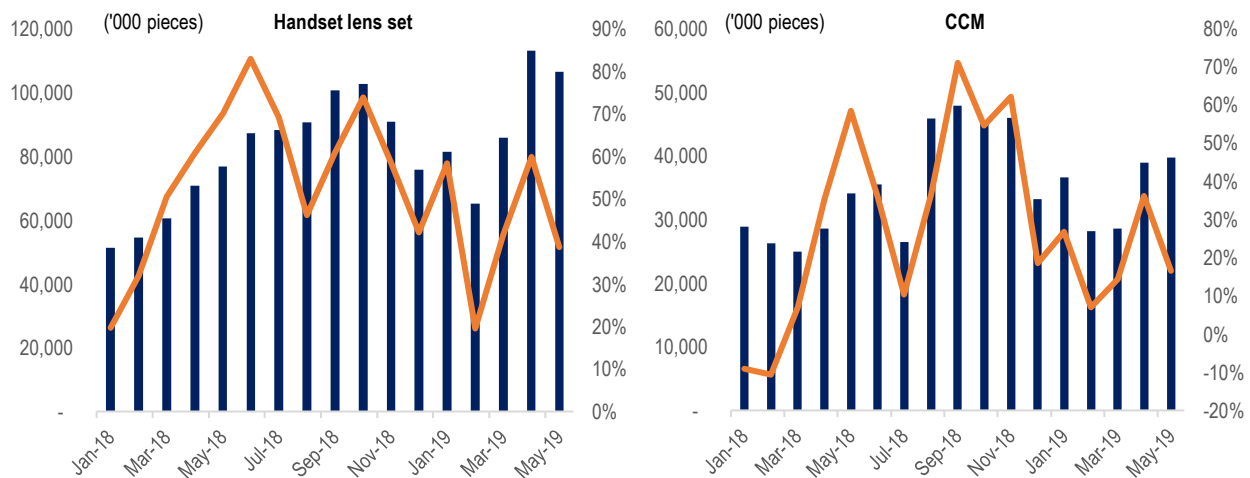




Smartphone supply chain

Figure 1: Sunny Optical monthly shipment (LHS) and YoY growth (RHS)



Source: Company data, AMTD Research

AMTD comments: On 11 Jun, Sunny Optical announced shipment data for May. Handset lens shipment were 107mn, -5.8% MoM/+38.7% YoY. CCM shipment were 39.7mn, +2.1% MoM/+16.6 YoY. The shipment data began to weaken mainly because the Huawei's order cut impact started to show. The positive news is that, according to Investor Day on 18 Jun, management maintained the full year shipment guidance unchanged (handset lens set 25-30% growth/CCM 20-25% growth) as the company believe it can make up the shortfall caused by Huawei with its diversified client base. For CCM gross margin, management mentioned it could come under pressure in 1H19, however, it is expected to improve in the 2H19 as many optimizations to the CCM production process have been implemented. In addition, increasing orders from overseas will cushion the FX impact. The company has constantly focused and made progress on trending designs and products such as wide-angle, periscope design in CCM and high-resolution HUD in vehicle.

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News updates

19 Jun 2019

Smartphone

Xiaomi

Xiaomi to invest RMB5bn in new retail channels

Xiaomi will invest an additional RMB5bn in new retail network over the next three years, establish more stores and boost marketing, to grab more market share before Huawei turned back into the domestic market to offset its overseas decline. The funds will be spent on expanding Xiaomi's distribution channels and on rewards to its partners and employees, said in an internal meeting by Lei Jun. Xiaomi saw 5G as a great opportunity and aimed to become the top vendor in China. (Source: [Bloomberg](#))

AMTD comments: We believe that the distribution channel expansion will help Xiaomi tap the offline smartphone market in low-tier cities, which is always dominated by its rivals OPPO and Vivo. In the meanwhile, Xiaomi can boost its product sales by leveraging distribution channels, as unlike its competitors, in addition to smartphone, Xiaomi has a rich product ecosystem including smartphone accessories, home appliances, and new IoT devices.

18 Jun 2019

Component

Murata

TDK

Murata to bring all-solid-state batteries into mass production in 2019

Murata will begin mass production of all-solid-state batteries using ceramic technology in 2019. Murata will build a new production line based on the original MLCC equipment, reaching a monthly capacity of 100,000. The sample size is 9.6mm (width) x 5.7mm (length) x 5.2mm (height), with a capacity of 10mAh. The new all-solid-state batteries will target the market for wearable devices. (Source: [Anue](#))

AMTD comments: Last year, TDK, Murata's major competitor, announced CeraCharge – the world's first all-ceramic solid-state rechargeable battery. The mass production of CeraCharge is expected to begin in 2019 as well. As the world's largest MLCC manufacturer, Murata reported MLCC sales growth of 27.7% in FY18. Given the sharp ASP increase in FY18 and higher distributor inventory, Murata projected a slower growth rate of 8% for MLCC in FY19. However, with an extensive lineup of passive component products, Murata will benefit from the growth of the 5G in the long run, in our view.

17 Jun 2019

Component

OmniVision

OmniVision announces its first 48 megapixel, 0.8 micron image sensor

On 17 Jun, OmniVision announced the OV48B, its first 48 megapixel (MP) image sensor featuring a 0.8 micron pixel size to enable high resolution smartphone cameras in a 1/2" optical format. The OV48B is a versatile sensor for all types of rear facing cameras in multi-camera configurations, including main, wide angle and telephoto. The OV48B samples are available now, and volume production is expected in Q4 2019. (Source: [OmniVision.com](#))

AMTD comments: With the announcement, OmniVision caught up with its competitors on 48MP sensor. Sony and Samsung launched the 48MP sensors IMX586 and GM1, respectively, at the end of last year, pushing the pixel battle of smartphones to a new height. Now more and more flagship smartphones are equipped with 48MP lens, such as Mi9, Redmi Note7 Pro, Huawei Nove4, Mate20, and Honor V20.

14 Jun 2019

AAC and Honda launched a new acoustics solution for automotive

Module

AAC

In CES Asia 2019, AAC and Honda together launched Personal Sound Zone (PSZ), a new acoustics solution for automotive. By sophisticatedly positioning and separately controlling each speaker, PSZ could control the directions of in-vehicle audio for each passenger, providing customized sound without interfering with each other. PSZ could realize 4 scenarios including navigation, personal music, back-seat cinema experience and front-seat mute. (Source: [AAC](#))

AMTD comments: Faced with slower growth and increased competition in smartphone market, AAC has begun to expand its business outside of smartphones, trying to apply existing acoustic, optical technology platform to more scenarios, such as automotive, AR/VR, IoT, etc., to capture more business opportunities.

10 Jun 2019

Nvidia to produce next-gen GPUs through Samsung's 7-nm EUV Process

Semiconductor

Nvidia

TSMC

Samsung

Nvidia, the world's second-largest semiconductor design company, will produce its next-generation GPUs using Samsung Electronics' 7-nm extreme ultra-violet (EUV) processes. Nvidia decided to partner with Samsung Electronics rather than Taiwan's TSMC since Samsung has offered better price. The Ampere is Nvidia's first 7-nm product and will be launched next year. Its rival AMD has already launched a 7-nm GPU. (Source: [Businesskorea](#))

AMTD comments: Just started in 3Q18, 7nm production accounted for 22%, the highest proportion, of TSMC's total revenue in 1Q19. The major client of 7nm chip will be Apple, Qualcomm, and Huawei. In particular, all the Huawei's high-end chipset (HiSilicon) is manufactured by TSMC's 7nm/16nm technology.

10 Jun 2019

Salesforce to buy Tableau Software at US\$15.7bn to augment its analytics

Cloud/SaaS

Salesforce

Tableau

Salesforce is acquiring Tableau, a data visualization company, in an all-stock transaction. Each share of Tableau Class A and Class B common stock will be exchanged for 1.103 shares of Salesforce common stock, representing a current enterprise value of US\$15.7bn (net of cash) and a premium of 42%. Salesforce believed the combination will accelerate its opportunity in the US\$1.8tn digital transformation space. The acquisition will close by 31 October 2019. (Source: [Salesforce](#))

AMTD comments: The US\$15.7bn all-stock transaction implies a 13.6x TTM EV/total revs. Salesforce has successful track record in acquiring companies. Prior to 2018, the company's major acquisitions were all in the areas of digital marketing, online advertising and e-commerce, which have constituted the company's Marketing Cloud and Commerce Cloud. As marketing is now undergoing a dramatic digital revolution, Salesforce is building its big data capability by acquiring BI/analytics company. Tableau would add data analytics and visualization capabilities to Salesforce's current cloud platform, in our view.

22 Jun 2019

ARM to relist within five years

Semiconductor

ARM

ARM will return to the stock market within five years, confirmed by Softbank founder Masayoshi Son, but which market to relist in has not been decided yet. ARM was acquired by Softbank for US\$32bn three years ago. As the most important chip design infrastructure provider in the world, ARM's microchips are adapted by over 90% of the world's mobile devices, including products of Apple, Huawei, Samsung and Qualcomm. (Source: [NikkiAsianReview](#))

21 Jun 2019

Semiconductor

Huawei

Huawei announced 7nm Kirin 810 with Huawei's Da Vinci architecture

On 21 Jun, Huawei announced its latest upper mid-range mobile chipset — a brand new 7nm Kirin 810 chipset. The highlight of the Kirin 810 is the DaVinci architecture NPU that Huawei performs better than the flagship Snapdragon 855 and MediaTek Helio P90 chipsets in AI-Benchmark test. Nova 5 is the first phone to now introduce the new Kirin 810 chipset. With this, Huawei has now become the world's first smartphone company to have two chipsets based on a 7nm process in its portfolio. (Source: [Synced](#))

20 Jun 2019

Module

LG

Global auto display panel shipment declined 10% YoY in 1Q19

According to IHS Markit, global automotive display shipments reached 36.33mn units in 1Q19, down 10.0% YoY from 40.32mn units in 1Q18. LG Display ranked first with a total shipment of 6.08mn units, up 32.5% YoY and accounting for a market share of 16.8%. It followed by JDI with a total shipment of 5.80mn units and a market share of 16.0%, and Tianma with 5.15mn units shipment and 14.2% of market share. In terms of sales, LG Display maintained leading position with US\$413.8mn, up 34% YoY. JDI ranked second with US\$280mn, followed by AUO with US\$230mn. (Source: [Pulsenews](#))

19 Jun 2019

Smartphone

Apple

Apple to shift 15%-30% capacity out of China

Apple plans to shift 15-30% of production capacity from China to Southeast Asia and Mexico for its supply chain restructuring. Major iPhone, MacBook, iPad, and AirPods makers were asked to evaluate the cost effects of the coming changes. The number of suppliers from mainland China and Hong Kong reached 41 out of the top 200 in 2018, higher than that of the U.S. and Japan, with over 90% of Apple's products assembled in China. (Source: [NikkeiAsianReview](#))

19 Jun 2019

Component/RF

Goertek

Goertek halted stake purchase in MACOM HK

Goertek, a company focusing on precision components (acoustics, sensor, optoelectronic), terminated its share purchase agreement with MACOM HK. Goertek announced to acquire 51% of MACOM HK stocks at US\$134.6mn (RMB906.3mn) in April. It was part of Goertek's plan into the RF components market, leveraging MACOM's superior GaN-on-Si technology. Goertek said that the termination was primarily due to the market conditions. MACOM HK was established in 2018 and has not started its business yet. (Source: [Sina](#))

18 Jun 2019

5G/Services

U.S.

U.S. carriers AT&T and Verizon to bring 5G phones on sale

Main carriers in the U.S. are rolling out 5G services. The US's second largest carrier, AT&T, put its first 5G phone, Samsung Galaxy S10 5G, on sale on 17 June, with a limited-time offer at US\$1,000 for the 256GB version. The largest carrier, Verizon Wireless, began to sell its third 5G phone, LG V50 ThinQ 5G, on 20 June at US\$999. Verizon Wireless has started to offer its users Moto Z3 equipped with a 5G Moto Mod and Galaxy S10 5G in March and May, respectively. (Source: [CNet](#))

17 Jun 2019

New Nvidia Shield TV could be running Android 9 and Tegra X1 chipset

Semiconductor

Nvidia

The references in the Google Play Developer console suggest there is a new, slightly refreshed version of the Nvidia Shield TV coming with the same Tegra X1 chipset, but powered by Android 9. The new Shield TV device codenamed "mdarcy", and it is thought that new shield TV is a minor update and refresh of the 2017 version of the Nvidia Shield TV gear rather than a brand new Nvidia Shield 2. The new Shield TV will most likely arrive this year. (Source: [Pocket-lint](#))

17 Jun 2019

ST announced ROM-based GNSS module to target mass-market

Module

STMicroelectronics

STMicroelectronics has enlarged its GNSS product offering with the Teseo-LIV3R ROM-based module. The competitively-priced module provides ST's full GNSS algorithm capability for cost-conscious tracking and navigation devices. It can simultaneously track of GPS, Glonass, Beidou, and QZSS constellations. The Teseo-LIV3R is in volume production. The 9.7mm x 10.1mm LCC18 module is priced from \$7.3 for orders of 1000 pieces. (Source: [ST.com](#))

12 Jun 2019

South Korea 5G subscribers reached 1mn in 69 days

5G/Services

South Korea

South Korea MST confirmed that 5G subscriber number in South Korea exceeded 1mn on June 10, just 69 days after the official launch of 5G services. The users on average increased by 17,000 each day, faster than 4G record in 2011. The three carriers, SK Telecom, KT and LG, now own a market share of 40%, 30% and 30%, on 5G, respectively. The total subscriber number is expected to reach 4mn-5mn by the year end. (Source: [Venturebeat](#))

12 Jun 2019

Huawei, ZTE won the first 5G network equipment contracts from China Mobile

5G/Infrastructure

China

China Mobile said it launched the tender for the first batch of 5G network equipment contracts. Domestic suppliers Huawei and ZTE won 51% and 5%, respectively, while Ericsson and Nokia won 34% and 10%, respectively. In addition, China Mobile's first phase of 5G project is under construction, with a total investment of US\$2.7bn, and it plans to achieve 5G coverage in 40 cities by the end of September. (Source: [ZOL](#))

12 Jun 2019

DJI releases its latest product, the DJI RoboMaster S1

Devices

DJI

On June 12, DJI released the consumer-grade competitive robot product RoboMaster S1, with 46 programmable components and 31 sensors, supporting Scratch and Python programming languages. The DJI RoboMaster S1 can get up to its 8 mph max speed quickly. It will be available for purchase for the retail price of \$499 in the US, Japan, and mainland China. (Source: [Engadget](#))

11 Jun 2019

Vietnam's Vingroup to lift smartphone capacity to 125mn with new plant

Smartphone

Vingroup

Vietnam's largest listed firm, Vingroup, has started to build its second smartphone factory in Hanoi. The factory, expected to be completed by early 2020, will lift Vingroup's annual production capacity to 125mn, about 25 times of the current level. Growth in contract manufacturing orders from foreign companies appears to have prompted Vingroup's decision to build a new plant. The new factory will produce its own smartphone Vsmart, as well as providing contract manufacturing services to U.S. and European clients. (Source: [Reuters](#))

10 Jun 2019

AMD cooperates with Microsoft on SoC to power next-gen Xbox

Semiconductor

AMD

AMD and Microsoft have co-designed and co-engineered a custom, high performance AMD SoC to power Project Scarlett to deliver an incredible gaming experience. The new console will be powered by AMD's full-featured bucket, including the Zen 2-based CPU and the RDNA-based Radeon custom GPU, which will be four times powerful than the Xbox One X. Project Scarlett will also be backward compatible with all existing Xbox One, Xbox 360 and Xbox One games. (Source: [theinquirer](#))

10 Jun 2019

Intel acquires networking startup Barefoot Networks

Semiconductor

Intel

Intel has signed an agreement to acquire Barefoot Networks, a developer of Ethernet switch silicon and software for use in the data center. Upon close, the addition of Barefoot Networks will support Intel's focus on end-to-end cloud networking and infrastructure leadership. Intel expects the transaction to close in the third quarter of 2019. The amount has not been disclosed. (Source: [ZDNet](#))

10 Jun 2019

Amazon to launch a new credit card for customers with bad credit

E-commerce

Amazon

Synchrony

Amazon partnered with Synchrony Financial to launch Amazon Credit Builder, a new secured credit card, to help people with no credit history or bad credit to build credit. Amazon Credit Builder charges no annual fee and offers promotional financing or 5% back for Prime members. The standard APR is 28.24% for new accounts. Amazon Credit Builder's credit line equals to the initial security deposit, which could be refunded if the card is upgraded to Amazon Store Card or closed. (Source: [CNBC](#))

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As of the date the report is published, Brian Li holds financial interest in the securities of Amazon mentioned in the report.

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