

ASMPT enabling the
digital world



SIPLACE CA2

High-speed chip assembly directly from wafer
and SMT placement in one machine

SMT AND DIE BONDING: SIPLACE CA2

THE HYBRID SIPLACE CA2 HIGH-SPEED PLATFORM REVOLUTIONIZES SiP PRODUCTION

Only consistent miniaturization and increasingly complex electronics make things like smart devices, autonomous driving and the 5G communication standard possible. The key technology is system-in-package (SiP) because it combines ICs and SMT components into a compact, highly innovative system.

As a hybrid combination of a SMT placement machine and a die bonder, the new SIPLACE CA2 can process SMDs supplied from changeover tables and feeders as well as dies taken directly from a sawn wafer in a single workstep. By integrating the complex die bonding process into the SMT line it eliminates the need for special machines in production. Reduced personnel deployment, high connectivity and integrative data utilization make the new SIPLACE CA2 the perfect match for the Intelligent Factory.

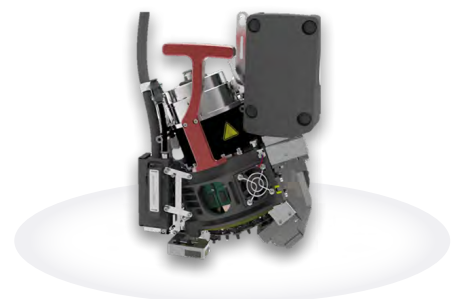
Placement directly from the wafer: more cost-effective and sustainable

Direct placement from the wafer eliminates the entire die taping process. The result: less replenishment or splicing, less effort to feed material to the line. Eliminating the tape feed for the sensitive dies also reduces handling risk and increases production resiliency. All of these factors add up to a significant reduction in costs. At the same time, taping waste is eliminated, making the manufacturing more environmentally friendly and sustainable overall, while increasing ROI.



Flexible combination

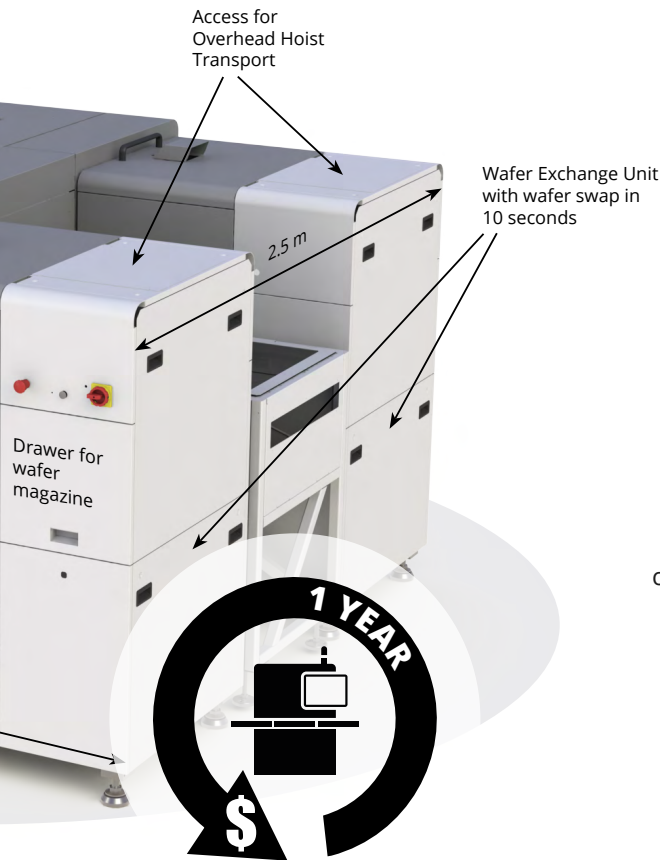
SMT and die bonding in one line simplify your process flow and improve material logistics.



Placement Head CP20

- Component spectrum: 0201 metric to 8.2 mm × 8.2 mm × 4 mm
- Touchless pickup and placement
- Placement force: 0.5 N – 4.5 N
- Extremely fast: Up to 48,000 cph
- Extremely precise: Up to ±10 µm @ 3 σ

MULTITALENT COMBINES TWO WORLDS IN ONE MACHINE



The SIPLACE CA2 can amortize itself within a year by saving 800 km of tape per year with full SiP production in 24/7 operation.



Wafer Exchange Unit

- Extremely flexible: Processes up to 50 different wafers
- Extremely fast: Wafer swap in only 10 seconds

Maximum productivity

Processes SMT components and dies directly from the wafer with die-attach and flip-chip processes in the same work step.

Cost-saving

No taping cost, no associated quality cost of the die taping process and no efforts for tape-waste disposal.

Unique flexibility

Wafer system for up to 50 different wafers with a wafer swap time of less than 10 seconds ("full multi-die capability"). A wafer chuck, flux (linear) dipping unit (LDU) and 10 x 8 mm tape-and-reel feeder tracks can be used parallel to pick up from wafer.

Full traceability

Keep track of data for each die from its source on the wafer to its placement position on the circuit board ("full single-die-level traceability").

Consistent sustainability

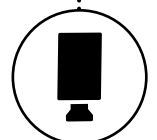
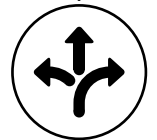
Processing dies directly from the diced wafer eliminates the entire die-taping process – and lots of tape waste.

Maximum performance

Thanks to die buffering and process parallelization, the SIPLACE CA2 can place up to 50,000 components per hour directly from wafer with an accuracy of up to 10 μm @ 3 σ .

Comprehensive quality management

Multiple high-end vision system reliably recognize even the smallest components and elements for comprehensive process control.



More about
SIPLACE CA2



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SIPLACE CA2	
Placement speed (benchmark)	SMT up to 76,000 cph Flip chip from wafer up to 40,000 cph Die attach from wafer up to 50,000 cph
Wafer swap	10 seconds
Placement accuracy (3 σ)	20 μm / 15 μm / 10 μm (can be selected on placement position and component shape level)
	20 μm @ 3 σ 15 μm & 10 μm @ 3 σ
PCB dimensions (l \times w)	50 mm \times 45 mm to 375 mm \times 260 mm (dual-lane mode) 50 mm \times 45 mm to 375 mm \times 430 mm (single-lane mode) 50 mm \times 55 mm to 250 mm \times 100 mm
Machine dimensions (l \times w \times h)	2.56 m \times 2.50 m \times 1.85 m
Feeder slots	up to 80 \times 8-millimeter tape-and-reel feeder or up to 2 \times Multi Wafer System and 10 \times 8-millimeter tape-and-reel feeder
Power consumption (average)	1.9 kW
Air consumption	120 NI/min (2 \times SIPLACE CP20)
Certifications	CE, SEMI S2/S8, Clean room class ISO 7
Data interfaces	IPC-HERMES-9852, IPC-CFX, IPC-SMEMA-9851, SECS/GEM

Placement head	SIPLACE CP20
Component range	from tape-and-reel: 0201m up to 8.2 mm \times 8.2 mm from wafer: 0.3 mm \times 0.3 mm up to 8.2 mm \times 8.2 mm
Min. lead pitch	70/50* μm
Min. lead width	30/25* μm
Min. ball pitch	100/50* μm
Min. ball diameter	50/25* μm

* with optional high-resolution camera (SST49)

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