

# Read before using

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## Overview

This document explains support parameter at C15440-20UP and how to control them by DCAM Properties. This document requires knowledge of basic concept of DCAM-API and SDK. If you need description about them, please refer other documents.

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## How to read the table

Property List is described according to the following rules.

1.Classfication										
2.PropertyID					3.	4.	5.	6.	7.	8.ValueType
	9.PropertyValue				10.Information					

Description table

index	item	explanation
1	Classification	Large classification of the Property.
2	Property ID	Property ID that camera supported.
3	Property Ver	DCAM-API version of this Property.
4	Readable Flag	Whether it is possible to read the value from this Property. In the case of "-" is not readable. In the case of "R" is readable.
5	Writable Flag(Stable)	Whether it is possible to change this Property value during status is "Stable". In the case of "-" is not writable. In the case of "W" is writable.

6	Writable Flag(Ready)	Whether it is possible to change this Property value during status is "Ready". In the case of "-" is not writable. In the case of "W" is writable.
7	Writable Flag(Busy)	Whether it is possible to change this Property value during status is "Busy". In the case of "-" is not writable. In the case of "W" is writable.
8	Value Type	Property value types : MODE, LONG and REAL.
9	Property Value	ID or minimum, maximum, default, step values from this Property.
10	Information	Additional information about this Property.

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## Property List

### Sensor mode and speed

DCAM_IDPROP_SENSORMODE	-	R	W	-	-	MODE
DCAMPROP_SENSORMODE__AREA (default)						
DCAMPROP_SENSORMODE__PROGRESSIVE						
DCAM_IDPROP_READOUTSPEED	-	R	W	-	-	LONG
1 to 3 , step 1 , default 3	This property is enable only when SENSORMODE is AREA. 1:Ultra quiet scan 2:Standard scan 3:Fast scan					
DCAM_IDPROP_READOUT_DIRECTION	-	R	W	-	-	MODE
DCAMPROP_READOUT_DIRECTION__FORWARD						
DCAMPROP_READOUT_DIRECTION__BACKWARE	@ DCAMPROP_SENSORMODE__PROGRESSIVE					

### Trigger

DCAM_IDPROP_TRIGGERSOURCE	-	R	W	W	W	MODE
DCAMPROP_TRIGGERSOURCE__INTERNAL (default)						
DCAMPROP_TRIGGERSOURCE__EXTERNAL						
DCAMPROP_TRIGGERSOURCE__SOFTWARE						
DCAMPROP_TRIGGERSOURCE__MASTERPULSE						
DCAM_IDPROP_TRIGGER_MODE	-	R	W	W	-	MODE
DCAMPROP_TRIGGER_MODE__NORMAL (default)						
DCAMPROP_TRIGGER_MODE__START						
DCAM_IDPROP_TRIGGERACTIVE	-	R	W	W	-	MODE
DCAMPROP_TRIGGERACTIVE__EDGE (default)						
DCAMPROP_TRIGGERACTIVE__LEVEL	@ DCAMPROP_SENSORMODE__AREA					
DCAMPROP_TRIGGERACTIVE__SYNCREADOUT	@ DCAMPROP_SENSORMODE__AREA					
DCAM_IDPROP_TRIGGER_GLOBALEXPOSURE	-	R	W	-	-	MODE
DCAMPROP_TRIGGER_GLOBALEXPOSURE__DELAYED (default)						
DCAMPROP_TRIGGER_GLOBALEXPOSURE__GLOBALRESET						

DCAM_IDPROP_TRIGGERPOLARITY	-	R	W	W	W	MODE
DCAMPROP_TRIGGERPOLARITY__NEGATIVE (default)						
DCAMPROP_TRIGGERPOLARITY__POSITIVE						
DCAM_IDPROP_TRIGGER_CONNECTOR	-	R	-	-	-	MODE
DCAMPROP_TRIGGER_CONNECTOR__BNC						
DCAM_IDPROP_TRIGGERTIMES	-	R	W	W	W	LONG
1 to 10000 , step 1 , default 1						
DCAM_IDPROP_TRIGGERDELAY	-	R	W	W	W	REAL (Second)
0 to 10.000002 , step 0.000001 , default 0	@ DCAMPROP_SENSORMODE__AREA					
0 to 0.022415515 , step 0.000004868 , default 0	@ DCAMPROP_SENSORMODE__PROGRESSIVE Depends on INTERNALLINESPEED and INTERNAL_LINEINTERVAL, OUTPUTTRIGGER_PREHSYNCCOUNT					

## Sensor cooler

DCAM_IDPROP_SENSORTEMPERATURE	-	R	-	-	-	REAL (degrees Celsius)
-50 to 100						
DCAM_IDPROP_SENSORCOOLER (at Water Cooling only)	-	R	W	W	W	MODE
DCAMPROP_SENSORCOOLER__OFF						
DCAMPROP_SENSORCOOLER__ON						
DCAMPROP_SENSORCOOLER__MAX						
DCAM_IDPROP_SENSORCOOLERSTATUS	-	R	-	-	-	MODE
DCAMPROP_SENSORCOOLERSTATUS__OFF						
DCAMPROP_SENSORCOOLERSTATUS__READY						
DCAMPROP_SENSORCOOLERSTATUS__BUSY						

## Binning and ROI

DCAM_IDPROP_BINNING	-	R	W	-	-	MODE
DCAMPROP_BINNING__1 (default)						
DCAMPROP_BINNING__2	@ DCAMPROP_SENSORMODE__AREA					
DCAMPROP_BINNING__4	@ DCAMPROP_SENSORMODE__AREA					
DCAM_IDPROP_SUBARRAYHPOS	-	R	W	-	-	LONG
0 to 2300 , step 4 , default 0	@ DCAMPROP_SENSORMODE__AREA					
0 to 2303 , step 1 , default 0	@ DCAMPROP_SENSORMODE__PROGRESSIVE					
DCAM_IDPROP_SUBARRAYHSIZE	-	R	W	-	-	LONG
4 to 2304 , step 4 , default 2304	@ DCAMPROP_SENSORMODE__AREA					
1 to 2304 , step 1 , default 2304	@ DCAMPROP_SENSORMODE__PROGRESSIVE					
DCAM_IDPROP_SUBARRAYVPOS	-	R	W	-	-	LONG
0 to 2300 , step 4 , default 0						
DCAM_IDPROP_SUBARRAYVSIZE	-	R	W	-	-	LONG
4 to 2304 , step 4 , default 2304						
DCAM_IDPROP_SUBARRAYMODE	-	R	W	-	-	MODE

DCAMPROP_MODE__OFF (default)						
DCAMPROP_MODE__ON						
Feature						
DCAM_IDPROP_EXPOSURETIME	-	R	W	W	W	REAL (Second)
0.000280632 to 10.000040632 , step 0.00000001 , default 0.011250824	@ DCAMPROP_SENSORMODE__AREA and DCAM_IDPROP_READOUTSPEED=1 Depends on SUBARRAY properties					
0.000065765 to 10.000017235 , step 0.00000001 , default 0.011220015	@ DCAMPROP_SENSORMODE__AREA and DCAM_IDPROP_READOUTSPEED=2 Depends on SUBARRAY properties					
0.000017632 to 10.000004662 , step 0.00000001 , default 0.011213221	@ DCAMPROP_SENSORMODE__AREA and DCAM_IDPROP_READOUTSPEED=3 Depends on SUBARRAY properties					
0.000017632 to 0.011218088 , step 0.00000001 , default 0.011213221	@ DCAMPROP_SENSORMODE__PROGRESSIVE Depends on INTERNALLINESPEED and INTERNAL_LINEINTERVAL, SUBARRAY properties					
ALU						
DCAM_IDPROP_DEFECTCORRECT_MODE	-	R	W	W	W	MODE
DCAMPROP_DEFECTCORRECT_MODE__OFF						
DCAMPROP_DEFECTCORRECT_MODE__ON (default)						
DCAM_IDPROP_HOTPIXELCORRECT_LEVEL	-	R	W	W	W	MODE
DCAMPROP_HOTPIXELCORRECT_LEVEL__STANDARD (default)						
DCAMPROP_HOTPIXELCORRECT_LEVEL__MINIMUM						
DCAMPROP_HOTPIXELCORRECT_LEVEL__AGGRESSIVE						
DCAM_IDPROP_INTENSITYLUT_MODE	-	R	W	W	-	MODE
DCAMPROP_INTENSITYLUT_MODE__THROUGH (default)						
DCAMPROP_INTENSITYLUT_MODE__PAGE						
DCAM_IDPROP_INTENSITYLUT_PAGE	-	R	-	-	-	MODE
1						
Output Trigger						
DCAM_IDPROP_NUMBEROF_OUTPUTTRIGGERCONNECTOR	-	R	-	-	-	LONG
return 3						
DCAM_IDPROP_OUTPUTTRIGGER_SOURCE	-	R	W	W	W	MODE
DCAMPROP_OUTPUTTRIGGER_SOURCE__READOUTEND (default)						
DCAMPROP_OUTPUTTRIGGER_SOURCE__VSYNC						
DCAMPROP_OUTPUTTRIGGER_SOURCE__HSYNC	@ DCAMPROP_SENSORMODE__PROGRESSIVE					
DCAMPROP_OUTPUTTRIGGER_SOURCE__TRIGGER						
DCAM_IDPROP_OUTPUTTRIGGER_POLARITY	-	R	W	W	W	MODE
DCAMPROP_OUTPUTTRIGGER_POLARITY__NEGATIVE (default)						

DCAMPROP_OUTPUTTRIGGER_POLARITY_POSITIVE						
DCAM_IDPROP_OUTPUTTRIGGER_ACTIVE	-	R	-	-	-	MODE
DCAMPROP_OUTPUTTRIGGER_ACTIVE_EDGE						
DCAM_IDPROP_OUTPUTTRIGGER_DELAY	-	R	W	W	W	REAL (Second)
0 to 10.0 , step 0.000001 , default 0						
DCAM_IDPROP_OUTPUTTRIGGER_PERIOD	-	R	W	W	W	REAL (Second)
0.000001 to 10.0 , step 0.000001 , default 0.001						
DCAM_IDPROP_OUTPUTTRIGGER_KIND	-	R	W	W	W	MODE
DCAMPROP_OUTPUTTRIGGER_KIND_LOW (default)						
DCAMPROP_OUTPUTTRIGGER_KIND_EXPOSURE						
DCAMPROP_OUTPUTTRIGGER_KIND_PROGRAMABLE						
DCAMPROP_OUTPUTTRIGGER_KIND_TRIGGERREADY						
DCAMPROP_OUTPUTTRIGGER_KIND_HIGH						
DCAM_IDPROP_OUTPUTTRIGGER_PREHSYNCCOUNT	-	R	W	W	W	LONG
0 to 4607 , step 1 , default 0						

## Master Pulse

DCAM_IDPROP_MASTERPULSE_MODE	-	R	W	W	W	MODE
DCAMPROP_MASTERPULSE_MODE_CONTINUOUS (default)						
DCAMPROP_MASTERPULSE_MODE_START						
DCAMPROP_MASTERPULSE_MODE_BURST						
DCAM_IDPROP_MASTERPULSE_TRIGGERSOURCE	-	R	W	W	W	MODE
DCAMPROP_MASTERPULSE_TRIGGERSOURCE_EXTERNAL (default)						
DCAMPROP_MASTERPULSE_TRIGGERSOURCE_SOFTWARE						
DCAM_IDPROP_MASTERPULSE_INTERVAL	-	R	W	W	W	REAL (Second)
0.000005 to 10.0 , step 0.000001 , default 0.1						
DCAM_IDPROP_MASTERPULSE_BURSTTIMES	-	R	W	W	W	LONG
1 to 65535 , step 1 , default 1						

## Synchronous timing

DCAM_IDPROP_TIMING_READOUTTIME	-	R	-	-	-	REAL (Second)
return seconds how long takes to reading out a frame.						
DCAM_IDPROP_TIMING_CYCLICTRIGGERPERIOD	-	R	-	-	-	REAL (Second)
return seconds which period cyclic trigger happens in.						
DCAM_IDPROP_TIMING_MINTRIGGERBLANKING	-	R	-	-	-	REAL (Second)
return seconds required minimum trigger blanking.						
DCAM_IDPROP_TIMING_MINTRIGGERINTERVAL	-	R	-	-	-	REAL (Second)
return seconds required minimum trigger interval.						
DCAM_IDPROP_TIMING_GLOBALEXPOSUREDELAY	-	R	-	-	-	REAL (Second)
return seconds how long takes to start global exposure.						
DCAM_IDPROP_TIMING_EXPOSURE	-	R	-	-	-	MODE
DCAMPROP_TIMING_EXPOSURE_ROLLING						
DCAM_IDPROP_TIMING_INVALIDEXPOSUREPERIOD	-	R	-	-	-	REAL (Second)

return seconds of period which exposure is not started from trigger.	
DCAM_IDPROP_INTERNALFRAMERATE	- R W W W REAL (Hz)
return number of frames per second in INTERNAL trigger mode.	@ DCAMPROP_SENSORMODE_AREA Read Only when sensor mode is AREA.
22.293875905 to 44.563571901, step 0	@ DCAMPROP_SENSORMODE_PROGRESSIVE Depends on INTERNALLINESPEED and INTERNAL_LINEINTERVAL
DCAM_IDPROP_INTERNAL_FRAMEINTERVAL	- R W W W REAL (Second)
return seconds of interval between frames in INTERNAL trigger mode.	@ DCAMPROP_SENSORMODE_AREA Read Only when sensor mode is AREA.
0.022439853 to 0.044855368, step 0	@ DCAMPROP_SENSORMODE_PROGRESSIVE Depends on INTERNALLINESPEED and INTERNAL_LINEINTERVAL
DCAM_IDPROP_INTERNALLINESPEED	- R W W W REAL (m/s)
return speed on the sensor.	@ DCAMPROP_SENSORMODE_AREA Read Only when sensor mode is AREA.
0.006754105 to 1.335347432, step 0.000001441	@ DCAMPROP_SENSORMODE_PROGRESSIVE
DCAM_IDPROP_INTERNAL_LINEINTERVAL	- R W W W REAL (Second)
return seconds of interval between two lines timings.	@ DCAMPROP_SENSORMODE_AREA Read Only when sensor mode is AREA.
0.000004868 to 0.000963662, step 0.000000206	@ DCAMPROP_SENSORMODE_PROGRESSIVE

## System Information

DCAM_IDPROP_COLORTYPE	- R - - - MODE
DCAMPROP_COLORTYPE_BW	
DCAM_IDPROP_BITSPERCHANNEL	- R W - - LONG
12 to 16 , step 4 , default 16	@ DCAM_PIXELTYPE_MONO16, MONO12, MONO12P
8 to 8 , step 0 , default 8	@ DCAM_PIXELTYPE_MONO8
DCAM_IDPROP_IMAGE_WIDTH	- R - - - LONG
return width pixel of current setting	
DCAM_IDPROP_IMAGE_HEIGHT	- R - - - LONG
return height line of current setting	
DCAM_IDPROP_IMAGE_ROWBYTES	- R - - - LONG
return horizontal rowbytes of current setting	
DCAM_IDPROP_IMAGE_FRAMEBYTES	- R - - - LONG
return bytes per frame of current setting	
DCAM_IDPROP_IMAGE_TOPOFFSETBYTES	- R - - - LONG
return offset bytes size to point first data in image	
DCAM_IDPROP_IMAGE_PIXELTYPE	- R W - - MODE
DCAM_PIXELTYPE_MONO8	
DCAM_PIXELTYPE_MONO16 (default)	
DCAM_PIXELTYPE_MONO12P	@ CoaXPress connection

DCAM_PIXELTYPE_MONO12	@ USB 3.0 connection					
DCAM_IDPROP_BUFFER_ROWBYTES	4.0	R	-	-	-	LONG
return row byte size of user attached buffer						
DCAM_IDPROP_BUFFER_FRAMEBYTES	4.0	R	-	-	-	LONG
return byte size of a frame buffer that should be allocated when you use dcambuf_attach() function						
DCAM_IDPROP_BUFFER_TOPOFFSETBYTES	4.0	R	-	-	-	LONG
return unnecessary data size in front of the actual image data						
DCAM_IDPROP_BUFFER_PIXELTYPE	4.0	R	-	-	-	MODE
DCAM_PIXELTYPE_MONO8						
DCAM_PIXELTYPE_MONO16						
DCAM_PIXELTYPE_MONO12P	@ CoaXPress connection					
DCAM_PIXELTYPE_MONO12	@ USB 3.0 connection					
DCAM_IDPROP_RECORDFIXEDBYTES_PERFILE	4.0	R	-	-	-	LONG
return additional data size per a file						
DCAM_IDPROP_RECORDFIXEDBYTES_PERSESSION	4.0	R	-	-	-	LONG
return additional data size per a session						
DCAM_IDPROP_RECORDFIXEDBYTES_PERFRAME	4.0	R	-	-	-	LONG
return additional data size per a frame						
DCAM_IDPROP_FRAMEBUNDLE_MODE	-	R	W	-	-	MODE
DCAMPROP_MODE_OFF (default)						
DCAMPROP_MODE_ON	Depends on SUBARRAY					
DCAM_IDPROP_FRAMEBUNDLE_NUMBER	-	R	W	-	-	LONG
2 to 8294 , step 1 , default 2	@ CoaXPress connection Depends on SUBARRAY properties					
2 to 1024 , step 1 , default 2	@ USB 3.0 connection Depends on SUBARRAY properties					
DCAM_IDPROP_FRAMEBUNDLE_ROWBYTES	-	R	-	-	-	LONG
return horizontal rowbytes of current setting						
DCAM_IDPROP_FRAMEBUNDLE_FRAMESTEPBYTES	-	R	-	-	-	LONG
return bytes of gap between two frames in a same frame bundle						
DCAM_IDPROP_SYSTEM_ALIVE	-	R	-	-	-	MODE
DCAMPROP_SYSTEM_ALIVE_OFFLINE						
DCAMPROP_SYSTEM_ALIVE_ONLINE						
DCAM_IDPROP_CONVERSIONFACTOR_COEFF	-	R	-	-	-	REAL
return current conversion factor coefficient						
DCAM_IDPROP_CONVERSIONFACTOR_OFFSET	-	R	-	-	-	REAL
return current conversion factor offset						
DCAM_IDPROP_IMAGEDETECTOR_PIXELWIDTH	4.0	R	-	-	-	REAL (um)
return 6.5						
DCAM_IDPROP_IMAGEDETECTOR_PIXELHEIGHT	4.0	R	-	-	-	REAL (um)
return 6.5						
DCAM_IDPROP_IMAGEDETECTOR_PIXELNUMHORZ	4.0	R	-	-	-	LONG
return 2304						

DCAM_IDPROP_IMAGEDETECTOR_PIXELNUMVERT	4.0	R	-	-	-	LONG
return 2304						
DCAM_IDPROP_TIMESTAMP_PRODUCER	4.0	R	-	-	-	MODE
DCAMPROP_TIMESTAMP_PRODUCER_IMAGINGDEVICE						
DCAM_IDPROP_FRAMESTAMP_PRODUCER	4.0	R	-	-	-	MODE
DCAMPROP_FRAMESTAMP_PRODUCER_IMAGINGDEVICE						

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