



FH-1200

8" & 12" Wafer Ring Film Frame Handler

Surpass the test.



Module Description

MCT is the leading provider of 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 a test handler capable of handling industry standard Film Frame Wafer rings. Film Frame rings are designed to hold singulated blocks, wafers or strips in an array with accuracy that is sufficient for high parallel contacting.

The number of parts in the array or wafer depends on the size of the parts. The specification presented defines the mechanical electrical, software control, functional, safety, general and buyoff requirements of the equipment. The equipment is designed to comply with S2-93 and CE directives.

Equipment Overview

The FH-1200 Film Frame Test Handler is designed to reduce the cost of ambient and hot testing for saw/punch isolated strip and block molded QFN, WLCSP, and eWLB packages. The handler is capable of simple conversion from one process to another with Test chuck change. To ensure optimum quality, process and data control, the FH-1200 is supported by MCT's leading data management software including the SmartTrak Software Suite.



mct

www.mctint.com

FH-1200 Functional / Performance Requirements

General	
Frame to Frame Index Time:	<3.5 s at ≥ 10 s total test time for single strip on frame. Add 1 s for each additional strip on the frame (note 1,2,3)
Intra-strip Index Time:	<300 ms for <24mm move
Maximum Y Axis Range:	200 mm (note 4)
Maximum Theta Range:	+/- 6 degrees
Positioning Accuracy:	± 10 microns with Vision
Contacting Controls:	Z-Height Position or Z-Force Limiting
Changeover (frame size, load board):	< 15 minutes
Device Changeover (recipe Change):	< 1 minute
2D, Barcode Read:	Topside - 2DID, Barcode, SEMI T9-0200
Jam Rate:	<1 jam in 1000 rings 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 with optional 120 Kgf version available
ESD	< 100 V within 75 mm of the device path- with optional ionizer
I/O	
Film Frame Carriers Supported	Standard frames for 300 mm wafers, up to 380 mm side to side and front to back
Cassette Length - Maximum:	400 mm (cassette for ~380 mm long frame)
Cassette Height - Maximum:	302 mm
Max, Number of cassettes	2 input, 2 output, 1 reject cassette with reduced number of slots
Strip Requirements (on tape within Film Frame Carrier)	
Package types:	QFN/DFN Lead Frames, WLCSP, other tape mounted package types
Pad pitch:	0.3 mm minimum
Pad size:	0.15 x 0.25 mm pad minimum
Docking	
Docking Plane:	Horizontal
Max Test Head Size:	Unlimited, as long as operator side of test head does not overhang front of handler, which is 1 m in front of the center of stage travel
Configuration	
Product flow:	Left to right
Size:	1.9 x 1.5 x 1.0 m (L x W x H)
Weight:	1500 Kgs
Mobility:	Transportable
Clearance at manipulator foot:	100 mm
CPU:	Core2 Duo, 2 GHz 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 – 64 MB DDR
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:	(3) available on back of handler
Operating System:	Windows XP Professional
Warranty	13 months after acceptance for defects in materials excluding consumables or a maximum of 13 months from date shipment.

Data Collection, Reporting

A Scalable Solution Production Solution:	Full compatibility with MCT Cell Controller / SmartTrak
Mid-level:	Internal CC for Map Manager
Entry-level:	Map files in MCT format
Operating Conditions	
Ambient Temperature:	25 C
Clean Room:	ISO Class 8 or Better (Class 100K)
Relative Humidity:	20-80% Non-Condensing
Maximum Floor Load:	750 kg/m ²
Audible Noise Level:	< 65 db at 1 m
Interfaces	
Operator Computer Interface:	LCD panel with Touch screen
Operator Indicator (Light Tower)	
Red, Yellow, flashing yellow, Green, Flashing Green	Configurable by customer
Factory network connection	Ethernet (TCP/IP, Microsoft)
Digital/Tester Interfaces:	Full MCT offering - GPIB, RS232, TCP/IP
Software Interface:	SECS/GEM compliant
Password Levels:	(4) Levels, 0-3, that are fully user configurable Any page of the user interface, and any of the user controls on any page (buttons etc.), can be activated or disabled on any level.

Power and Facilities Requirements

Electrical:	220 V single phase, 50-60 Hz, 20 Amps
Compressed Air:	CDA, 5.5 bar (~80 psi)
Air consumption:	< 175 lpm typical

Each equipment purchase entitles the purchaser to training for 2 personnel for 1 week. 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 Handler operation – Starting system, software/menus, operating etc.
- Device kit conversion

Intermediate (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.

Device kit conversion

- 1) Panel to panel handling time depends on height of contacting and other application specific parameters. Specification assumes that the contacting plane is below the bottom surface of the top plate.
- 2) Allow additional time for mapping distortion if necessary for fully sawn strips. Estimate 0.1 seconds for each map point, typically 2 map points per panel.
- 3) System performance (panel to panel time) is reduced in the 120 Kgf version of the stage.
- 4) Y axis movement does not strictly limit the width of strips within the frame. Contactor configurations can be used to allow wider spacing than 200 MM.
- 5) Test Parallelism is dependant on the wafer tape process (positional accuracy of singulated devices on the tape), contactor pin location accuracy, and tester capabilities.
- 6) Temperature maximum is dependent on the thermal capability of the film used to mount the strips to the ring.