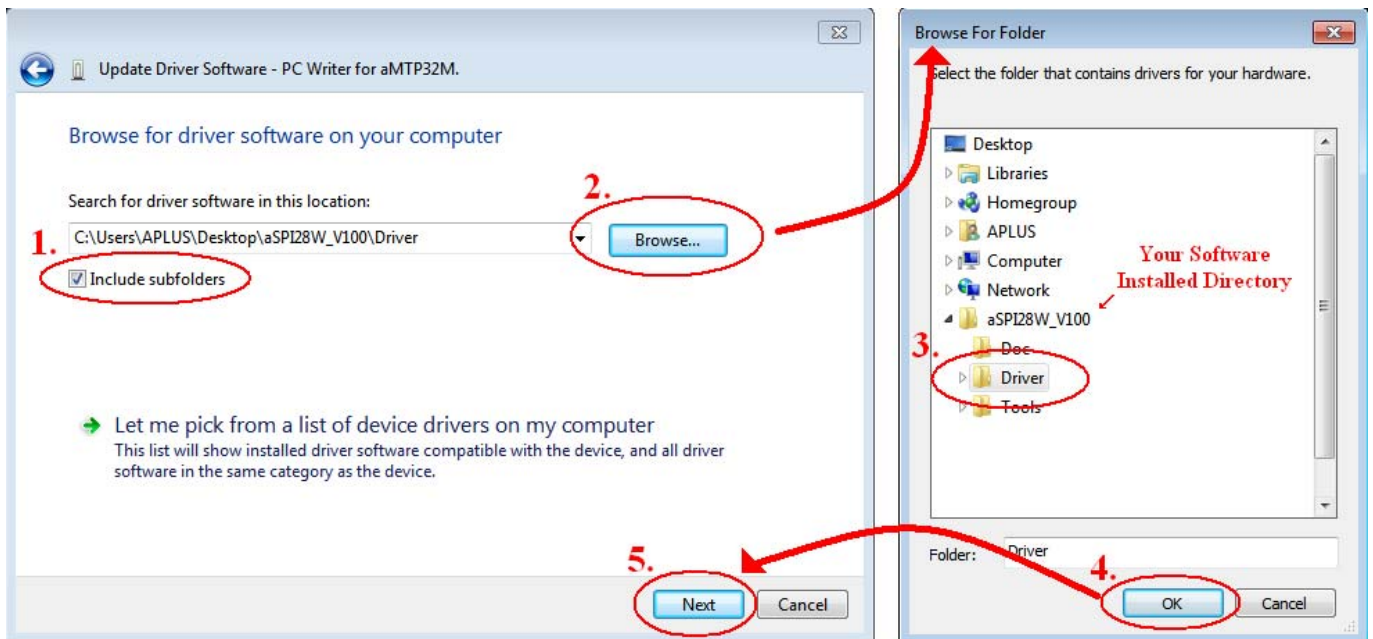
6. Right-click aMTP32M icon, and click [Update Device Software...].



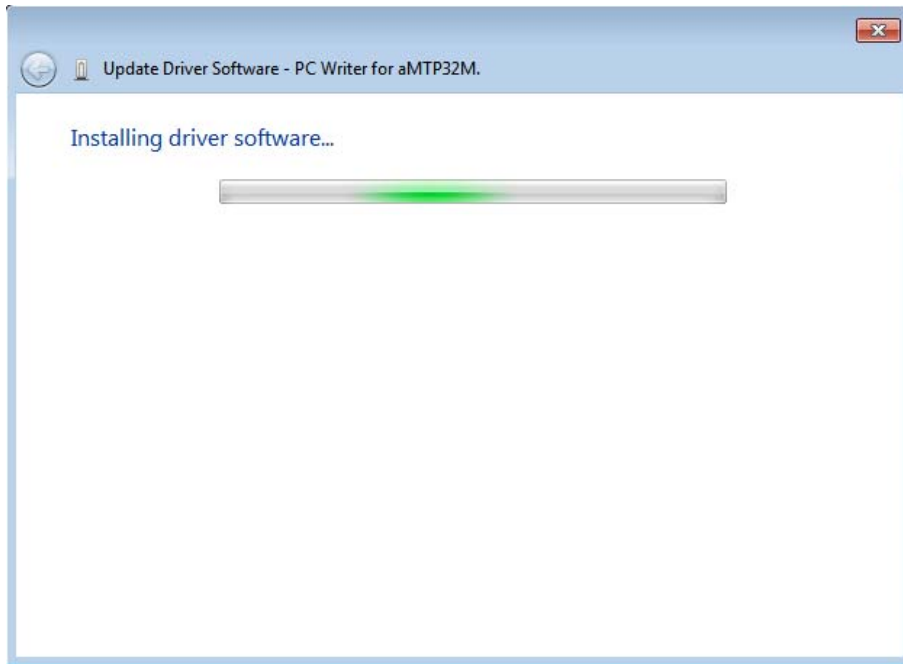
7. Click and follow below graph to install driver manually.



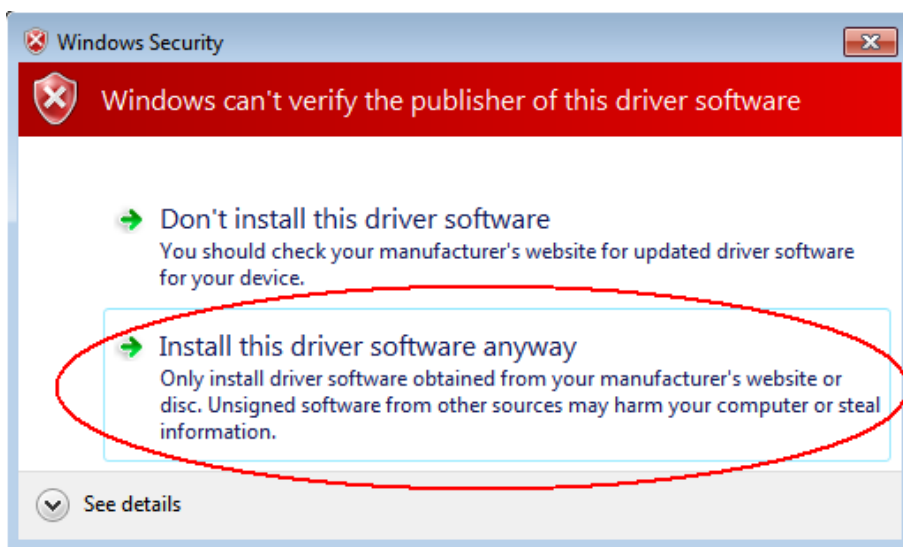
8. Select or click and follow below graph to assign the driver.



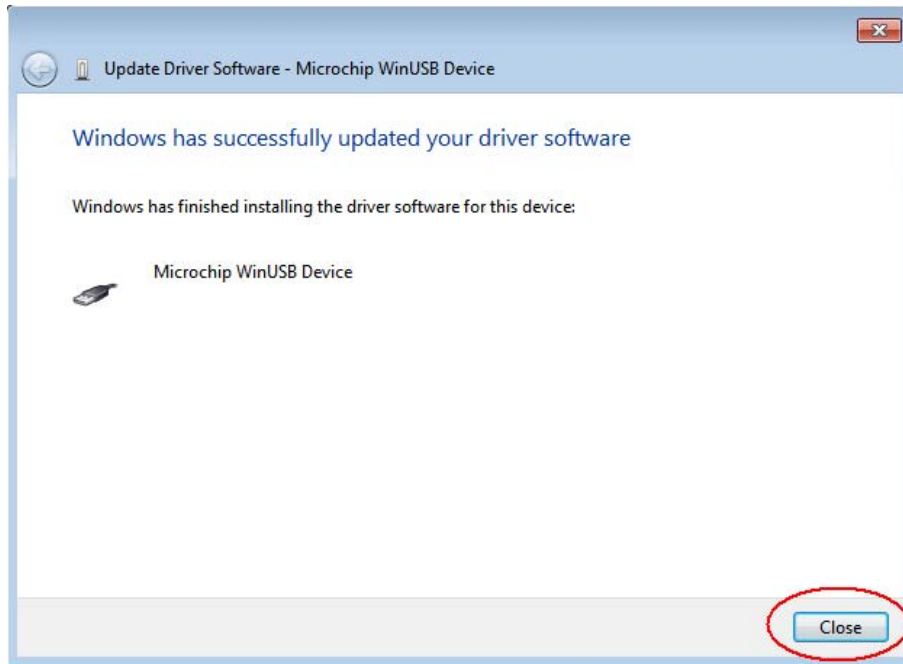
9. Windows will start to install driver to your PC.



10. When the driver install, if windows show the below message, please click [Install this driver software anyway] .

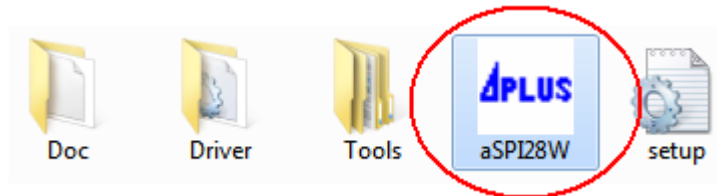


11. Click [Close] to end of install driver.

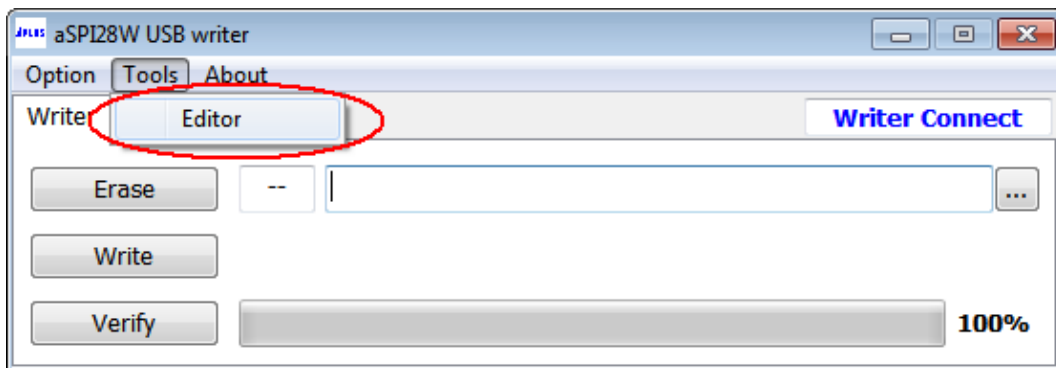


■ Build A Program Data

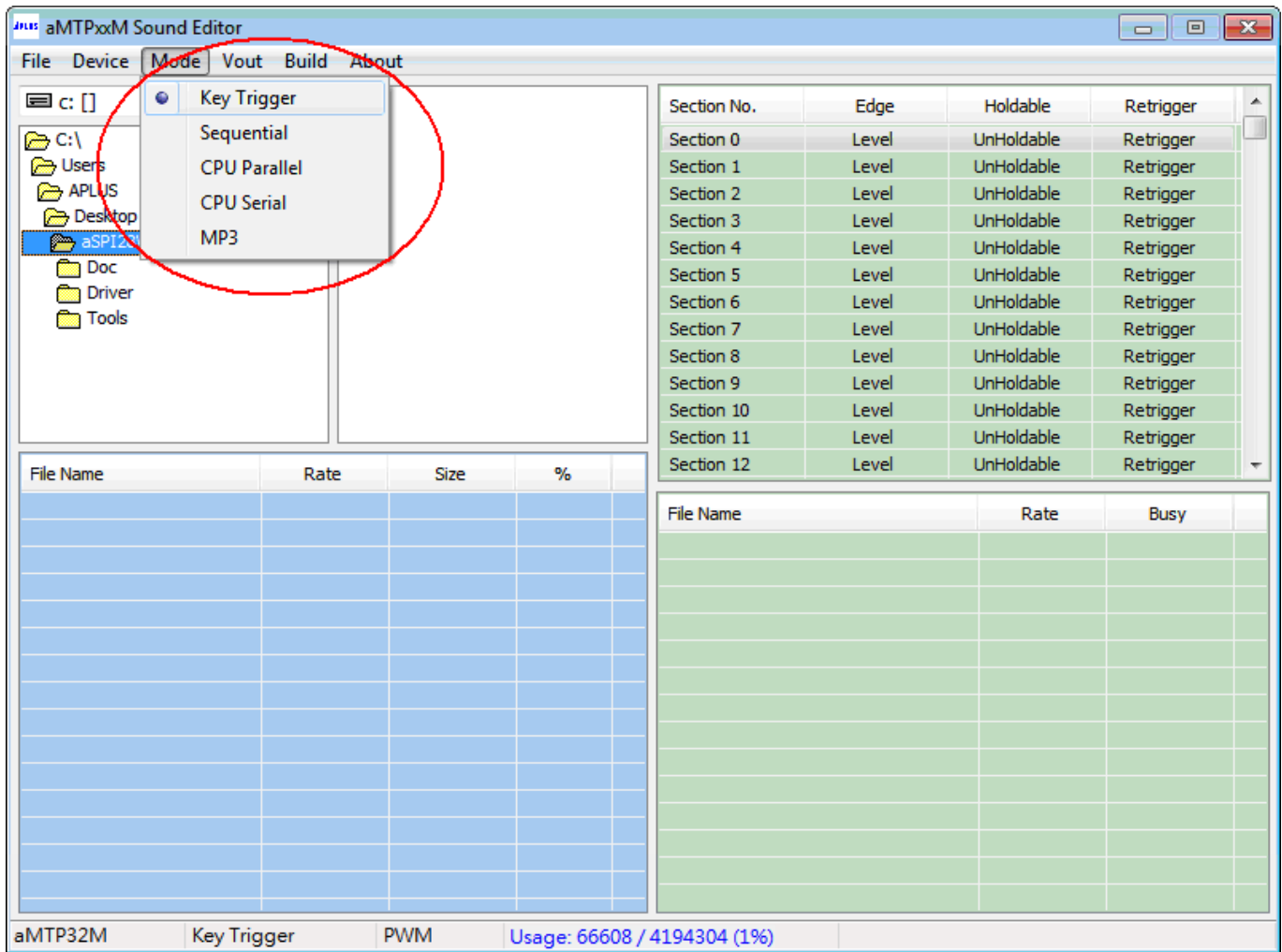
1. Double click aSPI28W icon to open software.



2. Click [Tools] → [Editor] to open “aMTP Series Sound editor”.

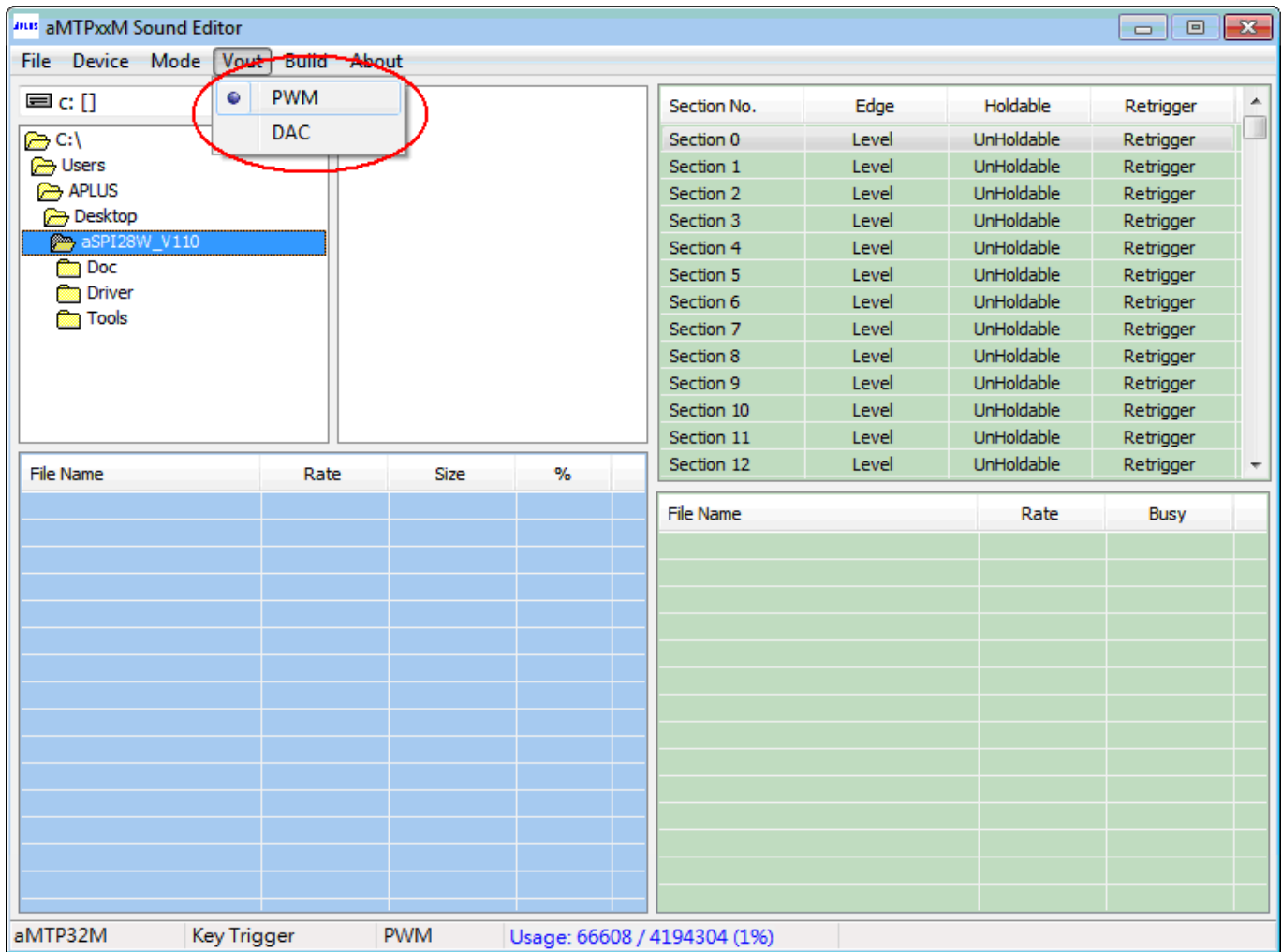


4. Click [Mode] to select the mode you want.



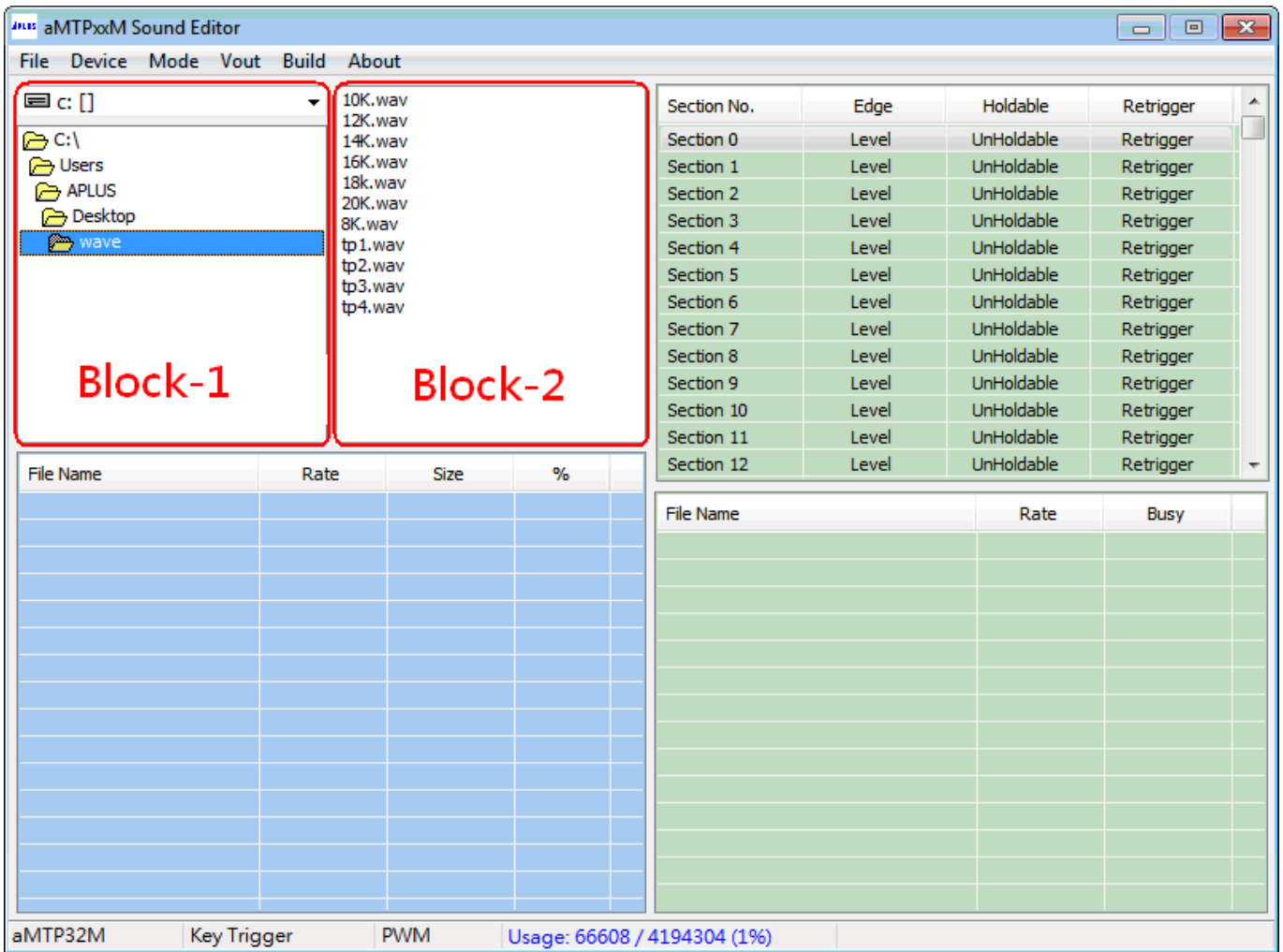
◆ More detailed description of “Mode”, please refer to aMTP32M data sheet.

5. Click [Vout] to select the voice mode you want.

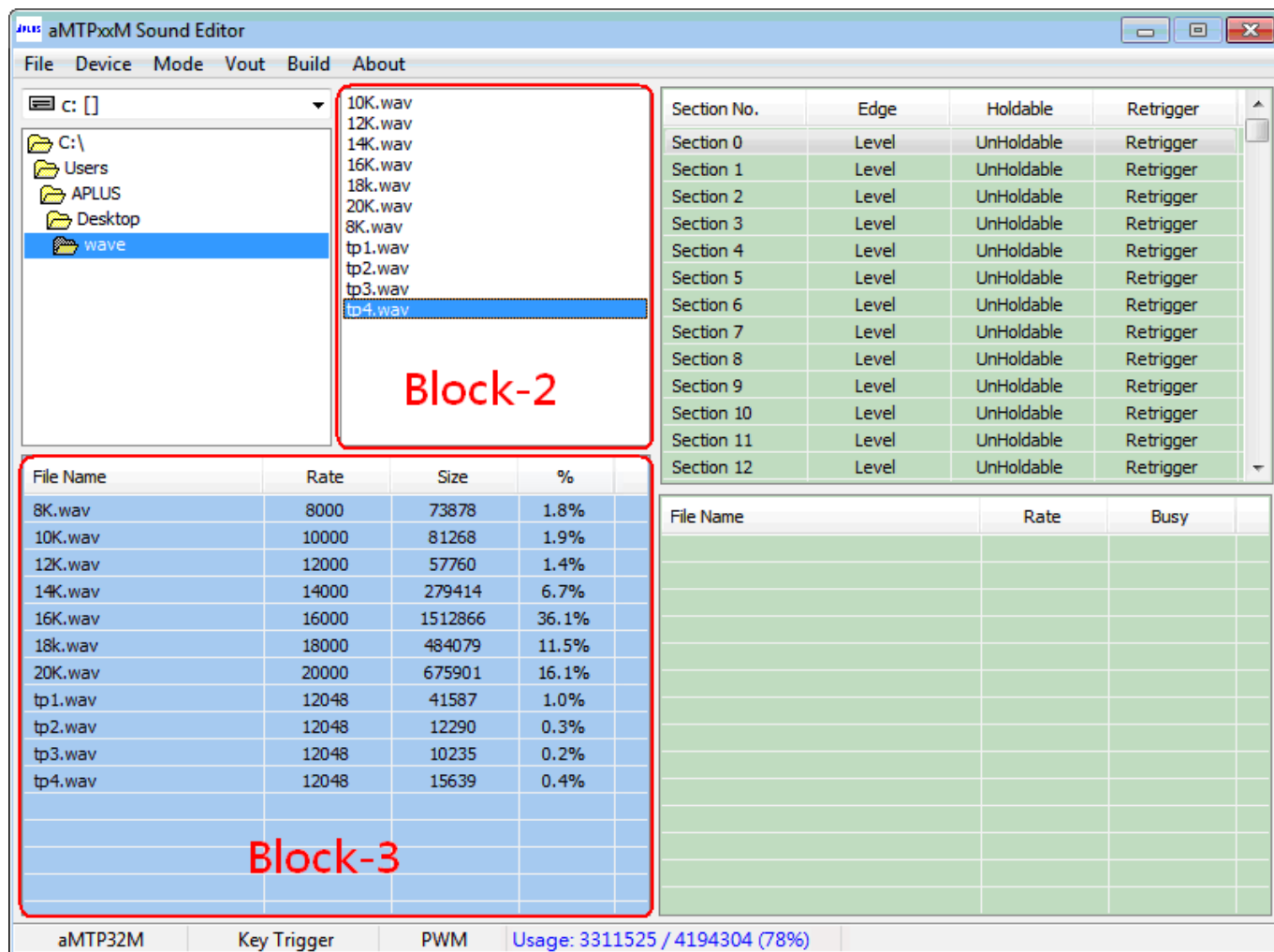


- ◆ PWM can directly drive speaker to save cost, but volume is smaller than DAC
- ◆ DAC need external amplifier to driver speaker. The volume depends on the amplifier and louder than PWM.
- ◆ More detailed description of DAC or PWM, please refer to aMTP32M data sheet.

6. Use Block-1 to select a directory, and Block-2 will list all of wave file in this directory.

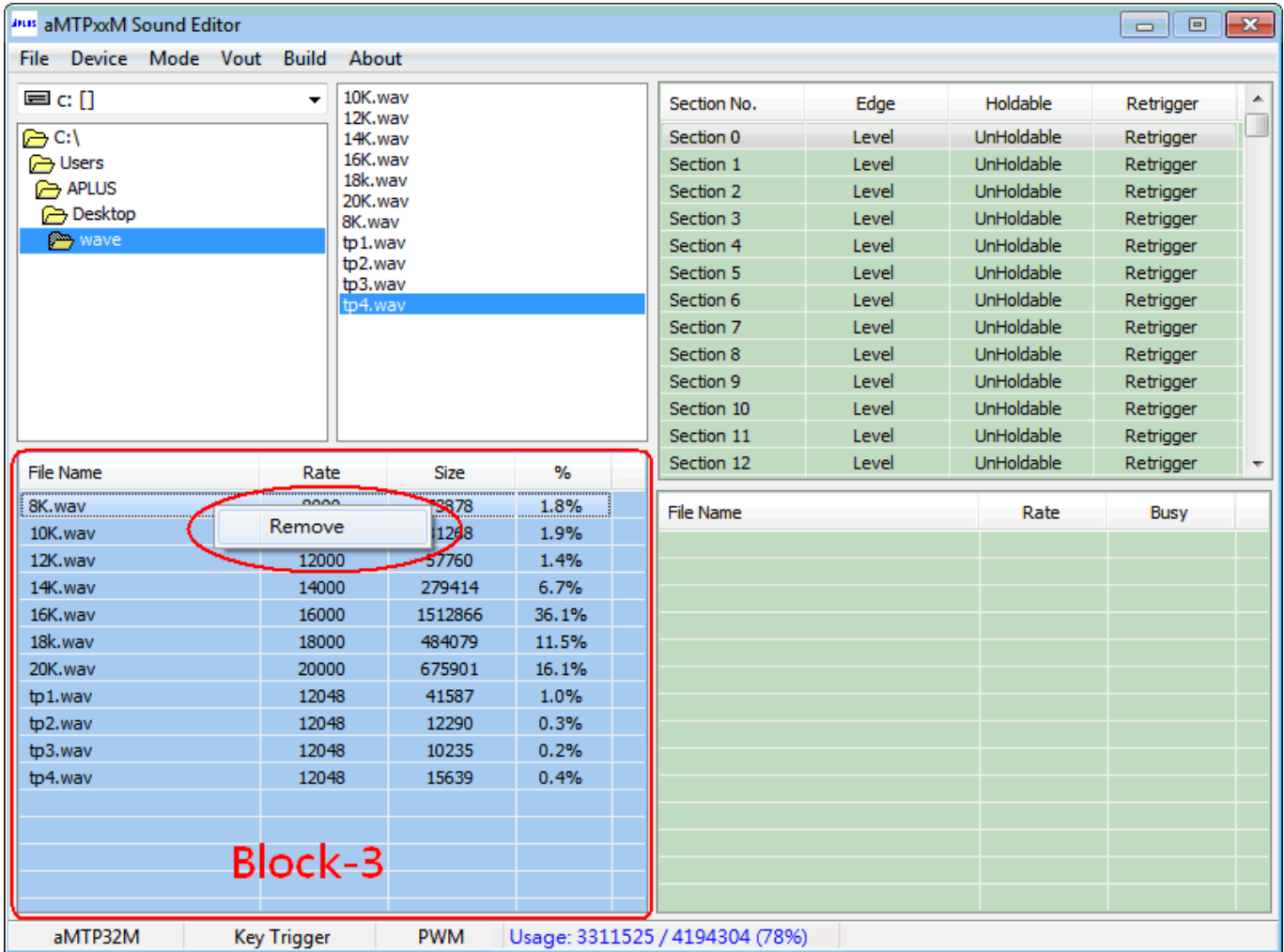


7. Double click file name in Block-2 to assign file into Block-3. Only Block-3 files will occupy memory space.



◆ The wave file must be 8-bit, mono format, and less then 20KHz sampling rate.

8. You can right-click a file name in Block-3 and click [Remove] to remove it.



9. Selected a section in Block-4 and assign waves by double click file name in Block-3, Block-5 will show Block-3 assigned files played in Block-4 sections.

The screenshot shows the aMTPxxM Sound Editor interface. On the left, a file explorer shows a 'wave' folder containing various .wav files. In the center, a table lists these files with their rates and sizes. On the right, a table lists sections (0-12) with their edge types and holdable status. A red box labeled 'Block-4' highlights the section table, and another red box labeled 'Block-3' highlights the file list table. A third red box labeled 'Block-5' highlights a table at the bottom right showing the status of files being played in the sections.

Section No.	Edge	Holdable	Retrigger
Section 0	Level	UnHoldable	Retrigger
Section 1	Level	UnHoldable	Retrigger
Section 2	Level	UnHoldable	Retrigger
Section 3	Level	UnHoldable	Retrigger
Section 4	Level	UnHoldable	Retrigger
Section 5	Level	UnHoldable	Retrigger
Section 6	Level	UnHoldable	Retrigger
Section 7	Level	UnHoldable	Retrigger
Section 8	Level	UnHoldable	Retrigger
Section 9	Level	UnHoldable	Retrigger
Section 10	Level	UnHoldable	Retrigger
Section 11	Level	UnHoldable	Retrigger
Section 12	Level	UnHoldable	Retrigger

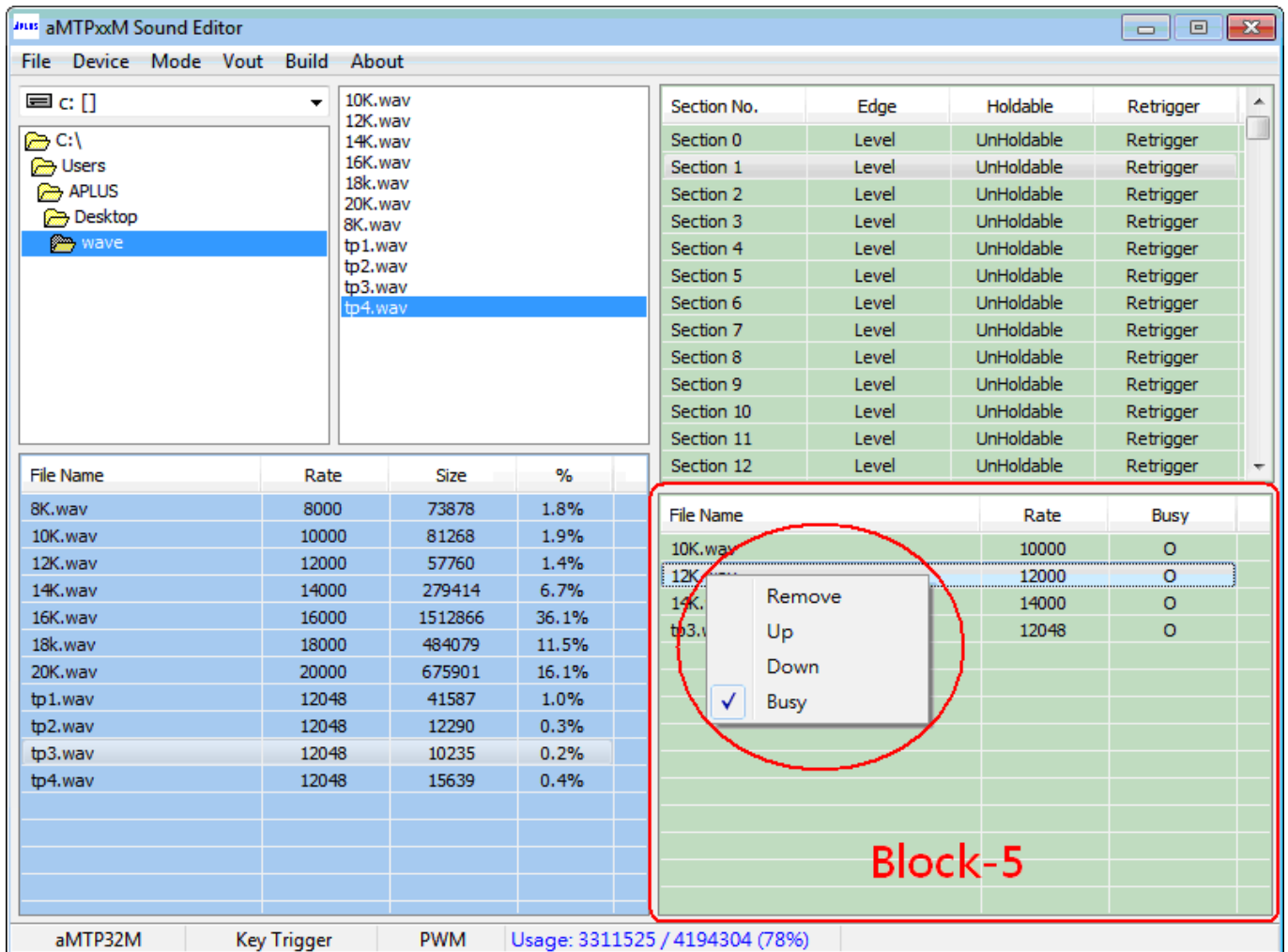
File Name	Rate	Size	%
8K.wav	8000	73878	1.8%
10K.wav	10000	81268	1.9%
12K.wav	12000	57760	1.4%
14K.wav	14000	279414	6.7%
16K.wav	16000	1512866	36.1%
18k.wav	18000	484079	11.5%
20K.wav	20000	675901	16.1%
tp1.wav	12048	41587	1.0%
tp2.wav	12048	12290	0.3%
tp3.wav	12048	10235	0.2%
tp4.wav	12048	15639	0.4%

File Name	Rate	Busy
10K.wav	10000	0
12K.wav	12000	0
14K.wav	14000	0
tp3.wav	12048	0

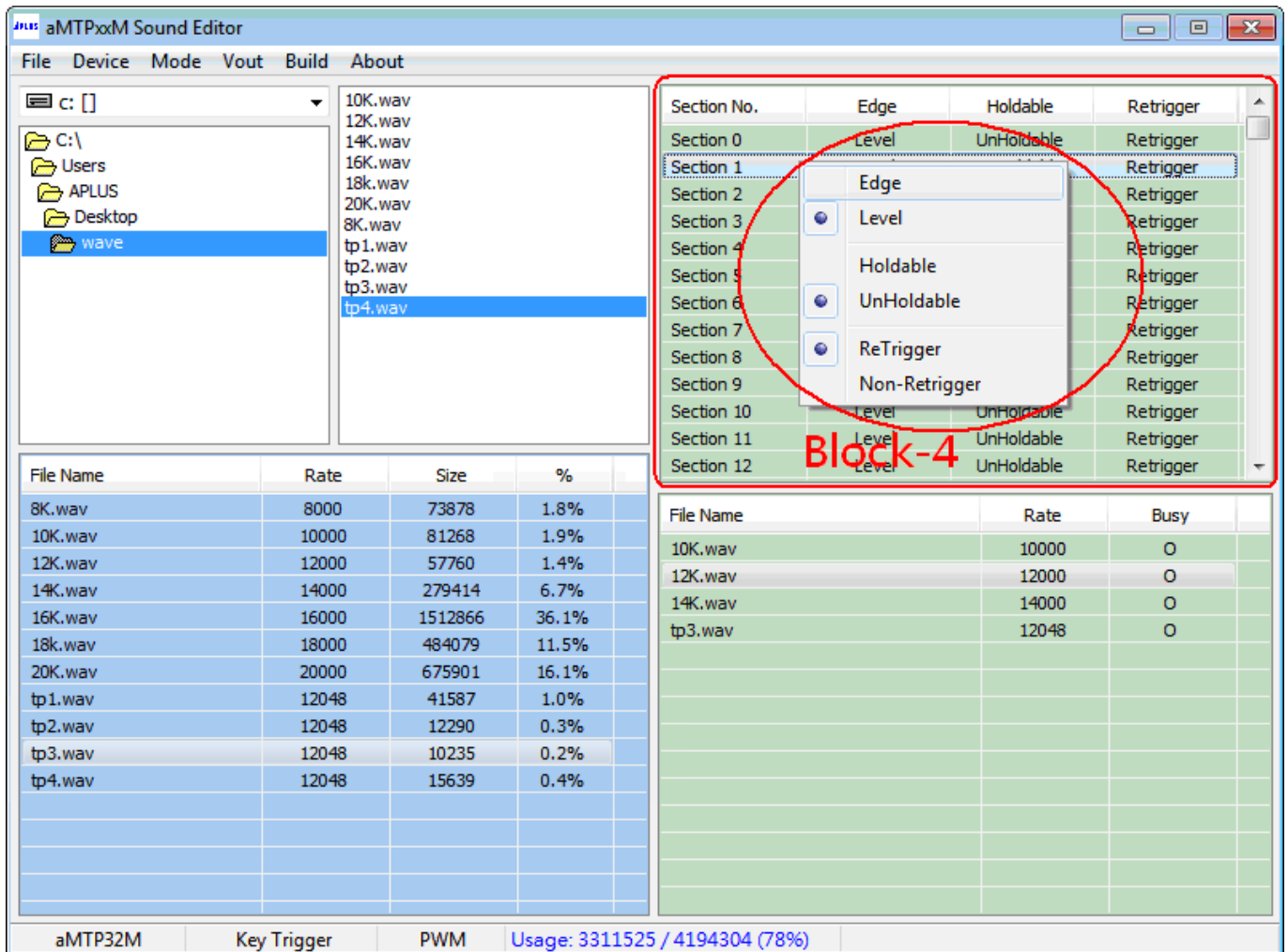
Usage: 3311525 / 4194304 (78%)

- ◆ In this example, when you trigger Section 1, the chip will play :
10K.wav + 12K.wav + 14K.wav + tp3.wav

10. You can right-click or double click a file name in Block-5 and click button to remove, change sequence or choose the Busy pin output when played.

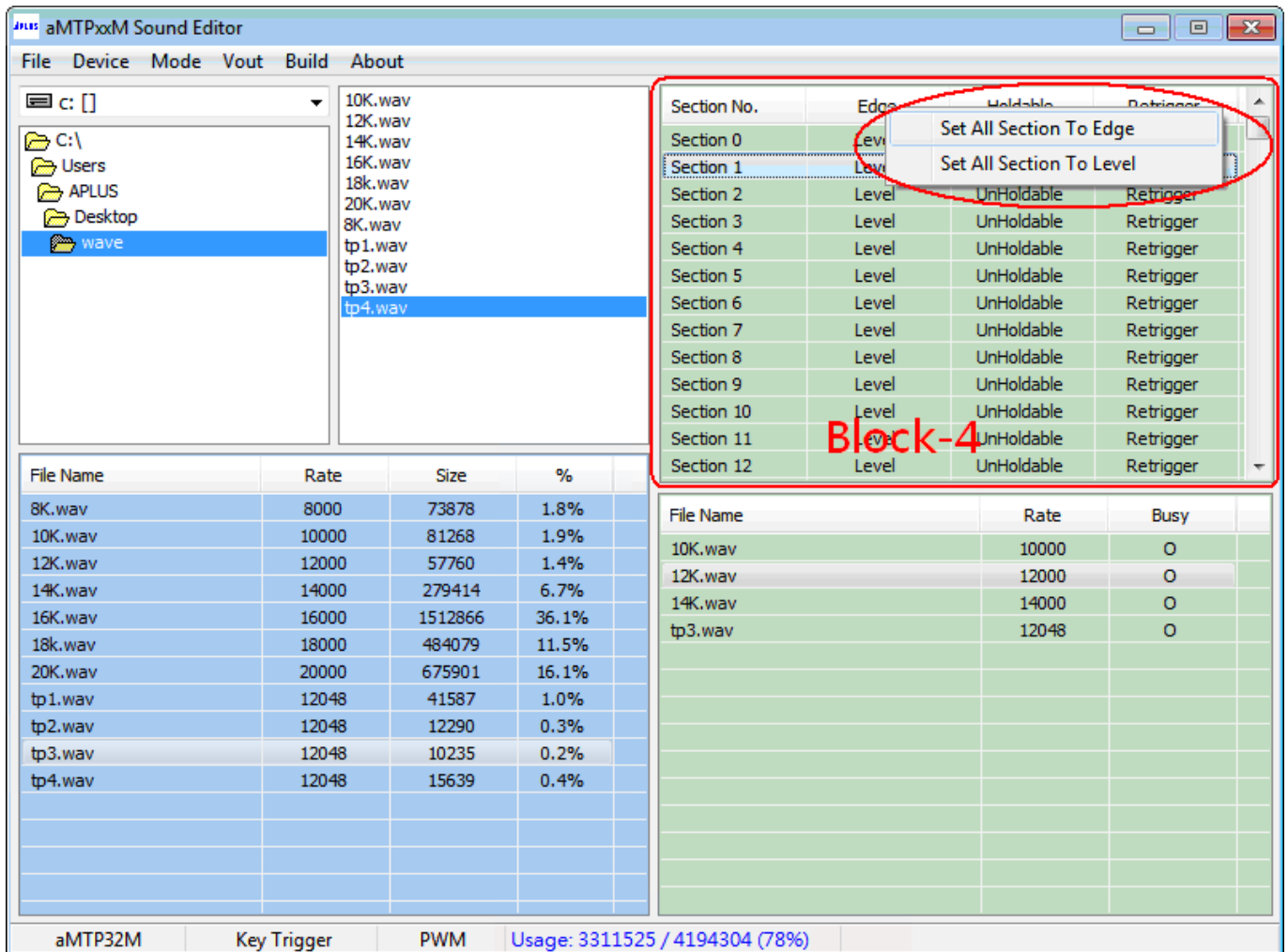


11. You can right-click or double click a section in Block-4 and click button to choose edge, holdable and re-trigger function .

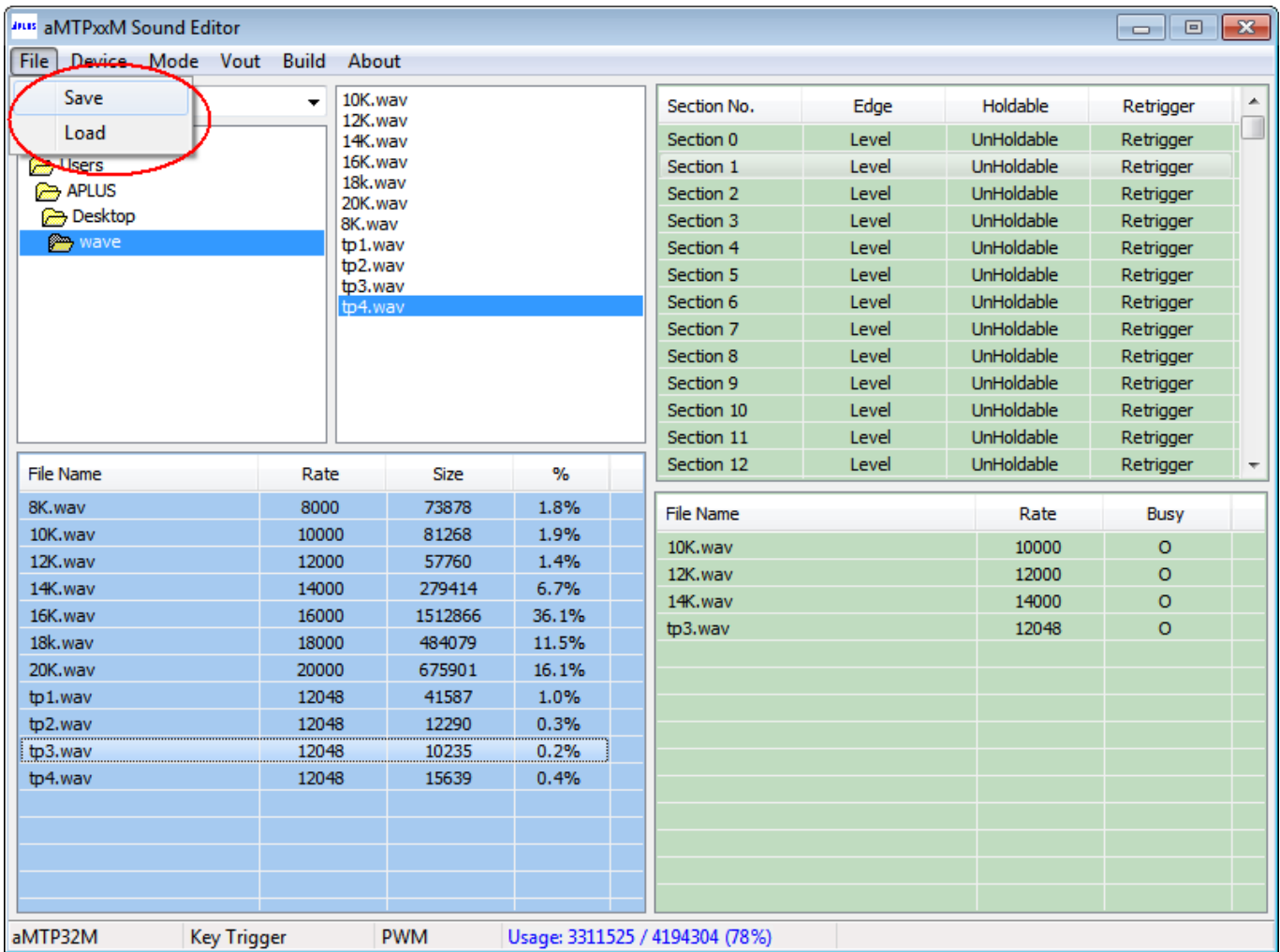


- ◆ More detailed description of “Edge”, “Holdable” and “Re-Trigger”, please refer to aMTP32M data sheet.

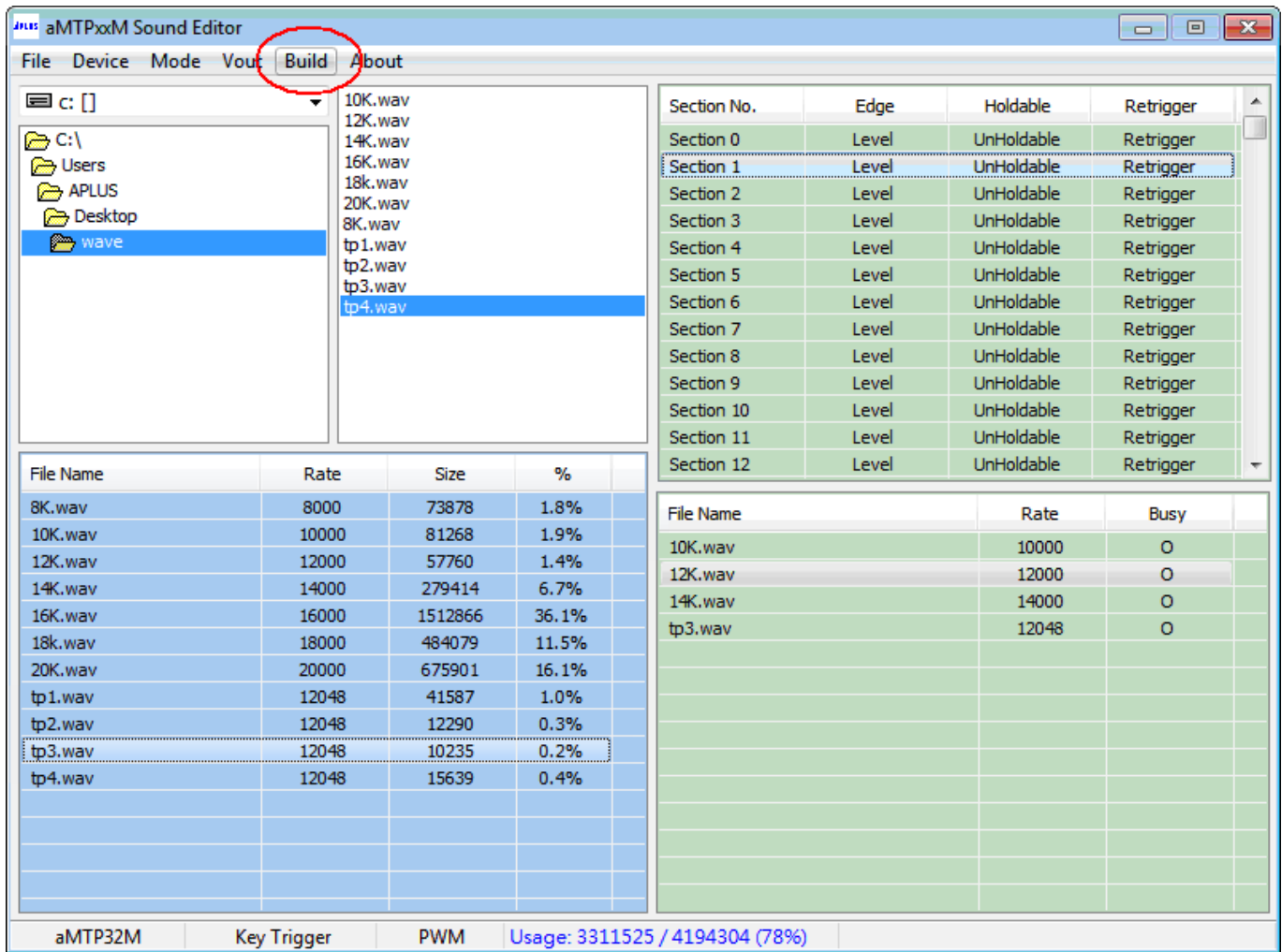
12. You can also click top entry [Edge], [Holdable] or [Retrigger] in Block-4 to choose a trigger function for all sections.



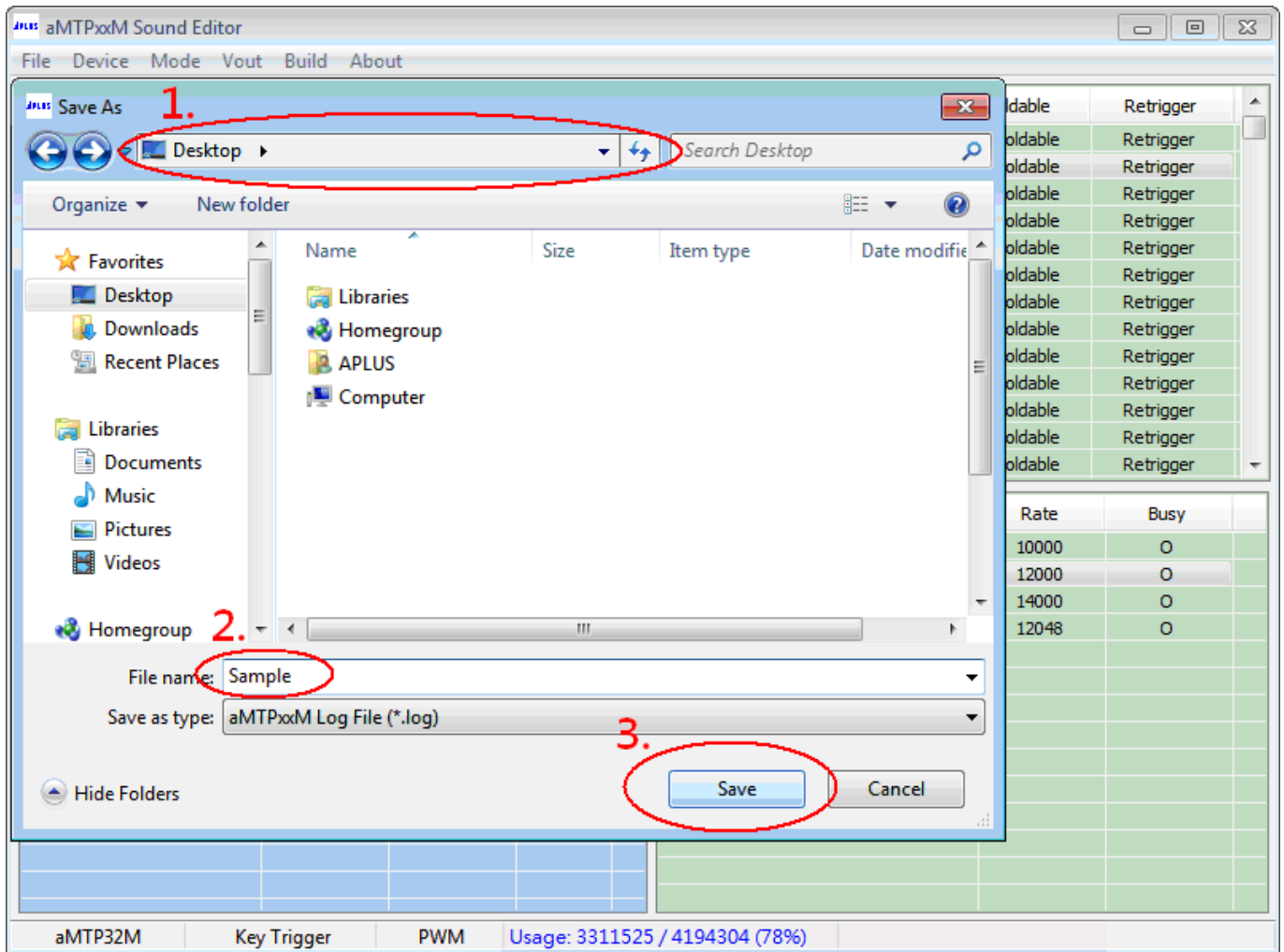
13. You can use [File] → [Save] / [Load] to save current editing or load previous editing..



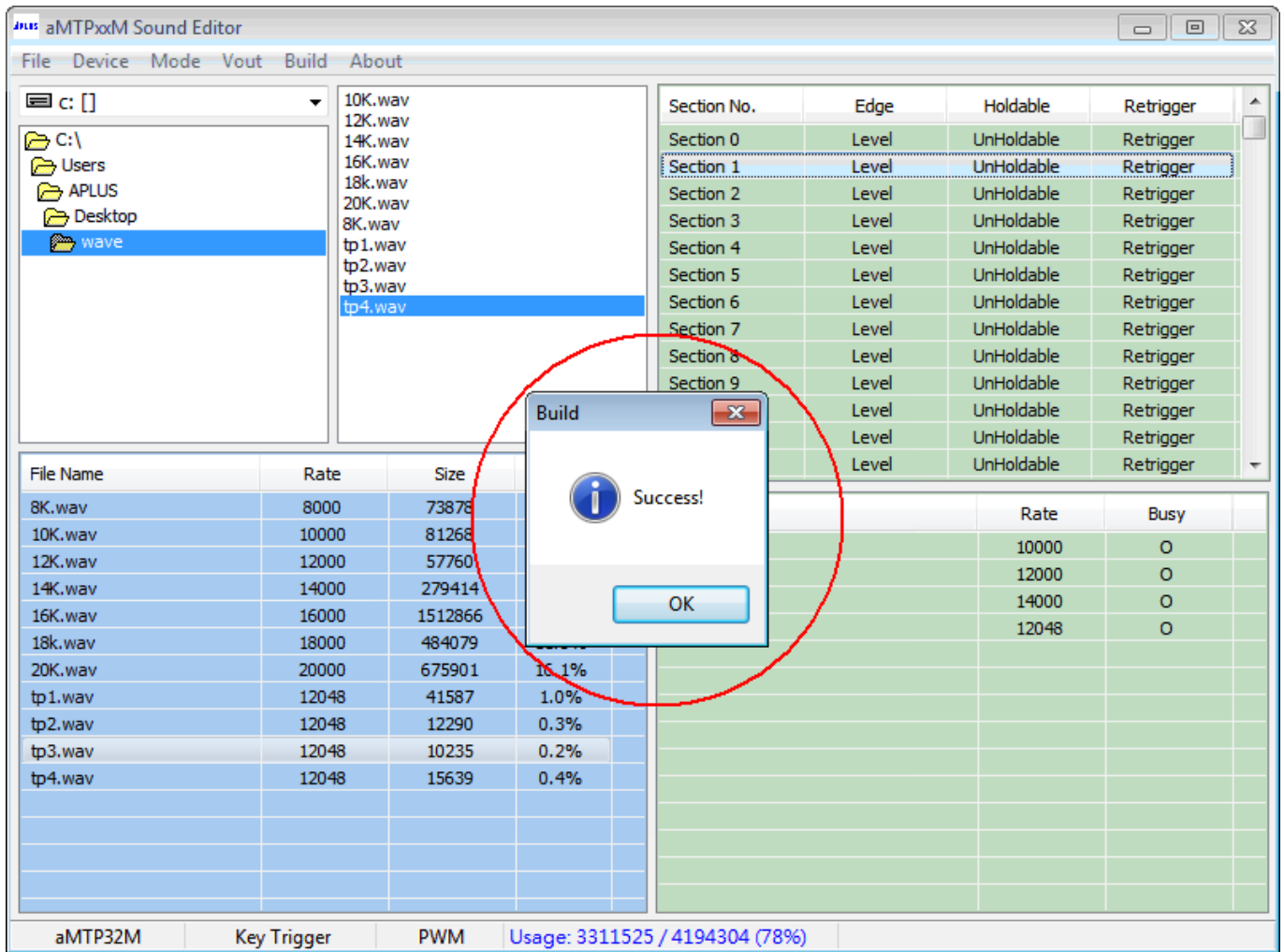
14. When you finish edit, use [Build] to build a program file.



15. Select a directory, and give it a name to save it.



16. Wait few seconds, software will show build result.



17. You will get a program data (*.data), and function table (*.log) as below :

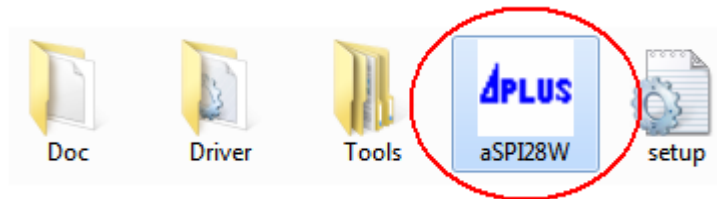


■ Program Data To aMTPxxM (DBMFL-STD2)

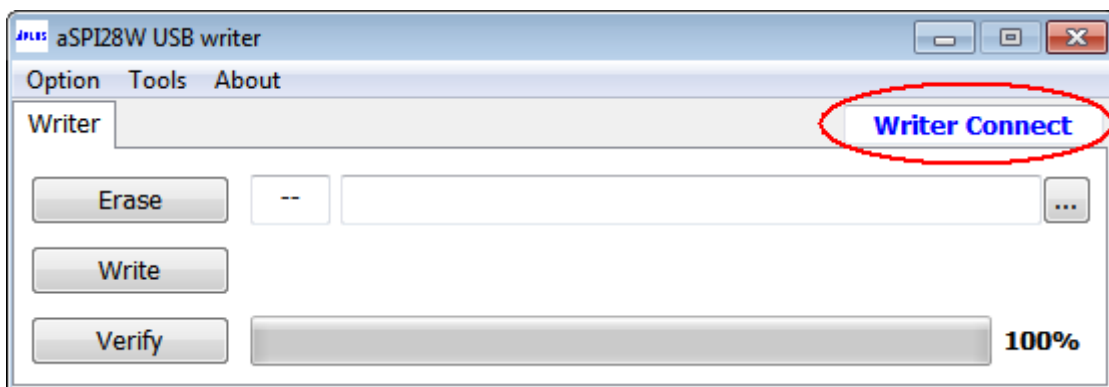
1. Connect aSPI28W USB writer to the demo board DBMFL-STD2.



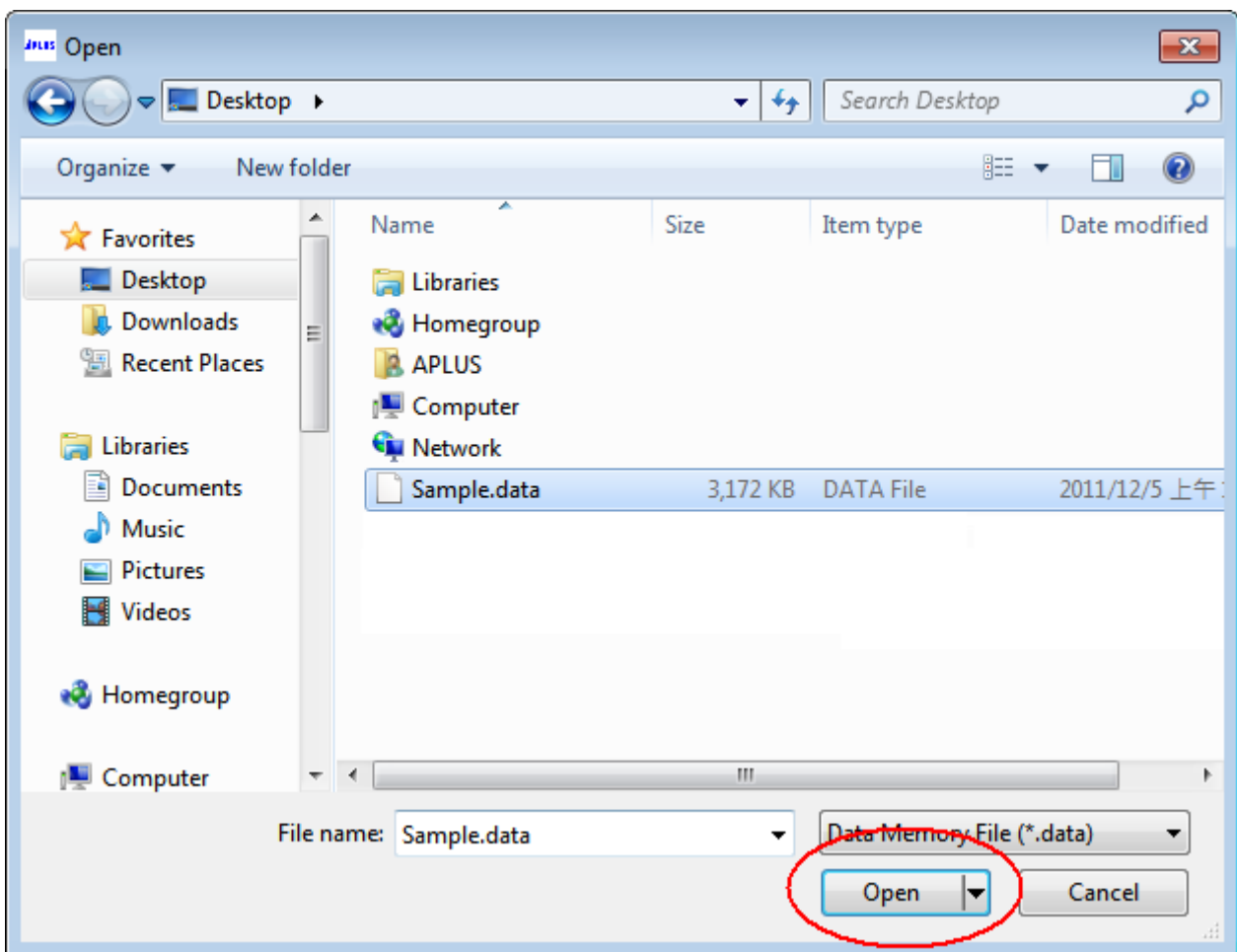
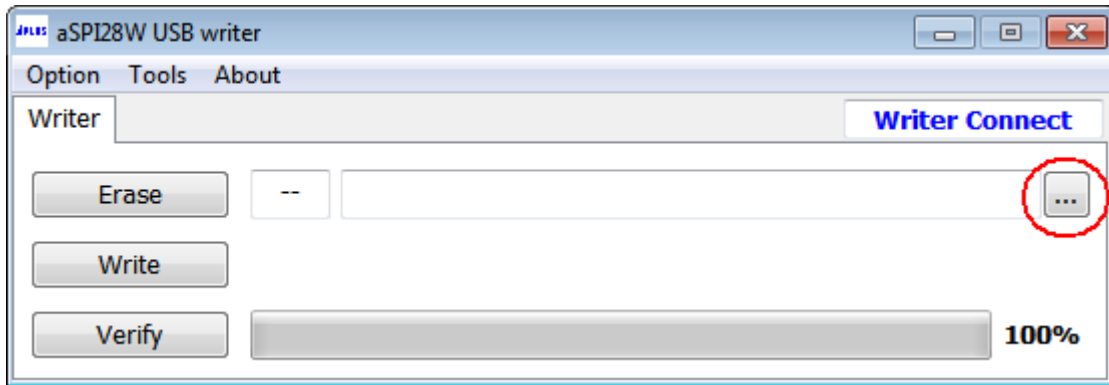
2. Double click aSPI28W icon to open software.



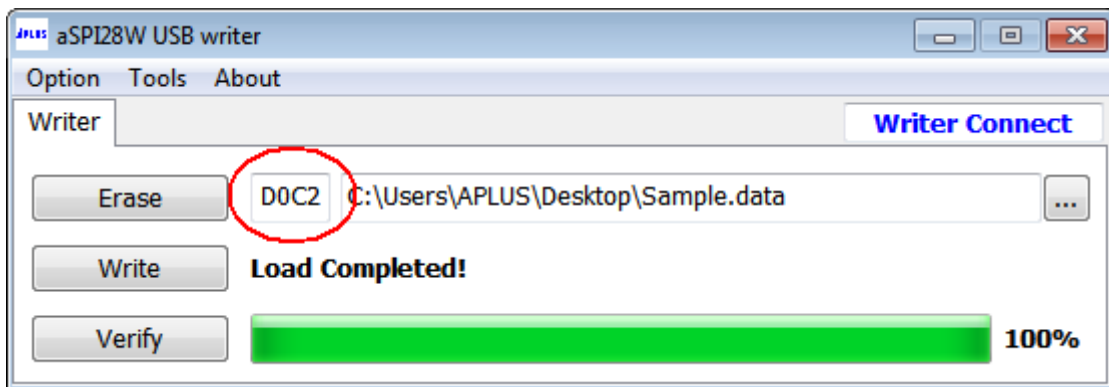
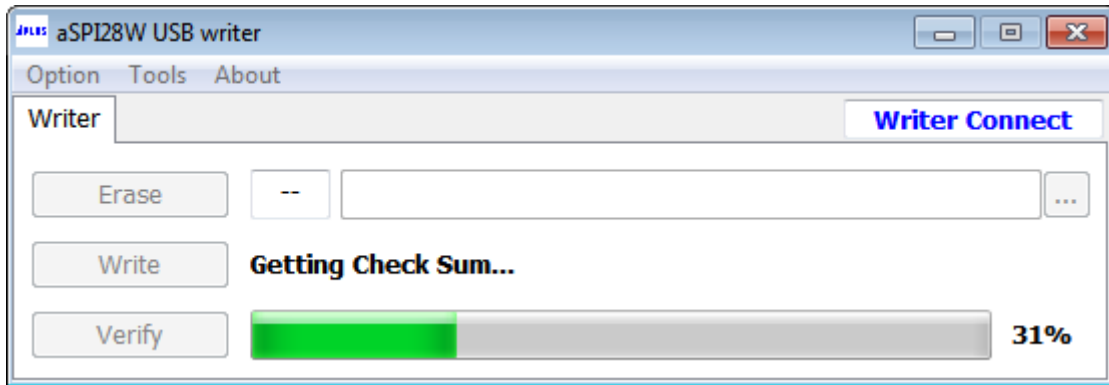
3. Check writer already connected.



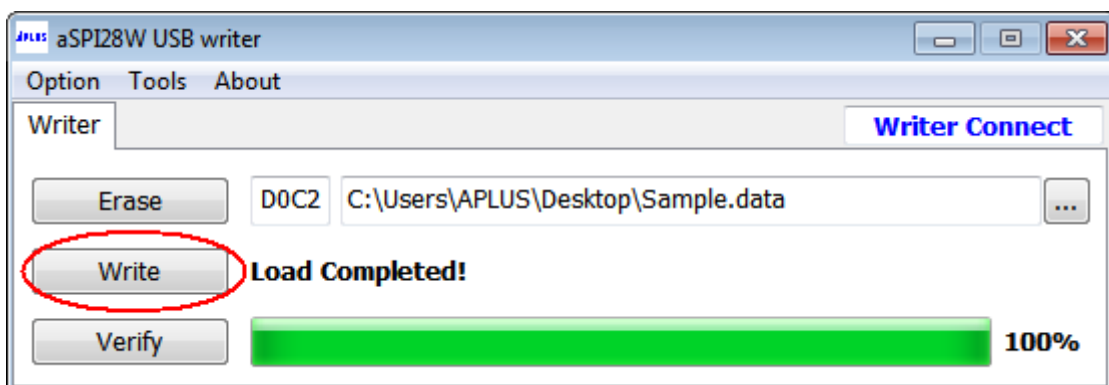
4. Click [...] to load a aMTPxxM program file (*.data).



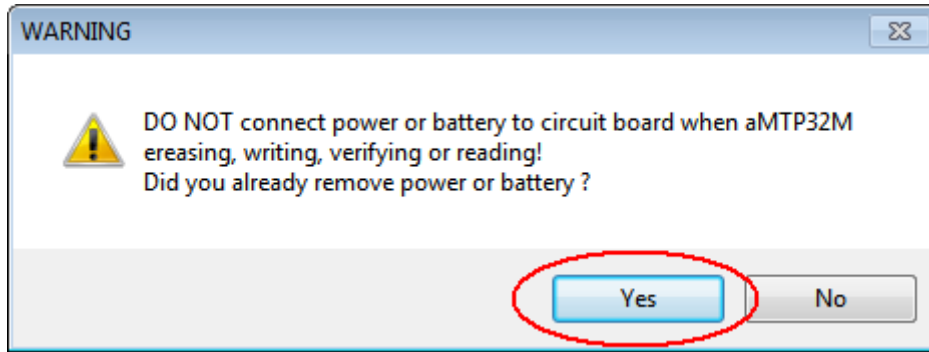
5. Software will get programmed file check sum , then show on the file path left.



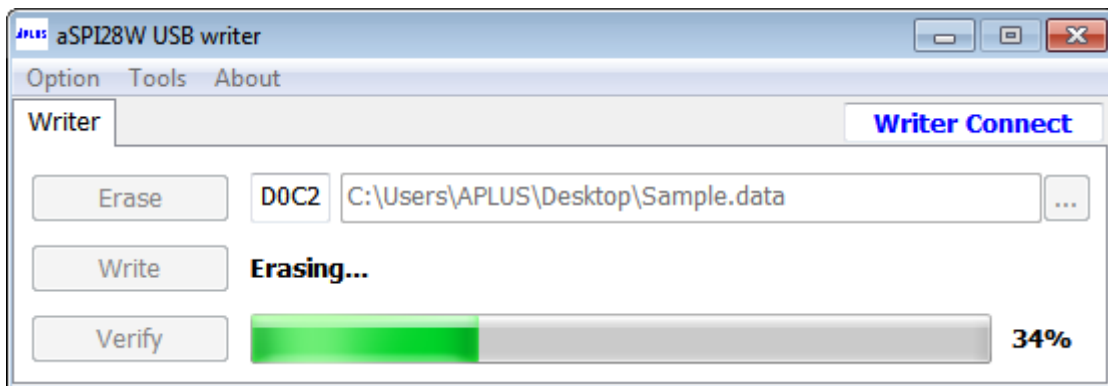
6. Click [Write] to program the file to aMTPxxM chip.



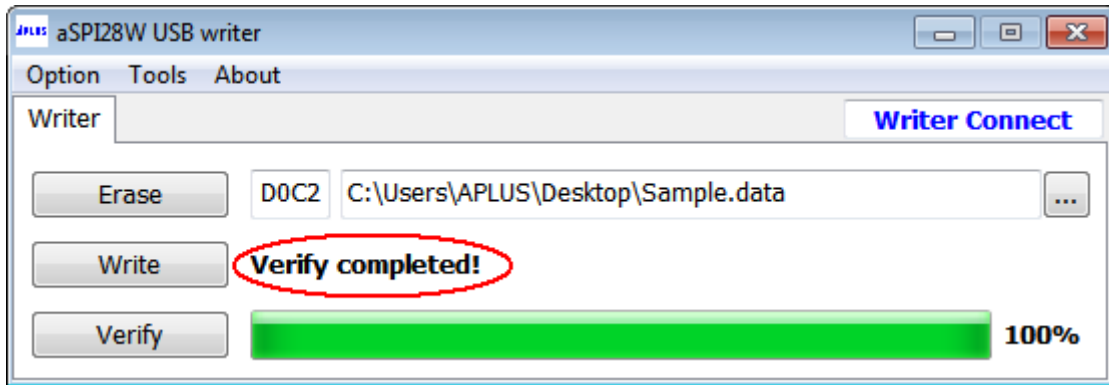
7. Check power or battery already removed, then click [Yes] .



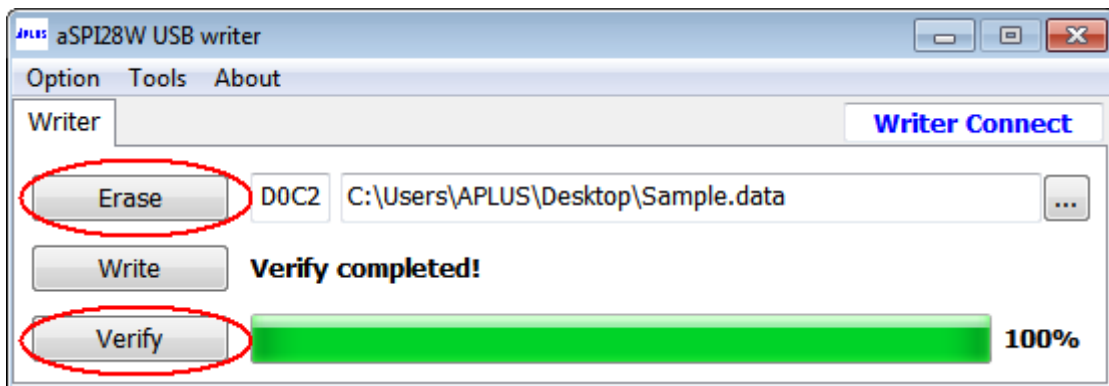
8. Software will start to erase, program and verify automatically.



9. When write successfully , software will show “Verify completed”.



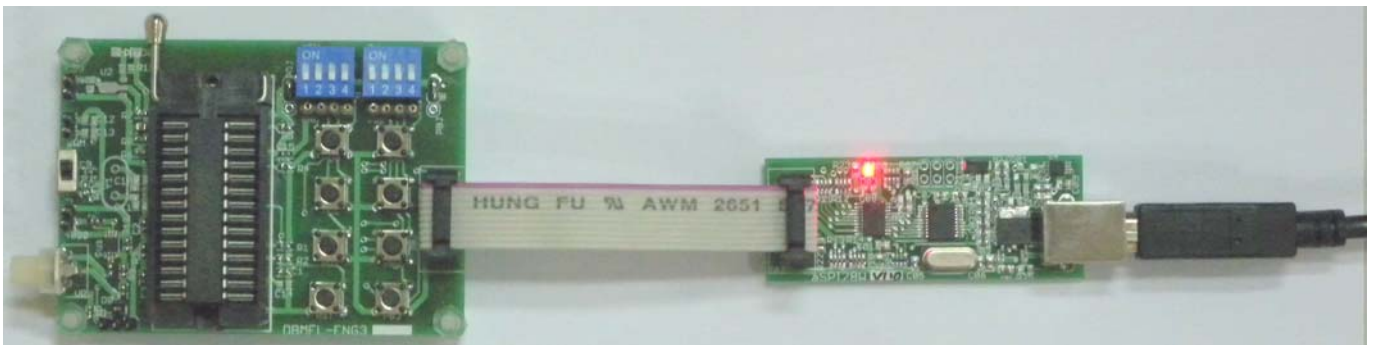
10. You can do erase or verify only by [Erase] or [Verify] .



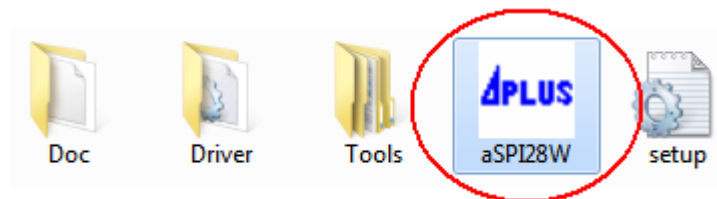
11. Now, you can remove aSPI28W USB writer , connecting power and speaker to play . About how to use DBMFL-STD2, please refer [DBMFL-STD2 user guide] .

■ Program Data To aMTPxxM (DBMFL-ENG2)

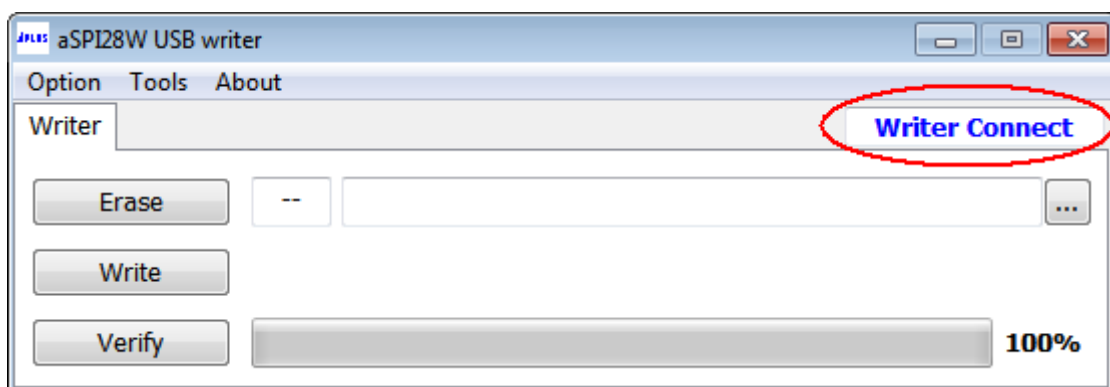
1. Connect aSPI28W USB writer to the demo board DBMFL-ENG2.



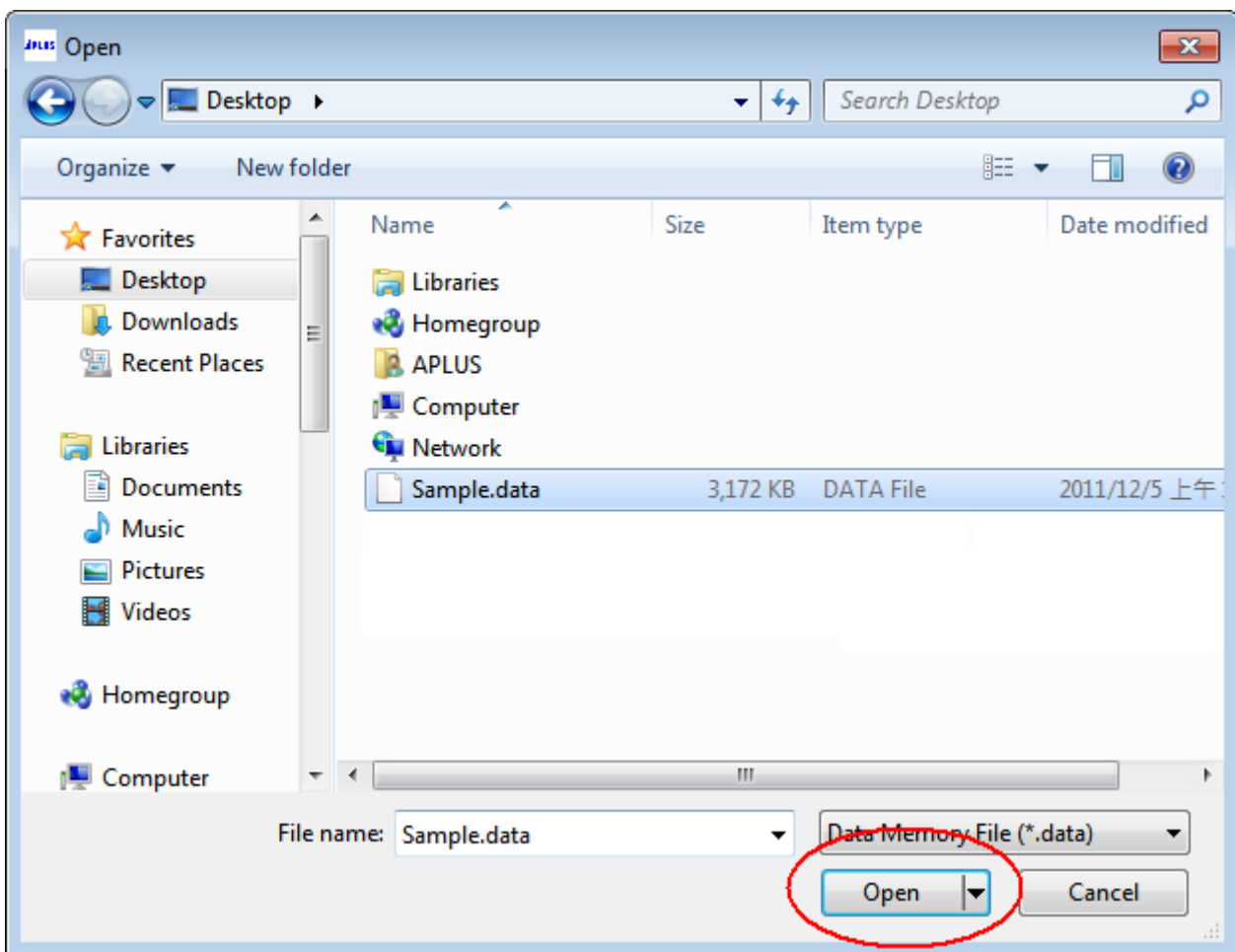
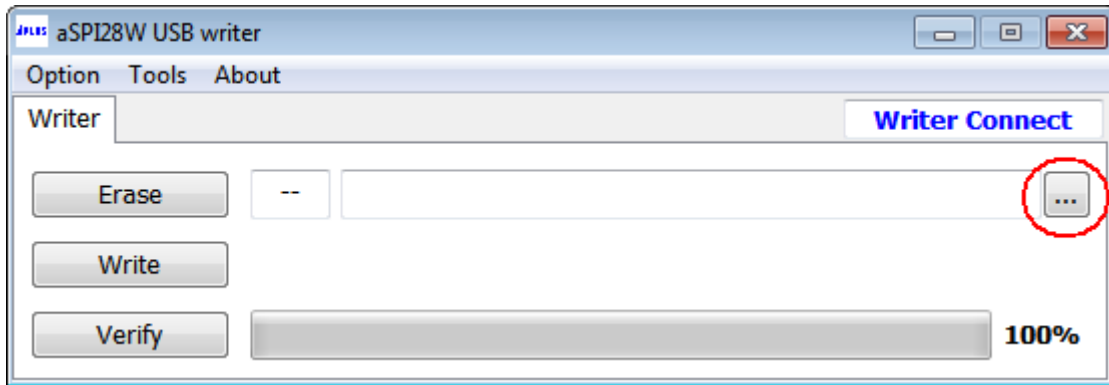
2. Double click aSPI28W icon to open software.



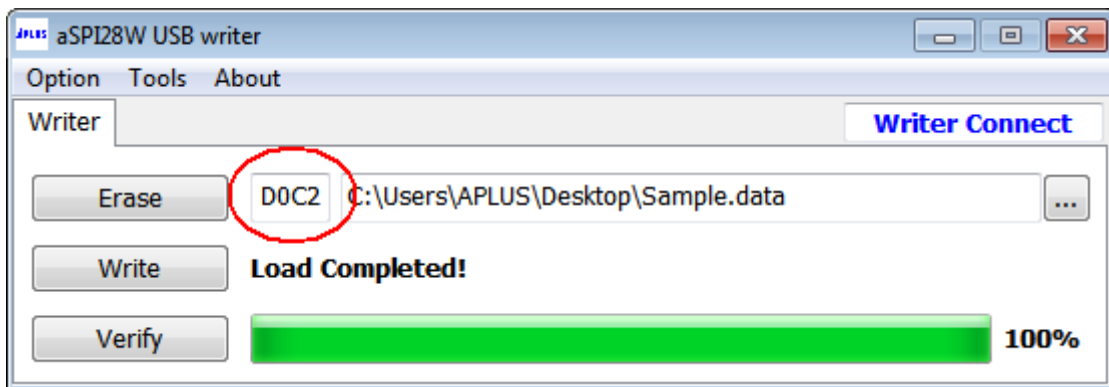
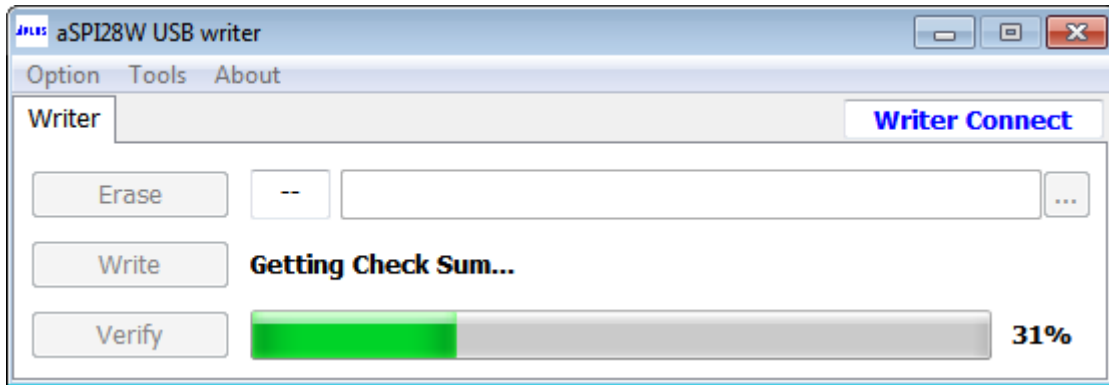
3. Check writer already connected.



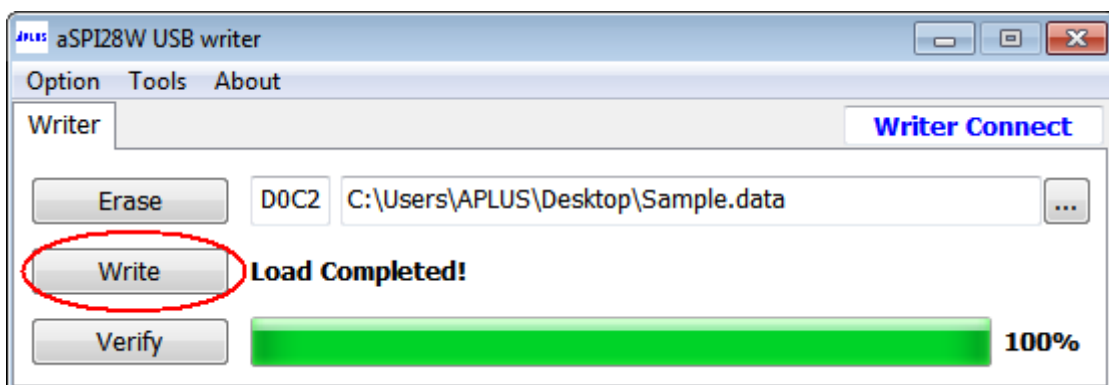
- Click [...] to load a aMTPxxM program file (*.data).



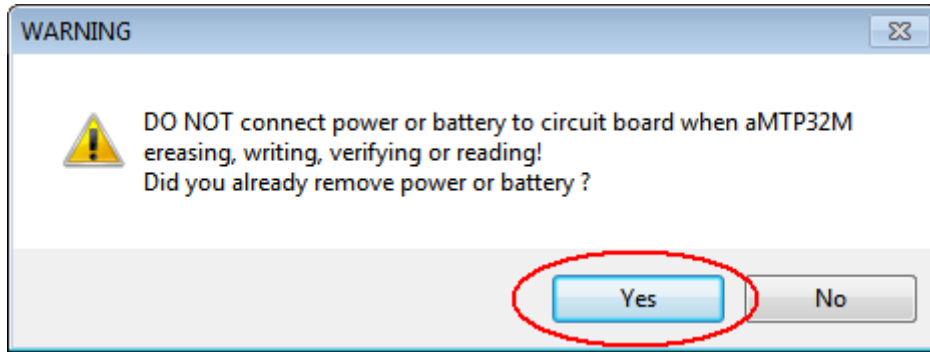
5. Software will get programmed file check sum, then show on the file path left.



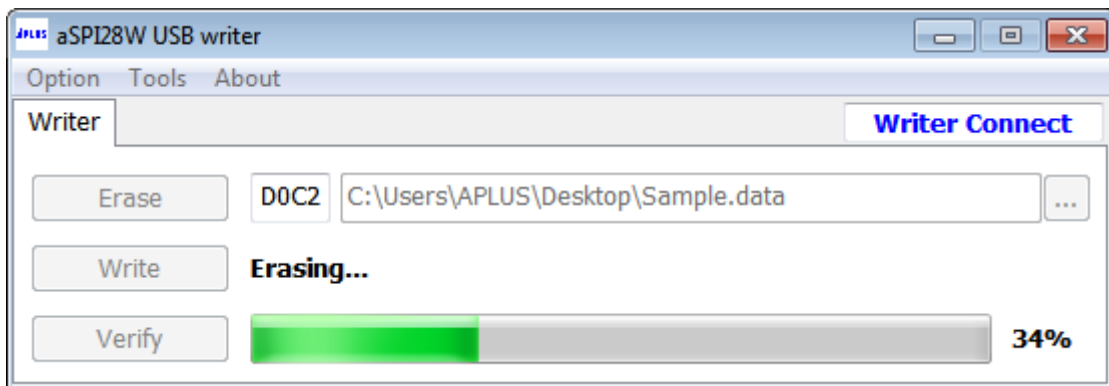
6. Click [Write] to program the file to aMTPxxM chip.



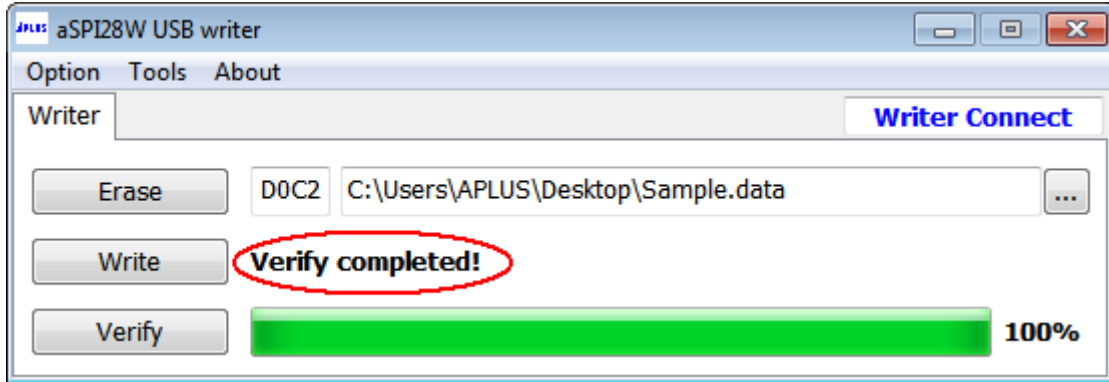
7. Check power or battery already removed, then click [Yes] .



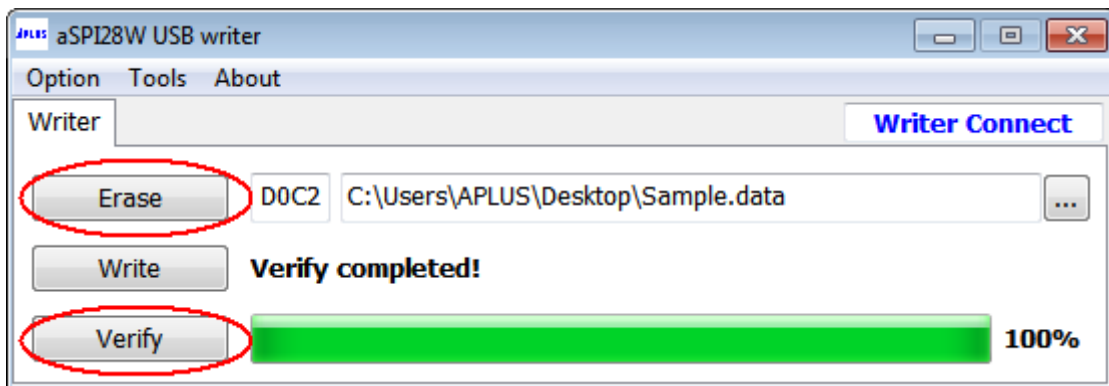
8. Software will start to erase, program and verify automatically.



9. When write successfully , software will show “Verify completed”.



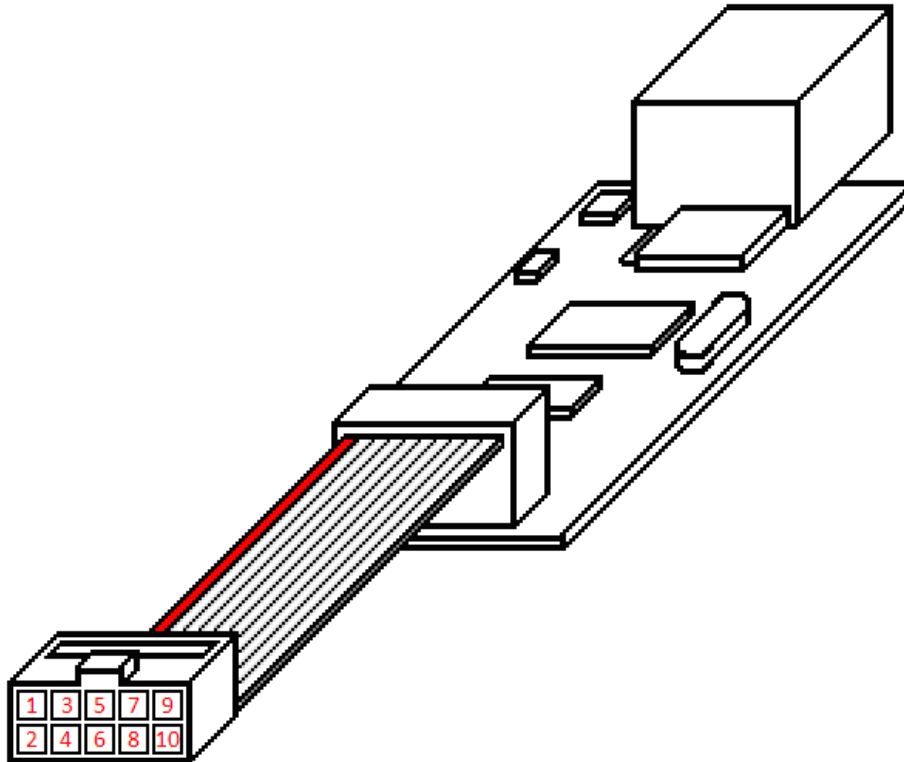
10. You can do erase or verify only by [Erase] or [Verify] .



11. Now, you can remove aSPI28W USB writer, connecting power and speaker to play. About how to use DBMFL-ENG2, please refer [DBMFL-ENG2 user guide] .

■ **Program Data To aMTPxxM (Single Chip Program)**

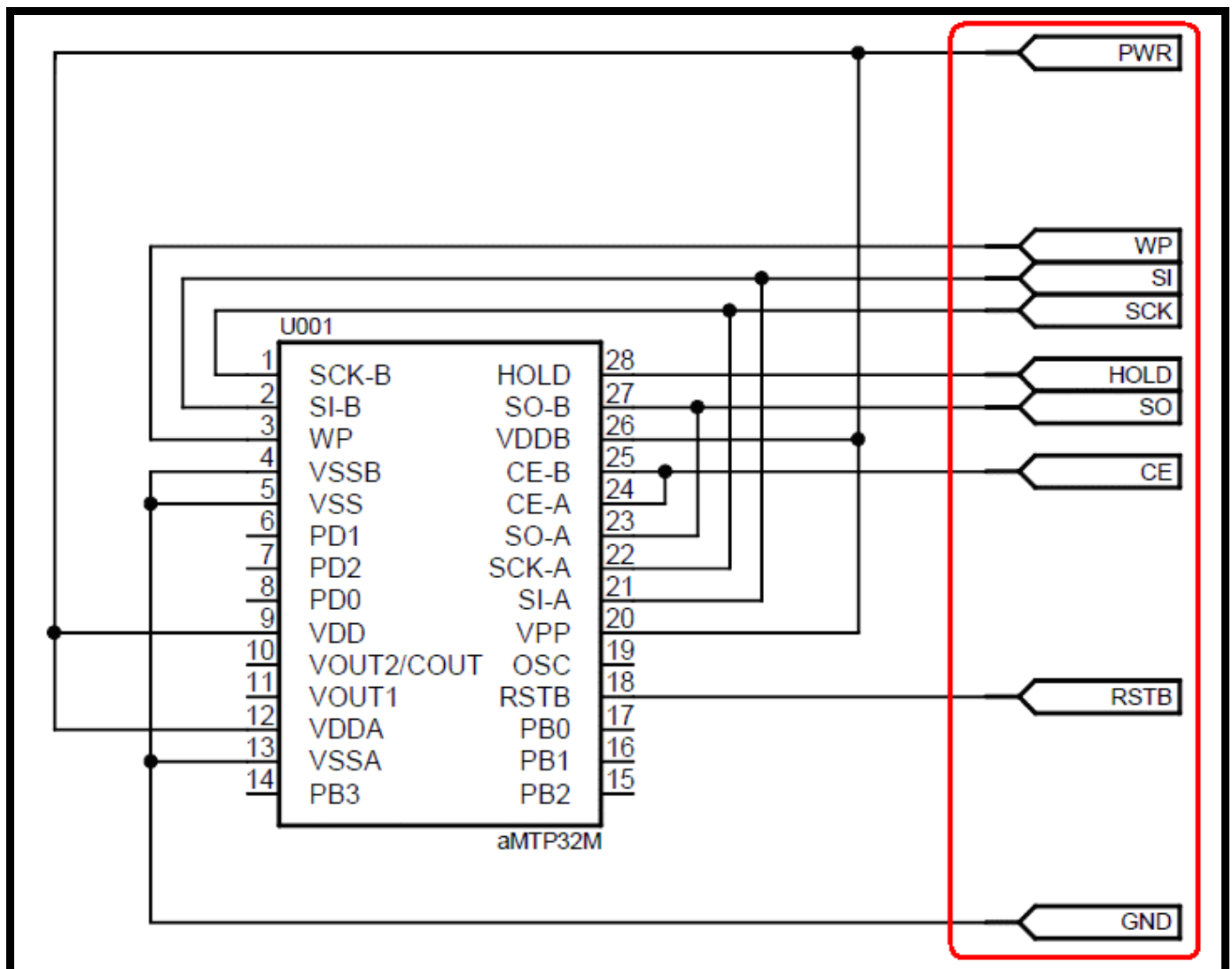
◆ aSPI28W PIN CONFIGURATIONS



Pin Number	Pin Name	Description
1	WP	Write Protect
2	RSTB	Reset Pin
3	SCK	Serial Data Clock
4	CE	Chip Enable
5	PWR	Power VDD
6	NC	--
7	SO	Serial Data Output
8	SI	Serial Data Input
9	GND	Power Ground
10	HOLD	Data Hold

◆ Single Chip Program

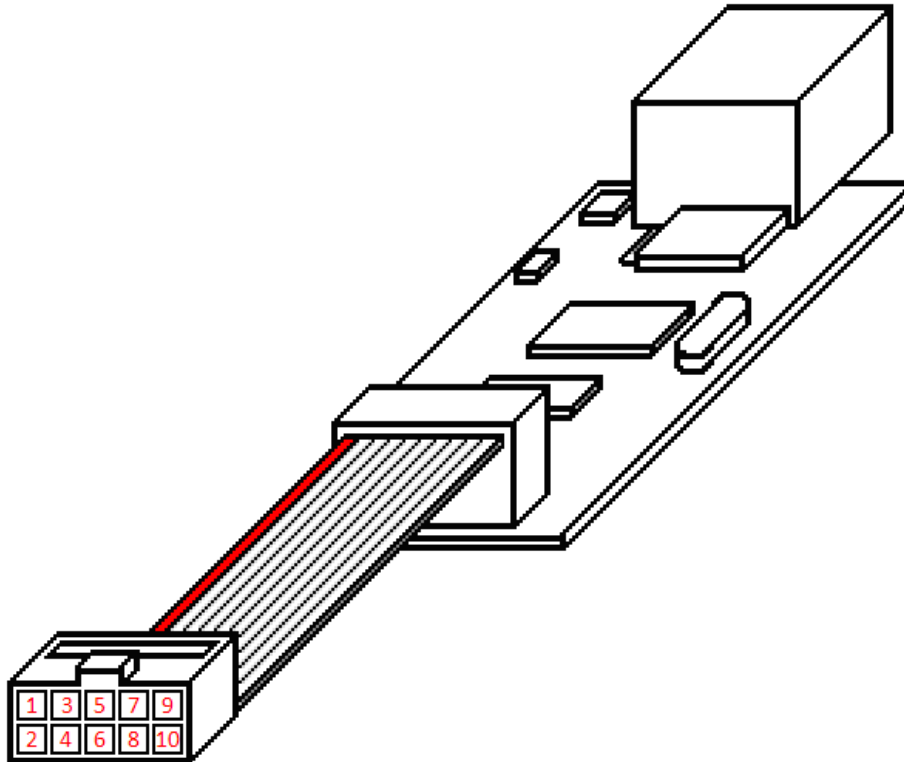
Connected aSPI28W USB writer to below circuit through program pin, then you can start to program aMTPxxM.



- Warning: aSPI28W PWR pin will offer power to circuit. So before connecting to aSPI28W, you must remove any other power source and device which may input signal to circuit.

■ **Program Data To aMTPxxM (In-Circuit Program)**

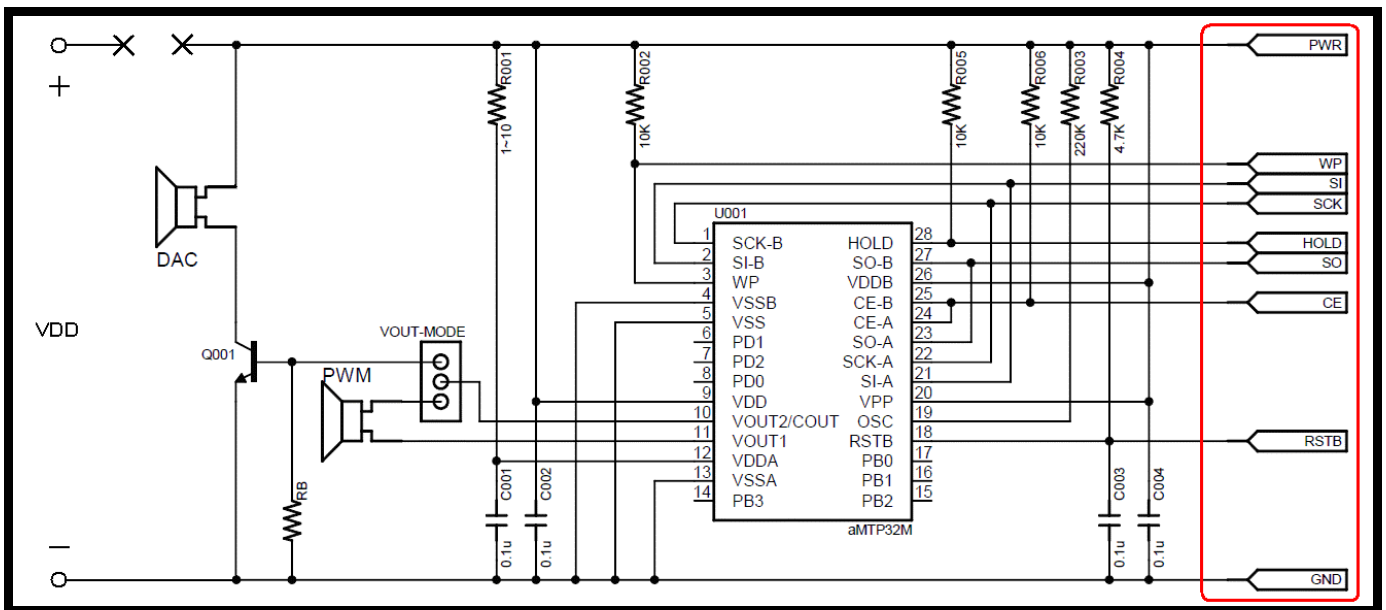
◆ aSPI28W PIN CONFIGURATIONS



Pin Number	Pin Name	Description
1	WP	Write Protect
2	RSTB	Reset Pin
3	SCK	Serial Data Clock
4	CE	Chip Enable
5	PWR	Power VDD
6	NC	--
7	SO	Serial Data Output
8	SI	Serial Data Input
9	GND	Power Ground
10	HOLD	Data Hold

◆ In-Circuit Program (Writer Provide Supply)

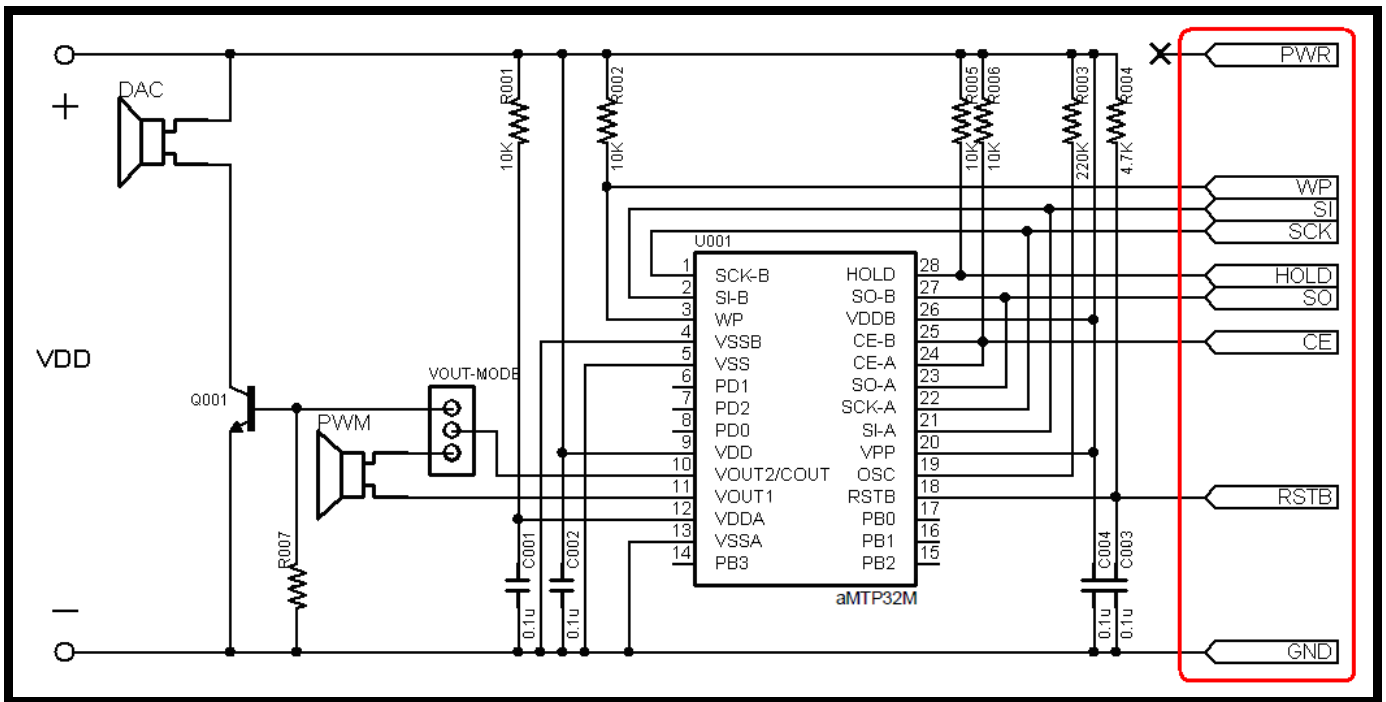
Connected aSPI28W USB writer to your application circuit through program pin, then you can start to program aMTPxxM with your application circuit.



- Warning: aSPI28W PWR pin will offer power to circuit. So before connecting to aSPI28W, you must remove any other power source and device which may input signal to circuit.

◆ In-Circuit Program With (User Provide Supply)

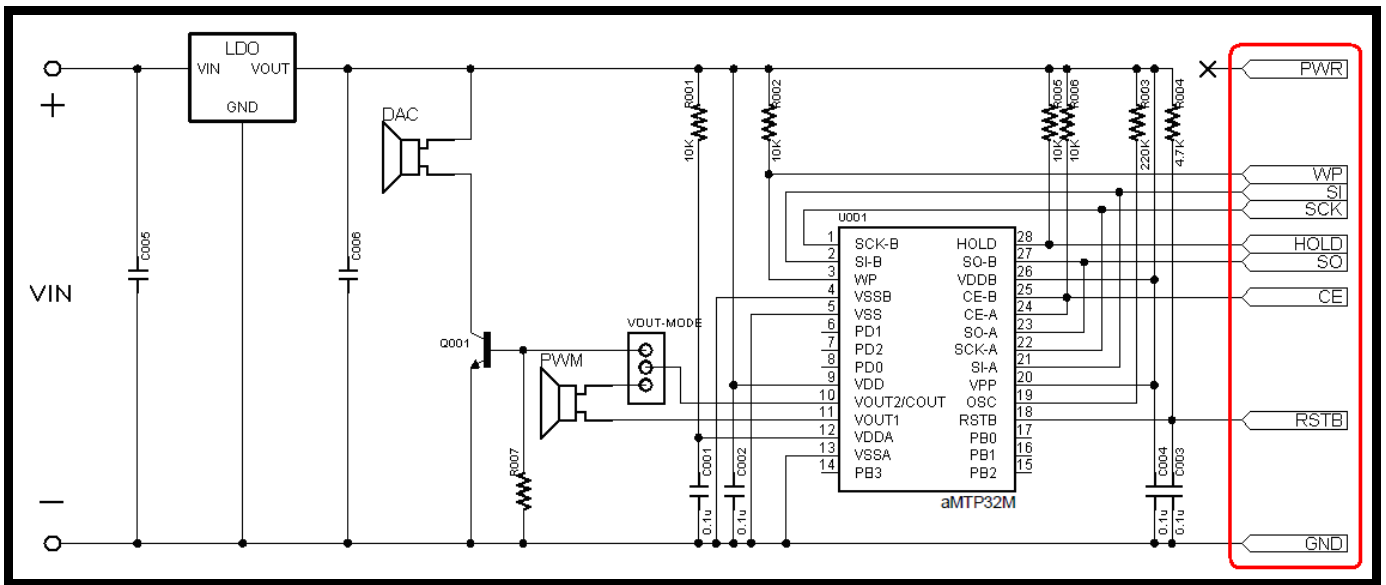
Connected aSPI28W USB writer to your application circuit through program pin and provide VDD, then you can start to program aMTPxxM with your application circuit.



- User provide supply VDD, VDD need between 3.3V and 3.6V.

◆ In-Circuit Program With LDO (User Provide Supply)

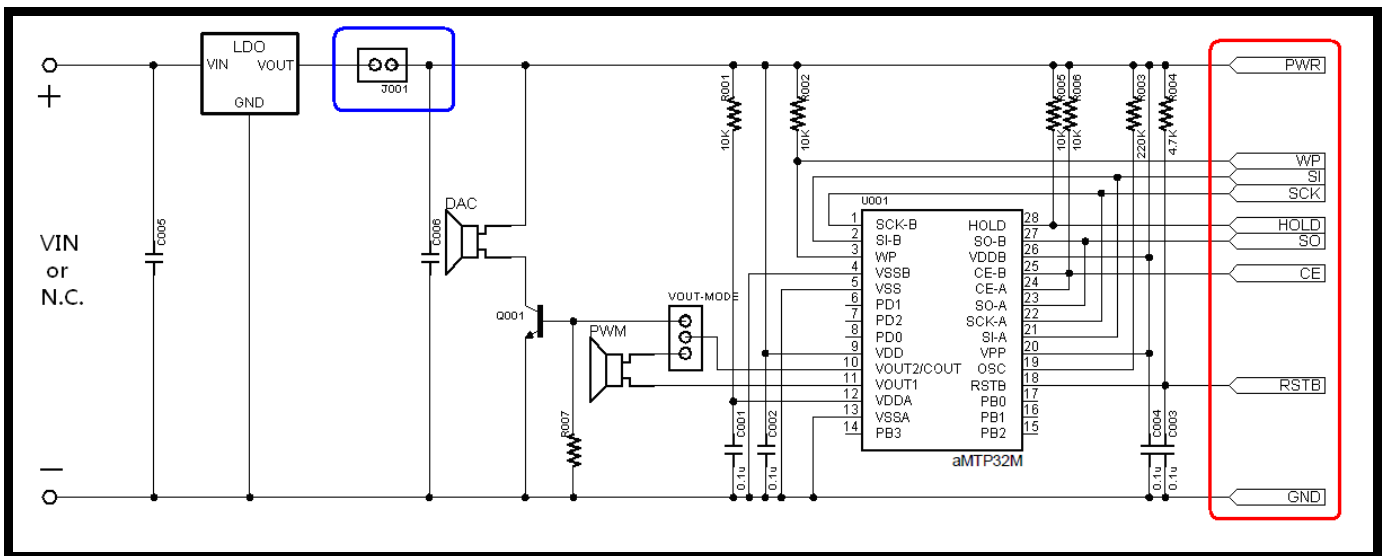
Connected aSPI28W USB writer to your application circuit through program pin and provide VDD, then you can start to program aMTPxxM with your application circuit.



- User provide supply VDD, VDD need between 3.3V and 3.6V.

◆ In-Circuit Program With LDO (Writer Provide Supply)

Open J001, then connected aSPI28W USB writer to your application circuit through program pin. Now you can start to program aMTPxxM with your application circuit.



- Warning: aSPI28W PWR pin will offer power to circuit. So before connecting to aSPI28W, you must open J001 to prevent power into LDO VOUT pin.
- When program finished, remove aSPI28W first, then close J001 to start voice play.

■ HISTORY

Ver 1.2	2012/01/06
[Remove] Section : Single Chip Program (User Provide Supply)	
[Modify] Section: In-Circuit Program With LDO (User Provide Supply).	

Ver 1.1	2012/01/04
[Modify] aSPI28W pin configurations.	
[Modify] Section: Program and In-circuit program.	

Ver 1.0	2011/12/05
The 1 st version user guide for aSPI28W USB writer.	
