# PrecisioNext Provides One-Step 800G/1.6T Optical Module Placement Solution for Top Manufacturers

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NEW YORK, UNITED STATES, July 21, 2025 /EINPresswire.com/ -- After nearly a year of rigorous testing, PrecisioNext's DA403 series high-precision die bonder for COB/COC applications are qualified by the world's largest two optical transceivers manufacturers PrecisioNext obtained long-term purchasing orders and delivered on time. It is first large-scale commercial application base on Chinese high-end bonding equipment for 400G/800G/1.6T optical transceivers products – a breakthrough for Chinese equipment in this premium segment.

Key Challenges in 400G/800G/1.6T Optical Transceivers Production

High-speed optical transceivers manufacturing faces three critical obstacles:

1. Complex Multi-Component Placement

- Multi-mode optical modules require handling VCSEL, PD, wire bonding resistors, TIA, and Driver chips.
- Single-mode optical modules need precise placement of PD, lens blocks, TIA, FA blocks, PIC, COC, and field lens components.
- Multiple bond-curing cycles increasing warpage risks and compromising yield.

2. Ultra-Tight Placement Accuracy (±3μm) at High UPH

Few Chinese bonders meet the ±3μm precision for optical chips (VCSEL/PD), while imported tools

sacrifice UPH (units per hour) for accuracy – creating a cost-prohibitive tradeoff for mass production.

3. Operational Complexity
Traditional high-precision equipment demands specialized engineers, it driving up labor costs and limiting production scalability. Reduce skill engineers and maintaining product stability is critical for production expansion.

The DA403 Series: A One-Step Solution
Co-developed with tier-1 customers, the DA403 series supports both epoxy and eutectic bonding with:
- Multi-material handling: Simultaneously places up to 6 chip types via 5x6" + 1x8" wafer rings, waffle packs, or gel packs.
- Dual-ejector system: Accommodates vastly different chip sizes from wafer ring.
- Flexible placement modes: Placement materials type by type or placement all kinds material per pad area sequentially.
- Two dispensing method: Dipping or pneumatic dispensing for large chips (eliminating inefficient multi-dip cycles).
- 6-nozzle configurability: Auto-calibration ensures accuracy for multi-chip assemblies.

Breaking Foreign Monopolies
The ultra-high-precision die bonder market was long dominated by overseas players; optical transceivers manufacturers can only use imported bonders for production. PrecisioNext's DA403 not only demonstrates China's technical prowess but accelerates domestic substitution for 800G/1.6T optical transceivers – elevating Chinese equipment to global standards.

About PrecisioNext: Chinese Semiconductor Equipment Leader
PrecisioNext's "Core Technology + Deep Application" strategy has yielded globally competitive solutions both in traditional and advanced packaging:
- Loong Series TC Bonder: ±1μm placement for 2.5D CoWoS and 3D HBM stacking – China's only domestic TCB solution.
- FOPLP Mass Transfer: Order-of-magnitude UPH gains for high-precision panel-level packaging (validated by top OSATs).
- Upcoming CPO Series: Nano-motion control enables ±0.3μm placement for co-packaged optics.

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