

Apple iPhone 6 & 6 Plus Rear Camera Modules from Sony

Discover the innovations in the camera modules of Iphone 6 & 6 Plus: 45nm technology node / Optical Image Stabilizer integration/ New Packaging

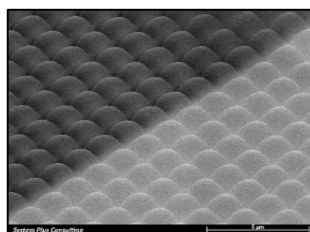
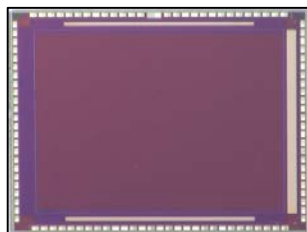
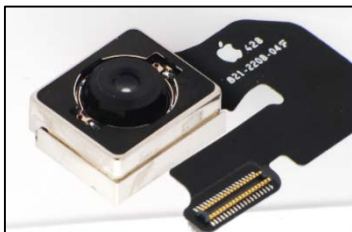
System Plus Consulting presents in two joint reports the technological innovation integrated in Apple's iPhone 6 & 6 Plus iSight camera modules and their differences.

Apple improves the logic ISP circuit, passing from 65nm to 45nm technology node process, and introduces the Optical Image Stabilization System, assembling it in a innovative way.

The iPhone 6 Plus camera module integrates the 8Mpixel resolution CMOS Image Sensor, with aperture of f/2.2 and a pixel size of 1.5µm, in a new bigger and flexible packaging concept.

The CIS is assembled in flip-chip on a ceramic substrate with a gold stud bumping process and uses the unique 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. This allows to raise the pixel array size by 15% and thus to considerably improve the light sensitivity.

The two camera modules, slightly different in dimensions, are both equipped with a 5-elements lens module and a VCM auto-focus actuator.



REVERSE COSTING ANALYSIS
REPORT BY 

Camera Module
 104 + 129 pages
 November 2014
 Pdf file
 Xls file

PRICE :
 Full report: EUR 2,990
 Bundle* report: EUR 6,000

COMPLETE TEARDOWN WITH:

- Detailed Photos
- Precise Measurements
- Material Analysis
- Manufacturing Process Flow
- Supply Chain Evaluation
- Manufacturing Cost Analysis
- Selling Price Estimation
- Comparison with iPhone 5S and Nokia Lumia technology choices

* Bundle reports = front and rear camera modules of Apple iPhone 6 and iPhone 6plus

TABLE OF CONTENTS

Camera Module Supply Chain & Companies Profile

Physical Analysis

- Camera Module
 - ✓ Camera Module View & Dimensions
 - ✓ Camera Module X-Ray
 - ✓ Camera Module Disassembly
- CMOS Image Sensor
 - ✓ View & Dimensions
 - ✓ Pads, Tungsten Grid
 - ✓ TSV Connections
 - ✓ CIS Pixels
 - ✓ Logic Circuit (Transistors, SRAM)
- Cross-Section: Camera Module
 - ✓ Overview
 - ✓ Driver (Assembly & Process) & MLCC
 - ✓ Ceramic Substrate, IR Filter & FPC
 - ✓ Lenses, Housing, VCM, IOS
- Cross-Section: CMOS Image Sensor
 - ✓ Overview
 - ✓ Pad Trenches
 - ✓ Pixel Array Circuit
 - ✓ Logic Circuit
 - ✓ TSVs
- Comparison with previous 8Mpixel CIS from Sony

CIS Manufacturing Process Flow

- Global Overview
- Logic Circuit Front-End Process
- Pixel Array Circuit Front-End Process
- BSI + TSV + Microlenses Process
- CIS Wafer Fabrication Unit

Cost Analysis

- Synthesis of the cost analysis
- Main steps of economic analysis
- Yields Hypotheses
- CMOS Image Sensor Cost
 - ✓ Logic Circuit Front-End Cost
 - ✓ Pixel Array Front-end Cost
 - ✓ BSI , IOS & TSV Front-End Cost
 - ✓ Color Filters & Microlenses Front-End Cost
 - ✓ Total Front-End Cost
 - ✓ Back-End: Tests & Dicing
 - ✓ CIS Wafer and Die Cost
- Camera Module Assembly Cost
 - ✓ Lens Module Cost
 - ✓ VCM Actuator Cost
 - ✓ Final Cost
- Camera Module Cost

Distributed by



Performed by



ORDER FORM

Please process my order for "iPhone 6 & 6 Plus Rear Camera Modules" Reverse Costing Analysis:

Ref.: SP14192A Apple iPhone 6 Plus Rear Camera Module Full Reverse Costing report: EUR 2,990*

Ref.: SP14192A+B iPhone 6 & 6 Plus Front Camera Modules & iPhone 6 & 6 Plus Rear Camera Modules reports: EUR 4,990*

*For price in dollars please use the day's exchange rate

*All reports are delivered electronically in pdf format

*For French customer, add 20 % for VAT

SHIP TO

Name (Mr/Ms/Dr/Pr):

.....

Job Title:

.....

Company:

.....

Address:

.....

City:

State:

.....

Postcode/Zip:

.....

Country*:

.....

*VAT ID Number for EU members:

.....

Tel:

.....

Email:

.....

Date:

.....

Signature :

.....

PAYMENT

DELIVERY on receipt of payment:

By credit card:



Number: |_|_|_|_|_| |_|_|_|_|_| |_|_|_|_|_| |_|_|_|_|_|

Expiration date: |_|_| / |_|_| Card Verification Value: |_|_|_|_|

By bank transfer:

HSBC – CAE- Le Terminal -2 rue du Charron- 44800 St Herblain France
BIC code : CCFRFRPP

In EUR

Bank code : 30056 - Branch code : 00955 - Account : 09550003234
IBAN : FR76 3005 6009 5509 5500 0323 439

In USD

Bank code : 30056 - Branch code : 00955 - Account : 09550003247
IBAN : FR76 3005 6009 5509 5500 0324 797

Return order by:

FAX: +33 (0)253 55 10 59

MAIL: SYSTEM PLUS CONSULTING

21 rue La Nouë Bras de Fer

44200 Nantes – France

Contact:

sales@systemplus.fr, Tel: +33 240 18 09 16

BILLING CONTACT

Name:

Email:

Phone:

Our prices are subject to change.

Please check our new releases and price changes on www.systemplus.fr

The present document is valid 6 months after its publishing date: November 14th, 2014.

ABOUT SYSTEM PLUS CONSULTING

System Plus Consulting specializes in the **cost analysis** of electronics, from **semiconductor devices** to **electronic systems**, and has developed a complete range of services and costing tools to provide **in-depth production cost studies** and to estimate the **objective selling price** of a product.

COSTING SERVICES

- ✓ **On demand Reverse Costing studies** are performed on ICs, ASICs, MEMs, Power Devices, ECUs, electronic boards and full electronic systems.
- ✓ **The catalog of available reports** includes cost analyzes on MEMS, LEDs, Modules and Electronic systems.

All these analyses are performed using in-house developed, proprietary costing tools and their technological databases.

COSTING TOOLS

"Purchaser" tools

- ✓ IC Price+ to estimate the cost of any integrated circuit
- ✓ Power Price+ for any power component or module

- ✓ PCB Price+ for printed circuit boards
- ✓ SYS.Cost+ for electronic boards and systems

Cost Simulation Tools, process flow based

- ✓ MEMS CoSim+
- ✓ LED CoSim+
- ✓ Power CoSim+
- ✓ 3D Package CoSim+

Other costing models can be developed according to customer specifications

Distributed by



Performed by



TERMS AND CONDITIONS OF SALES

1. INTRODUCTION

The present terms and conditions apply to the offers, sales and deliveries of services managed by System Plus Consulting except in the case of a particular written agreement.

Buyer must note that placing an order means an agreement without any restriction with these terms and conditions.

2. PRICES

Prices of the purchased services are those which are in force on the date the order is placed. Prices are in Euros and worked out without taxes. Consequently, the taxes and possible added costs agreed when the order is placed will be charged on these initial prices.

System Plus Consulting may change its prices whenever the company thinks it necessary. However, the company commits itself in invoicing at the prices in force on the date the order is placed.

3. REBATES and DISCOUNTS

The quoted prices already include the rebates and discounts that System Plus Consulting could have granted according to the number of orders placed by the Buyer, or other specific conditions. No discount is granted in case of early payment.

4. TERMS OF PAYMENT

System Plus Consulting delivered services are to be paid within 30 days end of month by bank transfer except in the case of a particular written agreement.

If the payment does not reach System Plus Consulting on the deadline, the Buyer has to pay System Plus Consulting a penalty for late payment the amount of which is three times the legal interest rate. The legal interest rate is the current one on the delivery date. This penalty is worked out on the unpaid invoice amount, starting from the invoice deadline. This penalty is sent without previous notice.

When payment terms are over 30 days end of month, the Buyer has to pay a deposit which amount is 10% of the total invoice amount when placing his order.

5. OWNERSHIP

System Plus Consulting remains sole owner of the delivered services until total payment of the invoice.

6. DELIVERIES

The delivery schedule on the purchase order is given for information only and cannot be strictly guaranteed. Consequently any reasonable delay in the delivery of services will not allow the buyer to claim for damages or to cancel the order.

7. ENTRUSTED GOODS SHIPMENT

The transport costs and risks are fully born by the Buyer. Should the customer wish to ensure the goods against lost or damage on the base of their real value, he must imperatively point it out to System Plus Consulting when the shipment takes place. Without any specific requirement, insurance terms for the return of goods will be the carrier current ones (reimbursement based on good weight instead of the real value).

8. FORCE MAJEURE

System Plus Consulting responsibility will not be involved in non execution or late delivery of one of its duties described in the current terms and conditions if these are the result of a force majeure case. Therefore, the force majeure includes all external event unpredictable and irresistible as defined by the article 1148 of the French Code Civil?

9. CONFIDENTIALITY

As a rule, all information handed by customers to system Plus Consulting are considered as strictly confidential.

A non-disclosure agreement can be signed on demand.

10. RESPONSABILITY LIMITATION

The Buyer is responsible for the use and interpretations he makes of the reports delivered by System Plus Consulting. Consequently, System Plus Consulting responsibility can in no case be called into question for any direct or indirect damage, financial or otherwise, that may result from the use of the results of our analysis or results obtained using one of our costing tools.

11. APPLICABLE LAW

Any dispute that may arise about the interpretation or execution of the current terms and conditions shall be resolved applying the French law.

If the dispute cannot be settled out-of-court, the competent Court will be the Tribunal de Commerce de Nantes.