



## **AUTOMATIC SYSTEM FUNCTION TESTER MODEL 3260**

Chroma 3260 is an innovative handler for high volume/multi-site IC testing at system level. It is capable of handling packages of various types including QFP, TQFP, BGA, PGA, etc. The handler uses pick and place technology to pick up devices from JEDEC trays, move them to the test site, then move them to the appropriate bin after test. It features a 90-degree device rotation which is required for various pin one orientations.

Chroma 3260 can test up to 6 devices in parallel at high temperature with ATC (Auto Temperature Cooling) ranging from 50°C to 125°C.

### **KEY FEATURES**

- Reliable high-speed pick & place handler
- Tester zero waiting time
- Gull wing package capability
- No socket damage
- Air damper for contact balance
- Feel-free robot teaching and alignment
- Auto contact force learning
- IC-in-socket protection

# **3260**



**Chroma**

# AUTOMATIC SYSTEM FUNCTION TEST

## The Disruptive Innovation in Semiconductor Test

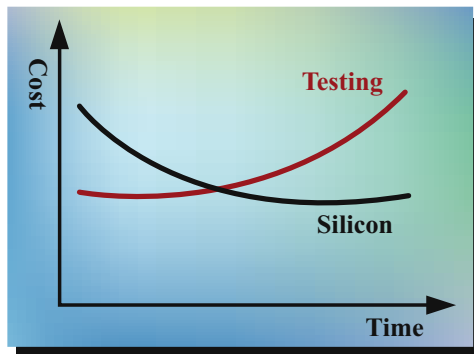
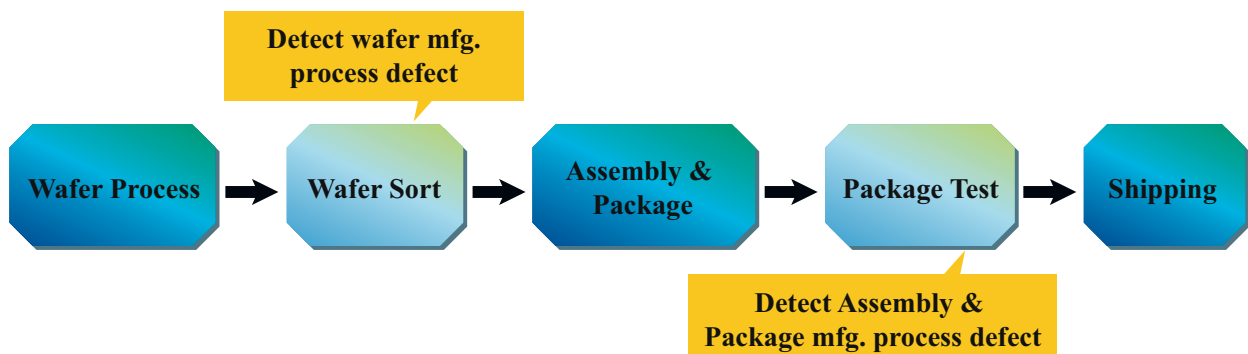
- cited from Dr. Christensen, Harvard University. *The Innovator's Solution*

### CONVENTIONAL IC MANUFACTURING PROCESS

In conventional IC backend process, to ensure shipment quality, most companies test packaged devices at speed with full function. However this induces several issues,

1. Device shipment quality is not ensured due to the difference between ATE and real working environment.
2. Time to market is delayed due to months-long test program development on ATE's.
3. Test cost continually raises in contrast with reducing silicon cost.

Therefore some companies add manual system function test after package test before shipment. However, with this approach people have to deal with human errors e.g. miss binning, bend-lead and etc.. °



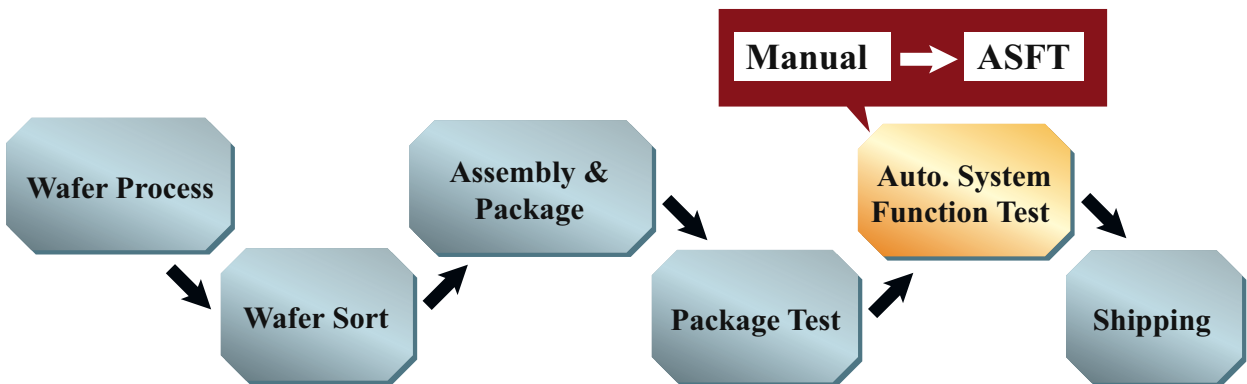
### QUESTIONS

Assuming chip design is bugs-free:

- Is there a better solution for testing packaged chip at speed?
- How do we achieve higher level of quality (lower DPPM)?
- How do we ship sample devices before ATE test program is ready?
- How do we reduce overall test cost?

## SOLUTION - CHROMA 3260 AUTOMATIC SYSTEM FUNCTION TEST

Chroma's solution is "automatic system function test". That is, after package test before shipment, customers add an automatic insertion with Chroma's patented 3260 for testing devices in real working environment.



## BENEFITS

- **Quality Improvement**
  - IC is tested in a real working environment. This process ensures the out-going quality level and reduces DPPM after shipment.
  - Compatibility issues can be checked by this approach.
  - Human errors can also be eliminated.
- **Shorten Time to Market**

With ASFT support we can ship tested samples in quantity before ATE test program is ready. This typically shortens time to market from months to weeks.
- **Cost Reduction**

As long as we adopt the ASFT, customers no longer need high-performance expensive ATE hence reduce overall cost of test.

## SPECIFICATIONS

<b>Model</b>	<b>3260</b>
<b>Dimensions and Weight</b>	Dimensions : 2570 mm (W) by 1360mm (D) by 1780 mm (H) "Excluding Signal Tower" Net Weight : 1300kg
<b>Power Requirement</b>	Power Supply : AC 220V, 50/60 Hz Single-phase Maximum Power Consumption : 6.0KVA Max Controller Circuit : 3.0 KVA Max. Heater Circuit : 3.0 KVA (Option)
<b>Compressed Air</b>	Dry Air of 5.0 kg/cm <sup>2</sup> ( 0.49 Mpa ) or higher, constant supply
<b>Vacuum Source</b>	Build-in diaphragm Vacuum Pump : Pumping Volume : 100 L/min Ultimate Pressure : 100 Torr (-13.3Kpa) Max.
<b>Applicable Device</b>	Type : BGA series, $\mu$ BGA, PGA, QFP series, CSP, BCC, QFN, Flip-Chip, TSOP Outer dimensions : 7 mm x 7 mm to 45 mm x 45 mm Depth : 0.9 mm to 5 mm Lead / Ball pitch : 0.4 mm / 0.5 mm and above Weight : 0.2g to 20g
<b>Multiple testing Layout</b>	6 sites (Pitch 400 mm)
<b>Index Time</b>	3.0 sec (excluding test communication time )/ One site cycle time: 3.5 Sec
<b>Jam Rate</b>	1/3000 pcs
<b>Applicable Tray</b>	Type : Input / Empty tray : 130 mm ~ 143 mm (D) by 310 mm ~ 330 mm (W) Output tray : 135 mm ~ 150 mm (D) by 290 mm ~ 330 mm (W) Capacity : Input / Empty tray : Elevator with 210 mm stroke (JEDEC) Output tray 1, 2, 3, 4 : Elevator with 210 mm stroke (JEDEC)
<b>Categories</b>	4 Categories (128 bin signals for RS232)
<b>Contact Force</b>	Max. 50 kgf ( Accuracy $\pm 1$ kgf )
<b>High Temperature (Optional)</b>	Operating Mode : Room Temperature / High Temperature Temperature Range : 50°C to 125°C (Heat-up time : Within 30 min) Accuracy : Pre-heater Buffer $\pm 5$ °C , Contact Area $\pm 3$ °C Cooling Head : 10°C + 5°C
<b>Tester Interface</b>	Standard RS-232, Optional GPIB,USB and TTL
<b>Advantage</b>	Universal kit design ECD function (Easy-edit communication define) Two tray (Color tray) mode available Continuous fail retest function Real pick and place system Yield control (Average yield of socket) Yield monitor (Per contact head plug)
<b>Option</b>	CCD camera for device orientation detection ATC high temperature system function Socket sensor

All specifications are subject to change without notice.

Developed and Manufactured by :

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