National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

BNNSPEAG TEST & CALIBRATION LABORATORY INDIA PRIVATE LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

11/11, SECTOR-3, RAJENDRA NAGAR, SAHIBABAD, GHAZIABAD, UTTAR PRADESH, INDIA

in the field of

CALIBRATION

Certificate Number: CC-2765

Issue Date: 25/06/2022 **Valid Until:** 24/06/2024

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity: BNNSPEAG TEST AND CALIBRATION LABORATORY INDIA PRIVATE LIMITED

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name :	BNNSPEAG TEST & CALIBRATION LABORATORY INDIA PRIVATE LIMITED, 11/11, SECTOR-3, RAJENDRA NAGAR, SAHIBABAD, GHAZIABAD, UTTAR PRADESH, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	CC-2765	**Page No**	1 of 9
Validity	25/06/2022 to 24/06/2024	**Last Amended on**	30/04/2023

S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Attenuation (10 MHz to 18 GHz)	Using Power Sensors with Signal Generators by Substitution Method	0.5 dB to 50 dB	0.37 dB to 0.87 dB
2	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Attenuation (9 kHz to 10 MHz)	Using Power Sensors with Signal Generators by direct Method	0.5 dB to 33 dB	0.33 dB to 0.39 dB
3	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Frequency / Generators	Using Rubidium Source & Frequency Counter by Direct Method	9 kHz to 14 GHz	1.3 Hz to 19.4 Hz
4	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Frequency/ Generators	Using Rubidium Source & Frequency Counter at Single Frequency by Direct Method	10 MHz	0.081 Hz

SCOPE OF ACCREDITATION

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5	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Power / Generators (10 MHz to 18 GHz)	Using Power Sensors by Direct Method	10 dBm to (-) 40 dBm	0.41 dB to 0.64 dB
6	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Power / Generators (9 kHz to 10 MHz)	Using Power Sensors by Direct Method	13 dBm to (-) 20 dBm	0.36 dB to 0.41 dB
7	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	RF Electric Field / Electromagnetic Field Sensor & Probe (9 kHz to 18000 MHz)	Using Electric Field Isotropic Probe & Electric Field Meter by Absolute Method (IEEE-1309-2013) - Type B, By TEC/SD/DD/CAL-EMF/01/FEB-19, By IEC 61000-4-3(2020) Annexure K	2 V/m to 100 V/m	14 %

SCOPE OF ACCREDITATION

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8	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	RF Electric Field/ Electromagnetic Field Sensor & Probe (80 MHz to 1000 MHz)	Using Electric Field Isotropic Probe & Electric Field Meter by Absolute Method (IEEE-1309-2013) - Type B, By TEC/SD/DD/CAL-EMF/01/FEB-19, By IEC 61000-4-3(2020) Annexure K	2 V/m to 500 V/m	14 %
9	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Attenuation (9 kHz to 18 GHz)	Using Power Sensors with Signal Generators by Direct Method	0.5 dB to 50 dB	0.1 dB to 0.65 dB
10	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Frequency / Receivers	Using Signal Generator, Reference Frequency Standard & Frequency Counter by Comparison / Reference Method	9 kHz to 18 GHz	1.3 Hz to 78 Hz
11	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Power / Receivers (9 kHz to 10 MHz)	Using Power Sensors with Signal Generators & Power Sensors by Comparison/ Substitution Method	10 dBm to (-) 20 dBm	0.43 dB to 0.47 dB

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12	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Power/ Receivers (10 MHz to 18 GHz)	Using Power Sensors with Signal Generators & Power Sensors by Comparison/ Substitution Method	+10 dBm to (-) 40 dBm	0.47 dB to 0.70 dB

SCOPE OF ACCREDITATION

Laboratory Name : BNNSPEAG TEST & CALIBRATION LABORATORY INDIA PRIVATE LIMITED, 11/11, SECTOR-3, RAJENDRA NAGAR, SAHIBABAD, GHAZIABAD, UTTAR PRADESH, INDIA

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Site Facility					
1	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per ANSI C 63.5: 2017, CISPR 16-1-6: 2014 + Amd 1: 2017 + Amd 2: 2022	1 GHz to 18 GHz	2dB
2	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per SAE ARP 958 Rev. D	1 GHz to 18 GHz	2dB
3	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	SAE ARP 958 Rev. E	1 GHz to 18 GHz	-2 dB to 2 dB
4	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	SAE ARP 958 Rev. E	20 MHz to 1 GHz	-2 dB to 2 dB

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5	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per ANSI C 63.5: 2017, CISPR 16-1-6: 2014 + Amd 1: 2017 + Amd 2: 202	30 MHz to 1 GHz	1.58dB
6	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per SAE ARP 958 Rev. D	30 MHz to 1 GHz	2dB
7	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Factor (AF)	Using Vector Network Analyzer as per CISPR 16-1-6: 2014 + Amd 1: 2017 + Amd 2: 2022, ANSI C63.5: 2017	9 kHz to 30 MHz	1.8dB
8	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Pair Reference site attenuation (Aapr)	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per CISPR 16-1-4: 2019 Clause 6.6.4, 6.10.2	30 MHz to 18 GHz	1dB

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9	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Return Loss	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per CISPR 16-1-6: 2014 + Amd 1: 2017 + Amd 2: 2022: Section A.8.7	30 MHz to 18 GHz	2.1 dB
10	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Symmetry	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per ANSI C 63.5-2017: Section 4.4.3	30 MHz to 300 MHz	2 dB
11	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Antenna Symmetry	Using Vector Network Analyzer, Open Area Test Site (OATS) Reference Standard as per CISPR 16-1-6: 2014: Section 6.3.2 [CISPR 16-1-4:2019 Section 4.5.4.2] + Amd 1: 2017 + Amd 2: 2022	30 MHz to 300 MHz	2 dB

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12	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Frequency / Generators	Using Rubidium Source & Frequency Counter by Direct Method	9 kHz to 14 GHz	1.3 Hz to 19.4 Hz
13	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Power / Generators (10 MHz to 18 GHz)	Using Power Sensors by Direct Method	10 dBm to (-) 40 dBm	0.41 dB to 0.64 dB
14	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Measure)	Power / Generators (9 kHz to 10 MHz)	Using Power Sensors by Direct Method	13 dBm to (-) 20 dBm	0.36 dB to 0.41 dB
15	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Frequency / Receivers	Using Signal Generator, Reference Frequency Standard & Frequency Counter by Comparison / Reference Method	9 kHz to 18 GHz	1.3 Hz to 78 Hz

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16	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Power / Receivers (9 kHz to 10 MHz)	Using Power Sensors with Signal Generators & Power Sensors by Comparison/ Substitution Method	10 dBm to (-) 20 dBm	0.43 dB to 0.47 dB
17	ELECTRO-TECHNICAL-RF/MICROWAVE (1 GHZ AND ABOVE) (Source)	Power/ Receivers (10 MHz to 18 GHz)	Using Power Sensors with Signal Generators & Power Sensors by Comparison/ Substitution Method	+10 dBm to (-) 40 dBm	0.47 dB to 0.70 dB

*** CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.**