

# Component & Device Parameter Test Instruments

## I. 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
- 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, $V_{AC}$ , $I_{AC}$				
DC Parameter	$V_{DC}$ , $I_{DC}$ , DCR				
Test Frequency	Range	10Hz--15MHz	10Hz--30MHz	10Hz--50MHz	10Hz--80MHz
	Resolution	1mHz			
	Relative frequency tolerance	$\leq \pm 0.007\%$			
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	40uA			
Test terminal configuration	Four Terminal Pair				
Output impedance	25 $\Omega$ / 100 $\Omega$				
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)				



RS232	GPIB	LAN	HANDE
standard	standard	standard	standard
USB HOST	USB DEVICE	HDMI	VGA
standard	standard	standard	standard

### TH2851 Series

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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Max Accuracy	1kHz: 0.08% 1MHz: 0.08% 2MHz: 0.5% 10MHz: 1% 130MHz: 5.0%	
Test Range	a $1 \times 10^{-18}$ ; E $1 \times 10^{18}$	
Cs, Cp	$\pm 1.00000$ aF - 999.999 EF	
Ls, Lp	$\pm 1.00000$ aH - 999.999 EH	
D	$\pm 0.00001$ - 9.99999	
Q	$\pm 0.01$ - 9999.99	
R, Rs, Rp, X, Z, R <sub>DC</sub>	$\pm 1.00000$ a $\Omega$ - 999.999 E $\Omega$	
G, B, Y	$\pm 1.00000$ aS - 999.999 ES	
Vdc	$\pm 1.00000$ aV - 999.999 EV	
Idc	$\pm 1.00000$ aA - 999.999 EA	
$\theta_r$	$\pm 1.00000$ rad - 3.14159 rad	
$\theta_d$	$\pm 0.0001$ deg - 180.000 deg	
$\Delta\%$	$\pm 0.0001\%$ - 999.999%	
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 split-screen methods, 16 curves	
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

TH26010 Gold-plated short circuit board  
 TH26005D Test fixture  
 TH26047A Test fixture

TH26082A 100 $\Omega$  Standard Resistance  
 TH26061D\_P1 Calibration Kit  
 AR05TTS1000N