

aP23KW16S

USB Writer **USER GUIDE**

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Introduction

The aP23KWC16S USB Writer is designed to support Aplus aP23xxx series Voice chips. It is suitable for:

- aP23682 (682 sec, 4 I/O chip) SOP16
- aP23341 (341 sec, 4 I/O chip) SOP16
- aP23170 (170 sec, 4 I/O chip) SOP16
- aP23085 (085 sec, 4 I/O chip) SOP16 _

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 aP23xxx 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

aP23KWC16S is a USB based writer programmer. It is intended to be used in Windows XP, Win7, Win8, Win10 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 aP23KWC16S USB Writer Programmer Board



Running The Software

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

COMPILER:

🚧 23KWCompiler	-V2.5											×
Compiler Writer	About				3.					Che	ck Sum :	15.
aP89341K 1	. V Key	/ Mode	2.	✓ Config	DAC PWM	Debounce	065us	Voltage ③ 3V ○ 4.5V	Output (Out1:Bu	Option: Isy-H Bu	isy- H	~
Wave File					High Volu	me	~	04.50	Out2 :LE	D-Flash LE	D- Flash	~
4.					Set LVD: Set Oscilla	⊡ Off [ator: □ X]On CT ∏Ext	t 🗹 Int	Out3 : St	op-H St	op-H	~
					Group	edge	Hol	dable	Trig	Stop	Outpu	ut
					9.							
Type : Compressio	n PCM ADPC	16 CM4	7.	6. Add-Wav Silence] 							
File Name	Size	Rate	Туре	Use %								
8					VoiceFile		Prog - I	Busy T	Table Use	Table Start	Туре	
					10.)						
					13 Usage : 52	8	14. < 10485	76 (0	%) L	12. oadDp2	1 Com	1. piler

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, aP89341K, aP89170K, aP89085K.
- 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. Show all your required voice files. (Only wav files acceptable).
 - --- The [xxx.wav]: 8 bits or 16 bits mono xxx.wav.



- 5. Select the compression mode. --- ADPCM4 / ULAW8 / PCM8 / PCM16.
- 6. Select your required voice file [xxx.wav] folder.
- 7. Select if adding the silence. --- 1ms ~ 10000ms.
- 8. Loading the required *.wav files.
- 9. Setting your required voice sections and function mode.
- 10. Show your final voice list.
- 11. Compiler: After setting the voices & function, push the button to create xxx.txt & xxx.dp2 files.
- 12. Re-download & Re-editing [xxx.dp2] to setting and function.
- 13. Show the memory of your usage.
- 14. Show the IC body memory size.
- 15. Show Check Sum.

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ompiler Writer 4 aP89341K Wave File	About ~ Ke	y Mode		22. ∨ Config	□ DAC ☑ PWM High Volu Set LVD: Set Oscilla	Debounce 16ms 16ms 10me	16. Voltag)65us ③ 3V ○ 4. On 17.	ge Output 21. Out1 :B 5V Out2 :Li 18. Out3 :S	Option: 19. usy-H Bus ED-Flash LEC top-H Sto	k Sum : sy-H → D- Flash → pp-H →
					Group	edge	Holdable	Trig	Stop	Output
Type : Compression)	416		Add-Wav						
		PCM4		Silence						
File Name	Size	Rate	Туре	Use %						
					VoiceFile		Prog - Busy	Table Use	Table Start	Туре
					Usage : 52	.8 <	1048576 (0%)	LoadDp2	Compiler

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4ue 23KWCompiler-V2.5			- 🗆 X
Compiler Writer About			Check Sum :
aP23341 - 8Pin v Key Mode v Config Wave File	 ✓ SBT Key3 23. □ PowerOnPlay 24. □ SBT Loop 25. □ Set Volume 26. 	tage Output Option 3V 4.5V	on:
	Close	Trig	Stop Output
lype : Compression			
Compiler Writer About			Check Sum :
aP89341K V MP3 Mode V Config Wave File	PowerOnPlay Set Volume	tage Output Option 3V Out1 : Busy- 4.5V Out2 : LED- F Out3 : Stop-1	on: H Busy-H ~ Hash LED-Flash ~ H Stop-H ~
	◎ SBT : P / P 27. ○ SBT : P / S	Trig	Stop Output
//////////////////////////////////////			– 🗆 X
Compiler Writer About			Check Sum :
aP89341K v SPI Mode v Config Wave File	PowerOnPlay Set Volume	tage Output Optic 3V Out1 : Busy- 4.5V Out2 : LED- F Out3 : Stop-1	n: H Busy-H ~ ilash LED-Flash ~ H Stop-H ~
		Trig	Stop Output
	CPU Serial Option 28.		

- 16. Select required debounce time.
 - --- 65us or 16ms.
- 17. Select if using low voltage detect.
 - --- Select ON if the IC voltage less than 2V will be reset.

18. Select if using the oscillator.

- --- XT (X'tal=16MHz) / Rosc ext ($68K \ ohm$) / Rosc Int.
- 19. 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.
 - --- Prog-BusyH, Prog-BusyL.
 - --- Load: 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].



- 20. Select PWM voice output volume. ---Select PWM high volume.
- 21. Select IC operating voltage at PWM (VOUT). --- Low Voltage: 3V, High Voltage: 4.5V.
- 22. IC body configures advanced function.
- 23. Select SBT pin swap. (for 8pin device only). --- Select (SBT as OUT1) or (SBT as KEY3).
 - --- SBT as OUT1: Busy-H/L, Stop-H/L, LED Flash (LED high active), ~LED Flash (LED low active), Prog-BusyH/L, Load.

S3 (pin7)	S2 (pin6)	Group	SBT = OUT1
0	1	SW1	Busy-H/L
1	0	SW2	Stop-H/L
1	1	SW3	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

24. Select power on play.

--- Power on play [sw0] group once.

- 25. Select SBT loop. (At SBT mode).
 - --- Enable: The SBT pin sequential trigger & loop play.
 - --- Disable: The SBT pin sequential trigger & play once.

*Note: Voice function (Trig Level) must select Level.

26. Select volume control function.

--- Select the volume control Level x16 / x8 / x4.

- 27. SBT pin act play/pause or play/stop function for MP3 mode.
- 28. 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.



	'IN •	
100		

Jt					Check Sum :
Holdable	Trig	Stop	Output	2.	
Prog - Busy	Table Use	Table Start	Туре		
7.	8.	ify □Se	9.	_ 10.	3.
	Holdable	Holdable Trig Holdable Trig Holdable Initial State	Holdable Trig Stop Holdable Trig Stop Holdable Trig Stop Holdable I I I </td <td>Holdable Trig Stop Output Image: Image:</td> <td>Holdable Trig Stop Output I</td>	Holdable Trig Stop Output Image:	Holdable Trig Stop Output I

WRITER DESCRIPTION:

- 1. Loading your programming file. (xxx.dp2)
- 2. Show setting and function after loading *.dp2 file.
- 3. Show your required IC body.
- 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 Master IC.) Page 9 of 33



- 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 :

ompiler Writer , aP23682 - 8Pir Wave File boku.wav CHILD.wav	About a Key	' Mode	b	 ✓ Config 	□ Hi Set Set	c Check Sun DAC Debounce Voltage Output Option: PWM ● 16ms ○ 65us ● 3V d gh Volume ● ● 4.5V t LVD: ☑ Off □ On t CVScillator: XT Ext	n :
MUSIC 02.wav Super 16A.wav Train 01.wav	h				Gr	roup edge Holdable Trig Stop C	output
ype : Compression ULAW8 PCM8		16 CM4	1	f Add-Wav Silence	-	Please Select a Folder	
ile Name	Size	Rate	Туре	Use %		A wave ABT_Builder AUVR AutoWriter-APP Builder_Project China_Customer Chk_dll cus wav	e

- 1. Select the IC body is [aP23682 8Pin].
- 2. Select [Key Mode] to be our trigger mode.
- 3. Select the voice output is [PWM].
- 4. IC operating voltage at 3V.
- 5. Select PWM high volume.
- 6. Click Add-Wav to pick your required folder.
- 7. After confirming the folder, click the button.
- 8. All wav files in the folder will be listed here.



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	About								Chec	k Sum :
aP23682 - 8P	in v Key	/ Mode	~	Config	DAC PWM	Debounce 16ms	65us Voltag	e Output	Option:	
Wave File					High Volu	ime	~ 0			
boku.wav					Set LVD:		Dn			
CHILD.wav					Set Oscill	ator: XT		+		
MUSIC 02.wav	h				Set Osem					
Super 16A.wav	_				Group	edge	Holdable	Trig	Stop	Output
Train 01.wav										
Turne + Compression										
Type : Compressio	on 		Ac	dd-Wav						
JULAW8 j	OPCM	16	L.E.		1					
PCM8		CM4	Ks	lience						
Fil Silonco Timo	(1 or 1000)			Use %						
Fil Silence Time	e (1 ~ 1000	0 mS)	Ok I	Use % 2						
Fil Silence Time 다 고이	e (1 ~ 1000) mS)	Ok I	Use % 2 4	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time	e (1 ~ 1000) mS	0 mS)	Ok I ancel	Use % 2 4 3	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time bc Cł 20 MI Super 16A.wav	e (1 ~ 1000) mS 512296	0 mS)	Ok I ancel PCM8	Use % 2 4 3 12	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time bc Cl 20 MI Super 16A.wav Train 01.wav	e (1 ~ 1000) mS 512296 46618	0 mS)	Ok I ancel PCM8 PCM8	Use % 2 4 3 12 2	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time bc Cl 20 Ml Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok I ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time bc Cl 20 Ml Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
Fil Silence Time bc Cl 20 Ml 20 Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type
Fil Silence Time bc Cl 20 Super 16A.wav Frain 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type
Fil Silence Time bc Cl 20 Super16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type
Fil Silence Time bc Cl 20 Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type
Fil Silence Time bc Cl 20 Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type
Fil Silence Time bc Cl 20 Super 16A.wav Train 01.wav Silence : 20mS	e (1 ~ 10000 mS 512296 46618 0	0 mS) C 16000 12000 16000	Ok ancel PCM8 PCM8 Silence	Use % 2 4 3 12 2 0	VoiceFile		Prog - Busy	Table Use	Table Start	Type

- 9. Show all your required *.wav files. Double click wav files you required in h, they will be showed in i.
- 9-1.If you once required multiple wav files to be showed in i. (Mouse left button as begin item after mouse right button as end item and click Add-Multi Wav at the same time).
- 9-2.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.
- 10. 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.
- 11. If you want to add mute voice, click Silence button to set the silence time.
- 12. If need silence 20ms. Key in 20 (unit ms) then click OK button.

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ompiler Writer	About n v Kev	/ Mode		 Config 	DAC	Debounce	M Voltag	e n Output	Option:	:k Sum :
Wave File boku.wav CHILD.wav					PWM High Vol Set LVD: Set Oscil	ume ☑ Off □ ator: □ ×	o 04.]On p T Ext √Ir	sv		
MUSIC 02.wav					Group	edge	Holdable	Tria	Stop	Output
Train 01.wav										
Type : Compressio	n					_				
ULAW8		16	1.00	Add-Wav						
PCM8		CM4		Silence						
File Name boku.wav	Size 35650	Rate 12000	Type PCM8	Use %						
CHILD.wav	91676	12000	PCM8	4	VoiceFile		Prog - Busy	Table Use	Table Start	Type
MUSIC 02.wav	73004	12000	PCM8	3						1.0
Super 16A. wav	512296	16000	PCM8	12					50	
Train 01.wav	46618	12000	PCM8	2						
Silence : 20mS	0	16000	Silence	0						

# 23KWCompiler-V2.5					_		X
Compiler Writer About		-			Chec	k Sum :	
aP23682 - 8Pin 🗸 Key Mode	~ Config	SBT Out1	tage 3V	Output Optio	n: H Bu:	sy- H	~
Wave File		PowerOnPlay S	4.5V	u			
boku.wav		SBT Loop t		_			
CHILD.wav		Set Volume	Int				
MUSIC 02.wav		<u> </u>				1	
Super 16A.wav				rig	Stop	Outpu	t
Train 01.wav							
Turne & Compression		Close					
rype : compression	Add Mov						



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23KWCompiler-V2	2.5						—		×
Compiler Writer Abo	out						Check S	ium :	
aP89170K	~ SPI	Mode	1	~ Config		tage Output Option: 3V Out1:Busy-H	Busy-I	н	~
Wave File					PowerOnPlay	Out2 : LED- Flash	LED-F	lash	~
boku.wav					v	Volume Warp : Disable Zenable	Load		~
CHILD.wav					🗹 Set Volume	Vol Level : 8 Vol Default : 8	1		
MUSIC 02.wav							1	Output	
Super 16A.wav Train 01.wav					w	Set V-1		σαφαί	
					CPU Serial Op	tion 🔽 SPI - 4 wire : Pin S4 as DO			
					Close	I2C - 3 wire : Pin S4 as DO			
Type : Compression	Open	16		Add-Wav		PULL-TYPE	36		
ULAWS	OPCM	10				Internal PULL-UP			
PCM8		CM4		Silence		O No internal PULL-UP			
File Name	Size	Rate	Туре	Use %		Set w.1			
boku.wav	35650	12000	PCM8	7		VV-1			

- 13. Select the signal timing. (16ms or 65us).
- 14. IC operating voltage at 3V.
- 15. Select PWM high volume.
- 16. Select set Low Voltage Detect when voltage less than 2V IC will be reset.
- 17. 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).
- 18. SBT pin swap other I/O pin function. ex : SBT pin swap to OUT1 as output use.
- 19. Disable the power on play function. It does not immediately play [SW0] once.
- 20. When trigger in "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).
- 21. 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-BusyH, Prog-BusyL, Load.
- 22. [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, $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 8 \rightarrow 8 \rightarrow \dots$

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Pin M1: volume Level [- 1].	
ex: Level x8, $8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 1$	1→
Select enable:	
Pin M0: volume Level [+ 1].	
ex: Level x8, $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8 \rightarrow 1 \rightarrow 1$	2→3→ 4→
Pin M1: volume Level [- 1].	
ex: Level x8, $8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1 \rightarrow 8 \rightarrow 1 \rightarrow 8 \rightarrow 1 \rightarrow 8 \rightarrow 1 \rightarrow 8 \rightarrow 1 \rightarrow 1$	•7→6→5→

23. When set SPI Mode or I2C Mode, the pin S4 is for data output (DO) using.

aP23682 - 8Pi	n v Key	/ Mode		~ Config	DAC Debound	e Voltag O 65us 0 3V	e Output Out1:Bu	Option: Jsy-H Bu	isy-H
Wave File					High Volume	~ 04.5	5V		
ooku.wav					Set IVD. 20ff	On			
CHILD.wav					Set Oscillator:		+		
MUSIC 02.wav					Set Oscillator.			1	1
Super 16A.wav					Group edge	Holdable	Trig	Stop	Output
Train 01.wav					SW1 X Edge	Unholdable	Retrigger	Enable	Panel-A
					SW2 Edge	Unholdable	Retrigger	Enable	
					SW3 Trig Level	Hold	Trigger	Stop	
vpe : Compressio	n				CLevel	Unholdable	○ Non-Retr	igger 🛛 🔿 Dis	able
ULAW8	OPCM	16	A	dd-Wav	Edge	⊖ Holdable	Retrigger	• Ena	able
PCM8		CM4		Silence			_		
File Name	Size	Rate	Туре	Use %	SW 2	2	C	OK Can	ncel
ooku.way	35650	12000	PCM8	2					
CHILD.way	91676	12000	PCM8	4	VoiceFile	Prog - Busy	Table Use	Table Start	Type
MUSIC 02.wav	73004	12000	PCM8	3	boku.way	1	0	0	PCM8
Super 16A.wav	512296	16000	PCM8	12	CHILD.way	1	0	0	PCM8
Train 01.wav	46618	12000	PCM8	2	MUSIC 02.wav	1	0	0	PCM8
							LL.		
i l							Up		Panel-B
					_		Down		
					-		Insert		0
							Delete		

- 24. Double click Panel-A for your setting the function of each Group.
- 25. Key in group number.

4

26. SW means group. ex : Select the second group and double click the wav files you required in (i) 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	About										Chec	k Sum :
aP23682 - 8Pi	n v Key	/ Mode		~ Config	□ DAC ☑ PWM	Debounce 16ms	e 0 65us	Voltage	e Ou Out	tput Optio 1 :Busy-H	n: H Bus	sy- H
Wave File					High Vol	ume	~	04.5	v			
ooku.wav					Set LVD.	Ø Off □	On					
CHILD.wav					Set Oscill	lator:		vt 🛛 Int				
MUSIC 02.wav					Set Oscill							
Super 16A.wav					Group	edge	H	Ioldable	Trig		Stop	Output
Train 01.wav					SW1	Edge	U	nholdable	Retrig	ger	Enable	
					SW2	Edge	U	nholdable	Retrig	ger	۸d	u.
					SW3	Edge	U	nholdable	Datrig	ger	A0	
vpe : Compressio	n						SW-Be	ain: 2	Z-1	Ok	M	ulti-Add
		16		Add-Wav			-			0.0	De	elete
0						SW-Er	nd: 3		Cancel	Pla	ay 🖆	
PCM8	PCM8 O ADPCM4 Silence						Triale	vel			Ste	-
	C	Dete	-	11 0/			OLe	vel	Edge			
file Name	Size	Rate	Type	Use %			Hold		0.1			
ooku.wav	35650	12000	PCM8	2			€Un	holdable	OHolda	ble		1
CHILD.wav	91676	12000	PCM8	4	VoiceFile		Trigge	r			le Start	Туре
MUSIC 02.wav	73004	12000	PCM8	3	boku.wav		O No	n-Retrigge	r 🖲 Retric	ger		PCM8
Super 16A.wav	512296	12000	PCM8	12	CHILD.wa	v	Stop			-		PCM8
Iran 01.wav	40010	12000	PCMO	2	MUSIC 02	.wav	ODis	able	Enabl	e	-	PCM8
					-							
					-							<u></u>
									् ्			
												-
										в		A
							NA. INTRODUCT	000000000000000000000000000000000000000				_

27. 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 (z-1). Delete: delete the group. Play: play all voices of the group. Stop: stop the voice playback.

- 28. Finish compiling, click compiler button.
- 29. Generate Check Sum number.
- 30. Loading finished compiled .dp2 file.

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ompiler Writer	About								Chee	ck Sum :
aP23682 - 8Pi Wave File	n v Key	/ Mode		 ✓ Config 	DAC PWM High Volu Set LVD: Set Oscilla	Debounce ● 16ms ○ me ☑ Off □ (ator: □ XT	65us Voltag 65us 3v 4.5 On Ext In	e Output Out1:B	Option: usy-H Bu	sy-H √
					Group	edge	Holdable	Trig	Stop	Output
Type : Compressic ULAW8 PCM8		16 CM4	F	Add-Wav Silence				wave\boku.w wave\CHILD.	C vav wav	
File Name	Size	Rate	Туре	Use %				्र	准定	
boku.wav	0	0	PCM8	0						
CHILD.wav	0	0	PCM8	0	VoiceFile		Prog - Busy	Table Use	Table Start	Туре
MUSIC 02.wav	73004	12000	PCM8	3						
Super16A.wav Train 01.wav	512296 46618	16000 12000	PCM8 PCM8	12 2						
Panel-C		Play Stop Remove Remove Modify	e e All Path							

- 31. Reloading .dp2 file if the voice file (*.wav) is not exist.
- 32. The mouse moves to Panel-C then enter right key for your modifying the path of the wav files.

PLUS Integrated Circuits Inc. aP23KWC16S - USB Writer User Guide

How to write the program file [xxx.dp2] to IC :

23KWC	ompiler-Va	2.5					Check S		B
omplier	AD	Jut							
Group	edge	Holdable	Trig	Stop	Output	D:\A\demo\demo1.dp2			
SW1	Edge	Unholdable	Retrigger	Enable		Key Mode			
SW2	Edge	Unholdable	Retrigger	Enable		Use: PWM , Low Voltage : 3V			
SW3	Edge	Unholdable	Retrigger	Enable		VOUT [PWM] - Level 6			
	C					Power On Play: Disable Use: Rosc Int LVD: Off SBT as Out1 b OutPut1: Busy- H Execute Blank Check Blank Ckeck Success)		
VoiceFile poku.wav	/	Prog - Busy	Table Use	Table Start	Type PCM8	Execute Program Program Finish Execute Verify Verify Success			
CHILD.Wa	av	1	0	0	PCM8				
	d								
⊴ Blanl	e k Check	✓ Program	n ⊡Ve	rify □S	ecurity	f aF Run g Load to Flash	23682 - 1	BPin a Load	ř

- a. Click [Load] button to load the program file [xxx.dp2] file. After loading, it will show Check Sum $\cdot b \cdot c \cdot d$ 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).
- 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 :

Aus 23KWCompiler-V2.5	_		×
Compiler Writer About	Check S	Sum : C1	81
aP23xxx Series Voice OTP Development System			
Version 2.5			
Aplus Integrated Circuits Inc.			
a www.aplusinc.com.tw			
sales@aplusinc.com.tw			
b Writer Firmware Versiom : V114			
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.



Writer and Copier only support the (*.dp2) file from 23KWCompiler version V2.4 or up.

Q1: How to update the latest firmware version.

Q2: How to convert (*.dat) format to (*.dp2) format.

Q3: How to convert V2.1 & V2.2 & V2.3 (*.dp2) to V2.4 or up (*.dp2) format.

Ans1:

23KWC	Compile	r-V2.5						- 🗆	>
ompiler	Writer	About						Check Sum :	
roup	edge	2	Holdable	Trig	Stop	Output	C:\Users\RD\Desktop\test_file\v2_ Writer Disconnect	3-dac.dp2	^
				Writer Ir	nformation	×			
oiceFile	2	Pro	og - Busy		Writer disc	connect 確定			
Rlap	k Cho		Drogram	Vorifi			-02	202 05:-	
Biani	K Che	CK ⊵	1 Program	⊠ verity	/ 🗆 Seci	irity	Run	3682 - 8Pin	~

a. Writer must be connected PC after load (*.dp2) file.

 PLUS
 Integrated Circuits Inc.
 aP23KWC16S - USB Writer User Guide

b. If Writer doesn't connect PC, it will show Writer disconnect message.

■ 23KW0	Compiler	-V2.5							\times
Compiler	Writer	About						Check Sum :	
Group	edge		Holdable	Trig	Stop	Output	C:\Users\RD\Desktop\test_file\v	2_3-dac.dp2	^
VoiceFile	e	Pro	g - Busy	Firmware Upda	ate date the latest	version firmw	Vare		
							確定		
🗹 Blan	nk Chec	k ⊵] Program	⊠ Verify	/ 🗆 Secu	ırity	Run	23682 - <mark>8</mark> Pin	>

- c. If Writer connects PC, it will show Update the latest version firmware message.
- d. Please click OK button.



mpiler	Writer About	; [
	edge	Holdable	Trig	Stop	Output	Get Img file (AP24XX_USB_Writer_v114.img) Execute Update Firmware Update Firmware Finish Please replug in Usb Writer	
oiceFile		Prog - Busy	Table Use	Firmware Upd Update Firm Please replus	ate ware Finish! g in Usb Writer 確定	×	
Blank	Check	✓ Program	n ⊠Ve	erify ∐Se	curity	AP23682 - 8Pin Run Load to Flash Loa	~ ad

e. After finishing firmware update, click OK button and replug in Usb Writer.





f. You can see About page to check Writer Firmware Version.



Ans2:

	4mm 23KW0	Compiler-V2.5								- 🗆	\times
	Compiler	Writer About							C	heck Sum :	
	Group	edge	Holdable	Trig	Stop	Outpu	ut				^
/nu≈ 開啟											×
$\leftrightarrow \rightarrow \uparrow \uparrow$	> 本機 > 舅	面→ test_file						ٽ ~	搜尋 test_file		Q
組合管理 ▼ 新増	資料夾									::: -	•
🕹 Downloads 🖈	· ^ 名稱		^		修改日期		類型	大小			
📃 桌面 🛛 📌	Page 1	/1_2-dac.dat			2016/4/28 上午	= 1	DAT 檔案	1,024	KB		
🔮 文件 🚽	PHO N	/1_2-pwm.dat			2016/4/28 上午	1	DAT 檔案	1,024	КВ		
📰 圏片 🚽	r HND v	/2_3-dac.dp2			2016/4/28 上午	- 1	DP2 檔案	1,025	KB		
demo	HND N	/2_3-pwm.dp2			2016/4/28 上午	= 1	DP2 檔案	1,025	KB		
pic											
test file											
TestGoGo											
🐔 OneDrive											
■ 本機											
Downloads											
(当) 文件											
♪ 音樂											
重 桌面											
	~										
1	檔案名稱(N):	v1_2-dac.dat						~	data files (*.e	dp2;*.dat)	~
									開啟(O)	取淵	¥

a. At Writer page click Load button and select (*.dat) file.



μu≈ 23KWCo	mpiler-V2.5					_	
Compiler	Writer About	:				Check Su	m :
Group	edge	Holdable	Trig	Stop	Output	C:\Users\RD\Desktop\test_file\v1_2-dac.dat	^
						- - - -	
			.*dat to .*	†dp2		×	
VoiceFile		Prog - Busy		(*.dat) file for	mat will be char	nged to (*.dp2) format	
						-	\sim
⊠ Blank	Check	✓ Program	n ⊠Ve	rify □S	ecurity	aP23682 - 8F	Pin ∼
					0 %	Load to Flash	.oad

- b. It will show (*.dat) file format will be changed to (*.dp2) format message.
- c. Click OK button.



	Anus 23KWC	ompiler-V2.5						_	
	Compiler	Writer About						Check Su	im :
	Group	ledea	Holdable	Tria	Stop	Output	Cillians/PD/Dockton/too	t filolut D-dae dat	
	Group	edge	Holdable	Ing	Stop	Output	C:\Users\RD\Desktop\tes	st_me\v1_2-dac.dat	
#14* 另仔新個									×
$\leftrightarrow \rightarrow \checkmark \uparrow \square \rightarrow$	本機 > 桌面	i⇒ test_file					∨ ひ 搜	尋 test_file	Q
組合管理 ▼ 新増資	¥料夾								• ?
🏥 文件 🖌 🖈	^ 名稱		^		修改日期	類型	大小		
📰 園片 🛛 🖈	₩0 v2_	3-dac.dp2			2016/4/28 上午	1 DP2 檔案	え 1,025 KB		
demo	₩0 v2_	3-pwm.dp2			2016/4/28 上午	1 DP2 檔算	鬓 1,025 KB		
pic									
test_file									
TestGoGo									
🕋 OneDrive									
💻 本機									
🖊 Downloads									
🔮 文件									
🎝 音樂									
三 桌面									
	×								
檔案名稱(N): 🔽	_2-new-dac								~
存檔類型(T): da	ata files (*.dp/	2)							~
								方模(C)	司会
▲ 隐藏資科夾							L	1于1闰(3)	RX //R

d. Now save (*.dat) file as (*.dp2) file. The (*.dp2) can be used as the data for program and verify only. The (*.dp2) file don't include sufficient information for re-load to the compiler.



Ans3:

Inc	23KWCo	mpiler-V2.5						- 0	\times
(Compiler V	Vriter About						Check Sum :	
		4	4			1			
	Group	edge	Holdable	Trig	Stop	Output	C:\Users\RD\Desktop\test_file\v2	_3-pwm.dp2	^
	-								
	<u></u>								
			Pr CheckSum In						
	VoiceFile	Pr		nformation	formation		×		
	1		Ат	he checksum	vill be modfie	sion compiler			
			· 🔼 .						
			-				確定		
			1						
									\sim
	⊠ Blank	Check 5	Program	✓ Verif	y 🗆 Sec	curity	aP2	3682 - 8Pin	~
							Run		
						0 %	Load to Flash	beol	
						- /0		Lodu	

- a. At Writer page click Load button.
- b. Because the check sum rule has been modified after version V2.4, the check sum maybe different from the original one.

den den	23KWCo	mpiler-V2.5									\times	
	Compiler V	Vriter About								Check Sum		
	Group	edge	Holdable	Trig	Stop	Output	C:\Us	ers\RD\Desktop\te	est_file\v2_	_3-pwm.dp2	^]
■ 另存新檔												
→ · ↑ <mark>.</mark> ·	本機 > 舅	∎ > test_f	ile					ٽ ~	搜尋 test	t_file		P
組合管理 ▼ 新増資	料夾										-	2
🔮 文件 🖌	^ 名稱		^		修改日期		類型	大小				
📰 圖片 🛛 🖈	HND 1	/1_2-new-da	ac.dp2		2016/4/28	上午 1	DP2 檔案	1,025	KB			
demo	HAD N	/2_3-dac.dp	2		2016/4/28	上午 1	DP2 檔案	1,025	KB			
pic	HND N	/2_3-pwm.d	p2		2016/4/28	上午 1	DP2 檔案	1,025	KB			
test_file												
TestGoGo												
OneDrive												
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- 4面												
	~											
檔案2羅(N)- 12	3 new ch	ksum										_
	ta filas († s	4-2)										_
1子1面現空(1): 08	ta mes (*.0	ipz)										

c. Now save (*.dp2) file as version V2.5 (*.dp2) file. The (*.dp2) include sufficient information for re-load to the compiler.



Inserting Devices into the Programmer

- SOP package devices
- Device should be inserted align to the bottom of the 16-pin textool socket.





2015/03/31

aP23KWC16S 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.

2016/02/01

Add \rightarrow Auto detect writer firmware version. Add \rightarrow MP3 mode Play/Pause & Play/Stop option.

2016/02/24

Add \rightarrow Q&A.

2016/05/06

Add \rightarrow Select IC operating voltage. Add \rightarrow PWM voice output volume. Modify \rightarrow Change LVR to LVD.

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