

aP23KWC8D

USB Writer **USER GUIDE**

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Introduction

The aP23KWC8D USB Writer is designed to support Aplus aP23xxx series Voice chips. It is suitable for:

- aP23682 (682 sec, 2 I/O chip) DIP8
- aP23341 (**341 sec, 2 I/O chip**) **DIP8**
- aP23170 (170 sec, 2 I/O chip) DIP8
- aP23085 (085 sec, 2 I/O chip) DIP8

This development system serves three main functions:

Compiler – to create a dp2 file from user's Voice files **Writer** – to program the dp2 file into the aP23xx chip **Copier** – connect DC 5V adaptor for 1 to 1 programming

The **Compiler** is used to combine the edited voice files into the chip to form the desired Voice Group and to define the playback functions of each Voice Group by selecting different Options and Trigger Modes of each individual Voice Group.

The **Writer** is used to program the voice data into the aP23xx devices that resulted from the Compiler Function. A Writer Board connected to the PC via USB port is required.

The **Copier** is using the compiled *.dp2 which loads to writer then disconnect the USB and connect the DC 5V for 1 pcs copying.



Hardware Installation

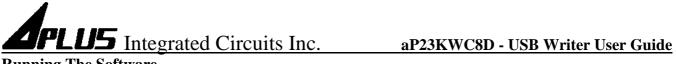
aP23KWC8D is a USB based writer programmer. It is intended to be used in WindowsXP, Win7, Win8 computer.

Writer Board Connection

- 1) Connect USB cable from the writer board to the computer. The computer will display a new hardware is found message. The installation will begin automatically.
- 2) If there are too many USB devices are connected to your computer at the same time, the current supply from USB may not be sufficient to support the writer board.



Fig. 1 The aP23KWC8D USB Writer Programmer Board



Running The Software

Double click the file **23KWComplier.exe** to launch the software.

COMPILER:

Compiler Writer	r-V2.3 About			3			11		10	Chec	tk Sum : 23
	1 🗸 Key	/ Mode	2	PWM	I6ms) 65us	Power Set Oscil	OnPlay lator: <mark>1</mark> [Set Volu	13 me - SBT Loo	op /R: 🔽 Off 🔲 On
Wave File					Output Op Out1 : Bus Out2 : LED	у-Н 18	Busy-H		 Out3:Stop ▼ 	o- H Stop	⊳-H ▼
					Group	edge	Hold	able	Trig	Stop	Output
Type : Compressi ULAW8 6	on PCM ADP			dd-Wav Silence							
File Name	Size	Rate	Туре	Use %							
7					VoiceFile 20		Prog - B	usy	Table Use	Table Start	Type
					Usage : 52	28 8	< 104857	6 ()	D %)	22 .oadDp2	21 Compiler

444 23KWCompiler-V2.3	1000	
Compiler Writer About aP23341 - 8Pin Key Mode Wave File	PWM Debounce DAC Output Option:	Check Sum : PowerOnPlay Set Volume SBT Loop SBT Swap Set Oscillator: XT Ext Int Set LVR: Off On
4ue 23KWCompiler-V2.3		
Aus 23KWCompiler-V2.3 Compiler Writer About aP89341K - SPI Mode	▼ PWM Debounce □ DAC 0 16ms 0 65us	Check Sum : PowerOnPlay Set Volume CPU Serial Option

COMPILER DESCRIPTION:

1. Select your required IC body.

- --- aP23682-8pin , aP23341-8pin , aP23170-8pin , aP23085-8pin.
- ---- aP23682-16pin , aP23341-16pin , aP23170-16pin , aP23085-16pin.
- ---- aP89682K , aP23341K , aP89170K , aP89085K.

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- 2. Select your required trigger mode.
 - --- Key mode / CPU parallel mode / MP3 mode / SPI mode / I2C mode / aP89 mode / SBT mode.
- 3. Select voice output mode.
 - --- DAC or PWM.
- 4. Select your required voice file [xxx.wav] folder.
- 5. Show all your required voice files. (Only wav files acceptable).
- --- The [xxx.wav]: 8 bits or 16 bits mono xxx.wav. 6. Select the compression mode.
 - --- ADPCM4 / ULAW8 / PCM8 / PCM16.
- 7. Loading the required *.wav files.
- 8. Show the memory of your usage.
- 9. Select if adding the silence.
 - --- 1ms ~ 10000ms.
- 10. Select required debounce time.
 - --- 65us or 16ms.
- 11. Select power on play.
 - --- Power on play [sw0] group once.
- 12. Volume control setting.
 - --- Volume level x16 / x8 / x4.
- 13. Select SBT loop. (At Key mode or SBT mode).
 - --- Enable: The SBT pin sequential trigger & loop play.
 - --- Disable: The SBT pin sequential trigger & play once.
- 14. Select SBT pin swap. (for 8pin device only).
 - --- Select (SBT as OUT1) or (SBT as KEY3).
 - [PS: Enable the SBT Swap, the SBT loop auto disable].
 - --- SBT as OUT1: busy-H/L, stop-H/L, LED flash (LED high active),

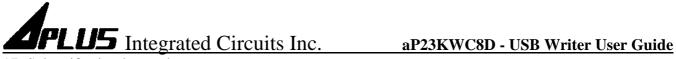
~LED flash (LED low active), prog-busyH/L, LoadBit.

S3 (pin7)	S2 (pin6)	Group	SBT = OUT1
0	1	SW2	Busy-H/L
1	0	SW3	Stop-H/L
1	1	SW10	LED

--- SBT as Key3:

SBT (pin5)	S3 (pin7)	S2 (pin6)	Group
0	0	1	SW1
0	1	0	SW2
0	1	1	SW3
1	0	0	SW4
1	0	1	SW5
1	1	0	SW6
1	1	1	SW7

- 15. Select if using pin S4 as data output pin.
 - --- The SPI mode or I2C mode of data output for 24 pin IC body and 16 pin IC body.
- 16. Select if using the oscillator.
 - --- XT (X'tal=16MHz) / Rosc ext (68K ohm) / Rosc Int.



- 17. Select if using low voltage reset.
 - --- Select ON if the IC voltage less than 2V will be reset.
- 18. Select the output function for output1, output2, output3.
 - --- busy-H, busy-L.
 - --- LED flash (LED high active), ~LED flash (LED low active).
 - --- stop-H, stop-L
 - --- LoadBit: For the play command [094h+D9~D0]; [D9~D0] total 10 bits indicate the voice address. Same the aP89341 prefetch-071h [no gap loop play].
 - --- prog busy-H , prog busy-L can setup the each section of group.
- 19. Setting your required voice sections and function mode.
- 20. Show your final voice list.
- 21. Compiler: After setting the voices & function, push the button to create xxx.txt & xxx.dp2 files.
- 22. Re-download & Re-editing [xxx.dp2] to setting and function.
- 23. Show Check Sum.

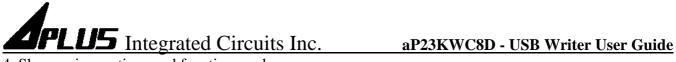
as 23KWCor	mpiler-V2.3	1 mar							X
Compiler V	Vriter About						Che	ck Sum :	
Group	edge	Holdable	Trig	Stop	Output	2			*
4									
	1			1					
VoiceFile 5	F	Prog - Busy	Table Use	Table Start	Туре				
							3		Ŧ
🕅 Blank	Check	Program	n 🦉 Ve	rify 🧧 Se		10 Dun	aP23682	- 8Pin	•
					0 %		Load to Flash	Load	
					2 70			Loud	

WRITER :

WRITER DESCRIPTION:

- 1. Loading your programming file. (xxx.dp2)
- 2. Show setting and function after loading *.dp2 file.
- 3. Show your required IC body.

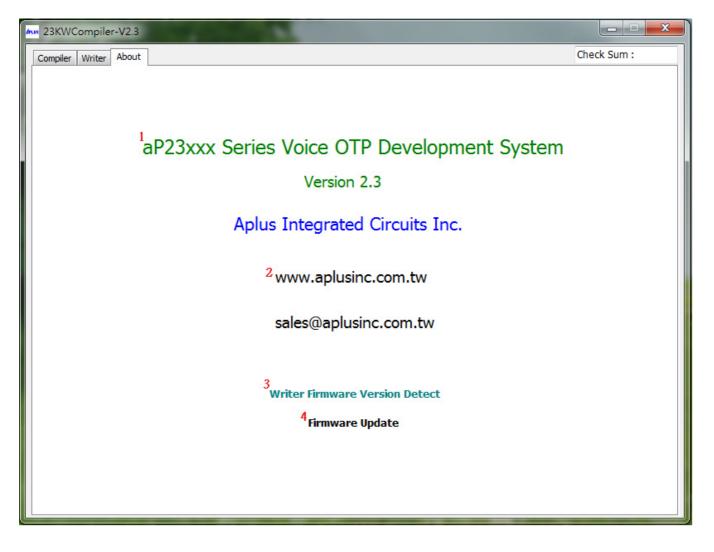
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- 4. Show voice sections and function mode.
- 5. Show the content of your selected section of voice list.
- 6. Select to blank check IC is blank?
- 7. Select to execute programming.
- 8. Select to verify the data of your programming.
- 9. Select if you need security mechanism.

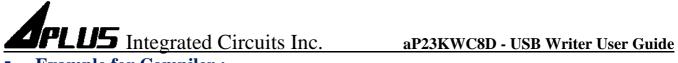
*** (If do this, it can't be copied; it can't be verified and can't be Master IC.)

- 10. Execute your selected (6.) (7.) (8.) (9.).
- 11. Show the progress of "blank check", "program", "verify" and "load to flash".
- 12. Load to Flash: download the program file (xxx.dp2) to [1 to 1 copier] writer.
- About :



ABOUT DESCRIPTION:

- 1. Show software version.
- 2. Show website of Aplus Integrated Circuits Inc.
- 3. Detect writer firmware version.
- 4. Update writer firmware version.



Example for Compiler :

aus 23KWCompiler-V2.3	
Compiler Writer About	Check Sum :
aP23085 - 8Pin a V Key Mode b V A	
Wave File	
1.wav 1.wav 2.wav f 3.wav 5 boku.wav CHILD.wav laugh 01.wav 1.wav MUSIC 02.wav 6 Type : Compression 0 ULAW8 Image: PCM16 PCM8 ADPCM4 Silence	Froundedoe Holdable Trice Ston Output 瀏覽資料夾 X X Y Y Please Select a Folder Y Y Y Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder Image: Display the select a Folder
File Name Size Rate Type Use % Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size Image: Size <t< td=""><td>▲ A ▲ S 3306WFLA_Writer ▲ ap23xx Serial IF ▲ aSPI28W ▲ Binary Viewer ▲ Complier&Writer_UserGuide ▲ EDIT_TEST_WAV ▲ M M M M M M M M M M M M M M M M M M M</td></t<>	▲ A ▲ S 3306WFLA_Writer ▲ ap23xx Serial IF ▲ aSPI28W ▲ Binary Viewer ▲ Complier&Writer_UserGuide ▲ EDIT_TEST_WAV ▲ M M M M M M M M M M M M M M M M M M M
	Usage : 528 < 262144 (0 %) LoadDp2 Compiler

- 1. Select the IC body is [aP23085 8Pin].
- 2. Select [Key Mode] to be our trigger mode.
- 3. Select the voice output is [PWM].
- 4. Click Add-Wav to pick your required folder.
- 5. After confirming the folder, click the button.
- 6. All way files in the folder will be listed here.

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Compiler Writer About aP23085 - 8Pin Wave File 0.wav 1.wav 2.wav 3.wav boku.wav		•	PWM DAC	Debounce I foms Output O) 65us		-		ck Sum : op 🔲 SBT Swap /B: 🗷 Off 🔲 On
Wave File 0.wav 1.wav 2.wav 3.wav	Key Mode		DAC	I6ms) 65us		-		
0.wav f 1.wav f 2.wav 3.wav				Output O	ption:				
1.wav f 2.wav 3.wav			E						
3.wav									
					1.	Larres	1	1	la i i
hales was				Group	edge	Holdable	Trig	Stop	Output
CHILD.wav									
laugh 01.wav			-						
Type : Compression				-					
		A	dd-Wav						
0	PCM16								
PCM8 ^h	ADPCM4	i e	Silence						
Fil Silence Time (1 ~ 1. 2. 20 n	10000 mS) _j	Ok Cancel	Use % 2 2	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
3.	15 [Calicer	3						1.11-2
boku.wav 35	650 12000	PCM8	14						
CHILD.wav 91	676 12000	PCM8	35						
laugh 01.wav 22	877 12000	PCM8	9						
Silence : 20mS 0	16000	Silence	0						
g									
				-					
				<u> </u>					
				g - 1 Usage : 1	70527	< 262144	(65%)	LoadDp2	Compiler

7. Show all your required *.wav files. Double click .wav files you required in f, they will be showed in g.

- 7a. It will show the memory size you has been used.
 - (Please note the data size you loaded can't exceed the body's memory).
 - *** Please note the data size you loaded can't exceed the body's memory. If so, there are some ways to solve this problem:
 - 1). Change it to a bigger memory size body. ex: aP23085-8Pin to aP23341-8Pin.
 - 2). Compressed the wav files to decrease the memory size. ex: from PCM16 to PCM8.
 - 3). Delete some required voice files.
- 8. If way file is too big, we can choose compressing files to decrease their sizes.
 - (UALW8 compress wav file to 8bits, PCM8 compress wav file to 8bits, ADPCM compress wav file to 4bits).
 - *** Please note if your original voice is 16bits wav file which need to be compressed to 8 bits, We suggest you choose ULAW would be better.
- 9. If you want to add mute voice, click Silence button to set the silence time.
- 10. If need silence 20ms. Key in 20 (unit ms) then click OK button.

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aP23085 - 8Pir	n 👻 Ke	y Mode		PWM	Debounce 16ms	e k ⊚ 65us	PowerOnPla Set Oscillator:	-		op 🔽 SBT Out1 /R: 🚛 Off 🔽 O
Wave File					Output O			p		
0.wav					Out1:Bus	sy-H r	Busy-H	-		
1.wav				=						
2.wav							-			-
3.wav					Group	edge	Holdable	Trig	Stop	Output
ooku.wav										
CHILD.wav										
augh 01.wav				-						
ALICTO OD										
ype : Compression			A	dd-Wav						
) ULAW8	O PCN	116			-					
PCM8	ADF	PCM4		Silence						
File Name	Size	Rate	Туре	Use %						
1.wav	6412	8000	PCM16	2						
2.wav	5912	8000	PCM16	2	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
3.wav	7472	8000	PCM16	3						
ooku.wav	35650	12000	PCM8	14						
CHILD.wav	91676	12000	PCM8	35						
augh 01.wav	22877	12000	PCM8	9						
Silence : 20mS	0	16000	Silence	0						
					Usado : 1	70527	C 262144	(65.%)	.oadDp2	Compiler
					Usage : 1	/052/ 4	< 262144	(65 %) L	.oadDp2	Compiler

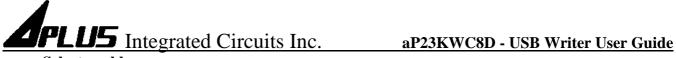
Debounce 16ms 65us	PowerOnPlay V Set Volume SBT Loop Set (Volume Warp : V Disable Enable R: Off V On
Output Option: Out1 : Busy- H	Busy. Vol Level : 8 Vol Default : 8
	Set

- 11. Select the signal timing. (16ms or 65us).
- 12. Enable the power on play function, immediately play [SW0] once.
- 13. [Set volume] control function.
 - Select the volume control Level x16 / x8 / x4.
 - The volume control key by the [M1] and [M0] key.
 - Volume Warp: Volume level increase to the max then begin from the level 1.
 Select disable:

```
Pin M0: volume Level [+ 1].
```

```
ex: Level x8, 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 8 \rightarrow 8 \rightarrow \dots
```

```
Pin M1: volume Level [- 1].
ex: Level x8, 8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 1 \rightarrow 1 \rightarrow \dots
```



Select enable:

Pin M0: volume Level [+ 1]. ex: Level x8, $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow \dots$

Pin M1: volume Level [-1]. ex: Level x8, $8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow \dots$

14. When trigger in "Key mode" or "SBT mode",

If enable the [SBT Loop]: It will one key sequential trigger and keep loop play in every group. If disable the [SBT Loop]: It will one key sequential trigger and play one time in every group. (*** Note: Trig level must select Level).

Debounce 16ms 65us	PowerOnPlay Set	Volume SBT Loop SBT Out1 Rosc Ext SBT as OUT1
Output Option: Out1 :Busy- H	Busy-H	SBT as KEY3
		Set

- 15. SBT pin swap other I/O pin function. ex : SBT pin swap to OUT1 as output use.
- 16. Select set Oscillator from Crystal mode(x'tal=16MHz), External Rosc mode(68K), Internal Rosc mode. (if selecting Crystal mode, It must set at pin M0 & pin M1).
- 17. Select set Low Voltage Reset when voltage less than 2V IC will be reset.
- 18. Output Option: Setup the out1, out2, out3. Can select the busy-H, busy-L, stop-H, stop-L, LED flash (LED high active), ~LED flash(LED low active), Prog busy-H, Prog busy-L, LoadBit.

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Compiler Writer	About								Check	cSum:
aP23085 - 8Pi	n 🖌 Key	y Mode	6	PWM	Debounce I6ms	© 65us	PowerOnPla	ay 🗌 Set Volur		
Wave File				*	Output O				Inc Sec Evi	
0.wav					Out1:Bus	iy-H	Busy-H	-		
1.wav				=						
2.wav						1	1	-	1	
3.wav					Group	edge	Holdable	Trig	Stop	Output
boku.wav					SW1	Edge	Unholdable		Enable	
CHILD.wav					SW2	Edge	Unholdable	e Retrigger	Enable 📕	anel-A
laugh 01.wav				-	SW3 S	Trig Level	Hold	Trigger	Stop	
Type : Compressio	n		_			C Level	Ounholdable	Non-Retri	igger 🛛 🔘 Disab	ole
O ULAW8		16	A	dd-Wav		Edge	O Holdable	Retrigger	Enable	le
PCM8		CM4	S	ilence		-				
File Name	Size	Rate	Туре	Use %		SW 2	2 t	0	K Cano	el
1.wav	6412	8000	PCM16	2						
2.wav	5912	8000	PCM16	2	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
3.wav	7472	8000	PCM16	3	2.wav		1	0	0	PCM16
boku.wav	35650	12000	PCM8	14	boku.wav		1	0	0	PCM8
CHILD.wav	91676	12000	PCM8	35	CHILD.wa	v	1	0		PCM8
laugh 01.wav	22877	12000	PCM8	9				Up		
u								Down	Pa	nel-B
								Insert		
								Delete		
								_		
					Usage: 1	70607 <	< 262144	(65%) L	oadDp2	Compiler

- 19. Double click Panel-A for your setting the function of each Group.
- 20. Key in group number.
- 21. SW means group. ex : Select the second group and double click the wav files you required in (u) then Panel-B will show them.

The mouse moves to Panel-B then enter right key for your adjusting the order of the wav files or insert or delete them.

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ompiler Writer aP23085 - 8P		/ Mode		PWM	Debounce 16ms					SBT Lo	k Sum : DACA ³ op 📝 SBT Out1 /R: 🔲 Off 📝 O	
Wave File 0.wav 1.wav				* 	Output Op Out1 : Bus		Busy-H	.ur	7	Inc Set Ly		
2.wav 3.wav					Group	edge	Holdab	le	Trig	Stop	Output	
boku.way					SW1	Edge	Unholda	able	Retrigger	Enable		
CHILD.way					SW2	Edge	Unholda	able	Retrigger	Enable	Panel-A	
laugh 01.wav					SW3	Edge	Unholda		Retrigger	Enable		
MUSIC 02				-			v			1	·']	
Type : Compression ULAW8 PCM16 PCM8 ADPCM4		A	dd-Wav		Add Multi-		F	SW-Begin:		Ok		
		5	Silence	Delete		-	SW-End:	3	Cancel			
File Name	Size	Rate	Туре	Use %		Play Stop		E	C Level	Edge	je 📃	
1.wav	6412	8000	PCM16	2				_	Old O	le 🔘 Holdable		
2.wav	5912	8000	PCM16	2	VoiceFile		Prog - Busy	1	Та			
3.wav	7472	8000	PCM16	3					Trigger			
boku.wav	35650	12000	PCM8	14					🔘 Non-Retrigger 🔘 Retrigger			
CHILD.wav	91676	12000	PCM8	35					Stop Disable	Ena	LL.	
laugh 01.wav	22877	12000	PCM8	9						U Ena		
					Usage : 17	70607 <	< 262144	(6	5 %) ^y Loa	dDp2	V Compiler	

22. If the mouse move to Panel-A and enter right key, it will show there are additional function for add, multi-add, delete, play and stop.

Add: add single group. Multi-Add: add multi-groups at one time (v-1). Delete: delete the group. Play: play all voices of the group. Stop: stop the voice playback.

- 23. Finish compiling, click compiler button.
- 24. Generate Check Sum number.
- 25. Loading finished compiled .dp2 file.

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23KWCompiler	-V2.3		1	-							
Compiler Writer	About				Debound						k Sum :
aP23085 - 8P	in 👻 Ke	y Mode		PWM		e () 65us					op 🔽 SBT Out1 /R: 🔲 Off 🔽 On
Wave File					Output (Out1 : Bu		Set Oscillator: XT Ext Int Set LVR: Off I On Busy-H				
					Group	edge	Holda	able	Trig	Stop	Output
Type : Compression Add-Wav ULAW8 Image: Compression PCM8 ADPCM4					File is		Wave\bok		×		
File Name	Size	Rate	Туре	Use %	- 4	D:\A\	Wave\CHI	ILD.wav			
1.wav	6412	8000	PCM16	2							
2.wav	5912	8000	PCM16	2	1		z 🗖	確定		Table Start	Туре
3.wav	7472	8000	PCM16	3				如田人王			
boku.wav CHILD.wav	0	0	PCM8 PCM8	3							
laugh 01.wav	22877	12000	PCM8	9	_		_		_		
Panel-C			Play Stop Remove Remove								
			Modify	Path Z-	1 ge : 4	43201 <	< 209715	2 (16	5%)	LoadDp2	Compiler

26. Reloading .dp2 file if the voice file (*.wav) is not exist.

27. The mouse moves to Panel-C then enter right key for your modifying the path of the wav files.



• Write the program file [xxx.dp2] to IC :

Group	edge	Holdable	Trig	Stop	Output	C:\Users\Jimmy\Desktop\TestTTGo\demo1.dp2
W1	Edge	Unholdable	Retrigger	Enable		Key Mode
W2	Edge	Unholdable	Retrigger	Enable		Use: PWM
W3	Edge	Unholdable	Retrigger	Enable	19	Power On Play: Disable
						Use: Rosc Int
С						LVR: On
			-			SBT as Out1 b
						OutPut1: Busy- H
	2					Execute Blank Check
						Device ID Correct
						Blank Ckeck Success
					<u></u>	Execute Program
/oiceFile		Deen Dura	Table Use	Table Start	Туре	Device ID Correct
		Prog - Busy				Program Finish
.wav		1	0	0	PCM16	Execute Verify
2						Device ID Correct
d						Verify Success
						Execute Security
						Device ID Correct
						Security Finish
				13	14	
					30	
Dlank	Check	Drogram		:6, 💷 Ca	augh (
Blank	Спеск	🗷 Progran	n 🛛 🗹 Ver	ity 🗹 Se	ecurity	aP23085 - 8Pin 🔻

- a. Click [Load] button to load the program file [xxx.dp2] file. After loading, it will show Check Sum 、b、c、d message.
- e. Select Blank Check to check if this IC is blank.
 Select Program to execute programming.
 Select Verify to execute verification.
 Select Security to execute IC security mechanism.
 ***(To avoid the data to be copied and it can't be a master IC).
 PS: After the IC selecting Security, this IC can't execute Verify.
- f. Click Run button to execute all your selected items in e column. (It'll show (e.) progress & (b) message).

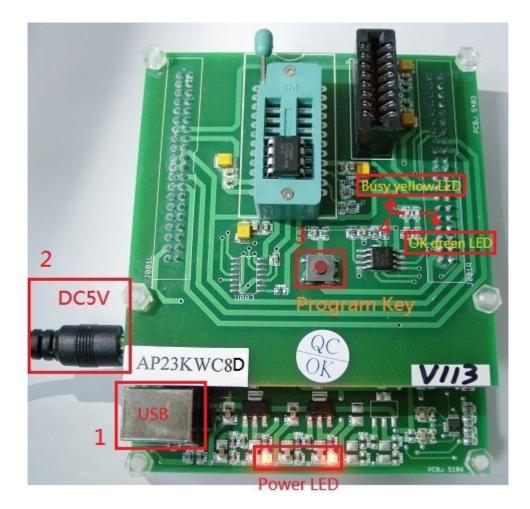






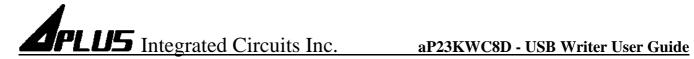
g. Click [Load to Flash] button to download .dp2 file to Writer.





When writer is able to be a 1 to 1 copier. *** (You must do g. step at first.)

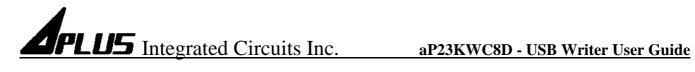
- 1. Disconnect USB.
- 2. Connect 5V adapter.
- 3. Push program key to execute programming.
- 4. When programming, yellow LED flash. When programming finished, green LED light. When programming failed , no LED light.



Example for About :

aux 23KWCo	mpiler-V2.3		
Compiler V	Vriter About		Check Sum : DACA
	¬D	22ww Series Voice OTP Development System	
	ar	23xxx Series Voice OTP Development System	
		Version 2.3	
		Aplus Integrated Circuits Inc.	
		Aplus Integrated Circuits Inc.	
		a www.aplusinc.com.tw	
		sales@aplusinc.com.tw	
		b Writer Firmware Version Detect	
		c Firmware Update	

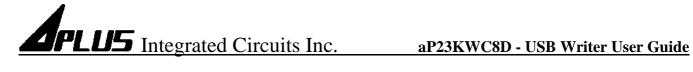
- a. Double click the <u>www.aplusinc.com.tw</u> will connect website Aplus Integrate Circuits Inc.
- b. Double click the Writer Firmware Version will show writer firmware version.
- c. Double click the Firmware Update will load firmware file.



Inserting Devices into the Programmer

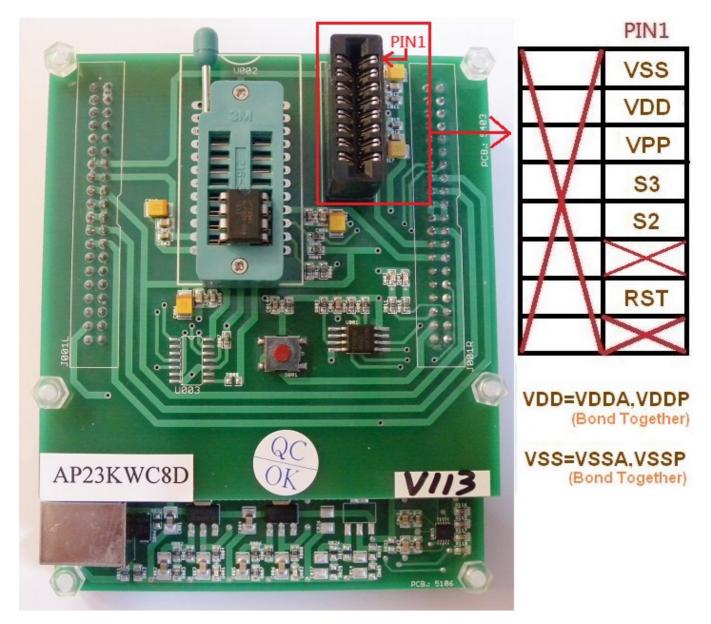
- DIP package devices
- Device should be inserted align to the bottom of the 8-pin textool socket.
- If you want to program COB, insert it to the COB Connecter





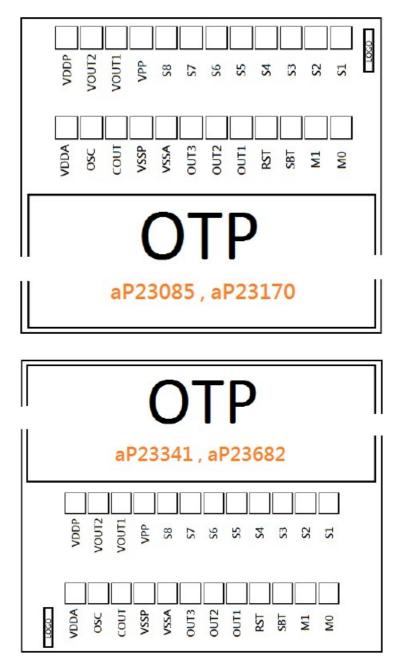
COB Information

AP23xxx_Writer Programmable I/O pin





DIE DIAGRAM:



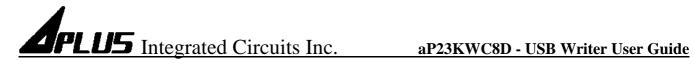
Programmable pin : VDD(VDDP \vdot VDDA) \vdot VSS(VSSA \vdot VSSP) \vdot VPP \vdot S2 \vdot S3 \vdot RST

Notes:

- 1. Between VPP and GND should add $10K\Omega$.
- 2. VDDA and VDDP should be connected to the Positive Power Supply.
- 3. VSSA and VSSP should be connected to the Power GND.
- 4. Substrate should be connected to the Power GND.

*PCB dimension for Slot : 2.28cm x 0.15cm COB pad pitch : 2.54mm

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HISTORY

2015/04/10

aP23KWC8D User Guide.

2015/05/20

Dat file become dp2 file.

2015/07/17

Add \rightarrow Device map & Check Sum.

2015/09/18

Add \rightarrow Low voltage reset & CPU serial option. Modify→Trigger mode & Silence time & Usage memory size & Execute Run component control.