



## 8MP OV8865 MIPI Camera board for SKATE-212 SBC



## SK2-KYMICAM-8MP Datasheet

Rev.1.1  
19<sup>th</sup> February 2018

## Revision History

Rev No	Date	Major Changes	Author	Approved & Released by
1.0	05-Dec-2017	Initial release	Hardware Dev. Team	
1.1	19-Feb-2018	Links & Logo updated		
1.2	05-Mar-2019	Linux support removed		

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**Table 1 – Abbreviations**

MIPI	Mobile Industry Processor Interface
CSI	Camera Serial Interface
MP	Mega Pixel
TBD	To Be Decided
DNI	Do Not Import
DNP	Do Not Populate
FPC	Flexible printed circuits

## 8MP MIPI Camera board for SKATE-212 SBC

### 1. Introduction

The new SK2-KYMICAM-8MP, is a member from Kemsys Camera Board family. It carries OV8865 MIPI CSI-2 CMOS sensor module in smaller footprint of 28mm X 31mm.

Below are the main features of 8MP MIPI camera.

- Features MIPI CSI-2, Fixed focus, OV8865 CMOS camera sensor module
- Supports video capture 120fps at VGA, 60 fps at 720p & 30fps in full 8-MP resolution
- Direct connection to the MIPI CSI-2 FFC Connector on SKATE-212 SBC
- No requirement for an external power supply
- Compatible with Kemsys SKATE-212 Single Board Computer

### 2. Purpose of the document

Purpose of this document is to provide brief the technical details of hardware design of Camera hardware.

### 3. Block Diagram of SK2-KYMICAM-8MP with SKATE-212

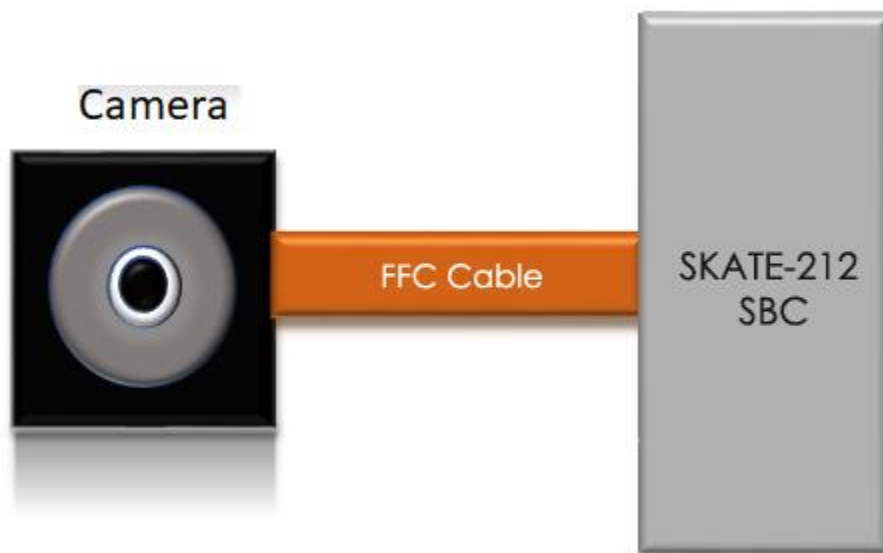


Figure 1: Block Diagram

## 4. Camera Board Specifications

- Camera Module with Omnivision's OV8865 image sensor
- 8MP CMOS image sensor with pixel size 1.4  $\mu\text{m}$  x 1.4  $\mu\text{m}$
- Active Array size : 3264 x 2448
- Output Formats : 10-bit Bayer Raw
- Dual lane MIPI CSI-2 interface
- **Supporting Image Size:**
  1. 8MP (3264 x 2448) @ 30 fps
  2. 1080p (1920 x 1080) @ 30 fps
  3. 720p (1280 x 720) @ 60 fps
  4. VGA (640 x 480) @ 120 fps
- Sensitivity - 940 mv/Lux-sec
- max S/N ratio : 36.7 dB

## 5. Layout and Components

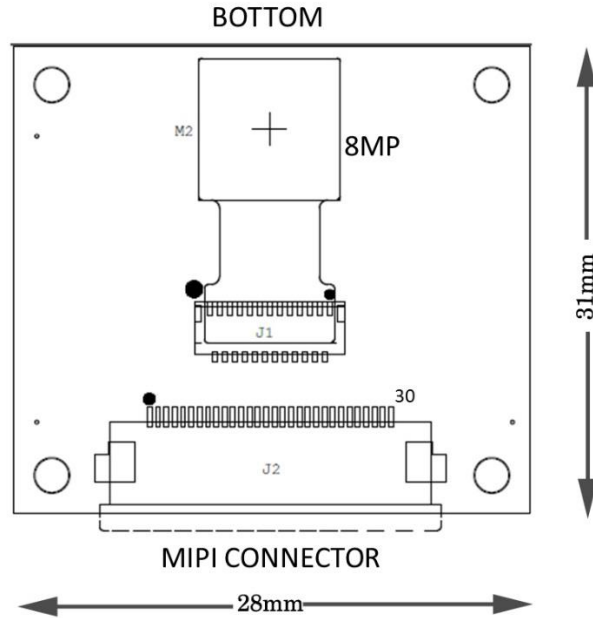


Figure 2: Layout Bottom view

### 5.1 Handling and Testing

The SK2-KYMICAM-8MP board is ESD sensitive device, hence safety precautions are mandatory

1. Handling the board under an ESD controlled chamber.
2. Should not touch the board with a bare hand or dropping on the ground may cause the board permanently damaged.

## 6. SK2-KYMICAM-8MP Electrical Specifications

Table 2 – 8MP Electrical Specification

Supply Voltages	Values
AVDD	2.8V
DOVDD	1.8V
DVDD	1.2V
<b>VCM Specification</b>	
VCM Supply Voltages	2.8-3.3V
Rated current	85mA
Coil Resistance	$19 \pm 2.8 \Omega$

## 6.1 Connectors Pinout

**Table 3 – Connector Pinouts**

PIN NO	Description	PIN NO	Description
1	SDA	16	GND
2	SCL	17	NC
3	NC	18	NC
4	8MP STANDBY_N	19	NC
5	8MP RESET_N	20	GND
6	8MP MCLK	21	NC
7	GND	22	NC
8	8MP CSI_CLK_N	23	GND
9	8MP CSI_CLK_P	24	NC
10	GND	25	NC
11	8MP CSI_LANE0_P	26	GND
12	8MP CSI_LANE0_N	27	1.8V Supply
13	GND	28	2.9V Supply
14	8MP CSI_LANE1_P	29	1.2V Supply
15	8MP CSI_LANE1_N	30	2.85V Supply

## 7. Conclusion

This document describes about SK2-KYMICAM-8MP camera board features and the pin-outs of the connectors used. It also explains board dimensions, electrical and mechanical specification of the camera board.