

## **The second quarter of FY2020 Presentation Q&A**

(20Q2 refers to the second quarter of FY2020, 20F1 refers to the first half of FY2020, and 20F refers to FY2020.)

**[20Q2 results, 20F1 results, 20F forecast]**

Q. It is said that there is a sense of overheating in demand for components. How much was the sales in excess of actual demand for 20Q2? And, in which application did the excess occur? Sales are expected to decline until 20Q4, but will the excess be solved by that trend? Will the situation be normalized by the end of March 2021?

A. This happened mainly to smartphones. On the assumption that there would be a need to make up for a decrease from the largest manufacturer in Greater China, brisk orders from other smartphones manufacturers have come our way. Although we look at the situation of 20F2 somewhat conservatively, we expect the sense of overheating to be resolved and the situation to normalize by March.

The quantity of PCs exceeded the forecast of the beginning of the fiscal year due to stay-at-home demand in 20F1, but the situation will return to normal in the second half. Automotive use plunged in 20Q1 but considerably recovered in 20Q2. We expect the quantity of vehicles to decrease 15% year-on-year on a 20F full-year basis.

Q. It is speculated that sales to the largest manufacturer in Greater China will decrease in and after 20Q3. What is your view of sales as a whole? Additionally, how do you expect sales to change for a slightly longer time of period in and after 21F?

A. Due to the EAR issued anew in the middle of August by the US Department of Commerce, demand of the largest manufacturer in Greater China declined considerably after October. They affect our performance to some extent, but in a way to make up for the decrease, we are receiving strong demand from other smartphone manufacturers. We expect the quantity of sets to settle down to a 7% year-on-year decrease on a 20F full year basis. We forecast that the impact will be felt momentarily but that the impact on total demand for smartphones will not be so significant on a full year basis. In and after 21F, the attachment ratio of 5G will affect performance. With new models starting to employ 5G from this fall, we will monitor the situation, then make estimates.

Q. I think that the largest manufacturer in Greater China stockpiled modules, in particular. Regarding the amount of money, please give us an indication.

A. We do not disclose impacts on money concerning individual customers. We think that they have a stock of components and maintain production with them. Although the impact is not

small, we are receiving slightly overheated demand from other companies, which can make up for the decrease.

Q. I think the most likely scenario is that the largest manufacturer in Greater China will give up on its own chips and make a comeback with other manufacturers' chips. Other companies are attempting to raise their market shares at the moment, but if you have ever simulated the impact in the case of the largest manufacturer in Greater China returns, please share it with us.

A. We have been able to fully assume a change of platform, and we expect that the situation will come to the point that our current response and supply capacity will sufficiently cover it. Though we revised slightly upward this time, we see a 7% year-on-year decrease on the premise of the quantity of smartphones by taking various environments into account.

【Modules】

Q. Filter technology is getting more important to 5G modules. In addition to LTCC filters, IPD is being released as well. What kind of choices do you make now by comparing performance and shapes? How are you going to use new technologies, such as XBAR®?

A. Among 5G trends, sub6 is among mandatory items, and as filter technology, many meet this year's specifications with LC filers that use LTCC. When a system matures, required specifications for filters will be stricter. There will be a need to shift to steep filters around 2022. We think that we will be able to handle that with technologies, such as I.H.P. SAW and XBAR®.

Q. I think the IPD filters are released now. What is the advantage over them? Which merits and demerits do users look at and choose components?

A. The advantage of IPD is to realize thinness. For modules, IPD is easier to use. There is no big difference in the unloaded Q factor, which determines the basic characteristics of filers, between IPD and LC. When thin items are needed in terms of size, IPD is employed, but ceramic LC is better in terms of cost.

Q. In terms of performance, there is no big difference between IPD and LC. Are filters that use resonance necessary for improving performance?

A. That is right. Regarding the specifications of sub6 for the coming two years, extensions to the current ones will be able to handle them. After that, frequencies in the neighborhood will become interfering waves. When thinking of the attenuation, we will need something with a higher Q factor than current SAW filers, so we are preparing the XBAR® technology.

Q. I heard you say that you were hoping to recover with modules at the earnings release conference of 20Q1. How has the situation changed into 20F2? How did you incorporate it into the forecast?

A. Regarding the reference design at the platform of the Taiwanese manufacturer, there are some points that we have allowed US competitors to take a slight early lead, but we have entered the reference design in parallel. We have already started turning prospects into customers in China, which we included in the forecast for 20F2.

Q. I have heard that the capacity of foundries to produce 8 inch products for power amplifiers and switches is tight. Taking an increase in the quantity of 5G next year into account, I find to secure capacity important. What strategy are you pursuing now?

A. Taking power amplifiers as an example, there are the LTE cellular band, 5G band, and Wi-Fi band. We segment them to divide into ones using Gallium arsenide (GaAs) HBT and others using silicon on insulator (SOI). Supply of SOI CMOS seems somewhat tighter. We accredited two foundries to hedge risks. We find the two companies sufficient to cover demand for next year. Regarding GaAs HBT, we use one foundry in Taiwan, through which we intend to secure the sufficient quantity of wafers.

Q. The size of decrease in sales of modules contracted from the forecast of the beginning of the fiscal year. Please break it down into items, such as Wi-Fi, MetroCirc™ and RF. I think that you received frontloading orders for RF, in particular, due to US-China friction in 20F1. How will they affect 20F2 and 21F?

A. Large volumes of MetroCirc™, Wi-Fi and others were shipped out for old models during 20F1. As for new models, large volumes of RF and Wi-Fi front-end are being shipped out. Although it is difficult to predict the attachment rate of 5G in and after 21F, 5G sub6 is becoming mandatory to some extent as things stand now. There are many portions of highly accurate antennas and transmission lines that MetroCirc™ can handle. Demand for RF modules will also rise.

#### 【Capacitors】

Q. What about capacity reinforcement and preparations for capacitors toward 21F? Is there any possibility that supply will become short or tight?

A. Regarding capacity reinforcement (on a production load basis), we increased by 10% in 19F and will increase by 5 to 10% in 20F. There is no exact plan for 21F yet, but we intend to expand by 5 to 10%. If demand in 20Q4 is strong, there may be a slight add-on.

Q. Do you feel any tightness in the demand and supply of MLCC at the moment?

A. As orders have come back considerably since 20Q2, there is tightness in some of the fields of small items and advanced ones. But the supply is not tight enough to cause inconvenience to our customers.

Q. What is your view on change in prices of MLCC in and after 20Q3?

A. Although the fall of prices was mild in 20F1, prices are expected to drop in 20F2 because many customers are seeing their earnings deteriorate due to COVID-19, and we have received requests for cooperation in pricing. There could also be price revisions by manufacturers of automotive in 20Q4.

Q. As supply becomes tight, it is hard to expect that prices will fall further in 20F2. Is the forecast based on considerably conservative preconditions?

A. It depends on how much you think is conservative, but we expect a certain level of price reduction for 20F2, compared to 20F1.

Q. When looking at MLCC for a medium term of three to five years in and after 21F, how much are its quantity and amount expected to expand annually on average?

A. If COVID-19 is to start coming to an end, we want to expect an annual growth rate of 10% or so in quantity.

Q. What is your view of demand for small-size large capacitance items and medium and high-voltage items of MLCC in 21F? Can such demand be accommodated by production capacity? Will investments in MLCC increase from 20F to 21F?

A. We expect automotive use to return soundly in 21F, which will increase medium-size medium-voltage items. Our vision is that growth should be materialized based on the two crucial factors for small items for smartphones and medium-voltage items. To this end, we are thinking of definitely priming production capacity to retain our market shares. Production load per piece differs considerably for small items and medium-voltage items. Therefore, we will reinforce capacity from the viewpoint of not quantity but a production capacity basis. We intend to definitely continue on a similar level to 20F.

【Base stations】

Q. How will the US-China friction affect the technical side of base stations? Will they set technical levels back a little, such as a decrease in the number of antennas?

A. At first, it was assumed that the largest manufacturer in Greater China would be front and

center, and that 5G base stations would mainly employ TRX 64 x 64, which was a considerably large-size antenna. However, it has turned out that the mainstream items are small ones of 32 x 32 or less. It seems that the number of subscribers is projected to be smaller than initially assumed. Demand for components has been lower than initially assumed. China was the first to start construction of infrastructure for 5G sub6, then there was progress under way in Japan, the US and South Korea as assumed, and this trend will gain momentum from next year onward. In the US and Japan, millimeter-wave base stations will be installed in considerably narrow intervals based on the Olympic Games and other events. As a technological trend, active elements are different between the largest manufacturer in Greater China and US-European key players, but the architecture is the same, so we will be able to roll out standard components.

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