

Datasheet

oToBrite Electronics, Inc



oToCAM251

<u>Revision</u>	<u>Description</u>	<u>Release Date</u>
1.0	First Release	Oct., 31, 2022
1.1	Update specification and outline drawing.	Dec., 8, 2022
1.2	Update specification	Feb, 16, 2023
1.3	Update specification	Feb.20, 2023

1. General Description

The oToCAM251 is an automotive Driver Monitoring Camera (DMC). It uses high sensitive 1/4” Mono CMOS sensor. It also comes with two IR LED @940nm. oToCAM251 is a perfect selection for in cabin automotive application.

2. Product specification

No.	Item	Specification
1	Image sensor	CMOS (VB56G4A)
2	Number of pixels	Mega-pixel (1088x1080) (Default Setting)
3	View angle(H)	30.3 degree
4	Resolution (Center/Corner)	(TBD)
5	Color filter array	Mono
6	Output Interface	FPD-Link III with POC
7	Output Formats	10-bit raw data (Fakra connector on pig-tail)
8	Lens structure	2G2P with IR940 filter
9	Lens F No.	F2.0
10	Power source (POC)/Typical	DC 12V
11	Startup time of power in	Within 200ms
12	Frame rate	30 fps (default setting)
13	Exposure Control	External AE
14	Serializer	TI DS90UB953
15	Camera Current Consumption	Below 150mA @ 12V (include LED)
16	LED	Two IR (940nm) LEDs
17	LED Power	Max. 1 watts
18	Operating Temperature	-40°C ~ +85°C
19	Storage temperature Range	-40°C ~ +95°C
20	Waterproof	N/A
21	Dimension(mm)	44.2x25x22.8mm (exclude Fakra connector)
22	Weight	38.4g

3. Outline Drawing

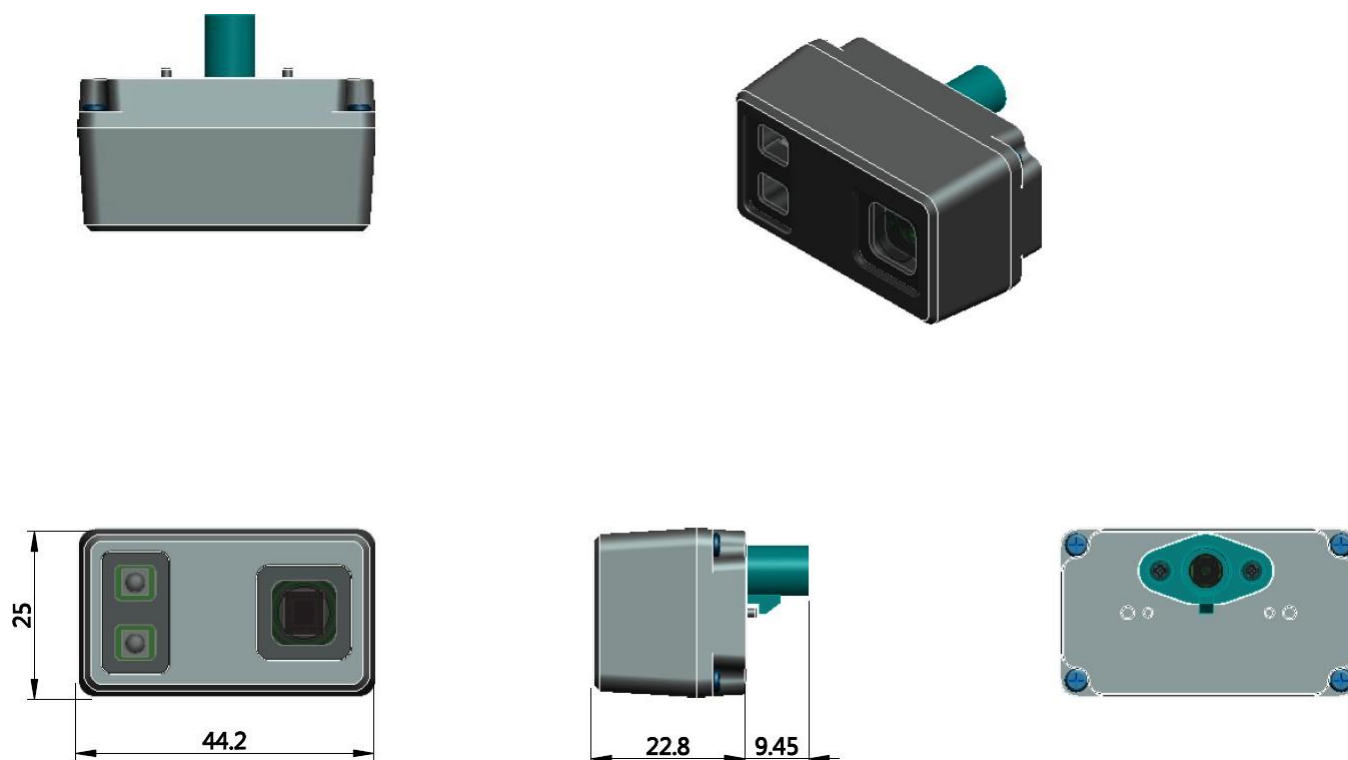


Figure 1. oToCAM251 Diagram (the bracket is optional and different for different car models)

4. Interface, Cables and Connectors

4.1 Connectors: Amphenol SMB1251Y3-002-TT5GP-50

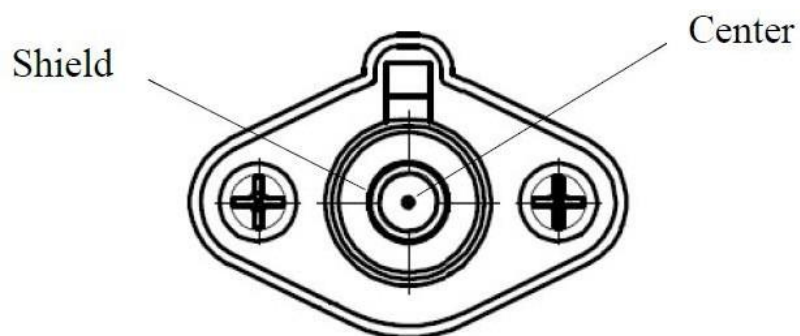


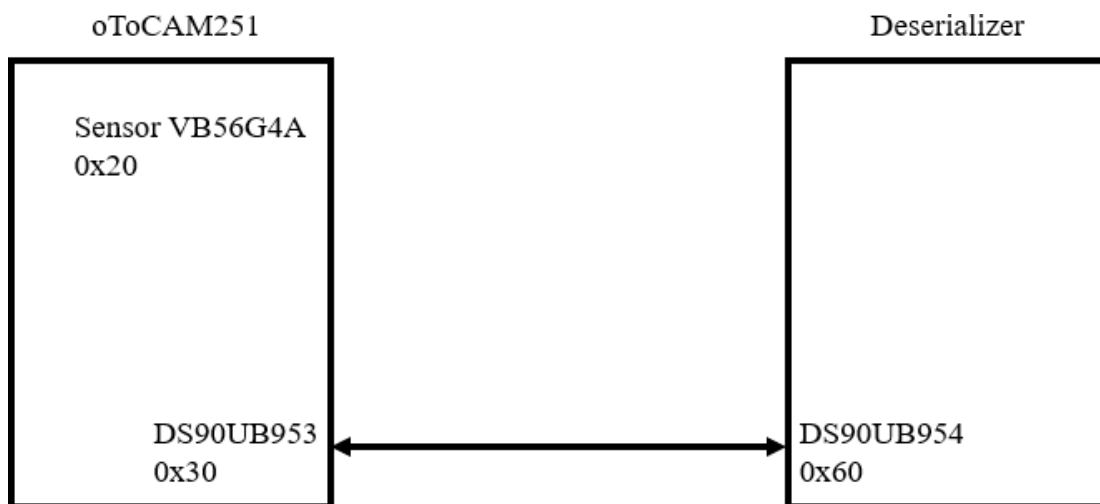
Figure 2. Amphenol SMB1251Y3-002-TT5GP-50

4.2 Pin definition:

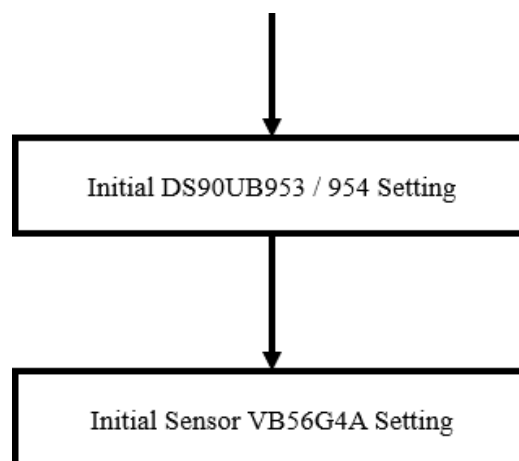
Pin No.	Signal Name	Operation Voltage and Current
Center	DOUT	Min. 0.320V, Max. 0.412V
	PWR	Typ. 150mA @12V
Shield	Shield GND	

5. Applications

5.1. I2C ID Address



5.2. Initialization



5.3. Sensor (VB56G4A) Register Settings

(The sensor registers file will be provided under NDA and/or samples purchased)

5.4 LED Setting

N/A

6. Special Note

There is no ISP (Image Signal Processor) inside this camera, and the AE function is applied by external ECU. Raw image data 10bits are captured and transmitted from camera through LVDS cable.

7. System Configuration (TBD)

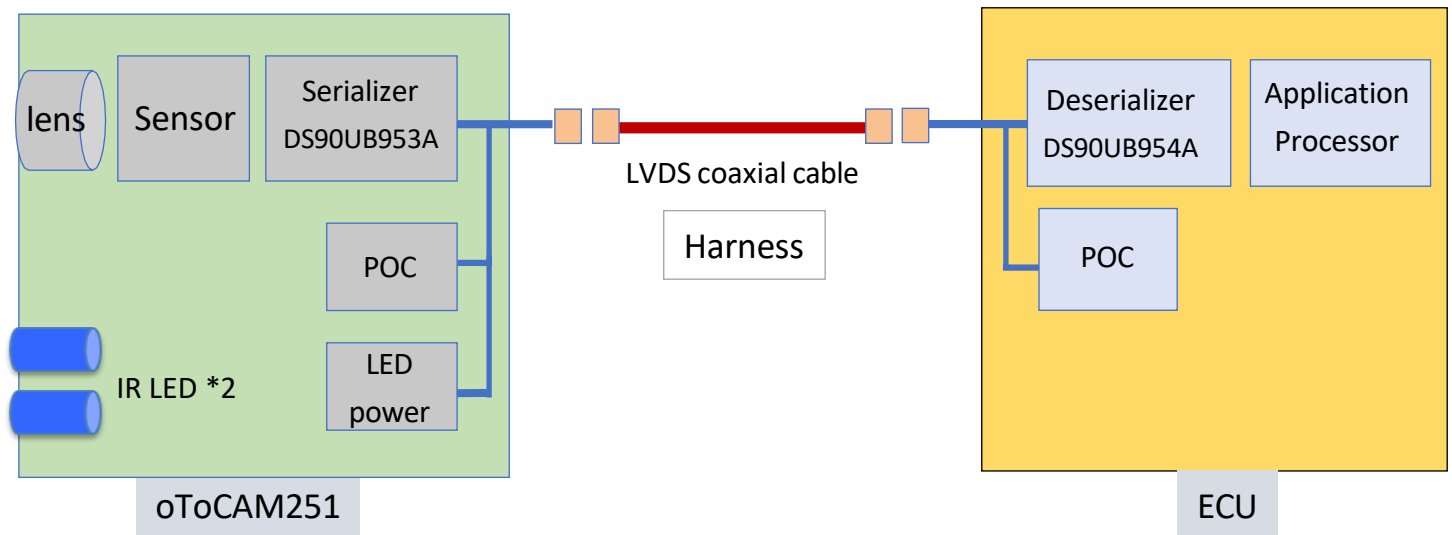


Figure 3. System Configuration

TI DS90UB954 must be used as de-serializer in ECU for connecting oToCAM251.