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## Basic Measurement Characteristics

### Measurement Parameters

Impedance parameters	$ Z $ , $ Y $ , $L_s$ , $L_p$ , $C_s$ , $C_p$ , $R_s$ , $R_p$ , $X$ , $G$ , $B$ , $D$ , $Q$ , $\theta_z$ [°], $\theta_z$ [rad], $\theta_y$ [°], $\theta_y$ [rad] (A maximum of four parameters can be displayed at one time.)
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### Measurement Range

Measurement range	200 m $\Omega$ to 3 k $\Omega$ (Frequency = 1 MHz, Averaging factor = 8, Oscillator level $\geq -33$ dBm, Measurement uncertainty $\leq \pm 10$ %, Calibration is performed within $23\text{ }^\circ\text{C} \pm 5\text{ }^\circ\text{C}$ , Measurement is performed within $\pm 5\text{ }^\circ\text{C}$ from the calibration temperature
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### Source Characteristics

#### Frequency

Range	1 MHz to 3 GHz
Resolution	100 kHz
Uncertainty	$\pm 10$ ppm ( $23 \pm 5\text{ }^\circ\text{C}$ ) $\pm 20$ ppm ( $5\text{ }^\circ\text{C}$ to $40\text{ }^\circ\text{C}$ )

## Basic Measurement Characteristics

### Oscillator Level

Range	
Cable length: 1m	
Power (when 50Ω LOAD is connected to the test port)	–40 dBm to 1 dBm (Frequency ≤ 1 GHz) –40 dBm to 0 dBm (Frequency > 1 GHz <sup>*1</sup> )
Current (when SHORT is connected to the test port)	0.0894 mA <sub>rms</sub> to 10 mA <sub>rms</sub> (Frequency ≤ 1 GHz) 0.0894 mA <sub>rms</sub> to 8.94 mA <sub>rms</sub> (Frequency > 1 GHz <sup>*1</sup> )
Voltage (when OPEN is connected to the test port)	4.47 mV <sub>rms</sub> to 502 mV <sub>rms</sub> (Frequency ≤ 1 GHz) 4.47 mV <sub>rms</sub> to 447 mV <sub>rms</sub> (Frequency > 1 GHz <sup>*1</sup> )
Cable length: 2m	(when Option 002 is used)
Power	Subtract the following attenuation from the power (setting value) at 1 m cable length: Attenuation [dB] = $0.37 \times \sqrt{F}$ (F: Frequency [GHz])
Resolution	0.1 dB <sup>*2</sup>
Uncertainty	
Cable length: 1 m	
Power (when 50Ω LOAD is connected to the test port)	
Frequency ≤ 1 GHz	± 2 dB(23 ± 5 °C) ± 4 dB(5 °C to 40 °C)
Frequency > 1 GHz	± 3 dB(23 ± 5 °C) ± 5 dB(5 °C to 40 °C)
Cable length: 2 m	(when Option 002 is used)
Power	Add 1 dB to the uncertainty at 1 m cable length.

\*1. It is possible to set more than 0 dBm (447 mV, 8.94 mA) oscillator level at frequency > 1 GHz. However, the characteristics at this setting are not guaranteed.

\*2. When the unit is set at mV or mA, the entered value is rounded to 0.1 dBm resolution.

### Output Impedance

Output Impedance	50Ω (nominal)
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