PI5008KSvmViewGenTool User Guide

ver. 1.42.00

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⠶ Contents

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PI5008KSvmViewGenTool Overview

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PI5008KSvmViewGenTool Overview

➢ Main functions

(1) Change the shape of 3D surface (size, curvature and flat area)

(2) Change the shape of blend (blending angle/region, shadow area)

(3) Generate CAM(Undistort, Cylindrical) / SD / 2D / 3D view

(4) Save FR View, LR View and Blend LUT

(5) Save shadow image

(6) Save parking guide line

(7) Change view layout

➢ Specification

Item	Description
Input	Camera Image / Intrinsic & Extrinsic Parameters View Configuration
Output	FR View LUT (.bin/.txt) LR View LUT (.bin/.txt) Blend LUT (.bin/.txt) Shadow area image (.bmp/.yuv) View image (.bmp) Parking Guide Line (.bin/.txt/.bmp/.yuv) View Configuration (.cnf) SVM Configuration Binary, SVM Binary, PGL Image Binary (.bin)
View mode	SD / 2D / 3D / CAM(Undistort, Cylindrical)
Parking guide line	Static / Dynamic
Supported OS	Windows7 or above

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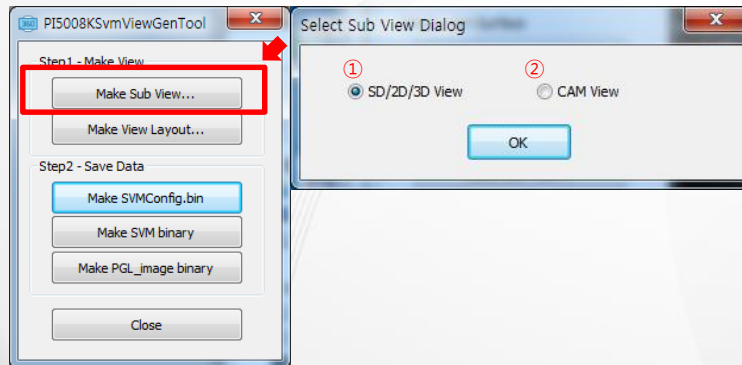
(1) Start Program

　Click <View Generation> button in PI5008KSvmPkgTool.
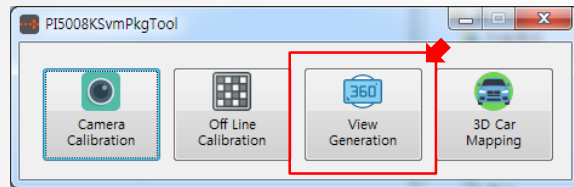
(2) Select Sub View Type

　Press <Make Sub View> button and select view type (SD/2D/3D view & CAM view).

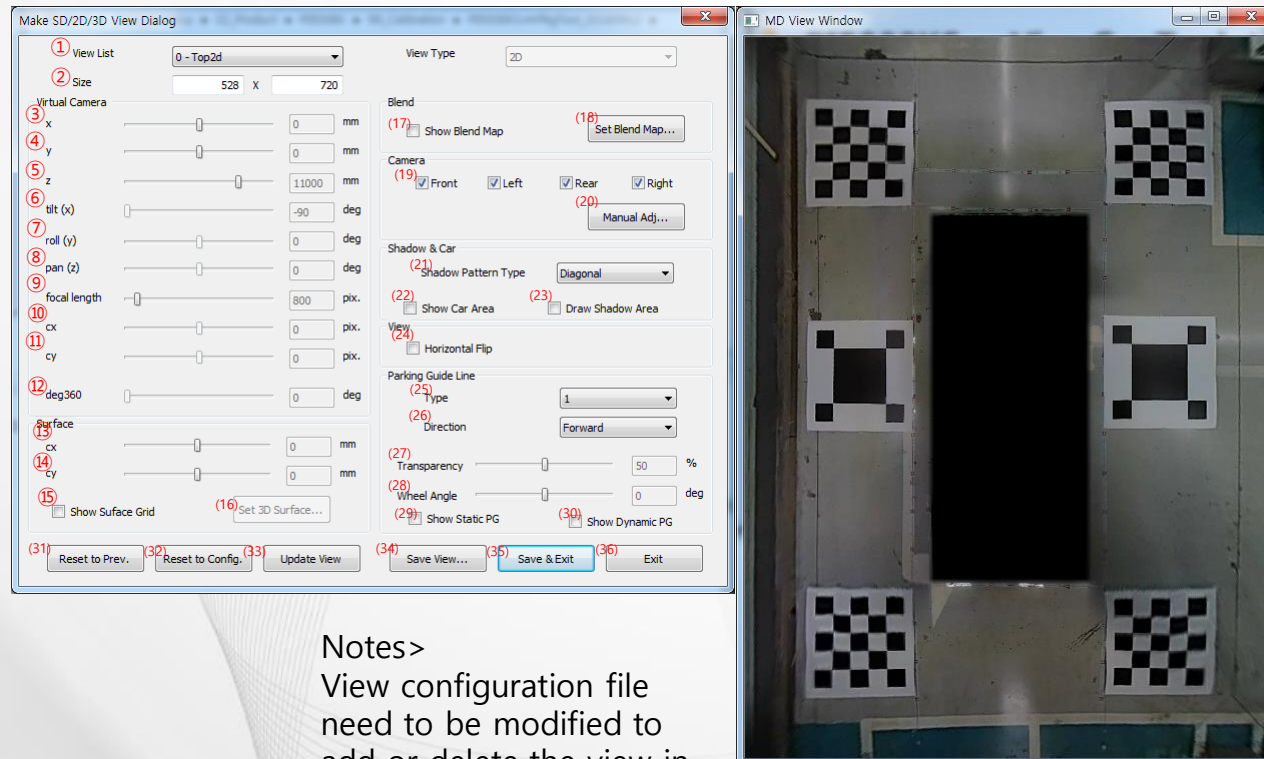Crystal Image through Imaging Innovation

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(3) Make SD/2D/3D view

　　Select "SD/2D/3D view" to set the attribute of views defined in loaded view configuration file(*.cnf).*

Please refer to next page for more details of each parameter.

Notes>
View configuration file
need to be modified to
add or delete the view in
View List.

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① **View List** : Select view in the list. (View list is loaded from view configuration file(*.cnf)).

② **Size** : Set view size. (unit : pixel) – Press <Update View> to effect.

③ **Virtual Camera → x** : Adjust x-axis position of virtual viewpoint. (unit : mm) – Press <Update View> to effect.

④ **Virtual Camera → y** : Adjust y-axis position of virtual viewpoint. (unit : mm) – Press <Update View> to effect.

⑤ **Virtual Camera → z** : Adjust z-axis position of virtual viewpoint. (unit : mm) – Press <Update View> to effect.

⑥ **Virtual Camera → tilt** : Adjust x-axis angle(tilt) of virtual viewpoint.(unit : deg.) – Press <Update View> to effect.

⑦ **Virtual Camera → roll** : Adjust y-axis angle(roll) of virtual viewpoint. (unit : deg.) – Press <Update View> to effect.

⑧ **Virtual Camera → pan** : Adjust z-axis angle(pan) of virtual viewpoint. (unit : deg.) – Press <Update View> to effect.

⑨ **Virtual Camera → focal length** : Adjust focal length of virtual camera. (unit : pixel) – Press<Update View> to effect.

⑩ **Virtual Camera → cx** : Adjust principal point x of virtual camera. (unit : pixel) – Press<Update View> to effect.

⑪ **Virtual Camera → cy** : Adjust principal point y of virtual camera. (unit : pixel) – Press<Update View> to effect.

⑫ **Virtual Camera → deg360** : Adjust view angle for view 360. (unit : deg.) – Press<Update View> to effect.

⑬ **Surface → cx** : Adjust x-axis position of 2D / 3D Surface Center. – Press <Update View> to effect.

⑭ **Surface → cy** : Adjust y-axis position of 2D / 3D Surface Center. – Press <Update View> to effect.

⑮ **Surface → Show Surface Grid** : Show the grid-patterned surface used to make view on top of view image. – Applied immediately.

(16) **Surface → Set 3D Surface :** Set 3D Surface parameters

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Change the shape of 3D surface. Adjust each parameters (wx, wy, wz, rx, ry, rz, zOffset) to change the shape as you want and save them. Please refer to the next page for the detailed description for each parameter.

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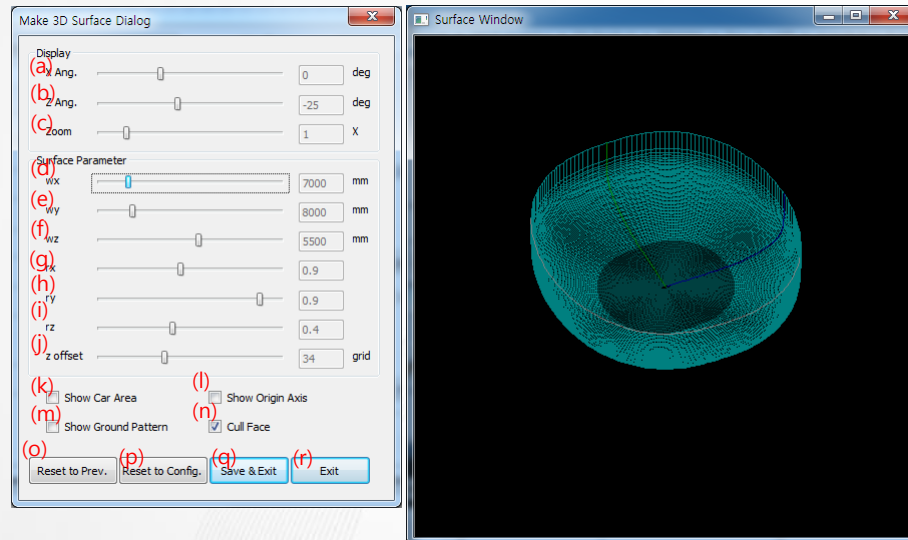
How to use PI5008KSvmViewGenTool

(a) **Display → X Ang.** : (For preview) rotate 3D surface image about x-axis.

(b) **Display → Z Ang.** : (For preview) rotate 3D surface image about z-axis.

(c) **Display → Zoom** : (For preview) increase/decrease the size of 3D Surface.

(d) **Surface Parameter → wx** : Adjust x-axis size of 3D Surface. (unit : mm)

(e) **Surface Parameter -> wy** : Adjust y-axis size of 3D Surface. (unit : mm)

(f) **Surface Parameter → wz** : Adjust z-axis size of 3D Surface. (unit : mm)

(g) **Surface Parameter → rx** : Adjust x-axis curvature of 3D Surface.

(h) **Surface Parameter → ry** : Adjust y-axis curvature of 3D Surface.

(i) **Surface Parameter → rz** : Adjust z-axis curvature of 3D Surface.

(j) **Surface Parameter → zOffset** : Adjust the size of flat surface of 3D Surface around vehicle.

(k) **Show Car Area :** Shows car area in 3D surface.

(l) **Show Origin Axis :** Shows direction of x/y/z-axis. (x axis : blue, y axis : green, z axis : red)

(m) **Show Ground Pattern :** Shows grid-patterned ground plane. It can be used to check the size of surface. (Grid size : 1.0x1.0m)

(n) **Cull Face :** Decide whether to show invisible back-face or not during preview.

(o) **Reset to Prev.** : Reset parameter values to previous values.

(p) **Reset to Config.** : Reset parameter values to values in config. File.

(q) **Save & Exit** : Save parameter values and exit.

(r) **Exit** : Exit without saving parameter values.

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(17) **Blend → Show Blend Map** : Shows shape of alpha0 blend map. – Applied immediately.

(18) **Blend → Set Blend Map...** : Set blend map parameters.

Set the attribute of Alpha0, Alpha1 Blend LUT. Save them after setting blend map and shadow attribute by modifying each parameter. Please refer to next page for more details of each parameter.
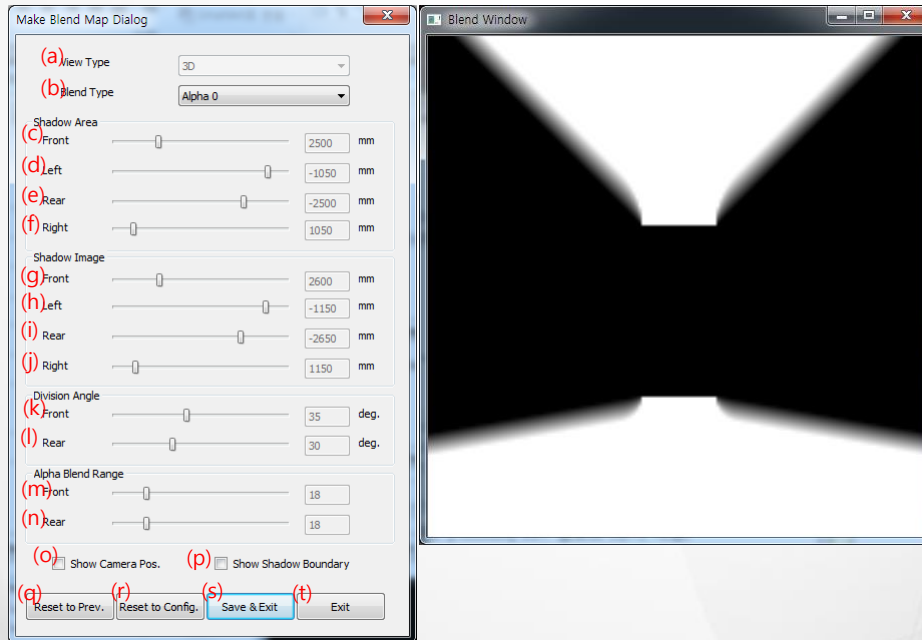
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(a) **View Type** : Select 2D or 3D view type.

(b) **Blend Type** : Select Alpha0 or Alpha1 blend type.

(c) **Shadow Area → Front** : Adjust front end position of shadow area. Adjust it not to show the blind spot or the car body. (unit : mm)

(d) **Shadow Area → Left** : Adjust left end position of shadow area. (unit : mm)

(e) **Shadow Area → Rear** : Adjust rear end position of shadow area. (unit : mm)

(f) **Shadow Area → Right :** Adjust right end position of shadow area. (unit : mm)

(g) **Shadow Image → Front** : Adjust front end position of shadow image. Shadow image should be adjusted a little bigger than shadow area to cover it. (unit : mm)

(h) **Shadow Image → Left** : Adjust left end position of shadow image. (unit : mm)

(i) **Shadow Image → Rear** : Adjust rear end position of shadow image. (unit : mm)

(j) **Shadow Image → Right :** Adjust right end position of shadow image. (단위 : mm)

(k) **Division Angle → Front** : Adjust angle of left-front and right-front division line. (unit : deg.)

(l) **Division Angle → Rear** : Adjust angle of left-rear and right-rear division line. (unit : deg.)

(m) **Alpha Blend Range → Front** : Adjust the size of left-front and right-front blending region (the region where the image of front camera is overlapped with side cameras).

(n) **Alpha Blend Range → Rear** : Adjust the size of left-rear and right-rear blending region (the region where the image of rear camera is overlapped with side cameras).

(o) **Show Camera Pos**. : Show the position of 4 cameras on the blend map.

(p) **Show Shadow Boundary** : Show the border of shadow area.

(q) **Reset to Prev.** : Initialize parameters to previous values.

(r) **Reset to Config.** : Initialize parameters to values in config. file.

(s) **Save & Exit** : Save parameters and exit.

(t) **Exit** : Exit without saving parameters.

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(19) **Camera ➔ Front / Left / Rear / Right** : Decide whether to show image of each camera – Applied immediately.

(20) **Manual Adj.** : If the result of calibration using camera extrinsic parameters is not satisfied, it can be compensated additionally by adjusting them (position, angle and principal point of each camera) manually.
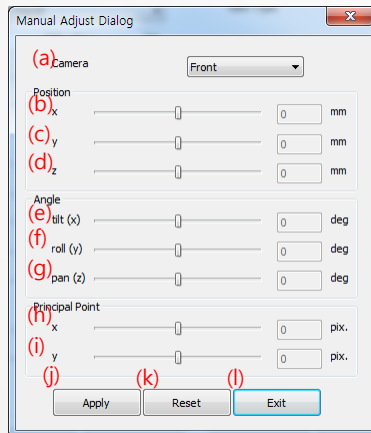

(a) **Camera** : Select camera to be adjusted.

(b) **Position ➔ x** : Adjust x-axis position of the selected camera. (unit : mm)

(c) **Position ➔ y** : Adjust y-axis position of the selected camera. (unit : mm)

(d) **Position ➔ z** : Adjust z-axis position of the selected camera. (unit : mm)

(e) **Angle ➔ x :** Adjust x-axis angle of the selected camera. (unit : deg.)

(f) **Angle ➔ y** : Adjust y-axis angle of the selected camera. (unit : deg.)

(g) **Angle ➔ z** : Adjust z-axis angle of the selected camera. (unit : deg.)

(h) **Principal Point ➔ x** : Adjust x-axis position of principal point(optical axis) of the selected camera. (unit : pixel)

(i) **Principal Point ➔ y** : Adjust y-axis position of principal point(optical axis) of the selected camera. (unit : pixel)

(j) **Apply** : Update view by applying parameter values.

(k) **Reset** : Initialize parameter values.

(l) **Exit** : Exit.

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(21) **Car & Shadow → Shadow Pattern Type :**

(22) **Car & Shadow → Show Car Model** : Decide whether to show vehicle area. – Applied immediately

(23) **Car & Shadow → Draw Shadow Area** : Decide whether to show shadow image. – Applied immediately

(24) **Horizontal Flip :** Decide whether to flip view horizontally. (This is recommended to be enabled by default for rear view.) – Press<Update View> to effect

(25) **Parking Guide Line → Type :** Choose the type of guide line – Applied immediately

(26) **Parking Guide Line → Direction** : Choose the direction of guide line (Forward / Backward). – Applied immediately

(27) **Parking Guide Line → Transparency :** Adjust the transparency of guide line. – Applied immediately

(28) **Parking Guide Line → Wheel Angle** : Adjust the angle of steering wheel to generate the dynamic parking guide line. – Applied immediately

(29) **Parking Guide Line → Show Static PG** : Decide whether to show the static parking guide line. – Applied immediately

(30) **Parking Guide Line → Show Dynamic PG** : Decide whether to show the dynamic parking guide line. – Applied immediately
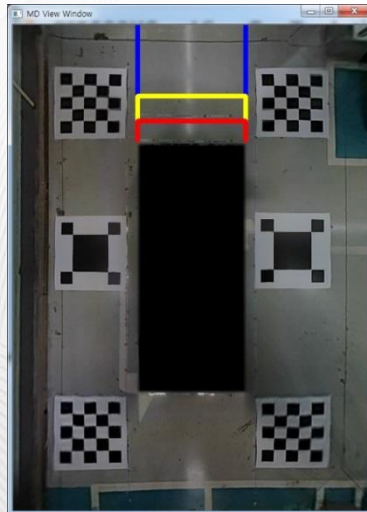
Static Guide Line   Dynamic Guide Line

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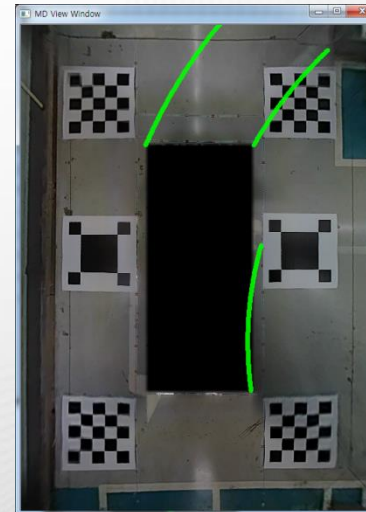
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(31) **Reset to Prev.** : initialize parameter values to the previous values.

(32) **Reset to Config.** : initialize parameter values defined in the view configuration file.

(33) **Update View** : Re-generate and display view according to the current parameter values.

(34) **Save View** : Press <Save View...> button and a window to select data and format to be saved will be displayed.

After selecting data and format, press <OK> button and a window to select target folder to save data will be displayed.

View / blend LUT, shadow image, parking guide line and view image will be saved in the selected target folder.
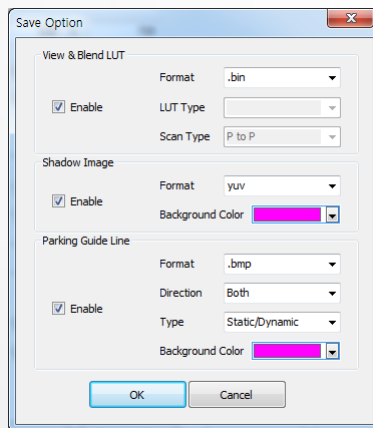
(35) **Save & Exit** : Save parameters and exit.

(36) **Exit** : Exit without saving parameters.

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(4) Making 360 degree surrounding view

There is a special view mode called 360 View in view type. (See Appendix)
This type can be used to make 360 degree surround view. A reference view to be rotated needs to be
made in advance. 360 degree surround view will be created automatically while maintaining some viewpoint
values such as distance from a vehicle, height and tilt angle.

a) Setting virtual camera

Set viewpoint to create reference view (Y/Z position, tilt angle) which you want rotate 360 degree.
X position, Roll/Pan angle for the reference view is fixed. By using deg360 scroll bar, you can check view
image for each rotation angle in advance. You can check if there is a blind area for each camera while
changing rotation angle.

b) Saving View data

In the selected target folder, a sub folder named View360 is created and the view for 0 to 359 degrees is
previewed sequentially and the LUT data is saved.

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(5) Making CAM (Undistort) View

Select CAM view to make a undistort view. Please refer to next page for more details of each parameter.
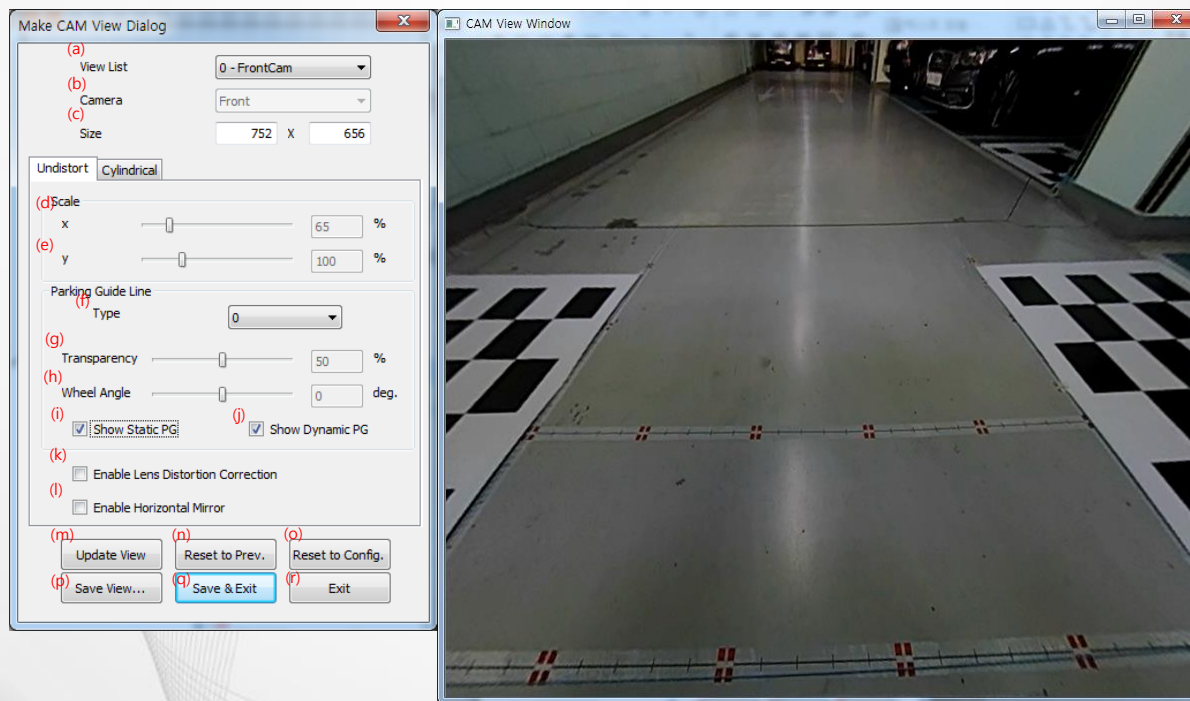
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(a) **View List** : Select view.

(b) **Camera** : Show camera channel.

(c) **Size** : Set view size. (unit : pixel) - Press <Update View> button to effect.

(d) **Undistort → Scale → x** : Adjust x-axis scale of view. (unit : %) – Press <Update View> button to effect.

(e) **Undistort → Scale → y** : Adjust y-axis scale of view. (unit : %) – Press <Update View> button to effect.

(f) **Undistort → Parking Guide Line → Type** : Adjust type of guide line – Applied immediately

(g) **Undistort → Parking Guide Line → Transparency** : Adjust the transparency of guide line. - Applied immediately

(h) **Undistort → Parking Guide Line → Wheel Angle** : Adjust the steering angle for generating dynamic guide line. - Applied immediately

(i) **Undistort → Parking Guide Line → Show Static PG** : Decide whether to display static guide line. - Applied immediately

(j) **Undistort → Parking Guide Line → Show Dynamic PG** : Decide whether to display dynamic guide line. - Applied immediately

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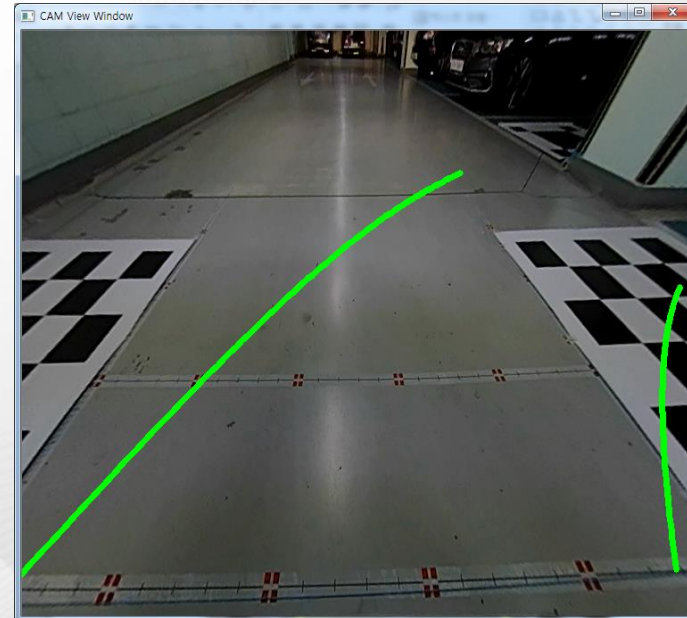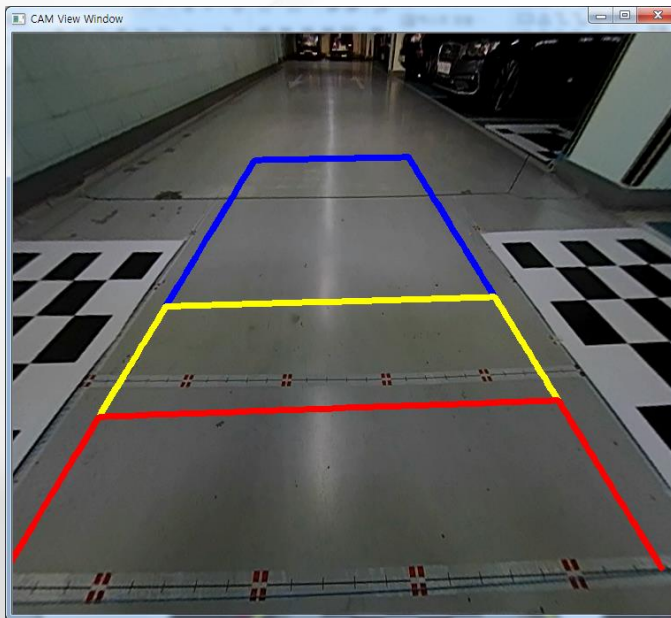
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(k) **Undistort → Enable Lens Distortion Correction** : Decide whether to apply lens distortion correction – Press <Update View> button to effect.

(l) **Undistort → Enable Horizontal Flip** : Decide whether to flip view horizontally. (This is recommended to be enabled by default for rear view.)

(m) **Update View** : Apply parameter values and update view.

(n) **Reset to Prev.** : initialize parameter values to the previous values.

(o) **Reset to Config.** : initialize parameter values defined in the view configuration file.

(p) **Save View** : Press <Save View...> button and a window to select data and format to be saved will be displayed. After selecting data and format, press <OK> button and a window to select target folder to save data will be displayed. View / blend LUT and parking guide line will be saved in the target folder.

(q) **Save & Exit** : Save parameters and exit.

(r) **Exit** : Exit without saving parameters.

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(6) Making CAM (Cylindrical) View

Select CAM view to make a cylindrical view. Please refer to next page for more details of each parameter.
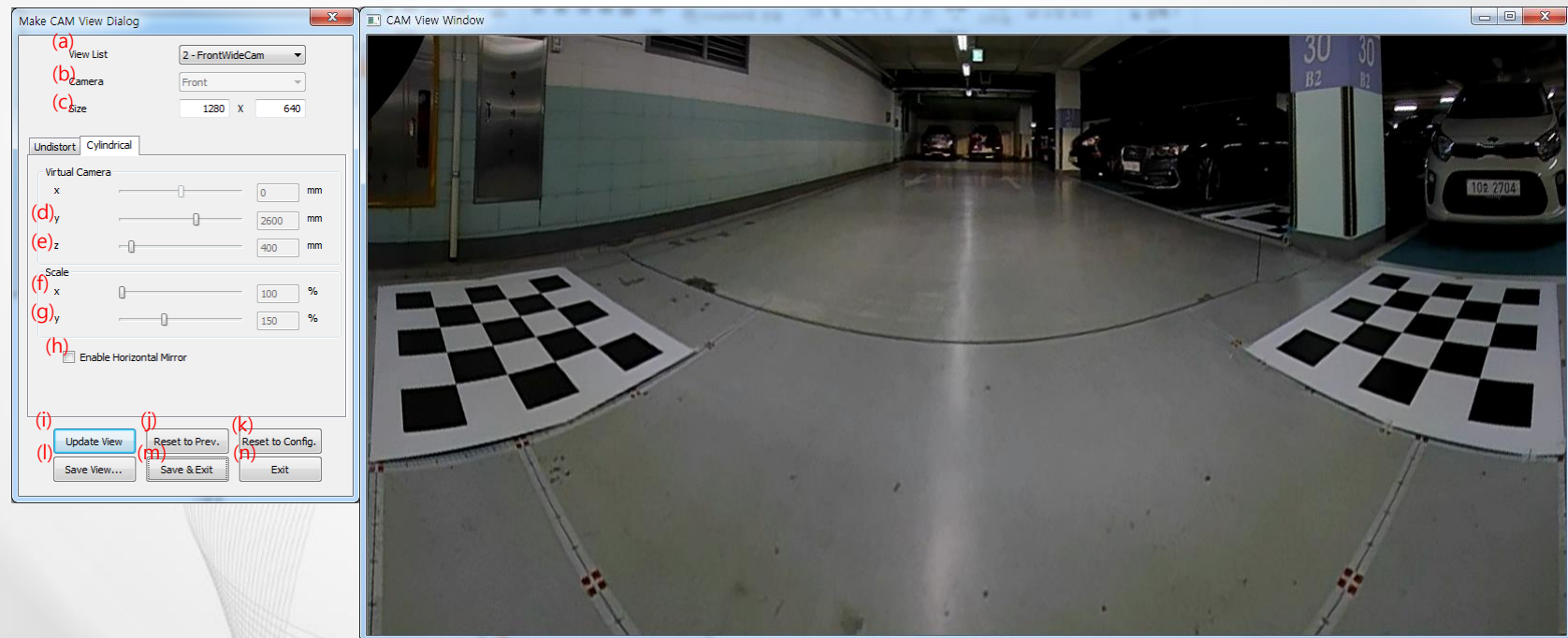
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(a) **View List** : Select view.

(b) **Camera** : Show camera channel.

(c) **Size** : Set view size. (unit : pixel) - Press <Update View> button to effect.

(d) **Cylindrical → Virtual Camera → y** : Adjust y-axis position of virtual viewpoint. (unit : mm) – Press <Update View> to effect.

(e) **Cylindrical → Virtual Camera → z** : Adjust z-axis position of virtual viewpoint. (unit : mm) – Press <Update View> to effect.

(f) **Cylindrical → Scale → x** : Adjust x-axis scale of view. (unit : %) – Press <Update View> button to effect.

(g) **Cylindrical → Scale → y** : Adjust y-axis scale of view. (unit : %) – Press <Update View> button to effect.

(h) **Cylindrical → Enable Horizontal Flip** : Decide whether to flip view horizontally. (This is recommended to be enabled by default for rear view.)

(i) **Update View** : Apply parameter values and update view.

(j) **Reset to Prev.** : initialize parameter values to the previous values.

(k) **Reset to Config.** : initialize parameter values defined in the view configuration file.

(l) **Save View** : Press <Save View…> button and a window to select data and format to be saved will be displayed. After selecting data and format, press <OK> button and a window to select target folder to save data will be displayed. View / blend LUT and parking guide line will be saved in the target folder.

(m) **Save & Exit** : Save parameters and exit.

(n) **Exit** : Exit without saving parameters.

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(7) Change View Layout

Press <Make View Layout> button to change the offset position of each view section.
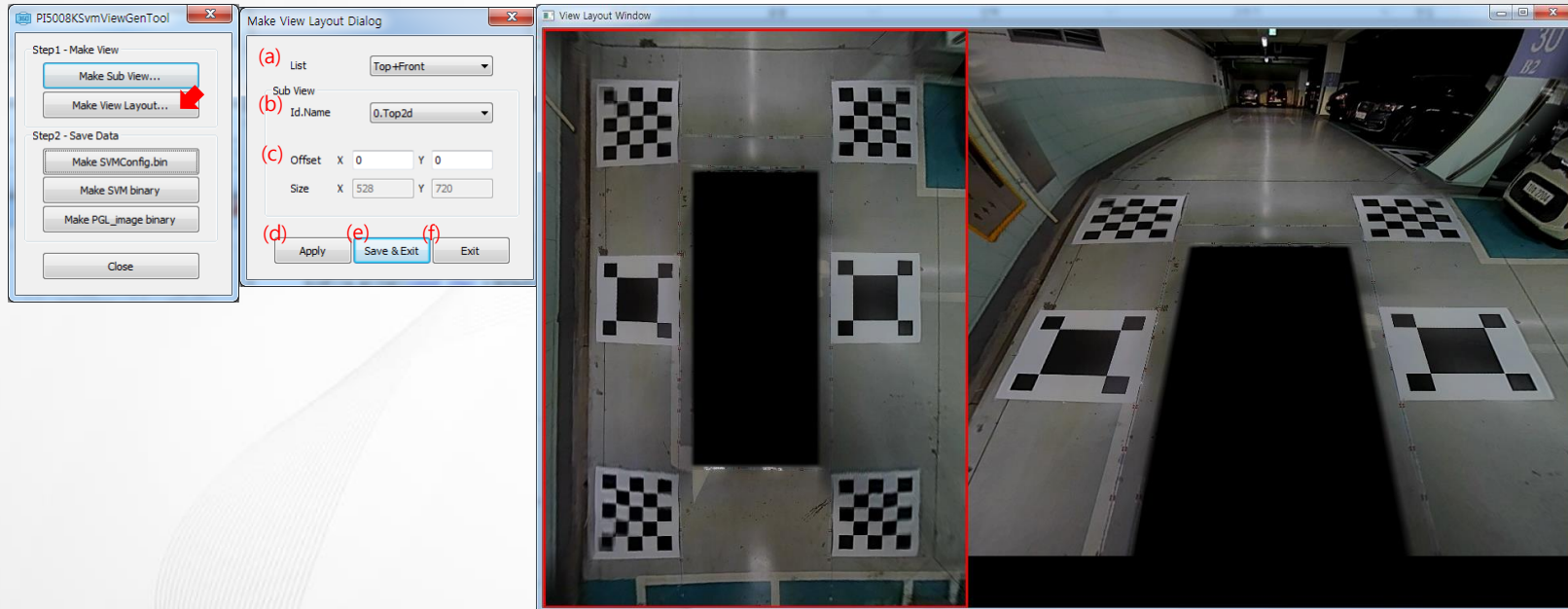
(a) **List** : Select layout list.

(b) **Id.Name** : Select sub view section.

(c) **Offset** : Set the position of sub view section. (unit : pixel) - Press <Apply> to effect.

(d) **Apply** : Apply offset values to View Layout Window.

(e) **Save & Exit** : Save parameters and exit.

(f) **Exit** : Exit without saving parameters.

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(8) Save SVM Configuration Binary

   Press <Make SVMConfig.bin> to save SVM configuration(.bin) file.

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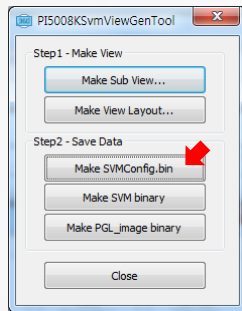
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(9) Making SVM.bin

Data for various views including 360 degree surrounding view need to be merged into one binary file before downloading to PI5008 board.

Press <Make SVM.bin> button and select folder where target data files exist.

Merged file SVM.bin will be created in the target folder.

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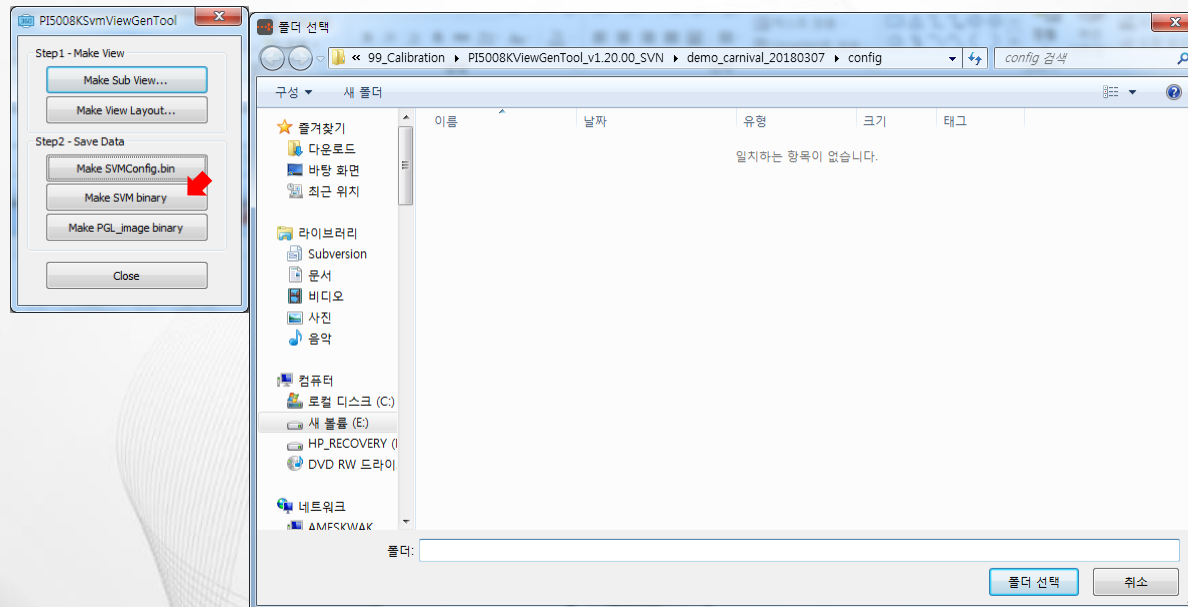
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(10) Making PGL_image.bin

    Press <Make PGL_image.bin> button to save PGL image to binary.

Appendix
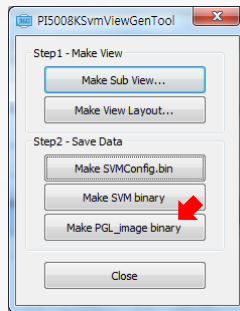
❖ View Configuration File (.cnf) Information

[Information]

name=PI5008KSvmViewGenTool Configuration ·············▶ File information (PI5008KSvmViewGenTool Configuration)

version=2.5 ·············▶ File version information

[Blend Map]

✓ shadowAreaFront=1000 ·············▶ Length from center of car to the front of shadow area (unit : mm)

✓ shadowAreaLeft=-700 ·············▶ Length from center of car to the left side of shadow area (unit : mm)

✓ shadowAreaRear=-1000 ·············▶ Length from center of car to the rear of shadow area (unit : mm)

✓ shadowAreaRight=700 ·············▶ Length from center of car to the right side of shadow area (unit: mm)

✓ shadowImageFront=1150 ·············▶ Length from center of car to the front of shadow image (unit : mm)

✓ shadowImageLeft=-800 ·············▶ Length from center of car to the left side of shadow image (unit : mm)

✓ shadowImageRear=-1150 ·············▶ Length from center of car to the rear of shadow image (unit : mm)

✓ shadowImageRight=800 ·············▶ Length from center of car to the right side of shadow image (unit : mm)

✓ alpha0DivAngFront=45 ·············▶ Angle of front division line of Alpha0 blend LUT (unit : deg.)

✓ alpha0DivAngRear=20 ·············▶ Angle of rear division line of Alpha0 blend LUT (unit : deg.)

✓ alpha0BlendAreaFront=18 ·············▶ Front area of Alpha0 blend LUT

✓ alpha0BlendAreaRear=18 ·············▶ Rear area of Alpha0 blend LUT

✓ alpha1DivAngFront=70 ·············▶ Angle of front division line of Alpha1 blend LUT (unit : deg.)

✓ alpha1DivAngRear=70 ·············▶ Angle of rear division line of Alpha1 blend LUT (unit : deg.)

✓ alpha1BlendAreaFront=18 ·············▶ Front area of Alpha1 blend LUT

✓ alpha1BlendAreaRear=18 ·············▶ Read area of Alpha1 blend LUT

✓ shadowPattern=0 ·············▶ Shadow image pattern type (0 : diagonal, 1 : solid, 2 : chess)

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Appendix

[2D Surface]

wx=20000 ·····▶ X-axis size of 2D surface from world coordinate center (unit : mm)

wy=20000 ·····▶ Y-axis size of 2D surface from world coordinate center (unit : mm)

✔ cx=0 ·····▶ X-axis word coordinate of 2D surface center (unit : mm)

✔ cy=0 ·····▶ Y-axis world coordinate of 2D surface center (단위 : mm)

[3D Surface]

✔ wx=6500.00000 ·····▶ X-axis size of 3D surface from world coordinate center (unit : mm)

✔ wy=7000.00000 ·····▶ y-axis size of 3D surface from world coordinate center (unit : mm)

✔ wz=4000.00000 ·····▶ z-axis size of 3D surface from world coordinate center (unit : mm)

✔ rx=0.80000 ·····▶ Curvature of 3D surface in X-axis direction

✔ ry=1.00000 ·····▶ Curvature of 3D surface in y-axis direction

✔ rz=0.30000 ·····▶ Curvature of 3D surface in z-axis direction

✔ zOffset=30 ·····▶ Value to set area of surface around vehicle on 3D surface

✔ cx=0 ·····▶ X-axis world coordinate of 3D surface center (unit : mm)

✔ cy=0 ·····▶ Y-axis world coordinate o 3D surface center (unit : mm)

[Cylindrical Surface]

dist=1000.00000 ·····▶ Distance of cylindrical surface (단위 : mm)

[View]

width=1280 ·····▶ Output frame width (unit : pixel)

height=720 ·····▶ Output frame height (unit : pixel)

scaleX=1.0 ·····▶ X-axis scale of Sub view (unit : 1/100 %)

scaleY=1.0 ·····▶ Y-axis scale of Sub view (unit : 1/100 %)

mdViewCount=10 ·····▶ Number of MD view preset

camViewCount=2 ·····▶ Number of CAM view preset

scanType=0 ·····▶ Scan type of in/out image (0 : P→P, 1 : P→I, 2 : I→P, 3: I→I)

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Appendix

```
[MD View 0]
name=Top2d                        ▶ View name
viewType=0                        ▶ View type (0 : 2D, 1 : 3D, 2 : SD, 4 : 360 View)
camType=5                         ▶ Camera type (0 : front, 1 : left, 2 : rear, 3 : right, 4 : all)
✓ width=528                       ▶ View width (unit : pixel)
✓ height=720                      ▶ View height (unit : pixel)
✓ virCamPosX=0.00000             ▶ X-axis position of virtual camera in world coordinate (unit : mm)
✓ virCamPosY=0.00000             ▶ Y-axis position of virtual camera in world coordinate (unit : mm)
✓ virCamPosZ=10500.00000         ▶ Z-axis position of virtual camera in world coordinate (unit : mm)
✓ virCamTilt=-90.00000           ▶ Tilt angle of virtual camera in world coordinate (unit : deg.)
✓ virCamRoll=0.00000             ▶ Roll angle of virtual camera in world coordinate (unit : deg.)
✓ virCamPan=0.00000              ▶ Pan angle of virtual camera in world coordinate (unit : deg.)
✓ virCamFocalLen=800.00000       ▶ Focal length of virtual camera (unit : pixel)
✓ virCamCx=0                     ▶ Principal point x of virtual camera (unit : pixel)
✓ virCamCy=0                     ▶ Principal point y of virtual camera (unit : pixel)
✓ hFlip=0                        ▶ H mirror or not (1 : yes, 0 : no)
bPgl=1                            ▶ PGL generate or not (1 : yes, 0 : no)
pglType=2                         ▶ PGL type (0 : forward, 1 : backward, 2 : both)
[MD View 1]
name=Front3d
viewType=1
camType=5
width=752
height=656
virCamPosX=0.00000
virCamPosY=-5000.00000
virCamPosZ=4000.00000
```

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Contents

Appendix

```
[MD View 3]
name=Rear3d
viewType=1
camType=5
width=752
height=656
virCamPosX=0.00000
virCamPosY=4000.00000
virCamPosZ=4000.00000
virCamTilt=-35.00000
virCamRoll=0.00000
virCamPan=180.00000
virCamFocalLen=800.00000
virCamCx=0
virCamCy=0
hFlip=1
bPgl=0
pglType=1
[MD View 4]
name=Right3d
viewType=1
camType=5
width=752
height=656
virCamPosX=4100.00000
virCamPosY=-2800.00000
virCamPosZ=3600.00000
```

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virCamTilt=-30.00000

virCamRoll=0.00000

virCamPan=0.00000

virCamFocalLen=800.00000

virCamCx=0

virCamCy=0

hFlip=0

hFlip=0

bPgl=0

[MD View 2]

name=Left3d

viewType=1

camType=5

width=752

height=656

virCamPosX=-4100.00000

virCamPosY=-2800.00000

virCamPosZ=3700.00000

virCamTilt=-37.00000

virCamRoll=0.00000

virCamPan=-55.00000

virCamFocalLen=800.00000

virCamCx=0

virCamCy=0

hFlip=0

bPgl=0

pglType=0

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```
[MD View 3]
name=Rear3d
viewType=1
camType=5
width=752
height=656
virCamPosX=0.00000
virCamPosY=4000.00000
virCamPosZ=4000.00000
virCamTilt=-35.00000
virCamRoll=0.00000
virCamPan=180.00000
virCamFocalLen=800.00000
virCamCx=0
virCamCy=0
hFlip=1
bPgl=0
pglType=1
[MD View 4]
name=Right3d
viewType=1
camType=5
width=752
height=656
virCamPosX=4100.00000
virCamPosY=-2800.00000
virCamPosZ=3600.00000
```

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virCamTilt=-37.00000

virCamRoll=0.00000

virCamPan=55.00000

virCamFocalLen=800.00000

virCamCx=0

virCamCy=0

hFlip=0

bPgl=0

pglType=0

[MD View 5]

name=LeftFront3d

viewType=1

camType=5

width=752

height=656

virCamPosX=-1500.00000

virCamPosY=-4700.00000

virCamPosZ=2200.00000

virCamTilt=-20.00000

virCamRoll=0.00000

virCamPan=-5.00000

virCamFocalLen=800.00000

virCamCx=0

virCamCy=0

hFlip=0

bPgl=0

pglType=0

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```
[MD View 6]
name=RightFront3d
viewType=1
camType=5
width=752
height=656
virCamPosX=1500.00000
virCamPosY=-4700.00000
virCamPosZ=2200.00000
virCamTilt=-20.00000
virCamRoll=0.00000
virCamPan=5.00000
virCamFocalLen=800.00000
virCamCx=0
virCamCy=0
hFlip=0
bPgI=0
[MD View 7]
name=Front
viewType=2
camType=0
width=752
height=656
virCamPosX=0
virCamPosY=1000
virCamPosZ=700
```

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virCamTilt=-35.0

virCamRoll=0.0

virCamPan=0.0

virCamFocalLen=300

virCamCx=0

virCamCy=0

hFlip=0

bPgl=0

pglType=0

[MD View 8]

name=Rear

viewType=2

camType=2

width=752

height=656

virCamPosX=0

virCamPosY=-1200

virCamPosZ=900

virCamTilt=-42.0

virCamRoll=0.0

virCamPan=180.0

virCamFocalLen=300

virCamCx=0

virCamCy=0

hFlip=1

bPgl=1

pglType=1

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```
[MD View 9]
name=View360
viewType=4
camType=3
width=752
height=656
virCamPosX=0
virCamPosY=-5000
virCamPosZ=4000
virCamTilt=-30.0
virCamRoll=0.0
virCamPan=0.0
virCamCx=0
virCamCy=0
virCamFocalLen=800
hFlip=0
[CAM View 0]
name=FrontCam
viewType=3
camType=0
width=752
height=656
scaleX=0.65
scaleY=1.0
```

CAM view name
View type (3 : CAM)
Camera type (0 : front, 1 : left, 2 : rear, 3 : right)
View width (unit : pixel)
View height (unit : pixel)
X-axis scale (unit : %)
Y-axis scale (unit : %)

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hFlip=0 ·····························► H mirror or not (1 : yes, 0 : no)

ldc=0 ·····························► Lens distortion correction 여부 (1 : yes, 0 : no)

bPgl=0 ·····························► PGL or not (1 : yes, 0 : no)

pglType=0 ·····························► PGL type (0 : forward, 1 : backward, 2 : both)

[CAM View 1]

name=RearCam

viewType=3

camType=2

width=752

height=656

scaleX=0.65

scaleY=1.0

hFlip=1

ldc=0

bPgl=1

pglType=1

[CAM View 2]

name=FrontWideCam

viewType=6

camType=0

width=1280

height=640

scaleX=1.000000

scaleY=1.500000

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virCamPosX=0.00000

virCamPosY=2600.00000

virCamPosZ=400.00000

hFlip=0

[CAM View 3]

name=RearWideCam

viewType=6

camType=2

width=1280

height=640

scaleX=1.000000

scaleY=1.300000

virCamPosX=0.00000

virCamPosY=-2550.00000

virCamPosZ=450.00000

hFlip=1

[Static PG]

numPoint=100 ········▶ Number of points of lines which form Static guide line (Near/Middle/Far)

distMin=0 ········▶ Min. displaying distance of near line from front/rear of shadow area (unit : mm)

distNearMax=500 ········▶ Max displaying distance of near line from front/rear of shadow area (unit : mm)

distMiddleMax=1000 ········▶ Max displaying distance of mid line from front/rear of shadow area (unit : mm)

distFarMax=2500 ········▶ Max displaying distance of far line from front/rear of shadow area (unit : mm)

width=1500 ········▶ Width of left and light Line (unit : mm)

lineWidth=5 ········▶ Thickness of Line (unit : pixel)

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lineColorNear=0x000000FF ┈┈┈┈┈┈┈┈┈┈┈┈┈► Color of Near line (XBGR)

lineColorMiddle=0x0000FFFF ┈┈┈┈┈┈┈┈┈► Color of Middle line (XBGR)

lineColorFar=0x00FF0000 ┈┈┈┈┈┈┈┈┈┈┈► Color of Far line (XBGR)

[Dynamic PG]

numPoint=100 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Number of points of lines which form Dynamic guide line(Left/Right/Side)

wheelBase=1800 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Front and rear axis distance of vehicle (unit : mm)

wheelBaseCy=0 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Y coordinate of the center of wheelBase (unit : mm)

distLRMin=100 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Min. displaying distance of left/right line from front/rear of shadow area (unit : mm)

distSideMin=100 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Min. displaying distance of side line from front/rear of shadow area (unit : mm)

distLRMax=3000 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Max. displaying distance of left/right line from front/rear of shadow area (unit : mm)

distSideMax=3000 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Max. displaying distance of side line from front/rear of shadow area (unit : mm)

width=1600 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Width of left/right line (unit : mm)

lineWidth=5 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Thickness of line (unit : pixel)

lineColor=0x0000FF00 ┈┈┈┈┈┈┈┈┈┈┈► Color of line (XBGR)

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Appendix

❖ View Layout File (.cnf) Information

<table>
<tr><td>✓</td><td>: Parameters which can be modified using View generation program</td></tr>
</table>

[Information]

name=View Layout Configuration ·····················► File information (View Layout Configuration)

version=1.1 ·····················► File version information

[View ID]

n=10 ·····················► Number of view id

viewId0=0.Top2d ·····················► Sub view for view id 0

viewId1=1.Front3d

viewId2=2.Left3d

viewId3=3.Rear3d

viewId4=4.Right3d

viewId5=5.LeftFront3d

viewId6=6.RightFront3d

viewId7=9.View360

viewId8=0.FrontCam

viewId9=1.RearCam

[Layout]

layoutCount=9 ·····················► Number of view layout

[Layout 0] ·····················► View Layout 0

name=Top+Front ·····················► View layout 0 name

viewCount=2 ·····················► Number of section in view layout 0

viewId0=0 ·····················► View id for section 0

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✓ viewXOffset0=0 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► X offset position of section 0

✓ viewYOffset0=0 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Y offset position of section 0

  viewId1=1 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► View id for section 1

✓ viewXOffset1=528 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► X offset position of section 1

✓ viewYOffset1=0 ┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈┈► Y offset position of section 1

  [Layout 1]

  name=Top+Left

  viewCount=2

  viewId0=0

  viewXOffset0=0

  viewYOffset0=0

  viewId1=2

  viewXOffset1=528

  viewYOffset1=0

  [Layout 2]

  name=Top+Right

  viewCount=2

  viewId0=0

  viewXOffset0=0

  viewYOffset0=0

  viewId1=4

  viewXOffset1=528

  viewYOffset1=0

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[Layout 3]

name=Top+Rear

viewCount=2

viewId0=0

viewXOffset0=0

viewYOffset0=0

viewId1=3

viewXOffset1=528

viewYOffset1=0

[Layout 4]

name=Top+LeftFront

viewCount=2

viewId0=0

viewXOffset0=0

viewYOffset0=0

viewId1=5

viewXOffset1=528

viewYOffset1=0

[Layout 5]

name=Top+RightFront

viewCount=2

viewId0=0

viewXOffset0=0

viewYOffset0=0

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```
viewId1=6
viewXOffset1=528
viewYOffset1=0
[Layout 6]
name=Top+FrontCam
viewCount=2
viewId0=0
viewXOffset0=0
viewYOffset0=0
viewId1=8
viewXOffset1=528
viewYOffset1=0
[Layout 7]
name=Top+RearCam
viewCount=2
viewId0=0
viewXOffset0=0
viewYOffset0=0
viewId1=9
viewXOffset1=528
viewYOffset1=0
[Layout 8]
name=Top+View360
viewCount=2
```

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viewId0=0

viewXOffset0=0

viewYOffset0=0

viewId1=7

viewXOffset1=528

viewYOffset1=0

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❖ swing (.cnf) Information

✓ : Parameters which can be modified using View generation program

[Information]

name=Swing Configuration ┄┄┄┄► File information (PI5008KSvmViewGenTool Configuration)

version=1.0 ┄┄┄┄► File version information

[Swing]

✓ degreeInterval=2 ┄┄┄┄► 0 to 180 (default 2)
  - Specify Interval of the angles
  - If (360 / interval) is not interger, error message pop up
  - If It is not a value between 0~180, error message pop up

✓ FBLRLutInterval=8 ┄┄┄┄► Specify the interval to generate All FB/LR/BC lut (default:8)

✓ staticView=0,44,90,134,180,224,270,314 ┄┄┄┄► Static View to use in swing mode

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