



ET1092 series LCR digital bridges



ET1092series LCR digital bridges are high-precision component parameter analyzers making use of automatic balancing bridge principle, featuring 10 Hz~ 1 MHz testing bandwidth, continuously adjustable frequency, 0.05% of basic measuring accuracy, automatic level control, list scanning and position counting, which can provide accurate and complete measurement and analysis for most components and materials, so it is wildly used in product R&D, component incoming inspection and online product sorting.

Model description

Category	Model	Description
Basic model	ET3500	50 kHz frequency range, 0.1% basic accuracy, 5 1/2 digit display
	ET3500A	50 kHz frequency range, 0.05% basic accuracy, 5 1/2 digit display
	ET1092A	100 kHz frequency range, 0.05% basic accuracy, 5 1/2 digit display
Broadband precision model	ET1092B	200 kHz frequency range, 0.05% basic accuracy, 6 1/2 digit display
	ET1092C	300 kHz frequency range, 0.05% basic accuracy, 6 1/2 digit display
	ET1092D	500 kHz frequency range, 0.05% basic accuracy, 6 1/2 digit display
	ET1092E	1 MHz frequency range, 0.05% basic accuracy, 6 1/2 digit display

Product features

1. 0.05% basic accuracy or 0.1% basic precision
2. A maximum of 200 time/s measuring speed
3. Frequency measurement range of 10 Hz- 1 MHz
4. Amplitude of excitation signal 10 mV- 2 V adjustable
5. Internal programmable DC bias voltage
6. External additional DC bias voltage supported
7. Automatic level adjustment of voltage or current
8. V,I testing signal monitoring
9. 10-point list scanning testing
10. 10-grade sorting and counting
11. 256 groups of correcting data for specified frequencies

12.6 digit reading resolution

13.7" LED display screen, Chinese and English interfaces

14.USB, Ethernet, RS232, GPIB, Handler interfaces

Measured objects

1. Passive components: impedance parameter evaluation and performance analysis for capacitors, inductors, magnetic cores, resistors, piezoelectric devices, transformers, chip components and network components.
2. Semiconductor components: C-VDC characteristics of varactors; analysis of parasitic parameters transistors and integrated circuits
3. Other components: impedance evaluation of printed-circuit boards, relays, switches, cables, batteries, etc.
4. Dielectric materials: dielectric constants and loss angle of plastic, ceramic and other materials;
5. Magnetic materials: evaluation of magnetic permeability and loss angle of ferrite, amorphous bodies, and other magnetic materials
6. Semiconductor materials: dielectric constant, electric conductivity and C-V characteristic of semiconductor materials
7. Liquid crystal materials: dielectric constant, elastic constant and other C-V characteristic of liquid crystal unit

Applications

1. Electronic capacitors, substrates, PCB, antennae, ferrite, dampers, SAR phantom materials
2. Aerospace/national defense, stealth technology, RAM (radar-absorbent materials), radar antenna housing
3. Industrial materials, ceramic and composite materials, auto parts, coating
4. Polymers, plastic fibers, films, insulating materials
5. Hydrogel, disposable diapers, soft contact lens
6. Liquid crystal display
7. Other products containing such materials: tires, paints, adhesives
8. Food and agriculture: food preservation (deterioration) study, development of microwave food, package and water content measurement
9. Forestry and mining: water content measurement and oil content analysis of wood/paper products
10. wood/paper products

	ET1092E/ET1092D/ET1092C/E T1092B	ET1092A/ET350 0A	ET3500
Measurable parameters	Cp-D/Q/G/Rp, Cs-D/Q/Rs, Lp-D/Q/G/Rp, Ls-D/Q/Rs, Rs-Xs, Z-θ, Y-θ, G-B		
Measurement time mode (Fast/medium)	200ms/500ms @ 10Hz 100ms/500ms @ 50Hz 20ms/200ms @ ≥100Hz		
User-defined time range	100ms/2000ms @ 10Hz 20ms/2000ms @ 50Hz 20ms/2000ms @ ≥100Hz 5ms/2000ms @ ≥1kHz		
Frequency (at a step of 1mHz)	10Hz-1MHz(ET1092E) 10Hz-500kHz(ET1092D) 10Hz-300kHz(ET1092C) 10Hz-200kHz(ET1092B)	ET1092A: 10Hz-100kHz ET3500A: 10Hz-50kHz	10Hz-50kHz
Testing signal level (At a step of 1mVrms)	10mVrms to 2Vrms 100μArms to 20mArms		
Constant voltage level	10mVrms-1Vrms		
Constant current level	100μArms-10mArms		
DC bias capacity	Internal -2V to +2V voltage bias External bias input (within ±60V)		None
Internal resistance of signal source	30 Ohm or 100 Ohm, selectable		
Basic accuracy	0.05%		0.1%
Display resolution	6 1/2 digit	5 1/2 digit	5 1/2 digit
Comparator	9 groups of qualified setting, one group of unqualified setting, one group of auxiliary setting		

Pharmacy and medicine: R&D and production of drugs, biological implant, human tissue characterization, biomass and fermentation

General technical specifications

Power voltage: 220V.AC $\pm 10\%$, 50Hz;

Power consumption: <20W

Display: 7" TFT LCD, with a resolution of 800*480

Interfaces: Ethernet, RS232, GPIB, USB and Handler interfaces

Service environment: 0°C-40°C

Sizes: 330mm*285mm*136mm (L*W*H)

Standard accessories:

Three-core power cord

Kelvin clips

Lead-type testing clips

Gilded short circuit bar

Optional accessories:

GPIB cable

RS232 serial port line

USB cable

1m/2m test cable

Patch testing clips

Patch testing clips (with cable)