Name of Accreditation Program	JCSS Accreditation Program
Accreditation Identification	JCSS 0100 Calibration
Name of Conformity Assessment Body	Service Center, Keysight Technologies Japan K.K.
Name of Legal Entity	Keysight Technologies Japan K.K. JCN 3010403011350
Inquiry Point	Service Center TEL: +81-120-412-766 FAX: +81-120-412-114

*JCN: Japan Corporate Number

23･06･30-NITE-013
2023-12-11

Certificate of Accreditation

International Accreditation Japan (IAJapan) hereby accredits the following conformity assessment body as a calibration laboratory of Japan Calibration Service System.

Accreditation Identification: JCSS 0100 Calibration

Name of Conformity Assessment Body: Service Center, Keysight Technologies Japan K.K.

Name of Legal Entity: Keysight Technologies Japan K.K.

Location of Conformity Assessment Body: 9-1Takakura-machi, Hachioji-shi, Tokyo 192-8550, JAPAN

Scope of Accreditation: Time & Frequency & Rotational speed,
Electricity(Direct Current & Low Frequency),
Electricity(High Frequency) & Electromagnetic Fields
(as the following pages)

Accreditation Requirement: ISO/IEC 17025:2017*

* The relevant accreditation requirements described in the Accreditation Scheme Document for JCSS are also applied.

Effective Date of Accreditation: 2023-12-11

Expiry Date of Accreditation: 2027-12-10

Date of Initial Accreditation: 2001-10-23

SAITO Kazunori
Chief Executive, International Accreditation Japan (IAJapan)
National Institute of Technology and Evaluation

- International Accreditation Japan (IAJapan) is a laboratory accreditation body which has signed MRAs of ILAC (International Laboratory Accreditation Cooperation) and APAC (Asia Pacific Accreditation Cooperation).
- MRA requirements are, in addition to relevant international standards and guides, requirements for participation in proficiency testing programs, surveillance and reassessment, and the policy for the traceability of measurement for MRA purpose.
- This laboratory fulfills ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation means this laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).
- The latest accreditation information is publicly available on IAJapan Website as an accreditation certificate.

General Field of Calibration: Time & Frequency & Rotational speed
Date of Initial Accreditation of the Field: 2009-03-31
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Time & Frequency Counter, etc.	Frequency Standard	1 MHz, 5 MHz, 10 MHz	1.6×10^{-12}
	Frequency Generator	From 100 Hz less than 200 kHz	2.9×10^{-10}
		From 200 kHz up to 12.4 GHz	1.3×10^{-10}
		More than 12.4 GHz up to 26.5 GHz	9.8×10^{-11}
		More than 26.5 GHz up to 46 GHz	5.8×10^{-11}
	Frequency Counter	From 100 Hz less than 200 kHz	2.9×10^{-10}
		From 200 kHz up to 12.4 GHz	1.3×10^{-10}
		More than 12.4 GHz up to 26.5 GHz	9.8×10^{-11}
		More than 26.5 GHz up to 46 GHz	5.8×10^{-11}

#All Calibration Procedures are in-house procedures developed by this laboratory.
*The values in the CMC column exclude sources of uncertainty attributed to a unit under test.

General Field of Calibration: Electricity (Direct Current & Low Frequency)
Date of Initial Accreditation of the Field: 2001-10-23
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	DC Resistor	10 Ω	5.0 μΩ/Ω
		100 Ω	3.9 μΩ/Ω
		1 kΩ	2.2 μΩ/Ω
		10 kΩ	2.3 μΩ/Ω
		100 kΩ	2.9 μΩ/Ω
		1 MΩ	6.0 μΩ/Ω
		10 MΩ	18 μΩ/Ω
		More than 0 Ω up to 12 Ω	18 μΩ/Ω×R+68 μΩ
		More than 12 Ω less than 100 Ω	15 μΩ/Ω×R+0.68 mΩ
		More than 100 Ω up to 1.2 kΩ	13 μΩ/Ω×R+0.68 mΩ
		More than 1.2 kΩ up to 12 kΩ	13 μΩ/Ω×R+6.8 mΩ
		More than 12 kΩ up to 120 kΩ	13 μΩ/Ω×R+0.068 Ω
		More than 120 kΩ up to 1.2 MΩ	18 μΩ/Ω×R+2.3 Ω
		More than 1.2 MΩ up to12 MΩ	53 μΩ/Ω×R+104 Ω
		More than 12 MΩ up to 120 MΩ	0.50 mΩ/Ω×R+3.2 kΩ
		More than 120 MΩ up to 1.2 GΩ	5.0 mΩ/Ω×R+226 kΩ
	DC Resistance Measuring Equipment	10 Ω	4.6 μΩ/Ω
		100 Ω	4.1 μΩ/Ω
		1 kΩ	2.3 μΩ/Ω
		10 kΩ	2.2 μΩ/Ω
		100 kΩ	2.6 μΩ/Ω
		1 MΩ	5.7 μΩ/Ω
		10 MΩ	17 μΩ/Ω
		More than 0 Ω up to 12 Ω	18 μΩ/Ω×R+68 μΩ
		More than 12 Ω less than 100 Ω	15 μΩ/Ω×R+0.68 mΩ
		More than 100 Ω up to 1.2 kΩ	13 μΩ/Ω×R+0.68 mΩ
		More than 1.2 kΩ up to 12 kΩ	13 μΩ/Ω×R+6.8 mΩ
		More than 12 kΩ up to 120 kΩ	13 μΩ/Ω×R+0.068 Ω
		More than 120 kΩ up to1.2 MΩ	18 μΩ/Ω×R+2.3 Ω
		More than 1.2 MΩ up to 12 MΩ	53 μΩ/Ω×R+104 Ω
		More than 12 MΩ up to120 MΩ	0.50 mΩ/Ω×R+3.2 kΩ
		More than 120 MΩ up to 1.2 GΩ	5.0 mΩ/Ω×R+226 kΩ

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note]R: Resistance [Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	DC voltage Source	0.1 V	3.5 μV/V
		1.0 V	2.1 μV/V
		10 V	0.82 μV/V
		100 V	2.2 μV/V
		1000 V	3.8 μV/V
		More than 0 V less than 0.1 V	7.1 μV/V×V+0.36 μV
		More than 0.1 V up to 1.2 V	6.1 μV/V×V+0.36 μV
		More than 1.2 V up to 12 V	6.1 μV/V×V+0.80 μV
		More than 12 V up to 120 V	8.1 μV/V×V+36 μV
		More than 120 V up to 1050 V	$\{8.1\ \mu\text{V/V} + 12\ \mu\text{V/V} \times \left(\frac{V}{1000\ \text{V}}\right)^2\} \times V + 0.13\ \text{mV}$
		More than 1050 V up to 3000 V	46 μV/V
	DC voltage Measuring Equipment	0.1 V	3.8 μV/V
		1.0 V	2.2 μV/V
		10 V	0.96 μV/V
		100 V	2.0 μV/V
		1000 V	3.7 μV/V
		More than 0 V less than 0.1 V	7.1 μV/V×V+0.36 μV
		More than 0.1 V up to 1.2 V	6.1 μV/V×V+0.36 μV
		More than 1.2 V up to 12 V	6.1 μV/V×V+0.80 μV
		More than 12 V up to 120 V	8.1 μV/V×V+36 μV
		More than 120 V up to 1050 V	$\{8.1\ \mu\text{V/V} + 12\ \mu\text{V/V} \times \left(\frac{V}{1000\ \text{V}}\right)^2\} \times V$
		More than 1050 V up to 3000 V	46 μV/V

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[Note]R: Resistance [Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Direct Current Source	10 pA	0.085 %
		100 pA	0.068 %
		1 nA	0.022 %
		10 nA	0.014 %
		100 nA	63 μA/A
		1 μA	73 μA/A
		10 μA	18 μA/A
		100 μA	7.2 μA/A
		1 mA	7.1 μA/A
		10 mA	7.4 μA/A
		100 mA	13 μA/A
		1 A	39 μA/A
		More than 0 A up to 120 μA	25 μA/A×I+0.95 nA
		More than 120 μA up to 1.2 mA	25 μA/A×I+6.5 nA
		More than 1.2 mA up to 12 mA	25 μA/A×I+65 nA
		More than 12 mA up to 120 mA	40 μA/A×I+0.65 μA
		More than 120 mA up to 1.0 A	115 μA/A×I+12 μA
		More than 1.0 A less than 2 A	52 μA/A
		From 2 A less than 3 A	37 μA/A
		From 3 A less than 5 A	32 μA/A
		From 5 A less than 10 A	29 μA/A
		From 10 A up to 15 A	28 μA/A
		More than 15 A up to 20 A	30 μA/A
	Direct Current Measuring Equipment	10 pA	0.084 %
		100 pA	0.068 %
		1 nA	0.021 %
		10 nA	0.013 %
		100 nA	42 μA/A
		1 μA	25 μA/A
		10 μA	20 μA/A
		100 μA	7.4 μA/A
		1 mA	7.2 μA/A
		10 mA	7.4 μA/A
		100 mA	16 μA/A
		1 A	42 μA/A
		More than 0 A uo to 120 μA	25 μA/A×I+0.95 nA
		More than 120 μA up to 1.2 mA	25 μA/A×I+6.5 nA
		More than 1.2 mA up to 12 mA	25 μA/A×I+65 nA
		More than 12 mA up to 120 mA	40 μA/A×I+0.65 μA
		More than 120 mA up to 1.0 A	115 μA/A×I+12 μA
		More than 1.0 A less than 2 A	52 μA/A
		From 2 A less than 3 A	37 μA/A
		From 3 A less than 5 A	32 μA/A
		From 5 A less than 10 A	29 μA/A
		From 10 A up to 15 A	30 μA/A
		More than 15 A up to 20 A	34 μA/A

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note]R: Resistance [Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC Voltage Source	10 mV	1 kHz	96 μV/V
		0.1 V	1 kHz	38 μV/V
		1.0 V	1 kHz	38 μV/V
		10 V	20 Hz	49 μV/V
		10 V	1 kHz	35 μV/V
		10 V	20 kHz	59 μV/V
		10 V	100 kHz	71 μV/V
		10 V	1 MHz	0.030 %
		100 V	1 kHz	47 μV/V
		700 V	1 kHz	69 μV/V
		From 1.2 mV up to 12 mV	From 1 Hz less than 40 Hz	0.30 mV/V×V+3.0 μV
			From 40 Hz up to 1 kHz	0.20 mV/V×V+1.1 μV
			More than 1 kHz up to 20 kHz	0.30 mV/V×V+1.1 μV
			More than 20 kHz up to 50 kHz	1.0 mV/V×V+1.1 μV
			More than 50 kHz up to 100 kHz	1.0 mV/V×V+5.0 μV
			More than 100 kHz up to 1 MHz	12 mV/V×V+5.0 μV
			More than 1 MHz up to 4 MHz	70 mV/V×V+7.0 μV
			More than 4 MHz up to 8 MHz	200 mV/V×V+8.0 μV
		More than 12 mV up to 120 mV	From 1 Hz less than 40 Hz	72 μV/V×V+4.0 μV
			From 40 Hz up to 1 kHz	72 μV/V×V+2.0 μV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+2.0 μV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+2.0 μV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+2.0 μV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+10 μV
			More than 300 kHz up to 1 MHz	10 mV/V×V+10 μV
			More than 1 MHz up to 2 MHz	15 mV/V×V+10 μV
			More than 2 MHz up to 4 MHz	40 mV/V×V+0.070 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.080 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+0.10 mV
		More than 120 mV up to 1.2 V	From 1 Hz less than 40 Hz	72 μV/V×V+40 μV
			From 40 Hz up to 1 kHz	72 μV/V×V+20 μV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+20 μV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+20 μV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+20 μV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+0.10 mV
			More than 300 kHz up to 1 MHz	10 mV/V×V+0.10 mV
			More than 1 MHz up to 2 MHz	15 mV/V×V+0.10 mV
			More than 2 MHz up to 4 MHz	40 mV/V×V+0.70 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.80 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+1.0 mV
		From 200 mV up to 1.5 V	From 10 Hz up to 100 kHz	0.16 %
			More than 100 kHz up to 500 kHz	0.21 %
			More than 500 kHz up to 1 MHz	0.25 %
			More than 1 MHz up to 2 MHz	0.32 %
			More than 2 MHz up to 3 MHz	0.37 %
			More than 3 MHz up to 4 MHz	0.42 %
			More than 4 MHz up to 5 MHz	0.46 %
			More than 5 MHz less than 10 MHz	0.64 %

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[Note]R: Resistance [Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC Voltage Source	More than 1.5 V up to 4.5 V	From 10 Hz up to 100 kHz	0.20 %
			More than 100 kHz up to 500 kHz	0.24 %
			More than 500 kHz up to 1 MHz	0.28 %
			More than 1 MHz up to 2 MHz	0.34 %
			More than 2 MHz up to 3 MHz	0.39 %
			More than 3 MHz up to 4 MHz	0.44 %
			More than 4 MHz up to 5 MHz	0.47 %
			More than 5 MHz less than 10 MHz	0.66 %
		More than 1.2 V up to 12 V	From 1 Hz less than 40 Hz	72 μV/V×V+0.40 mV
			From 40 Hz up to 1 kHz	72 μV/V×V+0.20 mV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+0.20 mV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+0.20 mV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+0.20 mV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+1.0 mV
			More than 300 kHz up to 1 MHz	10 mV/V×V+1.0 mV
			More than 1 MHz up to 2 MHz	15 mV/V×V+1.0 mV
			More than 2 MHz up to 4 MHz	40 mV/V×V+7.0 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+8.0 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+10 mV
		More than 12 V up to 120 V	From 1 Hz less than 40 Hz	0.20 mV/V×V+4.0 mV
			From 40 Hz up to 1 kHz	0.20 mV/V×V+2.0 mV
			More than 1 kHz up to 20 kHz	0.20 mV/V×V+2.0 mV
			More than 20 kHz up to 50 kHz	0.35 mV/V×V+2.0 mV
			More than 50 kHz up to 100 kHz	1.2 mV/V×V+2.0 mV
			More than 100 kHz up to 300 kHz	4.0 mV/V×V+10 mV
			More than 300 kHz up to 1 MHz	15 mV/V×V+10 mV
		More than 120 V up to 700 V	From 1 Hz less than 40 Hz	0.40 mV/V×V+40 mV
			From 40 Hz up to 1 kHz	0.40 mV/V×V+20 mV
			More than 1 kHz up to 20 kHz	0.60 mV/V×V+20 mV
			More than 20 kHz up to 50 kHz	1.2 mV/V×V+20 mV
			More than 50 kHz up to 100 kHz	3.0 mV/V×V+20 mV

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note]R: Resistance[Ω],V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC Voltage Measuring Equipment	10 mV	1 kHz	0.010 %
		0.1 V	1 kHz	40 μV/V
		1.0 V	1 kHz	39 μV/V
		10 V	20 Hz	50 μV/V
		10 V	1 kHz	35 μV/V
		10 V	20 kHz	63 μV/V
		10 V	100 kHz	75 μV/V
		10 V	1 MHz	0.030 %
		100 V	1 kHz	44 μV/V
		700 V	1 kHz	72 μV/V
		From 1.2 mV up to 12 mV	From 1 Hz less than 40 Hz	0.30 mV/V×V+3.0 μV
			From 40 Hz up to 1 kHz	0.20 mV/V×V+1.1 μV
			More than 1 kHz up to 20 kHz	0.30 mV/V×V+1.1 μV
			More than 20 kHz up to 50 kHz	1.0 mV/V×V+1.1 μV
			More than 50 kHz up to 100 kHz	1.0 mV/V×V+5.0 μV
			More than 100 kHz up to 1 MHz	12 mV/V×V+5.0 μV
			More than 1 MHz up to 4 MHz	70 mV/V×V+7.0 μV
			More than 4 MHz up to 8 MHz	200 mV/V×V+8.0 μV
		More than 12 mV up to 120 mV	From 1 Hz less than 40 Hz	72 μV/V×V+4.0 μV
			From 40 Hz up to 1 kHz	72 μV/V×V+2.0 μV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+2.0 μV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+2.0 μV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+2.0 μV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+10 μV
			More than 300 kHz up to 1 MHz	10 mV/V×V+10 μV
			More than 1 MHz up to 2 MHz	15 mV/V×V+10 μV
			More than 2 MHz up to 4 MHz	40 mV/V×V+0.070 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.080 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+0.10 mV
		More than 120 mV up to 1.2 V	From 1 Hz less than 40 Hz	72 μV/V×V+40 μV
			From 40 Hz up to 1 kHz	72 μV/V×V+20 μV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+20 μV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+20 μV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+20 μV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+0.10 mV
			More than 300 kHz up to 1 MHz	10 mV/V×V+0.10 mV
			More than 1 MHz up to 2 MHz	15 mV/V×V+0.10 mV
			More than 2 MHz up to 4 MHz	40 mV/V×V+0.70 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.80 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+1.0 mV

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note]R : Resistance [Ω], V : Voltage[V], I : Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC Voltage Measuring Equipment	From 200 mV up to 1.5 V	From 10 Hz up to 100 kHz	0.14 %
			More than 100 kHz up to 500 kHz	0.19 %
			More than 500 kHz up to 1 MHz	0.23 %
			More than 1 MHz up to 2 MHz	0.30 %
			More than 2 MHz up to 3 MHz	0.35 %
			More than 3 MHz up to 4 MHz	0.40 %
			More than 4 MHz up to 5 MHz	0.44 %
			More than 5 MHz less than 10 MHz	0.62 %
		223.6 mV	From 10 Hz up to 100 kHz	0.058 %
			More than 100 kHz up to 500 kHz	0.14 %
			More than 500 kHz up to 1 MHz	0.19 %
			More than 1 MHz up to 2 MHz	0.26 %
			More than 2 MHz up to 3 MHz	0.32 %
			More than 3 MHz up to 4 MHz	0.37 %
			More than 4 MHz up to 5 MHz	0.41 %
			More than 5 MHz less than 10 MHz	0.58 %
		More than 1.5 V up to 4.5 V	From 10 Hz up to 100 kHz	0.18 %
			More than 100 kHz up to 500 kHz	0.22 %
			More than 500 kHz up to 1 MHz	0.26 %
			More than 1 MHz up to 2 MHz	0.32 %
			More than 2 MHz up to 3 MHz	0.37 %
			More than 3 MHz up to 4 MHz	0.42 %
			More than 4 MHz up to 5 MHz	0.45 %
			More than 5 MHz less than 10 MHz	0.64 %
		More than 1.2 V up to 12 V	From 1 Hz less than 40 Hz	72 μV/V×V+0.40 mV
			From 40 Hz up to 1 kHz	72 μV/V×V+0.20 mV
			More than 1 kHz up to 20 kHz	0.14 mV/V×V+0.20 mV
			More than 20 kHz up to 50 kHz	0.30 mV/V×V+0.20 mV
			More than 50 kHz up to 100 kHz	0.80 mV/V×V+0.20 mV
			More than 100 kHz up to 300 kHz	3.0 mV/V×V+1.0 mV
			More than 300 kHz up to 1 MHz	10 mV/V×V+1.0 mV
			More than 1 MHz up to 2 MHz	15 mV/V×V+1.0 mV
			More than 2 MHz up to 4 MHz	40 mV/V×V+7.0 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+8.0 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+10 mV
		More than 12 V up to 120 V	From 1 Hz less than 40 Hz	0.20 mV/V×V+4.0 mV
			From 40 Hz up to 1 kHz	0.20 mV/V×V+2.0 mV
			More than 1 kHz up to 20 kHz	0.20 mV/V×V+2.0 mV
			More than 20 kHz up to 50 kHz	0.35 mV/V×V+2.0 mV
			More than 50 kHz up to 100 kHz	1.2 mV/V×V+2.0 mV
			More than 100 kHz up to 300 kHz	4.0 mV/V×V+10 mV
			More than 300 kHz up to 1 MHz	15 mV/V×V+10 mV
		More than 120 V up to 700 V	From 1 Hz less than 40 Hz	0.40 mV/V×V+40 mV
			From 40 Hz up to 1 kHz	0.40 mV/V×V+20 mV
			More than 1 kHz up to 20 kHz	0.60 mV/V×V+20 mV
			More than 20 kHz up to 50 kHz	1.2 mV/V×V+20 mV
			More than 50 kHz up to 100 kHz	3.0 mV/V×V+20 mV

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[Note]R: Resistance[Ω], V : Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Alternating Current Source	100 μA	1 kHz	0.012 %
		1 mA	1 kHz	0.011 %
		10 mA	1 kHz	0.011 %
		100 mA	1 kHz	0.011 %
		1 A	1 kHz	0.014 %
		From 6 μA up to 100 μA	From 10 Hz less than 20 Hz	4.0 mA/A×I+30 nA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+30 nA
			From 45 Hz up to 1 kHz	0.61 mA/A×I+30 nA
		More than 100 μA up to 1.2 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+0.20 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+0.20 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+0.20 μA
		More than 1.2 mA up to 12 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+2.0 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+2.0 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+2.0 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+2.0 μA
		More than 12 mA up to 120 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+20 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+20 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+20 μA
		More than 120 mA up to 1.05 A	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 mA
			From 20 Hz less than 45 Hz	1.6 mA/A×I+0.20 mA
			From 45 Hz up to 100 Hz	0.81 mA/A×I+0.20 mA
			More than 100 Hz up to 5 kHz	1.0 mA/A×I+0.20 mA
	Alternating Current Measuring Equipment	100 μA	1 kHz	0.013 %
		1 mA	1 kHz	0.012 %
		10 mA	1 kHz	0.012 %
		100 mA	1 kHz	0.012 %
		1 A	1 kHz	0.016 %
		From 6 μA up to 100 μA	From 10 Hz less than 20 Hz	4.0 mA/A×I+30 nA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+30 nA
			From 45 Hz up to 1 kHz	0.61 mA/A×I+30 nA
		More than 100 μA up to 1.2 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+0.20 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+0.20 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+0.20 μA
		More than 1.2 mA up to 12 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+2.0 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+2.0 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+2.0 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+2.0 μA
		More than 12 mA up to 120 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+20 μA
			From 45 Hz less than 100 Hz	0.61 mA/A×I+20 μA
			From 100 Hz up to 5 kHz	0.31 mA/A×I+20 μA
		More than 120 mA up to 1.05 A	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 mA
			From 20 Hz less than 45 Hz	1.6 mA/A×I+0.20 mA
			From 45 Hz up to 100 Hz	0.81 mA/A×I+0.20 mA
			More than 100 Hz up to 5 kHz	1.0 mA/A×I+0.20 mA

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note]R: Resistance[Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitor	1 pF	1 kHz	Capacitance 0.062 %
				D factor: 0.00048
			1 MHz	Capacitance: 0.022 %
				D factor: 0.000034
		10 pF	1 kHz	Capacitance: 0.018 %
				D factor: 0.000059
			More than 1 kHz less than 1 MHz	Capacitance: $(-0.0040\times f^2 + 0.062)$ %
				D factor: $-0.000027\times f^{1.5} + 0.000059$
			1 MHz	Capacitance: 0.017 %
				D factor: 0.000032
		100 pF	From 100 Hz up to 1 kHz	Capacitance: 0.017 %
				D factor: 0.000027
			More than 1 kHz less than 1 MHz	Capacitance: $(-0.0010\times f^2 + 0.017)$ %
				D factor: 0.000027
			1 MHz	Capacitance: 0.018 %
				D factor: 0.000027
		1000 pF	From 20 Hz up to 1 kHz	Capacitance: 0.018 %
				D factor: 0.000028
			More than 1 kHz less than 1 MHz	Capacitance: $(0.0010\times f^2 + 0.018)$ %
				D factor: $0.000010\times f^{1.5} + 0.000028$
			1 MHz	Capacitance: 0.019 %
				D factor: 0.000038
		0.01 μF	From 20 Hz up to 120 Hz	Capacitance: 0.010 %
				D factor: 0.000023
			1 kHz	Capacitance: 96 μF/F
				D factor: 0.000023
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000023
			100 kHz	Capacitance: 0.010 %
				D factor: 0.000050
		0.1 μF	From 20 Hz up to 120 Hz	Capacitance: 0.010 %
				D factor: 0.000032
			1 kHz	Capacitance: 97 μF/F
				D factor: 0.000023
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000031
			100 kHz	Capacitance: 0.010 %
				D factor: 0.000066

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitor	1 mF	From 20 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000047
			1 kHz	Capacitance: 97 μF/F
				D factor: 0.000031
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000066
			100 kHz	Capacitance: 0.016 %
				D factor: 0.00058
		10 mF	From 20 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000047
			1 kHz	Capacitance: 0.011 %
				D factor: 0.000046
			10 kHz	Capacitance: 0.019 %
				D factor: 0.00028
			100 kHz	Capacitance: 0.075 %
				D factor: 0.00081

#All Calibration Procedures are in-house procedures developed by this laboratory.

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	1 pF	From 10 Hz up to 1 kHz	Capacitance: 0.019 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: $(0.0030\times f^2 + 0.019)$ %
				D factor: $0.000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.022 %
				D factor: 0.000033
			More than 1 MHz less than 2 MHz	Capacitance: $(0.0043\times f^2 + 0.018)$ %
				D factor: $0.000017\times f^{1.5}+0.000016$
			2 MHz	Capacitance: 0.035 %
				D factor: 0.000064
			More than 2 MHz less than 3 MHz	Capacitance: $(0.0044\times f^2 + 0.017)$ %
				D factor: $0.000012\times f^{1.5}+0.000030$
			3 MHz	Capacitance: 0.057 %
				D factor: 0.000093
			More than 3 MHz less than 4 MHz	Capacitance: $(0.0041\times f^2 + 0.020)$ %
				D factor: $0.000017\times f^{1.5}+0.0000059$
			4 MHz	Capacitance: 0.086 %
				D factor: 0.00014
			More than 4 MHz less than 5 MHz	Capacitance: $(0.0038\times f^2 + 0.026)$ %
				D factor: $0.000019\times f^{1.5}-0.000011$
			5 MHz	Capacitance: 0.12 %
				D factor: 0.00020
			More than 5 MHz less than 10 MHz	Capacitance: $(0.0035\times f^2 + 0.033)$ %
				D factor: $0.000018\times f^{1.5}-0.0000024$
			10 MHz	Capacitance: 0.38 %
				D factor: 0.00057
			More than 10 MHz less than 13 MHz	Capacitance: $(0.077\times f - 0.39)$ %
				D factor: $0.000017\times f^{1.5}+0.000031$
			13 MHz	Capacitance: 0.61 %
				D factor: 0.00083

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	10 pF	From 10 Hz up to 1 kHz	Capacitance: 0.018 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: 0.018 %
				D factor: $0.0000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.018 %
				D factor: 0.000024
			More than 1 MHz less than 2 MHz	Capacitance: 0.018 %
				D factor: $0.0000027\times f^{1.5}+0.000021$
			2 MHz	Capacitance: 0.018 %
				D factor: 0.000029
			More than 2 MHz less than 3 MHz	Capacitance: 0.018 %
				D factor: $-0.0000013\times f^{1.5}+0.000033$
			3 MHz	Capacitance: 0.018 %
				D factor: 0.000026
			More than 3 MHz less than 4 MHz	Capacitance: 0.018 %
				D factor: $0.0000011\times f^{1.5}+0.000020$
			4 MHz	Capacitance: 0.016 %
				D factor: 0.000029
			More than 4 MHz less than 5 MHz	Capacitance: 0.018 %
				D factor: $0.0000025\times f^{1.5}+0.0000089$
			5 MHz	Capacitance: 0.018 %
				D factor: 0.000037
			More than 5 MHz less than 10 MHz	Capacitance: $(0.000040\times f^{2}+0.017)$ %
				D factor: $0.0000020\times f^{1.5}+0.000015$
			10 MHz	Capacitance: 0.021 %
				D factor: 0.000078
			More than 10 MHz less than 13 MHz	Capacitance: $(0.000040\times f+0.017)$ %
				D factor: $0.0000014\times f^{1.5}+0.000034$
			13 MHz	Capacitance: 0.024 %
				D factor: 0.00010

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	100 pF	From 10 Hz up to 1 kHz	Capacitance: 0.018 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: 0.018 %
				D factor: $0.0000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.018 %
				D factor: 0.000024
			More than 1 MHz less than 2 MHz	Capacitance: 0.018 %
				D factor: $0.0000027\times f^{1.5}+0.000021$
			2 MHz	Capacitance: 0.018 %
				D factor: 0.000029
			More than 2 MHz less than 3 MHz	Capacitance: 0.018 %
				D factor: $0.0000025\times f^{1.5}+0.000022$
			3 MHz	Capacitance: 0.018 %
				D factor: 0.000035
			More than 3 MHz less than 4 MHz	Capacitance: $(0.00010\times f^2 + 0.017)$ %
				D factor: $0.0000071\times f^{1.5}-0.0000021$
			4 MHz	Capacitance: 0.019 %
				D factor: 0.000055
			More than 4 MHz less than 5 MHz	Capacitance: $(0.00030\times f^2 + 0.014)$ %
				D factor: $0.0000031\times f^{1.5}+0.000030$
			5 MHz	Capacitance: 0.022 %
				D factor: 0.000065
			More than 5 MHz less than 10 MHz	Capacitance: $(0.00020\times f^2 + 0.017)$ %
				D factor: $0.0000051\times f^{1.5}+0.0000076$
			10 MHz	Capacitance: 0.037 %
				D factor: 0.00017
			More than 10 MHz less than 13 MHz	Capacitance: $(0.0022\times f^2 - 0.015)$ %
				D factor: $0.0000053\times f^{1.5}+0.0000041$
			13 MHz	Capacitance: 0.052 %
				D factor: 0.00025

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[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor.

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	1000 pF	From 10 Hz up to 1 kHz	Capacitance: 0.018 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: $(0.0010\times f^2 + 0.018)$ %
				D factor: $0.000012\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.019 %
				D factor: 0.000035
			More than 1 MHz less than 2 MHz	Capacitance: $(0.0017\times f^2 + 0.017)$ %
				D factor: $0.000018\times f^{1.5}+0.000017$
			2 MHz	Capacitance: 0.024 %
				D factor: 0.000068
			More than 2 MHz less than 3 MHz	Capacitance: $(0.0024\times f^2 + 0.014)$ %
				D factor: $0.000018\times f^{1.5}+0.000018$
			3 MHz	Capacitance: 0.036 %
				D factor: 0.00011
			More than 3 MHz less than 4 MHz	Capacitance: $(0.0021\times f^2 + 0.017)$ %
				D factor: $0.000018\times f^{1.5}+0.000017$
			4 MHz	Capacitance: 0.051 %
				D factor: 0.00016
			More than 4 MHz less than 5 MHz	Capacitance: $(0.0020\times f^2 + 0.019)$ %
				D factor: $0.000022\times f^{1.5}$-0.000016
			5 MHz	Capacitance: 0.069 %
				D factor: 0.00023
			More than 5 MHz less than 10 MHz	Capacitance: $(0.0019\times f^2 + 0.022)$ %
				D factor: $0.000020\times f^{1.5}+0.000011$
			10 MHz	Capacitance: 0.21 %
				D factor: 0.00063
			More than 10 MHz less than 13 MHz	Capacitance: $(0.034\times f$ - 0.13) %
				D factor: $0.000019\times f^{1.5}+0.000029$
			13 MHz	Capacitance: 0.31 %
				D factor: 0.00092

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	0.01 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000024
			1 kHz	Capacitance: 98 μF/F
				D factor: 0.000025
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000024
			100 kHz	Capacitance: 0.010 %
				D factor: 0.000050
		0.1 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000033
			1 kHz	Capacitance: 97 μF/F
				D factor: 0.000024
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000031
			100 kHz	Capacitance: 0.011 %
				D factor: 0.000067
		1 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000047
			1 kHz	Capacitance: 96 μF/F
				D factor: 0.000031
			10 kHz	Capacitance: 0.011 %
				D factor: 0.000070
			100 kHz	Capacitance: 0.017 %
				D factor: 0.00058
		10 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000047
			1 kHz	Capacitance: 0.011 %
				D factor: 0.000050
			10 kHz	Capacitance: 0.020 %
				D factor: 0.00029
			100 kHz	Capacitance: 0.075 %
				D factor: 0.00089

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] D factor: Dissipation factor

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	AC Resistance Measuring Equipment	1 Ω	From 5 Hz up to 1 kHz	Parallel Resistance: 0.035 %
		10 Ω	From 5 Hz less than 1 MHz	Parallel Resistance: 0.045 %
				Reactance: 0.0042 Ω
			1 MHz	Parallel Resistance: 0.033 %
				Reactance: 0.0042 Ω
			2 MHz	Parallel Resistance: 0.056 %
				Reactance: 0.0052 Ω
			3 MHz	Parallel Resistance: 0.062 %
				Reactance: 0.0051 Ω
			4 MHz	Parallel Resistance: 0.071 %
				Reactance: 0.0061 Ω
			5 MHz	Parallel Resistance: 0.10 %
				Reactance: 0.0074 Ω
			10 MHz	Parallel Resistance: 0.42 %
				Reactance: 0.020 Ω
			13 MHz	Parallel Resistance: 0.62 %
				Reactance: 0.041 Ω
		100 Ω	From 5 Hz less than 1 MHz	Parallel Resistance: 0.034 %
				Reactance: 0.042 Ω
			1 MHz	Parallel Resistance: 0.033 %
				Reactance: 0.042 Ω
			2 MHz	Parallel Resistance: 0.042 %
				Reactance: 0.042 Ω
			3 MHz	Parallel Resistance: 0.051 %
				Reactance: 0.042 Ω
			4 MHz	Parallel Resistance: 0.051 %
				Reactance: 0.042 Ω
			5 MHz	Parallel Resistance: 0.051 %
				Reactance: 0.042 Ω
			10 MHz	Parallel Resistance: 0.20 %
				Reactance: 0.081 Ω
			13 MHz	Parallel Resistance: 0.30 %
				Reactance: 0.093 Ω

#All Calibration Procedures are in-house procedures developed by this laboratory.

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	AC Resistance Measuring Equipment	1 kΩ	From 5 Hz up to 100 kHz	Parallel Resistance: 0.033 %
				Susceptance: 0.42 μS
			More than 100 kHz less than 1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.42 μS
			1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.42 μS
			2 MHz	Parallel Resistance: 0.033 %
				Susceptance: 0.42 μS
			3 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.42 μS
			4 MHz	Parallel Resistance: 0.042 %
				Susceptance: 0.42 μS
			5 MHz	Parallel Resistance: 0.051 %
				Susceptance: 0.42 μS
			10 MHz	Parallel Resistance: 0.20 %
				Susceptance: 0.71 μS
			13 MHz	Parallel Resistance: 0.30 %
				Susceptance: 0.71 μS
		10 kΩ	From 5 Hz less than 100 kHz	Parallel Resistance: 0.026 %
				Susceptance: 0.046 μS
			100 kHz	Parallel Resistance: 0.025 %
				Susceptance: 0.046 μS
			More than 100 kHz less than 1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.046 μS
			1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.042 μS
		100 kΩ	From 5 Hz less than 100 kHz	Parallel Resistance: 0.033 %
				Susceptance: 0.0042 μS
			100 kHz	Parallel Resistance: 0.032 %
				Susceptance: 0.0042 μS
			More than 100 kHz less than 1 MHz	Parallel Resistance: 0.086 %
				Susceptance: 0.0065 μS
			1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.0065 μS

#All Calibration Procedures are in-house procedures developed by this laboratory.

General Field of Calibration: Electricity (Direct Current & Low Frequency)
Date of Initial Accreditation of the Field: 2001-10-23
Laboratory's permanent facility/On-site Calibration: On-site Calibration
Calibration and Measurement Capabilities

alibration Procedures# and Type of Instruments /Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	DC Resistor	More than 0 Ω up to 10 Ω	24 μΩ/Ω×R＋88 μΩ
		More than 10 Ω up to 100 Ω	21 μΩ/Ω×R＋0.88 mΩ
		More than 100 Ω up to 1 kΩ	19 μΩ/Ω×R＋0.88 mΩ
		More than 1 kΩ up to 10 kΩ	19 μΩ/Ω×R＋8.8 mΩ
		More than 10 kΩ up to 100 kΩ	19 μΩ/Ω×R＋0.088 Ω
		More than 100 kΩ up to 1 MΩ	24 μΩ/Ω×R＋4.3 Ω
		More than 1 MΩ up to 10 MΩ	93 μΩ/Ω×R＋504 Ω
		More than 10 MΩ up to 100 MΩ	0.70 mΩ/Ω×R＋7.2 kΩ
		More than 100 MΩ up to 1 GΩ	7.0 mΩ/Ω×R＋266 kΩ
	DC Resistance Measuring Equipment	More than 0 Ω up to 10 Ω	24 μΩ/Ω×R＋88 μΩ
		More than 10 Ω up to 100 Ω	21 μΩ/Ω×R＋0.88 mΩ
		More than 100 Ω up to 1 kΩ	19 μΩ/Ω×R＋0.88 mΩ
		More than 1 kΩ up to 10 kΩ	19 μΩ/Ω×R＋8.8 mΩ
		More than 10 kΩ up to 100 kΩ	19 μΩ/Ω×R＋0.088 Ω
		More than 100 kΩ up to 1 MΩ	24 μΩ/Ω×R＋4.3 Ω
		More than 1 MΩ up to 10 MΩ	93 μΩ/Ω×R＋504 Ω
		More than 10 MΩ up to 100 MΩ	0.70 mΩ/Ω×R＋7.2 kΩ
		More than 100 MΩ up to 1 GΩ	7.0 mΩ/Ω×R＋266 kΩ
	DC voltage Source	More than 0 V up to 0.1 V	13 μV/V×V＋0.56 μV
		More than 0.1 V up to 1.0 V	12 μV/V×V＋0.56 μV
		More than 1.0 V up to 10 V	11 μV/V×V＋1.0 μV
		More than 10 V up to 100 V	16 μV/V×V＋116 μV
		More than 100 V up to 1000 V	$\left\{0.016\ \mathrm{mV/V} + 0.012\ \mathrm{mV/V} \times \left(\frac{V}{1000\ \mathrm{V}}\right)^2\right\} \times V + 0.21\ \mathrm{mV}$
	DC voltage Measuring Equipment	More than 0 V up to 0.1 V	13 μV/V×V＋0.56 μV
		More than 0.1 V up to 1.0 V	12 μV/V×V＋0.56 μV
		More than 1.0 V up to 10 V	11 μV/V×V＋1.0 μV
		More than 10 V up to 100 V	16 μV/V×V＋116 μV
		More than 100 V up to 1000 V	$\left\{0.016\ \mathrm{mV/V} + 0.012\ \mathrm{mV/V} \times \left(\frac{V}{1000\ \mathrm{V}}\right)^2\right\} \times V + 0.21\ \mathrm{mV}$

#All Calibration Procedures are in-house procedures developed by this laboratory.
［Note］ R: Resistance[Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Direct Current Source	10 pA	0.085 %
		100 pA	0.068 %
		1 nA	0.024 %
		10 nA	0.015 %
		100 nA	68 μA/A
		1 μA	78 μA/A
		10 μA	32 μA/A
		More than 0 A up to 100 μA	45 μA/A×I+1.6 nA
		More than 100 μA up to 1 mA	45 μA/A×I+11 nA
		More than 1 mA up to 10 mA	45 μA/A×I+105 nA
		More than 10 mA up to 100 mA	90 μA/A×I+1.1 μA
		More than 100 mA up to 1 A	165 μA/A×I+18 μA
	Direct Current Measuring Equipment	10 pA	0.084 %
		100 pA	0.068 %
		1 nA	0.023 %
		10 nA	0.014 %
		100 nA	50 μA/A
		1 μA	36 μA/A
		10 μA	33 μA/A
		More than 0 A up to 100 μA	45 μA/A×I+1.6 nA
		More than 100 μA up to 1 mA	45 μA/A×I+11 nA
		More than 1 mA up to 10 mA	45 μA/A×I+105 nA
		More than 10 mA up to 100 mA	90 μA/A×I+1.1 μA
		More than 100 mA up to 1 A	165 μA/A×I+18 μA

#All Calibration Procedures are in-house procedures developed by this laboratory.
［Note］ R: Resistance［Ω］, V: Voltage［V］, I: Current［A］

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC voltage Source	From 0.6 mV up to 10 mV	From 10 Hz less than 20 Hz	4.1 mV/V×V+33 μV
			From 20 Hz less than 40 Hz	1.6 mV/V×V+26 μV
			From 40 Hz less than 100 Hz	0.66 mV/V×V+26 μV
			From 100 Hz up to 20 kHz	0.26 mV/V×V+26 μV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+9.0 μV
			More than 100 kHz up to 1 MHz	12 mV/V×V+9.0 μV
			More than 1 MHz up to 4 MHz	70 mV/V×V+11 μV
			More than 4 MHz up to 8 MHz	200 mV/V×V+12 μV
		More than 10 mV up to 100 mV	From 10 Hz less than 20 Hz	4 mV/V×V+20 μV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+20 μV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+10 μV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+10 μV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+50 μV
			More than 100 kHz up to 1 MHz	20 mV/V×V+50 μV
			More than 1 MHz up to 4 MHz	40 mV/V×V+0.070 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.080 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+0.10 mV
		More than 100 mV up to 1 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+0.20 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+0.20 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+0.10 mV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+0.10 mV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+0.50 mV
			More than 100 kHz up to 1 MHz	20 mV/V×V+0.50 mV
			More than 1 MHz up to 4 MHz	40 mV/V×V+0.70 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.80 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+1.0 mV
		More than 1 V up to 10 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+2.0 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+2.0 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+1.0 mV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+1.0 mV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+5.0 mV
			More than 100 kHz up to 1 MHz	20 mV/V×V+5.0 mV
		More than 10 V up to 100 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+20 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+20 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+10 mV
			From 100 Hz up to 20 kHz	0.34 mV/V×V+10 mV
			More than 20 kHz up to 100 kHz	1.2 mV/V×V+2 mV
			More than 100 kHz up to 250 kHz	20 mV/V×V+0.50 V
			More than 250 kHz up to 500 kHz	30 mV/V×V+0.60 V
			More than 500 kHz up to 1 MHz	50 mV/V×V+2.0 V
		More than 100 V up to 700 V	From 10 Hz less than 20 Hz	4.2 mV/V×V+0.30 V
			From 20 Hz less than 40 Hz	1.7 mV/V×V+0.30 V
			From 40 Hz less than 100 Hz	0.8 mV/V×V+0.20 V
			From 100 Hz up to 20 kHz	0.6 mV/V×V+0.20 V
			More than 20 kHz up to 50 kHz	1.5 mV/V×V+0.40 V
			More than 50 kHz up to 100 kHz	3.0 mV/V×V+0.10 V

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] R: Resistance[Ω], V: Voltage[V], I: Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	AC voltage Measuring Equipment	From 0.6 mV up to 10 mV	From 10 Hz less than 20 Hz	4.1 mV/V×V+33 μV
			From 20 Hz less than 40 Hz	1.6 mV/V×V+26 μV
			From 40 Hz less than 100 Hz	0.66 mV/V×V+26 μV
			From 100 Hz up to 20 kHz	0.26 mV/V×V+26 μV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+9.0 μV
			More than 100 kHz up to 1 MHz	12 mV/V×V+9.0 μV
			More than 1 MHz up to 4 MHz	70 mV/V×V+11 μV
			More than 4 MHz up to 8 MHz	200 mV/V×V+12 μV
		More than 10 mV up to 100 mV	From 10 Hz less than 20 Hz	4.0 mV/V×V+20 μV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+20 μV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+10 μV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+10 μV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+50 μV
			More than 100 kHz up to 1 MHz	20 mV/V×V+50 μV
			More than 1 MHz up to 4 MHz	40 mV/V×V+0.070 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.080 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+0.10 mV
		More than 100 mV up to 1 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+0.20 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+0.20 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+0.10 mV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+0.10 mV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+0.50 mV
			More than 100 kHz up to 1 MHz	20 mV/V×V+0.50 mV
			More than 1 MHz up to 4 MHz	40 mV/V×V+0.70 mV
			More than 4 MHz up to 8 MHz	40 mV/V×V+0.80 mV
			More than 8 MHz up to 10 MHz	150 mV/V×V+1.0 mV
		More than 1 V up to 10 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+2.0 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+2.0 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+1.0 mV
			From 100 Hz up to 20 kHz	0.24 mV/V×V+1.0 mV
			More than 20 kHz up to 100 kHz	1.0 mV/V×V+5.0 mV
			More than 100 kHz up to 1 MHz	20 mV/V×V+5.0 mV
		More than 10 V up to 100 V	From 10 Hz less than 20 Hz	4.0 mV/V×V+20 mV
			From 20 Hz less than 40 Hz	1.5 mV/V×V+20 mV
			From 40 Hz less than 100 Hz	0.64 mV/V×V+10 mV
			From 100 Hz up to 20 kHz	0.34 mV/V×V+10 mV
			More than 20 kHz up to 100 kHz	1.2 mV/V×V+2 mV
			More than 100 kHz up to 250 kHz	20 mV/V×V+0.50 V
			More than 250 kHz up to 500 kHz	30 mV/V×V+0.60 V
			More than 500 kHz up to 1 MHz	50 mV/V×V+2.0 V
		More than 100 V up to 700 V	From 10 Hz less than 20 Hz	4.2 mV/V×V+0.30 V
			From 20 Hz less than 40 Hz	1.7 mV/V×V+0.30 V
			From 40 Hz less than 100 Hz	0.84 mV/V×V+0.20 V
			From 100 Hz up to 20 kHz	0.64 mV/V×V+0.20 V
			More than 20 kHz up to 50 kHz	1.5 mV/V×V+0.40 V
			More than 50 kHz up to 100 kHz	3.0 mV/V×V+0.10 V

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] R: Resistance[Ω], V: Voltage[V], I : Current[A]

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Direct Current & Low Frequency Measuring Equipment, etc.	Alternating Current Source	From 6 μA up to 100 μA	From 10 Hz less than 20 Hz	4.0 mA/A×I+30 nA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+30 nA
			From 45 Hz up to 1 kHz	0.65 mA/A×I+30 nA
		More than 100 μA up to 1 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+0.20 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+0.20 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+0.20 μA
		More than 1 mA up to 10 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+2.0 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+2.0 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+2.0 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+2.0 μA
		More than 10 mA up to 100 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+20 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+20 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+20 μA
		More than 100 mA up to 1 A	From 10 Hz less than 20 Hz	4.0 mA/A×I+200 μA
			From 20 Hz less than 45 Hz	1.6 mA/A×I+200 μA
			From 45 Hz up to 100 Hz	0.85 mA/A×I+200 μA
			More than 100 Hz up to 5 kHz	1.0 mA/A×I+200 μA
	Alternating Current Measuring Equipment	From 6 μA up to 100 μA	From 10 Hz less than 20 Hz	4.0 mA/A×I+30 nA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+30 nA
			From 45 Hz up to 1 kHz	0.65 mA/A×I+30 nA
		More than 100 μA up to 1 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+0.20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+0.20 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+0.20 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+0.20 μA
		More than 1 mA up to 10 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+2.0 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+2.0 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+2.0 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+2.0 μA
		More than 10 mA up to 100 mA	From 10 Hz less than 20 Hz	4.0 mA/A×I+20 μA
			From 20 Hz less than 45 Hz	1.5 mA/A×I+20 μA
			From 45 Hz less than 100 Hz	0.65 mA/A×I+20 μA
			From 100 Hz up to 5 kHz	0.35 mA/A×I+20 μA
		More than 100 mA up to 1 A	From 10 Hz less than 20 Hz	4.0 mA/A×I+200 μA
			From 20 Hz less than 45 Hz	1.6 mA/A×I+200 μA
			From 45 Hz up to 100 Hz	0.85 mA/A×I+200 μA
			More than 100 Hz up to 5 kHz	1.0 mA/A×I+200 μA

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] R: Resistance[Ω], V: Voltage[V], I: Current[A]

General Field of Calibration: Electricity (Direct Current & Low Frequency)
Date of Initial Accreditation of the Field: 2001-10-23
Laboratory's permanent facility/On-site Calibration: On-site Calibration
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	1 pF	From 10 Hz up to 1 kHz	Capacitance: 0.021 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: $(0.0030\times f^2 + 0.021)$ %
				D factor: $0.000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.024 %
				D factor: 0.000033
			More than 1 MHz less than 2 MHz	Capacitance: $(0.0040\times f^2 + 0.020)$ %
				D factor: $0.000017\times f^{1.5}+0.000016$
			2 MHz	Capacitance: 0.036 %
				D factor: 0.000064
			More than 2 MHz less than 3 MHz	Capacitance: $(0.0042\times f^2 + 0.019)$ %
				D factor: $0.000012\times f^{1.5}+0.000030$
			3 MHz	Capacitance: 0.057 %
				D factor: 0.000093
			More than 3 MHz less than 4 MHz	Capacitance: $(0.0041\times f^2 + 0.020)$ %
				D factor: $0.000017\times f^{1.5}+0.0000059$
			4 MHz	Capacitance: 0.086 %
				D factor: 0.00014
			More than 4 MHz less than 5 MHz	Capacitance: $(0.0038\times f^2 + 0.026)$ %
				D factor: $0.000019\times f^{1.5}-0.000011$
			5 MHz	Capacitance: 0.12 %
				D factor: 0.00020
			More than 5 MHz less than 10 MHz	Capacitance: $(0.0035\times f^2 + 0.033)$ %
				D factor: $0.000018\times f^{1.5}-0.0000024$
			10 MHz	Capacitance: 0.38 %
				D factor: 0.00057
			More than 10 MHz less than 13 MHz	Capacitance: $(0.077\times f - 0.39)$ %
				D factor: $0.000017\times f^{1.5}+0.000031$
			13 MHz	Capacitance: 0.61 %
				D factor: 0.00083

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	10 pF	From 10 Hz up to 1 kHz	Capacitance: 0.020 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: 0.020 %
				D factor: $0.0000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.020 %
				D factor: 0.000024
			More than 1 MHz less than 2 MHz	Capacitance: 0.020 %
				D factor: $0.0000027\times f^{1.5}+0.000021$
			2 MHz	Capacitance: 0.020 %
				D factor: 0.000029
			More than 2 MHz less than 3 MHz	Capacitance: 0.020 %
				D factor: $-0.0000013\times f^{1.5}+0.000033$
			3 MHz	Capacitance: 0.020 %
				D factor: 0.000026
			More than 3 MHz less than 4 MHz	Capacitance: 0.020 %
				D factor: $0.0000011\times f^{1.5}+0.000020$
			4 MHz	Capacitance: 0.020 %
				D factor: 0.000029
			More than 4 MHz less than 5 MHz	Capacitance: $(0.00012\times f^2 + 0.018)$ %
				D factor: $0.0000025\times f^{1.5}+0.0000089$
			5 MHz	Capacitance: 0.021 %
				D factor: 0.000037
			More than 5 MHz less than 10 MHz	Capacitance: $(0.000027\times f^2 + 0.020)$ %
				D factor: $0.0000020\times f^{1.5}+0.000015$
			10 MHz	Capacitance: 0.023 %
				D factor: 0.000078
			More than 10 MHz less than 13 MHz	Capacitance: $(0.0010\times f + 0.013)$ %
				D factor: $0.0000014\times f^{1.5}+0.000034$
			13 MHz	Capacitance: 0.026 %
				D factor: 0.00010

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	100 pF	From 10 Hz up to 1 kHz	Capacitance: 0.020 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: 0.020 %
				D factor: $0.0000010\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.020 %
				D factor: 0.000024
			More than 1 MHz less than 2 MHz	Capacitance: 0.020 %
				D factor: $0.0000027\times f^{1.5}+0.000021$
			2 MHz	Capacitance: 0.020 %
				D factor: 0.000029
			More than 2 MHz less than 3 MHz	Capacitance: $(0.00020\times f^2 + 0.019)$ %
				D factor: $0.0000025\times f^{1.5}+0.000022$
			3 MHz	Capacitance: 0.021 %
				D factor: 0.000035
			More than 3 MHz less than 4 MHz	Capacitance: $(0.00014\times f^2 + 0.020)$ %
				D factor: $0.0000071\times f^{1.5}-0.0000021$
			4 MHz	Capacitance: 0.022 %
				D factor: 0.000055
			More than 4 MHz less than 5 MHz	Capacitance: $(0.00022\times f^2 + 0.018)$ %
				D factor: $0.0000031\times f^{1.5}+0.000030$
			5 MHz	Capacitance: 0.024 %
				D factor: 0.000065
			More than 5 MHz less than 10 MHz	Capacitance: $(0.00020\times f^2 + 0.019)$ %
				D factor: $0.0000051\times f^{1.5}+0.0000076$
			10 MHz	Capacitance: 0.039 %
				D factor: 0.00017
			More than 10 MHz less than 13 MHz	Capacitance: $(0.0047\times f - 0.0082)$ %
				D factor: $0.0000053\times f^{1.5}+0.0000041$
			13 MHz	Capacitance: 0.053 %
				D factor: 0.00025

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	1000 pF	From 10 Hz up to 1 kHz	Capacitance: 0.020 %
				D factor: 0.000023
			More than 1 kHz less than 1 MHz	Capacitance: $(0.0010\times f^2 + 0.020)$ %
				D factor: $0.000012\times f^{1.5}+0.000023$
			1 MHz	Capacitance: 0.021 %
				D factor: 0.000035
			More than 1 MHz less than 2 MHz	Capacitance: $(0.0017\times f^2 + 0.019)$ %
				D factor: $0.000018\times f^{1.5}+0.000017$
			2 MHz	Capacitance: 0.026 %
				D factor: 0.000068
			More than 2 MHz less than 3 MHz	Capacitance: $(0.0022\times f^2 + 0.017)$ %
				D factor: $0.000018\times f^{1.5}+0.000018$
			3 MHz	Capacitance: 0.037 %
				D factor: 0.00011
			More than 3 MHz less than 4 MHz	Capacitance: $(0.0021\times f^2 + 0.016)$ %
				D factor: $0.000018\times f^{1.5}+0.000017$
			4 MHz	Capacitance: 0.052 %
				D factor: 0.00016
			More than 4 MHz less than 5 MHz	Capacitance: $(0.0021\times f^2 + 0.016)$ %
				D factor: $0.000022\times f^{1.5}-0.000016$
			5 MHz	Capacitance: 0.070 %
				D factor: 0.00023
			More than 5 MHz less than 10 MHz	Capacitance: $(0.0019\times f^2 + 0.022)$ %
				D factor: $0.000020\times f^{1.5}+0.000011$
			10 MHz	Capacitance: 0.21 %
				D factor: 0.00063
			More than 10 MHz less than 13 MHz	Capacitance: $(0.034\times f - 0.13)$ %
				D factor: $0.000019\times f^{1.5}+0.000029$
			13 MHz	Capacitance: 0.31 %
				D factor: 0.00092

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] f: Frequency under calibration [MHz], D factor: Dissipation factor

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Low Frequency Impedance Measuring Equipment, etc.	Capacitance Measuring Equipment	0.01 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000024
			1 kHz	Capacitance: 98 μF/F
				D factor: 0.000025
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000024
			100 kHz	Capacitance: 0.010 %
				D factor: 0.000050
		0.1 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000033
			1 kHz	Capacitance: 97 μF/F
				D factor: 0.000024
			10 kHz	Capacitance: 0.010 %
				D factor: 0.000031
			100 kHz	Capacitance: 0.011 %
				D factor: 0.000067
		1 μF	From 10 Hz up to 120 Hz	Capacitance: 0.011 %
				D factor: 0.000047
			1 kHz	Capacitance: 96 μF/F
				D factor: 0.000031
			10 kHz	Capacitance: 0.011 %
				D factor: 0.000070
			100 kHz	Capacitance: 0.017 %
				D factor: 0.00058
	AC Resistance Measuring Equipment	1 kΩ	From 5 Hz up to 100 kHz	Parallel Resistance: 0.033 %
				Susceptance: 0.42 μS
			More than 100 kHz less than 1 MHz	Parallel Resistance: 0.034 %
				Susceptance: 0.42 μS
			1 MHz	Parallel Resistance: 0.032 %
				Susceptance: 0.42 μS
			2 MHz	Parallel Resistance: 0.033 %
				Susceptance: 0.42 μS
			5 MHz	Parallel Resistance: 0.051 %
				Susceptance: 0.42 μS

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] D factor: Dissipation factor

General Field of Calibration: Electricity (High Frequency) & Electromagnetic Fields
Date of Initial Accreditation of the Field: 2001-10-23
Laboratory's permanent facility/On-site Calibration: Laboratory's permanent facility
Calibration and Measurement Capabilities

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Power Source	From 10 nW less than 7.943 µW	50 MHz	1.8 %
			From 10 MHz up to 2 GHz	2.0 %
			More than 2 GHz up to 6 GHz	2.1 %
			More than 6 GHz up to 12 GHz	2.2 %
			More than 12 GHz up to 16 GHz	2.5 %
			More than 16 GHz up to 18 GHz	2.6 %
		1 mW	50 MHz	0.44 %
		From 7.943 µW up to 10 mW	9 kHz, 30 kHz, 50 kHz	1.5 %
			100 kHz, 300 kHz, 500 kHz, 1 MHz	1.4 %
			3 MHz	1.5 %
			5 MHz	1.7 %
			10 MHz	1.3 %
			30 MHz	1.3 %
			50 MHz	1.2 %
			100 MHz, 300 MHz 500 MHz, 800 MHz, 1 GHz 1.5 GHz, 2 GHz	1.3 %
			3 GHz, 4 GHz, 5 GHz, 6 GHz	1.4 %
			7 GHz, 8 GHz, 9 GHz, 10 GHz	1.5 %
			11 GHz	1.6 %
			12 GHz, 12.4 GHz, 13 GHz	1.5 %
			14 GHz, 15 GHz, 16 GHz, 17 GHz	1.7 %
			18 GHz, 18.5 GHz, 19 GHz	1.8 %
			19.5 GHz, 20 GHz, 20.5 GHz 21 GHz, 21.5 GHz, 22 GHz 22.5 GHz, 23 GHz, 23.5 GHz 24 GHz, 24.5 GHz, 25 GHz	2.1 %
			25.5 GHz, 26 GHz, 26.5 GHz	2.9 %
			More than 9 kHz less than 3 MHz	1.5 %
			More than 3 MHz less than 10 MHz	1.7 %
			More than 10 MHz less than 6 GHz	1.4 %
			More than 6 GHz less than 19 GHz	1.8 %
			More than 19 GHz less than 25 GHz	2.1 %
			More than 25 GHz less than 26.5 GHz	2.9 %

#All Calibration Procedures are in-house procedures developed by this laboratory.

Calibration Procedures# and Type of Instruments/Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Power Measuring Equipment	From 10 nW less than 7.943 μW	10 MHz	0.86 % [Note 1]
			30 MHz	0.85 % [Note 1]
			50 MHz	reference [Note 1]
			100 MHz, 300 MHz, 500 MHz 800 MHz, 1 GHz, 1.2 GHz 1.5 GHz, 2 GHz	0.71 % [Note 1]
			3 GHz, 4 GHz, 5 GHz, 6 GHz	0.97 % [Note 1]
			7 GHz, 8 GHz, 9 GHz, 10 GHz, 11 GHz, 12 GHz	1.3 % [Note 1]
			12.4 GHz, 13 GHz, 14 GHz 15 GHz, 16 GHz	1.8 % [Note 1]
			17 GHz, 18 GHz	1.9 % [Note 1]
			From 10 MHz less than 50 MHz	2.3 %
			50 MHz	1.9 %
			More than 50 MHz up to 1 GHz	2.0 %
			More than 1 GHz up to 6 GHz	2.2 %
			More than 6 GHz up to 12 GHz	2.3 %
			More than 12 GHz up to 16 GHz	2.8 %
			More than 16 GHz up to 18 GHz	2.9 %
		1 mW	9 kHz	0.46 % [Note 1]
			More than 9 kHz up to 100 kHz	0.50 % [Note 1]
			More than 100 kHz up to 500 kHz	0.56 % [Note 1]
			More than 500 kHz up to 1 MHz	0.62 % [Note 1]
			More than 1 MHz up to 2 MHz	0.80 % [Note 1]
			More than 2 MHz up to 3 MHz	0.88 % [Note 1]
			More than 3 MHz up to 4 MHz	0.99 % [Note 1]
			More than 4 MHz up to 5 MHz	1.1 % [Note 1]
			More than 5 MHz less than 10 MHz	1.4 % [Note 1]

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note1] Relative value referring to RF power at 50 MHz

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Power Measuring Equipment	From 0.631 mW up to 1.585 mW	9 kHz	0.54 % [Note 1]
			30 kHz, 50 kHz	0.57 % [Note 1]
			100 kHz	0.52 % [Note 1]
			300 kHz	0.57 % [Note 1]
			500 kHz	0.58 % [Note 1]
			1 MHz	0.63 % [Note 1]
			3 MHz	0.89 % [Note 1]
			5 MHz	1.1 % [Note 1]
			10 MHz	0.59 % [Note 1]
			30 MHz	0.45 % [Note 1]
			100 MHz, 300 MHz	0.45 % [Note 1]
			500 MHz, 800 MHz, 1 GHz 1.482 GHz, 1.5 GHz, 2 GHz	0.55 % [Note 1]
			2.5 GHz, 2.6 GHz, 3 GHz	0.63 % [Note 1]
			3.5 GHz, 3.7 GHz	0.65 % [Note 1]
			4 GHz	0.55 % [Note 1]
			4.2 GHz	0.58 % [Note 1]
			5 GHz	0.56 % [Note 1]
			6 GHz	0.55 % [Note 1]
			7 GHz	0.81 % [Note 1]
			8 GHz	0.82 % [Note 1]
			9 GHz	0.89 % [Note 1]
			10 GHz	0.86 % [Note 1]
			11 GHz	0.98 % [Note 1]
			12 GHz, 12.4 GHz, 13 GHz	0.83 % [Note 1]
			14 GHz, 15 GHz, 16 GHz	1.1 % [Note 1]
			17 GHz, 18 GHz 18.5 GHz, 19 GHz	1.2 % [Note 1]
			19.5 GHz, 20 GHz, 20.5 GHz 21 GHz, 21.5 GHz, 22 GHz 22.5 GHz, 23 GHz, 23.5 GHz 24 GHz, 24.5 GHz, 25 GHz	1.5 % [Note 1]
			25.5 GHz, 26 GHz, 26.5 GHz	2.5 % [Note 1]

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[Note 1] Relative value referring to RF power at 50 MHz

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Power Measuring Equipment	From 7.943 μW up to 4 mW	9 kHz	0.56 % [Note 1]
			30 kHz, 50 kHz	0.59 % [Note 1]
			100 kHz	0.61 % [Note 1]
			300 kHz, 500 kHz	0.66 % [Note 1]
			1 MHz	0.71 % [Note 1]
			3 MHz	0.95 % [Note 1]
			5 MHz	1.2 % [Note 1]
			10 MHz	0.67 % [Note 1]
			30 MHz	0.55 % [Note 1]
			100 MHz, 300 MHz	0.55 % [Note 1]
			500 MHz	0.63 % [Note 1]
			800 MHz	0.64 % [Note 1]
			1 GHz	0.63 % [Note 1]
			1.482 GHz, 1.5 GHz, 2 GHz	0.64 % [Note 1]
			2.5 GHz, 2.6 GHz, 3 GHz	0.70 % [Note 1]
			3.5 GHz, 3.7 GHz	0.72 % [Note 1]
			4 GHz	0.64 % [Note 1]
			4.2 GHz	0.66 % [Note 1]
			5 GHz	0.65 % [Note 1]
			6 GHz	0.64 % [Note 1]
			7 GHz	0.87 % [Note 1]
			8 GHz	0.88 % [Note 1]
			9 GHz	0.94 % [Note 1]
			10 GHz	0.92 % [Note 1]
			11 GHz	1.0 % [Note 1]
			12 GHz, 12.4 GHz, 13 GHz	0.89 % [Note 1]
			14 GHz, 15 GHz, 16 GHz	1.2 % [Note 1]
			17 GHz, 18 GHz 18.5 GHz, 19 GHz	1.3 % [Note 1]
			19.5 GHz, 20 GHz, 20.5 GHz 21 GHz, 21.5 GHz, 22 GHz 22.5 GHz, 23 GHz, 23.5 GHz 24 GHz, 24.5 GHz, 25 GHz	1.6 % [Note 1]
			25.5 GHz, 26 GHz, 26.5 GHz	2.5 % [Note 1]
			From 9 kHz less than 3 MHz	1.6 %
			From 3 MHz less than 10 MHz	1.7 %
			From 10 MHz up to 4 GHz	1.4 %
			More than 4 GHz up to 12 GHz	1.9 %
			More than 12 GHz up to 18 GHz	2.1 %
			More than 18 GHz up to 19 GHz	2.3 %
			More than 19 GHz up to 25 GHz	2.5 %
			More than 25 GHz up to 26.5 GHz	3.2 %

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[Note1] Relative value referring to RF power at 50 MHz

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Power Measuring Equipment	From 10 mW up to 1.0 W	10 MHz	1.3 % [Note 1]
			30 MHz	0.78 % [Note 1]
			100 MHz, 300 MHz	0.63 % [Note 1]
			500 MHz, 800 MHz, 1 GHz 1.5 GHz, 2 GHz	0.71 % [Note 1]
			2.6 GHz, 3 GHz, 4 GHz	1.2 % [Note 1]
			4.2 GHz, 5 GHz, 6 GHz	1.3 % [Note 1]
			7 GHz, 8 GHz	1.4 % [Note 1]
			9 GHz	1.5 % [Note 1]
			10 GHz	1.4 % [Note 1]
			11 GHz	1.7 % [Note 1]
			12 GHz, 12.4 GHz	1.6 % [Note 1]
			13 GHz	2.5 % [Note 1]
			14 GHz	2.6 % [Note 1]
			15 GHz, 16 GHz	3.0 % [Note 1]
			17 GHz, 18 GHz	3.1 % [Note 1]

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note1] Relative value referring to RF power at 50 MHz

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Voltage Source	From 200 mV up to 1.5 V	10 MHz	0.45 %
			More than 10 MHz up to 20 MHz	0.68 %
			More than 20 MHz up to 30 MHz	0.68 %
			More than 30 MHz up to 40 MHz	0.75 %
			More than 40 MHz up to 50 MHz	0.84 %
			More than 50 MHz up to 60 MHz	0.96 %
			More than 60 MHz up to 70 MHz	1.1 %
			More than 70 MHz up to 80 MHz	1.2 %
		More than 1.5 V up to 4.5 V	10 MHz	0.48 %
			More than 10 MHz up to 20 MHz	0.72 %
			More than 20 MHz up to 30 MHz	0.74 %
			More than 30 MHz up to 40 MHz	0.84 %
			More than 40 MHz up to 50 MHz	0.97 %
			More than 50 MHz up to 60 MHz	1.1 %
			More than 60 MHz up to 70 MHz	1.3 %
			More than 70 MHz up to 80 MHz	1.5 %
	RF Voltage Measuring Equipment	From 200 mV up to 1.5 V	10 MHz	0.43 %
			More than 10 MHz up to 20 MHz	0.66 %
			More than 20 MHz up to 30 MHz	0.67 %
			More than 30 MHz up to 40 MHz	0.71 %
			More than 40 MHz up to 50 MHz	0.77 %
			More than 50 MHz up to 60 MHz	0.84 %
			More than 60 MHz up to 70 MHz	0.92 %
			More than 70 MHz up to 80 MHz	1.0 %
		223.6 mV	10 MHz	0.38 %
			More than 10 MHz less than 20 MHz	0.61 %
			From 20 MHz up to 50 MHz	0.59 %
			More than 50 MHz up to 70 MHz	0.60 %
			More than 70 MHz up to 80 MHz	0.61 %
		More than 1.5 V up to 4.5 V	10 MHz	0.46 %
			More than 10 MHz up to 20 MHz	0.70 %
			More than 20 MHz up to 30 MHz	0.73 %
			More than 30 MHz up to 40 MHz	0.81 %
			More than 40 MHz up to 50 MHz	0.91 %
			More than 50 MHz up to 60 MHz	1.0 %
			More than 60 MHz up to 70 MHz	1.2 %
			More than 70 MHz up to 80 MHz	1.3 %

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Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	Attenuator	50 Ω	1 dB, 2 dB 3 dB, 4 dB 5 dB, 6 dB 7 dB	From 10 MHz up to 500 MHz	0.0084 dB
				More than 500 MHz up to 1.5 GHz	0.011 dB
				More than 1.5 GHz up to 4 GHz	0.017 dB
				More than 4 GHz up to 8 GHz	0.025 dB
				More than 8 GHz up to 14 GHz	0.057 dB
				More than 14 GHz up to 18 GHz	0.084 dB
			8 dB, 9 dB 10 dB, 11 dB	From 10 MHz up to 1.5 GHz	0.0094 dB
				More than 1.5 GHz up to 4 GHz	0.020 dB
				More than 4 GHz up to 8 GHz	0.027 dB
				More than 8 GHz up to 14 GHz	0.050 dB
				More than 14 GHz up to 18 GHz	0.069 dB
			20 dB, 30 dB	From 10 MHz up to 1.5 GHz	0.0088 dB
				More than 1.5 GHz up to 4 GHz	0.020 dB
				More than 4 GHz up to 8 GHz	0.026 dB
				More than 8 GHz up to 14 GHz	0.046 dB
				More than 14 GHz up to 18 GHz	0.073 dB
			40 dB	From 10 MHz up to 1.5 GHz	0.011 dB
				More than 1.5 GHz up to 4 GHz	0.018 dB
				More than 4 GHz up to 8 GHz	0.027 dB
				More than 8 GHz up to 14 GHz	0.054 dB
				More than 14 GHz up to 18 GHz	0.073 dB
			50 dB	From 10 MHz up to 1.5 GHz	0.014 dB
				More than 1.5 GHz up to 4 GHz	0.020 dB
				More than 4 GHz up to 8 GHz	0.027 dB
				More than 8 GHz up to 14 GHz	0.055 dB
				More than 14 GHz up to 18 GHz	0.075 dB
			60 dB	From 10 MHz up to 2 GHz	0.013 dB
				More than 2 GHz up to 4 GHz	0.017 dB
				More than 4 GHz up to 8 GHz	0.035 dB
				More than 8 GHz up to 14 GHz	0.055 dB
				More than 14 GHz up to 18 GHz	0.080 dB
			70 dB	From 10 MHz up to 2 GHz	0.016 dB
				More than 2 GHz up to 4 GHz	0.021 dB
				More than 4 GHz up to 8 GHz	0.035 dB
				More than 8 GHz up to 14 GHz	0.059 dB
				More than 14 GHz up to 18 GHz	0.081 dB

#All Calibration Procedures are in-house procedures developed by this laboratory.

Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	Attenuator	50 Ω	80 dB	From 10 MHz up to 4 GHz	0.039 dB
				More than 4 GHz up to 10 GHz	0.046 dB
				More than 10 GHz up to 18 GHz	0.092 dB
			90 dB	From 10 MHz up to 10 GHz	0.10 dB
				More than 10 GHz up to 18 GHz	0.21 dB
			100 dB	From 10 MHz up to 10 GHz	0.32 dB
				More than 10 GHz up to 18 GHz	0.59 dB
			110 dB	From 10 MHz up to 10 GHz	0.91 dB
				More than 10 GHz up to 18 GHz	1.6 dB
			From 12 dB up to69 dB	From 10 MHz up to 300 MHz	0.014 dB
				More than 300 MHz up to 1.5 GHz	0.026 dB
				More than 1.5 GHz up to 4 GHz	0.036 dB
				More than 4 GHz up to 8 GHz	0.062 dB
				More than 8 GHz up to 10 GHz	0.16 dB
				More than 10 GHz up to 14 GHz	0.18 dB
				More than 14 GHz up to 18 GHz	0.29 dB
			From 71 dB up to79 dB	From 10 MHz up to 300 MHz	0.017 dB
				More than 300 MHz up to 1.5 GHz	0.023 dB
				More than 1.5 GHz up to 4 GHz	0.037 dB
				More than 4 GHz up to 8 GHz	0.062 dB
				More than 8 GHz up to 14 GHz	0.16 dB
				More than 14 GHz up to 18 GHz	0.24 dB
			From 81 dB up to89 dB	From 10 MHz up to 300 MHz	0.037 dB
				More than 300 MHz up to 1.5 GHz	0.035 dB
				More than 1.5 GHz up to 4 GHz	0.048 dB
				More than 4 GHz up to 8 GHz	0.073 dB
				More than 8 GHz up to 10 GHz	0.089 dB
				More than 10 GHz up to 18 GHz	0.22 dB
			From 91 dB up to99 dB	From 10 MHz up to 300 MHz	0.088 dB
				More than 300 MHz up to 10 GHz	0.12 dB
				More than 10 GHz up to 18 GHz	0.29 dB
			From 101 dB up to109 dB	From 10 MHz up to 4 GHz	0.32 dB
				More than 4 GHz up to 10 GHz	0.28 dB
				More than 10 GHz up to 18 GHz	0.62 dB

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Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	Attenuation Measuring Equipment	50 Ω	1 dB, 2 dB 3 dB, 4 dB 5 dB, 6 dB 7 dB, 8 dB 9 dB, 10 dB 11 dB	From 10 MHz up to 300 MHz	0.0066 dB
				More than 300 MHz up to 1.5 GHz	0.010 dB
				More than 1.5 GHz up to 2 GHz	0.016 dB
				More than 2 GHz up to 4 GHz	0.019 dB
				More than 4 GHz up to 8 GHz	0.025 dB
				More than 8 GHz up to 14 GHz	0.053 dB
				More than 14 GHz up to 18 GHz	0.078 dB
			20 dB, 30 dB	From 10 MHz up to 2 GHz	0.0099 dB
				More than 2 GHz up to 4 GHz	0.018 dB
				More than 4 GHz up to 8 GHz	0.025 dB
				More than 8 GHz up to 12 GHz	0.038 dB
				More than 12 GHz up to 18 GHz	0.053 dB
			40 dB	From 10 MHz up to 2 GHz	0.013 dB
				More than 2 GHz up to 4 GHz	0.018 dB
				More than 4 GHz up to 8 GHz	0.025 dB
				More than 8 GHz up to 12 GHz	0.036 dB
				More than 12 GHz up to 18 GHz	0.053 dB
			50 dB	From 10 MHz up to 2 GHz	0.012 dB
				More than 2 GHz up to 4 GHz	0.018 dB
				More than 4 GHz up to 8 GHz	0.023 dB
				More than 8 GHz up to 12 GHz	0.038 dB
				More than 12 GHz up to 18 GHz	0.057 dB
			60 dB	From 10 MHz up to 2 GHz	0.013 dB
				More than 2 GHz up to 4 GHz	0.016 dB
				More than 4 GHz up to 8 GHz	0.029 dB
				More than 8 GHz up to 12 GHz	0.051 dB
				More than 12 GHz up to 18 GHz	0.059 dB
			70 dB	From 10 MHz up to 2 GHz	0.015 dB
				More than 2 GHz up to 4 GHz	0.018 dB
				More than 4 GHz up to 8 GHz	0.029 dB
				More than 8 GHz up to 12 GHz	0.056 dB
				More than 12 GHz up to 18 GHz	0.057 dB

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Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range			Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	Attenuation Measuring Equipment	50 Ω	80 dB	From 10 MHz up to 3 GHz	0.032 dB
				More than 3 GHz up to 4 GHz	0.036 dB
				More than 4 GHz up to 10 GHz	0.041 dB
				More than 10 GHz up to 18 GHz	0.077 dB
			90 dB	From 10 MHz up to 10 GHz	0.093 dB
				More than 10 GHz up to 18 GHz	0.19 dB
			100 dB	From 10 MHz up to 10 GHz	0.28 dB
				More than 10 GHz up to 18 GHz	0.55 dB
			110 dB	From 10 MHz up to 10 GHz	0.84 dB
				More than 10 GHz up to 18 GHz	1.6 dB
			From 12 dB up to39 dB	From 10 MHz up to 300 MHz	0.0097 dB
				More than 300 MHz up to 500 MHz	0.014 dB
				More than 500 MHz up to 1.195 GHz	0.026 dB
				More than 1.195 GHz up to 1.5 GHz	0.020 dB
				More than 1.5 GHz up to 4 GHz	0.035 dB
				More than 4 GHz up to 8 GHz	0.058 dB
				More than 8 GHz up to 14 GHz	0.16 dB
				More than 14 GHz up to 18 GHz	0.26 dB
			From 41 dB up to69 dB	From 10 MHz up to 500 MHz	0.015 dB
				More than 500 MHz up to 1.195 GHz	0.024 dB
				More than 1.195 GHz up to 1.5 GHz	0.021 dB
				More than 1.5 GHz up to 4 GHz	0.036 dB
				More than 4 GHz up to 8 GHz	0.057 dB
				More than 8 GHz up to 14 GHz	0.18 dB
				More than 14 GHz up to 18 GHz	0.29 dB
			From 71 dB up to79 dB	From 10 MHz up to 500 MHz	0.016 dB
				More than 500 MHz up to 1.195 GHz	0.022 dB
				More than 1.195 GHz up to 1.5 GHz	0.023 dB
				More than 1.5 GHz up to 4 GHz	0.037 dB
				More than 4 GHz up to 8 GHz	0.060 dB
				More than 8 GHz up to 14 GHz	0.16 dB
				More than 14 GHz up to 18 GHz	0.23 dB
			From 81 dB up to89 dB	From 10 MHz up to 1.5 GHz	0.034 dB
				More than 1.5 GHz up to 4 GHz	0.046 dB
				More than 4 GHz up to 10 GHz	0.085 dB
				More than 10 GHz up to 12 GHz	0.12 dB
				More than 12 GHz up to 18 GHz	0.22 dB
			From 91 dB up to99 dB	From 10 MHz up to 4 GHz	0.093 dB
				More than 4 GHz up to 10 GHz	0.12 dB
				More than 10 GHz up to 12 GHz	0.20 dB
				More than 12 GHz up to 18 GHz	0.28 dB
			From 101 dB up to109 dB	From 10 MHz up to 10 GHz	0.28 dB
				More than 10 GHz up to 18 GHz	0.58 dB

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Calibration Procedures# and Type of Instruments /Materials to be calibrated		Range		Expanded Uncertainty (Level of Confidence Approximately 95 %)
Radio Frequency Measuring Equipments	RF Impedance	Type-N 50 Ω Reflection Coefficient $\|S_{ii}\|$ up to 0.2	40 MHz	Amplitude: 0.0057 phase: arcsin(0.0057/ |Reflection Coefficient|)
			50 MHz, 100 MHz, 300 MHz 500 MHz, 800 MHz, 1 GHz 1.2 GHz, 1.5 GHz, 2 GHz	Amplitude: 0.0053 phase: arcsin(0.0053/ |Reflection Coefficient|)
			2.6 GHz, 3 GHz	Amplitude: 0.0055 phase: arcsin(0.0055/ |Reflection Coefficient|)
			4 GHz, 4.2 GHz, 5 GHz, 6 GHz 7 GHz, 8 GHz, 9 GHz	Amplitude: 0.0070 phase: arcsin(0.0070/ |Reflection Coefficient|)
			10 GHz, 11 GHz, 12 GHz	Amplitude: 0.0091 phase: arcsin(0.0091/ |Reflection Coefficient|)
			12.4 GHz, 13 GHz, 14 GHz 15 GHz, 16 GHz, 17 GHz 18 GHz	Amplitude: 0.010 phase: arcsin(0.010/ |Reflection Coefficient|)
		Type-3.5 mm 50 Ω Reflection Coefficient $\|S_{ii}\|$ up to 0.2	100 MHz, 300 MHz, 500 MHz 1 GHz, 1.5 GHz, 2 GHz	Amplitude: 0.0053 phase: arcsin(0.0053/ |Reflection Coefficient|)
			3 GHz, 4 GHz, 5 GHz 6 GHz, 7 GHz, 8 GHz	Amplitude: 0.0061 phase: arcsin(0.0061/ |Reflection Coefficient|)
			9 GHz, 10 GHz, 11 GHz 12 GHz, 12.4 GHz, 13 GHz 14 GHz, 15 GHz, 16 GHz 17 GHz, 18 GHz, 18.5 GHz 19 GHz, 19.5 GHz, 20 GHz	Amplitude: 0.0080 phase: arcsin(0.0080/ |Reflection Coefficient|)
			20.5 GHz, 21 GHz, 21.5 GHz 22 GHz, 22.5 GHz, 23 GHz 23.5 GHz, 24 GHz, 24.5 GHz 25 GHz, 25.5 GHz, 26 GHz, 26.5 GHz	Amplitude: 0.013 phase: arcsin(0.013/ |Reflection Coefficient|)

#All Calibration Procedures are in-house procedures developed by this laboratory.
[Note] Phase Unit：° (If equation is undefined, Uncertainty is 180 degree.)