Navian Marketing Report

~Medium-term forecast of RF Devices / Modules Market Cheunging RF circuit and RF Devices / Modules by Evolution of LTE~

RF Devices/Modules for Cellular 2016-2017

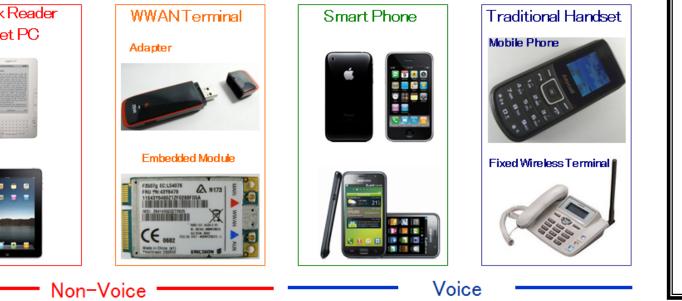
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(1)Front end Module(ASM·RX Module·TX Module·PAiD·PAMiD·FEMiD·FILTER BANK· Duplexer Bank Multiplexer Antenna Multiplexer) ②Antenna Switch (For Main RF For RX Diversity) ③Power Amplifier Module ④Duplexer(SAW/BAW/IHP) ⑤Band Pass Filter(SAW/BAW/IHP) ⑥TCXO

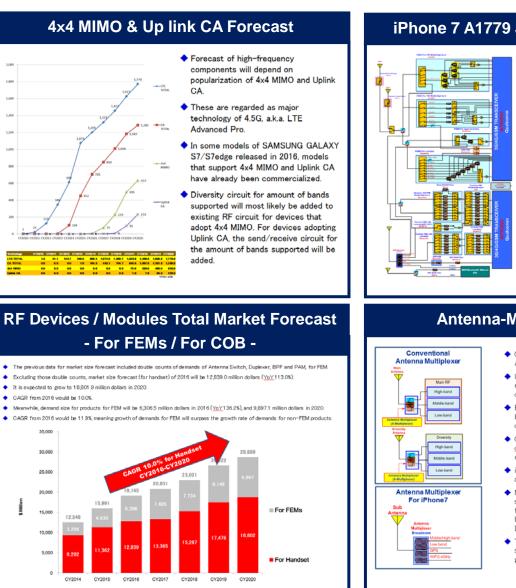


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RF Devices / Modules For Cellular in this Report



Report Sample



RF Devices/Modules For Cellular 2016 2017 English version -CD-ROM (PDF file & Excel file)-

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iPhone 7 A1779 Japan Model RF Circuit

- iPhone7 A1779 is Japan model, and has 2 extra 1.5GHz bands added to support Band-11 and Band-21 unique to Japan. FDD band count is 15 bands.
- It uses Qualcomm platform, and supports 6mode. FDD-LTE/TD-LTE/TD-SCDMA/UMTS/CDMA/GSM
- 4 PAMID are adopted for FEM: for ①High-band and Midd FDD band, ②High-band and Middle-band TDD band, ③ Japanese Local-band, and @Low-band.
- 2 PAMiD for High/Middle-band are by AVAGO. 1 for Japanese .ocal-band is by MURATA, and 1 for Low-band is by Skyworks
- MURATA's <u>PAMID</u> is the first product they are suppling their PA for Apple. (They used to supply <u>PAID</u> for iPad, but that PA was by Panasonic.)
- For Diversity side, it has 3 Diversity FEM for front stage with LNA, for: ①High/Middle-band, ②Local-band, and ③Low-band.
- Skyworks supplies for ①High/Middle-bandand ③Low-band, and MURATA supplies for ②Local-band.
- For interstage Diversity FEM, TDK supplies for ①High/Middle-band, and MURATA for ②Low-band.
- Aside from this, AVAGO's Pentaplexer with 5 BAW Filters is adopted for demultiplexing frequencies on reception side.
- Kyocera's XTAL unit with Thermistor is adopted as timing

Antenna-Multiplexer Outline

- Our new subject of investigation starting from this report is Antenna Multiplexer
- Unlike Multiplexers that aim for simultaneous sending and receiving of multiple frequencies using multiple Duplexers, this component demultiplexes Antenna signals into multiple waves.
- Both components are currently called Multiplexer in general. but we will refer to the latter as Antenna Multiplexer to differentiate it from Duplexer-based Multiplexer
- Currently, iPhone uses Antenna Multiplexer (A-Multiplexer) to demultiplex Sub Antenna, and Media Tek uses it in their reference design.
- iPhone uses it to <u>demultiplex WiFi</u> and GPS frequencies in addition to Cellular frequency.
- Meanwhile, Media <u>Tek</u> uses Antenna Multiplexers mainly to support Carrier aggregation, by demultiplexing Cellular frequencies into 3 bands of high-band, middle-band, and low-band, and are used directly under Antenna of Main RF and Diversity.
- This Media <u>Tek</u> Antenna Multiplexer is estimated to have the same style as what is considered to be adopted in other platforms, and will be the conventional Antenna Multiplexe

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vees on a consolidated basis.

subsidiaries and affiliated companies, you need to purchase the corporate

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