DIGITIMES Research: China Smartphone AP Tracker – 2Q 2014

China smartphone AP shipments

Eric Lin, DIGITIMES Research, July 2014

Introduction

Summary: The LTE market does not perform as expected in the China market while the TD-SCDMA market declines. Smartphone APs experience quarterly growth of 13.2% in China In the second quarter of 2014, with MediaTek's 3G products achieving nearly a 50% market share. In the second half of 2014, the LTE standard will rapidly replace 3G, 64-bit products will enter the mainstream market but overall shipment growth will be limited.

2Q14 review

According to Digitimes Research, smartphone AP shipments in China experienced quarterly growth of 18.7% in the second quarter of 2014, with annual growth at 16.9%. Although the LTE market has grown, shipments in the first half of the year only reached 10 million units, which is not a satisfying total considering the hype surrounding the rollout of LTE, resulting in lackluster growth in shipments for Qualcomm. The TD-SCDMA market also experienced a rapid contraction, which further added to the decline in Spreadtrum's shipments. On the other hand, the WCDMA market is still extremely hot, which is why MediaTek has been able to continue gaining market share even in the absence of an LTE product. In the second quarter, MediaTek was the clear industry leader with its overall market share reaching 52.4%.

Looking at the overall market, Digitimes Research believes that the mobile communications industry in China is gradually entering a stable phase, which means that vendor shipment volumes will follow traditional seasonal market trends. Although the second quarter is traditionally the slow season, it was not slow at all, with shipment volumes continuing to grow compared to the previous quarter. The lackluster development of the LTE market has resulted in Qualcomm and Marvell experiencing limited success in relative markets. Qualcomm originally expected to be able to gain some ground against MediaTek due to MediaTek's lack of LTE products during this period. However, the conflicting policies of operators ultimately resulted in end-user device manufacturers and consumers not knowing which standards to follow, with the strategies of chip vendors also being affected. This is why MediaTek, which was not in a rush to enter the LTE market, was able to benefit from the situation, thereby profiting and expanding its 3G product market share in a stable manner.

From the perspective of individual AP suppliers, MediaTek began volume shipments of the MT6592 at the end of the first quarter, with prices dropping rapidly. Its low-price quad-core and dual-core products also performed well. In terms of LTE, products that integrate the application processor (AP) with a baseband have been widely accepted by customers, with shipment volumes growing by 8% in the second quarter compared to the previous quarter. Spreadtrum's product strategy has not been able to keep up with the market, and its focus on extremely low-end products has made it difficult to expand its market share. Spreadtrum has been the biggest loser in the rapid contraction of the TD-SCDMA market, with shipments declining by 4.8% in the second quarter. Qualcomm continues to promote its QRD products, and has further expanded the QRD program to include LTE and 64-bit products. Although the LTE market did not evolve as quickly as originally expected in the first half of 2014, Qualcomm still acquired most of share of the AP market with a sequential shipment growth of 18.9%, and it has been losing market share to MediaTek; HiSilicon's momentum in terms of shipment volumes has continued in the second quarter due to its introduction of new products. Due to ZTE and Coolpad crossing over into high-end platforms as well as Xiaomi's product shipments slowing, Nvidia's shipment volumes declined by 16.7% in the second quarter.

2H14 forecast

Digitimes Research predicts the China smartphone AP market will continue to grow steadily in the second half of 2014 and the promotion on long-term evolution (LTE) is the main drive of this growth. In the first half of 2014, many firms delayed the launch of LTE products due to reservations about the LTE license distribution on the part of China's government and unclear subsidization policies on the part of China's biggest telecommunication firm, China Mobile.

In the first half of 2014, with the exception of Coolpad Group and other firms that showed strong shipments, other firms have limited LTE products and low shipments. In fact, most firms plan to focus on LTE products in the second half of 2014.

In addition to unclear subsidization policies from China Mobile, another reason for firms to push LTE product launches to the second half of 2014 is the lack of choices in chip solutions.

In the first half of 2014, only Qualcomm and Marvell provided adequate solutions. Other chipmakers such as Taiwan-based MediaTek, China-based Spreadtrum and Leadcore plan to introduce price competitive products in the second half of 2014. Moreover, most firms have optimistic expectations to the related markets as China Mobile reactivates subsidies for tri-mode products. Furthermore, two other telecommunication firms, China Unicom and China Telecom, are expected to obtain LTE licenses in the second half of 2014. With infra-platforms near completion and more telecommunication firms obtaining LTE licenses, the popularity of LTE products is expected to increase.

Among all LTE solution providers, Qualcomm was the first to invest in the technology. However, the prices of the LTE solutions from Qualcomm in the first half of 2014 were relatively high and without special features, hence the firm plans to secure customers with 64-bit and lower prices to fend off MediaTek in the second half of 2014. Marvell is also one of the first firms to invest in LTE solutions and although its prices are lower, the products lack support capabilities and have problems at the agreement level. This means customers need more time to solve these problems. In the second half of 2014, Marvell also plans to introduce 64-bit LTE solutions but if the firm does not improve support of its products, especially concerning protocol layers, it is unlikely that the firm can thrive in a price war with Qualcomm and MediaTek.

China-based HiSilicon has launched its LTE solutions and China-based smartphone maker Huawei has begun to adopt the products in large volumes.

In the first half of 2014, there were nearly no smartphones in the market that use MediaTek's LTE solutions. This is because MediaTek's product development could not keep up and the immaturity of the LTE market made the firm shy away from launching solutions in the first half of 2014. As the market enters the third quarter, MediaTek will continue to adopt conservative strategies by introducing AP plus baseband solutions. It won't be until the second half of the third quarter when MediaTek launches single chip solutions. Digitimes Research believes when MediaTek launches its single chip solutions, its competitive advantage will be its cost-performance ratio and high cooperativeness with clients.

Spreadtrum and Leadcore plan to focus on tri-mode products while Leadcore will also launch five-mode products. Under the pressure of China's government, end device makers will adopt these solutions for some of its products but the overall shipment total is unlikely to be large.

According to Digitimes Research, China smartphone AP shipments are likely to see an on-quarter increase of 4.5% in the third quarter and an on-quarter increase of 5.5% in the fourth quarter. In addition, MediaTek is expected to show steady growth in the second half of 2014, while Qualcomm is likely to face challenges despite its shipment growth in the first half of 2014. Spreadtrum's shipment growth is expected to return to positive and causes MediaTek and Qualcomm to see a slight fall of market share.

Key factors affecting China smartphone AP shipments

There are three main factors that affected smartphone AP shipment volumes in China in the second quarter of 2014.

Seasonal effects

Due to the traditional slow season and the switching of AP platforms, inventory demands were weak and AP shipment volumes increased only slightly compared to the first quarter.

Although demand in emerging markets has been increasing, the local market in China is facing a bottleneck in terms of growth.

Supply of components

Demand in terms of LTE has not developed as expected, which has allowed the shortage situation of PoP packaged memory to ease.

Status of chip vendors

MediaTek's 3G chip shipments are strong, with high demand for quad-core, eight-core, as well as 6290 LTE baseband chips.

Spreadtrum was impacted by the drop in demand in terms of the TD market, and saw both its product shipments and market share decline.

Although Qualcomm was quick to provide comprehensive LTE solutions, due to effects resulting from conflicting policies on the part of carriers, LTE demand was stagnant. In addition, Qualcomm also faced competition from Marvell in this market segment. Therefore, LTE did not contribute much to Qualcomm's overall shipment volumes.

HiSilicon and Nvidia both performed well in terms of product shipments. However, demand is declining for Nvidia, and there was a slight drop in its shipments.

Table 1: Key factors affecting China smartphone AP shipments in 2Q14

Factor	Item	Analysis	Influence on shipments
Market forces	Device makers	Due to effects from switching technology platforms and local economic market factors, shipment volumes only increased slightly compared to the first quarter.	↑★
		Although demand was strong in emerging markets, the US market, as well as the European market, have increased but the domestic market in China is facing a bottleneck.	↑★
Components	Supply of memory components	A memory shortage situation has eased.	↑★
Status of chip vendors	Spreadtrum	The TD market has been contracting, with continued declines in Cortex-A5 architecture products.	↓★★
	MediaTek	Demand for 3G products is still strong, with AP+Baseband products starting to ship.	↑★★
	Qualcomm	End-user device manufacturers have been switching platforms, resulting in a slight stall in product shipments.	↑★
	HiSilicon	Its newly introduced chips are being widely adopted by Huawei.	↑★
	Nvidia	Orders from Xiaomi have been stable. However, slight declines have been experienced due to the crowding out effect of Xiaomi's new products.	↓★

Source: Digitimes Research, July 2014

2H14 forecast

Two major factors will affect China smartphone AP shipments in the second half of 2014:

Market

Smartphone vendors and the end market will have strong confidence in shipments as all pieces in the local LTE market will be in place in the second half of 2014.

All levels of LTE products will be ready in the second half of 2014 allowing consumers to have more choices

Chipmakers

MediaTek is slightly behind in LTE product launch and shipments but is expected to be quite competitive later in the year; hence its shipments are likely to increase.

Spreadtrum will introduce tri-mode LTE solutions in the second half of 2014, and with the firm strengthening the integration and cost of its 3G products it is likely to see shipments increase.

Qualcomm will complete its product lineup with entry-level and mid-range products but it would be challenging for the firm to compete with MediaTek on price. However, the firm still has advantage in high-end products.

HiSilicon is expected to see rising shipments due to the product launch of its downstream customer Huawei while Leadcore will also experience a shipment increase as it launches tri-mode and five-mode products.

Table 2: Key factors affecting China smartphone AP shipments in 2H14

Factor	Item	Analysis	Influence on shipments
Market	LTE environment	LTE to boom as operators obtain licenses, chip solutions become comprehensive and infra-platforms near completion	↑★
	End market firms	Various large-size smartphone makers to introduce LTE products in 2H14, pushing market development	↑★★
Chipmakers	Spreadtrum	Tri-mode product to be launched and with strong support capability, the firm may outperform in 2H14 compared to 1H14	↑★
	MediaTek	Begins with AP plus baseband LTE products follow by low cost single chip solutions, shipments are expected to increase	↑★★
	Qualcomm	Mature LTE solution with an advantage in the high-end market but will face challenge in the entry-level and mid-range markets	↑★
	HiSilicon	Huawei has been allocating large orders for HiSilicon LTE chips and the firm plans to introduce new products, hence shipments are expected to grow	↑★
	Leadcore	Tri- and five-mode products available for market promotion	↑★

Source: Digitimes Research, July 2014

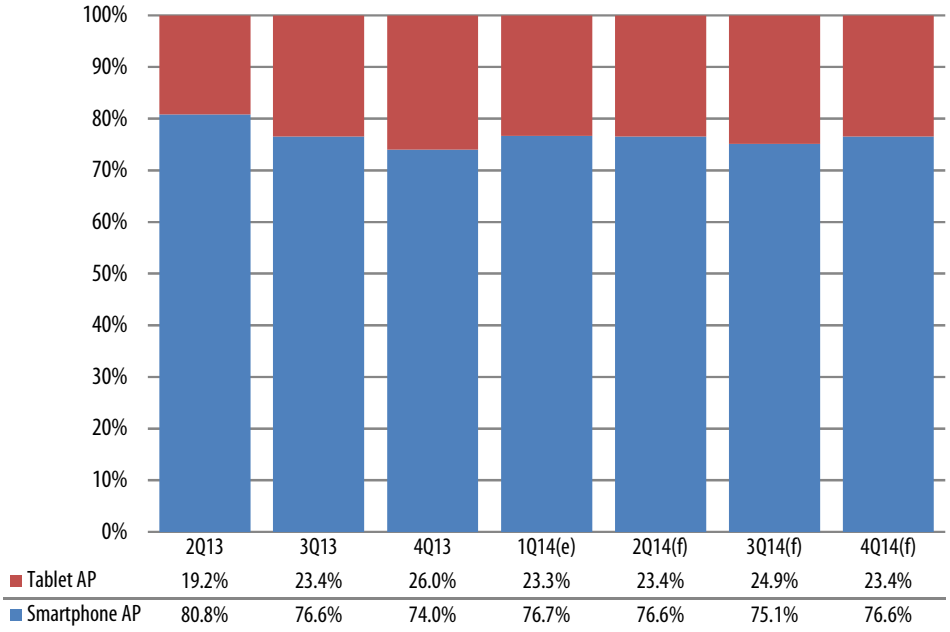
Shipment breakdown

Smartphone/Tablet share of AP market

The market for tablet APs has been warming up both globally and in the local China market in the second quarter, resulting in an increase in shipments. However, the degree of growth has been far lower than that of smartphone APs, resulting in an overall drop of 0.8% in overall market share.

In the second quarter, mid-to-high-end Smartphone APs product shipments experienced growth due to the rollout of LTE products. Shipments from leading smartphone AP suppliers, such as MediaTek and Qualcomm, have also increased. Overall, the level of growth has been higher than that of tablet APs.

Chart 1: China AP shipment share by application, 2Q13-4Q14



Source: Digitimes Research, July 2014

2H14 forecast

Tablet AP shipments and the related shipment share are expected to rise in the second half of 2014 compared to the first half of the year. Orders are expected to increase as end market firms prepare to stock up for the upcoming major holidays in China and other countries.

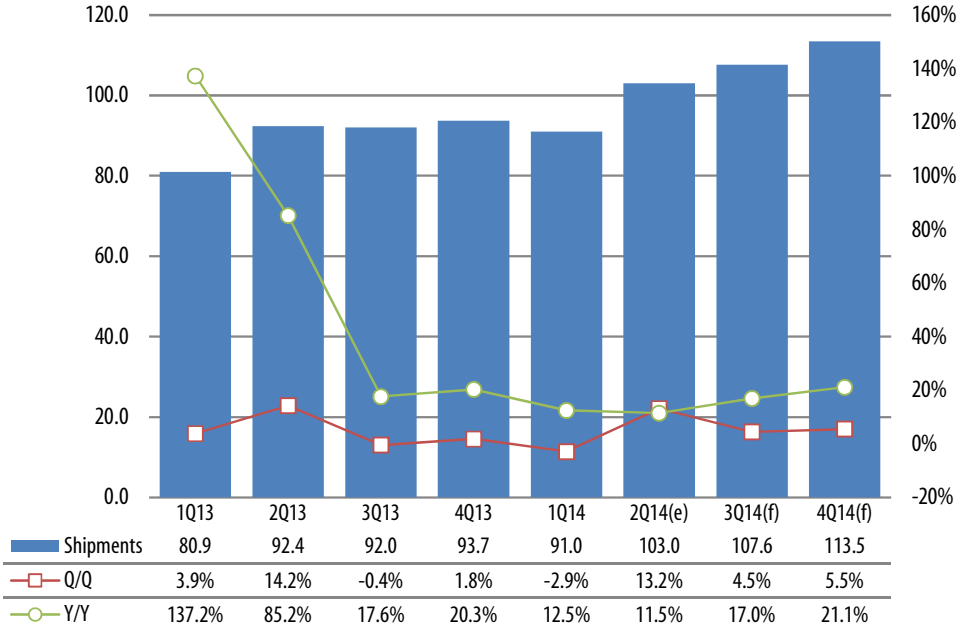
Smartphone AP shipments are likely to show growth as LTE products enter the market in the second half of 2014. Major chipmakers such as MediaTek and Qualcomm are also likely to see increasing shipments of smartphone APs. However, the magnitude of the overall shipment growth of smartphone APs will not surpass the shipment growth of tablet APs.

Smartphone AP shipments in China

Since the fourth quarter of 2012, growth in terms of smartphone AP shipments has slowed. Quarterly growth in terms of shipments was 13.2% in the second quarter of 2014. In contrast to the top three manufacturers, shipment volumes for HiSilicon and Nvidia grew significantly.

Annual growth for shipments was 11.5% in the second quarter of 2014, increasing by 16.6 percentage points compared to the previous quarter, thereby freeing itself from the previous situation of decline. Digitimes Research believes that in the future, the smartphone AP market in China will follow seasonal fluctuation patterns and will rarely experience dramatic growth.

Chart 2: China smartphone AP shipments, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	80.9	92.4	92.0	93.7	91.0	103.0	107.6	113.5
Q/Q	3.9%	14.2%	-0.4%	1.8%	-2.9%	13.2%	4.5%	5.5%
Y/Y	137.2%	85.2%	17.6%	20.3%	12.5%	11.5%	17.0%	21.1%

Source: Digitimes Research, July 2014

2H14 forecast

Digitimes Research believes the China smartphone AP market has entered a mature stage. Other than the launch of LTE products, the market will experience seasonal effects in the second half of 2014. However, the overall market is expected to be better compared to the first half of 2014.

In the third quarter of 2014, the on-quarter shipment growth is expected to reach 4.5% due to shipment growth of Qualcomm and MediaTek.

On-quarter shipment growth in the fourth quarter of 2014 is expected to be 5.5% due to rising shipments from Spreadtrum and Leadcore.

Shipments by supplier

MediaTek

Although they do not have a single-chip LTE product, since the LTE market has not yet matured and demand for 3G products is still on the rise, MediaTek's overall market share has reached 56.5%.

Qualcomm

Qualcomm has benefitted from its early LTE strategy, but its growth in terms of 3G product shipment volumes has not been as strong as that of MediaTek.

Spreadtrum

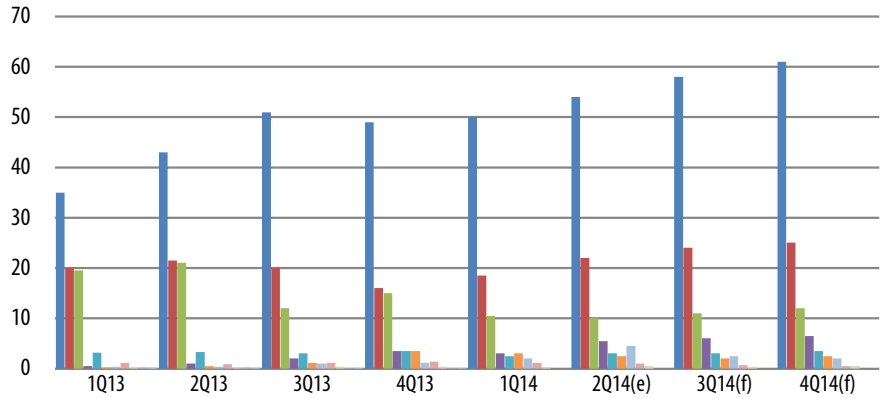
The TD market is continuing to experience a severe decline. However, there were signs the market bottomed out in the second quarter.

In the second quarter of 2014, the top three vendors' shipments accounted for 84.3% of overall shipments, dropping 2.1 percentage points compared to the previous quarter. Spreadtrum's drop in shipments has clearly impacted the market share of the top three vendors.

In addition to being adopted by Huawei, HiSilicon's Kirin910 and Kirin920 have also been adopted by other third-party customers, thereby showing exceptional growth in terms of shipments.

Nvidia continues to ship to Xiaomi. Although Nvidia has experienced a quarterly decline in terms of shipments, its performance in terms of shipments has increased compared to the same period of last year.

Chart 3: China smartphone AP shipments by supplier, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Mediatek	35	43.0	51.0	49.0	50.0	54.0	58.0	61.0
Qualcomm	20	21.5	20.0	16.0	18.5	22.0	24.0	25.0
Spreadtrum	19.5	21.0	12.0	15.0	10.5	10.0	11.0	12.0
Hisilicon	0.5	1.0	2.0	3.5	3.0	5.5	6.0	6.5
Leadcore	3.2	3.3	3.0	3.5	2.5	3.0	3.0	3.5
NVIDIA	0.3	0.5	1.2	3.5	3.0	2.5	2.0	2.5
Marvell	0.4	0.4	1.0	1.2	2.0	4.5	2.5	2.0
Broadcom	1.2	0.9	1.2	1.4	1.2	1.0	0.7	0.5
Samsung	0.2	0.3	0.4	0.4	0.3	0.5	0.4	0.5
TI	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0
ST-Ericsson	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0

Source: Digitimes Research, July 2014

2H14 forecast

MediaTek

The firm will shift its shipment focus to LTE products including AP plus baseband and single chip products in the third quarter.

The firm is expected to see increasing shipments in the fourth quarter as it introduces low-priced LTE products.

Qualcomm

In the second half of 2014, the firm plans to launch 64-bit products and its shipments are expected to thrive in the third quarter as MediaTek tries to catch up. However, the firm will face challenges in the fourth quarter.

Spreadtrum

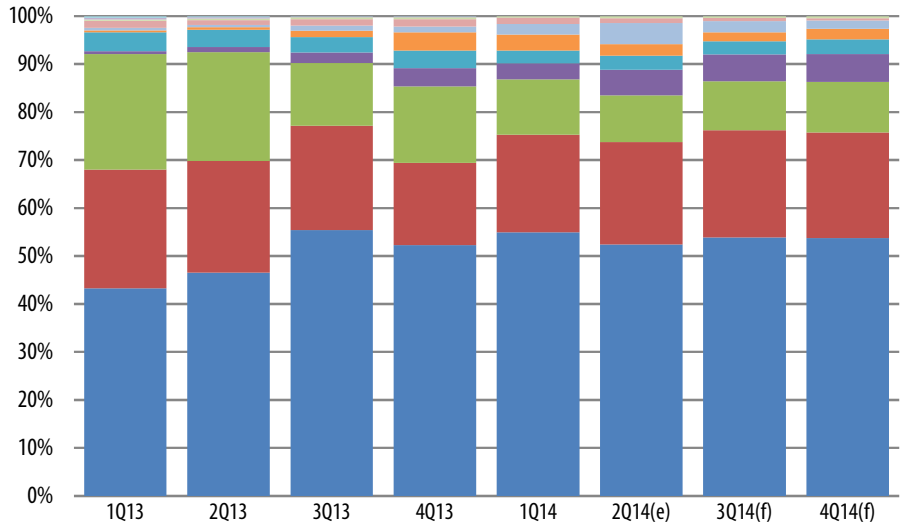
In the third quarter, the firm will rely on 3G products with high integration capabilities to stabilize its market share but still needs LTE products in the fourth quarter to break through in the market.

HiSilicon has orders from Huawei hence is expected to see steady shipments. In the second half of 2014, the firm has opportunities to expand its customer base.

Others

Marvell obtained some shares in the LTE market in the first half of 2014 but as competitors prepare to launch products, its total share is likely to fall. Leadcore and Nvidia are expected to obtain market share in the second half of 2014 with the launch of new products.

Chart 4: China smartphone AP shipment share by supplier, 1Q13-4Q14



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
ST-Ericsson	0.37%	0.22%	0.11%	0.11%	0.00%	0.00%	0.00%	0.00%
TI	0.37%	0.32%	0.11%	0.11%	0.00%	0.00%	0.00%	0.00%
Samsung	0.25%	0.32%	0.43%	0.43%	0.33%	0.49%	0.37%	0.44%
Broadcom	1.48%	0.97%	1.30%	1.49%	1.32%	0.97%	0.65%	0.44%
Marvell	0.49%	0.43%	1.09%	1.28%	2.20%	4.37%	2.32%	1.76%
NVIDIA	0.37%	0.54%	1.30%	3.74%	3.30%	2.43%	1.86%	2.20%
Leadcore	3.96%	3.57%	3.26%	3.74%	2.75%	2.91%	2.79%	3.08%
Hisilicon	0.62%	1.08%	2.17%	3.74%	3.30%	5.34%	5.58%	5.73%
Spreadtrum	24.10%	22.73%	13.04%	16.01%	11.54%	9.71%	10.22%	10.57%
Qualcomm	24.72%	23.27%	21.74%	17.08%	20.33%	21.36%	22.30%	22.03%
Mediatek	43.26%	46.54%	55.43%	52.29%	54.95%	52.43%	53.90%	53.74%

Source: Digitimes Research, July 2014

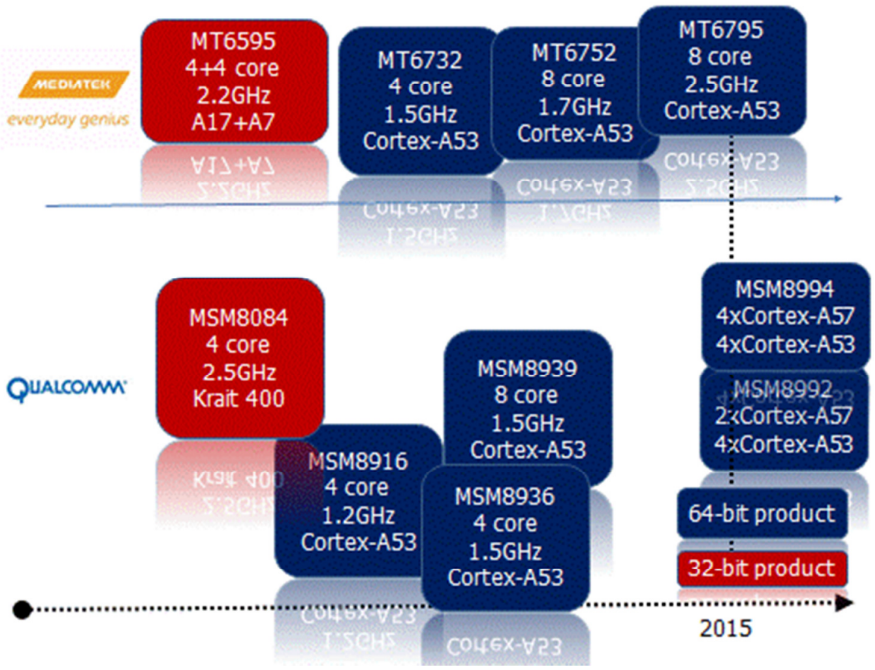
Qualcomm and MediaTek 2H14 product launch schedule

Qualcomm's strategy for new products is similar to MediaTek in the second half of 2014 with a small quantity of high-end 32-bit products and a large quantity of entry-level and mid-range 64-bit products.

MediaTek and Qualcomm both plan to focus on the quad-core Cortex-A53 platform in the second half of 2014. Qualcomm does have eight-core products but it is only for promotional purposes. The actual high-end 64-bit eight-core (a big quad-core and a small quad-core) product will likely be launched in 2015.

MediaTek is emphasizing on cost-performance ratio and is likely to introduce a high-end eight-core Cortex-A53 processer, MT6795, by the end of 2014. Although the firm lacks behind in product launches, its product configuration flexibility is superior. The MT6795 is not a de-facto high-end product but it is targeted at the high cost-performance ratio market in China. The target for the product is similar to the MT6592 introduced in the first half of 2014.

Chart 5: 2H14 Qualcomm and MediaTek smartphone AP product launch comparison



Source: Digitimes Research, July 2014

Shipments by architecture

In terms of core architectures for smartphone APs, in the second quarter of 2014, due to the drop in Spreadtrum's AP shipments, Cortex-A5 shipments declined significantly. The Cortex-A7 became the mainstream architecture and its market share surpassed 60%.

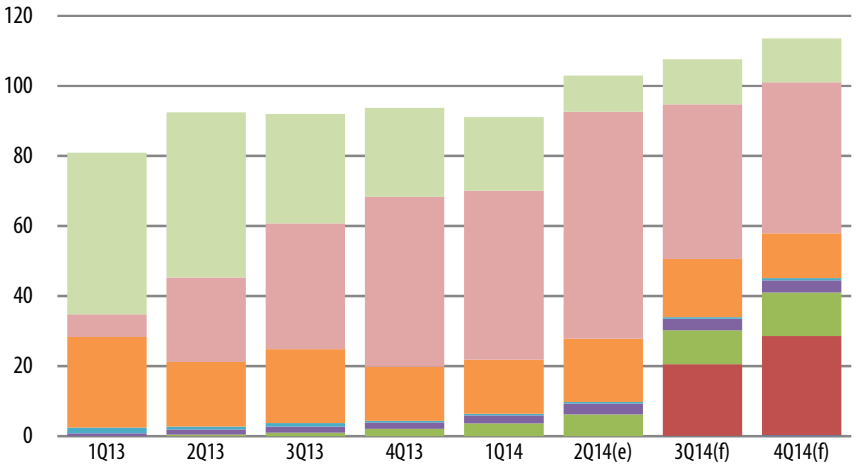
The growth of Cortex-A7 shipments is primarily due to several factors:

- ✓ Since the third quarter of 2013, MediaTek has adopted the Cortex-A7 as its primary product architecture for the full line of products that it ships, with the ratio of Cortex-A7 products continuing to rise in MediaTek's product portfolio.
- ✓ Spreadtrum is also actively working to replace its current ultra-low-end Cortex-A5 product lines with Cortex-A7 products.
- ✓ Qualcomm has also made significant strides in terms of Cortex-A7 cores, with its main mid-to-low-end S400 product primarily incorporating the Cortex-A7 architecture.

Cortex-A9 shipments increased due to HiSilicon's shipment growth. Leadcore also uses the Cortex-A9 as its primary architecture. MediaTek also ships a certain amount of Cortex-A9 products.

Cortex-A15 shipments have also increased due to shipments by Nvidia and Samsung. This growth, however, does not represent a large percentage.

Chart 6: China smartphone AP shipment by architecture, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Cortex-A5	46.1	47.1	31.3	25.3	20.9	10.3	12.9	12.5
Cortex-A7	6.5	24.0	35.9	48.5	48.2	64.9	44.1	43.1
Cortex-A8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cortex-A9	25.9	18.5	21.2	15.5	15.5	18.0	16.6	12.8
Scorpion	1.6	0.9	0.9	0.5	0.5	0.5	0.5	0.6
Krait	0.8	1.4	1.8	1.9	2.3	3.1	3.2	3.4
Cortex-A15/A12	0.0	0.5	0.9	2.1	3.6	6.2	9.7	12.5
Cortex-A53	0.0	0.0	0.0	0.0	0.0	0.0	20.4	28.4
Cortex-A57	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2

Source: Digitimes Research, July 2014

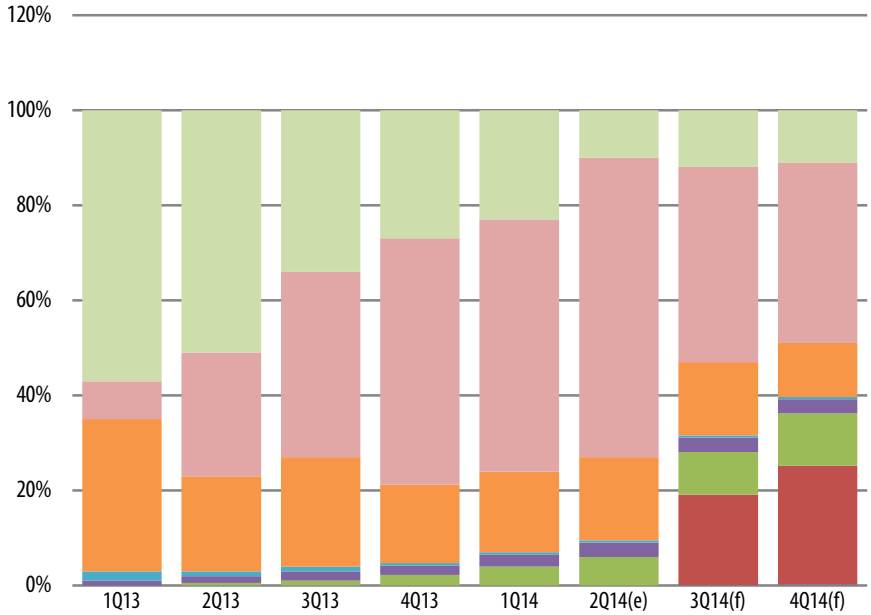
2H14 forecast

Among all smartphone AP platforms in the second half of 2014, Cortex-A7, which entered its peak in the second quarter, is likely to see a falling share as 64-bit products begin entering the market in the third quarter.

Favored by Qualcomm and MediaTek, Cortex-A53 is likely to see its market share rise to 25% in the second half of 2014

Cortex-A12 and A15 are expected to see an increase in market share as firms such as Nvidia, HiSilicon, and MediaTek adopt the platform.

Chart 7: China smartphone AP shipment share by architecture, 1Q13-4Q14



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Cortex-A5	57.0%	51.0%	34.0%	27.0%	23.0%	10.0%	12.0%	11.0%
Cortex-A7	8.0%	26.0%	39.0%	51.8%	53.0%	63.0%	41.0%	38.0%
Cortex-A8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cortex-A9	32.0%	20.0%	23.0%	16.5%	17.0%	17.5%	15.4%	11.3%
Scorpion	2.0%	1.0%	1.0%	0.5%	0.5%	0.5%	0.5%	0.5%
Krait	1.0%	1.5%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Cortex-A15/A12	0.0%	0.5%	1.0%	2.2%	4.0%	6.0%	9.0%	11.0%
Cortex-A53	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	25.0%
Cortex-A57	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%

Source: Digitimes Research, July 2014

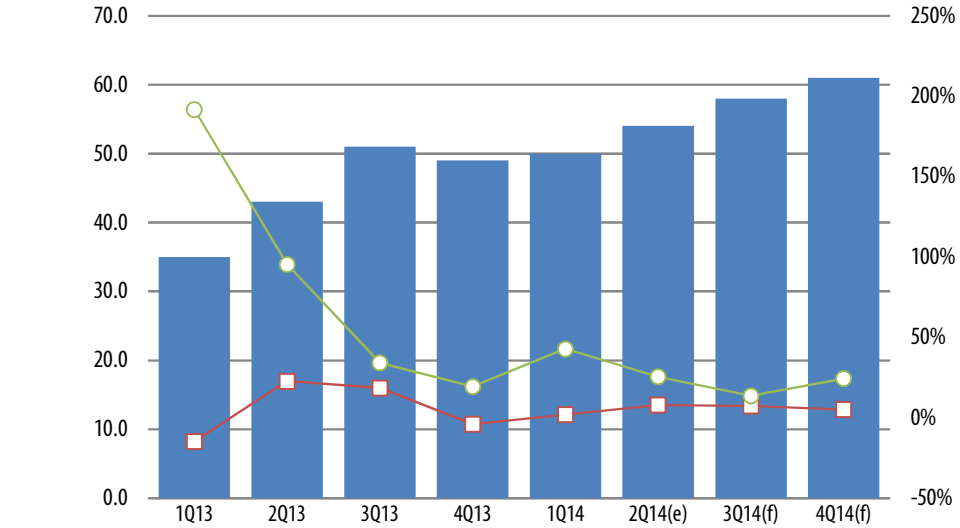
Supplier analysis

MediaTek

MediaTek's shipments in the second quarter of 2014 were distributed rather evenly, with eight-core, quad-core, and dual-core products all showing growth. Growth of eight-core products was the most significant and drove overall product shipments. MediaTek's quarterly growth in terms of shipments was 8%.

MediaTek's LTE product strategy is not yet mature and it still lacks a key single-chip solution. However, there is still a certain amount of demand for AP + independent baseband product solutions in the market.

Chart 8: MediaTek smartphone AP shipments, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	35.0	43.0	51.0	49.0	50.0	54.0	58.0	61.0
Q/Q	-14.6%	22.9%	18.6%	-3.9%	2.0%	8.0%	7.4%	5.2%
Y/Y	191.7%	95.5%	34.2%	19.5%	42.9%	25.6%	13.7%	24.5%

Source: Digitimes Research, July 2014

2H14 forecast

MediaTek will continue to see steady shipment growth in the second half of 2014 but in the fourth quarter, as China market enters its low season, the magnitude of shipment growth is expected to fall.

The firm will begin launching LTE products in the second half of 2014, which will likely cause demand for 3G chips to fall, hence the overall growth is unlikely to be comparable to previous years. However, the firm can expect to see on-year increase but its on-quarter increase will only be in the single-digit level.

Baseband breakdown

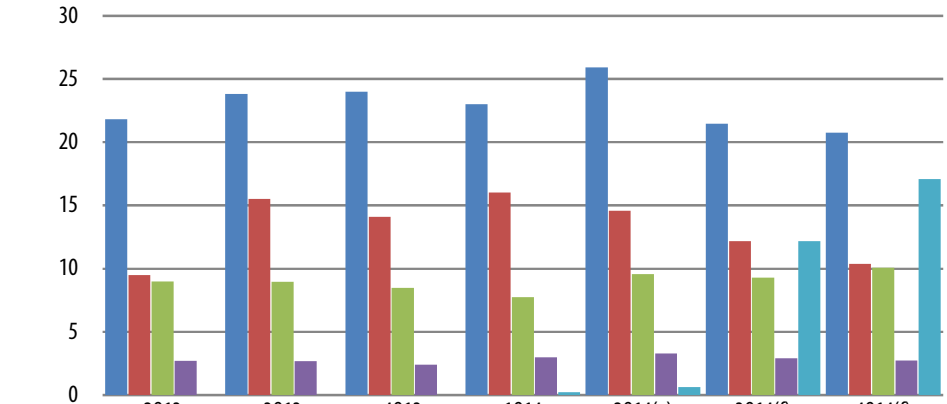
In the second quarter of 2014, WCDMA accounted for nearly half of MediaTek's overall AP shipments. MediaTek's shipments grew significantly in the second quarter of 2014, with shipments for all communications platforms all showing growth.

Although the TD-SCDMA market has contracted, since some of Spreadtrum's customers have switched over to MediaTek, MediaTek has experienced slight growth.

Due to increased demand for EDGE products in emerging markets, shipment volumes have significantly increased.

MediaTek's LTE products are not yet mature. Although some LTE products have been shipped, the quantity of the shipments have not been significant enough to affect overall shipment performance in the second quarter.

Chart 9: MediaTek shipments by baseband type, 1Q13-4Q14 (m units)



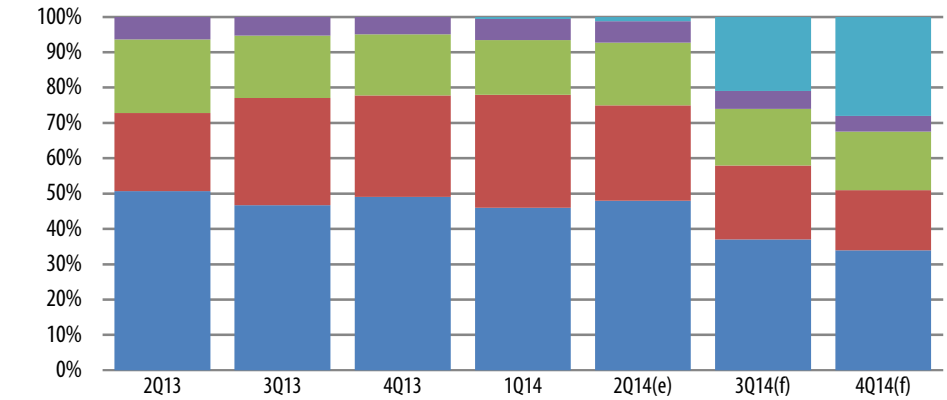
	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
WCDMA	21.801	23.817	24.01	23	25.92	21.5	20.7
TDSCDMA	9.503	15.504	14.112	16	14.58	12.2	10.4
EDGE	8.987	8.976	8.477	7.75	9.558	9.3	10.1
CDMA	2.709	2.703	2.401	3	3.294	2.9	2.7
LTE	0	0	0	0.25	0.648	12.2	17.1

Source: Digitimes Research, July 2014

2H14 forecast

The 3G platform will contract as MediaTek launches LTE products to meet market demand in the second half of 2014, while its EDGE market share is unlikely to be affected as demand from emerging markets has been steady.

Chart 10: MediaTek shipment share by baseband type, 1Q13-4Q14



	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
LTE	0.0%	0.0%	0.0%	0.5%	1.2%	21.0%	28.0%
CDMA	6.3%	5.3%	4.9%	6.0%	6.1%	5.0%	4.5%
EDGE	20.9%	17.6%	17.3%	15.5%	17.7%	16.0%	16.5%
TDSCDMA	22.1%	30.4%	28.8%	32.0%	27.0%	21.0%	17.0%
WCDMA	50.7%	46.7%	49.0%	46.0%	48.0%	37.0%	34.0%

Source: Digitimes Research, July 2014

Shipments by architecture

From the perspective of individual product proportions in the second quarter shipments, Cortex-A7 products accounted for 86% of overall shipments.

Some white box customers have adopted MT65 series chips as the cores for their communications tablets. These will not be included in smartphone AP shipment calculations.

For products ranging from dual-core to eight-core, Cortex-A7 has already become the mainstream architecture.

MT6592 pricing has rapidly dropped to the mid-to-low-end range, with shipment volumes increasing dramatically. The quad-core MT6582 product is also doing well.

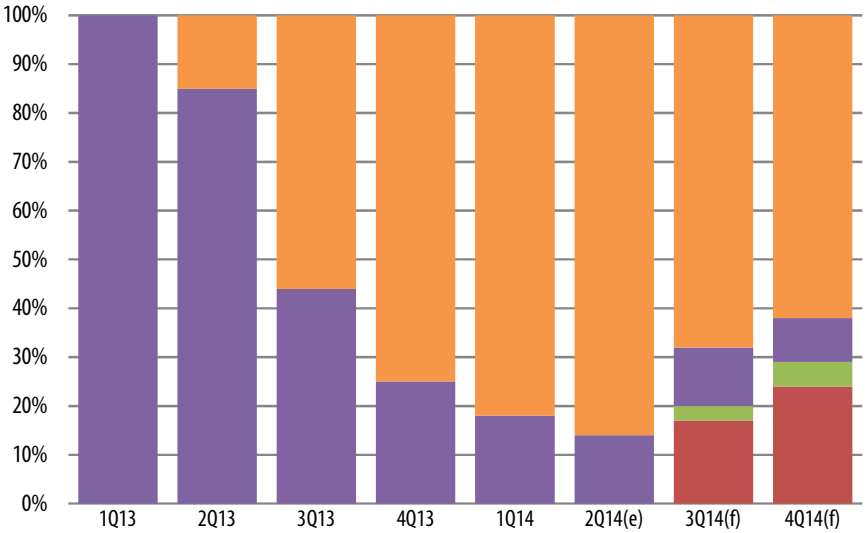
2H14 forecast

The shipment share of Cortex-A7 related products in MediaTek is expected to be fall in the second half of 2014 as the firm shifts focus to Cortex-A53.

MT65 series chips continue to be adopted by several communications and tablet products, therefore shipments are not included in smartphone AP shipments.

MediaTek will shift focus to MT6732 and MT6752, which use the Cortex-A53 platform, as will the low-priced 64-bit product that has yet to be announced in the second half of 2014.

Chart 11: MediaTek smartphone shipment share by architecture, 1Q13-4Q14



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Cortex-A5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cortex-A7	0.0%	15.0%	56.0%	75.0%	82.0%	86.0%	68.0%	62.0%
Cortex-A8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cortex-A9	100.0%	85.0%	44.0%	25.0%	18.0%	14.0%	12.0%	9.0%
Cortex-A15/A12	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	5.0%
Cortex-A53	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	24.0%
Cortex-A57	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Digitimes Research, July 2014

Qualcomm

Qualcomm performed well in terms of product shipments in the second quarter of 2014. Although it lacks competiveness in terms of its 3G platform, Qualcomm's 4G platform shipments are doing well.

The Snapdragon 400 is among the first wave of LTE products. However, since the next generation of products will soon be introduced, there has been a slight stall in orders from end-user equipment manufacturers.

Qualcomm experienced quarterly grown of 18.9% in terms of product shipments in the second quarter, which is mainly attributed to growth in LTE and TD-SCDMA product shipments.

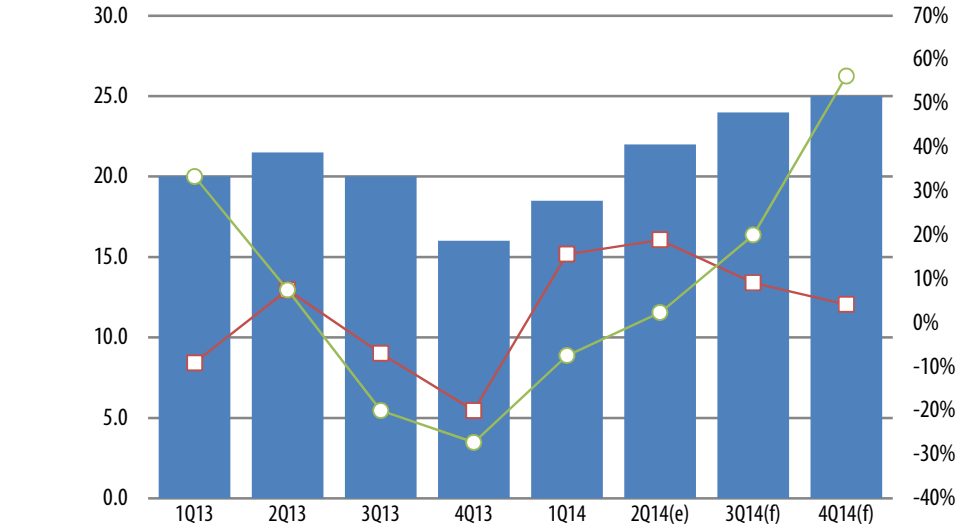
2H14 forecast

In the second quarter of 2014, Qualcomm saw shipment growth and this is likely to continue in the third quarter. The increase is due to LTE related products. However, in the fourth quarter, the firm is expected to experience strong competition and shipment growth is expected to weaken.

Snapdragon 410, Snapdragon 610 and 615 will become the focus in the second half of 2014 for Qualcomm.

Qualcomm will also likely see its shipment growth be smaller in the second half of 2014 compared to the first half of the year.

Chart 12: Qualcomm smartphone AP shipments to China, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	20.0	21.5	20.0	16.0	18.5	22.0	24.0	25.0
Q/Q	-9.1%	7.5%	-7.0%	-20.0%	15.6%	18.9%	9.1%	4.2%
Y/Y	33.3%	7.5%	-20.0%	-27.3%	-7.5%	2.3%	20.0%	56.3%

Source: Digitimes Research, July 2014

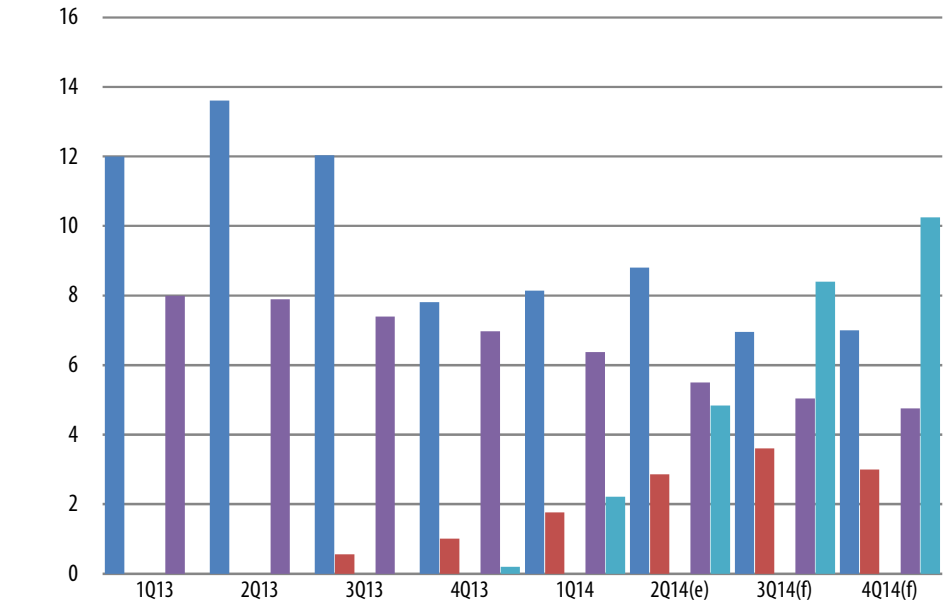
Shipments by baseband

From the perspective of product types, CDMA and WCDMA continued to be Qualcomm's two main product categories in the second quarter.

Due to Spreadtrum's poor product functionality, its TD-SCDMA shipments grew rapidly.

LTE product shipments also grew rapidly, though not as strongly as expected. Although chip shipments stalled in the second quarter due to the switching of product lines, the ratio of LTE products in overall shipments in the second quarter was still much higher than in the first quarter.

Chart 13: Qualcomm shipments by baseband type, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
WCDMA	12.0	13.6	12.0	7.8	8.1	8.8	7.0	7.0
TDSCDMA	0.0	0.0	0.6	1.0	1.8	2.9	3.6	3.0
EDGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CDMA	8.0	7.9	7.4	7.0	6.4	5.5	5.0	4.8
LTE	0.0	0.0	0.0	0.2	2.2	4.8	8.4	10.3

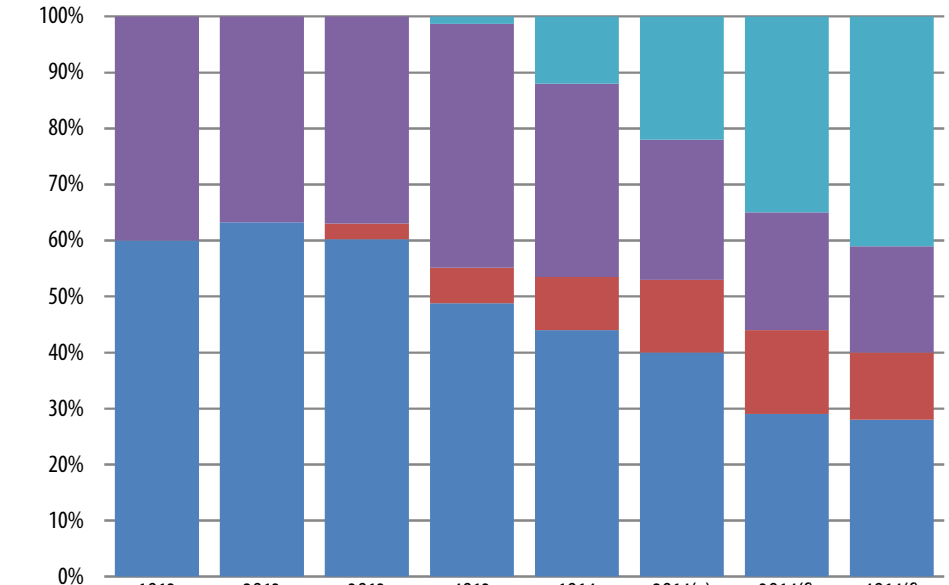
Source: Digitimes Research, July 2014

2H14 forecast

Among all products, in the second half of 2014, the LTE shipment share is likely to show rapid growth for Qualcomm.

WCDMA shipment growth is expected to stagnate. In the third quarter, TD-SCDMA shipment share may show growth as the firm obtains some market share from Spreadtrum but will return to regular market trend in the fourth quarter.

Chart 14: Qualcomm shipment share by baseband type, 1Q13-4Q14



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
LTE	0.0%	0.0%	0.0%	1.3%	12.0%	22.0%	35.0%	41.0%
CDMA	40.0%	36.7%	37.0%	43.6%	34.5%	25.0%	21.0%	19.0%
EDGE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TDSCDMA	0.0%	0.0%	2.8%	6.3%	9.5%	13.0%	15.0%	12.0%
WCDMA	60.0%	63.3%	60.2%	48.8%	44.0%	40.0%	29.0%	28.0%

Source: Digitimes Research, July 2014

Shipments by architecture

Low-end QRD products experienced a slight decline in terms of market share, with the primary focus shifting to S400-class products.

Although the LTE market has not performed as expected, Qualcomm's S400 series products still contributed significantly to overall product shipments.

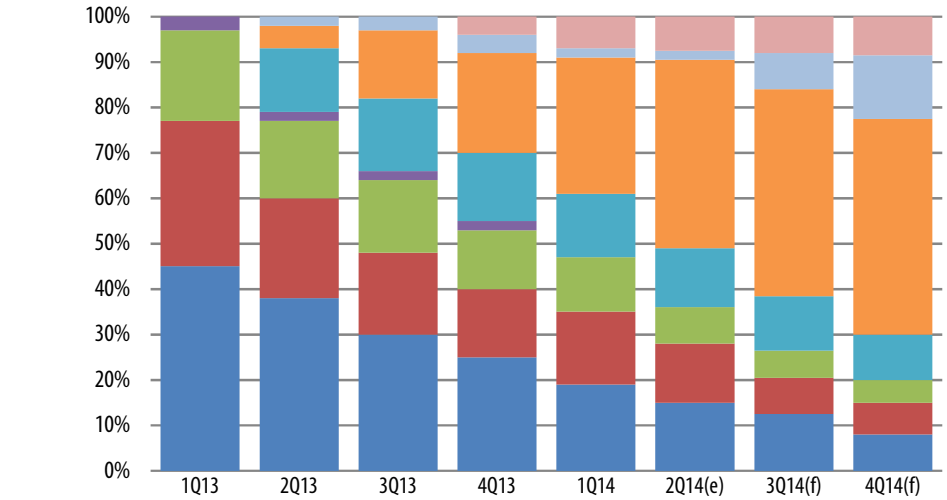
Demand for S801 products is continuing to grow, which is also significantly driving overall shipments.

2H14 forecast

Qualcomm will continue to contract QRD shipment share in the second half of 2014 and shift focus to S400 level products.

Demand for the Snapdragon 610 and 615, Snapdragon 801 and 805 will continue to increase, pushing shipments to rise.

Chart 15: Qualcomm shipment share by architecture, 2Q14



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Snapdragon 800	0.0%	0.0%	0.0%	4.0%	7.0%	7.5%	8.0%	8.5%
Snapdragon 600	0.0%	2.0%	3.0%	4.0%	2.0%	2.0%	8.0%	14.0%
Snapdragon 400	0.0%	5.0%	15.0%	22.0%	30.0%	41.5%	45.5%	47.5%
Snapdragon 200	0.0%	14.0%	16.0%	15.0%	14.0%	13.0%	12.0%	10.0%
S4	3.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%
S3	20.0%	17.0%	16.0%	13.0%	12.0%	8.0%	6.0%	5.0%
S2	32.0%	22.0%	18.0%	15.0%	16.0%	13.0%	8.0%	7.0%
S1	45.0%	38.0%	30.0%	25.0%	19.0%	15.0%	12.5%	8.0%

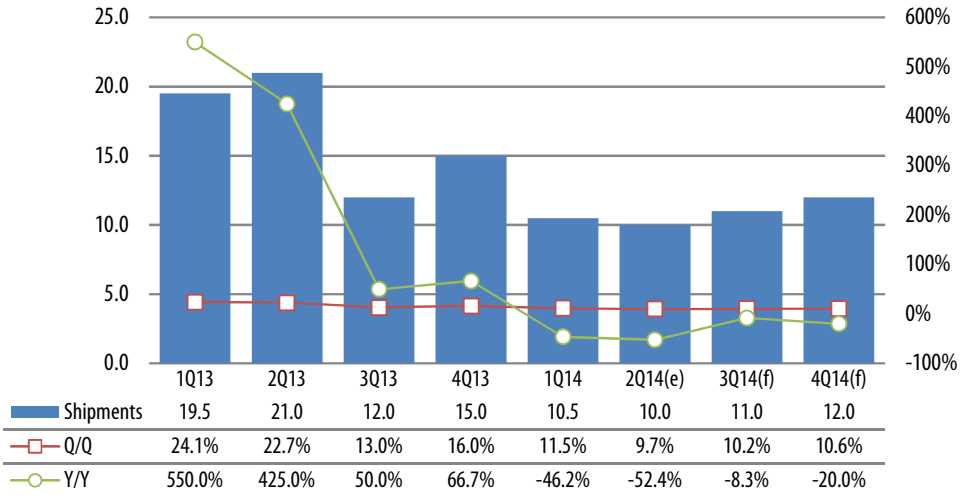
Source: Digitimes Research, July 2014

Spreadtrum

In the second quarter of 2014, Spreadtrum's product shipments declined by 4.8% due to a shifting of operator subsidies, the contraction of the TD-SCDMA market, as well as poor quality in its products.

In the second half of the year, Spreadtrum will target 3G as well as 3 mode LTE products. However, due to slow product rollout speeds, it may be the end of the year before any increases in product shipments are seen.

Chart 16: Spreadtrum smartphone AP shipments to China, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	19.5	21.0	12.0	15.0	10.5	10.0	11.0	12.0
Q/Q	24.1%	22.7%	13.0%	16.0%	11.5%	9.7%	10.2%	10.6%
Y/Y	550.0%	425.0%	50.0%	66.7%	-46.2%	-52.4%	-8.3%	-20.0%

Source: Digitimes Research, July 2014

2H14 forecast

In the second half of 2014, Spreadtrum has a chance to rebound from falling shipments in the first half of 2014 with the introduction of high integration 3G chips and tri-mode LTE chips.

In the third quarter of 2014, Spreadtrum is expected to see an on-quarter shipment increase of 10%. The firm is also expected to see an on-quarter shipment increase of 9.1% in the fourth quarter of 2014.

In the second quarter of 2014, shipments of Spreadtrum's TD-SCDMA and EDGE chips both showed declines, while WCDMA shipments experiencing slight growth. In terms of LTE, products with independent basebands have entered pilot production and have been shipped in small volumes.

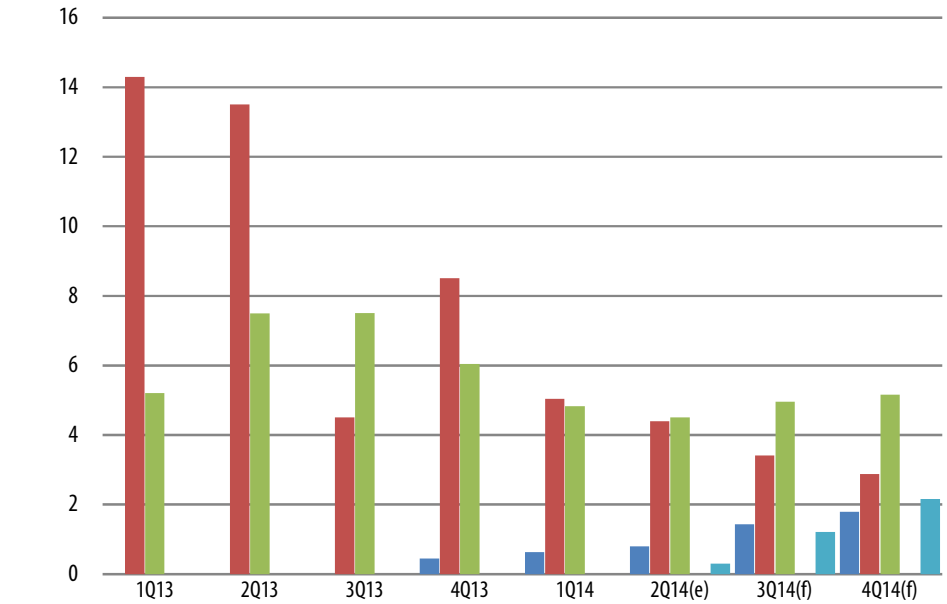
Spreadtrum's product portfolio in the first half of the year has been relatively weak and its market share has continued to decline. This trend may continue into the second half of the year before it gets any chances to improve the situation.

Shipments by baseband

In the second quarter of 2014, shipments of Spreadtrum's TD-SCDMA and EDGE chips both showed declines, while WCDMA shipments experienced slight growth. In terms of LTE, products with independent basebands entered pilot production and have been shipped in small volumes.

Spreadtrum's product portfolio in the first half of the year has been relatively weak and its market share has continued to decline. This trend may continue into the second half of the year before it gets any chances to improve the situation.

Chart 17: Spreadtrum shipments by baseband type, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
WCDMA	0.0	0.0	0.0	0.5	0.6	0.8	1.4	1.8
TDSCDMA	14.3	13.5	4.5	8.5	5.0	4.4	3.4	2.9
EDGE	5.2	7.5	7.5	6.0	4.8	4.5	5.0	5.2
CDMA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LTE	0.0	0.0	0.0	0.0	0.0	0.3	1.2	2.2

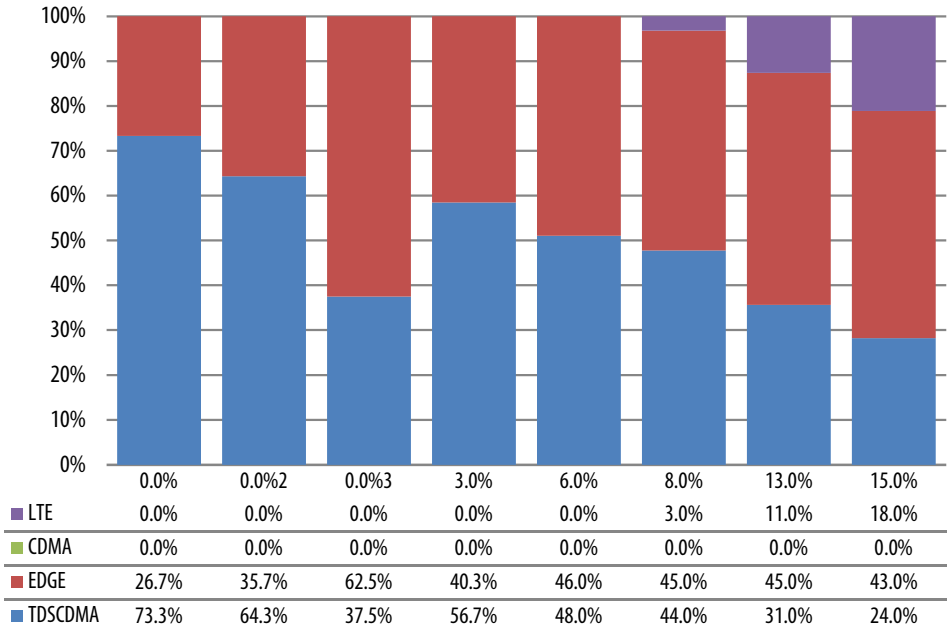
Source: Digitimes Research, July 2014

2H14 forecast

Among all Spreadtrum products, TD-SCDMA, the firm's focus, will experience falling shipment share while EDGE and WCDMA shipment share will continue to rise in the second half of 2014.

For Spreadtrum, LTE single chip products will be launched officially in the second half of 2014 while LTE related products introduced in the second and the third quarter are AP plus baseband.

Chart 18: Spreadtrum shipment share by baseband type, 1Q13-4Q14



	0.0%	0.0%2	0.0%3	3.0%	6.0%	8.0%	13.0%	15.0%
LTE	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	11.0%	18.0%
CDMA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EDGE	26.7%	35.7%	62.5%	40.3%	46.0%	45.0%	45.0%	43.0%
TDSCDMA	73.3%	64.3%	37.5%	56.7%	48.0%	44.0%	31.0%	24.0%

Source: Digitimes Research, July 2014

Shipments by architecture

Penetration of the Cortex-A7 architecture has not occurred quickly enough, and only reached 31% in the second quarter.

The main reason for the increase in Cortex-A7 shipments can be attributed to the SC8830, SC8835, SC7730, and SC7735 products beginning to ship.

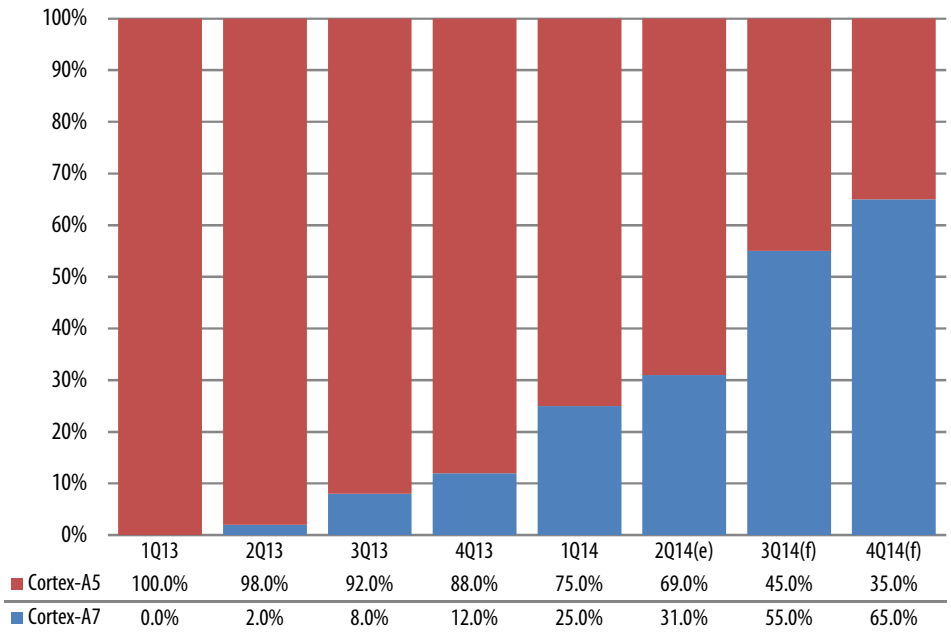
The Cortex-A5 is still Spreadtrum's primary shipping product. However, due to the rapid decline of the TD-SCDMA market, its ratio is quickly dropping.

2H14 forecast

Among all Spreadtrum products, the share of the Cortex-A7 platform is expected to increase as products that adopt the platform such as SC8830, SC8835, SC8735, SC7730, and SC7735 begin shipping. In the third quarter, the firm will officially begin shipments of SC883XG, a product with low prices and a high integration capability. This will improve the firm's shipment figures.

Share of the Cortex-A5 platform among Spreadtrum products may drop below 40% in the second half of 2014.

Chart 19: Spreadtrum shipment share by architecture, 1Q14



Source: Digitimes Research, July 2014

Leadcore

Looking at product shipment ratios for individual products in the second quarter, LC1810 and LC1811 products based on the Cortex-A9 architecture were still the primary products that were shipped.

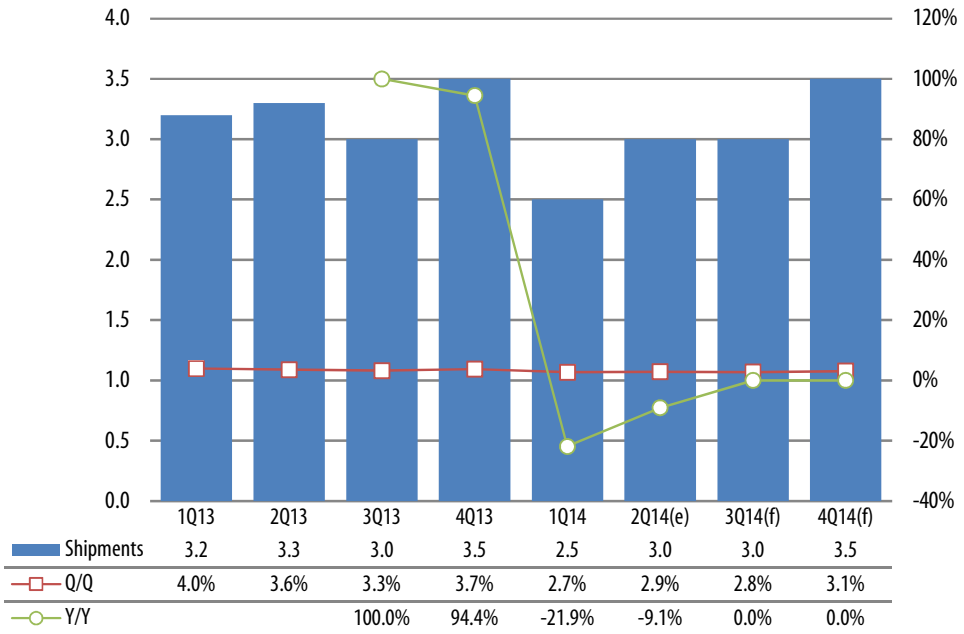
In the second quarter of 2014, Leadcore's LC1812 and LC1813 products based on the Cortex-A7 provide exceptional performance-to-price ratios, which is why their shipments are rapidly increasing.

2H14 forecast

Leadcore targeted the TD-SCDMA market with full force in the first half of 2014 with its product placed in a higher level compared to Spreadtrum. The firm has been seeing stable market demand.

Leadcore plans to enter the LTE market in the second half of 2014 with the launch of LC1860, a product with six-core Cortex-A7 platform, in the third quarter. The product will have tri- and five-mode configurations to satisfy different customer needs.

Chart 20: Leadcore smartphone AP shipments to China, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	3.2	3.3	3.0	3.5	2.5	3.0	3.0	3.5
Q/Q	4.0%	3.6%	3.3%	3.7%	2.7%	2.9%	2.8%	3.1%
Y/Y			100.0%	94.4%	-21.9%	-9.1%	0.0%	0.0%

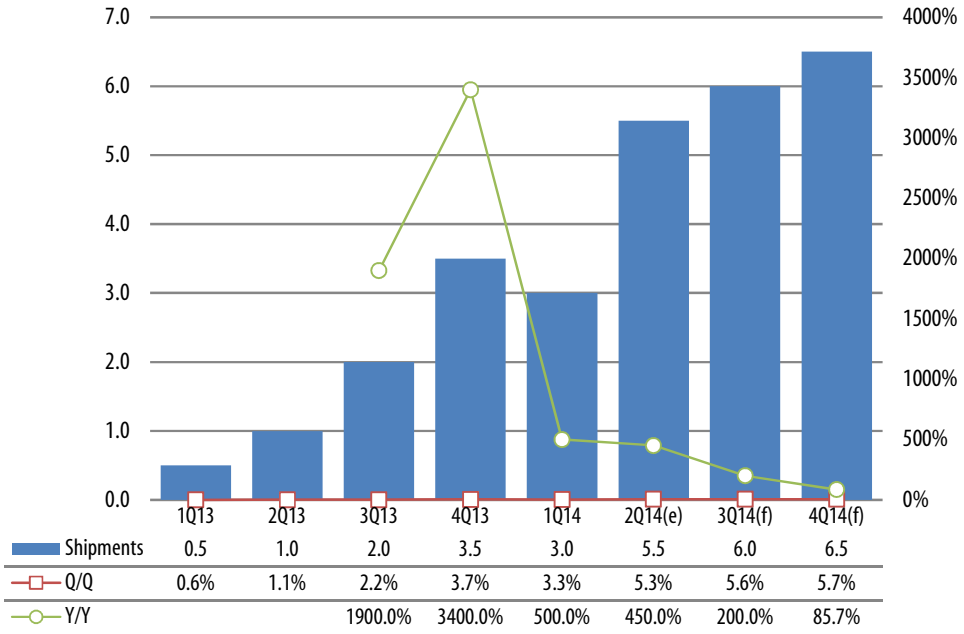
Source: Digitimes Research, July 2014

HiSilicon

HiSilicon introduced Kirin 910 and 920, favored strongly by Huawei, in the first half of 2014 and the firm has begun to expand its customer base.

HiSilicon will continue its product mix from the first half of 2014 in the second half of 2014. The firm may also introduce 64-bit products in the fourth quarter.

Chart 21: HiSilicon smartphone AP shipments to China, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	0.5	1.0	2.0	3.5	3.0	5.5	6.0	6.5
Q/Q	0.6%	1.1%	2.2%	3.7%	3.3%	5.3%	5.6%	5.7%
Y/Y			1900.0%	3400.0%	500.0%	450.0%	200.0%	85.7%

Source: Digitimes Research, July 2014

Nvidia

ZTE, Coolpad, and Xiaomi all use Nvidia's APs in their products. Xiaomi accounts for more than 80% of Nvidia's shipments to customers in the China region.

However, due to ZTE and Coolpad switching of platforms as well as their efforts in terms of beginning to form LTE product strategies, Nvidia's shipments to these two customers has halted. Orders from Xiaomi also declined due to reduced demand in terms of end-user products. Overall, Nvidia's shipments declined in the second quarter.

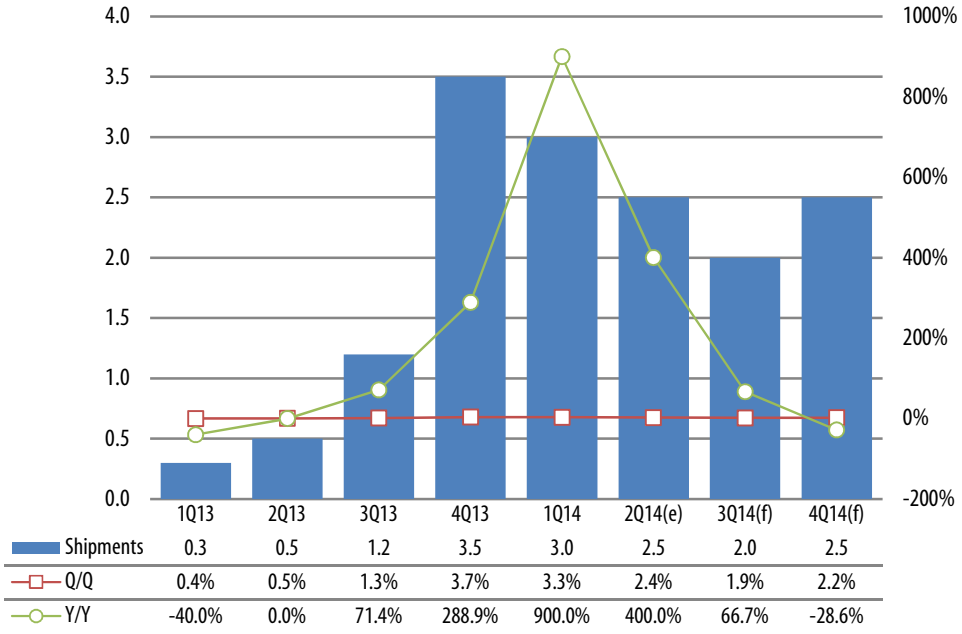
2H14 forecast

Nvidia showed strong shipments in the first half of 2014 compared to previous periods due to large quantity orders from smartphone maker Xiaomi. Although the firm plans to introduce 64-bit products in the second half of 2014, the products lack integrated baseband, hence the firm may see falling shipments.

Nvidia plans to introduce 64-bit products in the fourth quarter and the product is expected to be adopted by some high-end customers, hence shipments are likely to show growth.

The firm lacks diversity in its customer base and if the firm cannot find other customers, it risks seeing stalled shipments if it loses those related orders.

Chart 22: Nvidia smartphone AP shipments to China, 1Q13-4Q14 (m units)



	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14(e)	3Q14(f)	4Q14(f)
Shipments	0.3	0.5	1.2	3.5	3.0	2.5	2.0	2.5
Q/Q	0.4%	0.5%	1.3%	3.7%	3.3%	2.4%	1.9%	2.2%
Y/Y	-40.0%	0.0%	71.4%	288.9%	900.0%	400.0%	66.7%	-28.6%

Source: Digitimes Research, July 2014