

TEST REPORT

Applicant: Yoshinichi Co.,Ltd
Address of Applicant: Room 1620, JinHao Building, Guangshen Road No.109, Fuyong Town, Baoan District, Shenzhen, China.
Manufacturer/Factory: Yoshinichi Co.,Ltd
Address of Manufacturer/Factory: Room 1620, JinHao Building, Guangshen Road No.109, Fuyong Town, Baoan District, Shenzhen, China.

Equipment Under Test (EUT)

Product Name: LED MODULE
Model No.: MH902QHE-100, MH902QHE-XX(XXmay be replaced with 001~100, indicates the serial number, power:2.5W-250W)
Trade Mark: YOSHINICHI

Applicable Standards: J55015(H29)

Date of sample receipt: August 18, 2022

Date of Test: August 18- 24, 2022

Date of report issued: August 24, 2022

Test Result : Pass *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Luo
Laboratory Manager



This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	August 24, 2022	Original

Prepared By:



Date:

August 24, 2022

Project Engineer

Reviewed By:



Date:

August 24, 2022

Reviewer

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4 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Electromagnetic Disturbance Test: 9kHz-30MHz	J 55015	J 55015	Table 3a	PASS
Radiated electromagnetic disturbances 30MHz to 300MHz	J 55015	J 55015	Table 3b	PASS
Conducted Emission on AC, 150kHz to 30MHz	J 55015	J 55015	Table 2a	PASS

5 General Information

5.1 General Description of EUT

Product Name:	LED MODULE
Model No.:	MH902QHE-100, MH902QHE-XX(XX may be replaced with 001~100, indicates the serial number, power:2.5W-250W)
Test Model No:	MH902QHE-100
Power Supply:	AC100V, 50/60Hz

5.2 Test mode and voltage

Test mode:	
Operation mode	Keep the EUT in the operation status
Test in 50/60Hz to find the worst case.	
Test voltage:	
AC 100V, 50/60Hz	

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All other test items were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480; Fax: 0755-27798960

6 Test Instruments List

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17, 2021	Oct. 16, 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17, 2021	Oct. 16, 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17, 2021	Oct. 16, 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

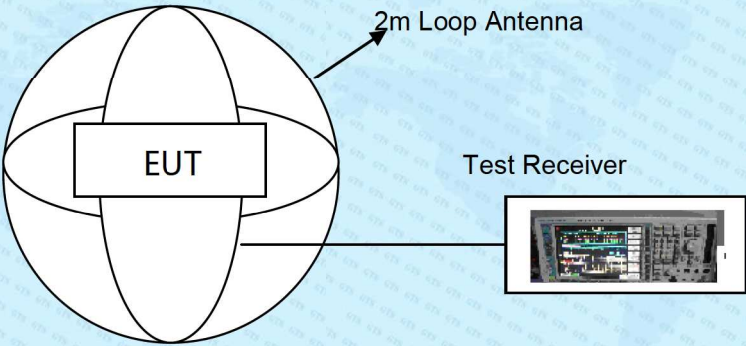
Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

Loop						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	TPIPLE-LOOP ANTENNA	EVERFINE	LLA-2	GTS539	April 22, 2022	April 21, 2023

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

7 Emission Test Results

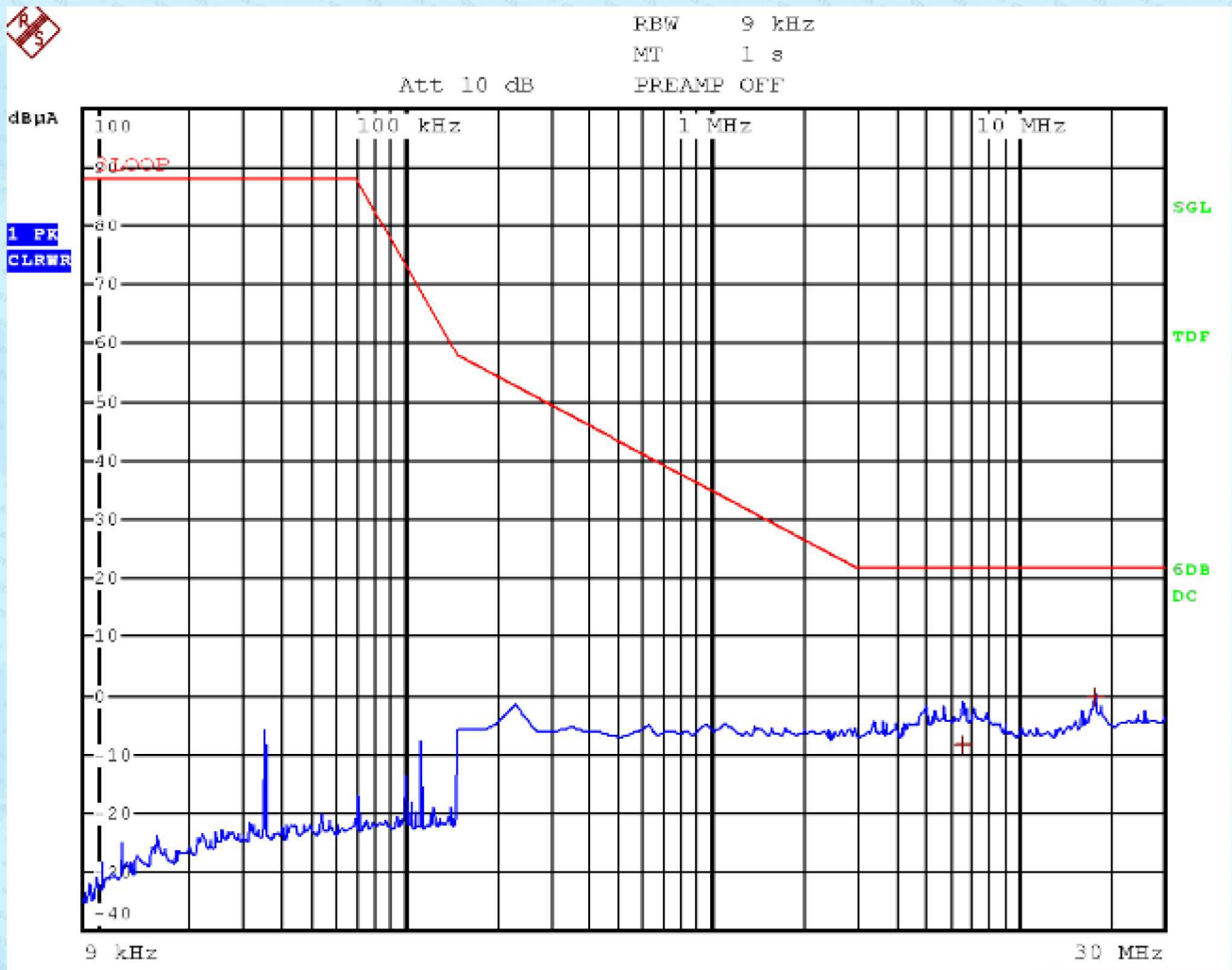
7.1 Radiated Electromagnetic Disturbance(150kHz-30MHz)

Test Requirement:	J 55015																			
Test Method:	J 55015																			
Test Frequency Range:	150kHz to 30MHz																			
Class / Severity:	Table 3a of J 55015																			
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="3">Limits for loop diameter dB(μA)</th> </tr> <tr> <th>2m</th> <th>3m</th> <th>4m</th> </tr> </thead> <tbody> <tr> <td>0.15-2.2</td> <td>58 ~ 26**</td> <td>51 ~ 22**</td> <td>45 ~ 16**</td> </tr> <tr> <td>2.2-3.0</td> <td>58</td> <td>51</td> <td>45</td> </tr> <tr> <td>3.0-30</td> <td>22</td> <td>15 ~ 16***</td> <td>9 ~ 12***</td> </tr> </tbody> </table> <p>**Decreasing linearly with the logarithm of the frequency. ***Increasing linearly with the logarithm of the frequency.</p>	Frequency range (MHz)	Limits for loop diameter dB(μA)			2m	3m	4m	0.15-2.2	58 ~ 26**	51 ~ 22**	45 ~ 16**	2.2-3.0	58	51	45	3.0-30	22	15 ~ 16***	9 ~ 12***
Frequency range (MHz)	Limits for loop diameter dB(μA)																			
	2m	3m	4m																	
0.15-2.2	58 ~ 26**	51 ~ 22**	45 ~ 16**																	
2.2-3.0	58	51	45																	
3.0-30	22	15 ~ 16***	9 ~ 12***																	
Test setup:																				
Detector:	Peak for pre-scan 200Hz resolution bandwidth between 9kHz & 150kHz 9kHz resolution bandwidth between 150kHz & 30MHz Quasi-peak scan if maximised peak with 6dB of quasi-peak limit																			
Test procedure	An initial pre-scan was performed in the 2m loop antenna using the spectrum analyser in peak detection mode. The EUT was measured for X(A), Y(B), Z(C) polarities.No further quasi-peak measurements were performed since no peak emissions from the EUT were detected within 6dB of the limit for 2m diameter loop antenna.																			
Test Instruments:	Temp.: 23.5 °C Humid.: 50% Press.: 1 012mbar																			
Measurement Record:	Uncertainty: 3.26dB																			
Test Instruments:	Refer to section 6 for details																			
Test mode:	Refer to section 5.2 for details only show the worst case.(AC100V 50Hz)																			
Test results:	Pass																			

Measurement Data

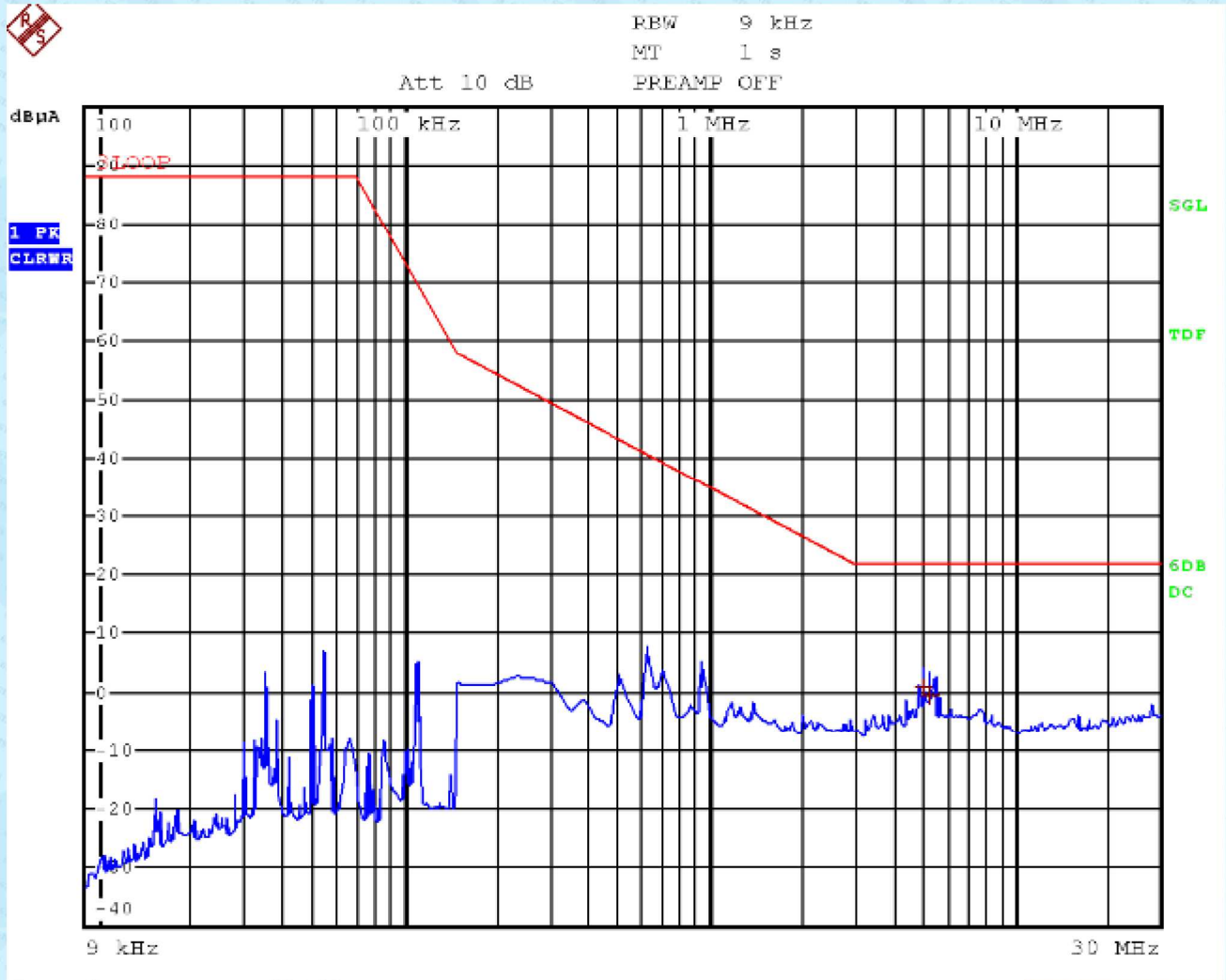
X100

X:



Trace1:	3LOOP		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	6.59 MHz	-8.15	-30.15
1 Quasi Peak	17.71 MHz	-0.08	-22.08

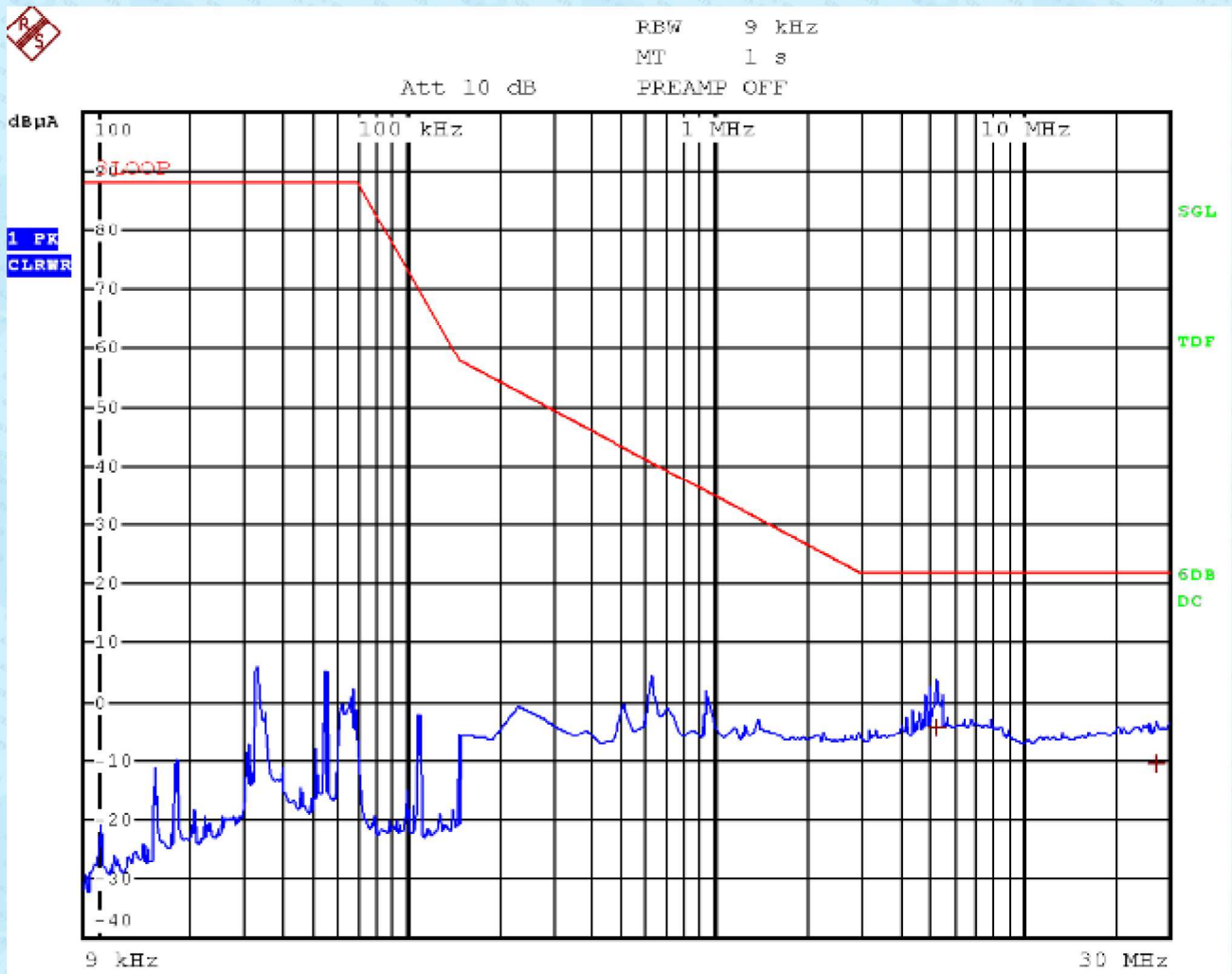
Y:



Trace1: 3LOOP
 Trace2: ---
 Trace3: ---

TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	5.03 MHz	1.03	-20.96
1 Quasi Peak	5.27 MHz	-0.55	-22.55

Z:

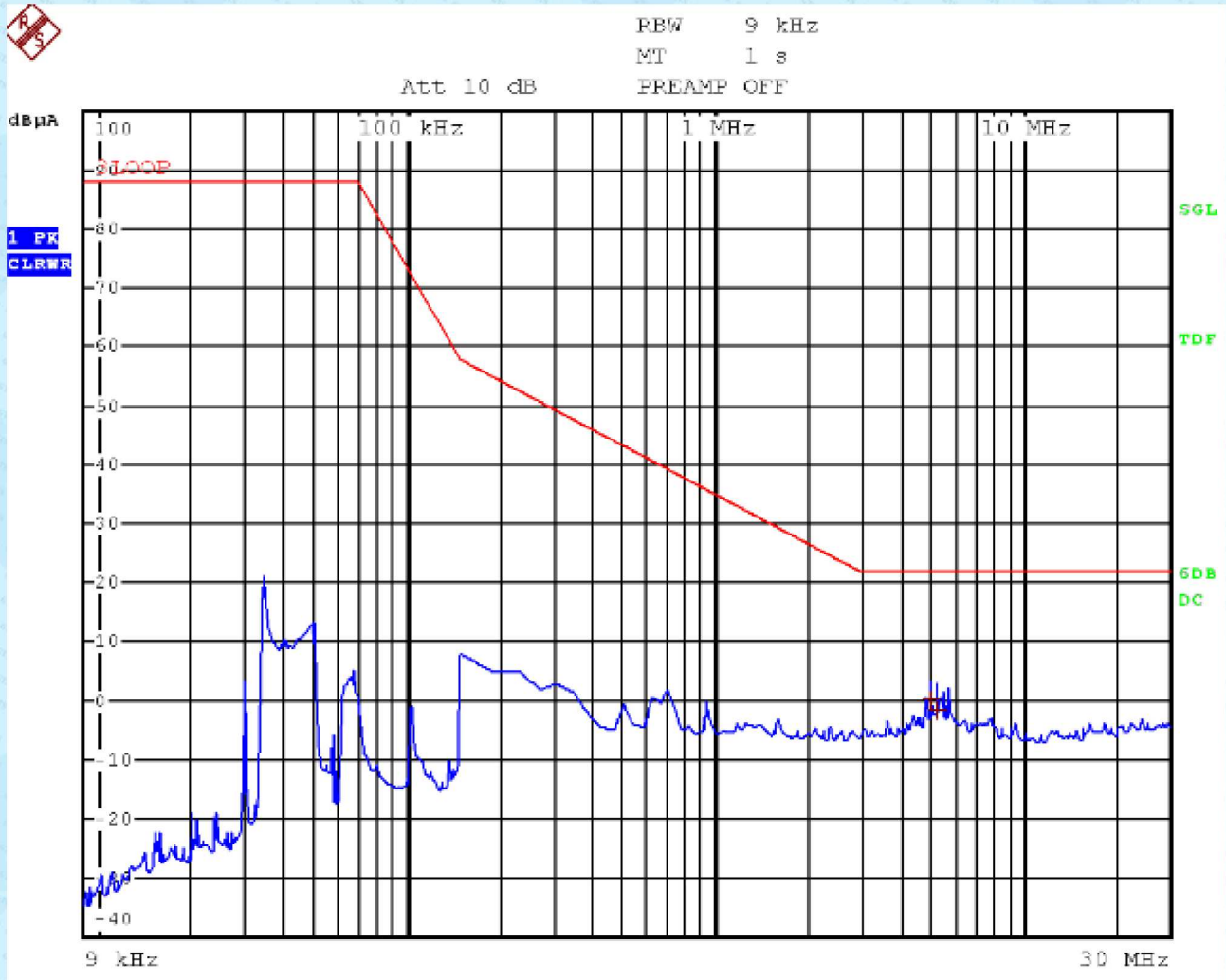


Trace1: 3LOOP
Trace2: ---
Trace3: ---

TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	9.23 MHz	-4.01	-26.01
1 Quasi Peak	27.39 MHz	-10.43	-32.43

X1

X:



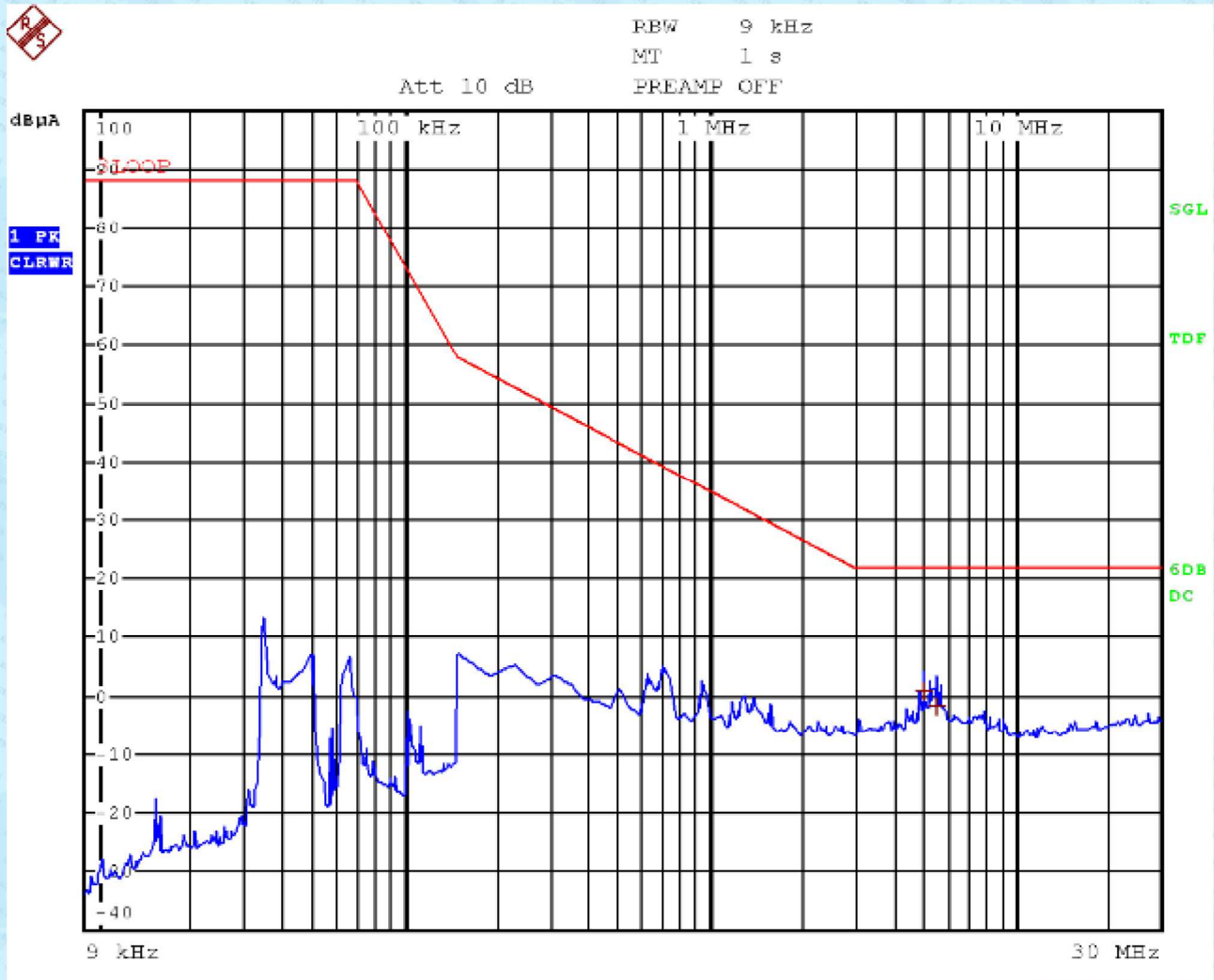
Trace1: 3LOOP

Trace2: ---

Trace3: ---

TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	5.03 MHz	0.25	-21.74
1 Quasi Peak	5.27 MHz	-1.51	-23.51

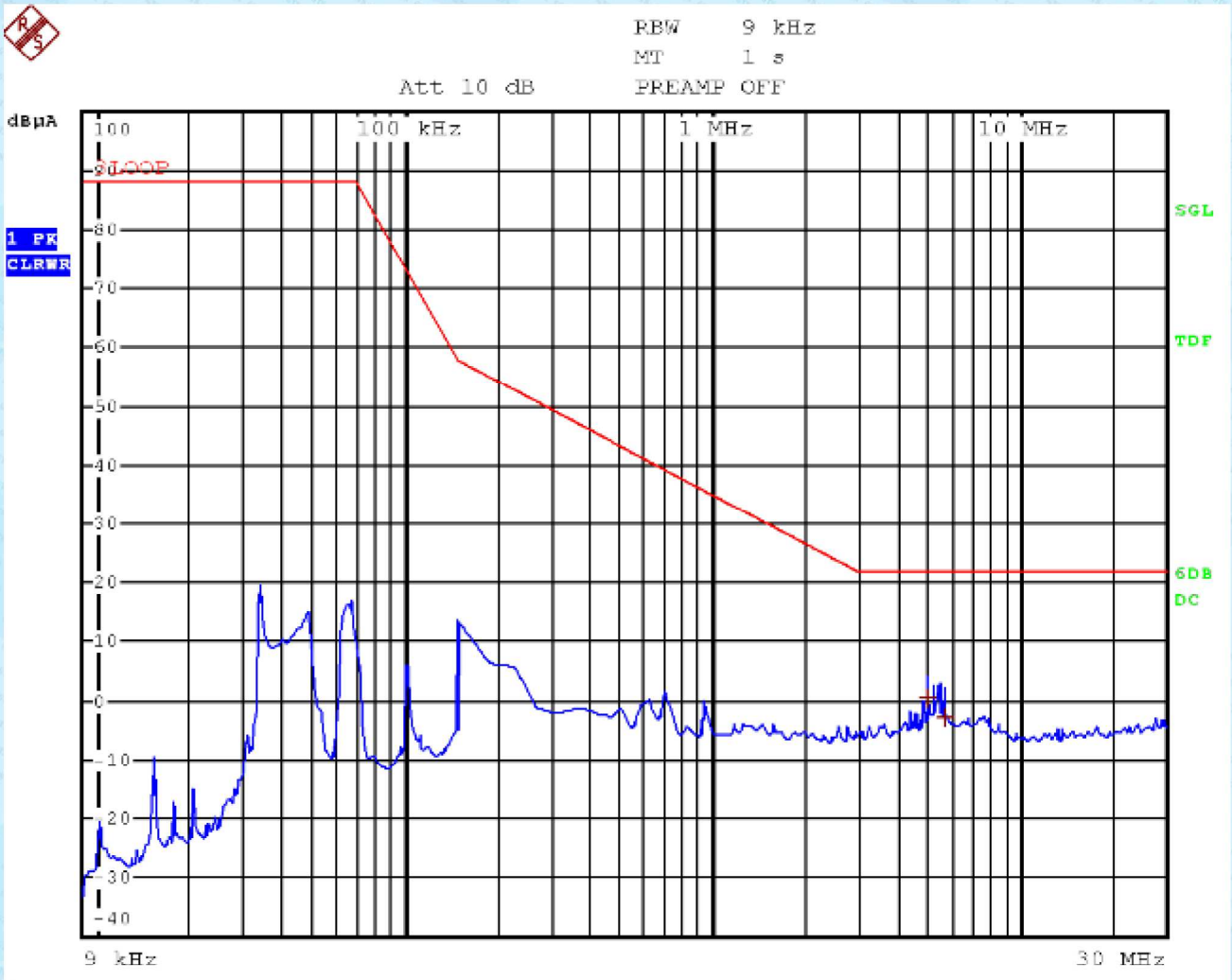
Y:



Trace1: 3LOOP
Trace2: ---
Trace3: ---

TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	5.03 MHz	1.08	-20.92
1 Quasi Peak	5.51 MHz	-1.60	-23.60

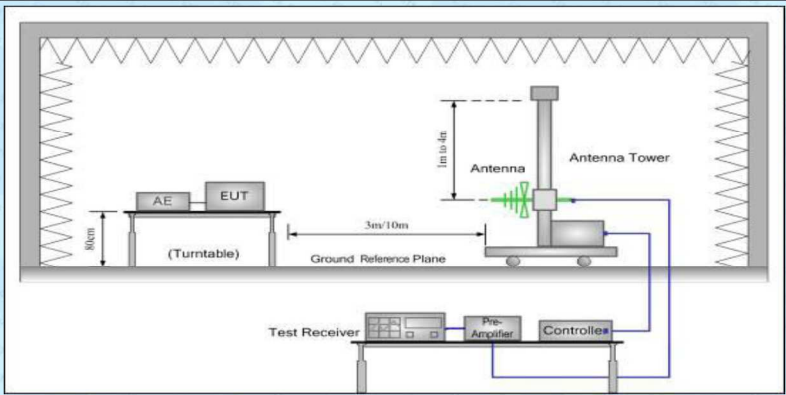
Z:



Trace1: 3100P
Trace2: ---
Trace3: ---

TRACE	FREQUENCY	LEVEL dBμA	DELTA LIMIT dB
1 Quasi Peak	5.03 MHz	0.73	-21.26
1 Quasi Peak	5.71 MHz	-2.82	-24.82

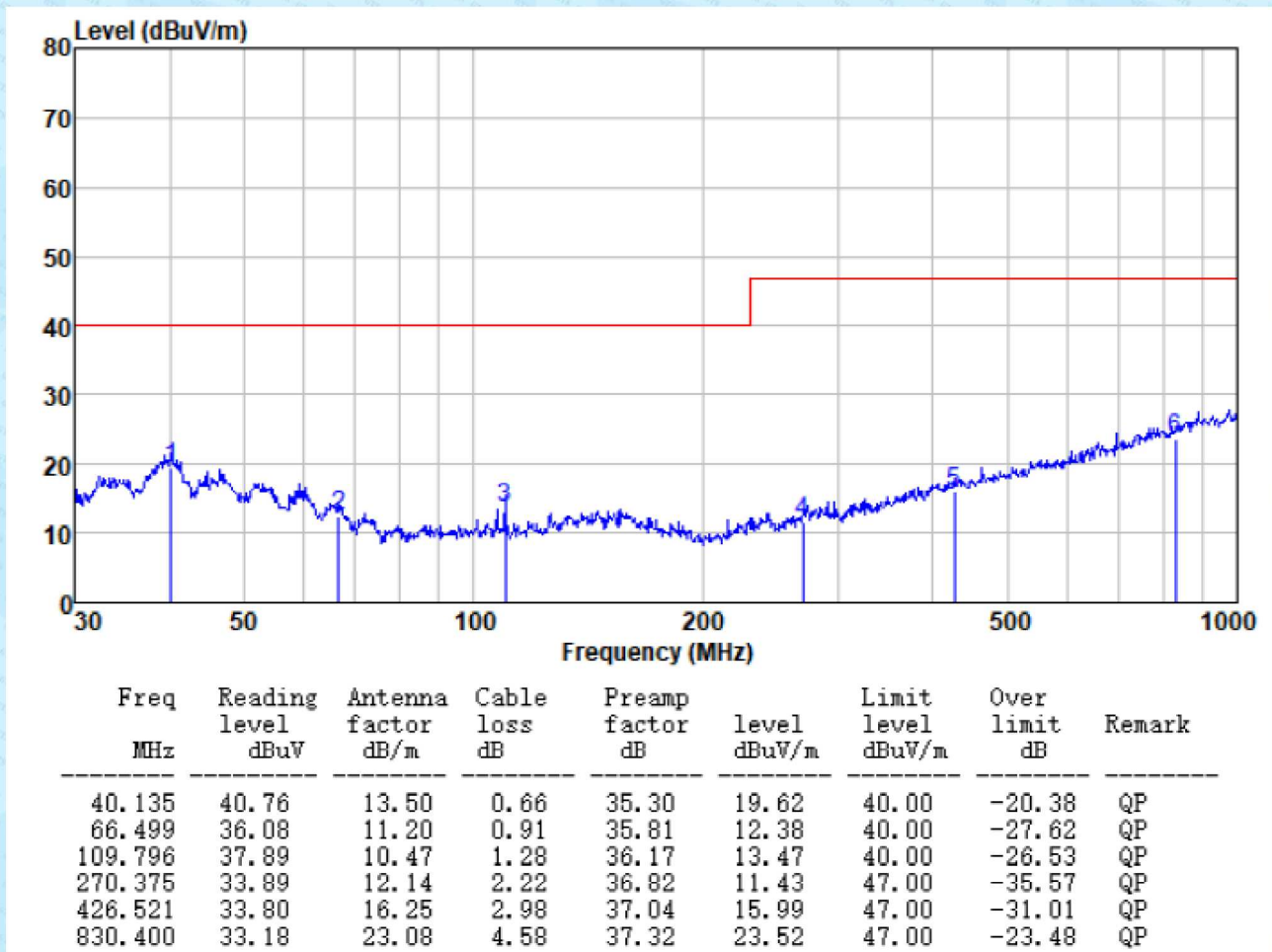
7.1 Radiated electromagnetic disturbances(30MHz-300MHz)

Test Requirement:	J 55015					
Test Method:	J 55015					
Class / Severity:	Table 3b of J 55015					
Test Frequency Range:	30MHz to 300MHz					
Test site:	Measurement Distance: 3m					
Limit:	Frequency range(MHz)			Limit @3m (dBuV)		
	30 to 230			40.00		
	230 to 300			47.00		
	* At the transition frequency, the lower limit applies.					
Test setup:						
Test procedure	<ol style="list-style-type: none"> 1. The radiated emissions test was conducted in a semi-anechoic chamber. 2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation. 3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT. 4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization. 					
Test Instruments:	Temp.:	25 °C	Humid.:	50%	Press.:	1 012mbar
Measurement Record:	Uncertainty: 3.8039dB (30MHz-200MHz) 3.9679dB (200MHz-1GHz)					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details only show the worst case.(AC100V 50Hz)					
Test results:	Pass					

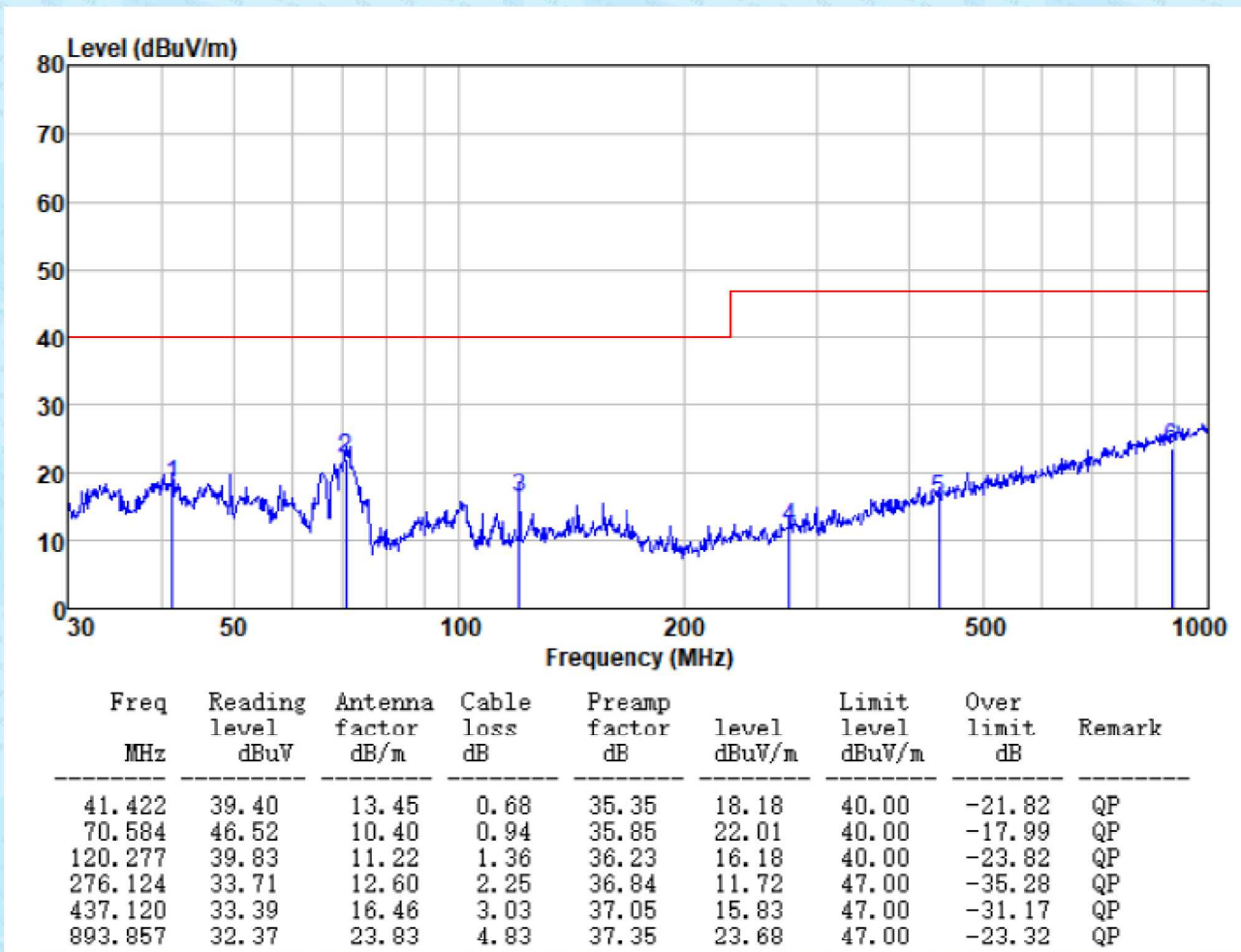
Measurement Data

X100

Test mode:	Operation mode	Antenna Polarity:	Horizontal
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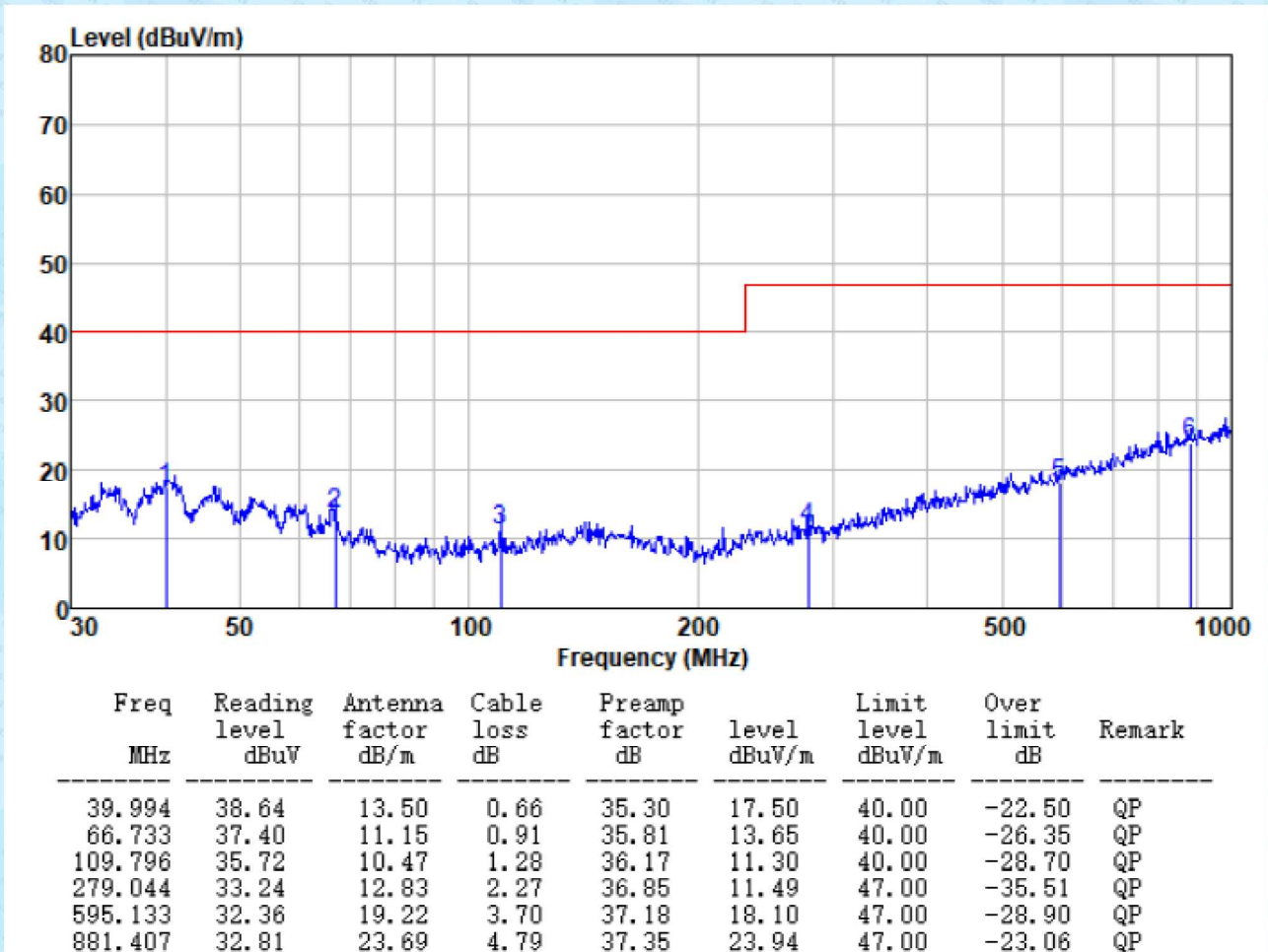


Test mode:	Operation mode	Antenna Polarity:	Vertical
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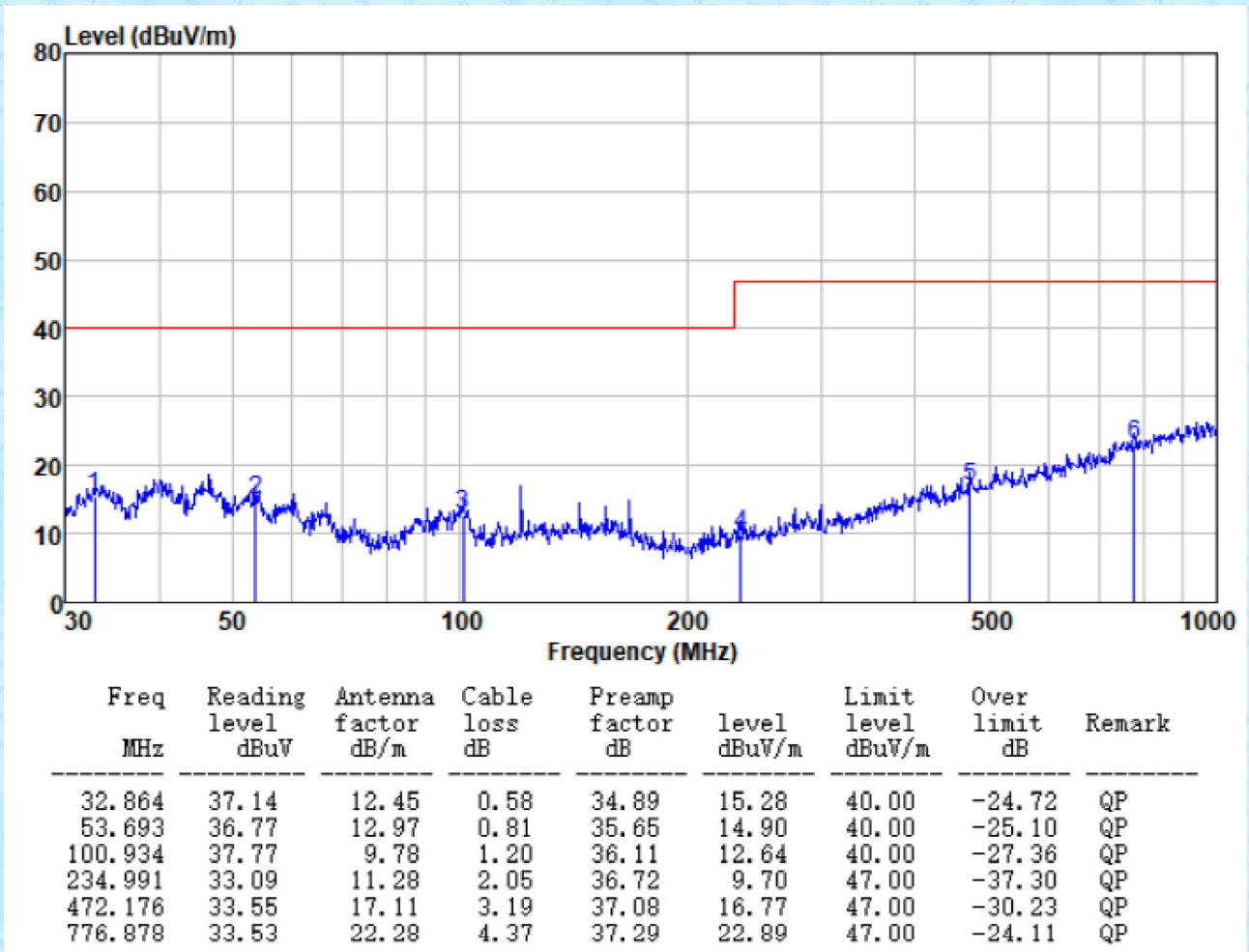


X1

Test mode:	Operation mode	Antenna Polarity:	Horizontal
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Test mode:	Operation mode	Antenna Polarity:	Vertical
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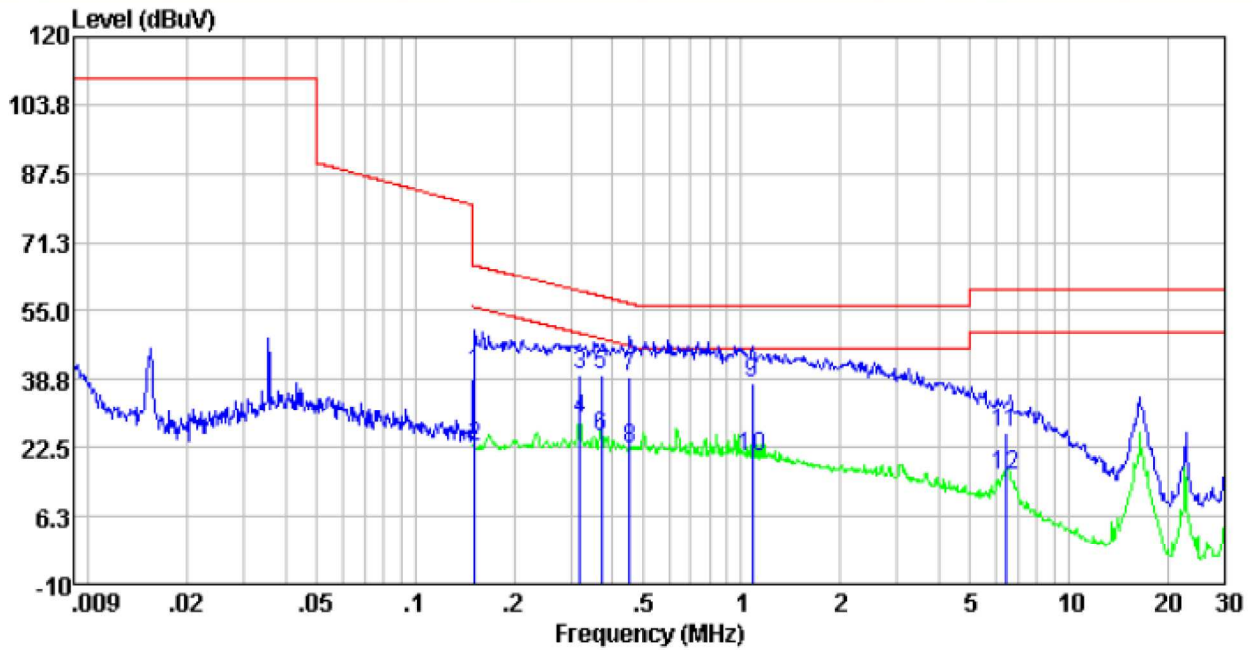
7.2 Disturbance voltages

Test Requirement:	J 55015					
Test Method:	J 55015					
Test Frequency Range:	150kHz to 30MHz					
Class / Severity:	Table 2a of J 55015					
Limit:	Frequency range (MHz)	Limit (dBuV)				
		Quasi-peak	Average			
	0.009-0.05	110	-			
	0.05-0.15	90-80*	-			
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
5-30	60	50				
* Decreases with the logarithm of the frequency.						
Test setup:	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>					
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth), Quasi-Peak & Average if maximised peak within 6dB of Average Limit.					
Test Instruments:	Temp.:	24 °C	Humid.:	51%	Press.:	1 012mbar
Measurement Record:	Uncertainty: 3.44dB					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.2 for details only show the worst case.(AC100V 50Hz)					
Test results:	Pass					

Measurement Data

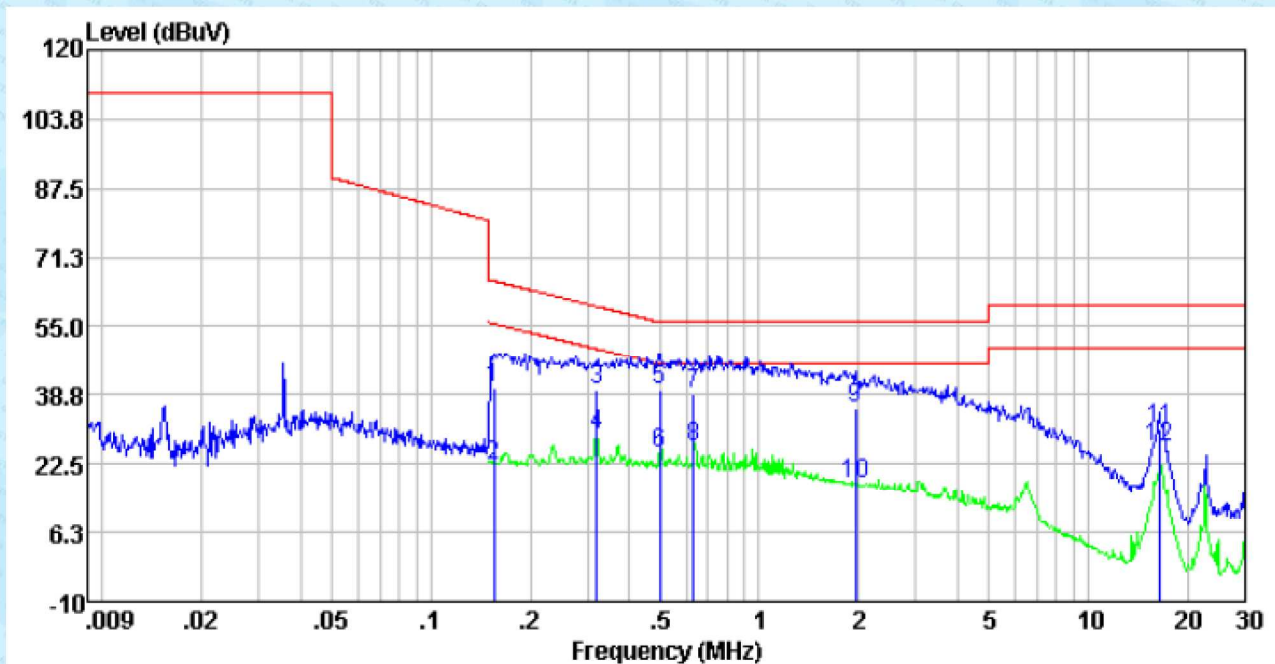
X100

Test mode:	Operation mode	Antenna Polarity:	Line
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Freq	Reading level	LISM/ISM factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.15	30.07	10.40	0.10	40.57	65.91	-25.34	QP
0.15	12.00	10.40	0.10	22.50	55.91	-33.41	Average
0.32	29.24	10.39	0.10	39.73	59.71	-19.98	QP
0.32	18.96	10.39	0.10	29.45	49.71	-20.26	Average
0.37	29.44	10.36	0.10	39.90	58.47	-18.57	QP
0.37	14.39	10.36	0.10	24.85	48.47	-23.62	Average
0.46	28.82	10.33	0.10	39.25	56.76	-17.51	QP
0.46	11.63	10.33	0.10	22.06	46.76	-24.70	Average
1.08	27.52	10.20	0.10	37.82	56.00	-18.18	QP
1.08	10.02	10.20	0.10	20.32	46.00	-25.68	Average
6.42	15.82	10.20	0.13	26.15	60.00	-33.85	QP
6.42	5.39	10.20	0.13	15.72	50.00	-34.28	Average

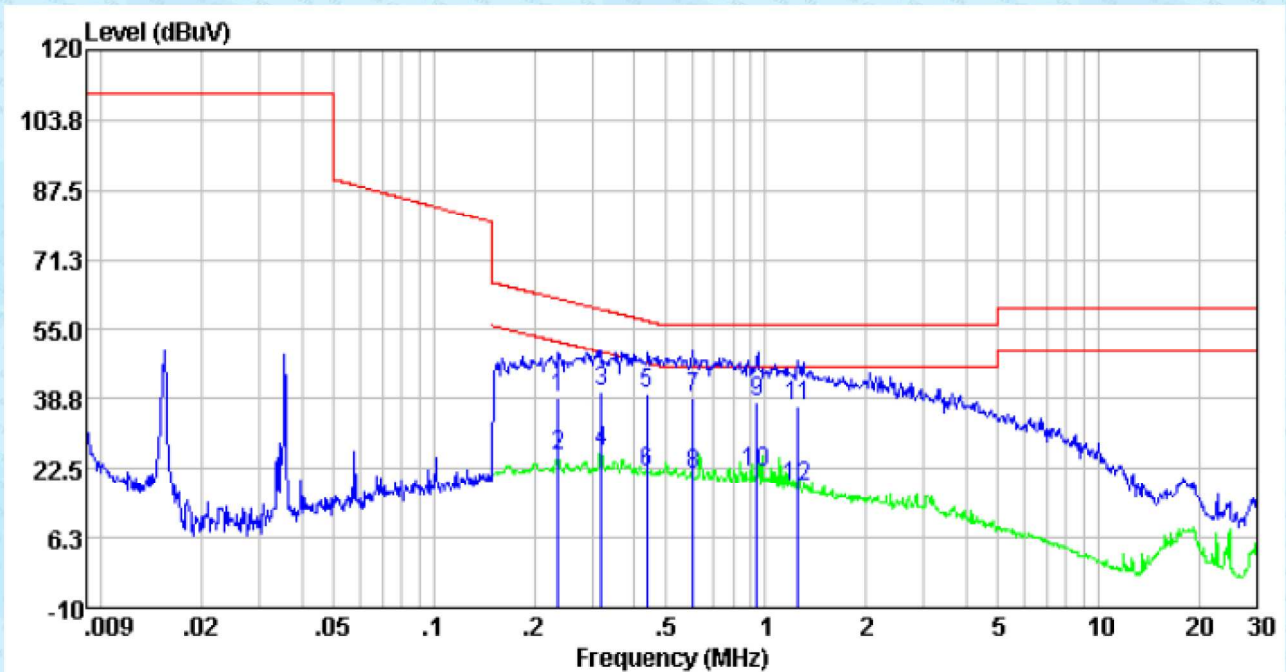
Test mode:	Operation mode	Antenna Polarity:	Neutral
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Freq	Reading level	LISM/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.15	29.99	10.40	0.10	40.49	65.74	-25.25	QP
0.15	11.87	10.40	0.10	22.37	55.74	-33.37	Average
0.32	29.54	10.39	0.10	40.03	59.71	-19.68	QP
0.32	18.99	10.39	0.10	29.48	49.71	-20.23	Average
0.50	29.25	10.32	0.10	39.67	56.01	-16.34	QP
0.50	14.41	10.32	0.10	24.83	46.01	-21.18	Average
0.63	28.79	10.28	0.10	39.17	56.00	-16.83	QP
0.63	16.28	10.28	0.10	26.66	46.00	-19.34	Average
1.97	25.29	10.20	0.10	35.59	56.00	-20.41	QP
1.97	7.36	10.20	0.10	17.66	46.00	-28.34	Average
16.53	20.15	10.23	0.20	30.58	60.00	-29.42	QP
16.53	15.93	10.23	0.20	26.36	50.00	-23.64	Average

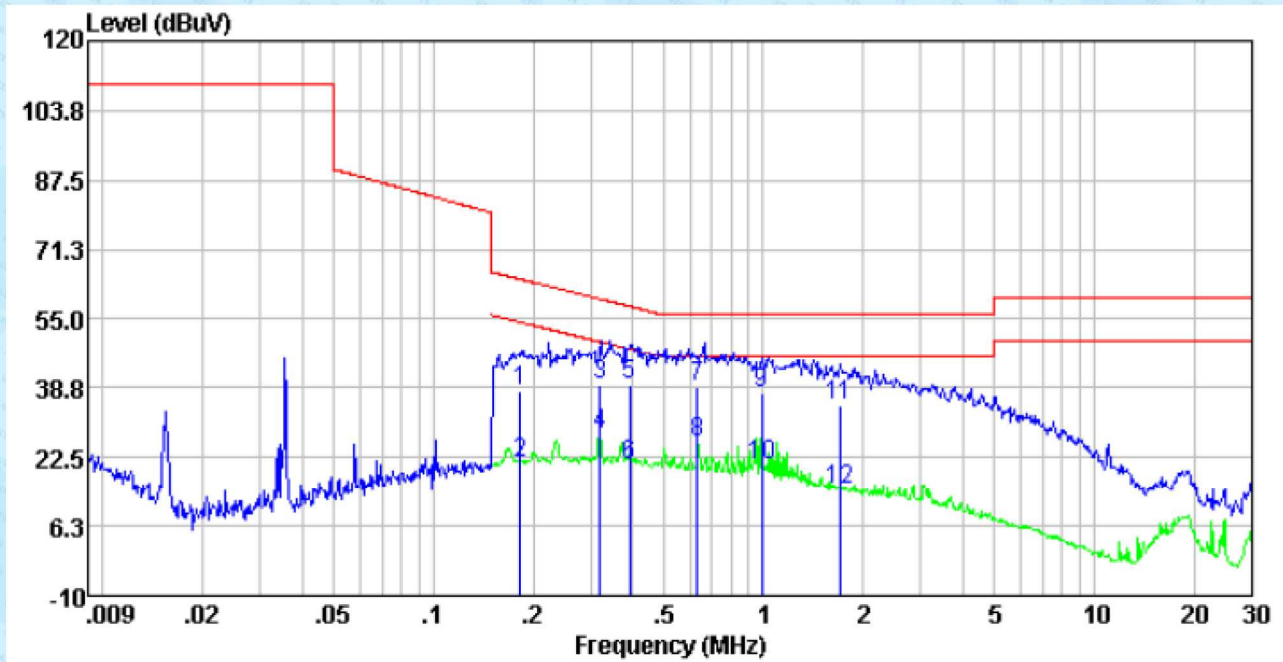
X1

Test mode:	Operation mode	Antenna Polarity:	Line
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Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.24	28.52	10.40	0.01	38.93	62.22	-23.29	QP
0.24	15.25	10.40	0.01	25.66	52.22	-26.56	Average
0.32	29.78	10.39	0.01	40.18	59.71	-19.53	QP
0.32	16.04	10.39	0.01	26.44	49.71	-23.27	Average
0.44	29.37	10.34	0.01	39.72	57.07	-17.35	QP
0.44	11.12	10.34	0.01	21.47	47.07	-25.60	Average
0.60	28.85	10.28	0.02	39.15	56.00	-16.85	QP
0.60	10.79	10.28	0.02	21.09	46.00	-24.91	Average
0.94	27.74	10.21	0.03	37.98	56.00	-18.02	QP
0.94	11.21	10.21	0.03	21.45	46.00	-24.55	Average
1.25	26.72	10.20	0.03	36.95	56.00	-19.05	QP
1.25	7.85	10.20	0.03	18.08	46.00	-27.92	Average

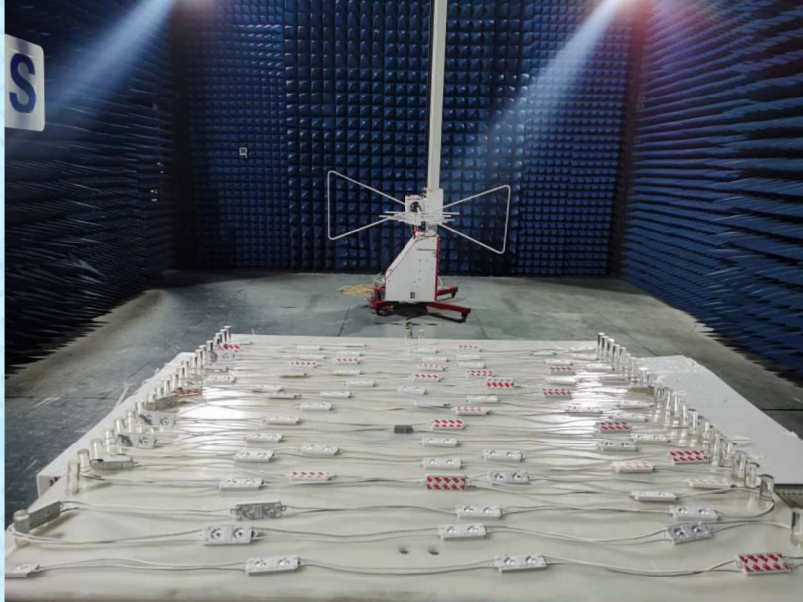
Test mode:	Operation mode	Antenna Polarity:	Neutral
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Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.18	27.48	10.40	0.01	37.89	64.33	-26.44	QP
0.18	10.85	10.40	0.01	21.26	54.33	-33.07	Average
0.32	29.03	10.39	0.01	39.43	59.71	-20.28	QP
0.32	17.69	10.39	0.01	28.09	49.71	-21.62	Average
0.39	29.20	10.35	0.01	39.56	57.99	-18.43	QP
0.39	10.56	10.35	0.01	20.92	47.99	-27.07	Average
0.63	28.66	10.28	0.02	38.96	56.00	-17.04	QP
0.63	15.81	10.28	0.02	26.11	46.00	-19.89	Average
0.99	27.02	10.20	0.03	37.25	56.00	-18.75	QP
0.99	10.70	10.20	0.03	20.93	46.00	-25.07	Average
1.70	24.59	10.20	0.04	34.83	56.00	-21.17	QP
1.70	4.69	10.20	0.04	14.93	46.00	-31.07	Average

8 Test Setup Photo

Radiated Emission



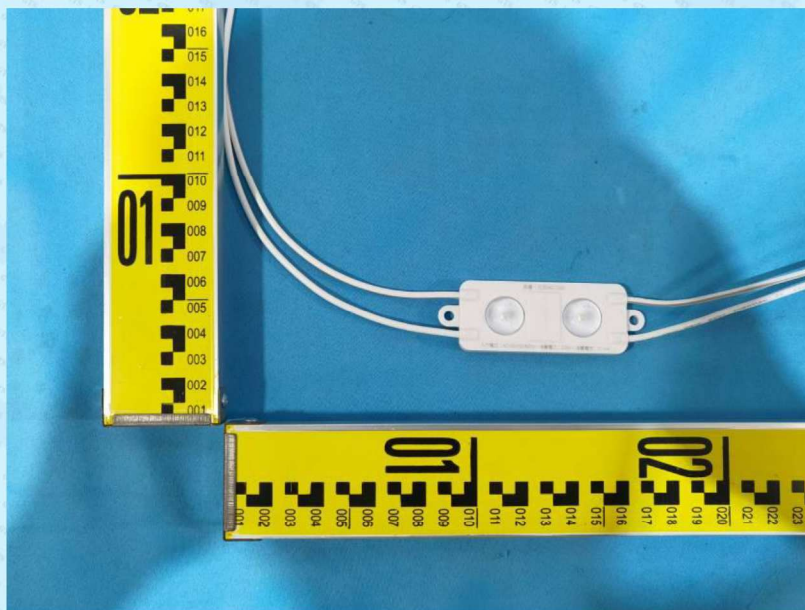
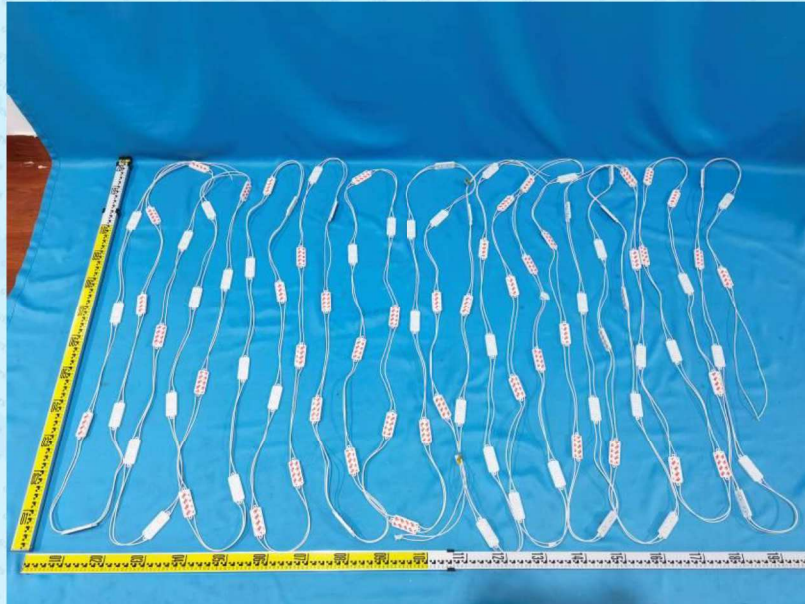
Disturbance voltages

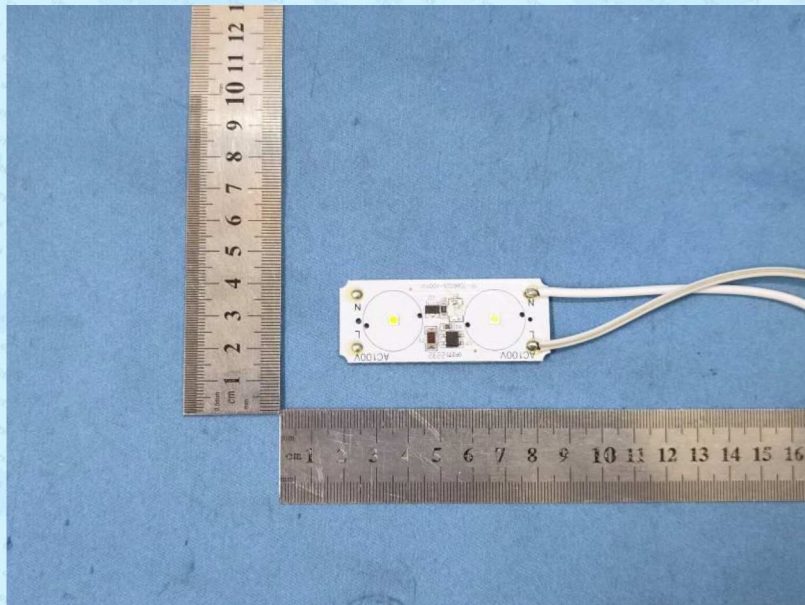
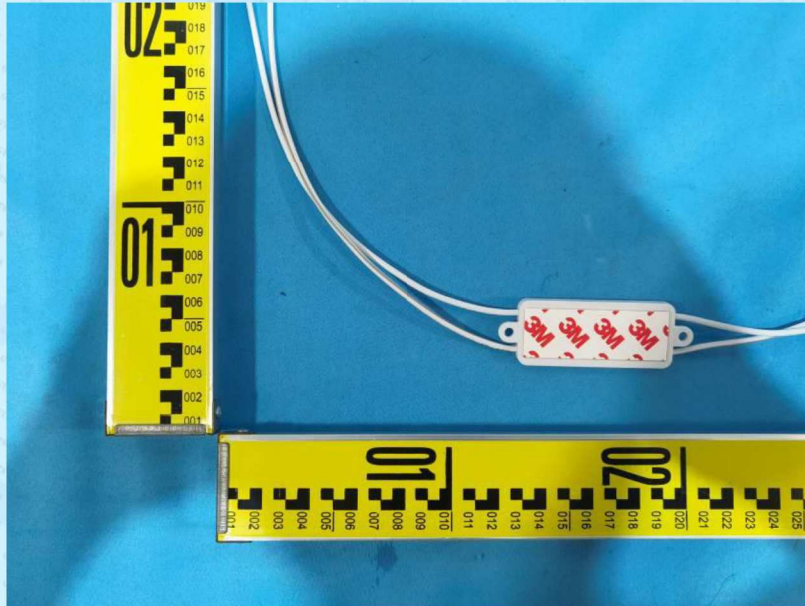


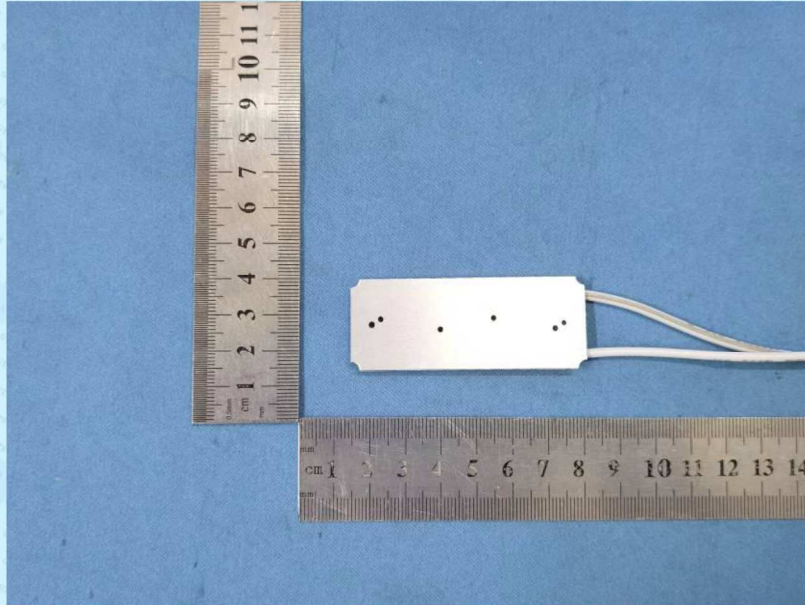
Radiated Electromagnetic Disturbance



9 EUT Constructional Details







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