

32-bit, 1536 kHz Sampling Stereo Audio D/A Converter

BD34302EKV Evaluation Board (Software)

(BD34302EKV-EVK-001)

About this Manual

This manual explains USBIF3 for HDAC Control Software for operating BD34302EKV evaluation board.

(BD34302EKV-EVK-001)

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

Please refer to BD34302EKV datasheet more detail information is required.

■Accessories

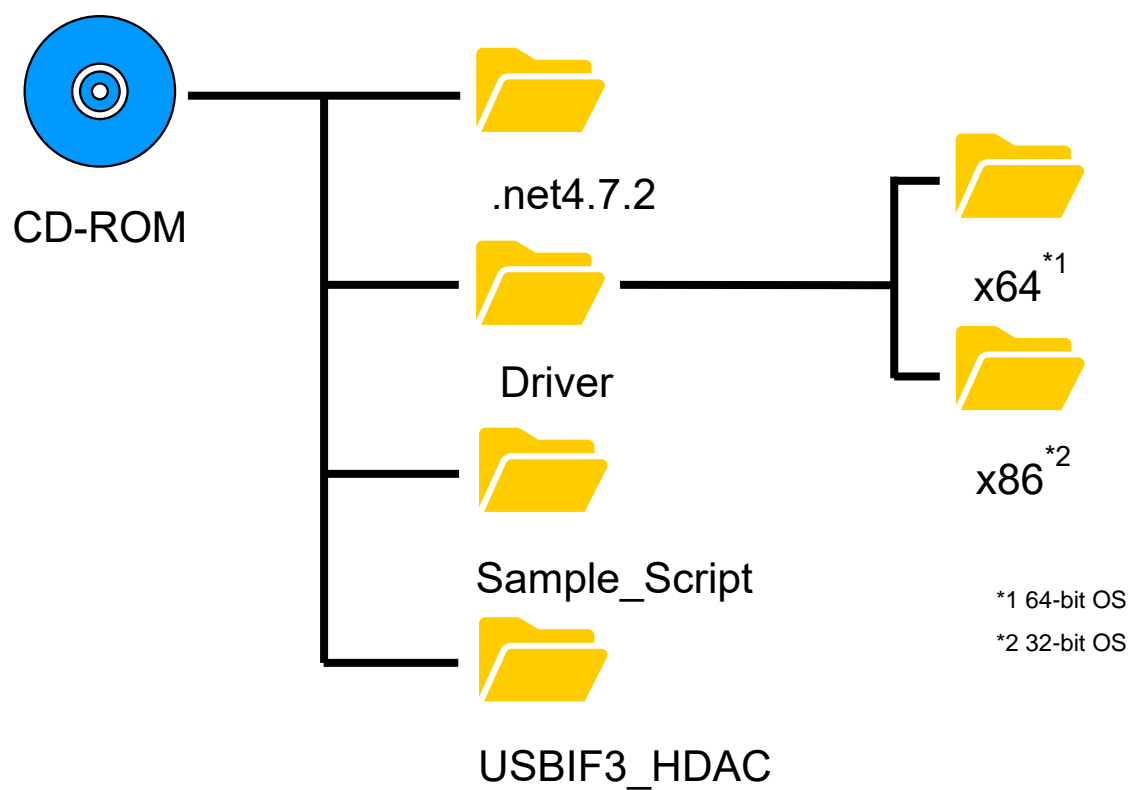
- CD-ROM
 - USBIF3 for HDAC Control Software
 - Sample Script file for BD34302EKV evaluation board
 - Schematic diagram of USBIF3 board
- USBIF3(USB to 2-Wire Conversion board) (attached to the evaluation board)



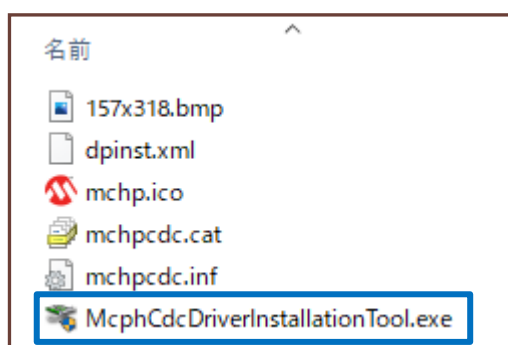
Note: USB cable(USB-A to Micro-B) is required due to connect PC.

Microsoft®, Windows® are either registered trademarks or trademarks of Microsoft Corporation.

■Folder Structure of accessory CD-ROM



x64 or x86 folder



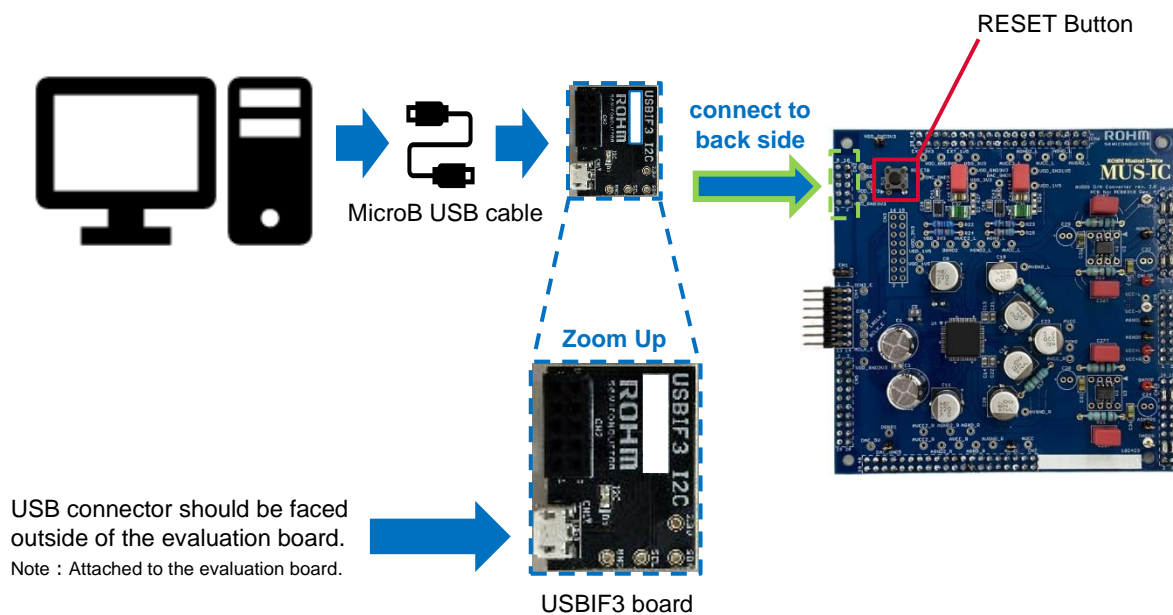
■Install USB Driver

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.

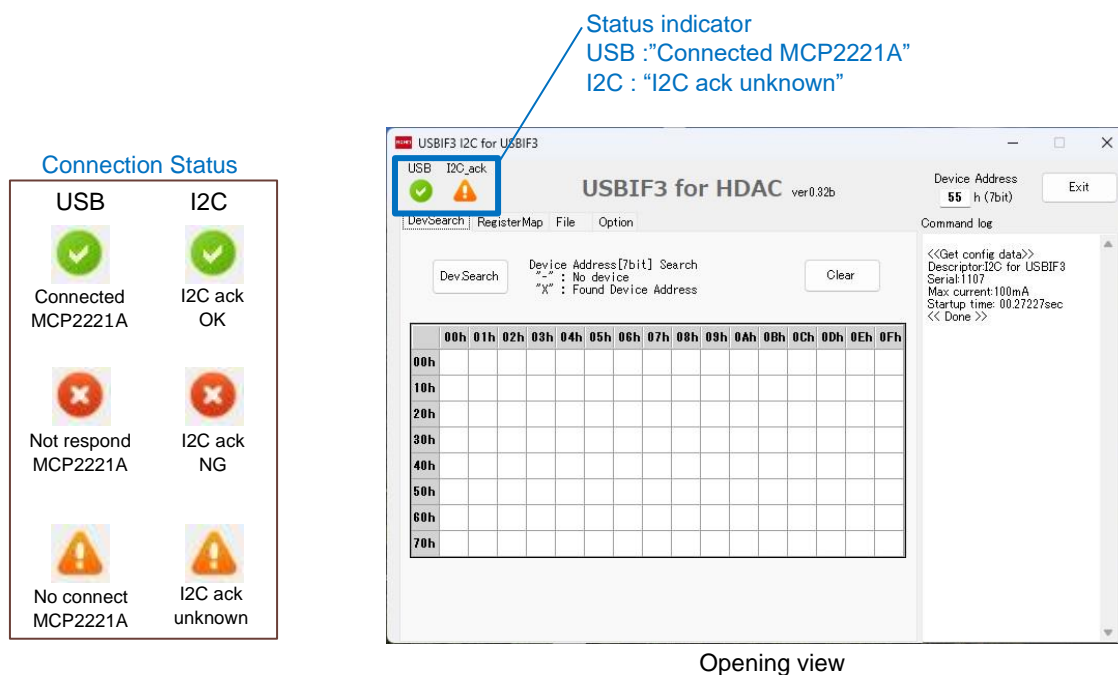
Setup the evaluation board referring to "BD34302EKV-EVK-001 User's Guide".



■ "USBIF3 for HDAC" Software Operation

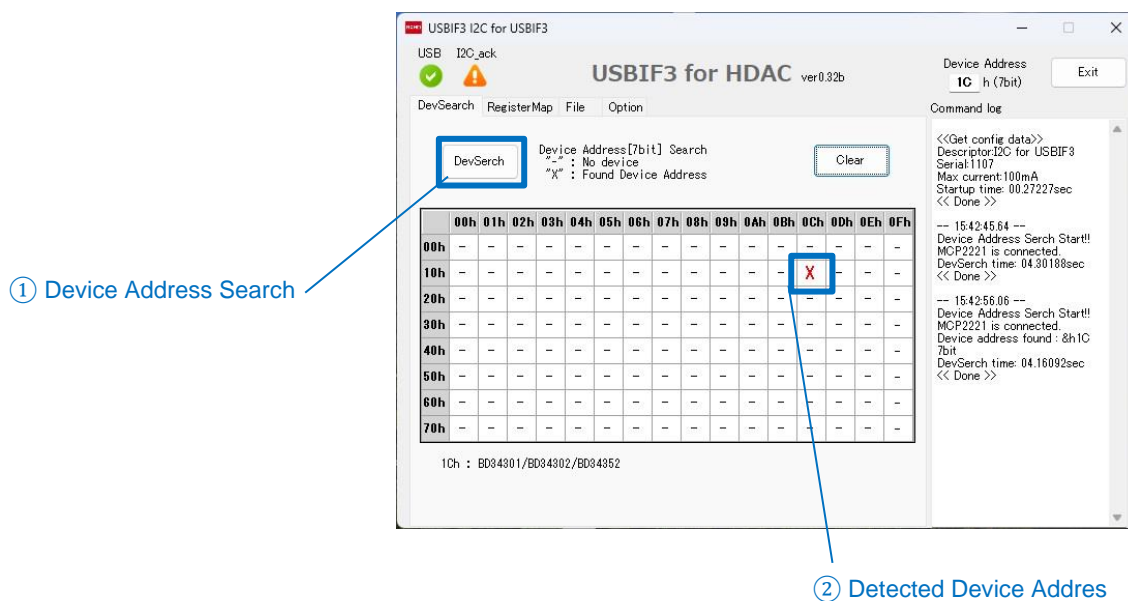
1. Start the "USBIF3 for HDAC" software.

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



2. Detect USBIF3 board and BD34302EKV evaluation board by PC.

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



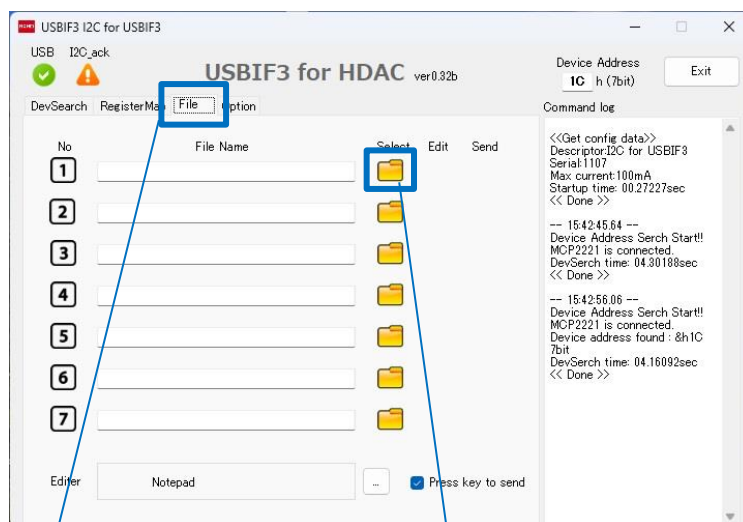
I2C is a trademark of NXP B.V.

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.

Sample Script List

```
BD34302EKV-EVK-001_MODE0_(PCM44p1k_Type1_x8_sharp).txt
BD34302EKV-EVK-001_MODE1_(PCM96k_Type1_x16_sharp).txt
BD34302EKV-EVK-001_MODE2_(PCM192k_Type1_x16_sharp).txt
BD34302EKV-EVK-001_MODE3_(DSD2.8M_Type1_x32_52k).txt
BD34302EKV-EVK-001_MODE5_(Auto_Type1_x32_Sharp_0dB).txt
BD34302EKV-EVK-001_MODE6_(Auto_Type2_x32_Sharp_0dB).txt
BD34302EKV-EVK-001_MODE7_(Auto_Type1_x32_Slow_0dB).txt
BD34302EKV-EVK-001_MODE8_(Auto_Type2_x32_Slow_0dB).txt
BD34302EKV-EVK-001_MODE9_(Auto_Type1_x32_Sharp_6dB).txt
BD34302EKV-EVK-001_MODEA_(Auto_Type2_x32_Sharp_6dB).txt
BD34302EKV-EVK-001_MODEB_(PCM1536k_Type1_x8).txt
BD34302EKV-EVK-001_MODEC_(PCM1536k_Type2_x8).txt
```









③ Select File TAB

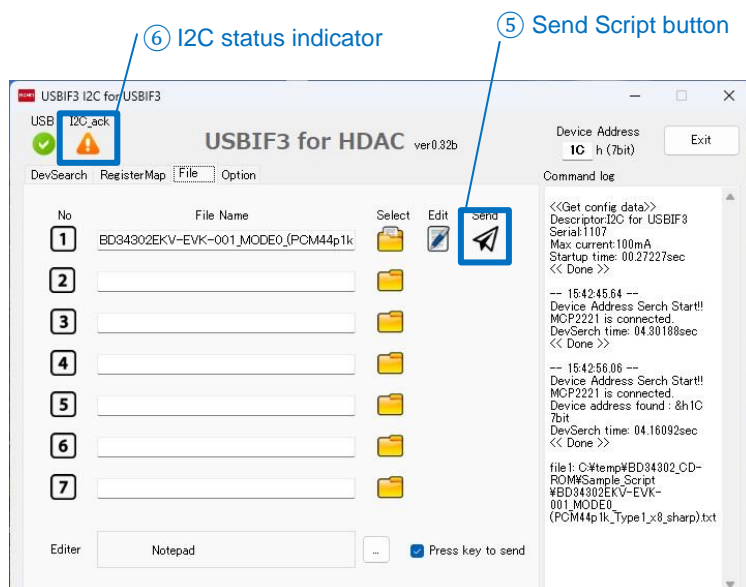
④ Select Script

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.

Connection Status

USB	I2C
 Connected MCP2221A	 I2C ack OK
 No respond MCP2221A	 I2C ack NG
 No connect MCP2221A	 I2C ack unknown



⑥ I2C status indicator

⑤ Send Script button

*1 "Editor" and "Send" button appear when the sample script selected.

■ Sample Scripts

13 Sample Script files (MODE0 to MODEC) stored in CD-ROM.

Refer to BD34302EKV-EVK-001 User's Guide for each mode condition.

MODE	File name
MODE0	BD34302EKV-EVK-001_MODE0_(PCM44p1k_Type1_x8_sharp).txt
MODE1	BD34302EKV-EVK-001_MODE1_(PCM96k_Type1_x16_sharp).txt
MODE2	BD34302EKV-EVK-001_MODE2_(PCM192k_Type1_x16_sharp).txt
MODE3	BD34302EKV-EVK-001_MODE3_(DSD2.8M_Type1_x32_52k).txt
MODE5	BD34302EKV-EVK-001_MODE5_(Auto_Type1_x32_Sharp_0dB).txt
MODE6	BD34302EKV-EVK-001_MODE6_(Auto_Type2_x32_Sharp_0dB).txt
MODE7	BD34302EKV-EVK-001_MODE7_(Auto_Type1_x32_Slow_0dB).txt
MODE8	BD34302EKV-EVK-001_MODE8_(Auto_Type2_x32_Slow_0dB).txt
MODE9	BD34302EKV-EVK-001_MODE9_(Auto_Type1_x32_Sharp_6dB).txt
MODEA	BD34302EKV-EVK-001_MODEA_(Auto_Type2_x32_Sharp_6dB).txt
MODEB	BD34302EKV-EVK-001_MODEB_(PCM1536k_Type1_x8).txt
MODEC	BD34302EKV-EVK-001_MODEC_(PCM1536k_Type2_x8).txt

■ 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.

(Left side) : Register address(8-bit)

(Right side) : Write data(8-bit)

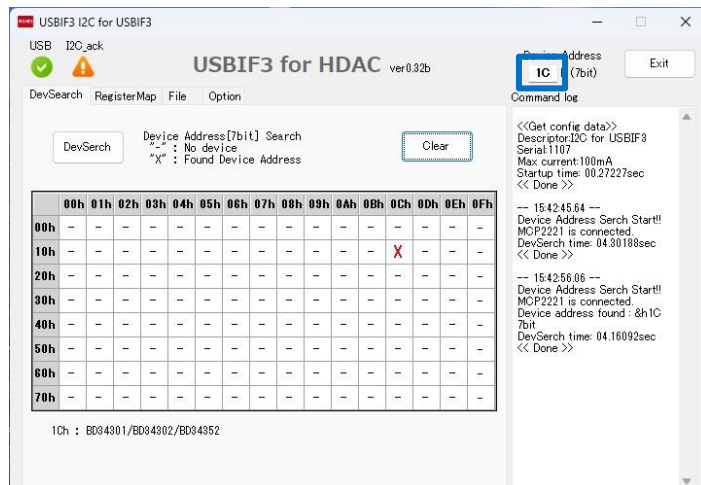
```

;-----
; COMMON BLOCK 1
;-----
;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

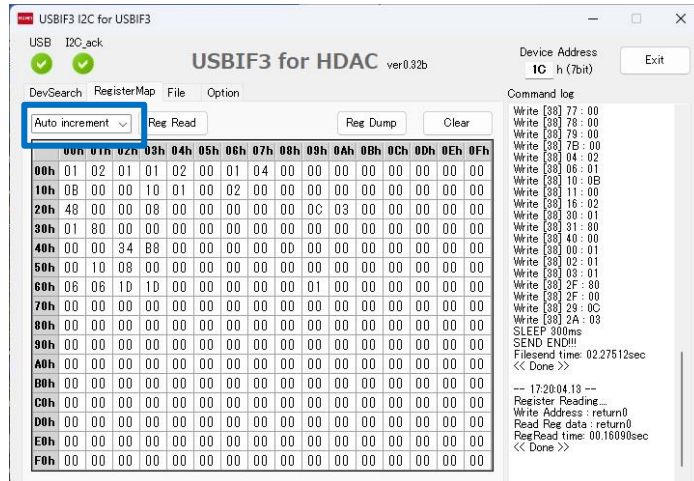
```

■ Retained data when exiting Software

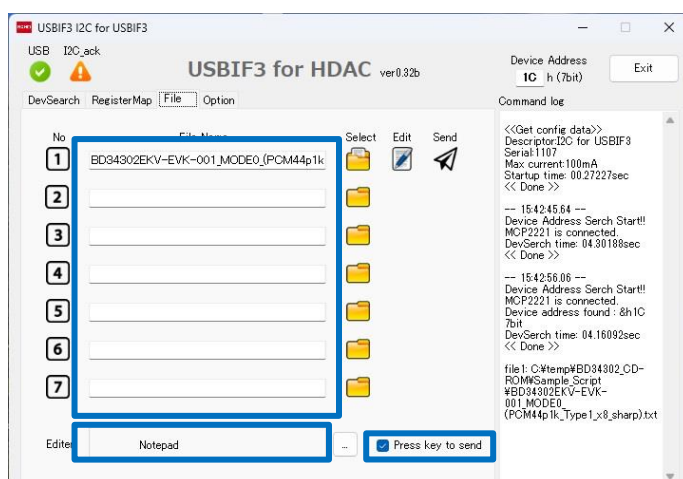
The data in blue frame will be retained the same data at the next start up.



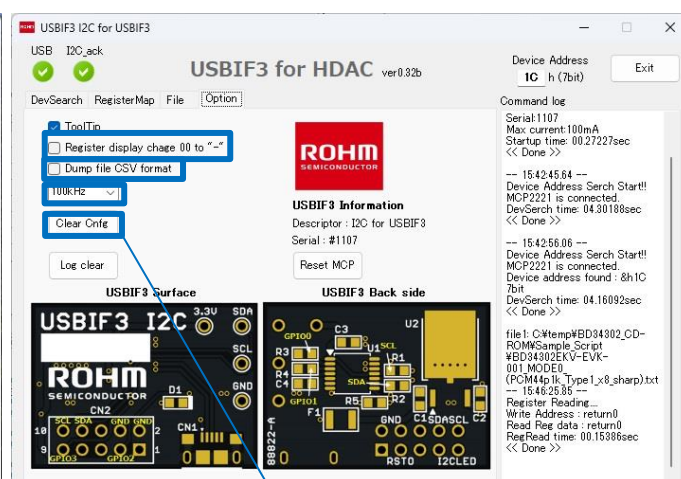
DevSearch view



RegisterMap view



File view



Option view

Initialize hold data

Appendix

[Appendix 1 : Explanation of each TAB]

1. DevSearch

Device Address Search button
Execution time 1.6sec

Search result
Clear button

Detected Address is automatically entered .
Direct entry is available.

USBIF3 I2C for USBIF3

USB I2C_ack

USBIF3 for HDAC ver0.32b

DevSearch RegisterMap File Option

DevSerch

Device Address[7bit] Search
"-" : No device
"X" : Found Device Address

Clear

	00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	0Ah	0Bh	0Ch	0Dh	0Eh	0Fh
00h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10h	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
20h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1Ch : BD34301/BD34302/BD34352

Device Address

1C h (7bit)

Exit

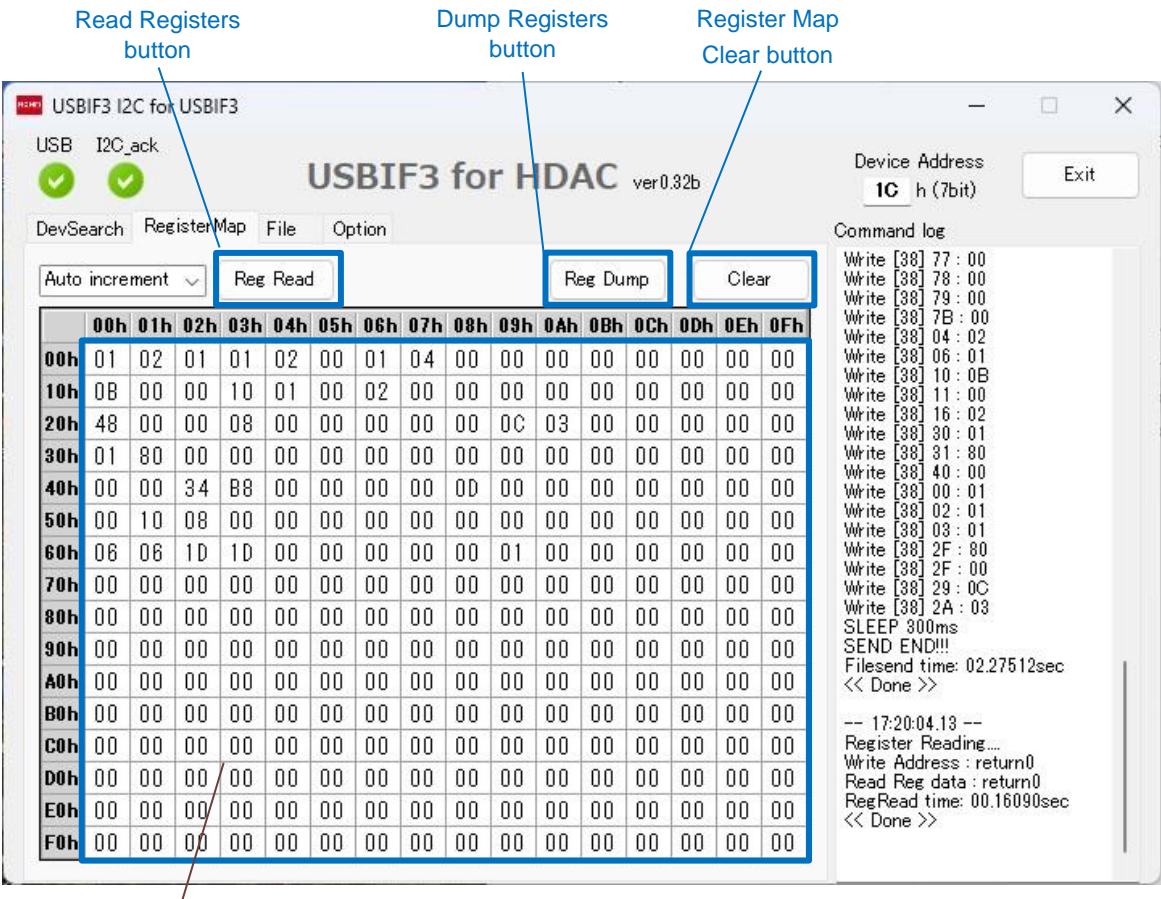
Command log

```
<<Get config data>>  
Descriptor:I2C for USBIF3  
Serial:1107  
Max current:100mA  
Startup time: 00.27227sec  
<< Done >>  
  
-- 15:42:45.64 --  
Device Address Serch Start!!  
MCP2221 is connected.  
DevSerch time: 04.30188sec  
<< Done >>  
  
-- 15:42:56.06 --  
Device Address Serch Start!!  
MCP2221 is connected.  
Device address found : &h1C  
7bit  
DevSerch time: 04.16092sec  
<< Done >>
```

Connection Status

USB	I2C
 Connected MCP2221A	 I2C ack OK
 Not Respond MCP2221A	 I2C ack NG
 No connect MCP2221A	 I2C ack unknown

2. RegisterMap



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.

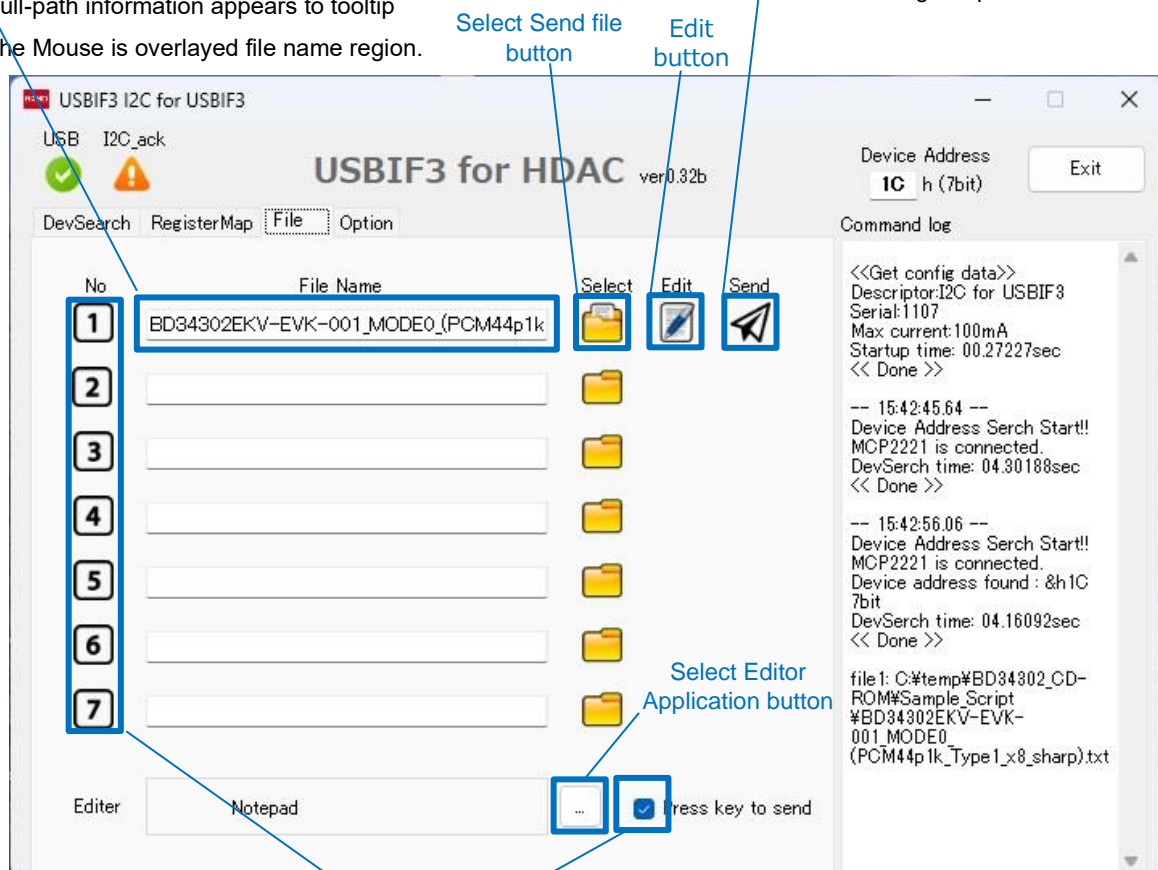
Tooltip enable/disable

Available to erase by DEL key.

Note: Full-path information appears to tooltip when the Mouse is overlayed file name region.

Send button

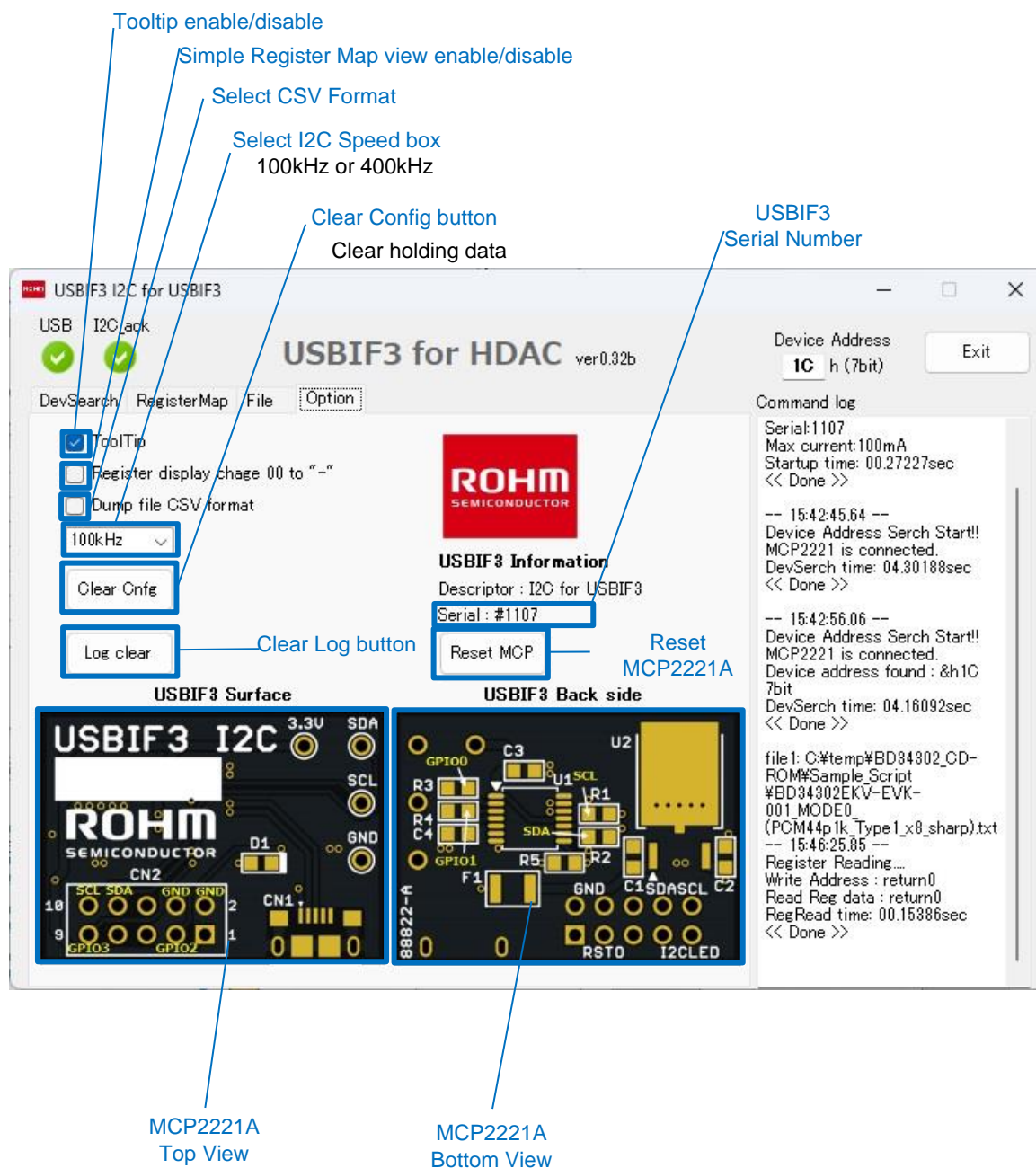
Note : Edit button and Send button appear when selecting Script file to send.



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 File examples

Comment Mark

```

;Sample command
; 1st line is set preset button name

; ";"=comment
#SLEEP = 100 ; sleep [ms]
; Device address is set on the software
; separate keyword is "=" or ";"
0x12 = 0x34 ; Hexadecimal
0x12 , 0x34 ; Hexadecimal
#sleep = 100
&h13 = &h35 ; Hexadecimal
&h13 , &h35 ; Hexadecimal
#sleep = 100
14 = 36 ; Decimal number
14 , 36 ; Decimal number
0x11, 0x32 , 0x10 ; specified 7bit device address
0x11, 0x32 = 0x10 ; specified 7bit device address
;Text files can be sent while editing

```

#SLEEP : Wait Time(ms)
Note : Inaccurate

(Left Side) : Register address(8-bit)
(Right Side) : Write data(8-bit)
" , " and " = " are same function.

"&h" : Hexadecimal
"0x" : Hexadecimal
None : Decimal

In case of 3 words format,
Device address(7-bit), Register address(8-bit) and Write data(8-bit)

Text files can be sent while editing

*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.

Register Dump button

	00h	01h	02h	03h	04h	05h	06h	07h	08h	09h	0Ah	0Bh	0Ch	0Dh	0Eh	0Fh
00h	01	02	01	01	02	00	01	04	00	00	00	00	00	00	00	00
10h	08	00	00	10	01	00	02	00	00	00	00	00	00	00	00	00
20h	48	00	00	08	00	00	00	00	00	0C	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	00	00	00	00	00	00	00	00
50h	00	10	08	00	00	00	00	00	00	00	00	00	00	00	00	00
60h	06	06	1D	1D	00	00	00	00	00	01	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	00	00	00	00	00	00	00	00	00	00	00	00	00
B0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
C0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
D0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
E0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
F0h	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Dump file & setting file

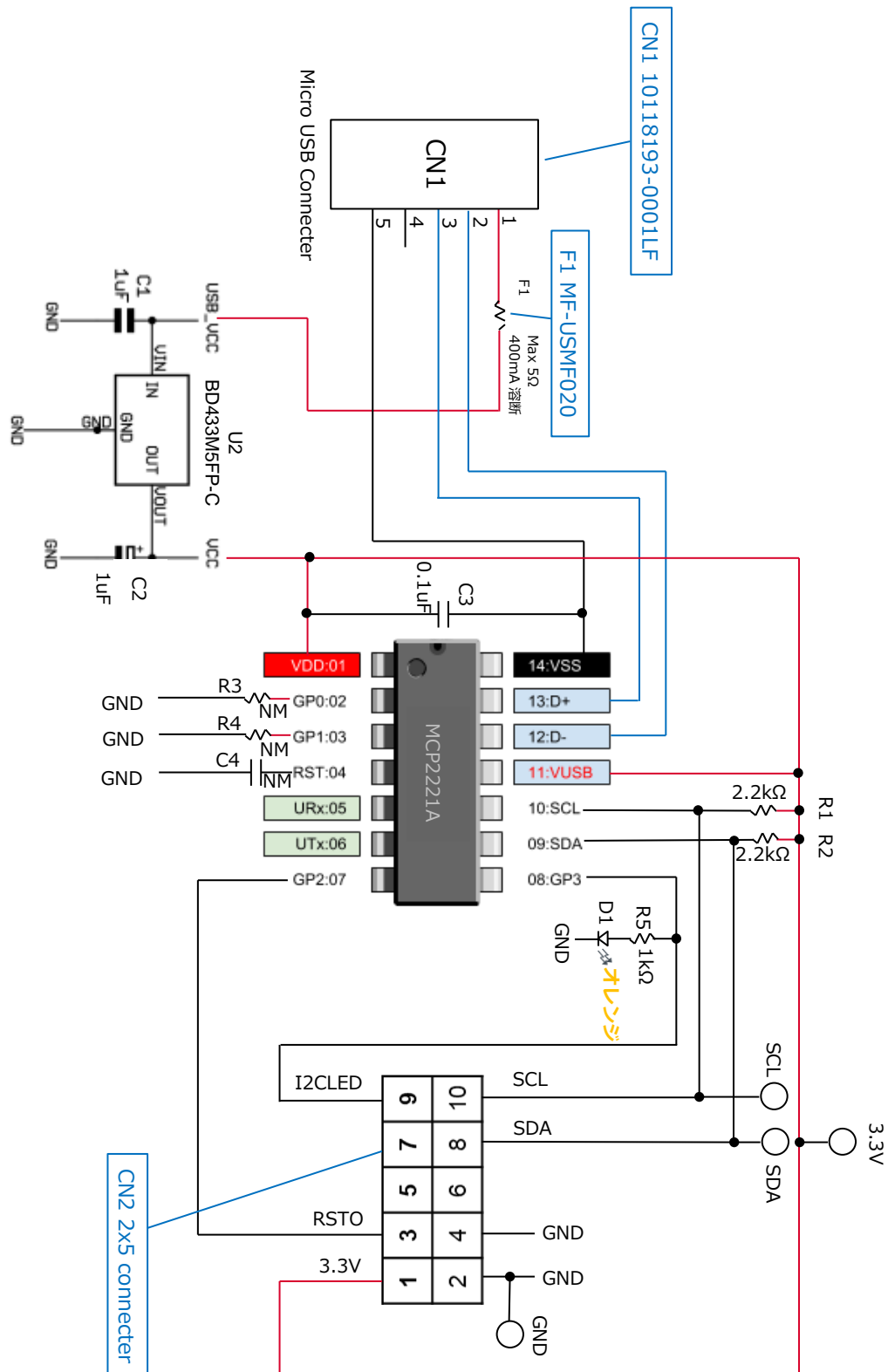
	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00:	01	02	01	01	02	00	01	04	00	00	00	00	00	00	00	00
10:	08	00	00	10	01	00	02	00	00	00	00	00	00	00	00	00
20:	48	00	00	08	00	00	00	00	00	0C	03	00	00	00	00	00
30:	01	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00
40:	00	00	34	B8	00	00	00	00	0D	00	00	00	00	00	00	00
50:	00	10	08	00	00	00	00	00	00	00	00	00	00	00	00	00
60:	06	06	1D	1D	00	00	00	00	00	01	00	00	00	00	00	00
70:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
80:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
90:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
A0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
B0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
C0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
D0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
E0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
F0:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Dump file

&h00 = &h01
&h01 = &h02
&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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