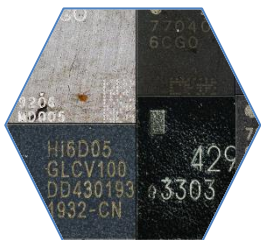
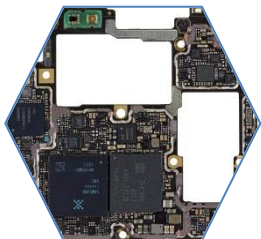


## RF Front-End Module Comparison 2020 – Volume 4

*Technical and cost overview of the latest radio frequency front-end module technologies integrated in Asian based smartphones manufacturers.*



**Title:** RF Front-End Module Comparison 2020 – Volume 4

**Pages:** 270

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**Reference:** SP20524

Each year System Plus opens hundreds of Front-End Modules (FEMs) and components to provide an overview of the Radio Frequency (RF) FEM market in selected flagship smartphones. Gathering the information into one report offers an opportunity to keep track of the evolution of this technology market.

This fourth volume provides insights into technology and cost data for FEMs and several components found in 19 Asian based latest smartphones: from Asus, HTC, Huawei, Oppo, OnePlus, Vivo, Sharp, ZTE, Xiaomi and Realme. It features a comprehensive overview of the RFFE architecture on the market, comparing available smartphones from these companies. Components dependency of the Asian OEMs are revealed along the different choice in integration of 5G technology even mmWave support. Also, it reveals how supplying companies offers the same type of components: similar prices, structure or even design.

With teardowns of the smartphones, the main RF modules and components have been extracted and physically analyzed, from the output of the transceiver to the antenna. Packaging, sizes, and technologies are studied to provide a large

panel of technical and economical choices and an overview of the market.

Moreover, the report includes an overview of other flagship smartphones released from Q3 2019 to Q2 2020 and provides a statistical analysis for most of connectivity modules. It also tries to explain the smartphone makers' choices and supplier tendencies. Wifi and Connectivity Module analysis is not included in this report.

### COMPLETE TEARDOWN WITH

- Detailed photos
- Precise measurements
- Module opening
- Die measurements
- Complete bills-of-materials for the modules
- Comparison between suppliers
- Comparison between OEMs
- Cost comparisons
- Detailed technical and cost analysis of 23 components

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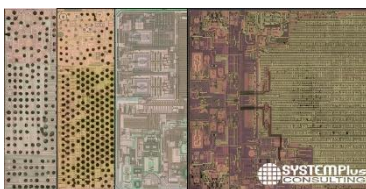


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## RELATED REPORTS



### RF Front-End Module Comparison 2020 – Volume 3

*Technical and cost overview of the latest Radio Frequency connectivity Front-End technologies, with deep analysis of Wifi 6.0 and Ultra-Wide Band architecture.*

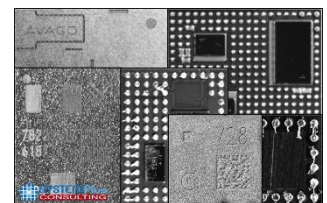
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### RF Front-End Module Comparison 2020 – Volume 2

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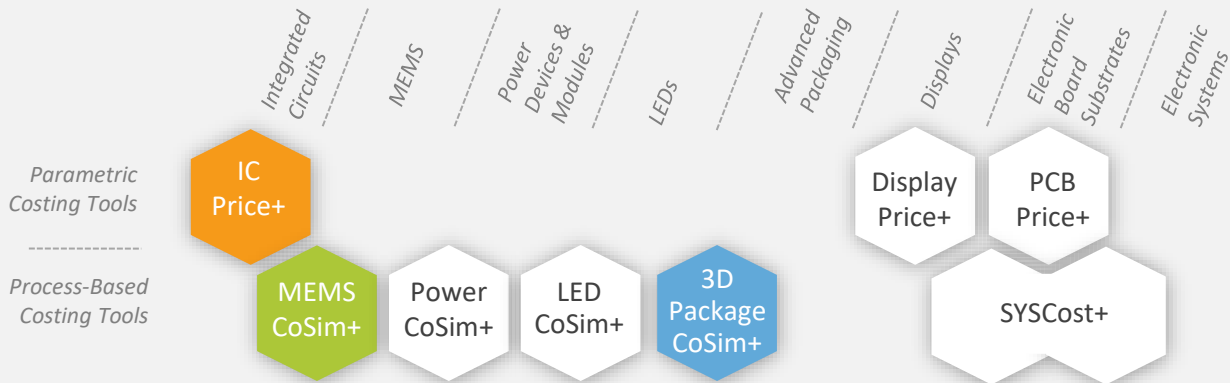


### RF Front-End Module Comparison 2020 – Volume 1

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## COSTING TOOLS



Our analysis is performed with our costing tool IC Price+, MEMS CoSim+ and 3D Package CoSim+.

System Plus Consulting offers powerful costing tools to evaluate any process or device, the production cost and selling price, from single chip to complex structures. All these tools are on sale under corporate license.

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## ABOUT SYSTEM PLUS CONSULTING

System Plus Consulting is specialized in the cost analysis of electronics from semiconductor devices to electronic systems.

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 is available.

Our services:

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# TERMS AND CONDITIONS OF SALES

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## 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.

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

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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?

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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.

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

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