



Himax Technologies, Inc. Q1 2020 Unaudited Financials and Investor Update Call

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Operator: Opening and standard introduction.

Mali Bergman: Welcome everyone to Himax's First Quarter 2020 Earnings Call. Joining us from the Company are Mr. Jordan Wu, President and Chief Executive Officer; and Ms. Jackie Chang, Chief Financial Officer. After the Company's prepared comments, we have allocated time for questions in a Q&A session. If you have not yet received a copy of today's results release, please email HIMX@mzgroup.us or access the press release on financial portals or download a copy from Himax's website at www.himax.com.tw.

Before we begin the formal remarks, I'd like to remind everyone that some of the statements in this conference call, including statements regarding expected future financial results and industry growth, are forward-looking statements that involve a number of risks and uncertainties that could cause actual events or results to differ materially from those described in this conference call. Factors that could cause actual events or results to differ materially from those described in this conference call include, but are not limited to, general business and economic conditions, the state of the semiconductor industry; market acceptance and competitiveness of the driver and non-driver products developed by Himax; demand for end-use application products; the uncertainty of continued success in technological innovations; as well as other operational and market challenges and other risks described from time to time in the Company's SEC filings, including those risks identified in the section entitled "Risk Factors" in its Form 20-F for the year ended December 31, 2019 filed with the SEC in March, 2020.

Except for the Company's full year of 2019 financials, which were provided in the Company's 20-F and filed with the SEC on March 25, 2020, the financial information included in this conference call is unaudited and consolidated and prepared in accordance with IFRS accounting. Such financial information is generated internally and has not been subjected to the same review and scrutiny, including internal auditing procedures and external audits by an independent auditor, to which we subject our annual consolidated financial statements, and may vary materially from the audited consolidated financial information for the same period. The Company undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

I will now turn the call over to Ms. Jackie Chang. The floor is yours.

Q1 Results

Ms. Jackie Chang: Thank you Maili and thank you everybody for joining us. On today's call, we will first review the Himax consolidated financial performance for the first quarter, followed by the second quarter 2020 outlook. Jordan will then give an update on the status of our business, after which we will take questions. We will review our financials on both IFRS and non-IFRS basis. The non-IFRS financials exclude share-based compensation and acquisition-related charges.

In light of the prevailing uncertainties clouding the global financial markets, we decided to pre-announce preliminary key financial results for the first quarter on April 3, 2020 with revenues met guidance while gross margin and EPS both exceeded the guidance issued on February 13, 2020. Today, our reported results for revenues, gross margin and EPS were all in line with the pre-announced results. For the first quarter, we recorded net revenues of \$184.6 million, an increase of 5.5% sequentially and an increase of 13.0% compared to the same period last year.

Historically, the first quarter has seasonally been the bottom of the year in terms of sales due to the Lunar New Year holidays, often down by more than 10% sequentially. The coronavirus outbreak has prompted more than half of the provinces in China to extend the New Year holidays by at least a week in an effort to contain the spread of the virus. The management of logistics, including worldwide customs operations in various ports, and the supply chain were impacted significantly during this period of time. Despite these dramatic headwinds, we were able to deliver strong financial results in the first quarter, specifically with double-digit revenue growth year-over-year.

The 5.5% sequential increase of revenue was at the midrange of our guidance of an increase of between 1.0% to 10.0% quarter-over-quarter. Gross margin was 22.7%, exceeding the prior guidance of an increase of 1.0% to 2.0% from the 20.6% delivered in the previous quarter. A more favorable product mix among small display products, improved WLO factory utilization

and higher-than-expected engineering fees from new project engagements enhanced the gross margin for the first quarter.

IFRS profit per diluted ADS was 1.9 cents, exceeding our guidance of -0.5 cents to 1.8 cents. Improved gross margin and lower than expected operating expenses contributed to the more positive earnings. Non-IFRS profit per diluted ADS was 2.2 cents, exceeding our guidance of -0.2 cents to 2.1 cents.

Revenue from large display drivers was \$61.4 million, up 6% sequentially, and down 12.3% year-over-year. The sequential growth was driven by Chinese panel customers' ramping of new LCD fabs as well as their building of inventories in anticipation of growing demand and higher panel prices in 2020. The revenue was, however, lower than the level of the same quarter last year when the production outputs of panel makers reached the peak. Since then, they have cut back their production each quarter to address overall weak TV demand and industry-wide capacity oversupply. Large panel driver ICs accounted for 33.2% of total revenues for the quarter, compared to 33.1% in the fourth quarter of 2019 and 42.9% a year ago.

Revenue for small and medium-sized display drivers was \$87.5 million, up 7.9% sequentially and 29.5% year-over-year. The segment accounted for 47.4% of total sales for the quarter, compared to 46.4% in the fourth quarter of 2019 and 41.4% a year ago. The sequential sales growth was driven primarily by a surge in tablet sales, offset by a decrease in smartphone

TDDI and automotive sales. The strong year-over-year growth was attributed by both tablet and automotive sales.

Sales into smartphone were down 7.6% sequentially but up 6.3% year-over-year. The sequential decline was caused mainly by lower TDDI shipments reflecting certain customers' delay into the second quarter for their new product launches with our TDDI solutions. The coronavirus outbreak caused serious disruptions in customers' engineering work after the Lunar New Year holidays, leading to delays in new product verification and launch timetables. The first quarter sales of traditional DDICs declined by 5.7% sequentially but increased 13.5% from last year.

Display drivers and TDDI for tablet and other consumer products were up 51.7% sequentially and doubled year-over-year. This was mainly due to customers' strong demand from newly launched tablets using TDDI as well as surging needs for online education and homeworking. We should emphasize that tablet TDDI was one of the main growth drivers for Q1 and will represent a significant growth opportunity for our business through the rest of 2020. While we only started mass shipment of in-cell TDDI for tablet this quarter, it already represented around 5% of our total revenues in the first quarter. Jordan will elaborate on this later.

Our driver IC revenue for the automotive application was down 9.7% sequentially. It was up 6.2% from the same period last year.

Revenue from our non-driver businesses were \$35.7 million, down 0.6% sequentially but up 38.7% year-over-year. Non-driver products accounted for 19.4% of total revenues, as compared to 20.5% in the fourth quarter of 2019 and 15.7% a year ago.

Gross margin for the first quarter was 22.7%, up 210 basis points sequentially and 10 basis points from the same period last year. Gross margin outperformed our guidance of an increase of 1.0% to 2.0% compared to the 20.6% of the fourth quarter of 2019. A more favorable product mix among small and medium-sized display driver products, improved WLO fab utilization and higher engineering fees from project engagements were the factors behind the sequential growth. Increased shipments of WLO product to an anchor customer led to higher capacity utilization of our WLO fabs and therefore better gross margin compared to the same period last year.

Our IFRS operating expenses were \$37.3 million in the first quarter, down 0.4% from the preceding quarter and down 7.4% from a year ago. The year-over-year decrease was a result of decreased salary and R&D expenses. Non-IFRS operating expenses for the first quarter were \$36.7 million, down 0.5% from the previous quarter and down 7.8% from the same quarter in 2019.

IFRS operating margin for the first quarter was 2.5%, up from -0.8% in the prior quarter and -2.1% in the same period last year. The sequential and year-over-year improvement were primarily a result of higher sales, better gross margin and lower operating expenses. First

quarter non-IFRS operating profit was \$5.3 million, or 2.9% of sales, up from non-IFRS operating loss of \$0.7 million, or -0.4% of sales last quarter, and -1.8% for the same period last year. Both sequential and year-over-year improvement were for the same reasons stated above.

IFRS profit for the first quarter was \$3.3 million, or 1.9 cents per diluted ADS, compared to profit of \$1 million, or 0.6 cents per diluted ADS, in the previous quarter and loss of \$2.3 million, or -1.3 cents per diluted ADS, a year ago. IFRS earnings per diluted ADS exceeded prior guidance of a per diluted ADS of around -0.5 to 1.8 cents. The better-than-expected earnings were due to improved gross margin and lower operating expenses. The sequential and year-over-year increase were a result of higher sales, better gross margin and lower operating expenses.

First quarter non-IFRS profit was \$3.8 million, or 2.2 cents per diluted ADS, compared to non-IFRS profit of \$1.5 million, or 0.9 cents per diluted ADS last quarter and non-IFRS loss of \$2 million, or -1.1 cents per diluted ADS for the same period last year. Non-IFRS earnings per diluted ADS exceeded prior guidance of around -0.2 to 2.1 cents.

Turning to the balance sheet, we had \$126.6 million of cash, cash equivalents and other financial assets as of the end of March 2020, compared to \$108.2 million at the same time last year and \$112.1 million a quarter ago. We delivered an operating cash inflow of \$10.6 million during the first quarter. The higher cash balance from the last quarter was mainly due to

additional unsecured borrowings of \$10.6 million during the quarter. On top of the cash position, restricted cash was \$164.0 million at the end of the quarter, the same as the preceding quarter and a year ago. The restricted cash is mainly used to guarantee the secured short-term borrowing for the same amount. We had \$67.9 million of unsecured short-term loan at the end of Q1, compared to the \$57.3 million a quarter ago and \$40.0 million at the same time last year.

Our inventories as of March 31, 2020 were \$148.4 million, little changed from \$143.8 million last quarter but down from \$189.3 million a year ago. Account receivables at the end of March 2020 were \$186.7 million, up from \$164.9 million last quarter and \$176.2 million a year ago. DSO was 92 days at the end of quarter, as compared to 97 days a year ago and 90 days at the end of the last quarter. As highlighted in the last few earnings calls, in response to capacity shortage at the foundry and certain packaging material, we had to keep the inventory level higher than usual in 2018. Given the unfavorable market conditions and easing of foundry capacity in 2019, we have started to control our inventory level since the first quarter of 2019. We believe inventory has reached a healthy level by now but given the prevailing market conditions, we will monitor our inventory carefully.

Net cash inflow from operating activities for the first quarter was \$10.6 million as compared to an outflow of \$22.1 million for the same period last year and an inflow of \$23.4 million last quarter.

First quarter capital expenditures amounted to \$3.1 million, versus \$6.3 million a year ago and \$2.7 million last quarter. As reported in the last earnings call, the capex for both the new building construction and the 3D sensing capacity expansion were concluded in the fourth quarter 2019. The first quarter capex was for R&D related equipment for our IC design business.

As of March 31, 2020, Himax had 172.2 million ADS outstanding, no change from last quarter. On a fully diluted basis, the total number of ADS outstanding was 173.3 million.

Q2 2020 Guidance:

As we mentioned in the last earnings call, the coronavirus outbreak created major uncertainties in the marketplace and new challenges for our operations. We have taken swift actions and worked extremely closely with both our customers and suppliers in an effort to adapt to the new circumstances. Among other things, we have proactively monitored the logistics and customs operations in various ports in China to identify any potential impacts to the supply chain and quickly adjusted the production and shipping plans accordingly. At this time, with China reopening and other countries moving in the same direction, the market appears to be stabilizing but business outlook remains murky. For the second quarter, we are confident in the smooth operation of our supply chain and the current driver IC shipment pipeline remains strong for NB, monitor, smartphone and tablet. However, TV and auto businesses are under pressure as global consumption appears to have shrunk drastically.

Among our non-driver IC products, WLO sales will reduce significantly from the last quarter. Jordan will elaborate on this in a few minutes.

The second quarter gross margin is likely to be lower than that of the first quarter. Notably, the automotive display driver, which enjoys the best gross margin among our driver IC products, is being hit by the coronavirus while the monitor business, which is expanding in volume right now, is relatively low in gross margin. In addition, as mentioned above, the second quarter WLO sales will drop significantly. This will also lead to much reduced gross margin of WLO for its lower fab utilization.

For the second quarter, we expect revenue to decrease slightly by within 5% sequentially. Gross margin is expected to be between 20.2% to 20.6%, depending on our final product mix. IFRS loss attributable to shareholders are expected to be in the range of around 1.5 cents to 0.5 cents per fully diluted ADS. Non-IFRS loss attributable to shareholders are expected to be in the range of 1.3 cents to 0.3 cents per fully diluted ADS.

I will now turn the call over to Jordan. Jordan, the floor is yours.

Q2 2020 Outlook:

Thank you, Jackie. Since late Q419, we have started to see a major turnaround in literally all aspects of our business with positive momentum and a strong outlook. This has been due to

design-wins with new and existing customers across our major product lines. However, the strong momentum was interrupted at around the time of the Lunar New Year holidays when many areas of China started to impose strict lockdown measures in the face of the Covid-19 outbreak. Uncertainty in the marketplace has continued since. Despite supply chain disruptions caused by China lockdowns, we delivered decent results in the first quarter, although the results could have been better without the coronavirus. China has recently reopened, and other countries are seemingly moving in the same direction following a long period of lockdown. At this point, our visibility into the second half of the year is rather limited as the pandemic has created a profound impact on the global consumption and the economy overall. Shorter-term, similar to the first quarter, our second quarter business is being affected by the Covid-19, especially for TV and automotive-related products. However, homeworking and online education have driven a surge in demand for our NB, monitor, and tablet related products. We are also seeing very strong momentum in our smartphone TDDI business on the backdrop of a sluggish global smartphone market. TDDI for tablet, which has made a decent contribution to our first-quarter result, is the major highlight of our business right now as the technology is being adopted and put into mass production rapidly as we speak. We are the dominant TDDI supplier to global Tier-1 Android tablet makers, making Himax the market leader in the emerging trend to replace the traditional design of having two ICs, namely display driver and touch panel controller, with the integrated TDDI IC for tablet displays. While still a new product, tablet TDDI already represents around 5% of our overall revenues in Q1 and we expect the business to continue to deliver strong growth in Q2 and throughout the rest of 2020. Despite the coronavirus, we are still making great progress, and remain committed to, ongoing

R&D projects for forward-looking products, notably ultralow power smart image sensing, TDDI for automotive, 3D sensing, and AMOLED. All of these new product areas are growth opportunities with great potential. We have taken proactive steps to strategically manage the business through the current crisis and are confident that we will deliver both top and bottom-line growth in 2020. Now, let me take you through each of our major business areas.

Display Driver IC Business

LDDIC

Let us start with the large-panel driver IC business update. For the second quarter, we expect the large display driver IC segment revenue to decrease by high-single-digit sequentially. Although we delivered strong results in Q1, our visibility is low for the second half as the market is still cautiously adapting to the new market environment. On a macro perspective, our Chinese panel customers continue to gain market share in the LCD market thanks to Korean panel makers' accelerated exit from the industry in 2020. As a leading IC supplier for the Chinese panel market, Himax is well-positioned to benefit from the increased demand coming out of the major Chinese large display players.

If we look into specific product segments, the global TV market continues to face challenges with reduced end-market demand as well as supply chain disruptions. Conversely, the strong growth momentum we experienced in Q1 for NB and monitor is expected to extend into Q2

and 2H20. Homeworking and online education have created new demand for these products. In addition, the Chinese government has recently mandated that all public offices and institutions replace foreign hardware and software with Chinese alternatives within the next three years. This has boosted the need not only for our large panel display driver ICs but also timing controller contents. Our businesses in high-end monitor and new generation low power notebook products, where we are the market leader in DDICs and/or Tcon, will benefit significantly from these trends.

On the supply side, in anticipation of there being foundry capacity shortage of 8-inch silicon wafers for display driver ICs, we strategically prepared 12-inch foundry, as well as associated backend packaging and testing, ahead of our peers to cover the potential 8-inch capacity shortfall. Our design project coverage is strong across all leading Chinese panel makers. The additional capacity has enabled us to accommodate customers' rush orders for monitors which are in very strong demand globally.

Looking at technology development, despite the delay of the 2020 Tokyo Olympics, top-tier TV brands continue to promote 8K TVs. We have active design-in activities in both 8K TV display driver and timing controller ICs, of which we are the market leader. The 8K TV timing controller technology enables the display to bring more realistic and vivid images, delivering immersive viewing experience especially for high-resolution contents such as games. Recently there have been multiple customers announcing their latest 8K TVs with Himax technology inside. Although the penetration of 8K TV is still low, we expect this to be a growth

opportunity for Himax as 8K TV sales will boost demand not just our driver IC but also timing controller contents where the product ASP is much higher.

SMDDIC

Now let's turn to the small and medium-sized display driver IC business, beginning with an update on our smartphone segment. Our TDDI product roadmap as well as, new design-wins with end customers and a foundry capacity advantage have positioned Himax to gain market share during the second quarter and throughout 2020.

The smartphone market continues to embrace new technologies and is moving toward higher frame rate displays to enable smoother screen viewing and gaming experience. This will drive the adoption of next-generation high refresh rate TDDI solutions, for which Himax is a leading technology provider. Also, the demand for 5G in China is expected to stimulate smartphone demand in 2020 which will, in turn, drive the growth for TDDI. Expecting aggressive Chinese government subsidy for 5G to boost the economy, smartphone makers continue to aggressively develop 5G products. Himax will benefit from all these trends.

Although global smartphone market demand has been severely impacted in the short-term by the pandemic, based on the current pipeline, we expect our TDDI smartphone shipments to grow significantly in Q2 due to the new design-wins into a certain newly launched models as well as ongoing strength in new design-ins scheduled for 2020 mass production. Bucking the

strong headwind of a declining global smartphone market, we are confident that our smartphone TDDI business will grow strongly from last year for the reasons mentioned above that are specific to Himax.

The price erosion of TDDI over the past year is expected to abate in 2020. This is not only because the new high refresh rate products will enjoy a better ASP but also that the industry-wide tightening of foundry capacity for TDDI would likely provide a price support. Although we are currently facing some pricing pressure, we expect this to stabilize in the second half with gross margin improvement for smartphone TDDI. We have prepared the capacity to meet strong TDDI product demand and capitalize on the opportunities for smartphone TDDI as well as other TDDI applications such as tablet, in 2020. Due to the strong demand, we expect in Q2 and 2H, we foresee the potential for capacity tightness again. We are therefore working diligently to enable additional capacity. Our Q2 sales into the TDDI for smartphone is expected to increase by over 40% sequentially.

Our traditional discrete driver IC sales into smartphones posted a slight sequential decline for the first quarter. We expect traditional smartphone display driver ICs shipments to continue to decline in Q2. This will be more than offset by the increase in smartphone TDDI shipments. The traditional discrete driver IC for smartphone for the second quarter is expected to decrease by around 60% sequentially.

As discussed previously, a major development we are seeing in the marketplace is the increasing utilization of the OLED display for smartphone. This is due to expanded AMOLED capacity as well as increased demand for under-display fingerprint technology that is only available in the AMOLED display at this time. We are encouraged by the progress we have made, collaborating closely with leading panel makers across China for AMOLED product development. We expect a small volume of smartphone AMOLED DDICs shipments in 2020. Additionally, we see OEMs aggressively gearing up to produce wearable devices. Beyond smartphone, we have made progress in wearable AMOLED display driver ICs where Himax is very active. Overall, we believe AMOLED driver ICs will soon become one of the major growth engines for our small panel driver IC business.

Turning to the automotive sector, the worldwide auto sales remain sluggish with highly uncertain consumer demand in 2H20. Himax commands more than 30% of the global market in automotive display driver IC and inevitably this business has been impacted. Revenues were down 9.7 % sequentially in Q1 and we expect to see around 15% decline in Q2. Even so, combining the two quarters, we are still up around 4% year-over-year. The year-over-year growth is mainly due to Chinese panel makers' increased market share globally for which we benefit. Our Chinese customers' ambition to gain market share in auto displays, combined with our technology and leadership in this area, position our automotive related business for further growth. Despite short-term challenges, Himax will remain the leader as the major developing trends have not changed. In the auto display segment, the number of displays per vehicle continues to rise as the overall auto display market is set to increase from 2020 onward.

Equally important for Himax, the market is quickly shifting towards a number of new technologies for auto display, including higher resolution, in-cell touch, slim border, giant pillar-to-pillar screen, local dimming for higher contrast, and plastic AMOLED for free-form design, all of which are contributing to expanding demand for automotive display driver ICs. Himax is the primary partner for most of the world's automotive panel makers to enable these new technologies.

Specifically, Himax is the dominant auto TDDI technology provider right now. In addition to working as the sole or main supplier with existing leading panel makers, we have numerous TDDI design-in projects with multiple new tier-1 customers and our R&D activities in new technology development continue without delay despite the pandemic. While we only expect a small volume of shipments in 2020, we anticipate very meaningful shipments of auto TDDI as we move into 2021.

We have also developed a new generation local dimming Tcon product that will improve display quality and contrast, adding backlight improvements for instrument cluster display - especially in dark surroundings. Local dimming has shown the potential to improve contrast and achieve OLED display properties without reliability concerns while also providing power savings over traditional backlight. Currently, we have numerous local dimming design-in activities with global tier-1 car makers.

Turning to the tablet and consumer electronics businesses, we expect the tablet business to be a major growth area for Himax during 2020 with a significant volume of tablet TDDI shipments that began in Q1. This strong momentum is expected to accelerate into Q2 and throughout the rest of 2020. The business growth will be driven primarily by leading Android tablet brands' rapid adoption of the newly developed in-cell TDDI solutions. In-cell TDDI is quickly becoming mainstream for tablets due to its lower cost and a simplified supply chain as well as faster and easier integration for display manufacturers. At the same time, consumer demand is expected to accelerate for these cheaper, slimmer, lighter and more stylish tablets. Himax is the primary supplier for all Android tablet in-cell TDDI products right now. While we only started mass shipments in Q1, it already represents over 30% of our tablet revenue and around 5% of our total revenues for the quarter. We continue to see growing demand in Q2, further boosted by the current trend of homeworking, online education and Chinese government's plan to replace IT equipment. Furthermore, we see TDDI tablet with active stylus becoming a new mainstream and Himax is also the market leader in this space. It's worth highlighting that, while tablet market is smaller than smartphone, the ASP and number of units for TDDI in each tablet are much higher than in smartphone. In the second quarter, TDDI for tablet is expected to increase by around 80% sequentially.

Additionally, for larger-sized tablets with slim bezel design, we continue shipping our traditional display driver IC with CoF packaging to a leading Chinese brand customer and expect strong shipments in Q2. We expect the strong momentum in our tablet products, both display driver ICs and TDDI, to be one of the main growth drivers in Q2 and throughout 2020. Tablet DDIC

and TDDI sales for the second quarter are expected to increase by around 40% sequentially and 150% year-over-year.

For the second quarter, revenue for the small and medium-sized driver IC business is expected to increase by low-single-digit sequentially.

Non-Driver Product Categories

Now let me share some of the progress we made on the non-driver IC businesses in the last quarter.

WLO

First on the WLO business. We delivered very strong results in Q1, almost doubling the business year-over-year despite a modest decline sequentially. However, we expect a significant decline in Q2 sequentially due to the coronavirus outbreak. The factory to which we usually ship this product has been ordered to shut down by the local government as part of their disease containment measures. The much reduced shipment in the second quarter, i.e., the much lower WLO fab utilization, will also have a negative impact on our overall gross margin. The demand for this product is likely to remain uncertain for a while even after the factory reopens. Despite the short-term disruption, we continue to make progress with our

ongoing R&D projects for next generation products centered around our exceptional design know-how and mass production expertise in WLO technology.

3D Sensing

Next is an update on the 3D sensing business. In the smartphone segment, we have advanced our WLO optics solution to cover both structured light and time-of-flight (ToF) 3D sensing. We are seeing increasing ToF adoption by smartphone makers for world-facing camera to enable advanced photography, distance/dimension measurement and 3D depth information generation for AR. In the past few months, we have been actively working with an industry-leading ToF 3D camera vendor to develop a new and advanced ToF solution, targeting Android smartphones. Leveraging our WLO technology, we have made great progress providing the partner with a spot projector for their reference design which has been ready for leading Android smartphone makers' evaluation this quarter, a slight delay from Q1 due to the pandemic. We have received positive feedback from our partner and have ongoing active design-in activities providing optical component or projector to our tier-1 smartphone OEM customers. 3D sensing remains one of the main growth drivers for us.

Our non-smartphone 3D-sensing engagements continue to focus on smart door lock and industrial automation applications where we provide structured light-based 3D sensing total solution. We have been collaborating closely with two primary types of partners: those with industry-leading expertise in facial recognition algorithms and those offering application

processor ICs with strong AI capability. We have started design-in projects with several smart door lock end customers. In addition to providing a total solution, we also offer individual key components including optics and/or our proprietary 3D decoder ASIC where we have received frequent inquiries from customer for various applications in 3D sensing.

We also continue to work with partners in shoe automation to optimize its manufacturing process for both cost and production efficiency. I am pleased to report that prototypes of our 3D sensing-enabled automatic robotic cementing system are ready now for production optimization testing.

Ultralow power smart sensing

Next on our AI-based ultralow power smart sensing solution. We see a surging demand for battery-powered smart devices with AI-enabled, ultralow power intelligent sensing, especially in markets such as home appliances, door lock, doorbell, TV, notebook, building control and security.

WiseEye, our total solution for AI-based ultralow power smart sensing, is built on Emza's unique AI-based algorithm, on top of Himax's proprietary computer vision processor and CMOS image sensor, all equipped with ultralow power design. Currently, laptop is the market of focus. Himax WiseEye 2.0 NB solution provides a 'laptop-ready' 3-in-1 RGB/IR/AI solution, respecting privacy while enhancing security for notebook users. A number of leading notebook

OEMs and ODMs demonstrated our WiseEye NB solution in their next-generation premium notebooks with positive feedbacks. In addition to notebook, we have also made progress with more OEMs in WiseEye solution into the displays to enable consumer privacy protection in real-time and a reference design of the world's first battery-powered human sensing solution for IoT market. Although the Covid-19 disrupted the development schedule, we see customers already starting product promotion.

In order for our WiseEye technology to reach its maximum potential, we have adopted a flexible business model whereby, in addition to the total solution approach mentioned above, we also offer individual key parts, both hardware and software, to address the customer's specific needs. For customers who own their own algorithm and wish to develop their own applications, we can provide our ultralow power AI processor and image sensor without our algorithm. The customer can piggyback on our technology and focus their effort on bringing AI to edge devices and transforming sensor data into actionable information for image, sound, activity, gesture, temperature, pressure and bio-metrics, among others, all with extremely low power consumption. We continue to collaborate with Google TensorFlow Lite and other AI framework providers in order for our WiseEye AI processor and image sensor platform to boost the inference performance and shorten the time to market for the customers targeting a wide variety of AIoT applications. Moreover, we are also collaborating with cloud computing service providers in deploying the Himax's WiseEye platform to edge-to-cloud certified IoT devices. We believe it will be a long-term growth driver for Himax in smart manufacturing, retail and smart building applications.

Moreover, for those customers/partners whose main business is to provide AI processor, we can offer our ultralow power image sensors without our AI processor and algorithm. We are pleased to report that our industry-first ultralow power backside-illuminated VGA CMOS image sensor has already been commercialized. It's designed with low latency and autonomous modes for always-on, intelligent visual sensing applications which enables, with extremely low power consumption, human presence detection and tracking, gaze detection, behavioral analysis, and pose estimation for growing markets such as smart home, smart building, healthcare, smartphone and AR/VR devices. The VGA resolution also supports greater than 90-degree wide field-of-view lens that makes it ideal in monitoring, detecting and image capturing.

We expect demand for the ultralow power sensing AIoT market to explode in the near future and numerous customers/ecosystem partners are expressing interest in our unique technology where we have made extraordinary progress in AI TV, smart home appliance, smart door lock/bell, smart surveillance applications that integrate voice and audio activation beyond facial recognition on edge device.

CMOS Image Sensor

We have covered our ultralow power smart sensing product status above. Now turning to our CMOS image sensor business update. We expect to see strong growth in this business due to the accelerated adoption of homeworking and online education.

Our industry-first 2-in-1 CMOS image sensor, which is another critical part of the WiseEye 2.0 NB total solution, is currently available for our partners/customers. This hybrid CMOS image sensor combines high quality HD image capabilities with ultralowpower output for AI visual sensing applications, specifically for NBs. Featured in unique design and small form factor, it enables laptop makers to achieve ultra-narrow bezel design which is on track to become the mainstream in the next couple of years. Our sensor has also incorporated an RGB-IR design to enable Windows Hello facial recognition. It helps reduce costs by eliminating the need to add an additional camera. We expect a small volume shipment for this product in 2020 with much-expanded volume in the years after.

For the traditional human vision segments, we see strong demand in notebooks, where we are one of the market leaders and have experienced increased shipments for multimedia applications such as car recorders, surveillance, drones, home appliances, and consumer electronics, among others.

LCOS

Lastly, on LCOS. We continue to focus on AR goggle devices and head-up-displays (HUD) for automotive. Many of our industry-leading customers have demonstrated their state-of-the-art products, including holographic HUD, AR glasses and LiDAR system, with Himax LCOS technology inside at the 2020 CES with positive market feedback. Our technology leadership and proven manufacturing expertise have made us a preferred partner for customers in these

emerging markets and their ongoing engineering projects in AR goggles and HUD for automotive applications.

For non-driver IC business, we expect revenue to decrease by over 15% sequentially in the second quarter. Aside from the WLO sales which are expected to be down, we expect other products to grow sequentially.

That concludes my report for this quarter. Thank you for your interest in Himax. We appreciate you joining today's call and are now ready to take questions.

OPERATOR TO QUEUE QUESTIONS

Jordan's closing remarks

As a final note, Jackie Chang, our CFO, will maintain investor marketing activities and continue to attend investor conferences. We will announce the details as they come about. Thank you and have a nice day!