

Datasheet

oToBrite Electronics, Inc



oToCAM261

<u>Revision</u>	<u>Description</u>	<u>Release Date</u>
1.0	First Release	Nov, 5, 2019
1.1	Spec update	Jul. 13. 2020
1.2	Modify 4.3 extension cable	Oct. 06. 2020

1. General Description

The oToCAM261 is an automotive grade camera for the application of autonomous driving system. 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 IMX 490)
2	Optical Format	1/1.55"
3	Pixel Size	3.0 μ m (H) \times 3.0 μ m (V)
4	Camera Resolution (default)	5.4M (2896 (H) \times 1876 (V))(default setting)
5	View angle(H)	120°
6	Resolution (Center/Corner)	IH0 SFR \geq 30%, IH8 SFR \geq 10% @imatest (80 lp/mm)
7	Color filter array	RGGB
8	Output Interface	GMSL2 with POC
9	Output Formats	12-bit raw data (default setting)
10	S/N ratio	52.10 dB
11	Lens structure	3GMO+4G
12	Lens F No.	F1.6
13	Power source (POC)/Typical	DC6~17V/6V
14	Startup time of power in	Within 200ms
15	Frame rate (default)	30 fps (default setting)
16	Serializer	MAX9295
17	Camera Current Consumption	Below 150mA @12V
18	Operating Temperature	-40°C ~ +85°C
19	Storage temperature Range	-40°C ~ +95°C
20	Waterproof	IP 67/IP 69K
21	Dimension(mm)	28*35*51.3 (include bracket)
22	Weight	63g (include bracket)
23	Product Lead Time	Sample: 1 month after getting firm order SOP: 1 months after getting firm order (assumption: customer has released 6 months rolling forecast)

3. Outline Drawing

3.1 Outline Drawing (with bracket)

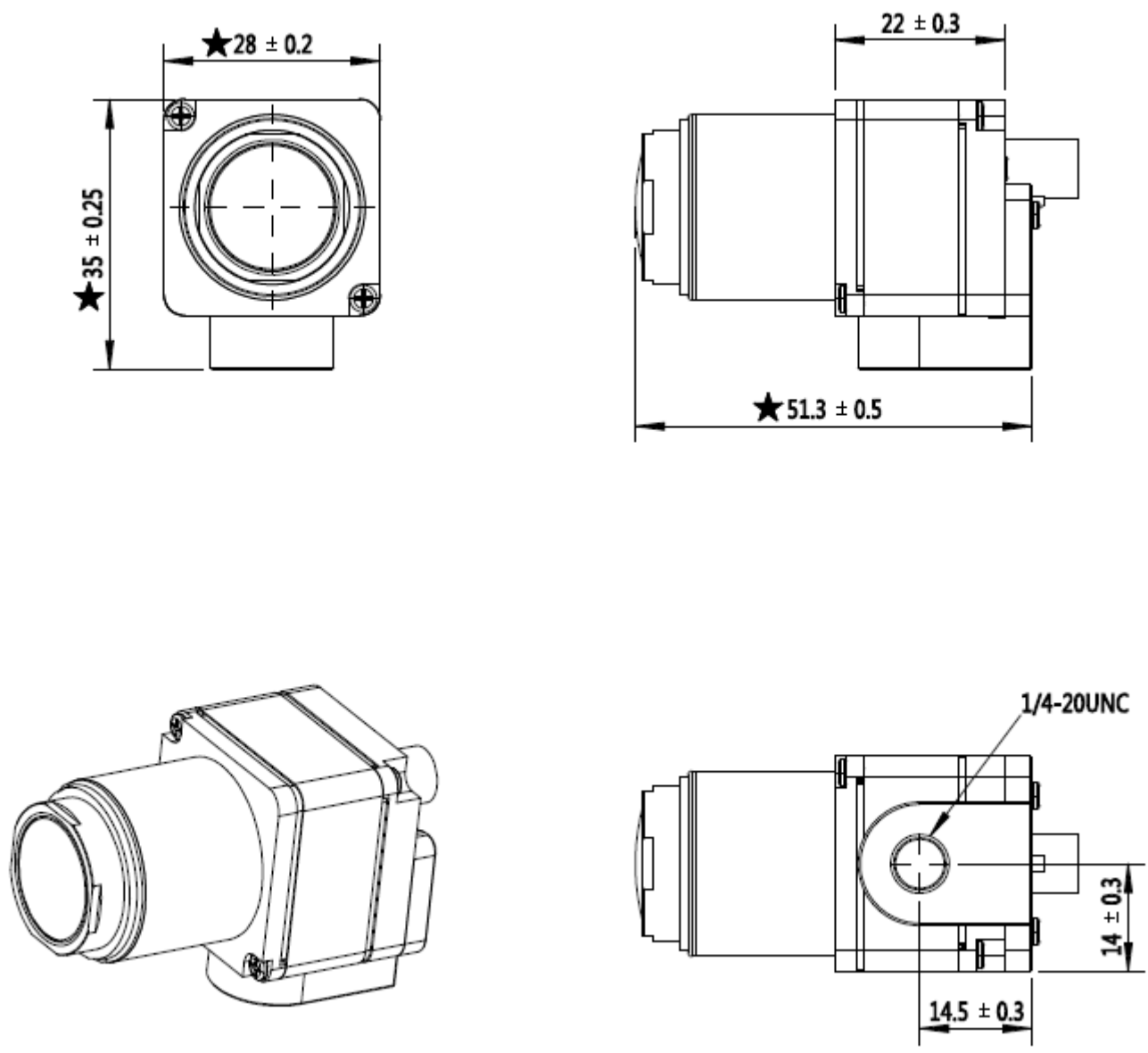


Figure 1. oToCAM261 Diagram

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

4.1 Connectors: Amphenol SMB1251Y3-002-TT5GP-50

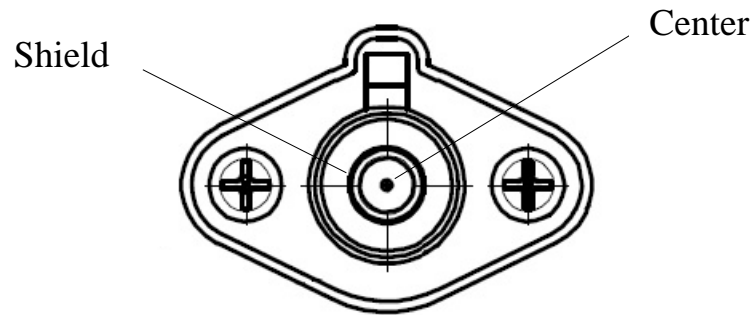


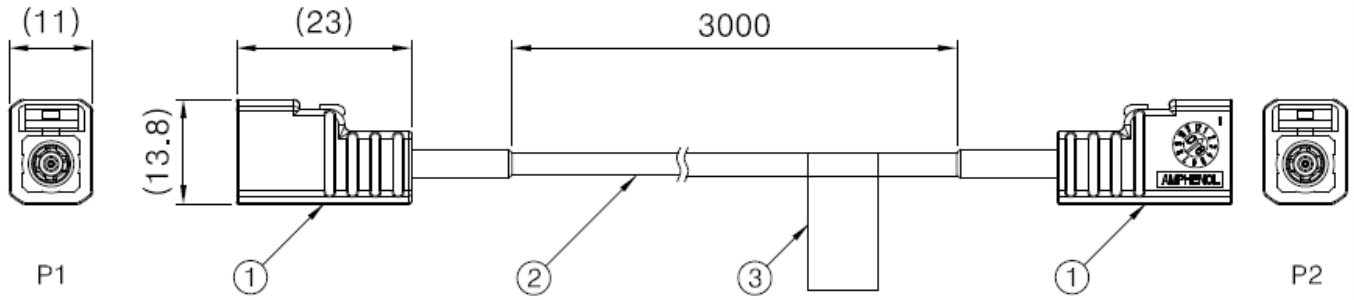
Figure 2. Amphenol SMB1251Y3-002-TT5GP-50

4.2 Pin definition:

Pin No.	Signal Name	Operation Voltage and Current
Center	DOUT	Min. 0.3V, Max. 0.5V
	PWR	Typ. 220mA @6V / 25°C
Shield	Shield GND	

4.3 Extension cable

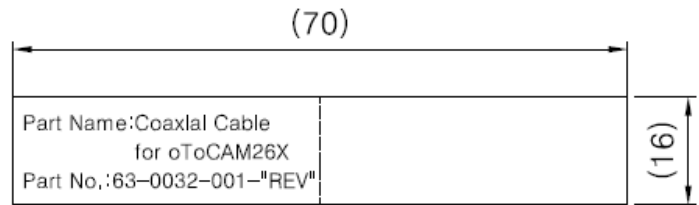
Cable length: 3000mm. The cable drawing is as below.



Item	Description	Description	Note
1	Connector	3FA1-NZSJ-C01E0	
2	Coaxial Cable	Amphenol RG-174	Coaxil Spec See Note 4
3	Lable	See" LABEL CONTENT"	

Notes:

1. Any open, miss wiring short and intermittent are not permitted.
2. ★ 標記為管制尺寸.
3. P1 and P2 are water-proof connector.
4. Coaxil Spec 如下表所示：

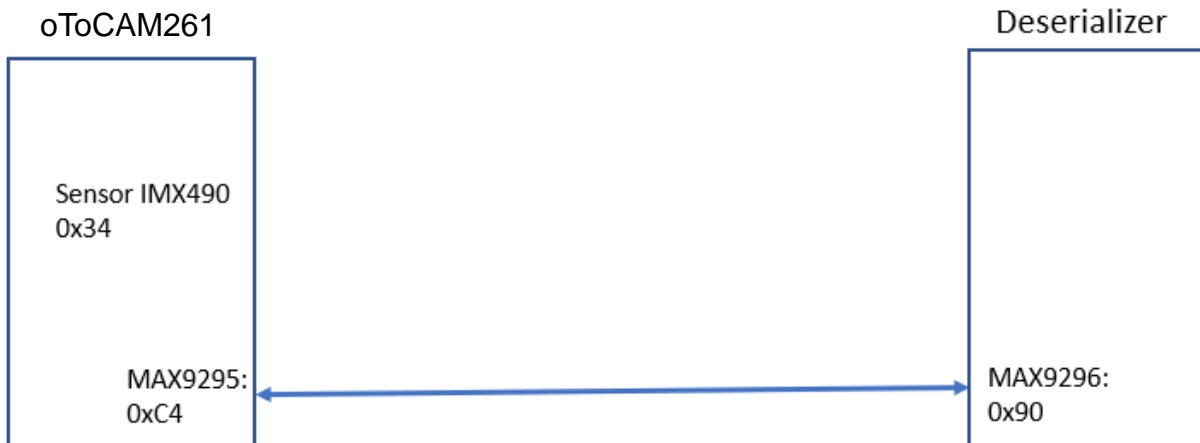


LABEL CONTENT

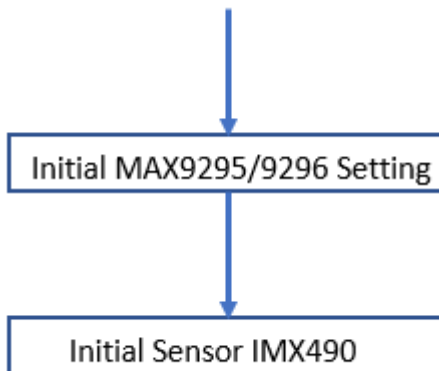
	Amphenol RG-174
Impedance(Ω)	50
Capacitance,nominal(pF/m)	105 pF
DC Resistance(ohm/m)	0.31
Attenuation,Maximun[20°C](dB/m)	0.81@900Mhz
	1.37@2.5Ghz
	2.31@6.0Ghz

5. Applications

5.1. I2C ID Address



5.2. Initialization



5.3. Deserializer (maxim 9296) Settings

1. MAX9296, Set Mode and I2C Select (CFG0 =0%:I2C\0x90; CFG1=0%:COAX\GMSL2\6Gbps).

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

5.4. Sensor (IMX490) Register Settings

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

6. Special Note

There is no ISP (Image Signal Processor) inside this camera. Raw image data 12bits are captured and transmitted 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)

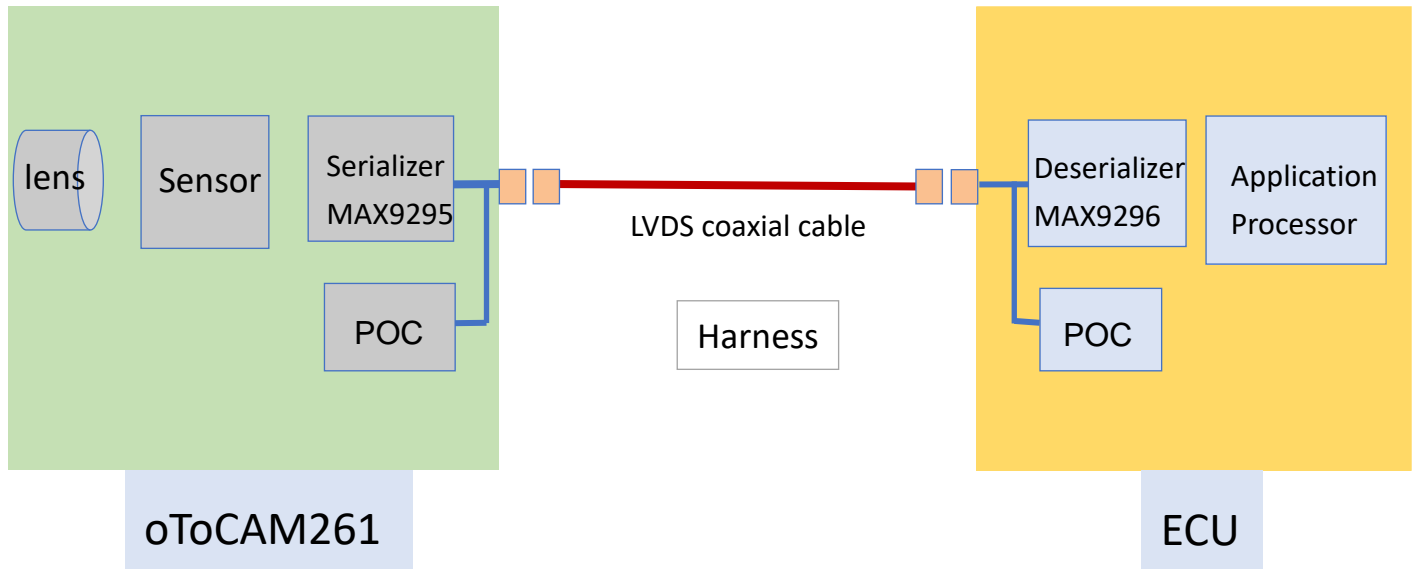


Figure 3. System Configuration

Maxim MAX9296 must be used as deserializer in ECU for connecting oToCAM261.