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Data Sheet

August 14, 2026

ADVANTEST

Advantest R6581 Digital multimeter

Functions: DCV DCI DCV ratio ACV ACI resistance frequency period Interface: GPIB SCPI plus legacy Advantest commands Input Terminals: front and rear remote switchable From Advantest R6581 catalog specification summaries and xDevs R6581T comparison table of OEM 1 year relative accuracy. R6581 includes AC functions; R6581D/T are DC only. Interface: GPIB SCPI plus legacy Advantest commands Input Terminals: front and rear remote switchable From Advantest R6581 catalog specification summaries and xDevs R6581T comparison table of OEM 1 year relative accuracy. R6581 includes AC functions; R6581D/T are DC only.



MODEL	CALIBRATION
Advantest R6581	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
R6581	https://aumictechlabs.com/products/r6581-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Advantest R6581 is a precision digital multimeter engineered for high-accuracy measurement across DC and AC domains. It delivers 8.5-digit resolution with True RMS AC capabilities, making it suitable for electronics testing, maintenance, and calibration work. The instrument covers DC voltage (100 mV to 1000 V), DC current (100 nA to 1 A), 2-wire and 4-wire resistance, frequency, and temperature measurements. Its exceptional DC voltage accuracy - as low as 5 ppm + 0.2 ppm on the 10 V range - and sophisticated 4-wire resistance measurement with selectable source current modes (10 mA down to 100 nA) enable precision characterization of components and circuits. The R6581 incorporates automatic thermoelectromotive force cancellation in resistance mode and achieves low noise performance across all measurement functions at NPLC100

integration. Technical Specifications Measurement Functions DC Voltage, DC Current, 2-wire and 4-wire Resistance True RMS AC Voltage and AC Current (Model R6581) Frequency and Temperature Display: 8.5 digits DC Voltage Accuracy (1 year) 100 mV: 7 ppm + 10 ppm 1 V: 6 ppm + 1 ppm 10 V: 5 ppm + 0.2 ppm 100 V: 7 ppm + 1 ppm 1000 V: 7 ppm + 0.2 ppm 4-Wire Resistance Accuracy (1 year) 10 Ω to 100 Ω : 12–14 ppm + 5–20 ppm 1 k Ω : 8 ppm + 0.5 ppm 10 k Ω to 100 k Ω : 15–50 ppm + 2–10 ppm 1 M Ω to 100 M Ω : 50–500 ppm + 10 ppm 1 G Ω : 5000 ppm + 10 ppm Input Characteristics DC Voltage Input Resistance: >10 G Ω 4-Wire Source Current (high power): 10 mA; (low power): 1 mA, 100 μ A, 10 μ A, 1 μ A, 100 nA Key Features True RMS AC measurement for voltage and current on Model R6581 Temperature coefficient: 0.01–1.2 ppm/°C (DC voltage range-dependent) Noise floor at NPLC100: 0.05–0.1 ppm (DC voltage) Automatic thermoelectromotive force cancellation in resistance measurements Burden voltage shunt resistance selectable by current range Typical Applications Precision component characterization, electrical standards calibration, semiconductor device verification, and high-accuracy circuit troubleshooting.

R6581 Characteristics / Specifications

PARAMETER	VALUE
Model	R6581
Display Digits	8.5 digit maximum 119999999
Maximum Sampling Rate	50000 readings per second 16 bit class
DC Voltage Ranges	100 mV 1 V 10 V 100 V 1000 V
DC Voltage Minimum Resolution	10 nV
DC Voltage 10 V Range 24 Hour Relative Accuracy	0.5 ppm of reading plus 0.1 ppm of range
DC Voltage 10 V Range 1 Year Relative Accuracy	5 ppm of reading plus 0.2 ppm of range
DC Voltage 100 mV Range 1 Year Relative Accuracy	7 ppm of reading plus 10 ppm of range
DC Voltage 1 V Range 1 Year Relative Accuracy	6 ppm of reading plus 1 ppm of range
DC Voltage 100 V Range 1 Year Relative Accuracy	7 ppm of reading plus 1 ppm of range
DC Voltage 1000 V Range 1 Year Relative Accuracy	7 ppm of reading plus 0.2 ppm of range plus V_{in} squared term above 100 V
AC Voltage True RMS Ranges	10 mV to 750 V
AC Voltage Minimum Resolution	100 nV
AC Voltage Bandwidth	10 Hz to 2 MHz
DC Current Ranges	100 nA to 1000 mA eight ranges
DC Current Minimum Resolution	100 fA class 0.1 pA listed on catalog span 0.1 pA to 1.2 A
AC Current Ranges	100 uA to 1000 mA
Resistance Ranges	10 ohm to 1000 M ohm
Resistance Minimum Resolution	1 uohm
Resistance 10 kOhm 100 kOhm 1 Year Relative Accuracy	8 ppm of reading plus 0.5 ppm of range
Frequency Range	1 Hz to 10 MHz

PARAMETER	VALUE
Functions	DCV DCI DCV ratio ACV ACI resistance frequency period
Interface	GPIO SCPI plus legacy Advantest commands
Data Memory	10000 readings
Input Terminals	front and rear remote switchable
Bandwidth	10 Hz to 2 MHz

R6581 Specifications

PARAMETER	VALUE
Advantest R6581 8.5 Digit System Digital Multimeter	Overview
Applications	Automated calibration systems, semiconductor and component inspection, and metrology DCV/ohms transfer work needing 8.5 digit resolution.
Key Features	8.5 digit 119999999 maximum display
Technical Specifications	Model: R6581

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

specifications list DC voltage from 100 mV to 1000 V with 10 nV resolution and 5 ppm plus 0.2 ppm 1 year relative accuracy on the 10 V range, resistance from 10 ohm to 1000 MOhm at 8 ppm class, and true RMS AC to 2 MHz.

Applications

Automated calibration systems, semiconductor and component inspection, and metrology DCV/ohms transfer work needing 8.5 digit resolution.

Key Features

8.5 digit 119999999 maximum display

50000 readings per second class sampling

True RMS AC to 2 MHz on full R6581

Front/rear input remote switching

SCPI GPIB for system use

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	R6581
Display Digits	8.5 digit maximum 119999999
Maximum Sampling Rate	50000 readings per second 16 bit class
DC Voltage Ranges	100 mV 1 V 10 V 100 V 1000 V
DC Voltage Minimum Resolution	10 nV

DC Voltage 10 V Range 24 Hour Relative Accuracy: 0.5 ppm of reading plus 0.1 ppm of range

DC Voltage 10 V Range 1 Year Relative Accuracy: 5 ppm of reading plus 0.2 ppm of range

DC Voltage 100 mV Range 1 Year Relative Accuracy: 7 ppm of reading plus 10 ppm of range

DC Voltage 1 V Range 1 Year Relative Accuracy: 6 ppm of reading plus 1 ppm of range

DC Voltage 100 V Range 1 Year Relative Accuracy: 7 ppm of reading plus 1 ppm of range

DC Voltage 1000 V Range 1 Year Relative Accuracy: 7 ppm of reading plus 0.2 ppm of range plus Vin squared term above 100 V

Specifications

PARAMETER	VALUE
AC Voltage True RMS Ranges	10 mV to 750 V
AC Voltage Minimum Resolution	100 nV
AC Voltage Bandwidth	10 Hz to 2 MHz
DC Current Ranges	100 nA to 1000 mA eight ranges
DC Current Minimum Resolution	100 fA class 0.1 pA listed on catalog span 0.1 pA to 1.2 A
AC Current Ranges	100 uA to 1000 mA
Resistance Ranges	10 ohm to 1000 M ohm

PARAMETER	VALUE
Resistance Minimum Resolution	1 uohm

Resistance 10 kOhm 100 kOhm 1 Year Relative Accuracy: 8 ppm of reading plus 0.5 ppm of range

Specifications

PARAMETER	VALUE
Frequency Range	1 Hz to 10 MHz
Functions	DCV DCI DCV ratio ACV ACI resistance frequency period
Interface	GPIB SCPI plus legacy Advantest commands
Data Memory	10000 readings
Input Terminals	front and rear remote switchable

Notes
From Advantest R6581 catalog specification summaries and xDevs R6581T comparison table of OEM 1 year relative accuracy. R6581 includes AC functions; R6581D/T are DC only.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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<https://aumictechlabs.com>

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.