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Q3 2021 Himax Technologies Inc Earnings Call

EVENT DATE/TIME: NOVEMBER 04, 2021 / 12:00PM GMT

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PRESENTATION

Operator

Hello, ladies and gentlemen. Welcome to the Himax Technologies, Inc. Third Quarter 2021 Earnings Conference Call. At this (Operator Instructions) As a reminder, this conference is being recorded.

I would now like to turn the conference over to your host, Mr. Mark Schwalenberg from MZ Group.

Mark Schwalenberg ***MZ Group S.A. - Director***

Thank you, Renz. Welcome, everyone, to Himax's Third Quarter 2021 Earnings Call. Joining us from the Company are Mr. Jordan Wu, President and Chief Executive Officer; Ms. Jessica Pan, Chief Financial Officer; and Mr. Eric Li, Chief IR/PR 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 e-mail himx@mzgroup.us. Access the press release on financial portals or download a copy from Himax's website at www.himax.com.tw.

Unless otherwise specified, we will discuss our financials based on non-IFRS measures. You can find the related reconciliation to IFRS on our website.

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. The factors include, but are not limited to, the effect of the COVID-19 pandemic on the Company's business, general business and economic conditions and the state of the semiconductor industry, market acceptance and competitiveness of the driver and nondriver products developed by the Company, demand for end-use applications products, reliance on a small group of principal customers, the uncertainty of continued success in technological innovations; our ability to develop and protect our intellectual property, pricing pressures, including declines in average selling prices; changes in customer order patterns; changes in estimated full year effective tax rate; shortage in supply of key components; changes in environmental laws and regulations; changes in export license regulated by Export Administration Regulations (EAR); exchange rate fluctuations, regulatory approvals for further investment in our subsidiaries; our ability to collect our accounts receivable and manage inventory 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, 2020, filed with the SEC as may be amended.

Except for the Company's full year of 2020 financials, which were provided in the Company's 20-F and filed with the SEC on March 31, 2021, 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 Mr. Eric Li. Eric, the floor is yours.

Eric Li ***Himax Technologies, Inc. - Chief of IR/PR Officer***

Thank you, Mark, and thank you everybody for joining us. My name is Eric Li, and I am the Chief IR/PR Officer. Joining me are Jordan Wu, our CEO; and Jessica Pan, our CFO. On today's call, I will first review Himax's consolidated financial performance for the third quarter of 2021, followed by the fourth quarter 2021 outlook. Jordan will then give an update on the status of our business, after which we will take questions.

Our third quarter revenue met guidance issued on August 5th, while gross margin and EPS were both at the upper range of the guidance. Revenue, gross margin and EPS, again, all reached all-time highs in the third quarter of 2021. For the third quarter, we recorded net revenues of $420.9 million, an increase of 15.2% sequentially and an increase of 75.4% compared to the same period of last year. The sequential increase was at the middle range of the guidance of an increase of around 13% to 17% quarter-over-quarter.

The 51.7% gross margin, at the upper range of the guidance of 50.5% to 52% was an increase from the already high level of 47.5% for the second quarter 2021. Non-IFRS profit per diluted ADS was 79.5 cents, at the upper end of the estimate of 75.0 cents to 81.0 cents. IFRS profit per diluted ADS was 68.0 cents towards the upper range of the guidance of 63.0 cents to 69.0 cents.

Revenue from large display drivers was $117.6 million in Q3, up 37.6% sequentially and more than doubled year-over-year, with sales growing through all 3 major product areas, namely TV, monitor and notebook. Both monitor and notebook IC revenues delivered impressive growth of around 60% sequentially as a result of persisting IT demand derived from remote working and the distance schooling.

TV revenue was up over 20% sequentially, mainly due to strong shipments of high-end TV products, including those for a world-leading end customer despite a dip in worldwide TV shipment during the quarter. Large panel driver IC accounted for 27.9% of total revenues for this quarter, compared to 23.4% in the second quarter of 2021 and 23.2% a year ago.

Small and medium-sized display driver saw resilient sales with revenue of $252.3 million, up 9.4% sequentially and up 66.4% year-over-year. Automotive segment continued strong growth momentum and delivered a more than 30% sequential increase in Q3. Our automotive segment has repeatedly been the fastest-growing sector among the small and medium sized display driver segment.

Tablet sales demonstrated another consecutive sequential increase, up low-teens quarter-over-quarter, while smartphone sales posted single-digit sequential decline, reflecting our capacity allocation decision, favoring tablet over smartphone. Small and medium-sized driver IC segment accounted for 59.9% of total sales for the quarter, compared to 63.1% in previous quarter and 63.2% a year ago.

The third quarter smartphone sales reached $77.1 million, as mentioned earlier, down single digit sequentially but up more than 20% compared to the same period last year. The smartphone segment represented around 18% of our total sales in Q3. Even with lower sales, our smartphone TDDI sales were still capped by severe capacity constraints. As highlighted many times before, our smartphone and tablet TDDI share the same process pool. We continued with our strategy to favor tablet TDDI shipment over smartphone as we are the preferred main or sole-source vendor for major non-iOS tablet names.

Sales of traditional smartphone display driver grew strongly in Q3 as expected due to seasonal demand from key customers. Nevertheless, the traditional smartphone DDICs are quickly being replaced by TDDI and AMOLED. Our tablet revenue made another record high in third quarter, reaching $94.3 million in sales that grew low-teens sequentially and were up more than 75% year-over-year. Our tablet sales continued to grow with accelerated TDDI penetration among leading non-iOS names where we continued to enjoy leading market share.

Our position is particularly strong in higher-end areas such as active stylus design, high frame rate and bigger sized tablet. It's worth highlighting that shipment of TDDI with active stylus feature already represented over 30% of tablet TDDI sales in Q3. Yet our shipments

were still limited by ongoing industry-wide capacity shortage.

Revenue of traditional discrete driver ICs for tablet was up single digit sequentially in third quarter, while its market continued to be quickly eroded by TDDI. Tablet revenue in this quarter represented the highest sales proportion of all product lines and accounted for more than 22% total sales.

Our third quarter driver IC revenue for automotive amounted to $71.6 million, up 34.3% sequentially and up more than 150% year-over-year, attributable to our market share gains in an expanding market as panels inside a car continue to grow in both quantity and size. Automotive driver IC business accounted for around 17% of total revenues in the quarter. As a reminder, automotive driver ICs enjoy high gross margins and higher revenue contribution from automotive can bolster our corporate gross margin. We expect to see robust and sustainable growth in this area for the coming quarters. Jordan will elaborate on this in a few minutes.

Third quarter revenue from our non-driver business was $51 million, up mid-single digits sequentially and up more than 50% year-over-year. Tcon business registered a mid-teens sequential growth and was up more than 140% year-over-year, driven by high value-added product area such as the 4K/8K TV, gaming monitor and low power notebook. Non-driver products in Q3 accounted for 12.2% of total revenue as compared to 13.5% in the second quarter of 2021 and 13.6% a year ago.

Non-IFRS gross margin for the third quarter was 51.7%, up 4.2 percentage points from 47.5% of the previous quarter and greatly increased from 22.4% of the same period last year. IFRS gross margin was 51.5% for the quarter. The sequential increase was mainly a reflection of the tight foundry capacity which resulted in a more favorable IC pricing and the product mix.

Our non-IFRS operating expenses for the third quarter were $44.5 million, up 13.1% from the previous quarter and up 14.2% from a year ago, mainly because of increased salary and R&D expenses. IFRS operating expenses were $68.5 million in the third quarter, up 73.1% from the preceding quarter and up 55.1% from a year ago. The difference is mainly due to the annual bonus compensation we award employees at the end of September each year. This year, the annual bonus compensation, including RSUs and the cash payout was in line with the guidance we mentioned on last earnings call that totaled $74.7 million, out of which $24.8 million was immediately invested in the third quarter. The remainder will be equally vested in the first, second and third anniversaries of the grant date.

Reflecting the higher sales and better gross margin, non-IFRS operating income was $173.4 million or 41.2% of sales versus 36.8% of sales in the last quarter. Again, both operating income and operating margin reached historical highs. Non-IFRS after-tax profit was $138.9 million or 79.5 cents per diluted ADS, a new record high and up significantly from $109.1 million or 62.4 cents per diluted ADS of the last quarter.

Turning to the balance sheet, we had $250.8 million of cash, cash equivalents and other financial assets as of September 30, 2021, compared to $142.9 million at the same time last year and $270.4 million a quarter ago. The lower cash balance was derived mainly from $47.4 million payment of cash dividends and payments made for the purpose of securing long-term foundry capacity, somewhat offset by payments received from the customers for the purpose of securing their long-term chip supply.

The third quarter saw a strong operating cash inflow of $60.5 million, compared to $33.5 million at the same time last year but lower than $85.2 million a quarter ago for the same reasons stated above. Restricted cash was $156.8 million at the end of Q3, compared to $112.1 million a quarter ago and $104 million a year ago. The restricted cash was mainly used to guarantee the short-term secured borrowings for the same amount. We had $54.0 million of long-term unsecured loan as of end of Q3, of which $6.0 million was current portion.

Our quarter end inventories were $160.9 million, up from $134.2 million last quarter and up from $125.7 million a year ago. Amid tight foundry capacity where demand still far outpaces supply, we continue to pursue an aggressive inventory buildup strategy. The vast majority of our inventory position now is composed of work-in-progress goods, while finished goods are promptly shipped as soon as they are ready.

Accounts receivable at the end of September 2021 was $400.9 million, up from $329 million last quarter and up from $221.1 million a

year ago due to higher sales. DSO was 100 days at quarter end, as compared to 99 days a year ago and 88 days at the end of last quarter.

Third quarter capital expenditures were $2.1 million versus $1.4 million last quarter and $1.2 million a year ago. The third quarter CapEx was mainly for R&D-related equipment for our IC design business. As of September 30, 2021, Himax had 174.3 million ADS outstanding, little changed from last quarter. On a fully diluted basis, the total amount of ADS outstanding was 174.7 million.

Now turning to our fourth quarter 2021 guidance. For the fourth quarter, we expect further revenue growth from the already high level of Q3 2021. We expect revenues to increase by 4% to 8% sequentially. Non-IFRS gross margin is expected to be around 50%, depending on the final product mix. Non-IFRS profit attributable to shareholders is expected to be in range of 78.0 to 83.0 cents per fully diluted ADS. IFRS profit attributable to shareholders is estimated to be in the range of 74.5 to 79.5 cents per fully diluted ADS.

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

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

Thank you, Eric. At this moment, we still feel the pressure amid stringent wafer capacity shortage in the mature process nodes where we are mainly anchored. While the semiconductor industry continues to push towards advanced process nodes for applications such as 5G and HPC that demand high processing power, the system implementations of these applications also boost the demand for various companion chips such as PMIC, CIS and display driver that all share similar mature process pools. In addition, major increases of wafer consumption also come from a few fast-growing new areas such as AIoT and EV which also require mature process nodes.

As we have highlighted many times, the industry has lacked major mature process capacity investment in years and the explosive demand from the above applications has led to significant capacity shortage. The display driver industry has been among the most impacted by the severe foundry shortage since the beginning of last year, and its supply-demand imbalance was exacerbated by the surging demands of some applications triggered by the pandemic. We believe the supply-demand imbalance will continue well into 2022. As such, we have made a long-term strategic decision to enter into multi-year contractual supply agreements with our foundry partners covering a wide range of product lines, including large display drivers, tablet and smartphone TDDIs, automotive and even OLED drivers to safeguard the capacity needed for our short-term and long-term business.

Naturally, in entering into supply agreements, our strategies toward some applications, notably automotive and OLED, are more aggressive than others. Backed by solid supply agreements, the automotive segment is on track to become our single largest revenue contributor starting 2022 and we will be able to solidify our leading position by further widening the gap with our competitors. Meanwhile, we also seek out similar contractual arrangements with many panel houses and certain leading end customers, whereby customers make prepayments or deposits to us to secure their long-term chip supplies.

All of these contractual arrangements are made following meticulous calculations of in-depth supply-demand projections among parties and typically cover the quantity deemed necessary to sustain the parties' businesses. They help alleviate the capacity pressure and are poised to boost collective organic growth of our customers, foundry partners and ourselves for the next few years.

Looking ahead to 2022, backed by secured capacity arrangements, the foundry capacity available to us is set to increase compared to this year, especially for automotive segment, covering both traditional display drivers and TDDI where the overall shortage across the industry is expected to be the most severe. Revenue-wise, we are particularly upbeat about the growth prospects of a few high-margin product areas. The most notable of these is the automotive sector, where the robust demand for traditional driver IC is backed by strong capacity support while TDDI, which we pioneered in mass production is on track to grow exponentially from this quarter onwards.

Moreover, non-driver products, especially our high-end Tcon and WiseEye ultralow power AI solution, a new addition to our revenue stream, are slated for vigorous growth in the next few years. The strength in these high-margin businesses will provide a solid support for our corporate margin. Again, gross margin expansion will continue to be one of our major business goals. We expect a more diversified and balanced portfolio across sectors and are confident to deliver both top and bottom line growth in 2022.

With that, now let us start with an update on the large panel driver IC business. For the fourth quarter, large display driver IC revenue is projected to increase by high-single digit sequentially. The buoyant market growth we experienced for notebook and monitor is expected to extend into Q4 with more than 20% sequential sales increase in both sectors. Conversely, our Q4 TV driver sales are expected to drop slightly due mainly to softer end market demand. While we faced partial market softness, we are armed with a diversified and comprehensive product offering covering TV, monitor and notebooks which allows us to take swift actions together with our customers and suppliers to redirect the production towards where market demand stays strong.

Looking into 2022, backed by tight strategic relationships with some of the leading end customers in TV, monitor and notebook markets, our project design coverage across all markets with all major panel makers remains strong. With the prevailing shortage expected to continue, especially given that much of the global large display driver ICs are still manufactured on 8-inch wafer where the room for capacity expansion is extremely limited, we remain positive on the prospect of our large display driver business.

The consumer market continues to grow its appetite towards advanced displays with surging adoption of high-end features, such as slim border design, higher refresh rate, high-aspect-ratio, curved-view displays and low power, all of which implies much more IC used per device. These advanced features adopt more sophisticated IC designs and consume more wafer area, which lower the chip quantity output on a per wafer basis.

On the other hand, it increases the content value in terms of dollar per wafer sales. We continue to lead in these areas with decent market share, providing one-stop shopping for clients who need driver ICs, advanced Tcons or total solution.

Now let's turn to the small and medium-sized display driver IC business. In the fourth quarter, revenue is expected to increase by low-teens sequentially and more than 50% year-over-year. Sales of smartphone is set to grow by high-teens sequentially and more than 30% year-over-year. As for the tablet segment, we expect sales to be flat sequentially after successive quarterly growth, driven by the steady rise of TDDI penetration.

The Q4 automotive driver business, again, is poised to grow by double digit sequentially and more than double year-over-year, despite the adverse impact on global automotive production caused by chip shortage. However, our growth is hindered by stalled supply in capacity that prevents us from meeting all customer demands.

In the fourth quarter, we expect smartphone, tablet and automotive driver sales to be about equal in revenue contribution with automotive sales outgrowing the other 2 segments.

Now let's have a quick review on each of the three major product segments within the small and medium-sized display driver IC business. First, the smartphone driver IC business. In Q4, we expect our smartphone TDDI sales to increase double digits sequentially despite the outbreak of delta variant continuing to weigh heavily on worldwide smartphone market, especially in the Southern Asia area.

Our supply for smartphone is still limited by the total capacity accessible to us where we can only support shipments to selected names. Looking ahead at our smartphone TDDI lineups, we are undertaking new design developments supporting higher frame rate, ultra slim bezel and higher resolution features. Successful engagements with some key customers have been achieved in Q4 with more customers indicating their interest for their next launches. Traditional drivers for smartphone, running at relatively low volume, are expected to decline for the fourth quarter due mainly to TDDI replacement.

Next, on tablet IC business. We maintain our leadership position in the tablet segment, particularly in advanced TDDI sector, where we have more than 60% global share in the non-iOS tablet TDDI market. In the fourth quarter, we expect sales of tablet TDDI to be up low teens, a continuation from the solid and high base in Q3. Our TDDI is supporting further feature upgrades for customers' next-generation products, covering higher frame rate, super high resolution, larger than 11-inches display and better precision active stylus running on different operating systems.

What's more, our tablet TDDI solution for the fast-expanding educational market has been successfully and widely adopted by leading Chinese players. Revenue of traditional DDIC for tablet is expected to decline double digits sequentially, resulting from replacement by

TDDI as we mentioned repeatedly and also severe capacity constraints.

Turning to the automotive sector, the highest growth area among our display driver business. In Q4, our automotive IC sales are expected to grow double digits sequentially on the backdrop of worldwide key component shortage and serious port congestion that is hurting automobile sales worldwide.

Looking ahead, the increase in the number, size and sophistication of displays inside the vehicle is evolving at a rapid rate, all indicating much more driver IC demand per vehicle. Having foreseen the growing automotive display demand, we entered into long-term arrangements with our strategic foundry partner back in early 2020 and secured a major increase in capacity for not only this year but also the next few years. That, together with our strong customer engagement, enables our robust shipment and sales growth amidst the prevailing IC shortage.

Car interiors are increasingly catering to more stylish, interactive and free-form displays with ever improving image quality made possible with panels equipped with advanced technologies such as TDDI and local dimming. In-cell TDDI for automotive, while still in small volume, will continue to increase in penetration and adoption on the center information display and rear seat infotainment display.

Himax is the front runner who kick started the industry's first automotive TDDI mass production back in 2019, followed by our Gen 2 automotive TDDI, which also went into mass production in Q3 this year. Right now, we are dominating in the new TDDI design-ins with multiple Tier-1 customers, panel makers as well as car manufacturers across the continents.

TDDI brings driver IC vendors much higher content value on a per panel basis, provides better profit margin, and represents a high barrier of entry for late comers. We are glad to report that, while still accounting for a small portion of our automotive business for now, we shipped over 1 million automotive TDDI chips within the third quarter alone, marking a major milestone for our automotive TDDI business. As automotive TDDI is being adopted and put into mass production rapidly as we speak, we anticipate more aggressive shipment momentum to carry over into Q4 and throughout 2022. We believe TDDI for automotive will soon become a major growth engine for our small- and medium-sized panel driver IC business.

We mentioned in the last earnings call that we were also leading the industry with the first launch of the cutting-edge LTDI or Large-Display Touch and Driver Integration solution. This technology incorporates sophisticated multichip system design and is essential for very large sized slim and curved automotive displays. We are glad to report that the introduction of the technology was met with enthusiastic responses from several OEMs and panel makers.

Combining all these leading technology with strong capacity support that we have secured with our foundry partners, we expect our automotive display driver IC business to enjoy exceptional growth going forward.

Next, for an update on AMOLED. Himax remains committed to OLED technology, where we continue to commit R&D efforts on not only driver ICs but also Tcon for smartphone, wearable, tablet and automotive areas, in partnerships with major Chinese and Korean panel makers. In the fourth quarter, we aim to successfully rollout production for the flexible AMOLED driver and Tcon for automotive application in collaboration with BOE Varitronix, a subsidiary of BOE, the world's largest TFT LCD player. In view of serious constraints on OLED display driver capacity in the next few years, we have also secured meaningful capacity for smartphone OLED drivers.

Now let me share some of the progress we've made on the non-driver IC businesses. Let's start from the timing controller sector. We anticipate Q4 Tcon sales to decrease by mid-teens sequentially as a result of weaker demand in TV and Chromebook notebook sectors after multiple quarters of strong shipments. While still limited by accessible foundry capacity, we are optimistic about the long-term growth prospect of the Tcon business where we continue to engage customers with high-end product areas, including 4K/8K TV, gaming monitor and low-power notebook.

Looking ahead, we are particularly excited about the potential for automotive Tcon where our cutting-edge local dimming Tcon has won numerous projects awards and penetrated into new car model launches of OEMs and Tier 1 car makers. We believe Tcon segment will be one of the driving forces of our non-driver businesses moving forward.

Next, on WLO update. The fourth quarter WLO revenue is expected to decline substantially as a result of lower shipments to an anchor customer. Moving forward, we will continue to support the shipments for the customer's legacy products. Nevertheless, the WLO technology continues to play an important role in shaping next-generation optical applications. Our exceptional optical design knowledge together with our production-proven nanoimprinting capabilities and mass manufacturing experience allow us to deliver high-quality solutions to meet the requirements of the future generation optical applications across automotive, consumer, industrial and medical applications.

Next to address our 3D sensing business. Himax's proprietary 3D decoder IC, that provides accurate 3D perception data processing and low power operation with rigorous data security protection, plays a vital role in areas such as secure payments and personnel identification used in door lock and industrial access control applications. It has been broadly adopted in leading e-payment ecosystems in China since its initial mass production in the second half of 2020. Further new design-in sockets are on the way which will lead to growing volume starting next year with accelerated adoption of our 3D total solution in various fields such as manufacturing automation, medical inspection, automotive owner recognition and intelligent service robot, and much more.

Now I would like to turn to our WiseEye smart sensing solution. To maximize market visibility and explore potential applications, we continue to push forward with 2 WiseEye business models, namely total solution and discrete component. First, an update on WiseEye total solution. Our WiseEye total solution incorporates Himax ultralow power CMOS image sensor, our proprietary AI processor and CNN-based AI algorithm. It is designed for a wide range of ultralow power use cases in consumer electronics that aim to modernize legacy end-point devices, which lack AI capability, with ultralow power computer vision AI.

Equipped with AI capability, WiseEye is capable of processing data locally on the end device with just metadata output while avoiding the need to transport massive data to the cloud, thereby improving response time, saving bandwidth and power and, last but not least, enhancing data security. We are pleased to report that the design-win with a top-tier name for a mainstream application that we indicated earlier is on track to enter into mass production in Q4.

Equally important, the number of awarded projects is growing quickly, covering a broad range of applications, including notebook, home appliances, utility meter, automotive, battery-powered surveillance camera, panoramic video conferencing and medical, just to name a few. Some applications are already slated for mass production at the end of this year. In addition to consumer electronics players who aim to add AI capability to their products, within just one year since we started sampling, our WiseEye solution has also drawn much attention from cloud service providers who look for secure and low-power edge AI devices to help collect big data for their cloud-based services.

We are excited by the potential opportunities presented by the edge-to-cloud platform collaboration, opening up new market frontiers for us in areas such as smart city, smart office, healthcare, agriculture, retail and factory automation. We anticipate more design-win awards and growing volume shipments starting next year.

For our WiseEye key component business model, we continue to leverage our key partners to amplify our offering and encourage adoption of our ultra-low power solution in AI communities, which also have strong appetite for ultralow power smart sensing AI. Being the official partner of prominent AI platforms such as Google TensorFlow Lite for Microcontrollers, Microsoft Azure, Arm AI Partner Program and tinyML Foundation, we get to enjoy the enormous network of these ecosystems and their numerous participants.

We continue to receive inquiries from large corporations and individual developers alike with hundreds of evaluation boards and development kits having been purchased online and distributed across the globe. Additionally, we continued our marketing efforts through joint webinars and other online activities with several well-known platform partners such as Edge Impulse, Digi-Key and SparkFun. We are confident that WiseEye will be one of our major growth drivers for our non-driver segments looking ahead into 2022 and beyond. For non-driver IC business, we expect revenue to decrease single digits sequentially in the fourth quarter.

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

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from the line of Tristan Gerra from Baird.

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

So my question is that given the weakness in notebooks and TVs that's driving you to project your Tcon business to be down mid-single digit in the quarter, is that something, particularly if the weakness in notebooks is sustainable throughout the year unlike TVs where the business seems to be stabilizing, is the ongoing weakness in notebook at some point accelerating the point where you get back to supply-demand imbalance or balance?

I know you've mentioned on the call that you're putting supply agreements in place and expect '22 to remain supply constrained. But again, if we see sustained weakness, notably in notebooks, does that mean supply-demand balance comes earlier than you previously expected? Any feedback would be useful here.

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

So particularly on notebook. So you want me to comment primarily on notebook rather than the overall market situation or supply-demand balance on driver IC. Is that right?

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

Supply demand actually overall. So in other words, if you have one of your end market that continues to be weak, does that mean that your overall business gets back in supply-demand balance earlier than you previously expected?

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

Okay. Got it. Actually, we are actually rather bullish on our overall large display driver IC business for next year, and that includes both driver IC and Tcon. And now I'm sure that everybody understands nowadays as we speak, the market is going through some softness, particularly in low end and small-sized TV segments. But in general, TV market remains soft. However, on the higher end, the demand is more persistent while we are seeing pretty solid demand coming from IT sectors, both monitor and notebook.

But most importantly, if you look at our projection for next year, we are actually, as I said, we are very upbeat about the prospect of large display sectors, including all the 3 areas, notebook, monitor and TV. While we are not particularly certain about the prospect of the market's overall demand, our forecast is only as good as anyone's. But I think our optimism and our strengths going into next year has a lot of things that are particular to Himax. And also, there are also factors that are particular to display driver IC. Again, the large display market may go soft or maybe it will stay strong, I don't know, for the next year.

But one very important factor for display driver IC that many people neglect is the fact that overall, the market is shifting towards higher-end feature and higher resolutions. And that is going to change the dynamics of the high-V process, i.e., display driver IC, wafer consumption substantially. So let me just repeat. So larger size, higher frame rate, higher end in general whether its notebook TV or monitor, while the number of units of panels shipment may remain the same or actually, it's only indirect relationship with the panel area or the glass area consumed.

But when you go to higher resolution, higher frame rate, better features that tend to enlarge the wafer consumption of our display driver IC a lot. Now I'm going to give you 1 or 2 very specific examples so you will get a very clear idea what I'm talking about. If I take, for example, 4K TV 60-hertz against full HD also 60 hertz, by going from full HD to 4K, you actually with the same panel, you actually double your number of units of driver IC needed with each piece of IC actually area size slightly larger for 4K TV compared to full HD.

Now if you take the same 4K TV, but you upgrade it from 60-hertz to 120 hertz, while the number of ICs remain the same, the die size of each IC actually will enlarge by almost 50%, by going from 60 hertz to 120 hertz. So what I'm trying to say is the overall trend towards better feature, higher performance TV notebook and monitor actually is going to provide a very, very strong support for display driver IC

demand regardless of the strength or weakness of the large display panel business. And that is point number one.

Point number two, based on internal analysis, which is derived out of extensive interviews and discussions with all foundry makers across the world who has a large display driver IC business, right, so based on our interview and survey with them, we actually project some decline of projected collective large display driver IC output next year because they are reallocating their wafer so that we are projecting large display driver IC wafer output to actually suffer from a little bit of decline next year against this, right?

And seeing this, right, so seeing the 2 factors, one, the large display IC actually, the wafer consumption is going to increase regardless of the market. And two, total wafer output may actually decrease. So seeing these 2 factors combined, we actually went rather aggressive this year, and we managed to successfully secure the increase of our wafer capacity next year against this year by actually adding a new very important new foundry partner to our lineup. So we believe our accessible foundry capacity for large display drive IC may actually increase by double digit next year.

So last but not least, I think throughout this shortage and what not, we have been collaborating a lot closely with selected leading end customers. I'm talking about the leading end customer for TV and for monitor and for notebook, respectively, right? So we enter into direct agreements, and we started direct collaboration with them. And that actually also not only secures our business for the coming years, it also enables us to when the market shifts, demand is shifting from one sector to another, we can actually react a lot more quickly compared to before. So all these factors combined, I apologize, this is a very long answer, but all these factors combined, I think we are actually rather upbeat of our prospects for next year high double-digit growth potentially for both display driver and Tcon.

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

Great. Thanks for the detailed answer. That's actually very useful. Just my follow-up question will be, do you expect your capacity, which you said is going to be up double digits next year to increase higher than the competition, which means that you will be able to gain market share as a result?

And then the second part of the question is, is the discrepancy between your Tcon business and the driver IC business really driven by the higher screen resolution and higher frame rate that you just described? Is that really the key reason for you predicting Tcon will be down in Q4, but driver ICs would be up?

And then finally, any comment about the China power shortages and the impact on the LCD panel production.

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

Okay. First, our capacity, I think based on our analysis, the answer is yes. We believe we are going to have some increase of capacity next year compared to this year, while the industry may actually suffer from some decrease of overall output. So the 2 factors together, certainly, I think we are likely to outpace our competitors in market share, hopefully, next year.

And the second question is Tcon. I think the fact that we have one quarter of some dip in Tcon and increasing driver IC shipments, I think it may only be a reflection of timing controller certain customers having inventory adjustment. Bear in mind, timing controller typically are not purchased directly from panel makers rather they are from their both manufacturers, both OEM, ODM manufacturers. So there could be timing wise, some mismatch. But in the long term, I think we believe our Tcon market share will rise next year faster than display driver because historically our display driver IC market share is slightly higher than Tcon.

Now with the tightness. We actually are, we and our customers I think we are both better off having our solutions shipped to customers on a bundled basis, meaning when much of them are bundled, our Tcon market share will get close to be more like driver IC. And again, historically drive IC market share is higher than that of Tcon.

Your last question is about China power shortage. We haven't really seen a direct impact on us, not yet anyway. So touch wood. And I mean the reason is very simple. Panel industry is considered strategically important for the Chinese government. So they actually take

measures to ensure that there's no power disconnection with the panel makers. And they also, in turn, are asking customers to look after their key suppliers. So again, so far, we haven't seen any impact, whether there will be long-term repercussions coming all the way to us, I don't know yet. But we haven't really seen or heard customers talking about this yet.

Operator

(Operator Instructions) We have our next question from the line of Jerry Su with Credit Suisse.

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

First question, I just want to get some more color about your gross margin outlook in the fourth quarter and perhaps into 2022, especially your gross margin guidance of around 50%. It seems like it's down 1 to 2 percentage points from the third quarter. So can you comment a little bit on that, the reason behind it? And how should we think about the gross margin into first quarter next year or perhaps 2022?

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

Thank you, Jerry. Yes, we guided for a slight dip in gross margin Q4 against Q3. Bear in mind, we have been going through a foundry capacity tightness. And therefore, we are taking up a lot of the foundry companies price hikes over the quarters. And so the way we keep or maintain or sustain or even improve our gross margin is to transfer the additional cost to our customers, right?

So your question is really about whether we will be able to continue to transfer such additional cost to our customers. And in Q4, if you look at the numbers, it's simple mathematics, we are still able to transfer the cost. We are just not adding further markup to the increase on top of the cost increase to our customers. That's all. So because it's quite simple, right? You both -- our revenue will increase a bit, right? And if we transfer our cost because there is a gap, because there's a gross profit, right, so if you transfer 100% effectively the cost into your customers, then actually by definition, your gross margin will come down slightly, right? So that's what exactly happened.

So if you look at the numbers we indicated for Q4, it basically shows that we are transferring just about all of our cost increases to our customers who can still take the cost increase, right, apparently. That's why we are giving the guidance.

Now for next year, next is too long and too early for us to comment right now, given the nature of the industry. However, I think there's no reason for us to be pessimistic about the prospect. I'm talking about whether we can continue to stay at such similar or such or similar high levels of gross margin. Again, our comment would be we are not pessimistic for a few reasons. One, I mean for high-V process, that's the overall major capacity shortage studies on track to watch very much into the full of next year or even the year after, given the fact that there is simply no meaningful addition to the industry's capacity pool for high-V.

And secondly, particularly for Himax, I talked about automotive business, which is on track to outgrow the rest of our business both display driver IC and very importantly TDDI which really will be a major year of increase next year. So automotive represent a better ASP and better margin. And it's actually long-term sustainable margin as well, it tends to fluctuate a lot less compared to consumer electronics. So that is one factor.

And so I say in our prepared remarks that we believe automotive as a stand-alone sector will become the single largest revenue contributor next year. So that showed our confidence. And also, there are more high-end products, which are set to outgrow the rest of our businesses, including timing controller and very interesting WiseEye, which will be the first year of mass production. So starting from almost 0 this year. So that certainly is additional growth area, and that is a high-margin area as well.

So all of these together on top of the fact that throughout this tightness period, I think we have quite successfully managed to reposition ourselves so that we are now a lot more high-end centric, we are lot more focused on leading end customers. And I think all these factors combined and our capacity will be limited, meaning we are giving away lower-margin business, low-end business. So hopefully, product mix-wise, we'll be able to defend our gross margin quite well next year.

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

Okay. And just one follow-up question. I think in the prepared remarks, you also mentioned only a little bit about the WLO and also the LCoS. But I was just wondering for I think for a lot of companies that have been talking about metaverse. I'm just wondering from Himax historical track record on out the AR/VR goggles, especially one of the tech giants invested in your LCoS subsidiary. How should we think about metaverse -- how is Himax positioned in the metaverse world like in the next couple of years?

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

Honestly, I think quite well. But I think overall, metaverse, I guess these days, people are focusing primarily on VR goggles and then certainly AR goggles as well. And our position is quite well, primarily WLO and also LCoS. Now admittedly, our exposure to VR is less than that to AR. And AR, I mean, it's more challenging as a product, although it's a lot more exciting, even successful, right?

So I think the whole industry is still fighting through the battles of conquering the engineering variance, trying to deliver something that consumers will go like, wow, right? So I think we are still going through that. In fact, our WLO in particular, we have projects covering 3D sensing for VR devices, and waveguide and 3D sensing for AR devices. And I mean, obviously, I cannot disclose the details and specific end customer names, but if you're talking about some, if not all of the biggest names in the tech world. They are working very closely with us. However, I don't think much will materialize in next year. I will be very honest about this. And that is why we decided, given the limited time and space, we decided not to mention much about it in our prepared remarks.

And likewise for our LCoS, bear in mind, it's only applicable for AR. And of course, we are focusing on a lot of other things because we are working very hard with a few big names for AR goggles. So we also understand the technical challenges. And so that's why we actually put a lot of our LCoS effort into other areas such as HUD for automotive which are making good progress. However, given the nature of automotive, the real mass production with real volume will be few years away. And telecommunication, WSS, so switch device, areas such as this. But yes, AR goggles, we remain active player, but we feel it is we -- also understand there's a lot of hype, short-form hype recently, but we feel there may be some time to go before they really materialize.

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

Okay. So this is something that we should still continue to monitor in the next couple of years' time?

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

Yes, yes.

Operator

Our next question is from the line of Jon Lopez with Vertical.

Jonathan Doherty Lopez ***The Vertical Trading Group, LLC, Research Division - Research Analyst***

Can you guys hear me, right?

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

Yes.

Jonathan Doherty Lopez ***The Vertical Trading Group, LLC, Research Division - Research Analyst***

Fantastic. I have 2 questions. I guess the first one, just thinking about the near-term dynamics. I guess maybe I want to ask it this way. If we look at several of your panel customers, they're guiding their panel shipments and/or area shipments to decline in Q4 versus Q3. If we look at your largest display driver peer, they seem to be guiding their revenues to decline in Q4 versus Q3. And there's kind of a whole bunch of weakness happening in the smartphone segment, again, sort of materializing in Q3 and extending into Q4.

You're guiding your sales to increase in Q4, and you're guiding your smartphone sales to increase more than your total sales. I'm wondering if you can just help us tease apart maybe what some of the differences are in your outlook versus that data set?

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

Well, again, twofold. One is, compared to the panel industry and the other one is compared to our peers, right? Compared to the panel industry, I think I've pretty much covered that in my response to the first question where our display driver demand do not necessarily go in proportion to the panel output for the glass area consumption, for the reason I've just mentioned, right, your feature upgrades, resolution upgrades, they tend to increase, in some cases, materially for the display driver wafer consumption while the glass area consumption may actually stay the same or even decline. So I think that is the comparison to the customer side.

Now as for the competition, it's harder for me to comment. I think what I can say is that, as I said, we are giving up a lot on the lower-end business because of 2 reasons, really, China local competition, they are subsidized, but they can only focus on low end, right? They don't get really well recognized by leading international end customers. So they are very price aggressive, right, and they are subsidized.

So throughout the foundry capacity tightness, we actually, before that, we have started to shift. We have started in customers' new project design, our bidding will be very conservative in those lower-end product areas while we focus only primarily on high end. That is one thing. So there's a major product mix shift for us this year, compared to last year, or the year after and then next year will be more so.

So we are very much on -- for example, for TV, typically a very easy definition for high end against low end will be miniLVDS interface for low end and point-to-point interface for high end. And if you look at our product mix right now compared to just a couple of years ago, there's a major, major shift towards P2P interface. And now with P2P interface, we are shifting a lot more towards what we call USIT interface, which is the most high end. So that product mix, I think is a major difference. And now the high-end market demand is a lot more resilient compared to the low end. But I think that is one thing.

And the second thing is that across TV and monitor and notebook, we have elected carefully and partnered closely, tightly with typically the #1 end customers. And so we enter into direct agreements with them. We have a lot of not just technical but business collaboration. And that also put our demand to be a lot more defensive to industry downturn. So I can only talk about our sales, and we have proven again and again and again that our guidance has been very robust and reliable, and I certainly hope and no reason to believe it will be different this quarter. So our guidance comes from directly from our board.

Operator

Our next question comes from the line of Donnie Teng with Nomura Securities.

Donnie Teng ***Nomura Securities Co. Ltd., Research Division - VP & Analyst of Greater China Semiconductor and Technology Research***

Okay. Just 2 simple questions. The first one is your large display driver IC guidance looks like to be a little bit better than our peers. So just wondering that if you originally have bigger sales exposure to IT panels, right, the TV panels or you temporarily gain market share in the fourth quarter? That's my first question.

And second question is regarding to our WiseEye total solution. So previously, we seemed like more positive from our progress with PC OEM customers by end of this year. So just wondering if you could give us some idea if we have entered into like volume production for our PC OEM customers in this quarter.

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

The first question, whether we have higher exposure for IT and notebook compared to TV, I don't have the answer right in front of me right now. We know we have a very solid notebook, no sorry, monitor, especially high-end monitor like gaming monitor market share. And our notebook market share has been rising. And then again, I emphasize, we are collaborating directly with end customers, leading end customers. I think all these factors helped.

For TV, again, we are really moving away from miniLVDS products, i.e., low-end products and focusing not just on high-end products, but really focusing a lot on some of the leading end customers' products. So whether and how that compare with our peers and which peer, it's hard for me to comment and whether we are particularly more exposure on this sector than the other, I'm not sure about that.

And for WiseEye, we have said in a few quarters already that we have had a major design win with a leading end customer for a mainstream application. We never really said it's PC or whether it's OEM or otherwise. But yes, we are on track to start mass production in Q4, and that's what we have always indicated. And certainly, Q4, it will not be throughout the whole quarter. So Q4 will be the commencement of mass production, but we have got pretty solid forecast for throughout for the whole next year.

And I think given that it's really a new thing for the whole world and it's a brand-new product for us, we only started the first sampling only about a year ago. I think we are extremely pleased with the progress. And in addition to that, we also have with smaller volume, quite a number of different applications with some customers also on track for mass production also starting this quarter as well. So next year, you will see some revenue contribution from WiseEye, but it will still be low single-digit revenue contribution. But hopefully, we will outgrow our overall business for a very long time and certainly, we are confident this will be high-margin business.

Operator

Thank you. There are no further questions at this time. I will turn the call back over to Mr. Jordan Wu.

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

I apologize for the hiccup, but luckily, we managed to finish just at the market open. So as a final note, Eric will maintain investor marketing activities and continue to attend investor conferences. So we'll announce the details as they come about. Thank you, and have a nice day.

Operator

Thank you. This concludes today's conference call. Thank you for participating. You may now disconnect.