THE FUTURE

展望新世代車用玻璃

LSH GLASS / CEO
Dr. Ausly Yang

2022/07/13

C.A.S.E

車聯網（Connectivity）

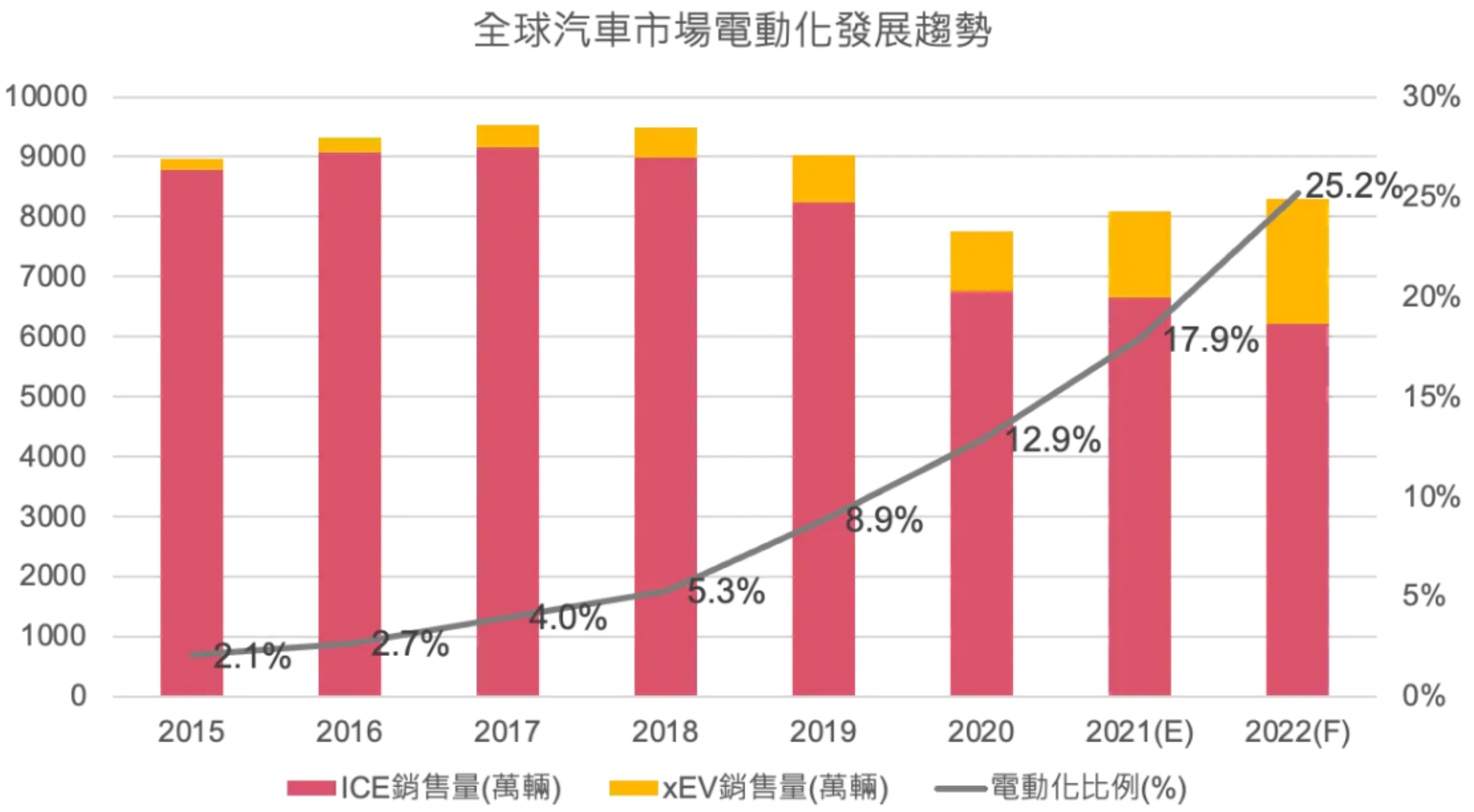
自動駕駛車（Autonomous）

汽車共享（Sharing）

電動車（Electrification）



電動車崛起



ICEV　Internal Combustion E V，統稱引擎車

電動車2022年預估2600萬輛上路
2030年研發逾5150億美元



參考資料：
Here's what's projected for electric vehicle manufacturing through 2030. electrek, 2022/4/12
The World's Electric Vehicle Fleet Will Soon Surpass 20 Million. Bloomberg, 2022/4/8

根據BloombergNEF(彭博新能源財經)預估，世界即將邁入電動車（ＥＶ）的另一個重要里程碑，到2022年6月，全球將有2000萬輛電動車（包含：插電式混合動力車）上路，這與2016年道路上僅有100萬輛電動車相比，的確是驚人的成長。

展望新世代車用玻璃



傳統玻璃 演化 智能玻璃

採用新科技 / 市場趨勢 / 跨介整合

展望新世代車用玻璃

智能調光







MIH　Model E 2021

展望新世代車用玻璃

智能調光







Porsch Taycan GTS 2022

展望新世代車用玻璃

智能調光







BMW iX M60

展望新世代車用玻璃

顯示功能



錼創科技　9.38吋透明MicroLED顯示器

展望新世代車用玻璃

顯示功能



友達　10.3 吋抬頭顯示器

展望新世代車用技術







Audi Urbansphere

https://www.youtube.com/watch?v=astOSwwjThE

展望新世代車用技術



YUNTECH ONE 自動駕駛概念車

(雲智能e動聯盟)

LSH GLASS

Who are we?

林商行強化安全玻璃廠(股)份有限公司

- 創立日期：1962年12月6日
- 公司地址：高雄市小港區大業南路46號
- 主要產品：汽車用強化安全玻璃、汽車用膠合安全玻璃
- ISO 9001驗證、ISO14001驗證、日本NEW JIS驗證、IATF16949驗證、CCC認證



LSH GLASS- OE廠客戶











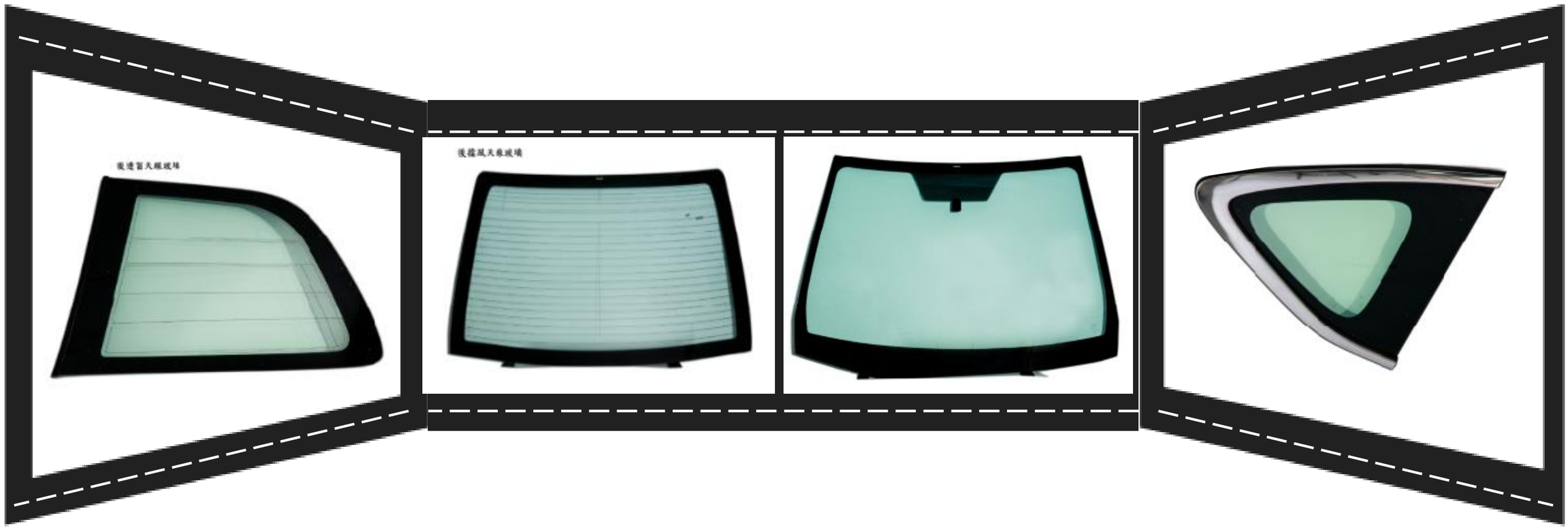






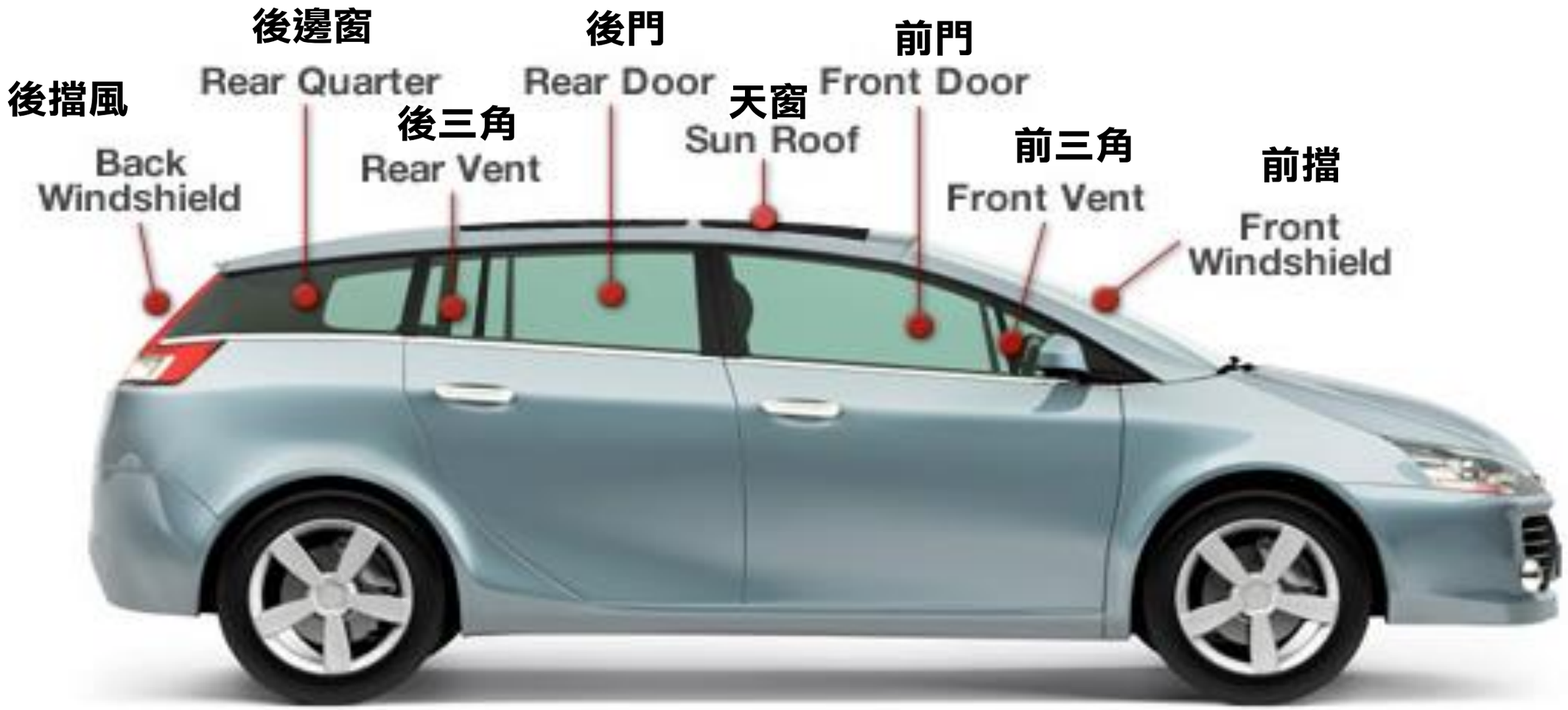


LSH GLASS-主要產品



主要產品：汽車用強化安全玻璃、汽車用膠合安全玻璃。

LSH GLASS-車用部位別



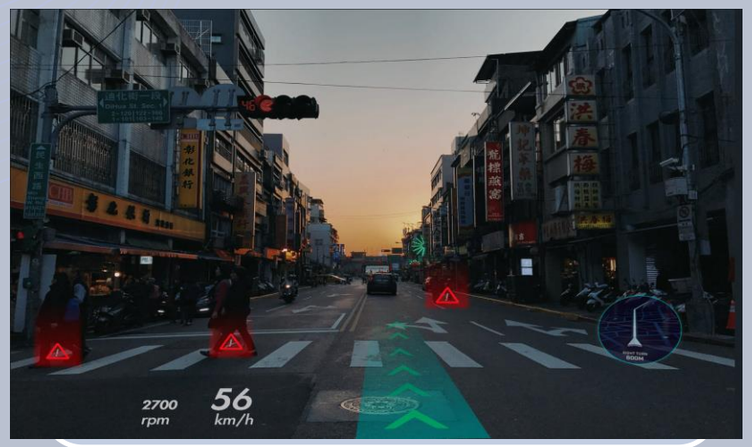
LSH GLASS-全 球 認 證

CCC	E-MARK	IATF 16949	JIS MARK
CNS	ISO 14001	ISO 9001	ANSI



LSH GLASS







雙層降噪玻璃

採用複合結構夾層玻璃，有效降低外部高頻噪音。

特殊工法設計將玻璃輕量化，並達到降低油耗、節能減碳目的。

HUD楔型玻璃

駕駛者能精準清晰讀取各項行車數據，

具懸浮感可搭配眼睛直視區域，大幅提升行駛安全性。

智能調光玻璃

PDLC模組具灰階變色功能，一秒變色，立刻讓後座具隱私性。透過天窗，白天可調整光線明暗，夏夜可欣賞星空。

雙層降噪玻璃



雙層降噪玻璃



雙層降噪玻璃



2019 Toyota Corolla Altis



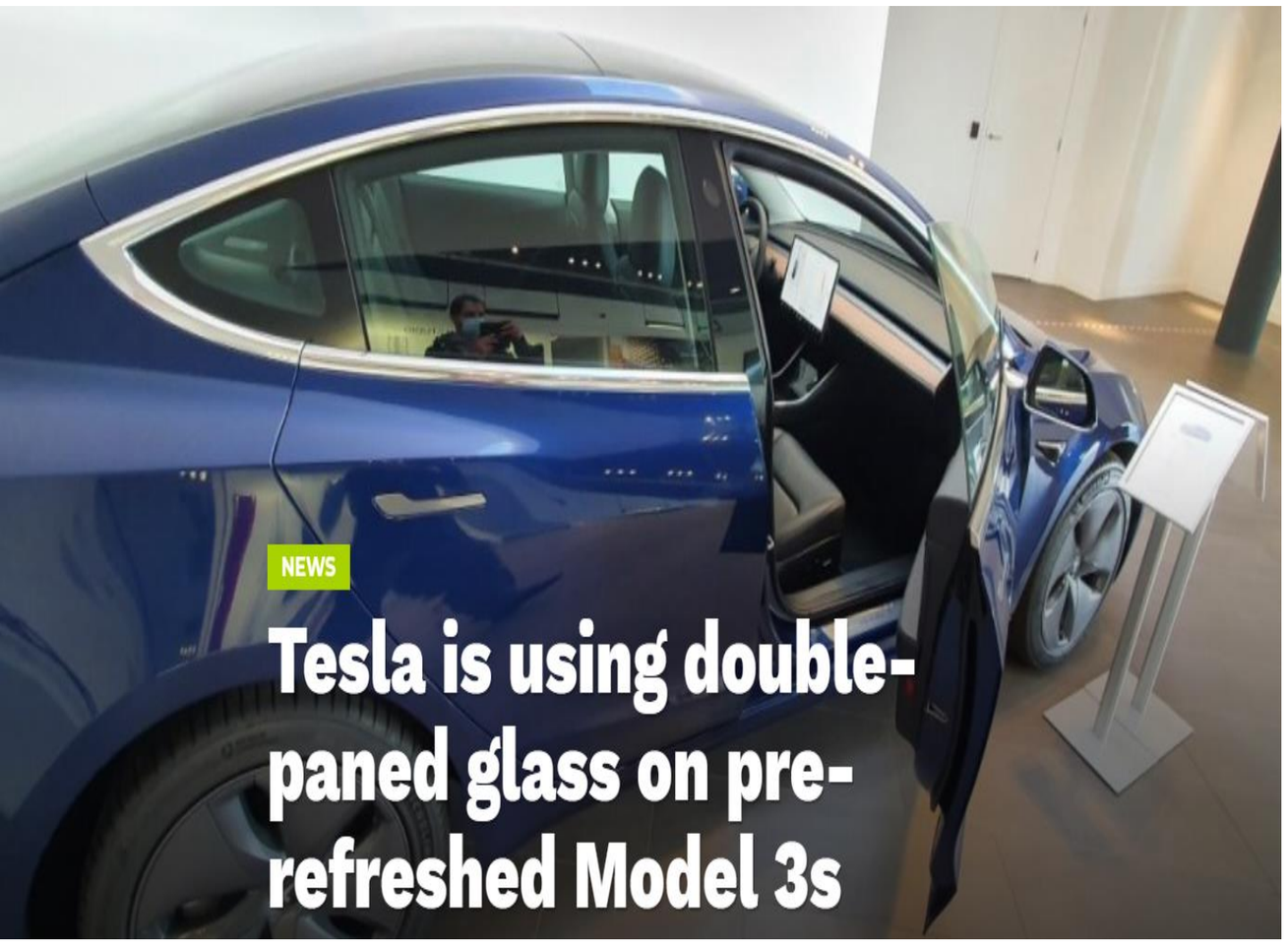
2021 Toyota RAV4

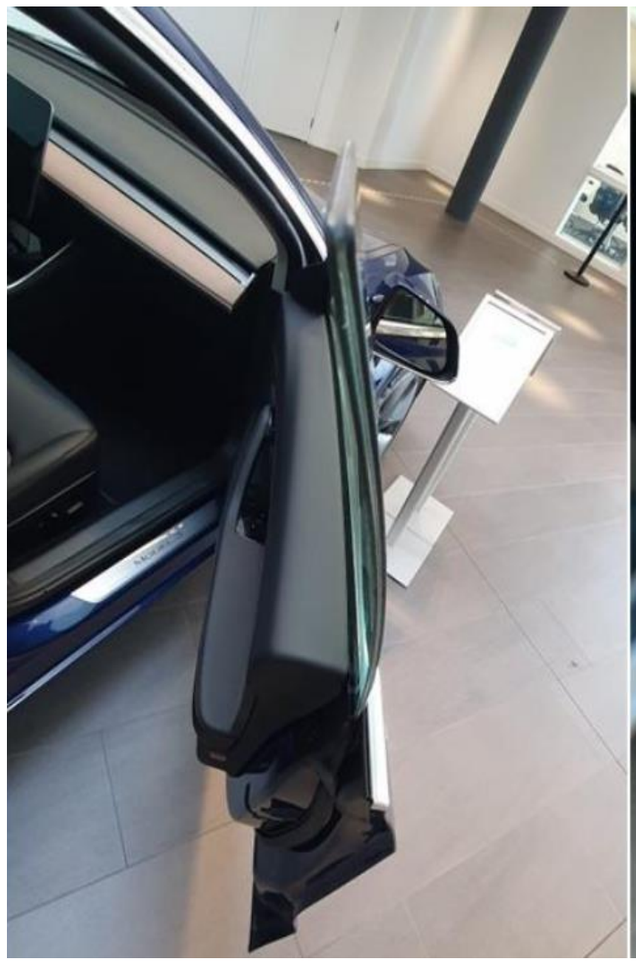


Toyota Corolla Cross

林商行降噪玻璃目前已量產供貨之車型

雙層降噪玻璃Acoustic Glass on EV







雙層降噪玻璃Acoustic Glass on EV

Lexus RZ 450e



Toyota bZ4X



雙層降噪玻璃-ARTC實測



Test A

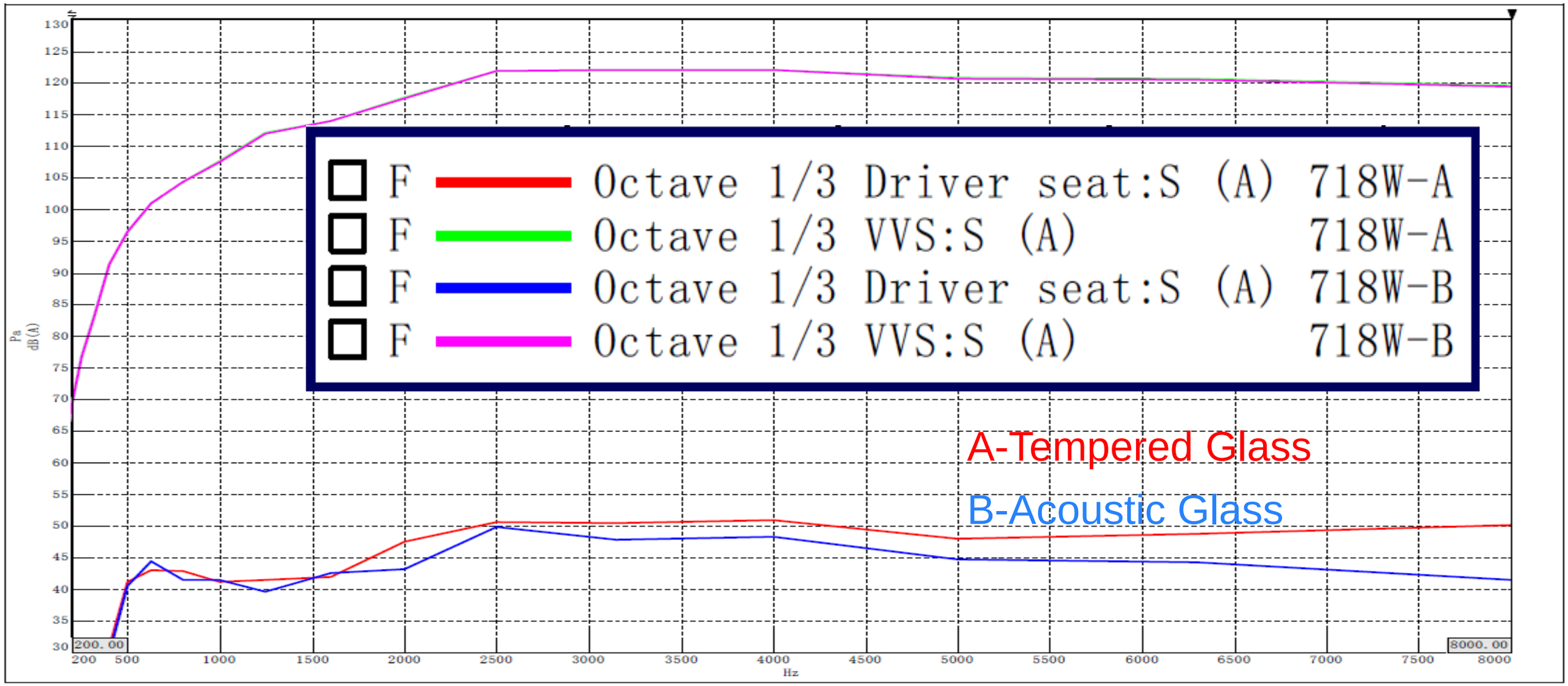
A-Tempered Glass



Test B

B-Acoustic Glass

雙層降噪玻璃-ARTC實測

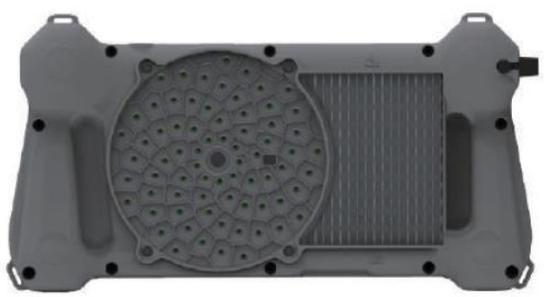


雙層降噪玻璃-動態實測

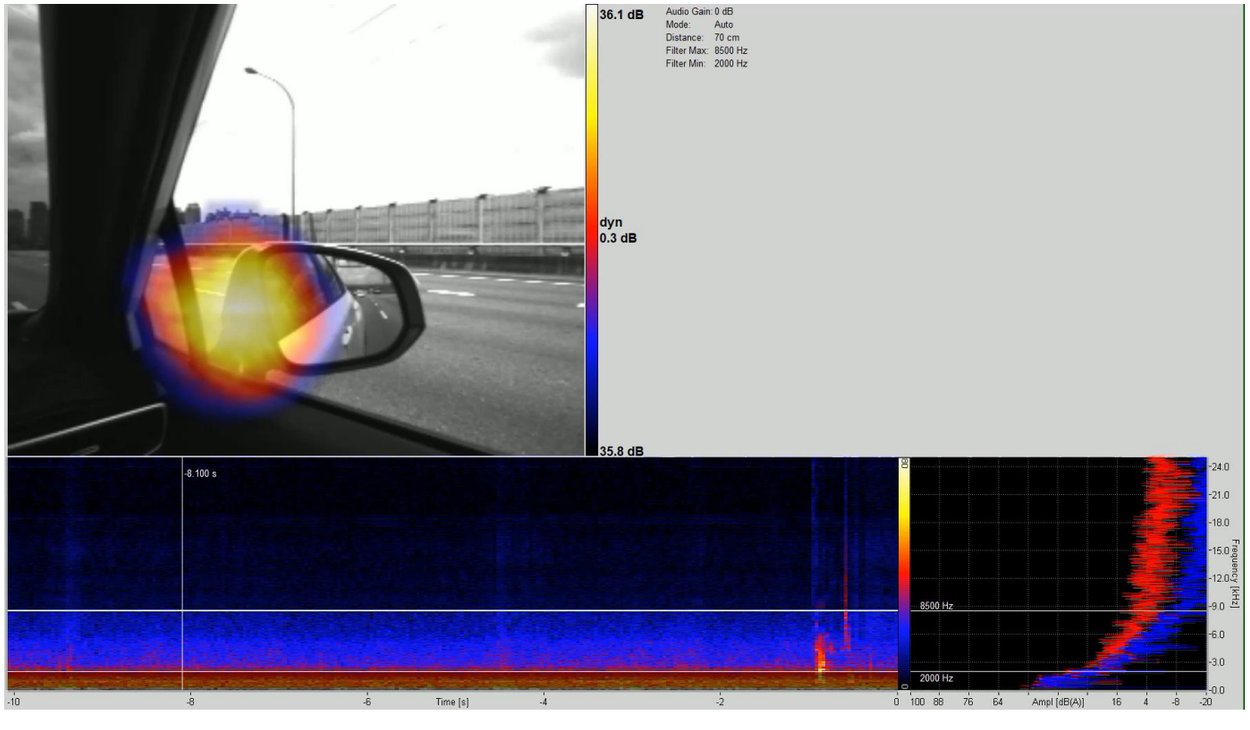
Vehicle Speed: 100KM/Hour

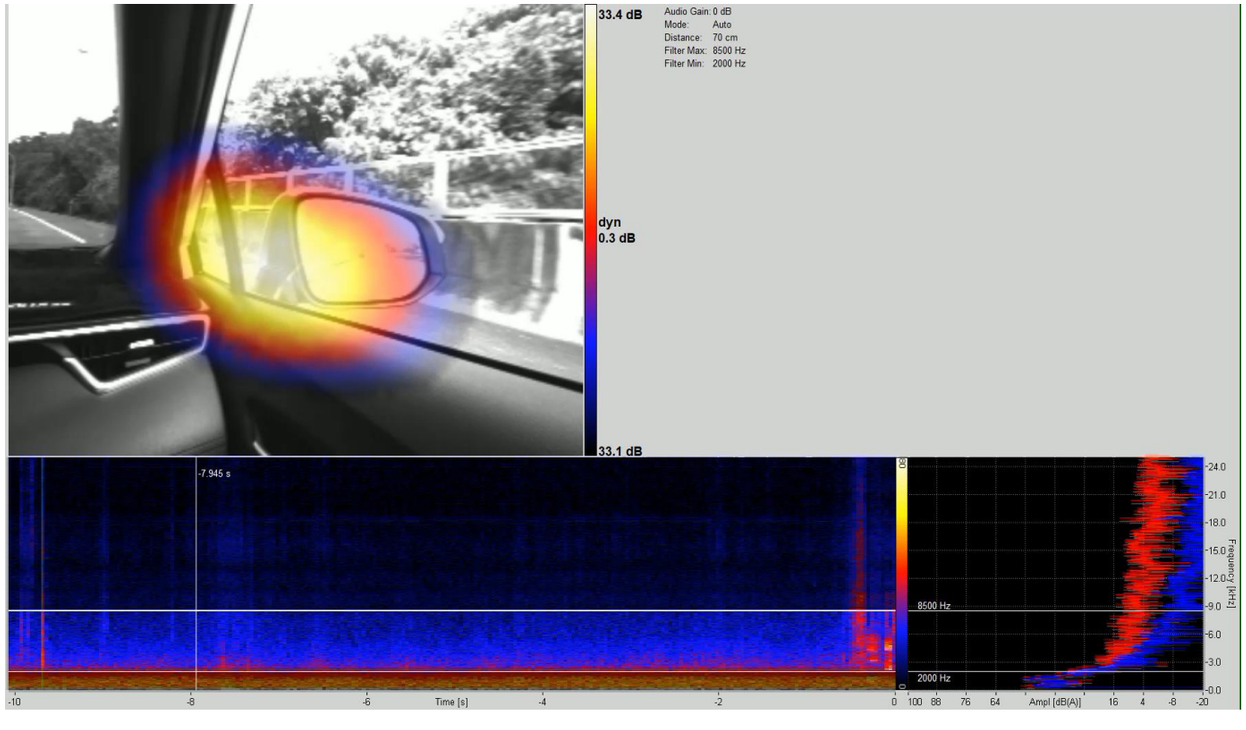
Test Result:

Side Window Glass	Max noise measurement
A:Tempered Glass	35.3dB
B:Acoustic Glass	33.1dB









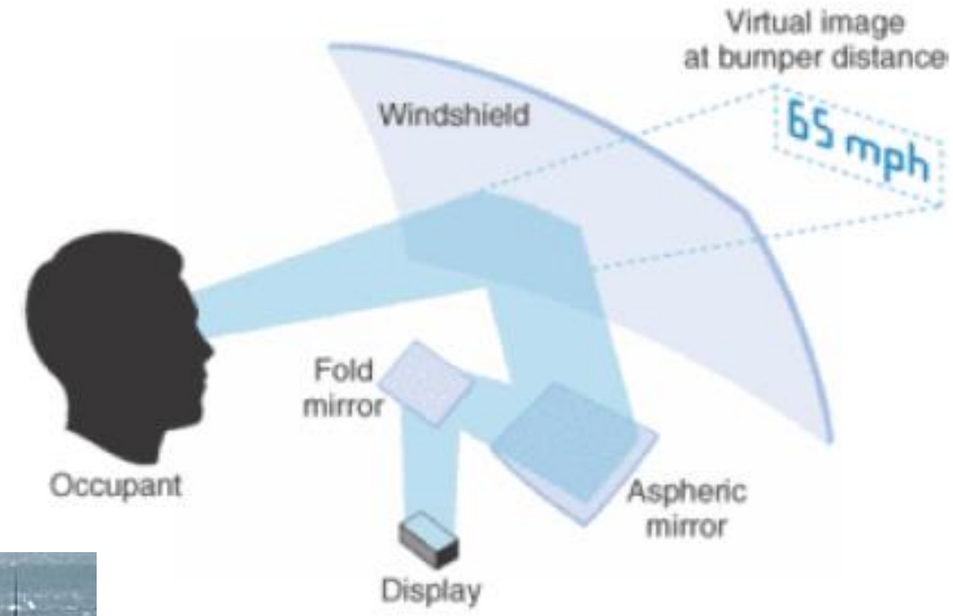
HUD 楔 型 玻 璃

HUD 楔型玻璃



HUD 楔型玻璃

抬頭顯示器（簡稱HUD）用於汽車可將圖像與數字投影到擋風玻璃上，駕駛不必低頭看汽車儀表就可以透過HUD顯示設備掌握資訊。導航指引、ADAS駕駛輔助功能、速度/轉速、胎壓是目前HUD顯示常見的資訊。





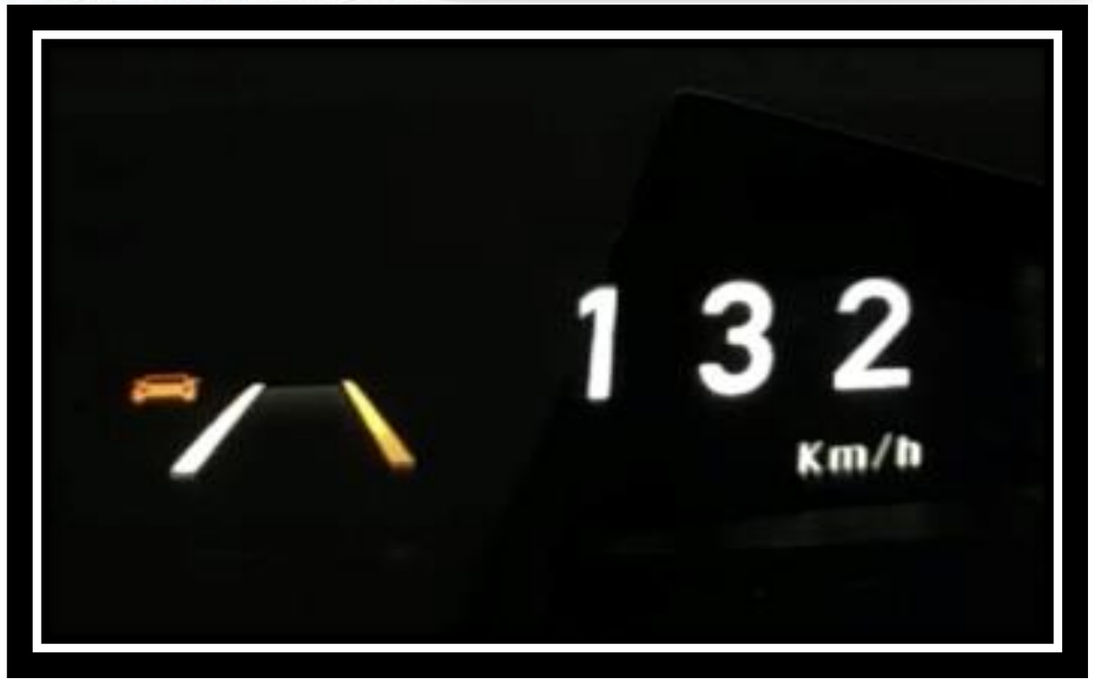


HUD 楔型玻璃









一般前擋膠合玻璃

LSH前擋楔型膠合玻璃

智能調光玻璃







智能調光玻璃


降低油耗，
減少二氧化碳排放
更強韌，安全防爆，
一秒霧狀變透明
隱私保護，亦可當
投影幕，耗電量低
兼具隔音、抗UV、
抗IR等特性

智能調光玻璃

- 耐溫100度
- 隔熱專利
- 防窺專利
- 隱私防護
- 投影顯示
- 跨界應用



2021 台北智慧移動展





2021/10/20~22 鴻華MIH智慧移動展，與信昌集團共同展出LSH新產品(智能調光玻璃)。

2022 美國SID展


Automotive Application
- High durability
- UV/IR cut
- Patterning
E-blind Equipped
Sunroof Glazing
BenQ
BenQ Materials Corp
The combination of aesthetic and function: Effortlessly adjusts the e-blind and transparency as you want by gesture with intuitive operation.
technical support

2022 SID

國際信息顯示展　(Society for information display)

Metaverse
元宇宙

META

MICRO

MINI

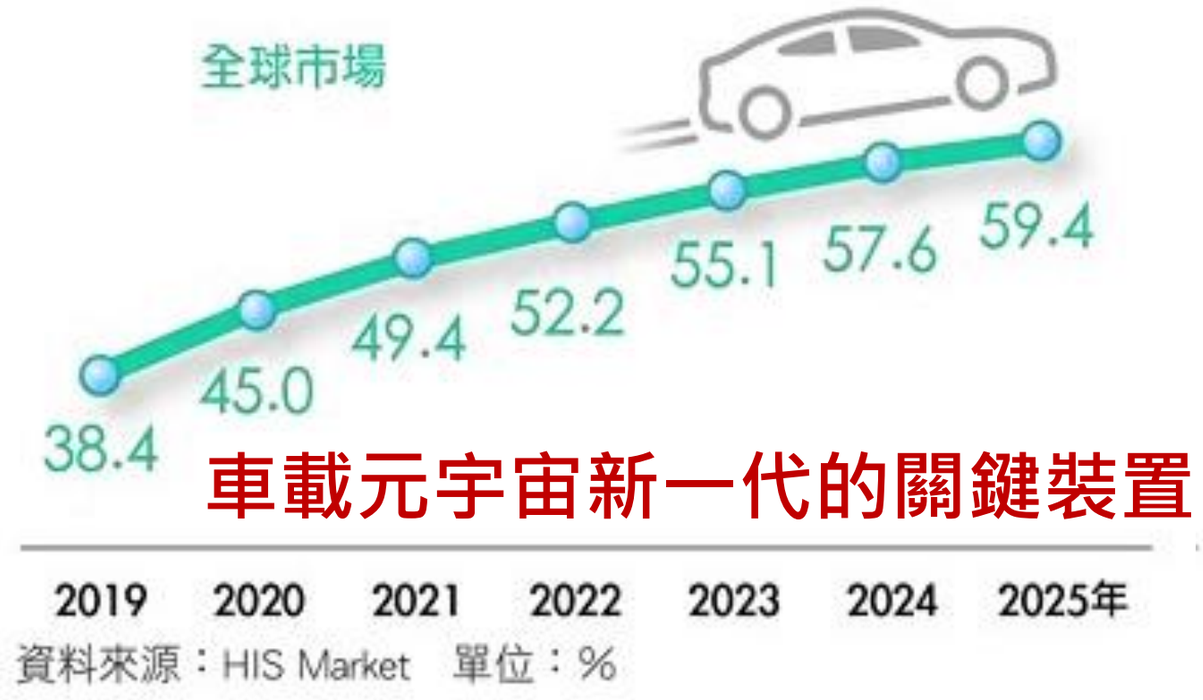


未來趨勢「顯示製造」到「顯示應用」

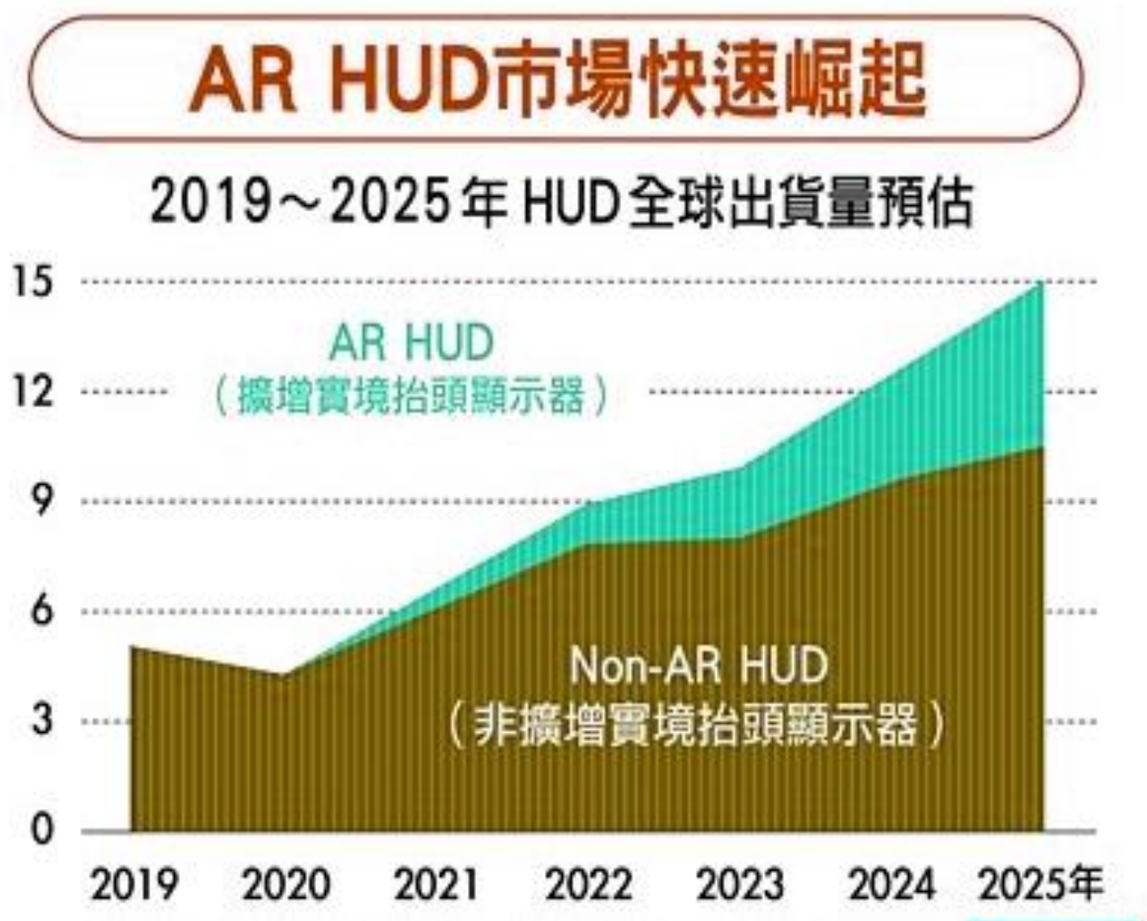
2022美國聖荷西SID和TOUCH TAIWAN, 三大主題。所有亮點引領人類進入前所未有的生活體驗。

汽車座艙元宇宙化AR HUD快速崛起

智慧座艙滲透率節節高升



AR HUD市場快速崛起



2025年全球嵌入式HUD出貨量將達1,560萬台 ，從2019~2025年平均複合成長率達17%。

資料來源: 拓璞產業研究所　　單位: 百萬台　　財訊

2022 SID

Display Week

國際顯示器發表會,
一年一次為期一周



Date

2022年5月8日-5月13日

Location

San Jose Convention Center
150 W San Carlos St, San Jose,
CA95113, San Jose, USA

Product

PDLC 智慧調光膜

參展廠商

這次參展廠商總共１３０廠商，分為９５個項目，14個國家參展，其它活動還有I-ZONE,研討會,商務會議,論壇,主要以ARVR,人工智能,量子點微LED,OLED,穿戴式,靈活,折疊式等所有最新資訊。５月１２日研討專題裡，多項為電子膜顯示技術,汽車優化HUD顯示器,新款大面積汽車趨勢 。



2022 SID

Society for information display



MINI

AMOLED
多點觸控面板

MICRO

OLED

META

２０２２年超現實顯示器
（ＡＲ/ＶＲ/ＭＲ）

超現實（AR、VR 和 MR）

HYPER-REALISTIC DISPLAY
(AR\VR\MR)

顯示器的機器學習

MACHINE LEARNING FOR DISPLAYS

戶外展示

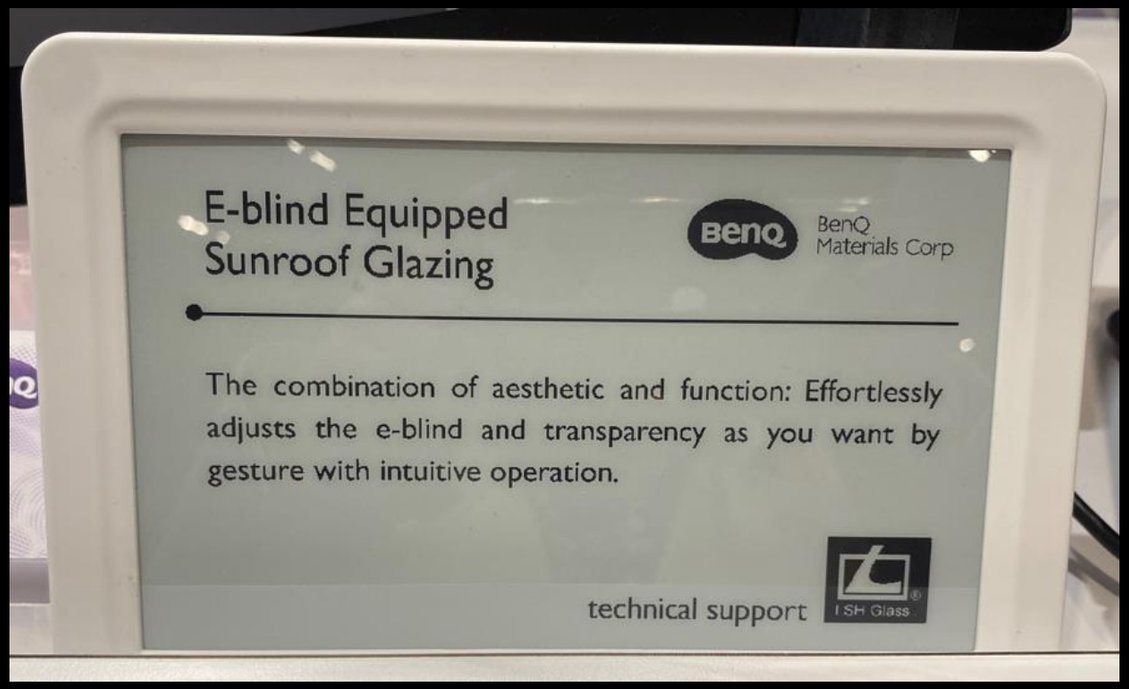
OUTDOOR DISPLAYS

符合要求的可穿戴顯示器

CONFORMABLE WEARABLE DISPLAYS

2022 SID

LSH GLASS & BenQ





LIN SHANG HANG

TRUTH & VIRTUE
BEAUTY

INTRO



1962 UNTIL

- Date of Establishment: December 6, 1962
- Headquarter: Kaohsiung City
- Capital: NT$320 million
- Scale: 176 employees
- Main Products: Tempered Glass For Vehicles,Laminated Glass For Vechicles, Smart Film Glass
- Quality Certificates Obtained: CNS, E-MARK(E6), ISO9001, ISO14001, TF16949, JIS, ANSI, CCC.
- The first brand of professional automotive glass manufacturer with the highest quality assurance in Taiwan.



VISION

In line with the government's 2050 net-zero carbon emission and cooperate with the government's carbon reduction plan.To achieve sustainable development of enterprise.

Continue the company's management funtions ,inheritance,innovation,cooperation to develop new ideas and crate new current products.

Recruit professional talents for creating a new future.

Marketing business plan for a new product(s).

ABOUT US



60 years ago, Lin Shang Hang Temper-Safe Glass Factory was established in 1962, since its establishment, Lin Shang Hang has implemented the three core functions of "integrity and aggressiveness", "proactivity and customer orientation" to implement the business philosophy of enterprise's " truth, virtue and beauty" .

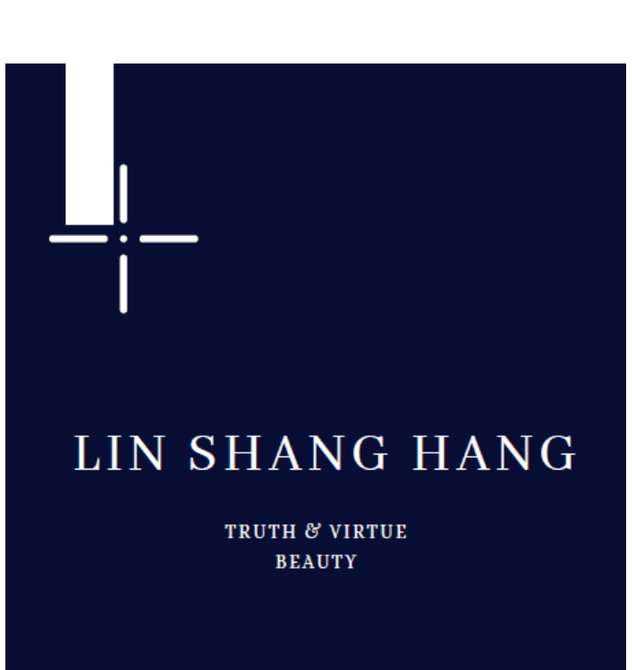
BUSINESS PHILOSOPHY

Leading Position

Persistency

Honesty





PRODUCTS

lsh-glass.com

- TEMPERED GLASS
- LAMINATED GLASS
- ACOUSTIC GLASS
- HEAD-UP DISPLAY WINDSHIELD (HUD)
- ELECTROCHROMIC GLASS

Quality Certifications

IATF

ANSI

CCC

JIS

E-MARK

WHAT WE DO?



Based on the core value of "Innovation, Inheritance, and Cooperation", LSH promotes the enterprise's society responsibility and develops the brand's spirit, provides the staffwith a friendly and efficient working environment, advocates the safety of work and ensures an excellent product quality while delivering goods.The department heads of LSH have to possess the ability of educating their subordinates, building up the team spirit, and solving the problems. Every member of the company is the most important asset of the company, especially when the company is expanding the enterprise's territory. Therefore, the company thinks highly of the cooperation spirit among staffs, and the ability of problem shooting. LSH offers multiple stills training programs, also provides the staffs a stable environment that make the staffs to develop their self-value. By doing so, not only the company's competiveness is generated, but also the staffs gain the satisfaction from work. So to work in LSH, the staffs are not only getting the material reward, but also gaining the satisfaction and happiness in soul.

Thank you, and we look forward to working with you.

https://www.surveycake.com/s/N0gv





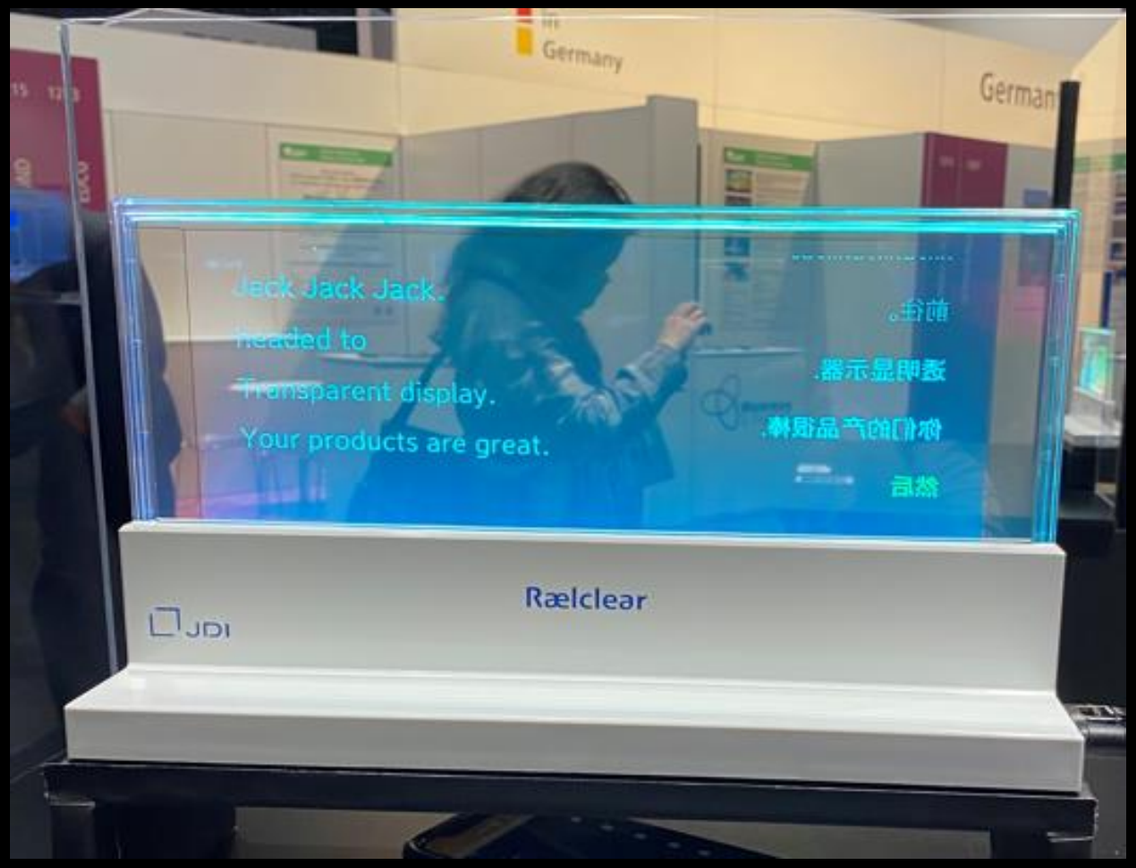
- ✓ Micro LED顯示技術及產品，包括Samsung、LG、友達、群創、BOE、錼創等知名廠商。
- ✓ 大型顯示器、車用顯示器、透明顯示器、穿戴式裝置及AR/VR頭戴顯示器等。










Germany
Jack Jack Jack.
headed to
Transparent display.
Your products are great.
Rælclear
JDI


LG Display


2022 Display Application of the Year Award
MBUX Hyperscreen
Mercedes-Benz
Science. Applied to Life.™
3M




2022 Display Application of the
MBUX Hyperscreen




EQS 580
EQS


N3D Display
Naked-eye N3D Display
for Multi-user
Volume N3D Medical Display
INNOLUX
N3D Display


i-App
NFC Integration
SAMSUNG DISPLAY
Vehicle Display


CORNING
CORNING
nano
CORNING
Manufacturing
Foundation
nano
nano

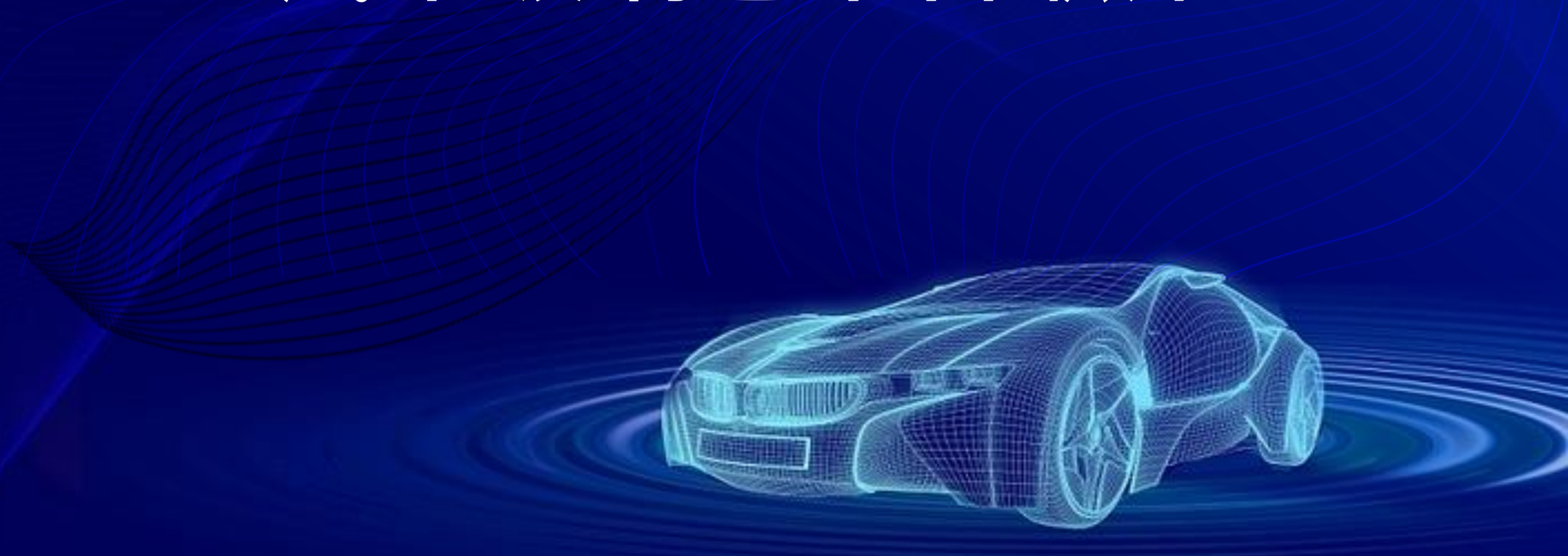

12.3" Driver Monitoring
TCL
华星光电
C50T


BOE
12.3" N-shaped Folding OLED
Item
Parameter


BOE
OLED
AR
VR
Full Screen Display

軟體定義硬體的時代，

汽車玻璃也不會缺席！



THANK YOU

林 商 行 股 份 有 限 公 司

Dr. Ausly Yang

LSH-Glass