

MTZ-35

35 MHz Impedance Analyzer



APPLICATIONS

- Ceramics
- Sensors
- Polymers
- Nano materials
- Solar/photovoltaic cells
- Rubbers
- Glues
- Epoxies
- Liquid crystals
- Ferro electrics
- Biological cells
- Polar liquids...



MTZ-35

The **new benchmark** of impedance analyzers.

This easy-to-use impedance analyzer, delivered with its high performance software **MT-Lab®**, is the new standard for impedance measurements.

A global leader in scientific instrumentation for materials science and engineering, Bio-Logic is pleased to extend its materials research product range with the **MTZ-35** impedance analyzer and ancillary equipment. Combining our world class design and manufacturing with the latest measurement technology on the market today, the **MTZ-35** system is the value choice without sacrificing performance.

A modern materials science lab faces challenging measurements each day, and impedance spectroscopy is a primary tool in materials research that helps characterize the physical properties and/or chemical interactions of the materials under investigation.

The Bio-Logic **MTZ-35** impedance analyzer has the specifications and features required to address the broad scope of applications in the materials research field.

With a wide frequency range (10 μ Hz - 35 MHz) and superior accuracy (0.1% amplitude, 0.05% phase) the **MTZ-35** impedance analyzer tackles the most difficult tasks in materials science today.

The **MTZ-35** interface is the Windows-based **MT-Lab®** software that is supplied with the system and allows easy management of multiple runs and complex experimental sequences, including control and interface features for temperature, furnaces, cryostats and a wide range of sample holders adapted to the user's needs.

Upgrade your laboratory now with impedance analysis and take your research to a whole new level of analysis with the **MTZ-35!**

Exploring new frontiers of impedance testing with a wide frequency range impedance analyzer and a full range of ancillary equipment.

MEASUREMENT RANGES

- Frequency 10 μ Hz to 35 MHz
- Inductance 10 nH to 10 kH
- Capacitance 1 pF to 1000 μ F
- Resistance 1 m Ω to 500 M Ω

ANCILLARY EQUIPMENT

- Furnaces ambient to 1100°C
- High temperature sample holder

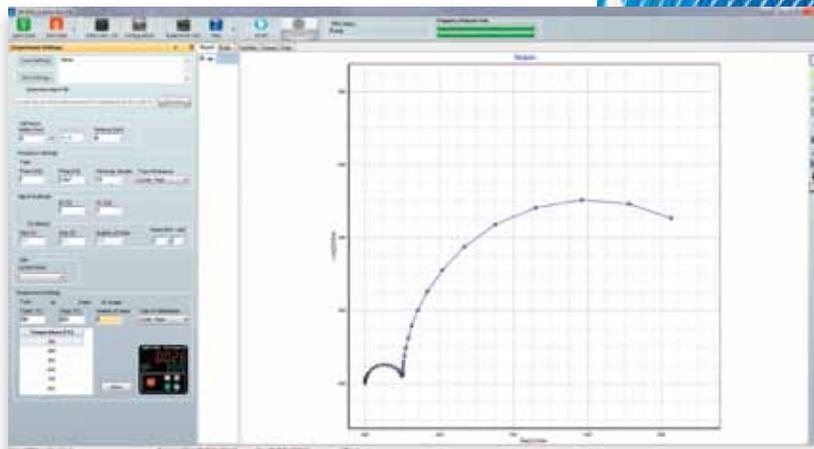
MT-Lab[®], complete and powerful interface

Experimental setup builder

MT-Lab[®] software offers all tools needed for materials applications with a simply to use interface showing on the same view the setup and the graph.

A powerful setup builder can execute a series of different modular sequences, wait and loops to create a complex experiment mixing different parameters such as frequency, amplitude, bias, and temperature.

Frequency sweep, AC sweep or DC sweep techniques can be applied to the sample.

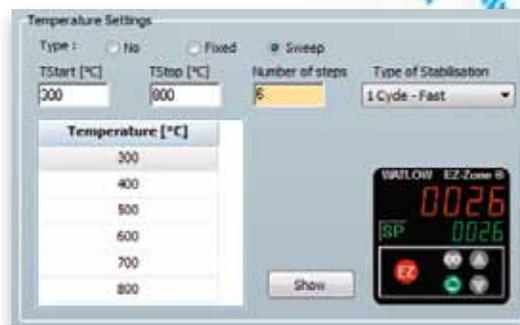


External device control

Some materials experiments require impedance analyzer to work with other instruments such as a furnace or a cryostat.

MT-Lab[®] has an advanced "External device configuration" menu that can be used to control and to record data from these separate instruments.

The HTF-1100 furnace is fully managed by a dedicated control panel on MT-Lab[®] setup window.



MT-Lab[®] graphics

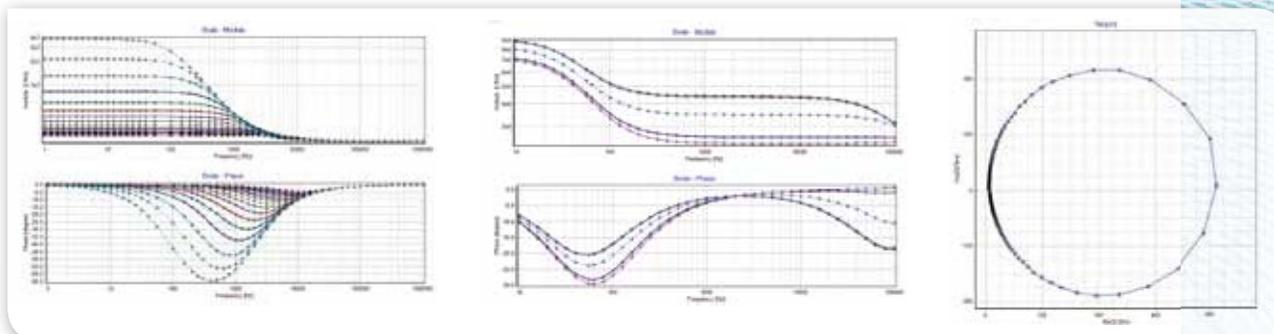
A complete graphic package.

MT-Lab[®]'s graphic package is part off the software and includes a powerful tool to create unique graph templates. Nyquist, Bode, Tangent-Delta plots are available as default.

Additionally, customised views such as 3D plot can be easily displayed.

Data points are stored in a table and can be exported in text format.

MT-Lab[®] is fully compatible with our powerful and unique EC-Lab[®] software for all the data treatment.



Specifications



MTZ-35

Cell connection

Operating mode	impedance measurement/FRA
Measuring configuration	4-wire for impedance, Gen V1 V2 for FRA mode
Input BNC	outer contact grounded

Generator

Frequency range	10 μ Hz to 35 MHz
Accuracy	$\pm 0.05\%$ of the desired frequency
Gain accuracy	0.01 dB + 0.001 dB/kHz < 1 MHz
Phase accuracy	0.02° < 10 kHz 0.05° + 0.0001°/ kHz < 35 MHz
Voltage range AC	$\pm 100 \mu$ V to ± 10 V peak to peak
Voltage range DC	$\pm 100 \mu$ V to ± 10 V
Input range	10 V, 3 V, 1 V, 300 mV, 100 mV, 30 mV, 10 mV, 3 mV, 1 mV peak to peak
Resolution	6 digits



HTF-1100 furnace

Insulation material	alumina fiber
Heating system	super Kanthal 1350° C wire built in a cement cylinder
Temperature range	ambient up to 1100° C
Shield tube	inconel 600
Temperature controller	PM6 watlow PID controller
Temperature sensors	two K-type thermocouples (one for furnace, one for sample)
Temperature control accuracy	better than $\pm 1^\circ$ C
Temperature scan	20° C/min
Safety features	emergency stop button, buzzer sound alarm, temperature safety limit
Size	545 x 331 x 266 mm (L x W x H) with slide
Weight	13 kg without HTSH

Measurement Ranges

Inductance	10 nH to 10 kH
Capacitance	1 pF to 1000 μ F
Resistance	1 m Ω to 500 M Ω
Basic accuracy	0.1%

Input channels

Number	2 balanced differential
Connectors	dual grounded BNC
Max input	10 V peak from earth
Input impedance	1 M Ω // 30 pF

Output

Output voltage	0 V to 10 V peak
Output impedance	50 Ω $\pm 1\%$
Output resolution	50 μ V to 5 mV level dependent
Output bias	± 10 V

General

Computer interface	USB2.0 RS232 baud rate 19200 RTS/CTS flow control
Mains voltage	115 V/230 V ranges ($\pm 10\%$)
Power consumption	30 VA max
Size & weight	530 x 525 x 184 mm (L x W x H), 12 kg



HTSH (High Temperature Sample Holder)

Materials	sample holder: high purity alumina, electrode: high purity platinum disk & wire, quartz tube: length = 250 mm diameter = 45 mm
Gas circuitry	inert gases input/output available with quartz tube
Water cooling	tube include for water cooling (0,1 l/min) when using T > 900° C
Frequency range	DC to 35 MHz
Sample size	12 mm \times \varnothing < 28 mm, thickness 5 mm
Temperature range	Ambient up to 1100° C

Pictures and specifications subject to change



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