



eYS3D
Microelectronics

eYs3D Linux SDK
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Contents

1	Introduction	1
2	Class Index	3
2.1	Class List	3
3	File Index	5
3.1	File List	5
4	Class Documentation	7
4.1	AccelerationTag Struct Reference	7
4.2	APCImageType Struct Reference	7
4.3	CompassTag Struct Reference	8
4.4	DECIMATION_PARAMS Struct Reference	8
4.5	eSPCtrl_RectLogData Struct Reference	8
4.5.1	Member Data Documentation	9
4.5.1.1	CamDist1	9
4.5.1.2	CamDist2	9
4.5.1.3	CamMat1	9
4.5.1.4	CamMat2	9
4.5.1.5	InImgHeight	10
4.5.1.6	InImgWidth	10
4.5.1.7	LRotaMat	10
4.5.1.8	NewCamMat1	10
4.5.1.9	NewCamMat2	10
4.5.1.10	nLineBuffers	10

4.5.1.11	OutImgHeight	10
4.5.1.12	OutImgWidth	11
4.5.1.13	RECT_AvgErr	11
4.5.1.14	RECT_Crop_Col_BG_L	11
4.5.1.15	RECT_Crop_Col_ED_L	11
4.5.1.16	RECT_Crop_Row_BG	11
4.5.1.17	RECT_Crop_Row_ED	11
4.5.1.18	RECT_CropEnable	11
4.5.1.19	RECT_Scale_Col_M	11
4.5.1.20	RECT_Scale_Col_N	12
4.5.1.21	RECT_Scale_Row_M	12
4.5.1.22	RECT_Scale_Row_N	12
4.5.1.23	RECT_ScaleEnable	12
4.5.1.24	RECT_ScaleHeight	12
4.5.1.25	RECT_ScaleWidth	12
4.5.1.26	RotaMat	12
4.5.1.27	RRotaMat	13
4.5.1.28	TranMat	13
4.5.1.29	uByteArray	13
4.6	GyroTag Struct Reference	13
4.7	packet_s Struct Reference	13
4.8	PointCloudInfo Struct Reference	14
4.8.1	Detailed Description	14
4.9	POST_PROCESS_PARAMS Struct Reference	14
4.10	tagAPC_STREAM_INFO Struct Reference	15
4.11	tagDEVINFORMATION Struct Reference	15
4.12	tagDEVSEL Struct Reference	15
4.13	tagKEEP_DATA_CTRL Struct Reference	15
4.14	tagZDTableInfo Struct Reference	16

5 File Documentation	17
5.1 eSPDI/eSPDI.h File Reference	17
5.1.1 Detailed Description	27
5.1.2 Function Documentation	27
5.1.2.1 APC_ApplyFilters()	28
5.1.2.2 APC_CloseCmdFiFo()	28
5.1.2.3 APC_CloseDevice()	29
5.1.2.4 APC_CloseDeviceEx()	29
5.1.2.5 APC_CloseDeviceMBL()	29
5.1.2.6 APC_ColorFormat_to_RGB24()	30
5.1.2.7 APC_Convert_Depth_Y_To_Buffer()	30
5.1.2.8 APC_Convert_Depth_Y_To_Buffer_offset()	31
5.1.2.9 APC_CreateSwPostProc()	31
5.1.2.10 APC_DecimationFilter()	32
5.1.2.11 APC_DecryptMP4()	32
5.1.2.12 APC_DecryptString() [1/2]	33
5.1.2.13 APC_DecryptString() [2/2]	33
5.1.2.14 APC_DepthMerge()	33
5.1.2.15 APC_DisableAE()	34
5.1.2.16 APC_DisableAWB()	35
5.1.2.17 APC_DoFusion()	35
5.1.2.18 APC_DoSwPostProc()	36
5.1.2.19 APC_EdgePreServingFilter()	36
5.1.2.20 APC_EnableAE()	37
5.1.2.21 APC_EnableAWB()	38
5.1.2.22 APC_EnableGPUAcceleration()	38
5.1.2.23 APC_EnableInterleave()	38
5.1.2.24 APC_EnableSensorIF()	39
5.1.2.25 APC_EncryptMP4()	39
5.1.2.26 APC_EncryptString() [1/2]	40

5.1.2.27	APC_EncryptString() [2/2]	40
5.1.2.28	APC_FindDevice()	40
5.1.2.29	APC_FlyingDepthCancellation_D11()	41
5.1.2.30	APC_FlyingDepthCancellation_D8()	41
5.1.2.31	APC_GenerateLutFile()	42
5.1.2.32	APC_Get2Image()	42
5.1.2.33	APC_Get_150_mm_depth()	43
5.1.2.34	APC_Get_60_mm_depth()	43
5.1.2.35	APC_Get_Color_30_mm_depth()	44
5.1.2.36	APC_GetAccMeterValue()	45
5.1.2.37	APC_GetAESTatus()	45
5.1.2.38	APC_GetAnalogGain()	45
5.1.2.39	APC_GetAutoExposureMode()	46
5.1.2.40	APC_GetAWBStatus()	46
5.1.2.41	APC_GetBusInfo()	47
5.1.2.42	APC_GetColorGain()	47
5.1.2.43	APC_GetColorImage()	48
5.1.2.44	APC_GetColorImageWithTimestamp()	48
5.1.2.45	APC_GetCompositeDevSelectIndex()	49
5.1.2.46	APC_GetControlCounterMode()	49
5.1.2.47	APC_GetCTPropVal()	50
5.1.2.48	APC_GetCTRangeAndStep()	50
5.1.2.49	APC_GetCurrentIRValue()	51
5.1.2.50	APC_GetDepthDataType()	52
5.1.2.51	APC_GetDepthImage()	52
5.1.2.52	APC_GetDepthImageWithTimestamp()	53
5.1.2.53	APC_GetDeviceInfo()	53
5.1.2.54	APC_GetDeviceInfoMBL_15cm()	54
5.1.2.55	APC_GetDeviceNumber()	54
5.1.2.56	APC_GetDeviceResolutionList()	54

5.1.2.57	APC_GetDigitalGain()	55
5.1.2.58	APC_GetExposureTime()	55
5.1.2.59	APC_GetFlexibleGyroData()	56
5.1.2.60	APC_GetFlexibleGyroLength()	56
5.1.2.61	APC_GetFWContinueMode()	57
5.1.2.62	APC_GetFWRegister()	57
5.1.2.63	APC_GetFwVersion()	58
5.1.2.64	APC_GetGlobalGain()	58
5.1.2.65	APC_GetHidGyro()	59
5.1.2.66	APC_GetHWContinueMode()	59
5.1.2.67	APC_GetHWRegister()	60
5.1.2.68	APC_GetImage()	60
5.1.2.69	APC_GetImageInterrupt()	61
5.1.2.70	APC_GetInfoHidGyro()	61
5.1.2.71	APC_GetInterleaveMode()	61
5.1.2.72	APC_GetIRMaxValue()	62
5.1.2.73	APC_GetIRMinValue()	62
5.1.2.74	APC_GetIRMode()	63
5.1.2.75	APC_GetLogData()	63
5.1.2.76	APC_GetLutData()	64
5.1.2.77	APC_GetMultiBytesHWRegister()	64
5.1.2.78	APC_GetPidVid()	65
5.1.2.79	APC_GetPointCloud()	65
5.1.2.80	APC_GetPUPropVal()	66
5.1.2.81	APC_GetPURangeAndStep()	67
5.1.2.82	APC_GetRectifyLogData()	67
5.1.2.83	APC_GetRectifyMatLogData()	68
5.1.2.84	APC_GetRectifyTable()	68
5.1.2.85	APC_GetSensorRegister()	70
5.1.2.86	APC_GetSerialNumber()	71

5.1.2.87	APC_GetSimpleDeviceNumber()	71
5.1.2.88	APC_GetSimpleDevSelectIndex()	71
5.1.2.89	APC_GetSRB()	72
5.1.2.90	APC_GetThermalFD()	72
5.1.2.91	APC_GetUACData()	73
5.1.2.92	APC_getUACNAME()	73
5.1.2.93	APC_GetUserData()	73
5.1.2.94	APC_GetYOffset()	74
5.1.2.95	APC_GetZDTable()	74
5.1.2.96	APC_HoleFill()	75
5.1.2.97	APC_HoleFilled()	76
5.1.2.98	APC_ImgMirro() [1/2]	76
5.1.2.99	APC_ImgMirro() [2/2]	77
5.1.2.100	APC_Init()	77
5.1.2.101	APC_InitDecimationFilter()	78
5.1.2.102	APC_InitialCmdFiFo()	78
5.1.2.103	APC_InitialFlexibleGyro()	79
5.1.2.104	APC_InitialHidGyro()	79
5.1.2.105	APC_InitialUAC()	79
5.1.2.106	APC_InitPostProcess()	80
5.1.2.107	APC_InitPostProcessCustomParameter()	80
5.1.2.108	APC_InitResizeProcess()	81
5.1.2.109	APC_InitSRB()	81
5.1.2.110	APC_InjectExtraDataToMp4()	82
5.1.2.111	APC_IsInterleaveDevice()	82
5.1.2.112	APC_IsMLBaseLine()	83
5.1.2.113	APC_OpenDevice()	83
5.1.2.114	APC_OpenDevice2()	84
5.1.2.115	APC_OpenDeviceMBL()	85
5.1.2.116	APC_PostProcess()	86

5.1.2.117 APC_PutSRB()	86
5.1.2.118 APC_ReadCmdFiFo()	87
5.1.2.119 APC_ReadFlashData()	87
5.1.2.120 APC_RefreshDevice()	88
5.1.2.121 APC_Release()	88
5.1.2.122 APC_ReleaseDecimationFilter()	88
5.1.2.123 APC_ReleaseFlexibleGyro()	89
5.1.2.124 APC_ReleaseHidGyro()	89
5.1.2.125 APC_ReleasePostProcess()	89
5.1.2.126 APC_ReleaseSwPostProc()	90
5.1.2.127 APC_ReleaseUAC()	90
5.1.2.128 APC_ResetFilters()	90
5.1.2.129 APC_ResetUNPData()	91
5.1.2.130 APC_ResizeImgToHalf()	91
5.1.2.131 APC_RetrieveExtraDataFromMp4()	92
5.1.2.132 APC_RGB2BMP()	92
5.1.2.133 APC_RotateImg180() [1/2]	93
5.1.2.134 APC_RotateImg180() [2/2]	93
5.1.2.135 APC_RotateImg90() [1/2]	94
5.1.2.136 APC_RotateImg90() [2/2]	94
5.1.2.137 APC_SaveLutData()	95
5.1.2.138 APC_SelectDevice()	95
5.1.2.139 APC_SetAETarget()	96
5.1.2.140 APC_SetAnalogGain()	96
5.1.2.141 APC_SetAutoExposureMode()	97
5.1.2.142 APC_SetColorGain()	97
5.1.2.143 APC_SetControlCounterMode()	98
5.1.2.144 APC_SetCTPropVal()	98
5.1.2.145 APC_SetCurrentIRValue()	99
5.1.2.146 APC_SetDepthDataType()	99

5.1.2.147 APC_SetDigitalGain()	99
5.1.2.148 APC_SetExposureTime()	100
5.1.2.149 APC_SetFWContinueMode()	100
5.1.2.150 APC_SetFWRegister()	101
5.1.2.151 APC_SetGlobalGain()	101
5.1.2.152 APC_SetHWRegister()	102
5.1.2.153 APC_SetHWVirtualChannel()	102
5.1.2.154 APC_SetInterleaveMode()	103
5.1.2.155 APC_SetIRMaxValue()	103
5.1.2.156 APC_SetIRMode()	104
5.1.2.157 APC_SetLogData()	104
5.1.2.158 APC_SetMultiBytesHWRegister()	105
5.1.2.159 APC_SetPidVid()	105
5.1.2.160 APC_SetPUPropVal()	106
5.1.2.161 APC_SetRectifyTable()	106
5.1.2.162 APC_SetRootCipher()	107
5.1.2.163 APC_SetSensorRegister()	107
5.1.2.164 APC_SetSensorTypeName()	108
5.1.2.165 APC_SetSerialNumber()	108
5.1.2.166 APC_Setup_v4l2_requestbuffers()	109
5.1.2.167 APC_SetupBlock()	109
5.1.2.168 APC_SetupHidGyro()	110
5.1.2.169 APC_SetUserData()	110
5.1.2.170 APC_SetYOffset()	111
5.1.2.171 APC_SetZDTable()	111
5.1.2.172 APC_SubSample()	112
5.1.2.173 APC_SwitchBaseline()	112
5.1.2.174 APC_TableToData()	113
5.1.2.175 APC_TemporalFilter()	113
5.1.2.176 APC_WriteCmdFiFo()	114
5.1.2.177 APC_WriteFlashData()	114
5.1.2.178 APC_WriteWaveEnd()	115
5.1.2.179 APC_WriteWaveHeader()	115
5.2 eSPDI/eSPDI_def.h File Reference	116
5.2.1 Detailed Description	124

Chapter 1

Introduction

This document describes the usage of eYs3D Linux SDK

What's inside the SDK

Table 1.1 File List

Folder	Filename	Description
bin	All files	sample executables on Linux platform
console_tester	All files	a console program demonstrating how to use the APIs defined in eSPDI.h
cfg	All files	configuration files
eSPDI	eSPDI.h	functions definitions
	eSPDI_def.h	error/data type definitions
	eSPDI↔ version.h	SDK version declaration header
DMPreview	All files	a sample project demonstrating how to open multiple devices in an application

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

AccelerationTag	7
APCImageType	7
CompassTag	8
DECIMATION_PARAMS	8
eSPCtrl_RectLogData	8
GyroTag	13
packet_s	13
PointCloudInfo	14
POST_PROCESS_PARAMS	14
tagAPC_STREAM_INFO	15
tagDEVINFORMATION	15
tagDEVSEL	15
tagKEEP_DATA_CTRL	15
tagZDTableInfo	16

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

eSPDI/ eSPDI.h	
Functions definitions	17
eSPDI/ eSPDI_def.h	
Error/data type definitions	116
eSPDI/ eSPDI_version.h	??

Chapter 4

Class Documentation

4.1 AccelerationTag Struct Reference

Public Attributes

- short **x**
- short **y**
- short **z**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI_def.h](#)

4.2 APCImageType Struct Reference

Public Types

- enum **Value** {
 IMAGE_UNKNOWN = -1, **COLOR_YUY2** = 0, **COLOR_RGB24**, **COLOR_MJPEG**,
 COLOR_UYVY, **DEPTH_8BITS** = 100, **DEPTH_8BITS_0x80**, **DEPTH_11BITS**,
 DEPTH_14BITS }

Static Public Member Functions

- static bool **IsImageColor** (APCImageType::Value type)
- static bool **IsImageDepth** (APCImageType::Value type)
- static APCImageType::Value **DepthDataTypeToDepthImageType** (WORD dataType)

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI_def.h](#)

4.3 CompassTag Struct Reference

Public Attributes

- short **x**
- short **y**
- short **z**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI_def.h](#)

4.4 DECIMATION_PARAMS Struct Reference

Public Attributes

- int **decimation_sub_sample_factor** = 2

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI_def.h](#)

4.5 eSPCtrl_RectLogData Struct Reference

Public Attributes

- ```

union {
 unsigned char uByteArray [1024]
 struct {
 unsigned short InImgWidth
 unsigned short InImgHeight
 unsigned short OutImgWidth
 unsigned short OutImgHeight
 int RECT_ScaleEnable
 int RECT_CropEnable
 unsigned short RECT_ScaleWidth
 unsigned short RECT_ScaleHeight
 float CamMat1 [9]
 float CamDist1 [8]
 float CamMat2 [9]
 float CamDist2 [8]
 float RotaMat [9]
 float TranMat [3]
 float LRotaMat [9]
 float RRotaMat [9]
 float NewCamMat1 [12]
 float NewCamMat2 [12]
 unsigned short RECT_Crop_Row_BG

```

```

 unsigned short RECT_Crop_Row_ED
 unsigned short RECT_Crop_Col_BG_L
 unsigned short RECT_Crop_Col_ED_L
 unsigned char RECT_Scale_Col_M
 unsigned char RECT_Scale_Col_N
 unsigned char RECT_Scale_Row_M
 unsigned char RECT_Scale_Row_N
 float RECT_AvgErr
 unsigned short nLineBuffers
 float ReProjectMat [16]
 float ParameterRatio [2]
 long Date
 char type
 char version [4]
}
};

```

### 4.5.1 Member Data Documentation

#### 4.5.1.1 CamDist1

```
float eSPCtrl_RectLogData::CamDist1[8]
```

Left Camera Distortion Matrix k1, k2, p1, p2, k3, k4, k5, k6 k1~k6 : radial distort ; p1,p2 : tangential distort

#### 4.5.1.2 CamDist2

```
float eSPCtrl_RectLogData::CamDist2[8]
```

Right Camera Distortion Matrix k1, k2, p1, p2, k3, k4, k5, k6 k1~k6 : radial distort ; p1,p2 : tangential distort

#### 4.5.1.3 CamMat1

```
float eSPCtrl_RectLogData::CamMat1[9]
```

Left Camera Matrix fx, 0, cx, 0, fy, cy, 0, 0, 1 fx,fy : focus ; cx,cy : principle point

#### 4.5.1.4 CamMat2

```
float eSPCtrl_RectLogData::CamMat2[9]
```

Right Camera Matrix fx, 0, cx, 0, fy, cy, 0, 0, 1 fx,fy : focus ; cx,cy : principle point

#### 4.5.1.5 InImgHeight

```
unsigned short eSPCtrl_RectLogData::InImgHeight
```

Input image height

#### 4.5.1.6 InImgWidth

```
unsigned short eSPCtrl_RectLogData::InImgWidth
```

Input image width(SideBySide image)

#### 4.5.1.7 LRotaMat

```
float eSPCtrl_RectLogData::LRotaMat[9]
```

3x3 rectification transform (rotation matrix) for the left camera.  $\begin{bmatrix} [0] & [1] & [2] \\ [3] & [4] & [5] \end{bmatrix} * \begin{bmatrix} |Xcl| \\ |Ycl| \\ |Zcl| \end{bmatrix} \Rightarrow cl = \text{left camera coordinate}$

#### 4.5.1.8 NewCamMat1

```
float eSPCtrl_RectLogData::NewCamMat1[12]
```

3x4 projection matrix in the (rectified) coordinate systems for the left camera.  $fx' \ 0 \ cx' \ 0 \ 0 \ fy' \ cy' \ 0 \ 0 \ 0 \ 1 \ 0 \ 0$  : rectified focus ;  $cx', cy'$  : rectified principle point

#### 4.5.1.9 NewCamMat2

```
float eSPCtrl_RectLogData::NewCamMat2[12]
```

3x4 projection matrix in the (rectified) coordinate systems for the right camera.  $fx' \ 0 \ cx' \ TranMat[0]*0 \ fy' \ cy' \ 0 \ 0 \ 0 \ 1 \ 0 \ 0$  : rectified focus ;  $cx', cy'$  : rectified principle point

#### 4.5.1.10 nLineBuffers

```
unsigned short eSPCtrl_RectLogData::nLineBuffers
```

Linebuffer for Hardware limitation < 60

#### 4.5.1.11 OutImgHeight

```
unsigned short eSPCtrl_RectLogData::OutImgHeight
```

Output image height

#### 4.5.1.12 OutImgWidth

```
unsigned short eSPCtrl_RectLogData::OutImgWidth
```

Output image width(SideBySide image)

#### 4.5.1.13 RECT\_AvgErr

```
float eSPCtrl_RectLogData::RECT_AvgErr
```

Reprojection error

#### 4.5.1.14 RECT\_Crop\_Col\_BG\_L

```
unsigned short eSPCtrl_RectLogData::RECT_Crop_Col_BG_L
```

Rectidied image crop column begin

#### 4.5.1.15 RECT\_Crop\_Col\_ED\_L

```
unsigned short eSPCtrl_RectLogData::RECT_Crop_Col_ED_L
```

Rectidied image crop column end

#### 4.5.1.16 RECT\_Crop\_Row\_BG

```
unsigned short eSPCtrl_RectLogData::RECT_Crop_Row_BG
```

Rectidied image crop row begin

#### 4.5.1.17 RECT\_Crop\_Row\_ED

```
unsigned short eSPCtrl_RectLogData::RECT_Crop_Row_ED
```

Rectidied image crop row end

#### 4.5.1.18 RECT\_CropEnable

```
int eSPCtrl_RectLogData::RECT_CropEnable
```

Rectified image crop

#### 4.5.1.19 RECT\_Scale\_Col\_M

```
unsigned char eSPCtrl_RectLogData::RECT_Scale_Col_M
```

Rectified image scale column factor M

**4.5.1.20 RECT\_Scale\_Col\_N**

```
unsigned char eSPCtrl_RectLogData::RECT_Scale_Col_N
```

Rectified image scale column factor N Rectified image scale column ratio = Scale\_Col\_N/ Scale\_Col\_M

**4.5.1.21 RECT\_Scale\_Row\_M**

```
unsigned char eSPCtrl_RectLogData::RECT_Scale_Row_M
```

Rectified image scale row factor M

**4.5.1.22 RECT\_Scale\_Row\_N**

```
unsigned char eSPCtrl_RectLogData::RECT_Scale_Row_N
```

Rectified image scale row factor N

**4.5.1.23 RECT\_ScaleEnable**

```
int eSPCtrl_RectLogData::RECT_ScaleEnable
```

Rectified image scale

**4.5.1.24 RECT\_ScaleHeight**

```
unsigned short eSPCtrl_RectLogData::RECT_ScaleHeight
```

Input image height(Single image) \*RECT\_Scale\_Row\_N /RECT\_Scale\_Row\_M

**4.5.1.25 RECT\_ScaleWidth**

```
unsigned short eSPCtrl_RectLogData::RECT_ScaleWidth
```

Input image width(Single image) \*RECT\_Scale\_Col\_N /RECT\_Scale\_Col\_M

**4.5.1.26 RotaMat**

```
float eSPCtrl_RectLogData::RotaMat[9]
```

Rotation matrix between the left and right camera coordinate systems. | [0] [1] [2] | |Xcr| | [3] [4] [5] | \* |Ycr| => cr  
= right camera coordinate | [6] [7] [8] | |Zcr|

## 4.5.1.27 RRotaMat

```
float eSPCtrl_RectLogData::RRotaMat[9]
```

3x3 rectification transform (rotation matrix) for the left camera.  $\begin{bmatrix} [0] & [1] & [2] \\ [3] & [4] & [5] \end{bmatrix} * \begin{bmatrix} |Xcr| \\ |Ycr| \end{bmatrix} \Rightarrow cr = \text{right camera coordinate} \begin{bmatrix} [6] & [7] & [8] \\ |Zcr| \end{bmatrix}$

## 4.5.1.28 TranMat

```
float eSPCtrl_RectLogData::TranMat[3]
```

Translation vector between the coordinate systems of the cameras.  $\begin{bmatrix} [0] \\ |Xcr| \end{bmatrix} + \begin{bmatrix} [1] \\ |Ycr| \end{bmatrix} \Rightarrow cr = \text{right camera coordinate} \begin{bmatrix} [2] \\ |Zcr| \end{bmatrix}$

## 4.5.1.29 uByteArray

```
unsigned char eSPCtrl_RectLogData::uByteArray[1024]
```

union data defined as below struct { }

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.6 GyroTag Struct Reference

## Public Attributes

- short **x**
- short **y**
- short **z**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.7 packet\_s Struct Reference

## Public Attributes

- int **len**
  - int **serial**
  - bool **bisRGB**
  - bool **bisReady**
  - union {
    - unsigned char **buffer\_yuyv** [2 \*2560 \*2560]
    - unsigned char **buffer\_RGB** [3 \*2560 \*2560]
- };

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.8 PointCloudInfo Struct Reference

```
#include <eSPDI_def.h>
```

### Public Attributes

- float **centerX**
- float **centerY**
- float **focalLength**
- float **disparityToW** [2048]
- int **disparity\_len**
- WORD **wDepthType**
- int **depth\_image\_edian**
- float **focalLength\_K**
- float **baseline\_K**
- float **diff\_K**
- float **slaveDeviceCamMat2** [9]
- float **slaveDeviceRotaMat** [9]
- float **slaveDeviceTranMat** [3]
- bool **blsMIPISplit**

### 4.8.1 Detailed Description

#### Parameters

|                     |                                                                                                                                                                         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>M_dst</i>        | input camera matrix of RGB-lens, including intrinsic parameters, such as RectifyLog-CamMat2 (M3). The buffer size is 9.                                                 |
| <i>R_dst_to_src</i> | input rotation matrix of dst-lens to src-lens, dst is the camera at left side, src is the camera at right side, such as RectifyLog-RotaMat (R31). The buffer size is 9. |
| <i>T_dst_to_src</i> | input translation matrix of dst-lens to src-lens, such as RectifyLog-TranMat (T13). The buffer size is 3.                                                               |

The documentation for this struct was generated from the following file:

- eSPDI/[eSPDI\\_def.h](#)

## 4.9 POST\_PROCESS\_PARAMS Struct Reference

### Public Attributes

- int **spatial\_filter\_kernel\_size** = 5
- float **spatial\_filter\_outlier\_threshold** = 16

The documentation for this struct was generated from the following file:

- eSPDI/[eSPDI\\_def.h](#)



## 4.10 tagAPC\_STREAM\_INFO Struct Reference

### Public Attributes

- int **nWidth**
- int **nHeight**
- BOOL **bFormatMJPG**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.11 tagDEVINFORMATION Struct Reference

### Public Attributes

- unsigned short **wPID**
- unsigned short **wVID**
- char \* **strDevName**
- unsigned short **nChipID**
- unsigned short **nDevType**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.12 tagDEVSEL Struct Reference

### Public Attributes

- int **index**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.13 tagKEEP\_DATA\_CTRL Struct Reference

### Public Attributes

- bool **blsSerialNumberKeep**
- bool **blsSensorPositionKeep**
- bool **blsRectificationTableKeep**
- bool **blsZDTableKeep**
- bool **blsCalibrationLogKeep**

The documentation for this struct was generated from the following file:

- [eSPDI/eSPDI\\_def.h](#)

## 4.14 tagZDTableInfo Struct Reference

### Public Attributes

- int **nIndex**
- int **nDataType**

The documentation for this struct was generated from the following file:

- eSPDI/[eSPDI\\_def.h](#)

## Chapter 5

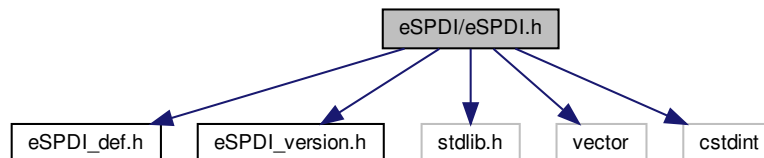
# File Documentation

### 5.1 eSPDI/eSPDI.h File Reference

functions definitions

```
#include "eSPDI_def.h"
#include "eSPDI_version.h"
#include <stdlib.h>
#include <vector>
#include <cstdint>
```

Include dependency graph for eSPDI.h:



### Functions

- int [APC\\_Init](#) (void \*\*ppHandleEYSD, bool blsLogEnabled)  
*entry point of EYSD camera SDK including 1.create a CEYSD class for accessing oncoming APIs 2.find out EYSD devices 3.create a CVideoDevice class for video streaming and hardware access*
- int [APC\\_FindDevice](#) (void \*pHandleEYSD)  
*find out all EYSD USB devices by PID, VID and ChipID, also remember device types*
- void [APC\\_Release](#) (void \*\*ppHandleEYSD)  
*release resource that APC\_Init had allocated*
- int [APC\\_RefreshDevice](#) (void \*pHandleEYSD)  
*refresh all EYSD UVC devices*
- int [APC\\_SwitchBaseline](#) (int index)  
*Swich the baseline index.*

- bool [APC\\_IsMLBaseLine](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*Check the device is multiple baseline device.*
- int [APC\\_DoFusion](#) (unsigned char \*\*pDepthBufList, double \*pDepthMerge, unsigned char \*pDepthMergeFlag, int nDWidth, int nDHeight, double fFocus, double \*pBaseline, double \*pWRNear, double \*pWRFar, double \*pWRFusion, int nMergeNum, bool bdepth2Byte11bit, int method)  
*Do Fusion Merge.*
- int [APC\\_GetDeviceInfo](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [DEVINFORMATION](#) \*pdevinfo)  
*get informations of EYSD UVC devices, see DEVINFORMATION*
- int [APC\\_GetDeviceInfoMBL\\_15cm](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [DEVINFORMATION](#) \*pdevinfo)  
*get informations of EYSD UVC devices, see DEVINFORMATION*
- int [APC\\_SelectDevice](#) (void \*pHandleEYSD, int dev\_index)  
*do not support currently*
- bool [APC\\_IsInterleaveDevice](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*check module support interleave function or not*
- int [APC\\_EnableInterleave](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, bool enable)  
*enable or disable interleave function*
- int [APC\\_SetPixelFormat](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [PIXEL\\_FMT](#) fmt)
- int [APC\\_SetControlCounterMode](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char nValue)  
*enable or disable interleave function*
- int [APC\\_GetControlCounterMode](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*nValue)  
*enable or disable interleave function*
- int [APC\\_GetSensorRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nId, unsigned short address, unsigned short \*pValue, int flag, [SENSORMODE\\_INFO](#) SensorMode)
- int [APC\\_SetSensorRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nId, unsigned short address, unsigned short nValue, int flag, [SENSORMODE\\_INFO](#) SensorMode)  
*set sensor register value*
- int [APC\\_GetFWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned short \*pValue, int flag)  
*get firmware register value*
- int [APC\\_SetFWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned short nValue, int flag)  
*set firmware register value*
- int [APC\\_SetRootCipher](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*cipher)  
*enter root cipher*
- int [APC\\_GetHWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned short \*pValue, int flag)  
*get hardware register value*
- int [APC\\_SetHWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned short nValue, int flag)  
*set hardware register*
- int [APC\\_GetMultiBytesHWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned char \*Data, int size, int flag)  
*set hardware register*
- int [APC\\_SetMultiBytesHWRegister](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short address, unsigned char \*Data, int size, int flag)  
*set hardware register*
- int [APC\\_GetAETarget](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short \*EV)
- int [APC\\_SetAETarget](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int index, float \*EV)  
*set hardware register*
- int [APC\\_GetBusInfo](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, char \*pszBusInfo, int \*pActualLength)

- get the firmware version of device, the version is a string*

  - int [APC\\_GetFwVersion](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, char \*pszFwVersion, int nBufferSize, int \*pActualLength)
- get the firmware version of device, the version is a string*

  - int [APC\\_GetPidVid](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short \*pPidBuf, unsigned short \*pVidBuf)
- get PID(product ID) and VID(vendor ID) of device*

  - int [APC\\_SetPidVid](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short \*pPidBuf, unsigned short \*pVidBuf)
- set PID and VID to device*

  - int [APC\\_GetSerialNumber](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pData, int nbufferSize, int \*pLen)
- get device serial number*

  - int [APC\\_SetSerialNumber](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pData, int nLen)
- set serial number to device*

  - int [APC\\_ResetUNPData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)
- Reset the UNProtection area's datum.*

  - int [APC\\_GetYOffset](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index)
- get Y offset (file ID 30+) value*

  - int [APC\\_GetRectifyTable](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index)
- get rectify values (file ID 40+) from flash*

  - int [APC\\_GetZDTable](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, [PZDTABLEINFO](#) pZDTableInfo)
- get disparity and Z values from flash*

  - int [APC\\_GetLogData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index, CALIBRATION\_LOG\_TYPE type)
- get log data from flash*

  - int [APC\\_GetUserData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, USERDATA\_SECTION\_INDEX usi)
- get user data from flash*

  - int [APC\\_SetYOffset](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index)
- set Y offset values*

  - int [APC\\_SetRectifyTable](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index)
- set rectify values to flash*

  - int [APC\\_SetZDTable](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, [PZDTABLEINFO](#) pZDTableInfo)
- set disparity and Z values to flash*

  - int [APC\\_SetLogData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, int \*pActualLength, int index)
- set log data to flash*

  - int [APC\\_SetUserData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int BufferLength, USERDATA\_SECTION\_INDEX usi)
- set user data to flash*

  - int [APC\\_ReadFlashData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, FLASH\_DATA\_TYPE fdt, BYTE \*pBuffer, unsigned long int BufferLength, unsigned long int \*pActualLength)
- read firmware code(.bin) form flash The firmware code is the combination of boot loader, firmware body and plug-in data. This input buffer length has to match with the flash data type*

- int [APC\\_WriteFlashData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, FLASH\_DATA\_TYPE fdt, BYTE \*pBuffer, unsigned long int BufferLength, bool blsDataVerify, [KEEP\\_DATA\\_CTRL](#) kdc)
 

*write firmware code(.bin) to flash The firmware code is the combination of boot loader, firmware body and plug-in data, also can keep original functions(Serial Number, Sensor Position, RectificationTable, ZD Table and CalibrationLog) on camera flash by KEEP\_DATA\_CTRL control*
- int [APC\\_GetDevicePortType](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, USB\_PORT\_TYPE \*pUSB\_Port\_Type)
 

*Get Device USB-port-type.*
- int [APC\\_GetDeviceResolutionList](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nMaxCount, [APC\\_STREAM\\_INFO](#) \*pStreamInfo0, int nMaxCvoidount1, [APC\\_STREAM\\_INFO](#) \*pStreamInfo1)
 

*get the device resolution list*
- int [APC\\_Setup\\_v4l2\\_requestbuffers](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int cnt)
 

*Setup v4l2 request buffers, default = 4.*
- int [APC\\_OpenDevice](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nEP0Width, int nEP0Height, bool bEP0MJPEG, int nEP1Width, int nEP1Height, DEPTH\_TRANSFER\_CTRL dtc=DEPTH\_IMG\_NON\_TRANSFER, bool blsOutputRGB24=false, void \*phWndNotice=0, int \*pFPS=0, CONTROL\_MODE cm=IMAGE\_SN\_NONSYNC)
 

*the implement layer to open EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,*
- int [APC\\_OpenDevice2](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nEP0Width, int nEP0Height, bool bEP0MJPEG, int nEP1Width, int nEP1Height, DEPTH\_TRANSFER\_CTRL dtc=DEPTH\_IMG\_NON\_TRANSFER, bool blsOutputRGB24=false, void \*phWndNotice=0, int \*pFPS=0, CONTROL\_MODE cm=IMAGE\_SN\_NONSYNC)
 

*the implement layer to open EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,*
- int [APC\\_OpenDeviceMBL](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nEP0Width, int nEP0Height, bool bEP0MJPEG, int nEP1Width, int nEP1Height, DEPTH\_TRANSFER\_CTRL dtc=DEPTH\_IMG\_NON\_TRANSFER, bool blsOutputRGB24=false, void \*phWndNotice=0, int \*pFPS=0, CONTROL\_MODE cm=IMAGE\_SN\_NONSYNC)
 

*the implement layer to open Multiple Base Line EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,*
- int [APC\\_CloseDeviceMBL](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)
 

*close Multiple Base Linedevice and free resource*
- int [APC\\_CloseDevice](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)
 

*close device and free resource*
- int [APC\\_CloseDeviceEx](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)
 

*close device and free resource for warm reset*
- int [APC\\_GetImage](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)
 

*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_GetColorImage](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)
 

*get color image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_GetColorImageWithTimestamp](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial, int nDepthDataType, int64\_t \*pcur\_tv\_sec, int64\_t \*pcur\_tv\_usec)
 

*get color image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_GetDepthImage](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)
 

*get depth image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_GetDepthImageWithTimestamp](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial, int nDepthDataType, int64\_t \*pcur\_tv\_sec, int64\_t \*pcur\_tv\_usec)
 

*get color image by issuing V4L2's IOCTL to get frame data*

- int [APC\\_SetupBlock](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, bool enable)  
*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_Get\\_Color\\_30\\_mm\\_depth](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)  
*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_Get\\_60\\_mm\\_depth](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)  
*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_Get\\_150\\_mm\\_depth](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial=0, int nDepthDataType=0)  
*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int [APC\\_Get2Image](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pColorImgBuf, BYTE \*pDepthImgBuf, unsigned long int \*pColorImageSize, unsigned long int \*pDepthImageSize, int \*pSerial=0, int \*pSerial2=0, int nDepthDataType=0)  
*get color and/or depth pin images see APC\_GetImage for detailed description*
- int [APC\\_Get2ImageWithTimestampNoSplit](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pBuf, unsigned long int \*pImageSize, int \*pSerial, int64\_t \*pcur\_tv\_sec, int64\_t \*pcur\_tv\_usec, bool bNeedToSvave)  
*get color and/or depth pin images see APC\_GetImage for detailed description*
- int [APC\\_Get2ImageWithTimestamp](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*pColorImgBuf, BYTE \*pDepthImgBuf, unsigned long int \*pColorImageSize, unsigned long int \*pDepthImageSize, int \*pColorSerial, int \*pDepthSerial, int nDepthDataType, int64\_t \*pcur\_tv\_sec, int64\_t \*pcur\_tv\_usec)
- int [APC\\_GetExposureTime](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float \*pfExpTimeMS)  
*get exposure time of ISP setting in millisecond the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetExposureTime](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float fExpTimeMS)  
*set exposure time of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_GetGlobalGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float \*pfGlobalGain)  
*get global gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetGlobalGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float fGlobalGain)  
*set global gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetAnalogGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float fGlobalGain)  
*set analog gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_GetAnalogGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float \*pfGlobalGain)  
*get analog gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetDigitalGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float fGlobalGain)  
*set digital gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_GetDigitalGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float \*pfGlobalGain)  
*get digital gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetSensorTypeName](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, SENSOR\_TYPE\_NAME stn)  
*set the sensor type you want to work on*
- int [APC\\_GetColorGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float \*pfGainR, float \*pfGainG, float \*pfGainB)  
*get color gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)*
- int [APC\\_SetColorGain](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int nSensorMode, float fGainR, float fGainG, float fGainB)



- set color gain of ISP*

  - bool **APC\_GetThermalFD** (void \*pHandleEYSD, int \*p\_FD)

*get file description of thermal device*
- int **APC\_GetAccMeterValue** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int \*pX, int \*pY, int \*pZ)

*get acc meter value*
- int **APC\_EnableAE** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo)

*enable auto exposure(AE) function of ISP*
- int **APC\_DisableAE** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo)

*disable auto exposure(AE) function of ISP*
- int **APC\_EnableAWB** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo)

*enable auto white balance function of ISP*
- int **APC\_DisableAWB** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo)

*disable auto white balance of ISP*
- int **APC\_GetAEStatus** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, PAE\_STATUS pAEStatus)

*get auto exposure(AE) is enabled or disable*
- int **APC\_GetAWBStatus** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, PAWB\_STATUS pAWBStatus)

*get auto white balance(AWB) is enabled or disable*
- int **APC\_GetGPIOValue** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nGPIOIndex, BYTE \*pValue)

*get GPIO values*
- int **APC\_SetGPIOValue** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nGPIOIndex, BYTE nValue)

*set GPIO values*
- int **APC\_SetGPIOCtrl** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nGPIOIndex, BYTE nValue)

*set GPIO I/O control*
- int **APC\_GetCTPropVal** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, long int \*pValue)

*get camera terminal(CT) property value By v4l2\_control to get control value of camera terminal*
- int **APC\_SetCTPropVal** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, long int nValue)

*set camera terminal property values By v4l2\_control to set*
- int **APC\_GetPUPPropVal** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, long int \*pValue)

*get processing unit property value by v4l2\_control to get processing unit(PU) property value*
- int **APC\_SetPUPPropVal** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, long int nValue)

*set processing unit property value by v4l2\_control to set processing unit(PU) property value*
- int **APC\_GetCTRRangeAndStep** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, int \*pMax, int \*pMin, int \*pStep, int \*pDefault, int \*pFlags)

*set camera terminal property values By v4l2\_queryctrl to get control values of camera terminal(CT) this enumeration contained the following properties: V4L2\_CID\_EXPOSURE\_AUTO V4L2\_CID\_EXPOSURE\_AUTO\_PRIORITY V4L2\_CID\_EXPOSURE\_ABSOLUTE V4L2\_CID\_EXPOSURE V4L2\_CID\_FOCUS\_ABSOLUTE V4L2\_CID\_FOCUS\_RELATIVE V4L2\_CID\_FOCUS\_AUTO V4L2\_CID\_IRIS\_ABSOLUTE V4L2\_CID\_IRIS\_RELATIVE V4L2\_CID\_ZOOM\_ABSOLUTE V4L2\_CID\_ZOOM\_RELATIVE V4L2\_CID\_PAN\_ABSOLUTE V4L2\_CID\_PAN\_RELATIVE V4L2\_CID\_TILT\_ABSOLUTE V4L2\_CID\_TILT\_RELATIVE V4L2\_CID\_PRIVACY*
- int **APC\_GetPURRangeAndStep** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nId, int \*pMax, int \*pMin, int \*pStep, int \*pDefault, int \*pFlags)

*get processing unit property value By v4l2\_queryctrl to get property values of processing unit(PU) this enumeration contained the following properties: V4L2\_CID\_BACKLIGHT\_COMPENSATION V4L2\_CID\_BRIGHTNESS V4L2\_CID\_CONTRAST V4L2\_CID\_GAIN V4L2\_CID\_POWER\_LINE\_FREQUENCY V4L2\_CID\_HUE V4L2\_CID\_HUE\_AUTO V4L2\_CID\_SATURATION V4L2\_CID\_SHARPNESS V4L2\_CID\_GAMMA V4L2\_CID\_WHITE\_BALANCE\_TEMPERATURE V4L2\_CID\_AUTO\_WHITE\_BALANCE*
- int **APC\_GetCTPUSupportList** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, unsigned char CtPuld, unsigned short int \*pValue)
- int **APC\_SetDepthDataType** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, unsigned short nValue)

*set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting*
- int **APC\_GetDepthDataType** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, unsigned short \*pValue)

*get current depth data type setting*
- int **APC\_SetHWVirtualChannel** (void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int channel)



- set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting*

  - int **APC\_GetHWVirtualChannel** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, int \*pValue0, int \*pValue1)
- int **APC\_GetHWContinueMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool \*pValue)

*get color or depth pin image by issuing V4L2's IOCTL to get frame data*
- int **APC\_SetFWContinueMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool enable)

*set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting*
- int **APC\_GetFWContinueMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool \*pValue)

*get current depth data type setting*
- int **APC\_SetInterleaveMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool enable)

*set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting*
- int **APC\_GetInterleaveMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool \*pValue)

*get current depth data type setting*
- int **APC\_SetCurrentIRValue** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short nValue)

*set infrared radiation(IR) value of PUMA type IC*
- int **APC\_GetCurrentIRValue** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short \*pValue)

*get infrared radiation(IR) value of PUMA type IC*
- int **APC\_GetIRMinValue** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short \*pValue)

*get minimum IR value of camera module*
- int **APC\_SetIRMaxValue** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short nValue)

*get maximum IR value of camera module*
- int **APC\_GetIRMaxValue** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short \*pValue)

*get maximum IR value of camera module*
- int **APC\_SetIRMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short nValue)

*enable or disable IRs*
- int **APC\_GetIRMode** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, unsigned short \*pValue)

*to check IR is turn on or off*
- int **APC\_GetRectifyLogData** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, **eSPCtrl\_RectLogData** \*pData, int index)

*get rectify log data from flash, just for AXES1 device type*
- int **APC\_GetRectifyMatLogData** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, **eSPCtrl\_RectLogData** \*pData, int index)

*get rectify log data from flash, just for PUMA device type*
- int **APC\_EnablePostProcess** (void \*pHandleEYSD, **PDEVSELINFO** pDevSelInfo, bool bEnable)

*Not support now.*
- int **APC\_PostInitial** (void \*pHandleEYSD)

*Not support now.*
- int **APC\_PostEnd** (void \*pHandleEYSD)

*Not support now.*
- int **APC\_ProcessFrame** (void \*pHandleEYSD, unsigned char \*pYUY2Buf, unsigned char \*pDepthBuf, unsigned char \*OutputBuf, int width, int height)

*Not support now.*
- int **APC\_PostSetParam** (void \*pHandleEYSD, int ldx, int Val)

*Not support now.*
- int **APC\_PostGetParam** (void \*pHandleEYSD, int ldx, int \*pVal)

*Not support now.*
- int **APC\_CreateSwPostProc** (int depthBits, void \*\*handle)

*create a software post process class*
- int **APC\_ReleaseSwPostProc** (void \*\*handle)

*release a software post process class*

- int [APC\\_DoSwPostProc](#) (void \*pHandleEYSD, unsigned char \*colorBuf, bool isColorRgb24, unsigned char \*depthBuf, unsigned char \*outputBuf, int width, int height)  
*do software post process on a depth buffer*
- int [APC\\_FlyingDepthCancellation\\_D8](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pdepthD8, int width, int height)  
*Flying Pixel Depth Cancellation, just for EX8029.*
- int [APC\\_FlyingDepthCancellation\\_D11](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pdepthD11, int width, int height)  
*Flying Pixel Depth Cancellation.*
- int [APC\\_Convert\\_Depth\\_Y\\_To\\_Buffer](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depth\_y, unsigned char \*rgb, unsigned int width, unsigned int height, bool color, unsigned short nDepth↔DataType)  
*Convert Depth to RGB color or gray.*
- int [APC\\_Convert\\_Depth\\_Y\\_To\\_Buffer\\_offset](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depth\_y, unsigned char \*rgb, unsigned int width, unsigned int height, bool color, unsigned short n↔DepthDataType, int offset)  
*Convert Depth to RGB color or gray, added offset for 3cm baseline.*
- int [APC\\_EnableSensorIF](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, bool blsEnable)  
*enable or disable sensor IF*
- int [APC\\_getUACNAME](#) (char \*input, char \*output)  
*Get EYSD UAC Name.*
- int [APC\\_InitialUAC](#) (char \*deviceName)  
*UAC inital function.*
- int [APC\\_WriteWaveHeader](#) (int fd)  
*Write Wave Header.*
- int [APC\\_WriteWaveEnd](#) (int fd, size\_t length)  
*Modified Wave Header.*
- int [APC\\_GetUACData](#) (unsigned char \*buffer, int length)  
*UAC inital function.*
- int [APC\\_ReleaseUAC](#) (void)  
*UAC inital function.*
- int [APC\\_InitialFlexibleGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*gyro sensor inital function*
- int [APC\\_ReleaseFlexibleGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*gyro sensor release function*
- int [APC\\_GetFlexibleGyroData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int length, unsigned char \*pGyroData)  
*getting gyro data function*
- int [APC\\_GetFlexibleGyroLength](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short \*Gyro↔Len)  
*getting length of gyro data function.*
- int [APC\\_GetImageInterrupt](#) (void)  
*Get Image interrupt function Get the image interrupt and then read Gyro data.*
- int [APC\\_InitialHidGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*gyro sensor inital function*
- int [APC\\_ReleaseHidGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*gyro sensor release function*
- int [APC\\_GetHidGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pBuffer, int length)  
*getting gyro data function*
- int [APC\\_SetupHidGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pCmdBuf, int cmdlength)  
*getting gyro data function*

- int [APC\\_GetInfoHidGyro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*pCmdBuf, int cmdlength, unsigned char \*pResponseBuf, int \*resplength)  
*getting gyro data function*
- int [APC\\_GenerateLutFile](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename)  
*generate look up table(LUT) for spherical display this function reads the camera user data and generate a LUT file using for 360 degree preview*
- int [APC\\_SaveLutData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename)  
*Save LUT parameters in the specified file.*
- int [APC\\_GetLutData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, BYTE \*buffer, int nSize)  
*Read LUT parameters into the specified buffer.*
- int [APC\\_EncryptMP4](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename)  
*encrypt a H.264 video*
- int [APC\\_DecryptMP4](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename)  
*decrypt a H.264 video was generated by [APC\\_EncryptMP4\(\)](#)*
- int [APC\\_InjectExtraDataToMp4](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename, const char \*data, int dataLen)  
*APC\_InjectExtraDataToMp4.*
- int [APC\\_RetrieveExtraDataFromMp4](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, const char \*filename, char \*data, int \*dataLen)  
*APC\_RetrieveExtraDataFromMp4.*
- int [APC\\_EncryptString](#) (const char \*src, char \*dst)  
*APC\_EncryptString.*
- int [APC\\_DecryptString](#) (const char \*src, char \*dst)  
*APC\_DecryptString.*
- int [APC\\_EncryptString](#) (const char \*src1, const char \*src2, char \*dst)  
*APC\_EncryptString.*
- int [APC\\_DecryptString](#) (const char \*src, char \*dst1, char \*dst2)  
*APC\_DecryptString.*
- int [APC\\_GetAutoExposureMode](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short \*mode)  
*Get Auto Exposure Mode.*
- int [APC\\_SetAutoExposureMode](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned short mode)  
*Setup Auto Exposure Mode.*
- int [APC\\_RotateImg90](#) ([APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dst, int len, bool clockwise)  
*Rotate the image to 90 degree.*
- int [APC\\_RotateImg180](#) ([APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dst, int len)  
*Rotate the image to 180 degree.*
- int [APC\\_ResizeImgToHalf](#) ([APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dst, int len)  
*Resize the image to half.*
- int [APC\\_ImgMirro](#) ([APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dst)  
*Make the image to Mirro.*
- int [APC\\_RGB2BMP](#) (char \*filename, int width, int height, unsigned char \*data)  
*RGB to BMP.*
- int [APC\\_HoleFilled](#) (unsigned short \*pDImgIn, unsigned short \*pDImgOut, int width, int height, int holeFilldiff)  
*Hole Filled.*
- int [APC\\_InitialCmdFiFo](#) (const char \*pfifoName, int \*pFileDescription, bool bRead)  
*Cmd FiFo Initial function.*
- int [APC\\_CloseCmdFiFo](#) (int FileDescription)  
*Cmd FiFo Close function.*

- int [APC\\_WriteCmdFiFo](#) (int FileDescription, unsigned char \*pCmd, int len)  
*Write Cmd FiFo function.*
- int [APC\\_ReadCmdFiFo](#) (int FileDescription, unsigned char \*pBuf, int len)  
*Read Cmd FiFo function.*
- int [APC\\_InitSRB](#) (void \*\*pSmbHandle, int QueueSize, char \*queueName)  
*Initial the SRB(Share Ring Buffering)*
- int [APC\\_PutSRB](#) (void \*pSmbHandle, [srb\\_packet\\_s](#) \*pPacket)  
*Put Packet to SRB.*
- int [APC\\_GetSRB](#) (void \*pSmbHandle, [srb\\_packet\\_s](#) \*pPacket)  
*Get Packet from SRB.*
- int [APC\\_DepthMerge](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*\*pDepthBufList, float \*pDepthMergeOut, unsigned char \*pDepthMergeFlag, int nDWidth, int nDHeight, float fFocus, float \*pBaseline, float \*pWRNear, float \*pWRFar, float \*pWRFusion, int nMergeNum)  
*do depth merge*
- int [APC\\_GetPointCloud](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*ImgColor, int CW, int CH, unsigned char \*ImgDepth, int DW, int DH, [PointCloudInfo](#) \*pPointCloudInfo, unsigned char \*pPointCloudRGB, float \*pPointCloudXYZ, float Near, float Far)  
*get point cloud*
- int [APC\\_ColorFormat\\_to\\_RGB24](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*ImgDst, unsigned char \*ImgSrc, int SrcSize, int width, int height, [APCImageType::Value](#) type)  
*get hardware post processing status*
- int [APC\\_ColorFormat\\_to\\_BGR24](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*ImgDst, unsigned char \*ImgSrc, int SrcSize, int width, int height, [APCImageType::Value](#) type)
- int [APC\\_RotateImg90](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dstBuf, int len, bool clockwise)  
*Make the image to rotate.*
- int [APC\\_RotateImg180](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dst, int len)  
*Rotate the image to 180 degree.*
- int [APC\\_ImgMirro](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, [APCImageType::Value](#) imgType, int width, int height, unsigned char \*src, unsigned char \*dstBuf)  
*Make the image to Mirro.*
- int [APC\\_SubSample](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*\*SubSample, unsigned char \*depthBuf, int bytesPerPixel, int width, int height, int &new\_width, int &new\_height, int mode=0, int factor=3)  
*APC\_SubSample.*
- int [APC\\_HoleFill](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depthBuf, int bytesPerPixel, int kernel\_size, int width, int height, int level, bool horizontal)  
*APC\_HoleFill.*
- int [APC\\_TemporalFilter](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depthBuf, int bytesPerPixel, int width, int height, float alpha, int history)  
*APC\_TemporalFilter.*
- int [APC\\_EdgePreServingFilter](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depthBuf, int type, int width, int height, int level, float sigma, float lumda)  
*APC\_EdgePreServingFilter.*
- int [APC\\_ApplyFilters](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, unsigned char \*depthBuf, unsigned char \*subDisparity, int bytesPerPixel, int width, int height, int sub\_w, int sub\_h, int threshold=64)  
*APC\_ApplyFilters.*
- int [APC\\_ResetFilters](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo)  
*APC\_ResetFilters.*
- int [APC\\_EnableGPUAcceleration](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, bool enable)  
*APC\_EnableGPUAcceleration.*

- int [APC\\_TableToData](#) (void \*pHandleEYSD, [PDEVSELINFO](#) pDevSelInfo, int width, int height, int TableSize, unsigned short \*Table, unsigned short \*Src, unsigned short \*Dst)  
*transfer Src to Dst by Table*
- int [APC\\_InitPostProcess](#) (void \*\*ppPostProcessHandle, unsigned int nWidth, unsigned int nHeight, [APCImageType::Value](#) imageType)  
*APC\_InitPostProcess.*
- int [APC\\_InitPostProcessCustomParameter](#) (void \*\*ppPostProcessHandle, unsigned int nWidth, unsigned int nHeight, [APCImageType::Value](#) imageType, [POST\\_PROCESS\\_PARAMS](#) postProcessParams)
- int [APC\\_PostProcess](#) (void \*pPostProcessHandle, unsigned char \*pDepthData, unsigned char \*filteredFrame, [APCImageType::Value](#) imageType)
- int [APC\\_ReleasePostProcess](#) (void \*pPostProcessHandle)  
*APC\_ReleasePostProcess.*
- int [APC\\_InitDecimationFilter](#) (void \*\*ppDecimationFilterHandle, unsigned int inWidth, unsigned int inHeight, unsigned int \*outWidth, unsigned int \*outHeight, [APCImageType::Value](#) imageType, [DECIMATION\\_PARAMS](#) decimationParams)
- int [APC\\_DecimationFilter](#) (void \*pDecimationFilterHandle, unsigned char \*pDepthData, unsigned char \*filteredFrame, [APCImageType::Value](#) imageType)
- int [APC\\_ReleaseDecimationFilter](#) (void \*pDecimationFilterHandle)
- int [APC\\_InitResizeProcess](#) (void \*\*ppResizeProcessHandle, size\_t inWidth, size\_t inHeight, size\_t \*outWidth, size\_t \*outHeight, [APCImageType::Value](#) imageType, float factor)
- int [APC\\_ResizeProcess](#) (void \*pResizeProcessHandle, unsigned char \*pImageData, unsigned char \*resizedFrame, [APCImageType::Value](#) imageType)
- int [APC\\_ResizeProcess](#) (void \*pResizeProcessHandle, const std::vector< uint8\_t > &srcBuffer, std::vector< uint8\_t > &dstBuffer, [APCImageType::Value](#) imageType)
- int [APC\\_ReleaseResizeProcess](#) (void \*pResizeProcessHandle)
- int [APC\\_GetDeviceNumber](#) (void \*pHandleEYSD)  
*Get the number of composite camera devices (ex: USB camera device) .*
- int [APC\\_GetSimpleDeviceNumber](#) (void \*pHandleEYSD)  
*Get the number of simple camera devices (ex: MIPI camera device) .*
- int [APC\\_GetSimpleDevSelectIndex](#) (void \*pHandleEYSD, int index)  
*Get the pointer of PDEVSELINFO for simple camera device.*
- int [APC\\_GetCompositeDevSelectIndex](#) (void \*pHandleEYSD, int index)  
*Get the pointer of PDEVSELINFO for composite camera device.*

### 5.1.1 Detailed Description

functions definitions

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### 5.1.2 Function Documentation

### 5.1.2.1 APC\_ApplyFilters()

```
int APC_ApplyFilters (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * depthBuf,
 unsigned char * subDisparity,
 int bytesPerPixel,
 int width,
 int height,
 int sub_w,
 int sub_h,
 int threshold = 64)
```

APC\_ApplyFilters.

#### Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char* depthBuf depth buffer pointer                          |
| <i>unsigned</i>    | char* subDisparity [TODO]                                    |
| <i>int</i>         | bytesPerPixel byte number of one pixel                       |
| <i>int</i>         | width depth width                                            |
| <i>int</i>         | height depth height                                          |
| <i>int</i>         | sub_w [TODO]                                                 |
| <i>int</i>         | sub_h [TODO]                                                 |
| <i>int</i>         | threshold [TODO]                                             |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.2 APC\_CloseCmdFiFo()

```
int APC_CloseCmdFiFo (
 int FileDescription)
```

Cmd FiFo Close function.

#### Parameters

|            |                                  |
|------------|----------------------------------|
| <i>int</i> | FileDescription File Description |
|------------|----------------------------------|

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.3 APC\_CloseDevice()

```
int APC_CloseDevice (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

close device and free resource

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.4 APC\_CloseDeviceEx()

```
int APC_CloseDeviceEx (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

close device and free resource for warm reset

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.5 APC\_CloseDeviceMBL()

```
int APC_CloseDeviceMBL (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

close Multiple Base Linedevice and free resource

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.6 APC\_ColorFormat\_to\_RGB24()**

```
int APC_ColorFormat_to_RGB24 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * ImgDst,
 unsigned char * ImgSrc,
 int SrcSize,
 int width,
 int height,
 APCImageType::Value type)
```

get hardware post processing status

**Parameters**

|                            |                                                              |
|----------------------------|--------------------------------------------------------------|
| <i>void</i>                | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>            | char *ImgDst output image buffer                             |
| <i>unsigned</i>            | char *ImgSrc input image buffer                              |
| <i>int</i>                 | SrcSize sizeof of source image                               |
| <i>int</i>                 | width input image width                                      |
| <i>int</i>                 | height input image height                                    |
| <i>APCImageType::Value</i> | type input image-format                                      |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.7 APC\_Convert\_Depth\_Y\_To\_Buffer()**

```
int APC_Convert_Depth_Y_To_Buffer (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * depth_y,
 unsigned char * rgb,
 unsigned int width,
 unsigned int height,
 bool color,
 unsigned short nDepthDataType)
```

Convert Depth to RGB color or gray.



## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | char *depth_y depth data,                  |
| <i>unsigned</i>    | char *rgb output data,                     |
| <i>int</i>         | width image width,                         |
| <i>int</i>         | height image height,                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.8 APC\_Convert\_Depth\_Y\_To\_Buffer\_offset()

```
int APC_Convert_Depth_Y_To_Buffer_offset (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * depth_y,
 unsigned char * rgb,
 unsigned int width,
 unsigned int height,
 bool color,
 unsigned short nDepthDataType,
 int offset)
```

Convert Depth to RGB color or gray, added offset for 3cm baseline.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | char *depth_y depth data,                  |
| <i>unsigned</i>    | char *rgb output data,                     |
| <i>int</i>         | width image width,                         |
| <i>int</i>         | height image height,                       |
| <i>int</i>         | offset dpeth_y offset,                     |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.9 APC\_CreateSwPostProc()

```
int APC_CreateSwPostProc (
 int depthBits,
 void ** handle)
```

create a software post process class

#### Parameters

|             |                                                             |
|-------------|-------------------------------------------------------------|
| <i>int</i>  | depthBits depth bit to set                                  |
| <i>void</i> | **handle handle pointer to this software post process class |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.10 APC\_DecimationFilter()

```
int APC_DecimationFilter (
 void * pDecimationFilterHandle,
 unsigned char * pDepthData,
 unsigned char * filteredFrame,
 APCImageType::Value imageType)
```

#### Parameters

|                                |                                                                                                   |
|--------------------------------|---------------------------------------------------------------------------------------------------|
| <i>pDecimationFilterHandle</i> |                                                                                                   |
| <i>pDepthData</i>              | inWidth * inHeight * 2 (Size of 11 bits disparity) bytes when call APC_InitDecimationFilter*APIs. |
| <i>filteredFrame</i>           | outWidth * outWidth * 2 (Size of 11 bits disparity) bytes output buffer.                          |
| <i>imageType</i>               | APCImageType::Value                                                                               |

#### Returns

Returns APC\_NullPtr if pDepthData or filteredFrame is nullptr. Customized version might return APC\_DEVICE\_NOT\_SUPPORT. APC\_POSTPROCESS\_INIT\_FAIL if developer put the wrong imageType or bad [DECIMATION\\_PARAMS](#) is used.

#### 5.1.2.11 APC\_DecryptMP4()

```
int APC_DecryptMP4 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename)
```

decrypt a H.264 video was generated by [APC\\_EncryptMP4\(\)](#)

#### Parameters

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                                 |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index         |
| <i>const</i>       | char *filename the input video file for decryption |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.12 APC\_DecryptString()** [1/2]

```
int APC_DecryptString (
 const char * src,
 char * dst)
```

APC\_DecryptString.

**Parameters**

|              |                               |
|--------------|-------------------------------|
| <i>const</i> | char* src input string        |
| <i>char*</i> | dst output string (decrypted) |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.13 APC\_DecryptString()** [2/2]

```
int APC_DecryptString (
 const char * src,
 char * dst1,
 char * dst2)
```

APC\_DecryptString.

**Parameters**

|              |                                   |
|--------------|-----------------------------------|
| <i>const</i> | char* src input string            |
| <i>char*</i> | dst1 output string #1 (decrypted) |
| <i>char*</i> | dst2 output string #2 (decrypted) |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.14 APC\_DepthMerge()**

```
int APC_DepthMerge (
 void * pHandleEYSD,
```

```

PDEVSELINFO pDevSelInfo,
unsigned char ** pDepthBufList,
float * pDepthMergeOut,
unsigned char * pDepthMergeFlag,
int nDWidth,
int nDHeight,
float fFocus,
float * pBaseline,
float * pWRNear,
float * pWRFar,
float * pWRFusion,
int nMergeNum)

```

do depth merge

#### Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char** pDepthBufList [TODO]                                  |
| <i>float</i>       | *pDepthMergeOut [TODO]                                       |
| <i>unsigned</i>    | char *pDepthMergeFlag [TODO]                                 |
| <i>int</i>         | nDWidth [TODO]                                               |
| <i>int</i>         | nDHeight [TODO]                                              |
| <i>float</i>       | fFocus [TODO]                                                |
| <i>float</i>       | * pBaseline [TODO]                                           |
| <i>float</i>       | * pWRNear [TODO]                                             |
| <i>float</i>       | * pWRFar [TODO]                                              |
| <i>float</i>       | * pWRFusion [TODO]                                           |
| <i>int</i>         | nMergeNum [TODO]                                             |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.15 APC\_DisableAE()

```

int APC_DisableAE (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)

```

disable auto exposure(AE) function of ISP

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.16 APC\_DisableAWB()

```
int APC_DisableAWB (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

disable auto white balance of ISP

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.17 APC\_DoFusion()

```
int APC_DoFusion (
 unsigned char ** pDepthBufList,
 double * pDepthMerge,
 unsigned char * pDepthMergeFlag,
 int nDWidth,
 int nDHeight,
 double fFocus,
 double * pBaseline,
 double * pWRNear,
 double * pWRFar,
 double * pWRFusion,
 int nMergeNum,
 bool bdepth2Byte11bit,
 int method)
```

Do Fusion Merge.

## Parameters

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| <i>unsigned</i> | char **pDepthBufList Point to Depth Buffer List                |
| <i>double</i>   | *pDepthMerge Point to Fusion output.                           |
| <i>unsigned</i> | char *pDepthMergeFlag Point to Fusion select fFocus Focus vale |
| <i>int</i>      | nDWidth Image width                                            |
| <i>int</i>      | nDHeight Image Height                                          |

## Parameters

|               |                                                                                                                   |
|---------------|-------------------------------------------------------------------------------------------------------------------|
| <i>double</i> | *pBaseline Point to baseline array m_baselineDist[0] = 30.0; m_baselineDist[1] = 60.0; m_baselineDist[2] = 150.0; |
| <i>double</i> | *pWRNear NearWorkingRange Vecror(Container)                                                                       |
| <i>double</i> | *pWRFar FarWorkingRange Vecror(Container)                                                                         |
| <i>double</i> | *pWRFusion FusionWorkingRange Vecror(Container)                                                                   |
| <i>int</i>    | nMergeNum Total merges                                                                                            |
| <i>int</i>    | method method select 0: MBLBase 1: MBRbaseV0 2: MBRbaseV1                                                         |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.18 APC\_DoSwPostProc()

```
int APC_DoSwPostProc (
 void * handle,
 unsigned char * colorBuf,
 bool isColorRgb24,
 unsigned char * depthBuf,
 unsigned char * outputBuf,
 int width,
 int height)
```

do software post process on a depth buffer

## Parameters

|                 |                                                   |
|-----------------|---------------------------------------------------|
| <i>void*</i>    | handle handle of this software post process class |
| <i>unsigned</i> | char* colorBuf input color buffer                 |
| <i>bool</i>     | isColorRgb24 is this color buffer RGB888          |
| <i>unsigned</i> | char* depthBuf input depth buffer                 |
| <i>unsigned</i> | char* outputBuf output buffer                     |
| <i>int</i>      | width image width                                 |
| <i>int</i>      | height image height                               |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.19 APC\_EdgePreServingFilter()

```
int APC_EdgePreServingFilter (
 void * pHandleEYSD,
```

```

PDEVSELINFO pDevSelInfo,
unsigned char * depthBuf,
int type,
int width,
int height,
int level,
float sigma,
float lumda)

```

APC\_EdgePreServingFilter.

#### Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char* depthBuf depth buffer pointer                          |
| <i>int</i>         | bytesPerPixel byte number of one pixel                       |
| <i>int</i>         | width depth width                                            |
| <i>int</i>         | height depth height                                          |
| <i>int</i>         | level [TODO]                                                 |
| <i>float</i>       | sigma [TODO]                                                 |
| <i>float</i>       | lumda [TODO]                                                 |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.20 APC\_EnableAE()

```

int APC_EnableAE (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)

```

enable auto exposure(AE) function of ISP

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.21 APC\_EnableAWB()

```
int APC_EnableAWB (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

enable auto white balance function of ISP

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.22 APC\_EnableGPUAcceleration()

```
int APC_EnableGPUAcceleration (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool enable)
```

APC\_EnableGPUAcceleration.

#### Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>bool</i>        | enable enable it or not                                      |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.23 APC\_EnableInterleave()

```
int APC_EnableInterleave (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool enable)
```

enable or disable interleave function



## Parameters

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| <i>pHandleEYSD</i> | the pointer to the initilized EYSD SDK instance                   |
| <i>pDevSelInfo</i> | pointer of device select index                                    |
| <i>enable</i>      | set true to enable interleave, or set false to disable interleave |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.24 APC\_EnableSensorIF()

```
int APC_EnableSensorIF (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool bIsEnable)
```

enable or disable sensor IF

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>bool</i>        | bIsEnable true is enable, false is disable |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.25 APC\_EncryptMP4()

```
int APC_EncryptMP4 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename)
```

encrypt a H.264 video

## Parameters

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                                 |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index         |
| <i>const</i>       | char *filename the input video file for encryption |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.26 APC\_EncryptString()** [1/2]

```
int APC_EncryptString (
 const char * src,
 char * dst)
```

APC\_EncryptString.

**Parameters**

|              |                               |
|--------------|-------------------------------|
| <i>const</i> | char* src input string        |
| <i>char*</i> | dst output string (encrypted) |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.27 APC\_EncryptString()** [2/2]

```
int APC_EncryptString (
 const char * src1,
 const char * src2,
 char * dst)
```

APC\_EncryptString.

**Parameters**

|              |                               |
|--------------|-------------------------------|
| <i>const</i> | char* src1 input string #1    |
| <i>const</i> | char* src2 input string #2    |
| <i>char*</i> | dst output string (encrypted) |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.28 APC\_FindDevice()**

```
int APC_FindDevice (
 void * pHandleEYSD)
```

find out all EYSD USB devices by PID, VID and ChipID, also remember device types

#### Parameters

|             |                     |
|-------------|---------------------|
| <i>void</i> | *pHandleEYSD handle |
|-------------|---------------------|

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.29 APC\_FlyingDepthCancellation\_D11()

```
int APC_FlyingDepthCancellation_D11 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pdepthD11,
 int width,
 int height)
```

Flying Pixcel Depth Cancellation.

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | char *pdepthD11 point toinput depth buffer |
| <i>int</i>         | width depth width                          |
| <i>int</i>         | height depth height                        |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.30 APC\_FlyingDepthCancellation\_D8()

```
int APC_FlyingDepthCancellation_D8 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pdepthD8,
 int width,
 int height)
```

Flying Pixcel Depth Cancellation, just for EX8029.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | char *pdepthD8 point to input depth buffer |
| <i>int</i>         | width depth width                          |
| <i>int</i>         | height depth height                        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.31 APC\_GenerateLutFile()

```
int APC_GenerateLutFile (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename)
```

generate look up table(LUT) for spherical display this function reads the camera user data and generate a LUT file using for 360 degree preview

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>const</i>       | char* filename output LUT file name        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.32 APC\_Get2Image()

```
int APC_Get2Image (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pColorImgBuf,
 BYTE * pDepthImgBuf,
 unsigned long int * pColorImageSize,
 unsigned long int * pDepthImageSize,
 int * pColorSerial = 0,
 int * pDepthSerial = 0,
 int nDepthDataType = 0)
```

get color and/or depth pin images see APC\_GetImage for detailed description

## Parameters

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pColorImgBuf buffer to store color image                                         |
| <i>BYTE</i>        | *pDepthImgBuf buffer to store depth image                                         |
| <i>unsigned</i>    | long int *pColorImageSize the actual color buffer size                            |
| <i>unsigned</i>    | long int *pDepthImageSize the actual depth buffer size                            |
| <i>int</i>         | *pColorSerial color serial number                                                 |
| <i>int</i>         | *pDepthSerial depth serial number                                                 |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.33 APC\_Get\_150\_mm\_depth()

```
int APC_Get_150_mm_depth (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial = 0,
 int nDepthDataType = 0)
```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

## Parameters

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pDepthImgBuf buffer to store image data                                          |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device                   |
| <i>int</i>         | *pDepthSerial the serial number for synchronizing depth image                     |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.34 APC\_Get\_60\_mm\_depth()

```
int APC_Get_60_mm_depth (
 void * pHandleEYSD,
```

```

PDEVSELINFO pDevSelInfo,
BYTE * pBuf,
unsigned long int * pImageSize,
int * pSerial = 0,
int nDepthDataType = 0)

```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

#### Parameters

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pBuf buffer to store image data                                                  |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device                   |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image                |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.35 APC\_Get\_Color\_30\_mm\_depth()

```

int APC_Get_Color_30_mm_depth (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial = 0,
 int nDepthDataType = 0)

```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

#### Parameters

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pBuf buffer to store image data                                                  |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device                   |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image                |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.36 APC\_GetAccMeterValue()

```
int APC_GetAccMeterValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int * pX,
 int * pY,
 int * pZ)
```

get acc meter value

##### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>int</i>         | *pX X posiztion                            |
| <i>int</i>         | *pY Y posiztion                            |
| <i>int</i>         | *pZ Z posiztion                            |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.37 APC\_GetAESTatus()

```
int APC_GetAESTatus (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 PAE_STATUS pAESTatus)
```

get auto exposure(AE) is enabled or disable

##### Parameters

|                    |                                                                              |
|--------------------|------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                          |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                   |
| <i>PAE_STATUS</i>  | pAESTatus see enum definition as to AE_STATUS in <a href="#">eSPDI_def.h</a> |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.38 APC\_GetAnalogGain()

```
int APC_GetAnalogGain (
 void * pHandleEYSD,
```

```

PDEVSELINFO pDevSelInfo,
int nSensorMode,
float * pfGlobalGain)

```

get analog gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

#### Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | *pfGlobalGain pointer of global gain value                                     |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.39 APC\_GetAutoExposureMode()

```

int APC_GetAutoExposureMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * mode)

```

Get Auto Exposure Mode.

#### Parameters

|                    |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle.                                                                                     |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index.                                                             |
| <i>unsigned</i>    | short* mode pointer of the mode value. 0: Average, 1: Left (or Front) camera, 2: Right (or Back) camera |

#### Returns

success: APC\_OK, others: [eSPDI\\_def.h](#)

#### 5.1.2.40 APC\_GetAWBStatus()

```

int APC_GetAWBStatus (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 PAWB_STATUS pAWBStatus)

```

get auto white balance(AWB) is enabled or disable



## Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>PAWB_STATUS</i> | pAWBStatus see enum definition as to AWB_STATUS in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.41 APC\_GetBusInfo()

```
int APC_GetBusInfo (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 char * pszBusInfo,
 int * pActualLength)
```

get the firmware version of device, the version is a string

## Parameters

|                    |                                                      |
|--------------------|------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                  |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index           |
| <i>char</i>        | *pszBusInfo Bus information string                   |
| <i>int</i>         | *pActualLength the actual length of Bus info in byte |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.42 APC\_GetColorGain()

```
int APC_GetColorGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float * pfGainR,
 float * pfGainG,
 float * pfGainB)
```

get color gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

**Parameters**

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | *pfGainR pointer of red gain value of ISP setting                              |
| <i>float</i>       | *pfGainG pointer of green gain value of ISP setting                            |
| <i>float</i>       | *pfGainB pointer of blue gain value of ISP setting                             |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.43 APC\_GetColorImage()**

```
int APC_GetColorImage (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial = 0,
 int nDepthDataType = 0)
```

get color image by issuing V4L2's IOCTL to get frame data

**Parameters**

|                    |                                                                    |
|--------------------|--------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                         |
| <i>BYTE</i>        | *pBuf buffer to store image data                                   |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device    |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image |
| <i>int</i>         | nDepthDataType reserved, no used.                                  |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.44 APC\_GetColorImageWithTimestamp()**

```
int APC_GetColorImageWithTimestamp (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
```

```

 unsigned long int * pImageSize,
 int * pSerial,
 int nDepthDataType,
 int64_t * pcur_tv_sec,
 int64_t * pcur_tv_usec)

```

get color image by issuing V4L2's IOCTL to get frame data

#### Parameters

|                    |                                                                          |
|--------------------|--------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                      |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                               |
| <i>BYTE</i>        | *pBuf buffer to store image data                                         |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device          |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image       |
| <i>int</i>         | nDepthDataType reserved, no used.                                        |
| <i>int64_t</i>     | *pcur_tv_sec seconds in 'v4l2_buffer' timestamp of this image data       |
| <i>int64_t</i>     | *pcur_tv_usec microseconds in 'v4l2_buffer' timestamp of this image data |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.45 APC\_GetCompositeDevSelectIndex()

```

PDEVSELINFO APC_GetCompositeDevSelectIndex (
 void * pHandleEYSD,
 int index)

```

Get the pointer of PDEVSELINFO for composite camera device.

#### Parameters

|             |                                                              |
|-------------|--------------------------------------------------------------|
| <i>void</i> | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>int</i>  | index device select index                                    |

#### Returns

the device select index for composite camera device

#### 5.1.2.46 APC\_GetControlCounterMode()

```

int APC_GetControlCounterMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * nValue)

```

enable or disable interleave function

## Parameters

|                    |                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|
| <i>pHandleEYSD</i> | the pointer to the initilized EYSD SDK instance                                     |
| <i>pDevSelInfo</i> | pointer of device select index                                                      |
| <i>*nValue</i>     | pointer to frame counter mode value, 0: Frame Counter Mode, 1: Serial Counter Mode, |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.47 APC\_GetCTPropVal()

```
int APC_GetCTPropVal (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 long int * pValue)
```

get camera terminal(CT) property value By v4l2\_control to get control value of camera terminal

this enumeration contained the following properties: V4L2\_CID\_EXPOSURE\_AUTO; V4L2\_CID\_EXPOSURE\_AUTO\_PRIORITY V4L2\_CID\_EXPOSURE\_ABSOLUTE V4L2\_CID\_EXPOSURE V4L2\_CID\_FOCUS\_ABSOLUTE V4L2\_CID\_FOCUS\_RELATIVE V4L2\_CID\_FOCUS\_AUTO V4L2\_CID\_IRIS\_ABSOLUTE V4L2\_CID\_IRIS\_RELATIVE V4L2\_CID\_ZOOM\_ABSOLUTE V4L2\_CID\_ZOOM\_RELATIVE V4L2\_CID\_PAN\_ABSOLUTE V4L2\_CID\_PAN\_RELATIVE V4L2\_CID\_TILT\_ABSOLUTE V4L2\_CID\_TILT\_RELATIVE V4L2\_CID\_PRIVACY

## Parameters

|                    |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                     |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                              |
| <i>int</i>         | nId specifies the member of the property set, see CT Property ID defined in <a href="#">eSPDI_def.h</a> |
| <i>int</i>         | *pValue pointer of store CT property value                                                              |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.48 APC\_GetCTRangeAndStep()

```
int APC_GetCTRangeAndStep (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 int * pMax,
 int * pMin,
```

```

int * pStep,
int * pDefault,
int * pFlags)

```

set camera terminal property values By v4l2\_queryctrl to get control values of camera terminal(CT) this enumeration contained the following properties: V4L2\_CID\_EXPOSURE\_AUTO V4L2\_CID\_EXPOSURE\_AUTO\_PRIORITY V4L2\_CID\_EXPOSURE\_ABSOLUTE V4L2\_CID\_EXPOSURE V4L2\_CID\_FOCUS\_ABSOLUTE V4L2\_CID\_FOCUS\_RELATIVE V4L2\_CID\_FOCUS\_AUTO V4L2\_CID\_IRIS\_ABSOLUTE V4L2\_CID\_IRIS\_RELATIVE V4L2\_CID\_ZOOM\_ABSOLUTE V4L2\_CID\_ZOOM\_RELATIVE V4L2\_CID\_PAN\_ABSOLUTE V4L2\_CID\_PAN\_RELATIVE V4L2\_CID\_TILT\_ABSOLUTE V4L2\_CID\_TILT\_RELATIVE V4L2\_CID\_PRIVACY

#### Parameters

|                    |                                                                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                                                                                                                       |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                                                                                                                |
| <i>int</i>         | nId specifies the member of the property set, see CT Property ID defined in <a href="#">eSPDI_def.h</a>                                                                                                                                                                                                                                   |
| <i>long</i>        | int *pMax maximum value, inclusive. This field gives an upper bound for the control                                                                                                                                                                                                                                                       |
| <i>long</i>        | int *pMin minimum value, inclusive. This field gives a lower bound for the control                                                                                                                                                                                                                                                        |
| <i>long</i>        | int *pStep This field gives a step size for the control see enum <a href="https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html">https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html</a> how the step value is to be used for each possible control type. Note that this an unsigned 32-bit value |
| <i>long</i>        | int *pDefault The default value of a V4L2_CTRL_TYPE_INTEGER, _BOOLEAN, _BITMASK, _MENU or _INTEGER_MENU control. Not valid for other types of controls. Note that drivers reset controls to their default value only when the driver is first loaded, never afterwards.                                                                   |
| <i>long</i>        | int *pFlags control flags, see <a href="https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html">https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html</a>                                                                                                                                            |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.49 APC\_GetCurrentIRValue()

```

int APC_GetCurrentIRValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pValue)

```

get infrared radiation(IR) value of PUMA type IC

#### Parameters

|                    |                                               |
|--------------------|-----------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index    |
| <i>unsigned</i>    | short *pValue current 1 byte IR value setting |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.50 APC\_GetDepthDataType()**

```
int APC_GetDepthDataType (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pValue)
```

get current depth data type setting

**Parameters**

|                    |                                                      |
|--------------------|------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                  |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index           |
| <i>WORD</i>        | *pValue pointer of current depth data type in device |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.51 APC\_GetDepthImage()**

```
int APC_GetDepthImage (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial = 0,
 int nDepthDataType = 0)
```

get depth image by issuing V4L2's IOCTL to get frame data

**Parameters**

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pBuf buffer to store image data                                                  |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device                   |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image                |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.52 APC\_GetDepthImageWithTimestamp()

```
int APC_GetDepthImageWithTimestamp (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial,
 int nDepthDataType,
 int64_t * pcur_tv_sec,
 int64_t * pcur_tv_usec)
```

get color image by issuing V4L2's IOCTL to get frame data

## Parameters

|                    |                                                                          |
|--------------------|--------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                      |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                               |
| <i>BYTE</i>        | *pBuf buffer to store image data                                         |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device          |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image       |
| <i>int</i>         | nDepthDataType reserved, no used.                                        |
| <i>int64_t</i>     | *pcur_tv_sec seconds in 'v4l2_buffer' timestamp of this image data       |
| <i>int64_t</i>     | *pcur_tv_usec microseconds in 'v4l2_buffer' timestamp of this image data |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.53 APC\_GetDeviceInfo()

```
int APC_GetDeviceInfo (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 DEVINFORMATION * pdevinfo)
```

get informations of EYSD UVC devices, see DEVINFORMATION

## Parameters

|                        |                                            |
|------------------------|--------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index |
| <i>DEVINFORMATION*</i> | pdevinfo pointer of device information     |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.54 APC\_GetDeviceInfoMBL\_15cm()**

```
int APC_GetDeviceInfoMBL_15cm (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 DEVINFORMATION * pdevinfo)
```

get informations of EYSD UVC devices, see DEVINFORMATION

**Parameters**

|                        |                                            |
|------------------------|--------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index |
| <i>DEVINFORMATION*</i> | pdevinfo pointer of device information     |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.55 APC\_GetDeviceNumber()**

```
int APC_GetDeviceNumber (
 void * pHandleEYSD)
```

Get the number of composite camera devices (ex: USB camera device) .

**Parameters**

|             |                     |
|-------------|---------------------|
| <i>void</i> | *pHandleEYSD handle |
|-------------|---------------------|

**Returns**

number of composite camera devices

**5.1.2.56 APC\_GetDeviceResolutionList()**

```
int APC_GetDeviceResolutionList (
 void * pHandleEYSD,
```



```

PDEVSELINFO pDevSelInfo,
int nMaxCount0,
APC_STREAM_INFO * pStreamInfo0,
int nMaxCount1,
APC_STREAM_INFO * pStreamInfo1)

```

get the device resolution list

#### Parameters

|                        |                                               |
|------------------------|-----------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                           |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index    |
| <i>int</i>             | nMaxCount0 max count of endpoint1 resolutions |
| <i>APC_STREAM_INFO</i> | *pStreamInfo0 resolution infos of endpoint1   |
| <i>int</i>             | nMaxCount1 max count of endpoint2 resolutions |
| <i>APC_STREAM_INFO</i> | *pStreamInfo1 resolutions infos of endpoint2  |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.57 APC\_GetDigitalGain()

```

int APC_GetDigitalGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float * pfGlobalGain)

```

get digital gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

#### Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | *pfGlobalGain pointer of global gain value                                     |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.58 APC\_GetExposureTime()

```

int APC_GetExposureTime (
 void * pHandleEYSD,

```

```

PDEVSELINFO pDevSelInfo,
int nSensorMode,
float * pfExpTimeMS)

```

get exposure time of ISP setting in millisecond the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

#### Parameters

|                    |                                                                                                                                 |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD pHandleEYSD                                                                                                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                      |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2                                                  |
| <i>float</i>       | *pfExpTimeMS pointer of getting exposure time in millisecond by pixel clock, pixel per line, exposure line to get exposure time |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.59 APC\_GetFlexibleGyroData()

```

int APC_GetFlexibleGyroData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int length,
 unsigned char * pGyroData)

```

getting gyro data function

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>int</i>         | length Gyro Data Length                    |
| <i>unsigned</i>    | char *pGyroData pointer of Gyro Data.      |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.60 APC\_GetFlexibleGyroLength()

```

int APC_GetFlexibleGyroLength (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * GyroLen)

```

getting length of gyro data function.

## Parameters

|                    |                                             |
|--------------------|---------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                          |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index  |
| <i>unsigned</i>    | short* GyroLen pointer of Gyro Data Lenhth. |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.61 APC\_GetFWContinueMode()

```
int APC_GetFWContinueMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool * pValue)
```

get current depth data type setting

## Parameters

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index         |
| <i>bool</i>        | *pValue pointer of enable/disable status in device |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.62 APC\_GetFWRegister()

```
int APC_GetFWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned short * pValue,
 int flag)
```

get firmware register value

## Parameters

|                      |                                                                                                                                                                                                                                             |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>          | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i>   | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>      | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>      | short *pValue pointer of value got from register address                                                                                                                                                                                    |
| Generated by Doxygen | flag address and value data length(2 or 1 byte) ie FG_Address_2Byte   FG_Value_2Byte is 2 byte address and 2 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.63 APC\_GetFwVersion()**

```
int APC_GetFwVersion (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 char * pszFwVersion,
 int nBufferSize,
 int * pActualLength)
```

get the firmware version of device, the version is a string

**Parameters**

|                    |                                                        |
|--------------------|--------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                    |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index             |
| <i>char</i>        | *pszFwVersion firmware version string                  |
| <i>int</i>         | nBufferSize input buffer length to receive FW version  |
| <i>int</i>         | *pActualLength the actual length of FW version in byte |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.64 APC\_GetGlobalGain()**

```
int APC_GetGlobalGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float * pfGlobalGain)
```

get global gain of ISP setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

**Parameters**

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | *pfGlobalGain pointer of global gain value                                     |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.65 APC\_GetHidGyro()

```
int APC_GetHidGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pBuffer,
 int length)
```

getting gyro data function

## Parameters

|                    |                                              |
|--------------------|----------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index   |
| <i>unsigned</i>    | char *pGyroData pointer of Gyro Data Buffer. |
| <i>int</i>         | length Input buffer Length, should be >= 24  |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.66 APC\_GetHWContinueMode()

```
int APC_GetHWContinueMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool * pValue)
```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

## Parameters

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index         |
| <i>bool</i>        | *pValue pointer of enable/disable status in device |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.67 APC\_GetHWRegister()

```
int APC_GetHWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned short * pValue,
 int flag)
```

get hardware register value

#### Parameters

|                    |                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>    | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>    | short *pValue pointer of value got from register address                                                                                                                                                                                    |
| <i>int</i>         | flag address and value data length(2 or 1 byte) ie FG_Address_2Byte   FG_Value_2Byte is 2 byte address and 2 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.68 APC\_GetImage()

```
int APC_GetImage (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * pBuf,
 unsigned long int * pImageSize,
 int * pSerial = 0,
 int nDepthDataType = 0)
```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

#### Parameters

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                        |
| <i>BYTE</i>        | *pBuf buffer to store image data                                                  |
| <i>unsigned</i>    | long int *pImageSize the actual buffer size getting from device                   |
| <i>int</i>         | *pSerial the serial number for synchronizing color and depth image                |
| <i>int</i>         | nDepthDataType the depth data type, see definition in <a href="#">eSPDI_def.h</a> |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.69 APC\_GetImageInterrupt()**

```
int APC_GetImageInterrupt (
 void)
```

Get Image interrupt function Get the image interrupt and then read Gyro data.

**Returns**

success: 0, others: not got interrupt

**5.1.2.70 APC\_GetInfoHidGyro()**

```
int APC_GetInfoHidGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pCmdBuf,
 int cmdlength,
 unsigned char * pResponseBuf,
 int * resplength)
```

getting gyro data function

**Parameters**

|                    |                                               |
|--------------------|-----------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index    |
| <i>unsigned</i>    | char *pCmdBuf pointer of Gyro Cmd Buffer.     |
| <i>int</i>         | cmdlength Command Length.                     |
| <i>unsigned</i>    | char *pResponseBuf pointer of ResponseBuffer. |
| <i>int</i>         | resplength Response Length                    |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.71 APC\_GetInterleaveMode()**

```
int APC_GetInterleaveMode (
 void * pHandleEYSD,
```

```
PDEVSELINFO pDevSelInfo,
bool * pValue)
```

get current depth data type setting

#### Parameters

|                    |                                                    |
|--------------------|----------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index         |
| <i>bool</i>        | *pValue pointer of enable/disable status in device |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.72 APC\_GetIRMaxValue()

```
int APC_GetIRMaxValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pValue)
```

get maximum IR value of camera module

#### Parameters

|                    |                                                      |
|--------------------|------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                  |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index           |
| <i>unsigned</i>    | short *pValue the maximum 1 byte IR value can be set |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.73 APC\_GetIRMinValue()

```
int APC_GetIRMinValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pValue)
```

get minimum IR value of camera module



## Parameters

|                    |                                                      |
|--------------------|------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                  |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index           |
| <i>unsigned</i>    | short *pValue the minimum 1 byte IR value can be set |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.74 APC\_GetIRMode()

```
int APC_GetIRMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pValue)
```

to check IR is turn on or off

## Parameters

|                    |                                                                                                                                                                                                                    |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                         |
| <i>unsigned</i>    | short *pValue get IR was enabled or not D[7:4]: Reserved D3: Channel 3 D2: Channel 2 D1: Channel 1 D0: Channel 0 1: Enable Channel 0: Disable Channel If want to control ch0 and ch1, ubMode[3:0] must set to 0x03 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.75 APC\_GetLogData()

```
int APC_GetLogData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 int index,
 CALIBRATION_LOG_TYPE type)
```

get log data from flash

## Parameters

|                             |                                                          |
|-----------------------------|----------------------------------------------------------|
| <i>void</i>                 | *pHandleEYSD handle                                      |
| <i>PDEVSELINFO</i>          | pDevSelInfo pointer of device select index               |
| <i>BYTE</i>                 | *buffer buffer to store log data                         |
| <i>int</i>                  | BufferLength input buffer length, must be 4096           |
| <i>int</i>                  | *pActualLength actual length has written to buffer       |
| <i>int</i>                  | index index to identify log data for corresponding depth |
| <i>CALIBRATION_LOG_TYPE</i> | type which calibration log to get                        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.76 APC\_GetLutData()

```
int APC_GetLutData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int nSize)
```

Read LUT parameters into the specified buffer.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>BYTE*</i>       | buffer memory to store LUT data            |
| <i>int</i>         | nSize length of buffer in bytes            |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.77 APC\_GetMultiBytesHWRegister()

```
int APC_GetMultiBytesHWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned char * Data,
 int size,
 int flag)
```

set hardware register

## Parameters

|                    |                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>    | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>    | char *Data multiple-bytes register value to set                                                                                                                                                                                             |
| <i>int</i>         | size multiple-bytes register size                                                                                                                                                                                                           |
| <i>int</i>         | flag address and value data length(2 or 1 byte) ie FG_Address_1Byte   FG_Value_1Byte is 1 byte address and 1 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.78 APC\_GetPidVid()

```
int APC_GetPidVid (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pPidBuf,
 unsigned short * pVidBuf)
```

get PID(product ID) and VID(vendor ID) of device

## Parameters

|                    |                                                 |
|--------------------|-------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                             |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index      |
| <i>unsigned</i>    | short *pPidBuf 4 byte buffer to store PID value |
| <i>unsigned</i>    | short *pVidBuf 4 byte buffer to store VID value |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.79 APC\_GetPointCloud()

```
int APC_GetPointCloud (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * ImgColor,
 int CW,
 int CH,
```

```

unsigned char * ImgDepth,
int DW,
int DH,
PointCloudInfo * pPointCloudInfo,
unsigned char * pPointCloudRGB,
float * pPointCloudXYZ,
float Near,
float Far)

```

get point cloud

#### Parameters

|                       |                                                              |
|-----------------------|--------------------------------------------------------------|
| <i>void</i>           | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i>    | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>       | char *ImgColor RGB-buffer                                    |
| <i>int</i>            | CW ImgColor width                                            |
| <i>int</i>            | CH ImgColor height                                           |
| <i>unsigned</i>       | char *ImgDepth depth-buffer                                  |
| <i>int</i>            | DW ImgDepth width                                            |
| <i>int</i>            | DH ImgDepth height                                           |
| <i>PointCloudInfo</i> | *pPointCloudInfo point-cloud information                     |
| <i>unsigned</i>       | char *pPointCloudRGB point-cloud RGB value                   |
| <i>float</i>          | *pPointCloudXYZ point-cloud XYZ value                        |
| <i>float</i>          | Near filter range near dist.                                 |
| <i>float</i>          | Far filter range far dist.                                   |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.80 APC\_GetPUPropVal()

```

int APC_GetPUPropVal (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 long int * pValue)

```

get processing unit property value by v4l2\_control to get processing unit(PU) property value

this enumeration contained the following properties: V4L2\_CID\_BACKLIGHT\_COMPENSATION V4L2\_CID\_BR<↵  
 IGHTESS V4L2\_CID\_CONTRAST V4L2\_CID\_GAIN V4L2\_CID\_POWER\_LINE\_FREQUENCY V4L2\_CID\_HUE  
 V4L2\_CID\_HUE\_AUTO V4L2\_CID\_SATURATION V4L2\_CID\_SHARPNESS V4L2\_CID\_GAMMA V4L2\_CID\_W<↵  
 HITE\_BALANCE\_TEMPERATURE V4L2\_CID\_AUTO\_WHITE\_BALANCE

#### Parameters

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                    |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                             |
| <i>int</i>         | nId specifies the member of the property set see PU property ID defined in <a href="#">eSPDI_def.h</a> |
| <i>long</i>        | int *pValue pointer of store PU property value                                                         |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.81 APC\_GetPURangeAndStep()

```
int APC_GetPURangeAndStep (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 int * pMax,
 int * pMin,
 int * pStep,
 int * pDefault,
 int * pFlags)
```

get processing unit property value By v4l2\_queryctrl to get property values of processing unit(PU) this enumeration contained the following properties: V4L2\_CID\_BACKLIGHT\_COMPENSATION V4L2\_CID\_BRIGHTNESS V4L2\_CID\_CONTRAST V4L2\_CID\_GAIN V4L2\_CID\_POWER\_LINE\_FREQUENCY V4L2\_CID\_HUE V4L2\_CID\_HUE\_AUTO V4L2\_CID\_SATURATION V4L2\_CID\_SHARPNESS V4L2\_CID\_GAMMA V4L2\_CID\_WHITE\_BALANCE\_TEMPERATURE V4L2\_CID\_AUTO\_WHITE\_BALANCE

## Parameters

|                    |                                                                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                                                                                                                       |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                                                                                                                |
| <i>int</i>         | nId nId specifies the member of the property set, see CT Property ID defined in <a href="#">eSPDI_def.h</a>                                                                                                                                                                                                                               |
| <i>long</i>        | int *pMax maximum value, inclusive. This field gives an upper bound for the control                                                                                                                                                                                                                                                       |
| <i>long</i>        | int *pMin minimum value, inclusive. This field gives a lower bound for the control                                                                                                                                                                                                                                                        |
| <i>long</i>        | int *pStep This field gives a step size for the control see enum <a href="https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html">https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html</a> how the step value is to be used for each possible control type. Note that this an unsigned 32-bit value |
| <i>long</i>        | int *pDefault The default value of a V4L2_CTRL_TYPE_INTEGER, _BOOLEAN, _BITMASK, _MENU or _INTEGER_MENU control. Not valid for other types of controls. Note that drivers reset controls to their default value only when the driver is first loaded, never afterwards.                                                                   |
| <i>long</i>        | int *pFlags control flags, see <a href="https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html">https://www.linuxtv.org/downloads/v4l-dvb-apis-old/vidioc-queryctrl.html</a>                                                                                                                                            |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.82 APC\_GetRectifyLogData()

```
int APC_GetRectifyLogData (
 void * pHandleEYSD,
```

```

PDEVSELINFO pDevSelInfo,
eSPCtrl_RectLogData * pData,
int index)

```

get rectify log data from flash, just for AXES1 device type

#### Parameters

|                            |                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------|
| <i>void</i>                | *pHandleEYSD handle                                                                                 |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                                                          |
| <i>eSPCtrl_RectLogData</i> | *pData 4096 bytes of rectify log data, see <a href="#">eSPCtrl_RectLogData</a> for detailed members |
| <i>index,user</i>          | data section from 0 ~ 9                                                                             |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.83 APC\_GetRectifyMatLogData()

```

int APC_GetRectifyMatLogData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 eSPCtrl_RectLogData * pData,
 int index)

```

get rectify log data from flash, just for PUMA device type

#### Parameters

|                            |                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------|
| <i>void</i>                | *pHandleEYSD handle                                                                                 |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                                                          |
| <i>eSPCtrl_RectLogData</i> | *pData 4096 bytes of rectify log data, see <a href="#">eSPCtrl_RectLogData</a> for detailed members |
| <i>index,user</i>          | data section from 0 ~ 9                                                                             |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.84 APC\_GetRectifyTable()

```

int APC_GetRectifyTable (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,

```

```
int * pActualLength,
int index)
```

get rectify values (file ID 40+) from flash

## Parameters

|                    |                                                                           |
|--------------------|---------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                       |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                |
| <i>BYTE</i>        | *buffer buffer to store rectify table data                                |
| <i>int</i>         | BufferLength input buffer length, must be 1024                            |
| <i>int</i>         | *pActualLength actual length has written to buffer                        |
| <i>int</i>         | index index(from 0 ~ 9) to identify rectify table for corresponding depth |

## Returns

success:APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.85 APC\_GetSensorRegister()

```
int APC_GetSensorRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 unsigned short address,
 unsigned short * pValue,
 int flag,
 SENSORMODE_INFO SensorMode)
```

get value from sensor register

## Parameters

|                        |                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>int</i>             | nId sensor slave address see Videodevice.h for sensor slave address setting                                                                                                                                                                 |
| <i>unsigned</i>        | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>        | short *pValue pointer of value got from register address                                                                                                                                                                                    |
| <i>int</i>             | flag address and value data length(2 or 1 byte) ie FG_Address_2Byte   FG_Value_2Byte is 2 byte address and 2 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |
| <i>SENSORMODE_INFO</i> | SensorMode sensor mode(sensor A, B or Both) A is 0, B is 1, Both is 2                                                                                                                                                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)



### 5.1.2.86 APC\_GetSerialNumber()

```
int APC_GetSerialNumber (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pData,
 int nbufferSize,
 int * pLen)
```

get device serial number

#### Parameters

|                    |                                                                     |
|--------------------|---------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                 |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                          |
| <i>BYTE</i>        | *pData output buffer to store serial number string                  |
| <i>int</i>         | nbufferSize pData buffer length in byte, 2 byte(WideChar) is a unit |
| <i>int</i>         | *pLen pointer of actual serial number length                        |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.87 APC\_GetSimpleDeviceNumber()

```
int APC_GetSimpleDeviceNumber (
 void * pHandleEYSD)
```

Get the number of simple camera devices (ex: MIPI camera device) .

#### Parameters

|             |                                                              |
|-------------|--------------------------------------------------------------|
| <i>void</i> | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
|-------------|--------------------------------------------------------------|

#### Returns

number of simple camera devices

### 5.1.2.88 APC\_GetSimpleDevSelectIndex()

```
PDEVSELINFO APC_GetSimpleDevSelectIndex (
 void * pHandleEYSD,
 int index)
```

Get the pointer of PDEVSELINFO for simple camera device.

**Parameters**

|             |                                                              |
|-------------|--------------------------------------------------------------|
| <i>void</i> | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>int</i>  | index device select index                                    |

**Returns**

the device select index for simple camera device

**5.1.2.89 APC\_GetSRB()**

```
int APC_GetSRB (
 void * pSrbHandle,
 srb_packet_s * pPacket)
```

Get Packet from SRB.

**Parameters**

|                 |                                  |
|-----------------|----------------------------------|
| <i>void</i>     | *pSrbHandle pointer to SRB class |
| <i>packet_s</i> | *pPacket Input Packet            |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.90 APC\_GetThermalFD()**

```
int APC_GetThermalFD (
 void * pHandleEYSD,
 int * p_FD)
```

get file description of thermal device

**Parameters**

|             |                                          |
|-------------|------------------------------------------|
| <i>void</i> | *pHandleEYSD handle                      |
| <i>int</i>  | *p_FD file description of thermal device |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.91 APC\_GetUACData()

```
int APC_GetUACData (
 unsigned char * buffer,
 int length)
```

UAC initial function.

##### Parameters

|                 |                                    |
|-----------------|------------------------------------|
| <i>unsigned</i> | char *buffer pointer of UAC buffer |
| <i>int</i>      | length UAC buffer length           |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.92 APC\_getUACNAME()

```
int APC_getUACNAME (
 char * input,
 char * output)
```

Get EYSD UAC Name.

##### Parameters

|             |                                 |
|-------------|---------------------------------|
| <i>char</i> | *input Point to device Address. |
| <i>char</i> | *output Point to device Name.   |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.93 APC\_GetUserData()

```
int APC_GetUserData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 USERDATA_SECTION_INDEX usi)
```

get user data from flash

## Parameters

|                               |                                            |
|-------------------------------|--------------------------------------------|
| <i>void</i>                   | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i>            | pDevSelInfo pointer of device select index |
| <i>BYTE</i>                   | *buffer buffer to store user data          |
| <i>int</i>                    | BufferLength input buffer length           |
| <i>USERDATA_SECTION_INDEX</i> | usi which user index data to select        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.94 APC\_GetYOffset()

```
int APC_GetYOffset (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 int index)
```

get Y offset (file ID 30+) value

## Parameters

|                    |                                                 |
|--------------------|-------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                             |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index      |
| <i>BYTE</i>        | *buffer buffer to store Y offset values         |
| <i>int</i>         | BufferLength must be 256                        |
| <i>int</i>         | *pActualLength the buffer length, always be 256 |
| <i>int</i>         | index index value to file ID 30                 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.95 APC\_GetZDTable()

```
int APC_GetZDTable (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 PZDTABLEINFO pZDTableInfo)
```

get disparity and Z values from flash

## Parameters

|                     |                                                                               |
|---------------------|-------------------------------------------------------------------------------|
| <i>void</i>         | *pHandleEYSD handle                                                           |
| <i>PDEVSELINFO</i>  | pDevSelInfo pointer of device select index                                    |
| <i>BYTE</i>         | *buffer bufer to store ZD table                                               |
| <i>int</i>          | BufferLength input buffer length                                              |
| <i>int</i>          | *pActualLength actual length has written to buffer                            |
| <i>PZDTABLEINFO</i> | pZDTableInfo index to identify ZD table and data type for corresponding depth |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.96 APC\_HoleFill()

```
int APC_HoleFill (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * depthBuf,
 int bytesPerPixel,
 int kernel_size,
 int width,
 int height,
 int level,
 bool horizontal)
```

APC\_HoleFill.

## Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char* depthBuf depth buffer pointer                          |
| <i>int</i>         | bytesPerPixel byte number of one pixel                       |
| <i>int</i>         | kernel_size [TODO]                                           |
| <i>int</i>         | width depth width                                            |
| <i>int</i>         | height depth height                                          |
| <i>int</i>         | level [TODO]                                                 |
| <i>bool</i>        | horizontal [TODO]                                            |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.97 APC\_HoleFilled()

```
int APC_HoleFilled (
 unsigned short * pDImgIn,
 unsigned short * pDImgOut,
 int width,
 int height,
 int holeFilldiff)
```

Hole Filled.

#### Parameters

|                 |                                                          |
|-----------------|----------------------------------------------------------|
| <i>unsigned</i> | short *pDImgIn Image Input                               |
| <i>unsigned</i> | short *pDImgOut Image Output                             |
| <i>int</i>      | width image width                                        |
| <i>int</i>      | height image height                                      |
| <i>int</i>      | holeFilldiff Hole filled strangth, value from 0 to 2047. |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.98 APC\_ImgMirro() [1/2]

```
int APC_ImgMirro (
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf)
```

Make the image to Mirro.

#### Parameters

|                            |                                |
|----------------------------|--------------------------------|
| <i>APCImageType::Value</i> | imgType Image Type             |
| <i>int</i>                 | width image width              |
| <i>int</i>                 | height image height            |
| <i>unsigned</i>            | char *src image source         |
| <i>unsigned</i>            | char *dstBuf image desteration |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.99 APC\_ImgMirro() [2/2]

```
int APC_ImgMirro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf)
```

Make the image to Mirro.

## Parameters

|                            |                                                              |
|----------------------------|--------------------------------------------------------------|
| <i>void</i>                | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                   |
| <i>APCImageType::Value</i> | imgType Image Type                                           |
| <i>int</i>                 | width image width                                            |
| <i>int</i>                 | height image height                                          |
| <i>unsigned</i>            | char *src image source                                       |
| <i>unsigned</i>            | char *dstBuf image desteration                               |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.100 APC\_Init()

```
int APC_Init (
 void ** ppHandleEYSD,
 bool bIsLogEnabled)
```

entry point of EYSD camera SDK including 1.create a CEYSD class for accessing oncming APIs 2.find out EYSD devices 3.create a CVideoDevice class for video streaming and hardware access

## Parameters

|                       |                                            |
|-----------------------|--------------------------------------------|
| <i>**ppHandleEYSD</i> | a pointer of pointer to access CEYSD class |
| <i>bIsLogEnabled</i>  | generate log or not                        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

5.1.2.101 `APC_InitDecimationFilter()`

```
int APC_InitDecimationFilter (
 void ** ppDecimationFilterHandle,
 unsigned int inWidth,
 unsigned int inHeight,
 unsigned int * outWidth,
 unsigned int * outHeight,
 APCImageType::Value imageType,
 DECIMATION_PARAMS decimationParams)
```

## Parameters

|                                 |                                                                                       |
|---------------------------------|---------------------------------------------------------------------------------------|
| <i>ppDecimationFilterHandle</i> | Handle for user to store.                                                             |
| <i>inWidth</i>                  | input disparity width                                                                 |
| <i>inHeight</i>                 | input disparity height                                                                |
| <i>outWidth</i>                 | scale down image width                                                                |
| <i>outHeight</i>                | scale down image height                                                               |
| <i>imageType</i>                | Currently only support APCImageType::DEPTH_11BITS<br>APCImageType::DEPTH_14BITS       |
| <i>decimationParams</i>         | Divide resolutions by the factor and round to 4-divisible number. Ex. 1280 / 3 ~= 428 |

## Returns

APC\_POSTPROCESS\_INIT\_FAIL when null pointers is passed in. APC\_OK if no problem.

5.1.2.102 `APC_InitialCmdFiFo()`

```
int APC_InitialCmdFiFo (
 const char * pfifoName,
 int * pFileDescription,
 bool bRead)
```

Cmd FiFo Initial function.

## Parameters

|              |                                                         |
|--------------|---------------------------------------------------------|
| <i>const</i> | char * <i>pfifoName</i> Point to the cmd fifo name      |
| <i>int</i>   | * <i>pFileDescription</i> Point to the file description |
| <i>bRead</i> | Indicate Read or Write Cmd fifo                         |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)



#### 5.1.2.103 APC\_InitialFlexibleGyro()

```
int APC_InitialFlexibleGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

gyro sensor inital function

##### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.104 APC\_InitialHidGyro()

```
int APC_InitialHidGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

gyro sensor inital function

##### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

##### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.105 APC\_InitialUAC()

```
int APC_InitialUAC (
 char * deviceName)
```

UAC inital function.

##### Parameters

|             |                                   |
|-------------|-----------------------------------|
| <i>char</i> | *deviceName Point to device Name. |
|-------------|-----------------------------------|

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.106 APC\_InitPostProcess()**

```
APC_InitPostProcess (
 void ** ppPostProcessHandle,
 unsigned int nWidth,
 unsigned int nHeight,
 APCImageType::Value imageType)
```

APC\_InitPostProcess.

**Parameters**

|                                                                            |                              |
|----------------------------------------------------------------------------|------------------------------|
| <i>void</i>                                                                | <b>**ppPostProcessHandle</b> |
| <i>unsigned</i>                                                            | <b>int nWidth</b>            |
| <i>unsigned</i>                                                            | <b>int nHeight</b>           |
| <i>APCImageType::Value::DEPTH_11BITS, APCImageType::Value::DEPTH_8BITS</i> |                              |

**Returns**

success: APC\_POSTPROCESS\_INIT\_FAIL or APC\_OK

**5.1.2.107 APC\_InitPostProcessCustomParameter()**

```
int APC_InitPostProcessCustomParameter (
 void ** ppPostProcessHandle,
 unsigned int nWidth,
 unsigned int nHeight,
 APCImageType::Value imageType,
 POST_PROCESS_PARAMS postProcessParams)
```

**Parameters**

|                            |                                                                                                                                                                                                                                                                                          |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ppPostProcessHandle</i> |                                                                                                                                                                                                                                                                                          |
| <i>nWidth</i>              |                                                                                                                                                                                                                                                                                          |
| <i>nHeight</i>             |                                                                                                                                                                                                                                                                                          |
| <i>imageType</i>           | APCImageType::Value::DEPTH_11BITS                                                                                                                                                                                                                                                        |
| <i>postProcessParams</i>   | Custom setting for filters. Contact with us for more info to match your optical environment. spatial_filter_kernel_size must set to an odd number recommend value is [3, 15]. Larger value is smoother. spatial_filter_outlier_threshold [1, 64]. Smaller value filters out more points. |

## Returns

APC\_POSTPROCESS\_INIT\_FAIL or APC\_OK

## 5.1.2.108 APC\_InitResizeProcess()

```
int APC_InitResizeProcess (
 void ** ppResizeProcessHandle,
 size_t inWidth,
 size_t inHeight,
 size_t * outWidth,
 size_t * outHeight,
 APCImageType::Value imageType,
 float factor)
```

## Parameters

|                              |                                                                                                   |
|------------------------------|---------------------------------------------------------------------------------------------------|
| <i>ppResizeProcessHandle</i> |                                                                                                   |
| <i>inWidth</i>               | the pImageData width.                                                                             |
| <i>inHeight</i>              | the pImageData height.                                                                            |
| <i>outWidth</i>              | if user did not specify this value. We would fill in this value into inWidth * factor             |
| <i>outHeight</i>             | if user did not specify this value. We would fill in this value into inHeight * factor            |
| <i>imageType</i>             | Reference <a href="#">APCImageType</a> for more info. Currently support APCImageType::COLOR_YUY2. |
| <i>factor</i>                | greater than 1 is enlarge the image, otherwise shrink the image.                                  |

## Returns

APC\_OK

## 5.1.2.109 APC\_InitSRB()

```
int APC_InitSRB (
 void ** pSrbHandle,
 int QueueSize,
 char * queueName)
```

Initial the SRB(Share Ring Buffering)

## Parameters

|             |                                                |
|-------------|------------------------------------------------|
| <i>void</i> | **pSrbHandle a pointer of pointer to SRB class |
| <i>int</i>  | QueueSize                                      |
| <i>char</i> | srbName SRM Name                               |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.110 APC\_InjectExtraDataToMp4()**

```
int APC_InjectExtraDataToMp4 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename,
 const char * data,
 int dataLen)
```

APC\_InjectExtraDataToMp4.

**Parameters**

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>const</i>       | char *filename input video file name       |
| <i>const</i>       | char *data video data                      |
| <i>const</i>       | int dataLen video data length              |

**Returns**

success: APC\_OK, others:see [eSPDI\\_def.h](#)

**5.1.2.111 APC\_IsInterleaveDevice()**

```
bool APC_IsInterleaveDevice (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

check module support interleave function or not

**Parameters**

|                    |                                                 |
|--------------------|-------------------------------------------------|
| <i>pHandleEYSD</i> | the pointer to the initilized EYSD SDK instance |
| <i>pDevSelInfo</i> | pointer of device select index                  |

**Returns**

true: support interleave, false: not support

## 5.1.2.112 APC\_IsMLBaseLine()

```
bool APC_IsMLBaseLine (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

Check the device is multiple baseline device.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

## Returns

true: multiplies baseline device, false: normally device.

## 5.1.2.113 APC\_OpenDevice()

```
int APC_OpenDevice (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nEP0Width,
 int nEP0Height,
 bool bEP0MJPG,
 int nEP1Width,
 int nEP1Height,
 DEPTH_TRANSFER_CTRL dtc = DEPTH_IMG_NON_TRANSFER,
 bool bIsOutputRGB24 = false,
 void * phWndNotice = 0,
 int * pFPS = 0,
 CONTROL_MODE cm = IMAGE_SN_NONSYNC)
```

the implement layer to open EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,

1. initialize the USB device by V4L2 protocol 1.1 query device v4l2 capability 1.2 must have video capability 1.3 must have streaming capability 1.4 issue resolution mode to UVC driver and check result 1.5 initialize memory buffer mapping from kernel to user mode
2. enumerate frame interval to set frame rate
3. start video capture processes

## Parameters

|                    |                                                  |
|--------------------|--------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                              |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index       |
| <i>int</i>         | nEP0Width width of endpoint1(color) resolution   |
| <i>int</i>         | nEP0Height height of endpoint1(color) resolution |
| <i>bool</i>        | bEP0MJPG endpoint1 output is MJPEG ?             |
| <i>int</i>         | *pFPS input frame rate setting                   |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.114 APC\_OpenDevice2()**

```
int APC_OpenDevice2 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nEP0Width,
 int nEP0Height,
 bool bEP0MJPG,
 int nEP1Width,
 int nEP1Height,
 DEPTH_TRANSFER_CTRL dtc = DEPTH_IMG_NON_TRANSFER,
 bool bIsOutputRGB24 = false,
 void * phWndNotice = 0,
 int * pFPS = 0,
 CONTROL_MODE cm = IMAGE_SN_NONSYNC)
```

the implement layer to open EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,

1. initialize the USB device by V4L2 protocol 1.1 query device v4l2 capability 1.2 must have video capability 1.3 must have streaming capability 1.4 issue resolution mode to UVC driver and check result 1.5 initialize memory buffer mapping from kernel to user mode
2. enumerate frame interval to set frame rate
3. start video capture processes

**Parameters**

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| <i>void</i>                | *pHandleEYSD handle                              |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index       |
| <i>int</i>                 | nEP0Width width of endpoint1(color) resolution   |
| <i>int</i>                 | nEP0Height height of endpoint1(color) resolution |
| <i>bool</i>                | bEP0MJPG endpoint1 output is MJPEG ?             |
| <i>int</i>                 | nEP1Width width of endpoint2(depth) resolution   |
| <i>int</i>                 | nEP1Height height of endpoint2(depth) resolution |
| <i>DEPTH_TRANSFER_CTRL</i> | dtc depth image output transfer                  |

1. default is transferred to color(DEPTH\_IMG\_COLORFUL\_TRANSFER) by calling from [APC\\_OpenDevice\(\)](#)
2. DEPTH\_IMG\_GRAY\_TRANSFER : transfer to gray
3. DEPTH\_IMG\_NON\_TRANSFER : no transfer

**Parameters**

|             |                                                 |
|-------------|-------------------------------------------------|
| <i>bool</i> | bIsOutputRGB24 output color image is RGB format |
|-------------|-------------------------------------------------|

## Parameters

|                     |                                |
|---------------------|--------------------------------|
| <i>void</i>         | *phWndNotice reserved, not use |
| <i>int</i>          | *pFPS input frame rate setting |
| <i>CONTROL_MODE</i> | cm reserved, not use           |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.115 APC\_OpenDeviceMBL()

```
int APC_OpenDeviceMBL (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nEP0Width,
 int nEP0Height,
 bool bEP0MJPG,
 int nEP1Width,
 int nEP1Height,
 DEPTH_TRANSFER_CTRL dtc = DEPTH_IMG_NON_TRANSFER,
 bool bIsOutputRGB24 = false,
 void * phWndNotice = 0,
 int * pFPS = 0,
 CONTROL_MODE cm = IMAGE_SN_NONSYNC)
```

the implement layer to open Multiple Base Line EYSD camera device by V4L2(<https://en.wikipedia.org/wiki/Video4Linux>), can open color and depth at one time call, do functions as below,

1. initialize the USB device by V4L2 protocol 1.1 query device v4l2 capability 1.2 must have video capability 1.3 must have streaming capability 1.4 issue resolution mode to UVC driver and check result 1.5 initialize memory buffer mapping from kernel to user mode
2. enumerate frame interval to set frame rate
3. start video capture processes

## Parameters

|                            |                                                  |
|----------------------------|--------------------------------------------------|
| <i>void</i>                | *pHandleEYSD handle                              |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index       |
| <i>int</i>                 | nEP0Width width of endpoint1(color) resolution   |
| <i>int</i>                 | nEP0Height height of endpoint1(color) resolution |
| <i>bool</i>                | bEP0MJPG endpoint1 output is MJPEG ?             |
| <i>int</i>                 | nEP1Width width of endpoint2(depth) resolution   |
| <i>int</i>                 | nEP1Height height of endpoint2(depth) resolution |
| <i>DEPTH_TRANSFER_CTRL</i> | dtc depth image output transfer                  |

1. default is transferred to color(DEPTH\_IMG\_COLORFUL\_TRANSFER) by calling from [APC\\_OpenDevice\(\)](#)

2. DEPTH\_IMG\_GRAY\_TRANSFER : transfer to gray
3. DEPTH\_IMG\_NON\_TRANSFER : no transfer

**Parameters**

|                     |                                                 |
|---------------------|-------------------------------------------------|
| <i>bool</i>         | blsOutputRGB24 output color image is RGB format |
| <i>void</i>         | *phWndNotice reserved, not use                  |
| <i>int</i>          | *pFPS input frame rate setting                  |
| <i>CONTROL_MODE</i> | cm reserved, not use                            |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.116 APC\_PostProcess()**

```
int APC_PostProcess (
 void * pPostProcessHandle,
 unsigned char * pDepthData,
 unsigned char * filteredFrame,
 APCImageType::Value imageType)
```

**Parameters**

|                           |                                                                          |
|---------------------------|--------------------------------------------------------------------------|
| <i>pPostProcessHandle</i> |                                                                          |
| <i>pDepthData</i>         | disparity buffer.                                                        |
| <i>filteredFrame</i>      | filtered disparity.                                                      |
| <i>imageType</i>          | APCImageType::Value::DEPTH_11BITS will use CV_16UC1 as computing format. |

**Returns**

APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.117 APC\_PutSRB()**

```
int APC_PutSRB (
 void * pSrbHandle,
 srb_packet_s * pPacket)
```

Put Packet to SRB.

**Parameters**

|                          |                                  |
|--------------------------|----------------------------------|
| <i>void</i>              | *pSrbHandle pointer to SRB class |
| <a href="#">packet_s</a> | *pPacket Input Packet            |



**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.118 APC\_ReadCmdFiFo()**

```
APC_ReadCmdFiFo (
 int FileDescription,
 unsigned char * pBuf,
 int len)
```

Read Cmd FiFo function.

**Parameters**

|                 |                                    |
|-----------------|------------------------------------|
| <i>int</i>      | FileDescription File description   |
| <i>unsigned</i> | char *pCmd Point to the cmd buffer |
| <i>int</i>      | lenIndicate the cmd length.        |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.119 APC\_ReadFlashData()**

```
int APC_ReadFlashData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 FLASH_DATA_TYPE fdt,
 BYTE * pBuffer,
 unsigned long int BufferLength,
 unsigned long int * pActualLength)
```

read firmware code(.bin) form flash The firmware code is the combination of boot loader, firmware body and plug-in data. This input buffer length has to match with the flash data type

**Parameters**

|                        |                                                              |
|------------------------|--------------------------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                                          |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index                   |
| <i>FLASH_DATA_TYPE</i> | fdt segment type of flash be read                            |
| <i>BYTE</i>            | *pBuffer buffer to store firmware code                       |
| <i>unsigned</i>        | long int BufferLength input buffer length                    |
| <i>unsigned</i>        | long int *pActualLength actual length has written to pBuffer |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.120 APC\_RefreshDevice()**

```
int APC_RefreshDevice (
 void * pHandleEYSD)
```

refresh all EYSD UVC devices

**Parameters**

|             |                     |
|-------------|---------------------|
| <i>void</i> | *pHandleEYSD handle |
|-------------|---------------------|

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.121 APC\_Release()**

```
void APC_Release (
 void ** ppHandleEYSD)
```

release resource that APC\_Init had allocated

**Parameters**

|             |                                              |
|-------------|----------------------------------------------|
| <i>void</i> | **ppHandleEYSD array of CEYSD class handlers |
|-------------|----------------------------------------------|

**Returns**

none

**5.1.2.122 APC\_ReleaseDecimationFilter()**

```
int APC_ReleaseDecimationFilter (
 void * pDecimationFilterHandle)
```

**Parameters**

|                                |                        |
|--------------------------------|------------------------|
| <i>pDecimationFilterHandle</i> | handle to be released. |
|--------------------------------|------------------------|

**Returns**

APC\_NullPtr when parameter is nullptr. APC\_OK if no problem.

**5.1.2.123 APC\_ReleaseFlexibleGyro()**

```
int APC_ReleaseFlexibleGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

gyro sensor release function

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.124 APC\_ReleaseHidGyro()**

```
int APC_ReleaseHidGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

gyro sensor release function

**Parameters**

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.125 APC\_ReleasePostProcess()**

```
APC_ReleasePostProcess (
 void * pPostProcessHandle)
```

APC\_ReleasePostProcess.

**Parameters**

|             |                                                 |
|-------------|-------------------------------------------------|
| <i>void</i> | *ppPostProcessHandle the handle to be released. |
|-------------|-------------------------------------------------|

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.126 APC\_ReleaseSwPostProc()**

```
int APC_ReleaseSwPostProc (
 void ** handle)
```

release a software post process class

**Parameters**

|               |                                                           |
|---------------|-----------------------------------------------------------|
| <i>void**</i> | handle handle pointer to this software post process class |
|---------------|-----------------------------------------------------------|

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.127 APC\_ReleaseUAC()**

```
int APC_ReleaseUAC (
 void)
```

UAC inital function.

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.128 APC\_ResetFilters()**

```
int APC_ResetFilters (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

APC\_ResetFilters.

**Parameters**

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.129 APC\_ResetUNPData()**

```
int APC_ResetUNPData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo)
```

Reset the UNProtection area's datum.

**Parameters**

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.130 APC\_ResizeImgToHalf()**

```
int APC_ResizeImgToHalf (
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dst,
 int len)
```

Resize the image to half.

**Parameters**

|                            |                             |
|----------------------------|-----------------------------|
| <i>APCImageType::Value</i> | mgType Image Type           |
| <i>int</i>                 | width image width           |
| <i>int</i>                 | height image height         |
| <i>unsigned</i>            | char *src image source      |
| <i>unsigned</i>            | char *dst image destation   |
| <i>int</i>                 | len destation buffer length |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.131 APC\_RetrieveExtraDataFromMp4()

```
int APC_RetrieveExtraDataFromMp4 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename,
 char * data,
 int * dataLen)
```

APC\_RetrieveExtraDataFromMp4.

#### Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>const</i>       | char *filename input video file name       |
| <i>const</i>       | char *data video data                      |
| <i>const</i>       | int dataLen video data length              |

#### Returns

success: APC\_OK, others:see [eSPDI\\_def.h](#)

### 5.1.2.132 APC\_RGB2BMP()

```
int APC_RGB2BMP (
 char * filename,
 int width,
 int height,
 unsigned char * data)
```

RGB to BMP.

#### Parameters

|                  |                     |
|------------------|---------------------|
| <i>*filename</i> | Ouput BMP file name |
| <i>int</i>       | width image width   |
| <i>int</i>       | height image height |
| <i>*data</i>     | input RGB buffer.   |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

5.1.2.133 `APC_RotateImg180()` [1/2]

```
int APC_RotateImg180 (
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf,
 int len)
```

Rotate the image to 180 degree.

## Parameters

|                            |                                |
|----------------------------|--------------------------------|
| <i>APCImageType::Value</i> | mgType Image Type              |
| <i>int</i>                 | width image width              |
| <i>int</i>                 | height image height            |
| <i>unsigned</i>            | char *src image source         |
| <i>unsigned</i>            | char *dstBuf image desteration |
| <i>int</i>                 | len desteration buffer length  |

## Returns

success: `APC_OK`, others: see [eSPDI\\_def.h](#)

5.1.2.134 `APC_RotateImg180()` [2/2]

```
int APC_RotateImg180 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf,
 int len)
```

Rotate the image to 180 degree.

## Parameters

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| <i>void</i>                | * pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                    |
| <i>APCImageType::Value</i> | mgType Image Type                                             |
| <i>int</i>                 | width image width                                             |
| <i>int</i>                 | height image height                                           |
| <i>unsigned</i>            | char *src image source                                        |
| <i>unsigned</i>            | char *dstBuf image desteration                                |
| <i>int</i>                 | len desteration buffer length                                 |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.135 APC\_RotateImg90()** [1/2]

```
int APC_RotateImg90 (
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf,
 int len,
 bool clockwise)
```

Rotate the image to 90 degree.

**Parameters**

|                            |                                |
|----------------------------|--------------------------------|
| <i>APCImageType::Value</i> | mgType Image Type              |
| <i>int</i>                 | width image width              |
| <i>int</i>                 | height image height            |
| <i>unsigned</i>            | char *src image source         |
| <i>unsigned</i>            | char *dstBuf image desteration |
| <i>int</i>                 | len desteration buffer length  |
| <i>bClockwise, false</i>   | not supported.                 |
| <i>bOpencv</i>             | useage, not supported.         |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.136 APC\_RotateImg90()** [2/2]

```
int APC_RotateImg90 (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 APCImageType::Value imgType,
 int width,
 int height,
 unsigned char * src,
 unsigned char * dstBuf,
 int len,
 bool clockwise)
```

Make the image to rotate.



## Parameters

|                            |                                                               |
|----------------------------|---------------------------------------------------------------|
| <i>void</i>                | * pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i>         | pDevSelInfo pointer of device select index                    |
| <i>APCImageType::Value</i> | imgType Image Type                                            |
| <i>int</i>                 | width image width                                             |
| <i>int</i>                 | height image height                                           |
| <i>unsigned</i>            | char *src image source                                        |
| <i>unsigned</i>            | char *dstBuf image desteration                                |
| <i>bool</i>                | clockwise clockwise rotate or not                             |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.137 APC\_SaveLutData()

```
int APC_SaveLutData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * filename)
```

Save LUT parameters in the specified file.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>const</i>       | char* filename output LUT file name        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.138 APC\_SelectDevice()

```
int APC_SelectDevice (
 void * pHandleEYSD,
 int dev_index)
```

do not support currently

## Returns

APC\_NotSupport

### 5.1.2.139 APC\_SetAETarget()

```
int APC_SetAETarget (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int index,
 float * EV)
```

set hardware register

#### Parameters

|                    |                                                                                                                                                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                                                                                                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                                                                                                    |
| <i>int</i>         | index range from -6 to 9, 0 is default AE                                                                                                                                                                                                                                                                                     |
| <i>float</i>       | *EV -2.0EV - +3.0EV in 1/3EV step intervals,<br>ie [index, EV] =><br>[-6, -2.00EV]<br>[-5, -1.67EV]<br>[-4, -1.33EV]<br>[-3, -1.00EV]<br>[-2, -0.67EV]<br>[-1, -0.33EV]<br>[0, 0.00EV]<br>[1, 0.33EV]<br>[2, 0.67EV]<br>[3, 1.00EV]<br>[4, 1.33EV]<br>[5, 1.67EV]<br>[6, 2.00EV]<br>[7, 2.33EV]<br>[8, 2.67EV]<br>[9, 3.00EV] |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

### 5.1.2.140 APC\_SetAnalogGain()

```
int APC_SetAnalogGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float fGlobalGain)
```

set analog gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

#### Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | fGlobalGain pointer of global gain value                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.141 APC\_SetAutoExposureMode()

```
int APC_SetAutoExposureMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short mode)
```

Setup Auto Exposure Mode.

## Parameters

|                    |                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle.                                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index.                                                       |
| <i>unsigned</i>    | short mode The setup mode value. 0: Average, 1: Left (or Front) camera, 2: Right (or Back) camera |

## Returns

success: APC\_OK, others: [eSPDI\\_def.h](#)

## 5.1.2.142 APC\_SetColorGain()

```
int APC_SetColorGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float fGainR,
 float fGainG,
 float fGainB)
```

set color gain of ISP

## Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | fGainR Red channel color gain value                                            |
| <i>float</i>       | fGainG Green channel color gain value                                          |
| <i>float</i>       | fGainB Blue channel color gain value                                           |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.143 APC\_SetControlCounterMode()**

```
int APC_SetControlCounterMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char nValue)
```

enable or disable interleave function

**Parameters**

|                    |                                                 |
|--------------------|-------------------------------------------------|
| <i>pHandleEYSD</i> | the pointer to the initilized EYSD SDK instance |
| <i>pDevSelInfo</i> | pointer of device select index                  |
| <i>nValue</i>      | 0: Frame Counter Mode, 1: Serial Counter Mode,  |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.144 APC\_SetCTPropVal()**

```
int APC_SetCTPropVal (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 long int nValue)
```

set camera terminal property values By v4l2\_control to set

**Parameters**

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                    |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                             |
| <i>int</i>         | nId specifies the member of the property set see CT Property ID defined in <a href="#">eSPDI_def.h</a> |
| <i>long</i>        | int nValue CT property value to set                                                                    |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.145 APC\_SetCurrentIRValue()

```
t APC_SetCurrentIRValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short nValue)
```

set infrared radiation(IR) value of PUMA type IC

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | short nValue 1 byte IR value to set        |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.146 APC\_SetDepthDataType()

```
APC_SetDepthDataType (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short nValue)
```

set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting

## Parameters

|                    |                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                 |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                          |
| <i>unsigned</i>    | short nValue depth data type you want to set, see APC_DEPTH_DATA_xxx in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.147 APC\_SetDigitalGain()

```
int APC_SetDigitalGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float fGlobalGain)
```

set digital gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

## Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | fGlobalGain pointer of global gain value                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.148 APC\_SetExposureTime()

```
int APC_SetExposureTime (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float fExpTimeMS)
```

set exposure time of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

APC\_SetExposureTime( void \*pHandleEYSD, PDEVSELINFO pDevSelInfo, int nSensorMode, float fExpTimeMS)

## Parameters

|                    |                                                                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                               |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                        |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to set A is 0, B is 1, Both is 2                                                                                    |
| <i>float</i>       | fExpTimeMS pointer of setting exposure time in millisecond check sensor spec for detailed setting, we need pixel clock, pixel per line, V blank and exposure line |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.149 APC\_SetFWContinueMode()

```
APC_SetFWContinueMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool enable)
```

set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting

## Parameters

|                    |                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                  |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                           |
| <i>bool</i>        | enable enable/disable MIPI clock continue mode see APC_DEPTH_DATA_xxx in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.150 APC\_SetFWRegister()

```
int APC_SetFWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned short nValue,
 int flag)
```

set firmware register value

## Parameters

|                    |                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>    | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>    | short nValue register value to set                                                                                                                                                                                                          |
| <i>int</i>         | flag address and value data length(2 or 1 byte) ie FG_Address_1Byte   FG_Value_1Byte is 1 byte address and 1 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.151 APC\_SetGlobalGain()

```
int APC_SetGlobalGain (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nSensorMode,
 float fGlobalGain)
```

set global gain of ISP sensor setting the target sensor type was set in [APC\\_SetSensorTypeName\(\)](#)

## Parameters

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                            |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                     |
| <i>int</i>         | nSensorMode which sensor(sensor A, B or Both) to get A is 0, B is 1, Both is 2 |
| <i>float</i>       | fGlobalGain pointer of global gain value                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.152 APC\_SetHWRegister()

```
int APC_SetHWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned short nValue,
 int flag)
```

set hardware register

## Parameters

|                    |                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>    | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>    | short nValue register value to set                                                                                                                                                                                                          |
| <i>int</i>         | flag address and value data length(2 or 1 byte) ie FG_Address_1Byte   FG_Value_1Byte is 1 byte address and 1 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.153 APC\_SetHWVirtualChannel()

```
APC_SetHWVirtualChannel (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int channel)
```

set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting



## Parameters

|                    |                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                    |
| <i>int</i>         | channel Virtual Channel you want to set see APC_DEPTH_DATA_xxx in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.154 APC\_SetInterleaveMode()

```
APC_SetInterleaveMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool enable)
```

set depth data type, 11 bit for disparity data, 14 bit for Z data notice: only PUMA type IC can support this setting

## Parameters

|                    |                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                  |
| <i>bool</i>        | enable enable/disable interleave mode see APC_DEPTH_DATA_xxx in <a href="#">eSPDI_def.h</a> |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.155 APC\_SetIRMaxValue()

```
int APC_SetIRMaxValue (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short nValue)
```

get maximum IR value of camera module

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>unsigned</i>    | short nValue the IR maximum setting value  |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.156 APC\_SetIRMode()**

```
APC_SetIRMode (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short nValue)
```

enable or disable IRs

**Parameters**

|                    |                                                                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                 |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                          |
| <i>unsigned</i>    | short nValue 8 bit definition as below to turn on/off IR D[7:4]: Reserved D3: Channel 3 D2: Channel 2 D1: Channel 1 D0: Channel 0 1: Enable Channel 0: Disable Channel If want to control ch0 and ch1, ubMode[3:0] must set to 0x03 |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.157 APC\_SetLogData()**

```
int APC_SetLogData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 int index)
```

set log data to flash

**Parameters**

|                    |                                                          |
|--------------------|----------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                      |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index               |
| <i>BYTE</i>        | *buffer log data to set                                  |
| <i>int</i>         | BufferLength buffer length, must be 4096                 |
| <i>int</i>         | *pActualLength always return 4096                        |
| <i>int</i>         | index index to identify log data for corresponding depth |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.158 APC\_SetMultiBytesHWRegister()

```
int APC_SetMultiBytesHWRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short address,
 unsigned char * Data,
 int size,
 int flag)
```

set hardware register

## Parameters

|                    |                                                                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>unsigned</i>    | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>    | char *Data multiple-bytes register value to set                                                                                                                                                                                             |
| <i>int</i>         | size multiple-bytes register size                                                                                                                                                                                                           |
| <i>int</i>         | flag address and value data length(2 or 1 byte) ie FG_Address_1Byte   FG_Value_1Byte is 1 byte address and 1 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.159 APC\_SetPidVid()

```
int APC_SetPidVid (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned short * pPidBuf,
 unsigned short * pVidBuf)
```

set PID and VID to device

## Parameters

|                    |                                               |
|--------------------|-----------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index    |
| <i>unsigned</i>    | short *pPidBuf 4 byte PID value buffer to set |
| <i>unsigned</i>    | short *pVidBuf 4 byte VID value buffer to set |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.160 APC\_SetPUPropVal()**

```
int APC_SetPUPropVal (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 long int nValue)
```

set processing unit property value by v4l2\_control to set processing unit(PU) property value

**Parameters**

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                                                    |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                                             |
| <i>int</i>         | nId specifies the member of the property set see PU Property ID defined in <a href="#">eSPDI_def.h</a> |
| <i>int</i>         | nValue value to set                                                                                    |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.161 APC\_SetRectifyTable()**

```
int APC_SetRectifyTable (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 int index)
```

set rectify values to flash

**Parameters**

|                    |                                                                           |
|--------------------|---------------------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                                       |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                                |
| <i>BYTE</i>        | *buffer rectify values to set                                             |
| <i>int</i>         | BufferLength bufer length, must be 1024                                   |
| <i>int</i>         | *pActualLength always return 1024                                         |
| <i>int</i>         | index index(from 0 ~ 9) to identify rectify table for corresponding depth |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.162 APC\_SetRootCipher()**

```
int APC_SetRootCipher (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 const char * cipher)
```

enter root cipher

Set the correct root to do un-protect flash when writing parameters of camera.

**Parameters**

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>const</i>       | char* cipher cipher string                 |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**Parameters**

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>const</i>       | char* cipher root                                            |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.163 APC\_SetSensorRegister()**

```
int APC_SetSensorRegister (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int nId,
 unsigned short address,
 unsigned short nValue,
 int flag,
 SENSORMODE_INFO SensorMode)
```

set sensor register value

## Parameters

|                        |                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>            | *pHandleEYSD handle                                                                                                                                                                                                                         |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index                                                                                                                                                                                                  |
| <i>int</i>             | nId sensor slave address see Videodevice.h for sensor slave address setting                                                                                                                                                                 |
| <i>unsigned</i>        | short address register address                                                                                                                                                                                                              |
| <i>unsigned</i>        | short nValue value to set                                                                                                                                                                                                                   |
| <i>int</i>             | flag address and value data length(2 or 1 byte) ie FG_Address_1Byte   FG_Value_1Byte is 1 byte address and 1 byte value #define FG_Address_1Byte 0x01 #define FG_Address_2Byte 0x02 #define FG_Value_1Byte 0x10 #define FG_Value_2Byte 0x20 |
| <i>SENSORMODE_INFO</i> | SensorMode sensor mode(sensor A, B or Both) A is 0, B is 1, Both is 2                                                                                                                                                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.164 APC\_SetSensorTypeName()

```
int APC_SetSensorTypeName (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 SENSOR_TYPE_NAME stn)
```

set the sensor type you want to work on

## Parameters

|                         |                                            |
|-------------------------|--------------------------------------------|
| <i>void</i>             | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i>      | pDevSelInfo pointer of device select index |
| <i>SENSOR_TYPE_NAME</i> | stn which sensor you want to work on       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.165 APC\_SetSerialNumber()

```
int APC_SetSerialNumber (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pData,
 int nLen)
```

set serial number to device

## Parameters

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                                             |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                      |
| <i>BYTE</i>        | *pData pointer of buffer to store serial number, it is WildChar |
| <i>int</i>         | nLen pData length in byte                                       |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.166 APC\_Setup\_v4l2\_requestbuffers()

```
int APC_Setup_v4l2_requestbuffers (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int cnt)
```

Setup v4l2 request buffers, default = 4.

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>int</i>         | cnt Should be >= 0                         |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.167 APC\_SetupBlock()

```
int APC_SetupBlock (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 bool enable)
```

get color or depth pin image by issuing V4L2's IOCTL to get frame data

## Parameters

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>bool</i>        | enable Enable the Blocking mode or not)    |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.168 APC\_SetupHidGyro()**

```
int APC_SetupHidGyro (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * pCmdBuf,
 int cmdlength)
```

getting gyro data function

**Parameters**

|                    |                                              |
|--------------------|----------------------------------------------|
| <i>void*</i>       | pHandleEYSD handle                           |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index   |
| <i>unsigned</i>    | char *pGyroData pointer of Gyro Data Buffer. |
| <i>int</i>         | length Input buffer Length, shoul            |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.169 APC\_SetUserData()**

```
int APC_SetUserData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 USERDATA_SECTION_INDEX usi)
```

set user data to flash

**Parameters**

|                               |                                            |
|-------------------------------|--------------------------------------------|
| <i>void</i>                   | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i>            | pDevSelInfo pointer of device select index |
| <i>BYTE</i>                   | *buffer user buffer data to set            |
| <i>int</i>                    | BufferLength buffer length to write        |
| <i>USERDATA_SECTION_INDEX</i> | usi which user section data to set         |



**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.170 APC\_SetYOffset()**

```
int APC_SetYOffset (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 int index)
```

set Y offset values

**Parameters**

|                    |                                            |
|--------------------|--------------------------------------------|
| <i>void</i>        | *pHandleEYSD handle                        |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index |
| <i>BYTE</i>        | *buffer buffer data to set                 |
| <i>int</i>         | BufferLength buffer length                 |
| <i>int</i>         | *pActualLength always return 256           |
| <i>int</i>         | index index value to file ID 30            |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.171 APC\_SetZDTable()**

```
int APC_SetZDTable (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 BYTE * buffer,
 int BufferLength,
 int * pActualLength,
 PZDTABLEINFO pZDTableInfo)
```

set disparity and Z values to flash

**Parameters**

|                     |                                                                               |
|---------------------|-------------------------------------------------------------------------------|
| <i>void</i>         | *pHandleEYSD handle                                                           |
| <i>PDEVSELINFO</i>  | pDevSelInfo pointer of device select index                                    |
| <i>BYTE</i>         | *buffer ZD values to set                                                      |
| <i>int</i>          | BufferLength corresponding length of ZD table in buffer                       |
| <i>int</i>          | *pActualLength buffer length written to flash, should be same as BufferLength |
| <i>PZDTABLEINFO</i> | pZDTableInfo index and depth type of this ZD                                  |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.172 APC\_SubSample()**

```
int APC_SubSample (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char ** SubSample,
 unsigned char * depthBuf,
 int bytesPerPixel,
 int width,
 int height,
 int & new_width,
 int & new_height,
 int mode = 0,
 int factor = 3)
```

APC\_SubSample.

**Parameters**

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char **SubSample [TODO]                                      |
| <i>unsigned</i>    | char *depthBuf depth buffer pointer                          |
| <i>int</i>         | bytesPerPixel byte number of one pixel                       |
| <i>int</i>         | width depth width                                            |
| <i>int</i>         | height depth height                                          |
| <i>int&amp;</i>    | new_width new depth width                                    |
| <i>int&amp;</i>    | new_height new depth height                                  |
| <i>int</i>         | mode [TODO]                                                  |
| <i>int</i>         | factor [TODO]                                                |

**Returns**

success: APC\_OK, others: see [eSPDI\\_def.h](#)

**5.1.2.173 APC\_SwitchBaseline()**

```
int APC_SwitchBaseline (
 int index)
```

Swich the baseline index.

## Parameters

|            |                                                  |
|------------|--------------------------------------------------|
| <i>int</i> | index Baseline index 1: 30 mm 2: 60 mm 3: 150 mm |
|------------|--------------------------------------------------|

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.174 APC\_TableToData()

```
int APC_TableToData (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 int width,
 int height,
 int TableSize,
 unsigned short * Table,
 unsigned short * Src,
 unsigned short * Dst)
```

transfer Src to Dst by Table

## Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>int</i>         | width input image width                                      |
| <i>int</i>         | height input image height                                    |
| <i>int</i>         | TableSize input Table size in bytes                          |
| <i>unsigned</i>    | short *Table input Table buffer                              |
| <i>unsigned</i>    | short *Src input Src buffer                                  |
| <i>unsigned</i>    | short *Dst output Dst buffer                                 |

## Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.1.2.175 APC\_TemporalFilter()

```
int APC_TemporalFilter (
 void * pHandleEYSD,
 PDEVSELINFO pDevSelInfo,
 unsigned char * depthBuf,
 int bytesPerPixel,
 int width,
```

```

 int height,
 float alpha,
 int history)

```

APC\_TemporalFilter.

#### Parameters

|                    |                                                              |
|--------------------|--------------------------------------------------------------|
| <i>void</i>        | *pHandleEYSD the pointer to the initilized EYSD SDK instance |
| <i>PDEVSELINFO</i> | pDevSelInfo pointer of device select index                   |
| <i>unsigned</i>    | char* depthBuf depth buffer pointer                          |
| <i>int</i>         | bytesPerPixel byte number of one pixel                       |
| <i>int</i>         | width depth width                                            |
| <i>int</i>         | height depth height                                          |
| <i>float</i>       | alpha [TODO]                                                 |
| <i>int</i>         | history [TODO]                                               |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.176 APC\_WriteCmdFiFo()

```

int APC_WriteCmdFiFo (
 int FileDescription,
 unsigned char * pCmd,
 int len)

```

Write Cmd FiFo function.

#### Parameters

|                 |                                    |
|-----------------|------------------------------------|
| <i>int</i>      | FileDescription File description   |
| <i>unsigned</i> | char *pCmd Point to the cmd buffer |
| <i>int</i>      | lenIndicate the cmd length.        |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.177 APC\_WriteFlashData()

```

int APC_WriteFlashData (
 void * pHandleEYSD,

```

```

PDEVSELINFO pDevSelInfo,
FLASH_DATA_TYPE fdt,
BYTE * pBuffer,
unsigned long int BufferLength,
bool bIsDataVerify,
KEEP_DATA_CTRL kdc)

```

write firmware code(.bin) to flash The firmware code is the combination of boot loader, firmware body and plug-in data, also can keep original functions(Serial Number, Sensor Position, RectificationTable, ZD Table and CalibrationLog) on camera flash by KEEP\_DATA\_CTRL control

#### Parameters

|                        |                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <i>void</i>            | *pHandleEYSD CEronDI class                                                                                              |
| <i>PDEVSELINFO</i>     | pDevSelInfo pointer of device select index                                                                              |
| <i>FLASH_DATA_TYPE</i> | fdt segment type of flash be wrote                                                                                      |
| <i>BYTE</i>            | *pBuffer buffer of firmware code                                                                                        |
| <i>unsigned</i>        | long int BufferLength Buffer length to be wrote                                                                         |
| <i>BOOL</i>            | bIsDataVerify write data verification flag, if true this function will read data again and do a byte to byte comparison |
| <i>KEEP_DATA_CTRL</i>  | kdc keep function flags                                                                                                 |

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.178 APC\_WriteWaveEnd()

```

int APC_WriteWaveEnd (
 int fd,
 size_t length)

```

Modified Wave Header.

#### Parameters

|            |                        |
|------------|------------------------|
| <i>int</i> | fd wave file descript. |
|------------|------------------------|

#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

#### 5.1.2.179 APC\_WriteWaveHeader()

```

int APC_WriteWaveHeader (
 int fd)

```

Write Wave Header.

#### Parameters

|            |                        |
|------------|------------------------|
| <i>int</i> | fd wave file descript. |
|------------|------------------------|

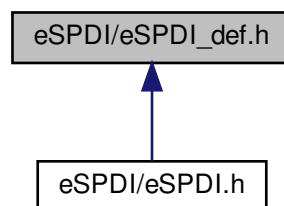
#### Returns

success: APC\_OK, others: see [eSPDI\\_def.h](#)

## 5.2 eSPDI/eSPDI\_def.h File Reference

error/data type definitions

This graph shows which files directly or indirectly include this file:



#### Classes

- struct [packet\\_s](#)
- struct [tagDEVINFORMATION](#)
- struct [POST\\_PROCESS\\_PARAMS](#)
- struct [DECIMATION\\_PARAMS](#)
- struct [tagDEVSEL](#)
- struct [tagAPC\\_STREAM\\_INFO](#)
- struct [tagZDTableInfo](#)
- struct [tagKEEP\\_DATA\\_CTRL](#)
- struct [eSPCtrl\\_RectLogData](#)
- struct [GyroTag](#)
- struct [AccelerationTag](#)
- struct [CompassTag](#)
- struct [APCImageType](#)
- struct [PointCloudInfo](#)

## Macros

- #define **MAX\_DEV\_COUNT** 20
- #define **MAX\_TOTAL\_DEV\_CONT** (MAX\_DEV\_COUNT \* 2 + MAX\_DEV\_COUNT)
- #define **SIMPLE\_DEV\_START\_IDX** (MAX\_TOTAL\_DEV\_CONT - (MAX\_DEV\_COUNT))
- #define **APC\_OK** 0
- #define **APC\_NoDevice** -1
- #define **APC\_NullPtr** -2
- #define **APC\_ErrBufLen** -3
- #define **APC\_Init\_Fail** -4
- #define **APC\_NoZDTable** -5
- #define **APC\_READFLASHFAIL** -6
- #define **APC\_WRITEFLASHFAIL** -7
- #define **APC\_VERIFY\_DATA\_FAIL** -8
- #define **APC\_KEEP\_DATA\_FAIL** -9
- #define **APC\_RECT\_DATA\_LEN\_FAIL** -10
- #define **APC\_RECT\_DATA\_PARSING\_FAIL** -11
- #define **APC\_RET\_BAD\_PARAM** -12
- #define **APC\_RET\_OPEN\_FILE\_FAIL** -13
- #define **APC\_NO\_CALIBRATION\_LOG** -14
- #define **APC\_POSTPROCESS\_INIT\_FAIL** -15
- #define **APC\_POSTPROCESS\_NOT\_INIT** -16
- #define **APC\_POSTPROCESS\_FRAME\_FAIL** -17
- #define **APC\_NotSupport** -18
- #define **APC\_GET\_RES\_LIST\_FAIL** -19
- #define **APC\_READ\_REG\_FAIL** -20
- #define **APC\_WRITE\_REG\_FAIL** -21
- #define **APC\_SET\_FPS\_FAIL** -22
- #define **APC\_VIDEO\_RENDER\_FAIL** -23
- #define **APC\_OPEN\_DEVICE\_FAIL** -24
- #define **APC\_FIND\_DEVICE\_FAIL** -25
- #define **APC\_GET\_IMAGE\_FAIL** -26
- #define **APC\_NOT\_SUPPORT\_RES** -27
- #define **APC\_CALLBACK\_REGISTER\_FAIL** -28
- #define **APC\_CLOSE\_DEVICE\_FAIL** -29
- #define **APC\_GET\_CALIBRATIONLOG\_FAIL** -30
- #define **APC\_SET\_CALIBRATIONLOG\_FAIL** -31
- #define **APC\_DEVICE\_NOT\_SUPPORT** -32
- #define **APC\_DEVICE\_BUSY** -33
- #define **APC\_DEVICE\_TIMEOUT** -34
- #define **APC\_IO\_SELECT\_EINTR** -35
- #define **APC\_IO\_SELECT\_ERROR** -36
- #define **APC\_ILLEGAL\_ANGLE** -40
- #define **APC\_ILLEGAL\_STEP** -41
- #define **APC\_ILLEGAL\_TIMEPERSTEP** -42
- #define **APC\_MOTOR\_RUNNING** -43
- #define **APC\_GETSENSORREG\_FAIL** -44
- #define **APC\_SETSENSORREG\_FAIL** -45
- #define **APC\_READ\_X\_AXIS\_FAIL** -46
- #define **APC\_READ\_Y\_AXIS\_FAIL** -47
- #define **APC\_READ\_Z\_AXIS\_FAIL** -48
- #define **APC\_READ\_PRESS\_DATA\_FAIL** -49
- #define **APC\_READ\_TEMPERATURE\_FAIL** -50
- #define **APC\_RETURNHOME\_RUNNING** -51
- #define **APC\_MOTOTSTOP\_BY\_HOME\_INDEX** -52

- #define **APC\_MOTOTSTOP\_BY\_PROTECT\_SCHEME** -53
- #define **APC\_MOTOTSTOP\_BY\_NORMAL** -54
- #define **APC\_ILLEGAL\_FIRMWARE\_VERSION** -55
- #define **APC\_ILLEGAL\_STEPPERTIME** -56
- #define **APC\_GET\_PU\_PROP\_VAL\_FAIL** -60
- #define **APC\_SET\_PU\_PROP\_VAL\_FAIL** -61
- #define **APC\_GET\_CT\_PROP\_VAL\_FAIL** -62
- #define **APC\_SET\_CT\_PROP\_VAL\_FAIL** -63
- #define **APC\_GET\_CT\_PROP\_RANGE\_STEP\_FAIL** -64
- #define **APC\_GET\_PU\_PROP\_RANGE\_STEP\_FAIL** -65
- #define **APC\_INVALID\_USERDATA** -70
- #define **APC\_MAP\_LUT\_FAIL** -71
- #define **APC\_APPEND\_TO\_FILE\_FRONT\_FAIL** -72
- #define **APC\_TOO\_MANY\_DEVICE** -80
- #define **APC\_ACCESS\_MP4\_EXTRA\_DATA\_FAIL** -81
- #define **BIT\_SET**(a, b) ((a) |= (1<<(b)))
- #define **BIT\_CLEAR**(a, b) ((a) &= ~(1<<(b)))
- #define **BIT\_FLIP**(a, b) ((a) ^= (1<<(b)))
- #define **BIT\_CHECK**(a, b) ((a) & (1<<(b)))
- #define **FG\_Address\_1Byte** 0x01
- #define **FG\_Address\_2Byte** 0x02
- #define **FG\_Value\_1Byte** 0x10
- #define **FG\_Value\_2Byte** 0x20
- #define **FG\_MULTI\_BYTE\_RW\_SELECTOR\_4** 0x200
- #define **EVENT\_BUFFER\_SHM\_COLOR** "/shm\_ring\_buffer\_color"
- #define **EVENT\_BUFFER\_SHM\_DEPTH** "/shm\_ring\_buffer\_depth"
- #define **EVENT\_BUFFER\_SHM** "/shm\_ring\_buffer"
- #define **CMD\_FIFO\_PATH** "/tmp/cmdfifo"
- #define **ZD\_PATH** "/tmp/zd\_addr"
- #define **RECTIFY\_LOG\_PATH** "/tmp/rectifylog\_addr"
- #define **SRB\_LENGTH** 10
- #define **CHIPID\_ADDR** 0xf014
- #define **SERIAL\_2BIT\_ADDR** 0xf0fe
- #define **APC\_DEPTH\_DATA\_OFF\_RAW** 0 /\* raw (depth off, only raw color) \*/
- #define **APC\_DEPTH\_DATA\_DEFAULT** APC\_DEPTH\_DATA\_OFF\_RAW /\* raw (depth off, only gray raw color) \*/
- #define **APC\_DEPTH\_DATA\_8\_BITS** 1 /\* rectify, 1 byte per pixel \*/
- #define **APC\_DEPTH\_DATA\_14\_BITS** 2 /\* rectify, 2 byte per pixel \*/
- #define **APC\_DEPTH\_DATA\_8\_BITS\_x80** 3 /\* rectify, 2 byte per pixel but using 1 byte only \*/
- #define **APC\_DEPTH\_DATA\_11\_BITS** 4 /\* rectify, 2 byte per pixel but using 11 bit only \*/
- #define **APC\_DEPTH\_DATA\_OFF\_RECTIFY** 5 /\* rectify (depth off, only rectify raw color) \*/
- #define **APC\_DEPTH\_DATA\_8\_BITS\_RAW** 6 /\* raw \*/
- #define **APC\_DEPTH\_DATA\_14\_BITS\_RAW** 7 /\* raw \*/
- #define **APC\_DEPTH\_DATA\_8\_BITS\_x80\_RAW** 8 /\* raw \*/
- #define **APC\_DEPTH\_DATA\_11\_BITS\_RAW** 9 /\* raw \*/
- #define **APC\_DEPTH\_DATA\_14\_BITS\_COMBINED\_RECTIFY** 11
- #define **APC\_DEPTH\_DATA\_11\_BITS\_COMBINED\_RECTIFY** 13
- #define **APC\_DEPTH\_DATA\_OFF\_BAYER\_RAW** 14
- #define **APC\_DEPTH\_DATA\_INTERLEAVE\_MODE\_OFFSET** 16
- #define **APC\_DEPTH\_DATA\_ILM\_OFF\_RAW** (APC\_DEPTH\_DATA\_OFF\_RAW + APC\_DEPTH\_DATA\_↵  
\_INTERLEAVE\_MODE\_OFFSET) /\* raw (depth off, only raw color) \*/
- #define **APC\_DEPTH\_DATA\_ILM\_DEFAULT** (APC\_DEPTH\_DATA\_DEFAULT + APC\_DEPTH\_DATA\_↵  
\_INTERLEAVE\_MODE\_OFFSET) /\* raw (depth off, only raw color) \*/
- #define **APC\_DEPTH\_DATA\_ILM\_8\_BITS** (APC\_DEPTH\_DATA\_8\_BITS + APC\_DEPTH\_DATA\_INTE↵  
RLEAVE\_MODE\_OFFSET) /\* rectify, 1 byte per pixel \*/



- `#define APC_DEPTH_DATA_ILM_14_BITS (APC_DEPTH_DATA_14_BITS + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel */`
- `#define APC_DEPTH_DATA_ILM_8_BITS_x80 (APC_DEPTH_DATA_8_BITS_x80 + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel but using 1 byte only */`
- `#define APC_DEPTH_DATA_ILM_11_BITS (APC_DEPTH_DATA_11_BITS + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel but using 11 bit only */`
- `#define APC_DEPTH_DATA_ILM_OFF_RECTIFY (APC_DEPTH_DATA_OFF_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify (depth off, only rectify color) */`
- `#define APC_DEPTH_DATA_ILM_8_BITS_RAW (APC_DEPTH_DATA_8_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_ILM_14_BITS_RAW (APC_DEPTH_DATA_14_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_ILM_8_BITS_x80_RAW (APC_DEPTH_DATA_8_BITS_x80_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_ILM_11_BITS_RAW (APC_DEPTH_DATA_11_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_ILM_14_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_14_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET)`
- `#define APC_DEPTH_DATA_ILM_11_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_11_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET)`
- `#define APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET 32`
- `#define APC_DEPTH_DATA_SCALE_DOWN_OFF_RAW (APC_DEPTH_DATA_SCALE_DOWN_OFF_RAW + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw (depth off, only raw color) */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_DEFAULT (APC_DEPTH_DATA_SCALE_DOWN_DEFAULT + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw (depth off, only raw color) */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_8_BITS (APC_DEPTH_DATA_8_BITS + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* rectify, 1 byte per pixel */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_14_BITS (APC_DEPTH_DATA_14_BITS + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* rectify, 2 byte per pixel */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_8_BITS_x80 (APC_DEPTH_DATA_8_BITS_x80 + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* rectify, 2 byte per pixel but using 1 byte only */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_11_BITS (APC_DEPTH_DATA_11_BITS + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* rectify, 2 byte per pixel but using 11 bit only */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_OFF_RECTIFY (APC_DEPTH_DATA_SCALE_DOWN_OFF_RECTIFY + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* Rule 0.4b Reserved unused in any firmware */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_8_BITS_RAW (APC_DEPTH_DATA_8_BITS_RAW + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_14_BITS_RAW (APC_DEPTH_DATA_14_BITS_RAW + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_8_BITS_x80_RAW (APC_DEPTH_DATA_8_BITS_x80_RAW + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_11_BITS_RAW (APC_DEPTH_DATA_11_BITS_RAW + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_14_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_14_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* Rule 0.4b Reserved unused in any firmware */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_11_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_11_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_SCALE_DOWN_MODE_OFFSET) /* Rule 0.4b Reserved unused in any firmware */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_OFF_RAW (APC_DEPTH_DATA_SCALE_DOWN_OFF_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw (depth off, only raw color) */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_DEFAULT (APC_DEPTH_DATA_SCALE_DOWN_DEFAULT + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw (depth off, only raw color) */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_8_BITS (APC_DEPTH_DATA_SCALE_DOWN_8_BITS + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 1 byte per pixel */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_14_BITS (APC_DEPTH_DATA_SCALE_DOWN_14_BITS + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel */`

- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_8_BITS_x80 (APC_DEPTH_DATA_SCALE_DOWN_8_BITS_x80 + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel but using 1 byte only */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_11_BITS (APC_DEPTH_DATA_SCALE_DOWN_11_BITS + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify, 2 byte per pixel but using 11 bit only */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_OFF_RECTIFY (APC_DEPTH_DATA_SCALE_DOWN_OFF_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* rectify (depth off, only rectify color) */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_8_BITS_RAW (APC_DEPTH_DATA_SCALE_DOWN_8_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_14_BITS_RAW (APC_DEPTH_DATA_SCALE_DOWN_14_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_8_BITS_x80_RAW (APC_DEPTH_DATA_SCALE_DOWN_8_BITS_x80_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_11_BITS_RAW (APC_DEPTH_DATA_SCALE_DOWN_11_BITS_RAW + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET) /* raw */`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_14_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_SCALE_DOWN_14_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET)`
- `#define APC_DEPTH_DATA_SCALE_DOWN_ILM_11_BITS_COMBINED_RECTIFY (APC_DEPTH_DATA_SCALE_DOWN_11_BITS_COMBINED_RECTIFY + APC_DEPTH_DATA_INTERLEAVE_MODE_OFFSET)`
- `#define APC_READ_FLASH_TOTAL_SIZE 128`
- `#define APC_READ_FLASH_FW_PLUGIN_SIZE 104`
- `#define APC_WRITE_FLASH_TOTAL_SIZE 128`
- `#define APC_Y_OFFSET_FILE_ID_0 30`
- `#define APC_Y_OFFSET_FILE_SIZE 256`
- `#define APC_RECTIFY_FILE_ID_0 40`
- `#define APC_RECTIFY_FILE_SIZE 1024`
- `#define APC_ZD_TABLE_FILE_ID_0 50`
- `#define APC_ZD_TABLE_FILE_SIZE_8_BITS 512`
- `#define APC_ZD_TABLE_FILE_SIZE_11_BITS 4096`
- `#define APC_CALIB_LOG_FILE_ID_0 240`
- `#define APC_CALIB_LOG_FILE_SIZE 4096`
- `#define APC_USER_DATA_FILE_ID_0 200`
- `#define APC_USER_DATA_FILE_SIZE_0 1024`
- `#define APC_USER_DATA_FILE_SIZE_1 4096`
- `#define APC_BACKUP_USER_DATA_FILE_ID 201`
- `#define APC_BACKUP_USER_DATA_SIZE 1024`
- `#define APC_PID_8029 0x0568`
- `#define APC_PID_8030 APC_PID_8029`
- `#define APC_PID_8039 APC_PID_8029`
- `#define APC_PID_8031 0x0117`
- `#define APC_PID_8032 0x0118`
- `#define APC_PID_8036 0x0120`
- `#define APC_PID_8037 0x0121`
- `#define APC_PID_8038 0x0124`
- `#define APC_PID_8038_M0 APC_PID_8038`
- `#define APC_PID_8038_M1 0x0147`
- `#define APC_PID_8040W 0x0130`
- `#define APC_PID_8040S 0x0131`
- `#define APC_PID_8040S_K 0x0149`
- `#define APC_PID_8041 0x0126`
- `#define APC_PID_8042 0x0127`

- #define **APC\_PID\_8043** 0x0128
- #define **APC\_PID\_8044** 0x0129
- #define **APC\_PID\_8045K** 0x0134
- #define **APC\_PID\_8046K** 0x0135
- #define **APC\_PID\_8051** 0x0136
- #define **APC\_PID\_8052** 0x0137
- #define **APC\_PID\_8053** 0x0138
- #define **APC\_PID\_8054** 0x0139
- #define **APC\_PID\_8054\_K** 0x0143
- #define **APC\_PID\_8059** 0x0146
- #define **APC\_PID\_8060** 0x0152
- #define **APC\_PID\_8060\_K** 0x0150
- #define **APC\_PID\_8060\_T** 0x0151
- #define **APC\_PID\_AMBER** 0x0112
- #define **APC\_PID\_SALLY** 0x0158
- #define **APC\_PID\_HYPATIA** 0x0160
- #define **APC\_PID\_HYPATIA2** 0x0173
- #define **APC\_PID\_8062** 0x0162
- #define **APC\_PID\_8063** 0x0164
- #define **APC\_PID\_8063\_K** 0x0165
- #define **APC\_PID\_8076** 0x0181
- #define **APC\_PID\_80362** APC\_PID\_8076
- #define **APC\_PID\_8077** 0x0182
- #define **APC\_PID\_8081** 0x0183
- #define **APC\_PID\_IRIS** 0x0184
- #define **APC\_PID\_IVY** 0x0177
- #define **APC\_PID\_IVY2** 0x0191
- #define **APC\_PID\_IVY2\_S** 0x0195
- #define **APC\_PID\_GRAP** 0x0179
- #define **APC\_PID\_GRAP\_K** 0x0000
- #define **APC\_PID\_GRAP\_SLAVE** 0x0279
- #define **APC\_PID\_GRAP\_SLAVE\_K** 0x0283
- #define **APC\_PID\_BOOTLOADER** 0x0668
- #define **APC\_PID\_GRAP\_THERMAL** 0xf9f9
- #define **APC\_PID\_GRAP\_THERMAL2** 0xf8f8
- #define **APC\_PID\_MIPI\_8036** (APC\_PID\_8036 | 0xf000)
- #define **APC\_PID\_NORA** 0x0168
- #define **APC\_PID\_HELEN** 0x0171
- #define **APC\_PID\_SANDRA** 0x0167
- #define **APC\_VID\_GRAP\_THERMAL** 0x04b4
- #define **APC\_VID\_2170** 0x0110
- #define **APC\_VID\_EEVER** 0x1e4e
- #define **APC\_VID\_EYS3D** 0x3438
- #define **CT\_PROPERTY\_ID** 1
- #define **PU\_PROPERTY\_ID** 3
- #define **CT\_PROPERTY\_ID\_AUTO\_EXPOSURE\_MODE\_CTRL** 0
- #define **CT\_PROPERTY\_ID\_AUTO\_EXPOSURE\_PRIORITY\_CTRL** 1
- #define **CT\_PROPERTY\_ID\_EXPOSURE\_TIME\_ABSOLUTE\_CTRL** 2
- #define **CT\_PROPERTY\_ID\_EXPOSURE\_TIME\_RELATIVE\_CTRL** 3
- #define **CT\_PROPERTY\_ID\_FOCUS\_ABSOLUTE\_CTRL** 4
- #define **CT\_PROPERTY\_ID\_FOCUS\_RELATIVE\_CTRL** 5
- #define **CT\_PROPERTY\_ID\_FOCUS\_AUTO\_CTRL** 6
- #define **CT\_PROPERTY\_ID\_IRIS\_ABSOLUTE\_CTRL** 7
- #define **CT\_PROPERTY\_ID\_IRIS\_RELATIVE\_CTRL** 8
- #define **CT\_PROPERTY\_ID\_ZOOM\_ABSOLUTE\_CTRL** 9

- #define CT\_PROPERTY\_ID\_ZOOM\_RELATIVE\_CTRL 10
- #define CT\_PROPERTY\_ID\_PAN\_ABSOLUTE\_CTRL 11
- #define CT\_PROPERTY\_ID\_PAN\_RELATIVE\_CTRL 12
- #define CT\_PROPERTY\_ID\_TILT\_ABSOLUTE\_CTRL 13
- #define CT\_PROPERTY\_ID\_TILT\_RELATIVE\_CTRL 14
- #define CT\_PROPERTY\_ID\_PRIVACY\_CTRL 15
- #define PU\_PROPERTY\_ID\_BACKLIGHT\_COMPENSATION\_CTRL 0
- #define PU\_PROPERTY\_ID\_BRIGHTNESS\_CTRL 1
- #define PU\_PROPERTY\_ID\_CONTRAST\_CTRL 2
- #define PU\_PROPERTY\_ID\_GAIN\_CTRL 3
- #define PU\_PROPERTY\_ID\_POWER\_LINE\_FREQUENCY\_CTRL 4
- #define PU\_PROPERTY\_ID\_HUE\_CTRL 5
- #define PU\_PROPERTY\_ID\_HUE\_AUTO\_CTRL 6
- #define PU\_PROPERTY\_ID\_SATURATION\_CTRL 7
- #define PU\_PROPERTY\_ID\_SHARPNESS\_CTRL 8
- #define PU\_PROPERTY\_ID\_GAMMA\_CTRL 9
- #define PU\_PROPERTY\_ID\_WHITE\_BALANCE\_CTRL 10
- #define PU\_PROPERTY\_ID\_WHITE\_BALANCE\_AUTO\_CTRL 11
- #define AE\_MOD\_MANUAL\_MODE 0x01
- #define AE\_MOD\_AUTO\_MODE 0x02
- #define AE\_MOD\_SHUTTER\_PRIORITY\_MODE 0x04
- #define AE\_MOD\_APERTURE\_PRIORITY\_MODE 0x08
- #define PU\_PROPERTY\_ID\_AWB\_DISABLE 0
- #define PU\_PROPERTY\_ID\_AWB\_ENABLE 1
- #define POSTPAR\_HR\_MODE 5
- #define POSTPAR\_HR\_CURVE\_0 6
- #define POSTPAR\_HR\_CURVE\_1 7
- #define POSTPAR\_HR\_CURVE\_2 8
- #define POSTPAR\_HR\_CURVE\_3 9
- #define POSTPAR\_HR\_CURVE\_4 10
- #define POSTPAR\_HR\_CURVE\_5 11
- #define POSTPAR\_HR\_CURVE\_6 12
- #define POSTPAR\_HR\_CURVE\_7 13
- #define POSTPAR\_HR\_CURVE\_8 14
- #define POSTPAR\_HF\_MODE 17
- #define POSTPAR\_DC\_MODE 20
- #define POSTPAR\_DC\_CNT\_THD 21
- #define POSTPAR\_DC\_GRAD\_THD 22
- #define POSTPAR\_SEG\_MODE 23
- #define POSTPAR\_SEG\_THD\_SUB 24
- #define POSTPAR\_SEG\_THD\_SLP 25
- #define POSTPAR\_SEG\_THD\_MAX 26
- #define POSTPAR\_SEG\_THD\_MIN 27
- #define POSTPAR\_SEG\_FILL\_MODE 28
- #define POSTPAR\_HF2\_MODE 31
- #define POSTPAR\_GRAD\_MODE 34
- #define POSTPAR\_TEMP0\_MODE 37
- #define POSTPAR\_TEMP0\_THD 38
- #define POSTPAR\_TEMP1\_MODE 41
- #define POSTPAR\_TEMP1\_LEVEL 42
- #define POSTPAR\_TEMP1\_THD 43
- #define POSTPAR\_FC\_MODE 46
- #define POSTPAR\_FC\_EDGE\_THD 47
- #define POSTPAR\_FC\_AREA\_THD 48
- #define POSTPAR\_MF\_MODE 51
- #define POSTPAR\_ZM\_MODE 52
- #define POSTPAR\_RF\_MODE 53
- #define POSTPAR\_RF\_LEVEL 54

## Typedefs

- typedef unsigned char **BYTE**
- typedef signed int **BOOL**
- typedef unsigned short **WORD**
- typedef struct [packet\\_s](#) **srb\_packet\_s**
- typedef struct [tagDEVINFORMATION](#) **DEVINFORMATION**
- typedef struct [tagDEVINFORMATION](#) \* **PDEVINFORMATION**
- typedef struct [tagDEVSEL](#) **DEVSELINFO**
- typedef struct [tagDEVSEL](#) \* **PDEVSELINFO**
- typedef struct [tagAPC\\_STREAM\\_INFO](#) **APC\_STREAM\_INFO**
- typedef struct [tagAPC\\_STREAM\\_INFO](#) \* **PAPC\_STREAM\_INFO**
- typedef struct [tagZDTableInfo](#) **ZDTABLEINFO**
- typedef struct [tagZDTableInfo](#) \* **PZDTABLEINFO**
- typedef struct [tagKEEP\\_DATA\\_CTRL](#) **KEEP\_DATA\_CTRL**
- typedef enum **AE\_STATUS** \* **PAE\_STATUS**
- typedef enum **AWB\_STATUS** \* **PAWB\_STATUS**
- typedef struct [eSPCtrl\\_RectLogData](#) **eSPCtrl\_RectLogData**
- typedef struct [GyroTag](#) **GYRO\_ANGULAR\_RATE\_DATA**
- typedef struct [AccelerationTag](#) **ACCELERATION\_DATA**
- typedef struct [CompassTag](#) **COMPASS\_DATA**

## Enumerations

- enum **SENSORMODE\_INFO** {  
  **SENSOR\_A** = 0, **SENSOR\_B**, **SENSOR\_BOTH**, **SENSOR\_C**,  
  **SENSOR\_D** }
- enum **PIXEL\_FMT** {  
  **YUV22\_UYVY\_PIXEL\_FMT** = 0, **YUV22\_UYVY\_PIXEL\_FMT**, **RAW10\_GBRG\_PIXEL\_FMT**, **RAW10\_BGRG\_PIXEL\_FMT**,  
  **RAW10\_RGBG\_PIXEL\_FMT**, **RAW10\_GRBG\_PIXEL\_FMT**, **MJPEG\_PIXEL\_FMT**, **UNKOWN\_PIXEL\_FMT** = 0xffff }
- enum **DEVICE\_TYPE** {  
  **OTHERS** = 0, **AXES1**, **PUMA**, **KIWI**,  
  **PLUM**, **UNKNOWN\_DEVICE\_TYPE** = 0xffff }
- enum **FLASH\_DATA\_TYPE** {  
  **Total** = 0, **FW\_PLUGIN**, **BOOTLOADER\_ONLY**, **FW\_ONLY**,  
  **PLUGIN\_ONLY**, **UNP** }
- enum **USERDATA\_SECTION\_INDEX** {  
  **USERDATA\_SECTION\_0** = 0, **USERDATA\_SECTION\_1**, **USERDATA\_SECTION\_2**, **USERDATA\_SECTION\_3**,  
  **USERDATA\_SECTION\_4**, **USERDATA\_SECTION\_5**, **USERDATA\_SECTION\_6**, **USERDATA\_SECTION\_7**,  
  **USERDATA\_SECTION\_8**, **USERDATA\_SECTION\_9** }
- enum **CALIBRATION\_LOG\_TYPE** {  
  **ALL\_LOG** = 0, **SERIAL\_NUMBER**, **PRJFILE\_LOG**, **STAGE\_TIME\_RESULT\_LOG**,  
  **SENSOR\_OFFSET**, **AUTO\_ADJUST\_LOG**, **RECTIFY\_LOG**, **ZD\_LOG**,  
  **DEPTHMAP\_KOG** }
- enum **CONTROL\_MODE** { **IMAGE\_SN\_NONSYNC** = 0, **IMAGE\_SN\_SYNC**, **IMAGE\_NORECTIFY\_DATA** = 100, **IMAGE\_RECTIFY\_DATA** }
- enum **DEPTH\_TRANSFER\_CTRL** { **DEPTH\_IMG\_NON\_TRANSFER**, **DEPTH\_IMG\_GRAY\_TRANSFER**, **DEPTH\_IMG\_COLORFUL\_TRANSFER** }

- enum **SENSOR\_TYPE\_NAME** {  
**APC\_SENSOR\_TYPE\_H22** = 0, **APC\_SENSOR\_TYPE\_H65** = 1, **APC\_SENSOR\_TYPE\_OV7740** = 2, **APC\_SENSOR\_TYPE\_AR0134** = 3,  
**APC\_SENSOR\_TYPE\_AR0135** = 4, **APC\_SENSOR\_TYPE\_AR0144** = 5, **APC\_SENSOR\_TYPE\_AR0330** = 6, **APC\_SENSOR\_TYPE\_AR0522** = 7,  
**APC\_SENSOR\_TYPE\_AR1335** = 8, **APC\_SENSOR\_TYPE\_OV9714** = 9, **APC\_SENSOR\_TYPE\_OV9282** = 10, **APC\_SENSOR\_TYPE\_H68** = 11,  
**APC\_SENSOR\_TYPE\_OV2740** = 12, **APC\_SENSOR\_TYPE\_OC0SA10** = 13, **APC\_SENSOR\_TYPE\_VD56G3** = 14, **APC\_SENSOR\_TYPE\_VD66GY** = 15,  
**APC\_SENSOR\_TYPE\_UNKOWN** = 0xffff }
- enum **AE\_STATUS** { **AE\_ENABLE** = 0, **AE\_DISABLE** }
- enum **AWB\_STATUS** { **AWB\_ENABLE** = 0, **AWB\_DISABLE** }
- enum **USB\_PORT\_TYPE** { **USB\_PORT\_TYPE\_2\_0** = 2, **USB\_PORT\_TYPE\_3\_0**, **MIPI\_PORT\_TYPE**, **USB\_PORT\_TYPE\_UNKNOW** }
- enum **SENSITIVITY\_LEVEL\_L3G** { **DPS\_245** = 0, **DPS\_500**, **DPS\_2000** }
- enum **SENSITIVITY\_LEVEL\_LSM** {  
**\_2G** = 0, **\_4G**, **\_6G**, **\_8G**,  
**\_16G** }
- enum **OUTPUT\_DATA\_RATE** {  
**One\_Shot** = 0, **\_1\_HZ\_1\_HZ**, **\_7\_HZ\_1\_HZ**, **\_12\_5\_HZ\_1HZ**,  
**\_25\_HZ\_1\_HZ**, **\_7\_HZ\_7\_HZ**, **\_12\_5\_HZ\_12\_5\_HZ**, **\_25\_HZ\_25\_HZ** }
- enum **POWER\_STATE** { **POWER\_ON** = 0, **POWER\_OFF** }
- enum **BRIGHTNESS\_LEVEL** {  
**LEVEL\_0** = 0, **LEVEL\_1**, **LEVEL\_2**, **LEVEL\_3**,  
**LEVEL\_4**, **LEVEL\_5**, **LEVEL\_6**, **LEVEL\_7**,  
**LEVEL\_8**, **LEVEL\_9**, **LEVEL\_10**, **LEVEL\_11**,  
**LEVEL\_12**, **LEVEL\_13**, **LEVEL\_14**, **LEVEL\_15** }

### 5.2.1 Detailed Description

error/data type definitions

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# Index

APC\_ApplyFilters  
    eSPDI.h, [27](#)

APC\_CloseCmdFiFo  
    eSPDI.h, [28](#)

APC\_CloseDevice  
    eSPDI.h, [28](#)

APC\_CloseDeviceEx  
    eSPDI.h, [29](#)

APC\_CloseDeviceMBL  
    eSPDI.h, [29](#)

APC\_ColorFormat\_to\_RGB24  
    eSPDI.h, [30](#)

APC\_Convert\_Depth\_Y\_To\_Buffer  
    eSPDI.h, [30](#)

APC\_Convert\_Depth\_Y\_To\_Buffer\_offset  
    eSPDI.h, [31](#)

APC\_CreateSwPostProc  
    eSPDI.h, [31](#)

APC\_DecimationFilter  
    eSPDI.h, [32](#)

APC\_DecryptMP4  
    eSPDI.h, [32](#)

APC\_DecryptString  
    eSPDI.h, [33](#)

APC\_DepthMerge  
    eSPDI.h, [33](#)

APC\_DisableAWB  
    eSPDI.h, [35](#)

APC\_DisableAE  
    eSPDI.h, [34](#)

APC\_DoFusion  
    eSPDI.h, [35](#)

APC\_DoSwPostProc  
    eSPDI.h, [36](#)

APC\_EdgePreServingFilter  
    eSPDI.h, [36](#)

APC\_EnableAWB  
    eSPDI.h, [37](#)

APC\_EnableAE  
    eSPDI.h, [37](#)

APC\_EnableGPUAcceleration  
    eSPDI.h, [38](#)

APC\_EnableInterleave  
    eSPDI.h, [38](#)

APC\_EnableSensorIF  
    eSPDI.h, [39](#)

APC\_EncryptMP4  
    eSPDI.h, [39](#)

APC\_EncryptString  
    eSPDI.h, [40](#)

APC\_FindDevice  
    eSPDI.h, [40](#)

APC\_FlyingDepthCancellation\_D11  
    eSPDI.h, [41](#)

APC\_FlyingDepthCancellation\_D8  
    eSPDI.h, [41](#)

APC\_GenerateLutFile  
    eSPDI.h, [42](#)

APC\_Get2Image  
    eSPDI.h, [42](#)

APC\_Get\_150\_mm\_depth  
    eSPDI.h, [43](#)

APC\_Get\_60\_mm\_depth  
    eSPDI.h, [43](#)

APC\_Get\_Color\_30\_mm\_depth  
    eSPDI.h, [44](#)

APC\_GetAESTatus  
    eSPDI.h, [45](#)

APC\_GetAWBStatus  
    eSPDI.h, [46](#)

APC\_GetAccMeterValue  
    eSPDI.h, [44](#)

APC\_GetAnalogGain  
    eSPDI.h, [45](#)

APC\_GetAutoExposureMode  
    eSPDI.h, [46](#)

APC\_GetBusInfo  
    eSPDI.h, [47](#)

APC\_GetCTPropVal  
    eSPDI.h, [50](#)

APC\_GetCTRRangeAndStep  
    eSPDI.h, [50](#)

APC\_GetColorGain  
    eSPDI.h, [47](#)

APC\_GetColorImage  
    eSPDI.h, [48](#)

APC\_GetColorImageWithTimestamp  
    eSPDI.h, [48](#)

APC\_GetCompositeDevSelectIndex  
    eSPDI.h, [49](#)

APC\_GetControlCounterMode  
    eSPDI.h, [49](#)

APC\_GetCurrentIRValue  
    eSPDI.h, [51](#)

APC\_GetDepthDataType  
    eSPDI.h, [52](#)

APC\_GetDepthImage  
    eSPDI.h, [52](#)

APC\_GetDepthImageWithTimestamp  
eSPDI.h, [53](#)

APC\_GetDeviceInfo  
eSPDI.h, [53](#)

APC\_GetDeviceInfoMBL\_15cm  
eSPDI.h, [54](#)

APC\_GetDeviceNumber  
eSPDI.h, [54](#)

APC\_GetDeviceResolutionList  
eSPDI.h, [54](#)

APC\_GetDigitalGain  
eSPDI.h, [55](#)

APC\_GetExposureTime  
eSPDI.h, [55](#)

APC\_GetFWContinueMode  
eSPDI.h, [57](#)

APC\_GetFWRegister  
eSPDI.h, [57](#)

APC\_GetFlexibleGyroData  
eSPDI.h, [56](#)

APC\_GetFlexibleGyroLength  
eSPDI.h, [56](#)

APC\_GetFwVersion  
eSPDI.h, [58](#)

APC\_GetGlobalGain  
eSPDI.h, [58](#)

APC\_GetHWContinueMode  
eSPDI.h, [59](#)

APC\_GetHWRegister  
eSPDI.h, [59](#)

APC\_GetHidGyro  
eSPDI.h, [59](#)

APC\_GetIRMaxValue  
eSPDI.h, [62](#)

APC\_GetIRMinValue  
eSPDI.h, [62](#)

APC\_GetIRMode  
eSPDI.h, [63](#)

APC\_GetImage  
eSPDI.h, [60](#)

APC\_GetImageInterrupt  
eSPDI.h, [61](#)

APC\_GetInfoHidGyro  
eSPDI.h, [61](#)

APC\_GetInterleaveMode  
eSPDI.h, [61](#)

APC\_GetLogData  
eSPDI.h, [63](#)

APC\_GetLutData  
eSPDI.h, [64](#)

APC\_GetMultiBytesHWRegister  
eSPDI.h, [64](#)

APC\_GetPUPPropVal  
eSPDI.h, [66](#)

APC\_GetPURangeAndStep  
eSPDI.h, [67](#)

APC\_GetPidVid  
eSPDI.h, [65](#)

APC\_GetPointCloud  
eSPDI.h, [65](#)

APC\_GetRectifyLogData  
eSPDI.h, [67](#)

APC\_GetRectifyMatLogData  
eSPDI.h, [68](#)

APC\_GetRectifyTable  
eSPDI.h, [68](#)

APC\_GetSRB  
eSPDI.h, [72](#)

APC\_GetSensorRegister  
eSPDI.h, [70](#)

APC\_GetSerialNumber  
eSPDI.h, [70](#)

APC\_GetSimpleDevSelectIndex  
eSPDI.h, [71](#)

APC\_GetSimpleDeviceNumber  
eSPDI.h, [71](#)

APC\_GetThermalFD  
eSPDI.h, [72](#)

APC\_GetUACData  
eSPDI.h, [72](#)

APC\_GetUserData  
eSPDI.h, [73](#)

APC\_GetYOffset  
eSPDI.h, [74](#)

APC\_GetZDTable  
eSPDI.h, [74](#)

APC\_HoleFill  
eSPDI.h, [75](#)

APC\_HoleFilled  
eSPDI.h, [75](#)

APC\_ImgMirro  
eSPDI.h, [76](#)

APC\_Init  
eSPDI.h, [77](#)

APC\_InitDecimationFilter  
eSPDI.h, [77](#)

APC\_InitPostProcess  
eSPDI.h, [80](#)

APC\_InitPostProcessCustomParameter  
eSPDI.h, [80](#)

APC\_InitResizeProcess  
eSPDI.h, [81](#)

APC\_InitSRB  
eSPDI.h, [81](#)

APC\_InitialCmdFiFo  
eSPDI.h, [78](#)

APC\_InitialFlexibleGyro  
eSPDI.h, [78](#)

APC\_InitialHidGyro  
eSPDI.h, [79](#)

APC\_InitialUAC  
eSPDI.h, [79](#)

APC\_InjectExtraDataToMp4  
eSPDI.h, [82](#)

APC\_IsInterleaveDevice  
eSPDI.h, [82](#)



APC\_IsMLBaseLine  
  eSPDI.h, [82](#)

APC\_OpenDevice  
  eSPDI.h, [83](#)

APC\_OpenDevice2  
  eSPDI.h, [84](#)

APC\_OpenDeviceMBL  
  eSPDI.h, [85](#)

APC\_PostProcess  
  eSPDI.h, [86](#)

APC\_PutSRB  
  eSPDI.h, [86](#)

APC\_RGB2BMP  
  eSPDI.h, [92](#)

APC\_ReadCmdFiFo  
  eSPDI.h, [87](#)

APC\_ReadFlashData  
  eSPDI.h, [87](#)

APC\_RefreshDevice  
  eSPDI.h, [88](#)

APC\_Release  
  eSPDI.h, [88](#)

APC\_ReleaseDecimationFilter  
  eSPDI.h, [88](#)

APC\_ReleaseFlexibleGyro  
  eSPDI.h, [89](#)

APC\_ReleaseHidGyro  
  eSPDI.h, [89](#)

APC\_ReleasePostProcess  
  eSPDI.h, [89](#)

APC\_ReleaseSwPostProc  
  eSPDI.h, [90](#)

APC\_ReleaseUAC  
  eSPDI.h, [90](#)

APC\_ResetFilters  
  eSPDI.h, [90](#)

APC\_ResetUNPData  
  eSPDI.h, [91](#)

APC\_ResizeImgToHalf  
  eSPDI.h, [91](#)

APC\_RetrieveExtraDataFromMp4  
  eSPDI.h, [91](#)

APC\_RotateImg180  
  eSPDI.h, [92](#), [93](#)

APC\_RotateImg90  
  eSPDI.h, [94](#)

APC\_SaveLutData  
  eSPDI.h, [95](#)

APC\_SelectDevice  
  eSPDI.h, [95](#)

APC\_SetAETarget  
  eSPDI.h, [95](#)

APC\_SetAnalogGain  
  eSPDI.h, [96](#)

APC\_SetAutoExposureMode  
  eSPDI.h, [97](#)

APC\_SetCTPropVal  
  eSPDI.h, [98](#)

APC\_SetColorGain  
  eSPDI.h, [97](#)

APC\_SetControlCounterMode  
  eSPDI.h, [98](#)

APC\_SetCurrentIRValue  
  eSPDI.h, [98](#)

APC\_SetDepthDataType  
  eSPDI.h, [99](#)

APC\_SetDigitalGain  
  eSPDI.h, [99](#)

APC\_SetExposureTime  
  eSPDI.h, [100](#)

APC\_SetFWContinueMode  
  eSPDI.h, [100](#)

APC\_SetFWRegister  
  eSPDI.h, [101](#)

APC\_SetGlobalGain  
  eSPDI.h, [101](#)

APC\_SetHWRegister  
  eSPDI.h, [102](#)

APC\_SetHWVirtualChannel  
  eSPDI.h, [102](#)

APC\_SetIRMaxValue  
  eSPDI.h, [103](#)

APC\_SetIRMode  
  eSPDI.h, [104](#)

APC\_SetInterleaveMode  
  eSPDI.h, [103](#)

APC\_SetLogData  
  eSPDI.h, [104](#)

APC\_SetMultiBytesHWRegister  
  eSPDI.h, [105](#)

APC\_SetPUPPropVal  
  eSPDI.h, [106](#)

APC\_SetPidVid  
  eSPDI.h, [105](#)

APC\_SetRectifyTable  
  eSPDI.h, [106](#)

APC\_SetRootCipher  
  eSPDI.h, [107](#)

APC\_SetSensorRegister  
  eSPDI.h, [107](#)

APC\_SetSensorTypeName  
  eSPDI.h, [108](#)

APC\_SetSerialNumber  
  eSPDI.h, [108](#)

APC\_SetUserData  
  eSPDI.h, [110](#)

APC\_SetYOffset  
  eSPDI.h, [111](#)

APC\_SetZDTable  
  eSPDI.h, [111](#)

APC\_Setup\_v4l2\_requestbuffers  
  eSPDI.h, [109](#)

APC\_SetupBlock  
  eSPDI.h, [109](#)

APC\_SetupHidGyro  
  eSPDI.h, [110](#)

- APC\_SubSample
  - eSPDI.h, [112](#)
- APC\_SwitchBaseline
  - eSPDI.h, [112](#)
- APC\_TableToData
  - eSPDI.h, [113](#)
- APC\_TemporalFilter
  - eSPDI.h, [113](#)
- APC\_WriteCmdFiFo
  - eSPDI.h, [114](#)
- APC\_WriteFlashData
  - eSPDI.h, [114](#)
- APC\_WriteWaveEnd
  - eSPDI.h, [115](#)
- APC\_WriteWaveHeader
  - eSPDI.h, [115](#)
- APC\_getUACNAME
  - eSPDI.h, [73](#)
- APCImageType, [7](#)
- AccelerationTag, [7](#)
  
- CamDist1
  - eSPCtrl\_RectLogData, [9](#)
- CamDist2
  - eSPCtrl\_RectLogData, [9](#)
- CamMat1
  - eSPCtrl\_RectLogData, [9](#)
- CamMat2
  - eSPCtrl\_RectLogData, [9](#)
- CompassTag, [8](#)
  
- DECIMATION\_PARAMS, [8](#)
  
- eSPCtrl\_RectLogData, [8](#)
  - CamDist1, [9](#)
  - CamDist2, [9](#)
  - CamMat1, [9](#)
  - CamMat2, [9](#)
  - InImgHeight, [9](#)
  - InImgWidth, [10](#)
  - LRotaMat, [10](#)
  - nLineBuffers, [10](#)
  - NewCamMat1, [10](#)
  - NewCamMat2, [10](#)
  - OutImgHeight, [10](#)
  - OutImgWidth, [10](#)
  - RECT\_AvgErr, [11](#)
  - RECT\_Crop\_Col\_BG\_L, [11](#)
  - RECT\_Crop\_Col\_ED\_L, [11](#)
  - RECT\_Crop\_Row\_BG, [11](#)
  - RECT\_Crop\_Row\_ED, [11](#)
  - RECT\_CropEnable, [11](#)
  - RECT\_Scale\_Col\_M, [11](#)
  - RECT\_Scale\_Col\_N, [11](#)
  - RECT\_Scale\_Row\_M, [12](#)
  - RECT\_Scale\_Row\_N, [12](#)
  - RECT\_ScaleEnable, [12](#)
  - RECT\_ScaleHeight, [12](#)
  - RECT\_ScaleWidth, [12](#)
  
- RRotaMat, [12](#)
- RotaMat, [12](#)
- TranMat, [13](#)
- uByteArray, [13](#)
  
- eSPDI.h
  - APC\_ApplyFilters, [27](#)
  - APC\_CloseCmdFiFo, [28](#)
  - APC\_CloseDevice, [28](#)
  - APC\_CloseDeviceEx, [29](#)
  - APC\_CloseDeviceMBL, [29](#)
  - APC\_ColorFormat\_to\_RGB24, [30](#)
  - APC\_Convert\_Depth\_Y\_To\_Buffer, [30](#)
  - APC\_Convert\_Depth\_Y\_To\_Buffer\_offset, [31](#)
  - APC\_CreateSwPostProc, [31](#)
  - APC\_DecimationFilter, [32](#)
  - APC\_DecryptMP4, [32](#)
  - APC\_DecryptString, [33](#)
  - APC\_DepthMerge, [33](#)
  - APC\_DisableAWB, [35](#)
  - APC\_DisableAE, [34](#)
  - APC\_DoFusion, [35](#)
  - APC\_DoSwPostProc, [36](#)
  - APC\_EdgePreServingFilter, [36](#)
  - APC\_EnableAWB, [37](#)
  - APC\_EnableAE, [37](#)
  - APC\_EnableGPUAcceleration, [38](#)
  - APC\_EnableInterleave, [38](#)
  - APC\_EnableSensorIF, [39](#)
  - APC\_EncryptMP4, [39](#)
  - APC\_EncryptString, [40](#)
  - APC\_FindDevice, [40](#)
  - APC\_FlyingDepthCancellation\_D11, [41](#)
  - APC\_FlyingDepthCancellation\_D8, [41](#)
  - APC\_GenerateLutFile, [42](#)
  - APC\_Get2Image, [42](#)
  - APC\_Get\_150\_mm\_depth, [43](#)
  - APC\_Get\_60\_mm\_depth, [43](#)
  - APC\_Get\_Color\_30\_mm\_depth, [44](#)
  - APC\_GetAESTatus, [45](#)
  - APC\_GetAWBStatus, [46](#)
  - APC\_GetAccMeterValue, [44](#)
  - APC\_GetAnalogGain, [45](#)
  - APC\_GetAutoExposureMode, [46](#)
  - APC\_GetBusInfo, [47](#)
  - APC\_GetCTPropVal, [50](#)
  - APC\_GetCTRangeAndStep, [50](#)
  - APC\_GetColorGain, [47](#)
  - APC\_GetColorImage, [48](#)
  - APC\_GetColorImageWithTimestamp, [48](#)
  - APC\_GetCompositeDevSelectIndex, [49](#)
  - APC\_GetControlCounterMode, [49](#)
  - APC\_GetCurrentIRValue, [51](#)
  - APC\_GetDepthDataType, [52](#)
  - APC\_GetDepthImage, [52](#)
  - APC\_GetDepthImageWithTimestamp, [53](#)
  - APC\_GetDeviceInfo, [53](#)
  - APC\_GetDeviceInfoMBL\_15cm, [54](#)
  - APC\_GetDeviceNumber, [54](#)

APC\_GetDeviceResolutionList, 54  
APC\_GetDigitalGain, 55  
APC\_GetExposureTime, 55  
APC\_GetFWContinueMode, 57  
APC\_GetFWRegister, 57  
APC\_GetFlexibleGyroData, 56  
APC\_GetFlexibleGyroLength, 56  
APC\_GetFwVersion, 58  
APC\_GetGlobalGain, 58  
APC\_GetHWContinueMode, 59  
APC\_GetHWRegister, 59  
APC\_GetHidGyro, 59  
APC\_GetIRMaxValue, 62  
APC\_GetIRMinValue, 62  
APC\_GetIRMode, 63  
APC\_GetImage, 60  
APC\_GetImageInterrupt, 61  
APC\_GetInfoHidGyro, 61  
APC\_GetInterleaveMode, 61  
APC\_GetLogData, 63  
APC\_GetLutData, 64  
APC\_GetMultiBytesHWRegister, 64  
APC\_GetPUPropVal, 66  
APC\_GetPURangeAndStep, 67  
APC\_GetPidVid, 65  
APC\_GetPointCloud, 65  
APC\_GetRectifyLogData, 67  
APC\_GetRectifyMatLogData, 68  
APC\_GetRectifyTable, 68  
APC\_GetSRB, 72  
APC\_GetSensorRegister, 70  
APC\_GetSerialNumber, 70  
APC\_GetSimpleDevSelectIndex, 71  
APC\_GetSimpleDeviceNumber, 71  
APC\_GetThermalFD, 72  
APC\_GetUACData, 72  
APC\_GetUserData, 73  
APC\_GetYOffset, 74  
APC\_GetZDTable, 74  
APC\_HoleFill, 75  
APC\_HoleFilled, 75  
APC\_ImgMirro, 76  
APC\_Init, 77  
APC\_InitDecimationFilter, 77  
APC\_InitPostProcess, 80  
APC\_InitPostProcessCustomParameter, 80  
APC\_InitResizeProcess, 81  
APC\_InitSRB, 81  
APC\_InitialCmdFiFo, 78  
APC\_InitialFlexibleGyro, 78  
APC\_InitialHidGyro, 79  
APC\_InitialUAC, 79  
APC\_InjectExtraDataToMp4, 82  
APC\_IsInterleaveDevice, 82  
APC\_IsMLBaseLine, 82  
APC\_OpenDevice, 83  
APC\_OpenDevice2, 84  
APC\_OpenDeviceMBL, 85  
APC\_PostProcess, 86  
APC\_PutSRB, 86  
APC\_RGB2BMP, 92  
APC\_ReadCmdFiFo, 87  
APC\_ReadFlashData, 87  
APC\_RefreshDevice, 88  
APC\_Release, 88  
APC\_ReleaseDecimationFilter, 88  
APC\_ReleaseFlexibleGyro, 89  
APC\_ReleaseHidGyro, 89  
APC\_ReleasePostProcess, 89  
APC\_ReleaseSwPostProc, 90  
APC\_ReleaseUAC, 90  
APC\_ResetFilters, 90  
APC\_ResetUNPDData, 91  
APC\_ResizeImgToHalf, 91  
APC\_RetrieveExtraDataFromMp4, 91  
APC\_RotateImg180, 92, 93  
APC\_RotateImg90, 94  
APC\_SaveLutData, 95  
APC\_SelectDevice, 95  
APC\_SetAETarget, 95  
APC\_SetAnalogGain, 96  
APC\_SetAutoExposureMode, 97  
APC\_SetCTPropVal, 98  
APC\_SetColorGain, 97  
APC\_SetControlCounterMode, 98  
APC\_SetCurrentIRValue, 98  
APC\_SetDepthDataType, 99  
APC\_SetDigitalGain, 99  
APC\_SetExposureTime, 100  
APC\_SetFWContinueMode, 100  
APC\_SetFWRegister, 101  
APC\_SetGlobalGain, 101  
APC\_SetHWRegister, 102  
APC\_SetHWVirtualChannel, 102  
APC\_SetIRMaxValue, 103  
APC\_SetIRMode, 104  
APC\_SetInterleaveMode, 103  
APC\_SetLogData, 104  
APC\_SetMultiBytesHWRegister, 105  
APC\_SetPUPropVal, 106  
APC\_SetPidVid, 105  
APC\_SetRectifyTable, 106  
APC\_SetRootCipher, 107  
APC\_SetSensorRegister, 107  
APC\_SetSensorTypeName, 108  
APC\_SetSerialNumber, 108  
APC\_SetUserData, 110  
APC\_SetYOffset, 111  
APC\_SetZDTable, 111  
APC\_Setup\_v4l2\_requestbuffers, 109  
APC\_SetupBlock, 109  
APC\_SetupHidGyro, 110  
APC\_SubSample, 112  
APC\_SwitchBaseline, 112  
APC\_TableToData, 113  
APC\_TemporalFilter, 113

- APC\_WriteCmdFiFo, [114](#)
- APC\_WriteFlashData, [114](#)
- APC\_WriteWaveEnd, [115](#)
- APC\_WriteWaveHeader, [115](#)
- APC\_getUACNAME, [73](#)
- eSPDI/eSPDI.h, [17](#)
- eSPDI/eSPDI\_def.h, [116](#)
- GyroTag, [13](#)
- InImgHeight
  - eSPCtrl\_RectLogData, [9](#)
- InImgWidth
  - eSPCtrl\_RectLogData, [10](#)
- LRotaMat
  - eSPCtrl\_RectLogData, [10](#)
- nLineBuffers
  - eSPCtrl\_RectLogData, [10](#)
- NewCamMat1
  - eSPCtrl\_RectLogData, [10](#)
- NewCamMat2
  - eSPCtrl\_RectLogData, [10](#)
- OutImgHeight
  - eSPCtrl\_RectLogData, [10](#)
- OutImgWidth
  - eSPCtrl\_RectLogData, [10](#)
- POST\_PROCESS\_PARAMS, [14](#)
- packet\_s, [13](#)
- PointCloudInfo, [14](#)
- RECT\_AvgErr
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Crop\_Col\_BG\_L
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Crop\_Col\_ED\_L
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Crop\_Row\_BG
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Crop\_Row\_ED
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_CropEnable
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Scale\_Col\_M
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Scale\_Col\_N
  - eSPCtrl\_RectLogData, [11](#)
- RECT\_Scale\_Row\_M
  - eSPCtrl\_RectLogData, [12](#)
- RECT\_Scale\_Row\_N
  - eSPCtrl\_RectLogData, [12](#)
- RECT\_ScaleEnable
  - eSPCtrl\_RectLogData, [12](#)
- RECT\_ScaleHeight
  - eSPCtrl\_RectLogData, [12](#)
- RECT\_ScaleWidth
  - eSPCtrl\_RectLogData, [12](#)
- RRotaMat
  - eSPCtrl\_RectLogData, [12](#)
- RotaMat
  - eSPCtrl\_RectLogData, [12](#)
- tagAPC\_STREAM\_INFO, [15](#)
- tagDEVINFORMATION, [15](#)
- tagDEVSEL, [15](#)
- tagKEEP\_DATA\_CTRL, [15](#)
- tagZDTableInfo, [16](#)
- TranMat
  - eSPCtrl\_RectLogData, [13](#)
- uByteArray
  - eSPCtrl\_RectLogData, [13](#)