EPIC Online Technology Meeting on MicroLEDs Technology and Applications

Jasper Display
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JDC and micro LED

■ **With 21 years in history starting from high precision LCoS display**

- ➢ JDC has migrated from FHD display to offer LCoS phase applications (e.g. WSS, light modulation, …) and **micro LED backplane**
- ➢ JDC backplane support: 0.55" 6.4um FHD, 0.7" 8um FHD, 0.7" 3.74um 4K to 1.2" 6.8um 4K
- ➢ We currently have micro LED customers targeting applications on automotive matrix headlamp, automotive HUD, AR/Near-Eye and other display applications
- ➢ We offer two micro LED starter kits for <u>fast prototyping</u>:
  - ➢ eSP70A (8um) for FHD monochrome or 960x540 color
  - ➢ eSP70P (40um) for 246x82 monochrome

■ **Why JDC?**

- ➢ Patented digital modulation: high precision control, overdrive for high response time
- ➢ JDC powerful modulation can be tailor made for customer application for maximum efficiency
- ➢ Long time experiences from 8um to 3.74um pixels and FHD to 4096x2400 resolution
- ➢ Scalability: Support from 8 million pixels down to 20K bigger size micro LED
- ➢ Design capability for 0.35 inch, 3.74um pitch, 960x540, RGB color, MIPI, All-in-one chip for AR glass
- ➢ Support custom chip design

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Micro LED Eco System

Smart Silicon Backplane
+
Micro LED
→
System Manufacture
→
Branding Companies

Jasperdisplay

Silicon Backplane Semiconductor

Jasper Display Corp.

One Chip Modulator

JD30M1 Main Board

➢ JDC ToolBox
Software for color

Jasper Display Corp.

Micro LED
NICHIA™
glō™
plessey
LUMILEDS
OSRAM
VueReal
EPISTAR
SEOUL
Playnitride

Micro LED Panels

System Manufacture
BenQ
LITEON®
FOXCONN 鴻海科技集團
PEGATRON
Quanta Computer
Coretronic

Branding Companies
 Apple
Google
Microsoft
magic leap
f
Lenovo

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The Future of Micro LED

JDC micro LED Starter Kit
For fast prototyping

■ Applications – silicon based

➢Automotive Matrix Headlamps

➢Automotive HUD

➢AR/HMD see-through applications

➢Micro LED Projector for home entertainment

➢Innovative projection applications

■ Challenges

➢Efficiency in smaller pitch, e.g. 2.5um

➢Mass transfer vs monolithic

➢Yield

➢Single panel Color

➢Uniformity Correction

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4

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