

PrecisioNext Signs Top-Tier OSAT Partner, Igniting Packaging Revolution with Mass Transfer Technology

PrecisioNext has secured a strategic partnership with a leading OSAT provider for its XBonder Pro FOPLP needle based mass transfer equipment.

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/EINPresswire.com/ -- After six months of rigorous testing, PrecisioNext has secured a strategic partnership with a leading OSAT provider for its XBonder Pro FOPLP needle based mass transfer equipment - marking the first large-scale adoption of mass transfer technology in IC packaging. This breakthrough promises to transform both wafer-level (WLP) and panel-level (PLP) packaging. PrecisioNext is also collaborating with a global top-5 OSAT and major power device manufacturer on wafer-level applications of XBonder Pro.



PrecisioNext
FOPLP Needle Based Mass Transfer
XBonder Pro

180k UPH **5-15µm X/Y Placement Accuracy** **FOPLP**

- Exclusively used the flip chip COB needle based die attach process, support high-speed transfer of real MiniLED-level chips.
- Ultra-high-speed, UPH(Unit Per Hour) can reach 360K, which is 10 times higher than the traditional Pick & Place mode.
- The accuracy can be from 5 to 15 µm with high UPH.
- Can handle chips with die size from 10 to 3000µm.
- Applicable for mass transfer of backlight display or RGB display.
- Support FOPLP in the field of IC with higher UPH than Pick&Place machine.
- No need mapping sorter process.
- Small footprint and low energy consumption.
- Matured technology: A similar technology with Company A used for the mass-production of MiniLED backlight.

Traditional Die Bonder (Pick and Place)

Needle Press Die Transfer

The Core Challenge: Precision and UPH

Die transfer is the critical bottleneck in advanced packaging. As advanced packaging of PLP/ WLP require subsequent processes like Redistribution Layer (RDL) after die attach, the demand for die attach placement accuracy is extremely high ($\pm 7\mu\text{m}$ to $\pm 3\mu\text{m}$), traditional die bonders face an impossible tradeoff:

High-precision models achieve just hundreds UPH.

Throughput boosts require multiple bond heads/nozzles, increasing: machine complexity, capital costs, and failure rates from nozzle variability.

As IC designs increasingly feature smaller and more numerous chips, traditional [die bonder](#) (pick-and-place) simply can't scale.

How Mass Transfer Changes the Game

PrecisioNext's needle-based technology delivers:

1. 10x Efficiency Gain vs traditional die bonding
2. Multi-fold Cost Reduction in die attach
3. 30K UPH at high precision ($\pm 3\mu\text{m}$ capable)
4. Zero Nozzle Wear issues that plague multi-head systems

Technical Breakdown: Pick-and-Place vs Needle Based Mass Transfer

Traditional Process (Industry Standard):

1. Ejector pins lift die through blue tape
 2. Nozzle picks die via vacuum
 3. Vision alignment precedes placement
- Each action consumes precious milliseconds

PrecisioNext's Innovation:

1. Wafer flips upside down
 2. Needle array aligns with substrate
 3. Direct needle press die transfer in bulk
- Eliminates 60% of movements

Proven in MiniLED production (300K+ UPH), this architecture has been adapted for IC packaging via the XBonder Pro series. The needle-type mass transfer process offers high efficiency and significantly reduces electricity and compressed air consumption, make FOPLP economically viable at scale, reduce capex/opex for advanced packaging lines.

PrecisioNext's partnerships with tier-1 OSATs validate mass transfer as the future of high-volume, precision packaging - finally breaking the UPH and accuracy deadlock that has constrained the industry.

Jack Li

Dongguan Precision Intelligent Technology Co., LTD

+86-13825438413

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