

eMemory Q2 2021 Results – Earnings Call Transcript

August 11th, 2021 16:00-17:00

Opening remark by Chairman and President, Dr. Charles Hsu

Good afternoon, everyone. Thank you for attending our conference call today.

It is with profound sadness we announce the sudden passing of our former President, Dr. Rick Shen, from a heart attack last month. As the company has always established a strong deputation system, we are confident his vision for the company's future will continue to be fully realized. All regular operations will proceed as normal during this interim period, with myself temporarily assuming the President's responsibilities.

As mentioned previously, we have entered a multi-year growth cycle. Following the applications of 28nm process nodes, the applications of 16nm and beyond are entering into production, which will contribute to our royalties in the future. Our penetration rate is still low, but considering the larger application market for 12-inch in comparison to 8-inch, there is considerable potential for future growth.

As for our new technology, we are confident with the development and adoption across various markets. I will elaborate more on our partnership with U.S. DARPA Toolbox Initiative later.

Next, I will invite our Senior Vice President of Business Development, Michael, to report our second-quarter operating results and the outlook of our business.

Operating results and future outlook by Senior Vice President of Business Development, Mr. Michael Ho

Good afternoon everyone.

I will first begin with our second-quarter results.

- 1) Second-quarter revenue was five hundred and forty-one million NT dollars (NT\$ 541 mil), down 9.3% sequentially, but up 27.9% year-over-year, or down 8.6% sequentially, but up 35.9% year-over-year in US dollars.
- 2) The operating expenses were two hundred and fifty-nine million NT dollars (NT\$ 259 mil), down 0.1% sequentially, but up 13.8% year-over-year, mainly attributable to expenditure increases such as human resource expenses, rewards, bonuses, and the compensation of employees and directors.
- 3) This brings us to the operating income of two hundred and eighty-three million NT dollars (NT\$ 283 mil), with a decrease of 16.3% sequentially, but an increase of 44.3% year-over-year. Therefore, the operating margin decreased by 4.4 percentage points sequentially but increased 5.9 percentage points year-over-year to 52.2%.
- 4) Overall, our second-quarter EPS was 3.27 NT dollars (NT\$ 3.27) and ROE was 50.2%.
- 5) For the first half of 2021, the revenue was one thousand one hundred and thirty-eight million NT dollars (NT\$ 1,138 mil), up 35.7% year-over-year. The operating expenses increased 15.4%, and the operating margin was 54.5%, with an increase of 8 percentage points. EPS up 54.5% to NT\$ 7.20, and ROE gained 12.5 percentage points to 55.3%.

Now let's move on to revenue contributions by licensing and royalty.

- 1) Licensing in the second-quarter accounted for 32.2% of the revenue, down 1.4% sequentially, but up 47.9% year-over-year, or down 0.4% sequentially, but up 57.3% year-over-year in US dollars.
- 2) Royalties in the second-quarter contributed 67.8% of the total revenue, decreasing 12.6% sequentially, but increasing 20.2% year-over-year, or down 12% sequentially, but up 27.6% year-over-year in US dollars.
- 3) In the first half of 2021, the total revenue grew 35.7% as compared to the previous year. Licensing and royalty have a growth of 56.6% and 28.1% respectively. In terms of US dollars, the total revenue increased 43.6% year-over-year, with licensing and royalty both increasing 66.2% and 35.4% respectively.

In terms of revenue contribution by specific IPs, the results are as follows:

- 1) **NeoBit** accounted for 28.6% of total licensing revenue in the second-quarter, increasing 82.9% sequentially, and 145.7% year-over-year. Its royalties accounted for 47% of total royalty, down 19.1% sequentially, and 13.9% year-over-year, mainly due to seasonality of smartphone customers and some products (PMIC, DDI, and Fingerprint) moving into 12-inch for production, and adopting NeoFuse IP instead. Other products such as legacy PMIC, Automotive IoT-related will contribute to NeoBit royalty in the future.
- 1) **NeoFuse** accounted for 58.6% of total licensing revenue in the second-quarter, up 12.7% sequentially, and 22.1% year-over-year. Its royalties decreased 7.1% sequentially due to the seasonality of smartphone customers, but increased 89.6% year-over-year due to continued strength on new application production. This brings the royalty of NeoFuse to 49.6% of total royalties.
- 2) **Our PUF-Based Security IPs** contributed to 1.2% of licensing revenue in the second-quarter. Even though engagement with industrial leaders will take a longer time, as it involves security architecture, it is still actively ongoing. Thus, we expect more significant contributions from PUF later this year.

- 3) **As for MTP technology**, licensing revenue decreased 62.2% sequentially, but increased 82% year-over-year to account for 11.6% of licensing revenue in the second-quarter. Royalty from MTP increased 17.5% sequentially, and 38.7% year-over-year to contribute 3.4% of total royalties. Currently, our MTP team is working with partners on developing MRAM, ReRAM, and AI memory. We have just gained ReRAM qualification in 40nm process and are in discussions with alpha customers for design-in.

In the first half of 2021:

- 1) **For NeoBit**, the licensing revenue increased 74% year-over-year, but royalty decreased 3.4%, accounting for 40.7% of the total revenue.
- 2) **For NeoFuse**, the licensing and royalty revenue grew 21.8% and 94.5% year-over-year, contributing to 50.1% of the total revenue.
- 3) **For PUF-Based Security IP**, licensing revenue increased 122.4% year-over-year, about 0.7% of total revenue.
- 4) **For MTP technology**, the licensing and royalty revenue increased 304.4% and 12.3% year-over-year, accounting for 8.5% of the total revenue.

Now looking at royalties for 8-inch and 12-inch wafers:

- 2) 8-inch wafers, which accounted for 51.8% of royalties, decreased 16.7% sequentially, but increased 3.3% year-over-year, due to the seasonality of smartphone customers. Other products such as legacy PMIC, Sensors, and Automotive-related will contribute to 8-inch royalty in the future.
- 3) 12-inch wafers contributed to 48.2% of royalties, decreased 6.3% sequentially, but increased 71.1% year-over-year, due to the continued strength of new application productions.

There were 154 product tape-outs completed in the second-quarter, which remains at a record high level, reflecting persistent demand for design activities with our IPs. We will provide more information in the management report.

In the next section, I will address our future outlook. We expect the growth of revenue to continue in the second half of 2021 and beyond.

- 1) For licensing revenue, there is continuing strong demand from NeoFuse, PUF-based solutions, and MTP. We expect licensing revenue to continue its growth this year.
- 2) For royalty revenues, 8-inch and 12-inch royalties will continue their growth momentum. 8-inch royalties will grow due to demand and content increases for PMIC, MCU, Fingerprint, and Sensor-related in 5G, Automotive, and IoT-related applications. 12-inch royalties will have strong growth as customer productions are increasing for TDDI, OLED, ISP, DTV, STB, WiFi 6, Bluetooth, Ethernet, Switch, TWS, DRAM, and others. In addition, we also expect to see more royalty contributions from the FinFET process in the second half of this year. Recently, several major foundries have actively expanded their 28/22nm production capacity. We have accumulated more than 140 NTOs at this process node, which will drive momentum to the growth of royalties in the future.

Now, looking at new business development:

Our new applications are centered on the business development of hardware security.

- 1) NeoFuse, in advanced processes, is being adopted for secure Key Storage and is seeking to replace the conventional e-Fuse. We expect that this will be a trend for hardware security as applications are moving to more advanced processes. Our effort in the past is also gradually being seen with higher adoption and penetration rate.
- 2) Business activities of PUF-based security solutions are in progress in applications of IoT, industrial IoT, AI, Blockchain, FPGA, Data Processor Unit (DPU), Mobile

Storage (UFS), and Automotive. In addition, our PUFrt and PUFiot have been adopted by several customers across various applications.

- 3) As for the collaboration with ARM, since customer adoption cases have been very successful, we intend to expand the cooperation to CPU security architecture in the future.
- 4) eMemory and PUFsecurity have also joined DARPA Toolbox Initiative to provide IP solutions for accelerated technology innovation.

For new IP technology development:

- 1) 6nm OTP has passed the qualification test and already has customer adoption. As for 5nm plus (N5P), it has completed characterization works and will move forward for further qualification tests.
- 2) In Q2, we have announced the cooperation of PUFsecurity and Andes to integrate crypto coprocessor PUFiot into RISC-V AIoT security platform.
- 3) We also continue to develop our PUF-based solution to implement HSM (Hardware Security Module), which can be embedded in the chip to provide a security function for network applications.

Next, I will pass the time to Charles.

Hardware Security in DARPA by Chairman and President, Dr. Charles Hsu

(Page 15: Collaboration with DARPA)

As we have announced in June, we are working with DARPA for advanced on-chip security mechanisms, utilizing our OTP (one-time programmable) memories, and PUF (physical unclonable function) to establish a unique identity for every chip as well as foundational building blocks for mitigating supply chain vulnerabilities. Our solutions come with embedded NeoFuse and NeoPUF to make up the secure storage and chip

fingerprint, providing an isolated secure boundary for the system, along with an anti-tampered shell to protect the secure boundary.

(Page 16: DARPA's Hardware Security Programs)

There are four programs to implement our PUF-based Root of Trust and security solutions, which can facilitate the development of chip providers for government and defense devices.

- 1) System Security Integration Through Hardware and Firmware (SSITH): It aims to develop hardware security architectures and associated design tools to protect electronic systems from remote attacks on locations such as software or firmware.
- 2) Supply Chain Hardware Integrity for Electronics Defense (SHIELD): It aims to prevent counterfeit or unauthorized IC to enter the module supply chain with Hardware Root of Trust.
- 3) Automatic Implementation of Secure Silicon (AISS): It aims to automate the process of incorporating scalable hardware security into chip designs.
- 4) Asset Management Infrastructure (AMI): It aims to protect chips throughout their lifecycle by using hardware security and blockchain to manage keys, authentication and certification during field usage.

The ultimate goal is to have the PUF-based security architectures in every single chip. And the supply chain going from chips to finished module needs to be secure with minimal cost. Then, when the device goes into field use, it remains under lifecycle security management until end-of-life to ensure the decommissioned parts never makes their way back to another device.

DARPA's or defense contractors who work on these four programs can easily adopt our solutions into their products. The U.S. has prioritized supply chain security, such that they require the chips used by the government and defense to be ideally produced on U.S. soil. So, foundries like GF, Intel, Skywater, and On- Semi are operating in the

U.S. to manufacture defense products. We are working with related parties to build a platform for defense products. We expect this platform to extend to commercial products as the U.S. government is pushing for a clean network and supply chain management for national security.

Closing comment by Chairman and President, Dr. Charles Hsu

Thank you once again, for your patience and support for eMemory. We will continue to work hard on IP innovation and security solutions for our customers and bring higher returns for our shareholders. Thank you!