

Crystal Image through
Imaging Innovation

PIXELPLUS



SURROUND VIEW MONITORING SYSTEM

PI5008K SDK Release Note

Rev 0.3.1

Last Update : 2018.11.xx

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Figure

<i>Figure 1 SDK Structure</i>	<i>4</i>
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1. SDK_201811xx

This release is the 3rd release of PI5008K SVM SDK and 1.0 version.

SDK will be released in the compressed format. When decompressed, toolchain, PC tools, Documents, Source code, Library will be extracted.

This release does not include some functions such as turn signal indication.

2. SDK Features

- Released α version
 - On-board Calibration : Camera calibration and view generation
 - NOR/NAND Booting
 - Static/Dynamic Parking Guide Line
 - 9 view modes (2D Top view + 8 3D views)
 - 360° Swing during Operating
 - Brightness Control
 - Dynamic Blending (Test version)
 - Firmware Upgrade using SD Card
 - PC tools
 - Merge binary files*
 - Offline Camera Calibration.
 - View/Parking Guide Line generation
 - Generate 3D Car image for each view
 - Build environment installer : BSP & IDE

Notes> After merging binary files, it will be downloaded to flash memory using JTAG.

- Released β version
 - Car wheel rotation.

- Turn signal indication
- PC tools
 - ~~ISP tuning~~
 - Merge & Download Tool via SPI
- Release 1.0 version
 - 360 Swing rotation.(8fixed point)
 - Car wheel rotation by speed.
 - Car Steering display
 - Car door open/close
 - PGL(Parking Guide Line) support alpha blending.
 - Swing View On-Board Calibration
 - optimization version will be released by patch(TBD)

3. Structure of SDK

3.1. Structure

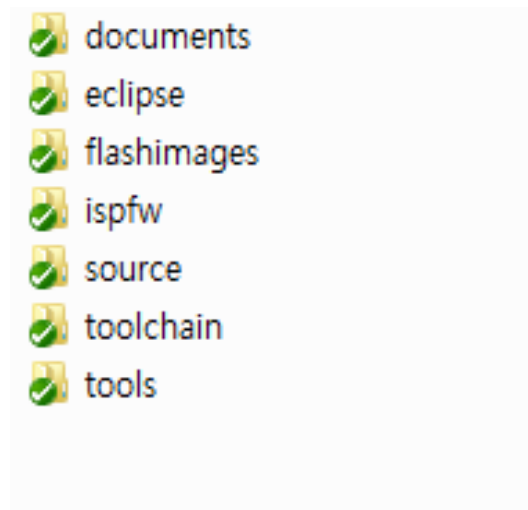


Figure 1 SDK Folder Structure

3.1.1. Source

- Pi5008K SDK

➤ Bootloader

3.1.2. Tools

- PC_Tools
 - ✓ Merge Tool
 - ✓ 3d Car Mapping Tool
 - ✓ Offline Calibration tool
 - ✓ View Generation tool
- Files to download binary file to flash memory via JTAG
 - ✓ PI5008k_Init_ddr2.bin : To initialize DDR2
 - ✓ PI5008K_Init_ddr3.bin : To initialize DDR3
 - ✓ Flashimage_nor.bin : Binary file downloaded to NOR flash
 - ✓ Flashimage_nonFTL.bin : Binary file downloaded to non-FTL area of NAND
 - ✓ Flashimage_FTL.bin : Binary files to download to FTL area of NAND
 - ✓ Flash_burner.adx : Execution file to burn Flash memory
 - ✓ Run_flash : Script file to burn NOR flash
 - ✓ Run_flash_nand : Script file to burn NAND flash

3.1.3. Binary files

- NOR
 - ✓ Bootloader.bin
 - ✓ Car_image.bin : 2D/3D Car image for each view mode
 - ✓ Flashimage_nor.bin
 - ✓ Isp_firm.bin : ISP binary
 - ✓ Main_firm.bin : Main binary
 - ✓ Menu_data.bin : Default setting value for menu
 - ✓ Pgl_image.bin : Parking guide line images
 - ✓ Svm_lut.bin : Look Up Table for view mode
 - ✓ Ui_image.bin : UI Data
 - ✓
- NAND
 - ✓ Non-FTL
 - ✓ Bootloader.bin
 - ✓ Bootloader2.bin

- ✓ Car_image.bin
- ✓ Flashimage_nonFTL.bin
- ✓ Pgl_image.bin
- ✓ Svm_lut_nonftl.bin
- ✓ FTL
 - ✓ Flashimage_FTL.bin
 - ✓ lsp_firm.bin
 - ✓ lsp_firm_bk.bin
 - ✓ Main_firm.bin
 - ✓ Main_firm_bk.bin
 - ✓ Menu_data.bin
 - ✓ Svm_lut_ftl.bin
 - ✓ SVMConfig_Main.bin
 - ✓ SVMConfig_Sub.bin
 - ✓ Ui_image.bin

3.1.4. Tool chain

- BSPv421_Windows.zip (Andes toolchain)
- Patch
 - ✓ Edm_rest.txt : Option file for JTAG Tool (AICE)
 - ✓ Andesgdbinit : Script file for Andes BSP
 - ✓ Gdbinit : Script file for IDE

3.1.5. IDE

- PI5008-IDEv1.0-setup.exe

3.1.6. Documents

1. PI5008_Toolchain_Manual
 - PI5008K Tool Chain installation guide
2. PI5008K_OfflineCalibrationTool_V0.57.00_UserGuide

- User guide of PC tool for Offline calibration
- 3. PI5008K_ViewGenerationTool_V1.12.00_UserGuide
 - User guide of PC tool to generate View/Parking guide etc.
- 4. PI5008K_Map3dCarTool_V0.22.00_UserGuide
 - User guide for PC tool to generate 3D Car Image for each view mode
- 5. PI5008K_Merge&DownloadToolUserGuide_v0.3
 - User guide for PC tool to merge binary images and download to flash memory
- 6. PI5008K_SDK_UserGuide
 - This guide explains overall issues of PI5008 SDK
- 7. PI5008_SVM_Driver_v0.1
 - This guide explain SVM(Surround View Monitor) device drivers.
- 8. PI5008K_SVM_UserGuide_V0.3
 - This guide shows how to use SVM API to generate 3D surround view
- 9. PI5008K_VideoIO_UserGuide_v0.3
 - This guide explains the video input/output type which can be used for PI5008K
 - It also explains how to choose video input/output
- 10. PI5008K_OS_Adaptation_Layer_UserGuide
 - This guide explains the OS adaptation layer for PI5008K SDK
- 11. PI5008K_BSP_UserGuide_v0.1
 - This guide explains the low-level driver for basic device drivers.
 - It also explains how to fuse image using JTAG
- 12. PI5008K_FileSystem_UserGuide_v0.1
 - This guide explains File System APIs.
- 13. PI5008K_Display_API_V0.5
 - This guide explains API for Display/UI

14. PI5008K_Application_v0.3
 - This guide explains user level functions in application layer
15. PI5008K_DU_Driver_v0.11
 - This guide explains device drivers for DU(Display Unit)
16. PI5008K_GUI_UserGuide_v0.3
 - This guide explains how to modify the GUI of PI5008 SDK using examples. By referring this guide, users can make their own GUI
17. PI5008K_UI_Scenario_v0.8
 - This guide shows the UI scenario of PI5008K SDK
18. PI5008K_GUI_Design_Guideline_v0.3
 - This guide shows how the GUI for PI5008K SDK is designed.
19. PI5008K_OnBoard_Calibration_UserGuide
 - This guide explains on-board calibration procedure step by step
20. PI5008K_SerialFlash_UserGude
 - This guide explains APIs to access serial Flash memory
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4. Revision History

Version	Date	Description
alpha	20180608	
beta	20180820	
v1.0	20181119	
v1.01	20181123	