



智晶光電



ISE CHIP SEMICONDUCTOR INC.

Company Profile 2023



About WISE CHIP





The PMOLED Maker of choice for customers.

WiseChip, a leading innovator of PMOLED technology, the company is a market leader & pioneer in Monochrome OLED, Character OLED, Segment OLED, Area Color, Full Color & 0.19 to 5.5-inch Custom design products.

WiseChip is headquartered in Taiwan & has sales & distributors in Mainland China, Europe, U.S., Japan, Korea, Oceania & The Middle East. We have a professional R&D team & highly reliable technology, in particular with the energetic enthusiasm to serve our customers.

Foundation	3th, Nov 2005
Headquarter	Chu-Nan Science Park
Capital	USD\$17Million





Sales branch office

Staff situation

Headquarter

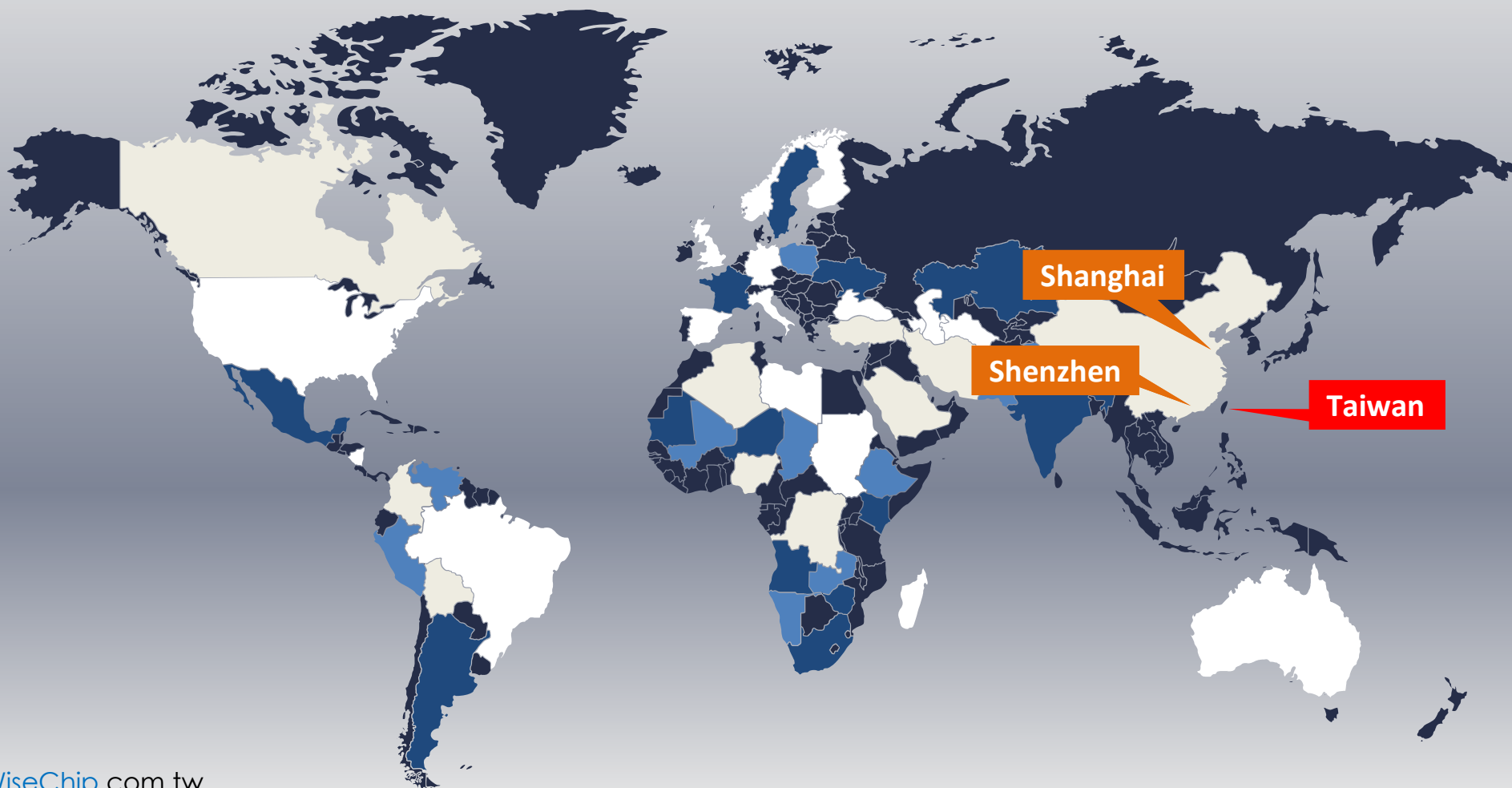
- 300 staff in the Chu-Nan Science Park, Taiwan

Branch Office

- 1 staff in the Shanghai office
- 6 staff in the Shenzhen office

Distributor

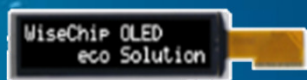
- Japan
- Korea
- Australia
- New Zealand
- Malaysia
- India
- Russia
- Middle East
- Europe
- South Africa
- Canada
- South America



SUCCESS

Brand Development~2016

5.50" World's Largest
PMOLED



1st **Character** Type



1st **Circular** Type

Blue-hazard-free
OLED Lighting



Established

2005 2009 2010 2011 2014 2015 2016

ISO-9001/14001



ISO/TS16949



Deloitte
Technology
Fast 500 Asia
Pacific 2011



Taiwan
Excellence
Awards



R&D 100
Awards



WSI Operation
Achievements
ranking of
35th



Brand Development~2022

Transparent Type



Wide Temperature Range Series



Flexible Series



In-Cell Touch Series



Hyperfluorescence PMOLED Display



Transparent OLED Touch Display



Smart Cycling Glasses



2017



WSI Operation
Achievements
ranking of 10th

2018



2019



2020



2021



2022





Global Brand Events

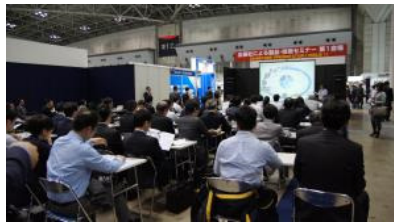
electronica Munich



electronica China



FINETECH JAPAN FINETECH JAPAN Seminar



CES ASIA



AI JAPAN



Korea Electronics



Appliance & electronics World Expo



Touch Taiwan



Digitimes Forum



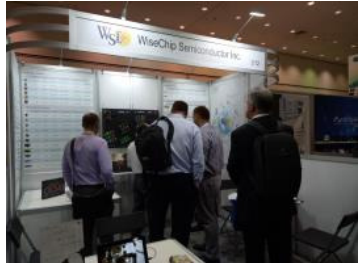
CHINA HI-TECH FAIR



embedded world



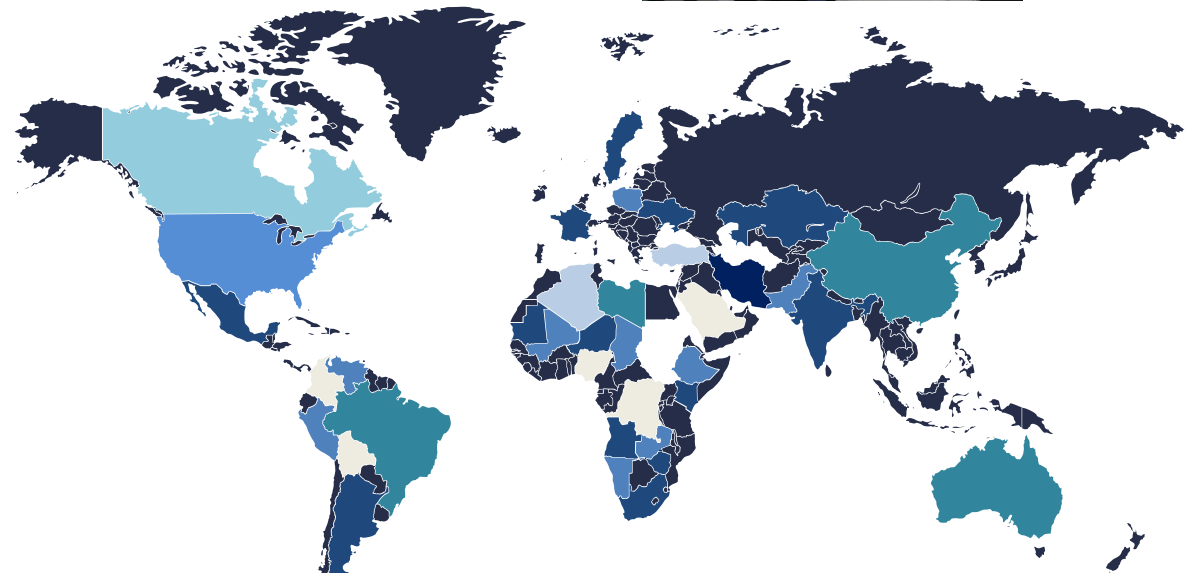
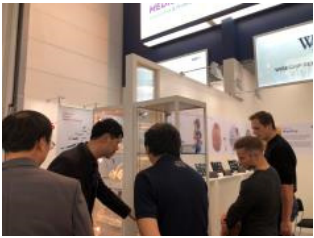
SID Display Week



HK electronics Fair



MEDICA





OUR Quality Certification

WSI follows international quality standards, including ISO 9001 and ISO 14001 to establish its quality system infrastructure.





Advantages of the WSI

WSI Team Support

- Assist customers in solving technical problems.
- Provide customers with proper product specification, technical consultation, and related application information.
- Handle customers' complaints.
- Handles problem.

FAE

Business
Consultation

- The Sales works with customers to provide technical consultation and maintain strong customer relationships.
- Provide regular after-sales service and consultation.

Quality
Control

Marketing

- Marcom support brand promotion.
- Support product poster design.
- Provide catalogs
- Website content easy to use.

CAPABILITY

Competitively

- Integration to Sales / R&D / Manufacturer are All Located in One Factory to Shorten the Process.
- Great Research & Development Capability to Enhance the Product Performance.
- Complete Patent / Know-How Database.

Flexibility

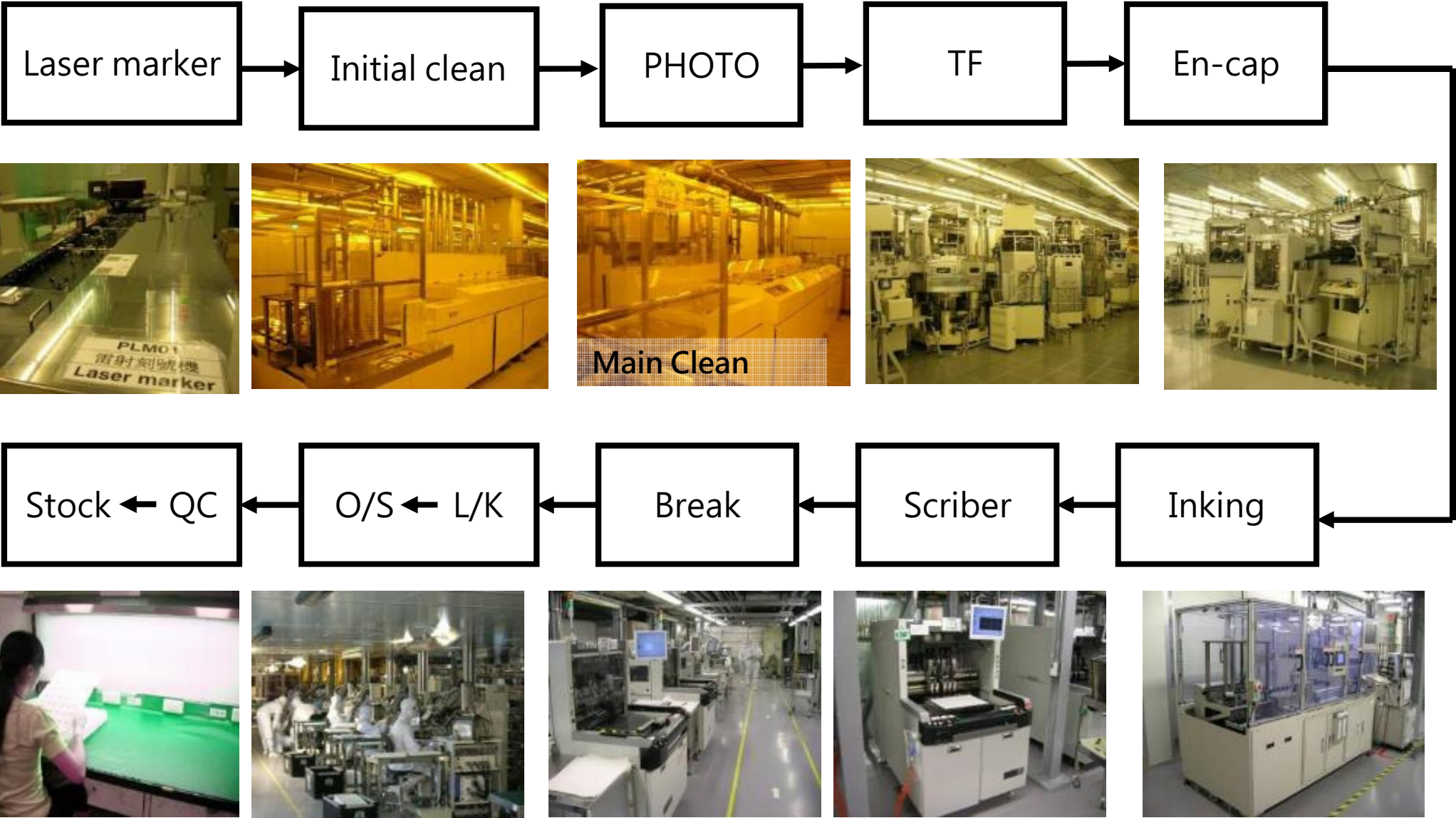
- Great Features to Fit Various Applications.
- Wide Range Products to User Application.
- Custom Design Capability.

Marketing Channel

- Global Networks Information.
- Branch Offices Linkage of World wide.

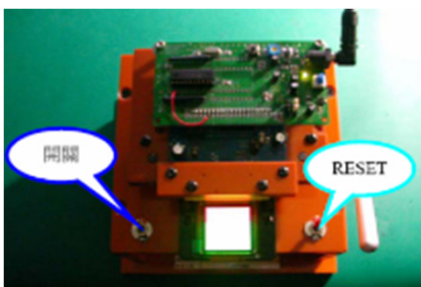
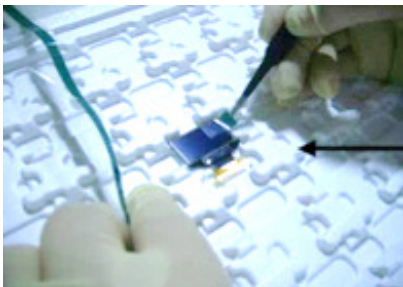
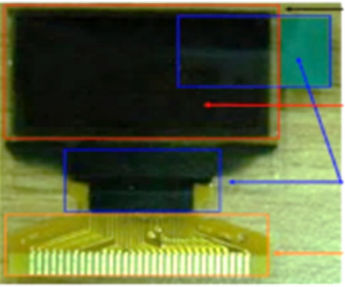
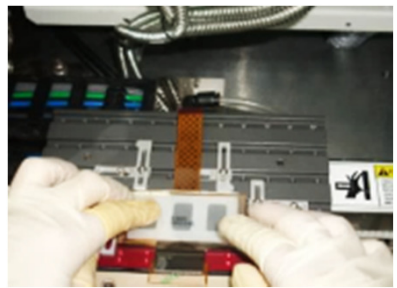
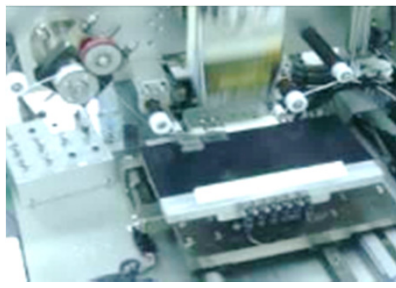
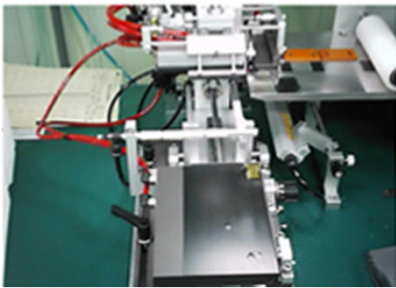
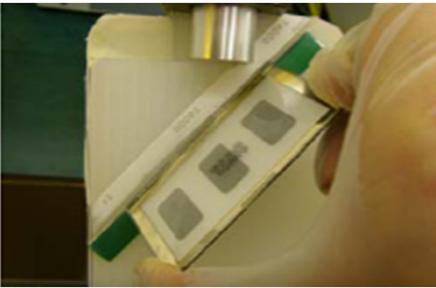
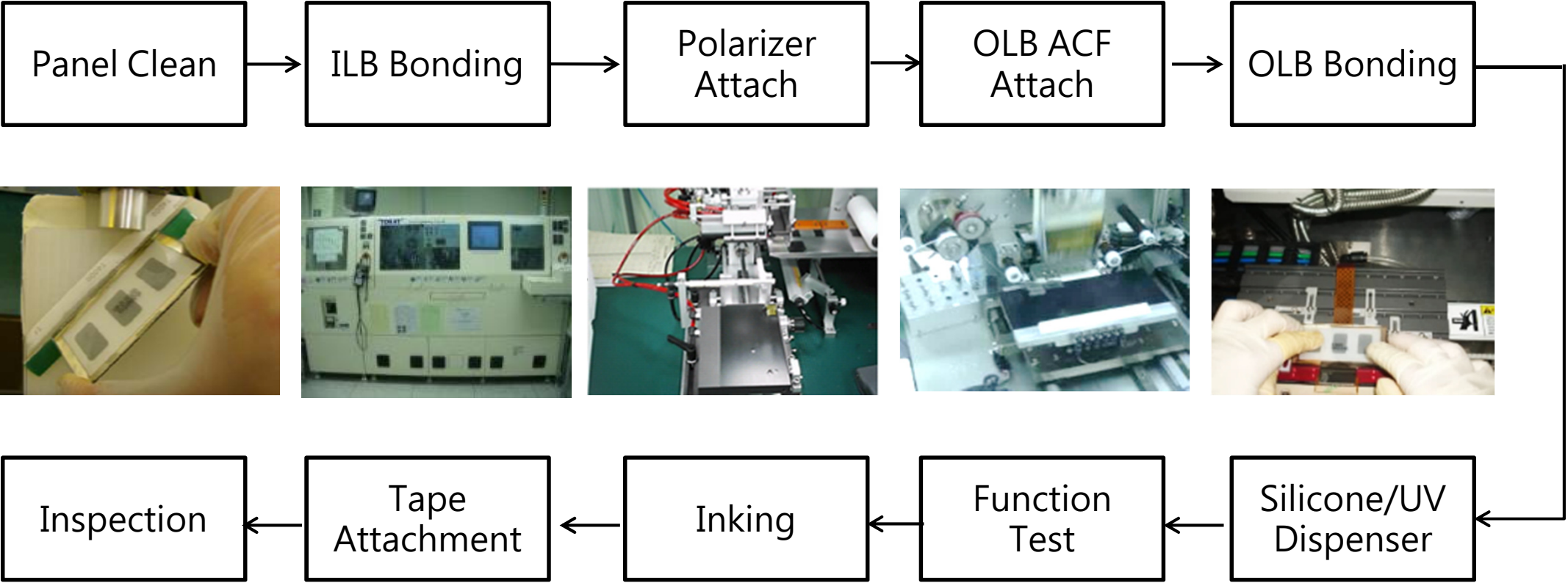


OLED manufacturing process-Panel Process





OLED manufacturing process-Module Process





WiseChip Production Capability



Area/Full Color
5,500 Substrates/mth

Line I

Full Color
7,000 Substrates/mth

Line II

Flexible/ Transparent
20,000 Substrates/mth

Line III

2003

2004

2005~ 2009

2017

1. To reach economic scale and to secure the leading status .
2. To support first tier customer's demand ,and future new products development.
3. Up to 20,000 substrates/M, 2KK modules/M



Technical Roadmap





Achievements

5.50"
World's Largest



1st Character
Type



1st
Circular Type



1st
Blue Light
Reduction
OLED Lighting



Flexible
Type



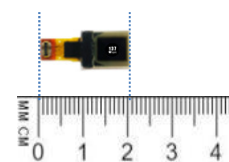
Transparent
Type



Touch
Panel
Series



Mini Display
Series



2005

2009

2010

2014

2017

2019

2020

2022

Cost Driving

Process Improving &
Market Developing

New Technology &
New Application Development

Consumer



Communication



Automotive



Industrial



Medical



Wearable



OLED Lighting



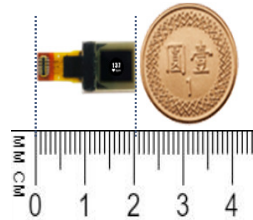
Optical



New Product Outline



High Resolution
OLED



Mini
OLED

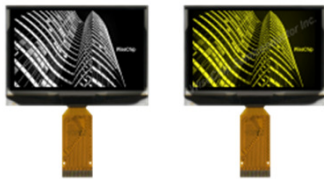


In/On-Cell Touch
OLED



Transparent
OLED

2.7" 256 x 128



4.65" 320 x 160



(Under-Development)

0.19"



0.37"



0.40"



In-Cell Touch Display

0.96"



1.32"



1.71"



On-Cell Touch Display

3.12"



Icon Type

4.1"



Dot Matrix Type

1.51"



Icon + Dot Matrix
(Customizable)

Transparency > 60%



Icon with Invisible Pattern
(Customizable)

Transparency > 90%



High Resolution OLED Display



With OLED display

Applications

- Monitoring (set-top box, mPOS, E-bike.)
- Appliances (Air-Purifier, Portable Devices.)
- Automotive
(New Business Opportunities in EV : Charging application)

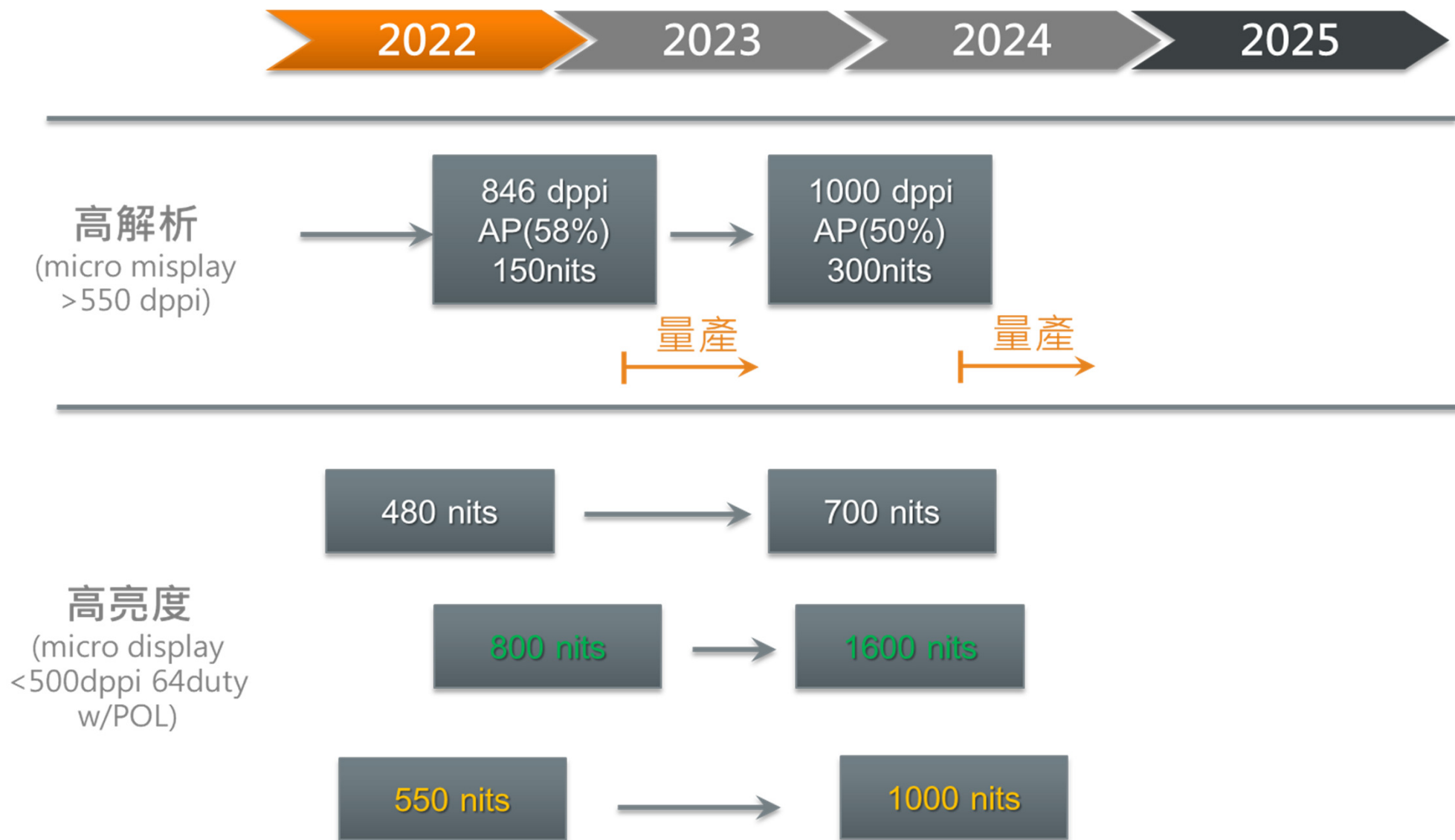
Specification

Diagonal Size	2.7"	4.65"
Pixel Number	256 x 128	320 x 160 (Under-Development)
Interface	Parallel, SPI	





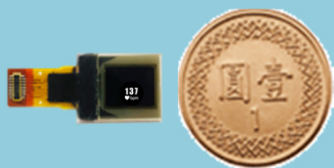
2023 Technology Roadmap-mini display





Mini Display

High-Resolution OLED Display



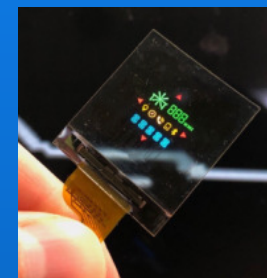
- ✓ Resolution : 1,000dpi
- ✓ Linewidth : 0.6mm

High-Brightness OLED Display



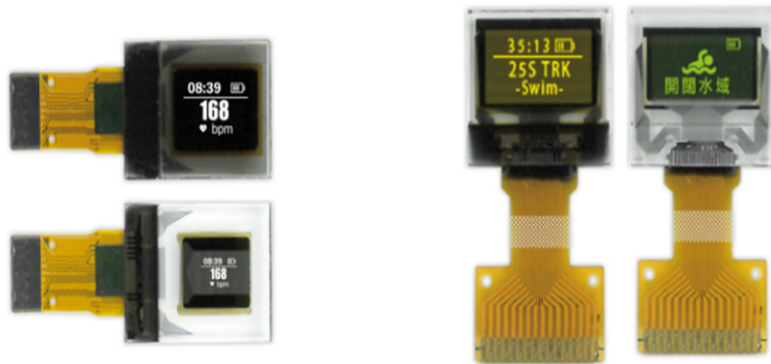
- ✓ Brightness > 1,000 nits
- ✓ Resolution > 500dpi

Ultra-Bright OLED Display



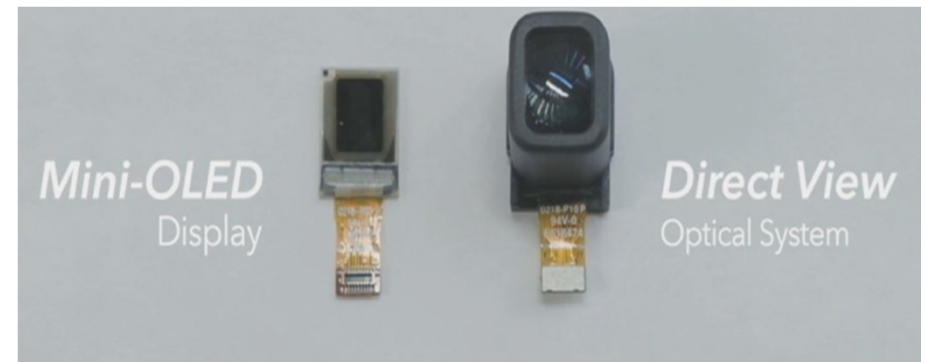
- ✓ Brightness > 3,000 nits
- ✓ Customized 4 color Icon
- ✓ Fine Image

Mini OLED Display



Applications

- Smart Cycling Glasses
- Golf laser Range Finder GPS
- Sport Hunting Scopes
- E-Trade applications



We can provide optical module solutions.

Specification

> Diagonal Size	0.19"	0.37"	0.40"
> Pixel Number	128 x 96	128 x 64	70 x 36
> Interface	SPI, I ² C		





THE GAME IS ON

Thanks!

Please feel free to contact us if you have any questions.

MKT@wisechip.com.tw

+886 37 587168



WiseChip
Semiconductor Inc.



ION SPORT



ION Sport Smart Cycling Glasses-Video





2023 Technology Roadmap-Flexible and Transparent

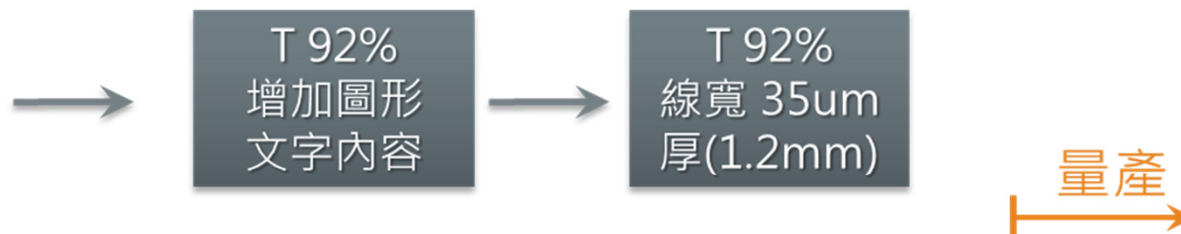


可撓式
(Flexible)

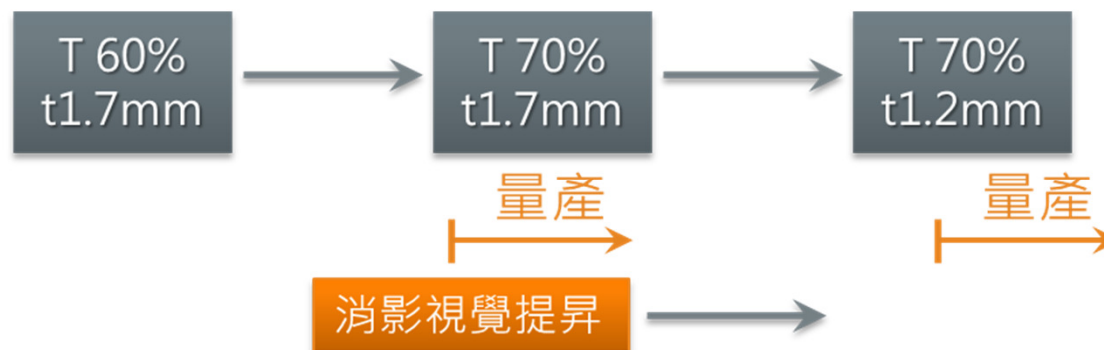


已量產

光學穿透式
(Transmittance)



Icon消圖案
穿透式
(Transmittance)



SUCCESS

Flexible OLED



Light and Thin

0.30mm Thickness

1st 126 Km Biking





Flexible Dot Matrix OLED

Bend characteristics : R 40mm, 10,000 times



Light and thin

Thickness : 0.3mm



Free Viewing Angle



No need of backlight,
self emitting



High Contrast Ratio(10000 : 1)

Operation Temperature : -20~60°C



Fast Response Time ($\leq 10\mu\text{s}$)

Interface : SPI, I²C



Transparent OLED Display



Head-Up Display



- ✓ Transparency > 70%
- ✓ Brightness : 1,000-3,000 nits
- ✓ Customized 4-5 color icon

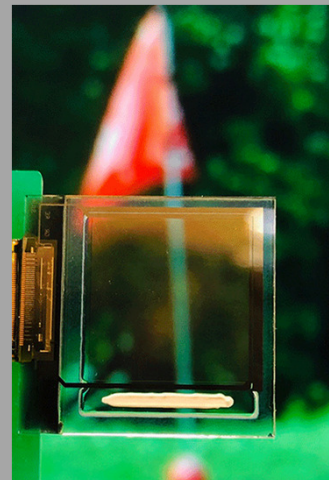


Dot-Matrix Display



- ✓ Transparency > 50%
- ✓ Monochrome

Rangefinder



- ✓ Transparency > 60%
- ✓ Brightness : 1,000-3,000 nits
- ✓ 2 colors
- ✓ Figure free transparent display

Spotting Scope



- ✓ Transparency > 95%
- ✓ Brightness > 3,000 nits
- ✓ Linewidth < 55um

Transparent OLED Display



Specification

> Display Type	Icon Type / Dot-Matrix Type
	Icon + Dot Matrix Type
> Color	Red, Orange, Green, White

Applications

- Smart Cycling Glasses
- Smart Firearms
- Telescope and other optical products
- IoT

Advantage

- ✓ **Clear and unobstructed view:**
Transmittance > 70%
- ✓ **High contrast and detailed images**
Brightness 1,000~3,000 nits.
- ✓ **Customizable to fit specific needs:**
Multiple Color

Reliability

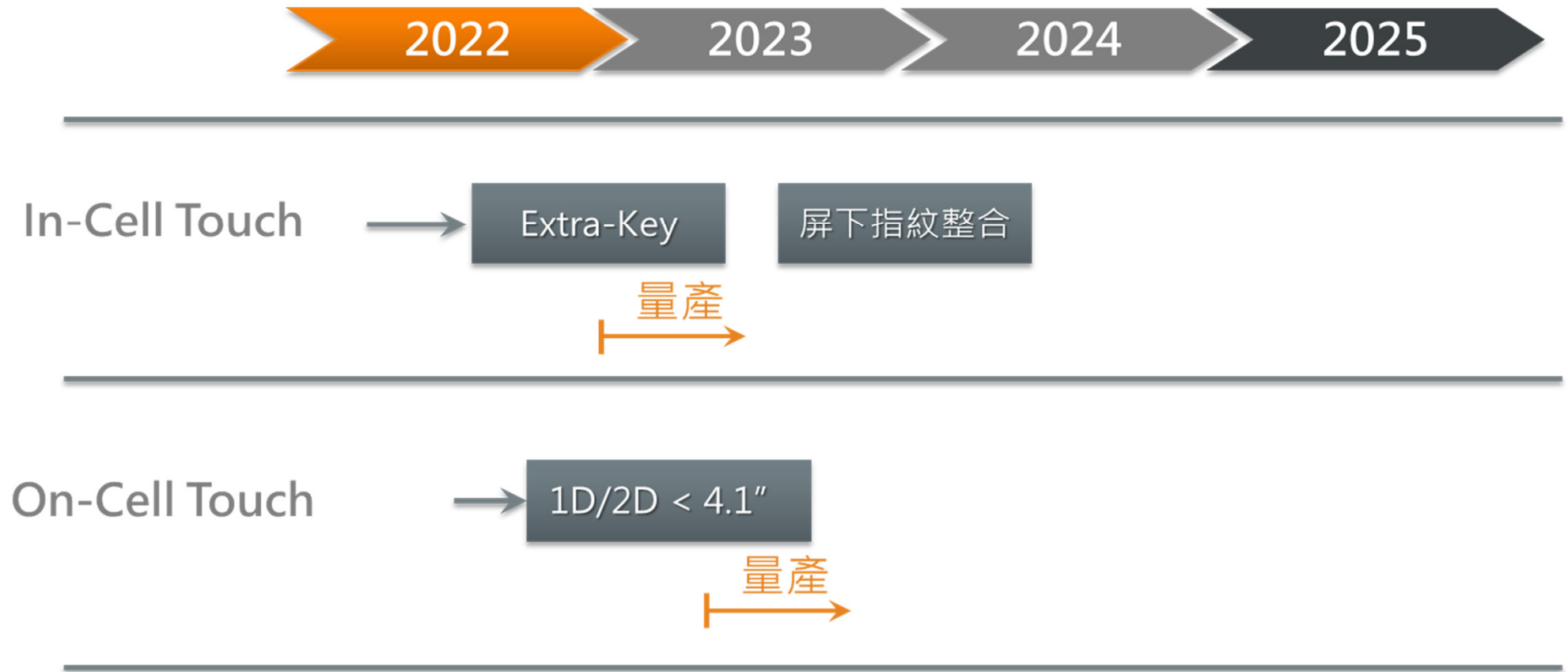
Climate & Environmental	Thermal shock	-40°C ~ 85°C
	High temp. & Humidity storage	60°C / 90% RH (Damp heat, cyclic)
	Temperature (Customized)	< 95°C Storage
Mechanical	Vibration	Embed (Defined by the end product)
	Mechanical Shock	Half Sine Wave: 50g / 11mS 、 100g / 6mS
Electrical	ESD	Air Discharge : 8KV

Performance

PPI	Monochrome : < 850 PPI
Contrast ratio	100000 : 1 ~ 100000 0: 1
Response time	< 10μs
Uniformity	> 90%



2023 Technology Roadmap-Touch





In/On Touch Panel Series



In-Cell Touch OLED Display



- ✓ Tap / Double/ Long tap
- ✓ Swipe / Drag & Drop
- ✓ The touch function and screen integrated the panel
- ✓ Small Size < 2"

On-Cell Touch OLED Display



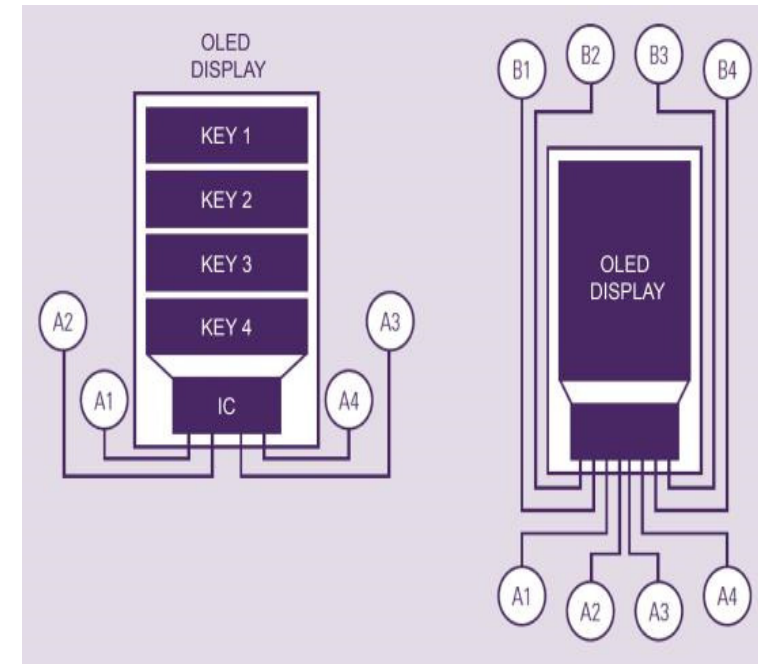
- ✓ Tap / Double/ Long tap
- ✓ Swipe / Drag & Drop
- ✓ Small Size < 5.5"

Ultra-Bright On-Cell Touch OLED display



- ✓ Tap / Double/ Long tap
- ✓ Swipe / Drag & Drop
- ✓ Size < 5.5"
- ✓ Brightness :1,000~3,000 nits.

WiseChip's Touch Screen Application Chart



> Plug-in other touch keys	• 1-4 In-Cell touch keys • 8 Out-Cell touch keys
> Maximum current	600uA
> OLED display high voltage power supply (VCC)	8.0V-18.0
> Touch drive power (VCT)	3.0V-3.5V



Standard product



Monochrome / Area Color

5.50"



3.12"



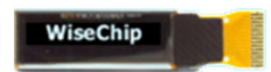
Wide Temperature Range

2.70"



Hyperfluorescence

1.04"

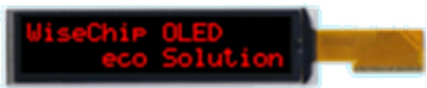


0.19"

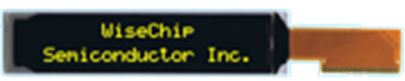


Character

3.67"



2.93"



2.89"



2.26"



Full Color

1.69"



1.45"



1.10"



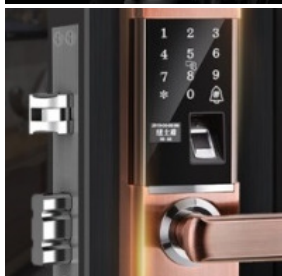
0.95"





PMOLED Multiple Applications

Smart Home



- Water Heater
- Vacuum Cleaner
- Electronic Locks



- Blender
- Washing Machine
- Air Purifier

Industrial



- USB-Key
- Barcode Scanner
- Smart Switch



- Digital Multimeters
- Measuring Instrument
- Digital Rolling Ruler

Internet & Communication



- Wi-Fi Hotspot
- NAS
- Digital Intercom



- Scanner Pan
- Router/Gateway
- Set-Top Box



PMOLED Multiple Applications

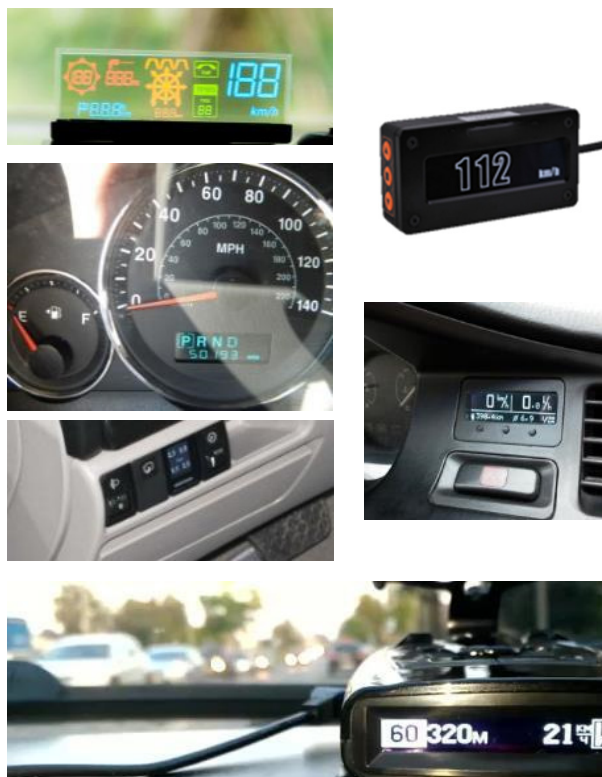
Medical



- Oximeter
- Injection Beauty Machine
- Portable Motor
- Blood Pressure Meter

- Glucose Meters
- Sleep Apnea Regulator
- Animal Microchip Scanner

Automotive



- HUD
- Meter
- Tire Pressure Detector

- Meter Timer
- Load Meter
- Radar Detector

Consumer Electronics

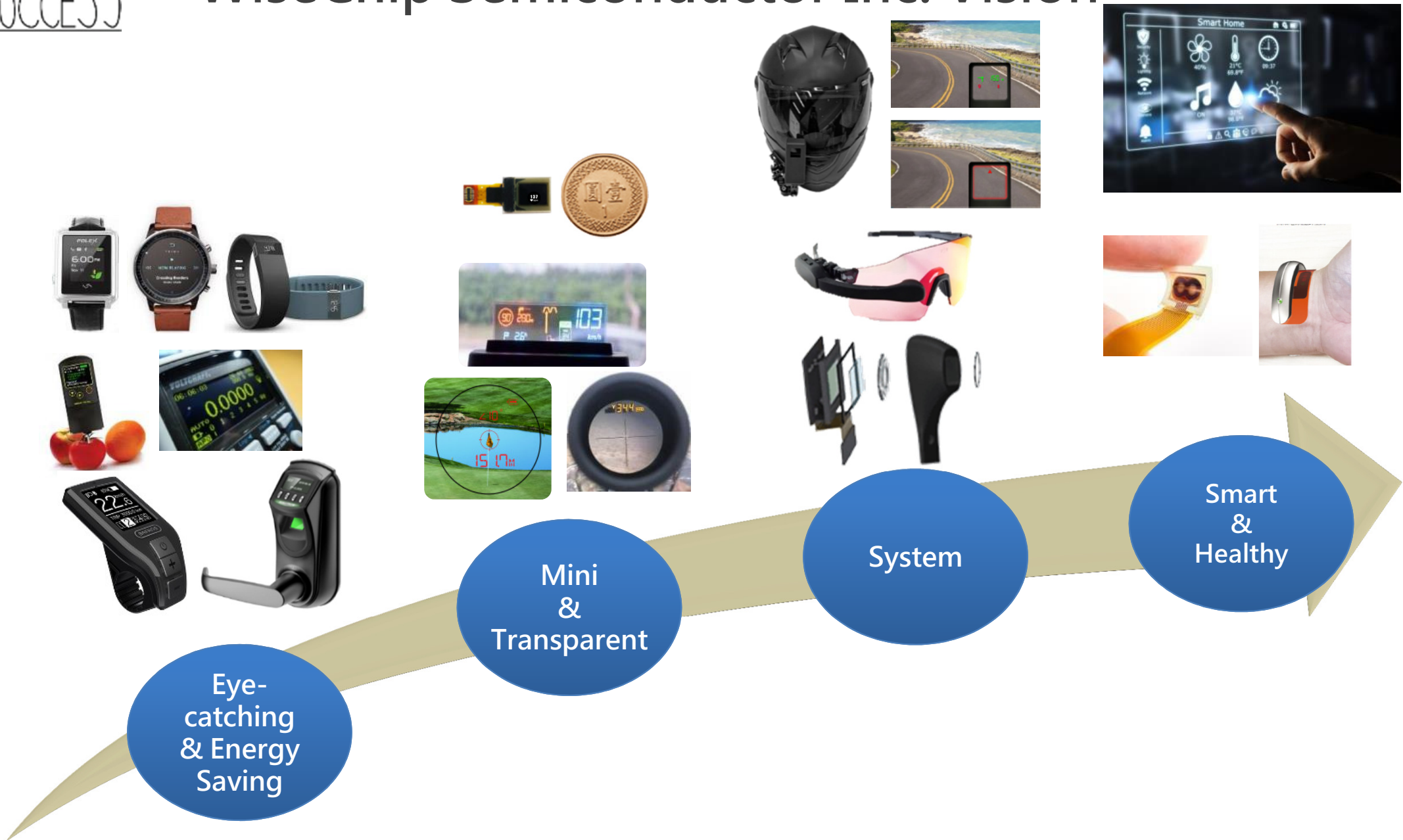


- Smart Band
- Power Bank
- Sports Action Camera
- Bike Light

- Smart Swimming Goggles
- Golf Laser Rangefinder
- Bike Computer

SUCCESS

WiseChip Semiconductor Inc. Vision



SUCCESS



Customers



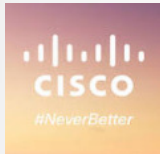
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SICK



Sagemcom



free



OMRON



Fisher & Paykel



:hager



ascom



televic

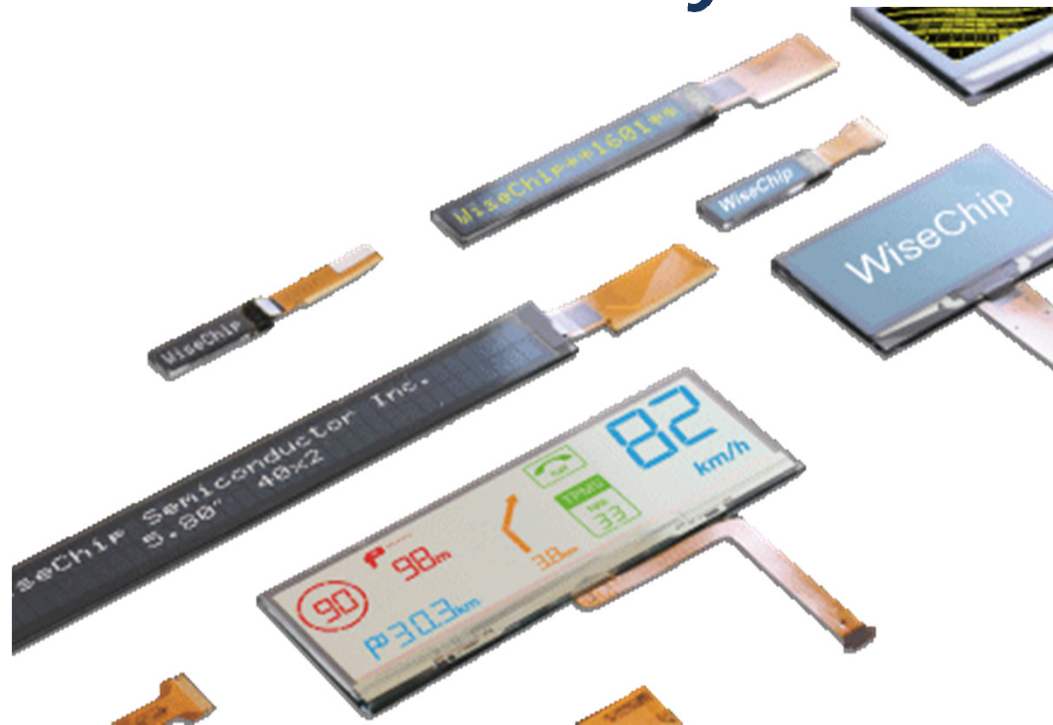
SIEMENS

TechniSat



WiseChip serve our customers with the energetic enthusiasm, providing professional and highly reliable technology to help you manufacture the unique style of products.

Professional innovations create more value for you!



✉ samdia_she@wisechip.com.tw

🌐 <http://www.wisechip.com.tw>

☎ +886-37-587168

★ 8, Kebei RD. 2, Science Park, Chu-Nan, Taiwan 35053