

#### SECTOR: TECHNOLOGY INDUSTRY: SEMICONDUCTORS

Himax Technologies, Inc. No.26, Zilian Road, Xinshi District Tainan City 74148, Taiwan Tel: +(886) 6 505-0880 www.himax.com.tw

COMPANY CONTACTS Eric Li Chief IR/PR Officer Tel: +886-6-505-0880 email: hx\_ir@himax.com.tw

Karen Tiao Investor Relations Tel: +886-2-2370-3999 email: hx\_ir@himax.com.tw

Mark Schwalenberg Investor Relations - US Representative Tel: 312-261-6430 email: mark.schwalenberg@mzgroup.us

SELECT FINANCIALS			
Fiscal Year	Dec. 31st		
Last-Traded Price (05/11/22)	\$7.97		
<b>Market Cap.</b> (05/11/22)	\$1,389M		
50-Day Avg. Daily Vol.	~2.76M		
Basic Weighted Avg. Out. ADS	174.3M		
<b>Cash</b> (3/31/22)	\$378.0M		
2021 Revenues	\$1,547.1M		
2021 Non-IFRS Profit	\$463.6M		
2021 Non-IFRS EPS	\$2.651 per ADS		
Legal	Davis Polk & Wardewll		
Auditor	KPMG		
# Analyst Coverage	5		

**Himax Technologies, Inc. (NASDAQ: HIMX)** is a fabless semiconductor solution provider dedicated to display imaging processing technologies. Himax is a worldwide market leader in display driver ICs and timing controllers used in TVs, laptops, monitors, mobile phones, tablets, automotive, digital cameras, car navigation, virtual reality (VR) devices and many other consumer electronics devices. Additionally, Himax designs and provides controllers for touch sensor displays, in-cell Touch and Display Driver Integration (TDDI) single-chip solutions, OLED/LED driver ICs, power management ICs and LCoS micro-displays for augmented reality (AR) devices and heads-up displays (HUD) for automotive. The Company also offers CMOS image sensors, wafer level optics for AR devices, 3D Sensing and ultralow power AI Image Sensing, which are used in a wide variety of applications such as mobile phone, tablet, laptop, TV, PC camera, automobile, security, medical device, home appliance, AIoT, etc. Founded in 2001 and headquartered in Tainan, Taiwan, Himax currently employs around 2,100 people from three Taiwan-based offices in Tainan, Hsinchu and Taipei and country offices in China, Korea, Japan, Israel, and the US. Himax has 3,009 patents granted and 456 patents pending approval worldwide as of March 31, 2022. Himax has retained its position as the leading display imaging processing semiconductor solution provider to consumer electronics brands worldwide.

#### **Investment Highlights**

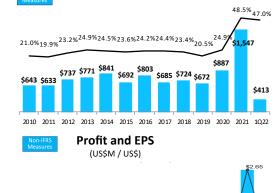
- Leading Display and Image IC Design House
- Diversified Base of Customers and Revenues

<ul> <li>Diversified base of customers</li> </ul>	and Revenues				
	Visionary Management Team				
Financial Summary	1Q2022	4Q2021	1Q2021	QoQ	YoY
Revenues	\$412.8M	\$451.9M	\$309.0M	-8.6%	+33.6%
Non-IFRS Gross Margin (%)	47.0%	51.8%	40.2%	-4.8%	+6.8%
Non-IFRS Profit	\$121.9M	\$148.4M	\$67.1M	-17.9%	+81.7%
Non-IFRS Earnings per ADS	\$0.697	\$0.849	\$0.384	-17.9%	+81.5%
IFRS Profit	\$115.9M	\$142.4M	\$66.9M	-18.6%	+73.2%
IFRS Earnings per ADS	\$0.663	\$0.815	\$0.383	-18.7%	+73.1%

#### 2Q2022 Guidance

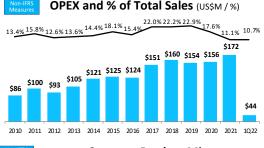
Revenues	Decrease 22% to 27% sequentially
Non-IFRS Gross Margin (%)	Around 43.0% - 45.0%, depending on final product mix
Non-IFRS Profit (Loss)	To be around 40.0 cents to 45.0 cents
IFRS Profit (Loss)	To be around 36.5 cents to 41.5 cents

#### Revenues and Gross Margin %



2017

S18 2011 2012 2013



Innovative New Products Capturing

**Growth Markets** 



## NASDAQ: HIMX

### **Core Product Lines - Growth Opportunities**

#### **Display Driver IC (DDIC)**

We are a leader in display driver ICs used to enable large, small and medium-sized flat panel displays in TFT and Touch **Strategies and Market Position** 

- Large display driver IC business positions toward high end solutions covering 4K/8K TV, gaming monitor and low power NB
- Provide both leading-edge Tcon and DDIC solutions
- Decent 4K/8K TV solution shipment. Dominate 8K TV Tcon market
- Decent gaming monitor IC shipment featuring higher resolution, high frame rate and large size display
- Outstanding notebook shipment in 2021 driven by the surging demands for work/learn-from-home
- Leader in non-iOS tablet market serving basically all brand names
- Leader in auto driver market. Collaborate closely with tier-1, panel makers as well as car manufacturers across continents
- Automotive AMOLED commenced MP in Q1 2022. Tablet OLED MP starting Q2 2022 as sole source for one leading customer

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# In-Cell Touch and Display Driver Integration (TDDI)

We design and implement touch display technologies, including incell touch and the fast-growing segment of Display Driver Integration (TDDI) single-chips

## **Strategies and Market Position**

- TDDI enjoys higher ASP and margin than traditional driver IC
- TDDI quickly replaces DDIC in smartphone/tablet and increase adoption in auto sector
- TDDI with COF package can enable super-slim bezel design for premium smartphone and tablet models
- Smartphone TDDI gained numerous design-wins and shipment with top-tier smartphone and panel makers in China starting 2018
- In-cell TDDI with active stylus becoming mainstream for tablet and Himax is the primary supplier for non-iOS tablets. MP started for major Tier-1 /OEMs in 1Q20. Higher tablet TDDI penetration and towards larger size, HFR and active stylus feature
- Himax is the dominant automotive TDDI provider with MP experience for leading panel makers. Offer advanced local dimming TCon, P2P bridge, cascade-topology connection, OLED and LTDI for next generation automotive
- Shipped over a million automotive TDDI chips within 3Q21 alone, marking a major milestone



### Management Team

# Wafer Level Optics (WLO) / 3D Sensing

Offer advanced WLO expertise in structured light and ToF for 3D Sensing for both smartphone and non-smartphone markets in AR/VR, disparity measurement, etc.

## **Strategies and Market Position**

- Volume production for anchor customers since 2015 with exceptional WLO technologies
- 3D sensing component: our 3D decoder IC registered a decent market share in e-payment system in China. Volume shipment from Q4 2020. Continuous growth throughout 2021 and beyond
- Our 3D Sensing solution can enable more human machine interface applications in metaverse devices and displays with gesture control, eye tracking and 3D reconstruction

# AI Image Sensing / CMOS Image Sensor (CIS)

Our AI Image Sensing solution, incorporated with AoS sensor, AI processor and AI algorithm, bring computer vision and audio command AI to edge devices. Our solution provides ultralow power and with high security / privacy features

# Strategies and Market Position

- Extensive CIS product portfolio for NB and web camera
- Industry first ultralow power always-on (AoS) sensors. Reference design win for Google TensorFlow Lite
- AI Image Sensing solution aim at low power edge AI or end-point applications, such as NB, AMR, endoscope, , battery camera, door bell, panoramic video conferencing, IoT devices, etc.
- Our vision AI solution was adopted in Dell new laptops and started MP in Q4 2021, followed by more design-wins in AMR, battery camera and panoramic video. AI Image Sensing is an area with great potential for Himax
- Key component strategy: Actively participate in the edge-tocloud ecosystems led by the world's leading AI and cloud service providers, such as TensorFlow Lite and Microsoft Azure

## Liquid Crystal on Silicon (LCoS) Microdisplays

Leader and long-term innovator of LCoS displays. Capable of highvolume production runs of LCoS displays for mass-market devices. With in-house facilities. Has shipped > 4M units

# Strategies and Market Position

- Focus on AR goggle devices and HUD for automotive applications
- LCoS is one of the mainstream technology for AR goggle device. Ongoing collaboration with global tier 1 manufacturers since 2011
- Front-lit LCoS Microdisplay, one of the tiniest display modules that offers significantly higher brightness, lighter weight, and lower power consumption, all making it ideal for future AR glasses
- Introduced LCoS 2.0 that focus on phase modulation offering. Target holographic display for AR-HUD, LiDAR for autonomous drive and ADAS, WSS for WDM

Dr. Bling-Seng Wu, Chairman of the Board - Dr. Wu, the founder of Himax, previously served as President, CEO and Director of Himax Taiwan. As a pioneer of TFT-LCD panel industry in Taiwan, Dr. Wu has been active in the TFT-LCD panel industry for with profound experience. With 121 patents related to Flat Panel Display and 3D Sensing granted worldwide, Dr. Wu has made significant contributions to Taiwan panel industry including the completion and operation of Taiwan's very first TFT-LCD plant, the winner of Outstanding Industry Contribution Award at the Gold Panel Awards 2009 from Ministry of Economic Affairs, etc. Dr. Wu holds a B.S. degree, an M.S. Degree and a Ph.D. Degree in Electrical Engineering from National Cheng Kung University. With well-recognized outstanding research and development capabilities, Dr. Wu received numerous awards including Sun Yat-Sen Technological Invention Award from Taiwan Executive Yuan in 1992, Outstanding Youth Electrical Engineer Award from Chinese Institute of Engineers in 1992, Research Achievement Awards from Industrial Technology Research Institute for consecutive 2 years of 1992 and 1993, ERSO Award from Pan Wen Yuan Foundation in 2008, 2011 NCKU Outstanding Alumni Award, etc.

Jordan Wu, President, CEO and Director - Mr. Jordan Wu, co-founder of Himax, previously served as the chairman of the board of Himax Taiwan from April 2003 to October 2005. Prior to joining Himax Taiwan, he served as CEO of TV Plus Technologies, Inc. and CFO and executive director of DVN Holdings Ltd. in Hong Kong. Prior to that, he was an investment banker in Hong Kong with Merrill Lynch (Asia Pacific) Limited, Barclays de Zoete Wedd (Asia) Limited and Baring Securities. Mr. Wu holds a B.S. degree in Mechanical Engineering from National Taiwan University and an M.B.A. degree from the University of Rochester.

Jessica Pan, Chief Financial Officer - Jessica joined Himax in 2006. She has played an integral role at Himax on finance, accounting, financial planning and analysis, forecasting and tax, having served as interim Chief Financial Officer from October 2010 to January 2012. Prior to joining Himax, Jessica worked as Assistant Finance Manager for Advanced Semiconductor Engineering, Inc. from 2002 to 2006 and as Auditor at Arthur Andersen LLP in Taiwan from 1998 to 2001. She holds a B.S. degree in Agriculture Chemistry from National Taiwan University and an M.B.A. degree from the State University of New York at Buffalo.

Eric Li, Chief IR/PR Officer - Joining Himax in 2012, Mr. Eric Li has extensive experience in image processing related IC design, having worked in the areas of sales, marketing, R&D and served as Associate Vice President at Himax covering the Intelligent Sensing AI product line. Previously worked in video processing ASIC service and TV/monitor ASSP products before he was put in charge of the fab construction and WLO advanced optics operation. He holds a B.S. degree in Nuclear Engineering from National Tsing Hua University and an M.S. degree in Computer Science from New Jersey Institute of Technology.

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