

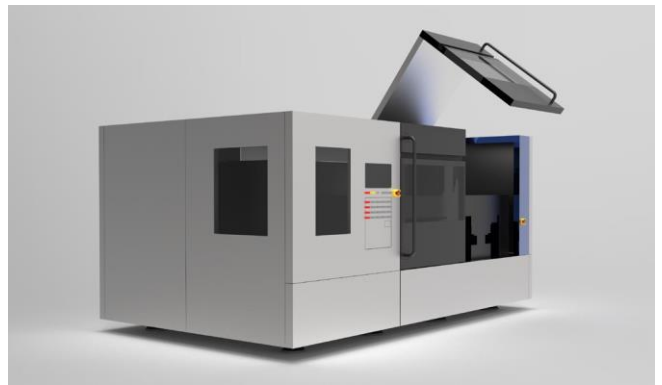
Model MSR

Micro led repair technology

Micro led 維修平台

Micro led display has millions and millions dies to be transferred. Even with the highest yields, the mass transfer process still results in thousands of bad pixels, which need to be repaired. Thousands of die to be repaired is a big job that repair process must be efficient with high quality. MRL repair station is the most advanced solution for efficient and high quality micro led repair. Micro led repair is a very sophisticated process, which requires the technology of being able to control the machine XY repeatability within 0.7um for 1.5 meter moving distance and a special vision algorithm with AI super resolution capabilities to reach transfer gap within 50um and the transfer accuracy within 5um. MRL series, integrating SSI exclusive core technologies in motion control, image processing, algorithms, micro laser machining and sub micron dispensing, is able to meet all critical repair requirements with high quality and efficiency. In addition, MRL series has an exclusive dispensing technology, which is able to dispense silver paste on very small width down to 1um for circuit repair and UV coating on the extremely small dies.

Micro led 顯示器需要轉移幾百萬顆的led die，即使再高的轉移良率，仍然有上千顆的die需要維修更換。Micro led die的維修需要尖端的軟硬體核心技術及整合以達到品質及效率的要求。MRL雷射維修工作站是一部專為高品質高效率設計最先進的micro led維修工作平台，該平台整合SSI多年開發的核心技術包括運動控制、影像處理、特殊演算法、雷射精密加工及次微米塗佈技術，XY的重複精度在長達1.5米的位置仍能達0.6um，轉移高度使用特殊演算法及AI超解析度技術能達到50um以下的精度。MRL同時具備最先進的線路修補技術，使用導電材料修補< 1um的線路。



MRL repair process

MRL 標準修補程序

- 1st step : Remove adhesive , bad die and circuit cleaning with UV laser.
第一步驟：去除膠水及不良的晶片，同時清除不良的線路
- 2nd step : Repair circuit with special conductive ink for the circuit width down to 1 um.
第二步驟：使用特殊的導電材料及技術修補線路，修補能力可達小至1um的線寬
- 3rd step : place and bond new good die with Excimer laser.
第三步驟：使用準分子轉移技術補上好的晶片
- 4th step UV adhesive coating on the good die.
第四步驟：使用特殊塗佈技術在晶片上塗上光學膠



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