

KEITHLEY

2450

The Keithley 2450 SourceMeter is a high-precision Source Measure Unit (SMU) designed for modern characterization and production test applications, offering a wide dynamic range, high measurement sensitivity, and an intuitive touchscreen interface.

SPECIFICATIONS

General

Interfaces	USB 2.0 (Type B), Ethernet (LXI), GPIB, TSP-Link
Display	5-inch, capacitive, color graphical touchscreen (TFT-LCD)
Recommended Calibration Interval	1 year

Physical

Power Supply	100 V to 240 V AC, 50/60 Hz
Operating Temperature	0 °C to 50 °C °C
Cooling	Fan-cooled

General Specifications

Instrument Type	Source Measure Unit (SMU)
Channels	1
Maximum Output Power	20 W

Source Specifications

Voltage Source Ranges	20 mV, 200 mV, 2 V, 20 V, 200 V
Voltage Source Max Output Current	1 A (for $ V \leq 20$ V), 100 mA (for $ V > 20$ V)
Current Source Ranges	10 nA, 100 nA, 1 μ A, 10 μ A, 100 μ A, 1 mA, 10 mA, 100 mA, 1 A
Current Source Max Output Voltage	200 V

Measure Specifications

Voltage Measurement Ranges	20 mV, 200 mV, 2 V, 20 V, 200 V
Voltage Measurement Resolution	5.5 digits to 6.5 digits
Current Measurement Ranges	10 nA, 100 nA, 1 μ A, 10 μ A, 100 μ A, 1 mA, 10 mA, 100 mA, 1 A
Current Measurement Resolution	5.5 digits to 6.5 digits
Resistance Measurement Resolution	5.5 digits to 6.5 digits
Resistance Measurement Method	2-wire, 4-wire (remote sense)
Offset Compensation	Yes
Measurement Speed (Readings/second)	Up to 1000 readings/second (4.5 digits)

System Performance

Maximum Source-Measure Speed	Up to 1000 readings/second
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Triggering and Synchronization

External Trigger Input	1 (TTL compatible)
External Trigger Output	1 (TTL compatible)
Trigger Link Interface	Yes, TSP-Link (RJ-45)
Source Delay	Programmable
Measure Delay	Programmable

Inputs/Outputs and Interfaces

Rear Panel Connectors	Triaxial, Digital I/O, TSP-Link IN/OUT, External Trigger IN/OUT
Sense Leads	Yes, 4-wire remote sense capability
Guard Leads	Yes, configurable guard
Remote Interface	USB 2.0 (Type B), Ethernet (LXI), GPIB

Software and Programming

Programming Language Compatibility	SCPI (Standard Commands for Programmable Instruments), TSP (Test Script Processor)
Driver Support	IVI-C, IVI-COM, LabVIEW

Display and User Interface

Display Size	5-inch
Display Type	Color graphical LCD
Display Resolution	800 x 480 pixels
Touchscreen Capability	Yes, capacitive
Front Panel Controls	Navigation wheel, dedicated buttons, touchscreen interface

Environmental and Safety

Altitude	Up to 2000 m
Safety Compliance	IEC 61010-1, UL 61010-1, CAN/CSA-C22.2 No. 61010-1
EMC Compliance	IEC 61326-1
Pollution Degree	2
Overvoltage Category	II

Power Requirements

AC Input Voltage Range	100 V to 240 V
AC Input Frequency	50 Hz / 60 Hz (auto-sensing)

Physical Specifications

Rack Mountable	Yes (with optional rack mount kit)
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Control

Test Script Processor (TSP®)	Built-in, enables embedded test programs
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Measurement

Auto-Zero	Selectable (On/Off/Once)
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Connectivity

Ethernet Interface	10/100BASE-T (RJ-45)
USB Interface	USB 2.0 (Type B device, Type A host)
GPIO Interface	IEEE-488.1, IEEE-488.2
LXI Compliance	LXI Class C
USB Port Locations	1 front (Type-A), 1 rear (Type-B)
Digital I/O Bits	6
Digital I/O Logic Low Voltage	0.7 V (typical)
Digital I/O Logic High Voltage	3.7 V (typical)
Digital I/O Sink/Source Current	1 mA (typical)

Display

Display Touch Functionality	Multi-touch, pinch-zoom
Waveform Display	Yes

TECHNOLOGY

Source Measure Unit (SMU), Touchscreen Interface

APPLICATIONS

Semiconductor device characterization, Material science research, Component testing (LEDs, solar cells, sensors), Education

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