LCR-8200(A) Series

High Frequency LCR Meter

FEATURES

- Wide Test Frequency :
  LCR-8200A : DC, 10Hz ~ 50/30/20/10/5 MHz
  LCR-8200 : DC, 10Hz ~ 30/20/10/5/1 MHz
- 7" LCD color Display
- 0.08% Basic Accuracy
- Displaying Four Measurement Results Simultaneously From 17 Selectable Measurement Parameters Freely
- 15 Steps List Measurement
- Two Curves Sweep Mode
- Equivalent Circuit Model Analysis (LCR-8200A only)
- Internal DC Bias Voltage ±12V
- USB Storage Available
- ALC Function Available
- Standard Interfaces : RS-232C, USB Host/Device, LAN, GPIB and Handler
- Universal Power Input

GW INSTEK
Simply Reliable

GW Instek's high-frequency LCR tester ~ LCR-8200 (A), which includes two series, LCR-8200A and LCR-8200, has ten models and the maximum test frequency is up to 50MHz. The entire series adopts 7-inch color display and features a high measurement accuracy (0.08%). The measurement results can be presented numerically or graphically according to the selected measurement mode, allowing users to optimally interpret the characteristics of the DUT. At the same time, a full range of standard interfaces such as USB device / RS-232C / Handler and GPIB allow users to control the instrument by the most familiar interface without worrying about additional hardware investment costs. Furthermore, the series also provides USB storage function when operating in the graphics mode. The measured characteristic curves and values of the DUT are saved for subsequent analysis. The wide variety of features of the LCR-8200 (A) can help users easily respond to the test requirements of passive components in R&D, engineering, and production.

Under the numerical measurement mode, it is divided into MEAS measurement and LIST measurement. Under the MEAS measurement mode, users can select up to 4 (at least 1) desired measurement items from the 17 measurement parameters. Each selected measurement item can be set to compare (PASS/FAIL judgement) or to the BIN function to conduct judgement and sorting, so that users can easily learn the results of the measurement by color and sound. Under the LIST mode, users is allowed to set 15 test points and each test point can set parameters independently, including frequency/voltage/bias, and it even can set independent comparison function and numerical display mode (value, difference value, difference percentage). On top of that, under the LIST mode, the automatic trigger mode is also provided. After each LIST measurement is completed, the instrument will be in the mechanism of standby trigger. Users only need to place the next DUT, and the LIST test can be automatically performed that saves time of repeatedly pressing the trigger button.

Under the graphical measurement mode, the SWEEP measurement provides the ability to sweep two parameters simultaneously (TRACE A / TRACE B). The relative parameters of the sweep, including the sweep source (frequency, voltage, current or bias voltage), horizontal / vertical axis scale (LINEAR / LOG), speed...etc., even adding a bias, can be set and tested according to the actual needs of users. Besides, the LCR-8200A series provides 7 different equivalent circuit models which allows user analysis by 3-components or 4-components combination to characterize the operational characteristics of the circuit. After the sweep is completed, the scale can be automatically adjusted according to the selected TRACE, so that the whole observation is clearer and easier to read. Other than that, the swept graphics (bmp) and values (csv) can be saved to the flash drive for subsequent analysis and applications.

Whether it is for measurement data collection during the test process or the collocation for the system integration, the LCR-8200 (A) series offers the most comprehensive communications interfaces, including USB device, RS-232C, LAN for PC connection and even GPIB, which are all standard communications interfaces. Users can choose according to the habits of use and the convenience of the system architecture without any additional cost. In addition, the LCR-8200 (A) series also provides a Handler interface for system integration of PLCs or sorters.

PANEL INTRODUCTION

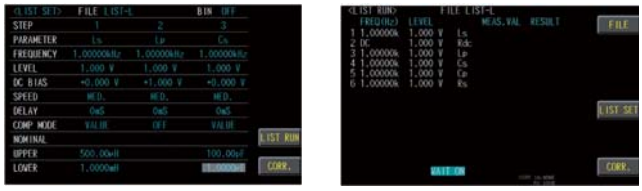
A. THE PRESENTATION OF FLEXIBLE MEASUREMENT COMBINATIONS

LCR-8200(A) Series allows users to select and arrange measurement parameters. Users can select at least one parameter to maximum four parameters from the 17 measurement parameters according to the measurement requirements and the presentation order can also be arranged in a desired manner. The set parameters can be stored in internal/external memory groups for subsequent recalls.

B. INDEPENDENT SETTING JUDGMENT

Each selected test parameter can independently set judgement and comparison such as value, difference value or difference percentage. Additionally, the display method can also be based on value, difference value or difference percentage to self-define the presentation of test results, and the observation is more in line with the actual needs. In addition to using the warning sound, all the parameters set for comparison judgment will be displayed in different colors. "Red" means that the limit value is exceeded, and "Green" means that it is within the limit value, so that the judgment can be conducted smoothly under noisy environment.

C. LIST MEASUREMENT



The 15-point LIST measurement mode provides measurement values at a specific frequency or voltage of the DUT, and each set point can set independent comparison and judgement. When the trigger mode is set to “AUTO”, the display “WAIT ON” will appear on the measurement screen and LCR-8200(A) Series will detect the contact status of the fixture. When the DUT is connected, the test will start automatically.

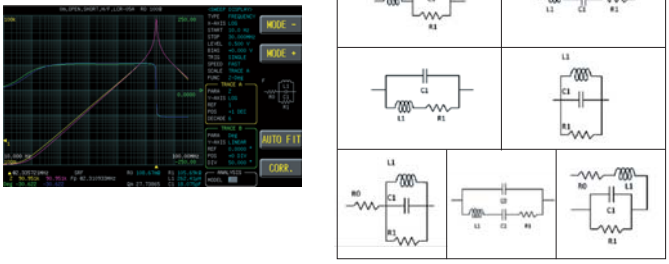
D. TWO-CURVE SWEEP

Up to 2 characteristic parameters of the DUT can be swept at the same time. Sweep type (frequency/Vac/Iac), axis form (LOG/LINEAR), sweep speed, even adding bias (internal), etc can be set according to the actual demands. After the sweep is completed, automatic adjustment can be used to obtain the best observation display. The movable cursor can be used to obtain the measurement result of the specific position. Swept displays and point values can be saved to the flash drive via the USB host on the panel for subsequent analysis.

E. BIN FUNCTION

BIN settings for one specific parameter of the selected measurement parameters provide up to 9 BIN positions. Set the judgment basis for individual classifications according to the desired BIN methods (EQUAL/SEQUENTIAL/TOLERANCE/RANDOM) and limit value mode (VALUE/delta/delta%). The result of this sorting can be obtained through the Handler interface. If directly connected to an external device such as a sorter, an immediate sorting can be performed.

F. EQUIVALENT CIRCUIT MODEL ANALYSIS



This function, which adopts the algorithm based on resonance theory, consists of 7 different equivalent circuit models. The 3-components analysis model is composed of 4 types, A, B, C and D, whereas the 4-components analysis model covers 3 types, E, F and G. By selecting suitable equivalent circuit model, the instrument will automatically calculate approximate value of each component parameter after measurement, and generate simulated curve (TRACE A/B SIMULATION) to compare with the measured curve (TRACE A/B).

Also, it's available to choose equivalent circuit model followed by directly input value of each component parameter to generate a simulated curve (TRACE A/B SIMULATION) to further compare with the measured curve (TRACE A/B). The parameters of both resonance frequency (SRF) and quality factor (Qm) can be displayed simultaneously.

SPECIFICATIONS

	LCR-8250A	LCR-8230A	LCR-8220A	LCR-8210A	LCR-8205A	–
	–	LCR-8230	LCR-8220	LCR-8210	LCR-8205	LCR-8201
TEST FREQUENCY						
	DC, 10Hz~50MHz; 6 Digits, ±0.0007%	DC, 10Hz~30MHz; 6 Digits, ±0.0007%	DC, 10Hz~20MHz; 6 Digits, ±0.0007%	DC, 10Hz~10MHz; 6 Digits, ±0.0007%	DC, 10Hz~5MHz; 6 Digits, ±0.0007%	DC, 10Hz~1MHz; 6 Digits, ±0.0007%
OUTPUT IMPEDANCE						
	25Ω / 100Ω SELECTABLE					
BASIC ACCURACY						
	±0.08%					
TEST SPEED						
	MAX: 2.5ms(>10kHz), FAST: 50ms(>20Hz), MEDIUM: 100ms, SLOW: 300ms, SLOW2: 600ms					
TEST SIGNAL LEVEL						
AC Voltage **AC Current** **DCR Voltage**	10mV ~ 2Vrms (FREQ. ≦1MHz), 10mV ~ 1Vrms (FREQ. > 1MHz or FREQ. ≦1MHz and RO=25Ω) 100μA ~ 20mArms (RO=100Ω), 200μA ~ 40mArms (RO=25Ω) 1Vdc (40mA max.)					
MEASUREMENT PARAMETERS						
	Maximum four parameters can be measured and displayed at the same time Impedance (Z), Inductance (Ls / Lp), Capacitance (Cs / Cp), AC Resistance (Rs / Rp), Quality Factor (Q), Dissipation Factor (D), Admittance (Y), Conductance (G), Reactance (X), Phase Angle (θd / θr), Susceptance (B), DC Resistance (Rdc)					
LIST MEASUREMENT						
Listed Steps **Listed Parameters** **Trigger**	15 Freq/Vac/Iac/DC Bias/Comp/BIN AUTO, REPEAT, SINGLE					
SWEEP MEASUREMENT						
Swept Graphical **Swept Parameters**	Two of measurement parameters Freq/Vac/Iac/BIAS V, Keep Trace					
EQUIVALENT CIRCUIT MODEL ANALYSIS ("A" series only)						
	7 different equivalent circuit models, 3-components, 4 types, 4-components, 3 types					
OTHER FUNCTIONS						
Auto Level Control (ALC) **DC Bias** **Handler**	Standard 0 ~ ±12V PASS, FAIL and OK, NG or BIN 1-9					
OTHER FEATURES						
Correction **V/I Monitor** **Comparator** **Buzzer** **Average**	Open/Short/HF Load/Load Vac, Iac, Vdc, Idc Value, Δ, Δ% OFF, Pass, Fail 1 to 64					
DISPLAY						
	7" LCD color display (800 x 480)					
INTERFACE						
	USB/GPIB/LAN/RS-232/Handler/USB Host/TRIGGER Input					
POWER SOURCE						
	AC 100V~240V, 50/60Hz; Consumption: 65VA (max.)					
DIMENSIONS & WEIGHT						
	346 (W) x 145 (H) x 335 (D) mm; Approx. 3.3kg					

* Difference between "A" series and "Non-A" series is only the "A" series provides the equivalent circuit model analysis.

Specifications subject to change without notice. LCR-8000ACD1BH

ORDERING INFORMATION

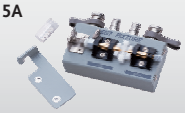
LCR-8250A	DC, 10Hz~50MHz High Frequency LCR Meter
LCR-8230A	DC, 10Hz~30MHz High Frequency LCR Meter
LCR-8220A	DC, 10Hz~20MHz High Frequency LCR Meter
LCR-8210A	DC, 10Hz~10MHz High Frequency LCR Meter
LCR-8205A	DC, 10Hz~5MHz High Frequency LCR Meter
LCR-8230	DC, 10Hz~30MHz High Frequency LCR Meter
LCR-8220	DC, 10Hz~20MHz High Frequency LCR Meter
LCR-8210	DC, 10Hz~10MHz High Frequency LCR Meter
LCR-8205	DC, 10Hz~5MHz High Frequency LCR Meter
LCR-8201	DC, 10Hz~1MHz High Frequency LCR Meter

ACCESSORIES

User Manual (CD) x 1, AC Power Cord x 1, Test Fixture LCR-06B x 1, Safety Sheet x 1

OPTION

LCR-05A	Test Fixture for Axial & Radial Lead Components (up to 50MHz)
LCR-06B	Test Lead with Kelvin clip(4 wire type)
LCR-07	Test Lead with Alligator clip(2 wire type)
LCR-08	Test Fixture(Tweezers) for SMD/Chip Components
LCR-10A	Test Fixture for Bottom Electrode Components (up to 50MHz)
LCR-12	Test Lead with Kelvin clip(4 wire type)
GRA-445	Rack Mount Kit, 19" 4U size
LCR-15A	Test Fixture for SMD/Chip components (up to 50MHz)
GTL-234	RS-232C cable
GTL-248	GPIB Cable
GTL-246	USB Cable
LCR-DB1	External DC Bias Voltage Box



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