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Huawei P9 Rear-Facing Dual Camera Module

With strategic technical choices in its dual camera module, Huawei is seeking to differentiate itself from Samsung and Apple.



Competition for the best camera in a phone has been revived by Huawei with its new flagship, the P9. Unlike the other players except LG, Huawei uses a dual camera module. This module of f/2.2 aperture integrates two CMOS Image Sensors (CISs) from Sony, using Exmor-RS Technology with 11.8M pixel resolution, a monochrome and a color sensor.

The P9 camera module, with dimensions of 18 x 9.2 x 5.1mm, is equipped with two sub-modules each including a Sony CIS, a closed loop voice coil motor (VCM) and a 6-element lens. Doubling the number of cameras gives more light, vivid colors and crisper details. Moreover, it compensates for the fact that the module is provided without optical image stabilization (OIS). The CISs are assembled on a copper metal core 4-layer PCB using a wire bonding process. An external image processor chip is present on the phone's printed circuit board (PCB).

The Sony Exmor-RS technology stacks two separate chips with through-silicon vias (TSVs) using optimized processes. One chip is a pixel array circuit which uses a Back-Side Illuminated (BSI) technology, and the other is a logic ISP circuit. For these sensors, an all-new TSV process is used and surprisingly both sensors are very similar but show significant process differences. Compared to the previous Huawei P8 and iPhone 6s with similar resolution, the P9's 1.25µm pixels are larger.

The report includes technology and cost analyses of the P9 dual camera module. Also, comparisons with Samsung Galaxy S7 and iPhone 6S rear camera modules are provided. These comparisons highlight structures, technical choices and manufacturing cost.

Title: Huawei P9 Rear-Facing Camera Module

Pages: 145

Date: July 2016

Format: PDF & Excel file

Price: Full report: EUR 3,490

COMPLETE TEARDOWN WITH:

- Detailed photos
- Precise measurements
- Material analysis
- Manufacturing process flow
- Supply chain evaluation
- Manufacturing cost analysis
- Selling price estimate
- Comparison with Samsung Galaxy S7 and iPhone 6S camera modules

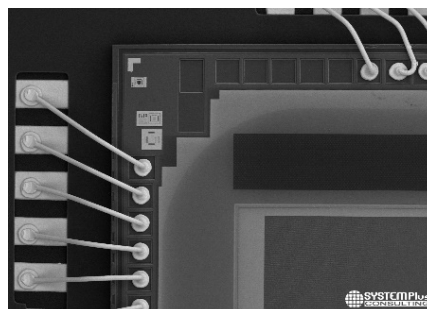


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Author:
Audrey
Lahrach

Audrey is in charge of costing analyses for IC, LCD & OLED Displays and Sensor Devices. She holds a Master degree in Microelectronics from the University of Nantes.



Author (Lab):
Véronique
Le Troadec

Véronique is in charge of structure analysis of semi-conductors. She has a deep knowledge in chemical & physical technical analyses. She previously worked for 20 years in Atmel Nantes Laboratory.

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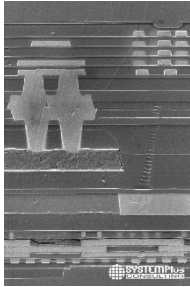
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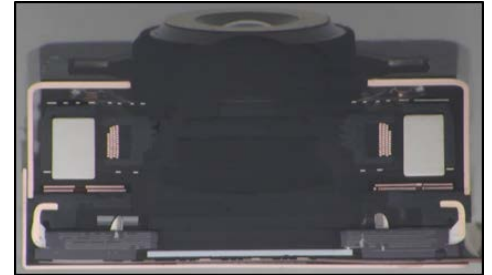
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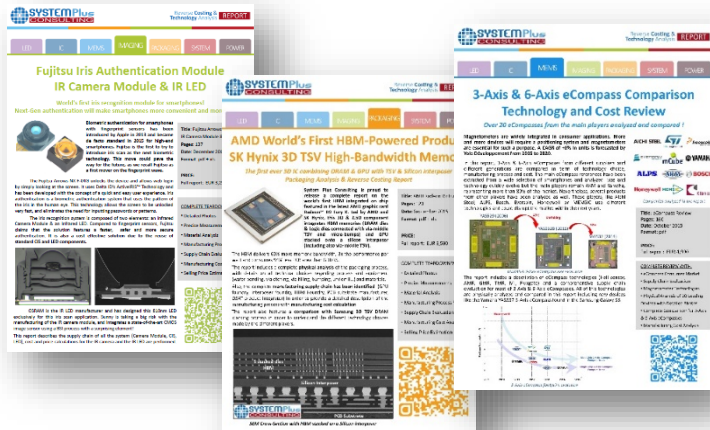
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