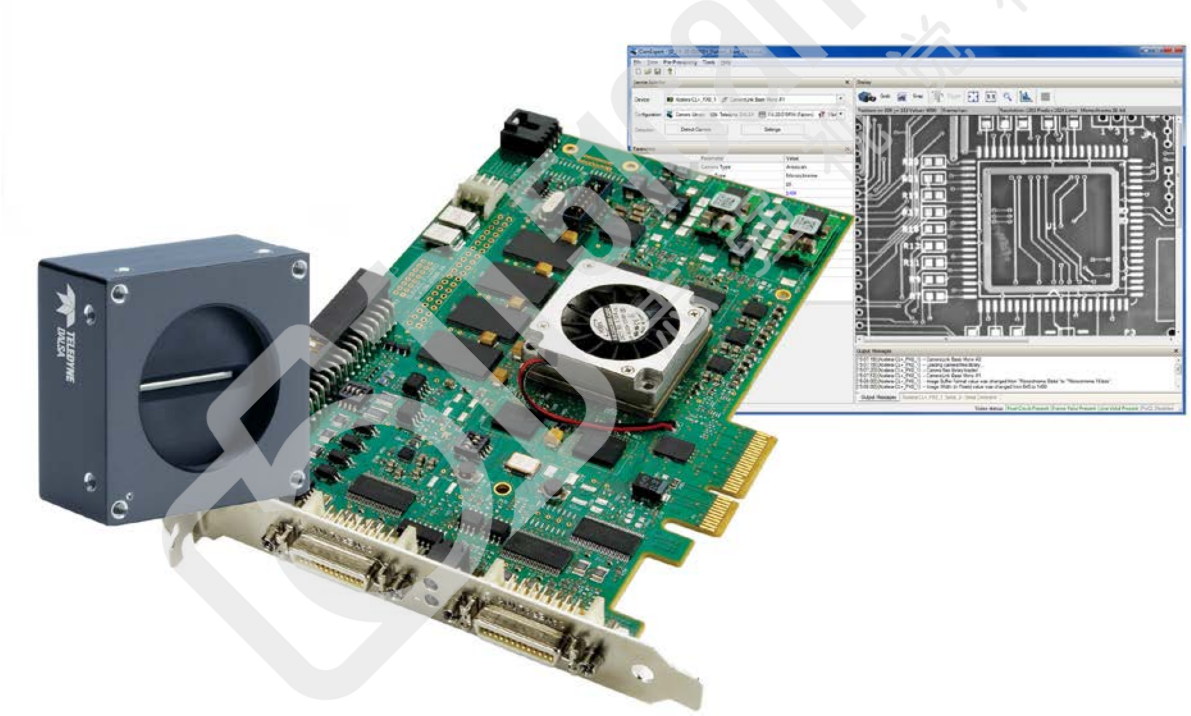
Sapera LT™ 8.0

Acquisition Parameters Reference Manual

sensors | cameras | frame grabbers | processors | **software** | vision solutions



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About Teledyne DALSA
Teledyne DALSA is an international high performance semiconductor and electronics company that designs, develops, manufactures, and markets digital imaging products and solutions, in addition to providing wafer foundry services.

Teledyne DALSA Digital Imaging offers the widest range of machine vision components in the world. From industry-leading image sensors through powerful and sophisticated cameras, frame grabbers, vision processors and software to easy-to-use vision appliances and custom vision modules.

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Introduction

Overview of the Manual

The *Sapera++ LT Programmer's* manual, *Sapera LT .NET Programmer's* and the *Sapera LT Basic Modules Reference* manual are the reference documents for the C++, .NET and C APIs, respectively. The *Sapera LT Acquisition Parameters Reference* manual complements these manuals by describing the parameters, capabilities, and concepts related to the acquisition process. The functions using acquisition parameters are described in the appropriate API reference manual mentioned above.

The *Sapera LT Acquisition Parameters Reference* online manual contains additional references to acquisition parameters and capabilities that typically do not need to be used by the user application.

This manual covers the following topics:

Sapera LT Acquisition Parameters Definitions
Description of the Sapera Acquisition parameters plus the related data structures and definitions.

Teledyne DALSA Contact Information
Phone numbers, web site, and important email addresses.

Advanced Acquisition Controls
Description of acquisition controls including camera parameters and capabilities.

Appendix A: Acquisition Configuration File Formats
Description of the Sapera camera configuration files (.CCA, .CVI, .CCF) fields.

Acquisition Parameter Definitions

Introduction

This section describes the parameters and definitions required for control of the acquisition process.

Refer to the Advanced Acquisition Control section to add advanced controls (such as detection of frame grabber capabilities) to the imaging application.

Using the Acquisition Parameters

A Sapera acquisition configuration is defined through the Acquisition Parameters. These parameters are divided in two categories:

Camera parameters
Video Input Conditioning (VIC) parameters

The Camera parameters describe the signal specifications of the video source (digital or analog). These parameters define the video source capabilities and modes of operation. Consult the section Advanced Acquisition Control for a description of the Camera related parameters.

The VIC related parameters define how the acquisition front end is configured in regards to the video source.

The Camera and VIC parameters typically are stored in CAM & VIC files (files with the .CCA and .CVI extension, respectively) or combined in a unique camera configuration file (file with the .CCF extension) and reloaded at will. This provides a convenient and portable method to initialize the frame grabber with predefined configurations. Sapera LT ships with an extensive list of camera configuration files for supported cameras. In addition, .CVI/CCF files are provided with Teledyne DALSA application notes to support the described camera modes or are generated by the Sapera CamExpert program as required by the imaging application.

CamExpert, the Sapera camera configuration utility, allows configuring the frame grabber (camera configuration file) using existing camera definition files included with the Sapera LT package. The user can also create or modify camera configuration files for new or custom cameras. Multiple .CCF files with different VIC parameters can be created from an existing .CCA file to support various camera operating modes.

	It is strongly recommended to start interfacing a camera with your frame grabber using CamExpert instead of experimenting directly with one of the supplied demo programs. CamExpert is designed to guide you through the camera interfacing process with minimum effort.

When dynamic control is required, such as brightness and contrast, the Sapera API provides functions for direct access to any Camera or VIC parameter.

The possible values of an acquisition parameter and its availability are generally indicated by Sapera Acquisition capabilities (CORACQ_CAP_*).

	Note: Sapera Acquisition capabilities are INT32 values, unless specified otherwise.

Acquisition Parameters

This section describes the Acquisition Management and VIC related parameters. Unlike the VIC parameters, the Acquisition Management parameters are not stored in any acquisition configuration files.

Acquisition Management Related Parameters

ID	Parameter
0x700	CORACQ_PRM_LABEL
0x701	CORACQ_PRM_EVENT_TYPE
0x702	CORACQ_PRM_EVENT_COUNT
0x703	CORACQ_PRM_EVENT_SERVER
0x704	CORACQ_PRM_EVENT_CALLBACK
0x705	CORACQ_PRM_EVENT_CONTEXT
0x706	CORACQ_PRM_HSYNC_TIMEOUT
0x707	CORACQ_PRM_VSYNC_TIMEOUT
0x708	CORACQ_PRM_SIGNAL_STATUS
0x709	Reserved
0x70a	Reserved
0x70b	Reserved
0x70c	CORACQ_PRM_FLAT_FIELD_SELECT
0x70d	CORACQ_PRM_FLAT_FIELD_ENABLE
0x70e	CORACQ_PRM_EVENT_TYPE_EX
0x70f	CORACQ_PRM_TIME_STAMP

CORACQ_PRM_EVENT_CALLBACK

Description Pointer to the Callback function registered using the function CorAcqRegisterCallback and CorAcqRegisterCallbackEx.

Type PCORCALLBACK

Note This parameter is read-only.

CORACQ_PRM_EVENT_CONTEXT

Description Context pointer registered using the function CorAcqRegisterCallback.

Type void *

Note This parameter is read-only.

CORACQ_PRM_EVENT_COUNT

Description Number of events that have occurred since a callback function was registered using the CorAcqRegisterCallback function.

Type UINT32

Note This parameter is read-only.

CORACQ_PRM_EVENT_SERVER

Description Handle to a server to which an event notification is made via a callback function.

Type CORSERVER

Note This parameter is read-only.

CORACQ_PRM_EVENT_TYPE

Description Event to be signaled while a transfer is in progress, unless otherwise specified.

Type UINT32

Limits The CORACQ_CAP_EVENT_TYPE capability specifies the event type(s) supported by the acquisition module. The capability returns the supported values ORed together.

Values The values may be ORed if more than one event is desired.

CORACQ_VAL_EVENT_TYPE_DATA_OVERFLOW (0x00004000)
Call the callback function when a data overflow occurs during live acquisition. This error can usually occur if the acquisition device cannot sustain the data rate of the incoming images.

CORACQ_VAL_EVENT_TYPE_END_OF_EVEN (0x00400000)
Call the callback function at end of even field.

CORACQ_VAL_EVENT_TYPE_END_OF_FIELD (0x00100000)
Call the callback function at end of odd or even field.

CORACQ_VAL_EVENT_TYPE_END_OF_FRAME (0x00800000)
Call the callback function at end of frame.

CORACQ_VAL_EVENT_TYPE_END_OF_LINE (0x04000000)
Call the callback function at end of line *n*.

CORACQ_VAL_EVENT_TYPE_END_OF_NLINES (0x08000000)
Call the callback function at end of *n* lines.

CORACQ_VAL_EVENT_TYPE_END_OF_ODD (0x00200000)
Call the callback function at end of odd field.

CORACQ_VAL_EVENT_TYPE_END_OF_TRANSFER (0x00000002)
Call the callback function at end of transfer.

CORACQ_VAL_EVENT_TYPE_EXTERNAL_TRIGGER (0x01000000)
Call the callback function upon receiving an external trigger which will then acquire at least one image. Therefore, the maximum callback rate cannot be greater than the acquisition video frame rate. See also CORACQ_PRM_EXT_TRIGGER_ENABLE

CORACQ_VAL_EVENT_TYPE_EXTERNAL_TRIGGER_IGNORED (0x00002000)
Call the callback function when an external trigger event is dropped. This occurs when the external trigger rate is faster than the acquisition frame rate. See also CORACQ_PRM_EXT_TRIGGER_ENABLE.

CORACQ_VAL_EVENT_TYPE_EXT_LINE_TRIGGER_TOO_SLOW (0x00000400)
Call the callback function if the detected line trigger rate is too slow for the hardware to process. This event can occur when using the shaft encoder multiplier.

CORACQ_VAL_EVENT_TYPE_FRAME_LOST (0x00008000)
Call the callback function for each frames lost during live acquisition. This error can usually occur if there is not enough bandwidth to transfer images to host memory.

CORACQ_VAL_EVENT_TYPE_HSYNC_LOCK (0x00000800)
Call the callback function if a horizontal sync unlock to lock condition is detected.

CORACQ_VAL_EVENT_TYPE_HSYNC_UNLOCK (0x00001000)
Call the callback function if an horizontal sync lock to unlock condition is detected.

CORACQ_VAL_EVENT_TYPE_LINE_TRIGGER_TOO_FAST (0x00000008)
Call the callback function if no line is received on the frame grabber following a line trigger to a camera. Usually this occurs when the line trigger rate is too fast for the camera.

CORACQ_VAL_EVENT_TYPE_LINK_ERROR (0x00000010)
Call the callback function when an error occurs on the link between the camera and the frame grabber (for HSLink cameras only). The exact error condition may be one of the following: 8-bit/10-bit encoding, packet header error, CRC error, bad revision, or lost idle lock.

CORACQ_VAL_EVENT_TYPE_LINK_LOCK (0x100000000LL)
Call the callback function when all required lanes are locked (for HSLink and CLHS cameras only).

CORACQ_VAL_EVENT_TYPE_LINK_UNLOCK (0x200000000LL)
Call the callback function if at least one of the required lanes loses the lock (for HSLink and CLHS cameras only)

CORACQ_VAL_EVENT_TYPE_NO_HSYNC (0x10000000)
Call the callback function if a timeout occurs due to a missing horizontal sync during live acquisition. The timeout value is specified by CORACQ_PRM_HSYNC_TIMEOUT. The event is only generated once, unless a new CorXferStart command is issued or a new horizontal sync is detected.

CORACQ_VAL_EVENT_TYPE_NO_PIXEL_CLK (0x40000000)
Call the callback function if no pixel clock is detected. The event is only generated once, unless a new CorXferStart command is issued or the pixel clock is detected again and then lost.

CORACQ_VAL_EVENT_TYPE_NO_VSYNC (0x20000000)
Call the callback function if a timeout occurs due to a missing vertical sync during live acquisition. The timeout value is specified by CORACQ_PRM_VSYNC_TIMEOUT. The event is only generated once, unless a new CorXferStart command is issued or a new vertical sync is detected.

CORACQ_VAL_EVENT_TYPE_PIXEL_CLK (0x80000000)
Call the callback function if a pixel clock is detected. The event is only generated once, unless a new CorXferStart command is issued or the pixel clock is lost again and then detected.

CORACQ_VAL_EVENT_TYPE_SHAFT_ENCODER_REVERSE_COUNT_OVERFLOW (0x00000004)
Call the callback function when an overflow of the shaft encoder reverse counter occurs.

CORACQ_VAL_EVENT_TYPE_START_OF_EVEN (0x00040000)
Call the callback function at start of even field.

CORACQ_VAL_EVENT_TYPE_START_OF_FIELD (0x00020000)
Call the callback function at start of odd or even field.

CORACQ_VAL_EVENT_TYPE_START_OF_FRAME (0x00080000
Call the callback function at start of frame.

CORACQ_VAL_EVENT_TYPE_START_OF_ODD (0x00020000)
Call the callback function at start of odd field.

CORACQ_VAL_EVENT_TYPE_USER_DEFINE (0x00000200)
Call the callback function when a “user defined” event occurs. Applicable when custom firmware which supports the user defined event, is loaded on to the acquisition board. This event does not have any other identification thus only the application can know the meaning of the user defined event.

CORACQ_VAL_EVENT_TYPE_VERTICAL_SYNC (0x02000000)
Call the callback function on every vertical sync, even if not acquiring.

CORACQ_VAL_EVENT_TYPE_VERTICAL_TIMEOUT (0x00000040)
Call the callback function if the end of the vertical sync (analog cameras) or beginning of frame valid (digital cameras) is not received within the specified delay. The timeout value is specified by CORACQ_PRM_VERTICAL_TIMEOUT_DELAY.

CORACQ_PRM_EVENT_TYPE_EX

Description	Event to be signaled while a transfer is in progress, unless otherwise specified.
Type	UINT64
Limits	The CORACQ_CAP_EVENT_TYPE_EX capability specifies the event type(s) supported by the acquisition module. The capability returns the supported values ORed together.
Values	The list of values are the same as CORACQ_PRM_EVENT_TYPE.
Notes	This parameter allows for the future expansion beyond the current 32-bit limitation of CORACQ_PRM_EVENT_TYPE.

CORACQ_PRM_FLAT_FIELD_ENABLE

Description Enable or disable the flat field resource.

Type UINT32

Availability Available only if CORACQ_CAP_FLAT_FIELD is TRUE

Values TRUE (0x00000001), Enable the flat field
FALSE (0x00000000), Disable the flat field

CVI entry None

Related Capabilities The flat field correction algorithm can be further characterized by the following capabilities.

Below are the relative minimum and maximum pixel gains:
CORACQ_CAP_FLAT_FIELD_GAIN_MIN and CORACQ_CAP_FLAT_FIELD_GAIN_MAX

Divide the relative pixel gain by CORACQ_CAP_FLAT_FIELD_GAIN_DIVISOR to get the actual gain value.

Example:
for: CORACQ_CAP_FLAT_FIELD_GAIN_MIN = 0x01
CORACQ_CAP_FLAT_FIELD_GAIN_MAX = 0xFF
CORACQ_CAP_FLAT_FIELD_GAIN_DISIVOR = 0x80
then: Minimum gain is 1 / 0x80 = 0.0078125
Maximum gain is 0xFF / 0x80 = 1.9921875

Below are the minimum and maximum gray level pixel offsets:
CORACQ_CAP_FLAT_FIELD_OFFSET_MIN and CORACQ_CAP_FLAT_FIELD_OFFSET_MAX

CORACQ_CAP_FLAT_FIELD_PIXEL_REPLACEMENT returns TRUE if pixel replacement is supported. A gain of zero indicates a pixel replacement.

CORACQ_PRM_FLAT_FIELD_SELECT

Description Selects the active flat field resource created using the function CorAcqNewFlatfield.

Type UINT32

Availability Available only if CORACQ_CAP_FLAT_FIELD is TRUE

Values 0 … (n-1), where ‘n’ is the number of flat field resources created. The maximum number that can be created is limited by the amount of memory available on the PC and/or on the device.

CVI entry None

CORACQ_PRM_HSYNC_TIMEOUT

Description Timeout value (in µsec) used to generate the event "horizontal loss of sync" (CORACQ_VAL_EVENT_TYPE_NO_HSYNC).

Type UINT32

CORACQ_PRM_LABEL

Description Acquisition device ID: Zero-terminated array of characters with a fixed size of 128 bytes.

Type CHAR[128]

Note This parameter is read-only.

CORACQ_PRM_SIGNAL_STATUS

Description Status of input signals connected to the acquisition device.
The returned value is the ORed combination of all valid values.

Type UINT32

Limits The CORACQ_CAP_SIGNAL_STATUS capability returns the supported values ORed together.

Values

CORACQ_VAL_SIGNAL_HSYNC_PRESENT (0x00000001)
True if an horizontal sync signal (analog video source) or a line valid (digital video source) has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_VSYNC_PRESENT (0x00000002)
True if a vertical sync signal (analog video source) or a frame valid (digital video source) has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_PIXEL_CLK_PRESENT (0x00000004)
True if a pixel clock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_PIXEL_CLK_1_PRESENT (0x00000004)
For CameraLink devices, this status returns true if a clock signal is detected on the base cable.

CORACQ_VAL_SIGNAL_PIXEL_CLK_2_PRESENT (0x00000200)
For CameraLink devices, this status returns true if a clock signal is detected on the medium cable.

CORACQ_VAL_SIGNAL_PIXEL_CLK_3_PRESENT (0x00000400)
For CameraLink devices, this status returns true if a clock signal is detected on the full cable.

CORACQ_VAL_SIGNAL_PIXEL_CLK_ALL_PRESENT (0x00000800)
For Camera Link devices, true if all required pixel clock signals have been detected by the acquisition device based on the CameraLink configuration selected.

CORACQ_VAL_SIGNAL_CHROMA_PRESENT (0x00000008)
True if a color burst signal has been detected by the acquisition device. This is valid for NTSC and PAL video signals.

CORACQ_VAL_SIGNAL_HSYNC_LOCK (0x00000010)
True if the acquisition device has been able to lock to an horizontal sync signal (analog video source).

CORACQ_VAL_SIGNAL_VSYNC_LOCK (0x00000020)
True if the acquisition device has been able to lock to a vertical sync signal (analog video source).

CORACQ_VAL_SIGNAL_POWER_PRESENT (0x00000040)
True if power is available for a camera. When true, this indicates only that power is available at the camera connector, where it might be supplied from the board PCI bus or from the board PC power connector (whether this power is used by the camera is unknown). When false, the circuit fuse is blown and power cannot be supplied to any connected camera. (See board manual for information on any fused power supply for cameras).

CORACQ_VAL_SIGNAL_POCL_ACTIVE (0x00000080)

True if power is applied to the camera through the 1st CameraLink cable to the camera connector and the camera is PoCL compliant. When false and the parameter CORACQ_PRM_POCL_ENABLE is TRUE, means the Camera is not PoCL compliant, the wrong cable is used, or the camera is not connected.

CORACQ_VAL_SIGNAL_POCL_ACTIVE_2 (0x00000100)

True if power is applied to the camera through the 2nd CameraLink cable to the camera connector and the camera is PoCL compliant. When false and the parameter CORACQ_PRM_POCL_ENABLE is TRUE, means the Camera is not PoCL compliant, the wrong cable is used, or the camera is not connected.

CORACQ_VAL_SIGNAL_LINK_LOCK (0x00001000)

For HSLink and CLHS devices, true if all lane lock signals necessary have been detected by the acquisition device based on the configuration selected.

CORACQ_VAL_SIGNAL_LANE1_LOCK (0x00002000)

For HSLink and CLHS devices, true rue if the lane 1 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE2_LOCK (0x00004000)

For HSLink and CLHS devices, true rue if the lane 2 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE3_LOCK (0x00008000)

For HSLink and CLHS devices, true rue if the lane 3 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE4_LOCK (0x00010000)

For HSLink and CLHS devices, true rue if the lane 4 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE5_LOCK (0x00020000)

For HSLink and CLHS devices, true rue if the lane 5 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE6_LOCK (0x00040000)

For HSLink and CLHS devices, true rue if the lane 6 lock signal has been detected by the acquisition device.

CORACQ_VAL_SIGNAL_LANE7_LOCK (0x00080000)

For HSLink and CLHS devices, true rue if the lane 7 lock signal has been detected by the acquisition device.

Note This parameter is read-only.

CORACQ_PRM_TIME_STAMP

Description Returns the current value of the acquisition device time stamp. This value is normally expressed in microseconds. This time stamp is passed to events and can also be used to time stamp host buffers. Note that the time stamp base units can be selected using the CORACQ_PRM_TIME_STAMP_BASE parameter.

Type UINT64

Values Time stamp

Note Writing to the parameter will reset the time stamp counter to 0.

CORACQ_PRM_VSYNC_TIMEOUT

Description Timeout value (in µsec) used to generate the event "vertical loss of sync" (CORACQ_VAL_EVENT_TYPE_NO_VSYNC).

Type UINT32

VIC Related Parameters

The following table lists VIC parameters by functional groups. A table listing VIC parameters sorted by their ID is available in the section VIC Parameters by ID.

Typically the acquisition hardware is initialized with Camera and VIC parameters by loading a camera configuration file. These parameters (such as the ones controlling brightness and contrast) can then be modified individually at runtime by the user application.

VIC Parameters by Groups

General	
CORACQ_PRM_VIC_NAME	

Input	
CORACQ_PRM_BIT_ORDERING	CORACQ_PRM_CAMSEL
CORACQ_PRM_PLANAR_INPUT_SOURCES	

Signal Conditioning	
CORACQ_PRM_BRIGHTNESS	CORACQ_PRM_FIX_FILTER_ENABLE
CORACQ_PRM_BRIGHTNESS_RED	CORACQ_PRM_FIX_FILTER_SELECTOR
CORACQ_PRM_BRIGHTNESS_GREEN	CORACQ_PRM_FIX_FILTER_SELECTOR_STR
CORACQ_PRM_BRIGHTNESS_BLUE	CORACQ_PRM_HUE
CORACQ_PRM_CONTRAST	CORACQ_PRM_SCALE_VERT
CORACQ_PRM_CONTRAST_RED	CORACQ_PRM_PROG_FILTER_ENABLE
CORACQ_PRM_CONTRAST_GREEN	CORACQ_PRM_PROG_FILTER_FREQ
CORACQ_PRM_CONTRAST_BLUE	CORACQ_PRM_SATURATION
CORACQ_PRM_DC_REST_MODE	CORACQ_PRM_SHARPNESS
CORACQ_PRM_DC_REST_START	

Stream Conditioning	
CORACQ_PRM_CROP_ACTIVATION	CORACQ_PRM_LUT_FORMAT
CORACQ_PRM_CROP_LEFT	CORACQ_PRM_LUT_MAX
CORACQ_PRM_CROP_TOP	CORACQ_PRM_LUT_NENTRIES
CORACQ_PRM_CROP_HEIGHT	CORACQ_PRM_LUT_NUMBER
CORACQ_PRM_CROP_WIDTH	CORACQ_PRM_PIXEL_MASK
CORACQ_PRM_DECIMATE_COUNT	CORACQ_PRM_SCALE_HORZ
CORACQ_PRM_DECIMATE_METHOD	CORACQ_PRM_SCALE_HORZ_METHOD
CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT	CORACQ_PRM_SCALE_VERT
CORACQ_PRM_FRAME_LENGTH	CORACQ_PRM_SCALE_VERT_METHOD
CORACQ_PRM_FLIP	CORACQ_PRM_SNAP_COUNT
CORACQ_PRM_HSYNC_REF	CORACQ_PRM_VSYNC_REF
CORACQ_PRM_LUT_ENABLE	

Control Signals	
CORACQ_PRM_CAM_CONTROL_PULSE0_HD_ALIGN	CORACQ_PRM_INT_FRAME_TRIGGER_FREQ
CORACQ_PRM_CAM_CONTROL_PULSE1_HD_ALIGN	CORACQ_PRM_INT_LINE_TRIGGER_ENABLE
CORACQ_PRM_CAM_RESET_DELAY	CORACQ_PRM_INT_LINE_TRIGGER_FREQ
CORACQ_PRM_CAM_RESET_ENABLE	CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MIN
CORACQ_PRM_CAM_TRIGGER_DELAY	CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MAX

Control Signals	
CORACQ_PRM_CAM_TRIGGER_ENABLE	CORACQ_PRM_LINE_INTEGRATE_DURATION
CORACQ_PRM_BOARD_SYNC_OUTPUT1	CORACQ_PRM_LINE_INTEGRATE_ENABLE
CORACQ_PRM_BOARD_SYNC_OUTPUT2	CORACQ_PRM_LINE_TRIGGER_ENABLE
CORACQ_PRM_EXT_FRAME_TRIGGER_DETECTION	CORACQ_PRM_LINE_TRIGGER_AUTO_DELAY
CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE	CORACQ_PRM_LINESCAN_DIRECTION_OUTPUT
CORACQ_PRM_EXT_FRAME_TRIGGER_LEVEL	CORACQ_PRM_MASTER_MODE
CORACQ_PRM_EXT_FRAME_TRIGGER_SOURCE	CORACQ_PRM_MASTER_MODE_HSYNC_POLARITY
CORACQ_PRM_EXT_LINE_TRIGGER_DETECTION	CORACQ_PRM_MASTER_MODE_VSYNC_POLARITY
CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE	CORACQ_PRM_SHAFT_ENCODER_ENABLE
CORACQ_PRM_EXT_LINE_TRIGGER_LEVEL	CORACQ_PRM_SHAFT_ENCODER_LEVEL
CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE	CORACQ_PRM_SHAFT_ENCODER_DROP
CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE_STR	CORACQ_PRM_SHAFT_ENCODER_MULTIPLY
CORACQ_PRM_EXT_TRIGGER_DELAY	CORACQ_PRM_SHAFT_ENCODER_SOURCE
CORACQ_PRM_EXT_TRIGGER_DELAY_TIME_BASE	CORACQ_PRM_SHAFT_ENCODER_SOURCE_STR
CORACQ_PRM_EXT_TRIGGER_DETECTION	CORACQ_PRM_STROBE_DELAY
CORACQ_PRM_EXT_TRIGGER_DURATION	CORACQ_PRM_STROBE_DELAY_2
CORACQ_PRM_EXT_TRIGGER_ENABLE	CORACQ_PRM_STROBE_DURATION
CORACQ_PRM_EXT_TRIGGER_IGNORE_DELAY	CORACQ_PRM_STROBE_ENABLE
CORACQ_PRM_EXT_TRIGGER_LEVEL	CORACQ_PRM_STROBE_LEVE
CORACQ_PRM_EXT_TRIGGER_SOURCE	CORACQ_PRM_STROBE_METHOD
CORACQ_PRM_EXT_TRIGGER_SOURCE_STR	CORACQ_PRM_STROBE_POLARITY
CORACQ_PRM_FIX_FILTER_SELECTOR_STR	CORACQ_PRM_TIME_INTEGRATE_DELAY
CORACQ_PRM_FRAME_INTEGRATE_COUNT	CORACQ_PRM_TIME_INTEGRATE_DURATION
CORACQ_PRM_SHAFT_ENCODER_DIRECTION	CORACQ_PRM_TIME_INTEGRATE_ENABLE
CORACQ_PRM_FRAME_INTEGRATE_ENABLE	CORACQ_PRM_VERTICAL_TIMEOUT_DELAY
CORACQ_PRM_INT_FRAME_TRIGGER_ENABLE	

Output	
CORACQ_PRM_OUTPUT_ENABLE (obsolete) use CORACQ_PRM_EXT_TRIGGER_ENABLE	CORACQ_PRM_OUTPUT_FORMAT

Shared Control Signals	
CORACQ_PRM_SHARED_CAM_RESET	CORACQ_PRM_SHARED_STROBE
CORACQ_PRM_SHARED_CAM_TRIGGER	CORACQ_PRM_SHARED_TIME_INTEGRATE
CORACQ_PRM_SHARED_EXT_TRIGGER	CORACQ_PRM_WEN_ENABLE
CORACQ_PRM_SHARED_FRAME_INTEGRATE	

Color Signals
CORACQ_PRM_COLOR_DECODER_ENABLE
CORACQ_PRM_COLOR_DECODER_METHOD
CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR
CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE
CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN
CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED
CORACQ_PRM_WB_GAIN_RED

CORACQ_PRM_WB_GAIN_GREEN
CORACQ_PRM_WB_GAIN_BLUE
CORACQ_PRM_WB_OFFSET_RED
CORACQ_PRM_WB_OFFSET_GREEN
CORACQ_PRM_WB_OFFSET_BLUE

VIC Parameters by ID

0x800	CORACQ_PRM_CAMSEL
0x801	CORACQ_PRM_PIXEL_MASK
0x802	CORACQ_PRM_DC_REST_MODE
0x803	CORACQ_PRM_BRIGHTNESS
0x804	CORACQ_PRM_BRIGHTNESS_RED
0x805	CORACQ_PRM_BRIGHTNESS_GREEN
0x806	CORACQ_PRM_BRIGHTNESS_BLUE
0x807	CORACQ_PRM_CONTRAST
0x808	CORACQ_PRM_CONTRAST_RED
0x809	CORACQ_PRM_CONTRAST_GREEN
0x80a	CORACQ_PRM_CONTRAST_BLUE
0x80b	CORACQ_PRM_HUE
0x80c	CORACQ_PRM_SATURATION
0x80d	CORACQ_PRM_FIX_FILTER_ENABLE
0x80e	CORACQ_PRM_FIX_FILTER_SELECTOR
0x80f	CORACQ_PRM_PROG_FILTER_ENABLE
0x810	CORACQ_PRM_PROG_FILTER_FREQ
0x811	CORACQ_PRM_CROP_LEFT
0x812	CORACQ_PRM_CROP_TOP
0x813	CORACQ_PRM_CROP_WIDTH
0x814	CORACQ_PRM_CROP_HEIGHT
0x815	CORACQ_PRM_SCALE_HORZ
0x816	CORACQ_PRM_SCALE_VERT
0x817	CORACQ_PRM_SCALE_HORZ_METHOD
0x818	CORACQ_PRM_SCALE_VERT_METHOD
0x819	CORACQ_PRM_DECIMATE_METHOD
0x81a	CORACQ_PRM_DECIMATE_COUNT
0x81b	CORACQ_PRM_LUT_ENABLE
0x81c	CORACQ_PRM_LUT_NUMBER
0x81d	CORACQ_PRM_STROBE_ENABLE
0x81e	CORACQ_PRM_STROBE_METHOD
0x81f	CORACQ_PRM_STROBE_POLARITY
0x820	CORACQ_PRM_STROBE_DURATION
0x821	CORACQ_PRM_STROBE_DELAY
0x822	CORACQ_PRM_FRAME_INTEGRATE_ENABLE
0x823	CORACQ_PRM_FRAME_INTEGRATE_COUNT
0x824	CORACQ_PRM_TIME_INTEGRATE_ENABLE
0x825	CORACQ_PRM_TIME_INTEGRATE_DURATION
0x826	CORACQ_PRM_CAM_TRIGGER_ENABLE
0x827	CORACQ_PRM_CAM_RESET_ENABLE
0x828	CORACQ_PRM_OUTPUT_FORMAT

0x829-0x82b	Reserved
0x82c	CORACQ_PRM_OUTPUT_ENABLE (obsolete) use CORACQ_PRM_EXT_TRIGGER_ENABLE
0x82d	CORACQ_PRM_VIC_NAME
0x82e	CORACQ_PRM_LUT_MAX
0x82f	CORACQ_PRM_EXT_TRIGGER_DETECTION
0x830	CORACQ_PRM_DC_REST_START
0x831	CORACQ_PRM_DC_REST_WIDTH
0x832	CORACQ_PRM_LUT_FORMAT
0x833	CORACQ_PRM_VSYNC_REF
0x834	CORACQ_PRM_HSYNC_REF
0x835	CORACQ_PRM_LINE_INTEGRATE_ENABLE
0x836	CORACQ_PRM_LINE_INTEGRATE_DURATION
0x837	CORACQ_PRM_LINE_TRIGGER_ENABLE
0x838	CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE
0x839	CORACQ_PRM_EXT_FRAME_TRIGGER_DETECTION
0x83a	CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE
0x83b	CORACQ_PRM_EXT_LINE_TRIGGER_DETECTION
0x83c	CORACQ_PRM_SNAP_COUNT
0x83d	CORACQ_PRM_INT_LINE_TRIGGER_ENABLE
0x83e	CORACQ_PRM_INT_LINE_TRIGGER_FREQ
0x83f	CORACQ_PRM_LINESCAN_DIRECTION_OUTPUT
0x840	CORACQ_PRM_BIT_ORDERING
0x841	CORACQ_PRM_EXT_TRIGGER_LEVELCORACQ_PRM_EXT_TRIGGER_LEVEL
0x842	CORACQ_PRM_STROBE_LEVE
0x843	CORACQ_PRM_EXT_FRAME_TRIGGER_LEVEL
0x844	CORACQ_PRM_EXT_LINE_TRIGGER_LEVEL
0x845	CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MIN
0x846	CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MAX
0x847	CORACQ_PRM_MASTER_MODE
0x848	CORACQ_PRM_MASTER_MODE_HSYNC_POLARITY
0x849	CORACQ_PRM_MASTER_MODE_VSYNC_POLARITY
0x84a	CORACQ_PRM_SHAFT_ENCODER_DROP
0x84b	CORACQ_PRM_SHAFT_ENCODER_ENABLE
0x84c	CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT
0x84d	CORACQ_PRM_INT_FRAME_TRIGGER_ENABLE
0x84e	CORACQ_PRM_INT_FRAME_TRIGGER_FREQ
0x84f	CORACQ_PRM_SHARED_EXT_TRIGGER
0x850	CORACQ_PRM_SHARED_CAM_RESET
0x851	CORACQ_PRM_SHARED_CAM_TRIGGER
0x852	CORACQ_PRM_SHARED_TIME_INTEGRATE
0x853	CORACQ_PRM_SHARED_FRAME_INTEGRATE
0x854	CORACQ_PRM_SHARED_STROBE
0x855	CORACQ_PRM_STROBE_DELAY_2
0x856	CORACQ_PRM_FRAME_LENGTH
0x857	CORACQ_PRM_FLIP
0x858	CORACQ_PRM_SHARPNESS
0x859	CORACQ_PRM_EXT_TRIGGER_DURATION

0x85a	CORACQ_PRM_TIME_INTEGRATE_DELAY
0x85b	CORACQ_PRM_CAM_RESET_DELAY
0x85c	CORACQ_PRM_CAM_TRIGGER_DELAY
0x85d	CORACQ_PRM_SHAFT_ENCODER_LEVEL
0x85e	CORACQ_PRM_WEN_ENABLE
0x85f	CORACQ_PRM_LUT_NENTRIES
0x860	CORACQ_PRM_EXT_FRAME_TRIGGER_SOURCE
0x861	CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE
0x862	CORACQ_PRM_EXT_TRIGGER_SOURCE
0x863	CORACQ_PRM_SHAFT_ENCODER_MULTIPLY
0x864	CORACQ_PRM_PLANAR_INPUT_SOURCES
0x865	CORACQ_PRM_EXT_TRIGGER_DELAY
0x866	CORACQ_PRM_EXT_TRIGGER_DELAY_TIME_BASE
0x867	CORACQ_PRM_COLOR_DECODER_ENABLE
0x868	CORACQ_PRM_COLOR_DECODER_METHOD
0x869	CORACQ_PRM_WB_GAIN_RED
0x86a	CORACQ_PRM_WB_GAIN_GREEN
0x86b	CORACQ_PRM_WB_GAIN_BLUE
0x86c	CORACQ_PRM_WB_OFFSET_RED
0x86d	CORACQ_PRM_WB_OFFSET_GREEN
0x86e	CORACQ_PRM_WB_OFFSET_BLUE
0x86f	CORACQ_PRM_CAM_CONTROL_PULSE0_HD_ALIGN
0x870	CORACQ_PRM_CAM_CONTROL_PULSE1_HD_ALIGN
0x871	CORACQ_PRM_EXT_TRIGGER_IGNORE_DELAY
0x872	CORACQ_PRM_BOARD_SYNC_OUTPUT1_SOURCE
0x873	CORACQ_PRM_BOARD_SYNC_OUTPUT2_SOURCE
0x874	CORACQ_PRM_FIX_FILTER_SELECTOR_STR
0x875	CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE_STR
0x876	CORACQ_PRM_EXT_TRIGGER_SOURCE_STR
0x877	CORACQ_PRM_VERTICAL_TIMEOUT_DELAY
0x878	CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR
0x879	CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED
0x87a	CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN
0x87b	CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE
0x87c	CORACQ_PRM_POCL_ENABLE
0x87d	CORACQ_PRM_CROP_ACTIVATION
0x87e	CORACQ_PRM_SHAFT_ENCODER_SOURCE
0x87f	CORACQ_PRM_SHAFT_ENCODER_SOURCE_STR
0x880	CORACQ_PRM_SHAFT_ENCODER_DIRECTION
0x881	CORACQ_PRM_LINE_TRIGGER_AUTO_DELAY
0x882	CORACQ_PRM_TIME_STAMP_BASE
0x883	CORACQ_PRM_BOARD_SYNC_OUTPUT1_SOURCE_STR
0x884	CORACQ_PRM_BOARD_SYNC_OUTPUT2_SOURCE_STR
0x885	CORACQ_PRM_SHAFT_ENCODER_ORDER
0x886	CORACQ_PRM_CAM_FRAMES_PER_TRIGGER

CORACQ_PRM_COLOR_DECODER_ENABLE

Description Enables or disables the hardware Bayer Decoder of the acquisition device. When enabled, it instructs the acquisition device to use the Bayer Decoder to convert the incoming Bayer video data into the specified output format specified by CORACQ_PRM_OUTPUT_FORMAT.

Type UINT32

Availability Onboard hardware Bayer Decoder is supported if the CORACQ_CAP_COLOR_DECODER capability returns TRUE.

Values TRUE (0x00000001), Enable the Bayer Decoder
FALSE (0x00000000), Disable the Bayer Decoder

CVI Entry [Stream Conditioning]
Bayer Decoder Enable

CORACQ_PRM_COLOR_DECODER_METHOD

Description Selects the Color Decoder method to apply to convert incoming color (for example Bayer) images into the specified output format.

Type UINT32

Limits The parameter value must match one of the supported methods of the acquisition device given by CORACQ_CAP_COLOR_DECODER_METHOD. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_COLOR_DECODER_METHOD_1
Technique based on bilinear interpolation. Fast, but tends to smooth the edges of the image.

CORACQ_VAL_COLOR_DECODER_METHOD_2
Advanced technique, better for preserving the edges of the image. However, it works well only when the image has a strong content in green. Otherwise, small amounts of noise may be visible within objects.

CORACQ_VAL_COLOR_DECODER_METHOD_3
Advanced technique, almost as good as Method 2 for preserving the edges, but independent of the image content in green. Small color artifacts of 1 pixel may be visible at the edges.

CORACQ_VAL_COLOR_DECODER_METHOD_4
Technique based on 2x2 interpolation. This is the simplest and fastest algorithm. Compared to a 3x3 kernel, it is better at preserving edge sharpness but introduces a slight jitter in pixel position. In practice it is a good choice for image display but less recommended than 3x3 for accurate image processing.

CORACQ_VAL_COLOR_DECODER_METHOD_5
Technique based on a set of linear filters. This method assumes that edges have a much stronger luminance than chrominance component.

CORACQ_VAL_COLOR_DECODER_METHOD_7
Support for the Teledyne DALSA Piranha 4 line scan camera color output. If the appropriate camera firmware is loaded, the driver will return this value in the capability CORACQ_CAP_COLOR_DECODER_METHOD.

CVI Entry [Stream Conditioning]
Bayer Decoder Method

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR

Description Adjusts the image saturation after Bayer decoding.

Type UINT32

Limits Range limits: CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_MIN to CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_MAX

Values saturationFactor = CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR / CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_DIVISOR

WeightRed = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_DIVISOR

WeightGreen = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_DIVISOR

WeightBlue = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_DIVISOR

mono = red * WeightRed + blue * WeightBlue + green * WeightGreen

red = red +(red-mono)*saturationFactor ;

green = green +(green-mono)*saturationFactor ;

blue = blue +(blue-mono)*saturationFactor ;

Availability Onboard hardware Bayer Decoder is supported if the CORACQ_CAP_COLOR_DECODER capability returns TRUE.

Onboard hardware Bayer Decoder Saturation is supported if the CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_MIN is not equal to CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_MAX

CVI Entry [Stream Conditioning]
Bayer Decoder Saturation Factor

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE

Description Change the image saturation of the pixel blue component value after Bayer decoding.

Type UINT32

Limits Range limits: CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_MIN to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_MAX

Values saturationFactor = CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR / CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_DIVISOR

WeightRed = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_DIVISOR

WeightGreen = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_DIVISOR

WeightBlue = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_DIVISOR

mono = red * WeightRed + blue * WeightBlue + green * WeightGreen

blue = blue +(blue-mono)*saturationFactor ;

Availability Onboard hardware Bayer Decoder is supported if the CORACQ_CAP_BAYER_DECODER capability returns TRUE.

Onboard hardware Bayer Decoder Saturation Weight Blue is supported if the CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_MIN is not equal to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_MAX

CVI Entry [Stream Conditioning]
Bayer Decoder `Weight Blue`

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN

Description Change the image saturation of the pixel green component value after Bayer decoding.

Type UINT32

Limits Range limits: CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_MIN to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_MAX

Availability Onboard hardware Bayer Decoder is supported if the CORACQ_CAP_BAYER_DECODER capability returns TRUE.

Onboard hardware Bayer Decoder Saturation Weight Green is supported if the CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_MIN is not equal to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_MAX

Values saturationFactor = CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR / CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_DIVISOR

WeightRed = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_DIVISOR

WeightGreen = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_DIVISOR

WeightBlue = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_DIVISOR

mono = red * WeightRed + blue * WeightBlue + green * WeightGreen

green = green +(green-mono)*saturationFactor ;

CVI Entry [Stream Conditioning]
Bayer Decoder Weight Green

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED

Description Change the image saturation of the pixel red component value after Bayer decoding.

Type UINT32

Limits Range limits: CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_MIN to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_MAX

Availability Onboard hardware Bayer Decoder is supported if the CORACQ_CAP_BAYER_DECODER capability returns TRUE.

Onboard hardware Bayer Decoder Saturation Weight Red is supported if the CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_MIN is not equal to CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_MAX

Values saturationFactor = CORACQ_PRM_BAYER_DECODER_SATURATION_FACTOR / CORACQ_CAP_BAYER_DECODER_SATURATION_FACTOR_DIVISOR

WeightRed = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_RED/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_RED_DIVISOR

WeightGreen = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_GREEN/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_GREEN_DIVISOR

WeightBlue = CORACQ_PRM_BAYER_DECODER_SATURATION_WEIGHT_BLUE/ CORACQ_CAP_BAYER_DECODER_SATURATION_WEIGHT_BLUE_DIVISOR

mono = red * WeightRed + blue * WeightBlue + green * WeightGreen

red = red +(red-mono)*saturationFactor ;

CVI Entry [Stream Conditioning]
Bayer Decoder Weight Red

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_GAIN_RED

Description Bayer Decoder White Balance Gain for the red channel.

Type UINT32

Limits Range limits: CORACQ_CAP_WB_GAIN_MIN .. CORACQ_CAP_WB_GAIN_MAX.
A gain of 1 = 100000

CVI Entry [Stream Conditioning]
Bayer Decoder White Balance Gain Red

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_GAIN_GREEN

Description Bayer Decoder White Balance Gain for the green channel.

Type UINT32

Limits Range limits: CORACQ_CAP_ WB_GAIN_MIN .. CORACQ_CAP _WB_GAIN_MAX
A gain of 1 = 100000

CVI Entry [Stream Conditioning]
Bayer Decoder White Balance Gain Green

Note Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_GAIN_BLUE

Description	Bayer Decoder White Balance Gain for the blue channel.
Type	UINT32
Limits	Range limits: CORACQ_CAP_ WB_GAIN_MIN .. CORACQ_CAP_ WB_GAIN_MAX A gain of 1 = 100000
CVI Entry	[Stream Conditioning] Bayer Decoder White Balance Gain Blue
Note	Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_OFFSET_RED

Description	Bayer Decoder White Balance Offset for the red channel.
Type	INT32
Limits	Range limits: CORACQ_CAP_WB_OFFSET_MIN .. CORACQ_CAP_WB_OFFSET_MAX Offset in gray level units.
CVI Entry	[Stream Conditioning]Bayer Decoder White Balance Offset Red
Note	Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_OFFSET_GREEN

Description	Bayer Decoder White Balance Offset for the green channel.
Type	INT32
Limits	Range limits: CORACQ_CAP_WB_OFFSET_MIN .. CORACQ_CAP_WB_OFFSET_MAX Offset in gray level units.
CVI Entry	[Stream Conditioning] Bayer Decoder White Balance Offset Green
Note	Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_WB_OFFSET_BLUE

Description	Bayer Decoder White Balance Offset for the blue channel.
Type	INT32
Limits	Range limits: CORACQ_CAP_WB_OFFSET_MIN .. CORACQ_CAP_WB_OFFSET_MAX Offset in gray level units.
CVI Entry	[Stream Conditioning] Bayer Decoder White Balance Offset Blue
Note	Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_BIT_ORDERING

Description The camera digital bit ordering.

Type UINT32

Limits Applies to digital video acquisition only. This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_BIT_ORDERING.
The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_BIT_ORDERING_STD (0x00000001)
Standard digital bit ordering.

CORACQ_VAL_BIT_ORDERING_9_10 (0x00000002)
For some 10-bit digital cameras, video data bits 9 and 10 are swapped with bits 0 and 1, as required by some 10-bit Kodak camera models.

CORACQ_VAL_BIT_ORDERING_MSB_10 (0x00000004)
For some 8-bit digital cameras, video data bits 0-7 connect to the acquisition device input bits 2-9, as required by some Kodak camera models.

CORACQ_VAL_BIT_ORDERING_MSB_12 (0x00000008)
For use with 12-bit digital cameras, video data bits 4-11 are directed to the input bits 0-7 of the acquisition device.

CORACQ_VAL_BIT_ORDERING_INVERT (0x00000010)
For use with digital cameras, the video data bits are inverted (logical NOT) before going to the acquisition device.

CVI Entry [Input]
Bit Ordering

CORACQ_PRM_BOARD_SYNC_OUTPUT1_SOURCE_STR

Description Returns a string representation of the currently selected CORACQ_PRM_BOARD_SYNC_OUTPUT1_SOURCE.

Type CHAR[32]

Values Null terminated string (up to 32 characters including the Null character)

Limits None

CVI Entry [Input]
Bit Ordering

Note Read-only parameter. This parameter is device dependent.

CORACQ_PRM_BOARD_SYNC_OUTPUT2_SOURCE_STR

Description Returns a string representation of the currently selected CORACQ_PRM_BOARD_SYNC_OUTPUT2_SOURCE.

Type CHAR[32]

Values Null terminated string (up to 32 characters including the Null character)

Limits None

CVI Entry [Input]
Bit Ordering

Note Read-only parameter. This parameter is device dependent.

CORACQ_PRM_BRIGHTNESS

Description Percentage of brightness to be applied to the composite video signal. Applies to analog video signals only.

Type INT32

Availability Available only if CORACQ_CAP_BRIGHTNESS is set to TRUE.

Limits Range limits: CORACQ_CAP_BRIGHTNESS_MIN to CORACQ_CAP_BRIGHTNESS_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_BRIGHTNESS_ STEP percent (%) in order for a change to occur in the video signal (10000 = 100%).

CVI Entry [Signal Conditioning]
Brightness

CORACQ_PRM_BRIGHTNESS_BLUE

Description Percentage of brightness to be applied to the blue video signal. Applies to analog video signals only.

Type INT32

Availability Available only if CORACQ_CAP_BRIGHTNESS_BLUE is set to TRUE.

Limits Range limits: CORACQ_CAP_BRIGHTNESS_BLUE_MIN to CORACQ_CAP_BRIGHTNESS_BLUE_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_BRIGHTNESS_BLUE_STEP percent (%) in order for a change to occur in the video signal (10000 = 100%).

CVI Entry [Signal Conditioning]
Brightness Blue

CORACQ_PRM_BRIGHTNESS_GREEN

Description Percentage of brightness to be applied to the green video signal. Applies to analog video signals only.

Type INT32

Availability Available only if CORACQ_CAP_BRIGHTNESS_GREEN is set to TRUE.

Limits Range limits: CORACQ_CAP_BRIGHTNESS_GREEN_MIN to CORACQ_CAP_BRIGHTNESS_GREEN_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_BRIGHTNESS_GREEN_STEP percent (%) in order for a change to occur in the video signal (10000 = 100%).

CVI Entry [Signal Conditioning]
Brightness Green

CORACQ_PRM_BRIGHTNESS_RED

Description Percentage of brightness to be applied to the red video signal. Applies to analog video signals only.

Type INT32

Availability Available only if CORACQ_CAP_BRIGHTNESS_RED is set to TRUE.

Limits Range limits: CORACQ_CAP_BRIGHTNESS_RED_MIN to CORACQ_CAP_BRIGHTNESS_RED_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_BRIGHTNESS_CONTRAST_RED_ STEP percent (%) in order for a change to occur in the video signal (10000 = 100%).

CVI Entry [Signal Conditioning]
Brightness Red

CORACQ_PRM_CAM_CONTROL_PULSE0_HD_ALIGN

Description	Specifies if the camera control pulse'0' will be aligned with the master HD.	
Type	UINT32	
Values	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_AUTO (0x00000000)	Device Dependent.
	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_ON (0x00000001)	Pulse 0 aligned with HD
	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_OFF (0x00000002)	Pulse 0 not aligned with HD
Limits	Supported only if CORACQ_CAP_CAM_CONTROL_PULSE0_HD_ALIGN is TRUE.	
CVI Entry	[Control Signals] Camera Control Pulse 0 HD Align	

CORACQ_PRM_CAM_CONTROL_PULSE1_HD_ALIGN

Description	Specifies if the camera control pulse'1' will be aligned with the master HD.	
Type	UINT32	
Values	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_AUTO (0x00000000)	Device Dependent.
	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_ON (0x00000001)	Pulse 1 aligned with HD
	CORACQ_VAL_CAM_CONTROL_HD_ALIGN_OFF (0x00000002)	Pulse 1 not aligned with HD
Limits	Supported only if CORACQ_CAP_CAM_CONTROL_PULSE1_HD_ALIGN is TRUE.	
CVI Entry	[Control Signals] Camera Control Pulse 1 HD Align	

CORACQ_PRM_CAM_RESET_DELAY

Description	Reset pulse delay (in µs).After receiving a trigger pulse (external, internal, or software), the acquisition device will wait for this delay before generating the reset pulse.
Type	UINT32
Limits	Range limits: CORACQ_CAP_CAM_RESET_DELAY_MIN to CORACQ_CAP_CAM_RESET_DELAY_MAX.
CVI Entry	[Control Signals] Camera Reset Delay
Note	This value is only validated if CORACQ_PRM_CAM_RESET_ENABLE is TRUE.

CORACQ_PRM_CAM_RESET_ENABLE

Description	Enables or disables the rest pulse to the camera. Applies to area scan cameras only.	
Type	UINT32	
Availability	Available only if CORACQ_CAP_CAM_RESET is TRUE.	
Values	TRUE (0x00000001)	Enable
	FALSE (0x00000000)	Disable
CVI Entry	[Control Signals] Camera Reset Enable	
Note	This parameter is mutually exclusive with CORACQ_PRM_FRAME_INTEGRATE_ENABLE, CORACQ_PRM_CAM_TRIGGER_ENABLE and CORACQ_PRM_TIME_INTEGRATE_ENABLE.	

CORACQ_PRM_CAM_TRIGGER_DELAY

Description Trigger pulse delay (in µs). After receiving a trigger pulse (external, internal or software), the acquisition device will wait this delay before generating the trigger pulse.

Type UINT32

Limits The value must be in the range CORACQ_CAP_CAM_TRIGGER_DELAY_MIN … CORACQ_CAP_CAM_TRIGGER_DELAY_MAX.

CVI Entry [Control Signals]
Camera Trigger Delay

Note This value is only validated if CORACQ_PRM_CAM_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_CAM_TRIGGER_ENABLE

Description Enables or disables the frame trigger pulse to the camera. Applies to area scan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_CAM_TRIGGER is TRUE..

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
Camera Trigger Enable

Note This parameter is mutually exclusive with CORACQ_PRM_FRAME_INTEGRATE_ENABLE, CORACQ_PRM_CAM_RESET_ENABLE and CORACQ_PRM_TIME_INTEGRATE_ENABLE.

CORACQ_PRM_CAMSEL

Description Numerical value representing the camera selector to acquire from.

Type UINT32

Limits If CORACQ_PRM_VIDEO is equal to CORACQ_VAL_VIDEO_MONO:
0 … CORACQ_CAP_CAMSEL_MONO – 1. Applies to composite cameras.

If CORACQ_PRM_VIDEO is equal to CORACQ_VAL_VIDEO_COLOR :
0 …CORACQ_CAP_CAMSEL_COLOR - 1. Applies to composite cameras.

If CORACQ_PRM_VIDEO is equal to CORACQ_VAL_VIDEO_YC:
0 … CORACQ_CAP_CAMSEL_YC – 1. Applies to Y/C cameras.

If CORACQ_PRM_VIDEO is equal to CORACQ_VAL_VIDEO_RGB:
0 … CORACQ_CAP_CAMSEL_RGB – 1. Applies to RGB cameras.

CVI Entry [Input]
Camera Selector

CORACQ_PRM_CONTRAST

Description Percentage of contrast to be applied to the composite video signal. Applies to analog video signals only.

Type UINT32

Availability Available only if CORACQ_CAP_CONTRAST is set to TRUE.

Limits Range limits: CORACQ_CAP_CONTRAST_MIN to CORACQ_CAP_CONTRAST_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_CONTRAST_STEP percent (%) in order for a change to occur in the video signal (100000 = 100%).

CVI Entry [Signal Conditioning]
Contrast

CORACQ_PRM_CONTRAST_BLUE

Description Percentage of contrast to be applied to the blue video signal. Applies to analog video signals only.

Type UINT32

Availability Available only if CORACQ_CAP_CONTRAST_BLUE is set to TRUE.

Limits Range Limits: CORACQ_CAP_CONTRAST_BLUE_MIN to CORACQ_CAP_CONTRAST_BLUE_MAX.
Adjust the parameter by increments of at least CORACQ_CAP_CONTRAST_BLUE_STEP percent (%) in order for a change to occur in the video signal (100000 = 100%).

CVI Entry [Signal Conditioning]
Contrast Blue

CORACQ_PRM_CONTRAST_GREEN

Description Percentage of contrast to be applied to the green video signal. Applies to analog video signals only.

Type UINT32

Availability Available only if CORACQ_CAP_CONTRAST_GREEN is set to TRUE.

Limits Range Limits: CORACQ_CAP_CONTRAST_GREEN_MIN to CORACQ_CAP_CONTRAST_GREEN_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_CONTRAST_GREEN_STEP percent (%) in order for a change to occur in the video signal (100000 = 100%).

CVI Entry [Signal Conditioning]
Contrast Green

CORACQ_PRM_CONTRAST_RED

Description Percentage of contrast to be applied to the red video signal. Applies to analog video signals only.

Type UINT32

Availability Available only if CORACQ_CAP_CONTRAST_RED is set to TRUE.

Limits Range limits: CORACQ_CAP_CONTRAST_RED_MIN to CORACQ_CAP_CONTRAST_RED_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_CONTRAST_RED_STEP percent (%) in order for a change to occur in the video signal.

CVI Entry [Signal Conditioning]
Contrast Red

CORACQ_PRM_BOARD_SYNC_OUTPUT1_SOURCE

Description Specifies the signal that will be output on board sync output 1. This parameter permits the synchronization of two acquisition devices using a signal from one acquisition device, and synching the second acquisition device with it.

Type UINT32

Limits Range Limits: 0 .. CORACQ_CAP_BOARD_SYNC_OUTPUT1_SOURCE – 1. The capability returns the ORed combination of all supported values.

Values Validated only if CORACQ_PRM_BOARD_SYNC_OUTPUT1_ENABLE is TRUE. A value of 0 disables the output to board sync 1.

CVI Entry [Control Signals]
Board Sync Output 1 Source

CORACQ_PRM_BOARD_SYNC_OUTPUT2_SOURCE

Description Specifies the signal that will be output on board sync output 2. This parameter permits the synchronization of two acquisition devices using a signal from one acquisition device, and synching the second acquisition device with it.

Type UINT32

Limits Range Limits: 0 .. CORACQ_CAP_BOARD_SYNC_OUTPUT2_SOURCE – 1.

Values Validated only if CORACQ_PRM_BOARD_SYNC_OUTPUT2_ENABLE is TRUE. A value of 0 disables the output to board sync 1.

CVI Entry [Control Signals]
Board Sync Output 2 Source

CORACQ_PRM_CAM_FRAMES_PER_TRIGGER

Description Specifies the number of frames output by the camera per camera trigger. Valid only for area scan cameras.

Type UINT32

Limits The value must be in the range 1 .. CORACQ_CAP_CAM_FRAMES_PER_TRIGGER_MAX.

CVI Entry [Control Signals]
Camera Frames Per Trigger

Note Parameter is only available if CORACQ_CAP_CAM_FRAMES_PER_TRIGGER_MAX is supported. Parameter is only validated if a camera trigger/integrate method is enabled.

CORACQ_PRM_CROP_ACTIVATION

Description Selects the activation method for the cropper

Type UINT32

Values 0x00000000
CORACQ_VAL_CROP_ACTIVATION_AUTO
Board specific behavior, either of LEVEL or EDGE as described below.

0x00000001
CORACQ_VAL_CROP_ACTIVATION_LEVEL
The cropper will only be active during the appropriate signal (HSync/LVAL polarity and VSync/FVAL polarity). In this mode, it is not possible to acquire pixels outside the active region of the video.

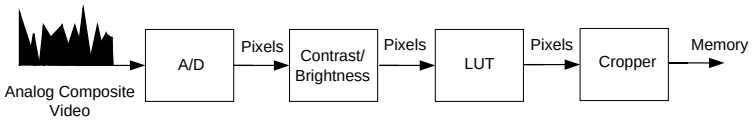
0x00000002
CORACQ_VAL_CROP_ACTIVATION_EDGE
The cropper will be activated when the appropriate edge is detected. In this mode, it is possible to acquire pixels outside the active region of the video.

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_ACTIVATION.

CVI Entry [Stream Conditioning]
Crop Activation

CORACQ_PRM_CROP_HEIGHT

Description Cropped height of the acquisition camera image (in lines per frame).



The acquisition device supports vertical cropping if the CORACQ_CAP_CROP_VERT capability returns TRUE.

Type UINT32

Limits The value must be in the range CORACQ_CAP_CROP_HEIGHT_MIN to CORACQ_CAP_CROP_HEIGHT_MAX, and must be a multiple of CORACQ_CAP_CROP_HEIGHT_MULT.

The value must also be in the range CORACQ_CAP_SYNC_CROP_HEIGHT_MIN to CORACQ_CAP_SYNC_CROP_HEIGHT_MAX and must be a multiple of CORACQ_CAP_SYNC_CROP_HEIGHT_MULT

The value (CORACQ_PRM_CROP_TOP + CORACQ_PRM_CROP_HEIGHT) must be smaller or equal to CORACQ_PRM_VACTIVE.

Scale Down limit:
The value CORACQ_PRM_CROP_HEIGHT / (CORACQ_CAP_SCALE_VERT_MIN_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be smaller or equal to CORACQ_PRM_SCALE_VERT.
CORACQ_CAP_SCALE_VERT_MIN_FACTOR specifies the factor used in calculating the minimum vertical downscaling ratio supported by the acquisition device. The minimum vertical downscaling ratio is equal to 1/(CORACQ_CAP_SCALE_VERT_MIN_FACTOR/ CORACQ_VAL_SCALE_FACTOR).

Scale Up limit:
The value CORACQ_PRM_CROP_HEIGHT * (CORACQ_CAP_SCALE_VERT_MAX_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be greater or equal to CORACQ_PRM_SCALE_VERT.
CORACQ_CAP_SCALE_VERT_MAX_FACTOR specifies the factor used in calculating the maximum vertical upscaling ratio supported by the acquisition device. The maximum vertical upscaling ratio is equal to CORACQ_CAP_SCALE_VERT_MAX_FACTOR/ CORACQ_VAL_SCALE_FACTOR.

CVI Entry [Stream Conditioning]
Crop Height

Note You should not directly use the function CorAcqSetPrm to set the value of this parameter. This may yield an error condition when it is validated together with the other cropping parameters (CORACQ_PRM_CROP_LEFT, CORACQ_PRM_CROP_TOP, and CORACQ_PRM_CROP_WIDTH).

Instead, you should first retrieve the current VIC parameters using CorAcqGetPrms, then modify the cropping parameters using CorVicSetPrm, and finally apply the new values as a block using CorAcqSetPrms.

CORACQ_PRM_CROP_LEFT

Description Number of pixels to crop from the left side of the acquisition camera image.

Includes the number of pixels in the horizontal blanking. The horizontal blanking includes the horizontal back porch and the horizontal back invalid parameters. If the horizontal sync reference is set to CORACQ_VAL_SYNC_REF_BEGIN, then the horizontal sync is also included.

The acquisition device supports horizontal cropping if the CORACQ_CAP_CROP_HORZ capability returns TRUE.

Type UINT32

Limits The value must be in the range CORACQ_CAP_CROP_LEFT_MIN to CORACQ_CAP_CROP_LEFT_MAX, and must be a multiple of CORACQ_CAP_CROP_LEFT_MULT.

The value (CORACQ_PRM_CROP_LEFT + CORACQ_PRM_CROP_WIDTH) must be smaller or equal to CORACQ_PRM_HACTIVE.

The value (CORACQ_PRM_HBACK_PORCH + CORACQ_PRM_HBACK_INVALID + CORACQ_PRM_CROP_LEFT) must be in the range CORACQ_CAP_SYNC_CROP_LEFT_MIN...CORACQ_CAP_SYNC_CROP_LEFT_MAX, and must be a multiple of CORACQ_CAP_SYNC_CROP_LEFT_MULT.

The value (CORACQ_PRM_HBACK_PORCH + CORACQ_PRM_HBACK_INVALID + CORACQ_PRM_CROP_LEFT + CORACQ_PRM_CROP_WIDTH) must be in the range CORACQ_CAP_SYNC_CROP_WIDTH_MIN...CORACQ_CAP_SYNC_CROP_WIDTH_MAX, and must be a multiple of CORACQ_CAP_SYNC_CROP_WIDTH_MULT.

CVI Entry [Stream Conditioning]
Crop Left

Note You should not directly use the function CorAcqSetPrm to set the value of this parameter. This may yield an error condition when it is validated together with the other cropping parameters (CORACQ_PRM_CROP_HEIGHT, CORACQ_PRM_CROP_TOP, and CORACQ_PRM_CROP_WIDTH).

Instead, you should first retrieve the current VIC parameters using CorAcqGetPrms, then modify the cropping parameters using CorVicSetPrm, and finally apply the new values as a block using CorAcqSetPrms.

CORACQ_PRM_CROP_TOP

Description Number of lines per acquisition frame to crop from the top of the camera image.

It includes the number of lines in the vertical blanking. The vertical blank includes the vertical back porch and the vertical back invalid parameters. If the vertical sync reference is set to CORACQ_VAL_SYNC_REF_BEGIN, then the vertical sync is also included.

The acquisition device supports vertical cropping if the CORACQ_CAP_CROP_VERT capability returns TRUE.

Type UINT32

Limits The value must be in the range CORACQ_CAP_CROP_TOP_MIN to CORACQ_CAP_CROP_TOP_MAX, and must be a multiple of CORACQ_CAP_CROP_TOP_MULT.

The value (CORACQ_PRM_CROP_TOP + CORACQ_PRM_CROP_HEIGHT) must be smaller or equal to CORACQ_PRM_VACTIVE.

The value (CORACQ_PRM_VBACK_PORCH + CORACQ_PRM_VBACK_INVALID + CORACQ_PRM_CROP_TOP) must be in the range CORACQ_CAP_SYNC_CROP_TOP_MIN...CORACQ_CAP_SYNC_CROP_TOP_MAX, and must be a multiple of CORACQ_CAP_SYNC_CROP_TOP_MULT.

The value (CORACQ_PRM_VBACK_PORCH + CORACQ_PRM_VBACK_INVALID + CORACQ_PRM_CROP_TOP + CORACQ_PRM_CROP_HEIGHT) must be in the range CORACQ_CAP_SYNC_CROP_HEIGHT_MIN...CORACQ_CAP_SYNC_CROP_HEIGHT_MAX, and must be a multiple of CORACQ_CAP_SYNC_CROP_HEIGHT_MULT. See CORACQ_PRM_CROP_HEIGHT for capability information.

CVI Entry [Stream Conditioning]
Crop Top

Note You should not directly use the CorAcqSetPrm function to set the value of this parameter. This may yield an error condition when it is validated together with the other cropping parameters (CORACQ_PRM_CROP_HEIGHT, CORACQ_PRM_CROP_LEFT, and CORACQ_PRM_CROP_WIDTH).

Instead, you should first retrieve the current VIC parameters using CorAcqGetPrms, then modify the cropping parameters using CorVicSetPrm, and finally apply the new values as a block using CorAcqSetPrms. See the *Sapera LT Basic Modules Reference Manual* for function descriptions referred to in this table.

CORACQ_PRM_CROP_WIDTH

Description Cropped width of the acquisition camera image (in pixels).

The acquisition device supports horizontal cropping if the CORACQ_CAP_CROP_HORZ capability returns TRUE.

Type UINT32

Limits The value must be in the range CORACQ_CAP_CROP_WIDTH_MIN to CORACQ_CAP_CROP_WIDTH_MAX, and must be a multiple of CORACQ_CAP_CROP_WIDTH_MULT.

The value must also be in the range CORACQ_CAP_SYNC_CROP_WIDTH_MIN to CORACQ_CAP_SYNC_CROP_WIDTH_MAX and must be a multiple of CORACQ_CAP_SYNC_CROP_WIDTH_MULT. See CORACQ_PRM_CROP_LEFT for capability information.

The value (CORACQ_PRM_CROP_LEFT + CORACQ_PRM_CROP_WIDTH) must be smaller or equal to CORACQ_PRM_HACTIVE.

Scale Down limit:
The value CORACQ_PRM_CROP_WIDTH / (CORACQ_CAP_SCALE_HORZ_MIN_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be smaller or equal to CORACQ_PRM_SCALE_HORZ. CORACQ_CAP_SCALE_HORZ_MIN_FACTOR specifies the factor used in calculating the minimum horizontal downscaling ratio supported by the acquisition device. The minimum horizontal downscaling ratio is equal to 1/(CORACQ_CAP_SCALE_HORZ_MIN_FACTOR/ CORACQ_VAL_SCALE_FACTOR).

Scale Up limit:
The value CORACQ_PRM_CROP_WIDTH * (CORACQ_CAP_SCALE_HORZ_MAX_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be greater or equal to CORACQ_PRM_SCALE_HORZ. CORACQ_CAP_SCALE_HORZ_MAX_FACTOR specifies the factor used in calculating the maximum horizontal upscaling ratio supported by the acquisition device. The maximum horizontal upscaling ratio is equal to CORACQ_CAP_SCALE_HORZ_MAX_FACTOR/ CORACQ_VAL_SCALE_FACTOR.

CVI Entry [Stream Conditioning]
Crop Width

Note You should not directly use the function CorAcqSetPrm to set the value of this parameter. This may yield an error condition when it is validated together with the other cropping parameters (CORACQ_PRM_CROP_HEIGHT, CORACQ_PRM_CROP_LEFT, and CORACQ_PRM_CROP_TOP).

Instead, you should first retrieve the current VIC parameters using CorAcqGetPrms, then modify the cropping parameters using CorVicSetPrm, and finally apply the new values as a block using CorAcqSetPrms.

CORACQ_PRM_DC_REST_MODE

Description DC restoration mode control. Applies to analog video signals only.
The acquisition device supports DC restoration if the CORACQ_CAP_DC_REST capability returns TRUE.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_DC_REST_MODE. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_DC_REST_MODE_AUTO (0x00000001)
The acquisition device automatically activates or deactivates DC restoration and selects the proper values for the start and width of the sampling pulse.
The pulse starting location is set to CORACQ_PRM_HSYNC pixels and the pulse width is set to 0.8 µs (expressed in pixels).

CORACQ_VAL_DC_REST_MODE_ON (0x00000002)
The acquisition device activates DC restoration using user-defined values.

CORACQ_VAL_DC_REST_MODE_OFF (0x00000004)
The acquisition device deactivates DC restoration.

CVI Entry [Signal Conditioning]
DC Restoration Mode

CORACQ_PRM_DC_REST_START

Description DC restoration sampling pulse start location relative to the horizontal sync, in pixels. Applies to analog video signals only.

The acquisition device supports DC restoration if the CORACQ_CAP_DC_REST capability returns TRUE.

Type UINT32

Limits Range limits: CORACQ_CAP_DC_REST_START_MIN to CORACQ_CAP_DC_REST_START_MAX.

CVI Entry [Signal Conditioning]
DC Restoration Start

Note Validated when CORACQ_PRM_DC_REST_MODE is equal to CORACQ_VAL_DC_REST_MODE_ON.

CORACQ_PRM_DC_REST_WIDTH

Description DC restoration sampling pulse width, in pixels. Applies to analog video signals only.

The acquisition device supports DC restoration if the CORACQ_CAP_DC_REST capability returns TRUE.

Type UINT32

Limits Range limits: CORACQ_CAP_DC_REST_WIDTH_MIN to CORACQ_CAP_DC_REST_WIDTH_MAX.

CVI Entry [Signal Conditioning]
DC Restoration Width

Note Validated only if CORACQ_PRM_DC_REST_MODE is equal to CORACQ_VAL_DC_REST_MODE_ON.

CORACQ_PRM_DECIMATE_COUNT

Description The number of fields or frames to decimate per second.

Type UINT32

Limits The value must be smaller than the number of acquisition fields or frames per second, depending on the decimation method requested.

CVI Entry [Stream Conditioning]
Decimate Count

CORACQ_PRM_DECIMATE_METHOD

Description Field and frame decimation method.

The acquisition device supports field/frame decimation if the CORACQ_CAP_DECIMATE capability returns TRUE.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_DECIMATE_METHOD. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_DECIMATE_DISABLE (0x00000001)	No decimation
CORACQ_VAL_DECIMATE_FIELD (0x00000002)	Decimate fields
CORACQ_VAL_DECIMATE_FRAME (0x00000004)	Decimate frames
CORACQ_VAL_DECIMATE_ODD (0x00000008)	Decimate odd fields only
CORACQ_VAL_DECIMATE_EVEN (0x00000010)	Decimate even fields only

CVI Entry [Stream Conditioning]
Decimate Method

CORACQ_PRM_EXT_FRAME_TRIGGER_DETECTION

Description Defines the signal detected that generates an external frame trigger event to the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_FRAME_TRIGGER_DETECTION. The capability returns the ORed combination of all supported values.

Values
CORACQ_VAL_ACTIVE_LOW (0x00000001), Active low signal. Acquisition starts on falling edge of trigger 1 - ends on rising edge of trigger 1 or CORACQ_PRM_CROP_HEIGHT numbers of lines acquired.
CORACQ_VAL_ACTIVE_HIGH (0x00000002), Active high signal. Acquisition starts on rising edge of trigger 1 - ends on falling edge of trigger 1 or CORACQ_PRM_CROP_HEIGHT numbers of lines acquired.
CORACQ_VAL_RISING_EDGE (0x00000004), Rising signal edge. Acquisition starts on rising signal edge and ends on when CORACQ_PRM_CROP_HEIGHT numbers of lines acquired.
CORACQ_VAL_FALLING_EDGE (0x00000008), Falling signal edge. Acquisition starts on falling signal edge and ends on when CORACQ_PRM_CROP_HEIGHT numbers of lines acquired.
CORACQ_VAL_BOTH_EDGE (0x00000010), Both signal edges.
CORACQ_VAL_DOUBLE _PULSE_RISING_EDGE (0x00000020),
Acquisition starts on rising edge of trigger 1 – ends on rising edge of trigger 2.
CORACQ_VAL_DOUBLE _PULSE_FALLING_EDGE (0x00000040),
Acquisition starts on falling edge of trigger 1 – ends on falling edge of trigger 2.

CVI Entry [Control Signals]
External Frame Trigger Detection

Note Validated only if CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE

Description Enable or disable external frame trigger on the acquisition device. Applies to linescan cameras only.
This feature is used for trigger acquisitions of virtual frames from a linescan camera. For area scan cameras. See CORACQ_PRM_EXT_TRIGGER_ENABLE.

The acquisition device may be able to simulate an external trigger. See CORACQ_PRM_EXT_TRIGGER_ENABLE for information concerning the CORACQ_CAP_SOFTWARE_TRIGGER capability.

Type UINT32

Availability Available only if CORACQ_CAP_EXT_FRAME_TRIGGER is TRUE. This feature is used to trigger the acquisition of a virtual frame from a linescan camera. For area scan cameras, see

CORACQ_PRM_EXT_TRIGGER_ENABLE for information concerning the CORACQ_CAP_EXT_TRIGGER capability.

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
External Frame Trigger Enable

CORACQ_PRM_EXT_FRAME_TRIGGER_LEVEL

Description Defines the external frame trigger level connected to the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_FRAME_TRIGGER_LEVEL. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_LEVEL_TTL (0x00000001)	TTL signal level.
CORACQ_VAL_LEVEL_422 (0x00000002)	RS-422 signal level.
CORACQ_VAL_LEVEL_LVDS (0x00000004)	LVDS signal level.
CORACQ_VAL_LEVEL_24VOLTS (0x00000008)	24V signal level.
CORACQ_VAL_LEVEL_OPTO (0x00000010)	Opto-coupled signal level.
CORACQ_VAL_LEVEL_LVTTL (0x00000020)	Low voltage TTL signal level.
CORACQ_VAL_LEVEL_12VOLTS (0x00000040)	12V signal level.

CVI Entry [Control Signals]
External Frame Trigger Level

Note Validated only if CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_FRAME_TRIGGER_SOURCE

Description Specifies the physical input source the external frame trigger is connected to on the acquisition device, in the case where the acquisition device has more than one input.

Type UINT32

Limits Range Limits: 0... CORACQ_CAP_EXT_FRAME_TRIGGER_SOURCE – 1 in the case where CORACQ_CAP_EXT_FRAME_TRIGGER_SOURCE is not 0. This capability will have a non-zero value if there is more than one physical input in which to connect an external frame trigger.

CVI Entry [Control Signals]
External Frame Trigger Source

Note Validated only if CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_LINE_TRIGGER_DETECTION

Description Defines the signal detected that generates an external line trigger event to the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_LINE_TRIGGER_DETECTION. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_RISING_EDGE (0x00000004)	Rising signal edge.
CORACQ_VAL_FALLING_EDGE (0x00000008)	Falling signal edge.

CVI Entry [Control Signals]
External Line Trigger Detection

Note Validated only if CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE

Description Enable or disable external line trigger on the acquisition device. Applies to linescan cameras only.
This controls the acquisition line rate of linescan cameras.

The acquisition device may be able to simulate an external trigger. See CORACQ_PRM_EXT_TRIGGER_ENABLE for information concerning the CORACQ_CAP_SOFTWARE_TRIGGER capability.

Type UINT32

Availability Available only if CORACQ_CAP_EXT_LINE_TRIGGER is TRUE.

Values TRUE (0x00000001), Enable
FALSE (0x00000000), Disable

CVI Entry [Control Signals]
External Line Trigger Enable

Note This parameter is mutually exclusive with CORACQ_PRM_INT_LINE_TRIGGER_ENABLE and CORACQ_PRM_SHAFT_ENCODER_ENABLE.

CORACQ_PRM_EXT_LINE_TRIGGER_LEVEL

Description Defines the external line trigger signal level connected to the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_LINE_TRIGGER_LEVEL. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_LEVEL_TTL (0x00000001)	TTL signal level
CORACQ_VAL_LEVEL_422 (0x00000002)	RS-422 signal level
CORACQ_VAL_LEVEL_LVDS (0x00000004)	LVDS signal level
CORACQ_VAL_LEVEL_24VOLTS (0x00000008)	24V signal level.
CORACQ_VAL_LEVEL_OPTO (0x00000010)	Opto-coupled signal level.
CORACQ_VAL_LEVEL_LVTTL (0x00000020)	Low voltage TTL signal level.
CORACQ_VAL_LEVEL_12VOLTS (0x00000040)	12V signal level.

CVI Entry [Control Signals]
External Line Trigger Level

Note Validated only if CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE

Description Specifies the physical input source the external line trigger is connected to on the acquisition device, in the case where the acquisition device has more than one input.

Type UINT32

Limits Range Limits: 0... CORACQ_CAP_EXT_LINE_TRIGGER_SOURCE – 1 in the case where CORACQ_CAP_EXT_LINE_TRIGGER_SOURCE is not 0. This capability will have a non-zero value if there is more than one physical input in which to connect an external line trigger.

CVI Entry [Control Signals]
External Line Trigger Source

Note Validated only if CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE_STR

Description Returns a string representation of the currently selected CORAQ_PRM_EXT_LINE_TRIGGER_SOURCE.

Type CHAR[32]

Values Null terminated string (up to 32 characters including the Null character).

Note Read-only parameter. This parameter is device dependent.

CORACQ_PRM_EXT_TRIGGER_DELAY

Description External trigger delay in units specified by CORACQ_PRM_EXT_TRIGGER_DELAY_TIME_BASE. This is the delay between the reception of the trigger signal and the start of image acquisition.

Type UINT32

Limits Range limits: CORACQ_CAP_EXT_TRIGGER_DELAY_MIN to CORACQ_CAP_EXT_TRIGGER_DELAY_MAX.

CVI Entry [Control Signals]
External Trigger Delay

CORACQ_PRM_EXT_TRIGGER_DELAY_TIME_BASE

Description External trigger delay time base

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_TRIGGER_DELAY_TIME_BASE. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_TIME_BASE_US (0x00000001): Time base is in microseconds.

CORACQ_VAL_TIME_BASE_MS (0x00000002): Time base is in milliseconds.

CORACQ_VAL_TIME_BASE_LINE_VALID (0x00000004): Time base is in line counts.

CORACQ_VAL_TIME_BASE_LINE_TRIGGER (0x00000008): Time base is in external line trigger or shaft encoder pulse counts (after drop or/and multiply factors).

CORACQ_VAL_TIME_BASE_FRAME_VALID (0x00000010): Time base is in video frame counts.

CORACQ_VAL_TIME_BASE__FRAME_TRIGGER (0x00000020): the time base is the external frame trigger.

CORACQ_VAL_TIME_BASE_SHAFT_ENCODER (0x00000040): the time base is the shaft encoder input (before drop or/and multiply factors).

CORACQ_VAL_TIME_BASE_NS (0x00000080), the time base is in nanoseconds

CORACQ_VAL_TIME_BASE_PIXEL_CLK (0x00000100), the time base is in camera pixel clock

CORACQ_VAL_TIME_BASE_100NS (0x00000200), the time base is in 100 nanosecond

CVI Entry [Control Signals]
External Trigger Delay Time Base

CORACQ_PRM_EXT_TRIGGER_DETECTION

Description Defines the signal detected that generates an external trigger event to the acquisition device.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_TRIGGER_DETECTION. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_ACTIVE_LOW (0x00000001)	Active low signal
CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Active high signal
CORACQ_VAL_RISING_EDGE (0x00000004)	Rising edge of signal
CORACQ_VAL_FALLING_EDGE (0x00000008)	Falling edge of signal

CVI Entry [Control Signals]
External Trigger Detection

Note Validated only if external trigger is enabled. See CORACQ_PRM_EXT_TRIGGER_ENABLE.

CORACQ_PRM_EXT_TRIGGER_DURATION

Description Minimum external trigger pulse duration (in µs), needed for the pulse to be acknowledged by the acquisition device. If the duration of the pulse is shorter, the pulse will be discarded. This feature is useful for trigger pulse debouncing. If the value is ‘0’, no validation will be done.

Type UINT32

Limits This value must be in the range CORACQ_CAP_EXT_TRIGGER_DURATION_MIN … CORACQ_CAP_EXT_TRIGGER_DURATION_MAX. A value of 0 means that the device cannot validate the pulse duration.

CVI Entry [Control Signals]
External Trigger Duration

CORACQ_PRM_EXT_TRIGGER_ENABLE

Description Replaces CORACQ_PRM_OUTPUT_ENABLE (obsolete). Enables or disables the external trigger feature of the acquisition device. When enabled, the acquisition device acquires frames upon receiving an external trigger.

The CorAcqSoftwareTrigger function can be used to simulate a hardware trigger. The CORACQ_CAP_SOFTWARE_TRIGGER capability specifies the software trigger type(s) that can be simulated by the acquisition device. See the CorAcqSoftwareTrigger function in the *Sapera LT Basic Modules Reference Manual* for further information.

The capability returns the ORed combination of all valid values as defined below:

CORACQ_VAL_SOFTWARE_TRIGGER_EXT (0x00000001)Simulate an external trigger

CORACQ_VAL_SOFTWARE_TRIGGER_EXT_FRAME (0x00000002) Simulate an external frame trigger

CORACQ_VAL_SOFTWARE_TRIGGER_EXT_LINE (0x00000004) Simulate an external line trigger

Type UINT32

Availability Available only if CORACQ_CAP_EXT_TRIGGER is TRUE. Note that CORACQ_CAP_OUTPUT_ENABLE is obsolete.

Values

CORACQ_VAL_EXT_TRIGGER_OFF (0x00000001)	External Trigger is turned off
CORACQ_VAL_EXT_TRIGGER_ON (0x00000008)	The acquisition device will acquire images whenever an external trigger signal is detected.

CVI Entry [Control Signals]
External Trigger Enable

Note If the CVI entry does not exist or the value is 0, then Output Enable will be used as the default for backward compatibility.
See also other parameters in the CORACQ_PRM_EXT_TRIGGER_xxx series.

CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT

Description Number of images to acquire upon receiving an external trigger.

The acquisition device can acquire more than one frame per trigger if the CORACQ_CAP_EXT_TRIGGER_FRAME_COUNT capability returns TRUE.

Type UINT32

Limits The value must be in the range: 1... CORACQ_CAP_EXT_TRIGGER_FRAME_COUNT_MAX
To grab an infinite number of frames set to CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT_INFIINITE

CVI Entry [Stream Conditioning]
External Trigger Frame Count

Note Validated only if external trigger is enabled. See CORACQ_PRM_EXT_TRIGGER_ENABLE.

CORACQ_CAP_EXT_TRIGGER_FRAME_COUNT_MAX returns the maximum number of images that can be acquired per trigger that is supported by the device when setting a specific value (CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT_INFINITE is also supported even though it is greater than CORACQ_CAP_EXT_TRIGGER_FRAME_COUNT_MAX).

When set to CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT_INFINITE, you must explicitly stop or abort the acquisition.

CORACQ_PRM_EXT_TRIGGER_IGNORE_DELAY

Description Following a valid external trigger, this parameter specifies the time delay, in µsec, where if another external trigger occurs, it will be ignored. The start of the delay (time '0') is the end of the next vertical sync for analog cameras, or the beginning of the next frame valid for digital cameras, following the valid external trigger. If the parameter CORACQ_PRM_CAM_CONTROL_DURING_READOUT is FALSE, time '0' will be the end of the last line acquired from a frame. All external triggers received between the valid external trigger and the Time '0' will also be ignored. Applies to area scan cameras only. For linescan cameras, the external trigger invalid region always extends to the end of the next virtual frame valid following a valid external trigger.

Type UINT32

Values Numerical value representing the delay in µsec.

Limits Range Limits: CORACQ_CAP_EXT_TRIGGER_IGNORE_DELAY_MIN … CORACQ_CAP_EXT_TRIGGER_IGNORE_DELAY_MAX.

CVI Entry [Control Signals]
External Trigger Ignore Delay

Note Validated only if external trigger is enabled. See CORACQ_PRM_EXT_TRIGGER_ENABLE

See also the related event CORACQ_PRM_EVENT_TYPE:
CORACQ_VAL_EVENT_TYPE_EXTERNAL_TRIGGER_IGNORED

For analog cameras, if the WEN signal is used, time '0' will be the start of this WEN signal.
For analog cameras, if synching to blanking signals, time '0' will be the end of the blanking signal.

CORACQ_PRM_EXT_TRIGGER_LEVEL

Description Defines the external trigger level connected to the acquisition device.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_EXT_TRIGGER_LEVEL. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_LEVEL_TTL (0x00000001)	TTL signal level
CORACQ_VAL_LEVEL_422 (0x00000002)	RS-422 signal level
CORACQ_VAL_LEVEL_LVDS (0x00000004)	LVDS signal level
CORACQ_VAL_LEVEL_24VOLTS (0x00000008)	24V signal level.
CORACQ_VAL_LEVEL_OPTO (0x00000010)	Opto-coupled signal level.
CORACQ_VAL_LEVEL_LVTTL (0x00000020)	Low voltage TTL signal level.
CORACQ_VAL_LEVEL_12VOLTS (0x00000040)	12V signal level.

CVI Entry [Control Signals]
External Trigger Level

Note Validated only if external trigger is enabled. See CORACQ_PRM_EXT_TRIGGER_ENABLE.

CORACQ_PRM_EXT_TRIGGER_SOURCE

Description Specifies the physical input source the external trigger is connected to on the acquisition device, in the case where the acquisition device has more than one input.

Type UINT32

Limits Range Limits: 0… CORACQ_CAP_EXT_TRIGGER_SOURCE – 1 in the case where CORACQ_CAP_EXT_TRIGGER_SOURCE is not 0. This capability will have a non-zero value if more than one physical input to connect an external trigger is present. Use CORACQ_PRM_EXT_TRIGGER_SOURCE_STR to get string descriptions for each possible setting.

CVI Entry [Control Signals]
External Trigger Source

Note Validated only if CORACQ_PRM_EXT_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_EXT_TRIGGER_SOURCE_STR

Description	Returns a string representation of the currently selected CORAQ_PRM_EXT_TRIGGER_SOURCE for area scan cameras and CORACQ_PRM_EXT_FRAME_TRIGGER_SOURCE for linescan cameras.
Type	CHAR[32]
Values	Null terminated string (up to 32 characters including the Null character).
Note	Read-only parameter. This parameter is device dependent.

CORACQ_PRM_FIX_FILTER_ENABLE

Description	Enable or disable the fixe-frequency filter if available on the acquisition device. Applies to analog video signals only.
Type	UINT32
Availability	Available only if CORACQ_CAP_FIX_FILTER is TRUE.
Values	TRUE (0x00000001), Enable the filter. FALSE 0x00000000), Disable the filter
CVI Entry	[Signal Conditioning] Fix Filter Enable

CORACQ_PRM_FIX_FILTER_SELECTOR

Description	Selects one of the available fixed-frequency filters. Applies to analog video signals only.
Type	UINT32
Limits	Range Limits: 0... CORACQ_CAP_FIX_FILTER_MAX – 1.
CVI Entry	[Signal Conditioning] Fix Filter Selector
Note	Validated only if CORACQ_PRM_FIX_FILTER_ENABLE is TRUE.

CORACQ_PRM_FIX_FILTER_SELECTOR_STR

Description	Returns a string representation of the currently selected CORAQ_PRM_FIX_FILTER_SELECTOR.
Type	CHAR[32]
Values	Null terminated string (up to 32 characters including the Null character).
Note	Read-only parameter. This parameter is device dependent.

CORACQ_PRM_FLIP

Description	Flipping mode control.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FLIP. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_FLIP_OFF (0x00000000)	Incoming lines and frames are not flipped.
	CORACQ_VAL_FLIP_HORZ (0x00000001)	The acquisition device will flip incoming lines. The right most pixels become the left most pixels
	CORACQ_VAL_FLIP_VERT (0x00000002)	The acquisition device will flip incoming frames. The bottom lines become the top lines.
CVI Entry	[Stream Conditioning] Flip	

CORACQ_PRM_FRAME_INTEGRATE_COUNT

Description	Number of frames to integrate. Applies to area scan cameras only.
Type	UINT32
Limits	The value is limited to 1... CORACQ_CAP_FRAME_INTEGRATE_COUNT_MAX.
CVI Entry	[Control Signals] Frame Integrate Count
Note	Validated only if CORACQ_PRM_FRAME_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_FRAME_INTEGRATE_ENABLE

Description	Enables or disables frame integration control. Applies to area scan cameras only.	
Type	UINT32	
Availability	Available only if CORACQ_CAP_FRAME_INTEGRATE is TRUE.	
Values	TRUE (0x00000001) FALSE (0x00000000)	Enable frame integration control. Disable frame integration control.
CVI Entry	[Control Signals] Frame Integrate Enable	
Note	This parameter is mutually exclusive with CORACQ_PRM_CAM_RESET_ENABLE, CORACQ_PRM_CAM_TRIGGER_ENABLE and CORACQ_PRM_TIME_INTEGRATE_ENABLE.	

CORACQ_PRM_FRAME_LENGTH

Description	Specifies if the image output by the acquisition device have a fixed or variable frame length.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FRAME_LENGTH. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_FRAME_LENGTH_FIX (0x00000001) CORACQ_VAL_FRAME_LENGTH_VARIABLE (0x00000002)	Fixed length images Variable length images
CVI Entry	[Stream Conditioning] Frame Length	

CORACQ_PRM_HSYNC_REF

Description	Defines the horizontal sync reference edge used for horizontal timing.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_HSYNC_REF. The horizontal sync reference is used as the starting point when counting the pixels in a line. Selecting the reference as the end of the sync is useful when dealing with a sync that might be variable. This is usually the case when time-integrating a video signal. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_SYNC_REF_BEGIN (0x00000001) CORACQ_VAL_SYNC_REF_END (0x00000002) CORACQ_VAL_SYNC_REF_HV_DEPENDENT (0x00000004)	Beginning of horizontal sync. End of horizontal sync. Horizontal and Vertical sync reference are dependent on if the acquisition device grabs analog or digital video.
CVI Entry	[Stream Conditioning] Horizontal Sync Reference	

CORACQ_PRM_HUE

Description Hue control: Phase change in degrees applied to the hue control. Applies only to NTSC analog color video signals (composite or Y/C).

Type INT32

Limits Range: CORACQ_CAP_HUE_MIN to CORACQ_CAP_HUE_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_HUE_STEP percent (%) in order for a change to occur in the video signal.

Availability Available only if CORACQ_CAP_HUE is set to TRUE.

CVI Entry [Signal Conditioning]
Hue

CORACQ_PRM_INT_FRAME_TRIGGER_ENABLE

Description Enable/disable the acquisition device's internal frame trigger feature. Applies to area scan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_INT_FRAME_TRIGGER is TRUE.

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
Internal Frame Trigger Enable

Note Controls the rate that video frames are triggered and acquired.

CORACQ_PRM_INT_FRAME_TRIGGER_FREQ

Description Internal frame trigger frequency in milli-Hz, output by the acquisition device. Applies to area scan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_INT_FRAME_TRIGGER_FREQ_MIN ... CORACQ_CAP_INT_FRAME_TRIGGER_FREQ_MAX.

CVI Entry [Control Signals]
Internal Frame Trigger Freq

Note Validated only if CORACQ_PRM_INT_FRAME_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_INT_LINE_TRIGGER_ENABLE

Description Enable/disable the acquisition device's internal line trigger feature. Applies to linescan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_INT_LINE_TRIGGER is TRUE. This feature is used when the acquisition device itself triggers lines out of a camera.

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
Internal Line Trigger Enable

Note Controls the rate video lines are triggered and acquired.
This parameter is mutually exclusive with CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE and CORACQ_PRM_SHAFT_ENCODER_ENABLE.

CORACQ_PRM_INT_LINE_TRIGGER_FREQ

Description Frequency (in Hz) of the internal line trigger signal output by the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits Acquisition device range limits: CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MIN to CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MAX.

Camera range limits: CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN to CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX.

CVI Entry [Control Signals]
Internal Line Trigger Freq

Note Validated only if CORACQ_PRM_INT_LINE_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MAX

Description Maximum frequency (in Hz) of the internal line trigger signal output by the acquisition device. Applies to linescan cameras only.

Type UINT32

CVI Entry None

Note Read-only parameter. This parameter may be dependent on the pixel clock setting. Always read the parameter after setting the required pixel clock.

CORACQ_PRM_INT_LINE_TRIGGER_FREQ_MIN

Description Minimum frequency (in Hz) of the internal line trigger signal output by the acquisition device. Applies to linescan cameras only.

Type UINT32

CVI Entry None

Note Read-only parameter. This parameter may be dependent on the pixel clock setting. Always read the parameter after setting the required pixel clock.

CORACQ_PRM_LINE_INTEGRATE_DURATION

Description Line integrate pulse width in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base, in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_INTEGRATE_DURATION_MIN... CORACQ_CAP_LINE_INTEGRATE_DURATION_MAX.

CVI Entry [Control Signals]
Line Integrate Duration

Note Validated only if CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_LINE_INTEGRATE_ENABLE

Description Enable or disable the line integration control signal to the camera. Applies to linescan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.

Values

TRUE (0x00000001)	Enable line integration pulse.
FALSE (0x00000000)	Disable line integration pulse.

CVI Entry [Control Signals]
Line Integrate Enable

Note This parameter is mutually exclusive with CORACQ_PRM_LINE_TRIGGER_ENABLE.

CORACQ_PRM_LINE_INTEGRATE_TIME_BASE

Description Time based used by all Line Integrate and Line Trigger delay/duration parameters.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_INTEGRATE_TIME_BASE. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_TIME_BASE_NS (0x00000080), the time base is in nano-seconds

CORACQ_VAL_TIME_BASE_PIXEL_CLK (0x00000100), the time base is in pixel clock ticks

CVI Entry [Control Signals]
Line Integrate Time Base

CORACQ_PRM_LINE_TRIGGER_ENABLE

Description Enable or disable the line trigger signal pulse to the camera. Applies to linescan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_LINE_TRIGGER is TRUE.

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
Line Trigger Enable

Note This parameter is mutually exclusive with CORACQ_PRM_LINE_INTEGRATE_ENABLE.

CORACQ_PRM_LINE_TRIGGER_AUTO_DELAY

Description Enables delaying line triggers to a camera based on the selected method. Delaying a line trigger is used to avoid over-triggering a camera.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_TRIGGER_AUTO_DELAY. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_LINE_TRIGGER_AUTO_DELAY_DISABLE (0x00000000)
No delays will be added before triggering a line from a camera.

CORACQ_VAL_LINE_TRIGGER_AUTO_DELAY_END_OF_LVAL (0x00000001)
If the end of the LVAL from a previous line trigger has not yet been received, the acquisition device will delay the line trigger to the camera until it receives this LVAL.

CORACQ_VAL_LINE_TRIGGER_AUTO_DELAY_FREQ_MAX (0x00000002).
If the time between 2 consecutive line triggers is shorter than the maximum frequency specified by CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX, the acquisition device will delay the line trigger to match the maximum frequency line trigger specified.

CVI Entry [Control Signals]
Line Trigger Auto Delay

Note While waiting on one of the conditions, if another line trigger is requested, the CORACQ_VAL_EVENT_TYPE_LINE_TRIGGER_TOO_FAST event will be received if enabled. Validated only if CORACQ_PRM_LINE_TRIGGER_ENABLE or CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_LINESCAN_DIRECTION_OUTPUT

Description	Linescan direction control. Applies to linescan cameras only.
Type	UINT32
Limits	Value can only be set to CORACQ_VAL_LINESCAN_DIRECTION_REVERSE if CORACQ_CAP_LINESCAN_DIRECTION is TRUE and CORACQ_PRM_LINESCAN_DIRECTION is TRUE. For Teledyne DALSA cameras, this control is called the TDI scan direction.
Values	CORACQ_VAL_LINESCAN_DIRECTION_FORWARD (0x00000001) — Forward direction. CORACQ_VAL_LINESCAN_DIRECTION_REVERSE (0x00000002) — Reverse direction.
CVI Entry	[Control Signals] LineScan Direction Output

CORACQ_PRM_LUT_ENABLE

Description	Enable or disable the input LUT.
Type	UINT32
Availability	At least one LUT is available if CORACQ_CAP_LUT is TRUE. CORACQ_CAP_LUT_ENABLE will then return TRUE if it can be enabled/disabled.
Values	TRUE (0x00000001) — Enable the input LUT. FALSE (0x00000000) — Disable the input LUT.
CVI Entry	[Stream Conditioning] Lut Enable
Note	The LUT cannot be disabled on some acquisition devices.
Description	Input LUT format based on the current pixel depth and output format.
Type	UINT32
CVI Entry	None
Values	Possible values are of the type CORLUT_VAL_FORMAT_ and must match the possible values as defined by the CORACQ_CAP_PIXEL_DEPTH capability that specifies the number of bits per pixel per tap supported by the acquisition device.
Note	Read-only parameter. This parameter may depend on CORACQ_PRM_PIXEL_DEPTH and CORACQ_PRM_OUTPUT_FORMAT.

CORACQ_PRM_LUT_FORMAT

Description	Input LUT format based on the current pixel depth and output format.
Type	UINT32
CVI Entry	None
Values	Possible values are of the type CORLUT_VAL_FORMAT_ and must match the possible values as defined by the CORACQ_CAP_PIXEL_DEPTH capability that specifies the number of bits per pixel per tap supported by the acquisition device.
Note	Read-only parameter. This parameter may depend on CORACQ_PRM_PIXEL_DEPTH and CORACQ_PRM_OUTPUT_FORMAT.

CORACQ_PRM_LUT_MAX

Description	Maximum number of LUTs available based on the current pixel depth and output format.
Type	UINT32
CVI Entry	None
Note	Read-only parameter. This parameter may depend on CORACQ_PRM_PIXEL_DEPTH and CORACQ_PRM_OUTPUT_FORMAT.

CORACQ_PRM_LUT_NENTRIES

Description	The number of elements in the input lookup table.
Type	UINT32
Values	Usually ranges from 256 to 65536.
CVI Entry	None
Note	Read only parameter. This parameter may depend on CORACQ_PRM_PIXEL_DEPTH and CORACQ_PRM_OUTPUT_FORMAT.

CORACQ_PRM_LUT_NUMBER

Description	Selects which Lute use.
Type	UINT32
Limits	The value must be in the range 0...CORACQ_PRM_LUT_MAX – 1.
CVI Entry	[Stream Conditioning] Lut Number
Note	Validated only if CORACQ_PRM_LUT_ENABLE is TRUE.

CORACQ_PRM_MASTER_MODE

Description	Specifies if the acquisition device drives the horizontal and/or the vertical sync of the camera.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_MASTER_MODE.
Values	CORACQ_VAL_MASTER_MODE_DISABLE (0x00000000), Master mode disabled. CORACQ_VAL_MASTER_MODE_HSYNC_VSYNC (0x00000001), The acquisition device drives the horizontal and vertical sync of the camera. CORACQ_VAL_MASTER_MODE_HSYNC (0x00000002), The acquisition device drives the horizontal sync of the camera. CORACQ_VAL_MASTER_MODE_VSYNC (0x00000004), The acquisition device drives the vertical sync of the camera.
CVI Entry	[Control Signals] Master Mode

CORACQ_PRM_MASTER_MODE_HSYNC_POLARITY

Description	Specifies the horizontal sync polarity that the acquisition device outputs in master mode.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_MASTER_MODE_HSYNC_POLARITY. The capability returns the ORed combination of all supported values.
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001) Horizontal sync is active low. CORACQ_VAL_ACTIVE_HIGH (0x00000002) Horizontal sync is active high.
CVI Entry	[Control Signals] Master Mode Horizontal Sync Polarity
Note	Validated only if CORACQ_PRM_MASTER_MODE is not equal to CORACQ_VAL_MASTER_MODE_DISABLE.

CORACQ_PRM_MASTER_MODE_VSYNC_POLARITY

Description Specifies the vertical sync polarity that the acquisition device outputs in master mode.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_MASTER_MODE_VSYNC_POLARITY. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_ACTIVE_LOW (0x00000001)	Vertical sync is active low.
CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Vertical sync is active high.

CVI Entry [Control Signals]
Master Mode Vertical Sync Polarity

Note Validated only if CORACQ_PRM_MASTER_MODE is not equal to CORACQ_VAL_MASTER_MODE_DISABLE.

CORACQ_PRM_OUTPUT_ENABLE (obsolete)

Description Video data output mode. Obsolete, use CORACQ_PRM_EXT_TRIGGER_ENABLE.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_OUTPUT_ENABLE. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_OUTPUT_ENABLE_AUTO (0x00000001),
The video data is output whenever a frame has been requested and there is a valid frame.

CORACQ_VAL_OUTPUT_ENABLE_ON (0x00000002), Video data output enabled always.

CORACQ_VAL_OUTPUT_ENABLE_OFF (0x00000004), Video data is not output.

CORACQ_VAL_OUTPUT_ENABLE_ON_EXTRIG(0x00000008),
The video data is output on the next valid frame when a frame has been requested and upon receiving an external trigger signal.

CVI Entry [Output]
Output Enable

Note When using CORACQ_VAL_OUTPUT_ENABLE_ON_EXTRIG, see also CORACQ_PRM_EXT_TRIGGER_DETECTION, CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT and CORACQ_PRM_EXT_TRIGGER_LEVEL.

CORACQ_PRM_OUTPUT_FORMAT

Description Data format output by the acquisition device.

Type UINT32 [64]

Limits This value must match one of the supported output formats given by CORACQ_CAP_OUTPUT_FORMAT.

This capability returns the different output formats supported by the acquisition device as a UINT32 list. The list terminates upon reaching an output format with a value of 0. An array of at least 64 elements must be allocated to obtain the full list of supported formats.

Values
CORACQ_VAL_OUTPUT_FORMAT_MONO1
CORACQ_VAL_OUTPUT_FORMAT_MONO8
CORACQ_VAL_OUTPUT_FORMAT_MONO16
CORACQ_VAL_OUTPUT_FORMAT_MONO32
CORACQ_VAL_OUTPUT_FORMAT_RGB5551
CORACQ_VAL_OUTPUT_FORMAT_RGB565
CORACQ_VAL_OUTPUT_FORMAT_RGB888
CORACQ_VAL_OUTPUT_FORMAT_RGB8888
CORACQ_VAL_OUTPUT_FORMAT_RGB101010
CORACQ_VAL_OUTPUT_FORMAT_RGB161616
CORACQ_VAL_OUTPUT_FORMAT_RGB16161616
CORACQ_VAL_OUTPUT_FORMAT_RGBP8
CORACQ_VAL_OUTPUT_FORMAT_RGBP16CORACQ_VAL_OUTPUT_FORMAT_RGBR888
CORACQ_VAL_OUTPUT_FORMAT_UYVY
CORACQ_VAL_OUTPUT_FORMAT_YUY2
CORACQ_VAL_OUTPUT_FORMAT_YVYU
CORACQ_VAL_OUTPUT_FORMAT_YUYV
CORACQ_VAL_OUTPUT_FORMAT_Y411
CORACQ_VAL_OUTPUT_FORMAT_Y211
CORACQ_VAL_OUTPUT_FORMAT_HSV
CORACQ_VAL_OUTPUT_FORMAT_HSI
CORACQ_VAL_OUTPUT_FORMAT_HSIP8
CORACQ_VAL_OUTPUT_FORMAT_BICOLOR88
CORACQ_VAL_OUTPUT_FORMAT_BICOLOR1616

CVI Entry [Output]
Output Format

CORACQ_PRM_PIXEL_MASK

Description Defines the pixel mask values. If any mask bits are set to 0, then the corresponding pixel bits are also set to 0.

Type UINT32

Availability Available only if CORACQ_CAP_PIXEL_MASK is TRUE.

CVI Entry [Stream Conditioning]
Pixel Mask

CORACQ_PRM_PLANAR_INPUT_SOURCES

Description Specifies which video input sources will be acquired synchronously and transferred to a vertical planar buffer.

Type UINT32

Availability Available only if CORACQ_CAP_PLANAR_INPUT_SOURCES is TRUE.

Values Bit field representing the video input sources that are to be enabled for synchronized acquisition into a vertical planar buffer. The board video input is enabled if the corresponding bit is 1. For example, a value of 0x00000005 indicates that bit 0 and 2 are active, and camera #1 and #3 will acquired from.

CVI Entry [Input]
Planar Input Sources

Note The acquisition module might have limitations on which inputs can be acquired synchronously. See the board's User's Manual for more details.

CORACQ_PRM_POCL_ENABLE

Description Enable or disable ending power through the camera link cable..

Type BOOL32

Availability Available only if CORACQ_CAP_POCL is TRUE.

Values

TRUE (0x00000001)	Enable camera link power.
FALSE (0x00000000)	Disable camera link power.

CVI Entry [Control Signal]
PoCL Enable

Note The camera must be PoCL compliant and use a PoCL cable. To validate if PoCL is active when PoCL is enabled, check the CORACQ_PRM_SIGNAL_STATUS for the CORACQ_VAL_SIGNAL_POCL_ACTIVE flag.

CORACQ_PRM_PROG_FILTER_ENABLE

Description Enable or disable the programmable frequency filter. Applies to analog video signals only.

Type UINT32

Availability Available only if CORACQ_CAP_PROG_FILTER is TRUE.

Values

TRUE (0x00000001)	Enable the programmable filter.
FALSE (0x00000000)	Disable the programmable filter.

CVI Entry [Signal Conditioning]
Programmable Filter Enable

CORACQ_PRM_PROG_FILTER_FREQ

Description Programmable filter frequency in Hz. Applies to analog video signals only.

Type UINT32

Limits The value must be in the range CORACQ_CAP_PROG_FILTER_FREQ_MIN ... CORACQ_CAP_PROG_FILTER_FREQ_MAX.

CVI Entry [Signal Conditioning]
Programmable Filter Frequency

Note Validated only if CORACQ_PRM_PROG_FILTER_ENABLE is TRUE.

CORACQ_PRM_SATURATION

Description Color saturation percentage control applied to analog composite color video signals.

Type UINT32

Availability Available only if CORACQ_CAP_SATURATION is set to TRUE

Limits Range limits: CORACQ_CAP_SATURATION_MIN to CORACQ_CAP_SATURATION_MAX.

Adjust the parameter by increments of at least CORACQ_CAP_SATURATION_STEP percent (%) in order for a change to occur in the video signal.

CVI Entry [Signal Conditioning]
Saturation

CORACQ_PRM_SCALE_HORZ

Description Number of pixels per line output by the scalar.

Type UINT32

Limits The value must be in the range CORACQ_CAP_SCALE_HORZ_MIN to CORACQ_CAP_SCALE_HORZ_MAX, and must be a multiple of CORACQ_CAP_SCALE_HORZ_MULT.

Scale Down limit: The value CORACQ_PRM_CROP_WIDTH / (CORACQ_CAP_SCALE_HORZ_MIN_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be smaller or equal to CORACQ_PRM_SCALE_HORZ.
Scale Up limit: The value CORACQ_PRM_CROP_WIDTH * (CORACQ_CAP_SCALE_HORZ_MAX_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be greater or equal to CORACQ_PRM_SCALE_HORZ.
See CORACQ_PRM_CROP_WIDTH for information on both CORACQ_CAP_SCALE_HORZ_MIN_FACTOR and CORACQ_CAP_SCALE_HORZ_MAX_FACTOR.

CVI Entry [Stream Conditioning]
Scale Horizontal

Note Available only if CORACQ_PRM_SCALE_HORZ_METHOD is not equal to CORACQ_VAL_SCALE_METHOD_DISABLE.

CORACQ_PRM_SCALE_HORZ_METHOD

Description Horizontal scaling method.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SCALE_HORZ_METHOD. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_SCALE_METHOD_DISABLE (0x00000001),
Disable horizontal scaling.

CORACQ_VAL_SCALE_METHOD_SIMPLE (0x00000002),
Horizontal scaling drops pixels.

CORACQ_VAL_SCALE_METHOD_INTERPOLATION (0x00000004),
Horizontal scaling interpolates pixels.

CORACQ_VAL_SCALE_METHOD_POW2 (0x00000008),
Horizontal scaling must be a power of 2.

CVI Entry [Stream Conditioning]
Scale Horizontal Method

CORACQ_PRM_SCALE_VERT

Description Number of lines per frame output by the scalar.

Type UINT32

Limits The value must be in the range CORACQ_CAP_SCALE_VERT_MIN ... CORACQ_CAP_SCALE_VERT_MAX, and must be a multiple of CORACQ_CAP_SCALE_VERT_MULT.

Scale Down limit: The value CORACQ_PRM_CROP_HEIGHT / (CORACQ_CAP_SCALE_VERT_MIN_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be smaller or equal to CORACQ_PRM_SCALE_VERT.

Scale Up limit: The value CORACQ_PRM_CROP_HEIGHT * (CORACQ_CAP_SCALE_VERT_MAX_FACTOR / CORACQ_VAL_SCALE_FACTOR) must be greater or equal to CORACQ_PRM_SCALE_VERT.

See CORACQ_PRM_CROP_HEIGHT for information on both CORACQ_CAP_SCALE_VERT_MIN_FACTOR and CORACQ_CAP_SCALE_VERT_MAX_FACTOR.

CVI Entry [Stream Conditioning]
Scale Vertical

Note Available only if CORACQ_PRM_SCALE_VERT_METHOD is not equal to CORACQ_VAL_SCALE_METHOD_DISABLE.

CORACQ_PRM_SCALE_VERT_METHOD

Description Vertical scaling method.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SCALE_VERT_METHOD. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_SCALE_METHOD_DISABLE (0x00000001), Disable vertical scaling.

CORACQ_VAL_SCALE_METHOD_SIMPLE (0x00000002), Vertical scaling drops lines.

CORACQ_VAL_SCALE_METHOD_INTERPOLATION (0x00000004), Vertical scaling interpolates lines.

CORACQ_VAL_SCALE_METHOD_POW2 (0x00000008), Vertical scaling must be a power of 2.

CVI Entry [Stream Conditioning]
Scale Vertical Method

CORACQ_PRM_SHAFT_ENCODER_DIRECTION

Description Selects the direction of the shaft encoder that increments/decrements the acquisition device encoder counter. Support of dual phase encoders might require that the direction of motion be considered. This is the case where system vibrations and/or conveyor backlash can cause the encoder to momentarily travel backwards. The acquisition device must in those cases count the reverse steps and subtract the forward steps such that only pulses after the reverse count reaches zero are considered valid.

Type UINT32

Values CORACQ_VAL_SHAFT_ENCODER_DIRECTION_IGNORED (0x00000000)
Do not take into account the shaft encoder direction. All shaft encoder pulses are considered valid.

CORACQ_VAL_SHAFT_ENCODER_DIRECTION_FORWARD (0x00000001)
Increment the shaft encoder counter when a forward motion is detected. A forward motion is detected when the order of the pulses are A/B.

CORACQ_VAL_SHAFT_ENCODER_DIRECTION_REVERSE (0x00000002)
Increment the shaft encoder counter when a reverse motion is detected. A reverse motion is detected when the order of the pulses are B/A.

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SHAFT_ENCODER_DIRECTION

CVI Entry [Control Signals]
Shaft Encoder Direction

Note Validated only if CORACQ_PRM_SHAFT_ENCODER_ENABLE is TRUE .

CORACQ_PRM_SHAFT_ENCODER_DROP

Description Number of signal edges dropped when video acquisitions are controlled by a shaft encoder. Applies to linescan cameras only.

Type UINT32

Limits Range limits CORACQ_CAP_SHAFT_ENCODER_DROP_MIN to CORACQ_CAP_SHAFT_ENCODER_DROP_MAX.

CVI Entry [Control Signals]
Shaft Encoder Pulse Drop

Note Validated only if CORACQ_PRM_SHAFT_ENCODER_ENABLE is TRUE.
For more details about the shaft encoder, see "Shaft Encoder Description".

CORACQ_PRM_SHAFT_ENCODER_ENABLE

Description Enable or disable the shaft encoder support of the acquisition device.

Type UINT32

Availability Available only if CORACQ_CAP_SHAFT_ENCODER is TRUE.

Values

TRUE (0x00000001)	Enable
FALSE (0x00000000)	Disable

CVI Entry [Control Signals]
Shaft Encoder Enable

Note This parameter is mutually exclusive with CORACQ_PRM_INT_LINE_TRIGGER_ENABLE and CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE.
For more details about the shaft encoder, see "Shaft Encoder Description".

CORACQ_PRM_SHAFT_ENCODER_LEVEL

Description Shaft encoder level fed to the acquisition device. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SHAFT_ENCODER_LEVEL. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_LEVEL_TTL (0x00000001)	TTL signal.
CORACQ_VAL_LEVEL_422 (0x00000002)	RS-422 signal.
CORACQ_VAL_LEVEL_LVDS (0x00000004)	LVDS signal.
CORACQ_VAL_LEVEL_24VOLTS (0x00000008)	24V signal level.
CORACQ_VAL_LEVEL_OPTO (0x00000010)	Opto-coupled signal level.
CORACQ_VAL_LEVEL_LVTTL (0x00000020)	Low voltage TTL signal level.
CORACQ_VAL_LEVEL_12VOLTS (0x00000040)	12V signal level.

CVI Entry [Control Signals]
Shaft Encoder Level

Note Validated only if CORACQ_PRM_SHAFT_ENCODER_ENABLE is TRUE.

CORACQ_PRM_SHAFT_ENCODER_MULTIPLY

Description Number of signal edges generated for each shaft encoder signal edge, when video acquisitions are controlled by an external shaft encoder trigger. Applies to linescan cameras only.

Type UINT32

Limits Range limits CORACQ_CAP_SHAFT_ENCODER_MULTIPLY_MIN to CORACQ_CAP_SHAFT_ENCODER_MULTIPLY_MAX by increments specified by CORACQ_CAP_SHAFT_ENCODER_MULTIPLY_STEP.

Adjust the parameter by minimum increments as specified by CORACQ_CAP_SHAFT_ENCODER_MULTIPLY_STEP. This capability is a 32-bit bitfield containing the minimum step (bit0 to bit15) and the step type (linear or exponential, bit16 to bit31).

Bits 31 - 16	Bits 15 - 0
Step Type	Step Value

The parameter varies as described below:

Step Type	CORACQ_PRM_SHAFT_ENCODER_MULTIPLY
CORSTEP_INCREMENT_LINEAR (0x10000000)	SHAFT_ENCODER_MULTIPLY_MIN + N * *step*
CORSTEP_INCREMENT_EXPONENTIAL (0x20000000)	SHAFT_ENCODER_MULTIPLY_MIN * $step^{N}$ Where N >= 0.

For example, if the CORACQ_CAP_SHAFT_ENCORDER_STEP value is 0x20000002, the step type is CORSTEP_INCREMENT_EXPONENTIAL, with a *step* of 2 .If CORACQ_CAP_SHAFT_ENCODER_MULTIPLY_MIN = 1, CORACQ_PRM_SHAFT_ENCODER_MULTIPLY would be 1, 2, 4, 8...

CVI Entry [Control Signals]
Shaft Encoder Pulse Multiply

Note Validated only if CORACQ_PRM_SHAFT_ENCODER_ENABLE is TRUE.
For more details about the shaft encoder, see "Shaft Encoder Description".

See your board User's manual for any hardware limitations of this feature.

CORACQ_PRM_SHAFT_ENCODER_ORDER

Description Selects the order of the drop/multiply operation of the shaft encoder.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SHAFT_ENCODER_ORDER. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_SHAFT_ENCODER_ORDER_AUTO: Device Specific

CORACQ_VAL_SHAFT_ENCODER_ORDER_DROP_MULTIPLY: Drop-Multiply

CORACQ_VAL_SHAFT_ENCODER_ORDER_MULTIPLY_DROP: Multiply-Drop

CVI Entry [Control Signals]
Shaft Encoder Order

CORACQ_PRM_SHAFT_ENCODER_SOURCE

Description Specifies the physical input source the shaft encoder is connected to on the acquisition device, in the case where the acquisition device has more than one input.

Type UINT32

Limits Range Limits: 0 ... CORACQ_CAP_SHAFT_ENCODER_SOURCE – 1 in the case where CORACQ_CAP_SHAFT_ENCODER_SOURCE is not 0. This capability will have a non-zero value if more than one physical input to connect a shaft encoder is present.

CVI Entry [Control Signals]
Shaft Encoder Source

Note Validated only if CORACQ_PRM_SHAFT_ENCODER_ENABLE is TRUE.

CORACQ_PRM_SHAFT_ENCODER_SOURCE_STR

Description Returns a string representation of the currently selected CORAQ_PRM_SHAFT_ENCODER_SOURCE

Type CHAR[32]

Values Null terminated string (up to 32 characters including the Null character).

Note Read-only parameter. This parameter is device dependent.

CORACQ_PRM_SHARED_CAM_RESET

Description Synchronize the reset output signal of the current acquisition module with another acquisition module of the board.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_CAM_RESET is TRUE.

CORACQ_CAP_SHARED_CAM_RESET is required to synchronize resetting more than 1 camera simultaneously. The master acquisition device must be acquiring in order for the slaved acquisition device to acquire.

Values The acquisition module's index (master device) that the reset output signal will synchronize with, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
Camera Reset

CORACQ_PRM_SHARED_CAM_TRIGGER

Description Synchronize the trigger output signal of the current acquisition module with another acquisition module of the board.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_CAM_TRIGGER is TRUE.

CORACQ_CAP_SHARED_CAM_TRIGGER is required to synchronize triggering more than 1 camera simultaneously. The master acquisition device must be acquiring in order for the slaved acquisition device to acquire.

Values The acquisition module's index (master device) that the trigger output signal will synchronize with, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
Camera Trigger

CORACQ_PRM_SHARED_EXT_TRIGGER

Description Share the external trigger signal from another acquisition module.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_EXT_TRIGGER is TRUE.

CORACQ_CAP_SHARED_EXT_TRIGGER is required to trigger more than 1 acquisition module simultaneously using a single external trigger input signal. The master acquisition device must be acquiring in order for the slaved acquisition device to acquire properly.

Values The acquisition module's index (master device) from which the external trigger signal will originate, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
External Trigger

CORACQ_PRM_SHARED_FRAME_INTEGRATE

Description Synchronize the frame integration output signal of the current acquisition module with another acquisition module of the board.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_FRAME_INTEGRATE is TRUE.
CORACQ_CAP_SHARED_FRAME_INTEGRATE is required to synchronize frame integration using multiple cameras simultaneously. The master acquisition device must be acquiring in order for the slaved device to acquire.

Values The acquisition module's index (master device) that the frame integration output signal will synchronize with, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
Frame Integrate

CORACQ_PRM_SHARED_STROBE

Description Share the strobe output signal from another acquisition module.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_STROBE is TRUE.

CORACQ_CAP_SHARED_STROBE is required when using a single strobe while acquiring with more than one camera simultaneously. The master acquisition device must be acquiring in order for the slaved acquisition device to acquire.

Values The acquisition module's index (master device) from which the strobe output signal will originate, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
Strobe

CORACQ_PRM_SHARED_TIME_INTEGRATE

Description Synchronize the time integration output signal of the current acquisition module with another acquisition module of the board.

Type UINT32

Limits This value can only be set to a value different than CORACQ_VAL_SHARED_CONTROL_DISABLE if CORACQ_CAP_SHARED_TIME_INTEGRATE is TRUE.

CORACQ_CAP_SHARED_TIME_INTEGRATE is required when synchronizing time integration with multiple cameras simultaneously. The master acquisition device must be acquiring in order for the slaved device to acquire.

Values The acquisition module's index (master device time integration output signal) which will be synchronized with, or CORACQ_VAL_SHARED_CONTROL_DISABLE (= -1) if not used.

CVI Entry [Shared Control Signals]
Time Integrate

CORACQ_PRM_SHARPNESS

Description Analog composite video sharpness control applied to the video signal. Applies to analog composite video signals only.

Type UINT32

Limits Range limits: CORACQ_CAP_SHARPNESS_MIN ... CORACQ_CAP_SHARPNESS_MAX.

CVI Entry [Signal Conditioning]
Sharpness

Note This parameter has no units. Sharpness values are dependent on the board hardware used.

CORACQ_PRM_SNAP_COUNT

Description Number of images to acquire per transfer count.

Type UINT32

Limits The value must be in the range: 1...(2**32) – 1.

Availability Available only if CORACQ_CAP_SNAP_COUNT is TRUE.

CVI Entry [Stream Conditioning]
Snap Count

Notes CORACQ_CAP_SNAP_COUNT_MAX returns the maximum number of images per transfer count that is supported by the device.

CORACQ_PRM_STROBE_DELAY

Description	Strobe pulse delay #1 (in µs).
Type	UINT32
Limits	Range limits: CORACQ_CAP_STROBE_DELAY_MIN to CORACQ_CAP_STROBE_DELAY_MAX.
CVI Entry	[Control Signals] Strobe Delay
Note	Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE. See "Strobe Methods" for details on using the pulse delay #1 parameter.

CORACQ_PRM_STROBE_DELAY_2

Description	Strobe pulse delay #2 (in µs).
Type	UINT32
Limits	Range limits: CORACQ_CAP_STROBE_DELAY_2_MIN to CORACQ_CAP_STROBE_DELAY_2_MAX.
Note	Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE. See "Strobe Methods" for details on using the pulse delay #2 parameter.

CORACQ_PRM_STROBE_DURATION

Description	Strobe pulse width (in µs).
Type	UINT32
Limits	Range limits: CORACQ_CAP_STROBE_DURATION_MIN to CORACQ_CAP_STROBE_DURATION_MAX.
CVI Entry	[Control Signals] Strobe Duration
Note	Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE.

CORACQ_PRM_STROBE_ENABLE

Description	Enable or disable the strobe pulse.	
Type	UINT32	
Availability	Available only if CORACQ_CAP_STROBE is TRUE.	
Values	TRUE (0x00000001) FALSE (0x00000000)	Enable the strobe pulse. Disable the strobe pulse.
CVI Entry	[Control Signals] Strobe Enable	

CORACQ_PRM_STROBE_LEVEL

Description Strobe signal level output by the acquisition device.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_STROBE_LEVEL. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_LEVEL_TTL (0x00000001)	TTL signal level.
CORACQ_VAL_LEVEL_422 (0x00000002)	RS-422 signal level.
CORACQ_VAL_LEVEL_LVDS (0x00000004)	LVDS signal level.
CORACQ_VAL_LEVEL_24VOLTS (0x00000008)	24V signal level.
CORACQ_VAL_LEVEL_OPTO (0x00000010)	Opto-coupled signal level.
CORACQ_VAL_LEVEL_LVTTL (0x00000020)	Low voltage TTL signal level.
CORACQ_VAL_LEVEL_12VOLTS (0x00000040)	12V signal level.

CVI Entry [Control Signals]
Strobe Level

Note Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE.

CORACQ_PRM_STROBE_METHOD

Description Select the strobe pulse output method.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_STROBE_METHOD. The capability returns the ORed combination of all supported values.

Values See "Strobe Methods".

CVI Entry [Control Signals]
Strobe Method

Note Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE.

CORACQ_PRM_STROBE_POLARITY

Description Strobe pulse polarity.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_STROBE_POLARITY. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_ACTIVE_LOW (0x00000001)	Strobe pulse will be active low.
CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Strobe pulse will be active high.

CVI Entry [Control Signals]
Strobe Polarity

Note Validated only if CORACQ_PRM_STROBE_ENABLE is TRUE.

CORACQ_PRM_TIME_INTEGRATE_DELAY

Description Time integration delay (in µs). After receiving a trigger pulse (external, internal or software), the acquisition device will wait this delay before generating the time integration pulse(s).

Type UINT32

Limits Range limits: CORACQ_CAP_TIME_INTEGRATE_DELAY_MIN ... CORACQ_CAP_TIME_INTEGRATE_DELAY_MAX.

CVI Entry [Control Signals]
Time Integrate Delay

Note Validated only if CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_TIME_INTEGRATE_DURATION

Description Time integration pulse width (in µs). Applies to area scan cameras only.

Type UINT32

Limits Acquisition device range limits: CORACQ_CAP_TIME_INTEGRATE_DURATION_MIN to CORACQ_CAP_TIME_INTEGRATE_DURATION_MAX.

Camera range limits: CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN to CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX.

CVI Entry [Control Signals]
Time Integrate Duration

Note Validated only if CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_TIME_INTEGRATE_ENABLE

Description Enable or disable the time integration signal pulse to the camera. Applies to area scan cameras only.

Type UINT32

Availability Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE.

Values

TRUE (0x00000001)	Enable time integration pulse.
FALSE (0x00000000)	Disable time integration pulse.

CVI Entry [Control Signals]
Time Integrate Enable

Note This parameter is mutually exclusive with CORACQ_PRM_CAM_TRIGGER_ENABLE and CORACQ_PRM_FRAME_INTEGRATE_ENABLE.

CORACQ_PRM_TIME_STAMP_BASE

Description Sets the acquisition device time stamp basic units.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TIME_STAMP_BASE. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_TIME_BASE_US (0x00000001), the time base is in microseconds

CORACQ_VAL_TIME_BASE_MS (0x00000002), the time base is in milliseconds

CORACQ_VAL_TIME_BASE_LINE_VALID (0x00000004), the time base is in line valid received

NOTE: This macro replaces obsolete one: CORACQ_VAL_TIME_BASE_LINE

CORACQ_VAL_TIME_BASE_LINE_TRIGGER (0x00000008), the time base is in external line trigger or shaft encoder pulse (after drop/multiply operation)

CORACQ_VAL_TIME_BASE_FRAME_VALID (0x00000010), the time base is in frame valid received.

NOTE: This macro replaces obsolete one: CORACQ_VAL_TIME_BASE_FRAME

CORACQ_VAL_TIME_BASE_FRAME_TRIGGER (0x00000020), the time base is in valid external frame trigger received (does not count the ones that are ignored).

CORACQ_VAL_TIME_BASE_SHAFT_ENCODER(0x00000040), the time base is in external line trigger or shaft encoder pulse (before drop/multiply operation)

CORACQ_VAL_TIME_BASE_NS (0x00000080), the time base is in nanoseconds

CORACQ_VAL_TIME_BASE_PIXEL_CLK (0x00000100), the time base is in camera pixel clock

CORACQ_VAL_TIME_BASE_100NS (0x00000200), the time base is in 100 nanoseconds

CVI Entry [General]
Time Stamp Base

Note If the acquisition device does not support this feature, the CORACQ_CAP_TIME_STAMP_BASE capability returns 0 or CORSTATUS_CAP_INVALID.

CORACQ_PRM_VERTICAL_TIMEOUT_DELAY

Description Following a valid external/internal/software trigger, this parameter specifies the time delay before which the end of a vertical sync (analog cameras) or beginning of a frame valid (digital cameras) must be detected. If none are detected after this delay, a vertical timeout delay event will be generated if the event is activated. Once a vertical timeout is detected, the acquisition device resets itself and waits for the next valid external/internal/software trigger. Applies to area scan cameras only.

Type UINT32

Values Numerical value representing the delay in µsec.

Limits Range Limits: CORACQ_CAP_VERTICAL_TIMEOUT_DELAY_MIN … CORACQ_CAP_VERTICAL_TIMEOUT_DELAY_MAX.

CVI Entry [Control Signals]
Vertical Timeout Delay

Note See also the related event
CORACQ_PRM_EVENT_TYPE:CORACQ_VAL_EVENT_TYPE_VERTICAL_TIMEOUT

For analog cameras, if the WEN signal is used, the beginning of the WEN must be detected before the programmed delay expires.
For analog cameras, if synching to blanking signals, the end of the blanking signal must be detected before the programming delay expires.

CORACQ_PRM_VIC_NAME

Description VIC parameter file description field (up to 63 characters long).

Type BYTE [64]

CVI Entry [General]
Vic Name

CORACQ_PRM_VSYNC_REF

Description Vertical sync reference.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_PRM_VSYNC_REF. The vertical sync reference is used as the starting point for counting video frame lines. Selecting the end of sync as the reference is useful when dealing with a variable width sync. This is often the case when time-integrating a video signal.
The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_SYNC_REF_BEGIN (0x00000001), Beginning of vertical sync.
CORACQ_VAL_SYNC_REF_END (0x00000002), End of vertical sync.

CORACQ_VAL_SYNC_REF_HV_DEPENDENT (0x00000004),
Horizontal and Vertical sync reference are locked together.

CVI Entry [Stream Conditioning]
Vertical Sync Reference

CORACQ_PRM_WEN_ENABLE

Description Enable or disable use of the WEN (Write ENable) signal from the camera.

Type UINT32

Availability Available only if CORACQ_CAP_WEN is TRUE.

Values

TRUE (0x00000001)	Enable the use of the WEN signal.
FALSE (0x00000000)	Disable the use of the WEN signal

CVI Entry [Control Signals]
WEN Enable

Data Structures

Defines Data Structures

Pin Connector Description

Certain frame grabbers provide connectors that are configurable; that is, it is possible to assign a control signal—such as pixel clock, HSync, or VSync—to specific pins on a given connector. Sapera LT provides a list of camera parameters to describe the pin assignment for a given camera (see the "Connector Description" parameters list within the Camera Related Parameters section in Advanced Acquisition Control). This allows the frame grabber to automatically configure its pins to meet the camera specifications. Refer to your frame grabber user's manual for a description of the board's capabilities.

Teledyne DALSA's CamExpert allows for the creation of a camera file (CCA file) with the desired connector descriptions. The bit field description below is provided for users who want to interpret or edit the camera files manually. It represents the value assigned to each of the connector description parameters.

Bits	31-24	23-16	15-0
Description	Connector #	Connector Type	Pin #

Bit Field	**Description**
Pin #	*Pin number on connector (1.. n).* **Note**: The macro CORACQ_VAL_CONNECTOR_PIN(*value*) is provided to extract the pin #, where the *value* is a valid pin connector description.
Connector Type	Type of connector: *CORACQ_VAL_CONNECTOR_TYPE_HIROSE12* *12-pin Hirose connector* *CORACQ_VAL_CONNECTOR_TYPE_CAMLINK* *Camera Link connector.* *The pin number represents the camera control line #:CC1, CC2, CC3 & CC4.* *CORACQ_VAL_CONNECTOR_TYPE_CAM_CONTROL* *Generic camera control connector. The pin numbers (up to 8) are device dependent.* *CORACQ_VAL_CONNECTOR_TYPE_CX4* *CX4 camera connector.* *CORACQ_VAL_CONNECTOR_TYPE_CLHS* *CLHS camera connector.* **Note**: The macro CORACQ_VAL_CONNECTOR_TYPE(value) is provided to extract the connector type, where the *value* is a valid connector type.
Connector #	*Number of the connector (in the event the camera has more than 1 connector, 1 .. n).* **Note**: The macro CORACQ_VAL_CONNECTOR_NUMBER(value) is provided to extract the connector number, where the *value* is a valid connector number.

The following are the related capabilities that give the valid values that can be applied to the connector number, connector type, and pin number.

CORACQ_CAP_CONNECTOR_TYPE

Description	Specifies the different connector types available on the device.	
Type	UINT32	
Values	CORACQ_VAL_CONNECTOR_TYPE_HIROSE12 (0x00000001)	12-pin Hirose connector
	CORACQ_VAL_CONNECTOR_TYPE_CAMLINK (0x00000002)	Camera Link connector
	CORACQ_VAL_CONNECTOR_TYPE_CAM_CONTROL (0x00000004)	Generic camera control connector
	CORACQ_VAL_CONNECTOR_TYPE_CX4 (0x00000008)	CX4 camera connector
	CORACQ_VAL_CONNECTOR_TYPE_CLHS (0x00000010)	CLHS camera connector

CORACQ_CAP_CONNECTOR_CAMLINK

Description	Specifies the different signals that the acquisition device can route to the Cam Link CC1, CC2, CC3, and CC4 connector pins.
Type	UINT32[4]
Values	Each entry in the table represents a bit field representing the valid signals that can be routed to the respective CameraLink pins. See "Signal Name Definitions" for CORACQ_VAL_SIGNAL_NAME_xxx definitions.

CORACQ_CAP_CONNECTOR_HIROSE12

Description	Specifies the different signals that the acquisition device can route to the Hirose-12 connector pins.
Type	UINT32[12]
Values	Each entry in the table represents a bit field representing the valid signals that can be routed to the respective Hirose-12 pins. See "Signal Name Definitions" for CORACQ_VAL_SIGNAL_NAME_xxx definitions.

CORACQ_CAP_CONNECTOR_CAM_CONTROL

Description	Specifies the different signals that the acquisition device can route to the generic camera control connector pins.
Type	UINT32[8]
Values	Each entry in the table represents a bit field representing the valid signals that can be routed to the respective generic camera control pins. See "Signal Name Definitions" or CORACQ_VAL_SIGNAL_NAME_xxx definitions.

Signal Name Definitions

Define	Value	Definition
CORACQ_VAL_SIGNAL_NAME_NO_CONNECT	0x00000001	No Connection
CORACQ_VAL_SIGNAL_NAME_HD	0x00000002	Horizontal Drive
CORACQ_VAL_SIGNAL_NAME_VD	0x00000004	Vertical Drive
CORACQ_VAL_SIGNAL_NAME_PULSE0	0x00000008	Camera Control Pulse 0
CORACQ_VAL_SIGNAL_NAME_PULSE1	0x00000010	Camera Control Pulse 1
CORACQ_VAL_SIGNAL_NAME_PIXEL_CLOCK_IN	0x00000020	Pixel Clock In
CORACQ_VAL_SIGNAL_NAME_PIXEL_CLOCK_OUT	0x00000040	Pixel Clock Out
CORACQ_VAL_SIGNAL_NAME_LINESCAN_DIRECTION	0x00000080	Linescan Direction
CORACQ_VAL_SIGNAL_NAME_WEN	0x00000100	WEN (Write ENable)
CORACQ_VAL_SIGNAL_NAME_EXT_TRIGGER	0x00000200	External Trigger
CORACQ_VAL_SIGNAL_NAME_EXT_LINE_TRIGGER	0x00000400	External Line Trigger
CORACQ_VAL_SIGNAL_NAME_INT_FRAME_TRIGGER	0x00000800	Internal Frame Trigger
CORACQ_VAL_SIGNAL_NAME_INT_LINE_TRIGGER	0x00001000	Internal Line Trigger
CORACQ_VAL_SIGNAL_NAME_SOFTWARE_TRIGGER	0x00002000	Software Trigger
CORACQ_VAL_SIGNAL_NAME_GND	0x00004000	Ground
CORACQ_VAL_SIGNAL_NAME_POWER_12V	0x00008000	Power 12V
CORACQ_VAL_SIGNAL_NAME_VIDEO	0x00010000	Video
CORACQ_VAL_SIGNAL_NAME_VIDEO_GND	0x00020000	Video Ground

Structure Definitions

Defines CORACQ_CAM_IO_CONTROL

CORACQ_CAM_IO_CONTROL

```
typedef struct
{
    char    label[12];      //User defined descriptive label of the camera control
                            //(for example, BIN, GAIN...)
    UINT32 connectorInput; // Pin Connector Description
    UINT32  nbBits;         //Number of bits needed for this control

    UINT32  level;          //CORACQ_VAL_LEVEL_TTL (0x00000001)
                            //CORACQ_VAL_LEVEL_422 (0x00000002)
                            //CORACQ_VAL_LEVEL_LVDS (0x00000004)
                            //CORACQ_VAL_LEVEL_24VOLTS (0x00000008)
                            //CORACQ_VAL_LEVEL_OPTO (0x00000010)
                            //CORACQ_VAL_LEVEL_LVTTL (0x00000020)
                            //CORACQ_VAL_LEVEL_12VOLTS (0x00000040)

    UINT32  direction;      //CORACQ_VAL_DIR_INPUT (0x00000001)
                            //CORACQ_VAL_DIR_OUTPUT (0x00000002)

    UINT32  polarity;       //Used only for information purposes by an application.
                            //The driver does not make any use of this member.
                            //CORACQ_VAL_ACTIVE_LOW (0x00000001)
                            //CORACQ_VAL_ACTIVE_HIGH (0x00000002)

    UINT32  value;          //The control’s default value when used as an output.
                            //If a bit is set to '1', the corresponding output
                            //will be set to on or high;
                            //otherwise, the output will be set to off or low.

} CORACQ_CAM_IO_CONTROL, *PCORACQ_CAM_IO_CONTROL;
```

Camera Control Method Definitions

This section provides definitions and timing diagrams for the camera control methods supported by Sapera LT. Topics covered are:

- Camera Reset Method
- Camera Trigger Methods
- Frame Integrate Methods
- Line Integrate Methods
- Line Trigger Methods
- Time Integrate Methods
- Strobe Methods

Camera Reset Method

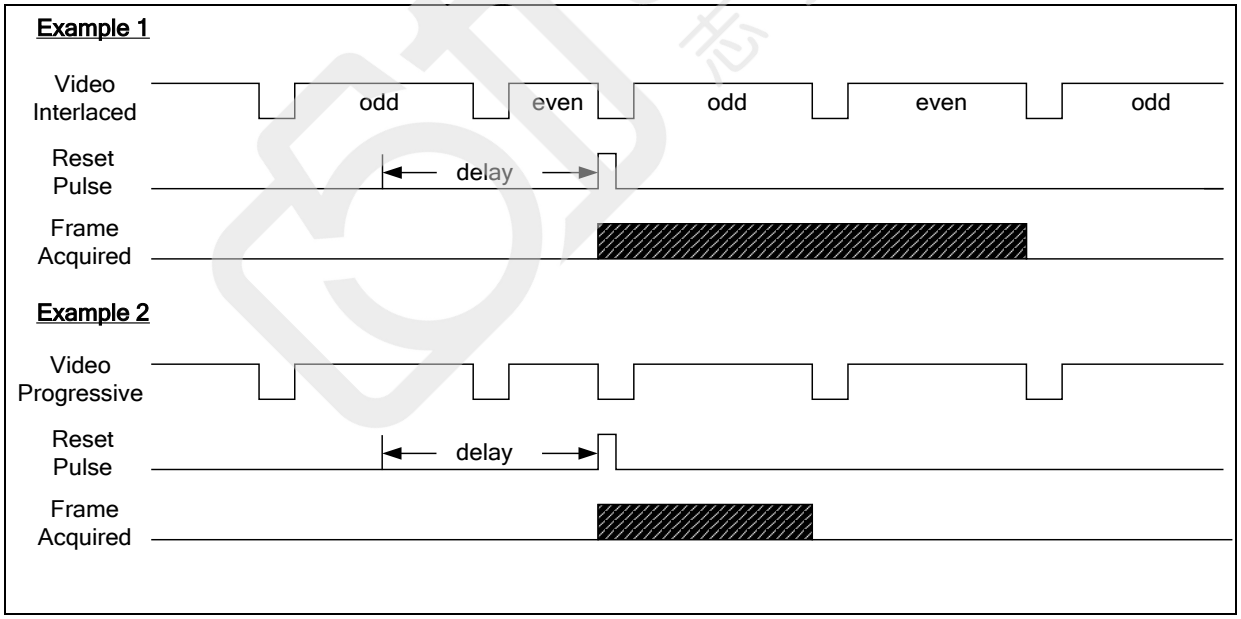
The following camera reset method is available:

CORACQ_VAL_CAM_RESET_METHOD_1

CORACQ_VAL_CAM_RESET_METHOD_1

Value	0x00000001 (Camera Reset Method #1)
Description	Method selection is via the parameter CORACQ_PRM_CAM_RESET_METHOD. This method generates an asynchronous reset pulse to a camera. The next generated frame then acquired. The reset pulse is defined by the following parameters: Delay CORACQ_PRM_CAM_RESET_DELAY Duration CORACQ_PRM_CAM_RESET_DURATION Polarity CORACQ_PRM_CAM_RESET_POLARITY

Example:



Camera Trigger Methods

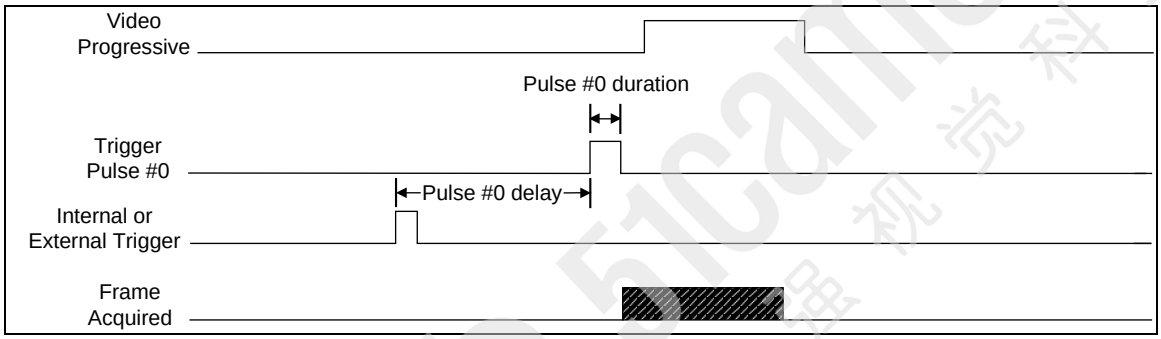
The following camera trigger methods are available (area scan only):

- CORACQ_VAL_CAM_TRIGGER_METHOD_1
- CORACQ_VAL_CAM_TRIGGER_METHOD_2
- CORACQ_VAL_CAM_TRIGGER_METHOD_3

CORACQ_VAL_CAM_TRIGGER_METHOD_1

Numerical Value	0x00000001 (Camera Trigger Method 1)
Description	Method selection is via the parameter CORACQ_PRM_CAM_TRIGGER_METHOD. This method generates an asynchronous trigger pulse to a camera (area scan only). The next generated frame is then acquired. The trigger pulse is defined by the following parameters:.
	Delay — CORACQ_PRM_CAM_TRIGGER_DELAY
	Duration — CORACQ_PRM_CAM_TRIGGER_DURATION
	Polarity — CORACQ_PRM_CAM_TRIGGER_POLARITY

Example:



CORACQ_VAL_CAM_TRIGGER_METHOD_2

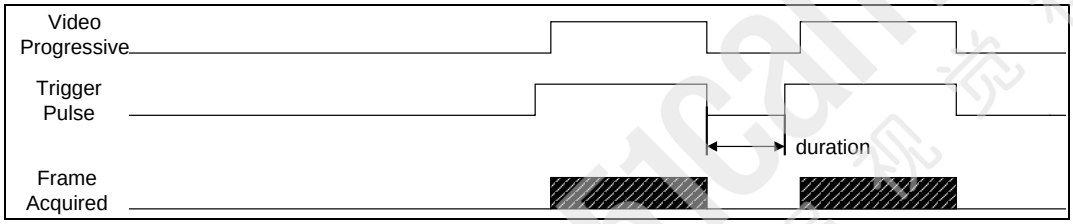
Numerical Value 0x00000002 (Camera Trigger Method #2)

Description Method selection is via the parameter CORACQ_PRM_CAM_TRIGGER_METHOD. This method generates an asynchronous trigger pulse to a camera (area scan only). The next generated frame is then acquired. This method's trigger pulse controls the number of lines output by the camera and is usually used to control the length of the frame output by the camera (partial scanning). The trigger pulse is defined by the parameter CORACQ_PRM_CAM_TRIGGER_POLARITY. Its length is dependent on the number of lines to acquire.
The parameters CORACQ_PRM_VSYNC + CORACQ_PRM_VBACK_PORCH + CORACQ_PRM_CROP_TOP + CORACQ_PRM_CROP_HEIGHT represent (in this case) the minimum time between triggers to the camera. Required for cameras where the CCD has a minimum reset time before it can be triggered again.

The trigger pulse is defined by the following parameters:

Delay	CORACQ_PRM_CAM_TRIGGER_DELAY
Duration	CORACQ_PRM_VSYNC + CORACQ_PRM_VBACK_PORCH + CORACQ_PRM_CROP_TOP + CORACQ_PRM_CROP_HEIGHT
Polarity	CORACQ_PRM_CAM_TRIGGER_POLARITY

Example:



CORACQ_VAL_CAM_TRIGGER_METHOD_3

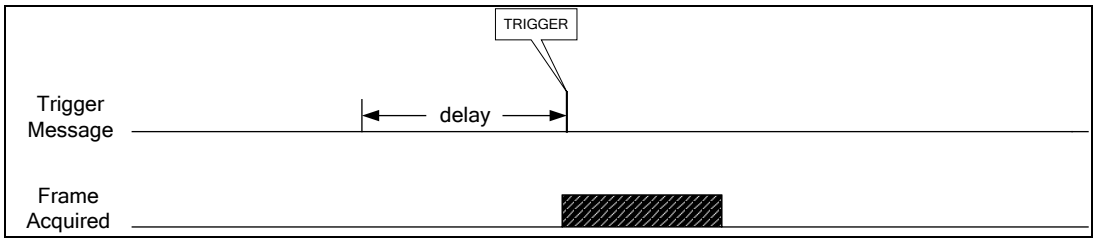
Numerical Value 0x00000004 (Camera Trigger Method #3)

Description Method selection is via the parameter CORACQ_PRM_CAM_TRIGGER_METHOD. This method generates a camera trigger message to a camera (area scan only). The next generated frame is then acquired.

The trigger pulse is defined by the following parameters:

Delay	CORACQ_PRM_CAM_TRIGGER_DELAY
Duration	N/A
Polarity	N/A

Example:



Frame Integrate Methods

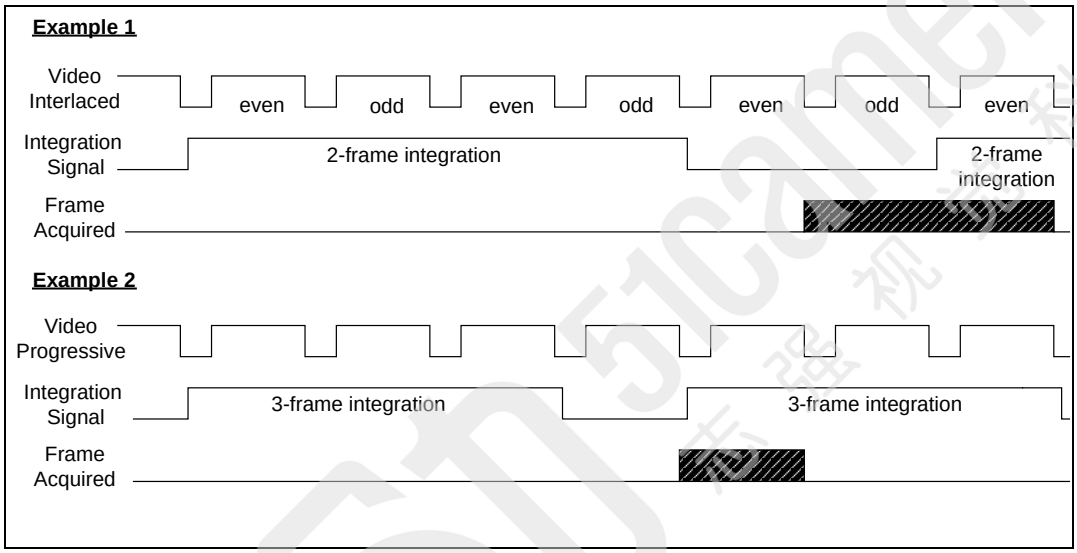
The following frame integrate methods are available:

CORACQ_VAL_FRAME_INTEGRATE_METHOD_1
CORACQ_VAL_FRAME_INTEGRATE_METHOD_2

CORACQ_VAL_FRAME_INTEGRATE_METHOD_1

Numerical Value	0x00000001 (Frame Integration Method #1)
Description	The frame integration signal is sent prior to the first field to be integrated. The signal is then held until the last field to be integrated is reached. The next frame is then acquired. Method selection is via the parameter CORACQ_PRM_FRAME_INTEGRATE_METHOD. The polarity of this signal is specified by the parameter CORACQ_PRM_FRAME_INTEGRATE_POLARITY. The number of frames to integrate is specified with the parameter CORACQ_PRM_FRAME_INTEGRATE_COUNT.

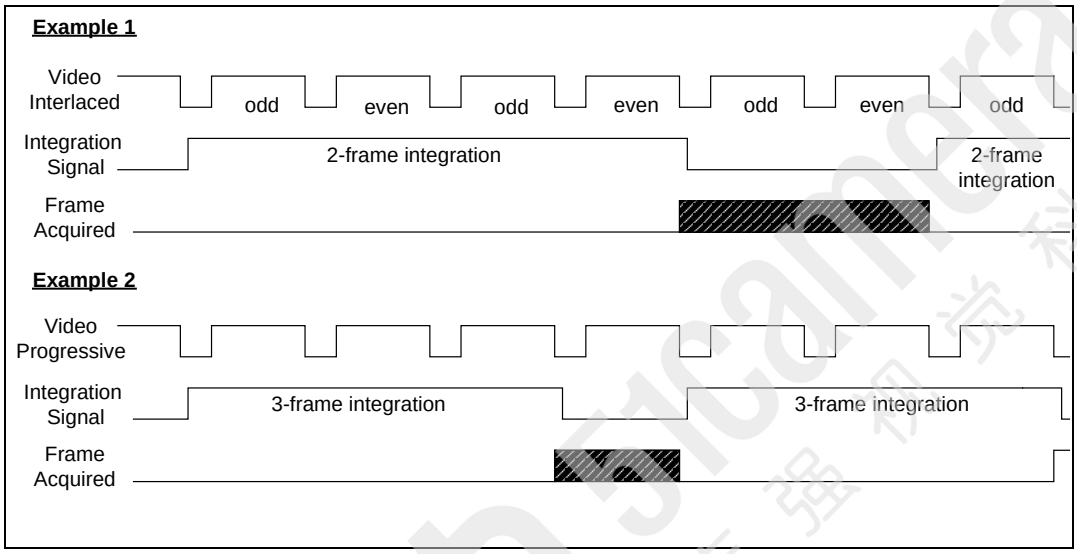
Example:



CORACQ_VAL_FRAME_INTEGRATE_METHOD_2

Numerical Value	0x00000002 (Frame Integration Method #2)
Description	The frame integration signal is sent during the vertical sync of the first field to be integrated. The signal is then held until the first field to be acquired is reached. The current frame is then acquired. Method selection is via the parameter CORACQ_PRM_FRAME_INTEGRATE_METHOD. The polarity of this signal is specified by the parameter CORACQ_PRM_FRAME_INTEGRATE_POLARITY. The number of frames to integrate is specified with the parameter CORACQ_PRM_FRAME_INTEGRATE_COUNT.

Example:



Line Integrate Methods

The following line integrate methods are available for line scan cameras:

- CORACQ_VAL_LINE_INTEGRATE_METHOD_1
- CORACQ_VAL_LINE_INTEGRATE_METHOD_2
- CORACQ_VAL_LINE_INTEGRATE_METHOD_3
- CORACQ_VAL_LINE_INTEGRATE_METHOD_4
- CORACQ_VAL_LINE_INTEGRATE_METHOD_7
- CORACQ_VAL_LINE_INTEGRATE_METHOD_8
- CORACQ_VAL_LINE_INTEGRATE_METHOD_9
- CORACQ_VAL_LINE_INTEGRATE_METHOD_10

CORACQ_VAL_LINE_INTEGRATE_METHOD_1

Numerical Value 0x00000001 (Line Integration Method #1)

Description Method selection is via the parameter CORACQ_PRM_LINE_INTEGRATE_METHOD. This method generates two pulses on two different outputs. The distance between the end of the first pulse and the start of the second pulse is the integration time (as specified by the parameter CORACQ_PRM_LINE_INTEGRATE_DURATION). The second pulse is also the Line Trigger input to the camera. For example, on a Teledyne DALSA camera, the first pulse is the 'PRIN' signal while the second pulse is the 'EXSYNC' signal.

The pulses are defined by the following parameters:

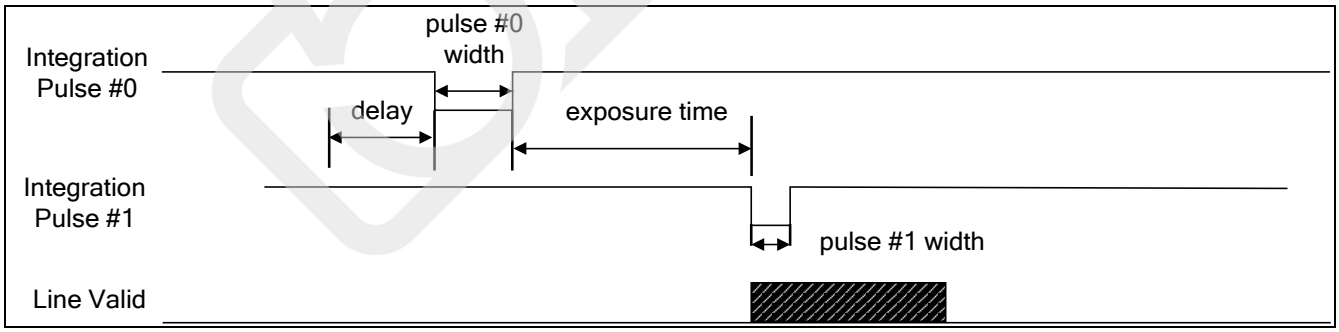
1st Pulse

Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY

2nd Pulse

Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY + CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION + CORACQ_PRM_LINE_INTEGRATE_DURATION
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY

Example:



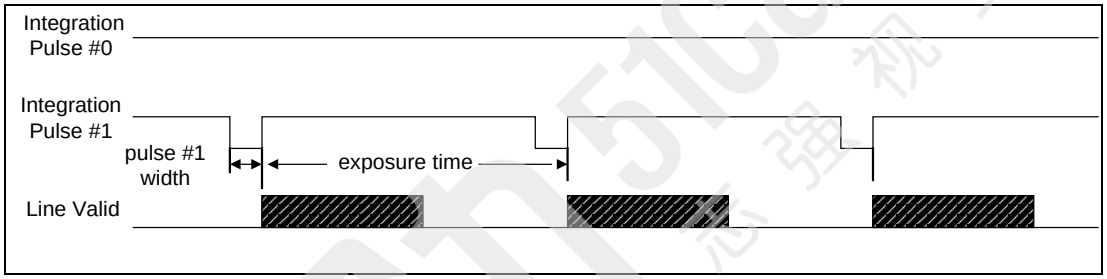
CORACQ_VAL_LINE_INTEGRATE_METHOD_2

Numerical Value 0x00000002 (Line Integration Method #2)

Description Method selection is via the parameter CORACQ_PRM_LINE_INTEGRATE_METHOD. This method generates two consecutive trigger pulses on the camera's Line Trigger input. The time interval between the end of the two trigger pulses represents the integration time (as specified by the parameter CORACQ_PRM_LINE_INTEGRATE_DURATION). An optional signal with a fixed level might be present. For example, on a Teledyne DALSA camera, the Line Trigger input would be the 'EXSYNC' signal and the optional signal would be the 'PRIN' signal. Both pulses are described by the parameters CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY. The optional signal with a fixed level is described by the parameter CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY.

1st Pulse	
Delay	N/A
Duration	N/A
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
2nd Pulse	
Delay	N/A
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY

Example:



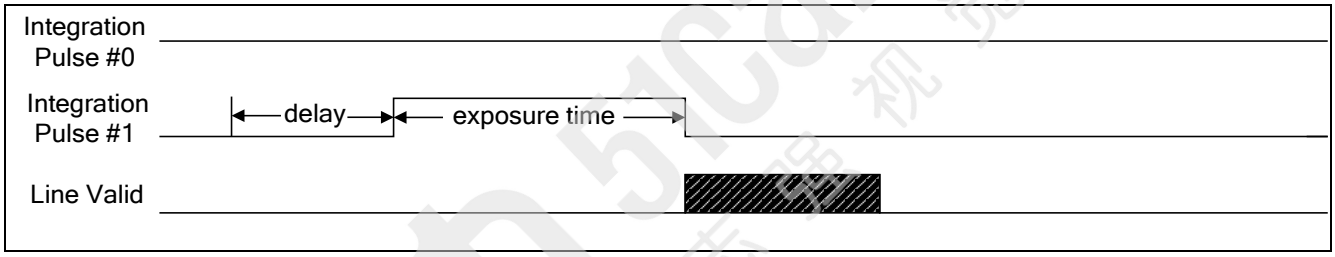
CORACQ_VAL_LINE_INTEGRATE_METHOD_3

Numerical Value 0x00000004 (Line Integration Method #3)

Description Method selection via the parameter CORACQ_PRM_LINE_INTEGRATE_METHOD. This method generates an asynchronous line integration pulse to a camera. The width of this pulse represents the integration time (as specified by the parameter CORACQ_PRM_LINE_INTEGRATE_DURATION). An optional signal with a fixed level might be present. For example, on a Teledyne DALSA camera, the integration pulse would be the 'EXSYNC' signal and the optional signal would be the 'PRIN' signal. The integration pulse is described by the parameter CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY and CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY. The optional signal with a fixed level is described by the parameter CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY.

1st Pulse	
Delay	N/A
Duration	N/A
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
2nd Pulse	
Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY

Example:



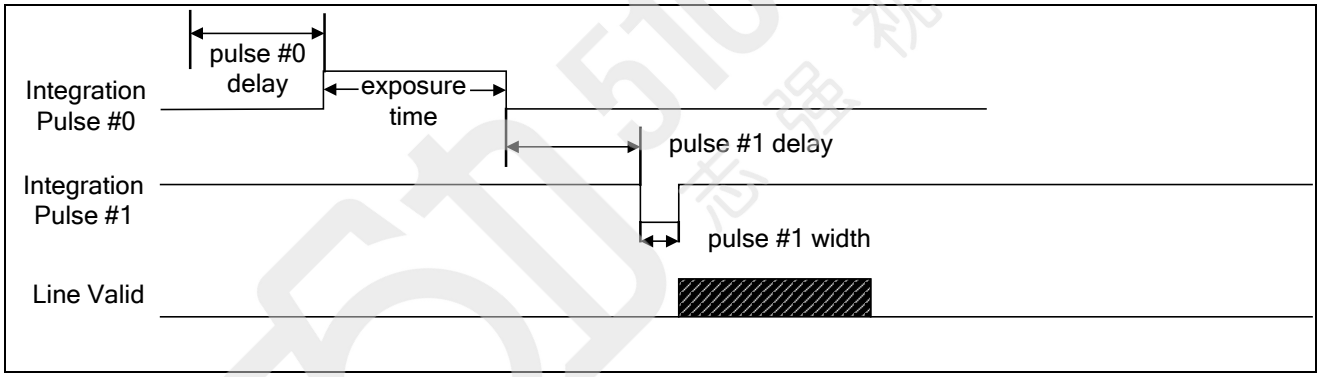
CORACQ_VAL_LINE_INTEGRATE_METHOD_4

Numerical Value 0x00000008 (Line Integration Method #4)

Description Method selection is via the parameter CORACQ_PRM_LINE_INTEGRATE_METHOD. This method generates an integration pulse followed by a trigger pulse on the camera's line trigger. The width of the integration pulse represents the integration time (as specified by the parameter CORACQ_PRM_LINE_INTEGRATE_DURATION). The first pulse is described by the parameter CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY. The second pulse is described by the parameters CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY, CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY.

1st Pulse	
Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
2nd Pulse	
Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY + CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY + CORACQ_PRM_LINE_INTEGRATE_DURATION
Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY

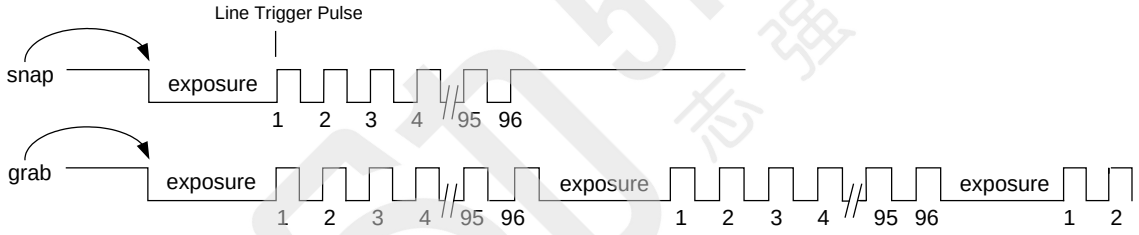
Example:



CORACQ_VAL_LINE_INTEGRATE_METHOD_7

Numerical Value	0x00000040 (Line Integration Method #7)
Description	Method selection is via the parameter CORACQ_PRM_LINE_INTEGRATE_METHOD. This method generates two type of pulses on the same output. The distance between the start of the first pulse and the start of the second pulse is the exposure time (as specified by the parameter CORCAM_PRM_LINE_INTEGRATE_PULSE0_DURATION). The second pulse is also the Line Trigger input to the camera. The first pulse is defined by the parameters CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION and CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY. The second pulse is defined by the parameters CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY.
	1st Pulse
	Delay — CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
	Duration — CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
	Polarity — CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
	2nd Pulse
	Delay — CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
	Duration — CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
	Polarity — CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY
Note	This camera is always integrating lines so the first few frames will have a saturated image after a grab.

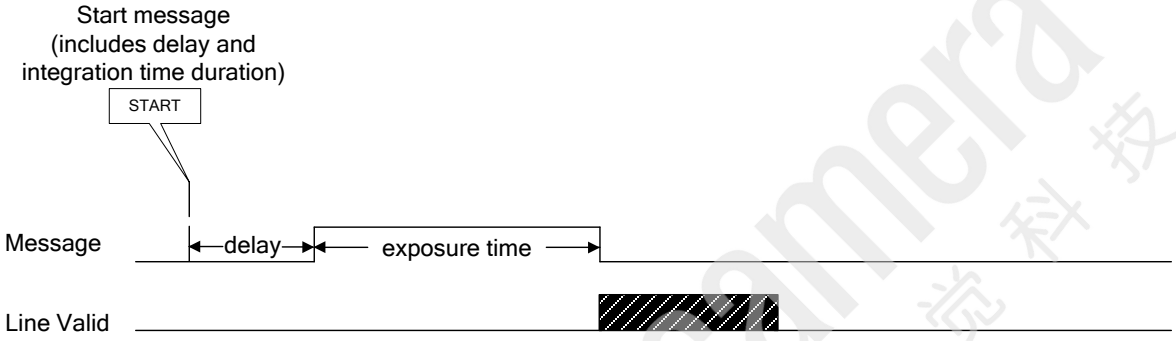
Example:



CORACQ_VAL_LINE_INTEGRATE_METHOD_8

Numerical Value	0x00000080 (Line Integration Method #8)
Description	This method generates a line integration message to a camera. The next generated line will be acquired. The integration message is described by the parameter CORACQ_PRM_LINE_INTEGRATE_DURATION and CORACQ_PRM_LINE_INTEGRATE_DELAY. Delay: CORACQ_PRM_LINE_INTEGRATE_DELAY Duration: CORACQ_PRM_LINE_INTEGRATE_DURATION Polarity: N/A
Note	Method 8 is similar to Method 3 except the physical trigger signal pulse is a message.

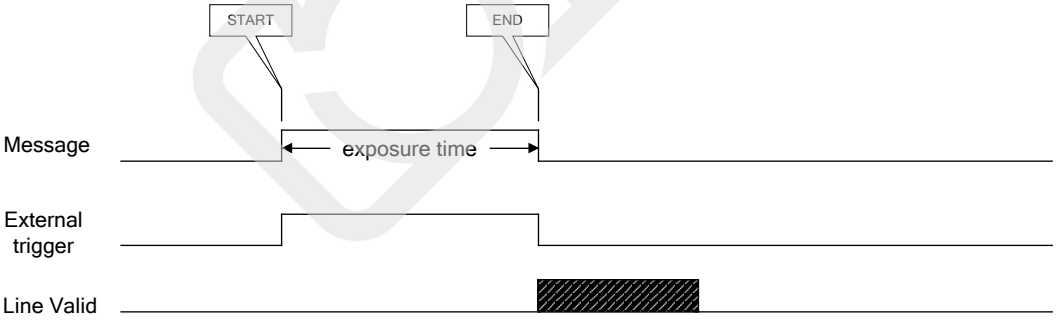
Example:



CORACQ_VAL_LINE_INTEGRATE_METHOD_9

Numerical Value	0x00000100 (Line Integration Method #9)
Description	This method generates start/stop line integration messages to a camera. The next generated line will be acquired. The time difference between the start/stop messages represent the integration time and are controlled by a physical external line trigger signal.

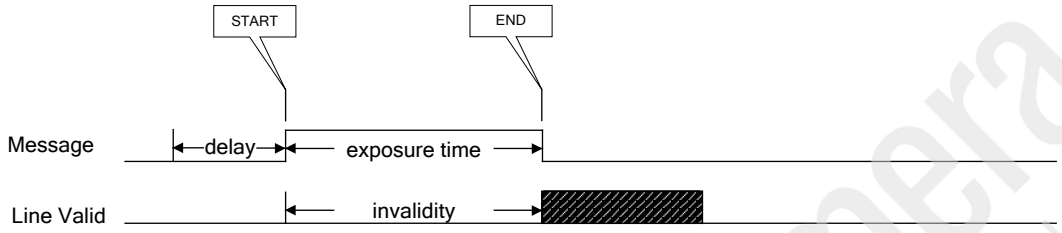
Example:



CORACQ_VAL_LINE_INTEGRATE_METHOD_10

Numerical Value	0x00000200 (Line Integration Method #10)
Description	This method generates start/stop line integration messages to a camera. The next generated line will be acquired. The time difference between the start/stop messages represent the integration time and is controlled by the parameters CORACQ_PRM_LINE_INTEGRATE_DURATION and CORACQ_PRM_LINE_INTEGRATE_DELAY.

Delay	CORACQ_PRM_LINE_INTEGRATE_DELAY
Duration	CORACQ_PRM_LINE_INTEGRATE_DURATION
Polarity	N/A



Line Trigger Methods

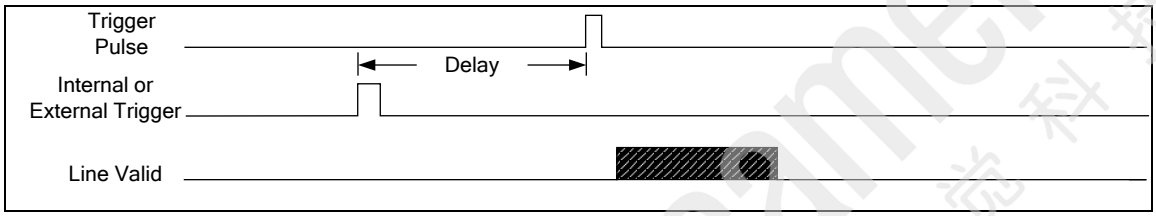
The following line trigger methods are available for line scan cameras:

- CORACQ_VAL_LINE_TRIGGER_METHOD_1
- CORACQ_VAL_LINE_TRIGGER_METHOD_2

CORACQ_VAL_LINE_TRIGGER_METHOD_1

Numerical Value	0x00000001 (Line Trigger Method #1)
Description	Method selection is via the parameter CORACQ_PRM_LINE_TRIGGER_METHOD. This method generates an asynchronous line trigger pulse to a camera. The next generated frame will be acquired. The trigger pulse is described by the parameters CORACQ_PRM_LINE_TRIGGER_DURATION and CORACQ_PRM_LINE_TRIGGER_POLARITY. The delay is set using CORACQ_PRM_LINE_TRIGGER_DELAY.

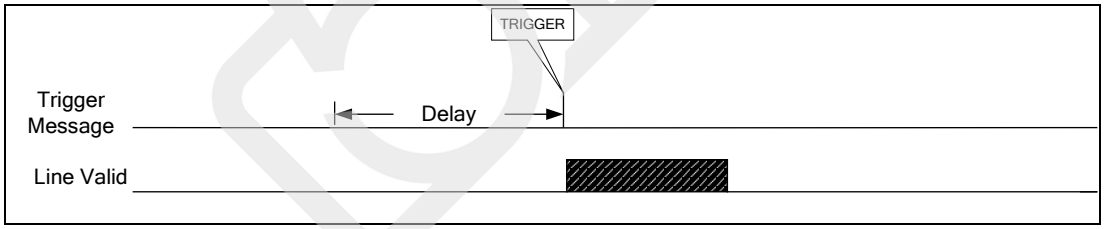
Example:



CORACQ_VAL_LINE_TRIGGER_METHOD_2

Numerical Value	0x00000002 (Line Trigger Method #2)
Description	Method selection is via the parameter CORACQ_PRM_LINE_TRIGGER_METHOD. This method generates a line trigger message to a camera. The next generated frame will be acquired. The delay is set using CORACQ_PRM_LINE_TRIGGER_DELAY.
Note	This method is similar to Method #1 except the physical trigger signal is a message.

Example:



Time Integrate Methods

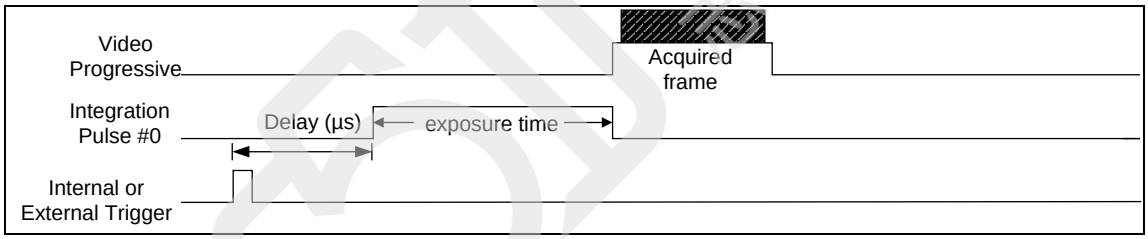
The following time integrate methods are available for area scan cameras:

- CORACQ_VAL_TIME_INTEGRATE_METHOD_1
- CORACQ_VAL_TIME_INTEGRATE_METHOD_2
- CORACQ_VAL_TIME_INTEGRATE_METHOD_3
- CORACQ_VAL_TIME_INTEGRATE_METHOD_4
- CORACQ_VAL_TIME_INTEGRATE_METHOD_5
- CORACQ_VAL_TIME_INTEGRATE_METHOD_6
- CORACQ_VAL_TIME_INTEGRATE_METHOD_7
- CORACQ_VAL_TIME_INTEGRATE_METHOD_8
- CORACQ_VAL_TIME_INTEGRATE_METHOD_10
- CORACQ_VAL_TIME_INTEGRATE_METHOD_11
- CORACQ_VAL_TIME_INTEGRATE_METHOD_12

CORACQ_VAL_TIME_INTEGRATE_METHOD_1

Numerical Value	0x00000001 (Time Integration Method #1)
Description	Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates an asynchronous time integration pulse to a camera (area scan only). The width of the pulse (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION), represents the integration time. The delay between the trigger and start of exposure is specified using the parameter CORACQ_PRM_TIME_INTEGRATE_DELAY. The integration pulse is defined by the following parameters: Delay — CORACQ_PRM_TIME_INTEGRATE_DELAY Duration — CORACQ_PRM_TIME_INTEGRATE_DURATION Polarity — CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY

Example:



CORACQ_VAL_TIME_INTEGRATE_METHOD_2

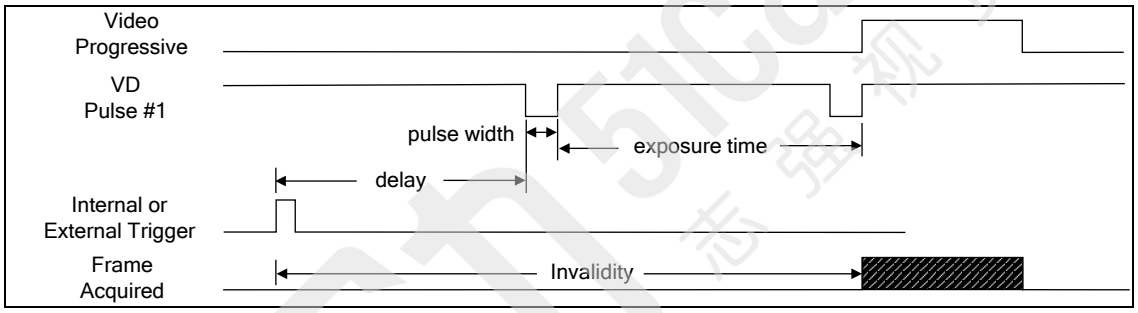
Numerical Value 0x00000002 (Time Integration Method #2)

Description Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates two consecutive trigger pulses on the VD (Vertical Drive) input of the camera (area scan only). The time interval between the end of the two trigger pulses (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) represents the integration time. The VD trigger pulses are described by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY.

The VD triggers are defined by the following parameters:

1st VD Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY
2nd VD Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Example:



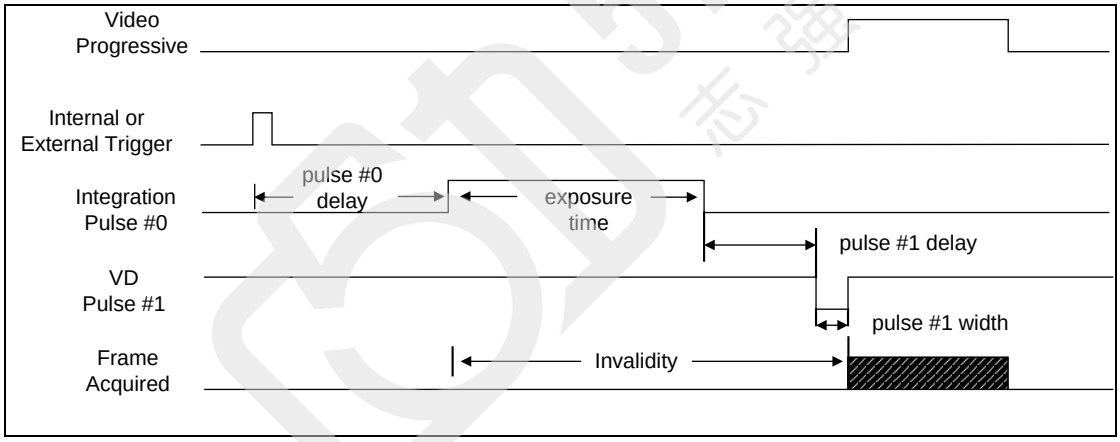
CORACQ_VAL_TIME_INTEGRATE_METHOD_3

Numerical Value 0x00000004 (Time Integration Method #3)

Description Also known as the E-Donpisha mode (area scan only). Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates an integration pulse on the camera trigger input, followed by a trigger pulse on the camera VD input. The width of the integration pulse (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) represents the integration time.
The polarity of the integration pulse is specified with the CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY parameter. The delay before the integration pulse is set using CORACQ_PRM_TIME_INTEGRATE_DELAY. The VD trigger pulse is described by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY, CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY, where the delay is the interval between the end of the integration pulse and the start of the VD trigger pulse.

1st Integration Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY
2nd VD Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION + CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Example:



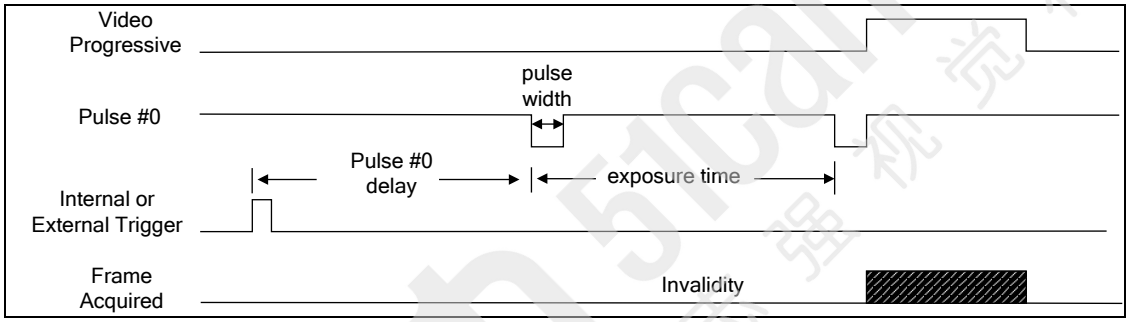
CORACQ_VAL_TIME_INTEGRATE_METHOD_4

Numerical Value 0x00000008 (Time Integration Method #4)

Description Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates two consecutive trigger pulses on the camera trigger input. The time interval between the start of the two trigger pulses (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) represents the integration time.
The trigger pulses are described by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY.

1st Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY
2nd Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Example:



CORACQ_VAL_TIME_INTEGRATE_METHOD_5

Numerical Value 0x00000010 (Time Integration Method #5)

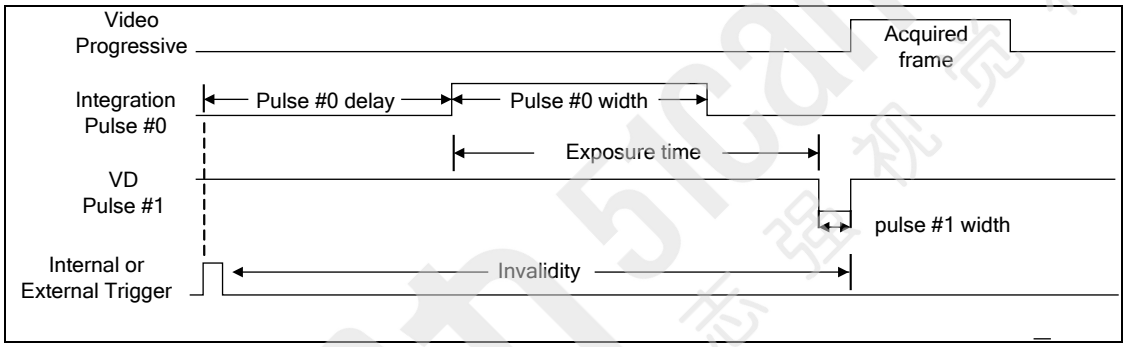
Description Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates a trigger pulse (#0) on the camera trigger input, followed by a trigger pulse (#1) on the camera VD input. The interval between the start of the two pulses (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) represents the integration time. The trigger pulse (#0) on the camera trigger input is defined by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY. The VD trigger pulse is defined by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY.

1st Pulse

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY

2nd Pulse

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY



CORACQ_VAL_TIME_INTEGRATE_METHOD_6

Numerical Value 0x00000020 (Time Integration Method #6)

Description Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates a trigger pulse (#0) on the camera trigger input, followed by a trigger pulse (#1) on the camera VD input. The interval between the start of pulse #0 and end of pulse #1 (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) is the integration time. The trigger pulse (#0) on the camera trigger input is defined by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY. The VD trigger pulse is defined by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY.

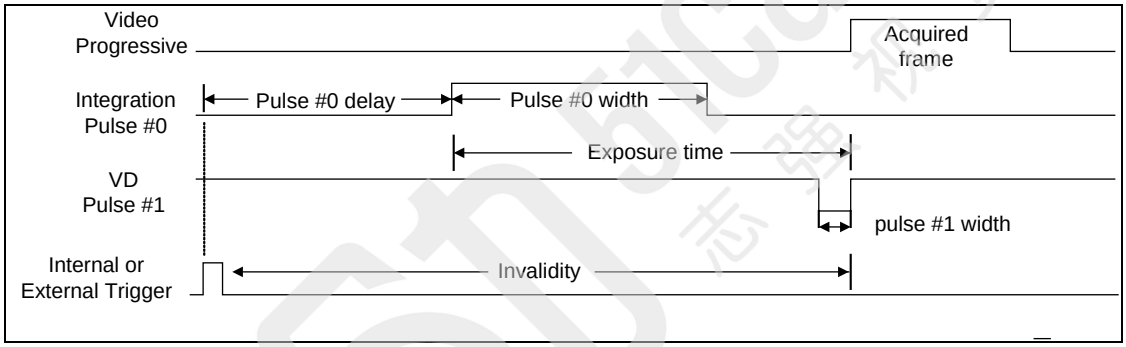
1st Integration Pulse

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY

2nd VD Pulse

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION + CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Example:



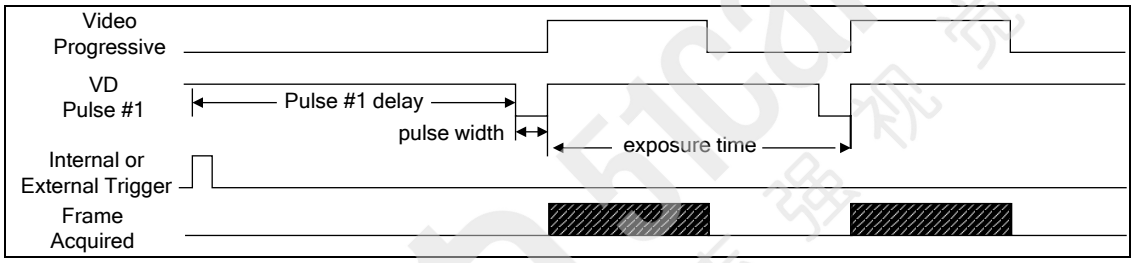
CORACQ_VAL_TIME_INTEGRATE_METHOD_7

Numerical Value 0x00000040 (Time Integration Method #7)

Description Method selection is via the parameter CORACQ_PRM_TIME_INTEGRATE_METHOD. This method generates two consecutive trigger pulses (#1) on the camera VD (Vertical Drive) input. The time interval between the end of the two trigger pulses (as specified by the parameter CORACQ_PRM_TIME_INTEGRATE_DURATION) is the integration time. This method differs from method #2, since a valid frame is available during the integration time. The VD trigger pulses are described by the parameters CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION and CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY.

1st Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY
2nd Pulse	
Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY + CORACQ_PRM_TIME_INTEGRATE_DURATION
Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Example:

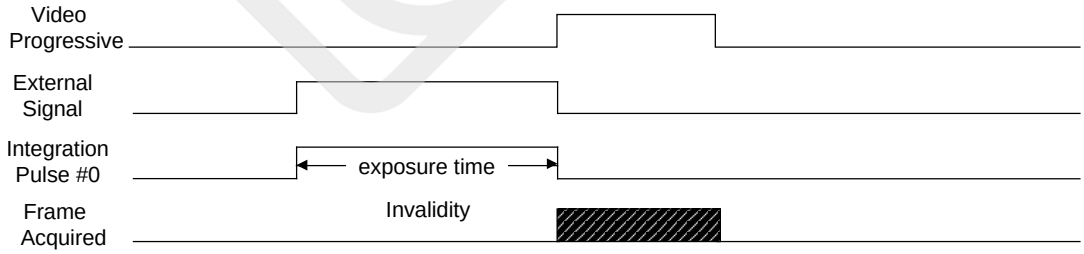


CORACQ_VAL_TIME_INTEGRATE_METHOD_8

Numerical Value 0x00000080 (Time Integration Method #8)

Description Method selection is via the parameter CORACQ_PRM_TIME_INTERGRATE_METHOD. This method generates an asynchronous time integration pulse (#0) to a camera. The width of the pulse represents the integration time and is controlled by an external signal.

Example:

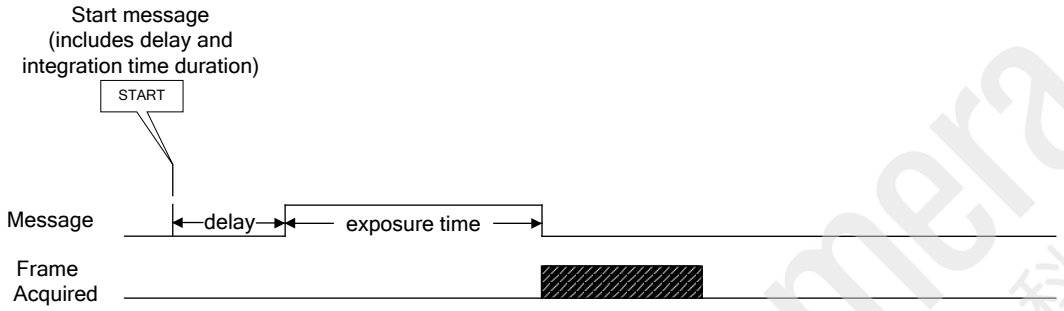


CORACQ_VAL_TIME_INTEGRATE_METHOD_10

Numerical Value 0x00000200 (Time Integration Method #10)

Description This method generates a time integration message to a camera. The next generated frame will be acquired. The integration message is described by the parameters CORACQ_PRM_TIME_INTEGRATE_DURATION and CORACQ_PRM_TIME_INTEGRATE_DELAY.

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_DURATION
Polarity	N/A

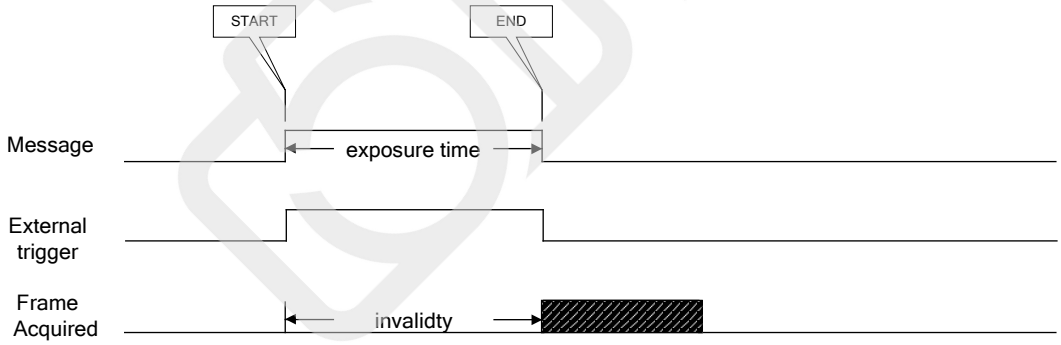


CORACQ_VAL_TIME_INTEGRATE_METHOD_11

Numerical Value 0x00000400 (Time Integration Method #11)

Description This method generates start/stop frame integration messages to a camera. The next generated frame will be acquired. The time difference between the start/stop messages represent the integration time and are controlled by a physical external frame trigger signal.

Example:



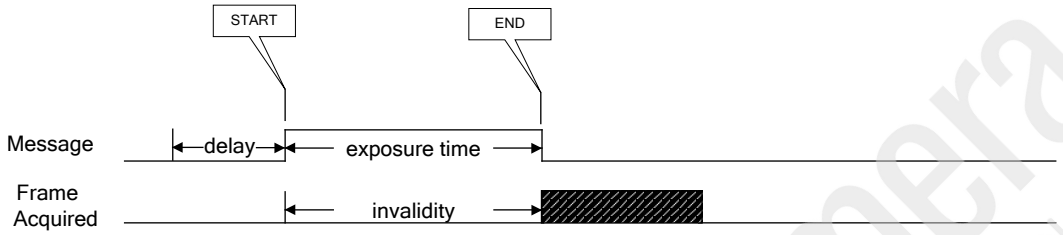
CORACQ_VAL_TIME_INTEGRATE_METHOD_12

Numerical Value 0x00000400 (Time Integration Method #12)

Description This method generates start/stop frame integration messages to a camera. The next generated frame will be acquired. The time difference between the start/stop messages represent the integration time and are controlled by the parameters CORACQ_PRM_TIME_INTEGRATE_DURATION and CORACQ_PRM_TIME_INTEGRATE_DELAY.

Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Duration	CORACQ_PRM_TIME_INTEGRATE_DURATION
Polarity	N/A

Example:



Strobe Methods

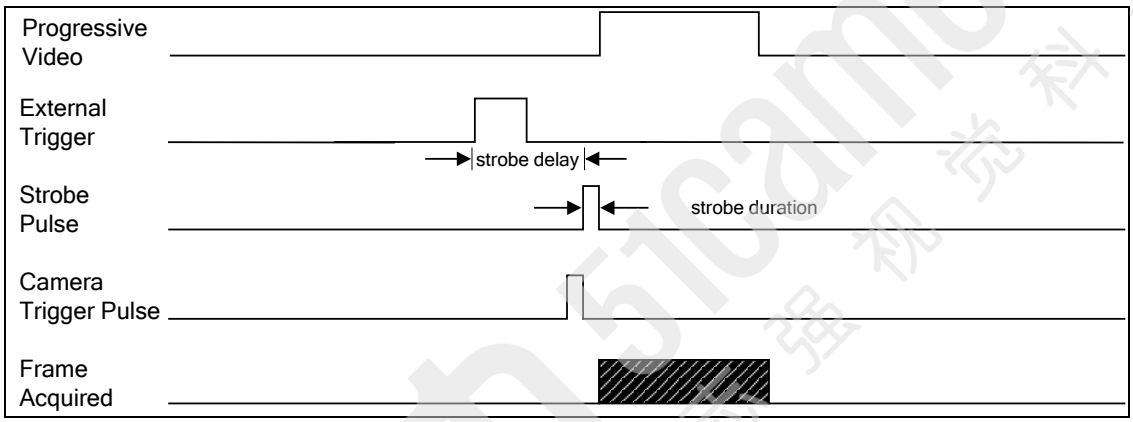
The following strobe methods are available:

- CORACQ_VAL_STROBE_METHOD_1
- CORACQ_VAL_STROBE_METHOD_2
- CORACQ_VAL_STROBE_METHOD_3
- CORACQ_VAL_STROBE_METHOD_4
- CORACQ_VAL_STROBE_METHOD_5

CORACQ_VAL_STROBE_METHOD_1

Numerical Value	0x00000001 (Strobe Method #1)
Description	Method selection is via the parameter CORACQ_PRM_STROBE_METHOD. This method generates a synchronous strobe pulse relative to a trigger signal (external, internal, software) depending on the mode of operation. The strobe pulse is described by the parameters CORACQ_PRM_STROBE_DELAY, CORACQ_PRM_STROBE_DURATION, and CORACQ_PRM_STROBE_POLARITY.

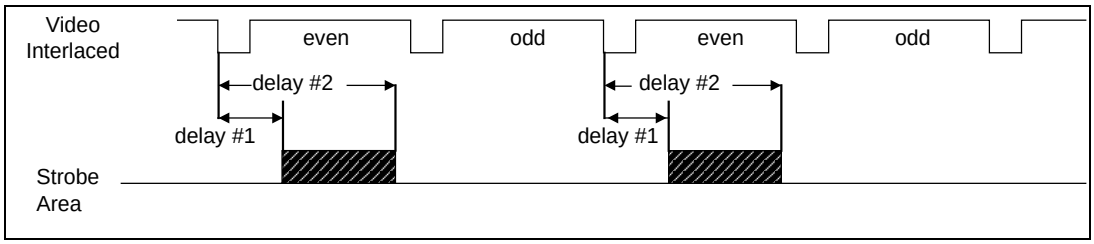
Example:



CORACQ_VAL_STROBE_METHOD_2

Numerical Value	0x00000002 (Strobe Method #2)
Description	Method selection is via the parameter CORACQ_PRM_STROBE_METHOD. This method generates an asynchronous strobe pulse. The pulse is generated outside the region comprising the start of a vertical sync up to the specified strobe delay, but not later than the second strobe delay. If interlaced video is acquired, then the strobe will be generated on the field previous to the acquired frame: even if the field ordering is odd-even (typical), odd if the field ordering even-odd, or any if the field ordering is next two fields. The strobe pulse is described by the parameters CORACQ_PRM_STROBE_DELAY, CORACQ_PRM_STROBE_DELAY_2, CORACQ_PRM_STROBE_DURATION, and CORACQ_PRM_STROBE_POLARITY.

Example: Interlaced, Odd-Even acquisition

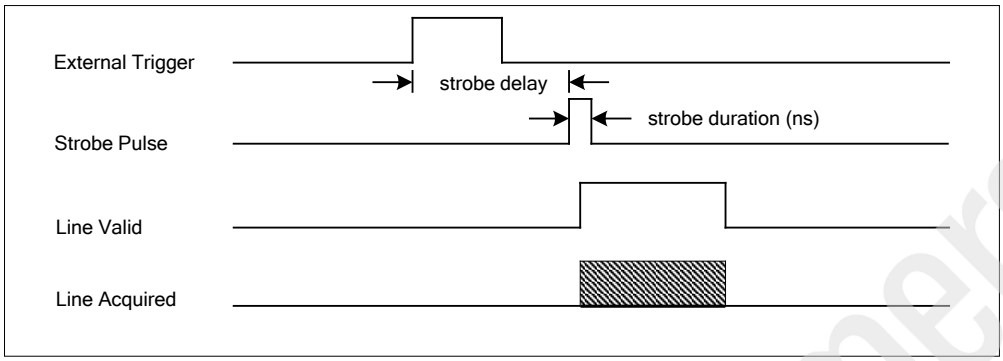


CORACQ_VAL_STROBE_METHOD_3

Numerical Value 0x00000004 (Strobe Method #3)

Description Method selection is performed via the parameter CORACQ_PRM_STROBE_METHOD. This method generates a synchronous strobe pulse relative to a line trigger signal (external, internal, software) depending on the mode of operation. The strobe pulse is described by the parameters CORACQ_PRM_STROBE_DELAY, CORACQ_PRM_STROBE_DURATION and CORACQ_PRM_STROBE_POLARITY.

External: External Line Trigger



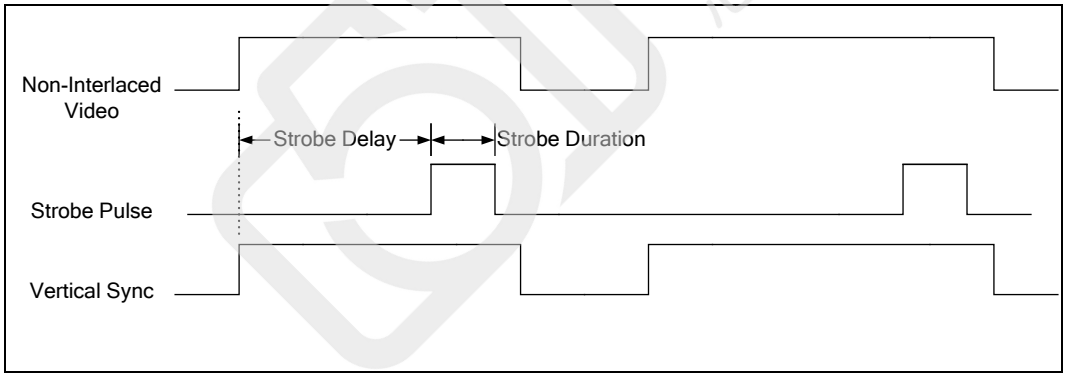
CORACQ_VAL_STROBE_METHOD_4

Numerical Value 0x00000008 (Strobe Method #4)

Description Method selection is via the parameter CORACQ_PRM_STROBE_METHOD. This method generates a synchronous strobe pulse relative to a vertical sync signal.. The strobe pulse is described by the parameters CORACQ_PRM_STROBE_DELAY, CORACQ_PRM_STROBE_DURATION, and CORACQ_PRM_STROBE_POLARITY.

Both area scan and line scan cameras support this method. Note that in linescan, there will be one strobe pulse output per virtual frame.

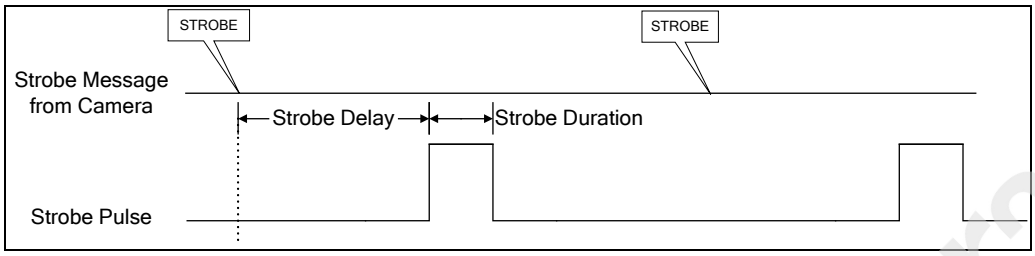
Example:



CORACQ_VAL_STROBE_METHOD_5

Numerical Value	0x00000010 (Strobe Method #5)
Description	This method generates a synchronous strobe pulse relative to a trigger message received from a camera. The strobe pulse is described by the parameters CORACQ_PRM_STROBE_DELAY, CORACQ_PRM_STROBE_DURATION and CORACQ_PRM_STROBE_POLARITY.

Example:

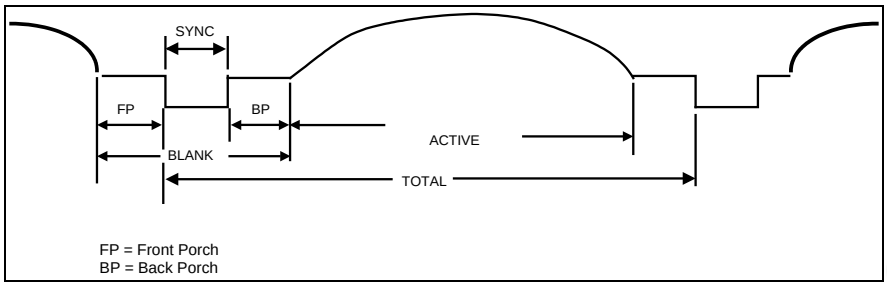


Camera Video Timing Definitions

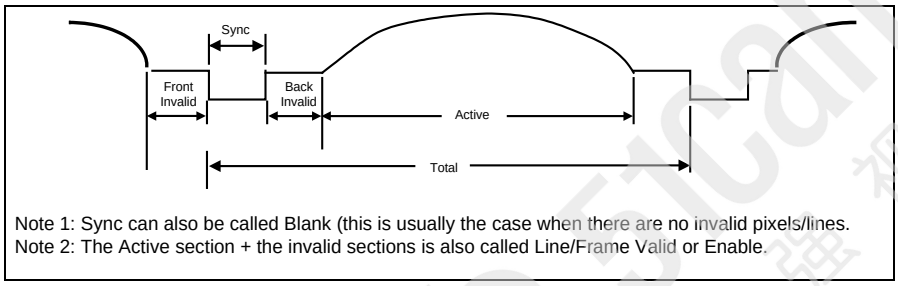
Generic camera timing diagrams describe the terminology and relationships used in Sapera LT applications. Topics covered are:

- Area Scan Analog Video Timings
- Area Scan Digital Video Timings
- Linescan Video Timings

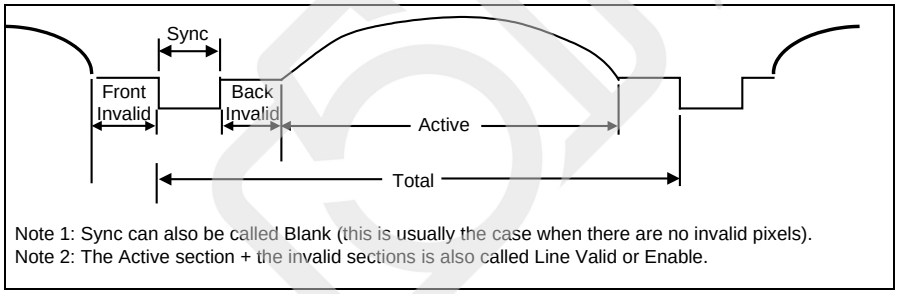
Analog Area Scan Video Timings



Digital Area Scan Video Timings



Linescan Video Timings



Custom Camera Control I/O Description

The acquisition module currently has specific parameters to control the following standard inputs/outputs: integration, camera trigger, camera reset, and strobe.

Custom camera I/Os are useful to control non-standard inputs/outputs from a camera, such as Gain and Binning. These custom controls are defined in the CCA file. The description of a custom I/O includes a label, the number of I/O bits used, the signal level of the I/Os (TTL/RS-422/LVDS), the direction of the I/Os (Inputs or Outputs), the polarity of the control for an active signal, and a default value in the case of an Output. The custom camera I/O information in the CCA file is passed to the acquisition module through the parameter CORACQ_PRM_CAM_IO_CONTROL. This is a complex parameter that can accommodate up to 32 different controls. The size of the parameter is therefore 32 * size of(CORACQ_CAM_IO_CONTROL).

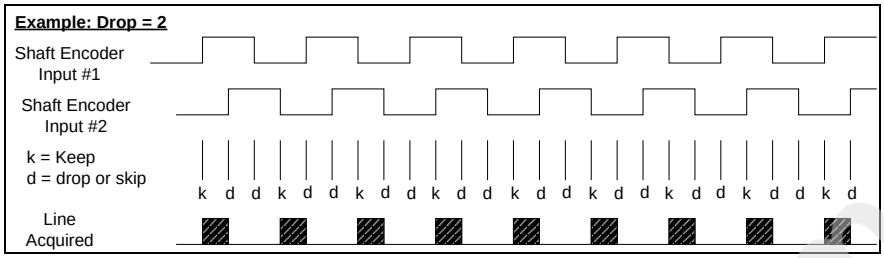
When applied, the driver scans the entries until a control specifies that 0 I/O bits is needed. It is therefore recommended to first initialize the CORACQ_CAM_IO_CONTROL to 0 before filling in control definitions. The driver assigns the necessary I/Os in an orderly fashion, following the order in which they are defined in the CCA/CCF file. At the function level, the I/O assignment can be setup by using the standard method of loading a CCA/CCF file (CorCamLoad + CorAcqSetPrms), or the CorAcqSetPrmEx function can be simply called with an CORACQ_PRM_CAM_IO_CONTROL parameter. To get/set the value of an I/O, use the Sapera functions (CorAcqDetectSync and CorAcqSetCamIOControl) where the label argument is the string representation of the I/O control as specified in the CCA/CCF file.

Shaft Encoder Description

The shaft encoder feature is used to control the rate at which an acquisition device acquires lines from a linescan camera. Two (2) square waves, usually out of phase by 90 degrees, are fed to the acquisition device. Every time an edge is detected, the acquisition device outputs the necessary signal(s) to trigger 1 line out from the linescan camera. The rate at which the lines are triggered can be controlled by dropping detected edges.

Example: LineScan Shaft Encoder

The shaft encoder is used to trigger the board every time a line needs to be acquired. The shaft encoder consists of two inputs, offset by 90 degrees. Each transition corresponds to one trigger. The drop parameter can be used to skip transitions.

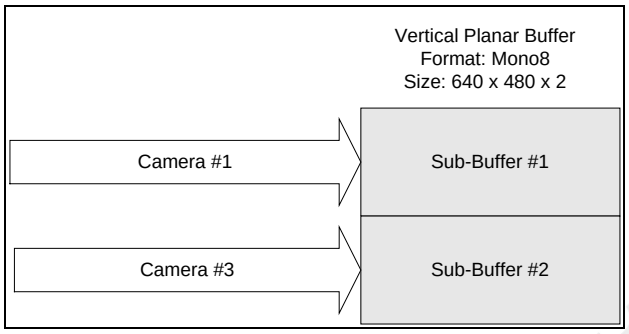


Planar Input Sources Description

The planar input sources parameter, **CORACQ_PRM_PLANAR_INPUT_SOURCES**, is used to acquire from multiple synchronized video sources. It enables selecting which input sources will be acquired into a vertical planar buffer. The parameter value is a bit field. Each bit represents an acquisition input. If the bit is 1, then the source connected to that input are acquired into a vertical planar buffer. All video sources must be synchronized together. The vertical planar buffer format is simply a buffer which has been created with a height that is 'n' times longer than the size of one video source vertical resolution, 'n' being the number of inputs that are to be acquired synchronously. The acquisition function will automatically divide the buffer into sub-buffers which are assigned to each input. Important: the parameter **CORACQ_PRM_CAMSEL** is used to select the sync signal source.

Example:

If CORACQ_PRM_PLANAR_INPUT_SOURCES = 0x00000005, then bit 0 and 2 are active, and camera #1 and #3 will be acquired from.



Advanced Acquisition Control

Introduction

The Acquisition Module controls the acquisition device and its functions. It is used in conjunction with the VIC and Camera modules.

Camera Related Parameters

The camera related parameters, as their name implies, modelize the video source irrelevant of the actual source itself (camera, etc.). These parameters define the video capabilities and modes of operation.

Camera Related Parameters By Groups

General	
CORACQ_PRM_CAM_NAME	CORACQ_PRM_CAM_COMPANY_NAME
CORACQ_PRM_CAM_MODEL_NAME	

Signal Description	
CORACQ_PRM_CHANNEL	CORACQ_PRM_CHANNELS_ORDER
CORACQ_PRM_COUPLING	CORACQ_PRM_FIELD_ORDER
CORACQ_PRM_FRAME	CORACQ_PRM_INTERFACE
CORACQ_PRM_PIXEL_DEPTH	CORACQ_PRM_SCAN
CORACQ_PRM_SIGNAL	CORACQ_PRM_TAP_OUTPUT
CORACQ_PRM_TAP_1_DIRECTION	CORACQ_PRM_TAP_2_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	CORACQ_PRM_TAP_4_DIRECTION
CORACQ_PRM_TAP_5_DIRECTION	CORACQ_PRM_TAP_6_DIRECTION
CORACQ_PRM_TAP_7_DIRECTION	CORACQ_PRM_TAP_8_DIRECTION
CORACQ_PRM_TAPS	CORACQ_PRM_VIDEO
CORACQ_PRM_VIDEO_LEVEL_MAX	CORACQ_PRM_VIDEO_LEVEL_MIN
CORACQ_PRM_VIDEO_STD	

Signal Timings	
CORACQ_PRM_HACTIVE	CORACQ_PRM_HBACK_INVALID
CORACQ_PRM_HBACK_PORCH	CORACQ_PRM_HFRONT_INVALID
CORACQ_PRM_HFRONT_PORCH	CORACQ_PRM_HSYNC
CORACQ_PRM_VACTIVE	CORACQ_PRM_VBACK_INVALID
CORACQ_PRM_VBACK_PORCH	CORACQ_PRM_VFRONT_INVALID
CORACQ_PRM_VFRONT_PORCH	CORACQ_PRM_VSYNC
CORACQ_PRM_TIMESLOT	

Pixel Clock	
CORACQ_PRM_PIXEL_CLK_DETECTION	CORACQ_PRM_PIXEL_CLK_EXT
CORACQ_PRM_PIXEL_CLK_INT	CORACQ_PRM_PIXEL_CLK_11
CORACQ_PRM_PIXEL_CLK_SRC	

Synchronization Signals

CORACQ_PRM_HSYNC_POLARITY
CORACQ_PRM_SYNC
CORACQ_PRM_VSYNC_POLARITY

Control Signals

CORACQ_PRM_CAM_CONTROL_DURING_READOUT
CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX
CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN
CORACQ_PRM_CAM_RESET_DURATION
CORACQ_PRM_CAM_RESET_POLARITY
CORACQ_PRM_CAM_RESET_METHOD
CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX
CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN
CORACQ_PRM_CAM_TRIGGER_DURATION
CORACQ_PRM_CAM_TRIGGER_METHOD
CORACQ_PRM_CAM_TRIGGER_POLARITY
CORACQ_PRM_DATA_VALID_ENABLE
CORACQ_PRM_DATA_VALID_POLARITY
CORACQ_PRM_FRAME_INTEGRATE_METHOD
CORACQ_PRM_FRAME_INTEGRATE_POLARITY
CORACQ_PRM_LINE_INTEGRATE_METHOD
CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY
CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY
CORACQ_PRM_LINE_TRIGGER_DELAY
CORACQ_PRM_LINE_TRIGGER_DURATION
CORACQ_PRM_LINE_TRIGGER_METHOD
CORACQ_PRM_LINE_TRIGGER_POLARITY
CORACQ_PRM_LINESCAN_DIRECTION
CORACQ_PRM_LINESCAN_DIRECTION_POLARITY
CORACQ_PRM_TIME_INTEGRATE_METHOD
CORACQ_PRM_TIME_INTEGRATE_PULSE0_DELAY
CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY
CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY
CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY
CORACQ_PRM_WEN_POLARITY

Connector Description

CORACQ_PRM_CAMLINK_CONFIGURATION
CORACQ_PRM_CONNECTOR_EXPOSURE_INPUT
CORACQ_PRM_CONNECTOR_HD_INPUT
CORACQ_PRM_CONNECTOR_LINE_INTEGRATE_INPUT
CORACQ_PRM_CONNECTOR_LINE_TRIGGER_INPUT
CORACQ_PRM_CONNECTOR_LINESCAN_DIRECTION_INPUT
CORACQ_PRM_CONNECTOR_PIXEL_CLK_OUTPUT
CORACQ_PRM_CONNECTOR_RESET_TRIGGER_INPUT

CORACQ_PRM_CONNECTOR_VD_INPUT	CORACQ_PRM_CONNECTOR_WEN_OUTPUT

Custom Camera I/O Control Signals
CORACQ_PRM_CAM_IO_CONTROL

Camera Related Parameters By ID

ID	Parameter
0x00	CORACQ_PRM_CHANNEL
0x01	CORACQ_PRM_FRAME
0x02	CORACQ_PRM_INTERFACE
0x03	CORACQ_PRM_SCAN
0x04	CORACQ_PRM_SIGNAL
0x05	CORACQ_PRM_VIDEO
0x06	CORACQ_PRM_PIXEL_DEPTH
0x07	CORACQ_PRM_VIDEO_STD
0x08	*Reserved*
0x09	CORACQ_PRM_FIELD_ORDER
0x0a	CORACQ_PRM_HACTIVE
0x0b	CORACQ_PRM_HSYNC
0x0c	CORACQ_PRM_VACTIVE
0x0d	CORACQ_PRM_VSYNC
0x0e	CORACQ_PRM_HFRONT_PORCH
0x0f	CORACQ_PRM_HBACK_PORCH
0x10	CORACQ_PRM_COUPLING
0x11	*Reserved*
0x12	CORACQ_PRM_VFRONT_PORCH
0x13	CORACQ_PRM_VBACK_PORCH
0x14	CORACQ_PRM_HFRONT_INVALID
0x15	CORACQ_PRM_HBACK_INVALID
0x16	CORACQ_PRM_VFRONT_INVALID
0x17	CORACQ_PRM_VBACK_INVALID
0x18	CORACQ_PRM_PIXEL_CLK_SRC
0x19	CORACQ_PRM_PIXEL_CLK_INT
0x1a	CORACQ_PRM_PIXEL_CLK_11
0x1b	CORACQ_PRM_PIXEL_CLK_EXT
0x1c	CORACQ_PRM_SYNC
0x1d	CORACQ_PRM_HSYNC_POLARITY
0x1e	CORACQ_PRM_VSYNC_POLARITY
0x1f	CORACQ_PRM_FRAME_INTEGRATE_METHOD
0x20	CORACQ_PRM_FRAME_INTEGRATE_POLARITY
0x21	CORACQ_PRM_TIME_INTEGRATE_METHOD
0x22	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY
0x23	CORACQ_PRM_CAM_TRIGGER_METHOD
0x24	CORACQ_PRM_CAM_TRIGGER_POLARITY
0x25	CORACQ_PRM_CAM_TRIGGER_DURATION
0x26	CORACQ_PRM_CAM_RESET_METHOD

0x27	CORACQ_PRM_CAM_RESET_POLARITY
0x28	CORACQ_PRM_CAM_RESET_DURATION
0x29	CORACQ_PRM_CAM_NAME
0x2a	CORACQ_PRM_LINE_INTEGRATE_METHOD
0x2b	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
0x2c	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
0x2d	CORACQ_PRM_LINE_TRIGGER_METHOD
0x2e	CORACQ_PRM_LINE_TRIGGER_POLARITY
0x2f	CORACQ_PRM_LINE_TRIGGER_DELAY
0x30	CORACQ_PRM_LINE_TRIGGER_DURATION
0x31	CORACQ_PRM_TAPS
0x32	CORACQ_PRM_TAP_OUTPUT
0x33	CORACQ_PRM_TAP_1_DIRECTION
0x34	CORACQ_PRM_TAP_2_DIRECTION
0x35	CORACQ_PRM_TAP_3_DIRECTION
0x36	CORACQ_PRM_TAP_4_DIRECTION
0x37	CORACQ_PRM_TAP_5_DIRECTION
0x38	CORACQ_PRM_TAP_6_DIRECTION
0x39	CORACQ_PRM_TAP_7_DIRECTION
0x3a	CORACQ_PRM_TAP_8_DIRECTION
0x3b	CORACQ_PRM_PIXEL_CLK_DETECTION
0x3c	CORACQ_PRM_CHANNELS_ORDER
0x3d	CORACQ_PRM_LINESCAN_DIRECTION
0x3e	CORACQ_PRM_LINESCAN_DIRECTION_POLARITY
0x3f	CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN
0x40	CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX
0x41	CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN
0x42	CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX
0x43	CORACQ_PRM_CONNECTOR_HD_INPUT
0x44	CORACQ_PRM_CONNECTOR_VD_INPUT
0x45	CORACQ_PRM_CONNECTOR_RESET_TRIGGER_INPUT
0x46	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY
0x47	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY
0x48	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
0x49	CORACQ_PRM_CAM_IO_CONTROL
0x4a	CORACQ_PRM_CONNECTOR_EXPOSURE_INPUT
0x4b	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DELAY
0x4c	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
0x4d	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY
0x4e	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY
0x4f	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
0x50	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
0x51	CORACQ_PRM_CAM_COMPANY_NAME
0x52	CORACQ_PRM_CAM_MODEL_NAME
0x53	CORACQ_PRM_VIDEO_LEVEL_MIN
0x54	CORACQ_PRM_VIDEO_LEVEL_MAX
0x55	CORACQ_PRM_CONNECTOR_LINE_TRIGGER_INPUT
0x56	CORACQ_PRM_CONNECTOR_LINE_INTEGRATE_INPUT

0x57	CORACQ_PRM_CONNECTOR_LINESCAN_DIRECTION_INPUT
0x58	CORACQ_PRM_CAMLINK_CONFIGURATION
0x59-0x5e	Reserved
0x5f	CORACQ_PRM_DATA_VALID_ENABLE
0x60	CORACQ_PRM_DATA_VALID_POLARITY
0x61	CORACQ_PRM_CONNECTOR_PIXEL_CLK_OUTPUT
0x62	CORACQ_PRM_CONNECTOR_WEN_OUTPUT
0x63	CORACQ_PRM_WEN_POLARITY
0x64-0x6b	Reserved
0x6c	CORACQ_PRM_TIMESLOT
0x6d	
0x6e	CORACQ_PRM_CAM_CONTROL_DURING_READOUT
0x6f-0x70	Reserved
0x71	CORACQ_PRM_CX4_CONFIGURATION
0x72-0x73	Reserved
0x74	CORACQ_PRM_DATA_LANES
0x75	Reserved
0x76	CORACQ_PRM_CLHS_BIT_TRANSFER_RATE

CORACQ_PRM_CLHS_BIT_TRANSFER_RATE

Description	Bit transfer rate between camera and acquisition device.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_BIT_TRANSFER_RATE_MULT and CORACQ_CAP_BIT_TRANSFER_RATE. The capability returns the ORed combination of all supported values. CORACQ_CAP_BIT_TRANSFER_RATE_MULT returns the basic bit rate in Mbps. The CORACQ_CAP_BIT_TRANSFER_RATE is a bitfield where if bit ‘x’ is 1, then the (x + 1) * Mbps transfer rate is supported. Example: CORACQ_CAP_BIT_TRANSFER_RATE_MULT = 1250, CORACQ_CAP_BIT_TRANSFER_RATE = 0x00000010 Then acquisition device supports only (Bit 4 + 1) * 125 = 6250 Mbps or 6.25 Gbps.
CVI Entry	[Signal Description] Bit Transfer Rate
Note	Validated only for CLHS connector type.

CORACQ_PRM_CAM_COMPANY_NAME

Description	The camera company name for which the camera file is intended for.
Type	BYTE [32]
Values	String up to 31 characters long.
CCA Entry	[General] Camera Name

CORACQ_PRM_CAM_CONTROL_DURING_READOUT

Description	Specifies if the camera control signals can be sent during the readout of a frame.
Type	UINT32
Values	CORACQ_VAL_CAM_CONTROL_DURING_READOUT_INVALID (0x00000000) Camera controls will not be sent during the readout of a frame. Once a camera is triggered, the next trigger will not occur until the end of FVAL is reached. CORACQ_VAL_CAM_CONTROL_DURING_READOUT_VALID (0x00000001) Camera controls can be sent during the readout of a frame. Once a camera is triggered, the next trigger can be sent when the frame grabber receives the corresponding FVAL. CORACQ_VAL_CAM_CONTROL_DURING_READOUT_IGNORE (0x00000002) Camera controls are sent whenever an external/internal frame trigger is received. It is the responsibility of the user to not over trigger the camera.
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAM_CONTROL_DURING_READOUT. The capability returns the ORed combination of all supported values. Note that CORACQ_VAL_CAM_CONTROL_DURING_READOUT_INVALID is always supported.
CCA Entry	[Control Signals] Camera Control During Readout
Note	Valid only for Area Scan cameras.

CORACQ_PRM_CAM_IO_CONTROL

Description	Description of the non-standard camera I/O controls.
Type	CORACQ_CAM_IO_CONTROL[32]
Values	List of the non-standard camera I/O controls.
CCA Entry	[Custom Camera IO Control Signals] Max Control Control_x (x takes a value from 0 to 31)
Note	See "Custom Camera I/O Control Description" for more information.

CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX

Description	Maximum line trigger frequency supported by the camera (in Hz).
Type	UINT32
Limits	This value must be greater or equal to CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN
CCA Entry	[Control Signals] Camera Line Trigger Frequency Maximum
Note	Applies to linescan cameras only.

CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN

Description	Minimum line trigger frequency supported by the camera (in Hz).
Type	UINT32
Limits	This value must be smaller or equal to CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX
CCA Entry	[Control Signals] Camera Line Trigger Frequency Minimum
Note	Applies to linescan cameras only.

CORACQ_PRM_CAM_MODEL_NAME

Description	The camera model name or which the camera file is intended for.
Type	BYTE [32]
Values	String up to 31 characters long.
CCA Entry	[General] Model Name

CORACQ_PRM_CAM_NAME

Description	The name or description of the camera related parameters.
Type	BYTE [64]
Values	String, up to 63 characters long.
CCA Entry	[General] Camera Name

CORACQ_PRM_CAM_RESET_DURATION

Description	Reset pulse width (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	The value must be in the range CORACQ_CAP_CAM_RESET_DURATION_MIN ... CORACQ_CAP_CAM_RESET_DURATION_MAX.
CCA Entry	[Control Signals] Camera Reset Duration
Note	Validated only when CORACQ_PRM_CAM_RESET_ENABLE is TRUE.

CORACQ_PRM_CAM_RESET_METHOD

Description	Method used to generate the reset pulse. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAM_RESET_METHOD. The capability returns the ORed combination of all supported values.
Values	See Camera Reset Method
CCA Entry	[Control Signals] Camera Reset Method
Note	Available only if CORACQ_CAP_CAM_RESET is TRUE. Validated only when CORACQ_PRM_CAM_RESET_ENABLE is TRUE.

CORACQ_PRM_CAM_RESET_POLARITY

Description	Reset pulse polarity. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAM_RESET_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Reset pulse will be active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Reset pulse will be active high.
CCA Entry	[Control Signals] Camera Reset Polarity	
Note	Available only if CORACQ_CAP_CAM_RESET is TRUE. Validated only when CORACQ_PRM_CAM_RESET_ENABLE is TRUE.	

CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX

Description	Maximum time integration supported by the camera (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	This value must be greater or equal to CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN.
CCA Entry	[Control Signals] Camera Time Integrate Duration Maximum

CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN

Description	Minimum time integration supported by the camera (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	This value must be smaller or equal to CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX.
CCA Entry	[Control Signals] Camera Time Integrate Duration Minimum

CORACQ_PRM_CAM_TRIGGER_DURATION

Description	Frame trigger pulse width (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	The value must be in the range CORACQ_CAP_CAM_TRIGGER_DURATION_MIN ... CORACQ_CAP_CAM_TRIGGER_DURATION_MAX.
CCA Entry	[Control Signals] Camera Trigger Duration
Note	Available only if CORACQ_CAP_CAM_TRIGGER is TRUE. Validated only when CORACQ_PRM_CAM_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_CAM_TRIGGER_METHOD

Description	Frame trigger pulse output method. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAM_TRIGGER_METHOD. The capability returns the ORed combination of all supported values.
Values	See Camera Trigger Methods.
CCA Entry	[Control Signals] Camera Trigger Method
Note	Available only if CORACQ_CAP_CAM_TRIGGER is TRUE. Validated only when CORACQ_PRM_CAM_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_CAM_TRIGGER_POLARITY

Description	Frame trigger pulse polarity. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAM_TRIGGER_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Frame trigger pulse will be active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Frame trigger pulse will be active high.
CCA Entry	[Control Signals] Camera Trigger Polarity	
Note	Available only if CORACQ_CAP_CAM_TRIGGER is TRUE. Validated only when CORACQ_PRM_CAM_TRIGGER_ENABLE is TRUE.	

CORACQ_PRM_CAMLINK_CONFIGURATION

Description	Defines the CameraLink connector configuration
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CAMLINK_CONFIGURATION. The capability returns the ORed combination of all supported values.
Values	CORACQ_VAL_CAMLINK_CONFIGURATION_BASE (0x00000001) Base configuration (1 connector)
	CORACQ_VAL_CAMLINK_CONFIGURATION_MEDIUM (0x00000002) Medium configuration (2 connectors)
	CORACQ_VAL_CAMLINK_CONFIGURATION_FULL (0x00000004) Full configuration (2 connectors)
	CORACQ_VAL_CAMLINK_CONFIGURATION_2BASE (0x00000008) Dual base configuration (2 connectors)
	CORACQ_VAL_CAMLINK_CONFIGURATION_10TAPS_FORMAT1 (0x00000010) 10 Taps (2 connectors) for example, CMC-1000
	CORACQ_VAL_CAMLINK_CONFIGURATION_16TAPS (0x000000020) 16 Taps (4 connectors)
	CORACQ_VAL_CAMLINK_CONFIGURATION_10TAPS_FORMAT2 (0x00000040) 10 Taps (2 connectors) for example, Basler A504
	CORACQ_VAL_CAMLINK_CONFIGURATION_8TAPS_10BITS (0x00000080) 8 taps @ 10 bits (2 connectors) for example, Basler A403
	CORACQ_VAL_CAMLINK_CONFIGURATION_FULL_PACKED (0x00000100) The video data is packed on the 8 ports of the Camera Link cable
	CORACQ_VAL_CAMLINK_CONFIGURATION_80BITS_PACKED (0x00000200 The video data is packed on the 10 ports of the Camera Link cable.
	CORACQ_VAL_CAMLINK_CONFIGURATION_FLAG_BGR (0x80000000) By default, RGB formats are received in the RGB order on the CameraLink ports. By using this value, the order will be considered as BGR
CCA Entry	[Connector Description] Camlink Configuration

CORACQ_PRM_CHANNEL

Description	Number of channels output by the video source. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CHANNEL.	
Values	CORACQ_VAL_CHANNEL_SINGLE (0x00000001)	One video channel is fed to the acquisition device.
	CORACQ_VAL_CHANNEL_DUAL (0x00000002)	Two synchronous video channels are fed to the acquisition device.
CCA Entry	[Signal Description] Channel	
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.	

CORACQ_PRM_CHANNELS_ORDER

Description	Order of the channels. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_CHANNELS_ORDER. The capability returns the ORed combination of all supported values.
Values	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001) The camera outputs the first line of the video on channel 1 (or A), the second line on channel 2 (or B), ... CORACQ_VAL_CHANNELS_ORDER_REVERSE (0x00000002) The camera outputs the first line of the video on channel 2 (or B), the second line on channel 1 (or A), ... CORACQ_VAL_CHANNELS_ORDER_DETECT (0x00000004) Auto detects the channel order by means of an external signal usually called FI (field index). If the signal is high, then the channel order is considered normal; otherwise it is reversed. CORACQ_VAL_CHANNELS_ORDER_SEGMENTED (0x00000008) Use when the number of channels is greater than 2. The camera outputs: the video lines 0 to n-1 on the first channel the video lines n to 2n-1 on the second channel the video lines 2n to 3n-1 on the third channel ... the video lines 7n to 7n-1 on the 8th channel
CCA Entry	[Signal Description] Channels Order
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_COLOR_ALIGNMENT

Description	Specifies the Bayer or Bicolor alignment of the image output by the video source.
Type	UINT32
Limits	The parameter value must match one of the supported alignments of the acquisition device given by CORACQ_CAP_COLOR_ALIGNMENT. The capability returns the ORed combination of all supported values as defined below.
Values	CORACQ_VAL_COLOR_ALIGNMENT_GB_RG (0x00000001) CORACQ_VAL_COLOR_ALIGNMENT_BG_GR (0x00000002) CORACQ_VAL_COLOR_ALIGNMENT_RG_GB (0x00000004) CORACQ_VAL_COLOR_ALIGNMENT_GR_BG (0x00000008) CORACQ_VAL_COLOR_ALIGNMENT_RG_BG (0x00000010) CORACQ_VAL_COLOR_ALIGNMENT_BG_RG (0x00000020)
CCA Entry	[Signal Description] Bayer Alignment
Note	Validated only if CORACQ_PRM_COLOR_DECODER_ENABLE is TRUE.

CORACQ_PRM_CONNECTOR_EXPOSURE_INPUT

Description	Camera exposure input pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Exposure Input

CORACQ_PRM_CONNECTOR_HD_INPUT

Description	Camera horizontal drive input/output pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] HD Input

CORACQ_PRM_CONNECTOR_LINE_INTEGRATE_INPUT

Description	Camera line integrate pin description. Applies to linescan cameras only.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Line Integrate Input
Note	Some cameras define this input as PRIN.

CORACQ_PRM_CONNECTOR_LINE_TRIGGER_INPUT

Description	Camera line trigger/exposure pin description. Applies to linescan cameras only.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Line Trigger Input
Note	Some cameras define this input as EXSYNC.

CORACQ_PRM_CONNECTOR_LINESCAN_DIRECTION_INPUT

Description	Camera linescan direction pin description. Applies to linescan cameras only.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Linescan Direction Input

CORACQ_PRM_CONNECTOR_PIXEL_CLK_OUTPUT

Description	Camera pixel clock output pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Pixel Clock Output

CORACQ_PRM_CONNECTOR_WEN_OUTPUT

Description	Camera WEN (Write ENable) output pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] WEN Output

CORACQ_PRM_CONNECTOR_RESET_TRIGGER_INPUT

Description	Camera Reset/Trigger input pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] Reset/Trigger Input

CORACQ_PRM_CONNECTOR_VD_INPUT

Description	Camera vertical drive input/output pin description.
Type	UINT32
Values	See Pin Connector Description
CCA Entry	[Connector Description] VD Input

CORACQ_PRM_CX4_CONFIGURATION

Description Defines the number of lanes the video will be transferred on and if the communication lane is dedicated or overlaps a data lane. Applies to HS-Link devices only.

Type UINT32

Limits Bits 0..7: Number of lanes used by the video data. Must be in the range 1..(CORACQ_CAP_CX4_CONFIGURATION & 0xff).
Macro CORACQ_VAL_CX4_CONFIGURATION_LANES_MASK can be used to get the number of lanes out of this parameter.

Bit 31: 1 indicates that the communication lane overlaps the 1st video lane. Can only be set to 1 if CORACQ_CAP_CX4_CONFIGURATION & 0x80000000 is true.
Macro CORACQ_VAL_CX4_CONFIGURATION_COMM_OVERLAP can be used to get/set the communication lane overlap state of this parameter.

CCA Entry [Signal Description]
CX4 Configuration

CORACQ_PRM_COUPLING

Description Video source coupling type. Applies to analog video signals only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_COUPLING. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_COUPLING_AC (0x00000001)	AC coupled.
CORACQ_VAL_COUPLING_DC (0x00000002)	DC coupled.

CCA Entry [Signal Description]
Coupling

CORACQ_PRM_DATA_LANES

Description Number of Data Lanes output by the Camera.

Limits Range Limits: 1..CORACQ_CAP_CLHS_LANES_MAX.

CCA Entry [Signal Description]
Data Lanes

Note Valid only for CLHS connector type.

CORACQ_PRM_DATA_VALID_ENABLE

Description Specifies if the acquisition device uses the camera data valid signal.

Type UINT32

Limits This value must match the capability of the acquisition device given by CORACQ_CAP_DATA_VALID_ENABLE = TRUE.

Values

FALSE (0x00000000)	Data valid signal is ignored.
TRUE (0x00000001)	Data valid signal is used.

CCA Entry [Control Signals]
Data Valid Enable

CORACQ_PRM_DATA_VALID_POLARITY

Description	Specifies the camera data valid polarity received from the acquisition device.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_DATA_VALID_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Data valid signal active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Data valid signal active high.
CCA Entry	[Control Signals] Data Valid Polarity	
Note	Validated only if CORACQ_DATA_VALID_ENABLE is TRUE	

CORACQ_PRM_FIELD_ORDER

Description	Field order output by the video source. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FIELD_ORDER. The capability returns the ORed combination of all supported values.
Values	CORACQ_VAL_FIELD_ORDER_ODD_EVEN (0x00000001) For an interlaced signal, the odd field is acquired first, followed by the even field. For a non-interlaced signal, this value is invalid. CORACQ_VAL_FIELD_ORDER_EVEN_ODD (0x00000002) For an interlaced signal, the even field is acquired first, followed by the odd field. For a non-interlaced signal, this value is invalid. CORACQ_VAL_FIELD_ORDER_NEXT_FIELD (0x00000004) For an interlaced signal, the next field is acquired whether it is odd or even. This is the standard value for a non-interlaced signal. CORACQ_VAL_FIELD_ORDER_FVAL_LINE1 (0x00000008) For a linescan camera, the FVAL is active to indicate a grouping of lines. In the case of a Bayer video source, the FVAL will group 2 lines together. When converting to RGB data, the 1st line will be considered as the 1st one, and the 2nd one as the 2nd. CORACQ_VAL_FIELD_ORDER_FVAL_LINE2 (0x00000010) For a linescan camera, the FVAL is active to indicate a grouping of lines. In the case of a Bayer video source, the FVAL will group 2 lines together. When converting to RGB data, the 2nd line will be considered as the 1st one, and the 2nd one as the 1st.
CCA Entry	[Signal Description] Field Order

CORACQ_PRM_FRAME

Description	Video source frame type. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FRAME. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_FRAME_INTERLACED (0x00000001)	Interlaced video.
	CORACQ_VAL_FRAME_PROGRESSIVE (0x00000002)	Progressive/non-interlaced video.
CCA Entry	[Signal Description] Frame	

CORACQ_PRM_FRAME_INTEGRATE_METHOD

Description	Method to be used to control the camera's frame integration. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FRAME_INTEGRATE_METHOD. The capability returns the ORed combination of all supported values.
Values	See Frame Integrate Methods
CCA Entry	[Control Signals] Frame Integrate Method
Note	Available only if CORACQ_CAP_FRAME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_FRAME_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_FRAME_INTEGRATE_POLARITY

Description	Frame integration pulse polarity. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_FRAME_INTEGRATE_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Frame integration pulse will be active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Frame integration pulse will be active high.
CCA Entry	[Control Signals] Frame Integrate Polarity	
Note	Available only if CORACQ_CAP_FRAME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_FRAME_INTEGRATE_ENABLE is TRUE.	

CORACQ_PRM_HACTIVE

Description	Horizontal active portion of the video (in pixels/tap).
Type	UINT32
Limits	Range limits: CORACQ_CAP_HACTIVE_MIN...CORACQ_CAP_HACTIVE_MAX, and also must be a multiple of CORACQ_CAP_HACTIVE_MULT.
CCA Entry	[Signal Timings] Horizontal Active

CORACQ_PRM_HBACK_INVALID

Description	Invalid horizontal portion of the video following the horizontal blanking (in pixels/tap).
Type	UINT32
Limits	Range limits: CORACQ_CAP_HBACK_INVALID_MIN ... CORACQ_CAP_HBACK_INVALID_MAX, and also must be a multiple of CORACQ_CAP_HBACK_INVALID_MULT.
CCA Entry	[Signal Timings] Horizontal Back Invalid

CORACQ_PRM_HBACK_PORCH

Description	The video's horizontal back porch (in pixels/tap). Applies to analog video signals only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_HBACK_PORCH_MIN ... CORACQ_CAP_HBACK_PORCH_MAX, and must be a multiple of CORACQ_CAP_HBACK_PORCH_MULT.
CCA Entry	[Signal Timings] Horizontal Back Porch

CORACQ_PRM_HFRONT_INVALID

Description	Invalid horizontal portion of the video preceding the horizontal blanking (in pixels/tap).
Type	UINT32
Limits	This value must be in the range CORACQ_CAP_HFRONT_INVALID_MIN...CORACQ_CAP_HFRONT_INVALID_MAX, and must be a multiple of CORACQ_CAP_HFRONT_INVALID_MULT.
CCA Entry	[Signal Timings] Horizontal Front Invalid

CORACQ_PRM_HFRONT_PORCH

Description	The video's horizontal front porch (in pixels/tap). Applies to analog video signals only.
Type	UINT32
Limits	This value must be in the range CORACQ_CAP_HFRONT_PORCH_MIN...CORACQ_CAP_HFRONT_PORCH_MAX, and must be a multiple of CORACQ_CAP_HFRONT_PORCH_MULT.
CCA Entry	[Signal Timings] Horizontal Front Porch

CORACQ_PRM_HSYNC

Description	The videos horizontal sync (in pixels/tap).
Type	UINT32
Limits	Range limits: CORACQ_CAP_HSYNC_MIN...CORACQ_CAP_HSYNC_MAX, and also must be a multiple of CORACQ_CAP_HSYNC_MULT.
CCA Entry	[Signal Timings] Horizontal Sync

CORACQ_PRM_HSYNC_POLARITY

Description	Horizontal sync polarity of the video source.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_HSYNC_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Horizontal sync pulse is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Horizontal sync pulse is active high.
CCA Entry	[Synchronization Signals] Horizontal Sync Polarity	

CORACQ_PRM_INTERFACE

Description	Video source interface type.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_INTERFACE since only one interface type is supported per acquisition device.	
Values	CORACQ_VAL_INTERFACE_ANALOG (0x00000001)	Analog video source.
	CORACQ_VAL_INTERFACE_DIGITAL (0x00000002)	Digital video source.
CCA Entry	[Signal Description] Interface	

CORACQ_PRM_LINE_INTEGRATE_DELAY

Description	Obsolete. Use instead the equivalent parameter CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY

CORACQ_PRM_LINE_INTEGRATE_METHOD

Description	Method to use for controlling the camera's line integration. Applies to linescan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_INTEGRATE_METHOD. The capability returns the ORed combination of all supported values.
Values	See Line Integrate Methods
CCA Entry	[Control Signals] Line Integrate Method
Note	Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE. Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_LINE_INTEGRATE_POLARITY

Description	Obsolete. Use instead the equivalent parameter CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY

CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY

Description Line integration pulse #0 delay in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_INTEGRATE_PULSE0_DELAY_MIN ... CORACQ_CAP_LINE_INTEGRATE_PULSE0_DELAY_MAX.

CCA Entry [Control Signals]
Line Integrate Pulse 0 Delay

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #0 delay parameter.

CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION

Description Line integration pulse #0 width in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_INTEGRATE_PULSE0_DURATION_MIN ... CORACQ_CAP_LINE_INTEGRATE_PULSE0_DURATION_MAX.

CCA Entry [Control Signals]
Line Integrate Pulse 0 Duration

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #0 duration parameter.

CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY

Description Line integration pulse #0 polarity. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_INTEGRATE_PULSE0_POLARITY. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_ACTIVE_LOW (0x00000001)	Time integration trigger pulse is active low.
CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Time integration trigger pulse is active high.

CCA Entry [Control Signals]
Line Integrate Pulse 0 Polarity

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #0. Note, if a constant signal is required, set this parameter to have an active signal polarity opposite to that of the constant signal. For example, to have a constant high signal the polarity would be set to CORACQ_VAL_ACTIVE_LOW.

CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY

Description Line integration pulse #1 delay in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_INTEGRATE_PULSE1_DELAY_MIN ... CORACQ_CAP_LINE_INTEGRATE_PULSE1_DELAY_MAX.

CCA Entry [Control Signals]
Line Integrate Pulse 1 Delay

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #1 delay parameter.

CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION

Description Line integration pulse #1 width in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_INTEGRATE_PULSE1_DURATION_MIN ... CORACQ_CAP_LINE_INTEGRATE_PULSE1_DURATION_MAX.

CCA Entry [Control Signals]
Line Integrate Pulse 1 Duration

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #1 duration parameter.

CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY

Description Line integration pulse #1 polarity. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_INTEGRATE_PULSE1_POLARITY. The capability returns the ORed combination of all supported values.

Values

CORACQ_VAL_ACTIVE_LOW (0x00000001)	Line integration trigger pulse is active low.
CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Line integration trigger pulse is active high.

CCA Entry [Control Signals]
Line Integrate Pulse 1 Polarity

Note Available only if CORACQ_CAP_LINE_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_LINE_INTEGRATE_ENABLE is TRUE.
See Line Integrate Methods for the different usages of the pulse #1. Note, if a constant signal is required, set this parameter to have an active signal polarity opposite to that of the constant signal. For example, to have a constant high signal the polarity would be set to CORACQ_VAL_ACTIVE_LOW.

CORACQ_PRM_LINE_TRIGGER_DELAY

Description Line trigger pulse delay in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_TRIGGER_DELAY_MIN ... CORACQ_CAP_LINE_TRIGGER_DELAY_MAX.

CCA Entry [Control Signals]
Line Trigger Delay

Note Available only if CORACQ_CAP_LINE_TRIGGER is TRUE.
Validated only when CORACQ_PRM_LINE_TRIGGER_ENABLE is TRUE.
See Line Trigger Methods for the different usages of the trigger delay parameter.

CORACQ_PRM_LINE_TRIGGER_DURATION

Description Line Trigger pulse width in units specified by CORACQ_PRM_LINE_INTEGRATE_TIME_BASE. In the case where the units are in CORACQ_VAL_TIME_BASE_NS, the CORACQ_CAP_LINE_INTEGRATE_TIME_BASE_MULT returns the resolution of the time base in nsec. Applies to linescan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_LINE_TRIGGER_DURATION_MIN ... CORACQ_CAP_LINE_TRIGGER_DURATION_MAX.

CCA Entry [Control Signals]
Line Trigger Duration

Note Available only if CORACQ_CAP_LINE_TRIGGER is TRUE.
Validated only when CORACQ_PRM_LINE_TRIGGER_ENABLE is TRUE.
See Line Trigger Methods for the different usages of the trigger duration parameter.

CORACQ_PRM_LINE_TRIGGER_METHOD

Description Line trigger pulse output method. Applies to linescan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_TRIGGER_METHOD. The capability returns the ORed combination of all supported values.

Values See Line Trigger Methods

CCA Entry [Control Signals]
Line Trigger Method

Note Available only if CORACQ_CAP_LINE_TRIGGER is TRUE.
Validated only when CORACQ_PRM_LINE_TRIGGER_ENABLE is TRUE.

CORACQ_PRM_LINE_TRIGGER_POLARITY

Description	Line trigger pulse polarity. Applies to linescan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINE_TRIGGER_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Line trigger pulse is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Line trigger pulse is active high.
CCA Entry	[Control Signals] Line Trigger Polarity	
Note	Available only if CORACQ_CAP_LINE_TRIGGER is TRUE. Validated only when CORACQ_PRM_LINE_TRIGGER_ENABLE is TRUE.	

CORACQ_PRM_LINESCAN_DIRECTION

Description	Specifies if the camera has a direction scan input control.
Type	UINT32
Values	TRUE (0x00000001), Camera has a direction scan input control. FALSE (0x00000000), Camera does not have a direction scan input control.
CCA Entry	[Control Signals] LineScan Direction
Note	Applies to linescan cameras only. On Teledyne DALSA cameras, this control is called the TDI scan direction.

CORACQ_PRM_LINESCAN_DIRECTION_POLARITY

Description	Camera direction scan signal polarity. Applies to linescan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_LINESCAN_DIRECTION_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Forward direction scan signal is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Forward direction scan signal is active high.
CCA Entry	[Control Signals] LineScan Direction Polarity	
Note	This value is only available if CORACQ_CAP_LINESCAN_DIRECTION is TRUE.	

CORACQ_PRM_PIXEL_CLK_11

Description	Pixel clock frequency (in Hz) so that the camera image has a 1:1 aspect ratio.
Type	UINT32
Limits	1.. (2**32) – 1
CCA Entry	[Pixel Clock] Pixel Clock Frequency 1:1
Note	This value is only given as information. Useful to accurately calculate distances between objects from an acquired image.

CORACQ_PRM_PIXEL_CLK_DETECTION

Description	Specifies the type of pixel clock detection of the video source.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_PIXEL_CLK_DETECTION. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_RISING_EDGE (0x00000004)	Sampling of a pixel is done on the rising edge of the pixel clock.
	CORACQ_VAL_FALLING_EDGE (0x00000008)	Sampling of a pixel is done on the falling edge of the pixel clock.
CCA Entry	[Pixel Clock] Pixel Clock Detection	

CORACQ_PRM_PIXEL_CLK_EXT

Description	External pixel clock frequency (in Hz).
Type	UINT32
Limits	The value must be in the range CORACQ_CAP_PIXEL_CLK_EXT_MIN...CORACQ_CAP_PIXEL_CLK_EXT_MAX.
CCA Entry	[Pixel Clock] Pixel Clock Frequency External
Note	Validated only if CORACQ_PRM_PIXEL_CLK_SRC specifies that an external pixel clock is needed.

CORACQ_PRM_PIXEL_CLK_INT

Description	Internal pixel clock frequency (in Hz).
Type	UINT32
Limits	The value must be in the range CORACQ_CAP_PIXEL_CLK_INT_MIN...CORACQ_CAP_PIXEL_CLK_INT_MAX.
CCA Entry	[Pixel Clock] Pixel Clock Frequency Internal
Note	This value is validated only if CORACQ_PRM_PIXEL_CLK_SRC specifies that an internal pixel clock is needed.

CORACQ_PRM_PIXEL_CLK_SRC

Description	Specifies the source of the acquisition device pixel clock.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_PIXEL_CLK_SRC. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_PIXEL_CLK_SRC_INT (0x00000001)	Internal pixel clock.
	CORACQ_VAL_PIXEL_CLK_SRC_EXT (0x00000002)	External pixel clock.
	CORACQ_VAL_PIXEL_CLK_SRC_EXT_INT (0x00000004)	The external pixel clock is used while the acquisition device simultaneously outputs its own internal pixel clock for other use.
CCA Entry	[Pixel Clock] Pixel Clock Source	

CORACQ_PRM_PIXEL_DEPTH

Description Pixel depth of the digitized video.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_PIXEL_DEPTH.

This capability returns a structure of the following type:

```
typedef struct
{
  UINT32 pixelDepth;
  UINT32 numberOfLuts;
  UINT32 lutFormat;
} CAP_PIXEL_DEPTH;
CAP_PIXEL_DEPTH capPixelDepth[43];
```

The amount of memory required for the capability is 512 bytes. Since there are 12 bytes per structure element, this means that you must allocate at least 512/12=43 (after rounding) such elements. The end of the list is reached when the pixelDepth value is 0.

pixelDepth: pixel depth in bits.
numberOfLuts: number of LUTs available
lutFormat: LUT format.

CCA Entry [Signal Description]
Pixel Depth

Note For analog cameras, this parameter is read-only and represents the number of bits digitized by the acquisition device's A/D.

CORACQ_PRM_SCAN

Description Video source scan type.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SCAN. The capability returns the ORed combination of all supported values.

Values	CORACQ_VAL_SCAN_AREA (0x00000001)	Area scan video source.
	CORACQ_VAL_SCAN_LINE (0x00000002)	Linescan video source.

CCA Entry [Signal Description]
Scan

CORACQ_PRM_SIGNAL

Description Video sauce signal type.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SIGNAL. The capability returns the ORed combination of all supported values.

Values	CORACQ_VAL_SIGNAL_SINGLE_ENDED (0x00000001)	Single ended signal.
	CORACQ_VAL_SIGNAL_DIFFERENTIAL (0x00000002)	Differential signal.

CCA Entry [Signal Description]
Signal

CORACQ_PRM_SYNC

Description Synchronization source.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_SYNC. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_SYNC_COMP_VIDEO (0x00000001), Composite video source.

CORACQ_VAL_SYNC_COMP_SYNC (0x00000002), Composite sync source.

CORACQ_VAL_SYNC_SEP_SYNC (0x00000004),
Separate horizontal and vertical sync source.

CORACQ_VAL_SYNC_INT_SYNC (0x00000008)
Internal horizontal and vertical syncs generated by the acquisition device.
See also CORACQ_PRM_MASTER_MODE.

CORACQ_VAL_SYNC_RED (0x00000010),
Composite video source from the red channel.

CORACQ_VAL_SYNC_GREEN (0x00000020),
Composite video source from the green channel.

CORACQ_VAL_SYNC_BLUE (0x00000040)
Composite video source from the blue channel.

CCA Entry [Synchronization Signals]
Synchronization Source

CORACQ_PRM_TAP_1_DIRECTION

Description Specifies the direction of tap #1 of the video source.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_TAP_DIRECTION_LR (0x00000001)
Pixels from the tap have a left to right order.

CORACQ_VAL_TAP_DIRECTION_RL (0x00000002)
Pixels from the tap have a right to left order.

CORACQ_VAL_TAP_DIRECTION_UD (0x00000004)
Lines from the tap have a top-bottom direction (up-down).

CORACQ_VAL_TAP_DIRECTION_DU (0x00000008)
Lines from the tap have a bottom-up direction (down-up).

CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
Lines from the tap start at the top of the camera image.

CORACQ_VAL_TAP_DIRECTION_FROM_MID (0x00000020)
Lines from the tap start in the middle of the camera image.

CORACQ_VAL_TAP_DIRECTION_FROM_BOT (0x00000040)
Lines from the tap start at the bottom of the camera image.

CCA Entry [Signal Description]
Tap 1 Direction

Note For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_2_DIRECTION

Description	Specifies the direction of tap #2 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION.
CCA Entry	[Signal Description] Tap 2 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_3_DIRECTION

Description	Specifies the direction of tap #3 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 3 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_4_DIRECTION

Description	Specifies the direction of tap #4 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION.
CCA Entry	[Signal Description] Tap 4 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_5_DIRECTION

Description	Specifies the direction of tap #5 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION.
CCA Entry	[Signal Description] Tap 5 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_6_DIRECTION

Description	Specifies the direction of tap #6 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 6 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_7_DIRECTION

Description	Specifies the direction of tap #7 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 7 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_8_DIRECTION

Description	Specifies the direction of tap #8 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION.
CCA Entry	[Signal Description] Tap 8 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_9_DIRECTION

Description	Specifies the direction of tap #9 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 9 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_10_DIRECTION

Description	Specifies the direction of tap #10 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 10 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_11_DIRECTION

Description	Specifies the direction of tap #11 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 11 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_12_DIRECTION

Description	Specifies the direction of tap #12 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 12 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_13_DIRECTION

Description	Specifies the direction of tap #13 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 13 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_14_DIRECTION

Description	Specifies the direction of tap #14 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 14 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_15_DIRECTION

Description	Specifies the direction of tap #15 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 15 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_16_DIRECTION

Description	Specifies the direction of tap #16 of the video source.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_DIRECTION. The capability returns the ORed combination of all supported values.
Values	See CORACQ_PRM_TAP_1_DIRECTION
CCA Entry	[Signal Description] Tap 16 Direction
Note	For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAP_OUTPUT

Description Specifies the tap output type of the video source.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TAP_OUTPUT. The capability returns the ORed combination of all supported values.

Values CORACQ_VAL_TAP_OUTPUT_ALTERNATE (0x00000001)
Construction of a line is done by concatenating the taps 2 by 2, with a pixel in turn from each tap. So the first two taps makes up the first segment of the line, the next two taps make up the second segment… Must be an even number of tabs.

CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
Construction of a line is done by concatenating the output of each tap.

CORACQ_VAL_TAP_OUTPUT_PARALLEL (0x00000004)
Construction of a line is done by concatenating a pixel in turn from each tap.

CCA Entry [Signal Description]
Tap Output

Note For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TAPS

Description Number of taps output by the video source.

Type UINT32

Limits This value must be in the range 1..CORACQ_CAP_TAPS.

CCA Entry [Signal Description]
Taps

Note For a description of tap geometries and corresponding parameter settings see Appendix: Tap Geometry Settings.

CORACQ_PRM_TIMESLOT

Description Number of pixel clocks needed to output 1 pixel on every tap

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TIMESLOT

Values CORACQ_VAL_TIMESLOT_1 (0x01):
for each pixel clock, a pixel from each tap is output (default)

CORACQ_VAL_TIMESLOT_2 (0x02):
2 pixel clock cycles are needed to output 1 pixel from each tap

CORACQ_VAL_TIMESLOT_3 (0x04):
3 pixel clock cycles are needed to output 1 pixel from each tap

CORACQ_VAL_TIMESLOT_4 (0x08):
4 pixel clock cycles are needed to output 1 pixel from each tap

CCA Entry [Signal Description]
Timeslot

CORACQ_PRM_TIME_INTEGRATE_METHOD

Description Method to use to control a camera's time integration. Applies to area scan cameras only.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TIME_INTEGRATE_METHOD. The capability returns the ORed combination of all supported values.

Values See Time Integrate Methods

CCA Entry [Control Signals]
Time Integrate Method

Note Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE.
CORACQ_CAP_TIME_INTEGRATE is obsolete. Use the equivalent parameter CORACQ_CAP_TIME_INTEGRATE_PULSE0_POLARITY.

CORACQ_CAP_TIME_INTEGRATE_PULSE0_POLARITY Values:
CORACQ_VAL_ACTIVE_LOW
Time integration trigger pulse can be active low.
CORACQ_VAL_ACTIVE_HIGH
Time integration trigger pulse can be active high.

Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE.

CORACQ_PRM_TIME_INTEGRATE_POLARITY

Description Obsolete. Use instead the equivalent parameter CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY

CORACQ_PRM_TIME_INTEGRATE_PULSE_DELAY

Description Obsolete. Use instead the equivalent parameter CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY

CORACQ_PRM_TIME_INTEGRATE_PULSE_DURATION

Description Obsolete. Use instead the equivalent parameter CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION

CORACQ_PRM_TIME_INTEGRATE_PULSE_POLARITY

Description Obsolete. Use instead the equivalent parameter CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

CORACQ_PRM_TIME_INTEGRATE_PULSE0_DELAY

Description Time integration pulse #0 delay (in µs). Applies to area scan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_TIME_INTEGRATE_PULSE0_DELAY_MIN ... CORACQ_CAP_TIME_INTEGRATE_PULSE0_DELAY_MAX.

CCA Entry [Control Signals]
Time Integrate Pulse 0 Delay

Note Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE.
Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE.
See Time Integrate Methods for the different usages of the pulse #0 delay parameter.

CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION

Description	Time integration pulse #0 width (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_TIME_INTEGRATE_PULSE0_DURATION_MIN ... CORACQ_CAP_TIME_INTEGRATE_PULSE0_DURATION_MAX.
CCA Entry	[Control Signals] Time Integrate Pulse 0 Duration
Note	Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE. See Time Integrate Methods for the different usages of the pulse #0 duration parameter.

CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY

Description	Time integration pulse #0 polarity. Applies to area scan cameras only.
Type	UINT32
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TIME_INTEGRATE_PULSE0_POLARITY. The capability returns the ORed combination of all supported values. See CORACQ_PRM_TIME_INTEGRATE_METHOD for further information on CORACQ_CAP_TIME_INTEGRATE_PULSE0_POLARITY.
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001), Time integration pulse is active low. CORACQ_VAL_ACTIVE_HIGH (0x00000002), Time integration pulse is active high.
CCA Entry	[Control Signals] Time Integrate Pulse 0 Polarity
Note	Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE. See Time Integrate Methods for the different usages of the pulse #0.

CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY

Description	Time integration pulse #1 delay (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	Range limits CORACQ_CAP_TIME_INTEGRATE_PULSE1_DELAY_MIN ... CORACQ_CAP_TIME_INTEGRATE_PULSE1_DELAY_MAX.
CCA Entry	[Control Signals] Time Integrate Pulse 1 Delay
Note	Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE. See Time Integrate Methods for the different usages of the pulse #1 delay parameter.

CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION

Description	Time integration pulse #1 width (in µs). Applies to area scan cameras only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_TIME_INTEGRATE_PULSE1_DURATION_MIN ... CORACQ_CAP_TIME_INTEGRATE_PULSE1_DURATION_MAX.
CCA Entry	[Control Signals] Time Integrate Pulse 1 Duration
Note	Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE. See Time Integrate Methods for the different usages of the pulse #1 duration parameter.

CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY

Description	Time integration pulse #1 polarity. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_TIME_INTEGRATE_PULSE1_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Time integration trigger pulse is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Time integration trigger pulse is active high.
CCA Entry	[Control Signals] Time Integrate Pulse 1 Polarity	
Note	Available only if CORACQ_CAP_TIME_INTEGRATE is TRUE. Validated only when CORACQ_PRM_TIME_INTEGRATE_ENABLE is TRUE. See Time Integrate Methods for the different usages of the pulse #1.	

CORACQ_PRM_TRIGGER_EXP_SIGNAL

Description	Obsolete. Use CORACQ_PRM_CONNECTOR_xxx parameters to describe the pinout of the camera.

CORACQ_PRM_VACTIVE

Description	Vertical active portion of the video (in lines per field). Applies to area scan cameras only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_VACTIVE_MIN ... CORACQ_CAP_VACTIVE_MAX, and also must be a multiple of CORACQ_CAP_VACTIVE_MULT.
CCA Entry	[Signal Timings] Vertical Active

CORACQ_PRM_VBACK_INVALID

Description	Invalid vertical portion of the video following the vertical blanking (in lines per field). Applies to area scan cameras only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_VBACK_INVALID_MIN ... CORACQ_CAP_VBACK_INVALID_MAX, and must be a multiple of CORACQ_CAP_VBACK_INVALID_MULT.
CCA Entry	[Signal Timings] Vertical Back Invalid

CORACQ_PRM_VBACK_PORCH

Description	Vertical back porch portion of the video (in lines per field). Applies to analog video signals only.
Type	UINT32
Limits	Range limits: CORACQ_CAP_VBACK_PORCH_MIN ... CORACQ_CAP_VBACK_PORCH_MAX, and must be a multiple of CORACQ_CAP_VBACK_PORCH_MULT.
CCA Entry	[Signal Timings] Vertical Back Porch

CORACQ_PRM_VFRONT_INVALID

Description Invalid vertical portion of the video preceding the vertical blanking (in lines per field). Applies to area scan cameras only.

Type UINT32

Limits Range limits: CORACQ_CAP_VFRONT_INVALID_MIN ... CORACQ_CAP_VFRONT_INVALID_MAX, and must be a multiple of CORACQ_CAP_VFRONT_INVALID_MULT.

CCA Entry [Signal Timings]
Vertical Front Invalid

CORACQ_PRM_VFRONT_PORCH

Description The video's vertical font porch (in lines per field). Applies to analog video signals only.

Type UINT32

Limits Range limits: CORACQ_CAP_VFRONT_PORCH_MIN ... CORACQ_CAP_VFRONT_PORCH_MAX, and must be a multiple of CORACQ_CAP_VFRONT_PORCH_MULT.

CCA Entry [Signal Timings]
Vertical Front Porch

CORACQ_PRM_VIDEO

Description Video type source.

Type UINT32

Limits This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_VIDEO.

Values

CORACQ_VAL_VIDEO_MONO (0x00000001)	Monochrome composite video source.
CORACQ_VAL_VIDEO_COLOR (0x00000002)	Color composite video source.
CORACQ_VAL_VIDEO_YC (0x00000004)	Y/C video source.
CORACQ_VAL_VIDEO_RGB (0x00000008)	RGB video source.
CORACQ_VAL_VIDEO_BAYER (0x00000010)	Bayer video source.
CORACQ_VAL_VIDEO_BICOLOR (0x00000020)	Bi-Color video source.

CCA Entry [Signal Description]
Video

CORACQ_PRM_VIDEO_LEVEL_MAX

Description Maximum value (in µV) o the video signal. Applies to analog video signal only.

Type UINT32

Limits This value must be greater or equal to CORACQ_PRM_VIDEO_LEVEL_MIN and must be in the range: [-(2**31)...(2**31)-1].

CCA Entry [Signal Description]
Video Level Maximum

Note For NTSC/RS-170 video standard signal, this value is usually equal to 714000 µV.
For PAL/CCIR video standard signal, this value is usually equal to 700000 µV.

If CORACQ_PRM_VIDEO_LEVEL_MIN and CORACQ_PRM_VIDEO_LEVEL_MAX are both set to 0, then the following default values will be used:
if PAL/CCIR video standard is selected: min = 0, max = 700000
else min = 53550, max = 714000.

CORACQ_PRM_VIDEO_LEVEL_MIN

Description	Minimum value (in µV) o the video signal. Applies to analog video signals only.
Type	INT32
Limits	This value must be smaller or equal to CORACQ_PRM_VIDEO_LEVEL_MAX and must be in the range: [-(2**31)...(2**31)-1].
CCA Entry	[Signal Description] Video Level Minimum
Note	For NTSC/RS-170 video standard signal, this value is usually equal to 53550 µV. For PAL/CCIR video standard signal, this value is usually equal to 0 µV. If CORACQ_PRM_VIDEO_LEVEL_MIN and CORACQ_PRM_VIDEO_LEVEL_MAX are both set to 0, then the following default values will be used: if PAL/CCIR video standard is selected: min = 0, max = 700000 else min = 53550, max = 714000.

CORACQ_PRM_VIDEO_STD

Description	Video source video standard.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_VIDEO_STD. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_VIDEO_STD_NON_STD (0x00000001)	Non-standard video source.
	CORACQ_VAL_VIDEO_STD_RS170_NTSC (0x00000002)	RS-170 and/or NTSC video source.
	CORACQ_VAL_VIDEO_STD_CCIR_PAL (0x00000004)	CCIR and/or PAL video source.
	CORACQ_VAL_VIDEO_STD_SECAM (0x00000008)	SECAM video source.
CCA Entry	[Signal Description] Video Standard	

CORACQ_PRM_VSYNC

Description	The video's vertical sync (in lines per field). Applies to area scan cameras only.
Type	UINT32
Limits	This value must be in the range CORACQ_CAP_VSYNC_MIN...CORACQ_CAP_VSYNC_MAX, and must be a multiple of CORACQ_CAP_VSYNC_MULT.
CCA Entry	[Signal Timings] Vertical Sync

CORACQ_PRM_VSYNC_POLARITY

Description	Vertical sync polarity. Applies to area scan cameras only.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_VSYNC_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	Vertical sync pulse is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	Vertical sync pulse is active high.
CCA Entry	[Synchronization Signals] Vertical Sync Polarity	

CORACQ_PRM_WEN_POLARITY

Description	Specifies the WEN (rite ENable) signal polarity that the acquisition device will consider as valid.	
Type	UINT32	
Limits	This value must match one of the supported capabilities of the acquisition device given by CORACQ_CAP_WEN_POLARITY. The capability returns the ORed combination of all supported values.	
Values	CORACQ_VAL_ACTIVE_LOW (0x00000001)	WEN is active low.
	CORACQ_VAL_ACTIVE_HIGH (0x00000002)	WEN is active high.
CCA Entry	[Control Signals] WEN Polarity	
Note	Validated only if CORACQ_PRM_WEN_ENABLE is TRUE.	

Configuration File Formats

Overview

This section covers the format descriptions for the information files describing camera definition parameters (.CCA) and acquisition parameters (.CVI). The camera configuration file (.CCF) is the combination of the .CCA and .CVI files into one file.

These parameters are stored in Sapera camera configuration files which an application loads to initialize the acquisition hardware. Note that all camera related parameters can be individually loaded by the application if a single acquisition source (hard-coded) program is desired.

Sapera LT supplies a number of camera definition files for popular cameras available on the market. The Sapera CamExpert tool simplifies making or modifying Sapera camera files and is described in the *Sapera LT User's* manual. Refer also to the CamExpert online help file and descriptive popup help for the various parameter fields.

Note that, in addition to the key names defined in the .CCA and .CVI files, the .CCF file may contain additional keys. This happens, for example, when saving a .CCF file for Teledyne DALSA cameras explicitly supported by CamExpert through the Camera Link serial port, for example, the Piranha Color. In some cases, the .CCA and .CVI keys are completely absent, and only the additional keys are present. This is the case for Genie cameras, which do not make use of the acquisition module with its capabilities and parameters.

Camera Definition File Description (CCA)

Sapera camera files (***.cca**) contain the parameters of specific cameras. Most of the information found in these files is the default settings that should never change for a given camera. Values can be written in decimal (for example, 16) or in hexadecimal (for example, 0x10).

The following tables contain each key name used by camera files. Under normal circumstances each ***.cca** file only the information required for a given camera. Note that the *.cca file contains all Sapera camera related parameters whether they are used or needed by the camera.

Key Name [General]	Related Parameter
Camera Name	CORACQ_PRM_CAM_NAME
Company Name	CORACQ_PRM_CAM_COMPANY_NAME
Model Name	CORACQ_PRM_CAM_MODEL_NAME
Version	Version of this file. This entry does not correspond to any parameter. 100: Initial Version 200: Formats are now indexes into a fix table independent of the Sapera values 300: Parameter CORACQ_PRM_TIME_INTEGRATE_POLARITY is now called CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY 301: New parameters CORACQ_PRM_LINE_INTEGRATE_PULSE_xxx, CORACQ_PRM_VIDEO_LEVEL_MIN/MAX

Key Name [Signal Description]	Related Parameter
Bayer Alignment	CORACQ_PRM_COLOR_ALIGNMENT
Channel	CORACQ_PRM_CHANNEL
Channels Order	CORACQ_PRM_CHANNELS_ORDER
Coupling	CORACQ_PRM_COUPLING
Field Order	CORACQ_PRM_FIELD_ORDER
Frame	CORACQ_PRM_FRAME
Interface	CORACQ_PRM_INTERFACE
Pixel Depth	CORACQ_PRM_PIXEL_DEPTH
Scan	CORACQ_PRM_SCAN
Signal	CORACQ_PRM_SIGNAL
Tap Output	CORACQ_PRM_TAP_OUTPUT
Tap 1 Direction	CORACQ_PRM_TAP_1_DIRECTION
Tap 2 Direction	CORACQ_PRM_TAP_2_DIRECTION
Tap 3 Direction	CORACQ_PRM_TAP_3_DIRECTION
Tap 4 Direction	CORACQ_PRM_TAP_4_DIRECTION
Tap 5 Direction	CORACQ_PRM_TAP_5_DIRECTION
Tap 6 Direction	CORACQ_PRM_TAP_6_DIRECTION
Tap 7 Direction	CORACQ_PRM_TAP_7_DIRECTION
Tap 8 Direction	CORACQ_PRM_TAP_8_DIRECTION
Taps	CORACQ_PRM_TAPS
Video	CORACQ_PRM_VIDEO
Video Level Maximum	CORACQ_PRM_VIDEO_LEVEL_MAX
Video Level Minimum	CORACQ_PRM_VIDEO_LEVEL_MIN
Video Standard	CORACQ_PRM_VIDEO_STD

Key Name [Signal Timings]	Related Parameter
Horizontal Active	CORACQ_PRM_HACTIVE
Horizontal Back Invalid	CORACQ_PRM_HBACK_INVALID
Horizontal Back Porch	CORACQ_PRM_HBACK_PORCH
Horizontal Front Invalid	CORACQ_PRM_HFRONT_INVALID
Horizontal Front Porch	CORACQ_PRM_HFRONT_PORCH
Horizontal Sync	CORACQ_PRM_HSYNC
Vertical Active	CORACQ_PRM_VACTIVE
Vertical Back Invalid	CORACQ_PRM_VBACK_INVALID
Vertical Back Porch	CORACQ_PRM_VBACK_PORCH
Vertical Front Invalid	CORACQ_PRM_VFRONT_INVALID
Vertical Front Porch	CORACQ_PRM_VFRONT_PORCH
Vertical Sync	CORACQ_PRM_VSYNC

Key Name [Pixel Clock]	Related Parameter
Pixel Clock Detection	CORACQ_PRM_PIXEL_CLK_DETECTION
Pixel Clock Frequency External	CORACQ_PRM_PIXEL_CLK_EXT
Pixel Clock Frequency Internal	CORACQ_PRM_PIXEL_CLK_INT
Pixel Clock Frequency 1:1	CORACQ_PRM_PIXEL_CLK_11
Pixel Clock Source	CORACQ_PRM_PIXEL_CLK_SRC

Key Name [Synchronization Signals]	Related Parameter
Horizontal Sync Polarity	CORACQ_PRM_HSYNC_POLARITY
Synchronization Source	CORACQ_PRM_SYNC
Vertical Sync Polarity	CORACQ_PRM_VSYNC_POLARITY

Key Name [Control Signals]	Related Parameter
Camera Line Trigger Frequency Maximum	CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MAX
Camera Line Trigger Frequency Minimum	CORACQ_PRM_CAM_LINE_TRIGGER_FREQ_MIN
Camera Reset Duration	CORACQ_PRM_CAM_RESET_DURATION
Camera Reset Method	CORACQ_PRM_CAM_RESET_METHOD
Camera Reset Polarity	CORACQ_PRM_CAM_RESET_POLARITY
Camera Time Integrate Duration Maximum	CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MAX
Camera Time Integrate Duration Minimum	CORACQ_PRM_CAM_TIME_INTEGRATE_DURATION_MIN
Camera Trigger Duration	CORACQ_PRM_CAM_TRIGGER_DURATION
Camera Trigger Method	CORACQ_PRM_CAM_TRIGGER_METHOD
Camera Trigger Polarity	CORACQ_PRM_CAM_TRIGGER_POLARITY
Data Valid Enable	CORACQ_PRM_DATA_VALID_ENABLE
Data Valid Polarity	CORACQ_PRM_DATA_VALID_POLARITY

Key Name [Control Signals]	Related Parameter
Frame Integrate Method	CORACQ_PRM_FRAME_INTEGRATE_METHOD
Frame Integrate Polarity	CORACQ_PRM_FRAME_INTEGRATE_POLARITY
Line Integrate Method	CORACQ_PRM_LINE_INTEGRATE_METHOD
Line Integrate Pulse 0 Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DELAY
Line Integrate Pulse 0 Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE0_DURATION
Line Integrate Pulse 0 Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE0_POLARITY
Line Integrate Pulse 1 Delay	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DELAY
Line Integrate Pulse 1 Duration	CORACQ_PRM_LINE_INTEGRATE_PULSE1_DURATION
Line Integrate Pulse 1 Polarity	CORACQ_PRM_LINE_INTEGRATE_PULSE1_POLARITY
Line Trigger Delay	CORACQ_PRM_LINE_TRIGGER_DELAY
Line Trigger Duration	CORACQ_PRM_LINE_TRIGGER_DURATION
Line Trigger Method	CORACQ_PRM_LINE_TRIGGER_METHOD
Line Trigger Polarity	CORACQ_PRM_LINE_TRIGGER_POLARITY
LineScan Direction	CORACQ_PRM_LINESCAN_DIRECTION
LineScan Direction Polarity	CORACQ_PRM_LINESCAN_DIRECTION_POLARITY
Time Integrate Method	CORACQ_PRM_TIME_INTEGRATE_METHOD
Time Integrate Pulse 0 Delay	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DELAY
Time Integrate Pulse 0 Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE0_DURATION
Time Integrate Pulse 0 Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE0_POLARITY
Time Integrate Pulse 1 Delay	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DELAY
Time Integrate Pulse 1 Duration	CORACQ_PRM_TIME_INTEGRATE_PULSE1_DURATION
Time Integrate Pulse 1 Polarity	CORACQ_PRM_TIME_INTEGRATE_PULSE1_POLARITY
WEN Polarity	CORACQ_PRM_WEN_POLARITY

Key Name [Connector Description]	Related Parameter
Camera Link Configuration	CORACQ_PRM_CAMLINK_CONFIGURATION
Exposure Input	CORACQ_PRM_CONNECTOR_EXPOSURE_INPUT
HD Input	CORACQ_PRM_CONNECTOR_HD_INPUT
Line Integrate Input	CORACQ_PRM_CONNECTOR_LINE_INTEGRATE_INPUT
Line Trigger Input	CORACQ_PRM_CONNECTOR_LINE_TRIGGER_INPUT
Linescan Direction Input	CORACQ_PRM_CONNECTOR_LINESCAN_DIRECTION_INPUT
Pixel Clock Output	CORACQ_PRM_CONNECTOR_PIXEL_CLK_OUTPUT
Reset/Trigger Input	CORACQ_PRM_CONNECTOR_RESET_TRIGGER_INPUT
VD Input	CORACQ_PRM_CONNECTOR_VD_INPUT
WEN Output	CORACQ_PRM_CONNECTOR_WEN_OUTPUT

Key Name [Custom Camera IO Control Signals]	Related Parameter
Max Control	This entry does not correspond to any parameter. The entry represents the number of custom I/O control defined in this section of the CCA file. ex. Max Control = 4
Control_0	CORACQ_PRM_CAM_IO_CONTROL

Key Name	Related Parameter
[Custom Camera IO Control Signals]	
	This entry has the following format: label, bits, level, input/output, polarity, default label: user defined descriptive label of the camera control (for example, BIN) bits: number of bits used by this control level: TTL/RS-422/24VOLTS/OPTO/LVTTL/12VOLTS input/output: direction of the control polarity: active high/low default: default value pin(optional): pin connector description ex. Control_1=CC1, 1, 2, 2, 2, 1 Control_0=CC1, 1, 2, 2, 2, 1,0x01020001 Control_1=CC2, 1, 2, 2, 2, 1,0x01020002 Control_2=CC3, 1, 2, 2, 2, 1,0x01020003 Control_3=CC4, 1, 2, 2, 2, 1,0x01020004 see also CORACQ_CAM_IO_CONTROL see also Pin Connector Description
Control_31	Control_31, 1, 2, 2, 2, 0 or Control_31,1,2,2,2,0,0x01020001

VIC Parameter File Description (CVI)

VIC parameter files (***.cvi**) contain the VIC settings for a specific acquisition module. Values can be written in decimal (for example, 16) or in hexadecimal (for example, 0x10). The following tables contain the key names used by the VIC parameter files.

Key Name [General]	Related Parameter
Vic Name	CORACQ_PRM_VIC_NAME
Version	Version of this file. This entry does not correspond to any parameter. 100: Initial Version 200: Formats are now indexes into a fix table independent of the Sapera values 300: New Parameters CORACQ_PRM_SHARED_xxx, CORACQ_PRM_FRAME_LENGTH, CORACQ_PRM_INT_FRAME_TRIGGER_xxx, CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT

Key Name [Input]	Related Parameter
Bit Ordering	CORACQ_PRM_BIT_ORDERING
Camera selector	CORACQ_PRM_CAMSEL
Planar Input Sources	CORACQ_PRM_PLANAR_INPUT_SOURCES

Key Name [Signal Conditioning]	Related Parameter
Brightness	CORACQ_PRM_BRIGHTNESS
Brightness Red	CORACQ_PRM_BRIGHTNESS_RED
Brightness Green	CORACQ_PRM_BRIGHTNESS_GREEN
Brightness Blue	CORACQ_PRM_BRIGHTNESS_BLUE
Contrast	CORACQ_PRM_CONTRAST
Contrast Red	CORACQ_PRM_CONTRAST_RED
Contrast Green	CORACQ_PRM_CONTRAST_GREEN
Contrast Blue	CORACQ_PRM_CONTRAST_BLUE
DC Restoration Mode	CORACQ_PRM_DC_REST_MODE
DC Restoration Start	CORACQ_PRM_DC_REST_START
DC Restoration Width	
Fix Filter Enable	CORACQ_PRM_FIX_FILTER_ENABLE
Fix Filter Selector	CORACQ_PRM_FIX_FILTER_SELECTOR
Hue	CORACQ_PRM_HUE
Programmable Filter Enable	CORACQ_PRM_PROG_FILTER_ENABLE
Programmable Filter Frequency	CORACQ_PRM_PROG_FILTER_FREQ
Saturation	CORACQ_PRM_SATURATION
Sharpness	CORACQ_PRM_SHARPNESS

Key Name [Stream Conditioning]	Related Parameter
Bayer Decoder Enable	CORACQ_PRM_COLOR_DECODER_ENABLE

Key Name [Stream Conditioning]	Related Parameter
Bayer Decoder Method	CORACQ_PRM_COLOR_DECODER_METHOD
Bayer Decoder White Balance Gain Red	CORACQ_PRM_WB_GAIN_RED
Bayer Decoder White Balance Gain Green	CORACQ_PRM_WB_GAIN_GREEN
Bayer Decoder White Balance Gain Blue	CORACQ_PRM_WB_GAIN_BLUE
Bayer Decoder White Balance Offset Red	CORACQ_PRM_WB_OFFSET_RED
Bayer Decoder White Balance Offset Green	CORACQ_PRM_WB_OFFSET_GREEN
Bayer Decoder White Balance Offset Blue	CORACQ_PRM_WB_OFFSET_BLUE
Crop Left	CORACQ_PRM_CROP_LEFT
Crop Top	CORACQ_PRM_CROP_TOP
Crop Height	CORACQ_PRM_CROP_HEIGHT
Crop Width	CORACQ_PRM_CROP_WIDTH
Decimate Count	CORACQ_PRM_DECIMATE_COUNT
Decimate Method	CORACQ_PRM_DECIMATE_METHOD
External Trigger Frame Count	CORACQ_PRM_EXT_TRIGGER_FRAME_COUNT
Frame Length	CORACQ_PRM_FRAME_LENGTH
Horizontal Sync Reference	CORACQ_PRM_HSYNC_REF
Lut Enable	CORACQ_PRM_LUT_ENABLE
Lut Number	CORACQ_PRM_LUT_NUMBER
Pixel Mask	CORACQ_PRM_PIXEL_MASK
Scale Horizontal	CORACQ_PRM_SCALE_HORZ
Scale Horizontal Method	CORACQ_PRM_SCALE_HORZ_METHOD
Scale Vertical	CORACQ_PRM_SCALE_VERT
Scale Vertical Method	CORACQ_PRM_SCALE_VERT_METHOD
Snap Count	CORACQ_PRM_SNAP_COUNT
Vertical Sync Reference	CORACQ_PRM_VSYNC_REF

Key Name [Control Signals]	Related Parameter
Camera Control Pulse 0 HD Align	CORACQ_PRM_CAM_CONTROL_PULSE0_HD_ALIGN
Camera Control Pulse 1 HD Align	CORACQ_PRM_CAM_CONTROL_PULSE1_HD_ALIGN
Camera Reset Delay	CORACQ_PRM_CAM_RESET_DELAY
Camera Reset Enable	CORACQ_PRM_CAM_RESET_ENABLE
Camera Trigger Delay	CORACQ_PRM_CAM_TRIGGER_DELAY
Camera Trigger Enable	CORACQ_PRM_CAM_TRIGGER_ENABLE
Control Signal Output 1	CORACQ_PRM_BOARD_SYNC_OUTPUT1
Control Signal Output 2	CORACQ_PRM_BOARD_SYNC_OUTPUT2
External Frame Trigger Detection	CORACQ_PRM_EXT_FRAME_TRIGGER_DETECTION
External Frame Trigger Enable	CORACQ_PRM_EXT_FRAME_TRIGGER_ENABLE

Key Name [Control Signals]	Related Parameter
External Frame Trigger Level	CORACQ_PRM_EXT_FRAME_TRIGGER_LEVEL
External Frame Trigger Source	CORACQ_PRM_EXT_FRAME_TRIGGER_SOURCE
External Line Trigger Detection	CORACQ_PRM_EXT_LINE_TRIGGER_DETECTION
External Line Trigger Enable	CORACQ_PRM_EXT_LINE_TRIGGER_ENABLE
External Line Trigger Level	CORACQ_PRM_EXT_LINE_TRIGGER_LEVEL
External Line Trigger Source	CORACQ_PRM_EXT_LINE_TRIGGER_SOURCE
External Trigger Detection	CORACQ_PRM_EXT_TRIGGER_DETECTION
External Trigger Duration	CORACQ_PRM_EXT_TRIGGER_DURATION
External Trigger Enable	CORACQ_PRM_EXT_TRIGGER_ENABLE
External Trigger Ignore Delay	CORACQ_PRM_EXT_TRIGGER_IGNORE_DELAY
External Trigger Level	CORACQ_PRM_EXT_TRIGGER_LEVEL
External Trigger Source	CORACQ_PRM_EXT_TRIGGER_SOURCE
Frame Integrate Count	CORACQ_PRM_FRAME_INTEGRATE_COUNT
Frame Integrate Enable	CORACQ_PRM_FRAME_INTEGRATE_ENABLE
Internal Frame Trigger Enable	CORACQ_PRM_INT_FRAME_TRIGGER_ENABLE
Internal Frame Trigger Freq	CORACQ_PRM_INT_FRAME_TRIGGER_FREQ
Internal Line Trigger Enable	CORACQ_PRM_INT_LINE_TRIGGER_ENABLE
Internal Line Trigger Freq	CORACQ_PRM_INT_LINE_TRIGGER_FREQ
Line Integrate Duration	CORACQ_PRM_LINE_INTEGRATE_DURATION
Line Integrate Enable	CORACQ_PRM_LINE_INTEGRATE_ENABLE
Line Trigger Enable	CORACQ_PRM_LINE_TRIGGER_ENABLE
LineScan Direction Output	CORACQ_PRM_LINESCAN_DIRECTION_OUTPUT
Master Mode	CORACQ_PRM_MASTER_MODE
Master Mode Horizontal Sync Polarity	CORACQ_PRM_MASTER_MODE_HSYNC_POLARITY
Master Mode Vertical Sync Polarity	CORACQ_PRM_MASTER_MODE_VSYNC_POLARITY
Shaft Encoder Enable	CORACQ_PRM_SHAFT_ENCODER_ENABLE
Shaft Encoder Level	CORACQ_PRM_SHAFT_ENCODER_LEVEL
Shaft Encoder Pulse Drop	CORACQ_PRM_SHAFT_ENCODER_DROP
Strobe Delay	CORACQ_PRM_STROBE_DELAY
Strobe Delay 2	CORACQ_PRM_STROBE_DELAY_2
Strobe Duration	CORACQ_PRM_STROBE_DURATION
Strobe Enable	CORACQ_PRM_STROBE_ENABLE
Strobe Level	CORACQ_PRM_STROBE_LEVE
Strobe Method	CORACQ_PRM_STROBE_METHOD
Strobe Polarity	CORACQ_PRM_STROBE_POLARITY
Time Integrate Delay	CORACQ_PRM_TIME_INTEGRATE_DELAY
Time Integrate Duration	CORACQ_PRM_TIME_INTEGRATE_DURATION
Time Integrate Enable	CORACQ_PRM_TIME_INTEGRATE_ENABLE
Vertical Timeout Delay	CORACQ_PRM_VERTICAL_TIMEOUT_DELAY
WEN Enable	CORACQ_PRM_WEN_ENABLE

Key Name [Output]	Related Parameter

Output Enable	CORACQ_PRM_OUTPUT_ENABLE	
Output Format	1: Mono 8	15: RGB161616
	3: Mono 16	19: UYVY
	7: Mono 32	20: YUY2
	10: RGB5551	21: YVYU
	11: RGB565	22: YUYV
	12: RGB888	23: Y411
	13: RGB8888	24: Y211
	14: RGB101010	38: RGB16161616
	See also CORACQ_PRM_OUTPUT_FORMAT	

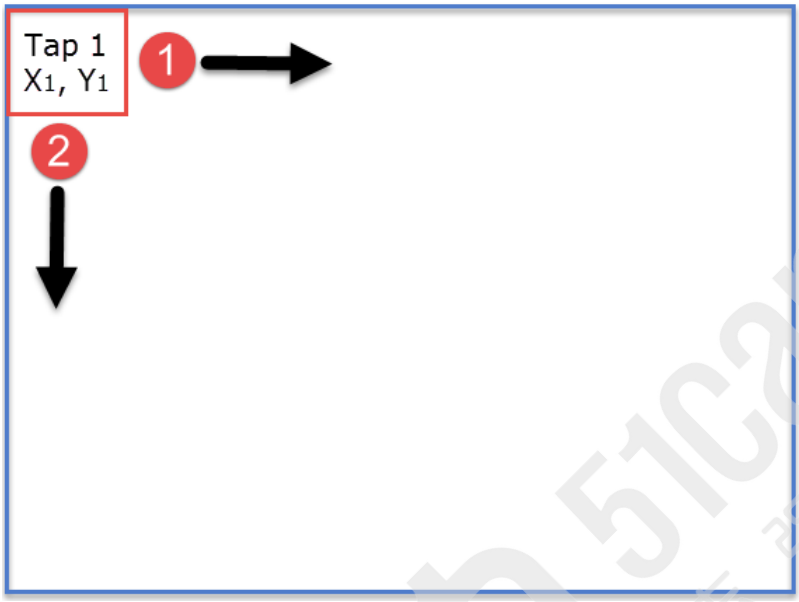
Key Name [Shared Control Signals]	**Related Parameter**
Camera Reset	CORACQ_PRM_SHARED_CAM_RESET
Camera Trigger	CORACQ_PRM_SHARED_CAM_TRIGGER
External Trigger	CORACQ_PRM_SHARED_EXT_TRIGGER
Frame Integrate	CORACQ_PRM_SHARED_FRAME_INTEGRATE
Strobe	CORACQ_PRM_SHARED_STROBE
Time Integrate	CORACQ_PRM_SHARED_TIME_INTEGRATE

Appendix: Tap Geometry Settings

The following sections describe widely used tap geometries and the required parameter settings. Currently, only are scan geometries are described, but line scan geometries can be inferred from these settings. The GeniCam standard naming convention is used, including corresponding descriptions.

1 Single Tap Geometries

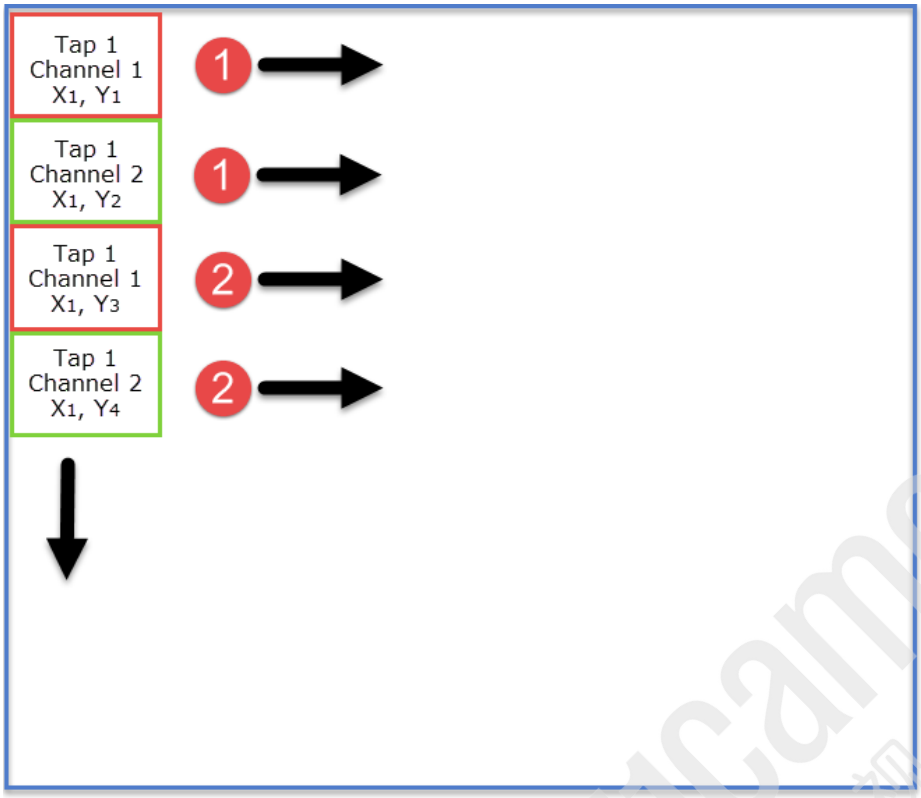
1X-1Y (area-scan): 1 zone in X, 1 Zone in Y = One tap left to right.



Parameter	Value
CORACQ_PRM_TAPS	1
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL

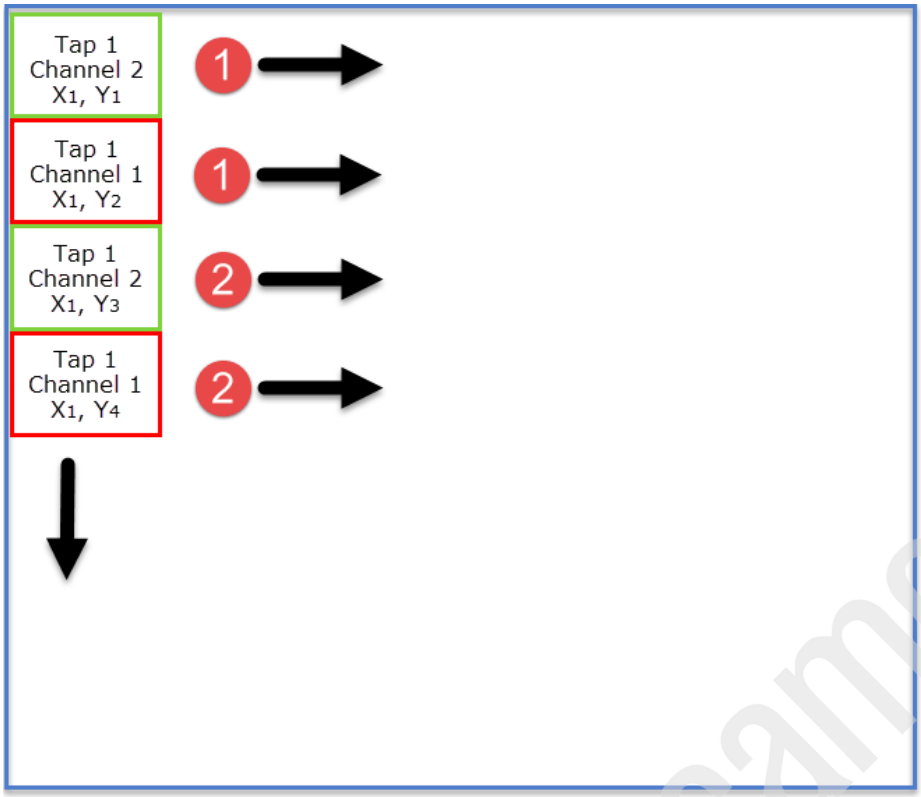
One Tap with Two Channels

1X-1Y2 (area-scan): 1 zones in X, 2 zones in Y: 2 interline channel, even A



Parameter	Value
CORACQ_PRM_TAPS	1
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_CHANNEL	2
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

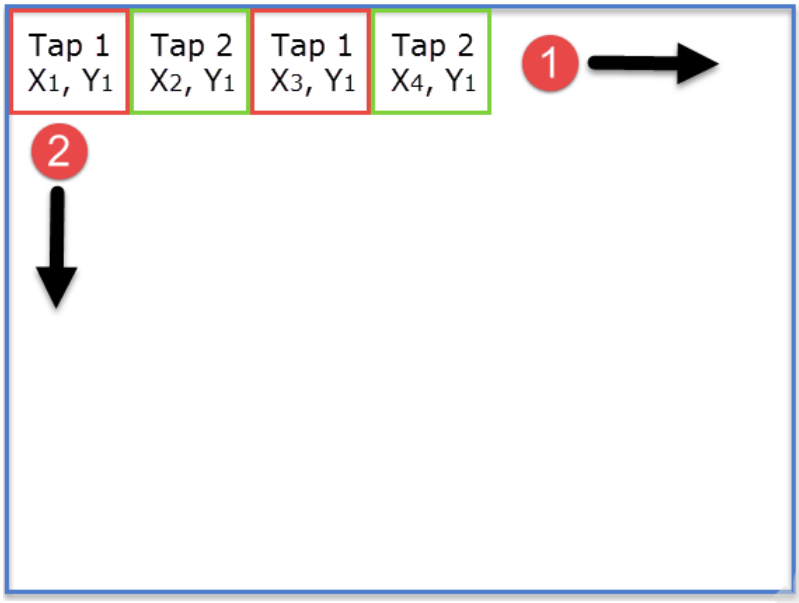
1X-1Y2 (area-scan): 1 zones in X, 1 zone in Y: 2 interline channel, even B



Parameter	Value
CORACQ_PRM_TAPS	1
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_CHANNEL	2
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_REVERSE (0x00000002)

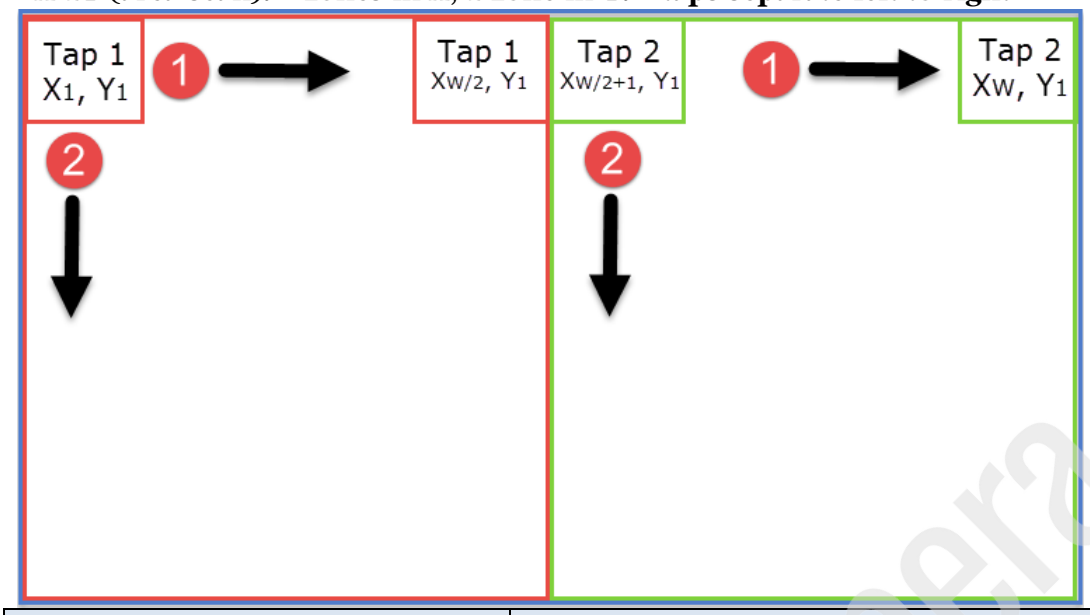
Dual Tap Geometries

1X2-1Y (area-scan): 1 zone in X with 2 taps, 1 Zone in Y = 2 Taps Interleaved



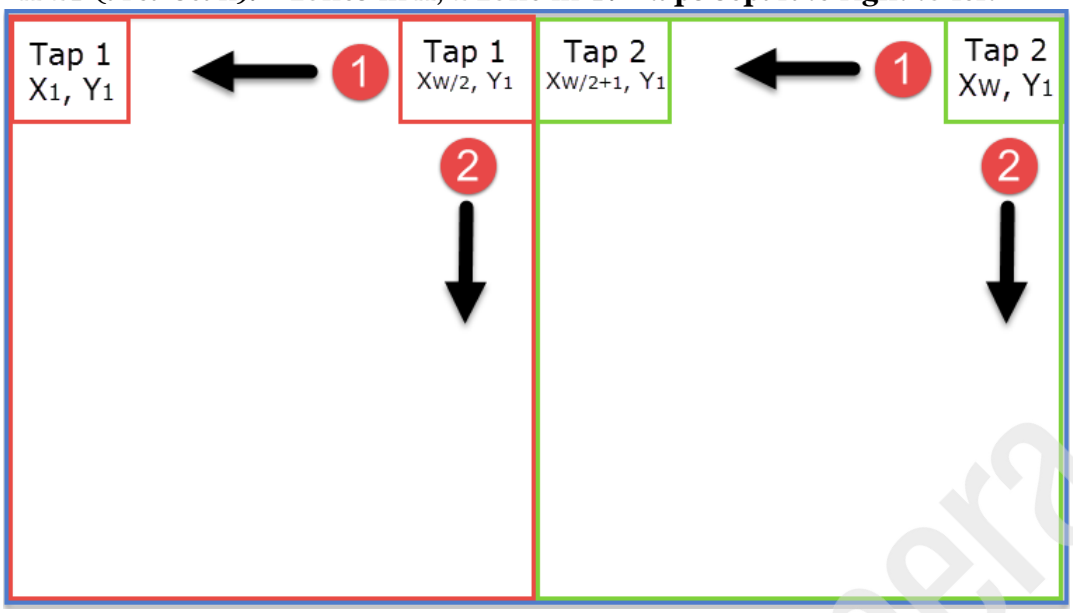
Parameter	Value
CORACQ_PRM_TAPS	2
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_PARALLEL (0x00000004)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL

2X-1Y (area-scan): 2 zones in X, 1 zone in Y: 2 taps separate left to right



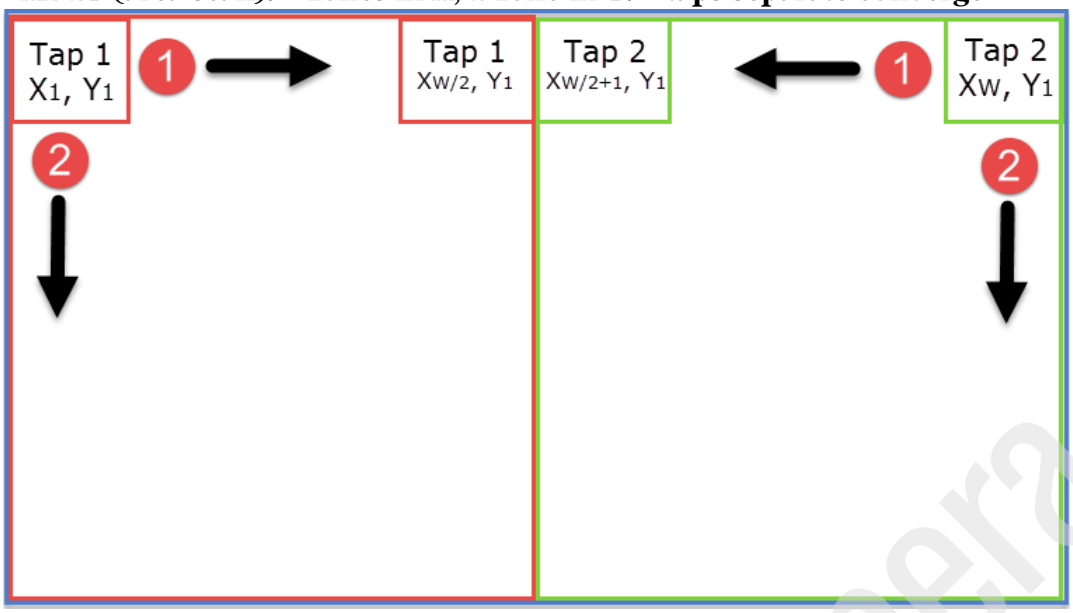
Parameter	Value
CORACQ_PRM_TAPS	2
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL

2X-1Y (area-scan): 2 zones in X, 1 zone in Y: 2 taps separate right to left



Parameter	Value
CORACQ_PRM_TAPS	2
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 22, hex = 0x16) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL

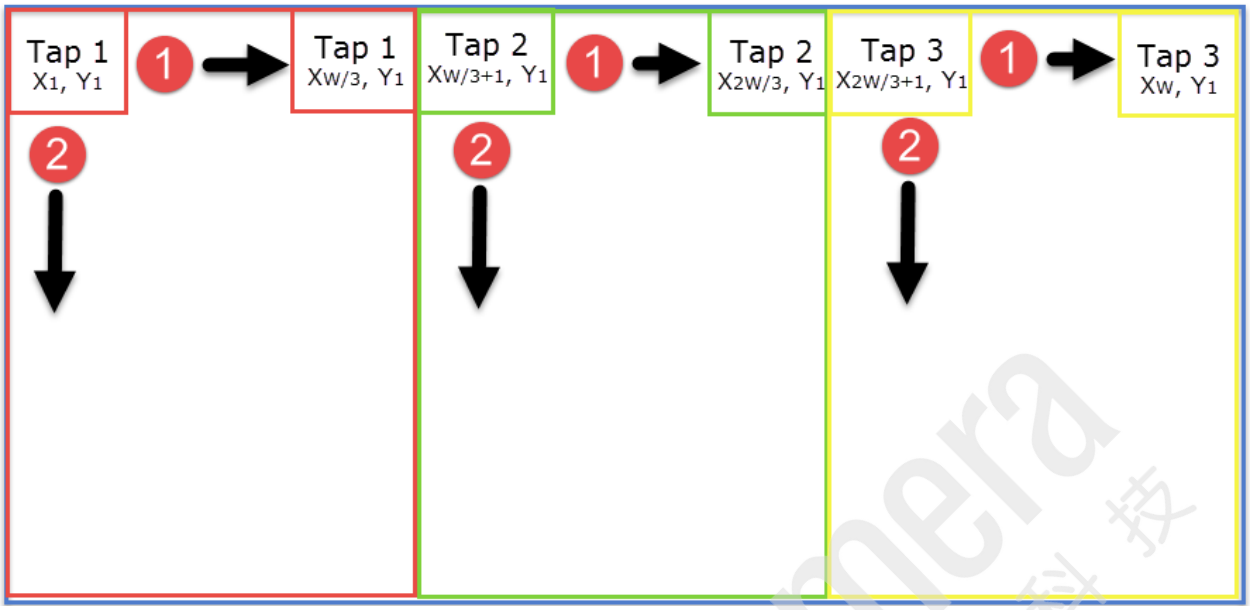
2XE-1Y (area-scan): 2 zones in X, 1 zone in Y: 2 taps separate converge



Parameter	Value
CORACQ_PRM_TAPS	2
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	The following values ORed (decimal = 22, hex = 0x16) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL

3 Tap Geometries

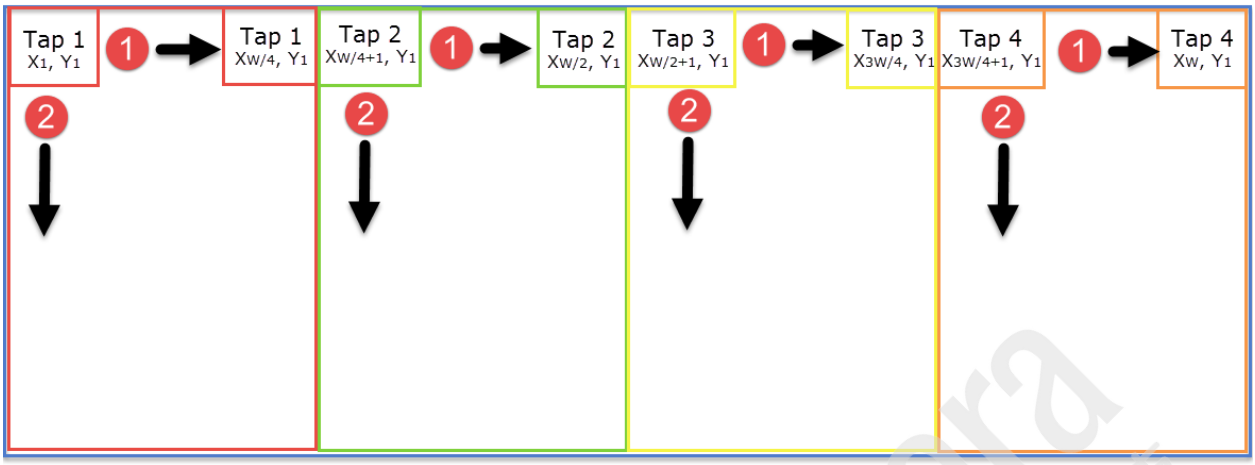
3X-1Y (area-scan): 2 zones in X, 1 zone in Y: 3 taps separate left to right



Parameter	Value
CORACQ_PRM_TAPS	3
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

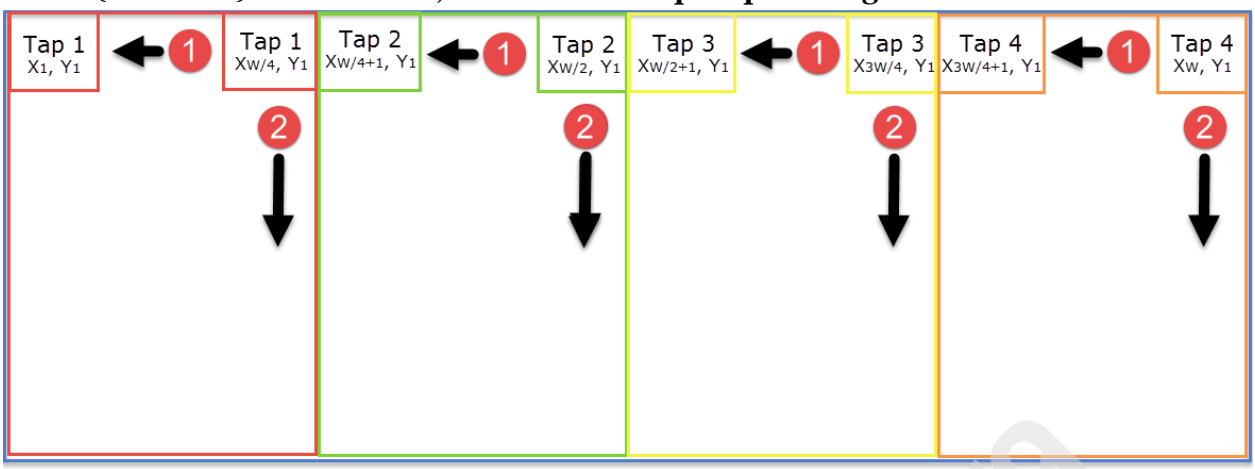
4 Tap Geometries

4X-1Y (area-scan): 4 zones in X, 1 zone in Y: 4 taps separate left to right



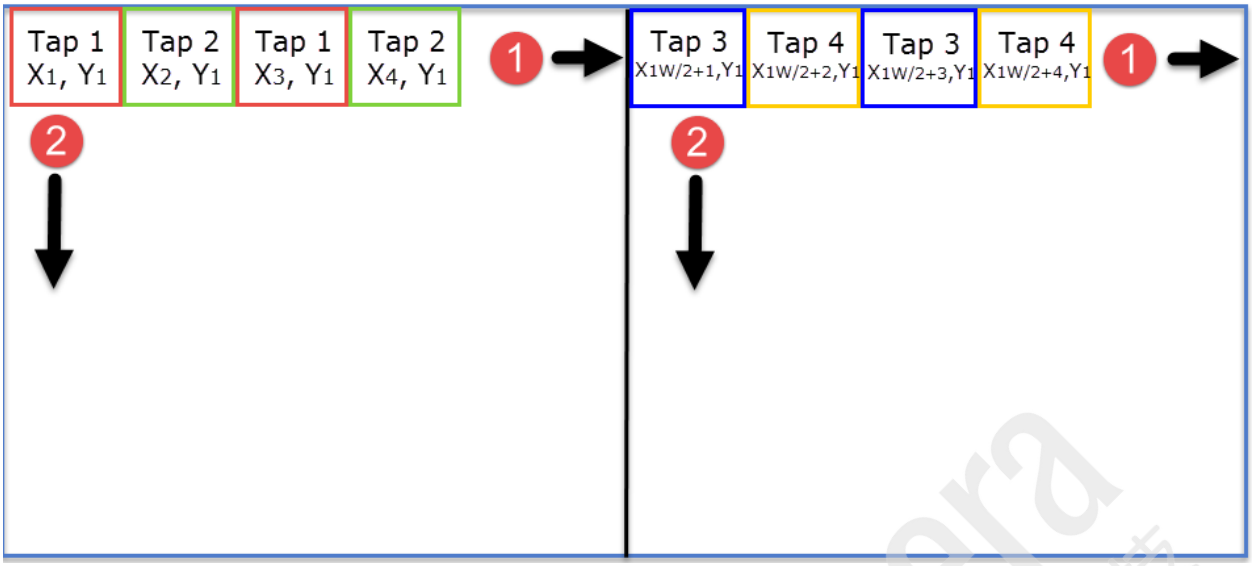
Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_4_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

4X-1Y (area-scan): 4 zones in X, 1 zone in Y: 4 taps separate right to left



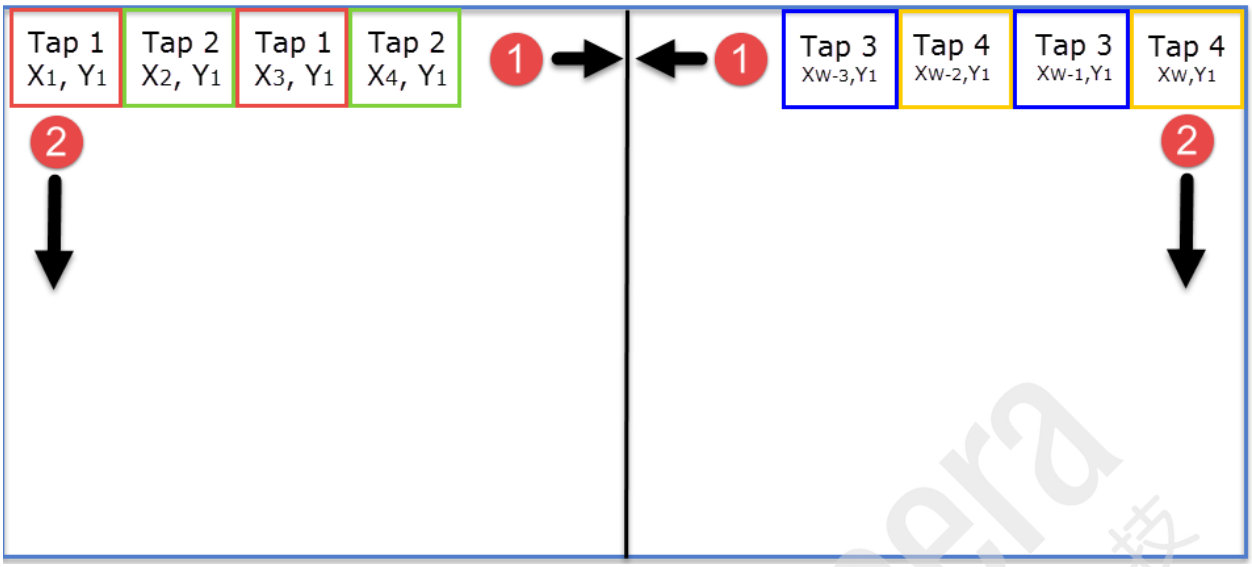
Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 22, hex = 0x16) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_4_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

2X2-1Y (area-scan): 2 zones in X with 2 taps, 1 zone in Y: 4 taps 2 segments interleaved



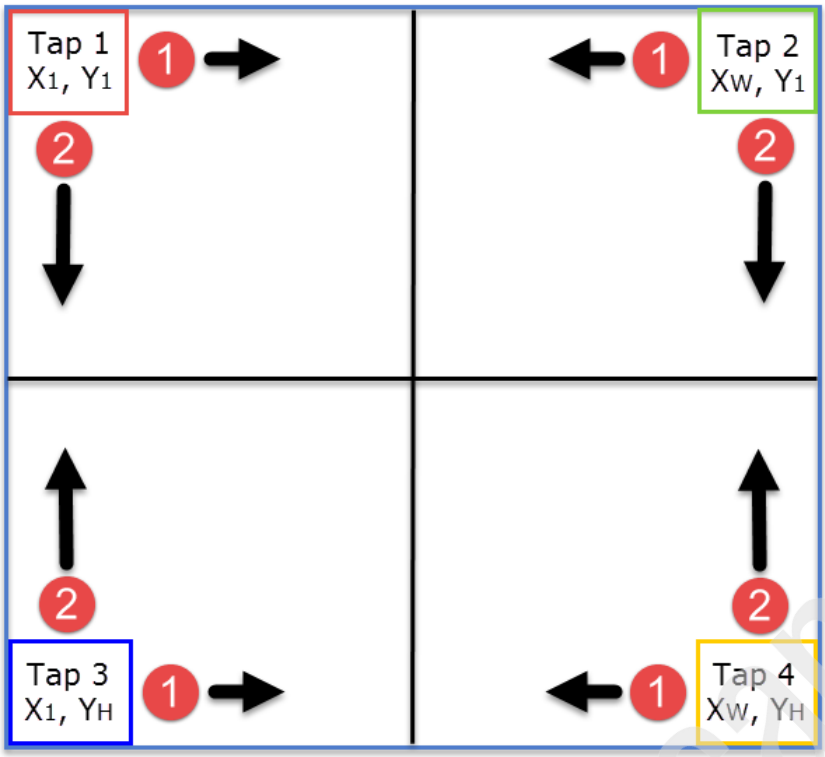
Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_ALTERNATE (0x00000001)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_4_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

2X2E-1Y (area-scan): 2 zones in X with 2 taps and end extraction, 1 zone in Y: 4 taps interleaved converge



Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_ALTERNATE (0x00000001)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	The following values ORed (decimal = 22, hex = 0x16) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_4_DIRECTION	Same as CORACQ_PRM_TAP_3_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

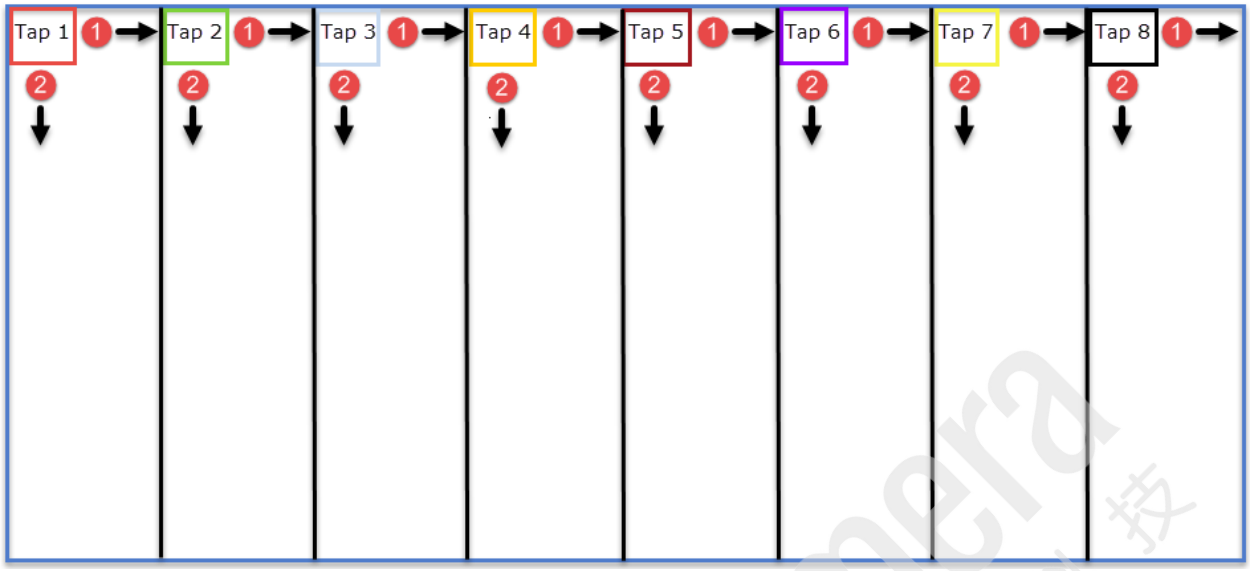
2X2E-2YE (area-scan): 2 zones in X with 2 taps, 2 zones in Y with 2 taps and end extraction, 1 zone in Y: 4 quadrant converge



Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_SEGMENTED (0x00000002)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	The following values ORed (decimal = 22, hex = 0x16) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_3_DIRECTION	The following values ORed (decimal = 73, hex = 0x49) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_BOT (0x00000040)
CORACQ_PRM_TAP_4_DIRECTION	The following values ORed (decimal = 74, hex = 0x4A) CORACQ_VAL_TAP_DIRECTION_RL (0x00000002) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_BOT (0x00000040)
CORACQ_PRM_CHANNEL	2
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

8 Tap Geometries

1X8-1Y (area-scan): 1 zones in X with 8 taps, 1 zone in Y: 8 taps interleaved



Parameter	Value
CORACQ_PRM_TAPS	4
CORACQ_PRM_TAP_OUTPUT	CORACQ_VAL_TAP_OUTPUT_ALTERNATE (0x00000001)
CORACQ_PRM_TAP_1_DIRECTION	The following values ORed (decimal = 21, hex = 0x15) CORACQ_VAL_TAP_DIRECTION_LR (0x00000001) CORACQ_VAL_TAP_DIRECTION_UD (0x00000004) CORACQ_VAL_TAP_DIRECTION_FROM_TOP (0x00000010)
CORACQ_PRM_TAP_2_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_3_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_4_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_5_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_6_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_7_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_TAP_8_DIRECTION	Same as CORACQ_PRM_TAP_1_DIRECTION
CORACQ_PRM_CHANNEL	1
CORACQ_PRM_CHANNELS_ORDER	CORACQ_VAL_CHANNELS_ORDER_NORMAL (0x00000001)

Contact Information

Sales Information

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