



# SH-5000 Strip Test Handler

Surpass the test.



## Module Description

MCT is the leading supplier of Strip Test handling and marking equipment. Our products are designed to meet evolving market needs of testing and marking arrays of devices in either singulated or leadframe format.

MCT meets the requirement for Test handling capable of handling devices in strips and laminate leadframes.

The MCT SH-5000 is capable of handling a vast array of strip and laminate leadframe sizes. This specification defines the mechanical, electrical, software control, functional, safety, general and buy-off requirements of the equipment. The Equipment is designed to comply with S2-93 and CE directives.

## Equipment Overview

The MCT SH-5000 is our second generation strip test handler that provides increased performance and greater flexibility at a lower cost. The SH-5000 is a universal strip test handler for all current and anticipated semiconductor device families including CSP, QFN, BGA, SO, SOT, QFP, to name a few. The SH-5000 supports single to massively parallel site testing, providing industry leading throughput.

MCT offers various configurations and optional features to meet your ever changing production requirements. The SH-5000 is supported by our industry leading data management and analysis software products such as Smart-Track® and Smart-EM, which allow you to optimize your production and quality control processes. The SH-5000 utilizes an innovative thermal conduction technology to rapidly condition strips to your desired thermal setpoint.

## Equipment Advantages

Increased tester utilization, first pass yields and throughput.

Decreased cost of test, jam rates, kit change over times.

Quality applications & design engineers, data management & analysis and after sale support & spares.



## SH-5000 Functional / Performance Requirements

General	
Strip-to-Strip Index Time	<3.2 secs at zero test time
Intra-Strip Index Time:	<350 msec for < 24mm move <300 msec for < 15mm move
Positioning Accuracy:	± 25 microns with Vision
Contacting Controls:	Z-Height Position or Z-Force Limiting
Conversion Kit Changeover:	< 30 minutes
Multi-site Test:	Single Site to Massively Parallel
Temperature Range:	-55 C* to +160 C (*with optional chiller)
Temperature Accuracy:	+/- 2 C
Soak Limitation:	Not soak limited for most applications
Re-Ambient	< 60 C from HOT Testing and > 10C from COLD Testing
Defrosting	One Defrost Cycle per Day
Time to Temperature*:	From ambient to any temperature set point < 45 minutes (*with optional chiller)
Temperature Slew Time*:	From any temperature set point to ambient < 45 minutes (*with optional chiller)
2D Read:	Topside, Bottom side - SEMI T9-0200
Jam Rate	< 1 jam in 1000 strips run
Uptime	> 97%
MTTA Mean Time to Assist	< 2 min.
MTBF Mean Time Between Failure (any failure that is not considered an assist)	> 200 hours
MTTR Mean Time to Repair	< 20 min.
Z-force/contacting force	77 KgF or optional 120 and 194 KgF versions available (increased strip to strip index time)
ESD	< 30 V – within 75 mm of device path - Ionizer: Available as an option - Ground Fault Monitoring: Available as an option
Tracked I/O	
Magazine Width	28-110 mm
Magazine Length	115-280 mm
Magazine Height	200-450 mm
Number of Cassettes	1 input, 1 output
Exchange on the fly	Yes
Slotted I/O	
Cassette Width	28-110 mm
Cassette Length	115-280 mm
Cassette Height	70-160 mm
Cassette Pitch	4.5 mm minimum
Number of Cassettes	355 mm available for cassettes
Exchange on the fly	Yes
Docking	
Docking Plane	Horizontal
Infinite plane	Yes
Configuration	
Product Flow	Left to right
Size:	1.7 x 1.5 x 1.0 m (L x W x H)
Weight	1500 kgs
Mobility	Transportable
Clearance for manipulator foot	100 mm
Embedded Controller - High Performance Industrial PC	
CPU	Core2 Duo 2GHZ or greater
Main Memory	DDR, 1 GB or greater
Hard Disk	80 GB or greater
Removable Storage	DVD / CD R/W Drive, 3.5" 1.44 MB Diskette
Video Adaptor	VGA – ONBOARD
Power Supply	350W or greater
USB Ports – 2/1.1	(4) present, (1) port available on back of handler
Printer Port	Present but committed - not available to user
Ethernet Ports	(2) available on back of handler
Operating System	MS Windows XP
Operating Conditions	
Ambient Temperature	25 C
Clean Room	Dust Class 100K or Better
Relative Humidity	20-80% Non-Condensing
Maximum Floor Load:	750 kg/m2
Audible Noise Level	< 65 db at 1m
Warranty	13 months after acceptance for defects in materials excluding consumables or a maximum of 13 months from date shipment.

Each equipment purchase entitles the purchaser three (3) training credits, which is inclusive of training for up to five (5) personnel for maximum of three (3) days. Training shall be conducted at customer's site to operators, service technicians and Equipment Engineers. Training shall be conducted in English.

**Basic** (2 days) shall include operation and basic trouble shooting of mechanical, electrical, software and hardware.

**Basic operation** – Starting system, software/ menus, operating etc.

### Device kit conversion

**Intermediate** (2-3 days – suggested that it occur 1 to 2 months after basic training). In depth machine training as follow:

Mechanical alignment procedures and diagnostic techniques

Electrical/electronics maintenance, troubleshooting and tuning procedures

Daily/Weekly/Monthly/Bimonthly/Quarterly/ half yearly/yearly machine preventative Maintenance.