With the iPhone 6s Plus, Apple introduces a new rear camera module. The new device has similar structure and technology than the previous one, but it has higher resolution and smaller pixel size.

The iPhone 6s Plus camera module integrates the 12Mpixel resolution CMOS Image Sensor, with aperture of f/2.2 and a pixel size of 1.22µm. The decreasing of the pixel size implies the introduction of Deep Trench Isolation structure.

Respect to the iPhone 6 Plus the logic ISP circuit with 45nm technology node process, the assembling structure and the 5-elements lens module are the same; otherwise technical ameliorations of the VCM brings to a better quality of the autofocus and the OIS.

The CIS is assembled in flip-chip on a ceramic substrate with a gold stud bumping process and uses the technology from Sony (Exmor-RS). The technology consists in a stacking of two separate chips using optimized processes: a pixel array circuit which uses a Back-Side Illuminated (BSI) technology, and a logic ISP circuit.

For this device Apple has significantly modified part of the supply chain.

The report includes comparisons with iPhone 5s and iPhone 6 Plus Rear Camera Module.
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ANALYSIS PERFORMED WITH OUR COSTING TOOLS IC PRICE+ AND 3D Package CoSim+

Author: Elena Barbarini
Elena is in charge of costing analyses for MEMS, Ics and Power Semiconductors. She has a deep knowledge of Electronics R&D and Manufacturing environment. She holds a Master in Nanotechnologies and a PhD in Power Electronics.

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