

THE ONLY TOTAL SOLUTION PROVIDER OF INPUT INTERFACES FOR FLEXIBLE OLED DISPLAYS



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- Chapter 1. Market Trend
- Chapter 2. HiDeep's Key Technology & Points
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At a Glance

HiDeep Target Market: **A Technology** in Mobile Devices



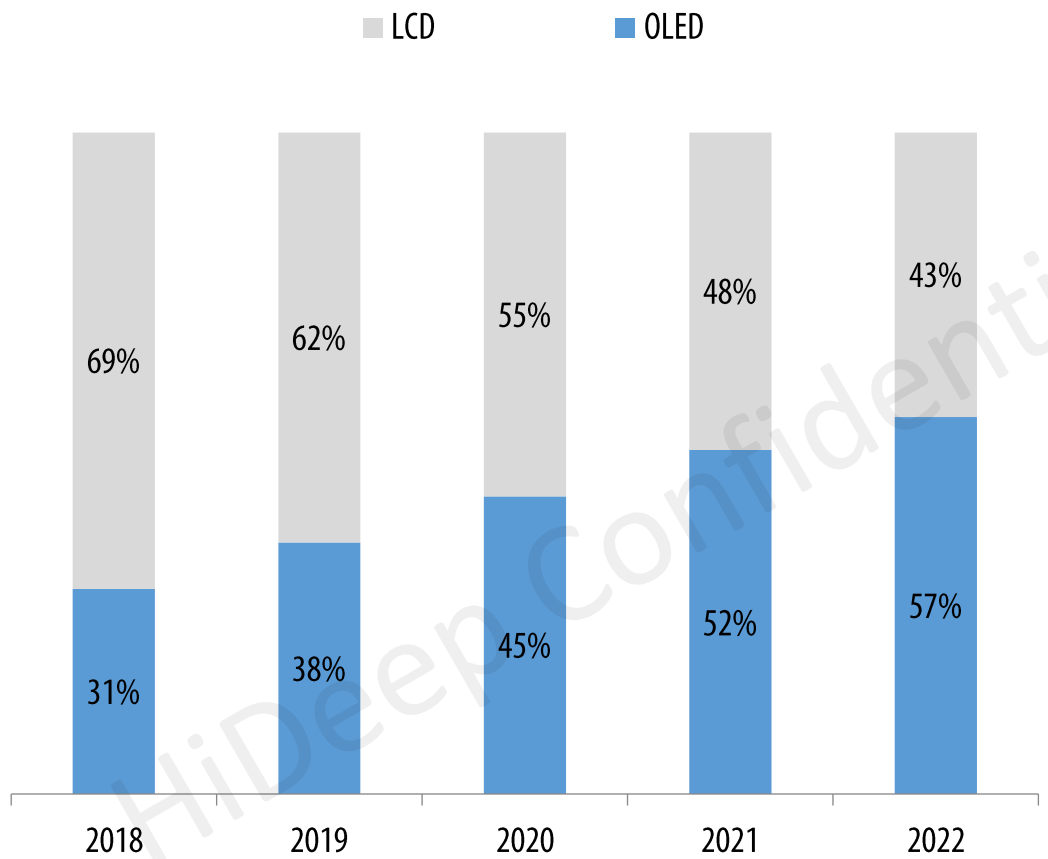
HiDeep Target Technology: **Stylus** for Mobile Devices



Chapter 1. Market Trend

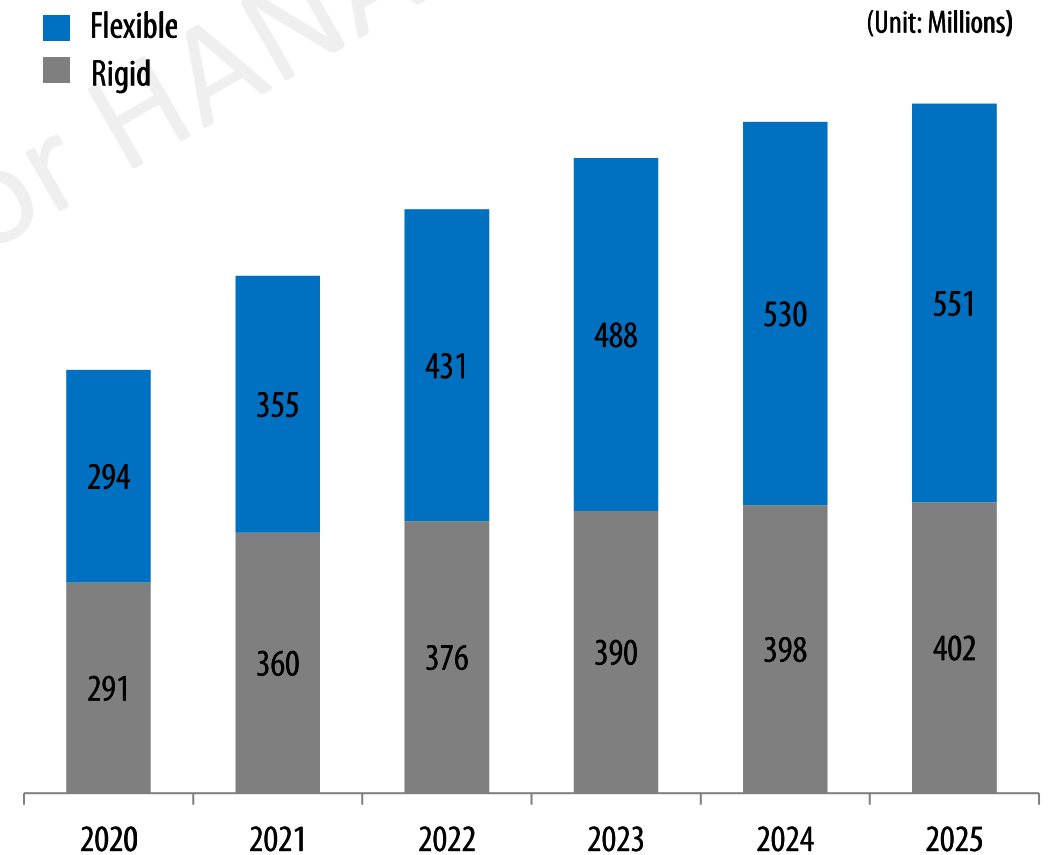
The Growth of OLED Display Market

The growing OLED penetration rate for mobile applications



※Source: Displaysupplychain.com

The growing OLED shipment



※Source: Omdia

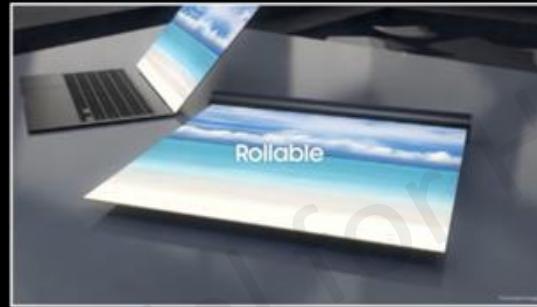
[SID 2021 Keynote Speech] "The Metaverse and the Great Future of Display"

Form Factor

Foldable/Rollable/Slidable/Stretchable, Tiled



Foldable



Rollable



Slidable



Stretchable

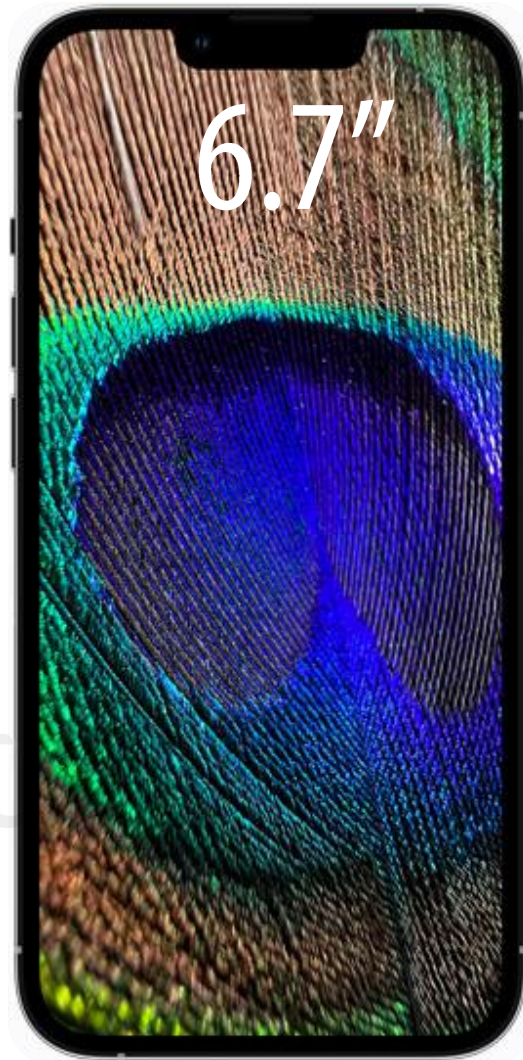


Tiled

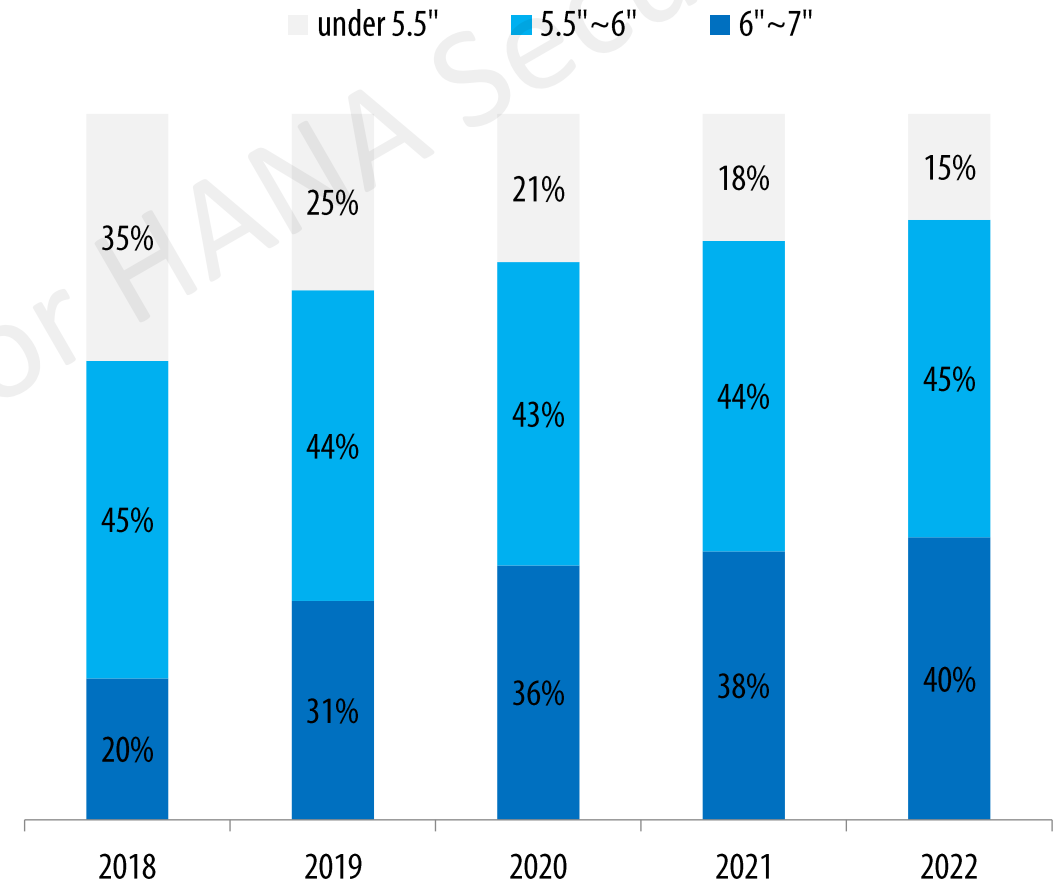
<https://www.youtube.com/watch?v=rrJSQcLS1Ko>

The Larger Screen Size of Smartphones

2021



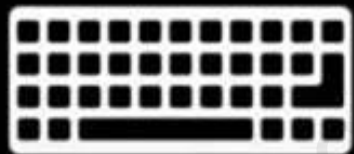
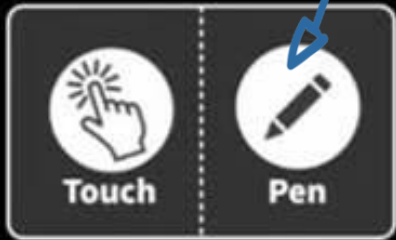
2007



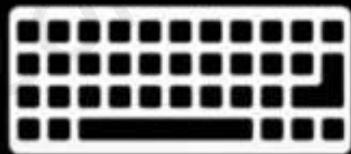
※Source: Statista

[SID 2021 Keynote Speech] "The Metaverse and the Great Future of Display"

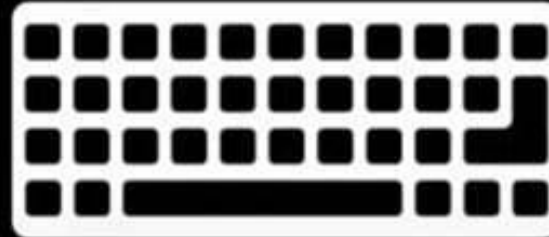
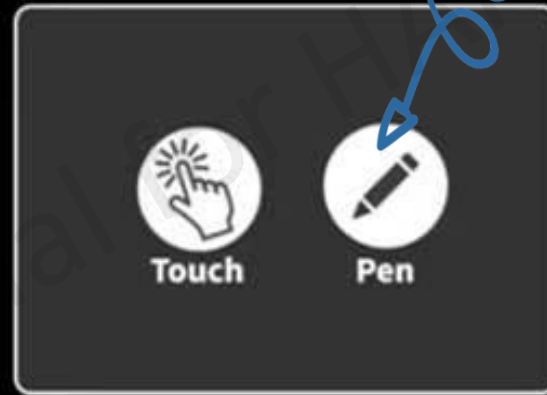
Foldable Phone



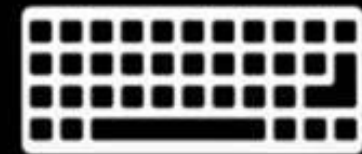
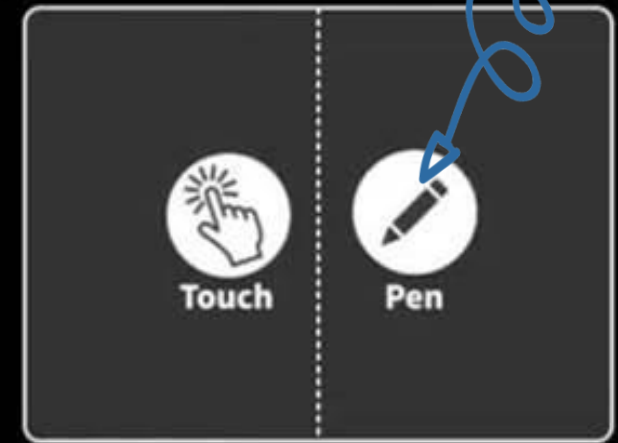
Tablet



Laptop

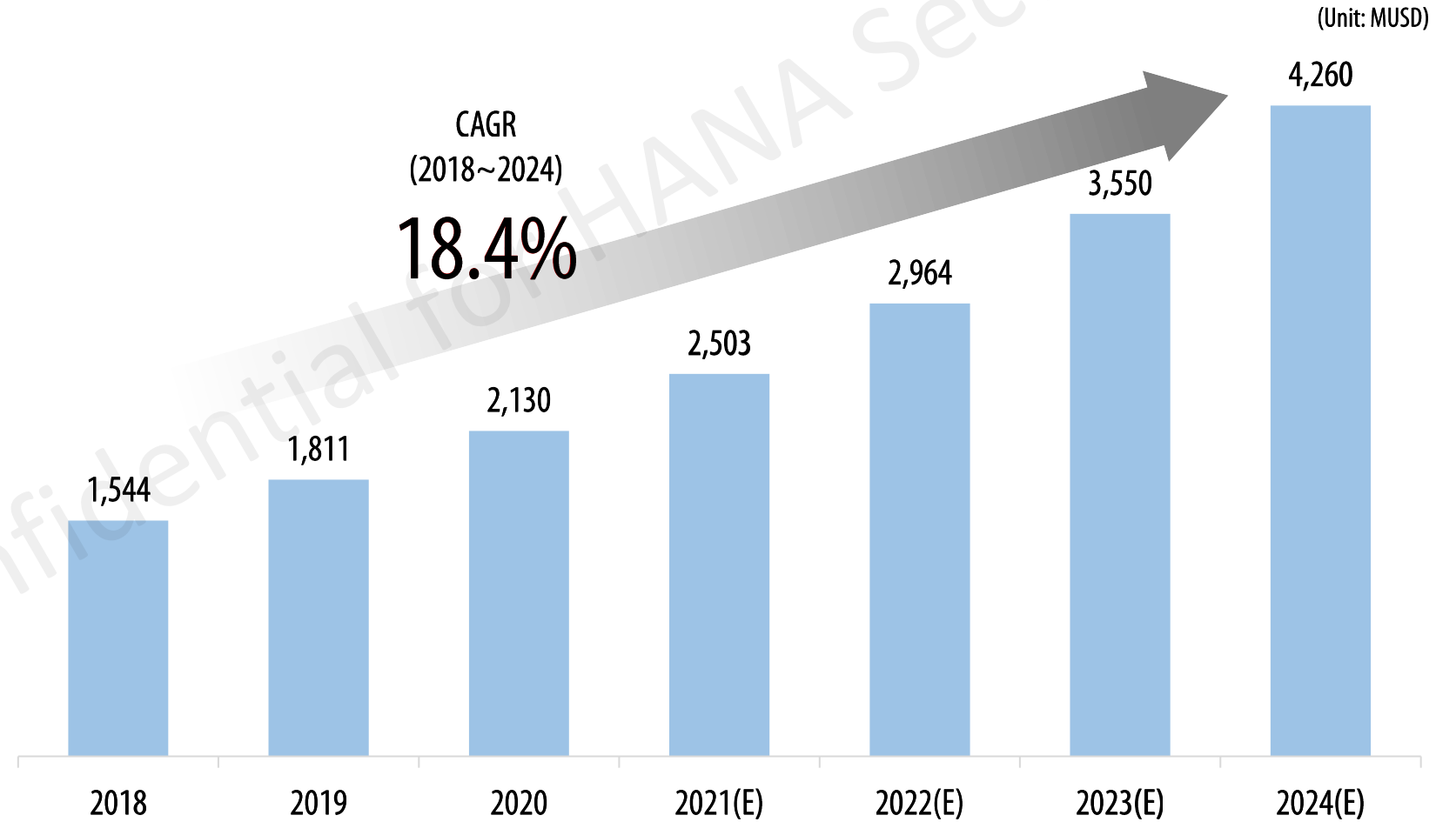


Foldable Monitor



<https://www.youtube.com/watch?v=rrJSQcLS1Ko>

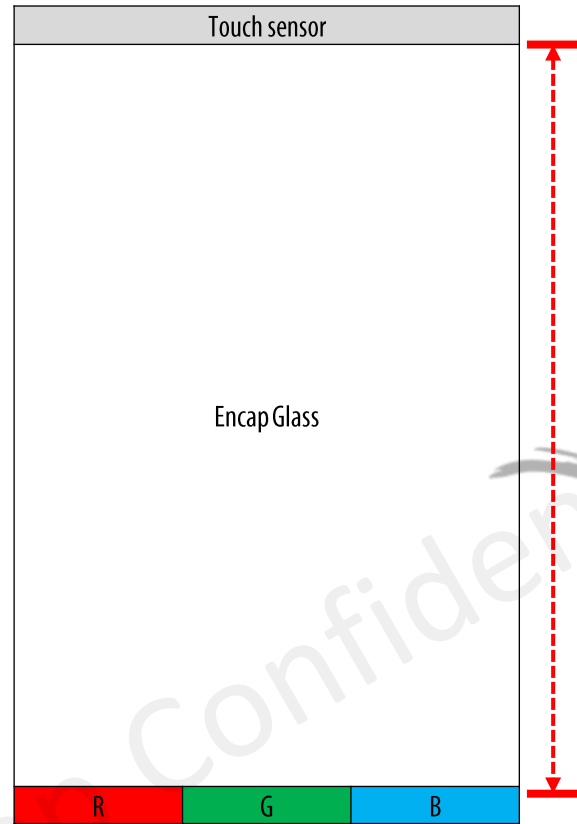
Stylus Market Prospect



※Source: Statista 2021

Chapter 2. HiDeep's Key Technology & Points

Challenges of Flexible OLED



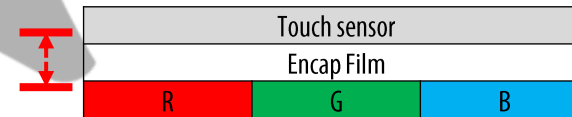
Rigid OLED Display

Display noise

x10

Distance from touch sensor to display

1/20

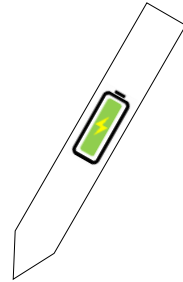


Flexible OLED Display

Challenges of Stylus Technology

Active Stylus

Passive Stylus



Cover glass

Display

Touch +
Stylus IC

Cover glass

Display

Stylus sensor

Touch IC

Stylus IC

Cover glass

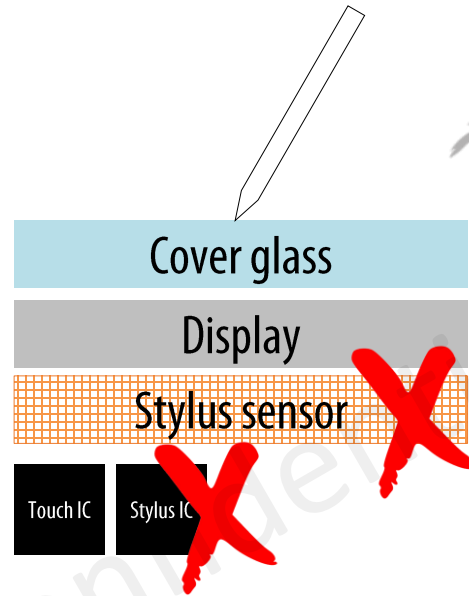
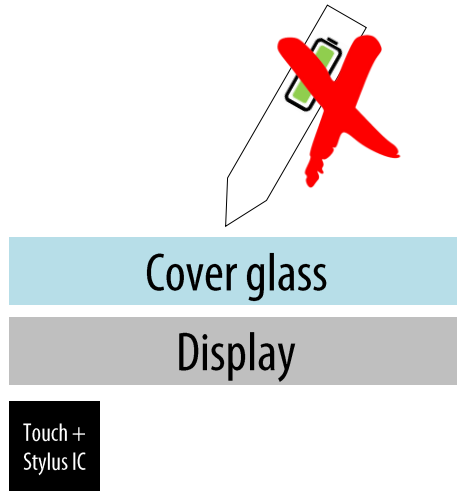
Display

Touch IC

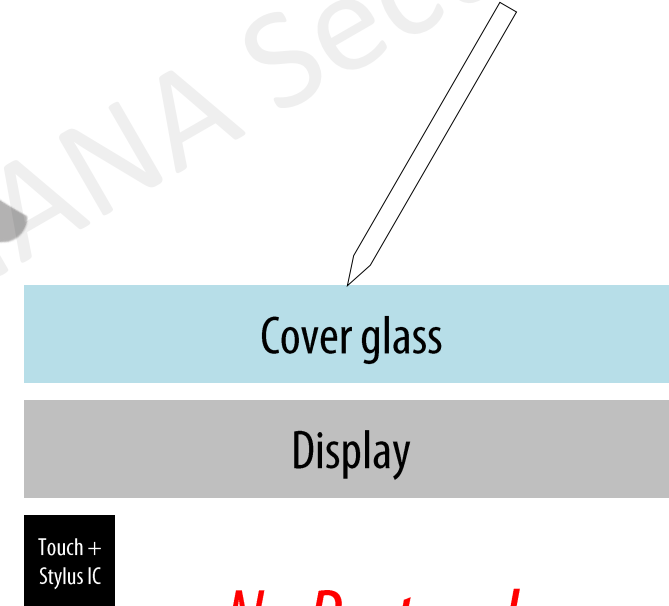


Flexible OLED Key Technology: HiDeep Stylus

The Market Solution

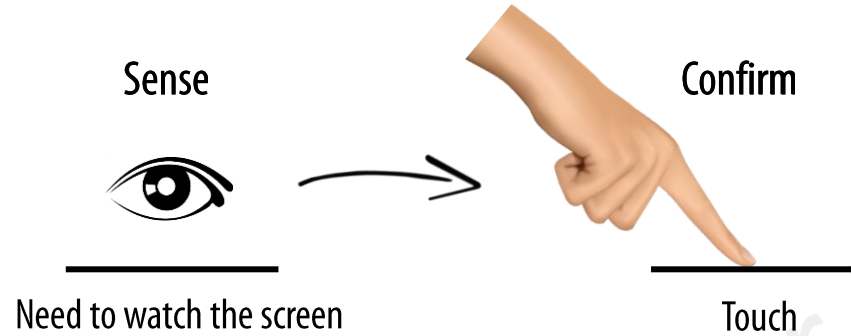


HiDeep Stylus Solution

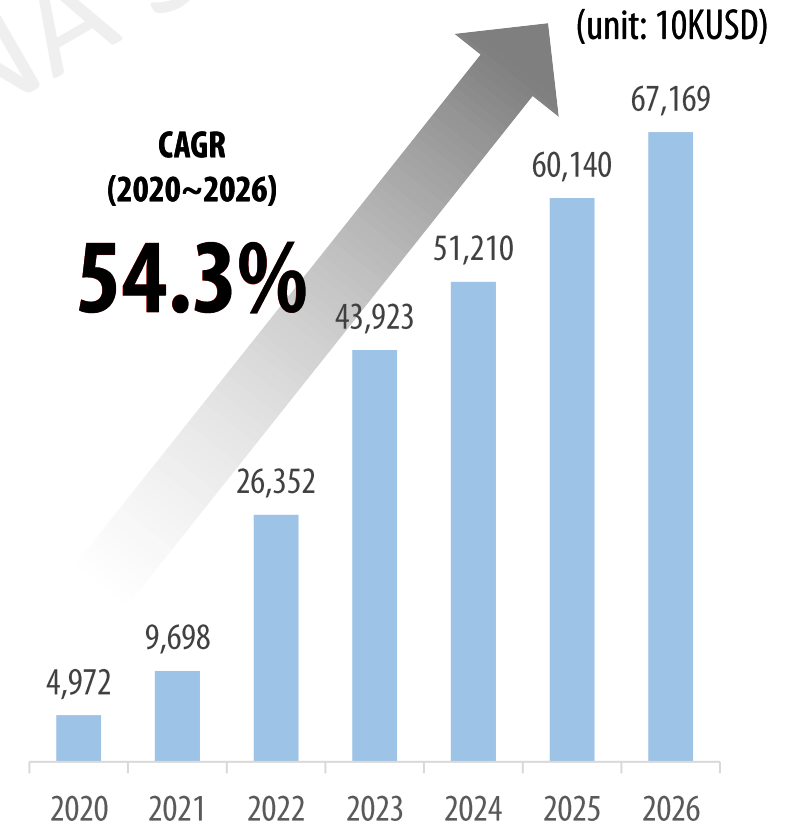


No Protocol
No Battery
No Stylus Sensor
Single IC

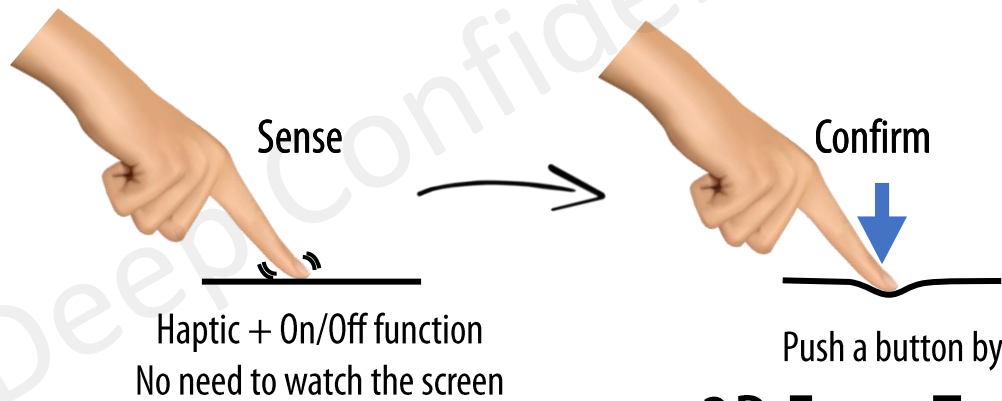
The Automotive OLED Market Opportunity: 3D Force Touch



Global automotive OLED market forecast



HiDeep 3D Force Touch Solution



3D Force Touch

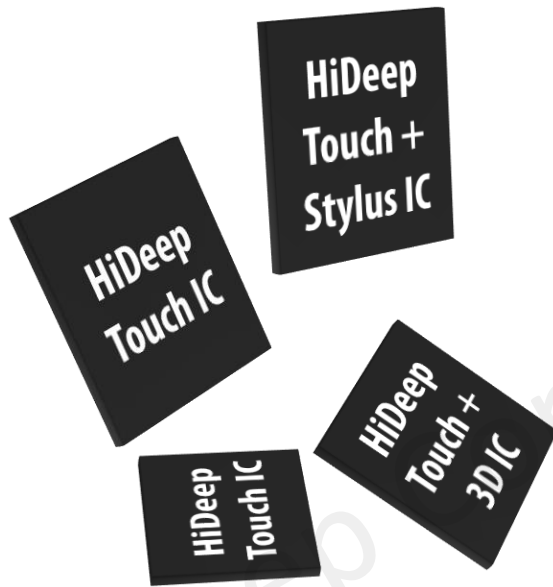
※source: Omdia

A Provider of IC, Stylus, Algorithms and Sensors for Flexible OLED Displays



HiDeep, Inc.

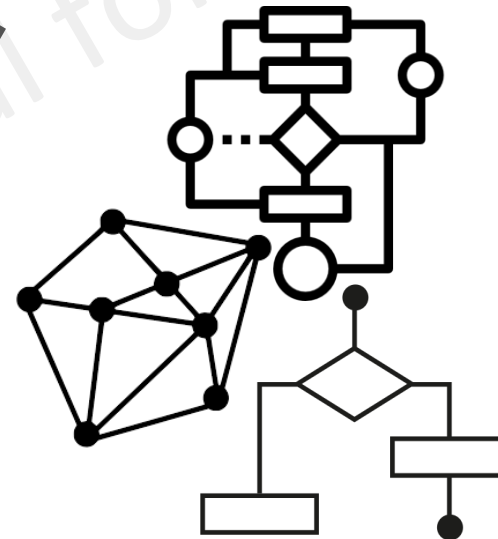
Touch IC



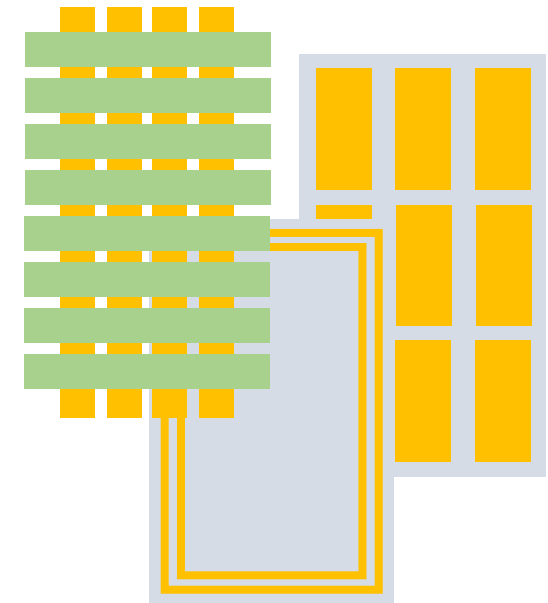
Stylus



Algorithm



Sensors



Chapter 3. About HiDeep

CEO's Profile



Brian Ko, Ph.D. Chief Executive Officer

Brian Ko, Ph.D. founded HiDeep in April 2010 as chief executive officer, responsible for leading the company's **strategic vision**. He brings to HiDeep more than **22 years** of experience building successful technology businesses. Prior to founding HiDeep, he was a founder of Integrant Technologies Inc. established in 2000, where he predicted that mobile TV broadcasting services would be launched and prepared for developing the world's first RF CMOS mobile TV tuner ICs including Satellite/Terrestrial DMB, ISDB-T, DVB-H and CMMB.

These innovative CMOS tuner products have been delivered over **40 million units** world wide. He also made the successful investment promotion of \$20 million and revenue of **\$40 million** in 6 years with team building up from 6 to over 90 employees.

Integrant Technologies was acquired by **Analog Devices** by **\$160 million** on Jun. 2006, where he served as HSSP (High Speed Signal Processing) product line director for the product development and strategic planning. Prior to founding Integrant Technologies, he was a senior RF (Radio Frequency) analog circuit design engineer for CDMA transceiver at Samsung Electronics.

Brian holds M.S. and Ph.D. in electrical engineering from KAIST.



Volume Production

A Shipping and Proven 2D/3D Touch Technology

AMOLED 3D Touch smartphones are in mass production with HiDeep 3D and 2D Touch solutions.

Huawei	Gionee	Huawei
Mate S	S8	P9
5.5inches OCTA (SDC)	5.5inches OCTA (SDC)	5.5inches OCTA (SDC)
MP in Q3, 2015	MP in Q2, 2016	MP in Q2, 2016
		

Volume Production

HiDeep multi-touch solution with the passive stylus supporting function

Lenovo	Lenovo	Lenovo	Lenovo	Lenovo	Lenovo	OKAY Education	Readboy	Wheatek
YOGA TABLET 2, 8 WITH WINDOWS	YOGA TAB3 8	YOGA TAB 3 PRO	YOGA TAB 3 10	YOGA TAB 3 Pro Refresh	YOGA BOOK	e Book S4.0	G550	Stubook
8"	8"	10.1"	10.1"	10.1"	10.1"	10.1"	10.1"	8"
MP in Q4, 2014	MP in Q2, 2015	MP in Q3, 2015	MP in Q3, 2015	MP in Q2, 2016	MP in Q3, 2016	MP in Q3, 2017	MP in Q2, 2018	MP in Q2, 2018
 					 			

Volume Production

HiDeep multi-touch solution for larger displays

Aristocrat	IGT	Aristocrat	Aristocrat	Aristocrat	Aristocrat	IGT	IGT	IGT
IEM (main display)	DPP (button deck)	Helix (button deck)	Edge X (button deck)	Flame (button deck)	Mars (button deck)	Crystal Dual (main display)	Crystal Slant (main display)	Peak Slant (main display)
23"	10.1"	15.8"	28.6"	23"	19.5"	27"	27"	32"
MP from 2014	MP from 2014	MP in 2020	MP in 2020	MP in 2020	MP in 2020	MP in 2020	MP in 2020	MP in 2020
								

Chapter 4. Growth Strategy

Business Model Diversification: Business Area

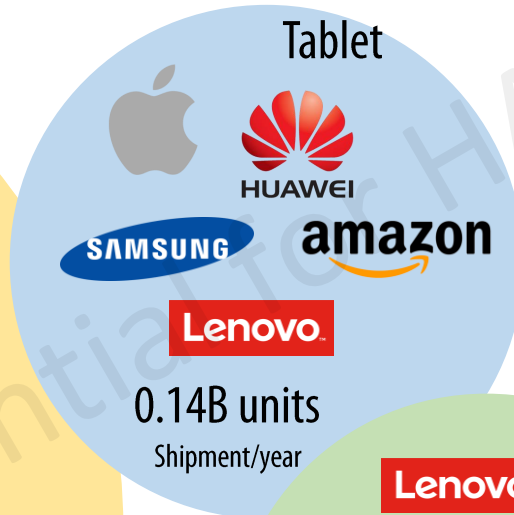
Business market

Smartphone



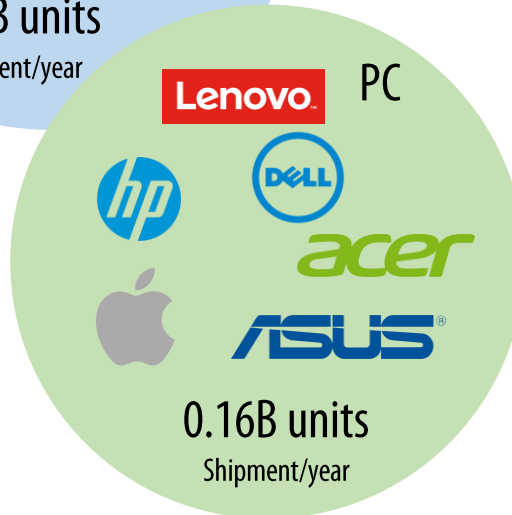
1.4B units
Shipment/year

Tablet



0.14B units
Shipment/year

PC



0.16B units
Shipment/year

Consumer market



Shareholder's

Shareholder's Table (2023-09-30)

Name of Owner	Shares	%
Largest shareholder(CEO) & Related persons	67,569,332	48.02%
SKYLAKE Investment Co.	6,970,000	4.95%
Others	66,179,098	47.03%
Total	140,718,430	100.00%

Lock-Up (2023-09-30)

Name of Owner	Shares	%	Lock-Up Period
Largest shareholder(CEO) & Related persons	61,210,186	43.50%	Until May 11, 2025
Total	61,210,186	43.50%	

Finance

Balance Sheet

(Unit: MKRW)

Description	2021	2022	2023. 3Q
Current assets	9,845	32,255	25,714
Non-current assets	4,780	5,891	5,784
Total assets	14,625	38,146	31,497
Current liabilities	6,210	6,318	14,185
Non-current liabilities	225	13,621	704
Total liabilities	6,435	19,939	14,889
Capital	2,246	13,746	14,072
Capital surplus	52,040	57,802	60,366
Other equity	3,013	2,672	2,006
Deficits	-49,109	-56,012	-59,836
Total equity	8,190	18,207	16,609

Income Statement

(Unit: MKRW)

Description	2021	2022	2023. 3Q
Revenue	13,309	18,145	9,825
Cost of revenue	8,444	11,925	5,402
Gross margin	4,865	6,221	4,423
Operating expenses	8,628	8,492	7,807
Operating Income	-3,762	-2,272	-3,384
Non-operating income	267	959	1,273
Non-operating expense	959	6,199	1,372
Income before income taxes	-4,454	-7,511	-3,483
Income taxes	-8	-528	71
Net income	-4,446	-6,983	-3,554

※ The table above shows a condensed financial statements in accordance with IFRS.



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