

## Ifm Efector Dualis Object Recognition Sensor

### Information Sheet for Crimson v3.0+

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#### Compatible Devices

Object recognition sensor O2D22x.

#### Verified Device

O2D224.

#### Overview

This note describes 2 drivers, a Camera Data Driver and a Camera Image driver, for use with the ifm effector Dualis Object Recognition Sensor O2DDx. Due to the connection limit on the device, **only one**, not both, of these may be used per camera.

Communication success is highly dependent upon consistent configuration between the Red Lion unit and the camera. Reading the Error Code value in many cases is helpful in diagnosing communication issues.

#### Device Configuration

##### The Camera Image Driver

##### *Process Interface*

Protocol Version – The protocol version used during communications should be configured to match that configured in the device.

The Start, Stop and Separator strings used in the Result message should be set to match those configured in the device.

Image Access Method – The message used to access the Image can be configured from one of the following 5 options:

1. Result Message – The device is able to output the Result Output message without being requested by the G3.

2. Last Good Image (Command I) – This method only accesses the last good image.
3. Last Bad Image (Command F) – This method only accesses the last failed image.
4. Last Result (Command R) – This method accesses the last image combined with result information.
5. Release Trigger (Command T) – This method releases a trigger and accesses that image with result information.

## The Camera Data Driver

### *Process Interface*

Protocol Version – The protocol version used during communications may be configured to match that configured in the device.

The Start, Stop and Separator strings used in the Result message maybe set to match those configured in the device.

## **Accessing Data**

### The Camera Image Driver

Certain data items may be accessed using DevCtrl calls with appropriate arguments, detailed below. DevCtrl syntax is as follows...

DevCtrl(number Device, number Function, string Value)

Function	Value	Usage	Image Access				
			1	2	3	4	5
1		Request the Trigger Pulse	N	Y	Y	Y	Y
2		Read Trigger Pulse Status ( 2 – Pending, 1 – Successful, 0 – Failed)					
3	result	Total Result (1 – PASS, 0 - FAIL)	Y	N	N	Y	Y
	match	Overall Match Quality	Y	N	N	Y	Y
4		Error Code	Y	Y	Y	Y	Y
5	total	Total Number of Evaluations	N	Y	Y	Y	Y
	good	Number of Good Evaluations	N	Y	Y	Y	Y
	bad	Number of Bad Evaluations	N	Y	Y	Y	Y
6	enable	Enable Statistics	N	Y	Y	Y	Y
	disable	Disable Statistics	N	Y	Y	Y	Y

Function 1 – Request the Trigger pulse. This command releases the trigger and causes an image to be evaluated. Note – this will result in a communication transaction with the device and is intended to be called when an image is to be triggered.

Function 3 – Result message evaluation result.

Function 4 – The Error Code. In the event that a request for an image cannot be processed, the driver will request the Error Code from the device. Refer to ifm efector documentation for the error code meaning.

Function 5 – Statistics. If enabled (via DevCtrl function 6) on a successful image capture, the driver can request the Statistics form the device.

Function 6 – Statistics control. Enable the Statistics request.

### The Camera Data Driver

The data items accessed by the Camera Data Driver are described below.

<b>Name</b>	<b>Description</b>	<b>Access</b>
Protocol	Protocol Version	Read/Write
Error	Error Code	Read Only
Trigger	Trigger Pulse	Write Only
Stats	Statistics	Read Only
Result	Evaluation result	Read Only

Protocol Version – Set the Protocol Version used during communication with the device.

Error Code – Request the Error Code from the device. Refer to ifm efector documentation for the error code meaning.

Trigger Pulse – Release the trigger and evaluate the image.

Statistics – Request the Statistic (Total (index = 0), Good (index = 1), Bad (index = 2)) from the device.

Result – Request the Evaluation Result (Result (index = 0), Match (index = 1)) from the device.

## **Cable Information**

Ethernet cable as supplied with device.

## **Revision History**

06/15/12 – Created

09/28/12 – Added additional Overview notes and Read Trigger Pulse Status.