TIANMA INVESTS IN FULL PROCESS MICRO-LED EXPERIMENTAL PLATFORM

(TIANMA), A LEADING GLOBAL MANUFACTURER OF FLAT PANEL DISPLAYS WILL BE CONSTRUCTING A FULL-PROCESS TEST LINE FOR MICRO-LED-BASED PRODUCTS, INCLUDING THE MASS TRANSFER PROCESS TO DISPLAY MODULE IN XIAMEN, FUJIAN, CHINA.

PROJECT OVERVIEW

1. Name: Tianma New Display Technology Research Institute
2. Location: Xiamen, Fujian, China
3. Total Investment: 1.1 Billion RMB (160 M$)
4. Construction Content: Micro-LED experimental platform, focusing on research for the mass transfer related technologies based on TFT substrate, including large-scale inspection, large-scale bonding, large-scale repair, packaging, module manufacturing processes, etc.

TECHNOLOGY

Micro-LED display technology is a pixel array display composed of LED chips below 50 micrometers. The LED chips are driven by an active driver array. Compared with the current mainstream display technology, direct emitting LEDs have advantages of higher brightness, high resolution, high contrast, wide colour gamut, high reliability, low power consumption, high operating temperature and long lifetime.

Transparency:
Due to the small LED size of less than 50 micrometers – which is below the resolution of the human eye – transparent displays can be made while the LED chip itself remains invisible. The 7.56” Transparent Micro-LED display shown at the beginning is one of the first prototypes.

Flexibility:
The Micro-LEDs can be put on flexible substrate, allowing to adopt the display itself to curved surfaces. This is shown in the example below.

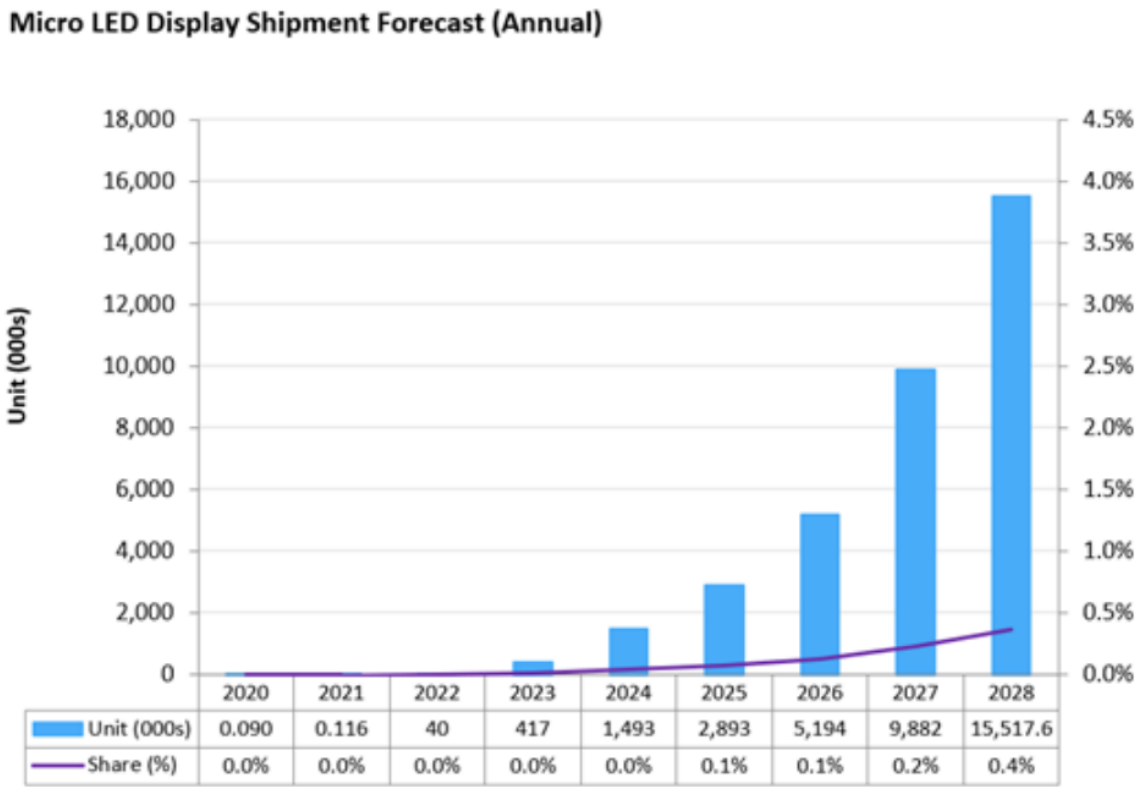
7.56″ Flexible Micro-LED. The world’s leading internal folding radius: R=5 mm

Seamless splicing:
As the LED chips can be put on the driver substrate up to the border line, different displays can be spliced together like tiles forming a larger display area while the connection between them is (almost) invisible. Display areas from small to very large can be made, providing great potential for numerous applications. Micro-LED is considered as the next generation display technology
in the industry with promising prospects for the future. In below picture shown is the 5.04″ seamless splicing Micro-LED display.

5.04″ seamless splicing Micro-LED. The highest PPI spliced unit worldwide.

Market

According to market forecasts, the Micro-LED market has huge potential and is expected to achieve rapid growth in the near future. Omdia expects annual global shipments of Micro-LED displays to soar to nearly 15.5 million units by 2028.



Tianma's Micro-LED activities and achievements

Tianma has been deeply engaged in the display field for nearly 40 years. With extensive technical expertise, mature management, and R&D teams, Tianma has been researching Micro-LED display technology for many years, and has accumulated corresponding achievements in technology, intellectual property rights and other aspects in this field. As a national strategic development industry in China, the new flat panel display industry plays an important role in manufacturing and the electronics industry.

Awards:

Tianma's Micro-LED products have also won various awards worldwide, such as SID "Best New Display Technology", ICDT "Gold AWARD for Best Innovative Display", DIC "AWARD for Innovative Display Device", etc.

Micro-LED Ecosystem Alliance:

In December 2021, Tianma launched the Micro-LED Ecosystem Alliance to cooperate with clients, scientific research institutes and upstream and

downstream industry related manufacturers. This will help to build the connections needed between industry-university-research-application, to accelerate the technological breakthroughs of the complete Micro-LED infrastructure from display foundation, system integration to application. The purpose of this alliance is to enhance technological competitiveness, promote integration of the industry related ecosystem, to finally accelerate the commercialization of Micro-LED Technology.

Micro-LED experimental platform:
This full process Micro-LED experimental platform investment is set to become the industry's leading research and development for Micro-LED technology innovation, product application development and open platform for the transformation of scientific research achievements. This platform helps Tianma to establish key generic technology and develop independent intellectual property rights, to promote the optimization and upgrading of the new display industry.

Outlook:
This investment in Micro-LED focuses on next generation technology, which will strengthen Tianma's position as an industry innovator, empowering the company's leading technology research and development capabilities. This initiative also further enhances Tianma's overall competitiveness and leading position in the display field.

To find out more about Micro-LED technology and how RDS can help you with your projects please contact:

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