

## Precision Impedance Analyzer

MCR-9000 Series



### Features

- Signal source frequency range: DC, 10Hz~3/5/10/20/30MHz
- Source position: variable voltage 10mV~2V/Variable current 200uA~20mA
- Basic impedance measuring accuracy:  $\pm 0.05\%$
- Automatic level control(ALC) function
- Output impedance 25 $\Omega$ /100 $\Omega$  switchable
- High cost efficient.Have basic measuring, drawing analysis function, also have support dielectric and permeability measurement
- High measuring speed< 3mS (fastest)
- Open circuit/ short circuit/ load correction function
- Up to four component parameters can be selected in the meter mode, and the inductance value and DCR value can be measured and displayed simultaneously
- Automatic component classification: Comparator function and Bin classification function of HANDLER interface
- Built-in DC bias voltage -12V to + 12V(6632)
- USB/GPIB/RS232/LAN Interface, Optional PC connection data analysis software can be purchased for fast automation and data access
- Ultra low power consumption<30W, fanless design, zero noise

### Fixture

#### Standard accessories

High frequency DIP component test fixture(MF-6006)

#### Optional accessories

Kelvin testing lead(MF-4001)

BNC test extension cord(MF-3001A/B/C)

Dielectric constant fixture(MF-6007)

Permeability coefficient fixture(MF-6008)

Material test fixture(MF-6009)

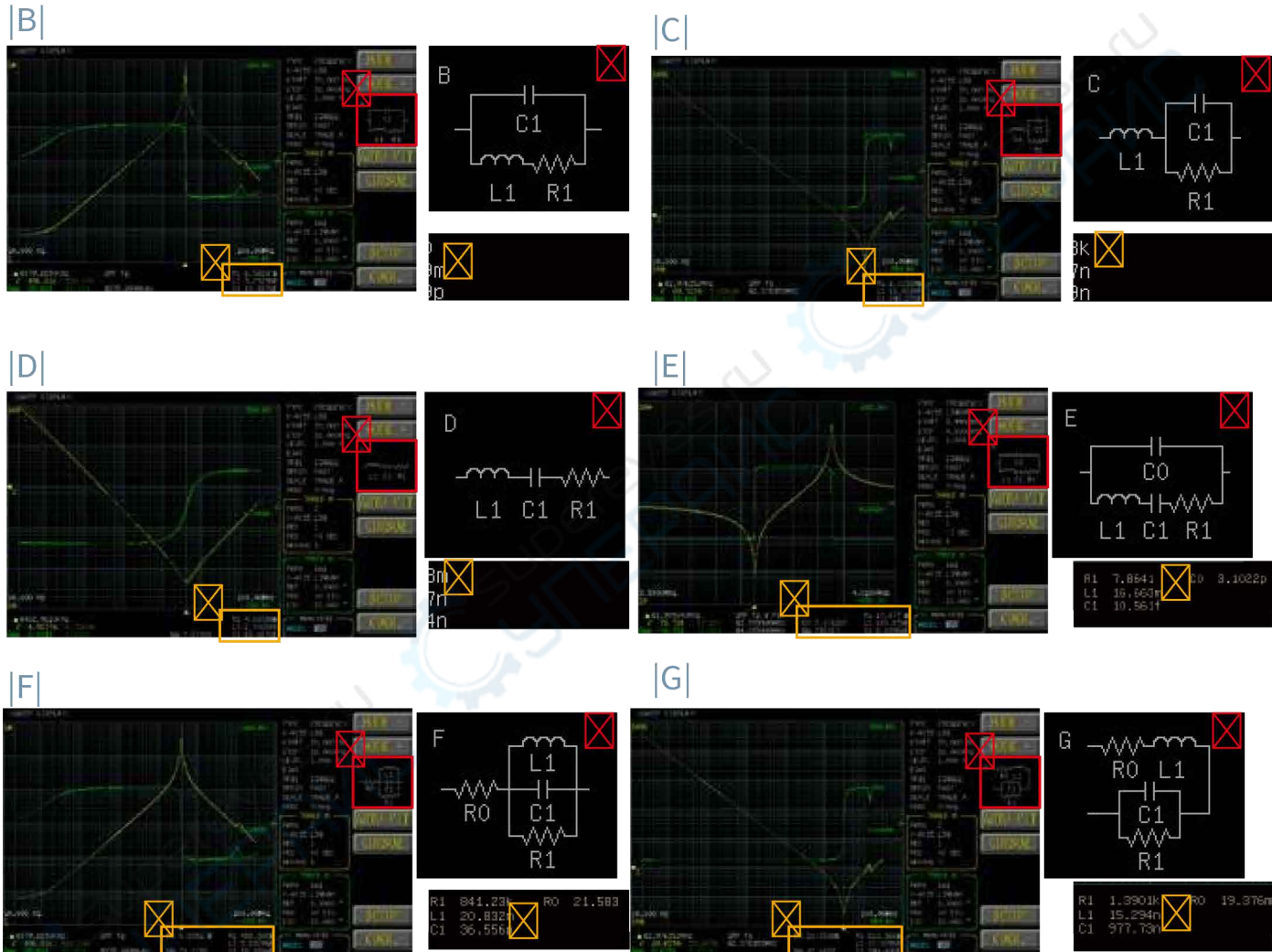
High-frequency precision down-pressure SMD test fixture(MF-6010)

High frequency precision tweezers type test wire clamp(MF-6011)

High frequency precision SMD test fixture(MF-6012)

## Seven types, equivalent line analysis(optional)

Modeling and curve simulation of various equivalent circuit models, seven different models, combined with different types of parameters (resistance, inductance, capacitance), can see three or four component values, as well as the self-resonance frequency(SRF),



## Complete interface selection

USB/LAN/GPIB/RS232/HANDLER interface



## Complete interface selection

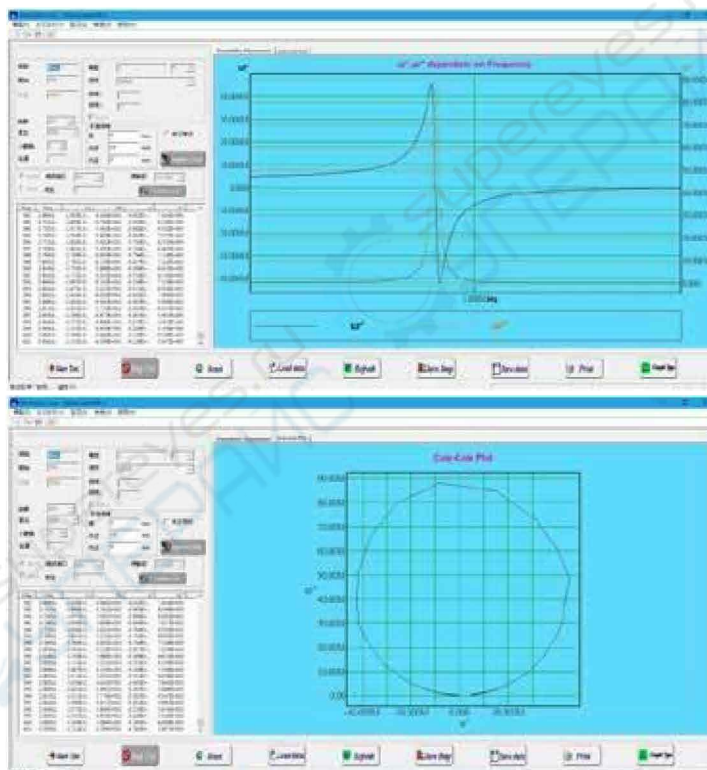
USB/LAN/GPIB/RS232/HANDLER interface



## PC Link software

Analyze data through software, can make report form.

- CPK process analyzing
- Provide Excel file conversion
- Use RS -232/GPIB communication protocol



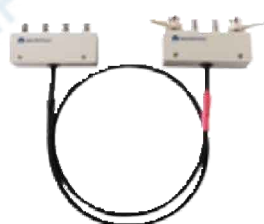
## Accessories/ model guide

MF-40001

MF-3001A/B/C

MF-6006

MF-6007



MF-6008

MF-6009

MF-6010

MF-6011

MF-6012

## Parameters

Testing frequency	MCR-9005	10Hz - 5MHz	
	MCR-9010	10Hz - 10MHz	
	MCR-9020	10Hz - 20MHz	
	MCR-9030	10Hz - 30MHz	
	Minimum resolution	100mHz, 6 digits frequency input	
	Accuracy	7ppm $\pm$ 100mHz	
Basic measuring accuracy	$\pm$ 0.08%		
AC measuring	Test signal voltage range	10mV - 2Vrms	
	Minimum voltage resolution	1mV	
	Accuracy	ALC OFF : 10% * Set voltage $\pm$ 2mV ALC ON : 6% * Set voltage $\pm$ 2mV	
	Test signal current range	200 $\mu$ A - 20mArms	
	Minimum current resolution	10 $\mu$ A	
	Accuracy	ALC OFF : 10% * Set current $\pm$ 20 $\mu$ A ALC ON : 6% * Set current $\pm$ 20 $\mu$ A	
Measuring speed(fastest)	< 3mS		
Output impedance	Switchable 25 $\Omega$ , 100 $\Omega$		
Testing parameters	Z  (impedance),  Y  (Admittance), $\theta$ (Phase angle), X(Reactance), R(Series and parallel resistance), G(Conductance), B(Susceptance), L(inductance), D(Loss factor), Q(Quality factor), DCR(DC resistance), C(Capacitance), Vdc-Idc(DC voltage&current), ESR(Equivalent series resistance), $\mu$ r(Relative permittivity), $\epsilon$ r(Relative permeability)		
Measuring mode	Meter mode, Multi-step list, Graphics scan		
Calibration function	open circuit/ short circuit/ load		
Equivalent circuit	Serial, parallel		
Equivalent model analysis (optional)	Three components(four models), four components(three models)		
Multi-step list test	15 test steps		
Built-in DC bias voltage	-12 to +12V, 100Hz to 30MHz		
PC LINK / CPK report environment	Optional		
Internal storage memory	10 groups of LCR meter setting files, 50 groups of multi-step test setup(each group have 15 test steps)		
External USB memory	LCR meter setting files, BPM image, multi-step test configuration file, scan image and data		
Interface	I/O Interface	Handler	
	Serial communication interface	USB、RS232、LAN	
	Parallel communication interface	GPIB	
Display	7.0" TFT, 800x480 color display		
Operating environment	Temperature: 10°C~40°C, Humidity: $\leq$ 80%RH		
Input power supply	Voltage	90-264Vac	Frequency 47-63Hz
Power consumption	Low power design: Max 30W		
Size(W*H*D)	359x147x343 mm		Weight 3.95 Kg

Parameter measuring range

Z	0.000mΩ to 9999.99MΩ	Cs, Cp	±0.00000pF to 9999.99F
R, X	±0.000mΩ to 9999.99MΩ	Ls, Lp	±0.00nH to 9999.99kH
Y	0.00000μS to 999.999kS	D	±0.00000 to 9999.99
G, B	±0.00000μS to 999.999kS	Q	±0.00 to 9999.99
θ <sub>RAD</sub>	±0.00000 to 3.14159	Δ	±0.00% to 9999.99%
θ <sub>DEG</sub>	±0.000° to 180.000°	Rdc	0.00mΩ to 99.9999MΩ
εr' εr'	0 to 100000	μr' μr'	0 to 100000

Impedance Analyze

Application range

Passive component	Capacitance, Inductance, Resisistance, Transformer, Ceramic resonator, Quartz crystal
Semiconductor component	Analysisi of CV charateristics of varactor diodes, Diodes
Dielectric material	Capacitance and loss tangent assessment fir plastic,ceramic and printed circuit boards.
Permeability magnetic material	
Other component	Component impedance evaluation

Select the scan function to display the curve chart

The graph displays the measurement information on the screen as a graph. Through the graph scanning function, the electrical characteristics of the component can be analyzed quickly.



The multi-step list tests the automatic programming capabilities

The customer can perform a series of measurements on the component according to a self-defined sequence of steps.

When all the test steps are completed, the screen will display the test results of the parameters selected for each step (PASS/HI/LO) or upload the data to the computer.

