

## SECTOR: TECHNOLOGY INDUSTRY: SEMICONDUCTORS

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SELECT FIN	ANCIALS
Fiscal Year	Dec. 31st
Last-Traded Price (11/8/23)	\$5.52
<b>Market Cap.</b> (11/8/23)	\$962M
50-Day Avg. Daily Vol.	~0.65M
Basic Weighted Avg. Out. ADS	174.7M
<b>Cash</b> (9/30/23)	\$219.7M
2022 Revenues	\$1,201.3M
2022 Profit	\$237.0M
2022 EPS	\$1.356 per ADS
Legal	Davis Polk & Wardewll
Auditor	KPMG
# Analyst Coverage	3

NASDAQ: HIMX

Himax Technologies, Inc. (NASDAQ: HIMX) is a leading global fabless semiconductor solution provider dedicated to display imaging processing technologies. The Company's display driver ICs and timing controllers have been adopted at scale across multiple industries worldwide including TVs, PC monitors, laptops, mobile phones, tablets, automotive, ePaper devices, industrial displays, among others. As the global market share leader in automotive display technology, the Company offers innovative and comprehensive automotive IC solutions, including traditional driver ICs, advanced in-cell Touch and Display Driver Integration (TDDI), local dimming timing controllers (Local Dimming Tcon), Large Touch and Display Driver Integration (LTDI) and AMOLED display technologies. Himax is also a pioneer in tinyML visual-AI and optical technology related fields. The Company's industry-leading WiseEye<sup>™</sup> Smart Sensing technology which incorporates Himax proprietary ultralow power AI processor, always-on CMOS image sensor, and CNN-based AI algorithm has been widely deployed in consumer electronics and AloT related applications. While Himax optics technologies, such as diffractive wafer level optics, LCoS micro-displays and 3D sensing solutions, are critical for facilitating emerging AR/VR/metaverse technologies. Additionally, Himax designs and provides touch controllers, AMOLED ICs, LED drivers, EPD drivers, power management ICs, and CMOS image sensors for diverse display application coverage. Founded in 2001 and headquartered in Tainan, Taiwan, Himax currently employs around 2,200 people from three Taiwan -based offices in Tainan, Hsinchu and Taipei and country offices in China, Korea, Japan, Germany, and the US. Himax has 2,838 patents granted and 376 patents pending approval worldwide as of September 30, 2023.

#### **Investment Highlights**

- Leading Display and Image IC Design House
  Diversified Base of Customers and Revenues
- Innovative New Products Capturing Growth Markets
   Visionary Management Team

Financial Summary					
	3Q2023	2Q2023	3Q2022	QoQ	ΥοΥ
Revenues	\$238.5M	\$235.0M	\$213.6M	+1.5%	+11.6%
Gross Margin (%)	31.4%	21.7%	36.0%	+9.7%	-4.6%
Profit	\$11.2M	\$0.9M	\$8.3M	+1165.3%	+35.1%
Earnings per ADS	\$0.064	\$0.005	\$0.048	+1164.6%	+35.0%
	4Q202	23 Guidance			
Revenues	Decline 5.0%	to 11.0% sequentia	Illy		
Gross Margin (%)	Around 30%, depending on our final product mix				
IFRS Profit	To be around	9.0 cents to 13.0 c	ents per diluted AD	S	

\$1,547

\$2.50

\$47

-<u>se</u> (ST4)

\$109

\$100

\$643 \$633 \$737 \$771

2,60%

\$27

2010 2011

34.8% 44.6%

#### Revenues and Gross Margin % (US\$M / %)

Profit and EPS (US\$M / US\$)

\$737

¢0.20

\$11

\$803

OPEX and % of Total Sales (US\$M / %)

\$133 \$133 \$118

2012 2013 2014 2015 2016 2017

\$803

**Category Product Mix** 

Large Panel Drivers S/M Panel Drivers Non-Driver

19.0% 20.0%

2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 9M23

\$166

\$156 \$163

45.8%

2021 2022 9M23

62.3% 64.8%

\$672 \$887 \$1,547 \$1,201 \$71

2019 2020

# **Core Product Lines - Growth Opportunities**

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

We are a leader in DDICs used to enable large, small and mediumsized flat panel displays in TFT and Touch

# **Strategies and Market Position**

- Large DDIC 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
- Leader in non-iOS tablet market serving major leading names
- Leader in auto driver IC market. Collaborate closely with Tier 1s, panel makers as well as car brands across continents
- Automotive AMOLED commenced MP in Q1 2022. Started Tablet AMOLED MP from Q2 2022 for a 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 TDDI single-chip **Strategies and Market Position** 

- TDDI enjoys higher ASP and margin than traditional DDIC
- TDDI quickly replaces DDIC in smartphone/tablet and increase adoption in automotive displays
- 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 and panel makers in China starting 2018
- In-cell TDDI with active stylus becomes mainstream for tablet where 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. Automotive TDDI chips cumulative shipment >25M as of 3Q23. Commenced world first LTDI mass production in 3Q23
- Offer advanced local dimming Tcon, P2P bridge, cascade-topology connection, AMOLED & LTDI for next gen automotive displays



## Wafer Level Optics (WLO) / 3D Sensing



Offer advanced WLO & 3D Sensing expertise in structured light & ToF for 3D Sensing for AR/VR, gaming, e-payment, door lock, medical applications, etc.

## **Strategies and Market Position**

- Exceptional WLO technologies: Volume production for anchor customers in AR/VR devices since 2015 and 3D gesture control in VR goggle for a NA customer starting Q2 2023
- New 3D processor offers structured light 3D and Time of Flight (ToF) 3D decoding along with sensor fusion, offering industryleading, fast response rate for high-precision spatial reality
- Our 3D Sensing solution can enable more human machine interface applications in metaverse devices, such as 3D naked eye display, gesture control, eye tracking and 3D reconstruction

WiseEye<sup>™</sup> Smart AI Image Sensing / CMOS Image Sensor (CIS) WiseEye solution, incorporated with our AoS sensor, AI processor and AI algorithm, brings context-aware sensor fusion AI to endpoint devices. Our solution provides ultralow power & superb local inferencing performance with advanced security / privacy features Strategies and Market Position

- Extensive CIS product portfolio for NB, web camera & AloT
- WiseEye AI solution was adopted in Dell's new laptops and started MP in Q4 2021, along with others end-point AI applications, such as video conference device, shared bike parking, door lock, smart agriculture, among others
- Intelli-Sensing Modules are highly integrated, plug-and-play, extremely compact in size, user-programmable and loaded with our pre-trained AI models for straightforward system integration
- Active collaboration with leading AI ecosystem partners, including Google TFLu, Microsoft Azure, Arm, Edge Impulse
- Next gen WE2 AI processor offers further advancements in inference speed and ultralow power than WE1, and provides context-aware AI for subtle presence or movement detection

	Google	Azure	EDGE IN	PULSE	Seeed Studio
Cyberon	Digi-Key	ECO/LUX 🤇	emza Emorphi	COPORATE LOG DESIGN MANUA	<sup>e</sup> Ninalbi
OMRON	sparkfun	USEFUL	Sensors Went		4技

# 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 millions of units

## Strategies and Market Position

- Focus on AR goggle devices and AR-HUD for automotive
- LCoS is one of the mainstream technology for AR goggle device. Ongoing collaboration with global Tier 1 since 2011
- Several tech giants in the industry have shifted their focus away from micro-OLED to our Front-Lit LCoS for their AR goggles. This demonstrates our exceptional achievements in lightweight and compact form factor (0.5 cc), higher brightness (100K nits), all are critical for future AR goggles
- 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

## **Management Team**

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 significant numbers of patent related to Flat Panel Display and 3D Sensing granted worldwide, Dr. Wu has made significant contributions to Taiwan's very first TFT-LCD panel, the winner of Outstanding Industry Vointbuiton Award at the Gold Panel Awards 2009 from Ministry of Economic Affains, etc. Dr. Wu holds a B.S. degree, and M.S. Degree and a Ph.D. Degree in Electrical Engineering from National Cheng Kung University. With well-recognized outstanding Industry variat the Gold Panel Awards from the Sun Yat-Sen Cultural Foundation in 1991, National Invention Award of Taiwan's 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 1993 and 1993, ERSO Award from Pan Wen Yuan Foundation in 2008, 2011 NCKU Outstanding Alumni Award, etc. Jordan Wu, Co-founder, President and Chief Executive Officer of Himax Technologies Inc., a NASDAQ-listed fabless IC design company headquartered in Taiwan, Terv to co-

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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, US

Eric LJ, 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 Alproduct line. Previously worked in video processing RSIC service and TV/monitor ASSP products before he was put in charge of the fab construction and WLD 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, US

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