

United States Department of Commerce  
National Institute of Standards and Technology



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## Certificate of Accreditation to ISO/IEC 17025:2017

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NVLAP LAB CODE: 200012-0

**IPS Corporation Nagano Calibration Center**  
Nagano-ken  
Japan

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

### Calibration Laboratories

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué on ISO/IEC 17025).*

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2025-12-04 through 2026-12-31

Effective Dates



A handwritten signature in black ink, appearing to read "Robert J. Knobel".

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For the National Voluntary Laboratory Accreditation Program

**CALIBRATION LABORATORIES**

**NVLAP LAB CODE 200012-0**

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

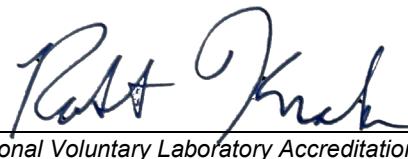
<p><b>IPS Corporation Nagano Calibration Center</b> 1878-1, Ono, Tatsuno-machi, Kamiina-gun, Nagano-ken 399-0601 JAPAN Mr. Shuichi Aruga Phone: +81-266-44-5200 Fax: +81-266-44-5300 E-mail: <a href="mailto:qa@ips-emc.co.jp">qa@ips-emc.co.jp</a> URL: <a href="http://www.ips-emc.co.jp">http://www.ips-emc.co.jp</a></p>	<p><b>Fields of Calibration</b> Electromagnetics – DC/Low Frequency Time and Frequency Electromagnetics – RF/Microwave</p>
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**CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)**<sup>Notes 1,2</sup>

<b>Measured Parameter or Device Calibrated</b>	<b>Range</b>	<b>Expanded Uncertainty</b> <sup>Notes 3, 5</sup>	<b>Remarks</b>
<b>ELECTROMAGNETICS – DC/LOW FREQUENCY</b>			
<b>AC RESISTANCE and CURRENT (20/E02)</b>			
AC Resistance Field calibrations available <sup>Note 4</sup> 50 Hz to 1 kHz	0.04 Ω to 1 Ω	5.6 %	LCR Meter
50 Hz, 60 Hz	0.04 Ω to 1 Ω	5.1 %	Oscilloscope, Current Coil, HV Probe
Inductance Field calibrations available <sup>Note 4</sup> 50 Hz to 1 kHz	Up to 1 H	5.6 %	LCR Meter
50 Hz, 60 Hz	Up to 1 H	5.1 %	Oscilloscope, Current Coil, HV Probe
Reactance (X <sub>L</sub> ) Field calibrations available <sup>Note 4</sup> 50 Hz to 1 kHz	0.04 Ω to 1 Ω	5.5 %	LCR Meter
50 Hz, 60 Hz	0.04 Ω to 1 Ω	5.1 %	Oscilloscope, Current Coil, HV Probe
Capacitance Field calibrations available <sup>Note 4</sup> 50 Hz to 1 kHz	Up to 1 μF	5.4 %	LCR Meter

2025-12-08 through 2026-12-31

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**CALIBRATION LABORATORIES**

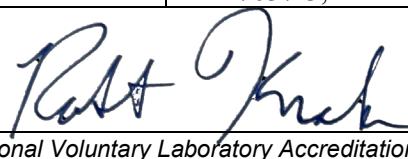
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**CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>**

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
<b>DC RESISTANCE and CURRENT (20/E05)</b>			
Surge Generator Field calibrations available <sup>Note 4</sup> Short circuit current waveform- Peak Current (rise time/duration: 8/20 $\mu$ s or 5/320 $\mu$ s)	(0.05 to 3) kA	2.6 %	IEC 61000-4-5 Oscilloscope
Overshoot/Ubershoot	Up to 900 A	3.2 % + 0.32 A	
<b>ESD Simulators</b>			
Peak current (2 to 30) kV Discharge current (30 to 800) ns	(6 to 130) A	3.9 %	IEC 61000-4-2, ISO 10605 Oscilloscope, ESD Target
(0.2 to 78) A	4.9 %		
<b>DC VOLTAGE (20/E06)</b>			
Surge Generator Field calibrations available <sup>Note 4</sup> Open circuit voltage waveform- Peak Voltage (rise time/duration: 1.2/50 $\mu$ s, Or 10/700 $\mu$ s) @ 1 M $\Omega$	100 V to 5 kV	2.8 %	IEC 61000-4-5 Oscilloscope, HV Probe
Overshoot/Ubershoot Field calibrations available <sup>Note 4</sup> Voltage @ 1 M $\Omega$	0 mV to 300 V	3.2 % + 0.64 V	Oscilloscope
EFT/Burst Field calibrations available <sup>Note 4</sup> Peak Voltage	100 V to 6 kV	3.0 %	IEC 61000-4-4 Oscilloscope, Attenuator
Peak Voltage with capacitive clamp		2.8 %	
Transient Generator Field calibrations available <sup>Note 4</sup> Peak Voltage	(10 to 600) V	4.1 %	ISO 7637-2, ISO-7637-3, ISO 16750-2

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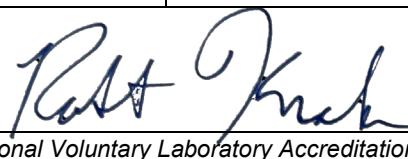
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
Impulse Generator Field calibrations available <sup>Note 4</sup>			
Peak Voltage	10 V to 600 V	4.1 %	Oscilloscope, HV Probe
Peak Voltage	100 V to 6 kV	3.0 %	Oscilloscope, Attenuator
DC Voltage - Measure Field calibrations available <sup>Note 4</sup>	0.01 V to 1000 V	0.11 %	DMM
ESD Simulators DC High Voltage	0.5 kV to 1 kV 1 kV to 3 kV 3 kV to 40 kV	2.3 % 1.2 % 1.1 %	IEC 61000-4-2, ISO 10605 DHM-40/10
<b>LF AC VOLTAGE (20/E09)</b>			
AC Voltage - Measure Field calibrations available <sup>Note 4</sup>			
0.1 V to 750 V	3 Hz to 5 Hz 5 Hz to 10 Hz 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz	3.1 % 0.46 % 0.12 % 0.18 % 0.79 % 5.2 %	DMM
10 mV to 5 V	DC to 100 MHz	3.3 %	Oscilloscope
5 V to 4 kV	DC to 50 MHz	3.8 %	Oscilloscope, HV Probe
Voltage Dip Simulator Field calibrations available <sup>Note 4</sup>			
AC Voltage – (50 or 60) Hz	10 V to 500 V	0.4 %	DMM
<b>MAGNETICS (20/E13)</b>			
Magnetic Field Generator <sup>Note 4</sup>			
50 Hz or 60 Hz			IEC 61000-4-8
Coil Current	1 A to 100 A 0.1 A to 1 A	1.0 % 1.3 %	

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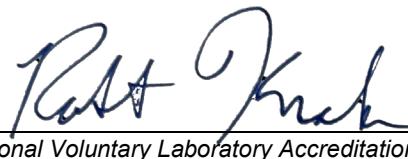
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
Coil Factor (I ≥ 1A) (I < 1 A)	0.10 to 20	2.4 % 2.5 %	
<b>TIME and FREQUENCY</b>			
<b>FREQUENCY DISSEMINATION (20/F01)</b>			
EFT/Burst (100 V to 6 kV) Field calibrations available <sup>Note 4</sup>			IEC 61000-4-4 Oscilloscope, Attenuator
Repetition frequency	1 kHz to 500 kHz	0.6 %	
Burst duration	0.5 ms to 20 ms	0.6 %	
Burst period	100 ms to 500 ms	0.4 %	
Voltage Dip Simulator Field calibrations available <sup>Note 4</sup>			
Duration Time	10 ms to 5 s	2.4 %	Oscilloscope
Frequency - Measure Field calibrations available <sup>Note 4</sup>	1 Hz to 1 GHz (45 to 65) Hz	0.5 % 0.1 %	Oscilloscope DMM
Time Measure Field calibrations available <sup>Note 4</sup>	1 ns to 5 s	0.6 %	Oscilloscope
Phase Field calibrations available <sup>Note 4</sup>	0° to 360°	2.5°	Oscilloscope
<b>PULSE WAVEFORM (20/F04)</b>			
ESD Simulators (2 kV to 30 kV) Rise time	0.6 ns to 1 ns	6.9 %	IEC 61000-4-2, ISO 10605 (Excluding RC time constant) Oscilloscope
EFT/Burst (100 V to 6 kV) Field calibrations available <sup>Note 4</sup> Without Capacitive Clamp			IEC 61000-4-4 Oscilloscope, Attenuator
Rise time	1 ns to 10 ns	1.5 %	
Impulse duration	10 ns to 500 ns	1.0 %	

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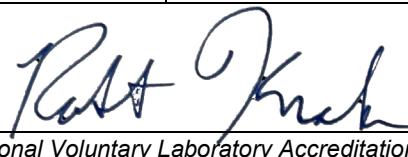
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**CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>**

<b>Measured Parameter or Device Calibrated</b>	<b>Range</b>	<b>Expanded Uncertainty<sup>Notes 3, 5</sup></b>	<b>Remarks</b>
With Capacitive Clamp			
Rise time	1 ns to 10 ns	1.4 %	
Impulse duration	10 ns to 500 ns	0.6 %	
Surge Generator			IEC 61000-4-5
Field calibrations available <sup>Note 4</sup>			
Open-circuit voltage waveform (100 V to 5 kV)			
(Rise time/duration: 1.2/50 $\mu$ s or 10/700 $\mu$ s)			
Rise Time	0.5 $\mu$ s to 20 $\mu$ s	3.5 %	Oscilloscope, HV Probe
Half value duration	10 $\mu$ s to 1000 $\mu$ s	3.7 %	
Short-circuit current waveform (50 A to 3 kA)			
(Rise time/duration: 8/20 $\mu$ s or 5/320 $\mu$ s)			
Rise Time	1 $\mu$ s to 20 $\mu$ s	3.4 %	
Half value duration	10 $\mu$ s to 500 $\mu$ s	2.3 %	
Transient Generator			ISO 7637-2, ISO 7637-3
(10 V to 600 V)			ISO 16750-2
Field calibrations available <sup>Note 4</sup>			Oscilloscope
Rise Time	1 ns to 50 ms	5.8 %	
Pulse Width	50 ns to 3 s	5.9 %	
Voltage Dip Simulator			
(10 V to 500 V; 50 Hz or 60 Hz)			IEC 61000-4-11
Field calibrations available <sup>Note 4</sup>			IEC 61000-4-34
Rise/Fall Time	1 $\mu$ s to 5 $\mu$ s	2.7 %	Oscilloscope

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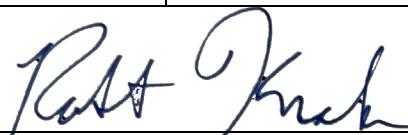
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
<b>ELECTROMAGNETICS – RF/MICROWAVE</b>			
<b>MICROWAVE ANTENNA PARAMETERS (20/R08)</b>			
Dipole Antenna (such as the HA9103/UHA9105)	30 MHz to 80 MHz (Tuned at 80 MHz)	0.6 dB	Substitution method
Horizontal Antenna Factor (D = 10 m, H = 2 m)	30 MHz to 300 MHz	0.6 dB	Network Analyzer
	300 MHz to 1 GHz	0.8 dB	
Biconical Antenna, Antenna Factor			Substitution method
Horizontal (D = 10 m, H = 2 m)	30 MHz to 300 MHz	0.7 dB	Network Analyzer
Horizontal (D = 3 m, H = 2 m)		0.6 dB	
Horizontal (D = 3 m, H = 1 m)		0.7 dB	
Vertical (D = 3 m, H = 1.5 m)		0.8 dB	
Vertical (D = 3 m, H = 1 m)		0.9 dB	
Log-Periodic Antenna Antenna Factor			Substitution method
Horizontal (D = 10 m, H = 2 m)	200 MHz to 1 GHz	1.1 dB	Network Analyzer
Horizontal (D = 3 m, H = 2 m)		1.1 dB	
Horizontal (D = 3 m, H = 1 m)		1.1 dB	
Vertical (D = 3 m, H = 1.5 m)		1.1 dB	
Vertical (D = 3 m, H = 1 m)		1.2 dB	
Bi-log Antenna Horizontal Antenna Factor (D = 10 m, H = 2 m) (D = 3 m, H = 2 m)	30 MHz to 1 GHz	1.3 dB 1.3 dB	Substitution method Network Analyzer
Biconical Antenna Antenna Factor			SAE ARP958
Horizontal (D = 1 m, H = 3 m)	25 MHz to 300 MHz	0.9 dB	Network Analyzer
Vertical (D = 1 m, H = 3 m)		0.8 dB	
Log-Periodic Antenna Antenna Factor			SAE ARP958
Horizontal (D = 1 m, H = 3 m)	150 MHz to 300 MHz	0.8 dB	Network Analyzer

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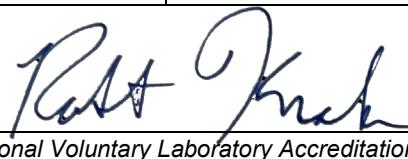
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
Horizontal (D = 1 m, H = 3 m)	300 MHz to 1 GHz	0.5 dB	
Horizontal (D = 1 m, H = 3 m)	1 GHz to 1.8 GHz	0.7 dB	
Vertical (D = 1 m, H = 3 m)	150 MHz to 300 MHz	0.6 dB	
Vertical (D = 1 m, H = 3 m)	300 MHz to 1 GHz	0.5 dB	
Vertical (D = 1 m, H = 3 m)	1 GHz to 1.8 GHz	0.6 dB	
Horn Antenna Antenna Factor Free Space (D = 1 m, H = 3 m)	0.75 GHz to 18 GHz 0.75 GHz to 18 GHz	1.0 dB 1.4 dB	SAE ARP958 Network Analyzer Spectrum Analyzer
NSA Measurement Field calibrations available <sup>Note 4</sup>	30 MHz to 200 MHz 200 MHz to 1 GHz	1.4 dB 1.7 dB 1.4 dB 1.5 dB	CISPR 16-1-4, and ANSI C63.4 Network Analyzer
SVSWR Measurement Field calibrations available <sup>Note 4</sup>	1 GHz to 3 GHz 3 GHz to 6 GHz 6 GHz to 12 GHz 12 GHz to 18 GHz	2.2 dB 2.1 dB 2.4 dB 2.7 dB 2.5 dB 1.9 dB 2.0 dB 1.9 dB	CISPR 16-1-4, and ANSI C63.4 Network Analyzer Spectrum Analyzer
Absorbing Clamp Clamp Factor	30 MHz to 300 MHz 300 MHz to 1 GHz	0.8 dB 1.1 dB	CISPR 16-1-3 Original Method Network Analyzer
Decoupling Factor (DF)	30 MHz to 150 MHz 150 MHz to 1 GHz	1.3 dB 4.4 dB	
Decoupling Factor (DR)	30 MHz to 150 MHz 150 MHz to 1 GHz	0.9 dB 6.1 dB	

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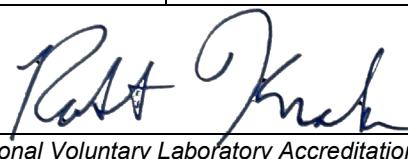
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
NSIL Measurement			CISPR 16-1-4
Field calibrations available <sup>Note 4</sup>			
X axis, Y axis and Z axis	9 kHz to 30 MHz	2.2 dB	Network Analyzer
Biconical, Log-periodic, Hybrid Antenna			Standard Site Method
Horizontal Antenna Factor (D = 10 m, H = 2 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.1 dB 0.9 dB	ANSI C63.5, CISPR 16-1-6 (OATS Calibration)
Horizontal Antenna Factor (D = 10 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.3 dB 1.1 dB	
Vertical Antenna Factor (D = 10 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.4 dB 1.5 dB	
Vertical Antenna Factor (D = 10 m, H = 1.5 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.3 dB 1.2 dB	
Horizontal Antenna Factor (D = 3 m, H = 2 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.1 dB 1.0 dB	
Horizontal Antenna Factor (D = 3 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.3 dB 1.1 dB	
Vertical Antenna Factor (D = 3 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.3 dB 1.5 dB	
Vertical Antenna Factor (D = 3 m, H = 1.5 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.2 dB 1.2 dB	
Horizontal GSCF (D = 10 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.3 dB 1.1 dB	
Vertical GSCF (D = 10 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.6 dB 1.4 dB	
Vertical GSCF (D = 10 m, H = 1.5 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.7 dB 1.2 dB	
Horizontal GSCF (D = 3 m, H = 2 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.2 dB 0.9 dB	
Horizontal GSCF (D = 3 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.4 dB 1.2 dB	

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**CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2**

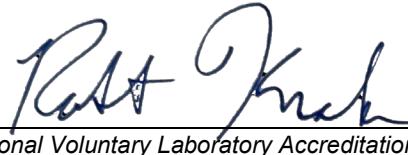
<b>Measured Parameter or Device Calibrated</b>	<b>Range</b>	<b>Expanded Uncertainty <small>Notes 3, 5</small></b>	<b>Remarks</b>
Vertical GSCF (D = 3 m, H = 1 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.5 dB 1.5 dB	
Vertical GSCF (D = 3 m, H = 1.5 m)	30 MHz to 300 MHz 300 MHz to 1 GHz	1.6 dB 1.2 dB	
Biconical, Log-periodic, Hybrid Antenna			ANSI C63.5 (OATS Calibration)
Antenna Symmetry	20 MHz to 300 MHz 300 MHz to 1 GHz	0.6 dB 0.6 dB	
	1 GHz to 1.8 GHz	0.5 dB	
Horn Antenna, Log Periodic Free Space Antenna Factor (D = 3 m)	0.75 GHz to 18 GHz 0.75 GHz to 18 GHz	1.0 dB 1.2 dB	Standard Site Method ANSI C63.5 , CISPR 16-1-6 Network Analyzer Spectrum Analyzer
Loop Antenna – Antenna Factor	9 kHz to 30 MHz	1.2 dB	Standard Antenna Method CISPR 16-1-6
Large Loop Antenna – Validation Factor Field calibrations available <small>Note 4</small>	9 kHz to 30 MHz	0.8 dB	CISPR 16-1-4 Annex C

**SCATTERING PARAMETERS (20/R18)**

Impedance & VSWR - Measure Field calibrations available <small>Note 4</small>	9 kHz to 300 kHz 300 kHz to 10 MHz 10 MHz to 3 GHz 3 GHz to 6 GHz 6 GHz to 18 GHz 18 GHz to 20 GHz	2.0 % + 0.002 2.0 % + 0.002 2.4 % + 0.002 3.5 % + 0.002 7.1 % + 0.002 8.4 % + 0.006	Network Analyzer
0 to 0.5 (Linear)	9 kHz to 300 kHz 300 kHz to 10 MHz 10 MHz to 3 GHz 3 GHz to 6 GHz 6 GHz to 18 GHz 18 GHz to 20 GHz	3.7 % + 0.002 3.7 % + 0.002 4.3 % + 0.002 6.8 % + 0.002 13.3 % + 0.002 16.2 % + 0.006	
0.5 to 1 (Linear)			

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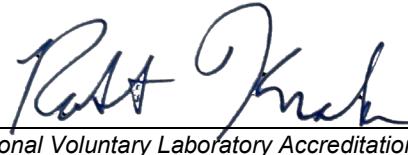
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### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
Directional Coupler (9 kHz to 6 GHz) Field calibrations available <sup>Note 4</sup>			
Insertion Loss	0 dB to 60 dB	0.20 dB	Network Analyzer
Coupling Factor	0 dB to 60 dB	0.20 dB	
EM Clamp / Decoupling Clamp 0.1 MHz to 230 MHz Field calibrations available <sup>Note 4</sup>			IEC 61000-4-6
Insertion Loss	100 kHz to 230 MHz	0.4 dB	
Impedance	100 kHz to 100 MHz 100 MHz to 230 MHz	6.0 % 8.8 %	
Decoupling Factor	100 kHz to 100 MHz 100 MHz to 230 MHz	0.6 dB 0.7 dB	
Coupling Factor	100 kHz to 100 MHz 100 MHz to 230 MHz	0.7 dB 0.6 dB	
50 ohm to 150 ohm Adaptor 0.1 MHz to 230 MHz Field calibrations available <sup>Note 4</sup>			Network Analyzer
Insertion Loss	0 dB to 60 dB	0.3 dB	
Current Probe/Current Injection Probe 10 kHz to 500 MHz Field calibrations available <sup>Note 4</sup>			
Insertion Loss	0 dB to 60 dB	0.5 dB	
Transfer Impedance	0 dBΩ to 60 dBΩ	0.5 dB	
Calibration Jig of Current Injection Probe Field calibrations available <sup>Note 4</sup>			
Transmission Loss	150 kHz to 230 MHz	0.6 dB	IEC 61000-4-6

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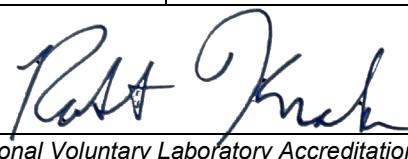
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**CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>**

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
Hi-Impedance Probe 9 kHz to 30 MHz Field calibrations available <sup>Note 4</sup>			
Voltage Division Factor (VDF)	0 dB to 60 dB	0.3 dB	
RF Insertion Loss/Gain Measure Field calibrations available <sup>Note 4</sup>			
9 kHz to 300 kHz	0 dB to 60 dB	0.30 dB	
300 kHz to 10 MHz		0.25 dB	
10 MHz to 3 GHz		0.18 dB	
3 GHz to 6 GHz		0.24 dB	
6 GHz to 18 GHz		0.34 dB	
18 GHz to 20 GHz		0.41 dB	
LISN Field calibrations available <sup>Note 4</sup>			
Insertion Loss/VDF	9 kHz to 108 MHz	0.18 dB	CISPR 16-1-2, CISPR 25, ISO 7637-1 and -2 ANSI C63.4
Impedance	9 kHz to 100 kHz	5.1 %	
	100 kHz to 108 MHz	1.1 %	
Phase	9 kHz to 30 MHz	4.9°	
	30 MHz to 108 MHz	6.6°	
Isolation	9 kHz to 108 MHz	2.9 dB	
CDN Field calibrations available <sup>Note 4</sup>			
Insertion Loss (-30 to 10) dB	100 kHz to 230 MHz	0.1 dB	
Impedance (90 to 210) Ω	100 kHz to 80 MHz	4.2 %	
	80 MHz to 230 MHz	9.2 %	

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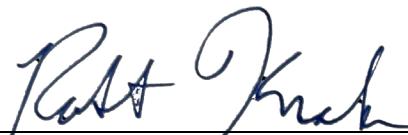
### CALIBRATION AND MEASUREMENT CAPABILITIES (CMC)<sup>Notes 1,2</sup>

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty <sup>Notes 3, 5</sup>	Remarks
CMAD Field calibrations available <sup>Note 4</sup> Transmission Coefficient Reflection Coefficient	30 MHz to 200 MHz 30 MHz to 200 MHz	0.0051 (linear) 0.013 (linear)	

END

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NVLAP LAB CODE 200012-0

### Notes

**Note 1:** A Calibration and Measurement Capability (CMC) is a description of the best result of a calibration or measurement (result with the smallest uncertainty of measurement) that is available to the laboratory's customers under normal conditions, when performing more or less routine calibrations of nearly ideal measurement standards or instruments. The CMC is described in the laboratory's scope of accreditation by: the measurement parameter/device being calibrated, the measurement range, the uncertainty associated with that range (see note 3), and remarks on additional parameters, if applicable.

**Note 2:** Calibration and Measurement Capabilities are traceable to the national measurement standards of the U.S. or to the national measurement standards of other countries and are thus traceable to the internationally accepted representation of the appropriate SI (Système International) unit.

**Note 3:** The uncertainty associated with a measurement in a CMC is an expanded uncertainty with a level of confidence of approximately 95 %, typically using a coverage factor of  $k = 2$ . However, laboratories may report a coverage factor different than  $k = 2$  to achieve the 95 % level of confidence. Units for the measurand and its uncertainty are to match. Exceptions to this occur when marketplace practice employs mixed units, such as when the artifact to be measured is labeled in non-SI units and the uncertainty is given in SI units (Example: 5 lb weight with uncertainty given in mg).

**Note 3a:** The uncertainty of a specific calibration by the laboratory may be greater than the uncertainty in the CMC due to the condition and behavior of the customer's device and specific circumstances of the calibration. The uncertainties quoted do not include possible effects on the calibrated device of transportation, long term stability, or intended use.

**Note 3b:** As the CMC represents the best measurement results achievable under normal conditions, the accredited calibration laboratory shall not report smaller uncertainty of measurement than that given in a CMC for calibrations or measurements covered by that CMC.

**Note 3c:** As described in Note 1, CMCs cover calibrations and measurements that are available to the laboratory's customers under *normal conditions*. However, the laboratory may have the capability to offer special tests, employing special conditions, which yield calibration or measurement results with lower uncertainties. Such special tests are not covered by the CMCs and are outside the laboratory's scope of accreditation. In this case, NVLAP requirements for the labeling, on calibration reports, of results outside the laboratory's scope of accreditation apply. These requirements are set out in Annex A.1.h. of NIST Handbook 150, Procedures and General Requirements.

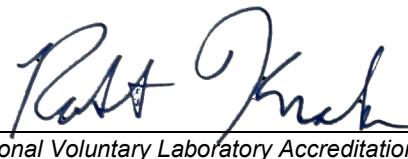
**Note 4:** Uncertainties associated with field service calibration may be greater as they incorporate on-site environmental contributions, transportation effects, or other factors that affect the measurements. (This note applies only if marked in the body of the scope.)

**Note 5:** Values listed with percent (%) are percent of reading or generated value unless otherwise noted.

**Note 6:** NVLAP accreditation is the formal recognition of specific calibration capabilities. Neither NVLAP nor NIST guarantee the accuracy of individual calibrations made by accredited laboratories.

2025-12-08 through 2026-12-31

Effective dates



For the National Voluntary Laboratory Accreditation Program