

# Component Parameter Test Instruments

## A. TH2851 Series Impedance Analyzer

### Features

- Test frequency: 10Hz-130MHz
- High precision: using automatic balance bridge technology, four-terminal pair test configuration
- High stability and consistency
- High speed: the fastest test speed up to 5ms
- High resolution: 10.1-inch capacitive touch screen, resolution 1280\*800
- Three test methods: point test, list scan, and graph scan
- 1601 point multi-parameter list scanning function
- Four-parameter measurement
- 4-channel graphic scanning function, each channel can display 4 curves, 16 kinds of split-screen display modes for channels and curves
- Powerful sorting: 10 grades sorting in LCR mode
- Graphic scanning mode, each curve is sorted individually
- High compatibility: Support SCPI instruction set, compatible with KEYSIGHT E4990A, E4980A, E4980AL, HP4284A

### Applications

- **Passive component:**  
Impedance parameter estimation and performance analysis of capacitor, inductor, magnetic core, resistor, piezoelectric devices, transformers, chip components and network components
- **Semiconductor component**  
Parasitic parameter test and analysis of LED driver integrated circuit  
C-VDC features of varactors  
Parasitic parameter analysis of transistors or integrated circuit
- **Other components**  
Impedance assessment of printed circuit boards, relays, switches, cables, batteries

### Specifications

Model	TH2851-015	TH2851-030	TH2851-050	TH2851-080	TH2851-130
Display	10.1 Inches TFT LCD Display 1280×RGB×800, Touch Screen				
AC Parameter	Cp/Cs、Lp/Ls、Rp/Rs、 Z 、 Y 、R、X、G、B、 $\theta$ 、D、Q、V <sub>AC</sub> 、I <sub>AC</sub>				
DC Parameter	V <sub>DC</sub> 、I <sub>DC</sub> 、DCR				
Test Frequency	Range	10Hz--15MHz	10Hz--30MHz	10Hz--50MHz	10Hz--80MHz
	Resolution	1mHz			
	Relative frequency tolerance	≤±0.0007%			
Test Level	AC Voltage	5mV—2Vrms			
	Resolution	1mV			
	AC Current	50uA—20mArms			
	Resolution	10uA			
DC Bias	Voltage	0V-±40V			
	Resolution	1mV			
	Current	0mA-±100mA			
	Resolution	40 μ A			
Test terminal configuration	Four Terminal Pair				
Output impedance	25 Ω / 100 Ω				
Typical Test time (Speed)	Five Shift: 1(Fast)—5(Accuracy)				
	1: 2.5ms 2: 10ms 3: 40ms 4: 80ms 5: 400ms (Does not include the arithmetic average of the communication time, each frequency test speed will be slightly different)				
Max Accuracy	1kHz: 0.08% 1MHz: 0.08% 2MHz: 0.5% 10MHz: 1% 130MHz: 5.0%				



**NEW**

Standard	RS232	USB HOST	USB DEVICE	LAN
	HANDLER	GPIB	HDMI	VGA

Dimension: 428mm(W)x220mm(H)x325mm(D)  
Weight: 14.5kg

- **Dielectric material**  
Dielectric constant and loss angle evaluation of plastics, ceramics and other materials
- **Magnetic materials**  
Magnetic permeability and loss angle assessment of ferrite, amorphous body and other magnetic materials
- **Semiconductor materials**  
Dielectric constant, electrical conductivity and C-V characteristics of semiconductor materials
- **Liquid crystal cell**  
Dielectric constant, elastic constant and C-V characteristics of liquid crystal cell

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Test Display Range	E: $1 \times 10^{18}$	
Cs, Cp	-9.99999EF ~ +9.99999EF	
Ls, Lp	-9.99999EH ~ +9.99999EH	
D	-9.99999E ~ +9.99999E	
Q	-9.99999E ~ +9.99999E	
R, Rs, Rp, X, Z, R <sub>DC</sub>	-9.99999E $\Omega$ ~ +9.99999E $\Omega$	
G, B, Y	-9.99999ES ~ +9.99999ES	
Vdc	-9999V ~ +9999V	
Idc	-9999mA ~ +9999mA	
$\theta_r$	-999999rad ~ +999999rad	
$\theta_d$	-180.0deg ~ +180.0deg	
$\Delta$ %	-999999% ~ +999999%	
Multi-function parameter list scan	1601 points, each point can be set to average, and each point can be sorted separately Sweep parameters: measurement parameters, test frequency, AC voltage, AC current, DC BIAS voltage, DC BIAS current	
Graphic scan	parameter	Frequency, ACV, ACI, DCV, DCI
	Types	Logarithmic, linear, frequency segmentation
	Points	2-1601
	Number of channels	4
	Number of curves	4 Per Channel
	Split Screen	14 (Channel and Curve)
Equivalent circuit analysis	3-element model: 4, 4-element model: 3	
Sorting	10 levels of sorting in LCR mode; each curve in scan mode is sorted individually	
Interface	RS232C, USB HOST, USB DEVICE, LAN, GPIB, HANDLER, VGA, HDMI	
Power-on warm-up time	60 Minutes	
Input Voltage	100-120VAC/198-242VAC Option, 47-63Hz	
Power consumption	Max 150VA	
Measurement (WxHxD) mm <sup>3</sup>	428x220x325	
Weight	14.5kg	

### Standard accessories

Three core power cord

TH26010 Gold-plated short circuit board

TH26047 Test fixture

TH26005C Four-terminal test fixture