

Overview of OWCI Software

One Wire Control Interface v1.7.5 Copyright@InvenSense Inc

OWCI Control GUI, Designed for MEMS Microphone

General Setting

Pilot Width: 100 us

Dev Addr: 0x28

CLK Buffered
☒ YES ☐ NO

Data Buffered
☒ YES ☐ NO

Set LR As
☒ HIGH ☐ LOW

OWCI CTL Thru
☒ CONFIG ☐ LR

Test Mode

Test Mode Key: [Enter Test Mode]

Write Value 0x 41 to Reg 0x AA

Registers R/W

Addr (H)	Data (H)	Read	Write
AA	00	Read	Write
00	00	Read	Write
00	00	Read	Write
00	00	Read	Write
00	00	Read	Write
00	00	Read	Write
00	00	Read	Write
00	00	Read	Write

Fuse

Enter Fuse Mode

Pulse Width: 165 ns

Duration Time: 10 ms

Fuse

OTP Window

Addr (Hex)	Bin	Use	Hex
00	0 0 0 0 0 0 0 0		00
01	0 0 0 0 0 0 0 0		00
02	0 0 0 0 0 0 0 0		00
03	0 0 0 0 0 0 0 0		00
04	0 0 0 0 0 0 0 0		00
05	0 0 0 0 0 0 0 0		00
06	0 0 0 0 0 0 0 0		00
07	0 0 0 0 0 0 0 0		00
08	0 0 0 0 0 0 0 0		00
09	0 0 0 0 0 0 0 0		00
0A	1 1 1 0 0 0 0 0		E0
0B	0 0 0 0 0 0 0 0		00
0C	0 0 0 0 0 0 0 0		00
0D	0 0 0 0 0 0 0 0		00
0E	0 0 0 1 0 1 0 0		14
0F	0 0 0 0 1 0 0 0		08
10	0 0 0 1 0 1 0 0		14
11	0 0 0 0 0 0 0 0		00
12	0 0 0 0 0 0 0 0		00
13	0 0 0 0 0 0 0 0		00
14	0 0 0 0 0 0 0 0		00
15	0 0 0 0 0 0 0 0		00
16	0 0 0 0 1 0 1 0		0A
17	0 0 0 0 0 0 0 0		00
18	0 0 0 0 0 0 0 0		00
19	0 0 0 0 0 0 0 0		00
1A	0 0 0 0 0 0 0 0		00
1B	0 0 1 0 0 0 0 1		21
1C	1 0 0 0 1 0 0 0		88
1D	0 0 1 0 0 1 0 1		25
1E	0 1 1 0 1 1 1 0		6E
1F	1 1 0 1 0 0 1 0		D2
20	0 0 0 0 0 0 0 0		00
21	0 0 0 0 1 0 1 0		0A
22	0 0 0 1 0 0 0 0		10

Load Data Read OTP
Save Data Write OTP

BLOW OTP

Script Window

```
SetPilot: 200us
SetLRasOwci:
Write: Addr 0x80; Data 0x0A
Write: Addr 0x81; Data 0x10
Write: Addr 0x83; Data 0x08
Write: Addr 0x89; Data 0x03
Write: Addr 0x88; Data 0x14
Write: Addr 0x80; Data 0x82
Write: Addr 0x81; Data 0x10
BurstRead: Addr 0x80; Num 0x07
Write: Addr 0x90; Data 0xE5
SetPilot: 100us
SetConfigasOwci:
BurstWrite: Addr 0x80; Num 0x10; Data 0x03
Delay: 100ms
Fuse: 160ns; 10ms
Write: Addr 0x90; Data 0x03
BurstRead: Addr 0x80; Num 0x07
Write: Addr 0x90; Data 0x01
BurstRead: Addr 0x80; Num 0x07
Write: Addr 0x90; Data 0x00
BurstRead: Addr 0x80; Num 0x07
Delay: 100ms
WriteOTP:
ReadOTP:
Delay: 100ms
BlowOTP:
```

Load Script Save Script Execute

Operation Log

FW Version

Flash LED

Disconnected

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- **General Setting**

- Hardware control, include pilot width and device address.

- **Test Mode**

- Enter Test Mode, supporting different DUTs.

- **Registers Read/Write**

- Single or burst registers read or write.

- **Fuse**

- Support eFuse.

These operations are almost the same as last version software.

- **OTP Window**

- OTP operation, bit by bit or byte by byte, load data from a .txt file and save data to a .txt file.

- **Script Window**

- Load script from a .txt file and execute, edit a script and execute or save to .txt file.

- **Operation log**

- Display all the operations include commands and return data



- **OTP window**

- Advantages:

- 1. Totally new designed tools for eMemery operation in md008, could be re-used in future project as well;
 - 2. For each project, software will initialize OTP window based on a default config file, no need to rebuild a new GUI.

- **Script window**

- Advantages:

- 1. Script operation is a simple, flexible and efficient way for both PE and designers to do validation;
 - 2. For each project, no need to rebuild a new GUI, just write new script and execute;
 - 3. Script file is easy save and re-used between different sites.



Blocks Review – OTP window

OTP setting file

InvenSense

- Functions of OTP Window

- Edit the window directly, supporting edit bit by bit or byte by byte, and write OTP or blow OTP;
- Save window data to a .txt file as right format;
- Load data from a .txt file as right format, and write OTP or blow OTP;
- After load, also can edit the updated window, and then save to a file, write OTP or blow OTP;
- Command line supporting, ext.
writeotp.exe OTP Demo.txt
blowotp.exe OTP Demo.txt
(Note: xxxxotp.exe and OTP Demo.txt must be in same directory).

OTP Demo.txt - Notepad

File Edit Format View Help

OTP Setting for ICS-41350

00
00
00
00
00
00
00
00
00
EQ
00
00
00
14
08
14
00
00
00
00
00
0A
00
00
00
00
21
88
25
6E
D2
00
0A
10

Address 00 to xx

OTP Window

ADDR(HEX)	Bin	Hex
00	0 0 0 0 0 0 0 0	00
01	0 0 0 0 0 0 0 0	00
02	0 0 0 0 0 0 0 0	00
03	0 0 0 0 0 0 0 0	00
04	0 0 0 0 0 0 0 0	00
05	0 0 0 0 0 0 0 0	00
06	0 0 0 0 0 0 0 0	00
07	0 0 0 0 0 0 0 0	00
08	0 0 0 0 0 0 0 0	00
09	0 0 0 0 0 0 0 0	00
0A	1 1 1 0 0 0 0 0	E0
0B	0 0 0 0 0 0 0 0	00
0C	0 0 0 0 0 0 0 0	00
0D	0 0 0 0 0 0 0 0	00
0E	0 0 0 1 0 1 0 0	14
0F	0 0 0 0 1 0 0 0	08
10	0 0 0 1 0 1 0 0	14



Blocks Review – Script window

Script file

InvenSense

- Functions of Script Window
 - Edit a new script, and execute;
 - Edit a new script, and save to a .txt file as right format;
 - Load script form a .txt file as right format, and execute;
 - After load script, also can edit in the updated window, and then choose to save to a new file or execute.
 - Command line supporting, ext.
execute.exe Script Demo.txt
(Note: xxxxotp.exe and OTP Demo.txt must be in same directory).

```
Script Demo.txt x
1 Script for DSM measurement of MD000
2
3 SetPilot: 200us;
4 SetLRasOwci;
5 Write: Addr 0x80: Data 0x0A;
6 Write: Addr 0x81: Data 0x10;
7 Write: Addr 0x83: Data 0x08;
8 Write: Addr 0x89: Data 0x03;
9 Write: Addr 0x88: Data 0x14;
10 Write: Addr 0x80: Data 0x82;
11 Write: Addr 0x81: Data 0x10;
12 BurstRead: Addr 0x80: Num 0x07;
13 Write: Addr 0x90: Data 0xE5;
14 SetPilot: 100us;
15 SetConfigasOwci;
16 BurstWrite: Addr 0x80: Num 0x10: Data 0x03;
17 Delay: 100ms;
18 Fuse: 160ns: 10ms;
19 Write: Addr 0x90: Data 0x03;
20 BurstRead: Addr 0x80: Num 0x07;
21 Write: Addr 0x90: Data 0x01;
22 BurstRead: Addr 0x80: Num 0x07;
23 Write: Addr 0x90: Data 0x00;
24 BurstRead: Addr 0x80: Num 0x07;
25 Delay: 100ms;
26 WriteOTP;
27 ReadOTP;
28 Delay: 100ms;
29 BlowOTP;
```

!!! Each command in single line



Description of Commands

- Write: Addr 0x80; Data 0x10 *//write value 0x10 to register 0x80*
- Read: Addr 0x80 *//Read value of register 0x80*
- BurstWrite: Addr 0x80; Num 0x10; Data 0x03 *//Burst write 0x03 to register 0x80-0x8A*
- BurstRead: Addr 0x80; Num 0x10 *//Burst Read values of register 0x80-0x8A*
- SetPilot: 200us *//Set pilot as 200us*
- Delay: 100ms *//Delay 100ms*
- Fuse: 160ns; 10ms *//Set fuse pulse as 160ns, fuse clock duration as 10ms, and fuse*
- WriteOTP: *//Write OTP data to relative registers*
- ReadOTP: *//Read OTP data*
- BlowOTP: *//Blow OTP, take care of POWER*
- SetLrAsOwci: *//Set LR pin on PCB as OWCI pin*
- SetConfigAsOwci: *// Set CONFIG pin on PCB as OWCI pin*

