

Guide to Add New VCM ＆ EEPROM module Into DDK

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Revision History

| Revision | Date | Author | Reason for Changes |
| --- | --- | --- | --- |
| 0.1 | 10/19/2017 | Xiaochun Shi | Initial draft |
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# VCM module (take DW9807 for example)

## In Vcm\_type.h

Add new module name define:

#define DW9807\_NAME "DW9807"

In enum VCM\_TYPE:

Replace VCM\_ex1 to a real module name like VCM\_DW9807;

## In Vcm\_map.c

1. #include "vcm\_dw9807.h"
2. Add callback functions in “Vcm[VCM\_NUM]”, replace below lines:

// below are function callback holders

{ VCM\_ex1, NONVCM\_NAME, 0, NULL, NULL, NULL, NULL, NULL, NULL, NULL }, { VCM\_ex2, NONVCM\_NAME, 0, NULL, NULL, NULL, NULL, NULL, NULL, NULL },

to

{ VCM\_DW9807, DW9807\_NAME, DW9807\_DEFAULT\_POS, DW9807\_Init, DW9807\_ResetPos, DW9807\_SetPos, DW9807\_GetPos, DW9807\_GetStatus, DW9807\_GetHPStatus, DW9807\_SetConfig },

{ VCM\_ex2, NONVCM\_NAME, 0, NULL, NULL, NULL, NULL, NULL, NULL, NULL },

1. In NTSTATUS ParseVcm(), add codes about dw9807:

NTSTATUS ParseVcm(

)

{

ANSI\_STRING ad5823;

......

ANSI\_STRING dw9807;

ANSI\_STRING name;

if (!pSsVcm)

{

return STATUS\_INVALID\_PARAMETER;

}

RtlInitAnsiString(&ad5823, AD5823\_NAME);

......

RtlInitAnsiString(&dw9807, DW9807\_NAME);

RtlInitAnsiString(&name, pVcmName);

if(RtlEqualString(&ad5823, &name, TRUE))

pSsVcm->VcmType = VCM\_AD5823;

......

else if (RtlEqualString(&dw9807, &name, TRUE))

pSsVcm->VcmType = VCM\_DW9807;

else

pSsVcm->VcmType = VCM\_NONE;

DoTraceMessage(FLAG\_LOG, "%s SensorCtx->VcmType:%d", DEVICE\_NAME, pSsVcm->VcmType);

return STATUS\_SUCCESS;

}

1. Add DW9807 source file and header file under CameraDDK\Sensor\Common\libiss\src\vcm

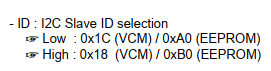
Vcm\_dw9807.c & vcm\_dw9807.h provided as template to implement VCM control functions

1. There are some functions might help you to write a new module, which is included in vcm.h.

# EEPROM module

## Check EEPROM I2C salve address, then configure it in BIOS.

1. The salve I2C address is defined in the datasheet like below. Take 0xB0 for example, its binary representation is 10110000, right shift one bit, change to 01011000(0x58), configure 0x58 in BIOS.(take DW9808 for example)



1. The final BIOS setting for Cam1 Link Option like below. In the Control Logic 1 Link Option, change the “EEPROM Type” to “ROM\_EEPROM\_xxx”. (If BIOS don’t support this new defined EEPROM Type, you can set an existing EEPROM Type. Then mocked it to new defined EEPROM Type in sensor driver). Change the “Number of I2C Components” to “3”. In <Deivce 2>, Set I2C Address to “0x58”, Set Device Type to “EEPROM”.

A screen shot of a computer

Description automatically generatedA close up of a computer

Description automatically generated

## In nvram\_type.h

Add new defined EEPROM type in enum type NVM\_TYPE.

// place holder, change to real name when needed

NVM\_M24C64,

## Add new EEPROM files

1. Add new M24C64 source and header file (nvm\_M24C64S.c & nvm\_M24C64S.h) under folder Camera\Sensor\commonddk\libiss\src\nvram. There are some functions defined in nvram.h and nvm\_M24C64S.h to read and write the EEPROM.
2. Cmd\_M24c64Write and Cmd\_M24c64Read defined in nvm\_M24C64S.h, which should be implemented in nvm\_M24C64S.c for specific EEPROM module. The implement details should refer to the EEPROM datasheet.

Check the Page size and Memory size in the EEPROM datasheet. There should be some description in the datasheet like:



Describe that information with Macro M24C64\_PAGE\_SIZE and M24C64\_PAGE\_NUM in nvm\_M24C64S.h, like below code snippet:

#define M24C64\_PAGE\_SIZE 32 //bytes, Column address 0x00 to 0x1F

#define M24C64\_PAGE\_NUM 256 //Pages, 0x00 to 0xFF

nvm\_M24C64S.c also define some functions named like: M24c64RomWrite/M24c64RomRead or RomWriteX/RomReadX to read/write this EEPROM by pages. Developer should define the Data Memory Address based on the Page, Addr and the address bytes format in the datasheet.

buf[0] = (UINT8)(Page >> 3 & 0x1F);

buf[1] = (UINT8)(Page << 5 & 0xE0) | (UINT8)(Addr);

## In nvram\_map.c

1. Include header file of this EEPROM.

#include "nvm\_M24C64S.h"

1. Add new defined EEPROM type to the NVM\_TYPE type array.

NVM\_TYPE NvmType[] =

{

NVM\_NONE,

NVM\_OTP,

……

NVM\_M24C64,

NVM\_DW9806B,

NVM\_CAT24C16,

// New NVM added to last in case to change above reserved values being used externally

NVM\_CAT24C64,

NVM\_24AA16,

NVM\_DW9808,

};

1. In “Nvm[NVM\_NUM]” add one line like below:

NVM\_FUNC Nvm[NVM\_NUM] =

{

......

// below are function callback holders, please add module above this line for inside.

{ NVM\_M24C64, 8192, 32, M24C64\_ADDR\_MIN, Cmd\_M24c64Write, Cmd\_M24c64Read, GetNvmData },

}

## In nvram.c

Include the new EEPROM head file and source file at begin and end of nvram.c.

#include "nvm\_M24C64S.h"

#include "nvm\_M24C64S.c"