FLIR BOSON SOFTWARE IDD

Official Publication Date: June 2021
Official Expiration Date: Until next release

Document Number: 102-2013-42
Rev206

FLIR BOSON SOFTWARE IDD

FLIR BOSON SOFTWARE IDD

1 Boson SDK Description

1.1 Global Objects

1.1.1 Basic Data Types

SDK Name	C	C#	Python
CHAR	"int8_t"	"SByte"	"int"
UCHAR	"uint8_t"	"Byte"	"int"
INT_16	"int16_t"	"Int16"	"int"
UINT_16	"uint16_t"	"UInt16"	"int"
INT_32	"int32_t"	"Int32"	"int"
UINT_32	"uint32_t"	"UInt32"	"int"
FLOAT	"float"	"Double"	"float"
DOUBLE	"double"	"Double"	"float"

1.1.2 Enums

Global Enumerations are available to all modules.

1.1.2.1 FLR_ENABLE_E — <INT_32>

FLR_DISABLE = 0
FLR_ENABLE = 1
FLR_ENABLE_END = 2

1.1.3 Functions

1.1.3.1 Initialize(port, baudrate=921600)

Starts communications and returns handle. Argument port may be "COM<N>" or <N-1> depending on platform. Baudrate is 921600 for Boson.

1.1.3.2 Close(handle)

Stops communications and releases handle.

1.2 Module: GAO

No description provided.

1.2.1 Enums

No enumerations in module gao.

FLIR® | The World's Sixth Sense™

1.2.2 Structs

No struct types in module gao.

1.2.3 Functions

1.2.3.1 gaoSetGainState()

Enables / disables application of per-pixel gain coefficients. When disabled, unity gain is applied to all pixels. Most users should leave this enabled.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.2 gaoGetGainState()

Reads the state (enabled/disabled) of per-pixel gain coefficients.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.3 gaoSetFfcState()

Enables / disables application of per-pixel Flat-Field Correction (FFC) coefficients. Most users should leave this enabled.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000003	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.4 gaoGetFfcState()

Reads the state (enabled/disabled) of per-pixel FFC coefficients.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.5 gaoSetTempCorrectionState()

Enables / disables application of per-pixel temperature corrections. Additionaly, controls application of Row Noise algorithm (if available).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000005	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.6 gaoGetTempCorrectionState()

Reads the state (enabled/disabled) of per-pixel temperature corrections and (if available) row noise corrections.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.7 gaoSetIConstL()

Writes the value of a global offset. Most users should leave this at the default value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000007	N/A	N/A	N/A
data	INT_16	0:2	N/A	N/A

No output parameters.

1.2.3.8 gaoGetIConstL()

Reads the value of a global offset. Most users should leave this at the default value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	INT_16	0:2	N/A	N/A

1.2.3.9 gaoSetIConstM()

Writes the value of a second global offset. Most users should leave this at the default value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000009	N/A	N/A	N/A
data	INT_16	0:2	N/A	N/A

No output parameters.

1.2.3.10   gaoGetIConstM()

Reads the value of a second global offset. Most users should leave this at the default value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000000A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	INT_16	0:2	N/A	N/A

1.2.3.11   gaoSetAveragerState()

Enables / disables a smart-averager function which cuts frame rate in half.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x0000000B	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.12 gaoGetAveragerState()

Reads the state (enabled/disabled) of the smart-averager function.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000000C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.13 gaoSetNumFFCFrames()

Specifies the number of frames (2, 4, 8, or 16) to be integrated during flat-field correction (FFC).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000000D	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.14 gaoGetNumFFCFrames()

Reads the number of frames to be integrated during FFC.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000000E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.15 gaoGetAveragerThreshold()

Reads the threshold value used by the smart-averager function.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000010	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.16 gaoSetRnsState()

Overrides the availability of the row-noise suppression (RNS) algorithm. To be used for testing only.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000011	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.17 gaoGetRnsState()

Reads the availability (enabled/disabled) of a row-noise suppression (RNS) algorithm. This algorithm is linked to the TempCorrection enable.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000012	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.18 gaoSetTestRampState()

Enables / disables a test ramp generated by internal electronics (in lieu of data from the sensor array). Most users should leave this disabled as it is intended primarily as a diagnostic feature.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000013	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.19   gaoGetTestRampState()

Reads the state (enabled/disabled) of a test ramp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000014	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.20   gaoSetSffcState()

Enables / disables supplemental flat-field correction (SFFC)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000017	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.21   gaoGetSffcState()

Reads the state (enabled/disabled) of the supplemental flat-field correction.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000018	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.22 gaoSetRpmState()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000019	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.23 gaoGetRpmState()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000001A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.24 gaoGetRpmThreshold()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000001C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
threshold	UINT_16	0:2	N/A	N/A

1.2.3.25 gaoSetFfcZeroMeanState()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000025	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.2.3.26 gaoGetFfcZeroMeanState()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000026	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.2.3.27 gaoSetRnsPopThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000002B	N/A	N/A	N/A
threshold	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.28 gaoGetRnsPopThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000002C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
threshold	UINT_16	0:2	N/A	N/A

1.2.3.29 gaoSetRnsCloseThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000002D	N/A	N/A	N/A
threshold	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.30   gaoGetRnsCloseThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000002E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
threshold	UINT_16	0:2	N/A	N/A

1.2.3.31   gaoSetRnsTooFewQuit()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000002F	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.32   gaoGetRnsTooFewQuit()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000030	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.33   gaoSetRnsTooFew()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000031	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.34   gaoGetRnsTooFew()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000032	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.35   gaoSetRnsMinCorrection()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000033	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.36   gaoGetRnsMinCorrection()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000034	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.37 gaoSetRnsDamping()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000035	N/A	N/A	N/A
data	UCHAR	0:1	N/A	N/A

No output parameters.

1.2.3.38 gaoGetRnsDamping()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000036	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UCHAR	0:1	N/A	N/A

1.2.3.39 gaoSetRnsFrameHysteresis()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000037	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.40 gaoGetRnsFrameHysteresis()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000038	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.41 gaoSetRnsBadDamping()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00000039	N/A	N/A	N/A
data	UCHAR	0:1	N/A	N/A

No output parameters.

1.2.3.42 gaoGetRnsBadDamping()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000003A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UCHAR	0:1	N/A	N/A

1.2.3.43 gaoSetRnsNumGoodDampingThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000003B	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.2.3.44 gaoGetRnsNumGoodDampingThreshold()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000003C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.2.3.45 gaoGetRnsFfcDesired()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0000003D	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.3 Module: ROIC
No description provided.

1.3.1 Enums

1.3.1.1 FLR_ROIC_TEMP_MODE_E — <INT_32>
FLR_ROIC_TEMP_NORMAL_MODE = 0
FLR_ROIC_TEMP_OFFSET_MODE = 1
FLR_ROIC_TEMP_STATIC_MODE = 2
FLR_ROIC_TEMP_MODE_END = 3

1.3.1.2 FLR_ROIC_EXT_SYNC_MODE_E — <INT_32>
FLR_ROIC_EXT_SYNC_DISABLE_MODE = 0
FLR_ROIC_EXT_SYNC_MASTER_MODE = 1
FLR_ROIC_EXT_SYNC_SLAVE_MODE = 2
FLR_ROIC_EXT_SYNC_END = 3

1.3.2 Structs

1.3.2.1 FLR_ROIC_FPATEMP_TABLE_T

Field Name	DataType	Bytes

value	INT_16*32	64

1.3.3 Functions

1.3.3.1 roicGetFPATemp()

Reads the raw (uncorrected) output of the on-chip temperature sensor. Note: A different command, bosonlookupFPATempDegCx10, provides the calibrated output in degrees Celsius, and bosonlookupFPATempDegKx10 provides the output in Kelvin.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020001	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.3.3.2 roicGetFrameCount()

Reads the value of a frame counter which increments by one for each new frame.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.3.3.3 roicGetActiveNormalizationTarget()

Gets the normalization target for the active pixels for the currently loaded table. The normalization target is the nominal expected output of the camera immediately after FFC (non-radiometric) when imaging the FFC source.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.3.3.4 roicSetFPARampState()

Enables / disables a test ramp generated by the sensor array. Most users should leave this disabled as it is intended primarily as a diagnostic feature.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020014	N/A	N/A	N/A
state	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.3.3.5 roicGetFPARampState()

Gets the state of the sensor array ramp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020015	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
state	FLR_ENABLE_E	0:4	N/A	N/A

1.3.3.6 roicGetSensorADC1()

Reads the value of an internal analog-to-digital convertor. This internal ADC is not currently used.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020019	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.3.3.7 roicGetSensorADC2()

Reads the value of an internal analog-to-digital convertor. This internal ADC is not currently used.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0002001A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.3.3.8 roicSetFPATempOffset()

Specifies an override of or an offset applied to the camera's internal temperature sensor, intended primarily as a diagnostic feature. Only has effect in two of the three FPA Temp modes (see roicSetFPATempMode)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0002001B	N/A	N/A	N/A
data	INT_16	0:2	N/A	N/A

No output parameters.

1.3.3.9 roicGetFPATempOffset()

Reads the value of an override / offset value applied to the camera's internal temperature sensor.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0002001C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	INT_16	0:2	N/A	N/A

1.3.3.10   roicSetFPATempMode()

Specifies the FPA temp mode (normal, fixed/override, or offset). Fixed/override and offset modes are intended primarily as diagnostic features, and most customers should leave this in its default state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0002001D	N/A	N/A	N/A
data	FLR_ROIC_TEMP_MODE_E	0:4	N/A	N/A

No output parameters.

1.3.3.11   roicGetFPATempMode()

Reads the FPA temp mode (normal, fixed/override, or offset).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0002001E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ROIC_TEMP_MODE_E	0:4	N/A	N/A

1.3.3.12   roicGetFPATempTable()

Reads the look-up table used internally for conversion of the raw output of the camera's internal temp sensor into a calibrated value (deg C or Kelvin).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020020	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
table	FLR_ROIC_FPATEMP_TABLE_T	0:64	N/A	N/A

1.3.3.13   roicSetFPATempValue()

Sets the value of the FPA temp when the FPA temp mode is set to fixed.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020022	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.3.3.14   roicGetFPATempValue()

Gets the value of the FPA Temp when the FPA temp mode is set to fixed. Alternately, in this mode roicGetFPATemp returns the same value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00020023	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.4 Module: BPR

No description provided.

1.4.1 Enums

No enumerations in module bpr.

1.4.2 Structs

No struct types in module bpr.

1.4.3 Functions

1.4.3.1 bprSetState()

Enables / disables the bad-pixel replace (BPR) algorithm.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00030002	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.4.3.2 bprGetState()

Reads the state (enabled/disabled) of the bad-pixel replace (BPR) algorithm.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00030001	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.5 Module: TELEMETRY

Boson provides the option to enable a single line of telemetry as either the first or last line in each frame. The telemetry line contains metadata describing the image stream and the camera. A complete list of the telemetry-line contents is provided in the Appendix <?>. All telemetry is aligned to 16-bit fields. If CMOS is configured for 8-bit output, only the 8 LSBs will be provided. If CMOS is configured to 24bit output, telemetry data will be provided via cmos_data[0:15].

1.5.1 Enums

1.5.1.1 FLR_TELEMETRY_LOC_E — <INT_32>

FLR_TELEMETRY_LOC_TOP = 0
FLR_TELEMETRY_LOC_BOTTOM = 1
FLR_TELEMETRY_LOC_END = 2

1.5.1.2 FLR_TELEMETRY_PACKING_E — <INT_32>

FLR_TELEMETRY_PACKING_DEFAULT = 0
FLR_TELEMETRY_PACKING_Y = 1
FLR_TELEMETRY_PACKING_8BITS = 2
FLR_TELEMETRY_PACKING_END = 3

1.5.2 Structs

No struct types in module telemetry.

1.5.3 Functions

1.5.3.1 telemetrySetState()

Set the telemetry state to Enabled or Disabled.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.5.3.2 telemetryGetState()

Return the current telemetry state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.5.3.3 telemetrySetLocation()

Set the telemetry to before(top) or after(bottom) the image.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040003	N/A	N/A	N/A
data	FLR_TELEMETRY_LOC_E	0:4	N/A	N/A

No output parameters.

1.5.3.4 telemetryGetLocation()

Return the current telemetry location.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_TELEMETRY_LOC_E	0:4	N/A	N/A

1.5.3.5 telemetrySetPacking()

Sets the type of packing that the telemetry data is preseneted - 16 Bit, Color or 8 -Bit

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040005	N/A	N/A	N/A
data	FLR_TELEMETRY_PACKING_E	0:4	N/A	N/A

No output parameters.

1.5.3.6 telemetryGetPacking()

Gets the telemetry packing format.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00040006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_TELEMETRY_PACKING_E	0:4	N/A	N/A

1.6 Module: BOSON

Functions to control the general operation of the Boson camera.

1.6.1 Enums

1.6.1.1 FLR_BOSON_GAINMODE_E — <INT_32>

FLR_BOSON_HIGH_GAIN = 0
FLR_BOSON_LOW_GAIN = 1
FLR_BOSON_AUTO_GAIN = 2
FLR_BOSON_DUAL_GAIN = 3
FLR_BOSON_MANUAL_GAIN = 4
FLR_BOSON_GAINMODE_END = 5

1.6.1.2 FLR_BOSON_FFCMODE_E — <INT_32>

FLR_BOSON_MANUAL_FFC = 0
FLR_BOSON_AUTO_FFC = 1
FLR_BOSON_EXTERNAL_FFC = 2
FLR_BOSON_SHUTTER_TEST_FFC = 3
FLR_BOSON_FFCMODE_END = 4

1.6.1.3 FLR_BOSON_FFCSTATUS_E — <INT_32>

FLR_BOSON_NO_FFC_PERFORMED = 0
FLR_BOSON_FFC_IMMINENT = 1
FLR_BOSON_FFC_IN_PROGRESS = 2
FLR_BOSON_FFC_COMPLETE = 3
FLR_BOSON_FFCSTATUS_END = 4

1.6.1.4 FLR_BOSON_MYRIADTEMPMODE_E — <INT_32>

FLR_BOSON_NORMAL_MYRIADTEMP_MODE = 0
FLR_BOSON_STATIC_MYRIADTEMP_MODE = 1

1.6.1.5 FLR_BOSON_EXT_SYNC_MODE_E — <INT_32>

FLR_BOSON_EXT_SYNC_DISABLE_MODE = 0
FLR_BOSON_EXT_SYNC_MASTER_MODE = 1
FLR_BOSON_EXT_SYNC_SLAVE_MODE = 2
FLR_BOSON_EXT_SYNC_END = 3

1.6.2 Structs

1.6.2.1 FLR_BOSON_PARTNUMBER_T

Field Name	DataType	Bytes
value	UCHAR*20	20

1.6.2.2 FLR_BOSON_SENSOR_PARTNUMBER_T

Field Name	DataType	Bytes
value	UCHAR*32	32

1.6.2.3 FLR_BOSON_GAIN_SWITCH_PARAMS_T

Field Name	DataType	Bytes
pHighToLowPercent	UINT_32	4
cHighToLowPercent	UINT_32	4
pLowToHighPercent	UINT_32	4
hysteresisPercent	UINT_32	4

1.6.3 Functions

1.6.3.1 bosonGetCameraSN()

Returns the camera's serial number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.6.3.2 bosonGetCameraPN()

Returns the camera's part number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_BOSON_PARTNUMBER_T	0:20	N/A	N/A

1.6.3.3 bosonGetSensorSN()

Returns the sensor's serial number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.6.3.4 bosonRunFFC()

Performs an FFC operation.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050007	N/A	N/A	N/A

No output parameters.

1.6.3.5 bosonSetFFCTempThreshold()

Sets the temperature threshold (in degC*10) for the FFC desired flag. If the camera is in Auto FFC mode, an FFC desired flag will result in an automatic FFC event.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050008	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.6.3.6 bosonGetFFCTempThreshold()

Gets the temperature threshold (in degC*10) for the FFC desired flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050009	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.6.3.7 bosonSetFFCFrameThreshold()

Sets the time threshold (in seconds) for the FFC desired flag. If the camera is in Auto FFC mode, an FFC desired flag will result in an automatic FFC event.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005000A	N/A	N/A	N/A
data	UINT_32	0:4	N/A	N/A

No output parameters.

1.6.3.8 bosonGetFFCFrameThreshold()

Gets the time threshold (in seconds) for the FFC desired flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005000B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.6.3.9 bosonGetFFCInProgress()

Gets the mode of the FFC state machine.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005000C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	INT_16	0:2	N/A	N/A

1.6.3.10   bosonReboot()

Tells the camera to perform a reboot.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050010	N/A	N/A	N/A

No output parameters.

1.6.3.11   bosonSetFFCMode()

Sets the mode of the camera's FFC operation.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050012	N/A	N/A	N/A
ffcMode	FLR_BOSON_FFCMODE_E	0:4	N/A	N/A

No output parameters.

1.6.3.12   bosonGetFFCMode()
Gets the mode of the camera's FFC operation.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050013	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
ffcMode	FLR_BOSON_FFCMODE_E	0:4	N/A	N/A

1.6.3.13   bosonSetGainMode()
Sets the mode of the camera's temperature compensation operation.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050014	N/A	N/A	N/A
gainMode	FLR_BOSON_GAINMODE_E	0:4	N/A	N/A

No output parameters.

1.6.3.14   bosonGetGainMode()
Gets the mode of the camera's temperature compensation operation.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050015	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
gainMode	FLR_BOSON_GAINMODE_E	0:4	N/A	N/A

1.6.3.15   bosonWriteDynamicHeaderToFlash()
Takes the current settings of the camera and stores them to the Dynamic header, part of the non-volatile flash for User settings, to be used at start-up.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050018	N/A	N/A	N/A

No output parameters.

1.6.3.16   bosonReadDynamicHeaderFromFlash()

Reads the settings stored in Dynamic header and writes them over the current values in use.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050019	N/A	N/A	N/A

No output parameters.

1.6.3.17   bosonRestoreFactoryDefaultsFromFlash()

Reads the settings stored in Factory header and writes them over the current values in use.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005001B	N/A	N/A	N/A

No output parameters.

1.6.3.18   bosonRestoreFactoryBadPixelsFromFlash()

Reads the bad pixels stores in the Factory Bad Pixel map and writes them over the current bap pixel map in use.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050020	N/A	N/A	N/A

No output parameters.

1.6.3.19   bosonWriteBadPixelsToFlash()

Writes the current bad pixel and vector offsets in use to the User Bad Pixel portion of the non-volatile flash.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050021	N/A	N/A	N/A

No output parameters.

1.6.3.20   bosonGetSoftwareRev()

Returns the version of the Camera Software.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050022	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
major	UINT_32	0:4	N/A	N/A
minor	UINT_32	4:8	N/A	N/A
patch	UINT_32	8:12	N/A	N/A

1.6.3.21   bosonSetBadPixelLocation()

Mark a pixel location as bad, for replacement by the Bad Pixel Replacement module.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005002D	N/A	N/A	N/A
row	UINT_32	0:4	N/A	N/A
col	UINT_32	4:8	N/A	N/A

No output parameters.

1.6.3.22   bosonlookupFPATempDegCx10()

Returns the camera's sensor temp in degrees Celcius x10.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050030	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	INT_16	0:2	N/A	N/A

1.6.3.23   bosonlookupFPATempDegKx10()

Returns the camera's sensor temp in degrees Kelvin x10.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050031	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.6.3.24   bosonWriteLensNvFfcToFlash()

Stores the current flat-field correction terms to non-volatile flash.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050033	N/A	N/A	N/A

No output parameters.

1.6.3.25   bosonWriteLensGainToFlash()

Writes the current Lens Gain map to flash.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050035	N/A	N/A	N/A

No output parameters.

1.6.3.26   bosonSetLensNumber()

Sets the desired lens number

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050038	N/A	N/A	N/A
lensNumber	UINT_32	0:4	N/A	N/A

No output parameters.

1.6.3.27   bosonGetLensNumber()

Returns the current lens number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050039	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
lensNumber	UINT_32	0:4	N/A	N/A

1.6.3.28   bosonSetTableNumber()

Sets the desired table number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005003A	N/A	N/A	N/A
tableNumber	UINT_32	0:4	N/A	N/A

No output parameters.

1.6.3.29   bosonGetTableNumber()

Returns the current table number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005003B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
tableNumber	UINT_32	0:4	N/A	N/A

1.6.3.30   bosonGetSensorPN()

Returns the sensor's part number.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005003F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
sensorPN	FLR_BOSON_SENSOR_PARTNUMBER_T	0:32	N/A	N/A

1.6.3.31   bosonSetGainSwitchParams()

Sets the parameters for the auto gain switching.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050040	N/A	N/A	N/A
parm_struct	FLR_BOSON_GAIN_SWITCH_PARAMS_T	0:16	N/A	N/A

No output parameters.

1.6.3.32   bosonGetGainSwitchParams()

Gets the parameters for the auto gain switching.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050041	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
parm_struct	FLR_BOSON_GAIN_SWITCH_PARAMS_T	0:16	N/A	N/A

1.6.3.33   bosonGetSwitchToHighGainFlag()

Gets the status of the SwitchToHighGain flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050042	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
switchToHighGainFlag	UCHAR	0:1	N/A	N/A

1.6.3.34 bosonGetSwitchToLowGainFlag()

Gets the status of the SwitchToLowGain flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050043	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
switchToLowGainFlag	UCHAR	0:1	N/A	N/A

1.6.3.35 bosonGetCLowToHighPercent()

Gets the calculated percent counts for the transition from low gain to high gain state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050044	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
cLowToHighPercent	UINT_32	0:4	N/A	N/A

1.6.3.36 bosonGetMaxNUCTables()

Returns the number of the highest Gain table.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050045	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
maxNUCTables	UINT_32	0:4	N/A	N/A

1.6.3.37 bosonGetMaxLensTables()

Returns the number of Lens tables the camera supports.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050046	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
maxLensTables	UINT_32	0:4	N/A	N/A

1.6.3.38 bosonGetFfcWaitCloseFrames()

Gets number of frames to wait for the shutter to close during an Auto or Manual FFC.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005004E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.6.3.39 bosonSetFfcWaitCloseFrames()

Sets number of frames to wait for the shutter to close during an Auto or Manual FFC.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005004F	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.6.3.40 bosonCheckForTableSwitch()

Performs table switch if camera's "Table Switch Desired" flag has been set.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050050	N/A	N/A	N/A

No output parameters.

1.6.3.41   bosonGetDesiredTableNumber()

Gets the table number that the camera wants to switch to.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050052	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
desiredTableNumber	UINT_32	0:4	N/A	N/A

1.6.3.42   bosonGetFfcStatus()

Gets the status of the FFC function - FLR_BOSON_NO_FFC_PERFORMED, FLR_BOSON_FFC_IMMINENT, FLR_BOSON_FFC_IN_PROGRESS , FLR_BOSON_FFC_COMPLETE

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050054	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
ffcStatus	FLR_BOSON_FFCSTATUS_E	0:4	N/A	N/A

1.6.3.43   bosonGetFfcDesired()

Gets the state of the FFC desired flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050055	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
ffcDesired	UINT_32	0:4	N/A	N/A

1.6.3.44   bosonGetLastFFCFrameCount()

Gets the frame count when the last FFC occurred.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005005D	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
frameCount	UINT_32	0:4	N/A	N/A

1.6.3.45 bosonGetLastFFCTempDegKx10()

Gets the temperature in degK*10 when the last FFC occurred.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005005E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
temp	UINT_16	0:2	N/A	N/A

1.6.3.46 bosonGetTableSwitchDesired()

Gets the value of the table switch desired state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005005F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
tableSwitch Desired	UINT_16	0:2	N/A	N/A

1.6.3.47 bosonGetOverTempThreshold()

Gets the temperature threshold in deg C above with the camera will go into low power state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050061	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
temperatureInC	FLOAT	0:4	N/A	N/A

1.6.3.48 bosonGetLowPowerMode()

Gets the state of low power flag. If enabled, the camera is in low power state and not fully functional.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050062	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
lowPowerMode	UINT_16	0:2	N/A	N/A

1.6.3.49 bosonGetOverTempEventOccurred()

Gets the state of the overTemp event occurred flag. If enabled, it means that an overTemp event has occurred. It continues to be set in the low power state. It gets cleared when the core temperature goes below or is equal to Threshold - 6°C.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050063	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
overTempEventOccurred	UINT_16	0:2	N/A	N/A

1.6.3.50 bosonSetPermitThermalShutdownOverride()

Sets the flag to ignore the overTemp event.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x00050064	N/A	N/A	N/A
permitThermalShutdownOverride	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.6.3.51 bosonGetPermitThermalShutdownOverride()
Gets the state of the flag to ignore the overTemp event.

Input/Send parameters:
Name	DataType	Bytes	Min	Max
FunctionID	0x00050065	N/A	N/A	N/A

Output/Receive parameters:
Name	DataType	Bytes	Min	Max
permitThermalShutdownOverride	FLR_ENABLE_E	0:4	N/A	N/A

1.6.3.52 bosonGetMyriadTemp()
Gets the core temperature in °C.

Input/Send parameters:
Name	DataType	Bytes	Min	Max
FunctionID	0x00050068	N/A	N/A	N/A

Output/Receive parameters:
Name	DataType	Bytes	Min	Max
myriadTemp	FLOAT	0:4	N/A	N/A

1.6.3.53 bosonGetNvFFCNucTableNumberLens0()
Gets the associated the NUC table with the NVFFC map that was written to Lens0.

Input/Send parameters:
Name	DataType	Bytes	Min	Max

Name	DataType	Bytes	Min	Max
FunctionID	0x0005006D	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
nvFFCNucTableNumberLens0	INT_32	0:4	N/A	N/A

1.6.3.54 bosonGetNvFFCNucTableNumberLens1()

Gets the associated the NUC table with the NVFFC map that was written to Lens1.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005006F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
nvFFCNucTableNumberLens1	INT_32	0:4	N/A	N/A

1.6.3.55 bosonGetNvFFCFPATempDegKx10Lens0()

Gets the FPA Temp at the time the NVFFC map was written to flash for Lens0.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050071	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
nvFFCFPATempDegKx10Lens0	UINT_16	0:2	N/A	N/A

1.6.3.56 bosonGetNvFFCFPATempDegKx10Lens1()

Gets the FPA Temp at the time the NVFFC map was written to flash for Lens1.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

Name	DataType	Bytes	Min	Max
FunctionID	0x00050073	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
nvFFCFPATempDegKx10Lens1	UINT_16	0:2	N/A	N/A

1.6.3.57 bosonSetFFCWarnTimeInSecx10()

Sets the amount of time in 10ths of a second before the occurrence of FFC that the warn time symbol should be displayed and the ffc state is set to imminent.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050074	N/A	N/A	N/A
ffcWarnTime	UINT_16	0:2	N/A	N/A

No output parameters.

1.6.3.58 bosonGetFFCWarnTimeInSecx10()

Gets the ffc warn time in 10ths of a second.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050075	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
ffcWarnTime	UINT_16	0:2	N/A	N/A

1.6.3.59 bosonGetOverTempEventCounter()

Gets the counter value that counts the number of times the overTemp event occurred.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050076	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
overTempEventCounter	UINT_32	0:4	N/A	N/A

1.6.3.60 bosonSetOverTempTimerInSec()

Sets the time is seconds that we want to wait before setting the camera in low power state after an overTemp event has occurred.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050077	N/A	N/A	N/A
overTempTimerInSec	UINT_16	0:2	N/A	N/A

No output parameters.

1.6.3.61 bosonGetOverTempTimerInSec()

Gets the overTemp countdown timer in seconds.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050078	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
overTempTimerInSec	UINT_16	0:2	N/A	N/A

1.6.3.62 bosonUnloadCurrentLensCorrections()

Set current lens maps to unity. Lens gain map will remain until next reboot, SFFC/NVFFC will remain until next lens switch (or reboot). See also: bosonReloadCurrentLensCorrections.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050079	N/A	N/A	N/A

No output parameters.

1.6.3.63 bosonSetTimeForQuickFFCsInSecs()

Sets the number of seconds after startup that FFC trigger params are 'reduced' to produce FFC events more often.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005007A	N/A	N/A	N/A
timeForQuickFFCsInSecs	UINT_32	0:4	N/A	N/A

No output parameters.

1.6.3.64 bosonGetTimeForQuickFFCsInSecs()

Gets the number of seconds after startup that FFC trigger params are 'reduced' to produce FFC events more often.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005007B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
timeForQuickFFCsInSecs	UINT_32	0:4	N/A	N/A

1.6.3.65 bosonReloadCurrentLensCorrections()

Reload current lens maps from non-volatile flash.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005007C	N/A	N/A	N/A

No output parameters.

1.6.3.66 bosonGetBootTimestamps()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0005007F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
FirstLight	FLOAT	0:4	N/A	N/A
StartInit	FLOAT	4:8	N/A	N/A
BosonExec Done	FLOAT	8:12	N/A	N/A
Timestamp 4	FLOAT	12:16	N/A	N/A

1.6.3.67   bosonSetExtSyncMode()

Set the external sync mode for the camera. May not be supported in all configurations.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050098	N/A	N/A	N/A
mode	FLR_BOSON_EXT_SYNC_MODE_E	0:4	N/A	N/A

No output parameters.

1.6.3.68   bosonGetExtSyncMode()

Get the external sync mode for the camera. May not be supported in all configurations.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00050099	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
mode	FLR_BOSON_EXT_SYNC_MODE_E	0:4	N/A	N/A

1.6.3.69   bosonGetSensorHostCalVersion()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x000500A0	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
version	UINT_32	0:4	N/A	N/A

1.7 Module: DVO

No description provided.

1.7.1 Enums

1.7.1.1 FLR_DVO_OUTPUT_FORMAT_E — <INT_32>

FLR_DVO_RGB = 0
FLR_DVO_YCBCR = 1
FLR_DVO_DEFAULT_FORMAT = 2
FLR_DVO_OUTPUT_FORMAT_END = 3

1.7.1.2 FLR_DVO_OUTPUT_RGB_FORMAT_E — <INT_32>

FLR_DVO_RGB888 = 0
FLR_DVO_MRGB888 = 1
FLR_DVO_OUTPUT_RGB_FORMAT_END = 2

1.7.1.3 FLR_DVO_OUTPUT_YCBCR_FORMAT_E — <INT_32>

FLR_DVO_YCBCR422_8B = 0
FLR_DVO_MYCBCR422_8B = 1
FLR_DVO_OUTPUT_YCBCR_FORMAT_END = 2

1.7.1.4 FLR_DVO_OUTPUT_CBCR_ORDER_E — <INT_32>

FLR_DVO_CRCB = 0
FLR_DVO_CBCR = 1
FLR_DVO_OUTPUT_CBCR_ORDER_END = 2

1.7.1.5 FLR_DVO_OUTPUT_Y_ORDER_E — <INT_32>

FLR_DVO_YFIRST = 0
FLR_DVO_YLAST = 1
FLR_DVO_OUTPUT_Y_ORDER_END = 2

1.7.1.6 FLR_DVO_OUTPUT_RGB_ORDER_E — <INT_32>

FLR_DVO_ORDER_RGB = 0
FLR_DVO_ORDER_BGR = 1
FLR_DVO_OUTPUT_RGB_ORDER_END = 2

1.7.1.7 FLR_DVO_TYPE_E — <INT_32>

FLR_DVO_TYPE_MONO16 = 0
FLR_DVO_TYPE_MONO8 = 1
FLR_DVO_TYPE_COLOR = 2
FLR_DVO_TYPE_ANALOG = 3
FLR_DVO_TYPE_END = 4

1.7.1.8 FLR_DVO_DISPLAY_MODE_E — <INT_32>

FLR_DVO_CONTINUOUS = 0
FLR_DVO_ONE_SHOT = 1
FLR_DVO_DISPLAY_MODE_END = 2

1.7.1.9 FLR_DVO_VIDEO_STANDARD_E — <INT_32>

FLR_DVO_NTSC = 0
FLR_DVO_PAL = 1
FLR_DVO_VIDEO_STANDARD_END = 2

1.7.2 Structs

1.7.2.1 FLR_DVO_YCBCR_SETTINGS_T

Field Name	DataType	Bytes
ycbcrFormat	FLR_DVO_OUTPUT_YCBCR_FORMAT_E	4
cbcrOrder	FLR_DVO_OUTPUT_CBCR_ORDER_E	4
yOrder	FLR_DVO_OUTPUT_Y_ORDER_E	4

1.7.2.2 FLR_DVO_RGB_SETTINGS_T

Field Name	DataType	Bytes
rgbFormat	FLR_DVO_OUTPUT_RGB_FORMAT_E	4
rgbOrder	FLR_DVO_OUTPUT_RGB_ORDER_E	4

1.7.3 Functions

1.7.3.1 dvoSetAnalogVideoState()

Sets the state of analog video

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060004	N/A	N/A	N/A

FLIR BOSON SOFTWARE IDD

analogVide oState	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.7.3.2 dvoGetAnalogVideoState()

Gets the state of analog video

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060005	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
analogVide oState	FLR_ENABLE_E	0:4	N/A	N/A

1.7.3.3 dvoSetOutputFormat()

Sets the output format for the lcd output. In order to apply these settings, dvoApplyCustomSettings function needs to be called.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060006	N/A	N/A	N/A
format	FLR_DVO_OUTPUT_FORMAT_E	0:4	N/A	N/A

No output parameters.

1.7.3.4 dvoGetOutputFormat()

Gets the output format for the lcd output

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
format	FLR_DVO_OUTPUT_FORMAT_E	0:4	N/A	N/A

1.7.3.5 dvoSetOutputYCbCrSettings()

Sets the YCBCR mode, Y order and CB/CR order. In order to apply these settings, dvoApplyCustomSettings function needs to be called.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060008	N/A	N/A	N/A
settings	FLR_DVO_YCBCR_SETTINGS_T	0:12	N/A	N/A

No output parameters.

1.7.3.6 dvoGetOutputYCbCrSettings()

Gets the YCBCR settings

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060009	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
settings	FLR_DVO_YCBCR_SETTINGS_T	0:12	N/A	N/A

1.7.3.7 dvoSetOutputRGBSettings()

Sets the RGB mode and RGB order. In order to apply these settings, dvoApplyCustomSettings function needs to be called.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000A	N/A	N/A	N/A
settings	FLR_DVO_RGB_SETTINGS_T	0:8	N/A	N/A

No output parameters.

1.7.3.8 dvoGetOutputRGBSettings()

Gets the RGB settings

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
settings	FLR_DVO_RGB_SETTINGS_T	0:8	N/A	N/A

1.7.3.9 dvoApplyCustomSettings()

Applies the settings set by dvoSetOutputFormat, dvoSetOutputYCbCrSettings and dvoSetOutputRGBSettings. If FLR_DVO_DEFAULT_FORMAT is chosen, this function applies the default lcd settings for the selected source. If FLR_DVO_YCBCR is set then the settings set by dvoSetOutputYCbCrSettings are applied and if FLR_DVO_RGB is selected, the settings set by dvoSetOutputRGBSettings are applied to the lcd output format.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000C	N/A	N/A	N/A

No output parameters.

1.7.3.10   dvoSetDisplayMode()

Sets the display mode to continuous or one shot

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000D	N/A	N/A	N/A
displayMode	FLR_DVO_DISPLAY_MODE_E	0:4	N/A	N/A

No output parameters.

1.7.3.11   dvoGetDisplayMode()

Gets the display mode

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
displayMode	FLR_DVO_DISPLAY_MODE_E	0:4	N/A	N/A

1.7.3.12   dvoSetType()

Sets the tap at which the DVO source points to

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0006000F	N/A	N/A	N/A
tap	FLR_DVO_TYPE_E	0:4	N/A	N/A

No output parameters.

1.7.3.13   dvoGetType()

Gets the tap at which the DVO source is pointing to

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060010	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
tap	FLR_DVO_TYPE_E	0:4	N/A	N/A

1.7.3.14   dvoSetVideoStandard()

Sets the analog video output to be either NTSC or PAL.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060011	N/A	N/A	N/A
videoStandard	FLR_DVO_VIDEO_STANDARD_E	0:4	N/A	N/A

No output parameters.

1.7.3.15   dvoGetVideoStandard()

Gets if the analog video output is NTSC or PAL.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060012	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
videoStandard	FLR_DVO_VIDEO_STANDARD_E	0:4	N/A	N/A

1.7.3.16   dvoSetCheckVideoDacPresent()

Sets the flag to either check or ignore the presence of the DAC. If we set this flag is enabled and if the video DAC is not present, we do not output the BT.656 data.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060013	N/A	N/A	N/A
checkVideoDacPresent	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.7.3.17   dvoGetCheckVideoDacPresent()

Gets the state of the checkVideoDacPresent flag.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060014	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
checkVideoDacPresent	FLR_ENABLE_E	0:4	N/A	N/A

1.7.3.18   dvoGetClockInfo()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00060019	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
horizontalSyncWidth	UINT_32	0:4	N/A	N/A

verticalSyn cWidth	UINT_32	4:8	N/A	N/A
clocksPerR owPeriod	UINT_32	8:12	N/A	N/A
horizontalF rontPorch	UINT_32	12:16	N/A	N/A
horizontalB ackPorch	UINT_32	16:20	N/A	N/A
frontTelem etryPixels	UINT_32	20:24	N/A	N/A
rearTeleme tryPixels	UINT_32	24:28	N/A	N/A
videoColum ns	UINT_32	28:32	N/A	N/A
validColum ns	UINT_32	32:36	N/A	N/A
telemetryR ows	UINT_32	36:40	N/A	N/A
videoRows	UINT_32	40:44	N/A	N/A
validRows	UINT_32	44:48	N/A	N/A
verticalFro ntPorch	UINT_32	48:52	N/A	N/A
verticalBac kPorch	UINT_32	52:56	N/A	N/A
rowPeriods PerFrame	UINT_32	56:60	N/A	N/A
clocksPerFr ame	UINT_32	60:64	N/A	N/A
clockRateIn MHz	FLOAT	64:68	N/A	N/A
frameRateI nHz	FLOAT	68:72	N/A	N/A
validOnRisi ngEdge	UINT_32	72:76	N/A	N/A
dataWidthI nBits	UINT_32	76:80	N/A	N/A

1.8 Module: CAPTURE

This set of controls is used to capture one or more video frames to Boson's internal memory. These captured frames are stored in DRAM and will be erased when the camera reboots or loses power.

1.8.1 Enums

1.8.1.1 FLR_CAPTURE_SRC_E — <INT_32>

FLR_CAPTURE_SRC_NUC = 1
FLR_CAPTURE_SRC_RESERVED = 2
FLR_CAPTURE_SRC_TNF = 3
FLR_CAPTURE_SRC_BLEND = 4
FLR_CAPTURE_SRC_END = 5

1.8.1.2 FLR_CAPTURE_FILE_TYPE_E — <INT_32>

FLR_CAPTURE_NONE = 0
FLR_CAPTURE_JPEG = 1
FLR_CAPTURE_PNG = 2

1.8.2 Structs

1.8.2.1 FLR_CAPTURE_SETTINGS_T

Field Name	DataType	Bytes
dataSrc	FLR_CAPTURE_SRC_E	4
numFrames	UINT_32	4
bufferIndex	UINT_16	2

1.8.2.2 FLR_CAPTURE_FILE_SETTINGS_T

Field Name	DataType	Bytes
captureFileType	FLR_CAPTURE_FILE_TYPE_E	4
filePath	UCHAR*128	128

1.8.3 Functions

1.8.3.1 captureSingleFrame()

Deprecated -- see captureSingleFrameWithSrc.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x00070001	N/A	N/A	N/A

No output parameters.

1.8.3.2 captureFrames()

Capture up to 16 frames from GAO, BadPixel, or TemporalFilter module to buffer(s). You can select which slot the capture begins in, though you cannot capture more frames than slots. Ex: Capturing 16 frames can only be accomplished if slot 0 is selected as the start point.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00070002	N/A	N/A	N/A
data	FLR_CAPTURE_SETTINGS_T	0:10	N/A	N/A

No output parameters.

1.8.3.3 captureSingleFrameWithSrc()

Capture a single frame from the selected source to capture buffer 0.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00070003	N/A	N/A	N/A
data	FLR_CAPTURE_SRC_E	0:4	N/A	N/A

No output parameters.

1.8.3.4 captureSingleFrameToFile()

Capture a single frame to SD card (unavailable in standard configurations)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00070004	N/A	N/A	N/A

No output parameters.

1.9 Module: SCNR

Spatial Column Noise Reduction settings

1.9.1 Enums

No enumerations in module scnr.

1.9.2 Structs

No struct types in module scnr.

1.9.3 Functions

1.9.3.1 scnrSetEnableState()

Enable or disable Spatial Column Noise Reduction (scnr).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.9.3.2 scnrGetEnableState()

Get scnr correction's current state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.9.3.3 scnrSetThColSum()

Set the threshold that determines if a column should increment or decrement by 1.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080003	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.4 scnrGetThColSum()

Get the current value of ThColSum.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.5 scnrSetThPixel()

Set the (base) threshold that determines if a neighboring pixel is within range to affect the correction of the center.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080005	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.6 scnrGetThPixel()

Get the current (base) value of ThPixel.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.7 scnrSetMaxCorr()

Set the (base) maximum correction amount that will be applied.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080007	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.8 scnrGetMaxCorr()

Get the (base) maximum correction.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.9 scnrGetThPixelApplied()

Get the current (scaled with temperature) value of ThPixel.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.10 scnrGetMaxCorrApplied()

Get the (scaled with temperature) maximum correction.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.11 scnrSetThColSumSafe()

Set the threshold (for Safe Mode) that determines if a column should increment or decrement by 1.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000C	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.12 scnrGetThColSumSafe()
Get the current value of ThColSum(Safe Mode).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000D	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.13 scnrSetThPixelSafe()
Set the (base) threshold (for Safe Mode) that determines if a neighboring pixel is within range to affect the correction of the center.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000E	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.14 scnrGetThPixelSafe()
Get the current (base) value of ThPixel (Safe Mode).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0008000F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.9.3.15 scnrSetMaxCorrSafe()

Set the (base) maximum correction amount (for Safe Mode) that will be applied.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080010	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.9.3.16 scnrGetMaxCorrSafe()

Get the (base) maximum correction (Safe Mode).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00080011	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.10 Module: AGC

No description provided.

1.10.1 Enums

No enumerations in module agc.

1.10.2 Structs

No struct types in module agc.

1.10.3 Functions

1.10.3.1 agcSetPercentPerBin()

Defines thet maximum percentage of pixels allowed in a bin in relation to the total number of pixels accumulated.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090001	N/A	N/A	N/A
data	FLOAT	0:4	0	100

No output parameters.

1.10.3.2 agcGetPercentPerBin()
Get the current PercentPerBin

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.3 agcSetLinearPercent()
Defines how linear the mapping from the input to output dynamic range will be. The valid range of the variable is [0 100] where a value of 0 (%) means the transfer function shape will be based entirely on the input histogram and a value of 100 (%) means the transfer function will be a straight line (linear).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090003	N/A	N/A	N/A
data	FLOAT	0:4	0	100

No output parameters.

1.10.3.4 agcGetLinearPercent()
Get the current setting for transfer function linearity.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.5   agcSetOutlierCut()

Defines the amount of histogram "outliers" (beginning and end) to ignore as a percentage of histSum. A non-zero value for this parameter will limit the effect of outlier pixel values such as non-operational pixels or small areas with extremely high values (high irradiance) or low values (low irradiance).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090005	N/A	N/A	N/A
data	FLOAT	0:4	0	49

No output parameters.

1.10.3.6   agcGetOutlierCut()

Get the outlier cut

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.7   agcGetDrOut()

Get the current dynamic range setting.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.8   agcSetMaxGain()

Set the maximum transfer function gain. This gain limit is applied on a per bin basis such that locally the transfer function slope never exceeds the limit defined by the maxGain parameter.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090009	N/A	N/A	N/A
data	FLOAT	0:4	0.25	8

No output parameters.

1.10.3.9   agcGetMaxGain()

Get the current maximum gain of the transfer function.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009000A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.10 agcSetdf()

Set the damping factor. This controls the update rate of the transfer function per function call. The damping factor has a valid range of [0 1] where a value of 0 means there is no damping and the latest calculated transfer function will the output transfer function and a value of 1.0 for df will freeze the update of the transfer function (i.e. 100% damped).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009000B	N/A	N/A	N/A
data	FLOAT	0:4	0	100

No output parameters.

1.10.3.11 agcGetdf()

Get the current damping factor.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009000C	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max

data	FLOAT	0:4	N/A	N/A

1.10.3.12 agcSetGamma()

Set the gamma correction value. This parameter can be used to compensate for the gamma of the display. In this implementation gamma<1 will generate a transfer function that has more contrast in the high irradiance range. Negative values for gamma are not allowed.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009000D	N/A	N/A	N/A
data	FLOAT	0:4	0.5	4

No output parameters.

1.10.3.13 agcGetGamma()

Get the current gamma correction value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009000E	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.14 agcGetFirstBin()

Get the index of the first populated bin in the histogram (starting form bin 0). If outlierCut is set to a value greater than zero firstBin may not be the first bin containing non-zero value (see outlierCut).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090010	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.10.3.15 agcGetLastBin()

Get the index of the last populated bin in the histogram (starting form bin 0). If outlierCut is set to a value greater than zero lastBin may not be the last bin containing a non-zero value (see outlierCut).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090012	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.10.3.16 agcSetDetailHeadroom()

Set the amount of headroom to be given to the detail component when DDE is enabled and has a non-zero gain. If this parameter is set to zero: positive valued detail signals (HP signal) in the highest irradiance regions of the image may saturate at the drOut level and negative valued detail signals in the lowest irradiance regions may saturate at 0. The allowed range for this parameter is [0 drOut-1] with a typical value of 10.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090013	N/A	N/A	N/A
data	FLOAT	0:4	0	127

No output parameters.

1.10.3.17 agcGetDetailHeadroom()

Get the current Detail Headroom

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090014	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.18 agcSetd2br()

Set the detail-to-background-ratio (d2br). This defines the ratio of the detail (HP) gain and the maximum slope/gain of the background (LP). The allowable range for this parameter is [0 inf] with a typical setting of 1.3.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090015	N/A	N/A	N/A
data	FLOAT	0:4	0.0	8

No output parameters.

1.10.3.19 agcGetd2br()

Get the current detail-to-background-ratio (d2br).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090016	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.20 agcSetSigmaR()

Set the smoothing factor. This defines the properties of the edge-preserving low pass filter used for the DDE functionality. Higher values for this parameter will result in more aggressive low pass filtering which will cause higher amplitude signals to be present in the detail (HP) component. Allowable range is [0 inf] with a typical setting of 2000. Value should be proportional to imager responsivity.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090017	N/A	N/A	N/A
data	FLOAT	0:4	1	100000

No output parameters.

1.10.3.21 agcGetSigmaR()

Get the current smoothing factor.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090018	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.22 agcSetUseEntropy()

Switches from Plateau Equalization to Entropy Equalization

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009001E	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.10.3.23 agcGetUseEntropy()

Get the Entropy State of AGC

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0009001F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.10.3.24 agcSetROI()

Define the current region of interest. Set the start and stop columns and rows, starting with column=0, row=0 in the upper left corner.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090020	N/A	N/A	N/A
roi	FLR_ROI_T	0:8	N/A	N/A

No output parameters.

1.10.3.25 agcGetROI()

Get the current boundaries of the ROI.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090021	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
roi	FLR_ROI_T	0:8	N/A	N/A

1.10.3.26 agcGetMaxGainApplied()

Gets the scaled value of the max gain

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090025	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.27 agcGetSigmaRApplied()

Gets the scaled value of sigma R

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090026	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.28 agcSetOutlierCutBalance()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x00090027	N/A	N/A	N/A
data	FLOAT	0:4	0.0	2.0

No output parameters.

1.10.3.29 agcGetOutlierCutBalance()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090028	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.10.3.30 agcGetOutlierCutApplied()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00090029	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
percentHigh	FLOAT	0:4	N/A	N/A
percentLow	FLOAT	4:8	N/A	N/A

1.11 Module: TF

No description provided.

1.11.1 Enums

1.11.1.1 FLR_TF_MOTION_MODE_E — <INT_32>

FLR_TF_MOTION_MODE_FRAME_BASED = 0
FLR_TF_MOTION_MODE_MOTION_BASED = 1
FLR_TF_MOTION_MODE_END = 2

1.11.2   Structs

1.11.2.1 FLR_TF_WLUT_T

Field Name	DataType	Bytes
value	UCHAR*32	32

1.11.2.2 FLR_TF_NF_LUT_T

Field Name	DataType	Bytes
value	UINT_16*17	34

1.11.2.3 FLR_TF_TEMP_SIGNAL_COMP_FACTOR_LUT_T

Field Name	DataType	Bytes
value	UINT_16*17	34

1.11.3   Functions

1.11.3.1 tfSetEnableState()

Enable or disable Temporal Noise Reduction (tnr)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.11.3.2 tfGetEnableState()

Get Temporal Noise Reduction (tnr) correction's current enable state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

FLIR® | The World's Sixth Sense™

1.11.3.3   tfSetDelta_nf()

Sets the Delta NF value. The delta_nf modifies the filter behavior by scaling the index into the table of weights (wLUT)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0003	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.11.3.4   tfGetDelta_nf()

Gets the Delta NF value. The delta_nf modifies the filter behavior by scaling the index into the table of weights (wLUT)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.11.3.5   tfSetTHDeltaMotion()

Sets the Delta Motion threshold. . The Delta Motion specifies a threshold to determine if there was motion in the scene enough to trigger the SPNR algorithm

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0005	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.11.3.6   tfGetTHDeltaMotion()

Gets the Delta Motion threshold. . The Delta Motion specifies a threshold to determine if there was motion in the scene enough to trigger the SPNR algorithm

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x000A0006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.11.3.7 tfSetWLut()

Sets the values in the Table of Weights - (wLUT) . The weight table specifies the ration of the averaging of the current with the previous frame.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0007	N/A	N/A	N/A
data	FLR_TF_WLUT_T	0:32	N/A	N/A

No output parameters.

1.11.3.8 tfGetWLut()

Gets the values in the Table of Weights - (wLUT) . The weight table specifies the ration of the averaging of the current with the previous frame.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_TF_WLUT_T	0:32	N/A	N/A

1.11.3.9 tfGetMotionCount()

Gets the current motion count from the camera. The motion count is the number of pixels in the image that is classified as have moved from the previous frame

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0009	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max

data	UINT_32	0:4	N/A	N/A

1.11.3.10 tfSetMotionThreshold()

Sets the motion detection threshold. If the number of pixels in a frame detected as having moved exceeds this threshold, the frame is considered to have motion and can trigger SPNR to execute.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A000E	N/A	N/A	N/A
data	UINT_32	0:4	N/A	N/A

No output parameters.

1.11.3.11 tfGetMotionThreshold()

Gets the motion detection threshold. If the number of pixels in a frame detected as having moved exceeds this threshold, the frame is considered to have motion and can trigger SPNR to execute.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A000F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.11.3.12 tfGetDelta_nfApplied()

Returns the actual Delta NF applied in the algorithm after parameter scaling

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0016	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.11.3.13 tfGetTHDeltaMotionApplied()

Returns the actual Delta motion applied in the algorithm after parameter scaling

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000A0017	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.12 Module: MEM

Tools for byte level access to volatile and persistent memory objects.

1.12.1 Enums

1.12.1.1 FLR_MEM_LOCATION_E — <INT_32>

FLR_MEM_INVALID = 0
FLR_MEM_BOOTLOADER = 1
FLR_MEM_UPGRADE_APP = 2
FLR_MEM_LENS_NVFFC = 3
FLR_MEM_LENS_SFFC = 4
FLR_MEM_LENS_GAIN = 5
FLR_MEM_LENS_DISTORTION = 6
FLR_MEM_USER_SPACE = 7
FLR_MEM_RUN_CMDS = 8
FLR_MEM_JFFS2 = 9
FLR_MEM_LAST = 10

1.12.2 Structs

No struct types in module mem.

1.12.3 Functions

1.12.3.1 memReadCapture()

Read bytes from the selected image buffer at the specified offset.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0003	N/A	N/A	N/A

bufferNum	UCHAR	0:1	N/A	N/A
offset	UINT_32	1:5	N/A	N/A
sizeInBytes	UINT_16	5:7	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	BYTEARRAY	0:512	N/A	N/A

1.12.3.2 memGetCaptureSize()

Get the size of the buffer in bytes, as well as the number of rows and columns in each capture buffer.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
bytes	UINT_32	0:4	N/A	N/A
rows	UINT_16	4:6	N/A	N/A
columns	UINT_16	6:8	N/A	N/A

1.12.3.3 memWriteFlash()

Write bytes to the selected Flash enum at the specified offset. Lens enums require an additional index parameter, other enums must set this parameter to 0.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0005	N/A	N/A	N/A
location	FLR_MEM_LOCATION_E	0:4	N/A	N/A
index	UCHAR	4:5	N/A	N/A
offset	UINT_32	5:9	N/A	N/A
sizeInBytes	UINT_16	9:11	N/A	N/A
data	BYTEARRAY	11:267	N/A	N/A

No output parameters.

1.12.3.4 memReadFlash()

Read bytes from the selected Flash enum at the specified offset. Lens enums require an additional index parameter, other enums must set this parameter to 0.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0006	N/A	N/A	N/A
location	FLR_MEM_LOCATION_E	0:4	N/A	N/A
index	UCHAR	4:5	N/A	N/A
offset	UINT_32	5:9	N/A	N/A
sizeInBytes	UINT_16	9:11	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	BYTEARRAY	0:512	N/A	N/A

1.12.3.5 memGetFlashSize()

Get the size of a specified Flash enum in bytes.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0007	N/A	N/A	N/A
location	FLR_MEM_LOCATION_E	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
bytes	UINT_32	0:4	N/A	N/A

1.12.3.6 memEraseFlash()

Prepare the specified Flash location for writing. Lens enums require an additional index parameter, other enums must set this parameter to 0.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0008	N/A	N/A	N/A
location	FLR_MEM_LOCATION_E	0:4	N/A	N/A
index	UCHAR	4:5	N/A	N/A

No output parameters.

1.12.3.7 memEraseFlashPartial()

Prepare subsections of the specified Flash location for writing. Flash erases must start and end on a multiple of 0x1000.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF0009	N/A	N/A	N/A
location	FLR_MEM_LOCATION_E	0:4	N/A	N/A
index	UCHAR	4:5	N/A	N/A
offset	UINT_32	5:9	N/A	N/A
length	UINT_32	9:13	N/A	N/A

No output parameters.

1.12.3.8 memReadCurrentGain()

Read bytes from the current applied gain buffer.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF000A	N/A	N/A	N/A
offset	UINT_32	0:4	N/A	N/A
sizeInBytes	UINT_16	4:6	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	BYTEARRAY	0:512	N/A	N/A

1.12.3.9 memGetGainSize()

Get the size of the buffer in bytes, as well as the number of rows and columns in applied gain buffer.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xFFFF000B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
bytes	UINT_32	0:4	N/A	N/A
rows	UINT_16	4:6	N/A	N/A
columns	UINT_16	6:8	N/A	N/A

1.13   Module: COLORLUT

This module is used to control which (if any) false color mode is applied to the 8-bit video output.

1.13.1   Enums

1.13.1.1 FLR_COLORLUT_ID_E — <INT_32>

FLR_COLORLUT_WHITEHOT = 0
FLR_COLORLUT_DEFAULT = 0
FLR_COLORLUT_0 = 0
FLR_COLORLUT_BLACKHOT = 1
FLR_COLORLUT_1 = 1
FLR_COLORLUT_2 = 2
FLR_COLORLUT_RAINBOW = 2
FLR_COLORLUT_3 = 3
FLR_COLORLUT_RAINBOW_HC = 3
FLR_COLORLUT_IRONBOW = 4
FLR_COLORLUT_4 = 4
FLR_COLORLUT_LAVA = 5
FLR_COLORLUT_5 = 5
FLR_COLORLUT_6 = 6
FLR_COLORLUT_ARCTIC = 6
FLR_COLORLUT_GLOBOW = 7
FLR_COLORLUT_7 = 7
FLR_COLORLUT_8 = 8
FLR_COLORLUT_GRADEDFIRE = 8
FLR_COLORLUT_HOTTEST = 9
FLR_COLORLUT_9 = 9
FLR_COLORLUT_ID_END = 10

1.13.2   Structs

No struct types in module colorLut.

1.13.3   Functions

1.13.3.1 colorLutSetControl()

Set the current enable state of the colorize module.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x000B0001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.13.3.2 colorLutGetControl()

Get the current enable state of the colorize module.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000B0002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.13.3.3 colorLutSetId()

Set the current color palette, by ID.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000B0003	N/A	N/A	N/A
data	FLR_COLORLUT_ID_E	0:4	N/A	N/A

No output parameters.

1.13.3.4 colorLutGetId()

Get the current color palette ID.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000B0004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_COLORLUT_ID_E	0:4	N/A	N/A

1.14 Module: SPNR

Functions for controlling Spatial Pattern Noise Reduction (SPNR) correction.

1.14.1   Enums

1.14.1.1 FLR_SPNR_STATE_E — <INT_32>

FLR_SPNR_READY = 0
FLR_SPNR_DESIRED = 1
FLR_SPNR_IN_PROGRESS = 2
FLR_SPNR_COMPLETE = 3

1.14.1.2 FLR_SPNR_ONESHOT_STATE_E — <INT_32>

FLR_SPNR_ONE_SHOT_READY = 0
FLR_SPNR_ONE_SHOT_EXECUTE = 1
FLR_SPNR_ONE_SHOT_RESET = 2
FLR_SPNR_ONE_SHOT_INIT = 3

1.14.2   Structs

1.14.2.1 FLR_SPNR_PSD_KERNEL_T

Field Name	DataType	Bytes
fvalue	FLOAT*64	256

1.14.3   Functions

1.14.3.1 spnrSetEnableState()

Enable or Disable SPNR corrections.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.14.3.2 spnrGetEnableState()

Get current SPNR correction enable state.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max

data	FLR_ENABLE_E	0:4	N/A	N/A

1.14.3.3 spnrGetState()

Get current SPNR execution state - FLR_SPNR_READY, FLR_SPNR_DESIRED, FLR_SPNR_IN_PROGRESS or FLR_SPNR_COMPLETE.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_SPNR_STATE_E	0:4	N/A	N/A

1.14.3.4 spnrSetFrameDelay()

Sets the frame delay parameter. This determines how many frames it takes between SPNR iterations. Note: Change value with caution.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0005	N/A	N/A	N/A
data	UINT_32	0:4	N/A	N/A

No output parameters.

1.14.3.5 spnrGetFrameDelay()

Gets the SPNR frame delay parameter.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.14.3.6 spnrGetSFApplied()

Get the currently applied Scale Factor.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0015	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
sf	FLOAT	0:4	N/A	N/A

1.14.3.7 spnrSetPSDKernel()

Sets the PSD kernel. This is power spectral density of the noise. Note: Change value with caution.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001A	N/A	N/A	N/A
data	FLR_SPNR_PSD_KERNEL_T	0:256	N/A	N/A

No output parameters.

1.14.3.8 spnrGetPSDKernel()

Gets the PSD kernel.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_SPNR_PSD_KERNEL_T	0:256	N/A	N/A

1.14.3.9 spnrSetSFMin()

Set the minimum Scale Factor ("SF") value, used when there is no scene motion. Scale Factor controls how aggressively the image is corrected.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001C	N/A	N/A	N/A
sfmin	FLOAT	0:4	N/A	N/A

No output parameters.

1.14.3.10 spnrGetSFMin()

Get the current minimum Scale Factor value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001D	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
sfmin	FLOAT	0:4	N/A	N/A

1.14.3.11 spnrSetSFMax()

Set the maximum Scale Factor ("SF") value used when there is much scene motion. Scale Factor controls how aggressively the image is corrected.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001E	N/A	N/A	N/A
sfmax	FLOAT	0:4	N/A	N/A

No output parameters.

1.14.3.12 spnrGetSFMax()

Get the current maximum Scale Factor value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C001F	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
sfmax	FLOAT	0:4	N/A	N/A

1.14.3.13 spnrSetDFMin()

Set the minimum Damping Factor ("DF") value, used when there is much scene motion.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0020	N/A	N/A	N/A
dfmin	FLOAT	0:4	N/A	N/A

No output parameters.

1.14.3.14 spnrGetDFMin()

Get the current minimum Damping Factor value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0021	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
dfmin	FLOAT	0:4	N/A	N/A

1.14.3.15 spnrSetDFMax()

Set the maximum Damping Factor ("DF") value, used when there is no scene motion.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0022	N/A	N/A	N/A
dfmax	FLOAT	0:4	N/A	N/A

No output parameters.

1.14.3.16 spnrGetDFMax()

Get the current maximum Damping Factor value.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0023	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
dfmax	FLOAT	0:4	N/A	N/A

1.14.3.17 spnrSetNormTarget()

Set the NormTarget, which adjusts how sensitive SPNR is to motion.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0024	N/A	N/A	N/A
normTarget	FLOAT	0:4	N/A	N/A

No output parameters.

1.14.3.18 spnrGetNormTarget()

Get the current NormTarget.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0025	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
normTarget	FLOAT	0:4	N/A	N/A

1.14.3.19 spnrGetNormTargetApplied()

Gets the actual NormTarget applied in the algorithm after parameter scaling

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000C0026	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
normTargetApplied	FLOAT	0:4	N/A	N/A

1.15 Module: SCALER

This module is used to control eZoom functionality.

FLIR® | The World's Sixth Sense™

1.15.1 Enums

No enumerations in module scaler.

1.15.2 Structs

1.15.2.1 FLR_SCALER_ZOOM_PARAMS_T

Field Name	DataType	Bytes
zoom	UINT_32	4
xCenter	UINT_32	4
yCenter	UINT_32	4

1.15.3 Functions

1.15.3.1 scalerGetMaxZoom()

Get the maximum scaling factor allowed by the current camera configuration.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000D0001	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
zoom	UINT_32	0:4	N/A	N/A

1.15.3.2 scalerSetZoom()

Set the current zoom parameters.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000D0002	N/A	N/A	N/A
zoomParams	FLR_SCALER_ZOOM_PARAMS_T	0:12	N/A	N/A

No output parameters.

1.15.3.3 scalerGetZoom()

Get the current zoom parameters.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000D0003	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
zoomParams	FLR_SCALER_ZOOM_PARAMS_T	0:12	N/A	N/A

1.15.3.4 scalerSetFractionalZoom()

Alternate configuration that allows for scaling below 1x.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000D0007	N/A	N/A	N/A
zoomNumerator	UINT_32	0:4	N/A	N/A
zoomDenominator	UINT_32	4:8	N/A	N/A
zoomXCenter	UINT_32	8:12	N/A	N/A
zoomYCenter	UINT_32	12:16	N/A	N/A
inChangeEnable	FLR_ENABLE_E	16:20	N/A	N/A
zoomOutXCenter	UINT_32	20:24	N/A	N/A
zoomOutYCenter	UINT_32	24:28	N/A	N/A
outChangeEnable	FLR_ENABLE_E	28:32	N/A	N/A

No output parameters.

1.15.3.5 scalerSetIndexZoom()

Internal function for zoom configuration.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000D0008	N/A	N/A	N/A
zoomIndex	UINT_32	0:4	N/A	N/A

zoomXCenter	UINT_32	4:8	N/A	N/A
zoomYCenter	UINT_32	8:12	N/A	N/A
inChangeEnable	FLR_ENABLE_E	12:16	N/A	N/A
zoomOutXCenter	UINT_32	16:20	N/A	N/A
zoomOutYCenter	UINT_32	20:24	N/A	N/A
outChangeEnable	FLR_ENABLE_E	24:28	N/A	N/A

No output parameters.

1.16   Module: SYSCTRL

General Pipeline controls

1.16.1   Enums

No enumerations in module sysctrl.

1.16.2   Structs

No struct types in module sysctrl.

1.16.3   Functions

1.16.3.1   sysctrlSetFreezeState()

Sets the state of the pipeline freeze parameter (enable/disable)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000E0001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.16.3.2   sysctrlGetFreezeState()

Gets the state of the pipeline freeze parameter (enable/disable)

Input/Send parameters:

Name	DataType	Bytes	Min	Max

Name	DataType	Bytes	Min	Max
FunctionID	0x000E0002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.16.3.3 sysctrlGetCameraFrameRate()

Get the framerate of the camera in frames per second (60/30 or 9).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x000E0007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
frameRate	UINT_32	0:4	N/A	N/A

1.17 Module: TESTRAMP

The test ramp can be used to replace the live video feed for calibration and error checking of the camera. The actual enable switch is located in the GAO module.

1.17.1 Enums

1.17.1.1 FLR_TESTRAMP_TYPE_E — <INT_32>

FLR_TESTRAMP_ZERO = 0
FLR_TESTRAMP_INCREMENTING = 1
FLR_TESTRAMP_VERT_SHADE = 2
FLR_TESTRAMP_HORIZ_SHADE = 3
FLR_TESTRAMP_BIG_VERT_SHADE = 4
FLR_TESTRAMP_SIMPLE_VERTICAL = 5
FLR_TESTRAMP_VTST_CHECKERBOARD = 6
FLR_TESTRAMP_VTST_DIAGONAL_STRIPE = 7
FLR_TESTRAMP_VTST_MOVING_LINE_BLACK = 8
FLR_TESTRAMP_VTST_DIAGONAL_LR = 9
FLR_TESTRAMP_VTST_DIAGONAL_RL = 10
FLR_TESTRAMP_TYPE_LAST = 11

1.17.2 Structs

1.17.2.1 FLR_TESTRAMP_SETTINGS_T

Field Name	DataType	Bytes
start	UINT_16	2
end	UINT_16	2
increment	UINT_16	2

1.17.3 Functions

1.17.3.1 testRampSetType()

Set the selected test ramp buffer to one of the pre-configured patterns. The simulated video frame is redrawn on set.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100000	N/A	N/A	N/A
index	UCHAR	0:1	N/A	N/A
data	FLR_TESTRAMP_TYPE_E	1:5	N/A	N/A

No output parameters.

1.17.3.2 testRampGetType()

Get the selected test ramp buffer's current pattern type.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100001	N/A	N/A	N/A
index	UCHAR	0:1	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_TESTRAMP_TYPE_E	0:4	N/A	N/A

1.17.3.3 testRampSetSettings()

Change the selected buffer's ramp settings. The buffer is redrawn on set. At present, the "Incrementing" pattern is the only configurable ramp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100002	N/A	N/A	N/A
index	UCHAR	0:1	N/A	N/A
data	FLR_TESTRAMP_SETTINGS_T	1:7	N/A	N/A

No output parameters.

1.17.3.4 testRampGetSettings()

Get the selected test ramp buffer's current ramp settings.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100003	N/A	N/A	N/A
index	UCHAR	0:1	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_TESTRAMP_SETTINGS_T	0:6	N/A	N/A

1.17.3.5 testRampSetMotionState()

Enable or disable looping through the test ramp buffers. If the Boson is configured with more than one test ramp: the video will display each ramp buffer once, then repeat.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100004	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.17.3.6 testRampGetMotionState()

Determine whether the test ramp is in motion or still mode.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100005	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.17.3.7   testRampSetIndex()

Display the selected ramp buffer on the next frame.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100006	N/A	N/A	N/A
data	UCHAR	0:1	N/A	N/A

No output parameters.

1.17.3.8   testRampGetIndex()

Get the ramp buffer index that will be displayed on the next frame.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UCHAR	0:1	N/A	N/A

1.17.3.9   testRampGetMaxIndex()

Determine the last valid index for a ramp buffer. MaxIndex=1 or two buffers is the default configuration.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00100008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UCHAR	0:1	N/A	N/A

1.18   Module: SYMBOLOGY

Use symbology commands to draw over video imagery. Colors are in 31bit ARGB color space. Transparency ("A") is from 0 (fully solid color) to 127 (fully transparent), while R,G,

and B range from 0-255. Color codes are represented as a 4-byte unsigned integer (0xAARRGGBB).

1.18.1   Enums

1.18.1.1 FLR_SYMBOLOGY_TEXT_ALIGNMENT_E — <INT_16>
FLR_SYMBOLOGY_LEFT_TOP = 17
FLR_SYMBOLOGY_CENTER_TOP = 18
FLR_SYMBOLOGY_RIGHT_TOP = 19
FLR_SYMBOLOGY_LEFT_MIDDLE = 33
FLR_SYMBOLOGY_CENTER_MIDDLE = 34
FLR_SYMBOLOGY_RIGHT_MIDDLE = 35
FLR_SYMBOLOGY_LEFT_BOTTOM = 49
FLR_SYMBOLOGY_CENTER_BOTTOM = 50
FLR_SYMBOLOGY_RIGHT_BOTTOM = 51
FLR_SYMBOLOGY_ALIGNMENT_LAST = 64

1.18.2   Structs
No struct types in module symbology.

1.18.3   Functions

1.18.3.1 symbologySetEnable()
Enable or disable drawing of all symbology, including systemSymbols.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140000	N/A	N/A	N/A
draw_symbols	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.18.3.2 symbologyCreateBitmap()
Create a bitmap object by describing ID, height, width, and position of the top/leftmost pixel. See symbologySendData to fill the pixel data. Width must be a multiple of 8 pixels in this release.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140001	N/A	N/A	N/A

ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A

No output parameters.

1.18.3.3 symbologySendData()

Send data to an existing bitmap object. Limited to 128bytes per transaction, automatically increments the write pointer. Bitmap is described from left to right, starting on the uppermost row. Pixels are described as 4 sequential bytes containing A, R, G, and B. Transparency "A" ranges from 0 (fully visible) to 127/0x7F (fully transparent). R, G, and B range from 0 to 255/0xFF. Transactions must be exactly 128 bytes long, pad buffer with 0x00 and adjust the size parameter to match the valid bytes sent.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140003	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
size	INT_16	1:3	N/A	N/A
text	UCHAR*128	3:131	N/A	N/A

No output parameters.

1.18.3.4 symbologyCreateArc()

Create an arc object by describing ID, position of the top/leftmost pixel in the bounding rectangle, height, width, start angle (0-360.0 degrees), end angle (0-360.0 degress) and the 4byte color code (0xAARRGGBB).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140004	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A
start_angle	FLOAT	9:13	N/A	N/A
end_angle	FLOAT	13:17	N/A	N/A

color	UINT_32	17:21	N/A	N/A

No output parameters.

1.18.3.5 symbologyCreateText()

Create a text object by describing ID, position of the top/leftmost pixel in the bounding rectangle, height, width, font index (1=system font, 2=user configurable), font size (~height in pixels), alignment of the text, 4byte color code (0xAARRGGBB), and a NULL terminated UTF-8 string containing exactly 128 bytes (pad the end of the string with NULL characters if necessary.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140006	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A
font	CHAR	9:10	N/A	N/A
size	INT_16	10:12	N/A	N/A
alignment	FLR_SYMBOLOGY_TEXT_ALIGNMENT_E	12:14	N/A	N/A
color	UINT_32	14:18	N/A	N/A
text	UCHAR*128	18:146	N/A	N/A

No output parameters.

1.18.3.6 symbologyMoveSprite()

Change the location of an existing symbology object's top/leftmost pixel to the specified coordinates.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140007	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A

No output parameters.

1.18.3.7   symbologyAddToGroup()

Add an existing symbology object to a group. Use groups to move and draw several objects at once. Group 0 is used by the system, and is not user changeable.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140008	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
group_ID	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.8   symbologyRemoveFromGroup()

Remove a symbology object from a group.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140009	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
group_ID	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.9   symbologyUpdateAndShow()

Draw or hide an existing symbology object.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014000A	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
visible	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.10 symbologyUpdateAndShowGroup()

Draw or hide all symbols in an existing symbology group.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014000B	N/A	N/A	N/A
group_ID	UCHAR	0:1	N/A	N/A

visible	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.11 symbologyDelete()

Remove a symbology object from all groups and delete it.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014000C	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A

No output parameters.

1.18.3.12 symbologyDeleteGroup()

Remove all symbology objects from a group and delete each object.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014000D	N/A	N/A	N/A
group_ID	UCHAR	0:1	N/A	N/A

No output parameters.

1.18.3.13 symbologyCreateFilledRectangle()

Create a rectangle that is a single solid color by describing ID, heigh, width, position of the top/leftmost pixel, and 4byte color code (0xAARRGGBB)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014000E	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A
color	UINT_32	9:13	N/A	N/A

No output parameters.

1.18.3.14 symbologyCreateOutlinedRectangle()

Create a rectangle that has a solid outline with transparent center by decribing ID, height, width, location of top/leftmost pixel, and 4byte color code (0xAARRGGBB)

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140010	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A
color	UINT_32	9:13	N/A	N/A

No output parameters.

1.18.3.15 symbologyCreateBitmapFromPng()

Not supported in current release.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140012	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
size	INT_16	5:7	N/A	N/A

No output parameters.

1.18.3.16 symbologyCreateCompressedBitmap()

Not supported in current release.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140014	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A

No output parameters.

1.18.3.17 symbologyCreateBitmapFromPngFile()

Not supported in current release.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140016	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
path	UCHAR*128	5:133	N/A	N/A

No output parameters.

1.18.3.18 symbologyResetWritePosition()

Reset the write pointer for a bitmap object. See also symbologySendData.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140018	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A

No output parameters.

1.18.3.19 symbologyMoveByOffset()

Move an existing symbology object's top/leftmost pixel by the specified horizontal and vertical offsets.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140019	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
off_X	INT_16	1:3	N/A	N/A
off_Y	INT_16	3:5	N/A	N/A

No output parameters.

1.18.3.20 symbologyMoveGroupByOffset()

Move all objects in a group by the specified horizontal and vertical offsets.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001A	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
off_X	INT_16	1:3	N/A	N/A
off_Y	INT_16	3:5	N/A	N/A

No output parameters.

1.18.3.21 symbologyCreateFilledEllipse()

Create an ellipse that is a single solid color by describing ID, height, width, location of top/leftmost pixel, and 4byte color code (0xAARRGGBB).

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001B	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
width	INT_16	5:7	N/A	N/A
height	INT_16	7:9	N/A	N/A
color	UINT_32	9:13	N/A	N/A

No output parameters.

1.18.3.22 symbologyCreateLine()

Create a line object by describing ID, 4byte color code, and the location of each endpoint.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001C	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
pos_X	INT_16	1:3	N/A	N/A
pos_Y	INT_16	3:5	N/A	N/A
pos_X2	INT_16	5:7	N/A	N/A
pos_Y2	INT_16	7:9	N/A	N/A
color	UINT_32	9:13	N/A	N/A

No output parameters.

1.18.3.23 symbologySetZorder()

Assign a Z height to an existing symbology object. Objects with a large Z height draw over objects with a lower Z height.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001D	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
zorder	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.24 symbologySaveConfiguration()

Save all current symbol objects and groups to persistent flash. Current visibility will also be saved.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001E	N/A	N/A	N/A

No output parameters.

1.18.3.25 symbologyReloadConfiguration()

Load configuration from persistent flash, existing objects will be overwritten by conflicting objects in flash non-conflicting objects will remain.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0014001F	N/A	N/A	N/A

No output parameters.

1.18.3.26 symbologyGetEnable()

Get the current state of symbology engine.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140020	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max

draw_symbols	FLR_ENABLE_E	0:4	N/A	N/A

1.18.3.27 symbologySetClonesNumber()

Add clones of already defined object. Clone objects differ from the original only in position.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140021	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
numberOfClones	UCHAR	1:2	N/A	N/A

No output parameters.

1.18.3.28 symbologyMoveCloneByOffset()

Move a clone of a symbology object by a horizontal and vertical offset.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140022	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
cloneID	UCHAR	1:2	N/A	N/A
pos_X	INT_16	2:4	N/A	N/A
pos_Y	INT_16	4:6	N/A	N/A

No output parameters.

1.18.3.29 symbologyMoveCloneSprite()

Move a clone of a symbology object to a new position.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00140023	N/A	N/A	N/A
ID	UCHAR	0:1	N/A	N/A
cloneID	UCHAR	1:2	N/A	N/A
pos_X	INT_16	2:4	N/A	N/A
pos_Y	INT_16	4:6	N/A	N/A

No output parameters.

1.19 Module: FILEOPS

Operations on the camera's internal filesystem. All paths are represented by fixed byte-width, null-terminated, utf-8 strings. All operations must use absolute paths for this release. The /jffs2/ directory contains symbology and splash screen data.

1.19.1 Enums

No enumerations in module fileOps.

1.19.2 Structs

No struct types in module fileOps.

1.19.3 Functions

1.19.3.1 fileOpsDir()

List the contents of the current directory, returning one item per call. An empty string signals the end of the current directory.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160000	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
dirent	UCHAR*128	0:128	N/A	N/A

1.19.3.2 fileOpsCd()

Change location to the new directory.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160001	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
pwd	UCHAR*128	0:128	N/A	N/A

1.19.3.3 fileOpsMd()

Make a new directory.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160002	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A

No output parameters.

1.19.3.4 fileOpsFopen()

Open a file, using "r", "w" to control mode. Returns a file index, if a file handle is available. Due to overhead, only a limited number of files can be opened simultaneously.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160003	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A
mode	UCHAR*128	128:256	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
id	UINT_32	0:4	N/A	N/A

1.19.3.5 fileOpsFclose()

Close a file by index. All files should be closed before rebooting or removing power from the camera. Any failure to close files may result in loss of data and/or degraded camera performance.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160004	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A

No output parameters.

1.19.3.6 fileOpsFread()

Read bytes from file by index.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160005	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A

length	UINT_32	4:8	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
buf	UCHAR*128	0:128	N/A	N/A
ret	UINT_32	128:132	N/A	N/A

1.19.3.7 fileOpsFwrite()

Write bytes to a file by index. File must be opened for writing. See also fileOpsGetFileSize().

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160006	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A
length	UINT_32	4:8	N/A	N/A
buf	UCHAR*128	8:136	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
ret	UINT_32	0:4	N/A	N/A

1.19.3.8 fileOpsFtell()

Return the current position of the pointer in file by index. See also fileOpsGetFileSize().

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160007	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
offset	UINT_32	0:4	N/A	N/A

1.19.3.9 fileOpsFseek()

Move the pointer in file by index.

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x00160008	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A
offset	UINT_32	4:8	N/A	N/A
origin	UINT_32	8:12	N/A	N/A

No output parameters.

1.19.3.10 fileOpsFtruncate()

Truncate a file to the specified size.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00160009	N/A	N/A	N/A
id	UINT_32	0:4	N/A	N/A
length	UINT_32	4:8	N/A	N/A

No output parameters.

1.19.3.11 fileOpsRmdir()

Recursively remove a directory and its contents.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0016000A	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A

No output parameters.

1.19.3.12 fileOpsRm()

Remove a file.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0016000B	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A

No output parameters.

1.19.3.13 fileOpsRename()

Rename a file or directory.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0016000C	N/A	N/A	N/A
oldpath	UCHAR*128	0:128	N/A	N/A
newpath	UCHAR*128	128:256	N/A	N/A

No output parameters.

1.19.3.14 fileOpsGetFileSize()

Return the total size of a file.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0016000D	N/A	N/A	N/A
path	UCHAR*128	0:128	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
fileLength	UINT_32	0:4	N/A	N/A

1.20 Module: JFFS2

The JFFS2 portion of the camera filesystem contains user accessible files, such as the symbology files and splash screen images. This allows the user to check and change the state of the JFFS2 partition. See also fileOps module.

1.20.1 Enums

1.20.1.1 FLR_JFFS2_STATE_E — <INT_32>

FLR_JFFS2_INITIAL = 0
FLR_JFFS2_CONFIGURED = 1
FLR_JFFS2_MOUNTING = 2
FLR_JFFS2_MOUNTED = 3
FLR_JFFS2_UNMOUNTING = 4
FLR_JFFS2_UNMOUNTED = 5
FLR_JFFS2_FAILED_MOUNT = 6
FLR_JFFS2_FAILED_UNMOUNT = 7
FLR_JFFS2_FAILED_CONFIG = 8
FLR_JFFS2_DISABLED = 9
FLR_JFFS2_STATE_END = 10

1.20.2   Structs

No struct types in module jffs2.

1.20.3   Functions

1.20.3.1   jffs2Mount()

Mount the jffs2 partition to /jffs2/.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00170001	N/A	N/A	N/A

No output parameters.

1.20.3.2   jffs2Unmount()

Unmount the jffs2 partition.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00170002	N/A	N/A	N/A

No output parameters.

1.20.3.3   jffs2GetState()

Check the current state of the jffs2 partition.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00170007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
state	FLR_JFFS2_STATE_E	0:4	N/A	N/A

1.21   Module: SPLASHSCREEN

Splash screen allows for the display of static imagery during camera bootup, before live data is available. Splash screen images must be 320x256 or 640x512. Only PNG files are supported for current release.

1.21.1 Enums

1.21.1.1 FLR_SPLASHSCREEN_FILETYPE_E — <INT_32>

FLR_SPLASHSCREEN_PNG = 0
FLR_SPLASHSCREEN_BMP = 1
FLR_SPLASHSCREEN_RAW = 2
FLR_SPLASHSCREEN_NONE = 3
FLR_SPLASHSCREEN_FILE_END = 4

1.21.2 Structs

No struct types in module splashScreen.

1.21.3 Functions

1.21.3.1 splashScreenSetDuration()

Set the minimum duration of splash screen display in ms. 0 is equivalent to disabling splash screen. If live imagery or additional splash screen is not available at the expiration of this time, the image will continue displaying until live imagery is ready.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0000	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A
periodMs	UINT_32	4:8	N/A	N/A

No output parameters.

1.21.3.2 splashScreenSetDataType()

Set the filetype for the selected splash screen. Only PNG is supported in this release.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0001	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A
filetype	FLR_SPLASHSCREEN_FILETYPE_E	4:8	N/A	N/A

No output parameters.

1.21.3.3 splashScreenSetBackground()

For 320x256 splash screens, set the background color as 0xRRGGBB.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0002	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A
backgroundColor	UINT_32	4:8	N/A	N/A

No output parameters.

1.21.3.4 splashScreenGetDuration()

Gets the minimum duration of display for the selected splash screen.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0003	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
periodMs	UINT_32	0:4	N/A	N/A

1.21.3.5 splashScreenGetDataType()

Gets the filetype for the selected splash screen.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0004	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
filetype	FLR_SPLASHSCREEN_FILETYPE_E	0:4	N/A	N/A

1.21.3.6 splashScreenGetBackground()

Get the background color for the selected splash screen.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001A0005	N/A	N/A	N/A
screen_num	UINT_32	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
backgroundColor	UINT_32	0:4	N/A	N/A

1.22 Module: SYSTEMSYMBOLS

System symbols are drawn to inform the user of certain important signals, such as overheat condition.

1.22.1 Enums

1.22.1.1 FLR_SYSTEMSYMBOLS_SYMBOL_E — <INT_32>

FLR_SYSTEMSYMBOLS_FFC_IMMINENT = 0
FLR_SYSTEMSYMBOLS_FFC_DESIRED = 1
FLR_SYSTEMSYMBOLS_TABLE_SWITCH_DESIRED = 2
FLR_SYSTEMSYMBOLS_LOW_GAIN = 3
FLR_SYSTEMSYMBOLS_OVERTEMP = 4
FLR_SYSTEMSYMBOLS_SYMBOL_LAST = 5

1.22.1.2 FLR_SYSTEMSYMBOLS_ID_TYPE_E — <INT_32>

FLR_SYSTEMSYMBOLS_ELEMENT = 0
FLR_SYSTEMSYMBOLS_GROUP = 1
FLR_SYSTEMSYMBOLS_ID_LAST = 2

1.22.1.3 FLR_SYSTEMSYMBOLS_STATE_E — <INT_32>

FLR_SYSTEMSYMBOLS_ENTERED = 0
FLR_SYSTEMSYMBOLS_EXITED = 1
FLR_SYSTEMSYMBOLS_STATE_LAST = 2

1.22.2 Structs

No struct types in module systemSymbols.

1.22.3   Functions

1.22.3.1   systemSymbolsGetID()

Get the current symbol or group ID associated with the specified signal.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001B0002	N/A	N/A	N/A
symbol	FLR_SYSTEMSYMBOLS_SYMBOL_E	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
id	UCHAR	0:1	N/A	N/A
id_type	FLR_SYSTEMSYMBOLS_ID_TYPE_E	1:5	N/A	N/A

1.22.3.2   systemSymbolsSetID()

Set the current symbol or group ID that should be displayed for the specified signal.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001B0003	N/A	N/A	N/A
symbol	FLR_SYSTEMSYMBOLS_SYMBOL_E	0:4	N/A	N/A
id	UCHAR	4:5	N/A	N/A
id_type	FLR_SYSTEMSYMBOLS_ID_TYPE_E	5:9	N/A	N/A

No output parameters.

1.22.3.3   systemSymbolsGetEnable()

Get the current enable state of the specified signal.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001B0004	N/A	N/A	N/A
symbol	FLR_SYSTEMSYMBOLS_SYMBOL_E	0:4	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
enabled	FLR_ENABLE_E	0:4	N/A	N/A

1.22.3.4 systemSymbolsSetEnable()

Enable or disable the specified signal.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001B0005	N/A	N/A	N/A
symbol	FLR_SYSTEMSYMBOLS_SYMBOL_E	0:4	N/A	N/A
enabled	FLR_ENABLE_E	4:8	N/A	N/A

No output parameters.

1.23 Module: SFFC

No description provided.

1.23.1 Enums

No enumerations in module sffc.

1.23.2 Structs

No struct types in module sffc.

1.23.3 Functions

1.23.3.1 sffcGetScaleFactor()

Get the currently applied SFFC Scale Factor.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0000	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.23.3.2 sffcGetDeltaTempLinearCoeff()

Get the linear coefficient for delta FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0001	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.23.3.3 sffcSetDeltaTempLinearCoeff()

Set the linear coefficient for delta FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0002	N/A	N/A	N/A
data	FLOAT	0:4	N/A	N/A

No output parameters.

1.23.3.4 sffcGetDeltaTempOffsetCoeff()

Get the offset coefficient for delta FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0003	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.23.3.5 sffcSetDeltaTempOffsetCoeff()

Set the offset coefficient for delta FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0004	N/A	N/A	N/A
data	FLOAT	0:4	N/A	N/A

No output parameters.

1.23.3.6 sffcGetFpaTempLinearCoeff()

Get the linear coefficient for current FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0005	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.23.3.7   sffcSetFpaTempLinearCoeff()
Set the linear coefficient for current FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0006	N/A	N/A	N/A
data	FLOAT	0:4	N/A	N/A

No output parameters.

1.23.3.8   sffcGetFpaTempOffsetCoeff()
Get the offset coefficient for current FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLOAT	0:4	N/A	N/A

1.23.3.9   sffcSetFpaTempOffsetCoeff()
Set the offset coefficient for current FPA temp.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0008	N/A	N/A	N/A
data	FLOAT	0:4	N/A	N/A

No output parameters.

1.23.3.10 sffcGetDeltaTempTimeLimitInSecs()

Get the number of seconds for which the delta FPA temp scale factor is applied.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C0009	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_32	0:4	N/A	N/A

1.23.3.11 sffcSetDeltaTempTimeLimitInSecs()

Set the number of seconds for which the delta FPA temp scale factor is applied.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001C000A	N/A	N/A	N/A
data	UINT_32	0:4	N/A	N/A

No output parameters.

1.24   Module: IMAGESTATS

No description provided.

1.24.1   Enums

No enumerations in module imageStats.

1.24.2   Structs

No struct types in module imageStats.

1.24.3   Functions

1.24.3.1   imageStatsGetTotalHistPixelsInROI()

Total number of pixels that are sub-sampled in the ROI.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0000	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
totalPixelsInROI	UINT_32	0:4	N/A	N/A

1.24.3.2   imageStatsGetPopBelowLowToHighThresh()

Number of pixels within the ROI with values below the Low to High threshold

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0001	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
popBelowLowToHighThresh	UINT_32	0:4	N/A	N/A

1.24.3.3   imageStatsGetPopAboveHighToLowThresh()

Number of pixels within the ROI with values above the High to Low threshold

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
popAboveHighToLowThresh	UINT_32	0:4	N/A	N/A

1.24.3.4   imageStatsSetROI()

Set the ROI for calculating statistics specified

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0003	N/A	N/A	N/A
roi	FLR_ROI_T	0:8	N/A	N/A

No output parameters.

1.24.3.5   imageStatsGetROI()

Get the current ROI for calculating statistics.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
roi	FLR_ROI_T	0:8	N/A	N/A

1.24.3.6   imageStatsGetFirstBin()

Returns the value of the lowest populated intensity histogram bin for the entire image

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0005	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
firstBin	UINT_16	0:2	N/A	N/A

1.24.3.7   imageStatsGetLastBin()

Returns the value of the highest populated intensity histogram bin for the entire image

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
lastBin	UINT_16	0:2	N/A	N/A

1.24.3.8   imageStatsGetMean()

Returns the image mean intensity for the entire image

Input/Send parameters:

Name	DataType	Bytes	Min	Max

FunctionID	0x001D0007	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
mean	UINT_16	0:2	N/A	N/A

1.24.3.9 imageStatsGetFirstBinInROI()

Returns the value of the lowest populated intensity histogram bin within the Image Stats ROI

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
firstBinInROI	UINT_16	0:2	N/A	N/A

1.24.3.10 imageStatsGetLastBinInROI()

Returns the value of the highest populated intensity histogram bin within the Image Stats ROI

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D0009	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
lastBinInROI	UINT_16	0:2	N/A	N/A

1.24.3.11 imageStatsGetMeanInROI()

Returns the image mean intensity within the Image Stats ROI

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x001D000A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
meanInROI	UINT_16	0:2	N/A	N/A

1.25 Module: SRNR

No description provided.

1.25.1 Enums

No enumerations in module srnr.

1.25.2 Structs

No struct types in module srnr.

1.25.3 Functions

1.25.3.1 srnrSetEnableState()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280001	N/A	N/A	N/A
data	FLR_ENABLE_E	0:4	N/A	N/A

No output parameters.

1.25.3.2 srnrGetEnableState()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280002	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	FLR_ENABLE_E	0:4	N/A	N/A

1.25.3.3 srnrSetThRowSum()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280003	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.25.3.4 srnrGetThRowSum()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280004	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.25.3.5 srnrSetThPixel()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280005	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.25.3.6 srnrGetThPixel()
No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280006	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.25.3.7   srnrSetMaxCorr()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280007	N/A	N/A	N/A
data	UINT_16	0:2	N/A	N/A

No output parameters.

1.25.3.8   srnrGetMaxCorr()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x00280008	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.25.3.9   srnrGetThPixelApplied()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0028000A	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.25.3.10 srnrGetMaxCorrApplied()

No description provided.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0x0028000B	N/A	N/A	N/A

Output/Receive parameters:

Name	DataType	Bytes	Min	Max
data	UINT_16	0:2	N/A	N/A

1.26 Module: DUMMY

No description provided.

1.26.1 Enums

No enumerations in module dummy.

1.26.2 Structs

No struct types in module dummy.

1.26.3 Functions

1.26.3.1 dummyBadCommand()

Deliberately invalid Command Id for negative testing.

Input/Send parameters:

Name	DataType	Bytes	Min	Max
FunctionID	0xDEADBEEF	N/A	N/A	N/A

No output parameters.