

# Advanced High Speed Flexible Mounter **SM481**

As a general component placer whose vision system is reinforced based on the platform of the SM471 high speed chip shooter. Chip placement speed is the highest among the same class component placers. The SM481 achieves a chip placement speed of 38,000 CPH, the highest among the same class component placers. Achieved by many improvements: applying a head with one gantry and ten spindles, a new flying vision and by maximizing the pickup and placement motion. In addition, it is applicable up to 0402 (01005 inch) chips and  $\square$ 42mm ICs. It has improved actual productivity and placement quality by applying high speed and high precision electrically driven feeders. Furthermore, since it is designed to be compatible with SM series pneumatic feeders, it maximizes the customer's operational convenience.



- 38,000 CPH (Optimum)
- 1 Gantry x 10 Spindles/Head
- Applicable Parts : 0402 (01005 inch)  
~  $\square$  42mm (H15mm)
- Applicable PCB : 460(L) x 400(W) (Standard)  
Max. 1,500(L) x 460(W) (Option)
- High Speed, High Precision and Electrically Driven Feeder
  - Automatic pick-up position alignment function
  - Compatible with SM pneumatic feeders
- New Vacuum System and Optimized Pickup/ Placement Motion
- SMART Feeder
  - World's first Auto Loading and Auto Splicing

Advanced High Speed Flexible Mounter

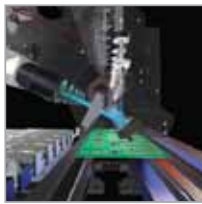
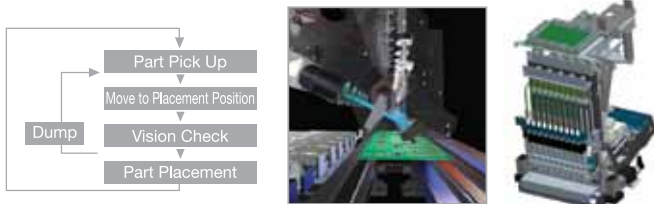
# SM481



## Realizes Super-high Placement Speed of 38,000 CPH

Realizes the highest placement speed among the same class chip placers by applying a new flying head mechanism with 10 spindles as well as optimized pickup/placement motion

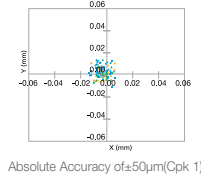
Since it allows part recognition without stopping after part pickup by applying its original On-the-Fly image recognition technology, the SM481 model maximizes the part placement speed by minimizing the time to move between the pickup position and placement position and by reducing the recognition time to almost zero.



## Placement accuracy correction system

Chip  $\pm 50\mu\text{m}$  (Cpk  $\geq 1.0$ )

The newly upgraded placement accuracy calibration system automatically checks and corrects the pickup point offset, head offset, C/V offset, etc. to allow reliable part placement.



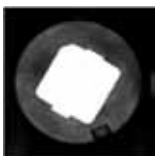
Absolute Accuracy of  $\pm 50\mu\text{m}$  (Cpk 1)

## Reinforced Applicability to Parts and PCBs

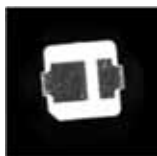
- Applicable to parts from 0402 (01005 inch) to  $\square 42\text{mm}$  (H15mm) as well as BGA/CSP parts
- Applicable to Max. 1,500(L) x 460(W) (Option) PCBs for long boards applied to LEDs and displays
- Supports automatic recognition of the entire pickup position by being equipped with a fiducial camera at the left and right respectively

## Applies a New Illumination System

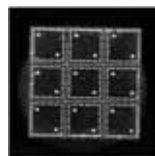
Reinforced applicability to odd-shaped parts including BGA, CSP, etc., by applying three-staged illumination systems (Side, Coaxial and Outer illumination).



Part Polarity Recognition



BGA and CSP Recognition



## Applies a New Vacuum System

- Minimized delay of part placement due to optimization of pneumatic path
- Realizes stabilized part pickup and minimized air consumption by applying a vacuum pump

※ Air consumption is less than 50Nl/min when using a vacuum pump.

## Electrically Driven High Speed and High Precision Feeder

### Electrically driven SM feeder

- Allows integrated use of 0603/2P/4P
- Equipped with a function to automatically align the pickup position between feeders to improve the simultaneous pickup rate.
- Able to set various part supply speeds to improve the stability of part supply.
- Automatic feeding pitch recognition function

※ Compatible with SM pneumatic feeders



### SM smart feeder

- The world's first feeder equipped with Auto Splicing and Auto Loading functions
- Maximizes work convenience and actual productivity by automating the splicing process for part reel replacement normally performed by hand.

- Applicable to reels with a small quantity of parts

※ Compatible with SM pneumatic feeders



Present Reel  
New Reel

## Specifications

| Model                  |                       | SM481  |  |
|------------------------|-----------------------|--|--|
| Alignment              |                       | Flying Vision + Stage Vision (Option)  |  |
| Number of Spindles     |                       | 10 Spindles x 1 Gantry   |  |
| Placement Speed        |                       | 38,000 CPH (Optimum)   |  |
| Placement Accuracy     | Chip/QFP              | $\pm 50\mu\text{m}$ @ $\mu+3\sigma$ /Chip, $\pm 30\mu\text{m}$ @ $\mu+3\sigma$ /QFP<br>(Based on the standard chips) |  |
|                        | Flying Vision         | FOV 24   | 0402(01005 inch) ~ $\square 16\text{mm}$ IC, Connector (Lead Pitch 0.4mm)<br>* BGA, CSP (Ball Pitch 0.4mm)   |
| Component Range        | Stage Vision (Option) | FOV 35   | ~ $\square 16\text{mm}$ IC, Connector (Lead Pitch 0.3mm)<br>* BGA, CSP (Ball Pitch 0.4mm)<br>~ $\square 32\text{mm}$ IC, Connector (Lead Pitch 0.4mm)<br>* BGA, CSP (Ball Pitch 0.5mm) |
|                        |                       | FOV 45   | ~ $\square 32\text{mm}$ IC, Connector (Lead Pitch 0.4mm)<br>* BGA, CSP (Ball Pitch 0.5mm)<br>~ $\square 42\text{mm}$ IC, Connector (Lead Pitch 0.5mm)<br>* BGA, CSP (Ball Pitch 1.0mm) |
|                        |                       | Max. Height  | 10mm (Option : 15mm)   |
| Board Dimension (mm)   | Minimum               | 50(L) x 40(W)  |  |
|                        | Maximum               | 460(L) x 400(W)      510(L) x 460(W) (Option)  | 610(L) x 510(W) (Option)      1,500(L) x 460(W) (Option)   |
|                        | PCB Thickness         | 0.38 ~ 4.2   |  |
| Feeder Capacity        |                       | 120ea / 112ea (Docking Cart)   |  |
| Utility                | Power                 | AC 200 / 208 / 220 / 240 / 380 / 415 V<br>(50/60Hz, 3Phase) Max. 3.5kVA  |  |
|                        | Air Consumption       | 0.5 ~ 0.7MPa (5 ~ 7kgf/cm <sup>2</sup> ) 180Nl/min,<br>50Nl/min (Vacuum Pump)  |  |
| Mass                   |                       | Approx. 1,655kg  |  |
| External Dimension(mm) |                       | 1,650(L) x 1,680(D) x 1,530(H)   |  |

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• Please note that specifications and product information in this catalog are subject to change without notice.