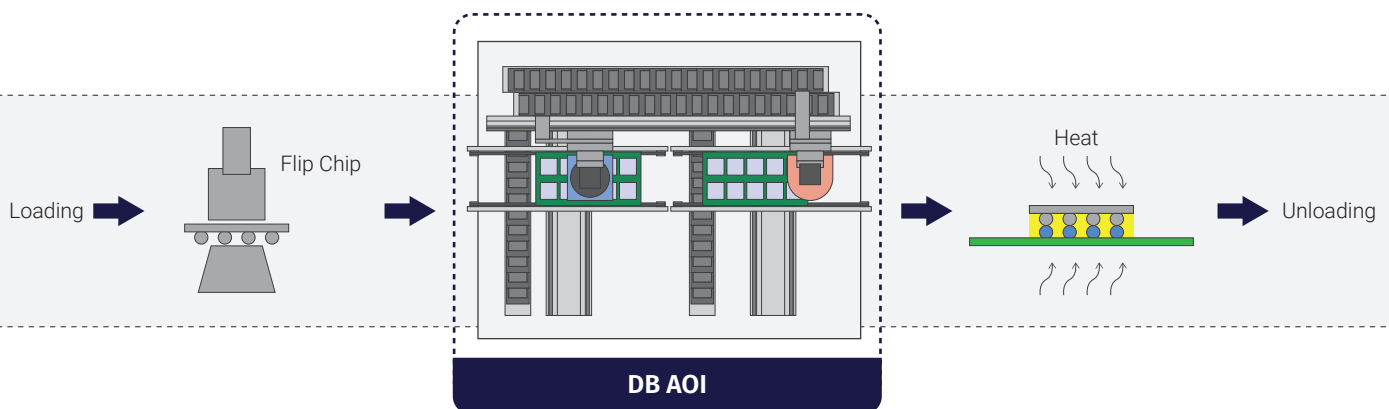


Die Bonding AOI

Product Introduction

Intelligent Visual Solution for Flip Chip Packaging Defects

As Flip Chip technology progresses towards thin and compact CSP and large-size BGA packages, the manufacturing process faces challenges such as micron-level shifts, chipping, and microcracks, all of which affect packaging yield. LEAPER's Die Bonding AOI Inspection System, centered around a multi-modal optical inspection matrix and intelligent algorithms, provides comprehensive protection for Flip Chip packaging quality, from outside to inside. The system achieves sub-micro level positioning, captures micro-level defects, and supports ultra-high-speed 15K+ online inspection and multi-channel serial/parallel inspection. The innovative IR online inspection optical solution, combined with the next-generation AI model, meets the detection needs of both thin dies and dies with grinding marks, helping customers build an intelligent closed-loop process quality system and providing strong support for packaging yield.

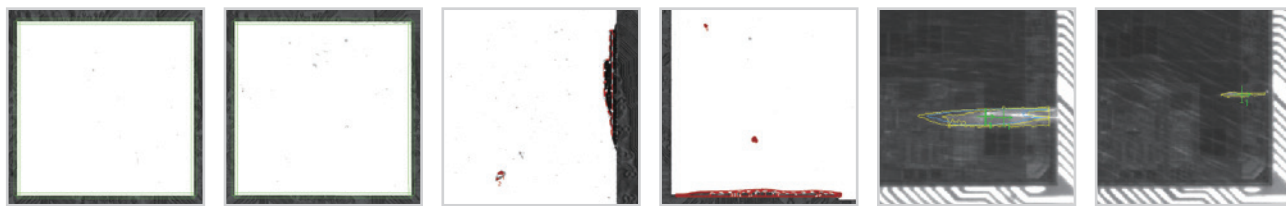


Advantages

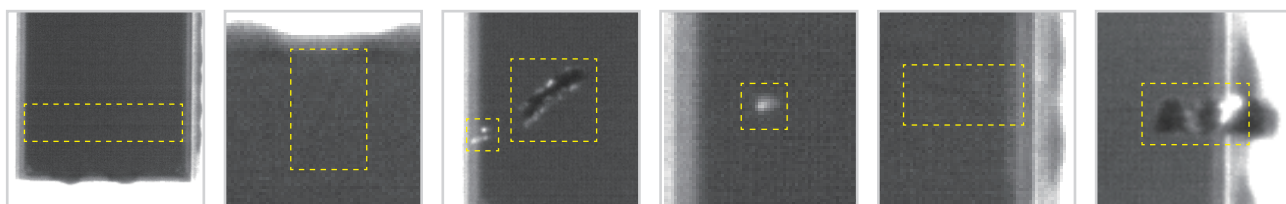
Hybrid Algorithm Architecture	Combining AI with traditional algorithms Breaking through micron-level detection limits Dynamically correcting image differences
Efficient Optical Solution	Flexible combination of line scan and area scan solutions Multi-angle/multi-spectrum/illumination sources highlight subtle defect features
Flexible Software Design	Module design Development-oriented architecture Scalable and extensible for further development
Precision Mechatronic Structure	Autofocus Vibration resistance design Multi-channel serial/parallel implementation for sub-micro level equipment precision

SPEC.

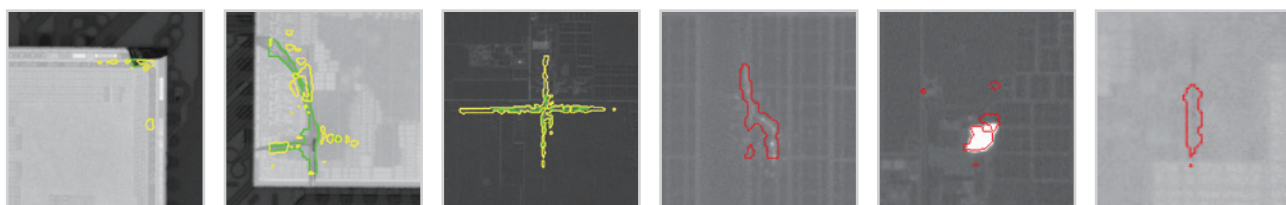
Camera	Camera Type	Inspection Type	Lens Magnification	Inspection Accuracy	UPH
6k TDI Visible Light	Line Scan	Die (thickness $\leq 31\text{mil}$): Chip Shift, Chipping, Die Back Crack	0.46X(CSP) 0.363X(BGA)	Shift: $> \pm 15\mu\text{m}$ Chipping: $> 35\mu\text{m}$ Crack: width $>15\mu\text{m}$	15K@5*5 mm die



Camera	Camera Type	Inspection Type	Lens Magnification	Inspection Accuracy	UPH
8k NIR	Line Scan	Die (thickness $\leq 31\text{mil}$): Die Front Crack	1X	Crack: width $>15\mu\text{m}$	8K@5*5 mm die



Camera	Camera Type	Inspection Type	Lens Magnification	Inspection Accuracy	UPH
1.3MP SWIR	Area Scan	Die (thickness $\leq 31\text{mil}$): Die Front Crack	1X	Crack: width $>15\mu\text{m}$	3.5K@10*13mm die



Camera	Camera Type	Inspection Type	Lens Magnification	Inspection Accuracy	UPH
5MP SWIR	Area Scan	Die (thickness $\leq 31\text{mil}$): Die Front Crack	FA	Crack: width $>50\mu\text{m}$	3.5K@5*5mm die
			1X	Crack: width $>15\mu\text{m}$	4K@5*5mm die
			5X	Crack: width $>7\mu\text{m}$	1.3K@5*5mm die

