



aixHALT Highly Accelerated Lifetime Testing

ADVANCED CUSTOMIZED CHARACTERIZATION TECHNOLOGIES



HALT Test Systems and Production Tools

The system is designed for fast reliability and accelerated life testing of piezoelectric or dielectric materials.

Reliability data including large and small signal material characteristics of materials and devices can be evaluated over temperature with a high flexibility in test patterns which can be tested simultaneously, dependent on the number of modules, on a large number of samples connected and scanned via an integrated switching matrix.

For electrical excitation signals a various number of high voltage amplifiers are available.

The current response of the samples is measured by the flexible and precise virtual ground method. Simultaneously, external signals can be recorded optionally such as displacement change dependent on external sensors.







Up to 3 μ C modules in one rack



Key facts

Flexible configurations

19" rack system with multiple controllers, host PC, optional power amplifier unit and temperature controller.

Integrated Switchmatrix

Multiple sample connection is typically done via integrated switching matrix modules that allows testing of up to 64 channels per module.

Customized sample fixture

aixACCT offers a wide range of sample fixture for standard sample layouts, but also offers the design of customized.

Complete material characterization

The PES systems are able to follow research activities or product developments from prototype to product. There are examples for tests results performed by PES below.

Solving customers problems

Get the best solution without headaches

The basis for the creation of customerspecific solutions is the high variability of the basic system. The µController as core system can be equipped with a multitude of extensions, which already cover many customer requirements, be it an increased dielectric strength or current limitations. Nevertheless, every customer brings new challenges with him, which we meet with our experience and know-how. One example of this is the large number of sample holders that we have developed to date. Thus, we can offer problem solutions in a short time, so that you reach your goals faster.





Example for sample fixture

For use in environmental chamber

Specialized sample holder DIP socket



Specialized sample holder for large PCB trays for MEMS testing



Probing system for 32 Thin bulk samples manual operation



Probing system for 32 bulk samples (max. 400V) Sample fixture can be used in Climate

chamber



aixHALT Software

The system runs under our aixHALT software that was specially designed for controlling the complete setup and presents a real time feedback of the measurement progress. The simplified design ensures an intuitive handling suited for production environments.

It can be scaled with the complexity of the hardware configuration and the related measurement tasks.

This allows the upscaling of the tool with customers growing demands of simultaneous data acquisition. Due to its high flexibility, it can be easily adjusted to customer specific configurations.

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Specifications

Module Hardware

- Microcontroller based test module with Ethernet interface
- Single measurement modes similar to TFAnalyzer (DHM, LM, CVM(0V), BDM) controlled by host application
- Hysteresis (DHM) up to 1kHz, CVM 1kHz
- Treatment modes (electrical stress): rect, sine, triangle, manual waveforms
- Fatigue signal up to 250kHz, DC bias stress, or arbitrary waveforms
- 2 (opt. 4) analog inputs, 16bit, 800kS/s simultaneous, 256kS channel memory
- 1 analog output 16bit,1MS/s, 32kS arbitrary waveform buffer
- > Test sequence and data for each module is transferred via Ethernet by host application
- Data can be recorded and temporarily stored in each module for each measurement cycle

Driving Unit

- output voltages: +/-12V, 150mApk, 250kHz, 50 Ohm output impedance
- optional module (internal): +/-100V, 50mA, (10nF@10kHz) or +/-200V, 20mA, (10nF@2kHz)
- optional external power amplifier support (output, voltage monitor, enable)
- optional external amplifier module +/-100V,
 500mArms, 100kHz (load dependent); 200V and
 400V module also available



Measurement Channels

- Current input ranges: 1A, 100mA, virtual ground 1nA, 10 nA, 1μA, 10μA, 100μA, 1mA, 10 mA, optional 10pA, 100pA
- Voltage monitor input +/-10V or internal output monitor
- 2 optional inputs +/-10V (displacement, external sensors, etc.)

Switching Unit

- Add-on switch matrix module, up to 64 channels per module, 1x32, 1x64, 2x32 or 2x64 configuration
- 54-way 2-row DIN 41612 connector
- max. contact rating 200V,1A (400V optional)
- optional current limit per channel (~300uA, 100V)
- optional aux connection for external amplifer support
- optional common output switchable for common drive or common sense configuration, or individual top and bottom contact

Dimensions

- 19" rackmount controller module 3HE(3U), 14TE(14HP), with switching unit 21TE(21HP)
- > up to 3 controller modules with switching unit per frame with power supply



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