

RF transceiver market for mobile devices to reach 1.5 billion by 2015 — says Petrov Group (part 2)

By LJ Ristic, Managing Director of Mobile Devices, Petrov Group -- Friday 28 October 2011

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RF transceivers are critical components of mobile devices including handsets/smartphones and tablet PCs. By 2015, the total RF transceiver market will reach 1.5 billion units while 3G multi-mode transceivers will reach more than one billion units, according to the Petrov Group. Part 1 of this series can be read [here](#).

RF transceiver products are divided into two distinct groups:

- The first group represents transceivers integrated with basebands on a single chip designed for the low-end phones that are based on the EDGE/GPRS/GSM standards. Integration of transceiver and basebands for this market segment is possible because of the lower complexity of the products.
- There is also the second group of transceiver products designed primarily for higher-end phones that are based on 3G and 4G standards. These are made as standalone (S/A) chips (the term standalone is used for a transceiver not integrated with baseband). Transceivers for 4G/3G are more complex, they use higher order modulation, work on multiple bands, include a diversity option, are mixed-signal in nature, and altogether designers deal with a completely different set of challenges compared to basebands. Thus, an integration strategy does not make sense. S/A transceiver chips will dominate the smartphone and tablet market in years to come, said Lj. Ristic, managing director at the Petrov Group.

The RF transceiver market is in a direct relation to the mobile device (handsets and tablets) market. The total mobile device market reached 1.5 billion units in 2010, and it is expected to reach more than 2.6 billion units by 2015. The mobile device market in 2010 was made up almost entirely of handsets, with the smartphone segment reaching 300 million units, or 20% of market share.

Tablets were introduced in 2010, and total sales of these products were below 20 million units, taking only 1% of market share. It is expected that tablets will reach more than 200 million units by 2015, which will be the highest growth segment with a CAGR of 65%.

The smartphone segment is the second-highest growth segment and is forecast to reach 1.2 billion units by 2015. The non-smartphone segment will stay at 2010 levels in terms of units. By 2015, the ratio of smartphones versus non-smartphones will reach a 1:1 level. In 2015, the smartphone market segment will be primarily composed of devices based on 3G and 4G standards, while the non-smartphone segment will be composed primarily of devices based on 2G, commented Ristic.

In 2010, low-end devices based on the EDGE/GPRS/GSM standard dominated the market with 72% of market share and almost 1.1 billion units. The market share of this market segment will significantly decline by 2015 down to 42%. Meanwhile, 3G market segments will grow and reach a market share of 40%.

A newcomer, the LTE standard, was practically nonexistent in 2010, but many trials have taken place worldwide laying a foundation for future use. LTE got an additional boost thanks to the Digital Dividend Initiative which made UHF frequency bands, 700MHz and 800MHz, available for use. This is important for the future of LTE since the cost of operation at these bands is much lower than at 2.6GHz, and also the propagation characteristics are much better in buildings (less attenuated). It is expected that mobile

devices with built-in LTE capability will reach about 10% market share by 2015. Among smartphones and tablets LTE should reach 240 million and 40 million units, respectively, which will represent about 20% of each of those market segments.

Among tablet products it is expected that tablets featuring 3G connectivity will reach about 80 million units. The relation of 3G-capable tablets versus LTE-capable tablets will reach a 2:1 ratio in 2015, while Wi-Fi-capable tablets will be the biggest segment with 100 million units.

For each mobile device with phone-connectivity at least one transceiver is needed. We define the RF transceiver market as a market made up of S/A transceivers. The total number of RF transceivers for mobile devices reached 750 million units in 2010 and will reach more than 1.5 billion units by 2015, said Ristic.

The EDGE/GPRS/GSM market segment was represented in 2010 by 330 million units which was about 44% of the transceiver market. This market segment will almost disappear by 2015, declining down to less than 10% of market share since the products of transceivers integrated with baseband on the same chip will take over this segment completely.

The 3G multi-mode transceiver segment reached more than 400 million units and represented 56% of the market share in 2010, and it will pass the one billion mark by 2015, dominating the transceiver market with 75% of market share.

The third segment is LTE multi-mode transceivers which were practically nonexistent in 2010. This segment will grow to about 300 million units to reach 18% market share by 2015.

In summary, by 2015 the total RF transceiver market will reach 1.5 billion units while 3G multi-mode transceivers will reach more than one billion units. At the same time, the 2G transceiver market will almost vanish, concluded Ristic.

Petrov Group: Mobile device market segmentation by standard, 2010-2015

	2010	2010	2015	2015	
Mobile Devices	Shipments (M units)	Market share (%)	Shipments (M units)	Market share (%)	CAGR (%)
Non-smart phones	1200	79	1200	46	0
Smartphones	300	20	1200	46	32
Total Handsets	1500	99	2400	92	10
Tablets	18	1	220	8	65
Total Mobile Devices	1518	100	2620	100	12
Mobile Handsets by Standard	Shipments (M units)	Market share (%)	Shipments (M units)	Market share (%)	CAGR (%)
2G (GSM/GPRS/EDGE)	1100	72	1100	42	0
3G (HSPA/WCDMA/CDMA2K/TD-SCDMA)	400	26	1060	40	22
LTE (4G – TD, FD)	0	0	240	9	
Total Mobile Handsets	1500	99	2400	92	10
Tablets by Standard	Shipments (M units)	Market share (%)	Shipments (M units)	Market share (%)	CAGR (%)
Tablets with 3G	14	1	80	3	42
Tablets with LTE	0	0	40	0	
Tablets Wi-Fi	4	0	100	4	90
Total Tablets	18	1	220	8	65

Source: Petrov Group, compiled by Digitimes, October 2011

Petrov Group: Number of units of transceiver by standard, 2010-2015					
	2010 shipments (M units)	2010 market share (%)	2015 shipments (M units)	2015 market share (%)	CAGR (%)
2G EDGE/GPRS/GSM transceivers	330	44	100	7	(21)
3G transceivers in handsets	400	54	1060	70	22
3G transceivers in tablets	14	2	80	5	42
LTE transceivers in handsets	0	0	240	16	
LTE transceivers in tablets	0	0	40	2	
Total transceivers	744	100	1520	100	15

Source: Petrov Group, compiled by Digitimes, October 2011

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