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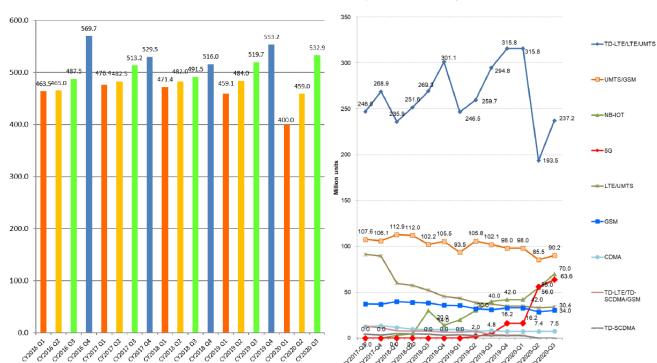
RF Devices/Modules For Cellular Terminal Quarterly Market Report Q3 2020

Released on February 2, 2021

RF Components & Modules in This Repor

- 1 Front end Module (ASM·TX Module · PAiD · FEMiD · All-in-One FEM · PAMiD · 5G TX Module/PAMiF-NEW Multiplexer A-Multiplexer 5G RX Module-NEW)
- 2 Antenna Switch (Main RF/Diversity) Power Amplifier Module 4 Duplexer **⑤** Band Pass Filter **⑥**TCXO

Cellular Terminal Shipment History











Report Sample

Sub 6GHz RFFE of **SAMSUNG GALAXY S20+ 5G SC-52A**

Sub 6GHz band count is dual bands of 3.5 GHz mudulus and reception and for reception

5G RX Module b 6GHz Single ba

■

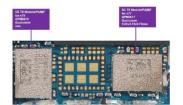
5G RX Module Sub 6GHz Single ba

5G RX

◆ GALAXY S20+ 5G SC-52A is a model for Japan

band (n78)and 4.5 GHz band, and MIMO spec is TX x 1/R x 3, making it 4x4 MIMO. ◆ The implementation was 2 of Qualcomm's 5G TX

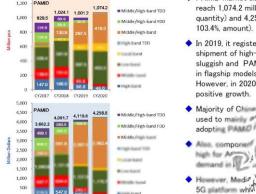
◆ Fitter and LTCC for TRX, and



3Q 2020: Diversity FEM Market Size

- ♦ Diversity FEM market size in Q3 2020 was 307.3 million pcs (quantity) and 399.4 million dollars (amount).
- ♦ It was QoQ 120.3% (quantity) and 120.3% (amount), and YoY 100.0% (quantity) and 100.0% (amount).
- Release of 2020 model iPhone (iPhone12) was in October, a month later than other years, and caused demand for Diversity FEM for Apple to become sluggish. Still. because adoption of Diversity FEM was progressing in Chinese 5G smartphones, and component demands were growing solidly in response to the change in the market trend due to Huawei's share shrinkage, they have supplemented the

Market Forecast of PAMID in 2020



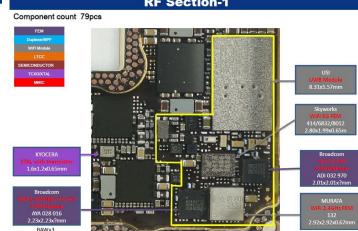
◆ PAMiD market size in 2020 is expected to reach 1,074.2 million pcs (YoY 107.3%, quantity) and 4,258.8 million dollars (YoY 103.4%, amount).

◆ In 2019, it registered negative growth since shipment of high-end smartphones were sluggish and PAMiD adoption has saturated in flagship models of Apple and SAMSUNG. However, in 2020, it is expected to result in positive growth.

Majority of Chamber Module are now adopt G smartphones.

high for A I I is a way and AMD ◆ However, Media Tek is scheduling to supply 5G which adopts TX Module to cut costs from late 2020. Therefore, 5G smartphones adopting TX Module may increase in and after 2021. 113

iPhone 12Pro Janpan/Canada Model & USA Model **RF Section-1**



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■Outline of the report

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