PRESS RELEASE

Plessey and Jasper Display collaborate on tailored backplane for monolithic microLED displays

Plymouth, ENGLAND – 11th September 2018: Plessey Semiconductors, a leading developer of award-winning optoelectronic technology solutions, today announced a strategic partnership with Jasper Display Corp (JDC). Plessey is going to utilise JDC's innovative silicon backplane to drive its own monolithic microLED displays manufactured on its proprietary GaN-on-Silicon (GaN-on-Si) wafers.

Unveiled by JDC earlier this year at CES in Las Vegas, the eSP70 silicon backplane is tailored for the needs of microLED devices. The full colour capable active matrix backplane features a resolution of 1920x1080, a pixel pitch of 8µm and offers excellent current uniformity via a proprietary current source pixel as well as flexible addressing.

Making displays brighter for today's portable AR and VR battery-powered devices is increasingly challenging. Using existing technologies which require high power output is a serious design limitation as the compact devices have limited space to house on-board power sources. By utilising JDC's eSP70 backplane, this will allow Plessey the flexibility to utilise its GaN-on-Si platform for microLEDs, delivering very high brightness with moderate power consumption or run with low power while maintaining daylight usable brightness levels.

JDC's VP Marketing and Product Management, T.I. Lin, said: "Plessey's monolithic microLED array is a great match to JDC's high density silicon backplane. Our JD27E series demonstrates our ability to deliver what our valuable partner Plessey and the wider industry has been waiting for – silicon that has been designed with their microLED needs in mind. Our X-on-Silicon backplane technology for microLED can be customised on a per-project basis, allowing us to make specialised silicon suiting needs ranging from low-power AR headsets all the way to automotive headlights."

Dr Keith Strickland, Chief Technology Officer at Plessey, explained: "JDC's microLED specific silicon backplane allows Plessey to rapidly bring to market our monolithic full colour microLED array at our entry level 8µm pixel size. At Plessey, we have overcome the significant challenges involved in accurately aligning and bonding the microLED array with the backplane. We are looking forward to partnering with JDC as we continue our development, reducing pixel and display size."

MicroLED technology is fast emerging as the only viable technology to provide high luminance in a very small form factor with minimal energy consumption, necessary for reducing costs and enabling lightweight battery-powered AR/ VR/ MR/ HUD applications. Challenging existing display technologies like LCD and OLED, Plessey's monolithic microLED technology offers extremely low power, high brightness and very high pixel density combined to create the potential for disruption in many existing application areas and create entirely new ones.

About Plessey

Plessey is a UK-based leading developer of advanced optoelectronic technology solutions. The company provides volume processing of its unique and proprietary GaN-on-silicon platform for a wide range of optoelectronic devices and systems.

With headquarters located in Plymouth, England, Plessey operates leading-edge 150mm and 200mm wafer processing facilities to undertake design, test and assembly of products, and a comprehensive suite of photonic characterisation and applications laboratories.

Plessey is an award-winning provider of innovative illuminators for display engines (DMD and LCOS) and full-field emissive microLED displays that combine very high-density RGB pixel arrays with high-performance CMOS backplanes to produce very high-brightness, low-power and high-frame-rate image sources for head-mounted displays (HMDs), and augmented reality (AR) and virtual reality (VR) systems.

For further information and datasheets, please visit or email sales@plesseysemi.com. You can also follow Plessey on Twitter, Facebook and LinkedIn.

About Jasper Display Corp.

Jasper Display Corp. (JDC) is a fabless semiconductor company based in Taiwan with R&D in Santa Clara, California and offers leading Spatial Light Modulators (SLM), LCoS and µLED microdisplays, and digital modulation controller ICs. JDC provides its X-on-Silicon partners with the backplanes and expertise required to create the next wave of optical innovation.

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