

EMC Test Report

For

Beijing InHand Networks Technology Co., Ltd.

Test Standards:	<u>FCC 47 CFR Part 15 Subpart B</u>
Product Description:	<u>Industrial Switch</u>
Tested Model:	<u>ISE2008D</u>
Adding Model:	<u>ISE1002D, ISE1003D, ISE1005D, ISE1008D,</u> <u>ISE2002E, ISE2002D, ISE2003D, ISE2005D,</u> <u>ISE2305D, ISE2308D, ISE5002D, ISE5003D,</u> <u>ISE5005D, ISE5008D, ISE5305D, ISE5306D,</u> <u>ISE5308D</u>
Classification:	<u>Supplier's Declaration of Conformity</u>
Report No.:	<u>EC2201001E01</u>
Tested Date:	<u>2022-01-18 to 2022-01-20</u>
Issued Date:	<u>2022-01-21</u>
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Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Hunan Ecloud Testing Technology Co., Ltd., the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2022.01.21	Valid	Original Report

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Summary of Test Result

FCC Rule	Description	Limit	Result
15.107	AC Conducted Emission	< 15.107 limits	Pass
15.109	Radiated Emission	< 15.109 limits	Pass

1 Test Laboratory

1.1 Test facility

CNAS (accreditation number: L11138)

Hunan Ecloud Testing Technology Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1244 , Test Firm Registration Number: 793308)

Hunan Ecloud Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

ISED(CAB identifier: CN0012, ISED#:24347)

Hunan Ecloud Testing Technology Co., Ltd. has been listed on the Wireless Device Testing Laboratories list of innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.

A2LA (Certificate Code : 4895.01)

Hunan Ecloud Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

2 General Description

2.1 Applicant

Beijing InHand Networks Technology Co., Ltd.

Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing

2.2 Manufacturer

Beijing InHand Networks Technology Co., Ltd.

Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing

2.3 General Description Of EUT

Product	Industrial Switch
Model NO.	ISE2008D
Additional NO.	ISE1002D, ISE1003D, ISE1005D, ISE1008D, ISE2002E, ISE2002D, ISE2003D, ISE2005D, ISE2305D, ISE2308D, ISE5002D, ISE5003D, ISE5005D, ISE5008D, ISE5305D, ISE5306D, ISE5308D
Difference Description	For more details, see Appendix C. According to the Declaration letter, we choose model ISE2008D and ISE5005D to perform all the tests.
Nominal Voltage	12/24/48Vdc or 24Vac
Highest Frequency:	Less than 108MHz
Equipment Category	Class A

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2.4 Modification of EUT

No modifications are made to the EUT during all test items.

2.5 Support equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Serial Number
1.	Notebook Computer	Lenovo	Xiaoxin chao5000	SDOC	PF0QPQMH
2.	Notebook Computer	Lenovo	ThinkPad E580	SDOC	PF-12XLH6

2.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC 47 CFR Part 15 Subpart B

3 Test Configuration of Equipment Under Test

3.1 Descriptions of Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz).

Radiated:

(a) For unintentional radiators:

Including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

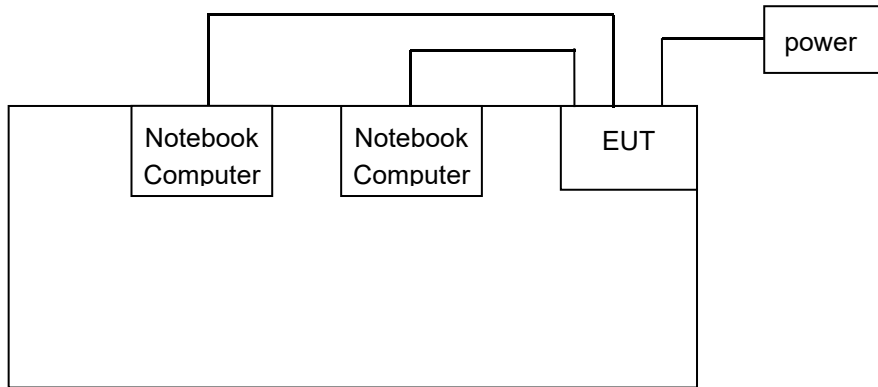
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Details of Test line Items
Radiated Emissions
Mode 1 : Working<Fig.1>

mode of all test items listed in section 2.1

Test items	mode
Radiated Emission	Mode 1
AC Conducted Emission	Mode 1

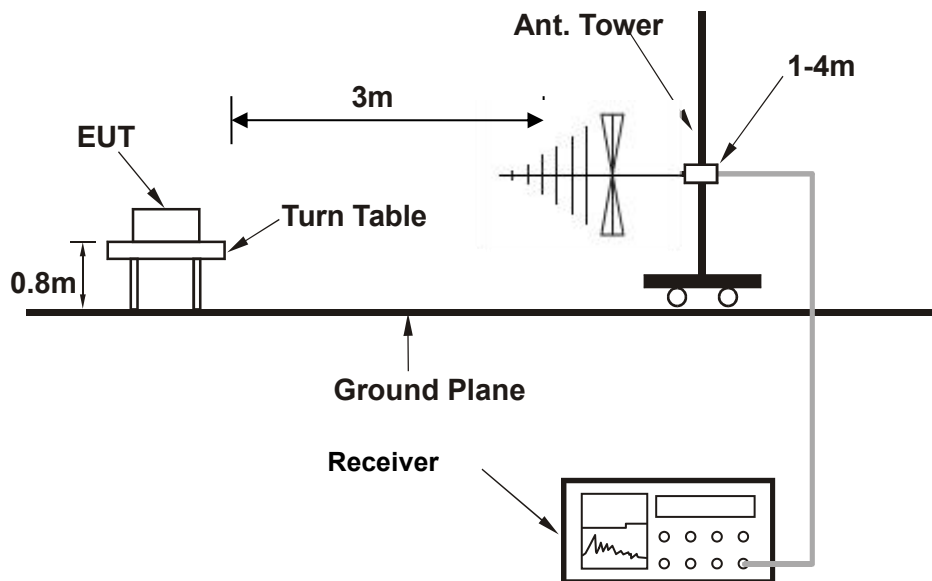
3.2 Connection of System Under Test



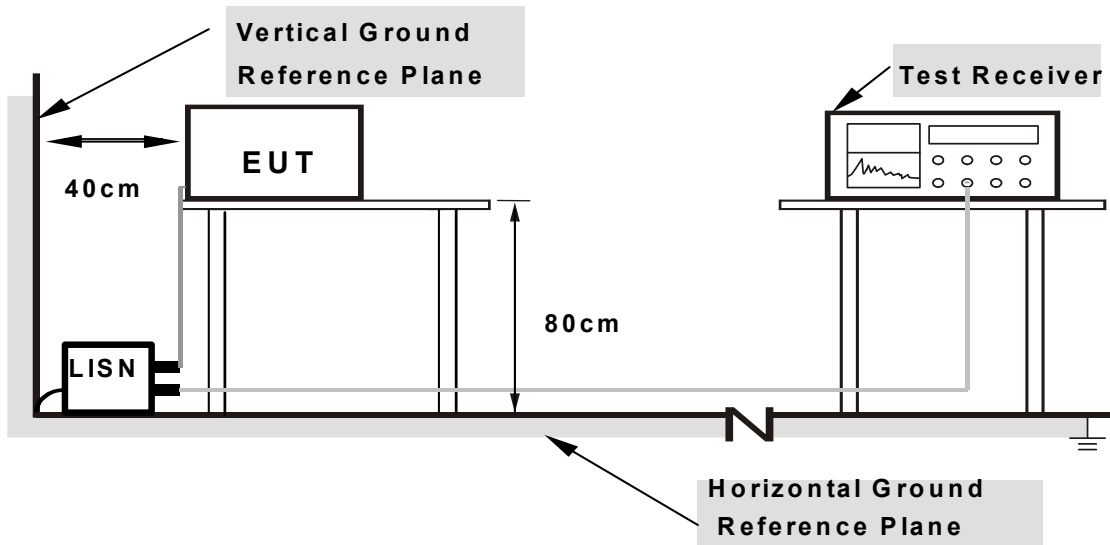
<Fig.1>

3.3 Test Setup

Setup diagram for Radiation(Below 1G) Test



Setup diagram for AC Conducted Emission Test



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

4 Test Result

4.1 AC Conducted Emission Measurement

4.1.1 Limit of AC Conducted Emission

For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms LISN. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

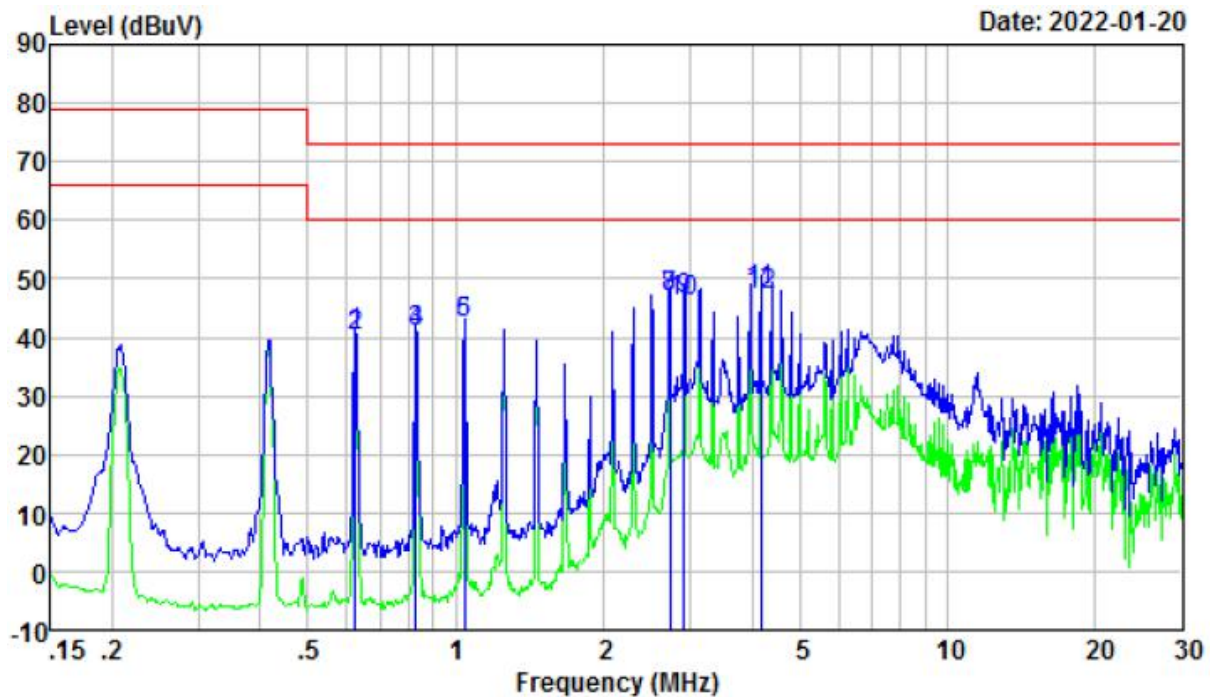
Frequency Range	Quasi Peak(dB μ V)	Average(dB μ V)
0.15-0.5	79	66
0.5-30	73	60

4.1.2 Test Procedures

1. During the conducted emissions test, the EUT was connected to the main outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.
2. Set the test-receiver system to Quasi-Peak and Average Detect Function and specified bandwidth (IF Bandwidth =9kHz) with Maximum Hold Mode. The frequency range from 150 kHz to 30 MHz was searched.

4.1.3 Test Result of AC Conducted Emission

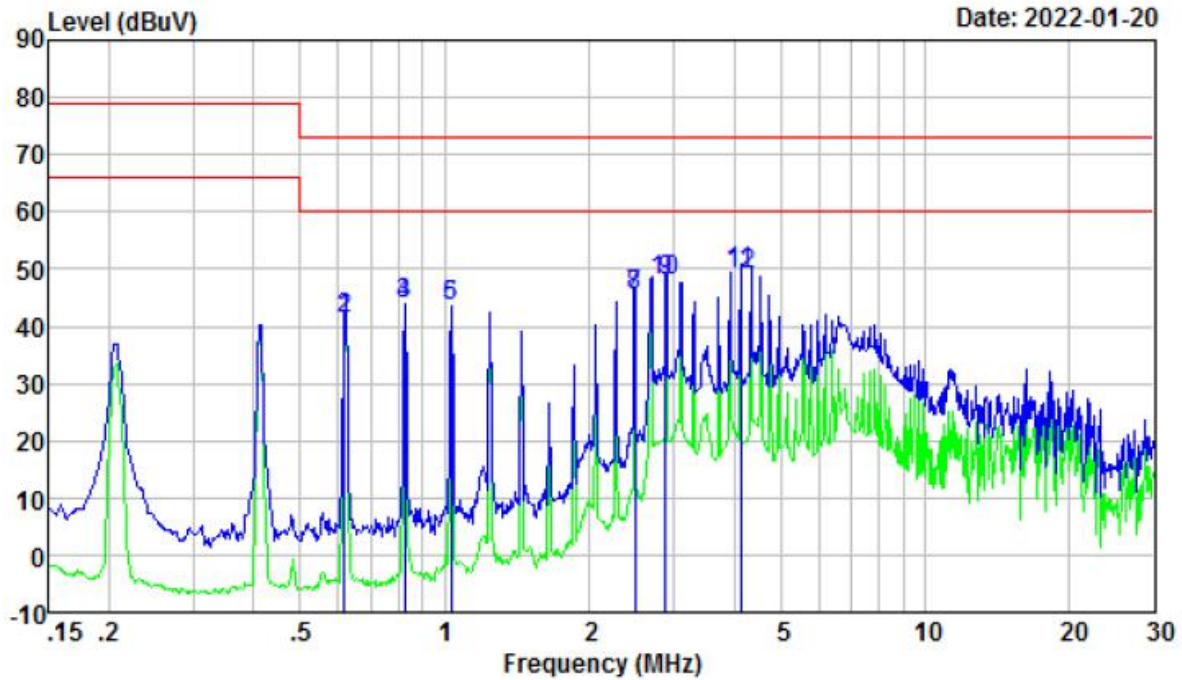
Test Mode :	Mode 1	Temperature :	19℃
Test Engineer :	Forest Chen	Relative Humidity :	53%
Test Voltage :	AC24V	Phase :	LINE
Function Type :	RJ45 Ping	Model :	ISE2008D



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.624	30.80	9.58	0.02	40.40	73.00	-32.60	QP
0.624	30.70	9.58	0.02	40.30	60.00	-19.70	Average
0.830	31.20	9.59	0.02	40.81	73.00	-32.19	QP
0.830	31.20	9.59	0.02	40.81	60.00	-19.19	Average
1.043	32.90	9.59	0.02	42.51	73.00	-30.49	QP
1.043	32.90	9.59	0.02	42.51	60.00	-17.49	Average
2.721	37.20	9.60	0.04	46.84	73.00	-26.16	QP
2.721	37.20	9.60	0.04	46.84	60.00	-13.16	Average
2.915	36.70	9.61	0.04	46.35	73.00	-26.65	QP
2.915	36.40	9.61	0.04	46.05	60.00	-13.95	Average
4.180	38.40	9.65	0.05	48.10	73.00	-24.90	QP
4.180	37.50	9.65	0.05	47.20	60.00	-12.80	Average

Result Level= Reading Level + LISN Factor + Cable Loss

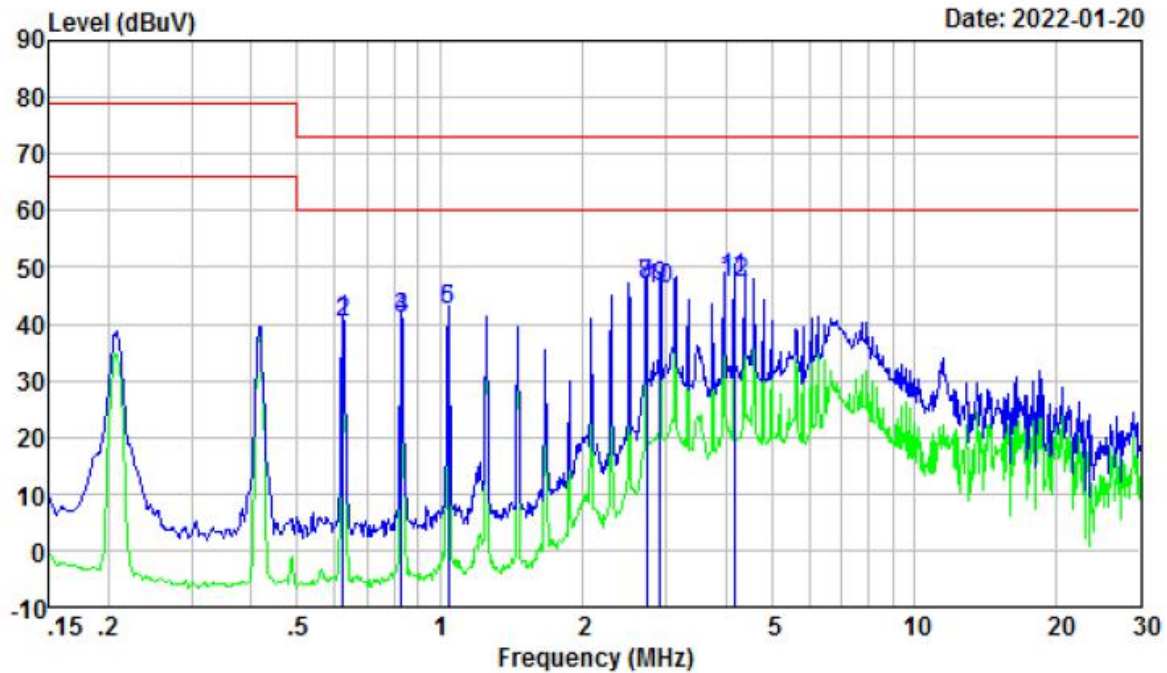
Test Mode :	Mode 1	Temperature :	19°C
Test Engineer :	Forest Chen	Relative Humidity :	53%
Test Voltage :	AC24V	Phase :	Neutral
Function Type :	RJ45 Ping	Model :	ISE2008D



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.617	31.70	9.58	0.02	41.30	73.00	-31.70	QP
0.617	31.70	9.58	0.02	41.30	60.00	-18.70	Average
0.826	34.40	9.58	0.02	44.00	73.00	-29.00	QP
0.826	34.40	9.58	0.02	44.00	60.00	-16.00	Average
1.032	33.80	9.59	0.02	43.41	73.00	-29.59	QP
1.032	33.80	9.59	0.02	43.41	60.00	-16.59	Average
2.487	35.90	9.60	0.03	45.53	73.00	-27.47	QP
2.487	35.60	9.60	0.03	45.23	60.00	-14.77	Average
2.884	38.30	9.61	0.04	47.95	73.00	-25.05	QP
2.884	38.20	9.61	0.04	47.85	60.00	-12.15	Average
4.136	39.61	9.64	0.05	49.30	73.00	-23.70	QP
4.136	39.21	9.64	0.05	48.90	60.00	-11.10	Average

Result Level= Reading Level + LISN Factor + Cable Loss

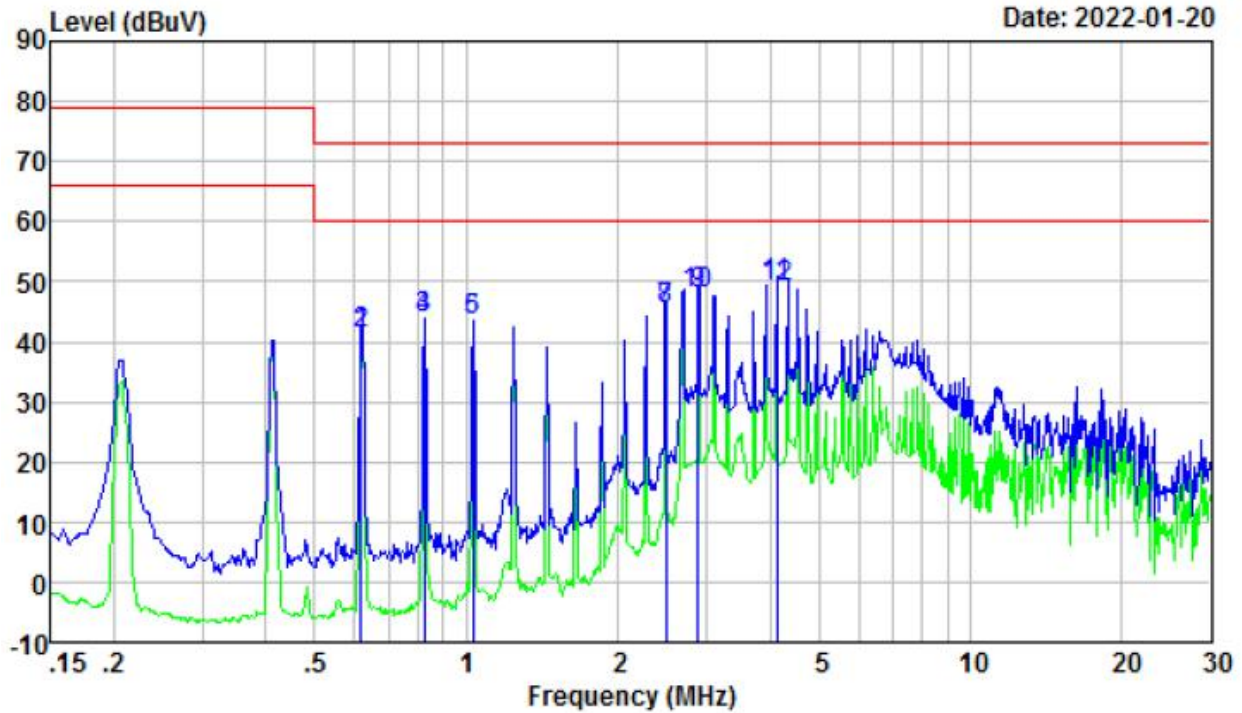
Test Mode :	Mode 1	Temperature :	19°C
Test Engineer :	Forest Chen	Relative Humidity :	53%
Test Voltage :	AC24V	Phase :	LINE
Function Type :	RJ45 Ping	Model :	ISE5005D



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.624	30.80	9.58	0.02	40.40	73.00	-32.60	QP
0.624	30.70	9.58	0.02	40.30	60.00	-19.70	Average
0.830	31.20	9.59	0.02	40.81	73.00	-32.19	QP
0.830	31.20	9.59	0.02	40.81	60.00	-19.19	Average
1.043	32.90	9.59	0.02	42.51	73.00	-30.49	QP
1.043	32.90	9.59	0.02	42.51	60.00	-17.49	Average
2.721	37.20	9.60	0.04	46.84	73.00	-26.16	QP
2.721	37.20	9.60	0.04	46.84	60.00	-13.16	Average
2.915	36.70	9.61	0.04	46.35	73.00	-26.65	QP
2.915	36.40	9.61	0.04	46.05	60.00	-13.95	Average
4.180	38.40	9.65	0.05	48.10	73.00	-24.90	QP
4.180	37.50	9.65	0.05	47.20	60.00	-12.80	Average

Result Level= Reading Level + LISN Factor + Cable Loss

Test Mode :	Mode 1	Temperature :	19°C
Test Engineer :	Forest Chen	Relative Humidity :	53%
Test Voltage :	AC24V	Phase :	Neutral
Function Type :	RJ45 Ping	Model :	ISE2008D



Freq MHz	Reading level dBuV	LISN/ISN factor dB	Cable loss dB	Result level dBuV	Limit level dBuV	Over limit dB	Remark
0.617	31.70	9.58	0.02	41.30	73.00	-31.70	QP
0.617	31.70	9.58	0.02	41.30	60.00	-18.70	Average
0.826	34.40	9.58	0.02	44.00	73.00	-29.00	QP
0.826	34.40	9.58	0.02	44.00	60.00	-16.00	Average
1.032	33.80	9.59	0.02	43.41	73.00	-29.59	QP
1.032	33.80	9.59	0.02	43.41	60.00	-16.59	Average
2.487	35.90	9.60	0.03	45.53	73.00	-27.47	QP
2.487	35.60	9.60	0.03	45.23	60.00	-14.77	Average
2.884	38.30	9.61	0.04	47.95	73.00	-25.05	QP
2.884	38.20	9.61	0.04	47.85	60.00	-12.15	Average
4.136	39.61	9.64	0.05	49.30	73.00	-23.70	QP
4.136	39.21	9.64	0.05	48.90	60.00	-11.10	Average

Result Level= Reading Level + LISN Factor + Cable Loss

4.2 Radiated Emission Measurement

4.2.1 Limit of Radiated Emission

The field strength of radiated emissions from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency range (MHz)	Distance (Meters)	Field Strength (microvolts/meter)
30 ~ 88	10	90
88~216	10	150
216-960	10	210
Above 960	10	300

Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
 (2) Distance refers to the distance in meters between the measuring instrument antenna and periphery of the EUT.
 (3) On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function, unless otherwise specified.
 (4) Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

4.2.2 Test Procedures

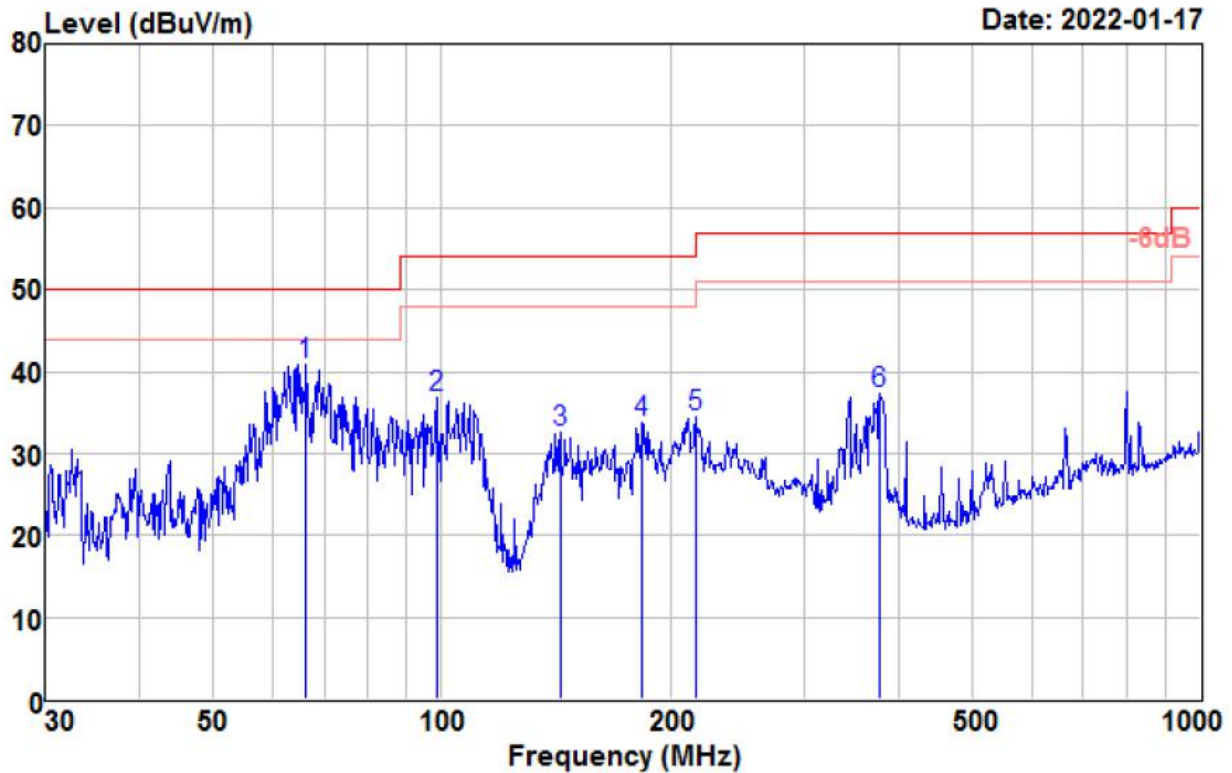
1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual.
2. Support equipment, if needed, was placed as per FCC 15B. All I/O cables were positioned to simulate typical actual usage as per FCC 15B.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.

4.2.3 Test Result of Radiated Emission

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	AC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

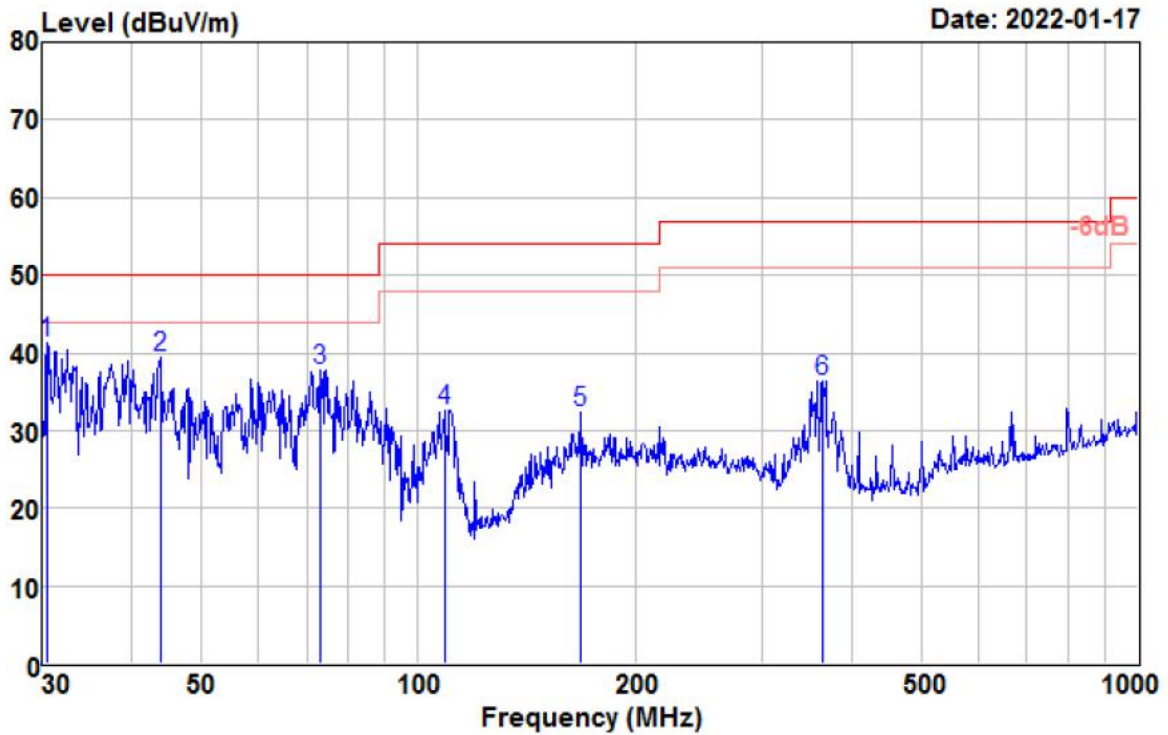


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
66.266	52.93	19.10	1.35	32.57	40.81	50.00	-9.19	QP
98.487	52.67	14.90	1.65	32.50	36.72	54.00	-17.28	QP
143.326	43.20	19.86	2.03	32.54	32.55	54.00	-21.45	QP
183.844	46.27	17.78	2.34	32.58	33.81	54.00	-20.19	QP
216.024	48.66	15.89	2.56	32.60	34.51	57.00	-22.49	QP
378.584	45.76	20.65	3.46	32.68	37.19	57.00	-19.81	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	AC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

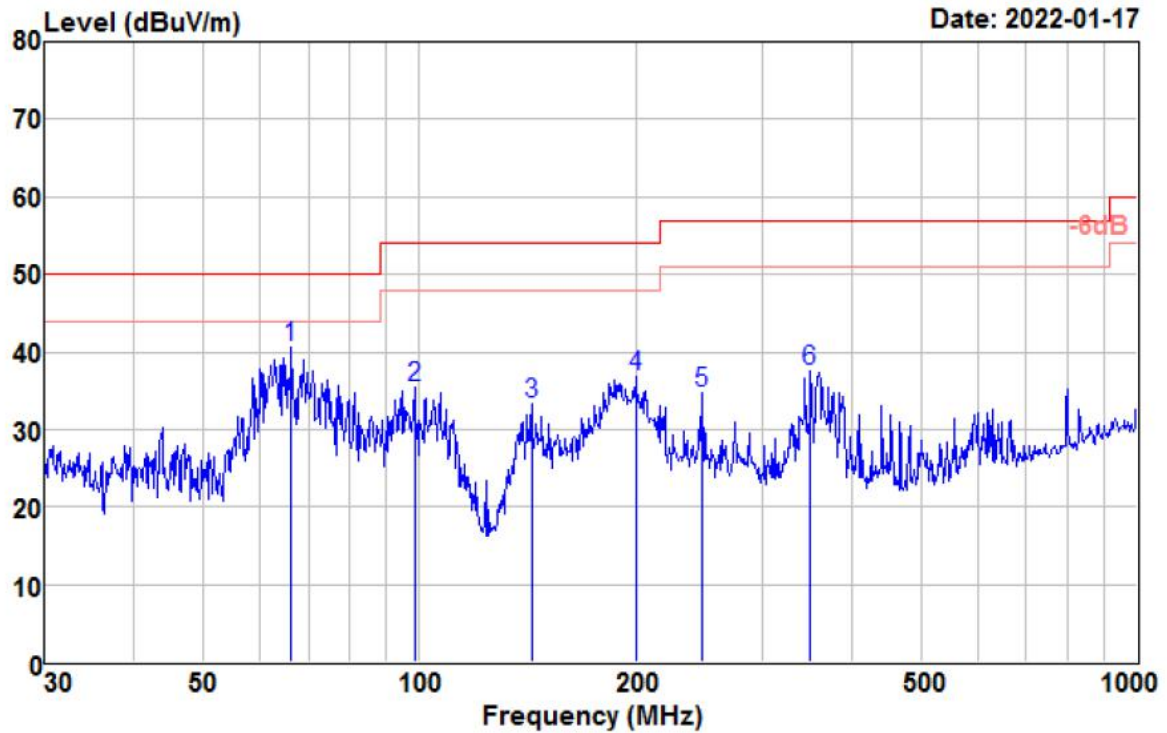


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
30.531	53.20	19.70	0.96	32.60	41.26	50.00	-8.74	QP
43.812	50.09	20.87	1.08	32.60	39.44	50.00	-10.56	QP
73.103	51.17	17.76	1.41	32.55	37.79	50.00	-12.21	QP
108.647	47.06	16.23	1.77	32.51	32.55	54.00	-21.45	QP
167.824	43.27	19.44	2.22	32.57	32.36	54.00	-21.64	QP
364.260	45.38	20.36	3.37	32.66	36.45	57.00	-20.55	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC12V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

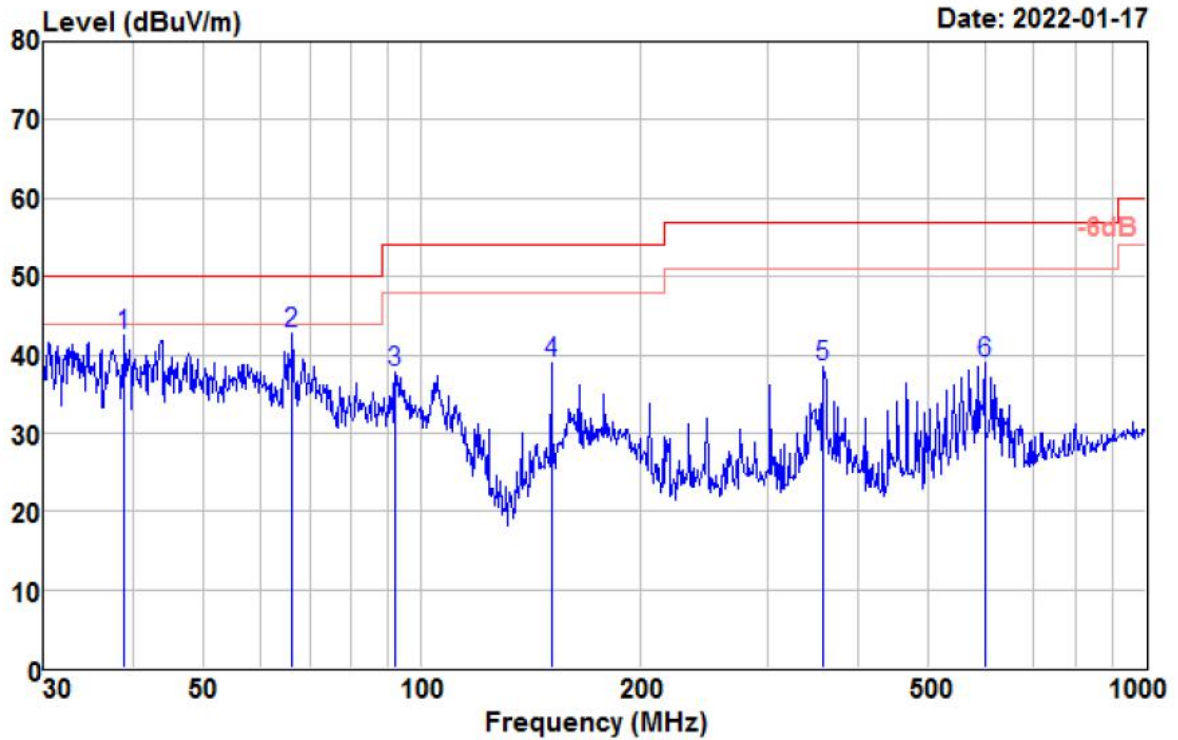


Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
66.266	52.65	19.10	1.35	32.57	40.53	50.00	-9.47	QP
98.487	51.35	14.90	1.65	32.50	35.40	54.00	-18.60	QP
143.326	44.04	19.86	2.03	32.54	33.39	54.00	-20.61	QP
199.986	51.05	16.04	2.43	32.60	36.92	54.00	-17.08	QP
247.682	46.85	17.61	2.74	32.60	34.60	57.00	-22.40	QP
350.477	46.83	20.02	3.27	32.65	37.47	57.00	-19.53	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC12V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

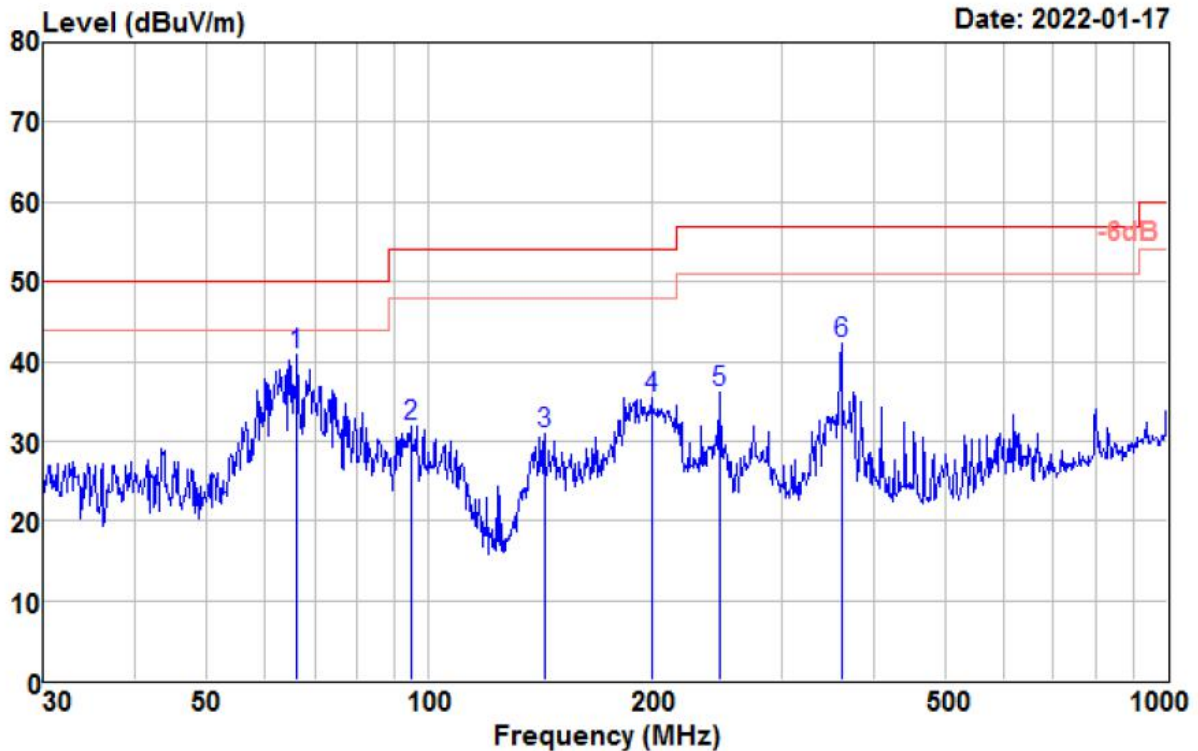


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
38.888	54.09	20.08	0.99	32.60	42.56	50.00	-7.44	QP
66.266	54.75	19.10	1.35	32.57	42.63	50.00	-7.37	QP
91.816	54.09	14.51	1.59	32.52	37.67	54.00	-16.33	QP
151.067	49.09	20.26	2.11	32.55	38.91	54.00	-15.09	QP
359.186	47.55	20.22	3.34	32.66	38.45	57.00	-18.55	QP
599.321	42.46	24.76	4.47	32.70	38.99	57.00	-18.01	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

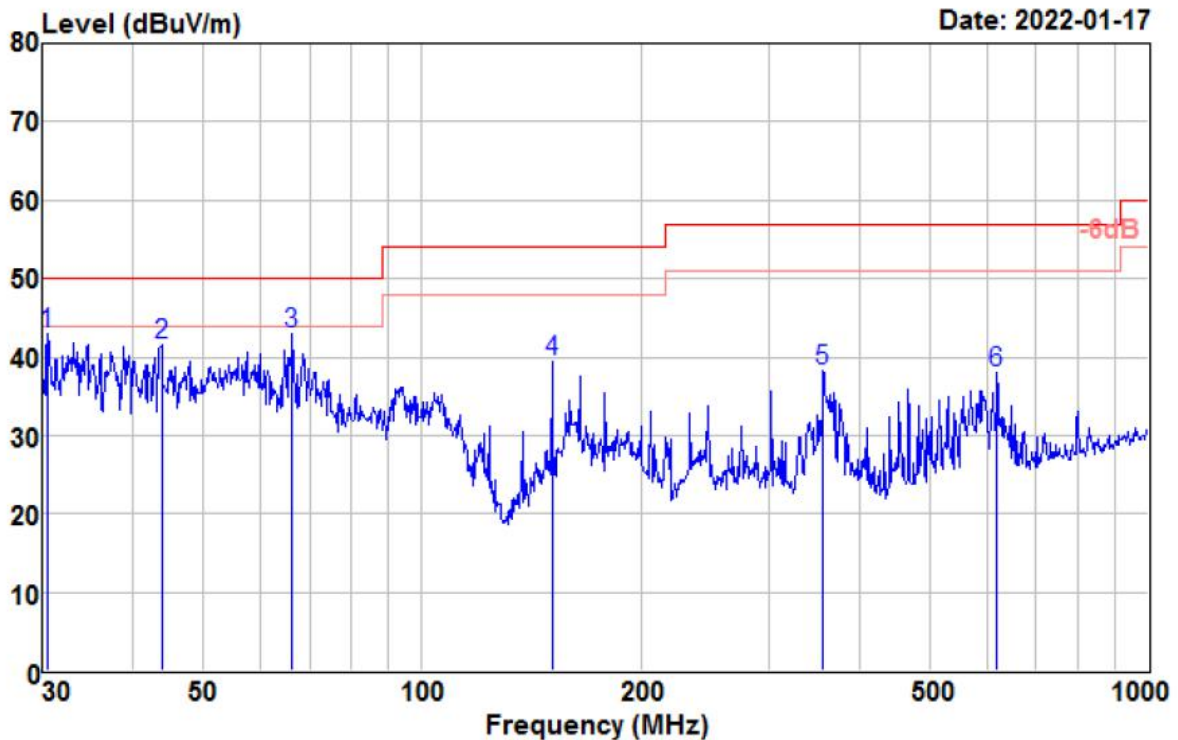


Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
66.266	52.86	19.10	1.35	32.57	40.74	50.00	-9.26	QP
94.428	48.14	14.59	1.61	32.51	31.83	54.00	-22.17	QP
143.326	41.52	19.86	2.03	32.54	30.87	54.00	-23.13	QP
199.986	49.62	16.04	2.43	32.60	35.49	54.00	-18.51	QP
247.682	48.40	17.61	2.74	32.60	36.15	57.00	-20.85	QP
361.714	51.34	20.29	3.35	32.66	42.32	57.00	-14.68	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

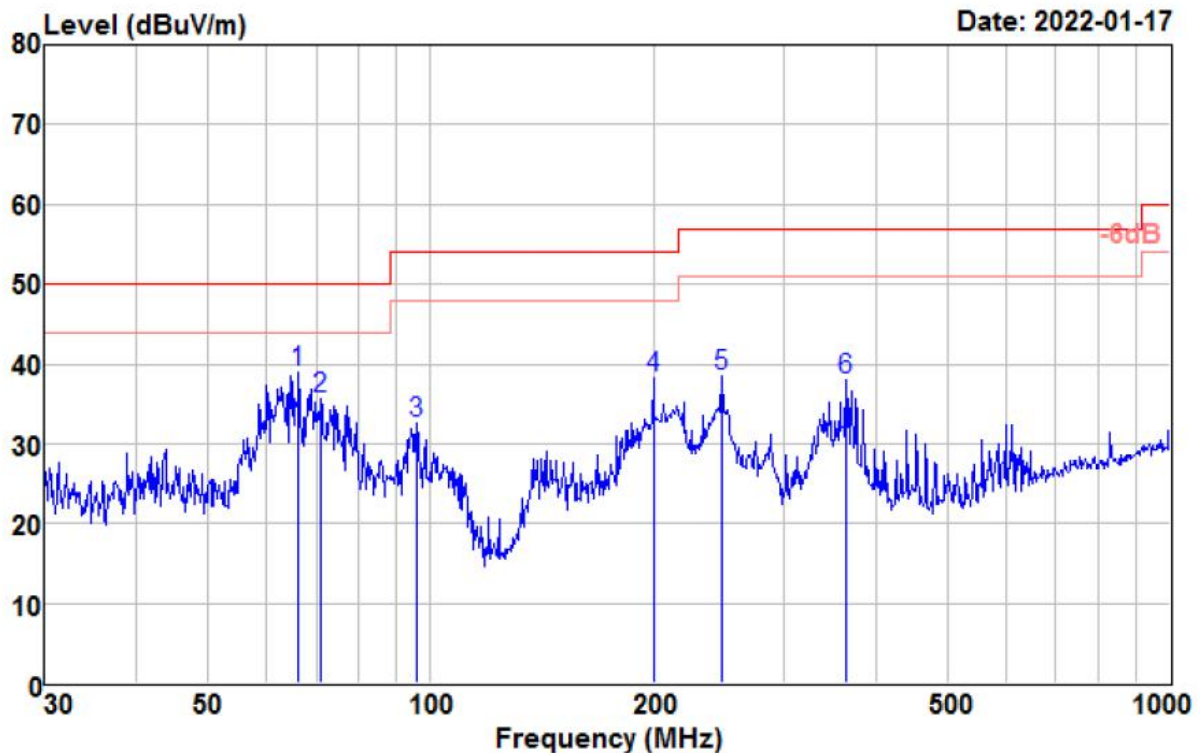


Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
30.531	54.95	19.70	0.96	32.60	43.01	50.00	-6.99	QP
43.812	52.14	20.87	1.08	32.60	41.49	50.00	-8.51	QP
66.266	55.13	19.10	1.35	32.57	43.01	50.00	-6.99	QP
151.067	49.63	20.26	2.11	32.55	39.45	54.00	-14.55	QP
356.676	47.46	20.16	3.32	32.66	38.28	57.00	-18.72	QP
618.537	41.35	24.89	4.51	32.68	38.07	57.00	-18.93	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC48V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

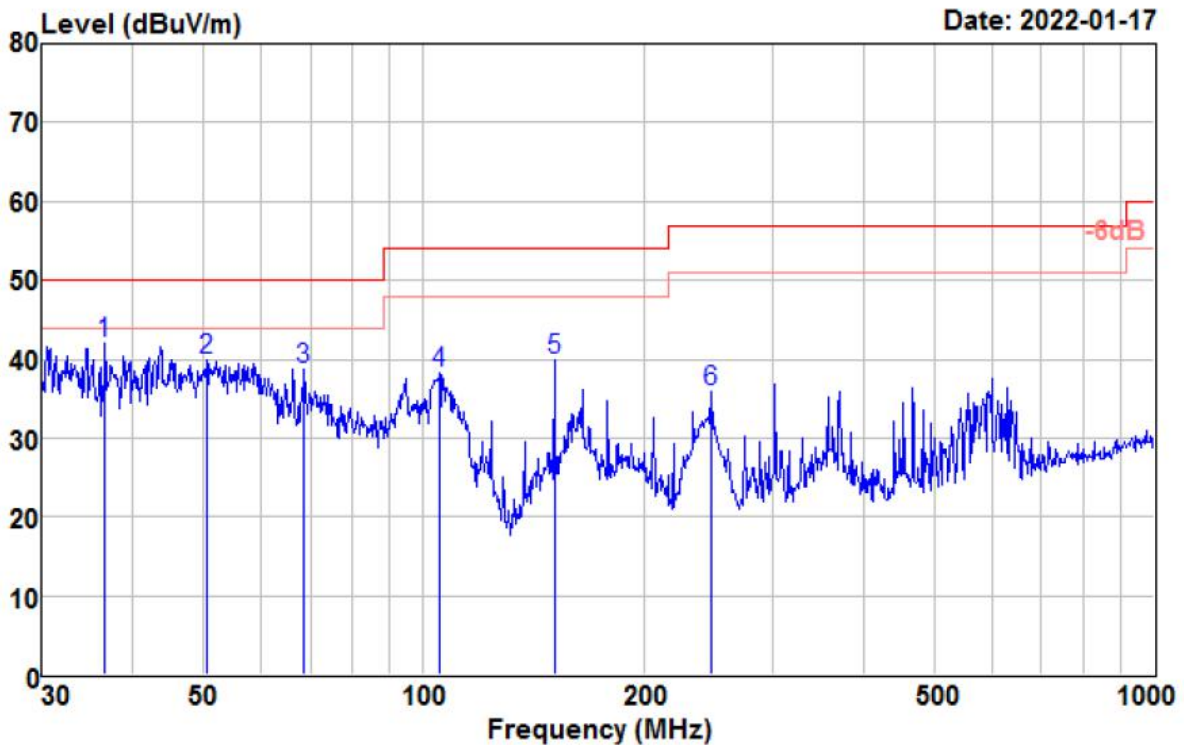


Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
66.266	51.11	19.10	1.35	32.57	38.99	50.00	-11.01	QP
71.080	48.88	17.91	1.39	32.56	35.62	50.00	-14.38	QP
95.762	48.69	14.67	1.63	32.51	32.48	54.00	-21.52	QP
199.986	52.43	16.04	2.43	32.60	38.30	54.00	-15.70	QP
247.682	50.64	17.61	2.74	32.60	38.39	57.00	-18.61	QP
364.260	46.97	20.36	3.37	32.66	38.04	57.00	-18.96	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC48V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

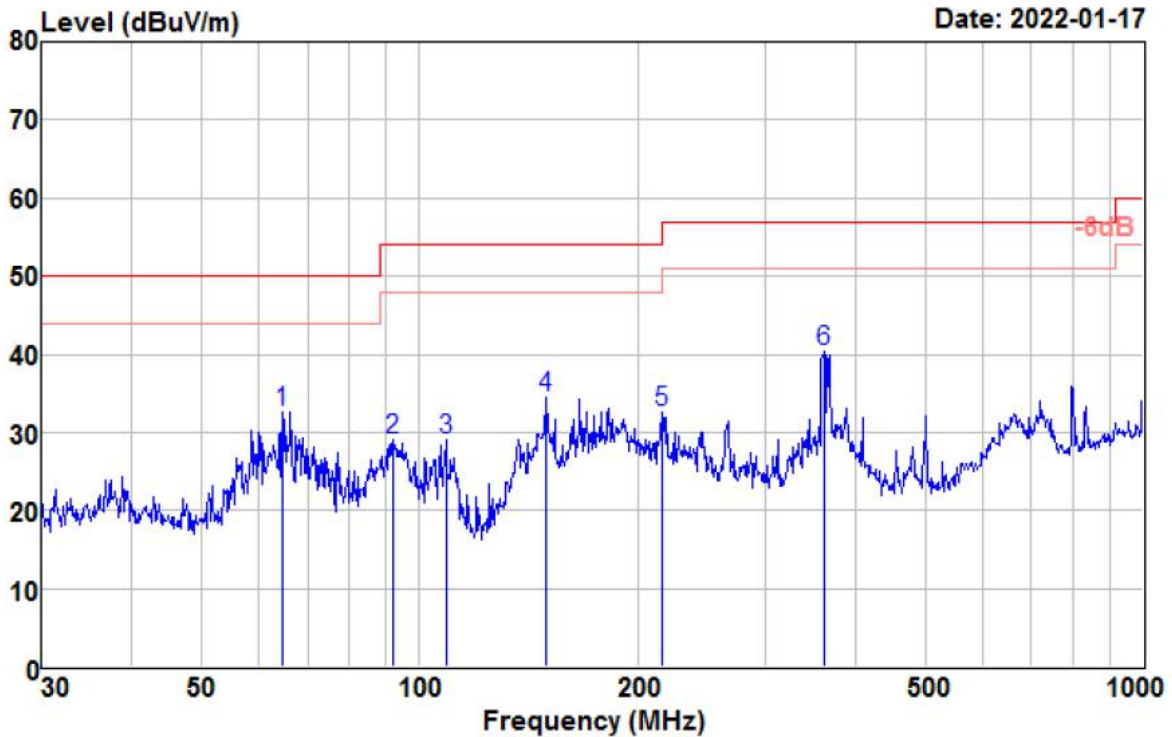


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
36.637	53.83	19.77	0.96	32.60	41.96	50.00	-8.04	QP
50.409	50.36	21.08	1.17	32.60	40.01	50.00	-9.99	QP
68.631	51.37	18.52	1.37	32.56	38.70	50.00	-11.30	QP
105.272	53.25	15.78	1.73	32.51	38.25	54.00	-15.75	QP
151.067	50.10	20.26	2.11	32.55	39.92	54.00	-14.08	QP
247.682	48.22	17.61	2.74	32.60	35.97	57.00	-21.03	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	AC24V	Model :	ISE5005D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

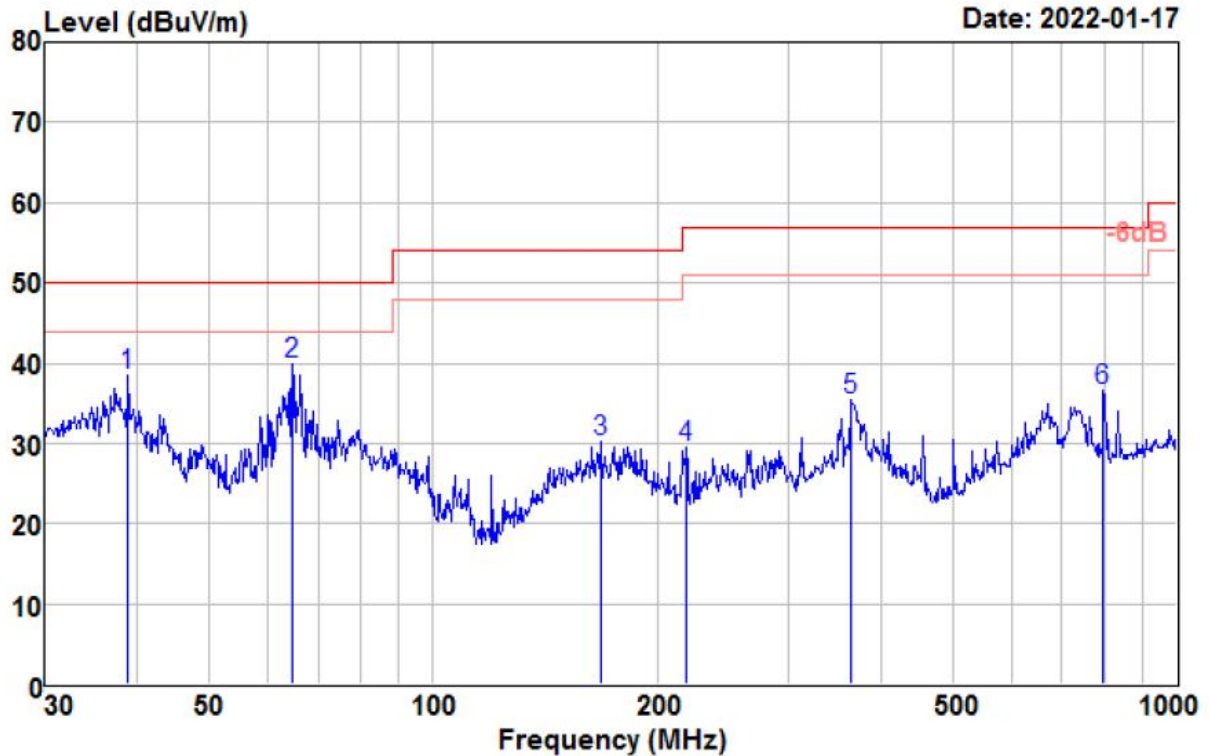


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
64.659	44.38	19.52	1.33	32.57	32.66	50.00	-17.34	QP
92.139	45.41	14.52	1.59	32.52	29.00	54.00	-25.00	QP
108.647	43.59	16.23	1.77	32.51	29.08	54.00	-24.92	QP
149.486	44.77	20.26	2.09	32.55	34.57	54.00	-19.43	QP
216.024	46.67	15.89	2.56	32.60	32.52	57.00	-24.48	QP
362.985	49.33	20.33	3.36	32.66	40.36	57.00	-16.64	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	AC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

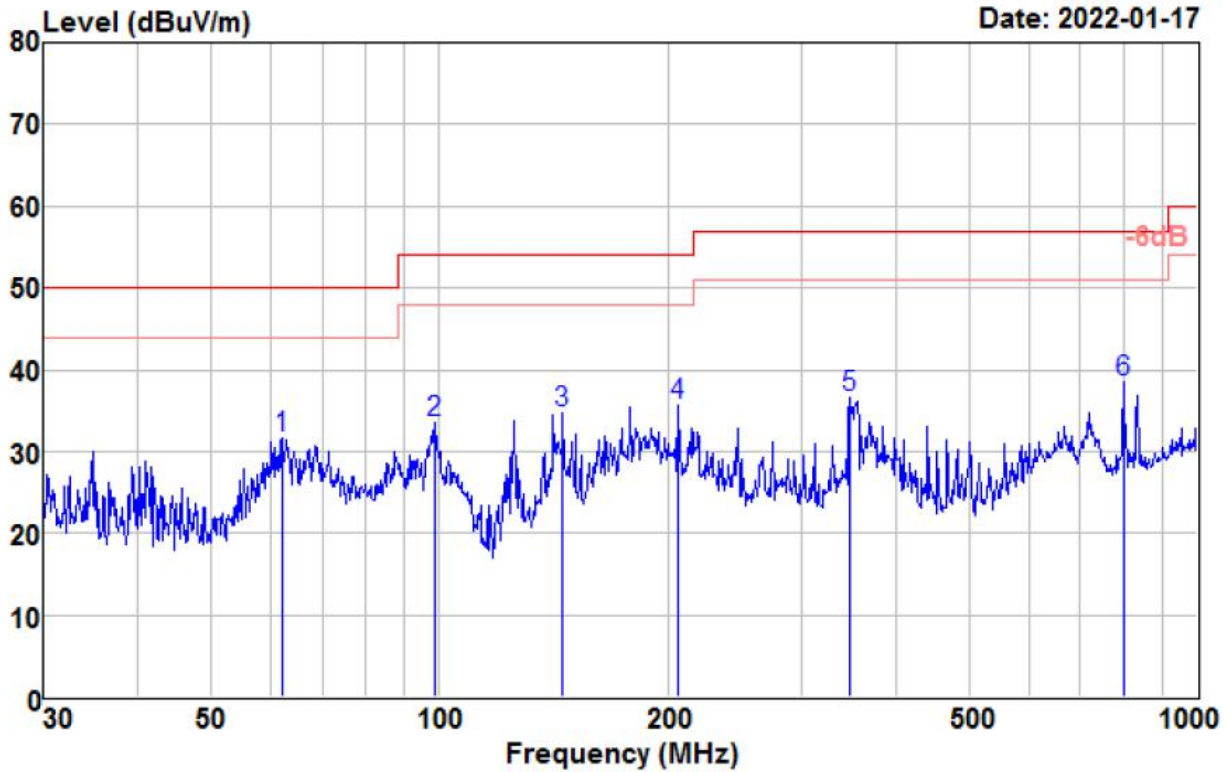


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
38.888	49.99	20.08	0.99	32.60	38.46	50.00	-11.54	QP
64.659	51.59	19.52	1.33	32.57	39.87	50.00	-10.13	QP
167.824	41.02	19.44	2.22	32.57	30.11	54.00	-23.89	QP
219.075	43.69	15.88	2.58	32.60	29.55	57.00	-27.45	QP
365.539	44.35	20.40	3.38	32.67	35.46	57.00	-21.54	QP
796.183	36.85	26.98	5.16	32.50	36.49	57.00	-20.51	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC12V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

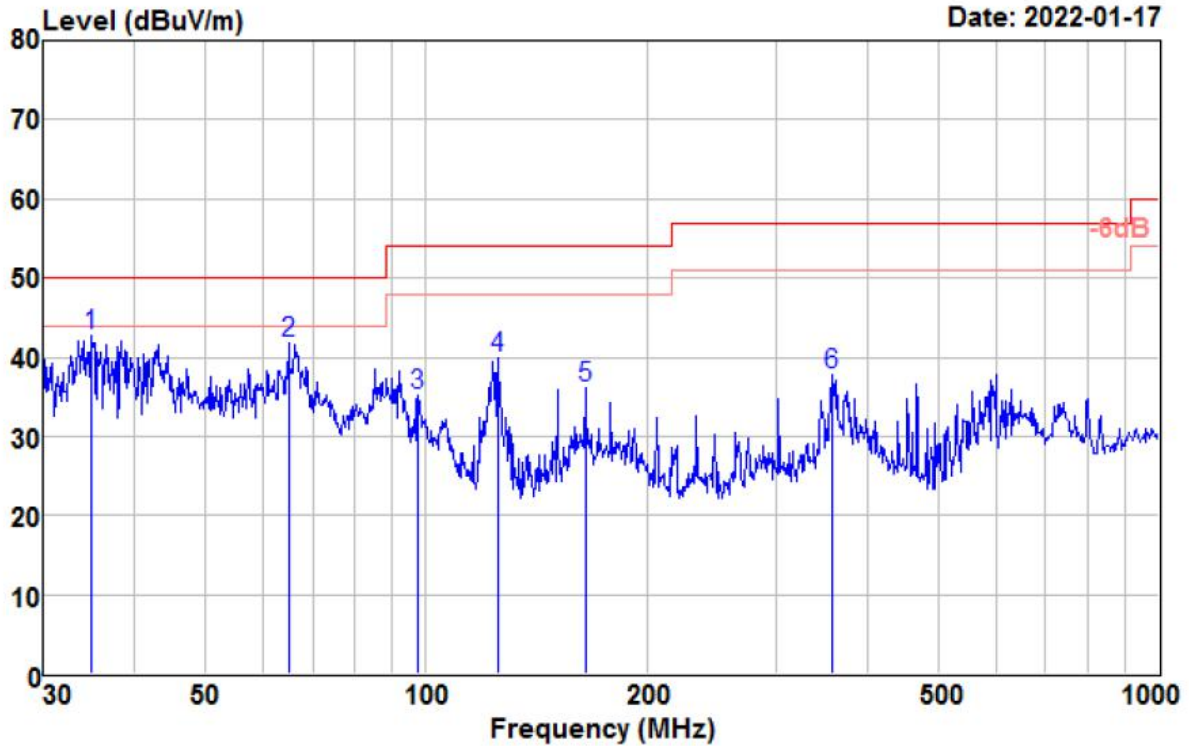


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
62.213	42.89	20.11	1.31	32.58	31.73	50.00	-18.27	QP
98.833	49.41	14.92	1.66	32.50	33.49	54.00	-20.51	QP
145.351	45.24	19.99	2.05	32.55	34.73	54.00	-19.27	QP
206.398	49.82	15.96	2.48	32.60	35.66	54.00	-18.34	QP
348.027	46.00	19.98	3.26	32.65	36.59	57.00	-20.41	QP
798.980	38.83	27.00	5.17	32.50	38.50	57.00	-18.50	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC12V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

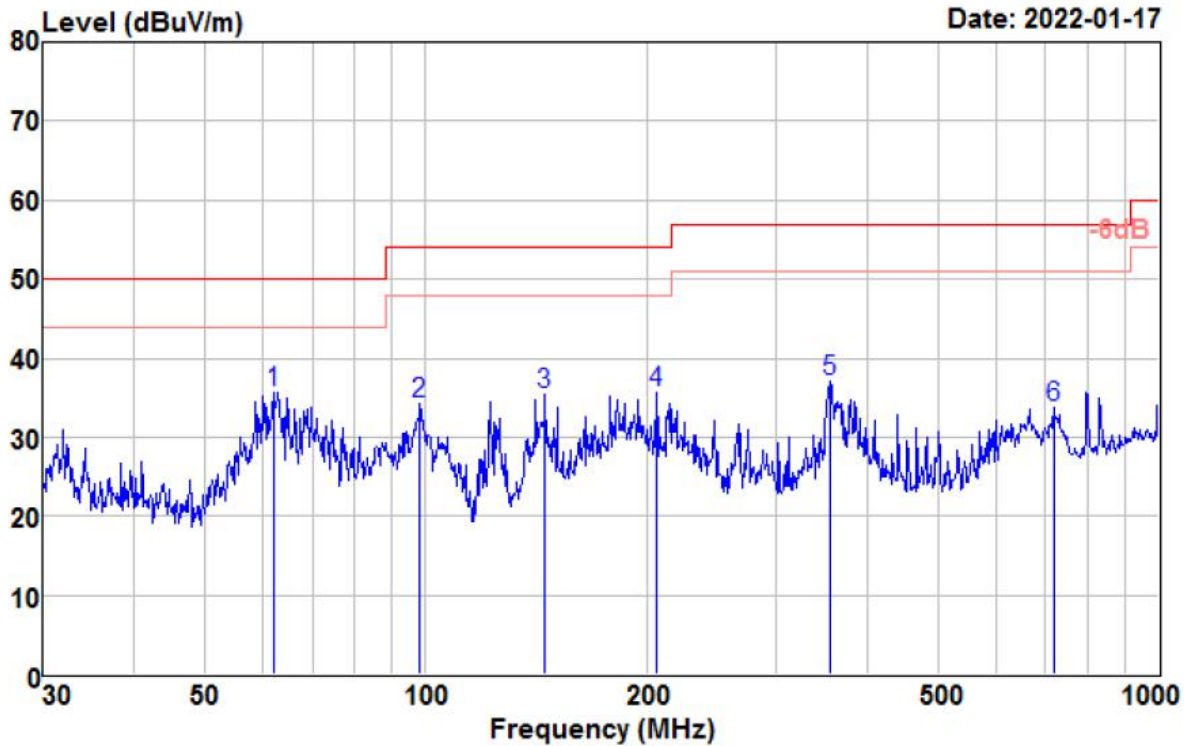


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
34.882	54.70	19.63	0.94	32.60	42.67	50.00	-7.33	QP
64.887	53.60	19.45	1.33	32.57	41.81	50.00	-8.19	QP
97.456	51.23	14.83	1.64	32.51	35.19	54.00	-18.81	QP
125.446	52.56	17.97	1.91	32.53	39.91	54.00	-14.09	QP
164.908	46.91	19.65	2.20	32.56	36.20	54.00	-17.80	QP
357.929	46.90	20.19	3.33	32.66	37.76	57.00	-19.24	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

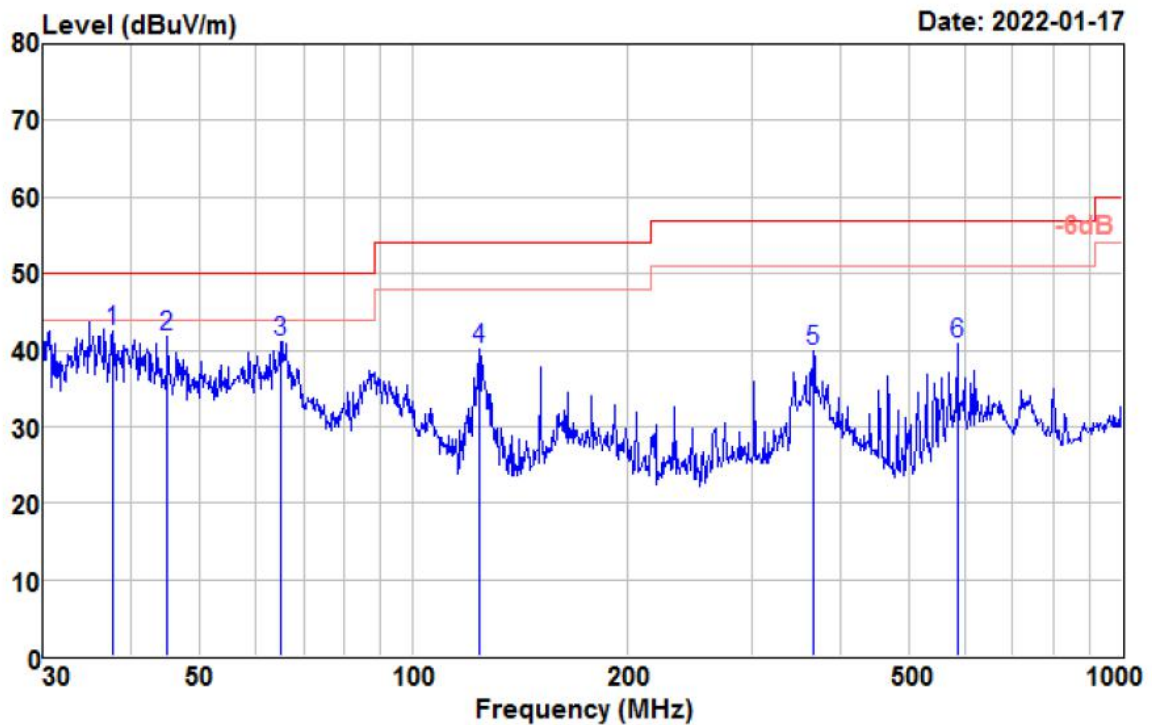


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
61.995	46.80	20.16	1.31	32.58	35.69	50.00	-14.31	QP
98.142	50.21	14.88	1.65	32.50	34.24	54.00	-19.76	QP
145.351	46.00	19.99	2.05	32.55	35.49	54.00	-18.51	QP
206.398	49.79	15.96	2.48	32.60	35.63	54.00	-18.37	QP
355.427	46.25	20.13	3.31	32.66	37.03	57.00	-19.97	QP
719.200	35.19	26.15	4.90	32.58	33.66	57.00	-23.34	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC24V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

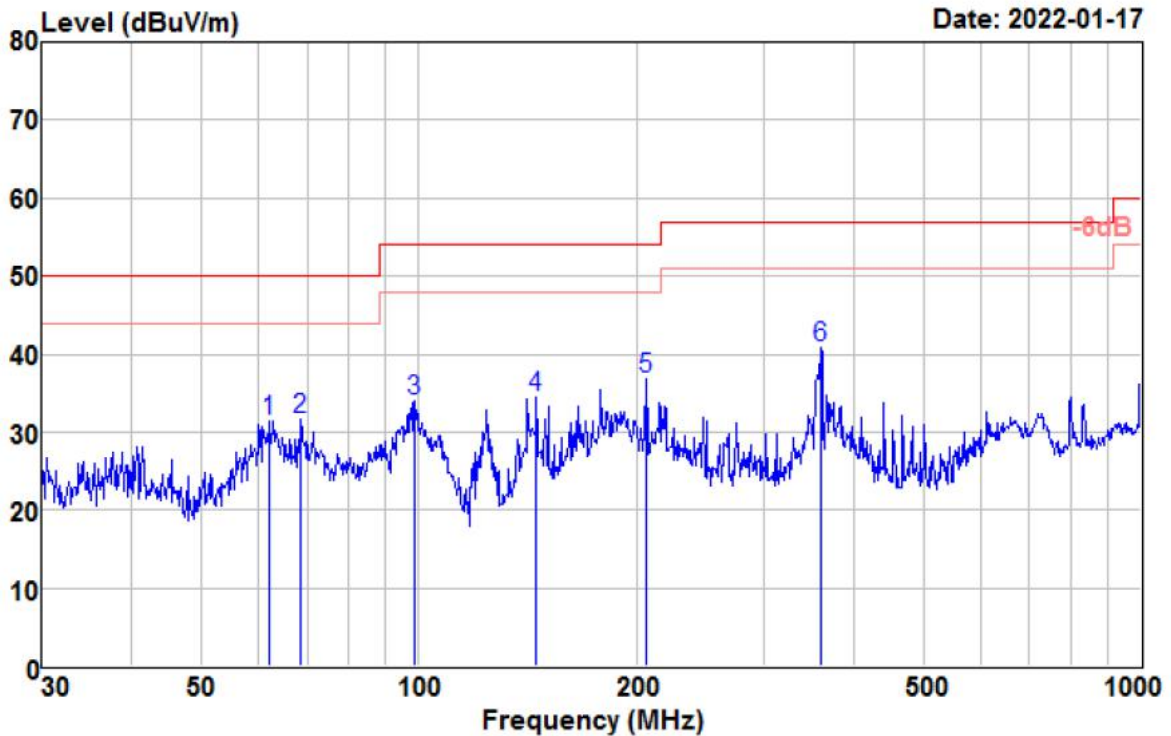


Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
37.680	54.34	19.89	0.97	32.60	42.60	50.00	-7.40	QP
45.058	52.47	20.83	1.10	32.60	41.80	50.00	-8.20	QP
64.887	52.87	19.45	1.33	32.57	41.08	50.00	-8.92	QP
123.699	52.92	17.75	1.90	32.52	40.05	54.00	-13.95	QP
366.823	48.75	20.44	3.39	32.67	39.91	57.00	-17.09	QP
584.790	44.85	24.40	4.37	32.72	40.90	57.00	-16.10	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Horizontal
Test Voltage :	DC48V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level

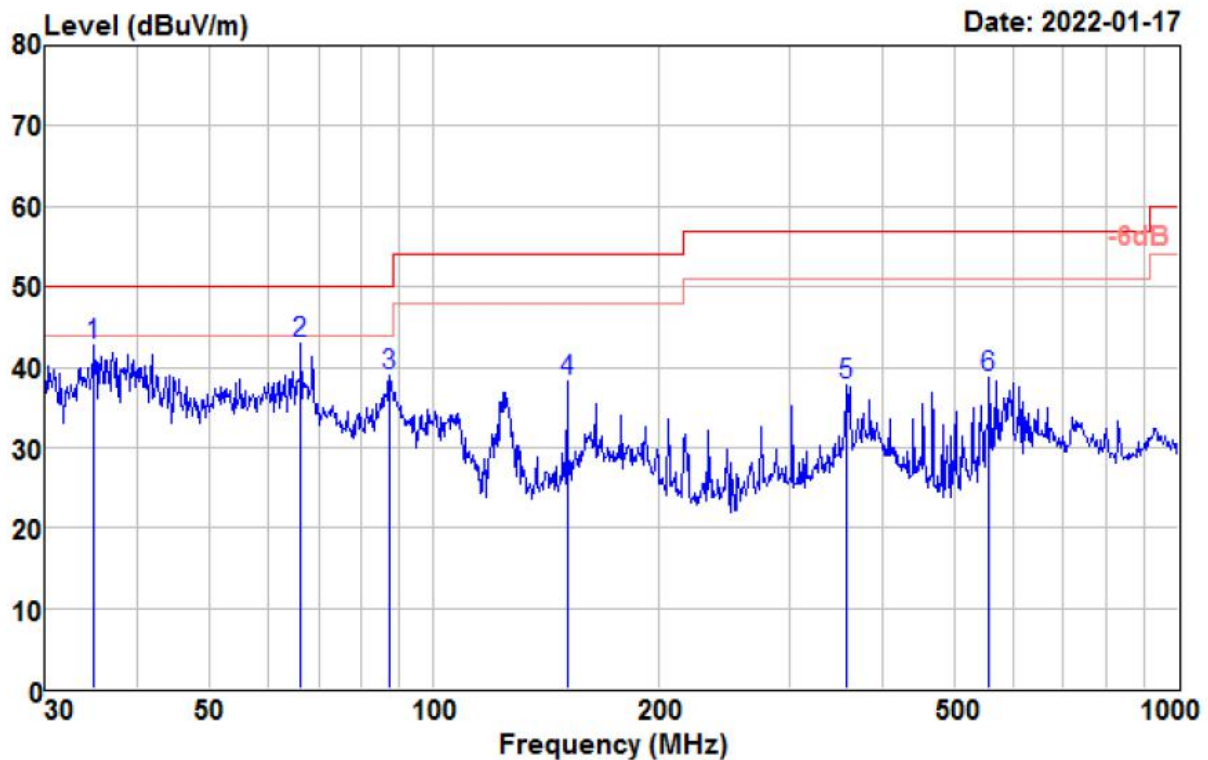


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
62.213	42.63	20.11	1.31	32.58	31.47	50.00	-18.53	QP
68.631	44.41	18.52	1.37	32.56	31.74	50.00	-18.26	QP
98.487	49.84	14.90	1.65	32.50	33.89	54.00	-20.11	QP
145.351	44.93	19.99	2.05	32.55	34.42	54.00	-19.58	QP
206.398	51.03	15.96	2.48	32.60	36.87	54.00	-17.13	QP
360.448	49.87	20.25	3.35	32.66	40.81	57.00	-16.19	QP

Test Mode :	Mode1	Temperature :	22°C
Test Engineer :	Forest Chen	Relative Humidity :	51%
Test Distance :	3m	Polarization :	Vertical
Test Voltage :	DC48V	Model :	ISE2008D

■ Emission level (dB μ V/m) = 20 log Emission level (μ V/m)

■ Corrected Reading: Antenna Factor + Cable Loss + Reading Level - Preamp Factor = Level



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.005	54.68	19.64	0.94	32.60	42.66	50.00	-7.34	QP
66.266	55.05	19.10	1.35	32.57	42.93	50.00	-7.07	QP
87.112	55.46	14.38	1.54	32.53	38.85	50.00	-11.15	QP
151.067	48.49	20.26	2.11	32.55	38.31	54.00	-15.69	QP
357.929	47.02	20.19	3.33	32.66	37.88	57.00	-19.12	QP
556.774	43.47	23.70	4.23	32.74	38.66	57.00	-18.34	QP

5 List of Measuring Equipment

Test Equipment for Conducted Emission					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
LISN	R&S	ENV216	102125	2021-12-29	2022-12-28
LISN	R&S	ENV432	101327	2021-12-29	2022-12-28
EMI Test Receiver	R&S	ESR3	102143	2021-12-30	2022-12-29
EMI Test Software	Audix	E3	N/A	N/A	N/A
Test Equipment for Radiated Emission					
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
EMI Test Receiver	R&S	ESR-3	102144	2021-12-30	2022-12-29
Amplifier	Sonoma	310	363917	2021-12-29	2022-12-28
Broadband Antenna	Schwarzbeck	VULB 9168	9168-757	2020-09-27	2023-09-26
EMI Test Software	Audix	E3	N/A	N/A	N/A

N/A: No Calibration Required

6 Uncertainty of Evaluation

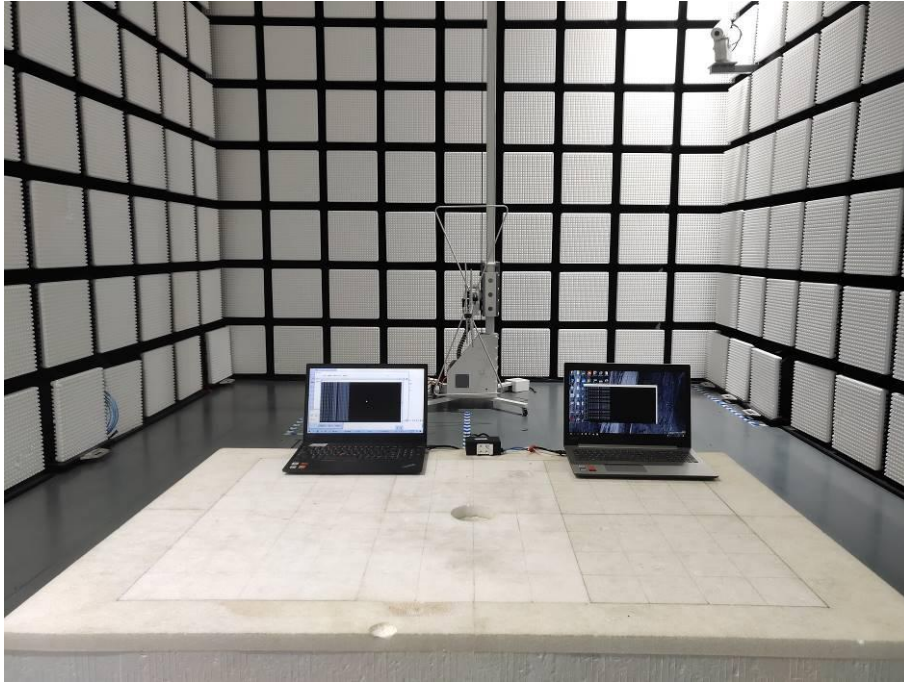
Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.42dB
Radiated emission	30MHz ~ 1GHz	3.84dB

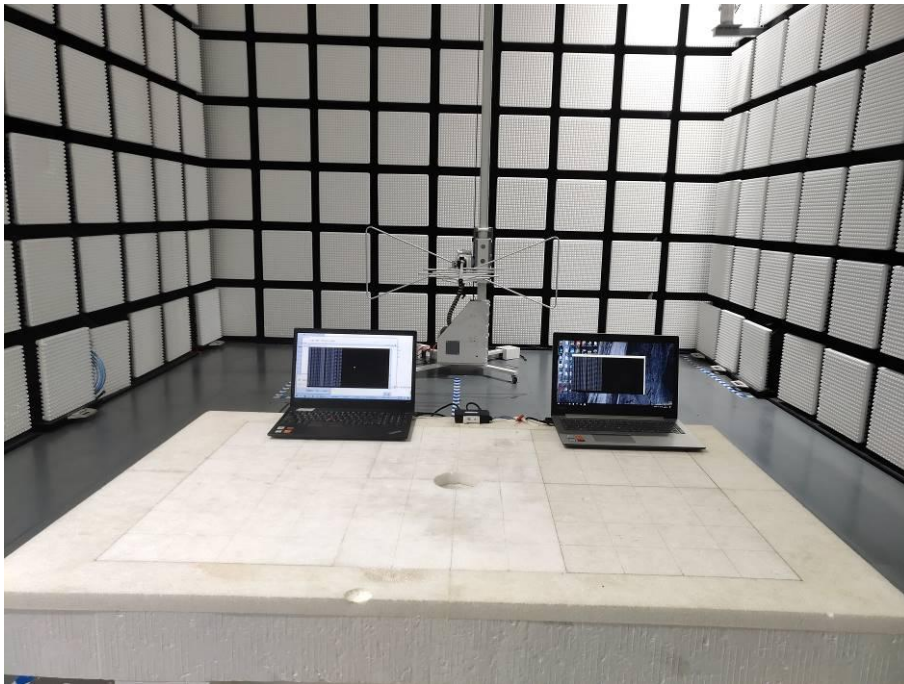
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Appendix A. Setup Photographs

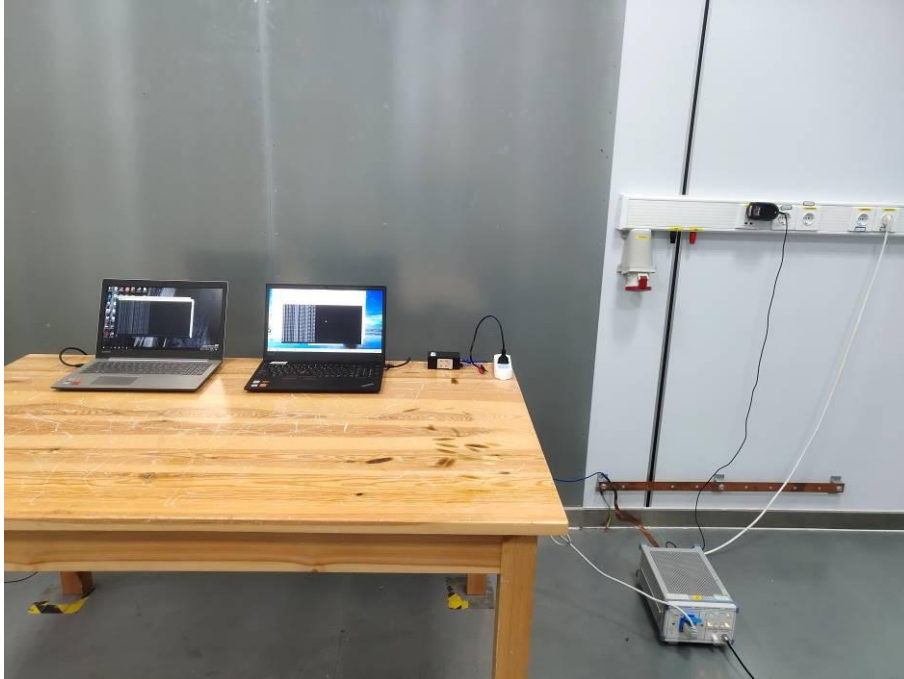
Radiated Emission Test Setup(ISE2008D)



Radiated Emission Test Setup(ISE5005D)



AC Conducted Emission Test Setup(ISE2008D)



AC Conducted Emission Test Setup(ISE5005D)



Appendix B. Photographs of EUT

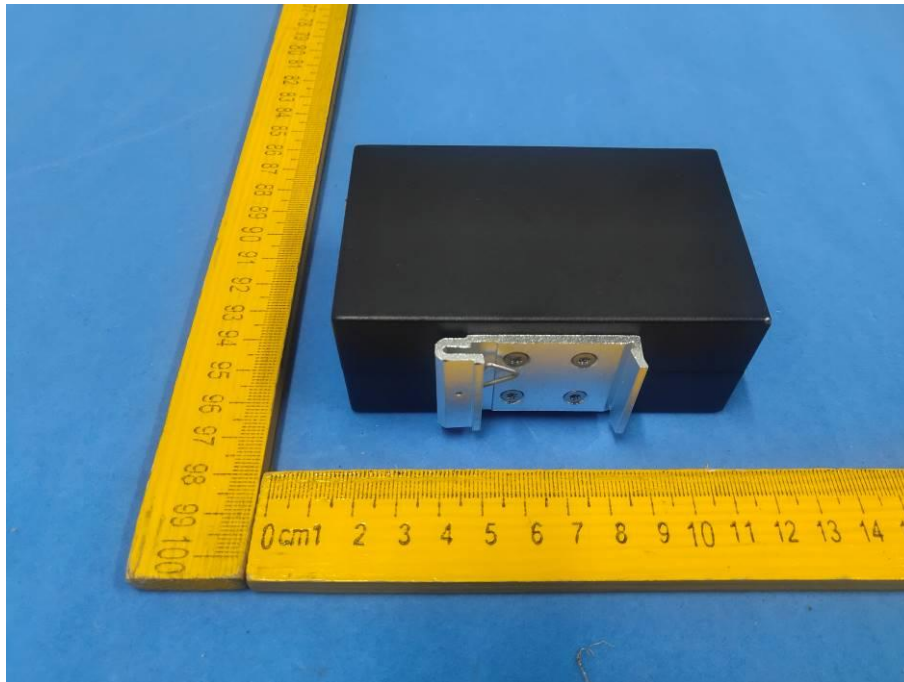
ISE2008D Side View



ISE2008D Side View



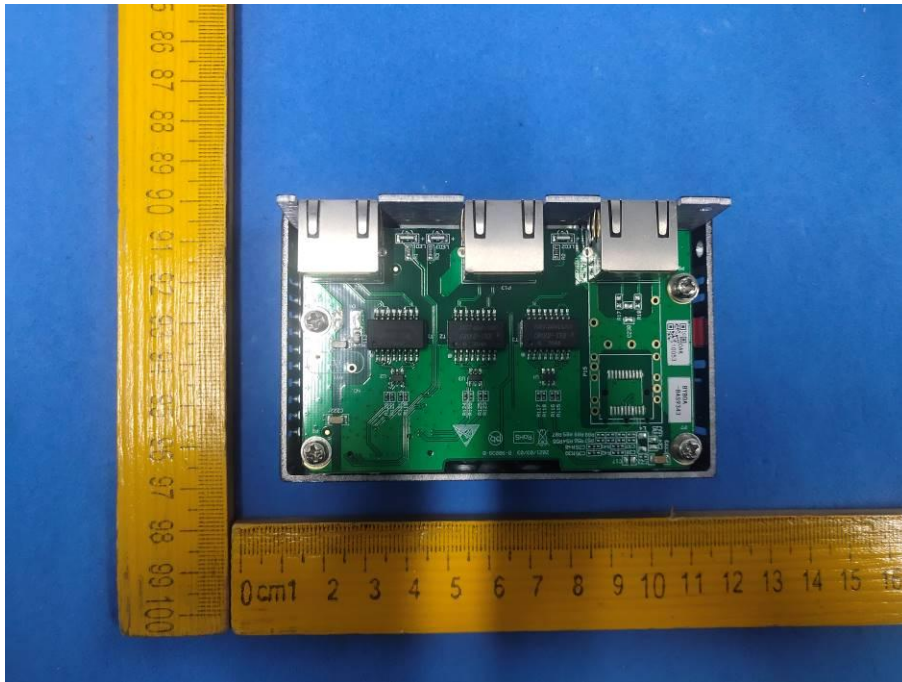
ISE2008D Side View



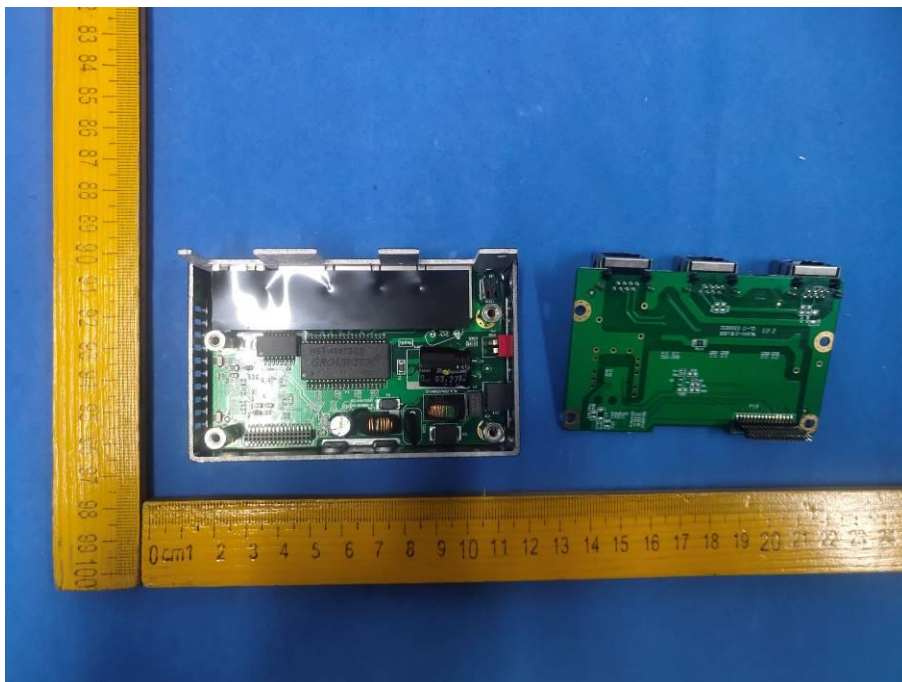
ISE2008D Side View



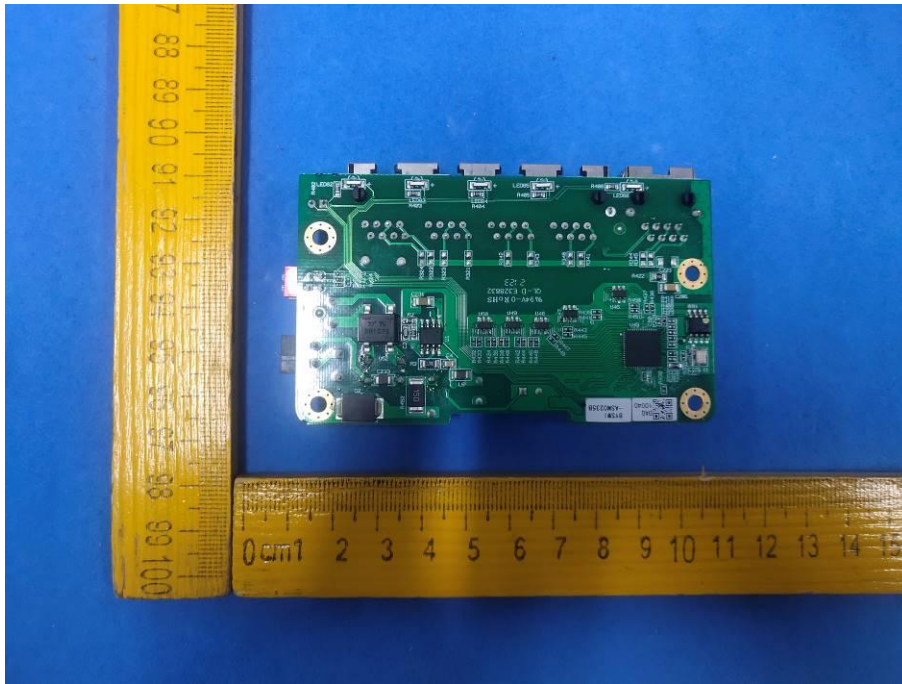
ISE2008D Inside View



ISE2008D Inside View



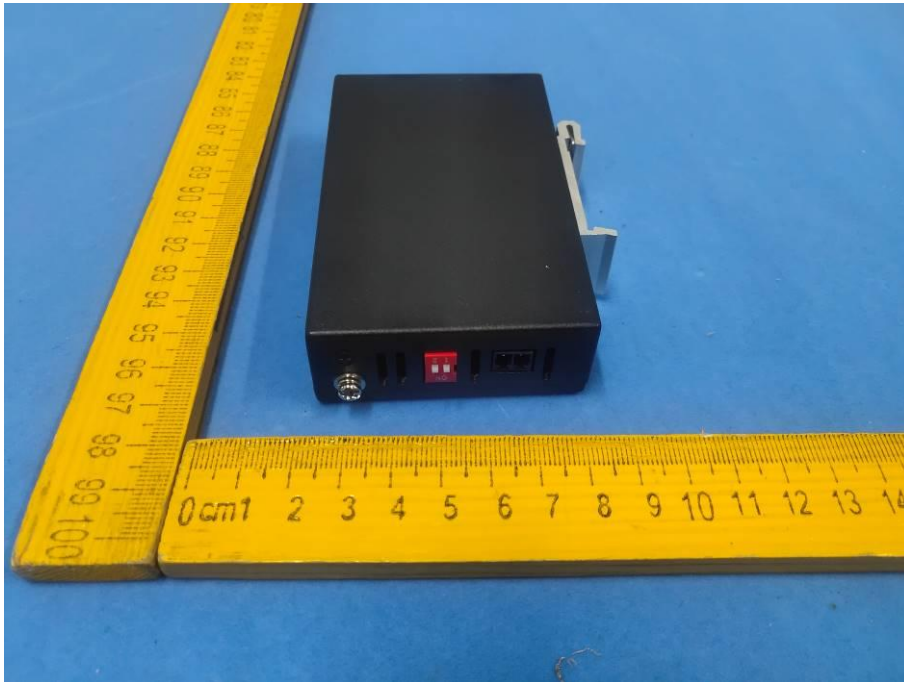
ISE2008D Inside View



ISE5005D Side View



ISE5005D Side View



ISE5005D Side View



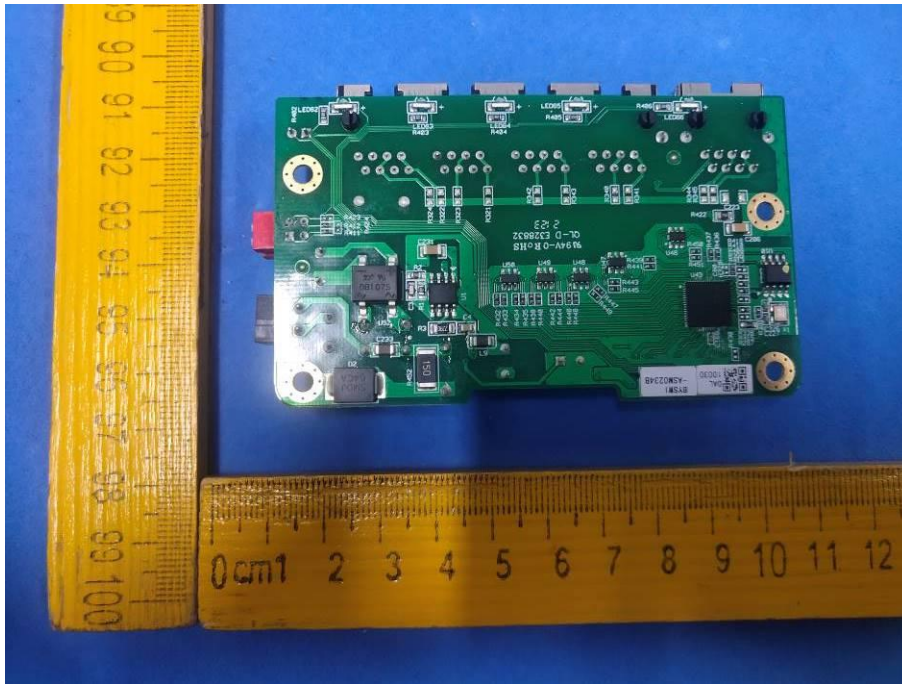
ISE5005D Side View



ISE5005D Inside View



ISE5005D Inside View



Appendix C. DECLARATION OF SIMILARITY

Declaration letter

Beijing InHand Networks Technology Co., Ltd.

Dear Sir,

For our business issue and marketing requirement, we would like to list different models numbers on the CE/FCC certificates and reports, as following:

Test Model No.: ISE2008D/ISE5005D

Series Models NO:

ISE1002D, ISE1003D, ISE1005D, ISE1008D, ISE2002E, ISE2002D, ISE2003D,

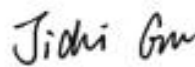
ISE2005D, ISE2305D, ISE2308D, ISE5002D, ISE5003D, ISE5008D, ISE5305D,

ISE5306D, ISE5308D

The eighteen models are the same in these: Hardware design. The final number of each product model represents the number of network ports in the product, and for models which final number is "8" for eight network ports have designed two pieces of PCB, others model only one pieces of PCB, e.g. ISE2008D has two pieces of PCB for eight network ports, and the ISE5005D has one pieces of PCB for five network ports. The product models with same final number are original product applied in different markets and industries.

Thank you!

Signature:



Printed name/title: Jichi Gu/ EMC engineer

Address: Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing

-----End of the report-----