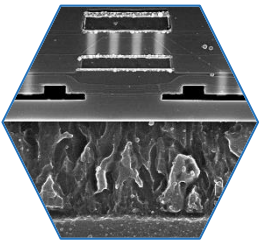
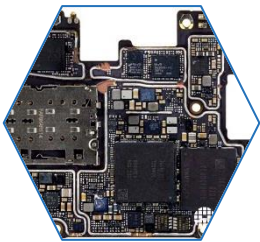


Oppo Reno3 5G Sub-6 Front-End Module

Study of innovative 5G Sub-6 modules from Qorvo and Skyworks integrated into Oppo's phones.



Title: Oppo Reno3 5G Sub-6 Front-End Module

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Qualcomm is currently the leader of the 5G market with several design wins in 2019 and 2020. But the company is not the only supplier of modules for 5G Sub-6 GHz frequency band communication. Qorvo and Skyworks follow Qualcomm in the rankings and could overtake it in the next few years. In the Reno3 5G, Oppo chose these two suppliers for the Radio Frequency Front-End (RFFE) for 4G and 5G. Both bring good alternatives to Qualcomm's components and offer cost-effective solutions.

Among the first 5G phones on the market in 2019, the Oppo Reno3 series has a different structure for the RF Front-End Module (FEM). The Pro version is based on a complete Qualcomm chipset from the modem to the antenna tuner. The standard version, studied in this report, features a modem and a transceiver from MediaTek and a complete RFFE split between Skyworks and Qorvo. Qorvo supplied the QM77040 3G/4G/5G Mid/High Band (MB/HB) Power Amplifier integrated Duplexer (PAMiD), mostly with 4G rearming bands for 5G. The device features several dies showing different innovations from the latest generation of PA to generation 4 and 5 Bulk Acoustic Wave (BAW) filter.

Skyworks supplies all the others main components: 4G Low/Low-Mid/Mid/High-band (LB/LMB/MB/HB) Diversity module (SKY53735), 4G/5G B41/n41 PAMiD

(SKY58254), 5G n78/n79 Low Noise PAMiD (L-PAMiD) (SKY58255), and 5G n78/n79 Diversity (SKY53728).

The report contains a complete analysis of the main FEM System-in-Package (SiP), including a detailed analysis of the switches, the Low Noise Amplifier (LNA), the filtering dies, and the internal/external Electromagnetic Interference (EMI) shielding. The report also features a cost analysis and a price estimation of the chipset. Finally, it also integrates a comparison of the Qorvo QM77040 with the Qualcomm QPM5670, and the Skyworks SKY58254 with the Qorvo QM78041 and the Qualcomm QPM6585.

COMPLETE TEARDOWN WITH

- Detailed photos
- Precise measurements
- Materials analysis
- Manufacturing process flow
- Supply chain evaluation
- Manufacturing cost analysis
- Estimated sales price
- Technical and cost comparison of the Qorvo QM77040 with the Qualcomm QPM5670 and the Skyworks SKY58254 with the Qorvo QM78041 and the Qualcomm QPM6585

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AUTHORS

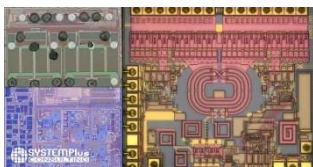


Stéphane Elisabeth, PhD is Expert Cost Analyst in RF, Sensors and Advanced Packaging. He has a deep knowledge of materials characterizations and electronics systems. He holds an Engineering Degree in Electronics and Numerical Technology, and a PhD in Materials for Microelectronics.



Nicolas Radufe is in charge of physical analysis at System Plus Consulting. He has a deep knowledge in chemical and physical analyses. He previously worked in microelectronics R&D for CEA/LETI in Grenoble and for STMicroelectronics in Crolles.

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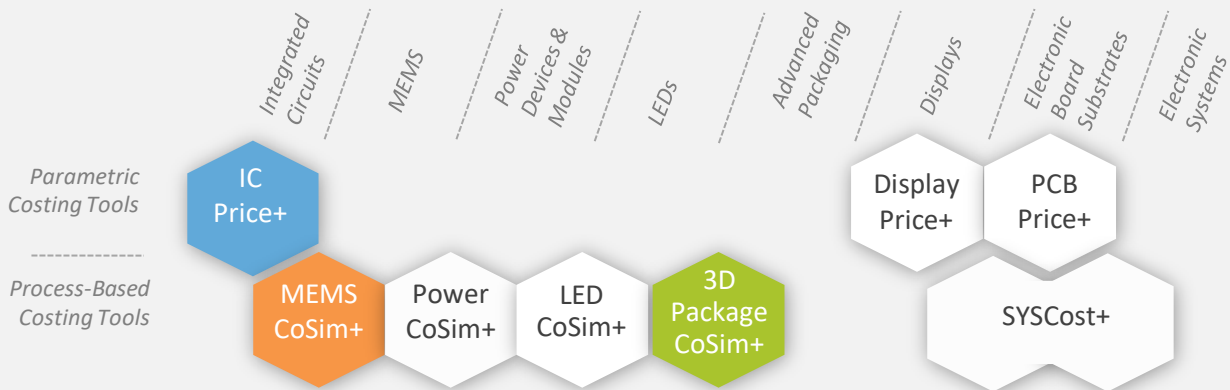


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CONTACTS

Headquarters

22, bd Benoni Goullin
 Nantes Biotech
 44200 Nantes
 France
 +33 2 40 18 09 16
sales@systemplus.fr

Europe Sales Office

Lizzie LEVENEZ
 Frankfurt am Main
 Germany
 +49 151 23 54 41 82
llevenez@systemplus.fr

America Sales Office

Steven LAFERRIERE
 Western USA & Canada
 +1 310-600-8267
laferriere@yole.fr

Chris YOUUMAN

Eastern USA & Canada
 +1 919-607-9839
chris.youman@yole.fr

Asia Sales Office

Takashi ONOZAWA
 Japan & Rest of Asia
 +81 80 4371 4887
onozawa@yole.fr

Mavis WANG

Greater China
 TW +886 979 336 809
 CN +8613661566824
wang@yole.fr

Peter OK

Korea
 +82 10 4089 0233
peter.ok@yole.fr

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