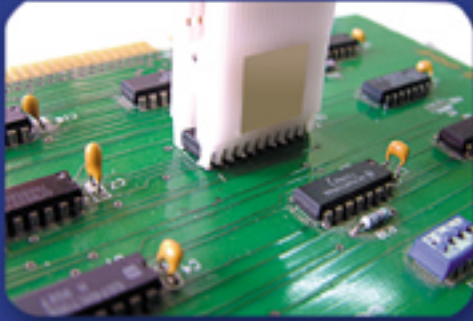


MELSSWIZARD MW48160

*Advanced Tester for Mixed Technology
PCB Fault Diagnosis*



MEL SYSTEMS AND SERVICES LTD.

Advanced Technology... Total Support

MEL Systems and Services Ltd. is pleased to introduce the next generation Tester MELSSWIZARD MW48160 for MIXED TECHNOLOGY BOARDS. This state-of-the art ATE helps the customers to test their complex Printed Circuit Boards (PCBs) which can have simple devices from the TTL, CMOS family, to latest generation VLSI components and ASICs.

This Tester is directly interfaced to the PC using the parallel port, hence freedom from obsolescence of PC interfaces and hardware.

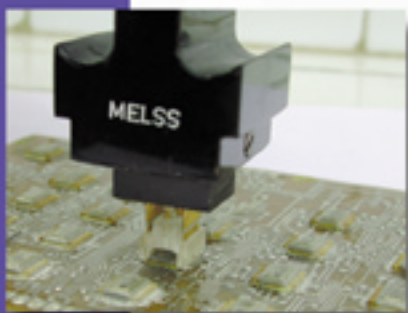
MW48160 can directly support testing of the Device Packages from old generation DIP packages to the new generation SOIC, PLCC, QFP Packages, having high pin counts up to 160 Pins.

MW48160 uses the powerful and field-proven VI Test Methods like MVI, SVI, WVI and GVI to learn the signatures from a known good board and compare the same with the faulty board. These test methods helps the users to test their boards without the need to rig up an expensive board-specific test jig and without writing tedious test programs.

MW48160 OFFERS THE FOLLOWING TEST METHODS

POWER-ON TEST

IN-CIRCUIT FUNCTIONAL TEST (ICFT)



Russian IC Testing

In-Circuit Functional Test facility helps the user to do Power-on functional testing of Digital Devices. A comprehensive library of devices covering TTL, CMOS, ECL, LV, CMOS HV Logic families, Memories, PALs, Microprocessors, Microcontrollers and their peripheral devices has been provided. A separate Russian Devices library is also provided as an option.

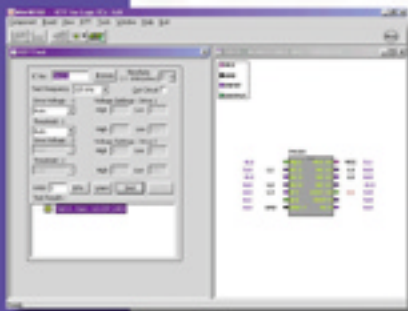
IN-CIRCUIT ANALOG TEST FACILITY

This facility allows the user to test the Analog Devices like Op-Amps, Regulators, Comparators, Opto-Couplers and Mixed Signal Devices like ADCs and DACs functionally. The in-built Intelligent Algorithm tests the Op-Amps for various configurations like Voltage Follower, Inverting and Non-Inverting Amplifier modes. The standard suite for Cluster Testing facility for all types of Analog Devices as well as Mixed Signal Devices is also provided.

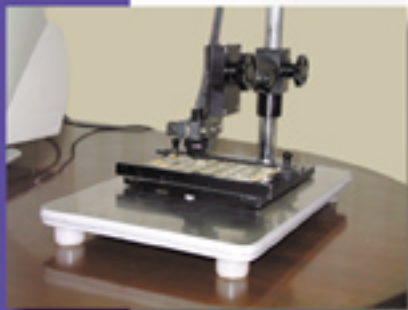
ADVANCED VECTORLESS TESTING TOOL SUITE for MIXED TECHNOLOGY BOARDS

VOLTAGE-CURRENT (VI) SIGNATURE ANALYSIS

This test checks the dynamic impedance (Voltage versus Current) of nodes of a Device or PCB under Power-Off conditions. The results, which are very unique for each node, can be graphically displayed, compared automatically against stored traces learnt from a known good board or device as reference. Normally the traces are taken with respect to Ground.



ICFT Menu



Test Clip Stand

MOVING REFERENCE VI (MVI)

MVI is the test methodology where the VI characteristics are taken with the reference being shifted sequentially pin by pin automatically. This helps in the diagnosis of pin-to-pin faults of devices, Input and Output impedance faults of analog devices etc.

GUARDED VI (GVI)

This facility allows the user to view and analyze the characteristic of an individual component connected to a node, eliminating the influence from a common nodal characteristic. GVI allows the user to guard a particular node and hence the effect of the other components on the component under test is substantially reduced. The GVI is a much more faithful representation of the characteristics of the individual component under test.

SUB-THRESHOLD VI (SVI)

This test facility, which allows the user to apply a very low stimulus voltage combined with the impedance matching capabilities, helps the user to take the VI characteristics of sensitive components/nodes safely and allows for an in-depth analysis, like a capacitor node to be analyzed for its leakiness.

WIZARD VI (WVI)

This is a proprietary algorithm for testing high pin count SMT devices quickly. This feature gives tremendous advantage to the user in terms of TIME to REPAIR.

CIRCUIT TRACER (Power-On & Power-Off)

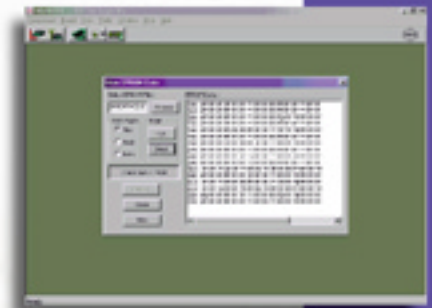
This feature learns the interlinks between the pins of an IC and the links between different ICs and other components from a good working board using clips and grabbers; the links data learnt is stored for future comparison. The reverse engineering process using the optional CAD package can be used for regenerating the schematic of the PCB.

PROGRAMMABLE FEED RESISTANCE

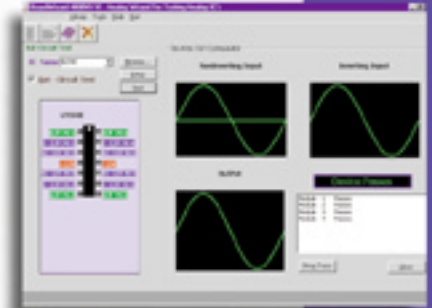
MW48160 offers the choice of a wide range of Feed Resistances: 14.3 Ω to 470 K Ω . You can match the impedance of the Device under test by selecting the right Feed Resistance to the DUT. This means that measured VI or Analog response would be true and meaningful, improving the fault coverage.

MW48160 can directly support testing of Device Packages from Through-hole Technology DIP packages to the new generation SOIC, SOL, PLCC, TSOP, VSOP, SSOP, QFP, PQFP, TQFP, BQFP, SOT packages, having Pin counts up to 160 Pins.

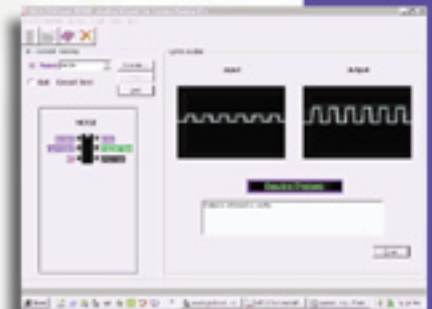
Factory upgrade is possible up to 400 Vectorless Channels for specific applications.



EEPROM Checksum



Analog Testing



Opto-coupler Testing

SPECIFICATIONS

Models:

- 1.MW48160HP : $\pm 5V$ and $\pm 12V$ Drive
- 2.MW48160LV : $\pm 5V$ Drive only

MELSSWizard MW48160 Software Features

- Auto programmable thresholds- ECL/TTL/CMOS/LV/User defined.
- User interactive programmable palette.
- DRC
- Program controlled DUT power supply with independent selection
- Digital signal capturing facility- for debugging
- Auto locate facility
- Auto compensation for self linked combinational and sequential devices
- Unconditional and/or conditional loops to verify the device consistency
- Automatic program generator for memories and PALs / GALs
- IC info. Popup
- Language free Interactive Vector Programming for digital devices
- Test sequence generation templates
- Integrated library request form

MELSSWizard MW48160 Other Features and Facilities

- Auto test data rate sweep for digital devices.
- Windows 95, 98, Me and XP platform
- Hands Free access for Russian and Western counterparts
- Enhanced analog IC testing
- Auto threshold sweep.
- Automatic program updation for sequential devices with custom links
- Rule based memory IC diagnostic testing
- Extensive Russian library
- Russian to Western equivalent for ease of use
- Integrated testing of digital and analog ICs in Clusters / Functional group
- User defined tolerance based Go-No-Go board program test
- Digital and analog signature capture
- Enhanced test results archive for future failure analysis/ fault trend analysis
- BIST - Built In Self Test
- Intelligent and user friendly system software
- Multi-tier access control software

General

Type of Tester	: IBM Compatible PC Driven, PIII or above
Operating System	: Microsoft Windows 9X/Me based
Built-in Fixed Power Supplies	: +5V@8A, -5V@0.5A, +12V@1A, -12V@1A, +3.3V@.5A
External Power Supplies	: Provision available. Routed through System to enable software control. Build-in Power Supplies.
System to Device Access	: DIP Clips, Probe, Micro-grabbers, Flying Channel Interface and optional SOIC, SOL, PLCC, TSOP, VSOP, SSOP, QFP, PQFP, TQFP, BQFP, SOT Packages, Custom Russian Clips and DIP to SOIC Adapters
System to PCB Access	: FRC. Optional Customised Connector Interfaces and Bed-of-Nails Fixture Interfaces
MELSSWIZARD Software System	: MW48160 Operating Software with Login and Password protection

Vectorless Test Tool Suite:

Power Off Vectorless Test Methods	: VI, MVI, SVI, GVI, Dual VI & WVI
Basic No. of Channels	: 80 Channels Expandable to 160.
Number of Quick Test probe channels	: 2
Resolution	: 12 Bit .
Test Frequency at Pin	: 15 Hz to 3.84 KHz
Voltage Amplitude	: +0.32V to 24V pp
Programmable Feed Resistance	: 14.3, 41.4, 153.6, 220, 337.7, 510, 1K, 10K, 82.4K, 100K, 470K
Interpretation of Test Results	: Manual or Automatic with user Defined Tolerances.

Applications:

Through-hole & SMT Board fault diagnosis through Application of Following Features.
Node to Node Impedance Signature Analysis (Two Probe VI), IC to IC Impedance

Signature Analysis (Two-clip Mode), Board Level Comparison-Component by Component, Edge connector Level, Bed of Nails Fixture

Power-On Analog Functional Test:

Basic No. of Channels	: 4 Channels Analog Display switchable across 40/160.
Resolution	: 12 Bit
Analog Drive data rate	: 250 KHz
Drive Test Frequency at Pin	: Up to 3.84 KHz
Waveforms	: Sine, Square, Triangle, Saw tooth, and User defined
Prog. Drive Voltage Amplitude	: Up to 24Vpp
Programmable Offset	: -6V to +6V
Prog. DC Stimulus Channels	: Standard 16
Prog. DC Stimulus Amplitude	: -12V to +12V
Prog. Feed Resistance	: 14.3, 41.4, 153.6, 220, 337.7, 510, 1K, 10K, 82.4K, 100K, 470K

Applications:

Through-hole & SMT Board Repairs through Application of Following Features.
Analog Clip-on IC Testing (Op-Amps, Comparators, Regulators, Opto-couplers, Switches), Analog Cluster Testing, Analog Listen Mode and ADC/DAC Testing.

Digital Test:

No. of Channels	: 48 Standard. For expansion Refer Factory
Test Data rate	: Up to 500KHz
Test Frequency at Pin	: Up to 250KHz
Duration per Tick	: 2 μ S
RAM Behind each Pin	: 8K x 2
Programmable Drive Amplitude	: +12V to -12V
Programmable Sense Amplitude	: -12V to +12V
Drive and Sense Levels	: TTL, CMOS, ECL, LV, HV CMOS and User Defined
Backdrive Source / Sink Current	: Up to 650 mA, Complying with MIL Std.
Programmable Guard Channels	: Standard 16
Pull-up/down	: Auto/Manual
Other Facilities	: Automatic Program Generation for PAL and Memories, Auto Clip Detection, ROM/EPROM/ EEPROM contents. Extraction and Verification in Cell-by-Cell method and by Checksum Loop test.

Applications

Functional Power-on Truth table testing of SSI/MSI Logics, Dual Threshold Devices, CMOS testing at 5V and 12V, 3.3V LV devices testing and LSI / VLSI devices testing (using Programmable vectors and with Rule based Algorithm).
Identification of Functional Equivalents of unknown ICs, Circuit Tracing facility for both Through-hole and SMT Devices.

RCV Measurement :	R - 5 to 5 M
	C - 10 pF to 11000 μ F
	V - 100Vpp

Board Level Test Program Development

Test Sequence generator Templates (TSG)
Graphical Device Location to guide operator while learning and testing devices (GDL)
Graphical Circuit Documentation and Tagging for analog circuit clusters (GCDDT)

Options

Schematic Generation CAD Package, Russian Library. Custom Accessories and Interfaces, Customised Board Program development for specific PCBs, Application Support and Training, IC Test Program Library Development, Training on Library and Board Level Program Development.

MELSS constantly work towards product improvement and as a result specifications may change without prior notice. All trade marks are acknowledged.



MEL SYSTEMS AND SERVICES LTD.

Regd. Office & Factory : 173, Developed Plots Estate,
Perungudi, Chennai - 600 096, INDIA.

Tel: 044-24961903/904, Fax: 044-24960488, E-mail: agency@melss.com

- Bangalore: Tel:080-2206652, Telefax:080-2266546, Email: melssblr@melss.com
- Kolkata: Tel:033-22810253/22479932/3, Fax:033-22472536/4502, Email: melsscal@melss.com
- Coimbatore: Tel:0422-2450405, Fax:0422-2433347, Email: melsscbce@melss.com
- Delhi: Tel:011-25727731, 51539331, 25743584, Fax:011-25727732, Email: melssdel@melss.com
- Mumbai: Tel:022-25003742, 55951930, Fax:022-25003744, Email: melssbom@melss.com
- Secunderabad: Tel:040-55217498, Telefax:040-27717498, Email: melsshyd@melss.com

Visit us at www.melssindia.com