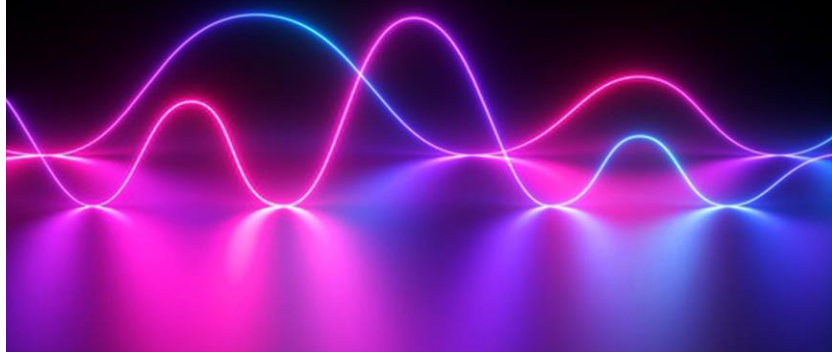**The Smarter Way to**

Characterize Component

GW Instek LCR-8200

High Frequency LCR Meter

New Product Announcement

This document allows GW Instek's partners to quickly grasp product's main features, FAB and ordering information.

LCR-8200 High-Frequency LCR Tester

New Product Announcement

GW Instek launches a new series of high-frequency LCR tester ~ LCR-8200, which has four models and the maximum test frequency is up to 30MHz. 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 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 or current), horizontal / vertical axis scale (LINEAR / LOG), speed...etc., even adding a bias, can be set and tested according to the actual needs of users. 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.

GW INSTEK

Whether it is for measurement data collection during the test process or the collocation for the system integration, the LCR-8200 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 series also provides a Handler interface for system integration of PLCs or sorters.

The Smarter Way to Characterize Component

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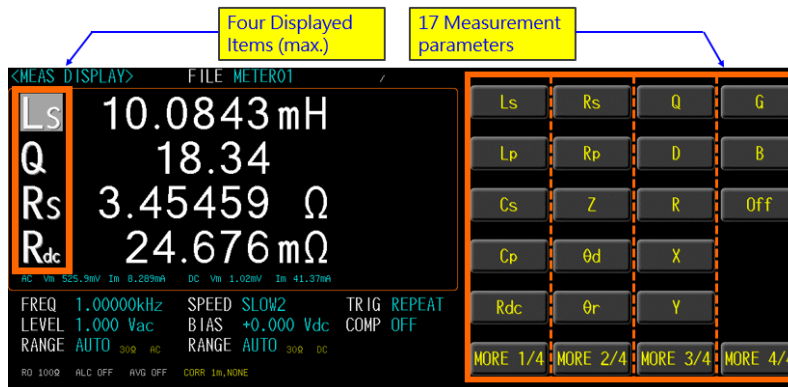
LCR-8200 allows users to select and arrange measurement parameters. Users can select at least one parameter to maximum four parameters from the 17 measurement parameters according to the measurement requirements and the presentation order can also be arranged in a desired manner. The set parameters can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

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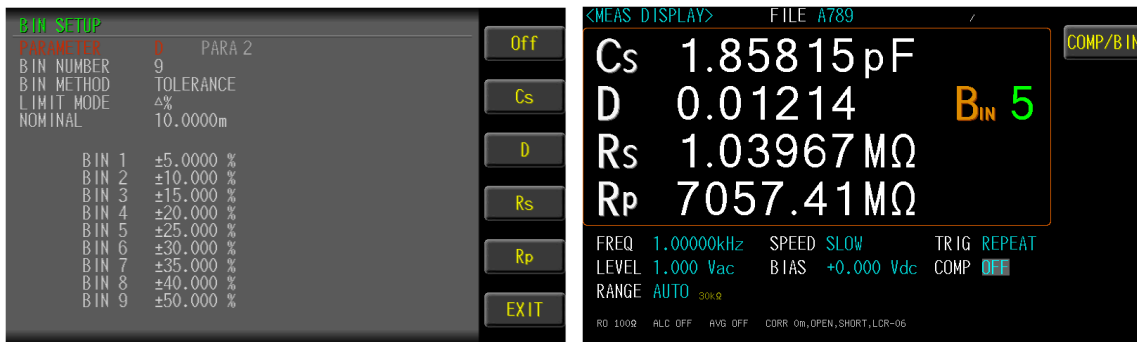
LIST measurement
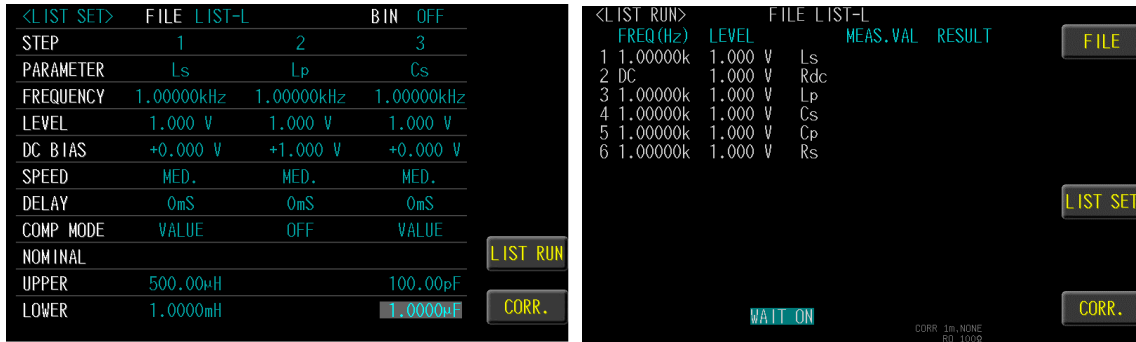
The 15-point LIST measurement mode provides measurement values at a specific frequency or voltage of the DUT, and each set point can set independent comparison and judgement. When the trigger mode is set to "AUTO", the display "WAIT ON" will appear on the measurement screen and LCR-8200 will detect the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

Hyperbolic Sweep
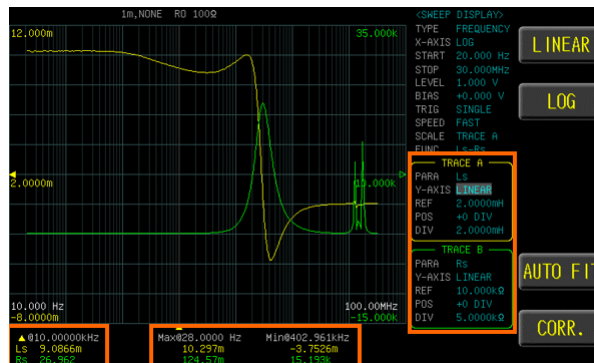
Up to 2 characteristic parameters of the DUT can be swept at the same time. Sweep type (frequency/Vac/Iac), axis form (LOG/LINEAR), sweep speed, even adding bias (internal), etc can be set according to the actual demands. After the sweep is completed, automatic adjustment can be used to obtain the best 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.

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.

Complete standard interfaces

Provides a variety of standard PC connection interfaces such as RS-232C, USB device, LAN, and GPIB industrial control interface to remotely control settings or read measurement results and other related information so as to substantially increase work efficiency without having to pay for additional interface procurement costs. In addition, LCR-8200 also provides Handler interface for PLC external control or for the collocation of measurement integration of sorters.

Key Features

- **Wide Test Frequency 10Hz ~ 30MHz/20MHz/10MHz/5MHz**
- **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**
- **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**

7" TFT LCD, supporting a greater view of setting parameters, testing value as well as Sweep trace.

Function keys to select corresponding option which located on the right of LCD screen
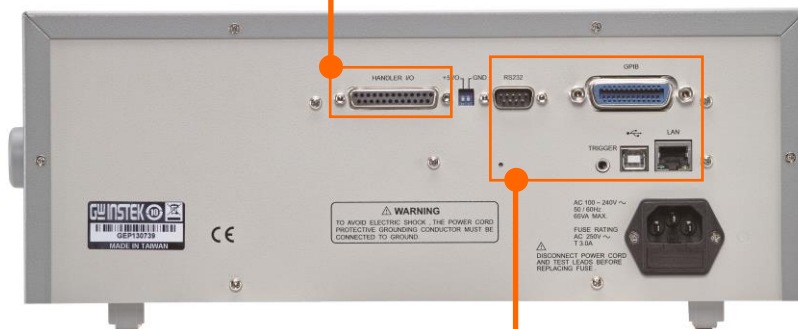
Arrow keys to navigate cursor on the screen

DC Bias indicator lights up when bias is active

USB host provides screen capture or Sweep data storage

Terminal to connect test fixture for measurement

Handler port provides external control by PLC or control system

Complete communication ports, USB / RS-232 / LAN as well as GPIB, facilitate the easy & convenient communication.

Specifications comparison ~ LCR-8200 vs LCR-8100G

Specifications highlighted in RED represent better performance

"X" represents "no such function" or "function not available"

(NOTE)

● **The LCR-8100G series will continue serve in the market.**

Brand	GW	GW
Model	LCR-8200	LCR-8100G
Outlook		
Display	7" Color(840x480)	5.6" Mono(320x240)
Operating Method	Key-pad	Key-pad
Frequency	DC,10Hz-5/10/20/30MHz	DC,20Hz-1/5/10MHz
Graph(Sweep)	Standard ~ Two curves	Standard ~ One curve
Basic Accuracy	0.08%	0.10%
Output Impedance	25Ω,100Ω	100Ω
Test Speed	2.5ms	75ms
Test Parameters	|Z|, |Y|, C, L, X, B, R,Q, D, G, θ, Rdc	|Z|, |Y|, C, L, X, B, R,Q, D, G, θ, Rdc
Test Signal (AC Volt.)	≦ 1MHz:10mV-2V ＞1MHz:10mV-1V	≦ 3MHz:10mV-2V ＞3MHz:10mV-1V
Test Signal (AC Curr.)	100µA ~ 20mA (RO=100Ω) 400µA ~ 40mA (RO=25Ω)	X
Test Signal (DCR Volt.)	1Vdc	1~2Vdc
Auto Level Control	Standard	X
Multi Step(List)	15 Step	10 Step
Equivalent Circuit	X	X
Graphic Parameters	Freq/Vrms/Irms	Freq/Vrms
DC Bias	±12V	X
Standard Interfaces	RS232C/ LAN/ GPIB USB host & device/ Handler	RS232/GPIB

Key Dates for Product Announcement

1. **Distributor Announcement & Demo Unit Order and Shipping (2nd of September)**

2. **Global Market Announcement (9th of September)**

Service Policy

1. **1 year warranty**

2. **Service Support**

   The service instructions in the Service Manual will help distributors repair defective units promptly. Should a board replacement be necessary to fix a defective unit, a board swapping service is provided by Good Will Instrument to facilitate the repairs done at a distribution site.

3. **GW Instek continues to provide the after sales support through its website. The most updated version of the service manual and Marcom material for LCR-8200 will be posted on the distributor zone of GW Instek Website at https://www.gwinstek.com**

Product Outlook

LCR-8200 (Front ~ numerical)   **LCR-8200 (Front ~ Sweep)**

LCR-8200 (Rear)

Application and Target Markets

■ **R&D**

– **High frequency drive source with adjustable frequency continuity allows the component to be measured under the real operation environment.**

– **High Resolution & Accuracy provide precision measurement results, which helps verify component characteristics.**

– **Sweep mode for component and material verification based on the sweep of either AC test frequency, voltage or current.**

■ **Quality Assurance Verification**

– **Wide frequency range to cover most of the characteristic measurement items for a broad variety of components.**

– **7' LCD color display, provides greater view of setting parameters, measured values, judgement results as well as swept curves.**

– **Pass/ Fail Test function with buzzer alarm makes the heavy duty of component or material measurement job easy**

– **List measurement, with each program containing 15 test steps, performs the routine measurements in sequence just at a push of the trigger button**

■ **Education Lab and Training Institution**

– **Wide frequency range to cover most of the characteristic measurement items for a broad variety of components.**

– **7' LCD color display, provides greater view of setting parameters, measured values, judgement results as well as swept curves.**

– **High Resolution & Accuracy provide precision measurement results, which helps verify component characteristics.**

– **Pass/ Fail Test function with buzzer alarm makes the heavy duty of component or material measurement job easy**

– **Sweep mode for verification of component and material response to the changes of either AC test frequency, voltage or current.**

Specifications

MODEL	LCR-8230	LCR-8220	LCR-8210	LCR-8205
TEST FREQUENCY				
	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%
OUTPUT IMPEDANCE				
	25Ω / 100Ω SELECTABLE			
BASIC ACCURACY				
	±0.08%			
TEST SPEED				
	MAX: 25ms(>10kHz), FAST: 50ms(>20Hz), MEDIUM: 100ms SLOW: 300ms, SLOW2: 600ms			
TEST SIGNAL LEVEL				
AC Voltage:	10mV ~ 2Vrms (FREQ. ≦ 1MHz), 10mV ~ 1Vrms (FREQ. > 1MHz or FREQ. ≦ 1MHz and RO=25Ω)			
AC Current:	100μA ~ 20mArms (RO=100Ω), 200μA ~ 40mArms (RO=25Ω)			
DCR Voltage:	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:	15			
Listed Parameters:	Freq/Vac/Iac/DC Bias/Comp/BIN			
Trigger:	AUTO, REPEAT, SINGLE			
SWEEP MEASUREMENT				
Swept Graphical:	Two of measurement parameters			
Swept Parameters:	Freq/Vac/Iac, Keep Trace			
OTHER FUNCTIONS				
Auto Level Control (ALC):	Standard			
DC Bias:	0 ~ ±12V			
Handler:	PASS, FAIL and OK, NG or BIN 1-9			
OTHER FEATURES				
Correction:	Open/Short/HF Load/Load			
V/I Monitor:	Vac, Iac, Vdc, Idc			
Comparator:	Value, Δ , Δ %			
Buzzer:	OFF, Pass, Fail			
Average:	1 to 64			
DISPLAY	7" LCD color display (800x480)			
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			

Ordering information

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

Included Accessories
Safety Instruction x 1, CD x1(user manual),
Power cord x 1, Test lead LCR-06B x 1

Option
Opt.02 DC Bias Voltage Box (up to 200V)

Optional Accessories
LCR-05	Test Fixture for axial & radial leaded components
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-12	Test Lead with Kelvin clip (4 wire type)
LCR-15	Test Fixture for SMD/Chip components
GTL-232	RS232C Cable, 9-pin Female to 9-pin, null Modem for Computer
GTL-248	GPIB Cable, approx. 2m

Should you have any questions on the LCR-8200 announcement, please don't hesitate to contact us.

Sincerely yours,

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Email: marketing@goodwill.com.tw

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