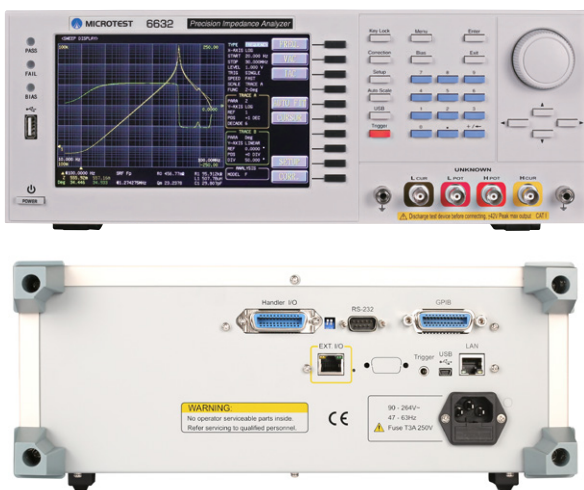


Impedance Analyzer

6632

Features

- Frequency range: DC, 10Hz to 1/3/5/10/20/30MHz/50MHz
- Basic accuracy up to $\pm 0.08\%$ (typical $\pm 0.05\%$)
- Automatic Level Control (ALC)
- Output impedance 25 Ω /100 Ω , switchable
- Using with DC bias current test system
- Support meter mode and list mode, sweep mode, and equivalent circuit analysis (option) function
- Built-in DC Bias voltage $\pm 12V$
- Measurement of piezoelectric element admittance circle, and can measure DC bias characteristic of capacitance value.
- Ultra-high measuring speed < 3ms
- Open circuit/short circuit/load correction function
- Up to four parameters can be selected in the electric meter mode. The inductance and DCR values can be measured and displayed simultaneously
- Auto component classification: Comparator function and Handler BIN classification function
- Can be used with various fixtures, such as: liquid dielectric material test fixture, dielectric material test fixture and magnetic material test fixture.....etc.
- Support RS-232, GPIB, Handler, LAN, USB Host/Device interfaces
- Using in R & D department, process development and laboratory
- PC connection data analysis software is available



CE RS-232 Handler USB Host/Device GPIB LAN

Applications

Passive Components: Capacitor, Inductor, Resistor, Transformer, Ceramic resonator, Quartz Crystal

Semiconductor Components: The CV characteristics analysis of varactor diodes, Diodes

Dielectric Material: Estimation on permittivity and consumption tangent of plastic, ceramic and PCB

Other Components: Estimation of the impedance of PCB components

Accessories / Fixtures

Standard Accessories

- Power Cord
- DIP Test Fixture (FX-000C19)



Optional Accessories

- PC Link software



- F423906A Kelvin Clip Leads (with BNC Box)



- F423503 DIP Test Fixture



- F423504 DIP Test Fixture



- FX-0000C6 Test Fixture



- F423905 SMD Test Fixture



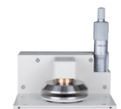
- FX-000C10 Bottom Electrode SMD Test Fixture



- FX-000C11 SMD Tweezer Test Leads



- FX-000C12 SMD Test Fixture



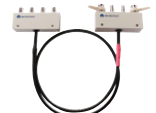
- FX-0000C7 Dielectric Material Test Fixture



- FX-0000C8 Magnetic Material Test Fixture



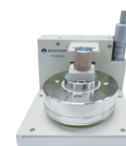
- FX-000C20 Liquid Dielectric Material Test Fixture



- F663001 A/B/C BNC Test Leads



- FX-0000C9 Material Testing Fixture



- F420001 External Voltage Bias ($\pm 200V/1MHz$)



- F420003 External Voltage Bias ($\pm 40V/1MHz$)



- F420005 External Voltage/Current Bias ($\pm 40V/100mA$)



- F420006 External Voltage Bias ($\pm 2000V/1MHz$)

Specifications | S model is an optional equivalent circuit analysis function

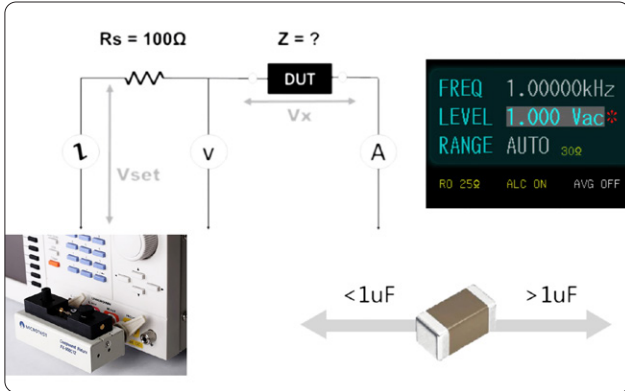
| Model Name | 6632-1/1S | 6632-3/3S | 6632-5/5S | 6632-10/10S | 6632-20/20S | 6632-30/30S | 6632-50/50S |
|-----------------------------------|---|-----------|--|-------------|-------------|-------------|-------------|
| Test Frequency | 10Hz-1MHz | 10Hz-3MHz | 10Hz-5MHz | 10Hz-10MHz | 10Hz-20MHz | 10Hz-30MHz | 10Hz-50MHz |
| Frequency Resolution | 100mHz, 6-bit Frequency Input | | | | | | |
| Frequency Output Accuracy | ±0.01% | | | | | | |
| Basic Accuracy | ±0.08% (typical ±0.05%) | | | | | | |
| AC Drive Level | Test Signal Voltage Level | | 10mV-2Vrms | | | | |
| | Voltage Minimum Resolution | | 1mV | | | | |
| | Accuracy | | ALC OFF: 10% * Voltage ±2mV ALC ON: 6% * Voltage ±2mV | | | | |
| | Test Signal Current Level | | 200µA-20mA rms | | | | |
| | Current Minimum Resolution | | 10µA | | | | |
| | Accuracy | | ALC OFF: 10% * Current ±20µA ALC ON: 6% * Current ±20µA | | | | |
| DC Drive Level | 1V (fixed) | | | | | | |
| Output Impedance | 25Ω, 100Ω (switchable) | | | | | | |
| Test Time (Fastest) | <3mS | | | | | | |
| Measurement Parameters and Ranges | Z | | 0.000mΩ-9999.99MΩ | | | | |
| | R, X | | ±0.000mΩ-9999.99MΩ | | | | |
| | Y | | 0.00000µS-999.999kS | | | | |
| | G, B | | ±0.00000µS-999.999kS | | | | |
| | θRAD | | ±0.00000-3.14159 | | | | |
| | θDEG | | ±0.000° -180.000° | | | | |
| | Cs, Cp | | ±0.00000pF-9999.99F | | | | |
| | Ls, Lp | | ±0.00nH-9999.99kH | | | | |
| | D | | 0.00000-9999.99 | | | | |
| | Q | | 0.00-9999.99 | | | | |
| | Δ | | ±0.00%-9999.99% | | | | |
| | Rdc | | 0.00mΩ-99.9999MΩ | | | | |
| | εr' εr'' | | 0-100000 | | | | |
| | μr' μr'' | | 0-100000 | | | | |
| Bias | DC Bias 6243/ 6240(320A), 6223/ 6220(120A), 6210(60A) | | | | | | |

General

| | | |
|---------------------|---|---|
| Measurement Mode | Meter mode, list mode, sweep mode, and optional equivalent circuit analysis function (S model) | |
| Measurement Circuit | Series/Parallel | |
| Correction | Open Circuit/Short Circuit/Load correction | |
| Cable Compensation | 0/ 0.5/ 1/ 2 m | |
| List Mode | 50 groups of Multi-steps setting (Each group contains up to 15 steps) | |
| Built-in DC Bias | -12 to +12V, 0.3% ±1.5mV, 100Hz to 50MHz | |
| BIN | 9 | |
| Comparator | ABS, ΔABS, Δ%, OFF | |
| Built-in Storage | 100 sets LCR setting documents, 50 groups of list mode setting | |
| USB Host Storage | LCR setting documents, list mode setting document, BMP graphics, Sweep screen and test result data | |
| Trigger Test | Auto, manual, RS-232, GPIB, Handler | |
| Interface | RS-232, GPIB, Handler, LAN, USB Host/Device | |
| Option | PC link software | |
| | Equivalent Circuit Analysis | Three elements (4 models), four elements (3 models) |
| | Plug-in DC Bias voltage/current | 0 to ±40V/±100mA |
| Power Supply | Voltage 90-264Vac | |
| | Frequency 47-63Hz | |
| | Low power consumption: Maximum 30W (Nominal value) | |
| Power Consumption | 30VA | |
| Display | 7.0" TFT, 800×480 color screen | |
| Environment | Temperature: 10-40°C, Humidity: 20-90%RH | |
| Dimension (W*H*D) | 336×147×340mm | |
| Weight | 3.95kg | |

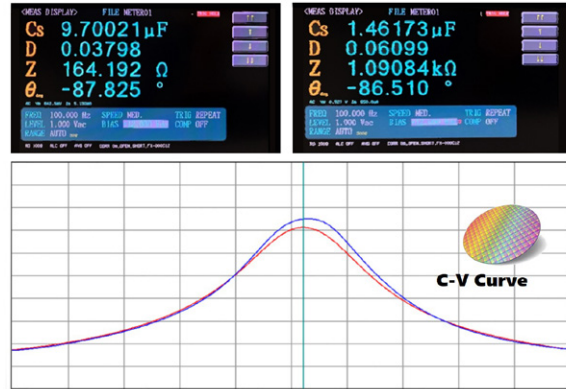
6632 Key Features

A Function Introduction



Output Impedance 25Ω/100Ω and Auto Level Control (ALC)

The key parameters for capacitance are Cs/Cp/D/Q/ESR/DC Bias Voltage.



Evaluation of DC bias voltage characteristics with semiconductor wafer or ceramic multilayer capacitors

Multi-layer ceramic capacitors (MLCC) DC Bias measuring value from 9.7uF decrease to 1.46uF.



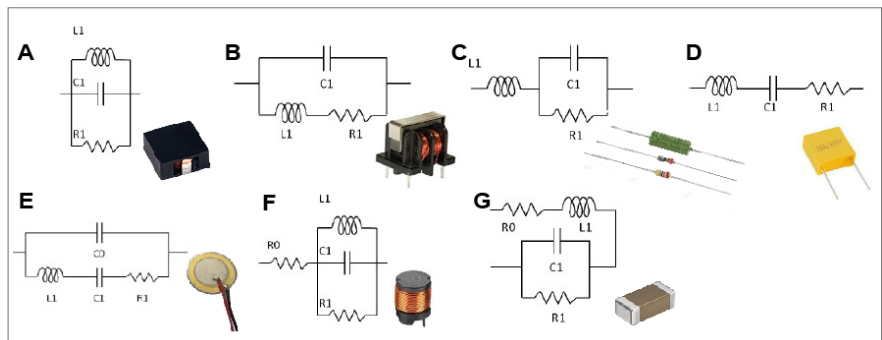
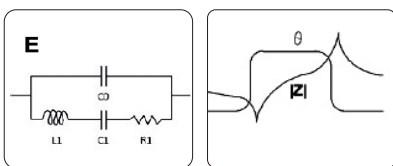
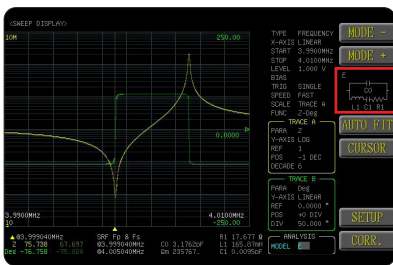
Liquid Dielectric Material Test Fixture (C20) /Dielectric Material Test Fixture (C7)

Using C20 for measuring the characteristics of electrochemical materials and using C7 or measuring PCB board or ceramic board.



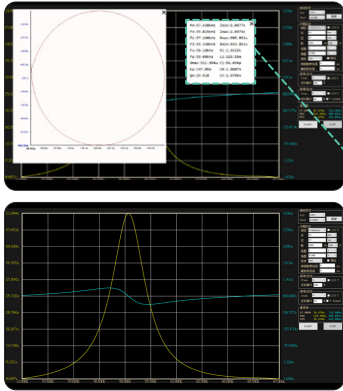
Magnetic Material Test Fixture (FX-000C8)

Using the magnetic material test fixture for measuring of permeability of various toroidal cores or ferrite cores and electromagnetic shielding coating materials, 6630 built-in formula to directly calculate the permeability coefficient value μ' , μ'' .



Equivalent Circuit Analysis

It has seven different models, combine with different types of parameters (R, L, C), you can see three or four elements value, and self-resonant frequency (SRF). You can simulate the impedance trace of your own equivalent circuit parameter values and then compare it with an accrual measurement trace.



Fm: 57.430kHz **Zmin: 1.0377k**
Fn: 59.815kHz **Zmax: 2.0376k**
F1: 57.160kHz **Bmax: 905.052u**
F2: 59.320kHz **Bmin: 432.842u**
Fs: 58.18kHz **R1: 1.9132k**
Fp: 59.08kHz **L1: 133.55m**
Gmax: 521.994u **C1: 56.034p**
Kp: 197.05m **C0: 1.8687n**
Qm: 25.518 **Ct: 1.9796n**

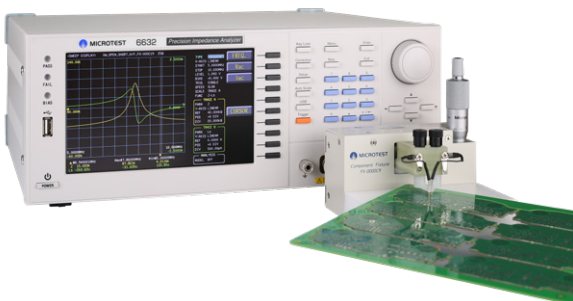
Piezoelectric element/quartz crystal analysis frequency characteristics

The key parameters for Piezoelectric element /quartz crystal are Fs/Fp/Qm/Kp (Electromechanical coupling coefficient)



Evaluation impedance characteristics of RFID/ NFC/automotive wireless of antennas

Using 6632 impedance analyzer equivalent circuit Analysis function.



Testing PC board inductance coil

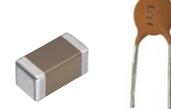
The key parameters for 6632 impedance analyzer measuring PC board inductance coil are L/Q/DCR/Rs/SRF.

B Applications

Passive Component



inductance
Ls / Lp / Q / SRF / I sat / I rms

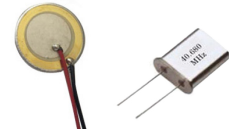


MLCC/capacitance
Cs / Cp / D / Q / ESR / DC Bias Voltage

Acoustic Components



Voice coil motor/Hearing aids
Ls / Q / Qm / SRF

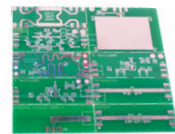


Piezoelectric element / quartz crystal
Cs / Cp / D / Fs / Fp

Material



Magnetic material
 $\mu r'' \mu r'$



Dielectric/ceramics / Electrochemical materials
 $\epsilon r' \epsilon r''$

Wireless RF/Power Supply



Wireless charging
Ls / Q / SRF / DCR / Rs

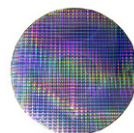


NFC/low Freq. RFID
Ls / Q / SRF / DCR / Rs



battery
ESR / Cs / Cp / D

Semiconductor Components



Wafer
C-V



LED Light board
Z / Cs / Cp / D



diode
Cs / Cp / D