

Sensor Development Environment Setup Guide

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Revision History

| Revision | Date | Author | Reason for Changes |
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| 0.1 | 10/19/2017 | Xiaochun Shi | Initial draft |
| 0.2 | 08/19/2020 | Qiang Su |  |
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## Development Environment Setup

Since the driver is targeting a Windows 10 environment, the best IDE to use, is Visual Studio 2019. The installation will need to include the C++ add-ins as well as the Windows 10 WDK.

* 1. **Install Visual Studio 2017**

With 2017, you need to install WDK 1803. Download link:

<https://docs.microsoft.com/en-us/windows-hardware/drivers/other-wdk-downloads>

* 1. **Install Visual Studio 2019**

With 2019, you need to install WDK 1903. Download link:

<https://docs.microsoft.com/en-us/windows-hardware/drivers/download-the-wdk>

Another important individual component is ‘MSVC v142 – VS 2019 C++ x64/x86 Spectre-mitigated libs (v14.23)’.

After installation, please confirm that you can create new windows driver project.

* In Visual Studio 2017, New Projects> Visual C++> Windows Driver.
* In Visual Studio 2019, search ‘km’ in the search menu.

Reference: <https://docs.microsoft.com/en-us/cpp/build/vscpp-step-0-installation?view=vs-2019>

## DDK Package Instruction

Unzip DDK zip file to PC. DDK should include following folders

* Documentation: setup & development guides.
* Include: Required header files to compile sensor driver code
* Lib: vcm, nvram, common static libraries
* Sensor: Common source files and example code (just a skeleton)
* Platform: Build script
* Test: Camera Test Cases

## Driver Visual Project Setup

### New project setup

* Run visual studio 2019
* Click [**File**]→[**New**]→[**Project**]
* Pop up the【**New Project**】dialog
* Select [**Installed**]→[**Templates**]→[**Visual C++**]→[**Windows Drivers**]→ [**WDF**]
* of【**New Project**】dialog and click it
* Select the “Kernel Mode Driver, Empty (KMDF)”
* Set the path of the project file to “Sensor” catalog of DDK Package
* Click [**OK**]

### Import common source files for all platform

* Right click Solution of Solution Explorer and pop up the dialog
* Select [**Add**]→[**Existing Item**] and click it
* Select common files of DDK Package and click [**Add**]

The common files for CHT Platform are following:

* common\sensor.c
* common\vcm\vcm\_map.c
* common\nvram\nvram\_map.c

### Import common source files for SKC

Manually modify the project file (\*.vcxproj) to include common\skc\_sensor.c. Please refer to example code file (Sensor\sample\sample.Vcxproj).

### Additional Include Directories

* Right click Solution of Solution Explorer and pop up the dialog
* Click [**Properties**] and pop up the dialog
* Select the [**Configuration Properties**]→[**C/C++**]→[**General**]
* Set “Additional Include Directories” to values of the following

.\skc;

..\common\;

..\common\inc;

..\common\libiss\libinc;

..\common\libiss\src\nvram;

..\common\libiss\src\vcm;

..\..\include;..\..\include\Skycam;

### Add dependencies for each platform

In link sub property page:

|  |  |
| --- | --- |
| Lib Files: | Lib Path: |
| ntstrsafe.lib;  common.lib;  vcm.lib;  nvram.lib | ..\..\Lib\$(PLAT\_FORM)\$(Configuration)\$(Platform); |

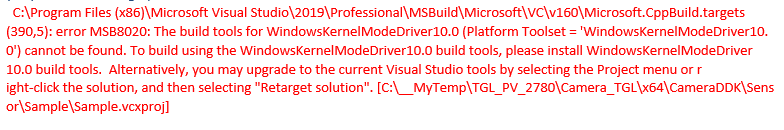
## Build Driver

Execute batch file \Platform\BuildCameraSensor.bat to generate sample driver binary. Also you can modify this batch to add your own driver project.

Example**:**

Build sensor driver: BuildCameraSensor.bat

If you meet errors like below:



Maybe WDK is not installed correctly, You can open **WDK.vsix** in path:  C:\Program Files (x86)\Windows Kits\10\Vsix\VS2019

