

INNOVATIVE **MICRO** AND NANOFABRICATION FOR ENHANCED PERFORMANCE IN DISPLAYS

Micro-optics
SUMMIT & EXPO

MICRO-OPTICS SUMMIT & EXPO

02 & 03 DECEMBER 2024
AMSTERDAM, THE NETHERLANDS

MICRO-OPTICS IS...
Phabulous

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NANOCOMP



瑞儀光電股份有限公司
Radiant Opto Electronics Corporation

FLEXIBLE LIGHT GUIDING



NANOCOMP

- Nanocomp is focused on display illumination and light management films
- Manufacturing is based on roll-to-roll process
- Operating globally, headquarters in Finland. Other locations in China, Hong Kong, Japan and Taiwan





瑞儀光電股份有限公司
Radiant Opto-Electronics Corporation

Radiant Opto-Electronics Corp.

Nanocomp
Radiant Opto-Electronics Group

ROE Overview



瑞儀光電股份有限公司
Radiant Opto Electronics Corporation

- **Founding Date** July, 1995
- **Chairman** Mr. PJ Wang
- **President** Mr. Justin Wang
- **Listing Date** April, 2002
- **Stock Code** 6176TT
- **Capital** NT\$ 4.65 Billion (US\$150M)
- **Sales Revenue** US\$1.5 billion(2023)
- **Employees** Approx. 1,200 (Taiwan), Approx. 15,000 (China)
- **Products** LCD Backlight Unit (BLU), LCD Light Guide Plate (LGP), **Front light guide film**
Liquid Crystal Module (LCM), LED Lighting Fixture, Front light guide

Nanjing |Feb. 2004



Suzhou |Jan. 2002

Kaohsiung |Jul. 1995

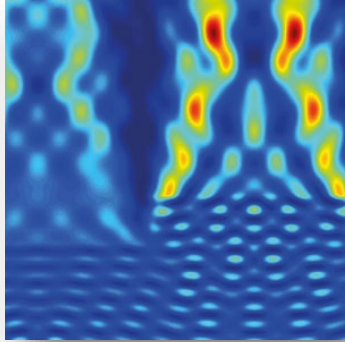


Guangzhou |Sep. 2007



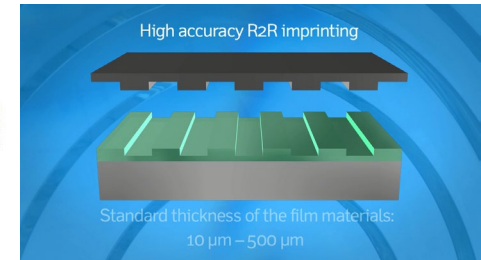
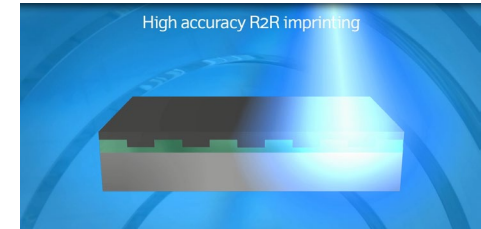
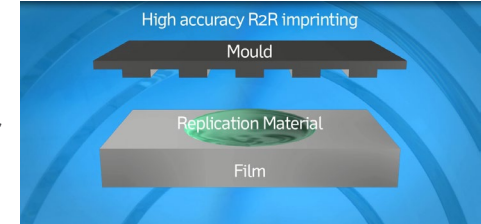
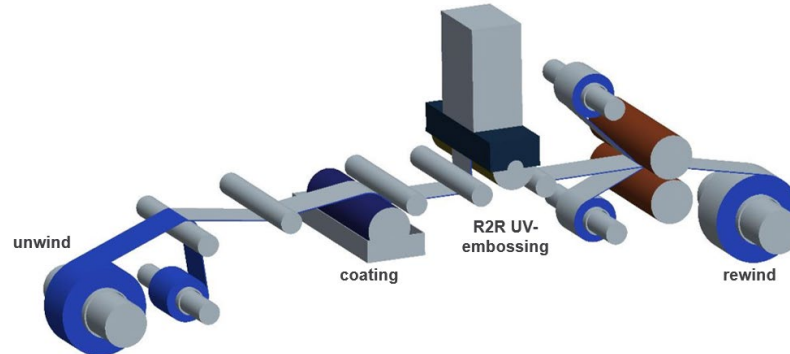
NANOCOMP

CURRENT PRODUCTION CHAIN

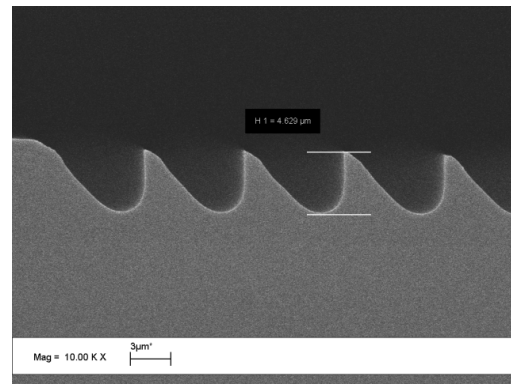
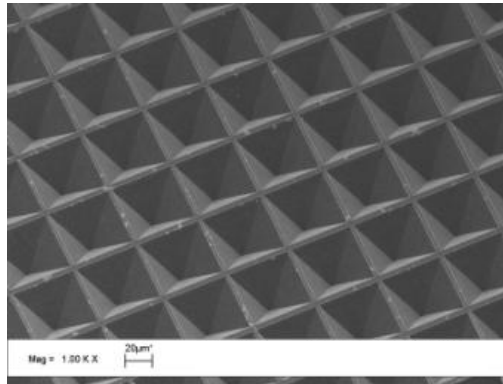
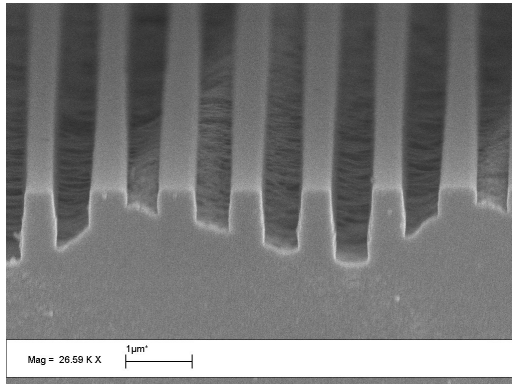
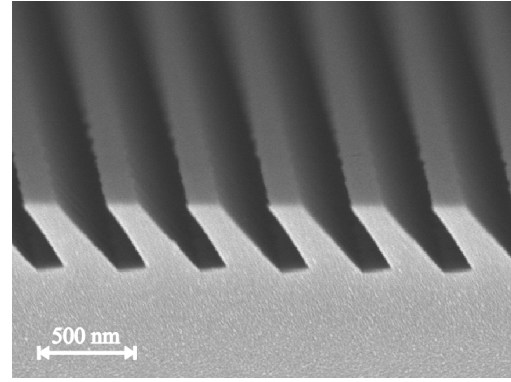
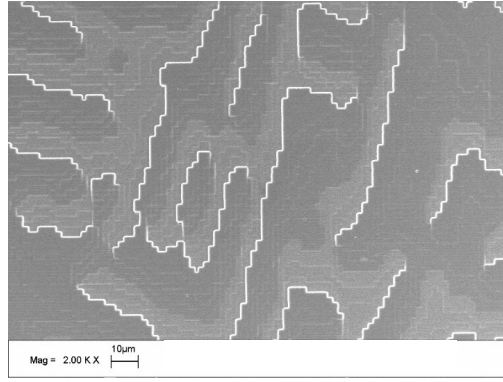
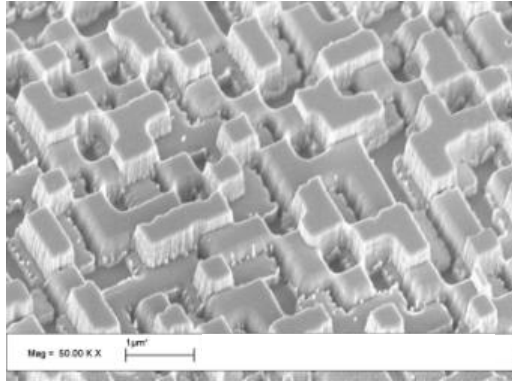


UV-ROLL-TO-ROLL PROCESS

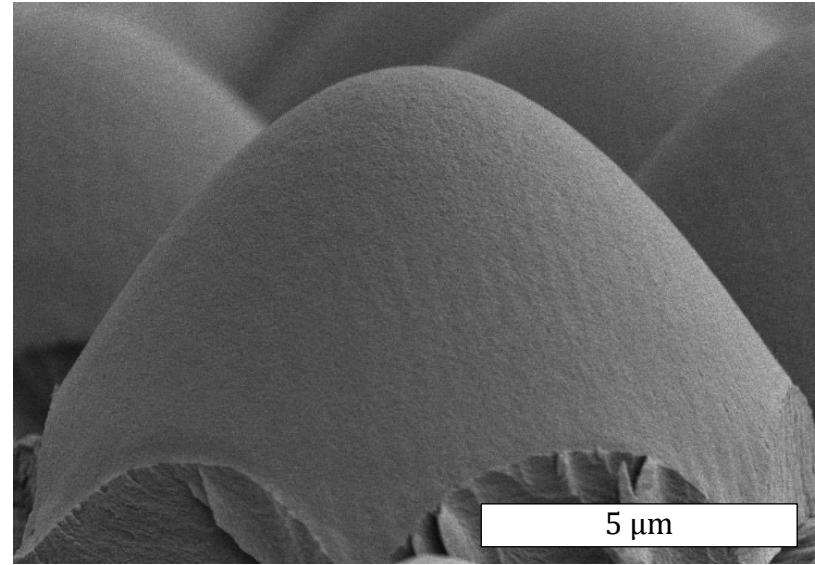
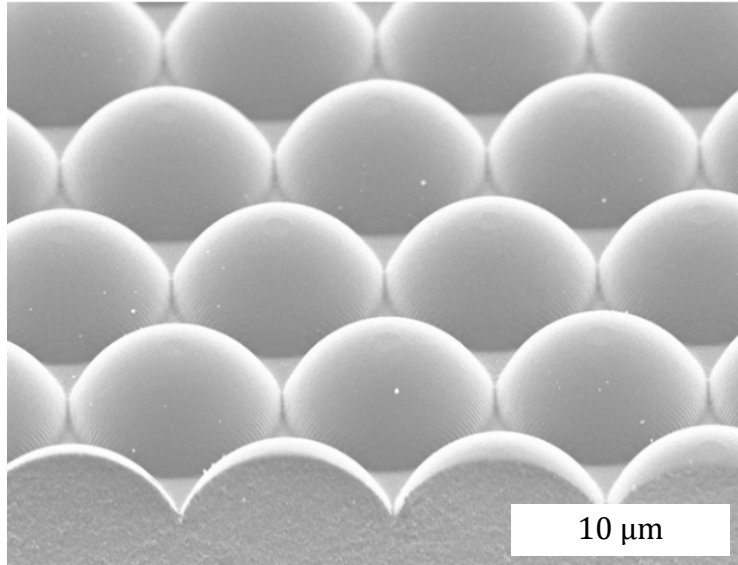
- Substrate film materials:
 - PC, PMMA, PET and TPU
- **In-house developed replication materials** for polymer substrate film
- Standard thickness of the substrate materials:
 - 10 μm – 500 μm



NANOCOMP MICRO AND NANO STRUCTURES

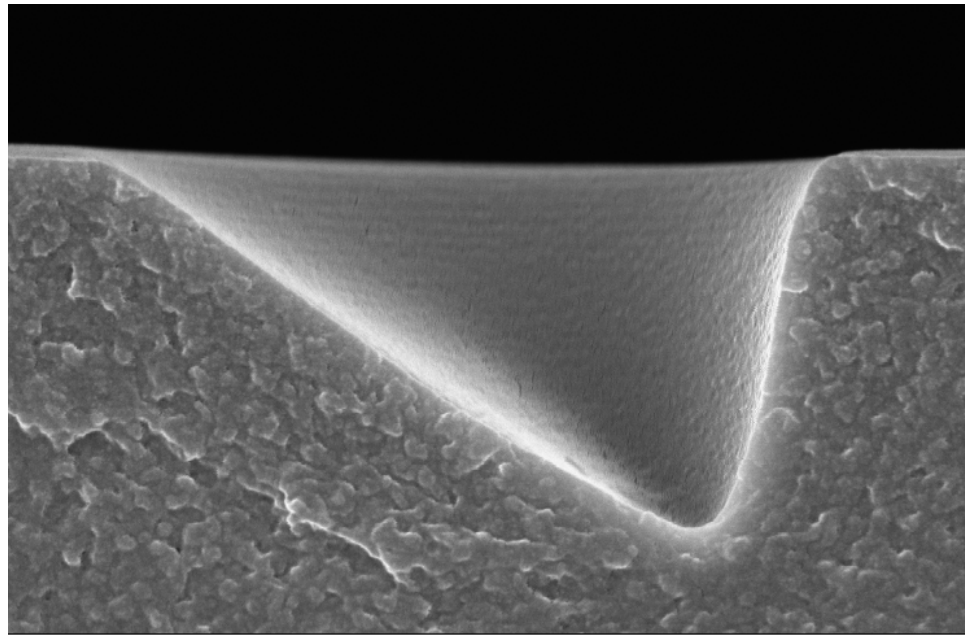
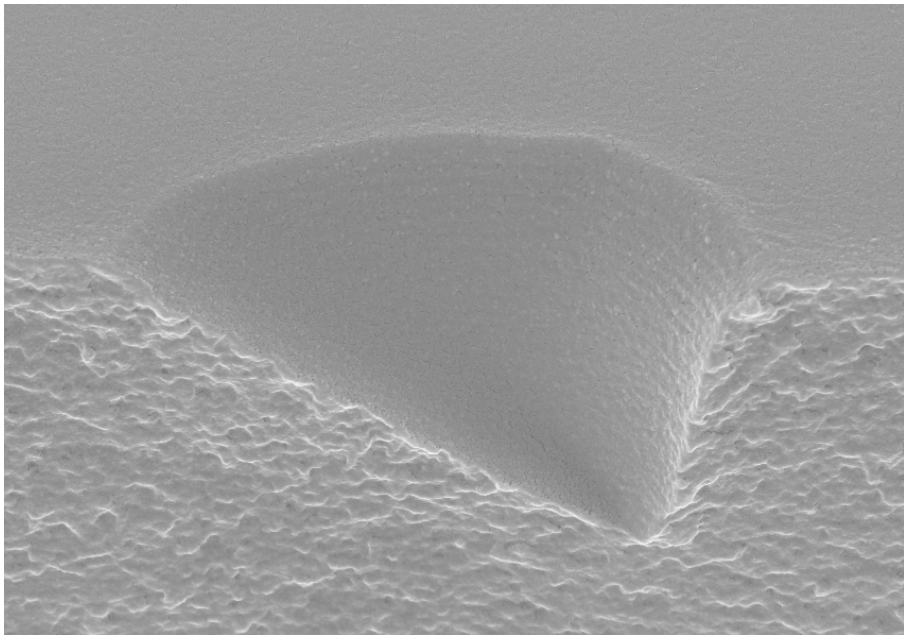


MICRO-OPTICS COMPONENTS BY GRAYSCALE LITHOGRAPHY AND UV-ROLL TO ROLL



Microlens array (MLA)

GRAYSCALE LITHOGRAPHY MICRO-OPTICAL STRUCTURES



NANOCOMP PRODUCTS & SOLUTIONS

Light guides for displays

- Front light guides for e-paper displays (B&W, colour)
- Front light guides for R-LCD
- Directional light guide for special back light functions

Light management films

- Microlens arrays (MLA)
- Mini LED diffusers
- Microstructured films (Fresnel lens, Microfluidics, Waveguide, Multilayer RI tuned films)

DISPLAY ILLUMINATION

Colour epaper



R-LCD



→ BENEFITS

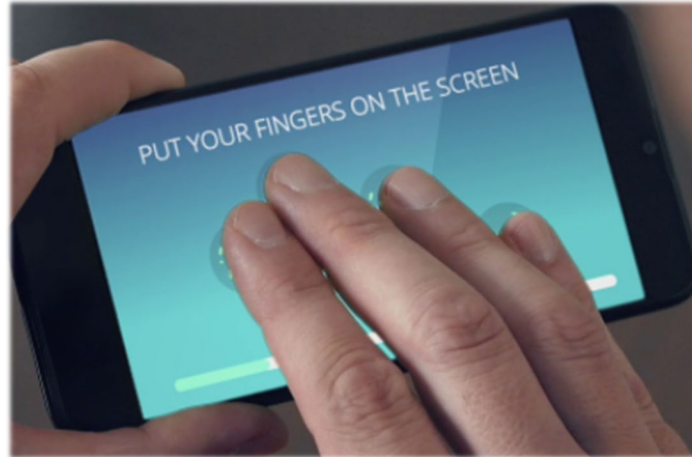
- Excellent contrast and colour properties
- Full optical bonding
- Several standard sizes + customized solutions available

OTHER FILM TYPE OF SOLUTIONS

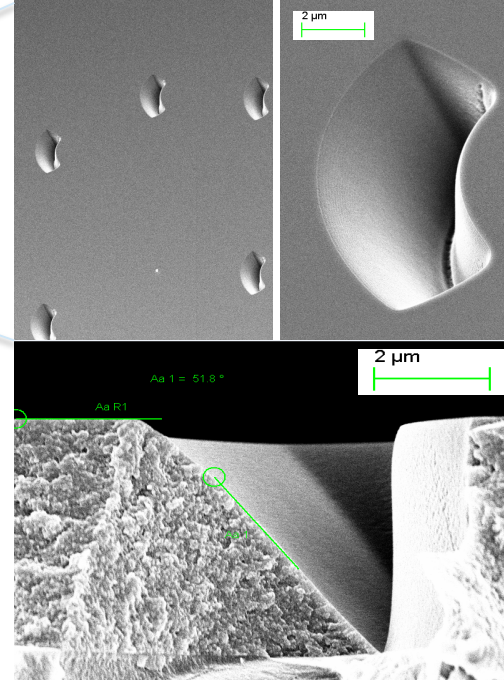
Thin lightguide films for decoration



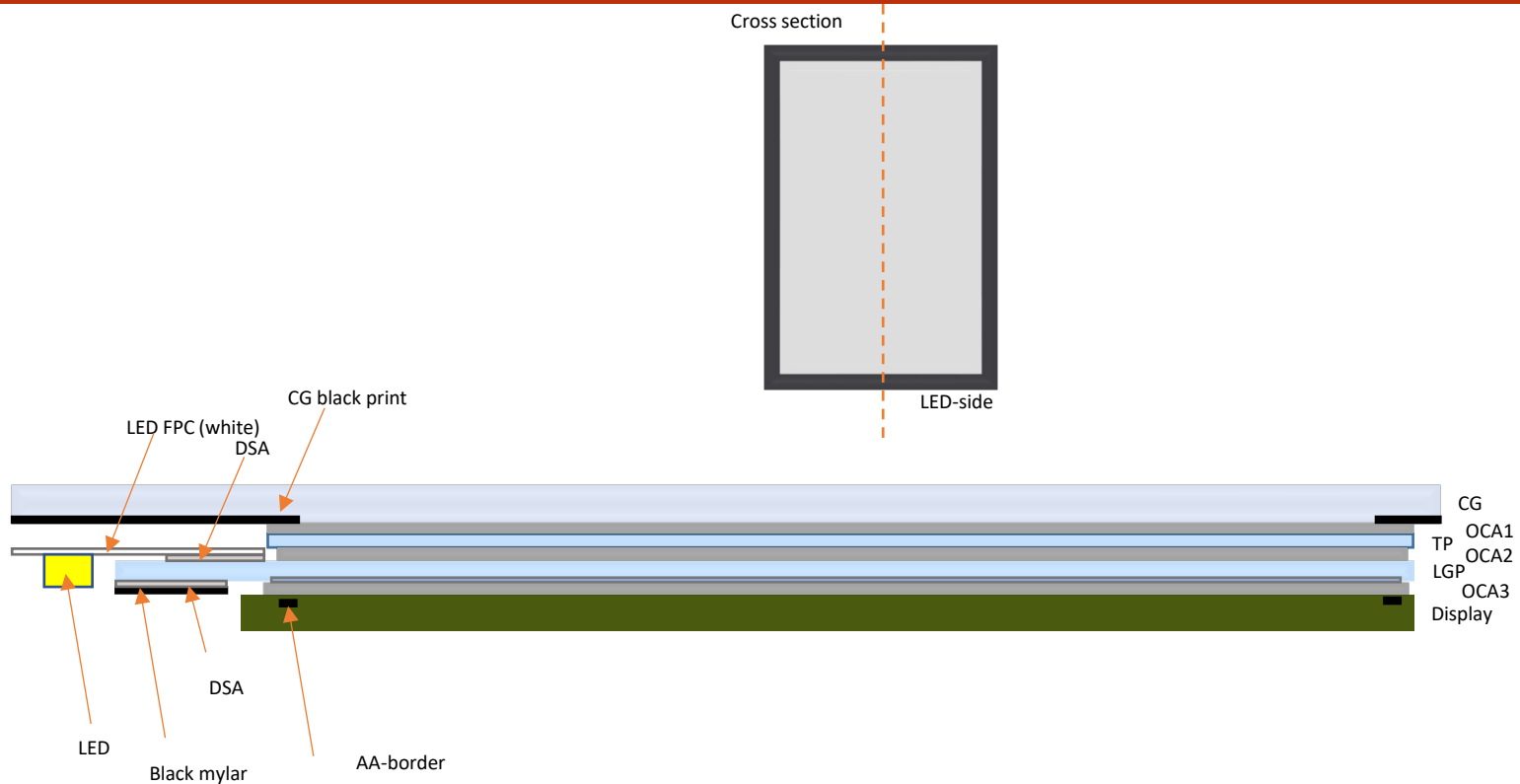
Films for sensor applications



MICRO-OPTICAL STRUCTURES FOR COLOR REFLECTIVE DISPLAY ILLUMINATION

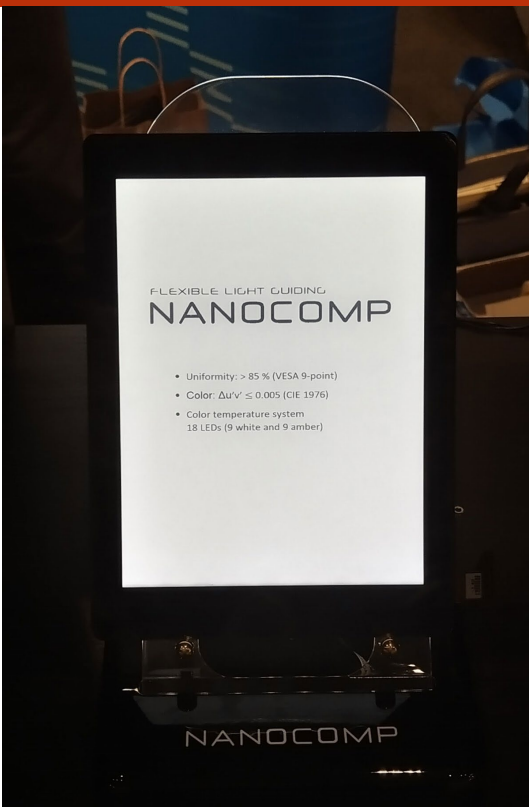
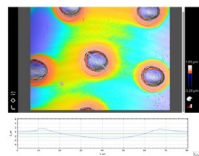
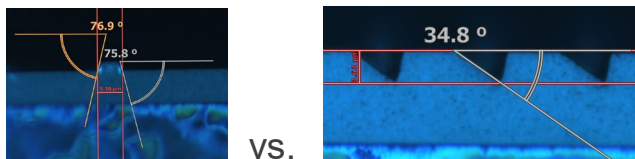


FL FOR EPD - INTEGRATION



FRONT LIGHT GUIDE FOR EPD – NC BENEFITS

- Higher contrast ratio
 - Structure
- Wider color gamut
 - Structure
 - RI tuning
- Fast white balance adjustment
 - By UV-lacquer)
- LED mura control without serration
- Ultimate thinness



FL FOR EPD – REFERENCES (1)

Hisense TOUCH 5.84”



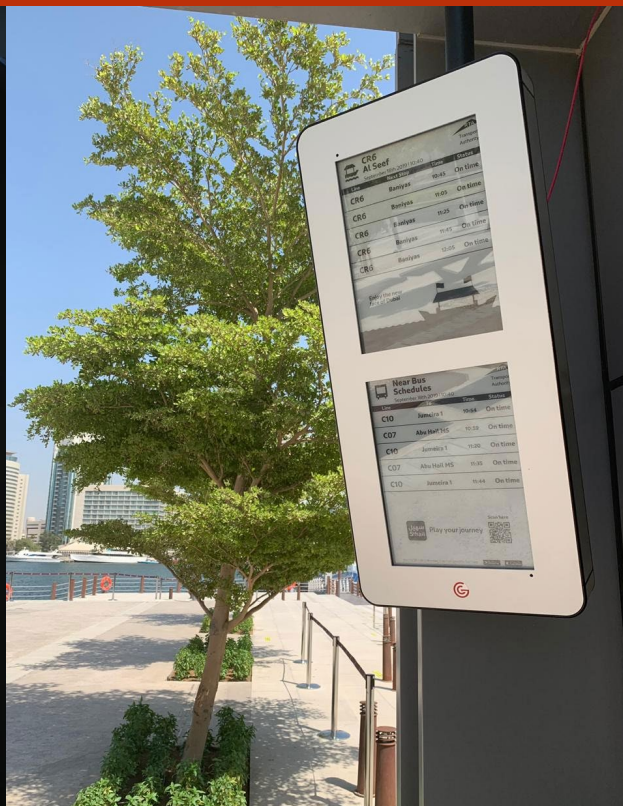
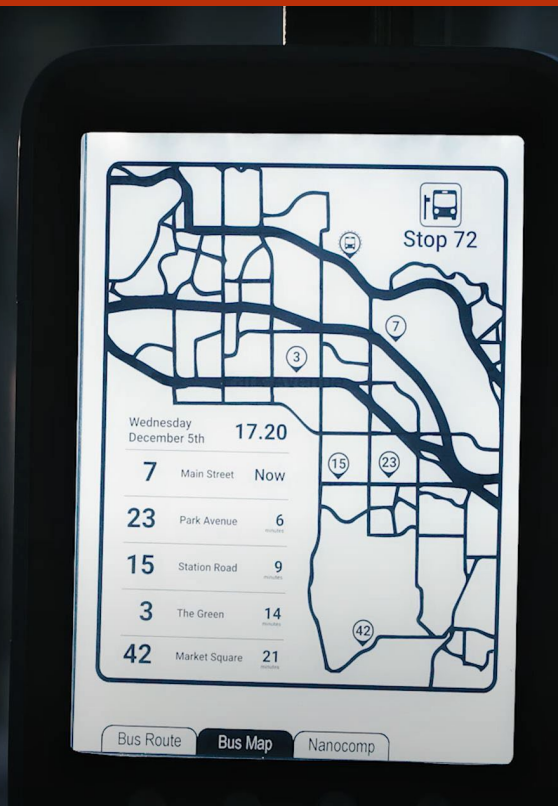
Hisense A7/A7 CC 6.7”



PocketBook InkPad Color 7.8”



FL FOR EPD - REFERENCES (2)





THANK YOU!

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