

MultiMac (Multi Measurement and Control)

Mateq developed MultiMac as a generic automated test solution for use during the development, production and support phases of a product's life cycle.

The concept is to provide a single test environment for engineers that would allow for quick turnaround times when developing tests for a variety of devices, ease of maintenance and cost effectiveness over the long-term.

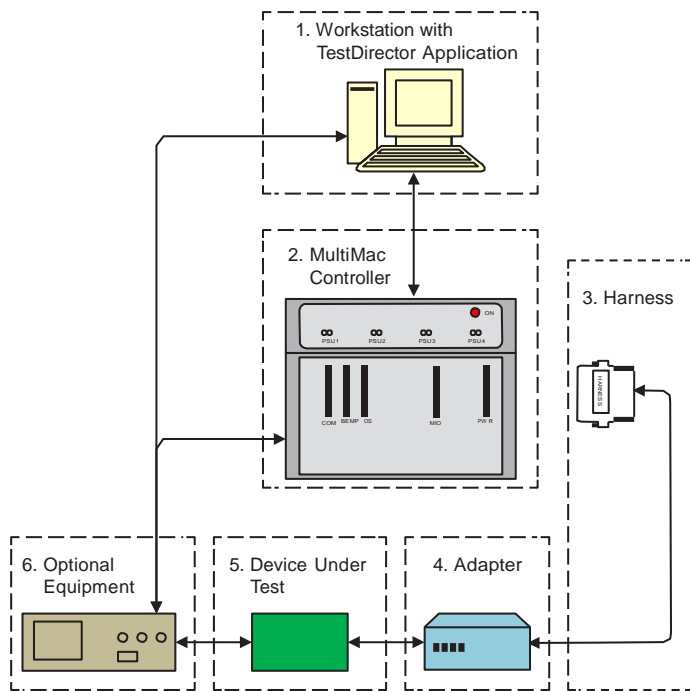


MultiMac Test Bench with typical Adapter

Features

Simplicity	<ul style="list-style-type: none"> Menu Driven Test Procedures allows a developer to easily develop test scripts since no programming skills are required. Test limits can be easily accessed and updated to cater for changes in requirements of a device. Intuitive layout of the menus and forms makes it easy to operate the software. The simplicity of the environment allows for ease of maintenance and short training cycles, especially when long term self-support by the customer is required. Contains most common test equipment which allows for testing of a variety of devices. In most instances, only a simple interface is required for a device under test.
Flexibility	<ul style="list-style-type: none"> Test functionality may be easily expanded with external software and hardware, using a simple interface definition, which allows for the exchange of data and results. External programs may be started to, for example, execute third party programming software. Electronic equipment can be tested at PCB or System Level
Accessibility	<ul style="list-style-type: none"> Different access level rights can be assigned to accommodate various users e.g. Administrator, Developer, Technician, Tester, Quality Assurance, etc. Various users may have access to the secure database and simultaneously review progress on devices tested and analyze results while testing is still in progress.
Rapid Development	<ul style="list-style-type: none"> Allows for quick turnaround to develop interfaces and test scripts for new devices.
Automated or manual testing	<ul style="list-style-type: none"> When a failure occurs, automated testing can be stopped and fault-finding performed by manually controlling the built-in equipment.
Environmental Stress Testing	<ul style="list-style-type: none"> Simplified Stress Testing can be performed by repeating scripts for either a period of time or number of cycles Easy to use scripts can be defined to perform complex Stress Testing, i.e. temperature profiles. Multiple units may be tested simultaneously to reduce Environmental Stress Testing time. When tests have to run over extended periods of time an optional Cellular Text Message capability is available to notify operator of failures and progress.
Reporting	<ul style="list-style-type: none"> Summary, Detailed and Analysis Reports are available
Customization	<ul style="list-style-type: none"> Hardware or software functionality can be added to meet customer specific requirements.

Test System Building Blocks



1. Computer (Workstation) including:
Monitor, keyboard and mouse.
The TestDirector application software.
2. The MultiMac Controller.
3. Harness to connect the MultiMac Controller to the Adapter or Device Under Test.
4. Adapter to interface the Device Under Test to the MultiMac Controller, if required, containing bed of nails, special electronics, loads, etc.
5. The Device Under Test (DUT).
6. Optional Equipment such as an RF spectrum analyser.

The MultiMac Controller consists of the following Configurable Instruments:

64 Analog I/O pins multiplexed to:

DC/AC Voltmeter, Range 1mV (100nV resolution) to 300V
DC/AC Current Meter, Range 10mA (10nA resolution) to 3A
Resistance Meter, Range 100 Ω (1m Ω resolution) to 100M Ω
Waveform Analysis Module to measure Vrms, Vp2p, Offset, Min/Max, etc.
Capture Compare module to measure frequency, period, signal phase, etc.
Accurate DC Voltage Source
Waveform Generators
Pulse Generators
Two Programmable Loads, range 0 Ω to 40k Ω (10 Ω steps)
Connectors to two external instruments

Communications:

Master unit multiplexed to 8 channels
Slave unit multiplexed to 8 Channels
Master or Slave may be configured as RS232, RS485, RS422, CANBus, UART or ARCNet.

Bus Emulator:

Configurable as a Master (i.e. CPU) or Slave (i.e. Peripheral or RAM Memory)
16bit Address Bus, 16bit Data Bus: 3.3V or 5V
Configurable Control Signals RD, WR, CS and Reset Up to 64 Configurable Discrete I/O

Power Supplies

4 Isolated 0 to 36V, 5A Power Supplies – may be connected serial or parallel
Script Programmable to set Voltage and Current Limit
Peak Current and duration programmable up to 8A
Measure Current and Output Voltage

The MultiMac Test Bench consists of the following items:

Rack 19" Wide, 38U High
MultiMac Controller
Rack mounted PC
LCD screen, 23"
Keyboard, Mouse on slide-out tray or fixed work surface

Optional

Internal Signal Multiplexer to add an additional 80 or 160 I/O pins.
Rack mounted Signal Multiplexer to multiplex 256 signals to 16 at 1A switching current
Resolver/LVDT Position Module
Building blocks to aid test equipment, i.e. load switches, temperature sensors, extra Power Supplies, etc.

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