

# Datasheet

oToBrite Electronics, Inc



oToCAM235



## 1. General Description

The oToCAM235 is an automotive grade camera for the application of autonomous driving and CMS. It uses high sensitive CMOS sensor to perform good image quality for the detection purpose of the system product.

## 2. Product specification

No.	Item	Specification
1	Image sensor	CMOS (Sony ISX 019)
2	Number of pixels (default)	1280(H) ×720 (V) (default setting)
3	View angle(H/V)	HFOV : 128° ; VFOV72°
4	Resolution (Center/Corner)	Center TV line $\geq$ 430 ; Corner TV line $\geq$ 350
5	Color filter array	RGGB
6	Output Interface	FPD-Link III with POC
7	Output Formats	Parallel 8-bit YCbCr data (uyvy)
8	Lens structure	5G1P
9	Lens F No.	F2.1
10	Power over coaxial (POC)	DC 6~12V
11	Startup time of power in	Within 500ms
12	Frame rate (default)	30 fps (default setting)
13	Exposure Control	DOL3
14	Serializer	TI DS90UB913A-Q1
15	Camera Current Consumption	Below 120mA @6V
16	Operating Temperature	-40°C ~ +85°C
17	Storage temperature Range	-40°C ~ +95°C
18	Waterproof	IP 67
19	Dimension(mm)	28.6*24.6*30.2mm (exclude FAKRA connector)
20	Weight	28g
21	Image sensor	CMOS (Sony ISX 019)

### 3. Outline Drawing

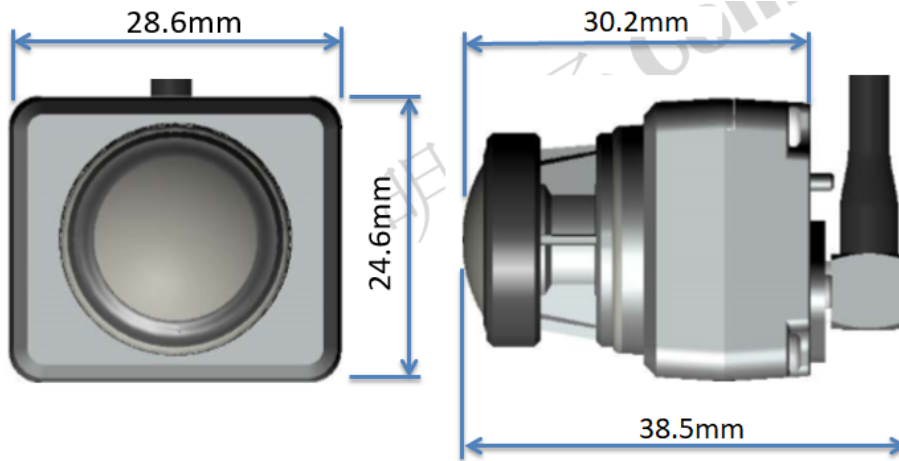


Figure 1. oToCAM235 Diagram (the bracket is optional and different for different car models)

### 4. Interface, Cables and Connectors (Male and Female)

#### 4.1 Connectors of pigtail cable

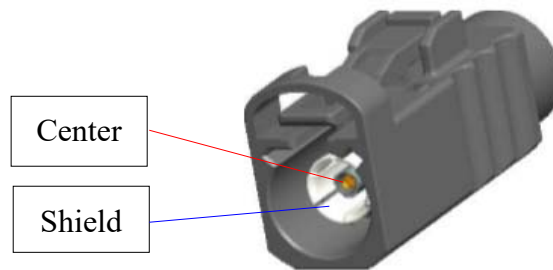


Figure 2. DEREN 6A0103-026R

#### 4.2 LVDS cable (POC) with Fakra connector

Cable length: 150mm (+10/0 mm)

Connector type: DEREN 6A0104-005R



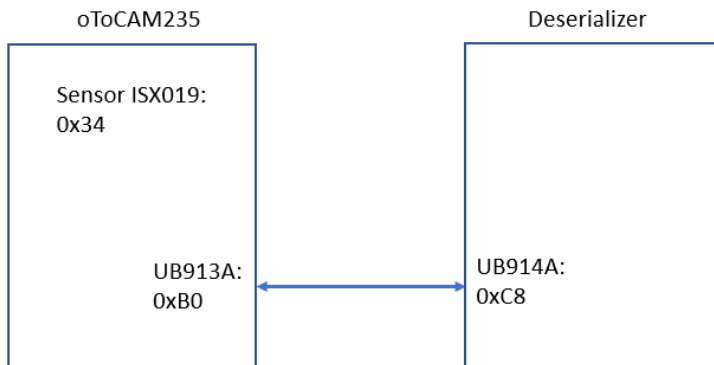
Figure 2.1 DEREN 6A0104-005R

Pin definition:

Pin No.	Signal Name	Operation Voltage and Current
Center	DOUT	Min. 0.32V, Max. 0.412V
	PWR	Typ. 90mA @6V / 25°C
Shield	Shield GND	

## 5. Applications

### 5.1. I2C ID Address



### 5.2. Initialization



### 5.3. Deserializer (TI 914A) Settings

1. DS90UB914A, Set Mode and OSS Select (OEN\_OSS Override:1, OEN Select:1, OSS Select:1, MODE\_OVERRIDE:1, MODE\_10-bit mode:1)
2. DS90UB914A, Selects the FPD-III serial input channel

### 5.4. Sensor (ISX019) Register Settings

Sensor setting will be loaded from on-board SPI flash automatically after power up.

## 6. Special Note

ISX019 is System On Chip image sensor with ISP (Image Signal Processor).  
Image are captured and transmitted with 8-bit YCbCr data from camera through coax cable.  
Usually, Gamma curve is applied to get 8-bit image to improve dynamic range for application.

## 7. System Configuration (TBD)

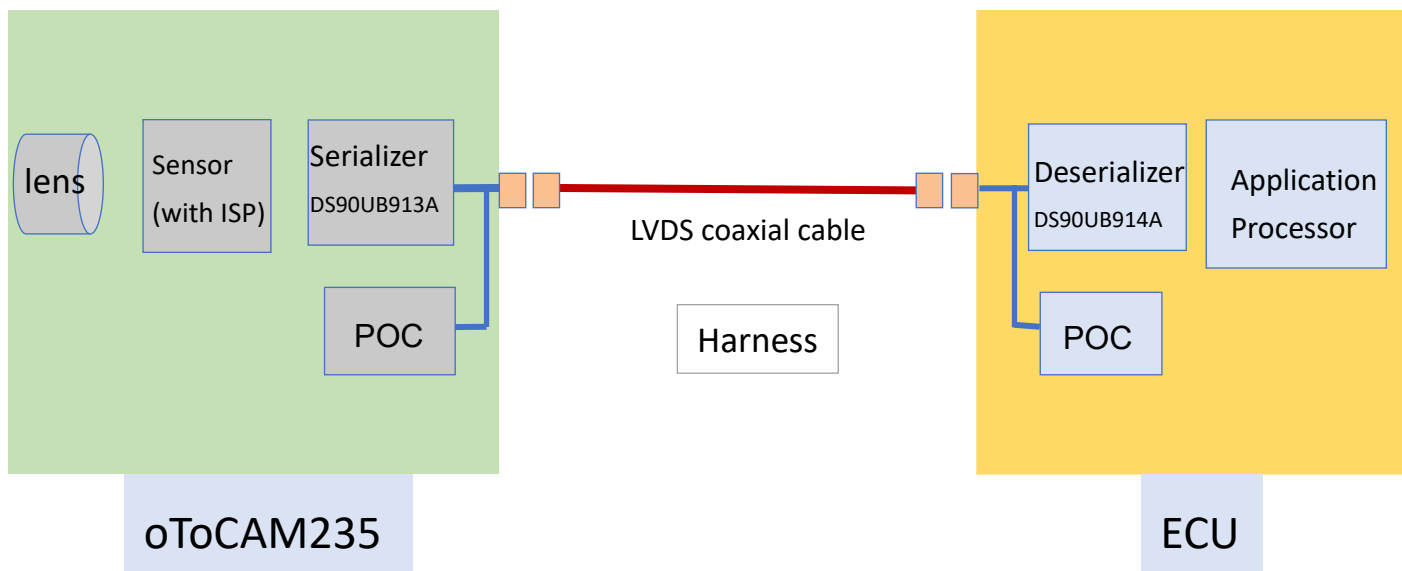


Figure 3. System Configuration

TI FPD-Link III Deserialzer must be used as receiver in ECU for connecting oToCAM235.