

# Specifications

Description		SM321-A TYPE (Standard Camera)	SM321-B TYPE (MEGA Camera)
Placement Rate (Tact Time)	CPH (IPC9850)	<ul style="list-style-type: none"> <li>• 1608 (0603) Chip : 21K CPH (IPC)</li> <li>• 1005 (0402) Chip : 20K CPH (IPC)</li> <li>• SOP16 : 15K CPH (IPC) / Feeder</li> <li>• QFP100 : 5.5K CPH (IPC) / Tray</li> </ul>	Same as the description at the left
		<ul style="list-style-type: none"> <li>• QFP100 : 1.1 sec (Stage Vision)</li> <li>• QFP256 : 1.4 sec (Stage Vision)</li> </ul>	
Placement Accuracy	Chip	• $\pm 50\mu\text{m}$ (0402@3 $\sigma$ )	Same as the description at the left
	QFP	• $\pm 30\mu\text{m}$ (QFP168@3 $\sigma$ )	
Component Range	Standard Configuration	<ul style="list-style-type: none"> <li>• 1005 (0402) ~ <math>\square 22\text{mm}</math> IC (CSP 0.75) (Flying Vision)</li> <li>• ~ <math>\square 32\text{mm}</math> IC (0.4P)</li> <li>• ~ <math>\square 55\text{mm}</math> IC (0.65P / MFOV) (Stage Vision)</li> </ul>	<ul style="list-style-type: none"> <li>• 0603 (0201) ~ <math>\square 22\text{mm}</math> IC (CSP 0.75) (Flying Vision)</li> <li>• ~ <math>\square 32\text{mm}</math> IC (0.4P)</li> <li>• ~ <math>\square 55\text{mm}</math> IC (0.65P / MFOV) (Stage Vision)</li> </ul>
	Option	<ul style="list-style-type: none"> <li>• 0402 (01005) ~ <math>\square 7\text{mm}</math> IC (CSP 0.65)</li> <li>• 0603 (0201) ~ <math>\square 12\text{mm}</math> IC (CSP 0.75) (Flying Vision)</li> <li>• ~ <math>\square 17\text{mm}</math> IC (0.3P)</li> <li>• ~ <math>\square 42\text{mm}</math> IC (0.5P)</li> <li>• ~ 72mm connector (0.65P / MFOV) (Stage Vision)</li> </ul>	<ul style="list-style-type: none"> <li>• 0402 (01005) ~ <math>\square 7\text{mm}</math> IC (CSP 0.65) (Flying Vision)</li> <li>• ~ <math>\square 17\text{mm}</math> IC (0.3P)</li> <li>• ~ <math>\square 42\text{mm}</math> IC (0.5P)</li> <li>• ~ 72mm connector (0.65P / MFOV) (Stage Vision)</li> </ul>
	Max Height	• H15mm (Stage Vision)	Same as the description at the left
	Proximity Placement	<ul style="list-style-type: none"> <li>• 1005 (0402) Chip : P 0.10mm</li> <li>• 1608 (0603) Chip : P 0.15mm</li> </ul>	
Feeder Capacity		• Max. 120 EA	
Board Dimension (mm) (L x W x t)	Standard	• 460 x 400 x 4.2 ~ 50 x 40 x 0.38 (Return Weight : 3 kg)	
	Option	• 510 x 460 x 4.2 ~	
	Special Order	• 610 x 510 x 4.2 ~	
External Size (mm)		• L1, 650 x D1, 680 x H1, 530	
Weight (kg)		• 1,800 kg	
Utility	Power	<ul style="list-style-type: none"> <li>• 3 phase</li> <li>• AC 200/208/220/240/380/415</li> <li>• 4.7 kVA (RMS 3 kVA)</li> <li>• 50/60 Hz</li> </ul>	
	Pneumatic Pressure	• 5 Kg/cm <sup>2</sup> 260 NI/min	

※ The dimensions and product specifications contained in this catalog may be changed for reasons of quality improvement without prior notice.

## POWER UPGRADE **SM321**

### High Speed

### CHIP 21K CPH

### QFP 5.5K CPH

### High Accuracy

### 0402 $\pm 50\mu\text{m}$

### QFP $\pm 30\mu\text{m}$

### High Resolution

### 1.4 MEGA PIXEL



## imagine New Generation

**21,000 CPH** exceeded for the first time in the world by a mid range machine!

SM321- 2006 upgrade of the SM320

Samsung's advanced technology achieved the component placement speed of 21,000 CPH (IPC9850).

A first among component placers in its class.

**SAMSUNG TECHWIN CO., LTD.**  
Semiconductor System Division  
SMT Business Dept.

■ **Main Office and Midland Business Office**

333-1 Sangdaewon-Dong, Jungwon-Gu, Sungnam-Si, Gyeonggi-Do, 462-120  
TEL : 82-31-730-8743-9 / FAX : 82-31-730-8797

■ **Southern Regional Business Office**

1<sup>st</sup> Factory, 42 Sungju-Dong, Changwon-Si, Gyeongnam, 641-716  
TEL : 82-55-260-5339 / FAX : 82-55-260-5349

■ <http://www.samsung-smc.com>



Ver 2006. 08(E)

## High Speed! High Productivity!

The placement speed of 21,000 CPH has been achieved for the first time by a mid range component placer!

Through continued development and optimization of Samsung's flying vision technology the productivity of the SM321 has realized a higher than 10% increase in speed from the successful SM320. Chips are placed at rates higher than 21,000 CPH and QFP's at 5,500 CPH.

### Upgraded High Speed Production Mechanism

#### Head Mechanism

- Reducing the weight of the head by using a single casting, stable high speed motion could be realized.
- Theta movements were further enhanced by the use of a high speed, smooth movement motor.

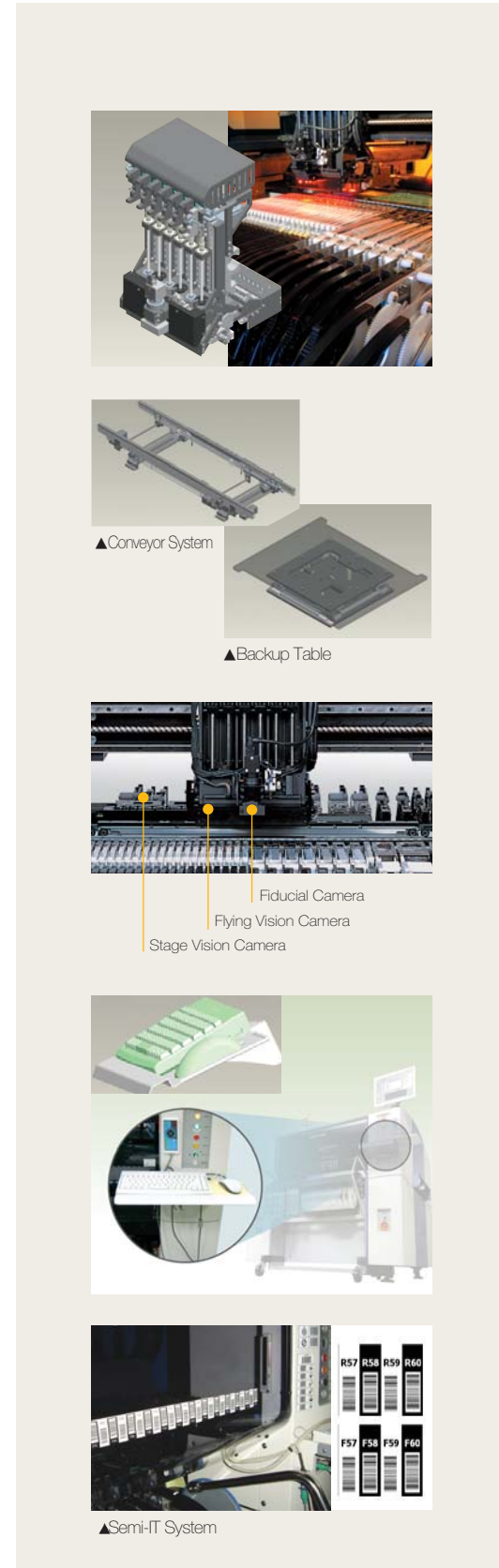
#### Improved Conveyor System

- Transfer speeds have been increased by up to 30%.
  - Through drive belt improvements PCB's are moved more smoothly and faster than ever.
  - Table mechanisms have been redesigned with smaller strokes and improved edge clamping.
  - Clamping mechanisms have been enhanced with a new linkage drive and ultra flat movement.
- A great advantage for flexible/thin PCB's.

### Supported by High Resolution Vision System

With the new mega pixel camera (SM321-B Type) productivity and flexibility has been improved by being able to place 0603 (0201) ~ □22mm Chip, SOP, QFP, BGA and SCP's.

- Standard Pixel Flying Camera : FOV 25mm (1005 (0402) ~ □22mm)
- Mega Pixel Flying Camera : FOV 25mm (0603 (0201) ~ □22mm)



## Convenience up!

- New keyboard and USB ports are supported making the machine extremely user friendly.
- Placement accuracy measurement (Cpk) function is now an option in the machine.

## Flexibility up!

#### Various models available tailoring to customer's needs.

- 1005 (0402) ~ □55mm : SM321-A Type (6 heads- standard pixel camera)
- 0603 (0201) ~ □55mm : SM321-B Type (6 heads- mega pixel camera)
- For large sized PCB (L610 x 510mm) : SM321-L Type (special order : C/V)

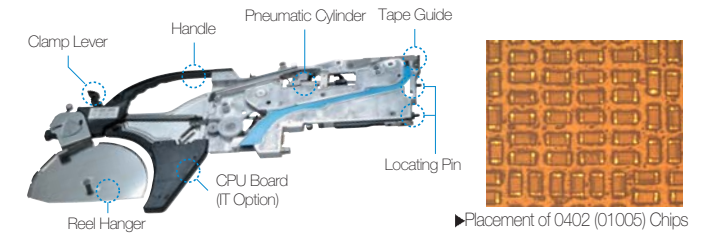
#### Support by IT (Intelligent Part Registration) system (option)

- Full IT System : Oracle network based automatic part registration
- Semi-IT System : Semi-automatic part registration for each machine

## Accessory & Options

### New Concept Non-stop Tape Feeder - SM Tape Feeder

The newly developed SM tape feeder utilizes nozzles specifically designed for fine pitch combined with an improved vision algorithm makes placement of 0402 (01005), 0603 (0201) and 1005 (0402) easy, even on a tight grid.



### New Non Stop Tray Feeder

The tray feeder can replenish parts during placement without stopping the machine. It uses one upper buffer and can hold up to 2 trays per pallet.



### Feeder Inspection JIG for SM Feeder

The tape feeder inspection jig allows inspection for factors that could cause potential errors including incorrect pickup position. Checking defective repetition accuracy through a high magnification camera any problem in the tape feeder can be adjusted thus maximizing the efficiency of the component placer.



### Non Stop Splicing Tool Set

Productivity can be increased by approximately 5% by connecting the tape reel in use to the one to be used during machine operation.

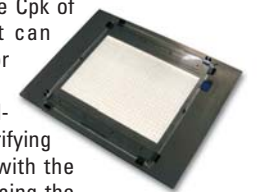
- Manual tape connecting tool
- Portable continuous tape connecting cart

It can perform a high quality tape connecting function by moving the tool to the front side of the machine.



### Placement Accuracy Measuring Jig

This tool can measure the Cpk of the machine on-site. It can check the Cp and Cpk for each head and total Cp and Cpk. Using the Cpk calculating program and verifying the placement position with the fiducial camera after placing the part using the provided PCB file.



## Intelligent (IT) Feeder System

The IT Feeder system provides integrated functions preventing misplacement and has integrated automatic part recognition functions.

Preventing operators mistakenly loading the wrong component or putting the feeder in the wrong location before the machine can place any of the parts. In addition, it allows efficient material management by checking the remaining part quantity and storing the part information in the database.

#### LOT TRACKING SYSTEM :

Manage critical lot tracking data using the SM Series IT feeder System. Maintain a complete history file for every product within a centralized database. Lot tracking data can also be integrated into third-party systems. In the event of a pcb recall the history management system can pinpoint any potential problem pcs using the traceability information.

