



## IMT-1A65M004-N

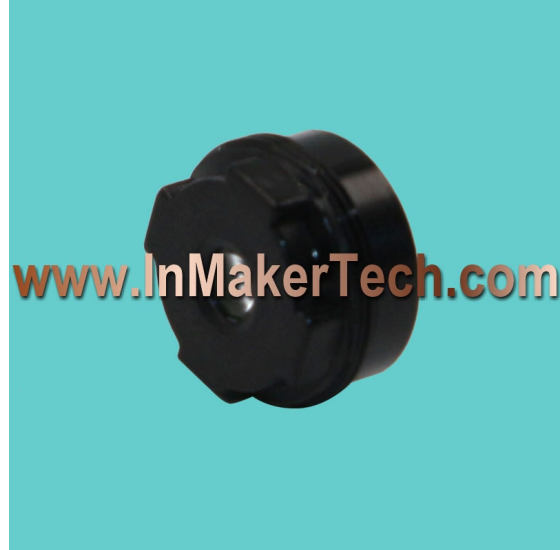
**1/3.1" 13MP COB F2.2 DFOV 74.4 Degree M6.5 Lens**



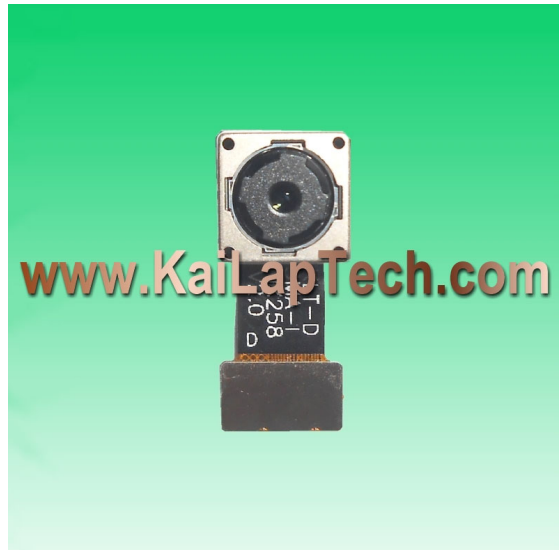
Lens Model	<b>IMT-1A65M004-N</b>
Sensor Format	1/3.1"
Resolution	13 MP
Sensor Type	COB
Structure	5P
Max Image Circle	Ø5.8
F/NO.	2.2
EFL (mm)	3.81
TTL (mm)	4.45
FOV	Field of View
Diagonal DFOV	74.4°
Horizontal HFOV	62.7°
Vertical VFOV	48.7°
TV Distortion	<1.5%
CRA	<32.4°
Lens Filter	None
Barrel	M6.5*P0.25
KLT Camera Modules	KLT-D3MA-IMX258 V2.0
Use IMT Made Lenses	KLT-D3MA-IMX214 V3.0

# IMT-1A65M004-N

1/3.1" 13MP COB F2.2 DFOV 74.4 Degree M6.5 Lens



IMT Lens on  
the real  
Camera



KLT is our  
Camera  
Modules  
Design and  
Manufacture  
Partner

[www.KaiLapTech.com](http://www.KaiLapTech.com)

[www.InMakerTech.com](http://www.InMakerTech.com) [Sales@InMakerTech.com](mailto:Sales@InMakerTech.com) China: (+86) 17727326718 HK: (+852) 69089316

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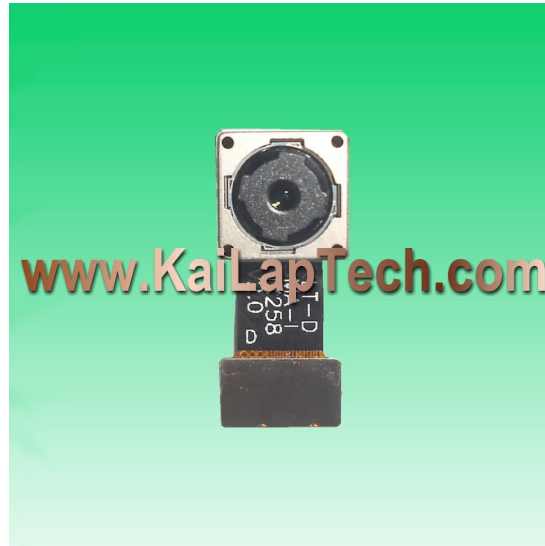


# CMOS CAMERA MODULES

*your BEST camera module partner*

## KLT-D3MA-IMX258 V2.0

SONY IMX258 MIPI Interface Auto Focus 13MP Camera Module



<b>Camera Module No.</b>	<b>KLT-D3MA-IMX258 V2.0</b>
<b>Image Sensor</b>	IMX258
<b>EFL</b>	3.85 mm
<b>F.NO</b>	2.2
<b>Pixel</b>	4224 x 3136
<b>View Angle</b>	74.4°
<b>Lens Type</b>	1/3.06 inch
<b>Lens Dimensions</b>	8.50 x 8.50 x 5.37 mm
<b>Module Size</b>	20.85 x 8.50 mm
<b>Module Type</b>	Auto Focus
<b>Interface</b>	MIPI
<b>IMT Lens Model</b>	IMT-1A65M004-N

<b>Mating Connector Part No. BBR43-30KB533</b>
Mating Connector On Main Board. Sold Separately.

[www.KaiLapTech.com](http://www.KaiLapTech.com) [sales@KaiLapTech.com](mailto:sales@KaiLapTech.com) Tel: (852) 6908 1256 Fax: (852) 3017 6778

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## [Product Brief]

Ver.1.0

# IMX214

### Diagonal 5.867mm (Type 1/3.06) 13M Pixel CMOS Image Sensor with Square Pixel for Color Cameras

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#### Description

IMX214 is a diagonal 5.867mm (Type 1/3.06) 13M pixel CMOS active pixel type stacked image sensor with a square pixel array. It adopts Exmor RS™ technology to achieve high speed image capturing by column parallel A/D converter circuits and high sensitivity and low noise image (comparing with conventional CMOS image sensor) through the backside illuminated imaging pixel structure. R, G, and B pigment primary color mosaic filter is employed. By introducing spacially varying exposure technology, high dynamic range still pictures and movies are achievable. It equips an electronic shutter with variable integration time. It operates with three power supply voltages: analog 2.7 V, digital 1.0V and 1.8 V for input/output interface and achieves low power consumption. IMX214 is designed for use in cellular phones or tablet devices\*.

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#### Functions and Features

- ◆ Back illuminated and stacked CMOS image sensor Exmor RS
- ◆ Single Frame High Dynamic Range (HDR) with equivalent full pixels.
- ◆ High signal to noise ratio (SNR).
- ◆ Full resolution @30fps (Normal / HDR), 4K2K @30fps (Normal / HDR) 1080p @60fps (Normal / HDR)
- ◆ Output video format of RAW10/8, COMP8/6
- ◆ Pixel binning readout and H/V sub sampling function
- ◆ Advanced Noise Reduction (Chroma noise reduction and luminance noise reduction)
- ◆ Independent flipping and mirroring.
- ◆ CSI 2 serial data output (MIPI 2lane/4lane, Max. 1.2Gbps/lane, DPHY spec. ver. 1.1 compliant)
- ◆ 2wire serial communication
- ◆ Two PLLs for independent clock generation for pixel control and data output interface.
- ◆ Advanced Noise Reduction.
- ◆ Dynamic Defect Pixel Correction.
- ◆ Zero shutter lag.
- ◆ Power on reset function
- ◆ Dual sensor synchronization operation.
- ◆ 8K bit of OTP ROM for users.
- ◆ Built in temperature sensor

#### NOTE)

1. When using this product for another application, Sony does not guarantee the quality and reliability of product. Therefore, don't use this for applications other than cellular phone and Tablet PCs. Consult your Sony sales representative if you have any questions.

## Device Structure

◆ CMOS image sensor	
◆ Image size	: Diagonal 5.867mm (Type 1/3.06)
◆ Total number of pixels	: 4224 (H) × 3200(V) approx. 13.51M pixels
◆ Number of effective pixels	: 4224 (H) × 3136 (V) approx. 13.25 M pixels
◆ Number of active pixels	: 4208 (H) × 3120 (V) approx. 13.13 M pixels
◆ Chip size	: 6.100mm (H) × 4.524mm (V)
◆ Unit cell size	: 1.12 μm (H) × 1.12 μm (V)
◆ Substrate material	: Silicon

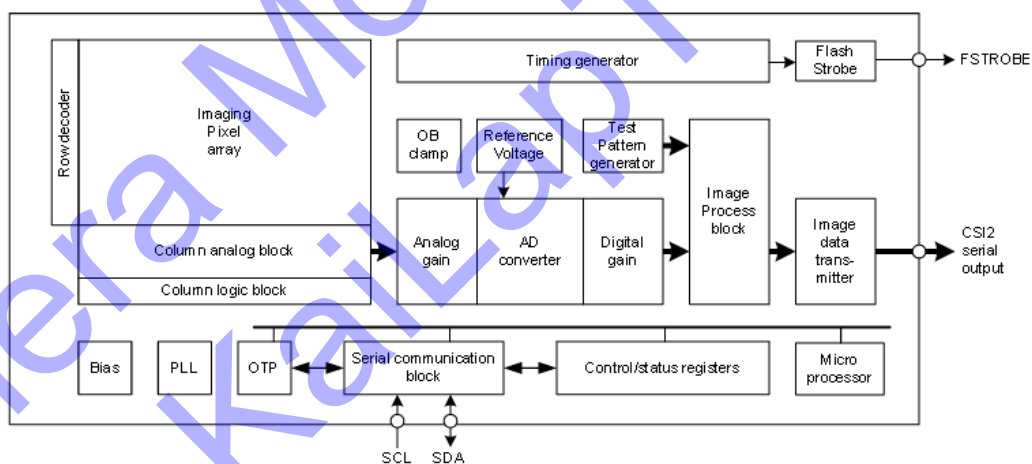
## Functional Description

### System Outline

IMX214 is a CMOS active pixel type image sensor which adopts the Exmor RS™ technology to achieve high sensitivity, low noise and high speed image capturing. It is embedded with backside illuminated imaging pixel, low noise analog amplifier, column parallel A/D converters which enables high speed capturing, digital amplifier, image binning circuit, timing control circuit for imaging size and frame rate, CSI2 image data high speed serial interface, PLL oscillator, and serial communication interface to control these functions.

Several additional image processing functions and peripheral circuits are also included for easy system optimization by the users. A one time programmable memory is embedded in the chip for storing the user data. It has 8 K-bit for users, 10 K-bit as a whole.

### Block Diagram



## Exmor RS

\* Exmor RS is a trademark of Sony Corporation. The Exmor RS is a Sony's CMOS image sensor with high-resolution, high-performance and compact size by replacing a supporting substrate in Exmor R™ which changed fundamental structure of Exmor™ pixel adopted column parallel A/D converter to back-illuminated type, with layered chips formed signal processing circuits.

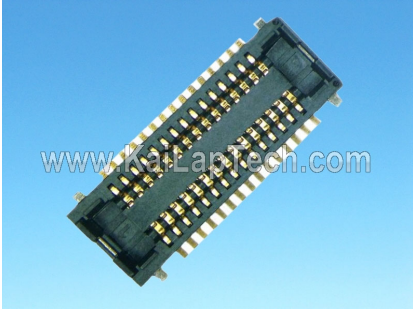
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Application circuits shown, if any, are typical examples illustrating the operation of the devices. Sony cannot assume responsibility for any problems arising out of the use of these circuits.

**KLT-D3MA-IMX214 V3.0****SONY IMX214 MIPI Interface Auto Focus 13MP Camera Module**

<b>Camera Module No.</b>	<b>KLT-D3MA-IMX214 V3.0</b>
<b>Image Sensor</b>	IMX214
<b>EFL</b>	3.85 mm
<b>F.NO</b>	2.2
<b>Pixel</b>	4224 x 3136
<b>View Angle</b>	74.4°
<b>Lens Type</b>	1/3.06 inch
<b>Lens Dimensions</b>	8.50 x 8.50 x 5.37 mm
<b>Module Size</b>	43.50 x 8.50 mm
<b>Module Type</b>	Auto Focus
<b>Interface</b>	MIPI
<b>IMT Lens Model</b>	IMT-1A65M004-N

<b>Mating Connector Part No. BBR43-30KB533</b>
 A photograph of a green printed circuit board (PCB) with a gold-plated MIPI connector. The text 'www.KaiLapTech.com' is overlaid in a semi-transparent font across the center of the image.
Mating Connector On Main Board. Sold Separately.

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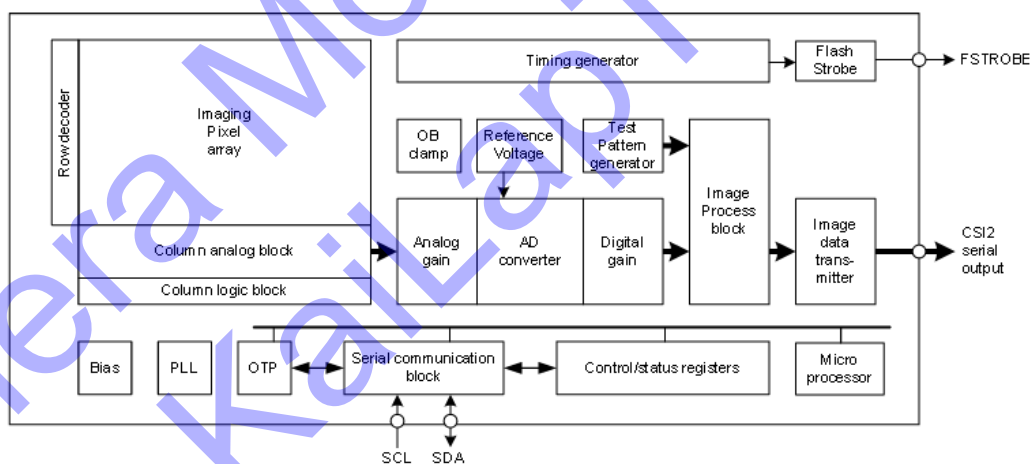
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