

32-bit, 768 kHz Sampling Stereo Audio D/A Converter BD34301EKV Evaluation Board (Software)

(BD34301EKV-EVK-005)

About this Manual

This manual explains USBIF3 for HDAC Control Software for operating BD34301EKV evaluation board. (BD34301EKV-EVK-005)

This software supports Microsoft® Windows®7, Windows®10, Windows®11.

Please refer to BD34301EKV datasheet more detail information is required.

Accessories

- ·CD-ROM
 - ·USBIF3 for HDAC Control Software
 - ·Sample Script file for BD34301EKV evaluation board
 - ·Schematic diagram of USBIF3 board

·USBIF3(USB to 2-Wire Conversion board) (attached to the evaluation board)



Note: USB cable(USB-A to Micro-B) is required due to connect PC.

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■Folder Structure of accessory CD-ROM





Install USB Driver

- 1. Copy all data in CD-ROM to any folder in PC for running software.
- 2. Click the "McphCdcDriverInstallationTool.exe" which is suitable for your OS.

■Connect to PC

Connect between software installed PC and evaluation board using USBIF3 board. Setup the evaluation board referring to "BD34301EKV-EVK-005 User's Guide".



■ "USBIF3 for HDAC" Software Operation

1. Start the "USBIF3 for HDAC" software.

Click "USBIF3_v032bforHDAC.exe" in "USBIF3_HDAC" folder in PC that copied all files in CD-ROM.

		_		/	S U 12	tatus SB :" 2C : "I	indica Conn 2C ao	ator ecte ck ur	d MC	CP22 wn"	21A"		
Connectio	on Status	Ē	USBIF3 I USB I2C	2C for USBIF3	3							-	
USB	12C	1 📕	0	A	U	SBIF:	3 for	HD/	AC ver	0.32Ь		Device Address 55 h (7bit)	Exit
002	.20		DevSearch	RegisterMa	p File (Option						Command log	
Connected MCP2221A	I2C ack OK		Dev	Search	evice Addra "-" : No da "X" : Found	ess[7bit] evice I Device A	Search Iddress		(Clear		<pre><<get config="" data="">> Descriptor:12C for US Serial:1107 Max current:100mA Startup time: 00.2722 << Done >></get></pre>	BIF3 7sec
0	8		00h 00h 10h 20h	i 01h 02h ()3h 04h 05	h 06h 07	7h 08h 0	9h OAh	OBh OC	h ODh O	Eh OFh		
Not respond MCP2221A	I2C ack NG		30h 40h										
			50h 60h										
	4		70h										
No connect MCP2221A	I2C ack unknown												
		-					С	pen	ina v	iew			

2. Detect USBIF3 board and BD34301EKV evaluation board by PC.

- 1 Click "DevSearch" button.
- 2 Address "1Ch" has "X" mark after detecting device, detection completed.

	000	4				1	US	BI	F3	fo	r H	ID/	٩C	verO	.32b			Device Address
	DevSi	earch	Reg	isterN	Мар	File	Ор	tion										Command log
	ſ	Dev:	Serch		Devi "X"	ce Ad : No : Fo	dres: dev und l	s[7bi ice Devic	t] Se e Ado	earch dress				C	Clea	ar		<pre><<get config="" data="">> Descriptor:12C for USBIF3 Serial:1107 Max current:100mA Startup time: 00.27227sec << Done >></get></pre>
		00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	0Ah	OBh	OCh	ODh	0Eh	OFh	15:42:45.64
	00h	-	-	-	-	-	-	1. 	-	-	-	-	-	-	-	-	-	Device Address Serch Start MCP2221 is connected.
	10h	-	-	8 3	-	8 8	-	-	-	800	-	-	-	X	-	0 -1 3	-	DevSerch time: 04.30188sec << Done >>
1) Device Address Search /	20h	-	-	-	-	-	-	8-8	-		-	-	-	5 -	-	-	-	15:42:56.06
	30h	-	-	1	-	-	-		-	-	-	-	-	-	-	-	-	MCP2221 is connected.
	40h	245	-	245	2	240	2	240	-	2242	-	1914	<u></u>	-	2	SER.	2	7bit
	50h	-	-	125	2	125	23	220	-	323	2	326	22	-	2	8228	-	<pre>Cone >></pre>
	60h		=	1.7.2		1.72		1.78	=	1.7	=	2.7.2		F			-	
	70h	1.70	-	878	-	8778		8.008	-	8.77.8	-	1.00	=	+	=	1000	-	
	1	Ch :	BD343	801/BI	D3430	2/BD3	4352											

- 3. Set Sample Script for sending to the evaluation board.
 - 3 Select File Tab.
 - (4) Click "Select" button and choose a Sample Script to send from Sample Script folder.



4. Send Sample Script to the evaluation board.

(5) Click "Send" button.*1

(6) I2C status changes from "unknown" to "OK"

when the Sample Script sent successfully to the evaluation board.



6 I2C status indicator	(5) Send Script button
USBIF3 I2C for USBIF3 USB 12C ack	Device Address
DevSearch RegisterMap File Option	1C h (7bit)
No File Name Select Edit 1 BD34301EKV-EVK-005_MODE0_(PCM44p1k) Image: Comparison of the comparison of	 King to the second seco
Editer Notepad – 🕑 Press ke	y to send

■ Sample Scripts

15 Sample Script files (MODE0 to MODEF) stored in CD-ROM. Refer to BD34301EKV-EVK-001 User's Guide for each mode condition.

MODE	File name
MODE0	BD34301EKV-EVK-005_MODE0_(PCM44p1k_x8_Sharp).txt
MODE1	BD34301EKV-EVK-005_MODE1_(PCM96k_x16_Sharp).txt
MODE2	BD34301EKV-EVK-005_MODE2_(PCM192k_x16_Sharp).txt
MODE3	BD34301EKV-EVK-005_MODE3_(PCM768k_x8).txt
MODE5	BD34301EKV-EVK-005_MODE5_(PCM44p1k_x32_Sharp).txt
MODE6	BD34301EKV-EVK-005_MODE6_(PCM96k_x32_Sharp).txt
MODE7	BD34301EKV-EVK-005_MODE7_(PCM192k_x32_Sharp).txt
MODE8	BD34301EKV-EVK-005_MODE8_(PCM44p1k_x32_Slow).txt
MODE9	BD34301EKV-EVK-005_MODE9_(PCM96k_x32_Slow).txt
MODEA	BD34301EKV-EVK-005_MODEA_(PCM192k_x32_Slow).txt
MODEB	BD34301EKV-EVK-005_MODEB_(PCM384k_x32).txt
MODEC	BD34301EKV-EVK-005_MODEC_(PCM768k_x16).txt
MODED	BD34301EKV-EVK-005_MODED (DSD2.8M)
MODEE	BD34301EKV-EVK-005_MODEE (DSD5.6M)
MODEF	BD34301EKV¥EVK-005_MODEF (DSD11.2M/22.4M)

■ Description rule of Script file

Sample Script is described by the following rules.

Please refer to Appendix 2 more detail information is required.

To the right of ";" is a comment.	;; COMMON BLOCK 1 ;
(Left side) : Register address(8-bit) (Right side) : Write data(8-bit)	;Mute Transition TIme (16384/fs, 372ms@44.1k, 278ms@2.8M) 0x29 = 0x0C ;Mute (Lch-ON, Rch-ON) 0x2A = 0x00 ;Digital Power (PWR-OFF, CLK-OFF) 0x02 = 0x00 ;Software Reset (RESET-ON) 0x00 = 0x00

■ Retained data when exiting Software

The data in blue frame will be retained the same data at the next start up.

ISBI	F3 12	C fo	r USB	IF3													- X USBIF3 I2C for USBIF3	-	
B	120_	ack				US	BI	F3	fo	r F	HD/	AC	ver0.	32Б			to (7bit) Exit USB 120.ack USBIF3 for HDAC ver0.02b	Device Address 1C h (7bit)	Exi
Sea	irch	Ree	gister	Мар	File	Op	otion										Command log DevSearch RegisterMap File Option	Command log	
-				Devi	ice A	idres	s[7bi	t]Sa	earch				-	01			(Get config data)> Descriptor.12C for USBIF3	ar Write [38] 43 : B8 Write [38] 48 : OD Write [38] 04 : O2	
L	Deva	erch		"X"	: No : Fo	o dev ound	ice Devic	e Adı	dress				L	Cie	ar		Serial 1107 Oun OIN OIN <th< td=""><td>0Fh Write [38] 00:01 Write [38] 10:0B 00 Write [38] 13:00 Write [38] 16:02</td><td></td></th<>	0Fh Write [38] 00:01 Write [38] 10:0B 00 Write [38] 13:00 Write [38] 16:02	
	DOH	01h	021	031	04h	05h	06h	07h	08h	09h	n OAh	0Bh	OCh	ODh	0Eh	DFh	Ione >> Ione 0B 00 00 01 00 02 00 01 10 00	00 Write [38] 30:01 00 Write [38] 31:80	
n	-	-	-	-	-	-	-	-	(.	-	-	-	-	Ξ.	-	-	Device Address Serch Start! MCP2221 is connected. 30h 01 80 00 00 00 00 00 00 00 00 00 00 00 00	00 Write [38] 60 : 16	
1	-	-	888	-	3 - 3	-	-	-	8 - 3	-	-	-	X	Ξ.		-	DevSerch time: 04.30188sec 40h 00 00 34 B8 00 00 00 00 00 00 00 00 00 00 00 00 00	00 Write [38] 00 : 01	
t	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	154256.06	00 Write [38] 02:01 Write [38] 03:01	
ŀ	-	-	-	-	-	-		-	14	-	120	-	-	-	-		Device Address Serch Start! 60h 16 16 00 00 00 00 00 00 12 00 00 00 00 00 00 00 00 00 00 00 00 00	00 Write [38] 2F : 80 Write [38] 2F : 00	
ŀ					-		1		1000		-			-	-		70h UU	UU Write [38] 29 : 1C Write [38] 2A : 03	
Ļ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_	-	701t DevSerch time: 04.16092sec	UU SLEEP 300ms	
L	-	-		-	-	-	-	-	-	-	-	-	-	-	-	2	Cone >>	Filesend time: 01/	53592sec
	=	\overline{a}	1.7	=	1.7	=	100		1.71		1000	Ξ.	1.0	π.	-	÷.,		00 << Done >>	
I	-	-	878	-	2.72	-	5 - 3	-	2.77.8	-	2.72	-	1.00	=	-	-		11:12:39.72 00 Register Reading.	-
ICI	n :	BD34	301/E	D3431	02/BD	34352											Doh 00	00 Write Address : re Read Reg data : r/ Reg Read time: 00	turn0 eturn0 15175sec
																	FOR 00 00 00 00 00 00 00 00 00 00 00 00 00	00	

DevSearch view

RegisterMap view



File view

Option view

Initialize hold data

Appendix

[Appendix 1 : Explanation of each TAB]

1. DevSearch



2. RegisterMap

USB	IF3 12	C for	USBI	F3													- 0
SB	I2C_	ack			IJ	US	BI	F3	fo	r H	D/	٩C	ver0.	³²⁶	/		Device Address 1C h (7bit)
evSe	earch	Reg	isterN	lap	File	Op	tion										Command log
Auto	incre	ment	$\overline{}$	Reg	Read						Reg Dump				Clea	r	Write [38] 43 : B8 Write [38] 48 : 0D Write [38] 04 : 02
	00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	0Ah	0Bh	OCh	ODh	0Eh	OFh	Write [38] 06 : 01
Oh	01	01	01	01	02	00	01	04	00	00	00	00	00	00	00	00	Write [38] 13:00
Oh	OB	00	00	00	01	00	02	00	00	11	00	00	00	00	00	00	Write [38] 16:02 Write [38] 30:01
:0h	48	00	00	00	00	00	00	00	00	10	03	00	00	00	00	00	Write [38] 31 : 80 Write [38] 40 : 00
lOh	01	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Write [38] 60 : 16
lOh	00	00	34	88	00	00	00	00	OD	00	00	00	00	00	00	00	Write [38] 01: 10 Write [38] 00: 01
iOh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Write [38] 02 : 01 Write [38] 03 : 01
:0h	16	16	00	00	00	00	00	00	12	00	00	00	00	00	00	00	Write [38] 2F : 80
70h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Write [38] 29 : 10
Oh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Write [38] 2A : 03 SLEEP 300ms
lOh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	SEND END!!! Filesend time: 0153592ccc
10h	00	00	00	03	00	FF	FF	FF	00	00	00	00	00	00	00	00	K Done >>
30 h	02	02	02	02	02	02	02	02	00	00	00	00	00	00	00	00	11:12:39.72
COH	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	Register Reading Write Address : return0
)0h	00	00	00/	00	00	00	00	00	00	00	00	00	00	00	00	00	Read Reg data : return0
:0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	KegKead time: UU.151/5sec << Done >>
OL	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

Available to entry each cell data directly. Its data will be sent by pressing "Enter" key.

3. File

Max 7 setting scripts can be hold.

Tooltip enable/disable	Send button
Available to erase by DEL key.	Note : Edit button and Send button appear
Note:Full-path information appears to tooltip	when selecting Script file to send.
when the Mouse is overlayed file name region. button button	
USBIF3 I2C for USBIF3	- 🗆 X
	Device Address IC h (7bit) Exit
DevSearch RegisterMap File Option	Command log
No File Name BD34301EKV-EVK-005_MODE0_(PCM44p1k) C	and
	n button
Editer Notepad	to send

Keyboard Execution enable/disable check box. If enable, No.1 to No.7 Script send when 1 to 7 key pressed.

4. Option



MCP2221A is a product of Microchip Technology.

[Appendix 2 : Format of Script File]

1. Script Fle examples



*1 In case of 2 words format, Device address is from GUI Window.

[Appendix 3 : Register Dump]

Click "Reg Dump" button, showing register table is exported to the file. Evaluation board can be set same condition by using exported file. CSV format can be selected in Option Tab menu.

											/I	Regi	ster	Dum	ip bu	utton
DevSe	earch	Reg	isterN	1ap	File	Op	tion									
Auto	incre	ment	~	Reg	Read					Re	eg Du	mp	Clear			
	00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	0Ah	0Bh	0Ch	ODh	0Eh	OFh
00h	01	01	01	01	02	00	01	04	00	00	00	00	00	00	00	00
10h	OB	00	00	00	01	00	02	00	00	11	00	00	00	00	00	00
20h	48	00	00	00	00	00	00	00	00	10	03	00	00	00	00	00
30h	01	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00
40h	00	00	34	B8	00	00	00	00	OD	00	00	00	00	00	00	00
50h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
60h	16	16	00	00	00	00	00	00	12	00	00	00	00	00	00	00
70h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
80h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
90h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
A0h	00	00	00	03	00	FF	FF	FF	00	00	00	00	00	00	00	00
BOh	02	02	02	02	02	02	02	02	00	00	00	00	00	00	00	00
COh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
DOh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
EOh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
FOh	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Dump file & setting file

00 01 02 03 04 05 ; 00: 01 01 01 01 02 00 ; 00: 01 01 01 01 02 00 ; 10: 0B 00 00 00 01 00 ; 20: 48 00 00 00 00 00 ; 30: 01 80 00 00 00 00 ; 40: 00 00 34 B8 00 00	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
; 50: 00 00 00 00 00 00 00 ; 60: 16 16 00 00 00 00 ; 70: 00 00 00 00 00 00 ; 80: 00 00 00 00 00 00 ; 80: 00 00 00 00 00 00 ; A0: 00 00 00 00 03 00 FF ; B0: 02 02 02 02 02 02 ; C0: 00 00 00 00 00 00 ; D0: 00 00 00 00 00 00 ; E0: 00 00 00 00 00 00 ; E0: 00 00 00 00 00 00	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	—— Dump file
&h00 = &h01 &h01 = &h01 &h02 = &h01 &h02 = &h01 &h03 = &h01 &h04 = &h02 &h05 = &h00 &h06 = &h01 &h07 = &h04 &h08 = &h00		—— Setting file

[Appendix 4 : Circuit Diagram of USBIF3 board]



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