THOMSON REUTERS STREETEVENTS

EDITED TRANSCRIPT

HIMX - Q4 2017 Himax Technologies Inc Earnings Call

EVENT DATE/TIME: FEBRUARY 13, 2018 / 1:00PM GMT

THOMSON REUTERS

CORPORATE PARTICIPANTS

Greg Falesnik

Jacqueline Chang *Himax Technologies, Inc. - CFO*

Jordan Wu *Himax Technologies, Inc. - Founder, CEO, President and Director*

CONFERENCE CALL PARTICIPANTS

Charlie Chan *Morgan Stanley, Research Division - Technology Analyst*

Jaeson Schmidt *Lake Street Capital Markets, LLC, Research Division - Senior Research Analyst*

Jerry Su *Crédit Suisse AG, Research Division - Director*

Suji Desilva *Roth Capital Partners, LLC, Research Division - Senior Research Analyst*

Thomas Sepenzis *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

Tristan Gerra *Robert W. Baird & Co. Incorporated, Research Division - MD and Senior Research Analyst*

PRESENTATION

Operator

Good day, ladies and gentlemen, and welcome to the Himax Technologies Fourth Quarter 2017 Earnings Conference Call. (Operator Instructions) And as a reminder, today's conference call is being recorded. I'd now like to turn the conference over to Greg Falesnik, Managing Director of MZ North America. Please go ahead.

Greg Falesnik

Thank you, operator. Welcome everyone to Himax's Fourth Quarter 2017 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've allocated time for questions in a Q&A session. If you have not yet received a copy of today's results release, please e-mail greg.falesnik@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, 2016 filed with the SEC in April 2017.

Except for the company's full year 2016 financials, which were provided in the company's 20-F and filed with the SEC on April 12, 2017, the financial information included in this conference call is unaudited and consolidated and prepared in accordance with US GAAP 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.

Jacqueline Chang - *Himax Technologies, Inc. - CFO*

Thank you, Greg. And thank you everyone for joining us. Our outline for today's call is, first, I will review Himax's consolidated financial performance for the quarter and full year 2017 on both GAAP and non-GAAP basis. The non-GAAP financials exclude share-based compensation and acquisition-related charges. I will conclude with the first quarter 2018 outlook. Jordan will then provide an update on the status of our business, after which we will take questions.

Our 2017 fourth quarter revenues, gross margin, GAAP and non-GAAP earnings per diluted ADS all met our guidance. For the fourth quarter, we reported net revenue of $181.1 million, a decrease of 8.1% sequentially and a decrease of 11% year-over-year. Gross margin was 24.6%, down 0.9% sequentially. GAAP earnings per diluted ADS were $0.137, compared to the guidance range of $0.13 to $0.15. Non-GAAP earnings per diluted ADS were $0.138, compared to the guidance range of $0.132 to $0.152.

Revenue from large display drivers was $58.4 million, up 6.3% sequentially, but down 13.7% year-over-year. Large panel driver ICs accounted for 32.3% of our total revenue for the fourth quarter compared to 27.9% in the third quarter of 2017 and 33.3% a year ago. Our large panel driver business grew mid-single digit sequentially, in line with guidance, driven by ramping of new LCD fabs in China and strong TV demand ahead of the Chinese New Year holidays. The year-over-year decline was caused by phase-out of certain customers' old models and the misses in certain customers new design-in projects, as we reported in previous earnings calls. We have overcome the engineering hiccups and business has started to be back on track since the third quarter. We're pleased with our current engineering collaboration and 4K TV design-in activities in the pipeline. Such activities will lead to further rebound in future sales.

Revenue for small and medium-sized display drivers came in at $81.3 million, down 6.8% sequentially and down 18.5% year-over-year. The product segment accounted for 44.9% of total sales for the fourth quarter, as compared to 44.2% in the third quarter of 2017 and 49% a year ago. As opposed to original guidance of flattish sequential growth, our small and medium-sized panel driver business declined mid-single digit, because of lower-than-expected smartphone driver IC sales.

Sales into smartphones were down 11.5% sequentially and declined more than 35% year-over-year. The less-than-satisfactory result in the fourth quarter was caused mainly by weak sentiment in the China market, as new products failed to attract consumers and therefore, OEMs turned cautious in building inventory. In addition, our sales were affected by the shrinking addressable market for pure TFT-LCD driver ICs, a significant portion of which is being replaced by TDDI and AMOLED technologies, as we indicated in previous earnings calls. The good news is that our TDDI solutions have started shipping in the fourth quarter. Jordan will elaborate on this a bit later.

Our small and medium-sized driver IC revenue for automotive applications went up more than 10% sequentially and more than 25% year-over-year. The quarterly revenue now reached close to $25 million, a historical high and accounting for over 15% of the total driver IC revenue. Driver IC sales for tablets were down 17.2% sequentially and declining 24.7% year-over-year, due to weak overall market demand in this product segment.

Revenues from our non-driver businesses were $41.4 million down 24.7% sequentially, but up 14.8% versus last year. Non-driver products accounted for 22.8% of total revenues, as compared to 27.9% in the third quarter of 2017 and 17.7% a year ago. The sequential decline was due primarily to certain one-off customer reimbursements related to our AR goggles business in the preceding quarter. Excluding the one-off reimbursements, which totaled $13.3 million, the sequential decrease would have been less than 1% as compared to the original guidance of 10% growth. Lower-than-expected WLO shipment and NRE income contributed to the sequential sales decline. The year-over-year increase was driven mainly by WLO product shipment to a leading customer and to lesser extent, increased sales of timing controllers and CMOS image sensors. The revenue increase was offset by the discontinuation of LCOS and WLO shipments to one of our major AR devices customers, who decided to end the product production, as we reported before.

We remain positive on the growth prospect of our WLO and LCOS product lines, judging by the expanding customer list that covers some of the world's biggest tech names, and the busy engineering activities going on with such customers right now. Jordan will elaborate on this a bit later.

Our GAAP gross margin for the fourth quarter was 24.6%, down 90 basis points from 25.5% in the third quarter of 2017, but up 550 basis points from 19.1% for the same period last year. The sequential margin decline was due mainly to a certain one-off customer reimbursement in Q3, as I mentioned earlier. Excluding the above-mentioned one-off reimbursements in the third quarter, which knocked down $5.7 million in gross profit,

our fourth quarter gross margin would have been an increase of 30 basis points versus the third quarter. The year-over-year increase was due to additional inventory write-down, totaling $12 million in the fourth quarter of 2016. Excluding the additional inventory write-down, the gross margin for the fourth quarter of 2016 would have been 25%.

Our GAAP operating expenses were $40.5 million in the fourth quarter, down 13.9% from the preceding quarter, but up 26.2% from a year ago. The significant year-over-year increase was primarily the result of rising R&D expenses in the areas of 3D sensing, WLO, TDDI and high-end TV, as well as the annual merit increase. In addition, NT dollar appreciation against the U.S. dollar caused our salary expense to increase around $1 million, as we pay the bulk of our employee salaries in NT dollars. The sequential expense decrease was primarily the result of a difference in RSU charge. In accordance with our protocol, our grant -- we grant annual RSUs to our staff at the end of September each year, which, given all other things equal, leads to higher third quarter GAAP operating expenses compared to the other quarters of the year. The fourth quarter RSU expense was only $0.1 million, while it was $6.5 million in the third quarter. Excluding the RSU expense, operating expenses decreased 0.4% from the third quarter, and increased 26.7% year-over-year.

GAAP operating margin for the fourth quarter was 2.3%, down from 3.4% for the same period last year, and up from 1.7% in the previous quarter. The GAAP operating income increased 21.3% sequentially and decreased 39.9% year-over-year. The sequential increase was primarily a result of lower RSU expense, offset by the one-time reimbursement from our AR customer in the third quarter. The year-over-year decline was, however, a result of higher operating expenses and lower sales, offset by the one-time inventory write-down in the previous year.

Fourth quarter non-GAAP operating income was $4.5 million or 2.5% of sales, down from 3.6% for the same period last year and down from 5.2% a quarter ago. The non-GAAP operating income decreased 55.9% sequentially and 38.7% from the same quarter in 2016.

GAAP net income for the fourth quarter was $23.5 million or $0.137 per diluted ADS, compared to $3.7 million or $0.021 per diluted ADS in the previous quarter and $4.4 million or $0.026 per diluted ADS a year ago. The increase was mainly the result of an investment gain of $20.7 million in the fourth quarter, as we disposed a direct investment in September. The transaction was already closed in Q4. Excluding this one-time gain, GAAP net income for the fourth quarter was $2.8 million or $0.016 per diluted ADS, a decrease of 36.6% year-over-year and 23.6% from the previous quarter. The sequential decline was caused by non-recurrence of the one-time reimbursement from our AR customer in the third quarter, as discussed earlier.

Fourth quarter non-GAAP net income was $23.8 million, or $0.138 per diluted ADS, compared to $9 million, or $0.052 per diluted ADS in the previous quarter and $4.8 million, or $0.028 per diluted ADS a year ago. Again, the increase was mainly due to the investment gain of $20.7 million in the quarter.

Let's now have a quick overview of the 2017 full year financial performance. Revenue totaled $685.2 million in 2017, representing a 14.7% decrease over 2016.

Revenues from large panel display drivers decreased 17.6% year-over-year, representing 32.8% of our total revenue, as compared to 34% in 2016. Our Large panel driver sales totaled $224.8 million for the year.

Small and medium-sized driver sales decreased 17.3% year-over-year, representing 44.5% of our total revenues, as compared to 46% in 2016.

Non-driver products decreased 3.6% year-over-year, representing 22.7% of our total sales, as compared to 20% a year ago. We would like to highlight that our WLO business hit inflection in the middle of the year when we began mass shipment to an anchor customer.

Gross margin in 2017 was 24.4%, a 20 basis point increase from 24.2% in 2016.

GAAP operating expenses were $158.9 million, up $23.8 million or 17.6% compared to last year. The increase was primarily the result of rising R&D expenses in the areas of 3D sensing, WLO, TDDI, and high-end TV, as well as the annual merit increases and additional headcount. In addition, NT dollar appreciation against the U.S. dollar caused our salary expense to increase around $3.7 million.

2017 GAAP operating income of $8.2 million represented an 86.2% decrease versus 2016 for lower sales and higher operating expenses.

Our GAAP net income for the year was $28 million, or $0.162 per diluted ADS, a decline of 45.1% from last year.

Non-GAAP net income for 2017 was $34.3 million, or $0.199 per diluted ADS, down 42.7% year-over-year.

Turning to our balance sheet. We had $148.9 million of cash, cash equivalents and marketable securities as of the end of December 2017, compared to $194.6 million at the same time last year and $151.6 million a quarter ago. In addition to the cash position, restricted cash was $147 million at the end of the quarter, little changed from $147.2 million in the preceding quarter and up from $138.2 million a year ago. The restricted cash is mainly used to guarantee the company's short-term loan for the same amount. We continue to maintain a very strong balance sheet and operate as a debt-free company.

Our year-end inventories were $135.2 million, up from $130.1 million a quarter ago, but down from $149.7 million at the same time last year. Accounts receivable at the end of December 2017 were $187.6 million as compared to $191 million a year ago and $181.7 million last quarter. Days sales outstanding was 100 days, as compared to 87 days a year ago and 98 days at end of the last quarter.

Net cash inflow from operating activities for the fourth quarter was $8.3 million as compared to an inflow of $47.2 million for the same period last year and an inflow of $16.9 million last quarter. Cash inflow from operations in 2017 was $29.4 million as compared to $84.7 million in 2016. The decrease in operating cash flow is mainly due to lower net profit.

Capital expenditures were on track with the plan at $15.7 million in the fourth quarter of 2017, versus $2.2 million a year ago and $10.2 million last quarter. The fourth quarter CapEx consisted mainly of ongoing payments for the new building's construction, WLO capacity expansion for certain anchor customer, and another WLO capacity expansion and installation of active alignment capacity to support our 3D sensing business. Total capital expenditure for the year was $39.8 million versus $7.9 million a year ago.

As of December 31, 2017, Himax had 172.1 million ADS outstanding, unchanged from last quarter. On a fully diluted basis, the total ADS outstanding are 172.5 million.

Beginning January 1, 2018, we adopted [International] Financial Reporting Standards, issued by the International Accounting Standard Board to prepare our consolidated financial statements. We don't expect the transition from US GAAP to IFRS to have any significant impact on our financial results.

The first quarter is traditionally the bottom of the year in terms of sales, because it has fewer working days, due to Chinese Lunar New Year. We expect the first quarter revenue to decrease around 9% to 14% sequentially, representing a low to mid-single digit year-over-year growth. Gross margin is expected to be around 22%, depending on our final product mix. The decline in gross margin is mainly caused by anticipated WLO shipment decline in Q1 2018. GAAP loss attributable to shareholders are expected to be in the range of $0.02 to $0.03 per diluted ADS, based on 172.5 million outstanding ADS.

I will now turn the call over to Jordan.

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Thank you, Jackie.

We delivered much improved results in the second half versus the first half last year. Looking into 2018, our major growth engines will be, for large panel segment, China panel makers increasing capacity. For small panel segment, in-cell TDDI for smartphone and driver ICs for automotive applications. And last but not the least for non-driver areas, increasing WLO revenue and commencement of 3D sensing total solution shipment. 3D sensing will be our biggest long-term growth engine and for this year, a major contributor to both revenues and profit, consequently creating a more favorable product mix for Himax starting in the second half of the year.

With that now let me give you some insights behind our guidance and trends that we see developing in our businesses.

Our large display driver IC business experienced a strong growth momentum in the second half of 2017, as 4K TV penetration was still on the rise globally and China continued to ramp brand new advanced generation LCD fabs. In fact, BOE has just launched the world's first Gen 10.5 fab a few weeks ago, while CEC-CHOT's Gen 8.6 fab and CEC-Panda's Gen 8.6+ fab will also go into operation this year. Being a market leader in large display driver IC business, we will benefit from such capacity expansion. However, the whole market is currently facing a capacity shortage of 8-inch foundry, where vast majority of large panel driver ICs are fabricated. While the growth of our large panel driver business may be limited by the tight 8-inch foundry capacity during this year, we are starting the early ramp of a newly built 12-inch fab in China. Adding the 12-inch fab into the pool of our foundry capacity will greatly alleviate the shortage issue of our customers. However, the ultimate ramping schedule will depend on how fast our customers can go through their customers' qualification, something all major customers are working very hard on. For the first quarter, we expect a low single digit sequential revenue growth for large display driver ICs.

With the 2020 Tokyo Olympics approaching, the ecosystem for super-high-resolution TV is being established, hoping to catch the business opportunity arising from the 8K program broadcast at the event. At this year's CES, major TV manufacturers have unveiled their 8K TV with Himax solutions inside. We will continue working with major panel makers for the development of next generation 8K TVs.

Turning to the small and medium display driver business. Our first quarter sales for smartphones are likely to decline by about 30% sequentially on product transition, weak market demand and seasonality. We have numerous TDDI design-wins for HD+ and for FHD+ projects with top-tier names, yet shipment has been hindered by the weak overall smart market -- smartphone market sentiment. In spite of the short-term headwinds, we're confident that our TDDI solutions and display driver IC business will accelerate starting in the second quarter, as smartphone makers begin to replenish inventory for their new product launches in the second half. On the high side, our new generation Full HD+ TDDI with COF or chip on film package is in design-in stage with a number of leading Chinese smartphone brands and panel makers. TDDI with COF package can enable super-slim bezel design for premium smartphone models. We expect small volume shipment in the first half with accelerating volume in the second half. Our driver IC business is also expanding into new areas, such as smart home assistant segment. Such activities will help future rebound in sales momentum.

On AMOLED product line, we've been collaborating closely with leading panel makers across China for product development. We believe AMOLED driver ICs will be one of the long-term growth engines for our small panel driver IC business.

As to automotive application, we continue to have further design wins from prior years going into mass production this year. We expect Q1 revenue to grow around 10% sequentially and more than 50% year-over-year. We've engaged all of the major automotive panel manufacturers worldwide for long-term partnerships and secured many of their key projects pipelined for the next few years.

Going into the first quarter, due to seasonality and overall weak smartphone market, we expect small and medium-sized driver IC revenue to be down around 10% sequentially.

Now, let me share some of the business progress of our non-driver IC businesses.

First, I will touch on our 3D sensing total solution. At present, our target market is primarily the Android-based smartphone, SLiM, our total -- our structured light based 3D sensing total solutions which we announced jointly with Qualcomm last August, brings together Qualcomm's industry-leading 3D algorithm with Himax's cutting-edge design and manufacturing capabilities in optics and NIR sensors, as well as unique know-how in 3D sensing system integration.

The majority of the key technologies inside the SLiM total solution is developed and supplied by Himax ourselves. These critical technologies include, on the projector end, DOE and collimator, utilizing our world-leading WLO technology, a tailor-made laser driver IC, and high precision active alignment for the projector assembly. And on the receiver end, a high efficiency near-infrared CMOS image sensor. Last but not least, Himax also developed an ASIC by incorporating Qualcomm's algorithm for 3D depth map generation. The fact that all of these critical components are developed in-house, puts us in a unique leading position. It represents a very high barrier of entry for any potential competition and a much higher ASP and profit margin for us.

The Qualcomm/Himax solution is by far the highest quality 3D sensing total solution available for the Android market right now. It has the industry's best performance in all of the dimension, 3D depth accuracy, indoor/outdoor sensitivity and power consumption. It passes the toughest eye safety standards with a proprietary glass broken detection mechanism to safeguard the user from any potential harm. Furthermore, we're the only solution to offer face recognition for secure online payment, a must-have feature for high-end smartphones of the future. We're working with multiple tier-1 smartphone makers, aiming to launch 3D sensing on their premium smartphones, starting the first half of 2018.

Our SLiM solution will be ready for mass production and shipment by the end of the first quarter 2018 with an initial capacity of 2 million units per month following some ramping period. The initial capacity is part of our Phase 1 expansion of $80 million. We have already achieved pretty satisfactory production yields in our internal pilot production, given that SLiM is a highly integrated solution with ASPs much higher than those of individual components. By the time we start making shipment, it will be a major growth contributor to our top and bottom lines.

In an attempt to accelerate the adoption of 3D sensing for Android phones, in addition to SLiM, we're also working on stereoscopic type 3D sensing as a lower cost alternative. Unlike SLiM, which utilizes structure light to generate 3D, stereoscopic type uses 2 cameras to replicate 3D vision in nature, augmented by coded light for image depth enhancement. Both types of solutions offered by Himax operate on active NIR light source with high sensitivity NIR sensors, thus working very well even under extreme brightness or total darkness. For 3D sensing purposes, structure light approach offers better depth precision than stereoscopic type, but the cost is also higher. By introducing stereoscopic 3D sensing, we aim to bring down the cost of 3D sensing, so that it can be afforded by mass market smartphone models.

We are pleased to report that development of stereoscopic 3D sensing total solution for face recognition and 3D features has been under way. We're aiming to be mass production and shipment ready by Q4 this year. Similar to our experience in SLiM, we are working with some of the most prominent ecosystem partners in developing our stereoscopic 3D total solution. We'll update progress in due course. While lower cost compared to structured light, stereoscopic 3D will still represent a much higher ASP and better gross margin potential for us.

Last but not least, at this year's CES, many of our customers and partners demonstrated 3D sensing applications in IoT, automotive, AR/VR, and robotic related products with Himax SLiM inside and received very positive feedbacks. As I mentioned before, 3D sensing can have a broad range of applications that go beyond smartphone. We are very excited about the growth prospects it represents and believe 3D sensing will be our biggest long-term growth engine.

In the last earnings call, we reported that we have started mass shipment of a highly customized WLO product to an anchor customer during the third quarter. The production has been going well, as we deliver consistent product quality, production ramp and high yields. Shipment volume to the customer for the fourth quarter accelerated sequentially. However, lower volume in the first quarter of 2018 is expected as per the customer's demand forecast. The much reduced shipment will negatively impact our Q1 gross margin, as lower utilization will lead to much higher equipment depreciation and factory overhead on a per unit basis. Despite the short term order adjustment, we expect strong rebound in the second half and are more optimistic than ever about the partnership and growth opportunities we have with the customer. The R&D projects with the said customer for their future generation products center around our exceptionally good design know-how and mass production expertise in WLO technology for optical devices.

Now, another major update for our WLO business. We recently announced the acquisition of certain advanced nano 3D masters manufacturing assets and related intellectual property and business. The advanced nano 3D manufacturing masters are primarily used in imprinting or stamping replication process to fabricate devices such as DOE, diffuser, collimator lens and micro lens array. This acquisition demonstrates our commitment and confidence in the long-term growth prospects for WLO and 3D sensing businesses.

Now, let me give you an update on the construction of the new building, one of the major CapEx projects for 2017. I'm pleased to report that the construction has been completed on schedule. The new building located near our current headquarters, will house additional 8-inch glass WLO capacity and the new active alignment equipment needed for SLiM 3D sensing solutions. It will also provide extra office space. We have started moving in equipment in the past few weeks.

Next on our CapEx, capital expenditure. Let me start with a recap of our current CapEx plan. We announced a CapEx plan of $80 million during 2017, which is on top of our regular CapEx, an unprecedented move in our history, given our fabless nature. We call this the Phase I capital

expenditure, which includes the construction of new building, an increase of our WLO capacity for the anchor customer I just mentioned, and a initial monthly capacity of 2 million units for our SLiM solution. We are now increasing the Phase I budget from $80 million to $105 million. The addition of $25 million is primarily for enhanced manufacturing automation and CIM infrastructure to achieve higher product yields and better production efficiency, an extra land of 1 hectare and more clean room and office space for future expansion. Some of these items are not necessarily required immediately, but we decided that it is far more economical to implement them now than in future. The Phase I is being executed as scheduled. Of the $105 million budget, $33 million has been paid out in 2017 with the remaining $72 million to be paid out in 2018.

We believe a Phase 2 CapEx will soon be required for additional capacity. The Phase 2 capacity will still be located in the same new building, using some of the clean rooms and office spaces built during the Phase 1. In fact, the new building has sufficient room to house capacity much in excess of the Phase 1 and 2 combined. We are still gathering customers' input and finalizing technical details and will formally announce the Phase 2 expansion as soon as the plan is finalized.

As we mentioned in the previous earnings calls, the CapEx budget for both phases of expansion will be funded through our internal resources and banking facilities, if so needed.

Now on to our CMOS image sensor business update. We continue to make great progress with our 2 machine vision sensor product lines, namely near-infrared or NIR sensor and Always-on-Sensor, or something we call AoS. Our NIR sensor is a critical part of our SLiM total solution. Our NIR sensors' overall performance, measured primarily by way of quantum efficiency, is far ahead of those of our peers for 3D sensing. We currently offer low noise HD or 1-megapixel and 5.5-megapixel NIR sensors and are planning to add more to further enrich our product portfolio. We are also developing the next generation NIR sensors, with quantum efficiency further elevated to the next level.

On the AoS product line, we announced the launch of the WiseEye IoT sensors, together with Emza and DSP Group, both Israel-based, in early January. It is the industry's first ultra-low power, always-on, fully trainable, AI-based machine vision intelligent visual sensor, adding human presence awareness for customer appliances -- for consumer appliances and industrial IoT applications. Emza demonstrated the WiseEye IoT sensors at this year's CES and successfully generated high interest from key market players, including smart buildings and security OEMs and makers of home assistance and home appliances. We expect to kick off some joint product development projects with heavy-weight industry leaders in the second half of the year. Himax now owns 45.1% equity in Emza with an option to acquire the remaining 54.9% and all outstanding options.

For the traditional human vision segments, we see strong demands in laptops and increasing shipments for the multimedia applications, such as car recorders, surveillance, drones, home appliances and consumer electronics, among others.

I will now give an update on the LCOS business, where our main focus areas are AR goggle devices and head-up-display for automotive and motorcycles. While AI will take a few years to fully realize its market potential, the wealth of announcements at CES 2018 say a lot about the industry's current momentum. Many companies, be the top name multinationals or new start-ups, are investing heavily to develop the ecosystem, applications, software, operating system, system electronics, and optics. With all these investments, we believe the AR goggle market will be back an accelerating mode again. In addition to AR goggle applications, we are pleased to report that we continue to make great progress in developing high-end head-up display for automotives. We and our partners together have secured a few design wins with certain big names. Timing and major revenue contribution will be 2019 at the earliest. Our technology leadership in this space has little competition. LCOS represents a significant long-term growth opportunity for us.

For non-driver business, we expect a sequential revenue decline of about 20% in the first quarter. However, it will still be an increase of close to mid-teens from the same period last year.

In summary, we are seeing weak seasonality and soft smartphone market demand, which will lead to sequential revenue decline in the first quarter. However, the revenue of all 3 major product categories will increase from the same period last year. We also expect our gross margin to be under pressure in the first quarter, caused by anticipated WLO shipment reduction, as per the customers demand forecast. Nevertheless, we believe shipments of TDDI ICs and WLO will accelerate in the second half of 2018. We also expect significant business growth in our 3D sensing business to contribute to both top and bottom lines as early as the second half of this year.

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.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from Tom Sepenzis of Northland Capital Markets.

Thomas Sepenzis - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

I was wondering if you can give us a little bit more color on the new stereoscopic 3D product in terms of ASP and security? Will this be usable for payment, specifically things like Alipay?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

The ASP, I think, the total solution combined -- well, firstly, I should say I'm assuming the algorithm, the process will be embedded in the AP processor to save cost. So with that assumption, I'm talking about the dual sensors and the optic -- the light source and the entire optics. The target price for the whole thing, I think, somewhere around -- less than $10, I would say, less than $10, although further details are still being worked on. As far as the secure payment is concerned, it's actually a challenging issue. Our goal is to enable secure payment under certain conditions, let's say, now without limited -- now with limited payment amount. Where the type of the payment should be set, I think it's still too early to say something. We are still discussing with Alipay and our other partners about it. But the goal is to still enable Alipay, but probably we still need restrictions, because the accuracy level of active stereotype 3D is still not as good as structured light optical. But we believe that should be sufficient for most of smartphone users' demands. I'm talking about small amount payments.

Thomas Sepenzis - *Northland Capital Markets, Research Division - MD & Senior Research Analyst*

Great. And then so what stops others from creating a similar 3D solution to challenge you here?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

I think I would not comment on specific competitors or alternatives. I think the way we see the market is developing right now, some of the players announcing such solutions, I think from our point of view, is premature. For example, some are with solutions with only RGB light capability, meaning they've been ruled out for smartphone altogether. Smartphones does need NIR. Some we feel the 3D sensitivity is not good enough, some are focusing primarily on their algorithm IC, meaning there is a ASIC required. While, our approach, our strategy, similar to our structured light solution, is for smartphone market to work primary with SoC players' platforms. Right now we are working with major ones. I cannot disclose further details, but that's the difference of our strategy. So we believe, given the low cost requirement and also the fact that all major APs have been pretty experienced in handling your dual camera, where algorithm is quite similar to what's required for active stereo 3D. So with further enhancement, it will be sufficient. So we feel to save cost and also to take advantage of the fact that the stereotype camera, dual camera, has been quite mature in algorithm. So we should take advantage of the AP's capability in that, while we are producing only the optics and sensor solution. So that is our strategy and approach and that's something we are executing now.

Operator

And our next question comes from Tristan Gerra of Baird.

Tristan Gerra - *Robert W. Baird & Co. Incorporated, Research Division - MD and Senior Research Analyst*

Could you give us a sense of what we should expect in Q2, understanding that you're not guiding for that quarter yet, but in terms of a rebound in the China smartphone supply chain and whether we should expect a further sequential decline also in your WLO shipments in Q2?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Q2, first, the smartphone. Right now I think in the pipeline, the inventory level is pretty high, not just on 18:9 panels, also on old 16:9 panels. That is why some end customers are not really so enthusiastic about pushing or promoting the new 18:9 design. But I believe from all indications, Q1 will be the period to adjust -- to digest such inventories. Hopefully, Q2 will rebound. And based on our projection for smartphone, Q2 should rebound by more than 20%, but certainly this is early, so don't take this as our guidance yet. On WLO, I mean, for sure Q2 will rebound. As far as how much it should rebound, I should say it will rebound nicely. As to how much exactly, we are still discussing with the customer for their final answer.

Tristan Gerra - *Robert W. Baird & Co. Incorporated, Research Division - MD and Senior Research Analyst*

Okay that's very useful. And is it fair to assume that the inflection point in your TDDI business is related to the rebound whenever the China smartphone market rebounds and what type of volume should we anticipate at that point?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

I think you should expect rebound quarter-after-quarter, starting from Q2. Certainly, I mentioned in my prepared remarks that our shipment in Q1 is being hindered by the fact that the customers are still digesting their old inventories, which will not be part of the game. In Q2, hopefully, as I said earlier, hopefully the situation will improve. But I just want to emphasize that our design top line with leading names, end customers and panel makers is pretty good actually. So I think you should expect quarter-after-quarter of increase, starting from the second quarter. In the second half, our target is to ship a monthly volume of 10 million units and I think it's fair to say that if we can achieve that, this will become a very stable business for us going forward. And our focus right now is still on HD+ and Full HD+ TDDI solutions. We are not going to get back to 16:9 solutions.

Operator

And our next question comes from Jaeson Schmidt of Lake Street.

Jaeson Schmidt - *Lake Street Capital Markets, LLC, Research Division - Senior Research Analyst*

Just first of all, wondering if you guys expect any 3D sensing revenue from Android OEMs in Q1?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

In Q1, you talk about 3D sensing, right?

Jaeson Schmidt - *Lake Street Capital Markets, LLC, Research Division - Senior Research Analyst*

Correct.

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Our SLiM total solution, right?

Jaeson Schmidt - *Lake Street Capital Markets, LLC, Research Division - Senior Research Analyst*

Yes.

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Okay. There will be some sample revenues, but not very significant, although we do sell some -- the premium to the mass production price, but it's not significant.

Jaeson Schmidt - *Lake Street Capital Markets, LLC, Research Division - Senior Research Analyst*

Okay. And then as a follow-up, wondering if you still expect capacity of 5 million to 6 million units per month for your SLiM by year-end?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

I think so -- I do think so, although it's something that we have to watch very closely, right. We -- I just mentioned, we are working now and we're hopeful to soon introduce -- formally introduce our active stereotype 3D. It's something new and the 2 are going to compete against each other for obvious reason. So as far as structured light is concerned, our belief is that starting from premium model, front facing 3D solution, then on to the wall-facing 3D solution and thereafter non-smartphone solutions. Okay? And I explained earlier in our previous calls that our uniqueness -- one of our uniqueness is that we do provide a whole solution. We know about the things, all components and how to optimize that, how to make trade-offs inside out. So that give us a very unique position to, in the future, tailor make solutions for customers. If they stay with me, they want-- they may want to -- in their unique use cases they may want to even bring in their algorithms. We can accommodate all that. And in fact I just mentioned in our CES demos, we are getting quite a bit of such inquiries, although our focus today is still -- needless to say, is still smartphone. We have to bring up smartphone ASAP. But -- so if you combine all this together, I think, 5 million long term is certainly -- 4 million or 5 million long term is very, very possible. Now with that said, our CapEx will be different from 3D -- from active 3D against structured light. In structured light, in addition to the WLO optics, or collimator lens and DOE, we also need to make pretty heavy investment in active alignment to align the optics with laser. With more -- a lot more simplified stereoscopic type 3D, active alignment is probably not needed, and also in many cases, probably we try to take away even the collimator as well, only leaving the DOE. So if you compare the total capacity apple-to-apple basis, the CapEx will be different, assuming ASP will be different for us as well. Now I think it's still too early to tell exactly how much volume we can expect for each, but I think capacity expansion for stereoscopic type 3D, I just mentioned we expect to be mass production ready in Q4. So I think certain CapEx for a particular reason, primarily on WLO without active alignment, I think you can expect that later in the year. In fact, now much capacity and how much CapEx dollar amount, still we are not prepared, although we are working very hard to finalize the plan, but we are not prepared to announce it yet.

Operator

And our next question comes from Suji Desilva of Roth Capital.

Suji Desilva - *Roth Capital Partners, LLC, Research Division - Senior Research Analyst*

On the stereoscopic solution, Jordan, is the competitive landscape somewhat different from the SLiM product or is it still a similar competitive landscape for you?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

I think they are. Eventually I suspect it will probably be more like -- probably, or firstly, the projector aspect. The reason why this is lower cost is because it doesn't have the complicated projector that is required for structured light. Rather, in structured light you have 1 sensor for the receiving end; in stereoscopic 3D, you have 2 sensors. So you mentioned in terms of the value of the whole solution, sensor company has more incentives to enter into the camp than the projector company, because projector is minimized. For a sensor, actually you need 2x the sensor value. So first off, I think that would probably encourage sensor companies to enter into the camp. Right now what we are seeing is they are only part of the ecosystem only, but they are now really leading the charge. My suspicion is they will probably try to play a bigger role in active stereotype 3D. However, what we are seeing is that those people -- most of those people, anyway, they lack the 3D algorithm and the active element of the total solution, meaning if you look at the RGB sensor today, it is passive. All we mean by passive is you could just provide a sensor and the environment provides the light, right. In the 3D sensing type, even for active stereotype, it requires active light, meaning you do need to have still laser primarily, or probably for the very low end even LED. But you need a light source to -- and the light source needs to be -- probably be coded to enhance the 3D effect. So you need to combine the light source with coded know-how and combine that and optimize that with your sensor solution. I think that is probably the stuff that the sensor companies still lack. And finally, as I said earlier, we have seen some companies coming from algorithm background, trying get into the camp. And I think what they typically lack -- I mean many of those companies they actually come to Himax, try to get our support for optics and sensors. So I think the algorithm approach, meaning they try to put the algorithm in ASIC, as I said earlier, to lower the cost, probably is a better idea than the algorithm handled by AP. So in that case, in a way, they are competition to the AP platform providers, while we try to be partners of them. So I think these are the differences, although I think it's still too early for me to make a whole prediction.

Suji Desilva - *Roth Capital Partners, LLC, Research Division - Senior Research Analyst*

Okay. That's very helpful color, Jordan. And then switching to the WLO, if the lead customer here -- does make any progression, would it involve more placements of content per device, would it be more devices, is that one of the tailwinds you'd have as the WLO product ramps to the lead customer?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

I think we are getting into more of the different kind of components and different devices, although obviously I'm not supposed to comment too much on the customers' activities. But I think I reported in the prepared remarks that we are more excited than ever, because in the past we handled 1 thing for them, now we are handling multiple things for them simultaneously, or R&D stage, development stage.

Operator

And our next question comes from Charlie Chan of Morgan Stanley.

Charlie Chan - *Morgan Stanley, Research Division - Technology Analyst*

So my first question is regarding your foundry supply. I know you're moving to a 12-inch fab in China, but can you explain why you cannot use other fab in, for example, Taiwan or Korea to fix the shortage issue? And also, given raw wafer price hike, do you expect your margin to get squeezed because of the shortage?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

The 8-inch overall globally is very, very tight, because all of a sudden, even since that MOSFET, which used to be very, very low value, now is very good price for foundry guys and let alone stuff like fingerprint sensors and power management ICs now are even more and more heavily used in smartphones. So probably the 8-inch capacity is such that there is no new supply and we are -- with driver IC are competing against new things and many of them all of a sudden are seeing big volume and they can actually afford better price than us. So -- and also I think foundry makers

traditionally have been probably too heavily dependent on driver IC business and naturally they want to diversify. So I think we are working with 8-inch -- almost all 8-inch foundry guys across Taiwan and Korea. We actually use multiple foundries from multiple suppliers in both countries. And so that is point one. Point two is that the 12-inch fab, the new one, which is located actually in Hefei province, it's actually located right exactly at the same site as the manufacturing place of our major customers. So I think logistically and also in terms of development support, it's actually quite beneficial to us. Now, we'll be able to get pretty decent price support from the 12-inch fab. And lastly, you talk about whether -- because of the tight foundry supply, our margin will get squeezed. I think in some cases, we do face pricing pressure from our foundry partners. But we are also in discussion with our customers for certain price increase. So all these are being discussed, So I think, overall, we don't expect our margin to be eroded as a direct result of the 8-inch foundry tight capacity. What we are more worried about is customers' qualification on our foundry, because for TVs, in this case, we're talking primarily about large panel, and large panel is primarily about TV. So in TV, our customers do need to go through their customers' qualification. Now everybody, the end users included, understand the severity of the foundry tightness. So I think it is not like people don't want to do it, but they do have to go through the procedure, and which is almost the hustle. So I said in our prepared remarks that our customers -- all our customers will be very hard on the qualification. And as far as we are concerned, we have successfully qualified the new 12-inch foundry and the customer has accepted our result and we were -- actually, we are starting to ramp some volume, but whether the volume will really ramp big enough to totally alleviate our problems and when that will happen, I think it's probably yet to be further reported.

Charlie Chan - *Morgan Stanley, Research Division - Technology Analyst*

Okay. So my next question is, your full year outlook. I know you cannot really quantify the -- how significant the revenue, of course, will be, but at least for the key cost driver, which is the 3D sensing, can you give us a some sense about the potential revenue contribution or the revenue mix from the anchor customer versus those Android customers? Can you give us some breakdown?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

For the whole year, again it's too early in our business, too dynamic. But I think driver market is stable. I think it's fair to say the driver market will be stable -- the driver market overall will be stable. In terms of demand and supply balance, some are slightly worried about oversupply, because of China's expansion, but we will actually benefit from China expansion, because we have a major market share in China. So in large panel, in particular, I think China expansion will benefit us, although it may cause a little bit of slight oversupply for the whole large panel business. And small panel, I think we have to count TDDI, and I commented on TDDI already, automotive and stuff will continue to grow. The big variable will be non-driver, harder to predict. One thing for certain, WLO will increase, because last year we only had half a year of operation, this year will be whole year. Although Q1 was very, very low -- Q1 was low, but I mentioned earlier, second half is expected to be strong, followed by a rebound of second quarter as well. So apple-to-apple basis or for the whole year basis, I think WLO we are pretty safe, we'll have a major growth from last year. And last, but not least, is the big variable which is 3D-sensing. We said starting -- the play is to start to ramp in the second half. I think, is something we are discussing with our customer almost every day, right. Exactly how much and how -- and I think to be fair, they are still trying to test the water of face recognition, face ID, secure payment, online payment and all that, right. So I would say they will start with premium model, coupled with Qualcomm's 845 -- Snapdragon 845. Thereafter, we'll try to penetrate into Qualcomm's 600 series and with that there will be some overlap between structured light and stereoscopic type 3D. So we'll see above that. But I think this year, in particular, is very, very difficult for us for whole year projection. Even stereoscopic 3D stereo is -- we say Q4 mass production ready and some customers are actually very anxious to start mass production as early as possible, but we'll see about that, still a long way to come.

Operator

(Operator Instructions) And our next question comes from Jerry Su of Credit Suisse.

Jerry Su - *Crédit Suisse AG, Research Division - Director*

Probably the first question, just want to follow up on what Charlie has asked about the 3D sensing. I think if you look at the full year contribution and then potentially your customer is ramping up more models with this 3D and then enjoy opportunity. So if we look at the non-driver business

for the second half of this year, do you think this non-driver, right now it's about 20% plus/minus of your total sales. Can this percentage further increase or maybe become the largest segment for your business in second half of this year?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Second half, I don't know, but I think next year, very likely you will be -- second half hard to say. As I say, it's so early stage. How much customer want to ramp in their premium model and so on and how the consumers will response to that, I think it's really too early to tell. All we can do is get ourselves ready. But I think with structured light and we have a roadmap next year, there will be new products launched and then you have stereoscopic 3D, which is more -- this is cost friendly. And all these factors combined, I think I have a fair degree of confidence that next year 3D sensing will be the biggest piece of our business. And I think -- fellows, I think, I just want to mention -- emphasize one thing. If you look at -- I know there are certain alternatives structured light 3D sensing available in the market. And we keep saying that we -- our solution is far better. I think it is very, very important for you guys to understand this, because if you look from all measures, whether it's performance, it is eye safety, it is the features, it is support the AP platform, even IP protection. You know, all of them, we are in all -- every single measure we are superior and probably superior by far. So I think, again, 3D sensing, we believe is a very long-term thing. Many things will require 3D sensing, not just smartphone, and smartphone, not just for face ID, face recognition, to unlock your face, you will be -- many other things; AR, and main camera and so on. So we are here for the long term. So what we are the most concerned about is how ready we are and how our solution compares to others. And I think it is -- I've the whole confidence in saying that our solution is indeed far better than any of the potential combination in all measures of comparison. And I think that will put us in a very unique position in the long term. In fact, some of the biggest names, tech names in the world are already coming to us for known smartphone applications. So our job is to start ramping this year and hopefully make some profit, with that profit invest into further expansion and expand the portfolio -- total portfolio to provide wider coverage for 3D sensing. But I think we are here for a long term for 3D sensing, that's for sure.

Jerry Su - *Crédit Suisse AG, Research Division - Director*

Okay, thank you. And just to clarify, when you say the second half this year and not sure about -- if 3D can become the larger segment, does this include the wafer level optics and also maybe the other non-driver business?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

No, we are not counting wafer level optics.

Jerry Su - *Crédit Suisse AG, Research Division - Director*

So just pure 3D total solution?

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Yes, 3D sensing total solution. And as I said, I may have design-ins and the customers have -- may have already indicated their intended volume, but this is really the pilot production, right, the customer will be pioneering the effort and how we have to adjust our strategy and product and performance and whatever to handle the customers demand, I think, it's all yet to be seen. So I think to predict the volume for second half will be too early. However, there is no reason for us to believe that in the second half we can have the mass production, because our solution is ready, the customers, I think, are ready, and yes, we just have to see about that.

Operator

Thank you. And that concludes the question-and-answer session for today. I'd like to turn the conference back over to management for any closing remarks.

Jordan Wu - *Himax Technologies, Inc. - Founder, CEO, President and Director*

Okay. Thank you for your questions. And as a final note, Jackie, our CFO, will maintain investor marketing activities and continue to attend investor conferences. So we will announce the details as they come about. Have a nice day and a happy Chinese New Year. Thank you.

Operator

Ladies and gentlemen, thank you for participating in today's conference. This does conclude the program and you may all disconnect. Everyone have a great day.
