eMemory Q1 2020 Results – Earnings Call Q&A

May 13th, 2020

PUFsecurity

1. **Are the customers of PUFsecurity the telecom operators who make SIM card? When do you think revenue can be generated?**

   Our customers are IC design companies who designed chips in SIM cards. They will sell those chips to telecom companies, which in turn use ODM to make SIM cards. PUFsecurity is currently 1 year old, and our products are PUF-related IPs and solutions. At this moment, the amount of revenue generated is small, but we anticipate that there will be more customers using PUF-related IPs in the second half of this year and the beginning of next year. Currently, most of our customers are in the field of IoT and AI.

Foundries/Process nodes/Applications

2. **Why was there no revenue from royalty in March?**

   As you can see from our website, there is no royalty in the third month of every quarter. In general, we collect royalty based on foundries' or customers' royalty report. That report will state the royalty of the previous quarter to be paid during the first or second month of each quarter.

3. **For ISP market, which NVM solution did customers use before? What is the reason they start to use eMemory's solution?**

   In the past, some of the ISP products use eFuse provided free of charge by foundries. eFuse cannot provide several features including high memory density, after packaging repair or programmability, and security. eFuse will burn out the fuse so that the code's UID and some security code will be reversed in case someone intends to get the data. Therefore, when ISP product shift to higher end, customers need to use OTP NeoFuse as a replacement. For example, when

customers move to 28nm and below, they require NeoFuse to enhance their product competitiveness.

4. **How does process node advancement impact eMemory's financial? Generally, how much more revenue can be generated if the advancement happen?**

Technology migration is based on Moore's law. Moore's law tells us that when product moves from one generation to another, the chip size will be halved. However, nowadays in most of the semiconductor products, they do not cause the provider to consider the cost saving from one generation to another. They are considering how to increase their functionality in the chip. In the AP, for example, smartphone APs, when moving from 7nm to 5nm, their chip size will not become smaller, but the design will become more complicated, causing some chip size to become larger instead. This phenomenon is observed in some of our customers. For instance, the LCD driver or the OLED driver. When customers move from 55nm to 40nm, their chip size will become bigger as they add more SRAM into the chip to enhance the chip's performance. As a result, the chip size become bigger, resulting in more wafer being produced. This will result in a higher ASP, which means that the royalty contribution to eMemory will be higher. Thus, to conclude, when customers move to more advanced process nodes, the royalty contribution to eMemory will become higher compared with customers who use the same process nodes.

5. **If the DDIC is using 55nm vs 40nm. How much ASP rise can happen?**

The price offering of foundries for 55nm to 40nm in general are 20% to 30% increase from one generation to the other.

6. **Please provide some examples of new IoT customers, and which specific type of IoT products is driving the development?**

   For IoT application, the largest Chinese design company has adopted our OTP and PUF for their NB-IoT product design. We hope to see IoT, especially NB-IoT using our solution to enhance their security level.

   Outlook in 2020

7. **Do you expect the strength you saw in April to continue for the rest of the year?**

   We expect the growth of revenue to accelerate in the second quarter and beyond. The reason being that we have accumulated over 200 product tape outs in the advanced process nodes. The growth applications that will drive revenue include smartphone-related applications, digital consumer, IoT, and FPGA.

8. **Between PMIC and OLED DDI, which has a bigger growth this year?**

   In terms of growth rate, OLED DDI will see a bigger growth this year due to customers' migration from older generations to advanced nodes, and growing number of customers' adoption of OLED in smartphones. We also anticipate the largest Korean panel maker to contribute to our royalty as we have successfully introduced our solution into their partner design, and we have seen a desirable progress in product verification. Hence, this will be a significant driving force for our future revenue growth.

9. **Have much of your royalty revenue is currently from leading edge, and how do you expect the mix to develop in the next 1 to 2 years?**

   Our royalty contribution from 12-inch is approximately 30% of royalty revenue. The royalty contribution mainly comes from the process nodes 80nm to 40nm. In terms of leading edge, our contribution is very little at the moment. Therefore, we expect the leading edge contribution in the next 1 to 2 years to grow significantly and

contribute more to our royalty revenue.

10. **What is the expectation the revenue generation from ISP-related product this year?**

The ISP product tape outs using our IPs have been increasing since last year. We expect both upfront fee and production royalty in contributing to the revenue this year.