

# The Optimal Choice for Electronic Component Analysis!



High Frequency



Speed < 3ms

## 6621-30 LCR Meter

10Hz~30MHz

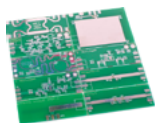


### Application



Magnetic material

$\mu_r'' / \mu_r'$



Dielectric / ceramics / Electrochemical materials

$\epsilon_r' / \epsilon_r''$



Voice coil motor

$L_s / Q / Q_m / SRF$



Hearing aids



Piezoelectric element

$C_s / C_p / D / F_s / F_p / K_p$



Quartz crystal



Wireless charging

$L_s / Q / SRF / DCR / R_s$

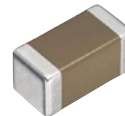


NFC/RFID



Battery

$C_s / C_p / D$



MLCC

$C_s / C_p / D / Q / DC \text{ Bias Voltage}$



Capacitance



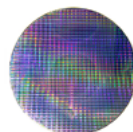
Diode

$C_s / C_p / D$



Inductance

$L_s / L_p / Q / SRF / I_{sat} / I_{rms}$



Wafer

C-V



LED Light board

$Z / C_s / C_p / D$



MOSFET

$C_{gd} / C_{gs} / C_{ds}$

# LCR Meter

**6621 Series**  
Frequency Range  
**10Hz~30MHz**

Component Tester



MICROTEST 6621 LCR Meter provides a wide frequency range of 10Hz to 30MHz for measuring the impedance characteristics of components and materials. The measured parameters include |Z| (Impedance), |Y| (Admittance),  $\theta$  (Phase Angle), X (Reactance), R (Series/Parallel Resistance), G (Conductance), B (Susceptance), L (Inductance), D (Dissipation Factor), Q (Quality Factor), DCR (DC Resistance), C (Capacitance) · It supports REMOTE/ Handler/ LAN/ USB Host/ USB Device/ RS-232/ GPIB (Optional) communication interfaces, making it compatible with automation equipment or human-machine interfaces (PLC).

## Application

Passive Components | Capacitors, Inductors, Resistors, Transformers, Ceramic Resonators, Quartz Crystals

Other Components | Ultrasonic Sensors, Piezoelectric Devices

## Features

- Frequency range: DC, 10Hz~1/ 3/ 5/ 10/ 20/ 30MHz
- Output Impedance 25 $\Omega$ / 100 $\Omega$ , switchable
- Ultra-high measuring speed <3ms
- Basic accuracy up to  $\pm 0.05\%$
- Automatic Level Control Function (ALC)
- Open circuit/ Short circuit/ Load Correction Function
- Built-in DC Bias Voltage  $\pm 12V$  (Option OP-662102)
- External DC Bias Current Source (Option 6621+ Series)
- Support Meter Mode and List Mode
- Display 4 Sets of Parameters at Once
- Simultaneous AC/ DC Measurement
- Comparator Function and Handler BIN Classification Function
- Support RS-232/ Handler/ LAN/ USB Host/ USB Device interfaces
- Supports GPIB Interface (Option OP-662101)
- Store Setup Files, Measurement Data, and Screenshots via USB
- Supports PC Link software



## Standard Interfaces

RS-232

USB Host

LAN

Handler

USB Device

REMOTE

## Specification

Model	6621-1	6621-3	6621-5	6621-10	6621-20	6621-30
Frequency Range	10Hz~1MHz	10Hz~3MHz	10Hz~5MHz	10Hz~10MHz	10Hz~20MHz	10Hz~30MHz
Frequency Resolution	6-digits of setting					
Frequency Output Accuracy	±0.01%					
Basic Accuracy	±0.05%					
AC Drive Level	Voltage	10mV~2Vrms(FREQ. ≤ 1MHz), 10mV~1Vrms(FREQ.>1MHz or FREQ. ≤ 1MHz and RO=25Ω)				
	Current	100μA~20mA Arms(RO=100Ω), 200μA~40mA Arms(RO=25Ω)				
	Voltage Minimum Resolution	1mV				
	Current Minimum Resolution	10μA				
DC Drive Level	DCR Voltage	1Vdc (40mA max.)				
ALC	ALC ON : 6% * Voltage ±2mV ALC OFF : 10% * Voltage ±2mV					
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				
	ε <sub>r</sub> ' ε <sub>r</sub> ''	0~100000				
	μ <sub>r</sub> ' μ <sub>r</sub> ''	0~100000				

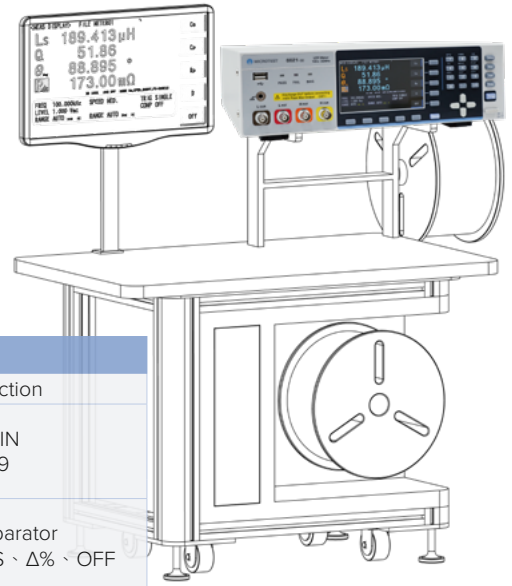
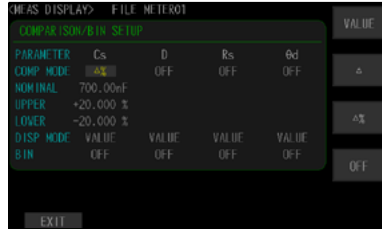
## General

Measurement Mode	Meter Mode, List Mode
Measurement Circuit	Series/ Parallel
Correction	Open Circuit/ Short Circuit/ Load Correction
Cable Compensation	0/ 0.5/ 1/ 2m
List Mode	50 groups of Multi-Steps setting (Each group contains up to 15 steps)
BIN	9
Comparator	ABS/ ΔABS/ Δ%/ OFF
Built-in Storage	100 sets LCR Meter setting documents, 50 sets list mode setting documents
USB Host Storage	LCR setting documents, List Mode setting documents, BMP graphics
Trigger Test	Auto/ Manual/ RS-232/ Handler/ GPIB (Option OP-662101)
Interface	RS-232/ Handler/ REMOTE/ LAN/ USB Host/ USB Device/ GPIB (Option OP-662101)
PC Link Software	●
Power Supply	Voltage 100~240Vac
	Frequency 50~60Hz
Power Consumption	100VA
Display	4.3"TFT · Color LCD (800*480)
Environment	Temperature : 10~40°C , Humidity : 20~80%RH
Dimension (W*H*D)	300x89.1x362.8 mm
Weight	3.4Kg

# Functions

## The Ideal LCR Meter for Component Sorting Systems

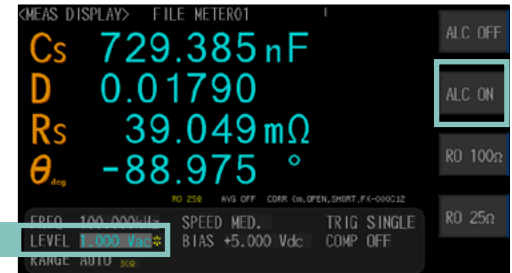
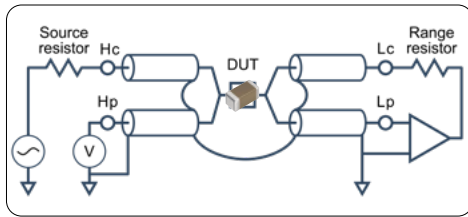
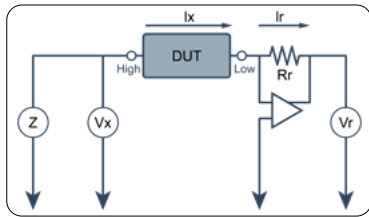
The 6621 LCR Meter is capable of displaying up to four measurement parameters simultaneously. It supports concurrent AC and DC measurements.



The Best Choice for Automated Component Testing   6621 LCR Meter				
Measurement Speed		Trigger	Interface	Function
MAX	2.5ms (>10kHz)	Auto	LAN	BIN 9
Fast	50ms (>20Hz)		USB Host	
Medium	100ms	Manual	USB Device	Comparator ABS · ΔABS · Δ% · OFF
Slow	300ms	RS-232	Handler	
Slow2	600ms	Handler	REMOTE GPIB(Optional)	

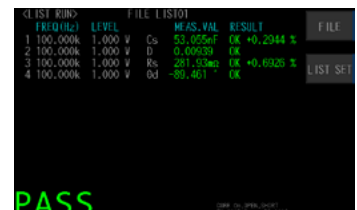
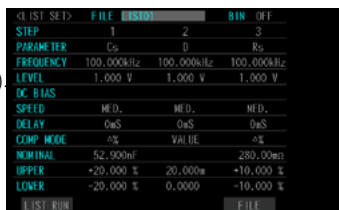
## Precision Calibration, Automatic Level Control (ALC), Selectable Output Impedance (25 Ω / 100 Ω)

Utilizes automatic balancing bridge measurement technology, supporting both 25Ω and 100Ω output Impedance Modes to meet users requirements for compatibility with other instruments.



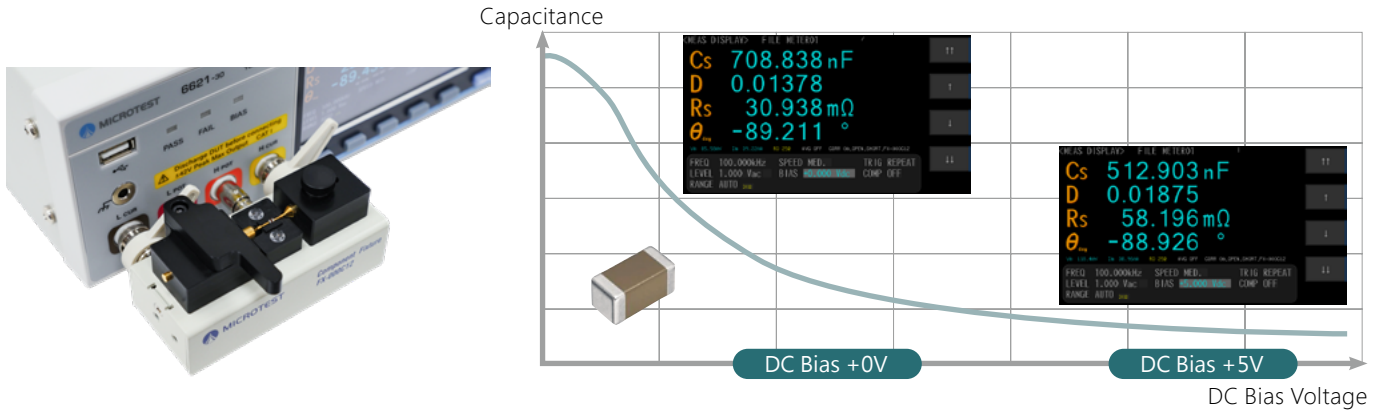
## List Mode

50 groups of List Mode setting (Each group contains up to 15 steps)

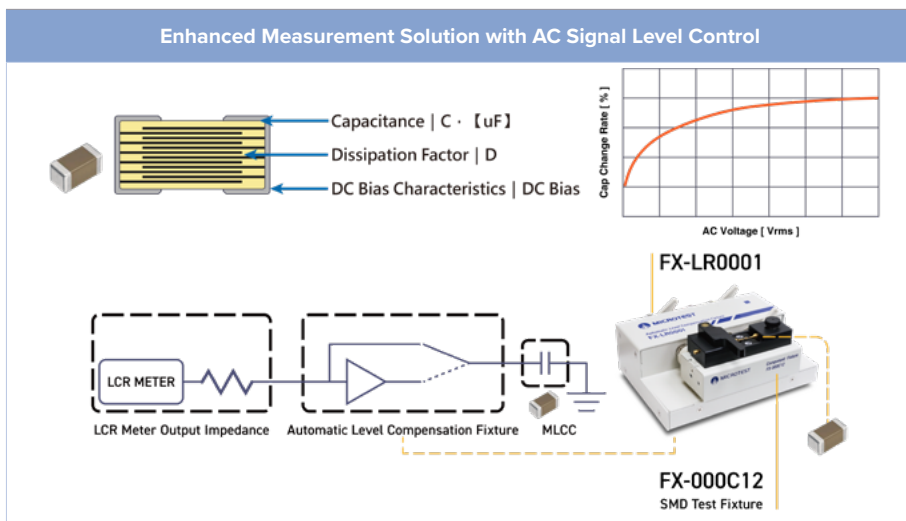


## Built-in ±12 V DC bias voltage for measuring the bias characteristics of capacitors.

Although large-capacity and compact MLCCs offer high capacitance advantages, their use of high dielectric constant materials (such as BaTiO<sub>3</sub>) results in capacitance reduction under DC bias.






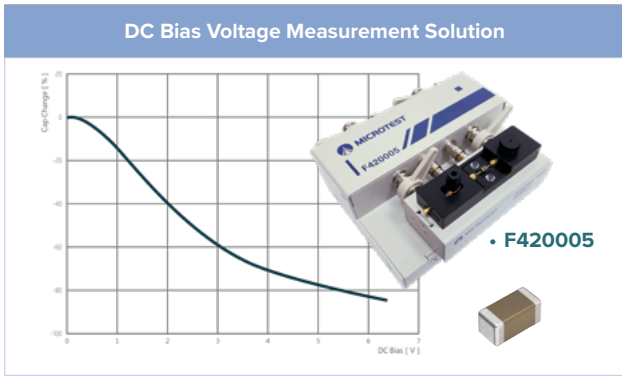
## 6621 LCR Meter- MLCC Test Solution



The regulation JIS C 5101-1-1998 specifies requirements for test signal conditions. When measuring the capacitance value of MLCCs, the LCR Meter must enable the Automatic Level Control (ALC) function. This function introduces a stable-level control circuit into the measurement path, which automatically corrects any signal level deviations and restores the voltage to the user-defined setting.

**6621 LCR Meter supports an enhanced AC signal level control function to ensure compliance and measurement accuracy.**

LCR Meter	Frequency Range	External AC Voltage Level Compensation Box		SMD Test Fixture	DIP Test Fixture
6621-1	10Hz~1MHz				
6621-3	10Hz~3MHz				
6621-5	10Hz~5MHz				
6621-10	10Hz~10MHz	Frequency	100Hz~100kHz	Frequency    DC~30MHz	Main unit up to DC~30MHz (single fixture up to 50 MHz)
6621-20	10Hz~20MHz	Voltage (ALC ON)	0.1Vrms~1Vrms		
6621-30	10Hz~30MHz	Current (ALC ON)	0.15A		



When measuring MLCCs, especially those with high dielectric constants such as X7R and Y5V types, DC bias characteristics are a critical factor that cannot be ignored. These capacitors may exhibit significant capacitance reduction when a DC bias is applied. In power supply filter design, failure to account for the DC bias effect of MLCCs can result in a substantial drop in actual capacitance, leading to degraded filtering performance and ineffective noise suppression.

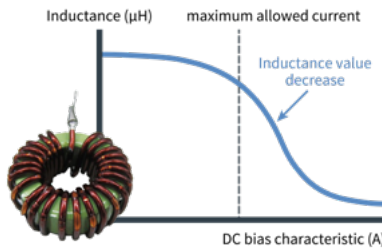
**6621 LCR Meter supports DC bias voltage measurements.**



LCR Meter	Frequency Range	Built-in DC Bias $\pm 12$ V	External DC Bias $\pm 40$ V	SMD Test Fixture	DIP Test Fixture
6621-1	10Hz~1MHz	Optional OP-662102	F420005  Frequency DC~30MHz	FX-000C12  Frequency DC~30MHz	FX-000C19  Main unit up to DC~30MHz (single fixture up to 50 MHz)
6621-3	10Hz~3MHz				
6621-5	10Hz~5MHz				
6621-10	10Hz~10MHz				
6621-20	10Hz~20MHz				
6621-30	10Hz~30MHz				

## Inductor Saturation Current Measurement Solution-Option 6621+ Series

6621 LCR Meter can be equipped with a DC bias current source to measure the inductor's saturation current characteristics. The maximum output current for superimposed bias is 640A, with a frequency response range of 100Hz to 10MHz. This setup allows for the verification and testing of the change in inductance value when a DC bias current is applied to the inductor.

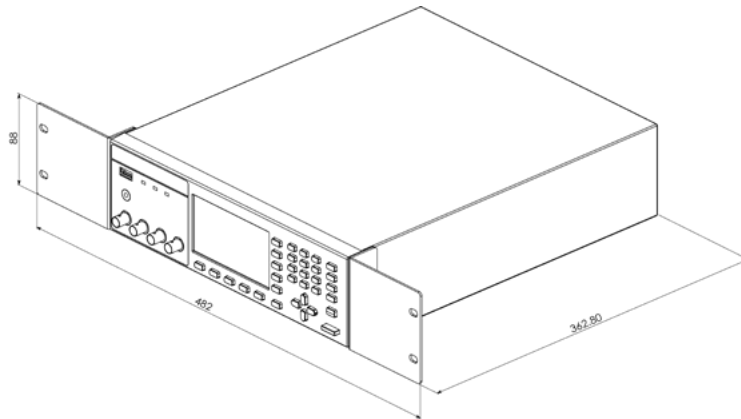


Inductor manufacturers typically define the saturation current as the current value at which the inductance decreases by 30%.

6621+Series DC Bias Current Test System							
6621 LCR Meter							
Model	6621-1	6621-3	6621-5	6621-10	6621-20	6621-30	
LCR Meter Freq.	10Hz~1MHz	10Hz~3MHz	10Hz~5MHz	10Hz~10MHz	10Hz~20MHz	10Hz~30MHz	
Frequency Response after Integration	10Hz~1MHz	10Hz~3MHz	10Hz~5MHz	10Hz~10MHz	10Hz~10MHz	10Hz~10MHz	
Equipped with the DC Bias Current Source							
Model	6225	6210	6220	6223	6240	6243	6243H
Output Current Max	20A	60A	120A	120A	320A	320A	640A
units of the DC Bias	1	6	6	6	8	8	16
Output Current (unit)	20A	10A	20A	20A	40A	40A	40A
Test Function							
<ul style="list-style-type: none"> <li>Saturation Current Curve Scan Analysis</li> <li>Temperature Rise Current Curve Scan Analysis</li> <li>Meter Mode</li> <li>List Mode</li> </ul>							

## Automatic Chassis Dimension

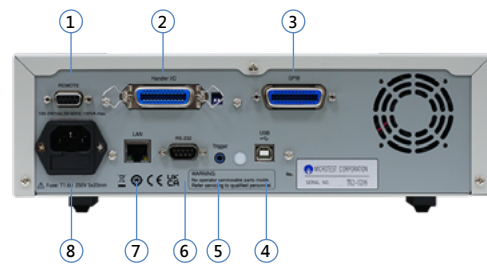
- Dimension (mm)



## Appearance



- |                     |                         |
|---------------------|-------------------------|
| 1. Power switch     | 6. setup and number key |
| 2. USB              | 7. Trigger              |
| 3. PASS/ FAIL/ BIAS | 8. Direction            |
| 4. LCD Screen       | 9. BNC terminal         |
| 5. Function         |                         |



- |                    |                           |
|--------------------|---------------------------|
| 1. REMOTE          | 5. Trigger                |
| 2. Handler         | 6. RS232                  |
| 3. GPIB (Optional) | 7. LAN                    |
| 4. USB             | 8. Power jack/ Fuse block |

## Ordering Information

6621 LCR Meter Series	Standard	Optional
<ul style="list-style-type: none"> <li>• 6621-1 (Frequency Range 10Hz~1MHz)</li> <li>• 6621-3 (Frequency Range 10Hz~3MHz)</li> <li>• 6621-5 (Frequency Range 10Hz~5MHz)</li> <li>• 6621-10 (Frequency Range 10Hz~10MHz)</li> <li>• 6621-20 (Frequency Range 10Hz~20MHz)</li> <li>• 6621-30 (Frequency Range 10Hz~30MHz)</li> </ul>	<ul style="list-style-type: none"> <li>• Power Cord</li> </ul>	<ul style="list-style-type: none"> <li>• F423906A Kelvin Clip Leads (100cm)</li> <li>• F423906B Kelvin Clip Leads (50cm)</li> <li>• F663001A BNC Test Leads (50cm)</li> <li>• F663001B BNC Test Leads (100cm)</li> <li>• F663001C BNC Test Leads (200cm)</li> <li>• F420001 External Voltage Bias (<math>\pm 200V/1MHz</math>)</li> <li>• F420003 External Voltage Bias (<math>\pm 40V/1MHz</math>)</li> <li>• F420005 External Voltage/ Current Bias (<math>\pm 40V/100mA</math>)</li> <li>• F420006 External Voltage Bias (<math>\pm 2000V/1MHz</math>)</li> <li>• FX-0000C6 DIP Test Fixture</li> <li>• FX-0000C7 Dielectric Material</li> <li>• FX-0000C8 Magnetic Material Test Fixture</li> <li>• FX-0000C9 Material Testing Fixture</li> <li>• FX-0000C10 Bottom Electrode SMD Test Fixture</li> <li>• FX-0000C11 SMD Tweezers Test Leads</li> <li>• FX-0000C12 SMD Test Fixture</li> <li>• FX-0000C19 DIP Test Fixture</li> <li>• FX-0000C20 Liquid Dielectric Material Test Fixture</li> <li>• FX-LR0001 Automatic Level Compensation Fixture</li> <li>• FX-0000C4 DIP Test Fixture</li> <li>• TL-000003 RS-232 Cable (180cm)</li> <li>• TL-000007 USB Cable (180cm I Type-A TO Type-B)</li> <li>• OP-662101 GPIB Interface</li> <li>• OP-662102 Built-in DC Bias Voltage <math>\pm 12V</math></li> <li>• 6621+ Series DC Bias Current Test System</li> <li>• PC Link Software</li> </ul>

# Fixture & Accessories

**FX-000C19**  
DIP Test Fixture



**F423906A**  
Kelvin Clip Leads (100cm)

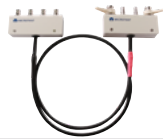


**F423906B**  
Kelvin Clip Leads (50cm)

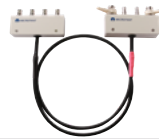


Frequency	DC~50MHz	DC~1MHz	DC~1MHz
Max. Voltage/ Current	±42V	±42V	±42V
DUT Size	-	Max. 6mm	Max. 6mm
Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367

**F663001A**  
BNC Test Leads (50cm)



**F663001B**  
BNC Test Leads (100cm)



**F663001C**  
BNC Test Leads (200cm)



Frequency	DC~20M	DC~10M	DC~5MHz
Max. Voltage/ Current	±200V	±200V	±200V
DUT Size	-	-	-
Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367

**F420001** External Voltage Bias (±200V/1MHz)    **F420003** External Voltage Bias (±40V/1MHz)



**F420005** External Voltage/Current Bias (±40V/100mA)

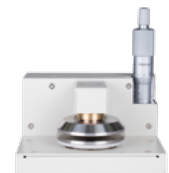


Frequency	100Hz~1MHz	100Hz~1MHz	≤ 30 MHz
Max. Voltage/ Current	±200V	±40V	DC ±40V
Accessory Description	-	-	DC ±100mA
Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630

**F420006** External Voltage Bias (±2000V/1MHz)    **FX-0000C6** DIP Test Fixture

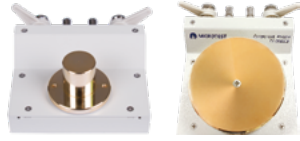


**FX-0000C7** Dielectric Material



Frequency	100Hz~1MHz	DC~30MHz	≤30MHz
Max. Voltage/ Current	±2000V	±42V	±42V
DUT Size	-	-	≤10mm (Electrode Diameter : 38mm · 5mm)
Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630

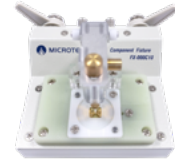
**FX-0000C8**  
Magnetic Material Test Fixture



**FX-0000C9**  
Material Testing Fixture



**FX-0000C10**  
Bottom Electrode SMD Test Fixture



Frequency	≤30MHz	DC~30MHz	DC~30MHz
Max. Voltage/ Current	±42V	±42V	±42V
DUT Size	Type A : OD 8, ID 3.1, H 3mm Type B : OD 20.5, ID 4.8, H 11mm Type C : OD 65.5, ID 7.1, H 28mm	≤10mm	≤9x9x5mm
Applicable Models	6632/ 6621/ 6630	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367

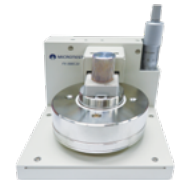
**FX-000C11**  
SMD Tweezers Test Leads



**FX-000C12**  
SMD Test Fixture



**FX-000C20**  
Liquid Dielectric Material Test Fixture



Frequency	DC~10MHz	DC~30MHz	DC~30MHz
Max. Voltage/ Current	±42V	±42V	±42V
DUT Size	≤10mm	≤7mm	Electrode Diameter : 38mm Gap of electrodes : 0.3/0.5/1/2/3/5mm
Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630

**FX-LR0001**  
Automatic Level Compensation Fixture



**FX-0000C4**  
DIP Test Fixture



Frequency	100Hz~100kHz	Frequency	DC~1MHz
Output Impedance	10 Ω (ON), 25 Ω/ 100 Ω (OFF)	Max. Voltage/ Current	±42V
Output Voltage Sweeping	AC 0.1 ~ 1V rms (ALC ON)	DUT Size	Max. 64mm
Max. Output Current	0.15A	Applicable Models	6632/ 6621/ 6630/ 6363~6367
Applicable Models	6632/ 6621/ 6630		

**TL-000003**  
RS-232 Cable



**TL-000007**  
USB Cable



Applicable Models	6632/ 6621/ 6630/ 6363~6367	6632/ 6621/ 6630
Accessory Description	180cm	Type-A TO Type-B   180cm