



TEST REPORT

Reference No..... : WTX20X11080892E
Applicant : Dongguan Olight E-Commerce Technology Co., Ltd
Address : 4th Floor Building 4 Kegou Industrial Park No6 Zhongnan Road,
Changan Town, Dongguan City ,Guangdong, China
Product : Flashlight
Test Model : Marauder 2
Standards : EN 55015:2013/A1:2015
EN 61547:2009
Date of Receipt sample : Nov.03, 2020
Date of Test..... : Nov.03, 2020 to Nov.05, 2020
Date of Issue : Nov.05, 2020
Test Result..... : Pass

Remarks:

The 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.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:

Dongguan Olight E-Commerce Technology Co., Ltd

Address of applicant:

4th Floor Building 4 Kegou Industrial Park No6
Zhongnan Road, Changan Town, Dongguan City ,
Guangdong, China

Manufacturer:

Dongguan Olight E-Commerce Technology Co., Ltd

Address of manufacturer:

4th Floor Building 4 Kegou Industrial Park No6
Zhongnan Road, Changan Town, Dongguan City ,
Guangdong, China

General Description of EUT

Product Name:	Flashlight
Trade Name:	OLIGHT
Model No.:	Marauder 2
Adding Model(s):	/

Note: The test data is gathered from a production sample, provided by the manufacturer.

Technical Characteristics of EUT

Rated Voltage:	DC 20V
Rated Current:	3A
Rated Power:	30W
Power Adaptor Model:	/
Highest Internal Frequency:	Below 108MHz
Classification of Equipment:	Class B



1.2 Test Standards

The tests were performed according to following standards:

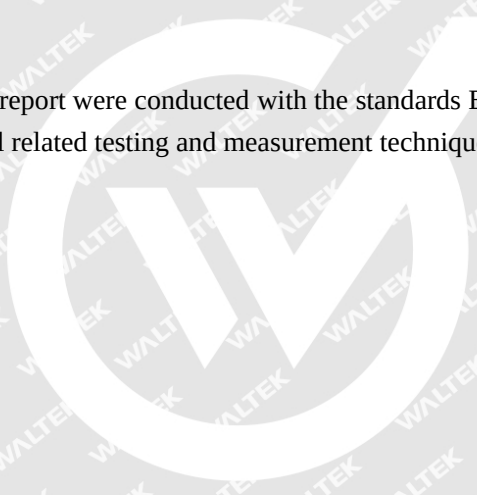
EN 55015:2013/A1:2015 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

EN 61547:2009 Electromagnetic for general lighting purposes - EMC immunity requirements

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards EN 55015, and EN 61547 for general lighting purposes equipment, and all related testing and measurement techniques intentional standards.



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1.4 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Charging	Type-C Port connection adapter	DC 5V(With a Adapter input AC230V/50Hz)
TM2	Charging	Type-C Port connection adapter	DC 20V(With a Adapter input AC230V/50Hz)
TM3	Discharge+(high beam is the brightest)+(output5V3A)	Type-C Port connection cement load(2R)	DC10.8V
TM4	Discharge+(High beams are the dimmest)+(output5V3A)	Type-C Port connection cement load(2R)	DC10.8V
TM5	Discharge+(nearest light is the dimmest)+(output5V3A)	Type-C Port connection cement load(2R)	DC10.8V
TM6	Discharge+(near light is the brightest)+(output5V3A)	Type-C Port connection cement load(2R)	DC10.8V
TM7	Discharge+(near light is the brightest)+(output20V1.5A)	Type-C Port connection cement load(13.5R)	DC10.8V
TM8	Discharge+(nearest light is the dimmest)+(output20V1.5A)	Type-C Port connection cement load(13.5R)	DC10.8V
TM9	Discharge+(High beams are the dimmest)+(output20V1.5A)	Type-C Port connection cement load(13.5R)	DC10.8V
TM10	Discharge+(high beam is the brightest)+(output20V1.5A)	Type-C Port connection cement load(13.5R)	DC10.8V

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Type-C Cable	1.0	Shielded	Without Core

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
adapter	ALOGIC	WCG2X68-ANZ	/
load	/	/	/



1.5 Performance Criteria for EMS

All the test data has been collected, reduced, and analyzed within this report in accordance with Immunity requires the following as specific performance criteria:

- A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.
- B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacturer. No change in operating state or loss of data is permitted.
- C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.



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1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2020-04-28	2021-04-27
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2020-04-28	2021-04-27
Amplifier	Agilent	8447F	3113A06717	2020-04-28	2021-04-27
Amplifier	C&D	PAP-1G18	2002	2020-04-28	2021-04-27
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2019-05-05	2021-05-04
Loop Antenna	EVERFINE	LLA-2	711001	2019-04-30	2021-04-29
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2020-04-28	2021-04-27
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2020-04-28	2021-04-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2020-04-28	2021-04-27
AC LISN	Schwarz beck	NSLK8126	8126-224	2020-04-28	2021-04-27
8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2020-04-28	2021-04-27
8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2020-04-28	2021-04-27
PMF Generator	LIONCEL	PMF-801C-C	0171101	2020-04-28	2021-04-27
PMF Antenna	LIONCEL	PMF-801C-A	0180302	2020-04-28	2021-04-27
Instantaneous PMF Generator Module	LIONCEL	PMF-801C-T	0171001	2020-04-28	2021-04-27
Digital Power Analyzer	California Instrument	CTS	72831	2020-04-28	2021-04-27
Power Source	California Instrument	5001IX-CTS-400	25965	2020-04-28	2021-04-27
ESD Generator	LIONCEL	ESD-203B	0170901	2020-04-28	2021-04-27
Amplifier	Agilent	8447D	2944A10179	2020-04-28	2021-04-27
Transient 2000	EMC PARTNER	TRA2000	863	2020-04-28	2021-04-27
Couple Clamp	EMC PARTNER	CN-EFT1000	513	2020-04-28	2021-04-27
CONDUCTED IMMUNITY TEST SYSTEM	FRANKONIA	CIT-10/75	126B1247/2013	2020-01-13	2021-01-12
Attenuator	EMTEST	MA-5100/6BF2	1009	2020-04-28	2021-04-27
CDN	Luthi	L-801M2/M3	2665	2020-04-28	2021-04-27
Signal Generator	HP	8688B	3438A00604	2020-04-28	2021-04-27
Power Meter	KEITHLEY	3500	1162591	2020-04-28	2021-04-27
Power Meter	KEITHLEY	3500	1121428	2020-04-28	2021-04-27
RF Power Amplifier	MicoTop	MPA-80-1000-250	MPA1906239	2020-04-28	2021-04-27
RF Power Amplifier	MicoTop	MPA-80-1000-100	MPA1906238	2020-04-28	2021-04-27
Antenna	SCHWARZBECK	STLP 9129	9129 114	N/A	N/A



2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
EN 55015	Disturbance Voltages	Compliant
	Radiated Electromagnetic Disturbances (Frequency range 9kHz to 30MHz)	Compliant
	Radiated Electromagnetic Disturbances (Frequency range 30MHz to 300MHz)	Compliant
EN 61000-3-2	Harmonic Current Emission	N/A
EN 61000-3-3	Voltage Fluctuation And Flicker	N/A
EN 61547	Electrostatic Discharge Immunity in accordance with EN 61000-4-2	Compliant
	Radio-Frequency Electromagnetic Field Immunity in accordance with EN 61000-4-3	Compliant
	Electrical Fast Transient/Burst Immunity in accordance with EN 61000-4-4	Compliant
	Surges Immunity in accordance with EN 61000-4-5	Compliant
	Injected Currents Immunity in accordance with EN 61000-4-6	Compliant
	Power-frequency Magnetic Field Immunity in accordance with EN 61000-4-8	Compliant
	Voltage Dips/Interruptions Immunity in accordance with EN 61000-4-11	N/A

N/A: not applicable



3. Conducted Emission

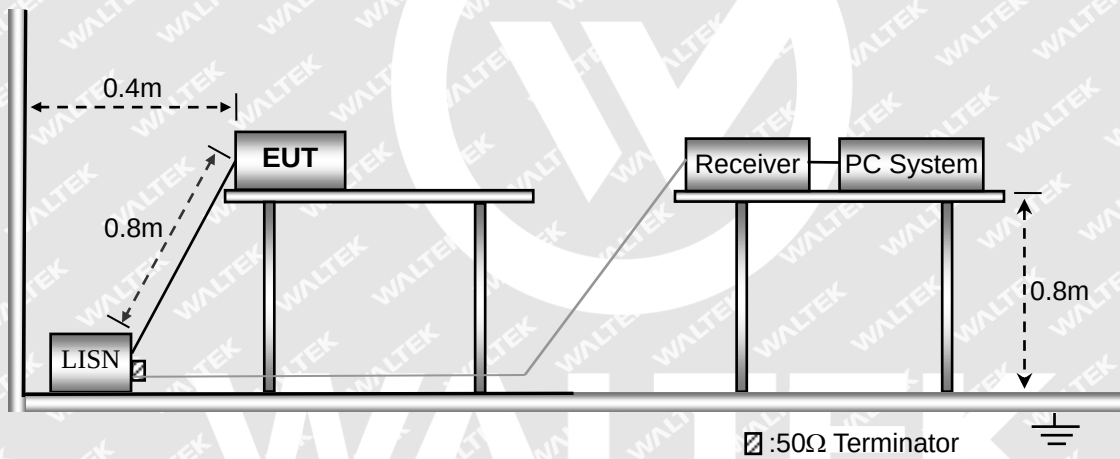
3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB

3.2 Basic Test Setup Block Diagram

AC port





3.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54 %
ATM Pressure:	1015 mbar

3.4 Summary of Test Results

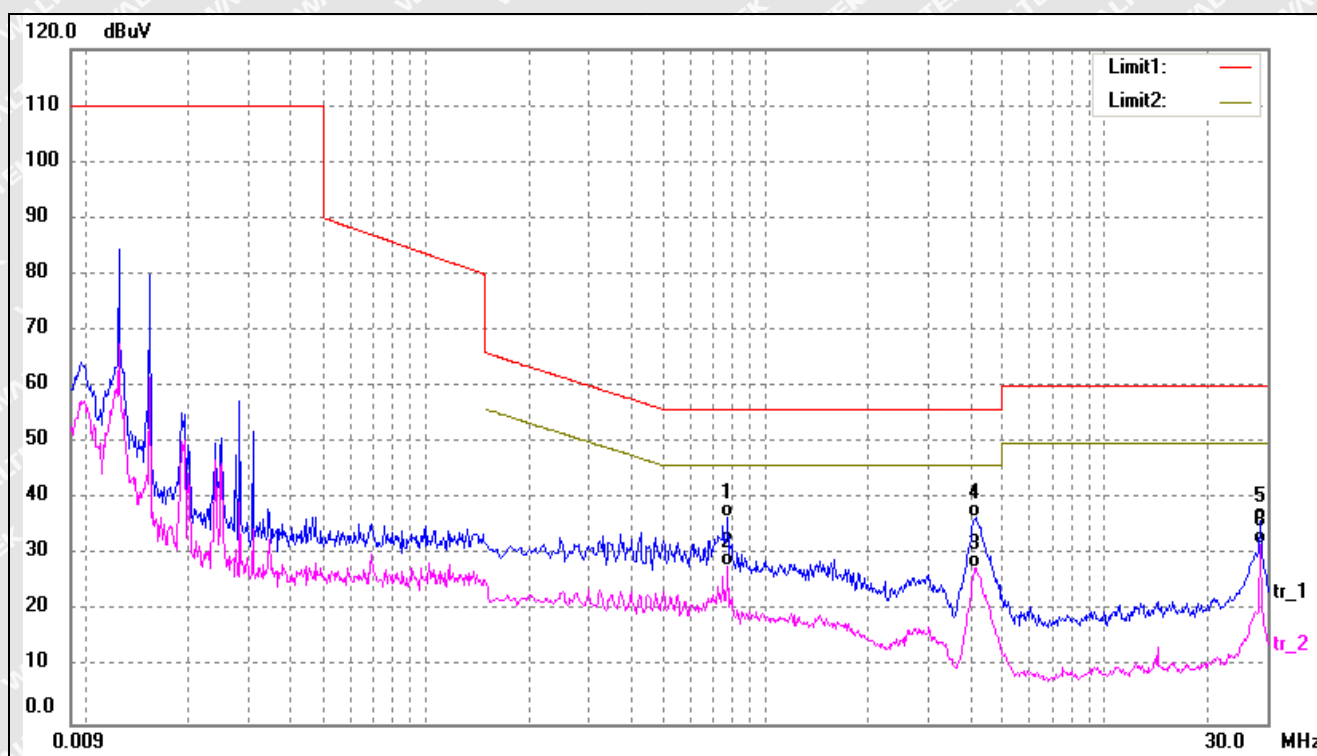
Look at the graphs and data below:



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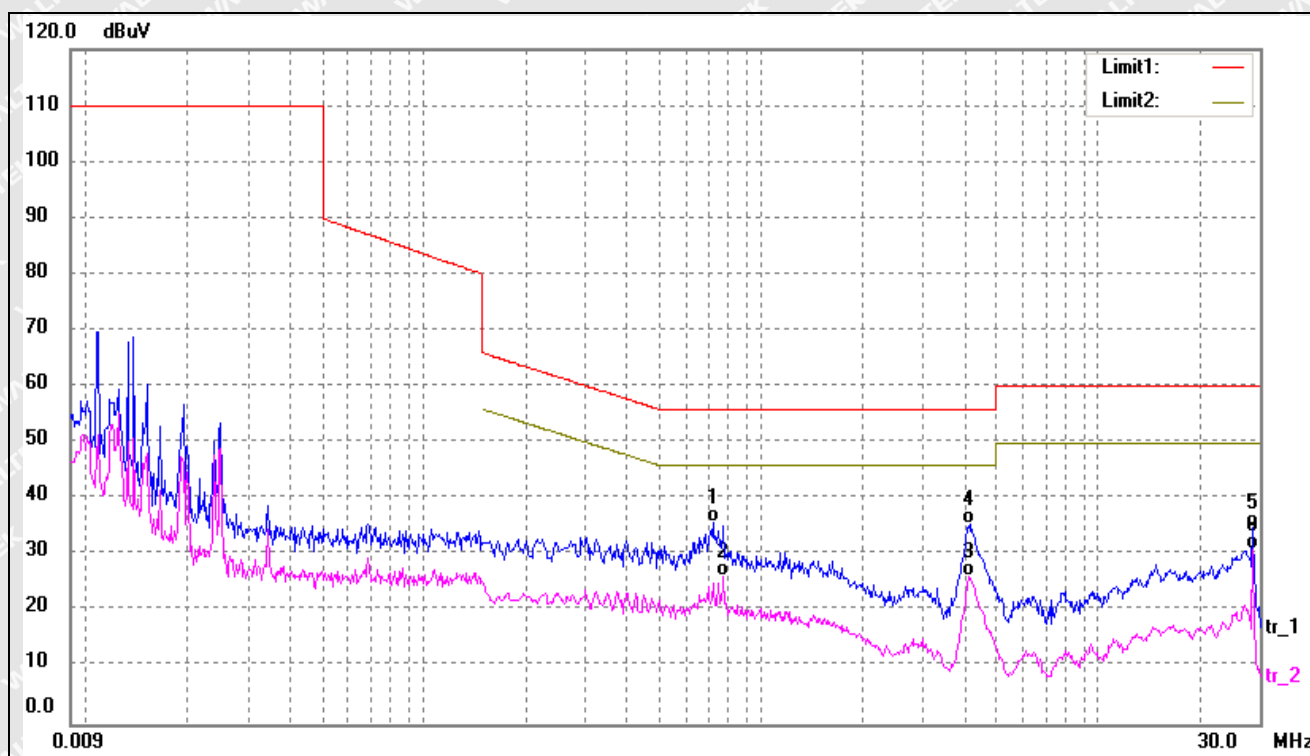
Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.7740	26.67	10.17	36.84	56.00	-19.16	QP
2	0.7740	17.79	10.17	27.96	46.00	-18.04	AVG
3	4.1420	17.61	10.24	27.85	46.00	-18.15	AVG
4	4.1660	26.67	10.23	36.90	56.00	-19.10	QP
5	28.6380	25.43	10.69	36.12	60.00	-23.88	QP
6*	28.6380	21.30	10.69	31.99	50.00	-18.01	AVG



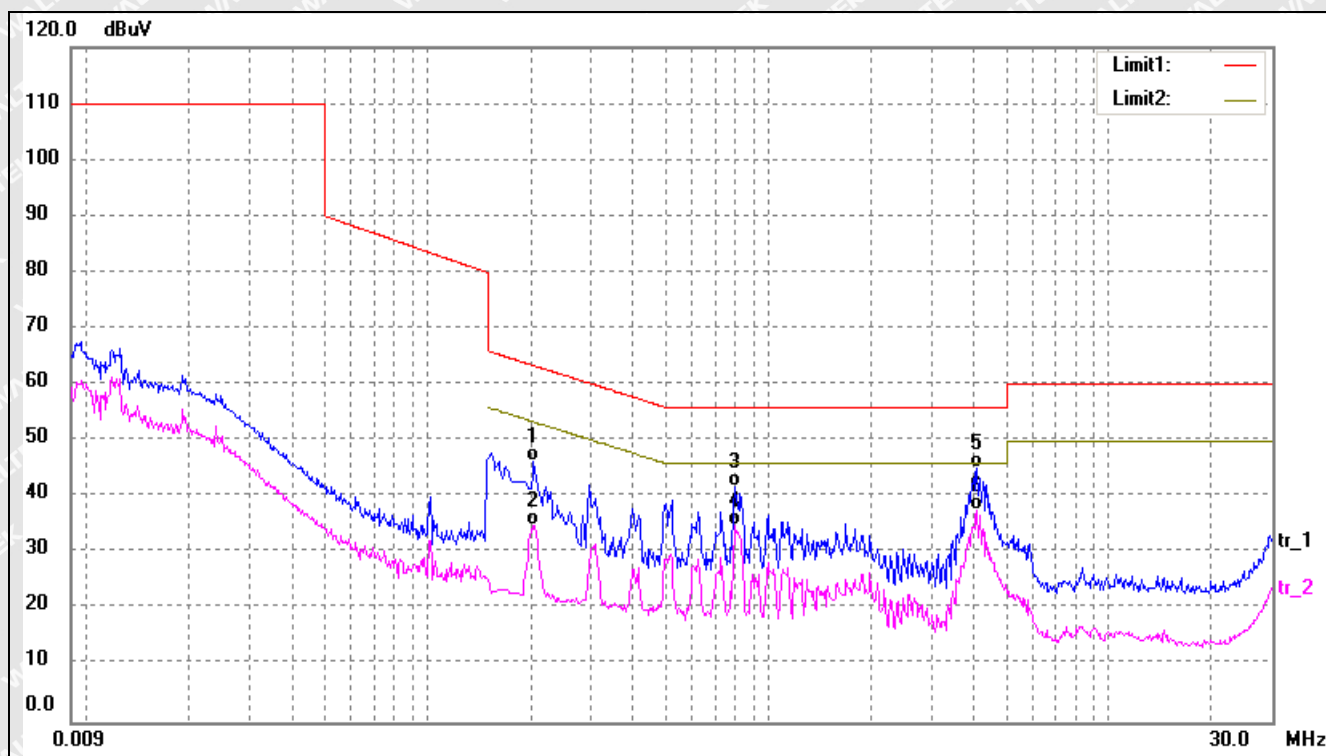
Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.7220	25.58	10.17	35.75	56.00	-20.25	QP
2	0.7740	15.98	10.17	26.15	46.00	-19.85	AVG
3	4.1420	15.99	10.24	26.23	46.00	-19.77	AVG
4	4.1900	25.37	10.24	35.61	56.00	-20.39	QP
5	28.6420	24.24	10.69	34.93	60.00	-25.07	QP
6*	28.6420	20.40	10.69	31.09	50.00	-18.91	AVG



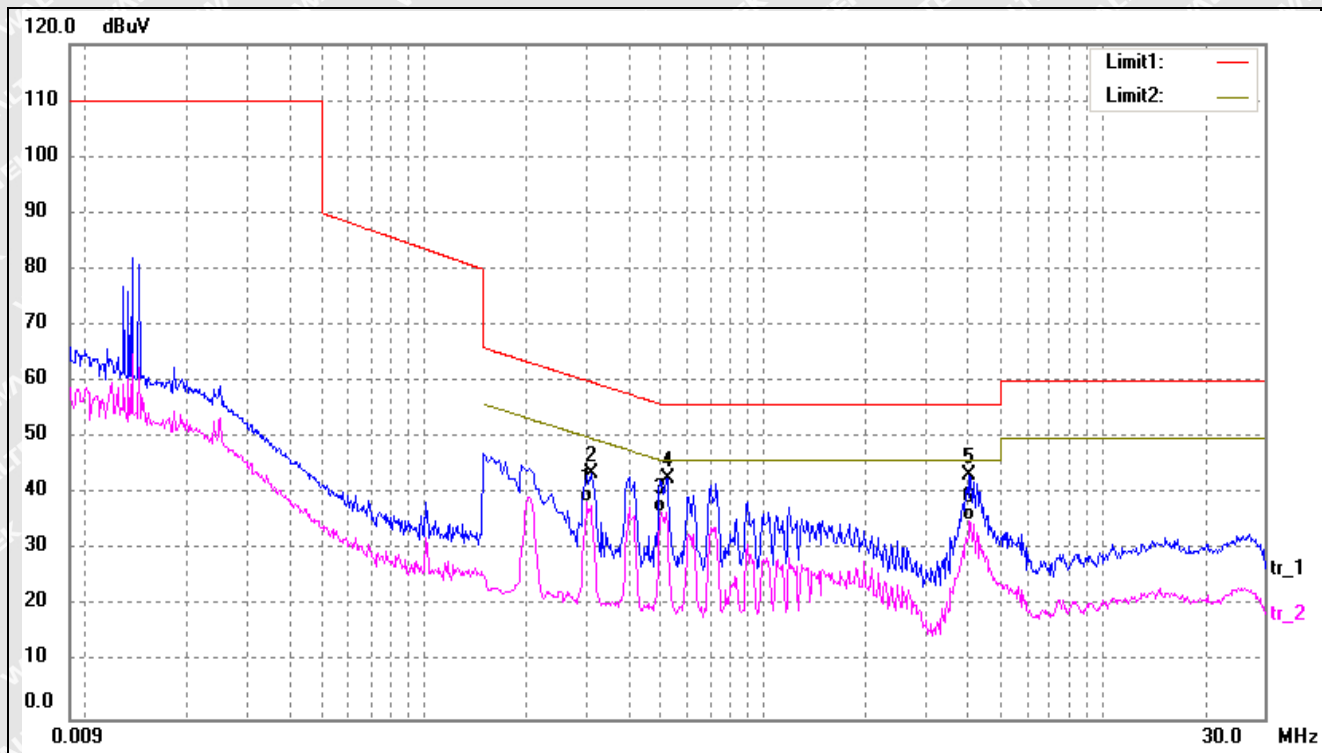
Test mode:	TM2	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2060	36.16	10.27	46.43	63.36	-16.93	QP
2	0.2060	24.76	10.27	35.03	53.36	-18.33	AVG
3	0.7980	31.77	10.18	41.95	56.00	-14.05	QP
4	0.8020	24.73	10.18	34.91	46.00	-11.09	AVG
5	4.0820	34.90	10.24	45.14	56.00	-10.86	QP
6*	4.0820	27.36	10.24	37.60	46.00	-8.40	AVG



Test mode:	TM2	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3020	28.19	10.24	38.43	50.19	-11.76	AVG
2	0.3100	33.46	10.24	43.70	59.97	-16.27	peak
3*	0.5020	26.65	10.22	36.87	46.00	-9.13	AVG
4	0.5220	32.55	10.22	42.77	56.00	-13.23	peak
5	4.0739	33.08	10.24	43.32	56.00	-12.68	peak
6	4.0739	24.99	10.24	35.23	46.00	-10.77	AVG



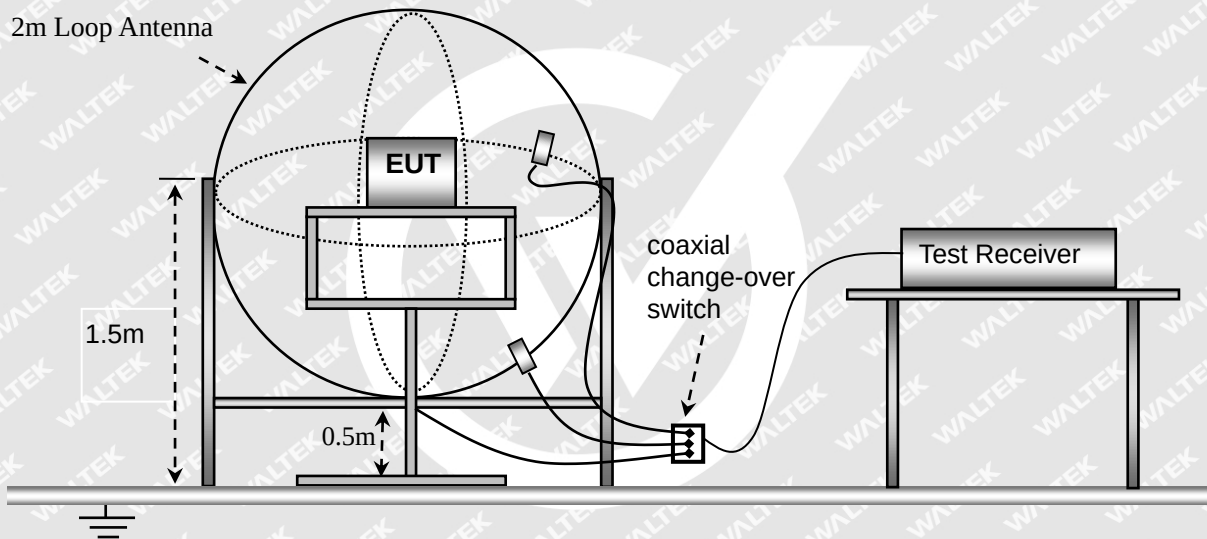
4. Radiated Electromagnetic Disturbances (9kHz to 30MHz)

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.6 dB.

4.2 Basic Test Setup Block Diagram

The Radiation Electromagnetic Disturbance (9kHz to 30MHz) test was performed in accordance with the EN 55015



4.3 Environmental Conditions

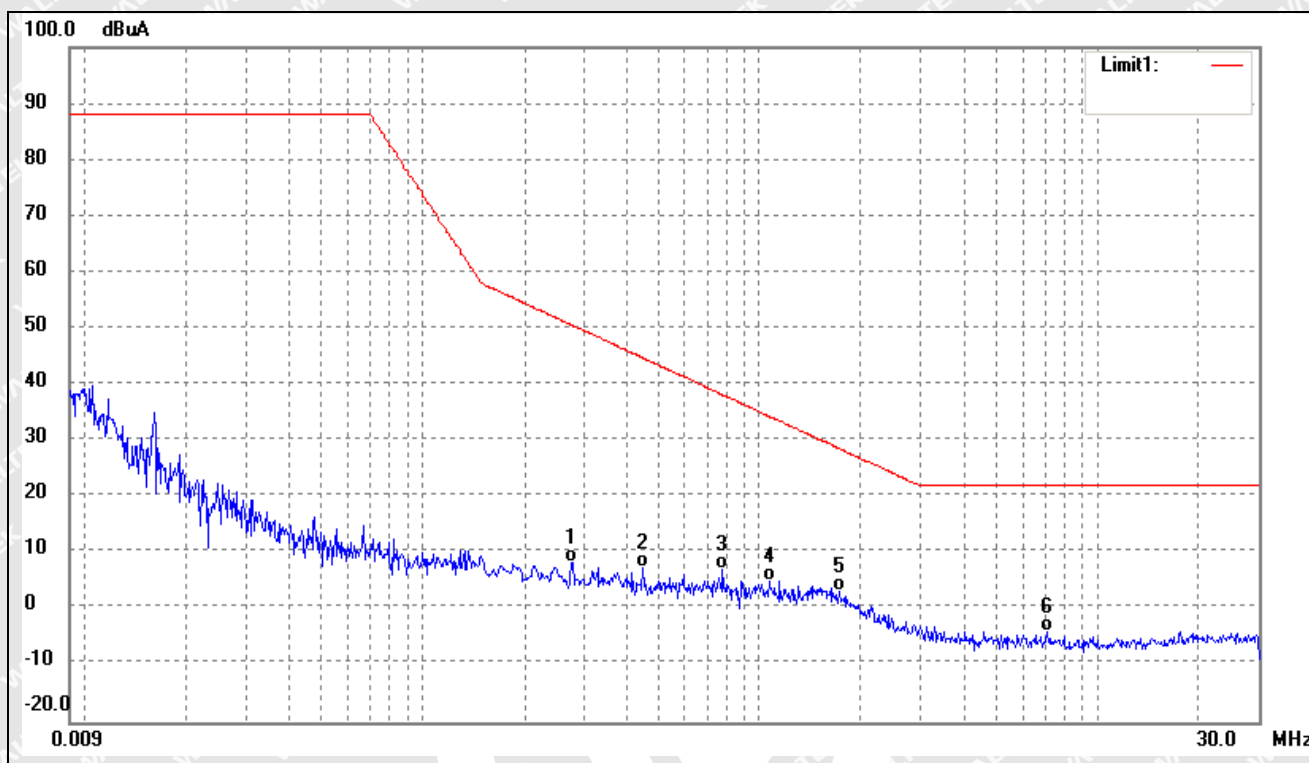
Temperature:	22.5 °C
Relative Humidity:	54 %
ATM Pressure:	1015 mbar

4.4 Summary of Test Results

Look at the graphs and data below:



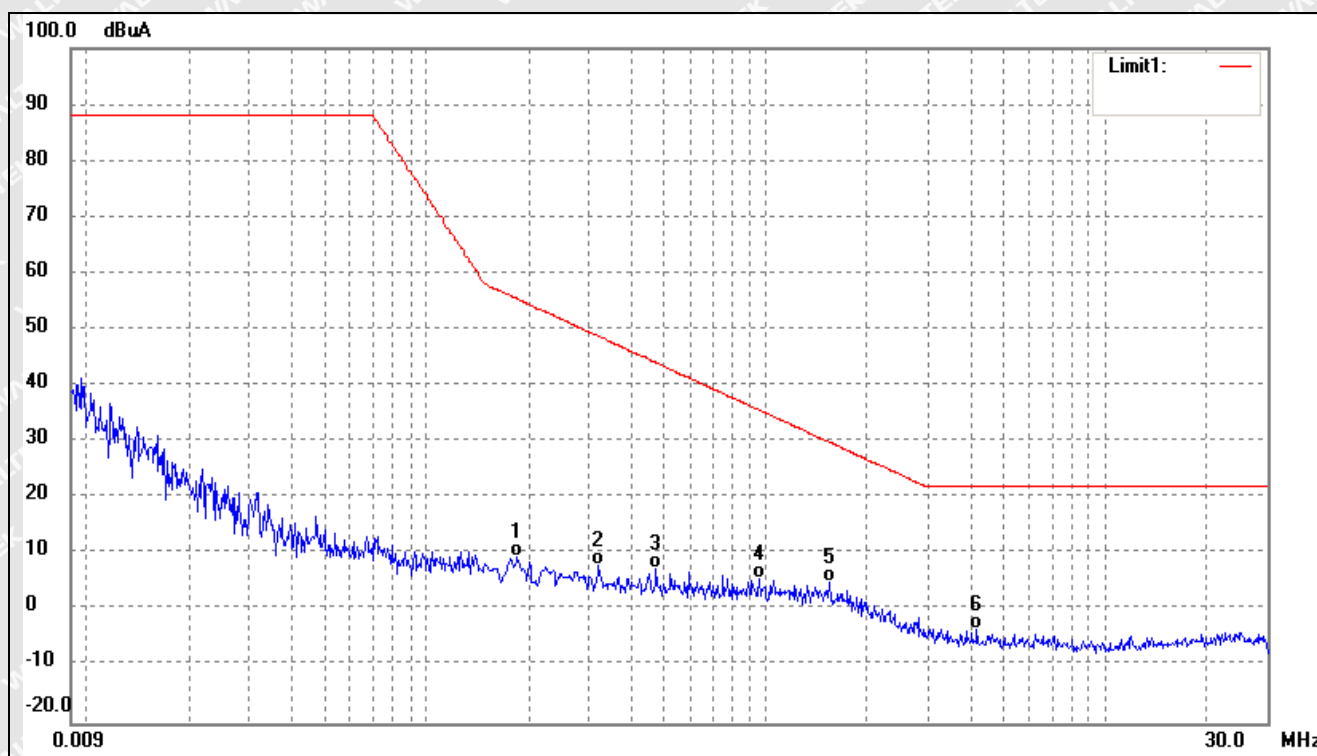
Test mode:	TM1	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.2779	-12.09	20.54	8.45	50.58	-42.13	QP
2	0.4500	-12.88	20.31	7.43	44.79	-37.36	QP
3	0.7740	-13.04	20.07	7.03	38.28	-31.25	QP
4	1.0620	-14.97	20.09	5.12	34.48	-29.36	QP
5*	1.7220	-17.15	20.42	3.27	28.67	-25.40	QP
6	7.1300	-24.42	20.53	-3.89	22.00	-25.89	QP



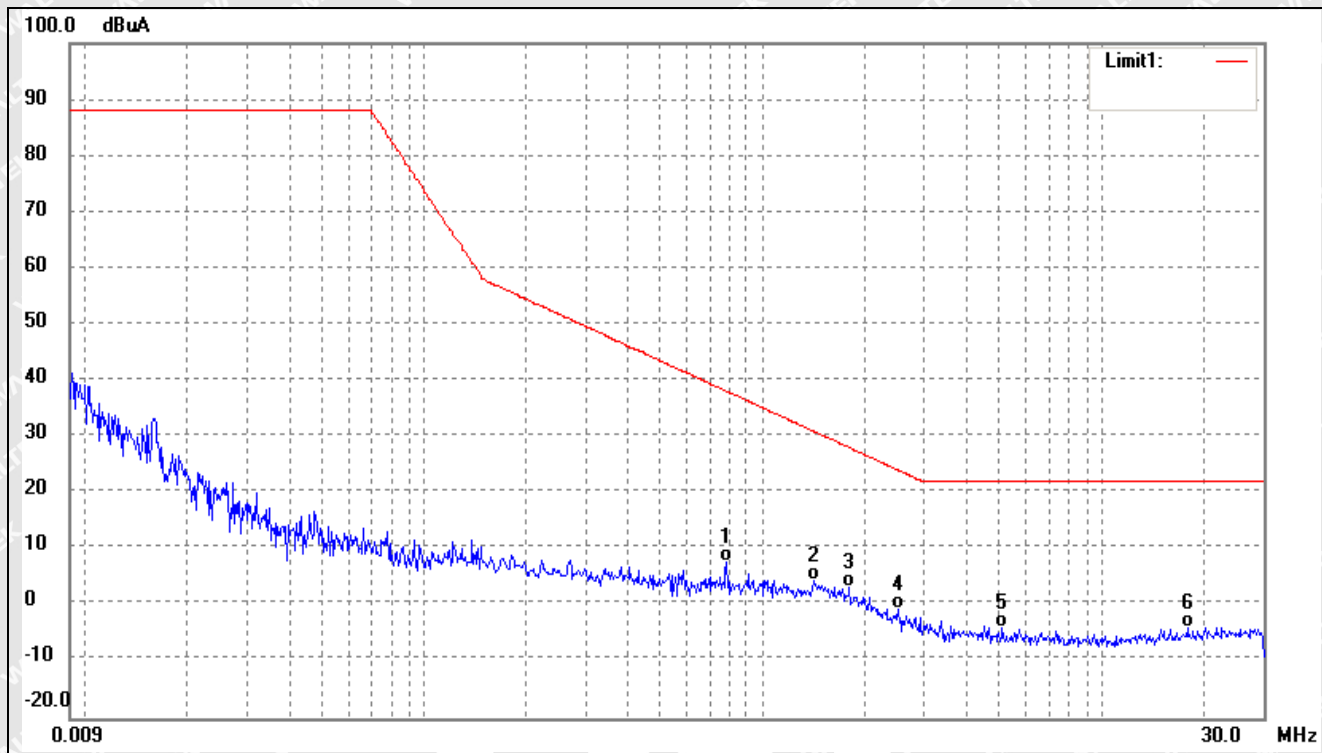
Test mode:	TM1	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.1860	-11.35	20.79	9.44	55.41	-45.97	QP
2	0.3220	-12.28	20.48	8.20	48.82	-40.62	QP
3	0.4780	-12.86	20.28	7.42	44.07	-36.65	QP
4	0.9620	-14.33	20.06	5.73	35.67	-29.94	QP
5*	1.5460	-15.26	20.33	5.07	29.97	-24.90	QP
6	4.1860	-24.09	20.67	-3.42	22.00	-25.42	QP



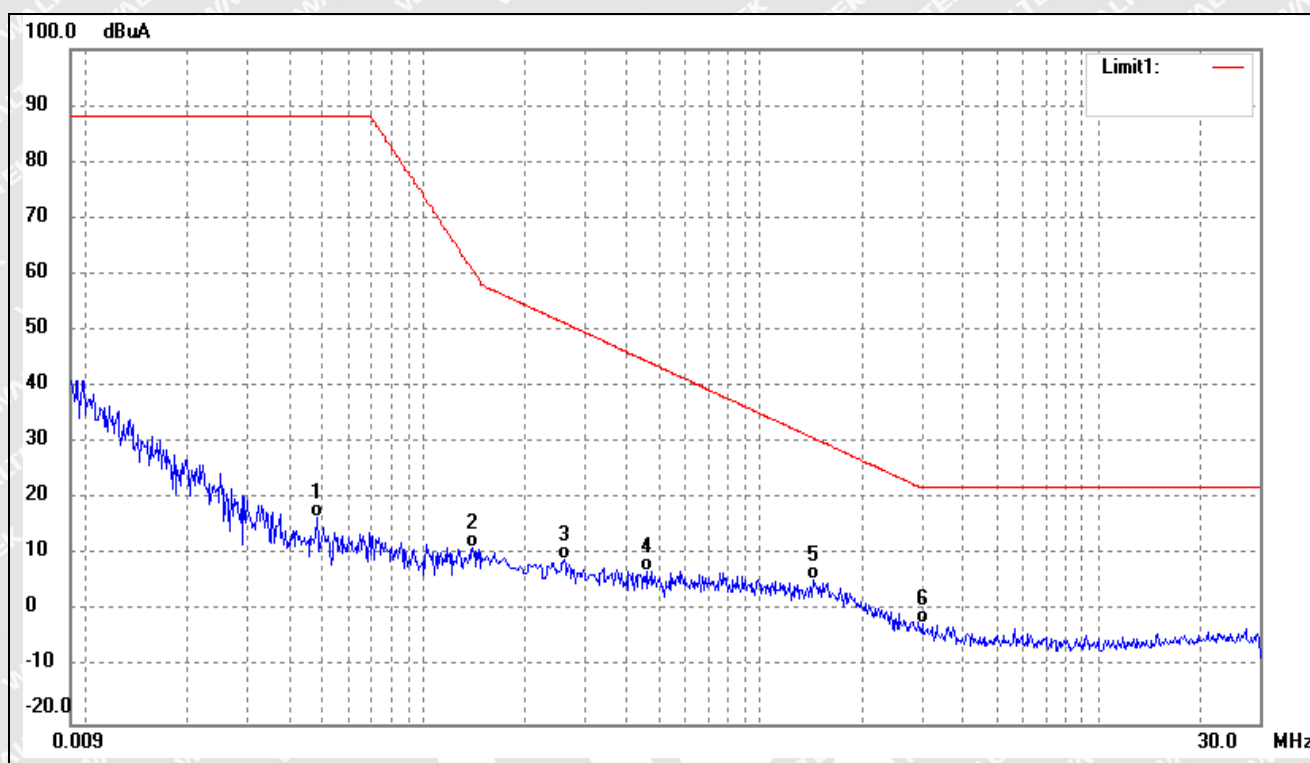
Test mode:	TM1	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.7820	-12.40	20.07	7.67	38.16	-30.49	QP
2	1.4140	-15.96	20.27	4.31	31.04	-26.73	QP
3	1.7980	-17.25	20.46	3.21	28.15	-24.94	QP
4*	2.5100	-21.28	20.59	-0.69	24.14	-24.83	QP
5	5.0780	-24.54	20.71	-3.83	22.00	-25.83	QP
6	17.9940	-25.15	21.06	-4.09	22.00	-26.09	QP



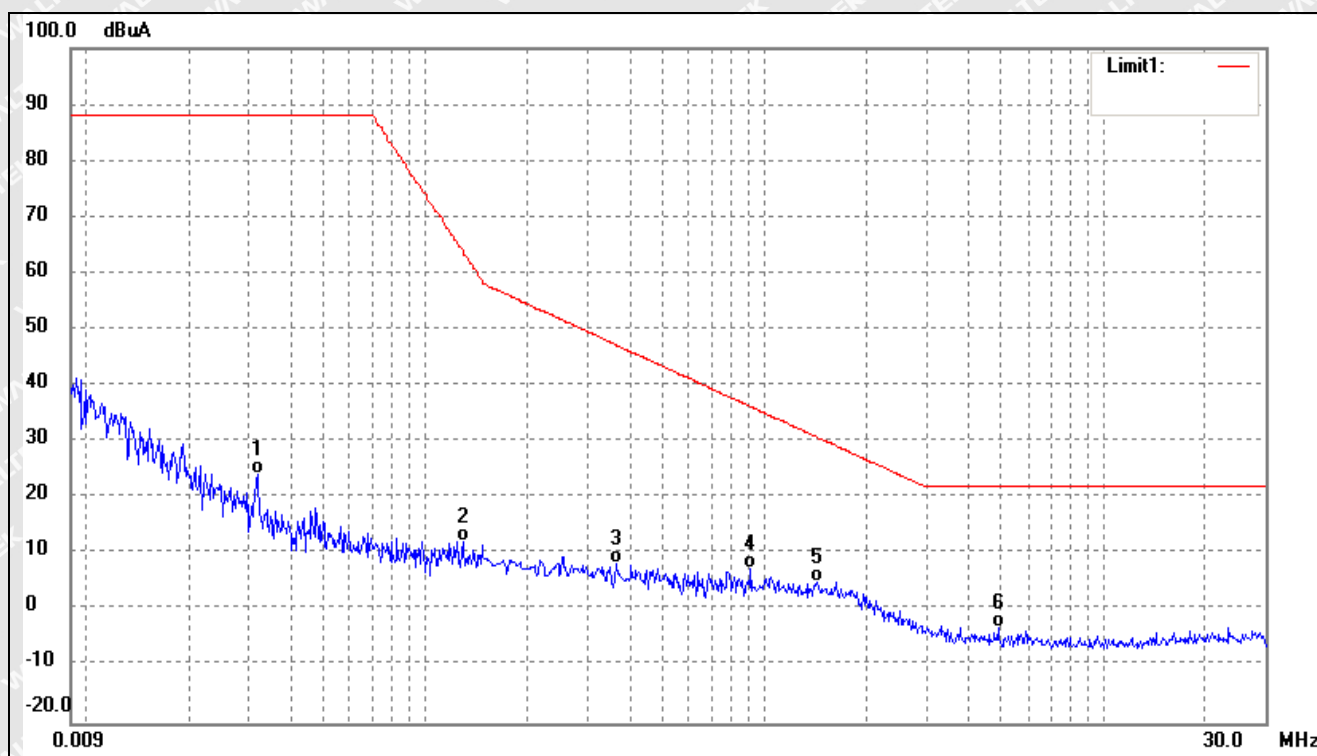
Test mode:	TM2	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0485	-7.71	24.32	16.61	88.00	-71.39	QP
2	0.1405	-9.79	21.20	11.41	60.55	-49.14	QP
3	0.2620	-11.35	20.57	9.22	51.29	-42.07	QP
4	0.4580	-13.06	20.30	7.24	44.58	-37.34	QP
5	1.4217	-14.76	20.27	5.51	30.97	-25.46	QP
6*	3.0178	-22.78	20.61	-2.17	22.00	-24.17	QP



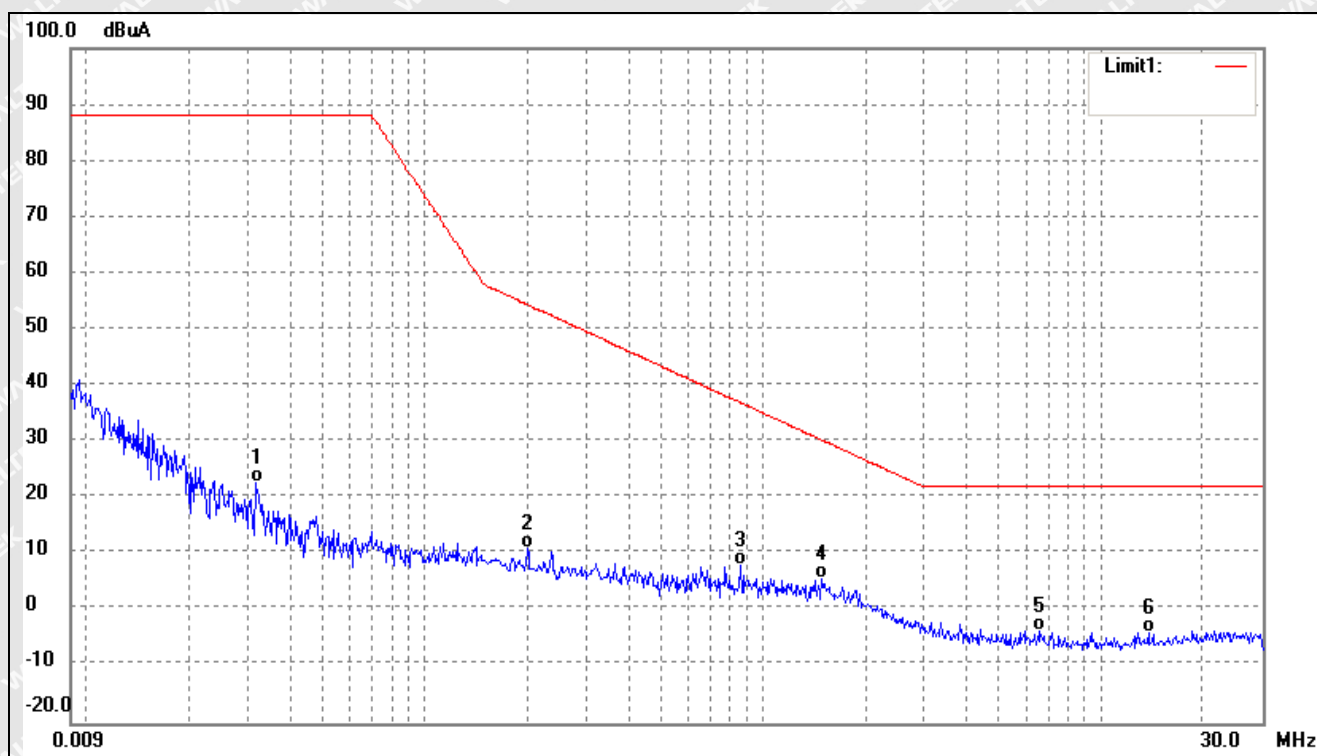
Test mode:	TM2	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0320	-3.89	28.18	24.29	88.00	-63.71	QP
2	0.1287	-9.05	21.30	12.25	64.01	-51.76	QP
3	0.3659	-12.15	20.41	8.26	47.28	-39.02	QP
4	0.9100	-12.61	20.06	7.45	36.33	-28.88	QP
5	1.4258	-15.33	20.27	4.94	30.94	-26.00	QP
6*	4.9100	-23.87	20.71	-3.16	22.00	-25.16	QP



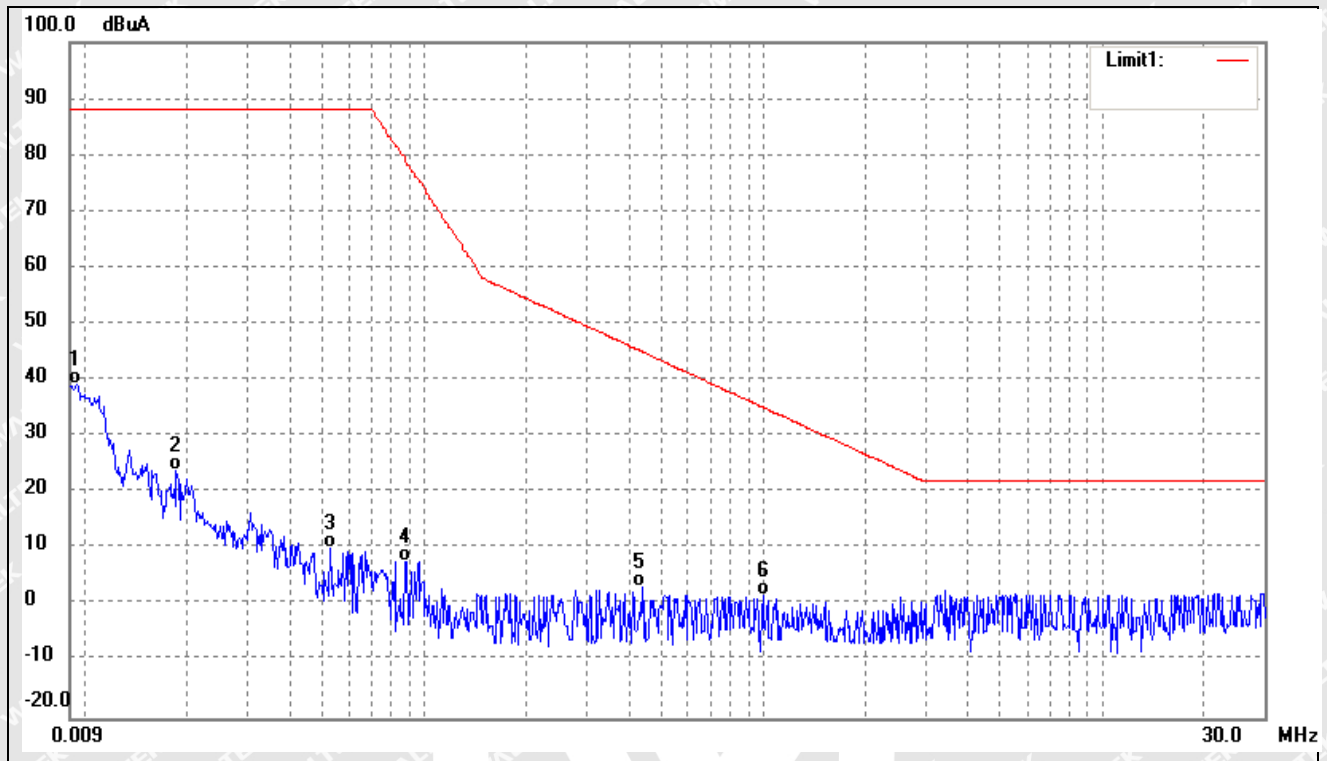
Test mode:	TM2	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0318	-5.61	28.25	22.64	88.00	-65.36	QP
2	0.2020	-9.64	20.66	11.02	54.42	-43.40	QP
3	0.8659	-12.15	20.06	7.91	36.93	-29.02	QP
4*	1.5020	-14.65	20.31	5.66	30.31	-24.65	QP
5	6.5899	-24.19	20.64	-3.55	22.00	-25.55	QP
6	13.8140	-24.46	20.64	-3.82	22.00	-25.82	QP



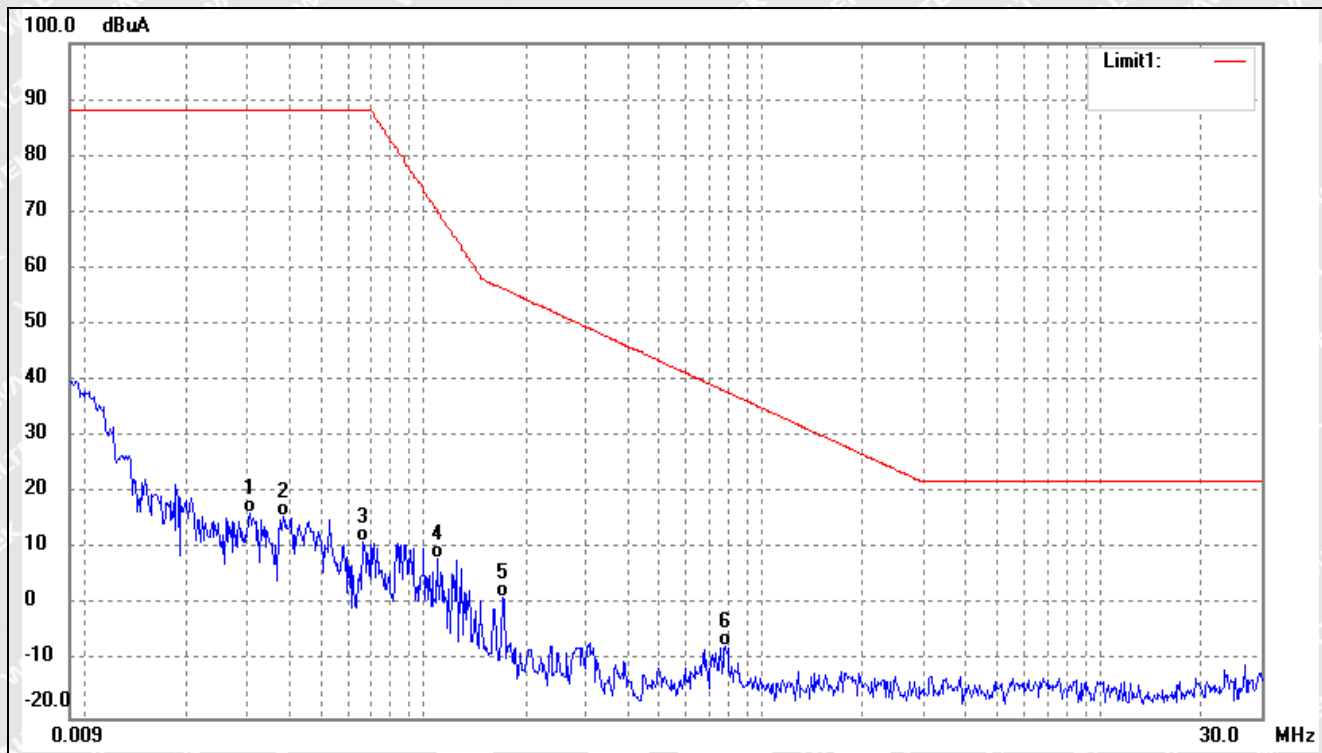
Test mode:	TM3	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	-0.18	39.46	39.28	88.00	-48.72	QP
2	0.0183	-9.63	33.65	24.02	88.00	-63.98	QP
3	0.0529	-13.69	23.83	10.14	88.00	-77.86	QP
4	0.0873	-14.27	21.94	7.67	79.30	-71.63	QP
5	0.4380	-17.07	20.32	3.25	45.12	-41.87	QP
6*	0.9979	-18.45	20.06	1.61	35.22	-33.61	QP



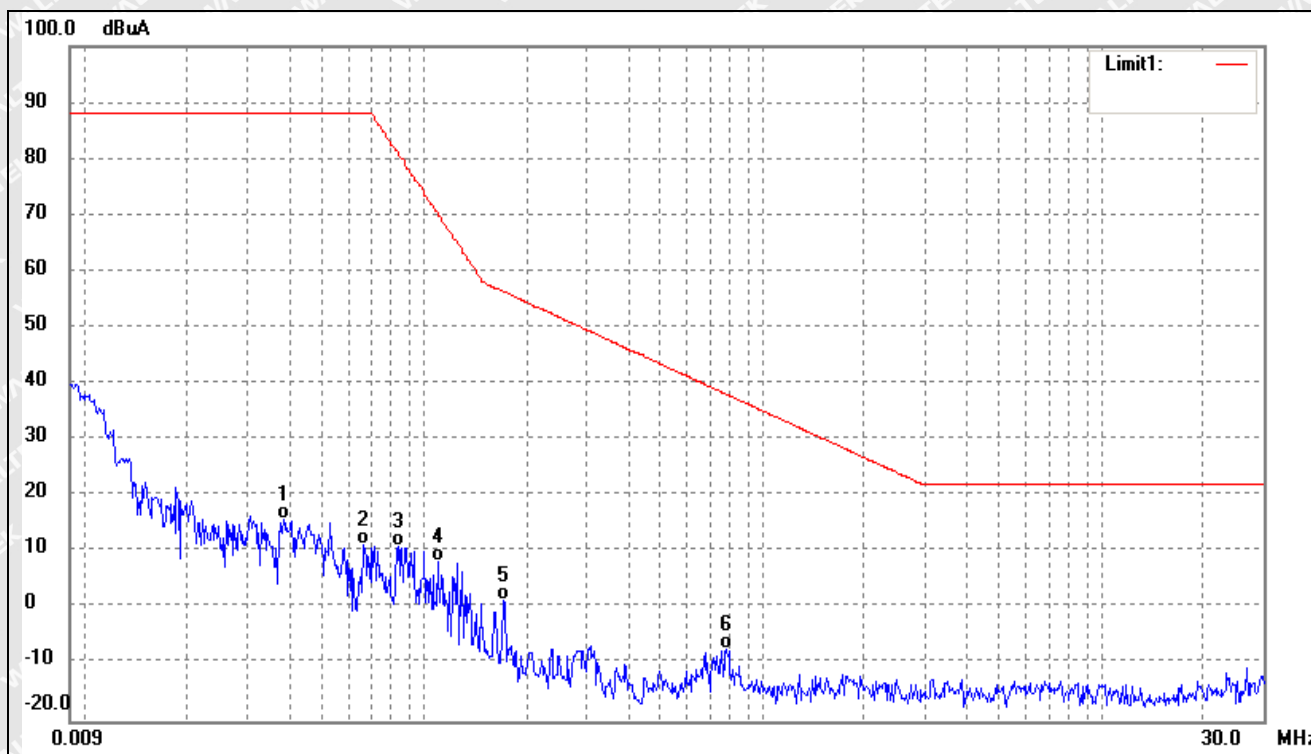
Test mode:	TM3	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0305	-12.21	28.73	16.52	88.00	-71.48	QP
2	0.0383	-9.99	25.88	15.89	88.00	-72.11	QP
3	0.0661	-11.39	22.78	11.39	88.00	-76.61	QP
4	0.1097	-13.13	21.47	8.34	70.30	-61.96	QP
5	0.1710	-19.58	20.92	1.34	56.42	-55.08	QP
6*	0.7820	-27.39	20.07	-7.32	38.15	-45.47	QP



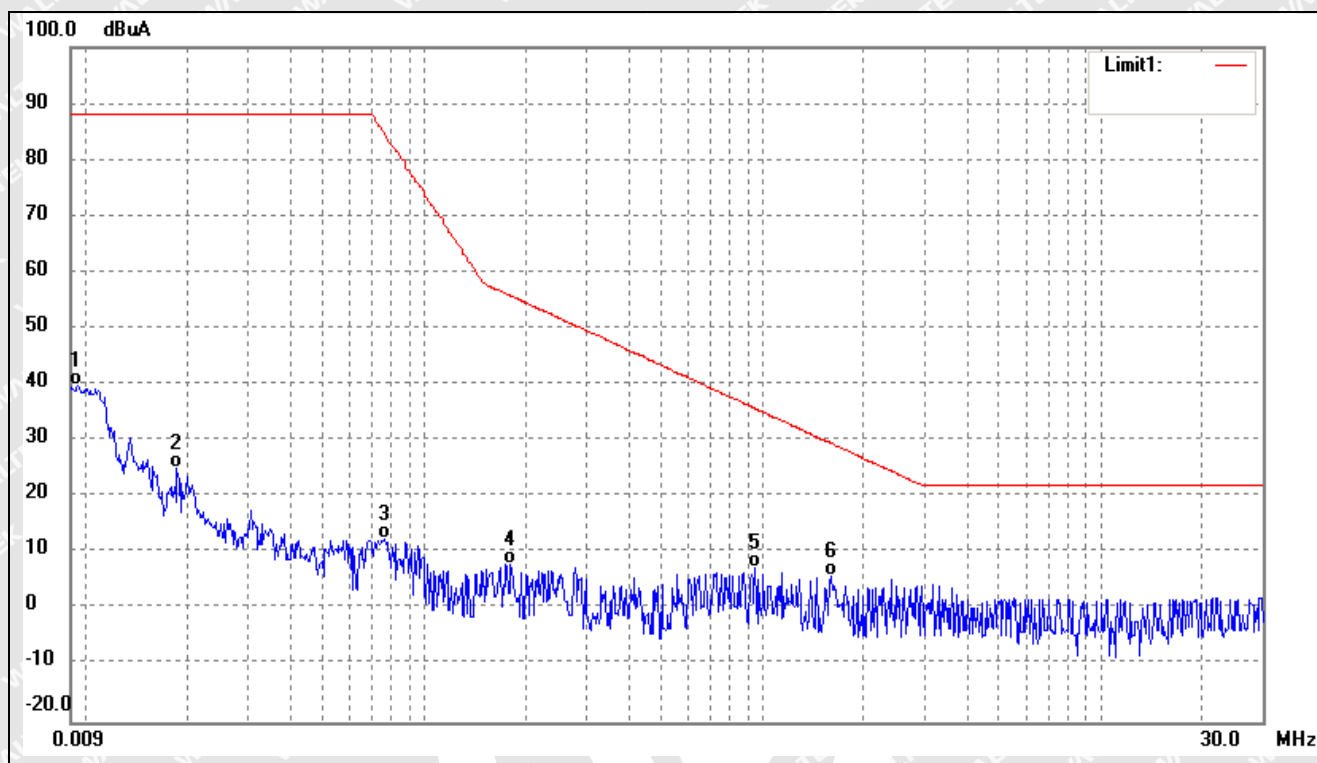
Test mode:	TM3	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0383	-9.99	25.88	15.89	88.00	-72.11	QP
2	0.0661	-11.39	22.78	11.39	88.00	-76.61	QP
3	0.0840	-11.06	22.04	10.98	80.82	-69.84	QP
4	0.1097	-13.13	21.47	8.34	70.32	-61.98	QP
5	0.1710	-19.58	20.92	1.34	56.43	-55.09	QP
6*	0.7820	-27.39	20.07	-7.32	38.16	-45.48	QP



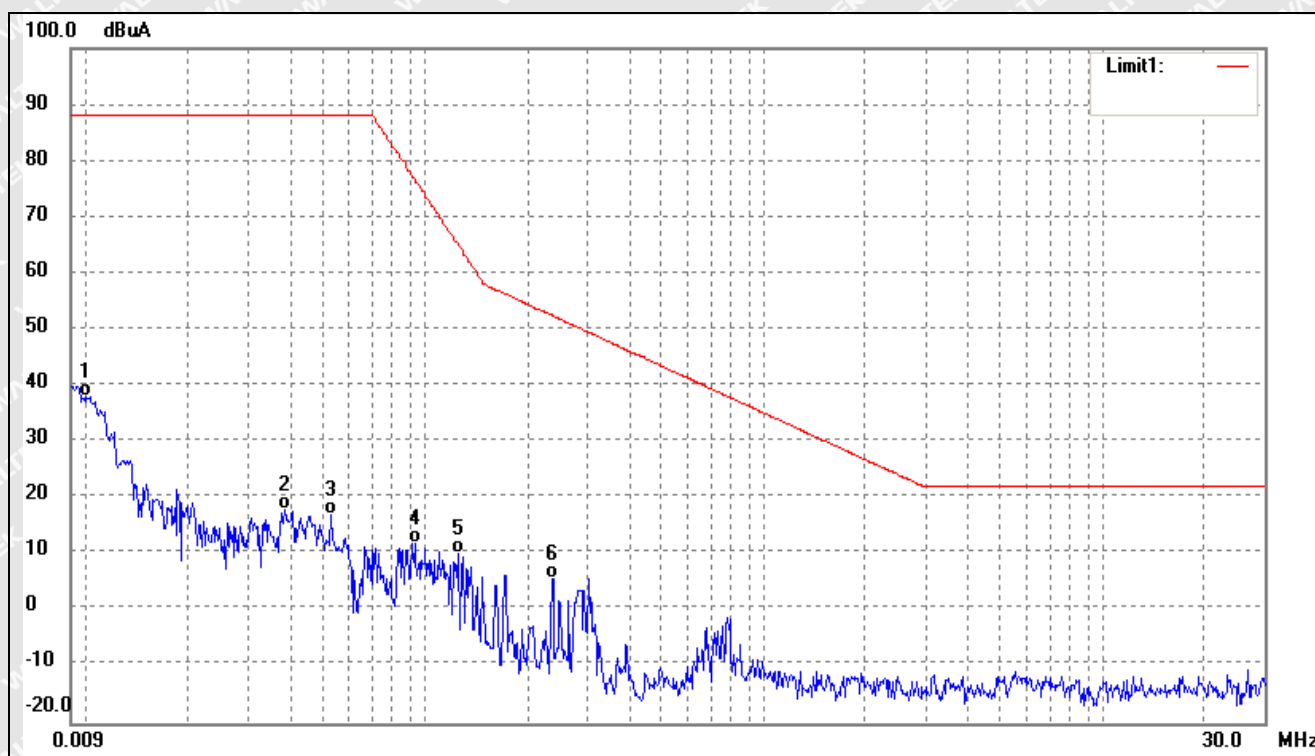
Test mode:	TM4	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	0.32	39.46	39.78	88.00	-48.22	QP
2	0.0183	-8.63	33.65	25.02	88.00	-62.98	QP
3	0.0761	-9.89	22.33	12.44	84.71	-72.27	QP
4	0.1794	-12.84	20.85	8.01	55.85	-47.84	QP
5	0.9497	-12.57	20.06	7.49	35.82	-28.33	QP
6*	1.6019	-14.43	20.36	5.93	29.54	-23.61	QP



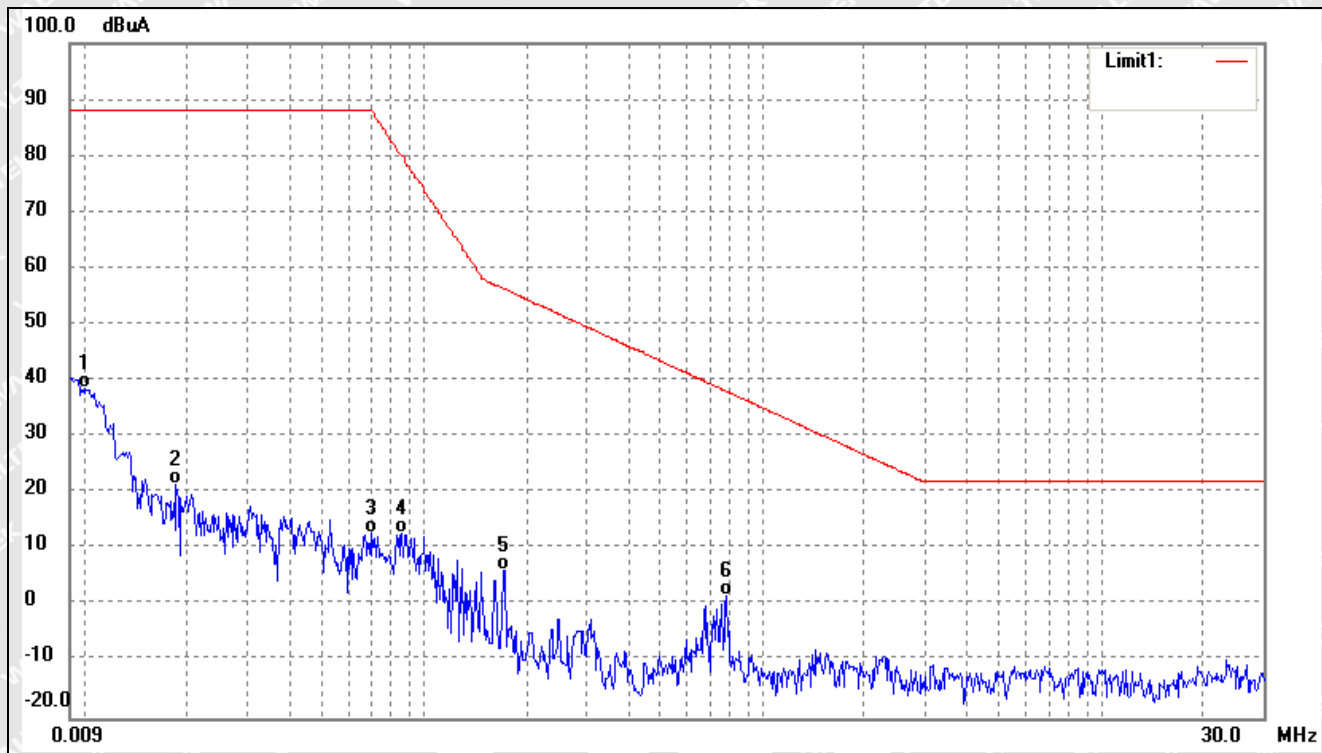
Test mode:	TM4	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0100	-0.95	38.96	38.01	88.00	-49.99	QP
2	0.0383	-7.99	25.88	17.89	88.00	-70.11	QP
3	0.0529	-6.69	23.83	17.14	88.00	-70.86	QP
4	0.0937	-9.68	21.75	12.07	76.51	-64.44	QP
5	0.1247	-11.27	21.34	10.07	65.25	-55.18	QP
6*	0.2379	-14.86	20.60	5.74	52.45	-46.71	QP



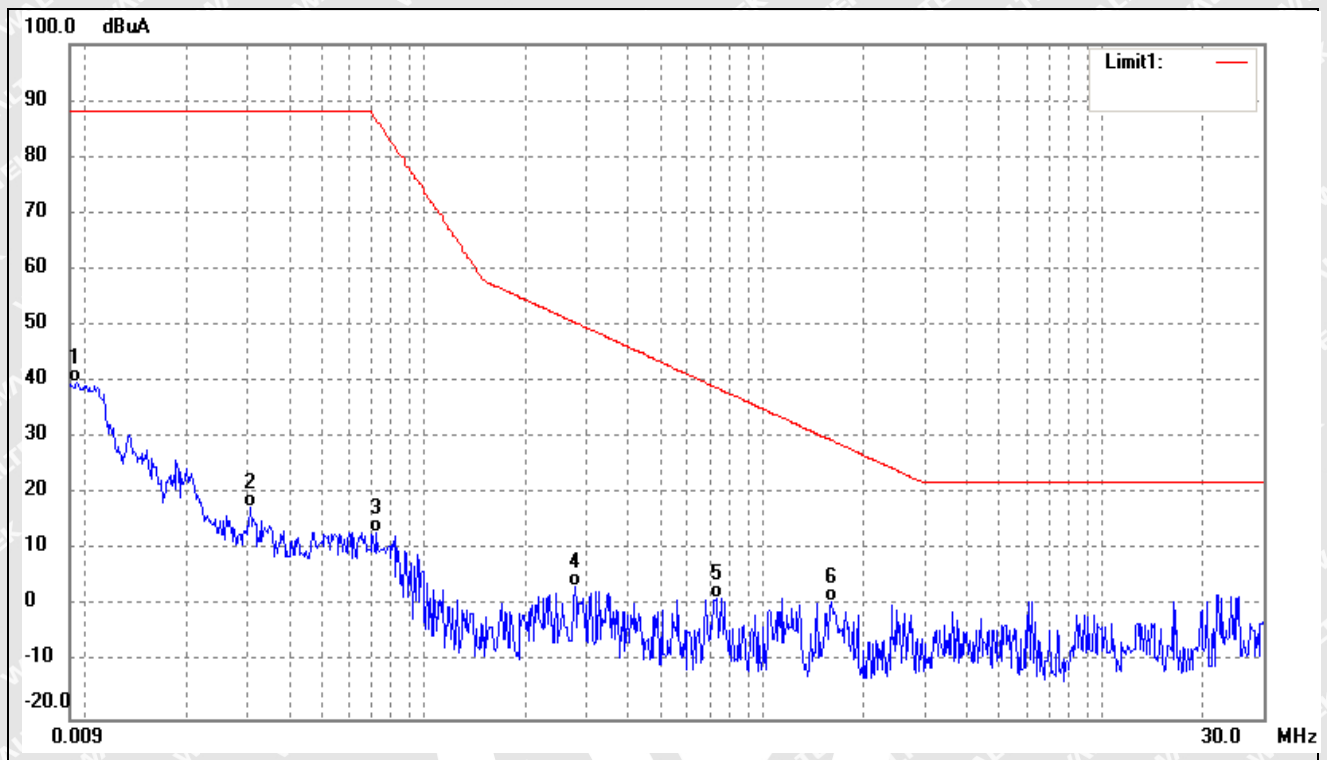
Test mode:	TM4	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0100	-0.45	38.96	38.51	88.00	-49.49	QP
2	0.0183	-12.13	33.65	21.52	88.00	-66.48	QP
3	0.0694	-9.81	22.63	12.82	88.00	-75.18	QP
4	0.0863	-9.23	21.97	12.74	79.75	-67.01	QP
5	0.1710	-14.58	20.92	6.34	56.42	-50.08	QP
6*	0.7820	-18.39	20.07	1.68	38.15	-36.47	QP



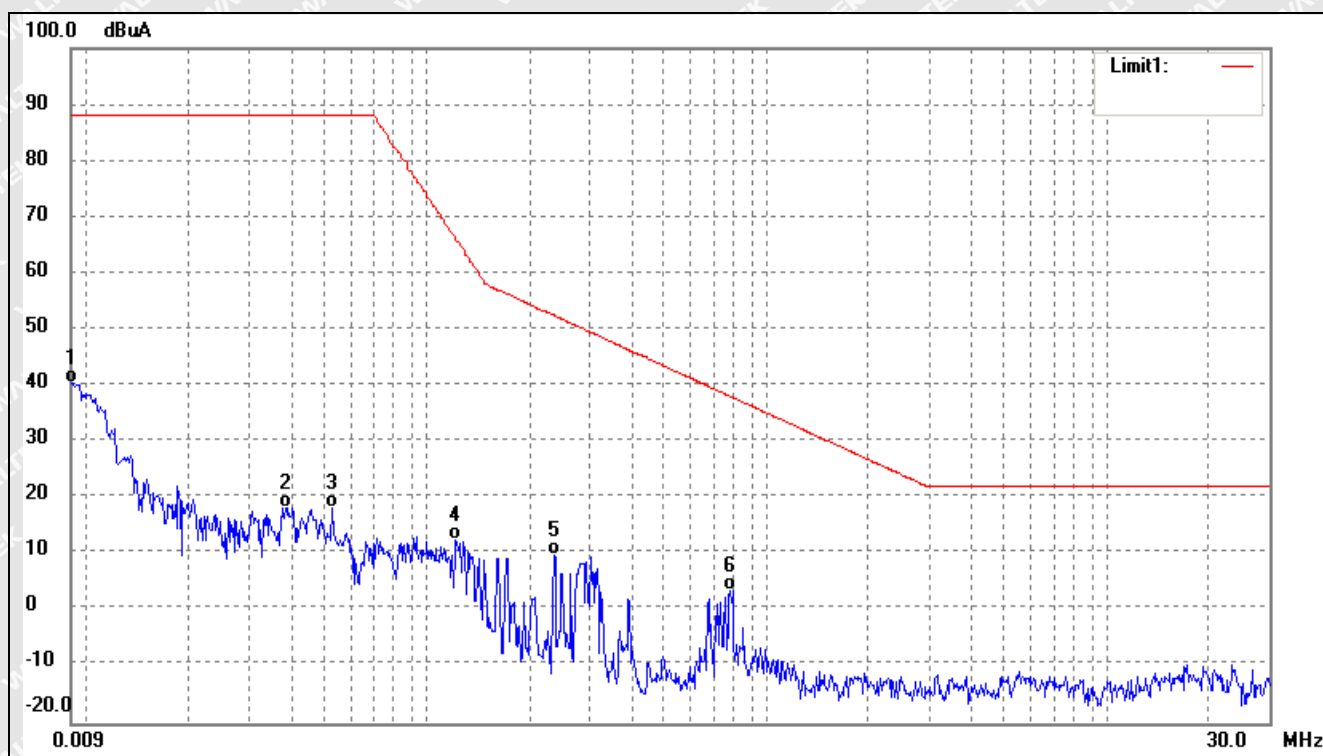
Test mode:	TM5	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	0.32	39.46	39.78	88.00	-48.22	QP
2	0.0303	-11.28	28.80	17.52	88.00	-70.48	QP
3	0.0728	-9.36	22.48	13.12	86.46	-73.34	QP
4	0.2782	-16.98	20.54	3.56	50.58	-47.02	QP
5	0.7338	-18.64	20.09	1.45	38.92	-37.47	QP
6*	1.6019	-19.43	20.36	0.93	29.54	-28.61	QP



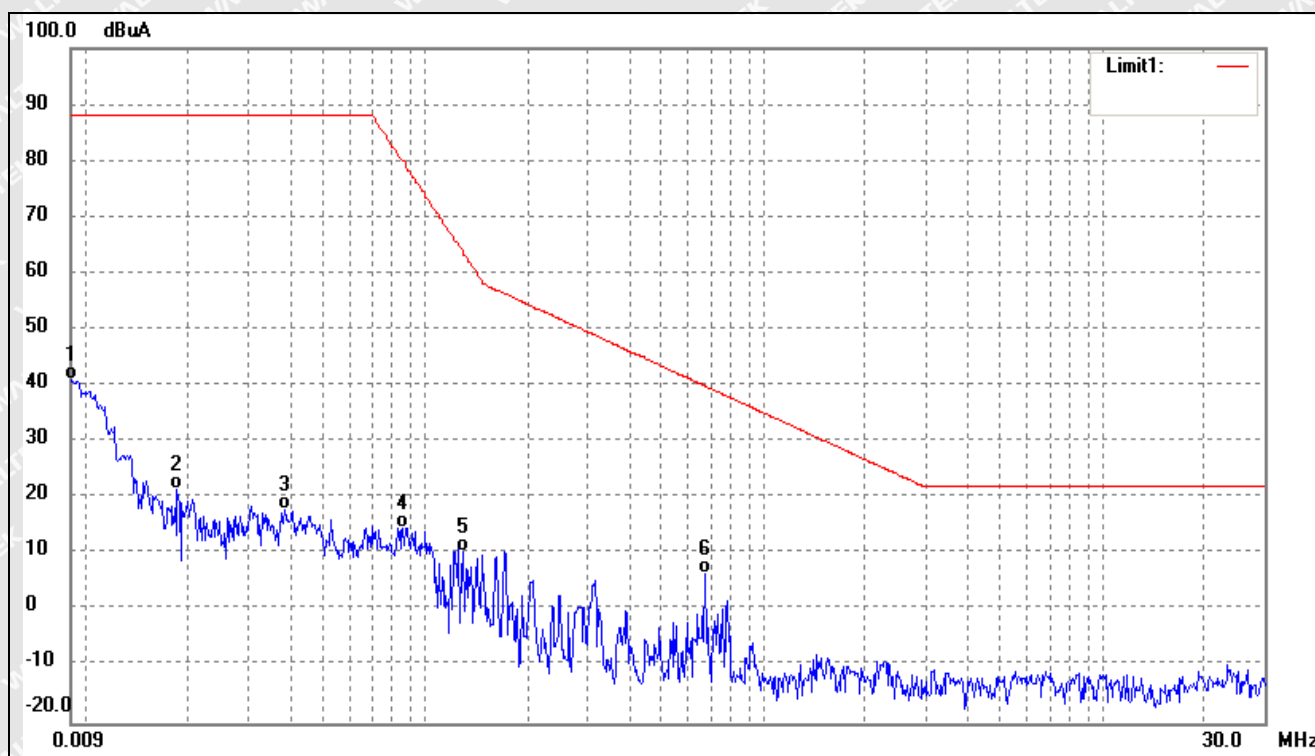
Test mode:	TM5	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0091	0.77	39.71	40.48	88.00	-47.52	QP
2	0.0383	-7.49	25.88	18.39	88.00	-69.61	QP
3	0.0529	-5.69	23.83	18.14	88.00	-69.86	QP
4	0.1218	-8.79	21.36	12.57	66.18	-53.61	QP
5	0.2379	-10.86	20.60	9.74	52.45	-42.71	QP
6*	0.7820	-16.39	20.07	3.68	38.15	-34.47	QP



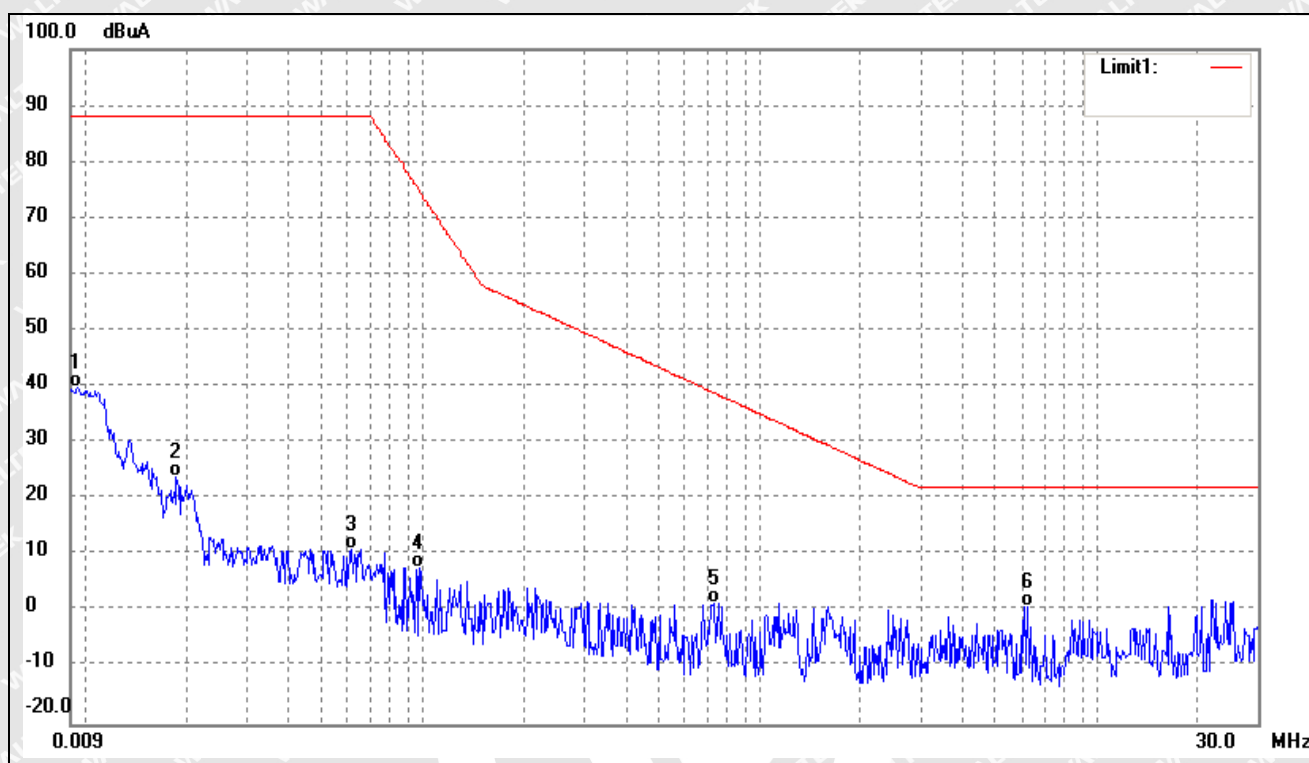
Test mode:	TM5	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0091	1.27	39.71	40.98	88.00	-47.02	QP
2	0.0183	-12.13	33.65	21.52	88.00	-66.48	QP
3	0.0383	-7.99	25.88	17.89	88.00	-70.11	QP
4	0.0863	-7.23	21.97	14.74	79.75	-65.01	QP
5	0.1300	-10.88	21.29	10.41	63.61	-53.20	QP
6*	0.6700	-13.67	20.12	6.45	40.01	-33.56	QP



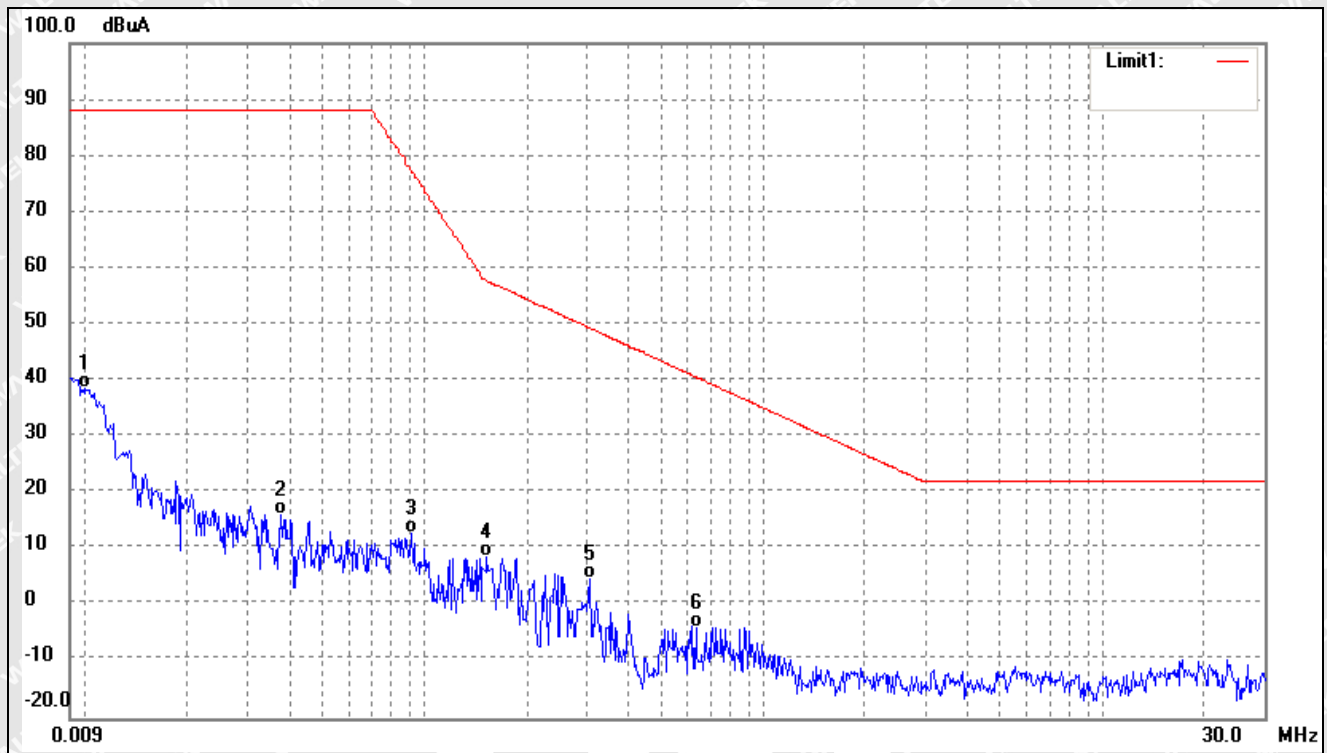
Test mode:	TM6	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	0.32	39.46	39.78	88.00	-48.22	QP
2	0.0183	-9.63	33.65	24.02	88.00	-63.98	QP
3	0.0616	-11.86	22.98	11.12	88.00	-76.88	QP
4	0.0976	-13.74	21.63	7.89	74.91	-67.02	QP
5	0.7338	-18.64	20.09	1.45	38.92	-37.47	QP
6*	6.2460	-19.81	20.71	0.90	22.00	-21.10	QP



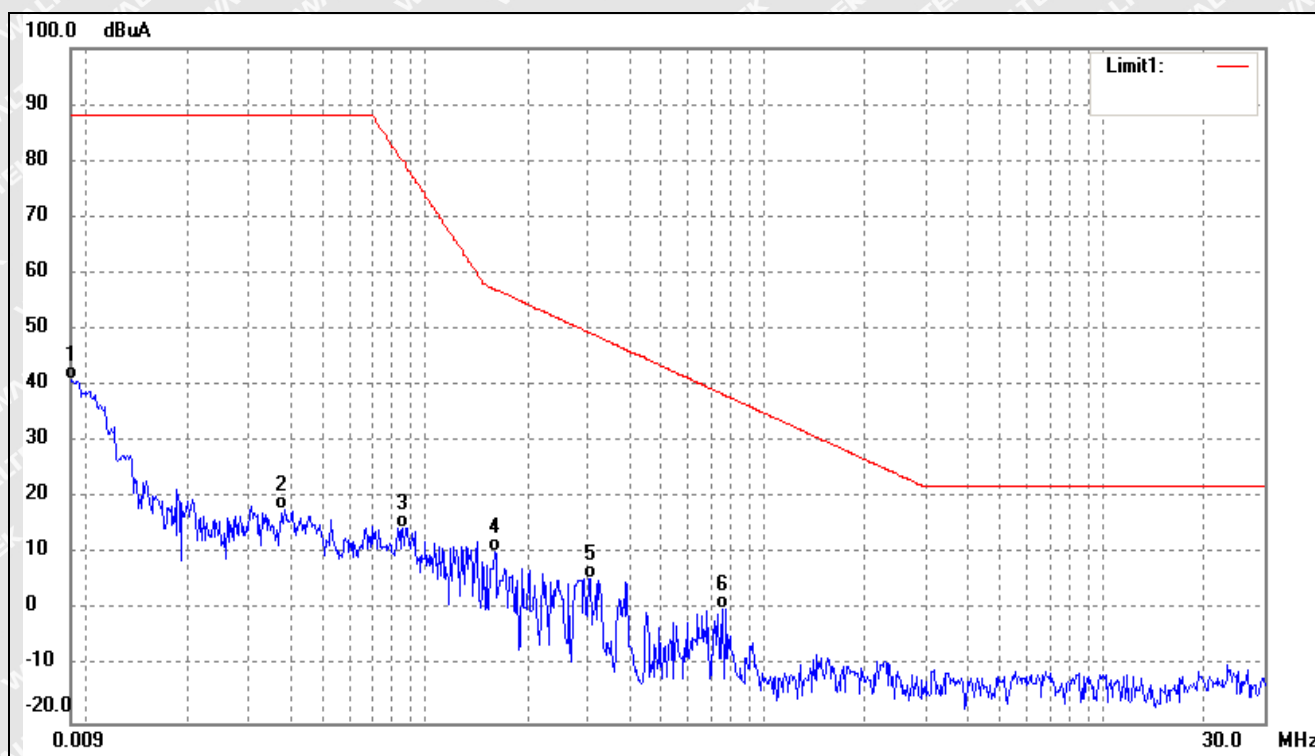
Test mode:	TM6	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0100	-0.45	38.96	38.51	88.00	-49.49	QP
2	0.0379	-9.75	26.03	16.28	88.00	-71.72	QP
3	0.0922	-8.98	21.79	12.81	77.15	-64.34	QP
4	0.1527	-12.41	21.09	8.68	57.78	-49.10	QP
5	0.3064	-15.83	20.50	4.67	49.41	-44.74	QP
6*	0.6340	-24.05	20.14	-3.91	40.67	-44.58	QP



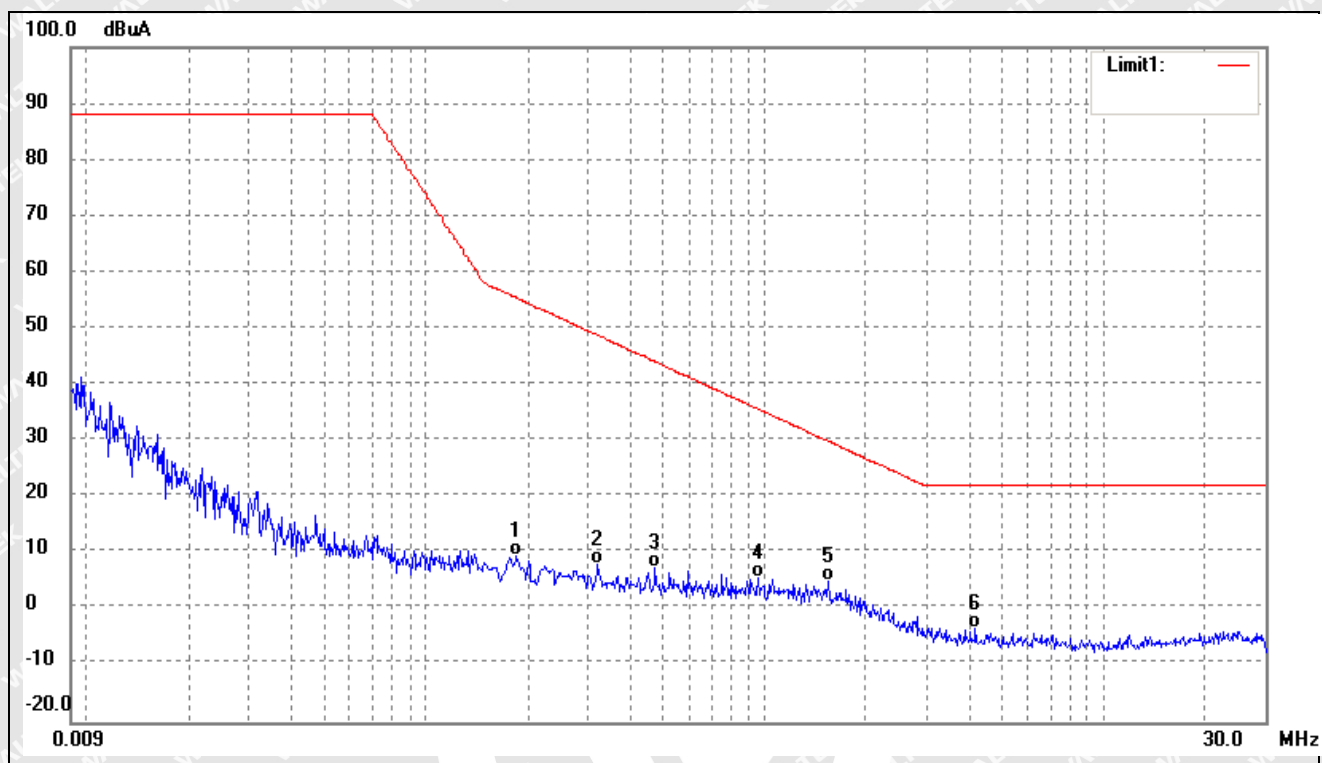
Test mode:	TM6	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0091	1.27	39.71	40.98	88.00	-47.02	QP
2	0.0383	-7.99	25.88	17.89	88.00	-70.11	QP
3	0.0863	-7.23	21.97	14.74	79.76	-65.02	QP
4	0.1602	-10.68	21.02	10.34	57.21	-46.87	QP
5	0.3064	-14.83	20.50	5.67	49.42	-43.75	QP
6*	0.7580	-19.70	20.08	0.38	38.53	-38.15	QP



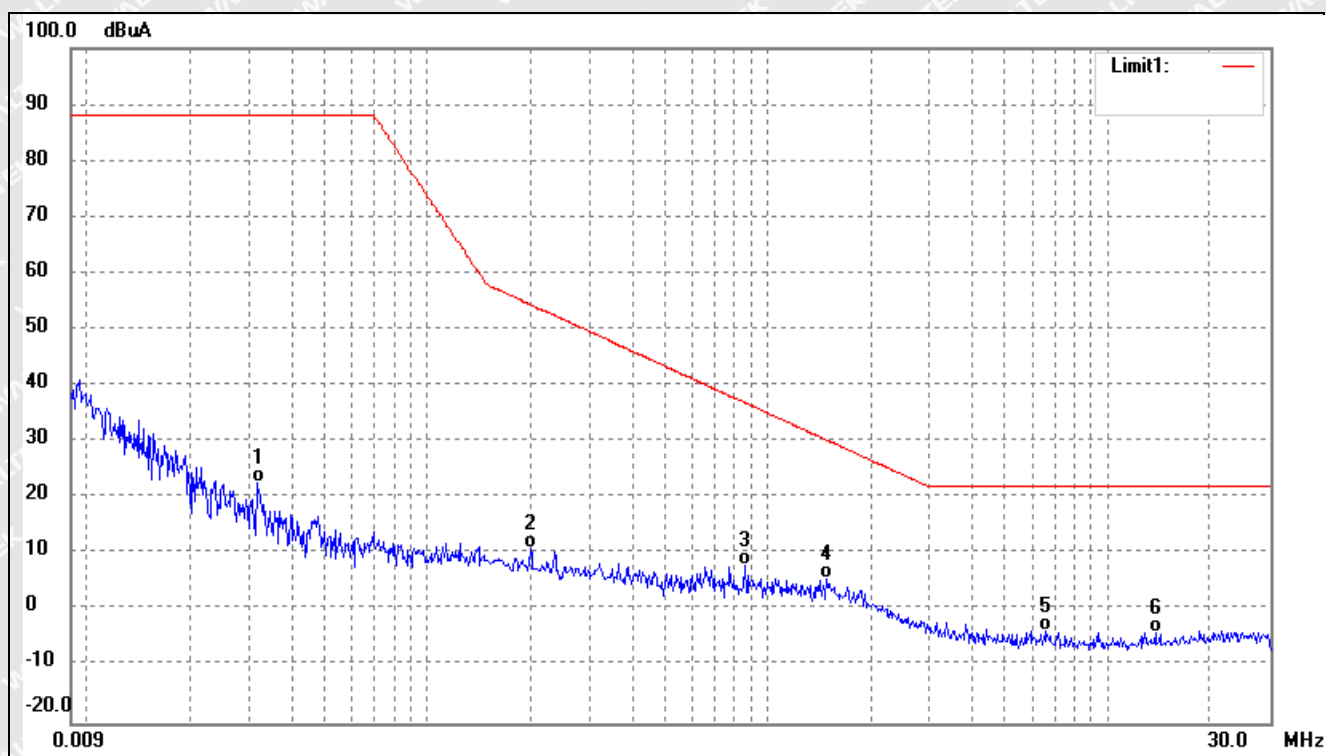
Test mode:	TM7	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.1860	-11.35	20.79	9.44	55.41	-45.97	QP
2	0.3220	-12.28	20.48	8.20	48.82	-40.62	QP
3	0.4780	-12.86	20.28	7.42	44.07	-36.65	QP
4	0.9620	-14.33	20.06	5.73	35.67	-29.94	QP
5*	1.5460	-15.26	20.33	5.07	29.97	-24.90	QP
6	4.1860	-24.09	20.67	-3.42	22.00	-25.42	QP



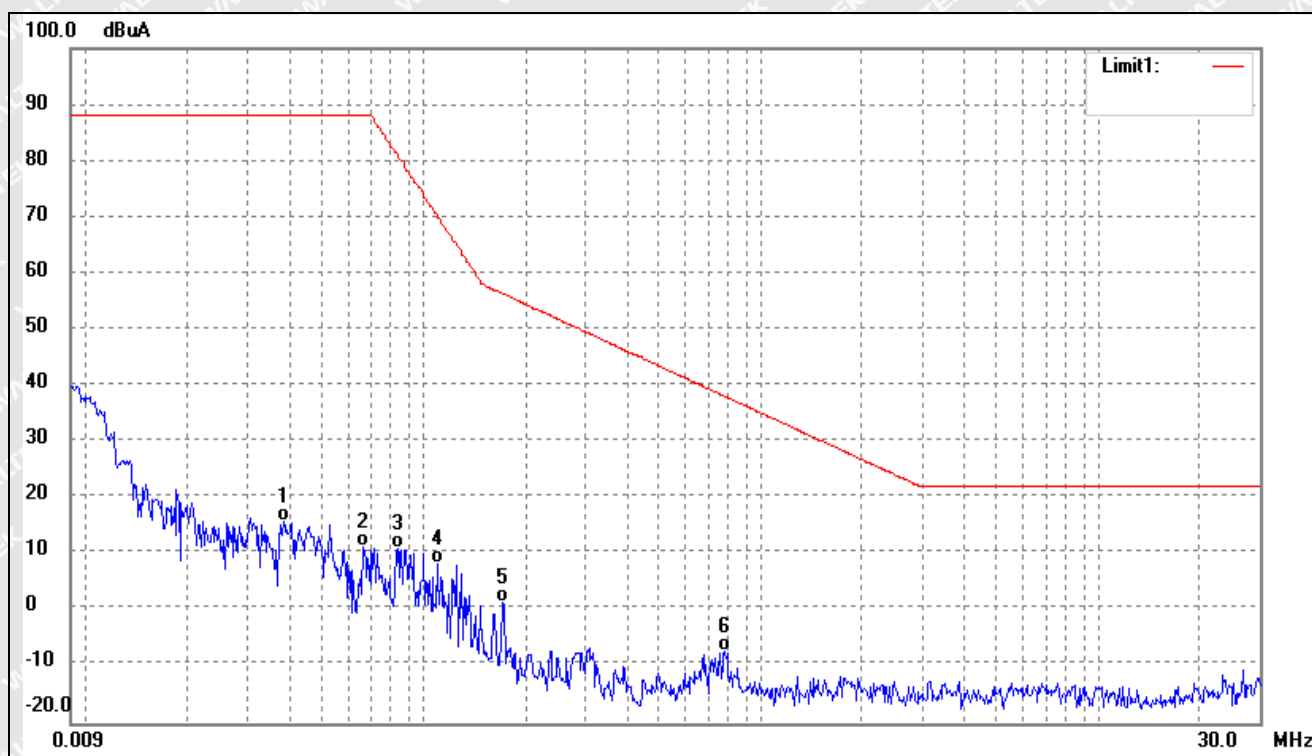
Test mode:	TM7	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0318	-5.61	28.25	22.64	88.00	-65.36	QP
2	0.2020	-9.64	20.66	11.02	54.42	-43.40	QP
3	0.8659	-12.15	20.06	7.91	36.93	-29.02	QP
4*	1.5020	-14.65	20.31	5.66	30.31	-24.65	QP
5	6.5899	-24.19	20.64	-3.55	22.00	-25.55	QP
6	13.8140	-24.46	20.64	-3.82	22.00	-25.82	QP



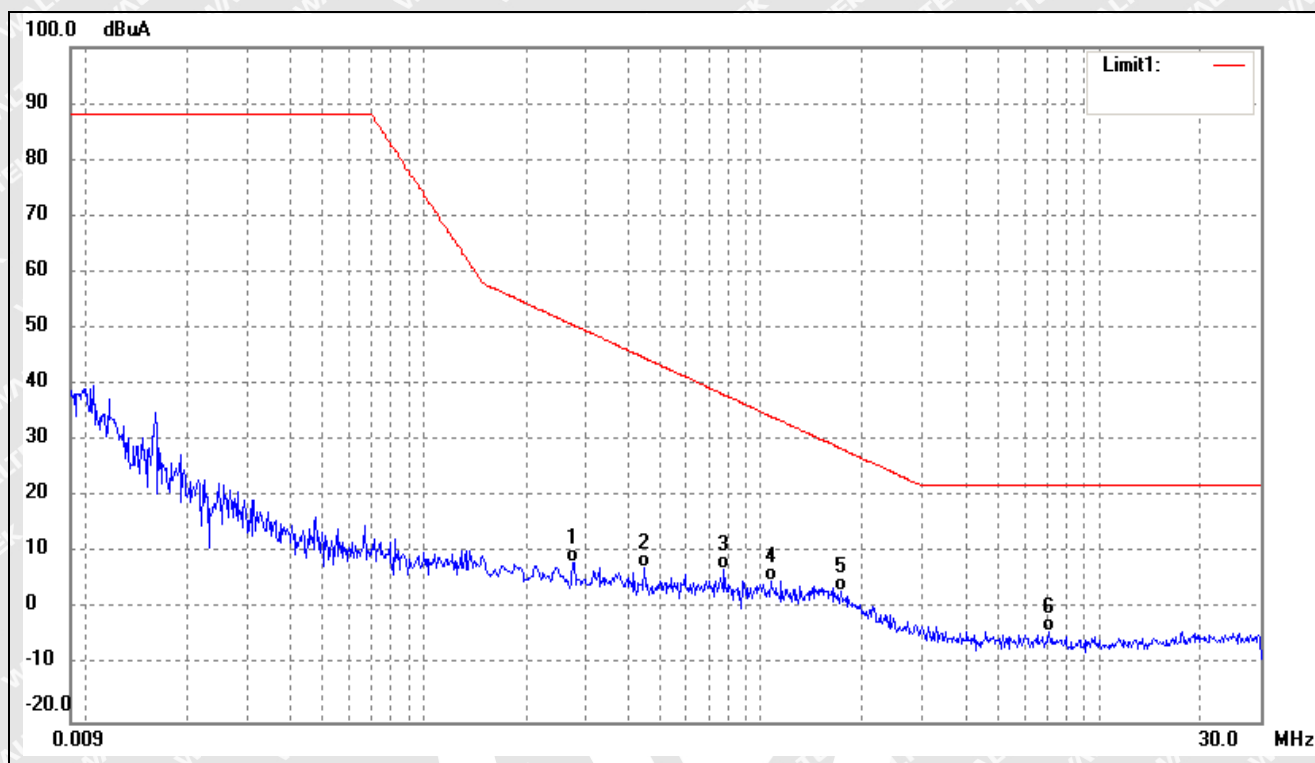
Test mode:	TM7	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0383	-9.99	25.88	15.89	88.00	-72.11	QP
2	0.0661	-11.39	22.78	11.39	88.00	-76.61	QP
3	0.0840	-11.06	22.04	10.98	80.82	-69.84	QP
4	0.1097	-13.13	21.47	8.34	70.32	-61.98	QP
5	0.1710	-19.58	20.92	1.34	56.43	-55.09	QP
6*	0.7820	-27.39	20.07	-7.32	38.16	-45.48	QP



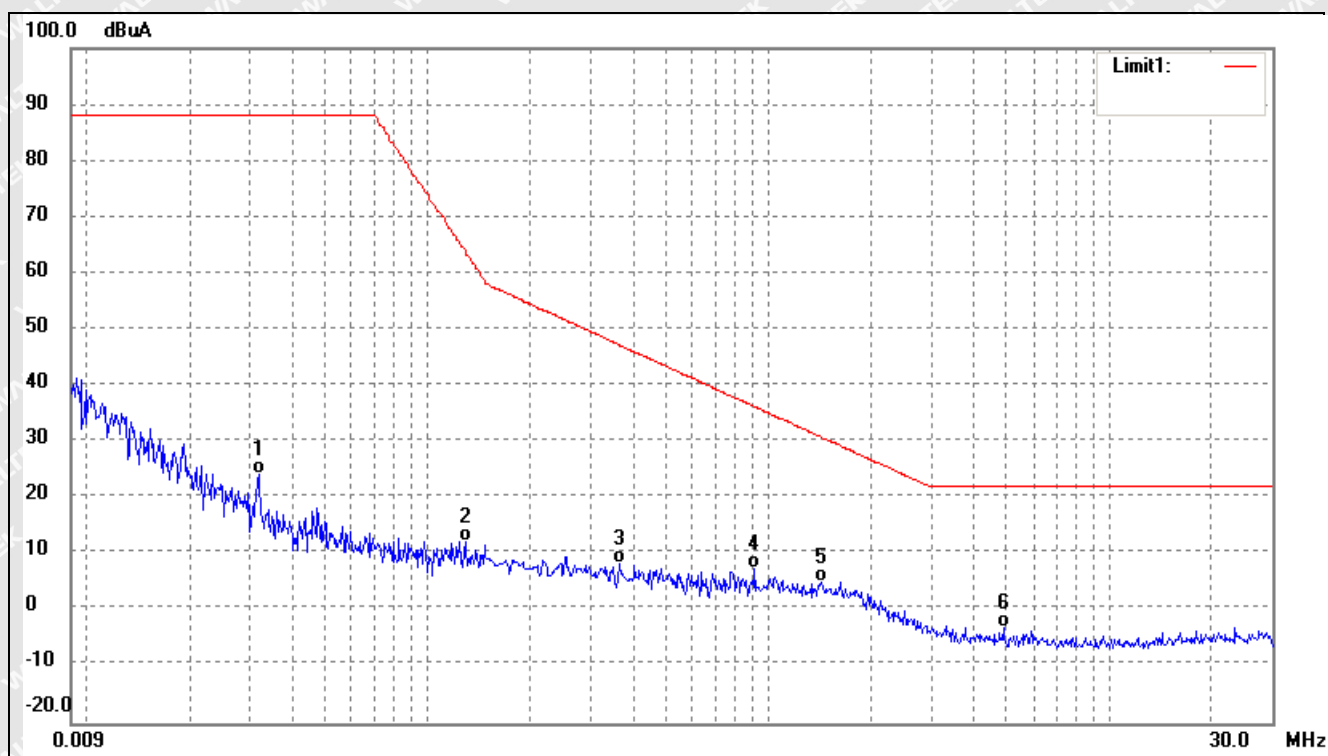
Test mode:	TM8	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.2779	-12.09	20.54	8.45	50.58	-42.13	QP
2	0.4500	-12.88	20.31	7.43	44.79	-37.36	QP
3	0.7740	-13.04	20.07	7.03	38.28	-31.25	QP
4	1.0620	-14.97	20.09	5.12	34.48	-29.36	QP
5*	1.7220	-17.15	20.42	3.27	28.67	-25.40	QP
6	7.1300	-24.42	20.53	-3.89	22.00	-25.89	QP



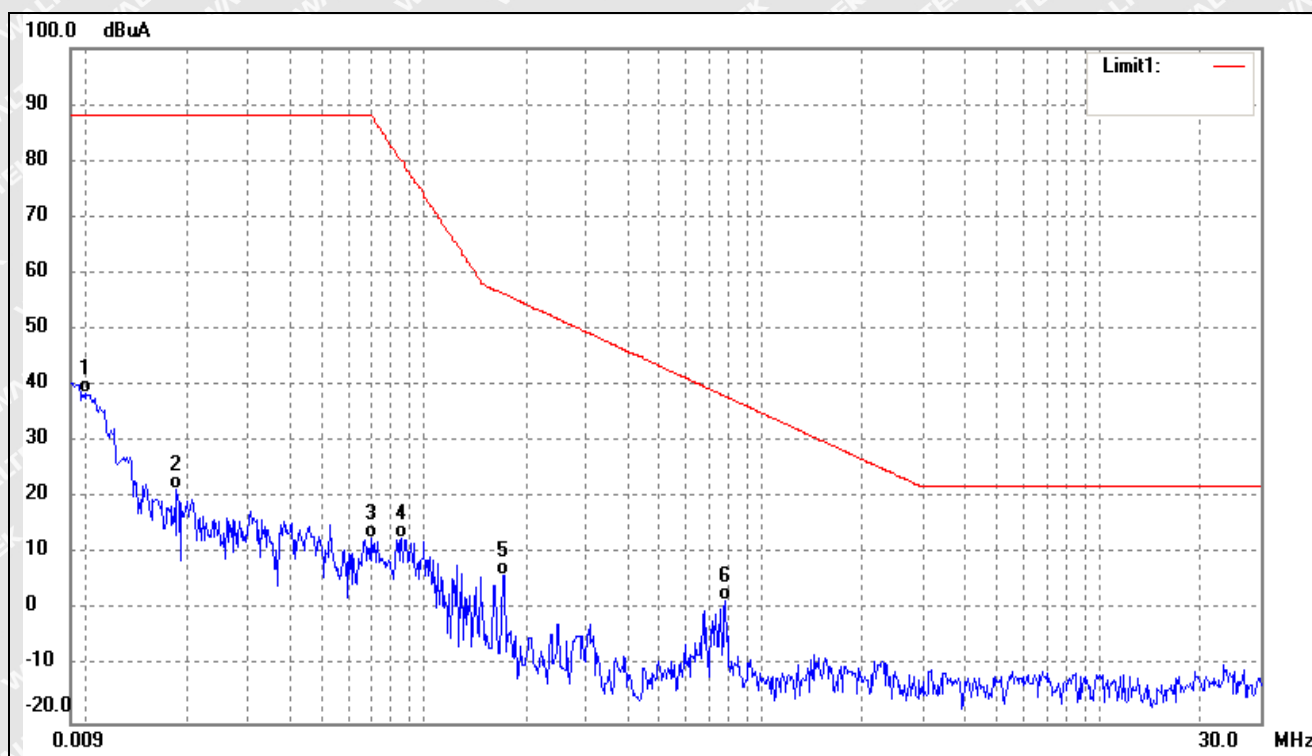
Test mode:	TM8	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0320	-3.89	28.18	24.29	88.00	-63.71	QP
2	0.1287	-9.05	21.30	12.25	64.01	-51.76	QP
3	0.3659	-12.15	20.41	8.26	47.28	-39.02	QP
4	0.9100	-12.61	20.06	7.45	36.33	-28.88	QP
5	1.4258	-15.33	20.27	4.94	30.94	-26.00	QP
6*	4.9100	-23.87	20.71	-3.16	22.00	-25.16	QP



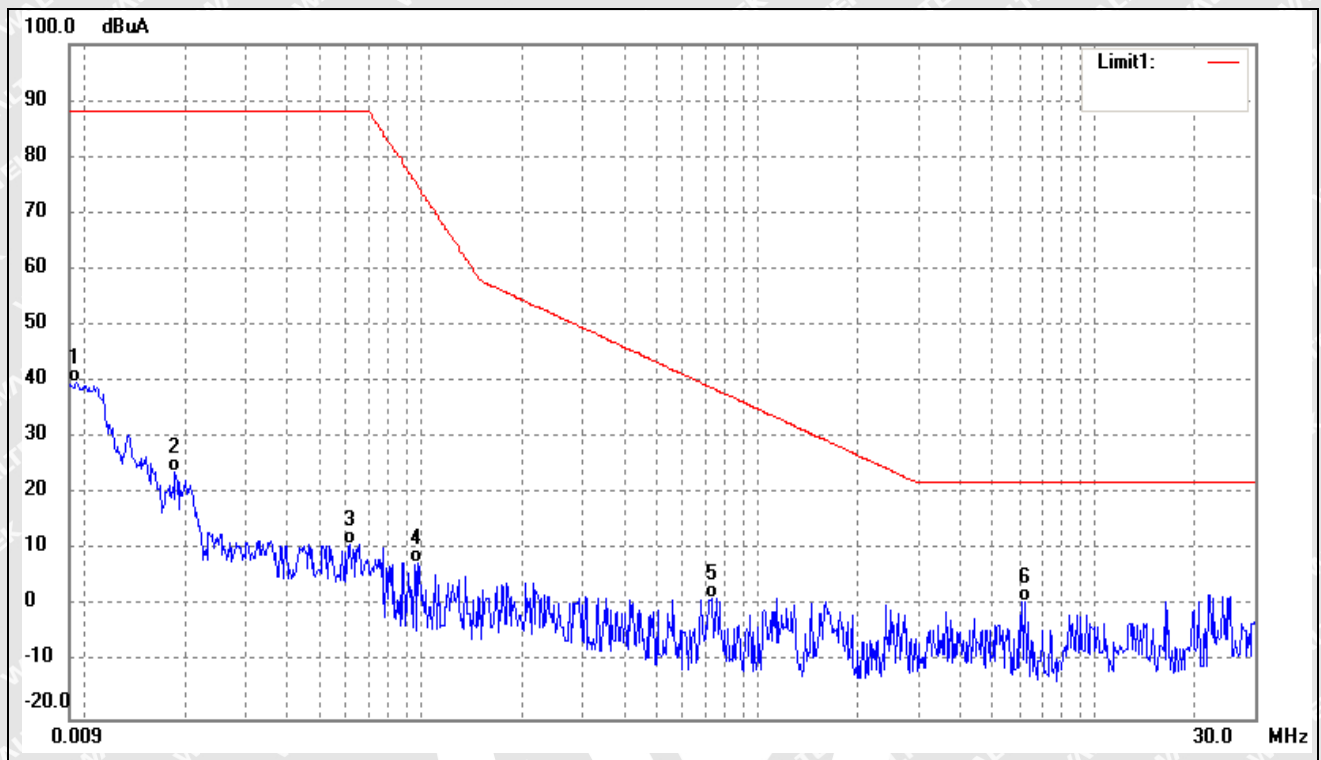
Test mode:	TM8	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0100	-0.45	38.96	38.51	88.00	-49.49	QP
2	0.0183	-12.13	33.65	21.52	88.00	-66.48	QP
3	0.0694	-9.81	22.63	12.82	88.00	-75.18	QP
4	0.0863	-9.23	21.97	12.74	79.75	-67.01	QP
5	0.1710	-14.58	20.92	6.34	56.42	-50.08	QP
6*	0.7820	-18.39	20.07	1.68	38.15	-36.47	QP



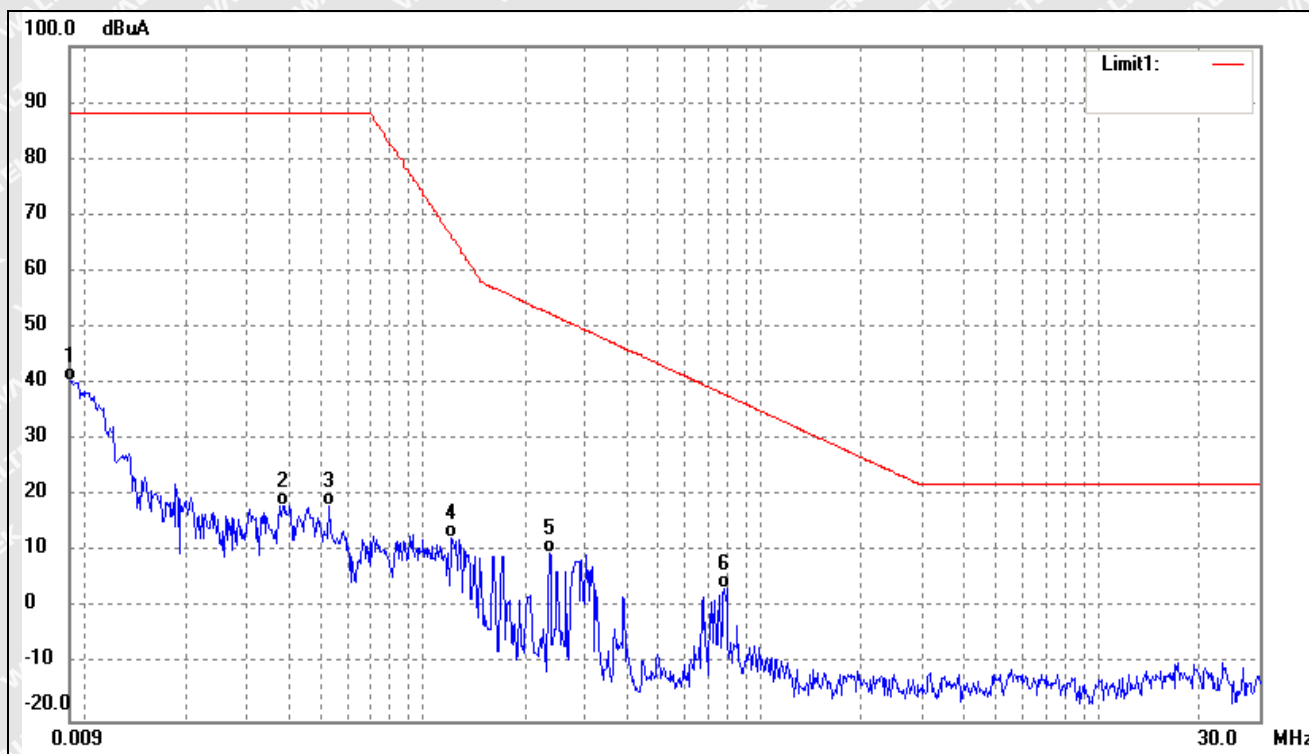
Test mode:	TM9	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	0.32	39.46	39.78	88.00	-48.22	QP
2	0.0183	-9.63	33.65	24.02	88.00	-63.98	QP
3	0.0616	-11.86	22.98	11.12	88.00	-76.88	QP
4	0.0976	-13.74	21.63	7.89	74.91	-67.02	QP
5	0.7338	-18.64	20.09	1.45	38.92	-37.47	QP
6*	6.2460	-19.81	20.71	0.90	22.00	-21.10	QP



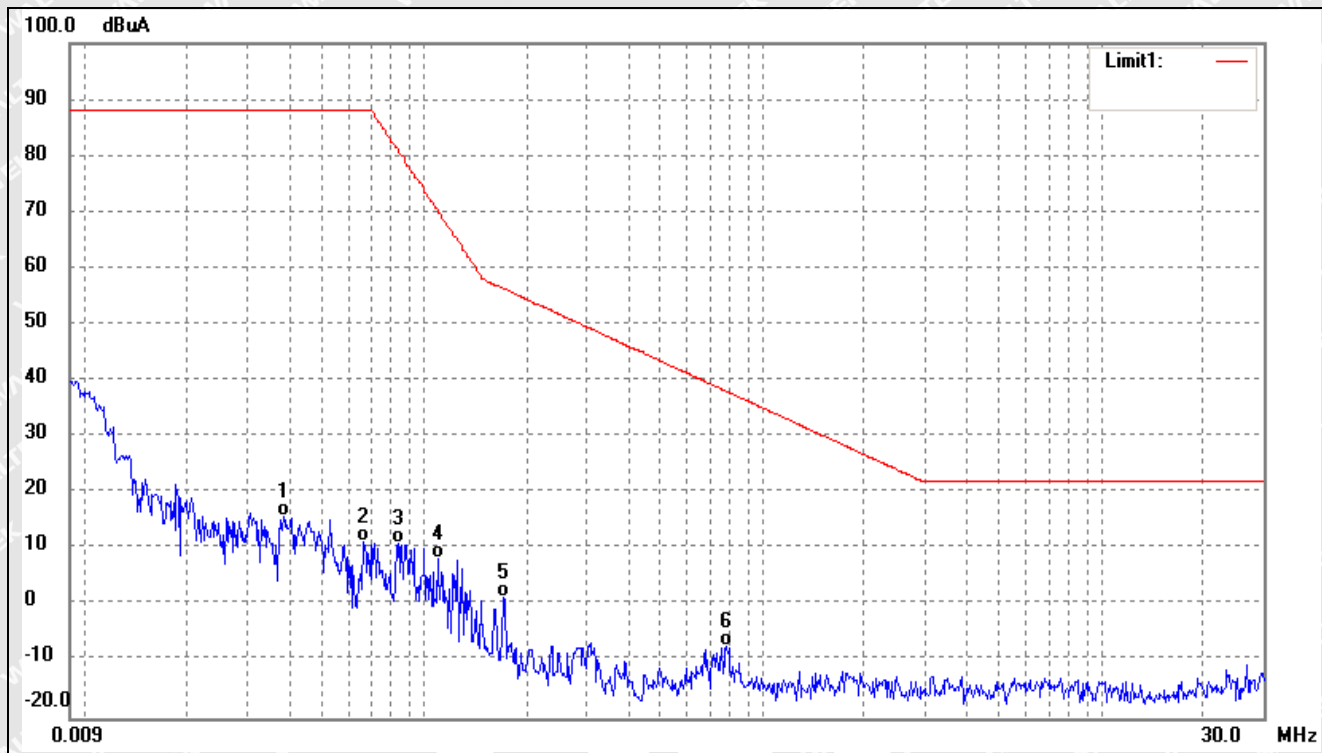
Test mode:	TM9	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0091	0.77	39.71	40.48	88.00	-47.52	QP
2	0.0383	-7.49	25.88	18.39	88.00	-69.61	QP
3	0.0529	-5.69	23.83	18.14	88.00	-69.86	QP
4	0.1218	-8.79	21.36	12.57	66.18	-53.61	QP
5	0.2379	-10.86	20.60	9.74	52.45	-42.71	QP
6*	0.7820	-16.39	20.07	3.68	38.15	-34.47	QP



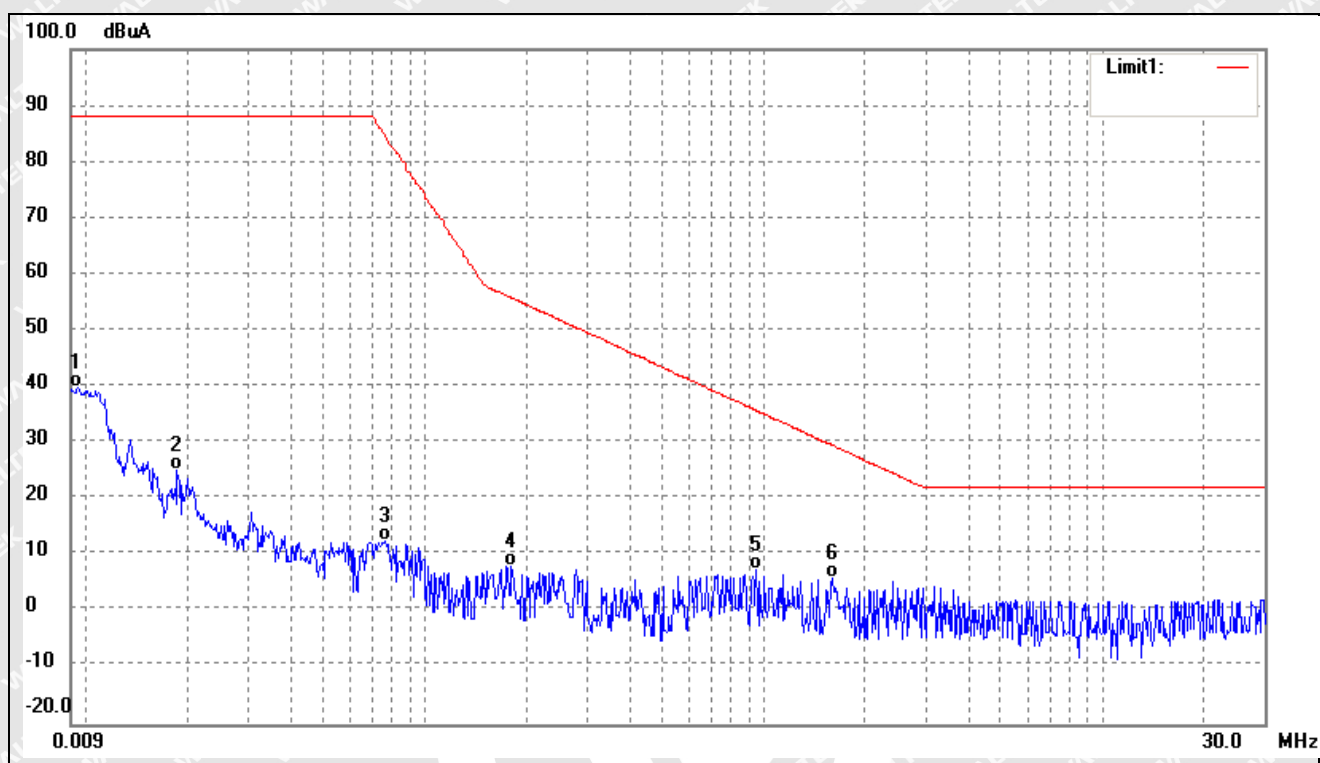
Test mode:	TM9	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0383	-9.99	25.88	15.89	88.00	-72.11	QP
2	0.0661	-11.39	22.78	11.39	88.00	-76.61	QP
3	0.0840	-11.06	22.04	10.98	80.82	-69.84	QP
4	0.1097	-13.13	21.47	8.34	70.32	-61.98	QP
5	0.1710	-19.58	20.92	1.34	56.43	-55.09	QP
6*	0.7820	-27.39	20.07	-7.32	38.16	-45.48	QP



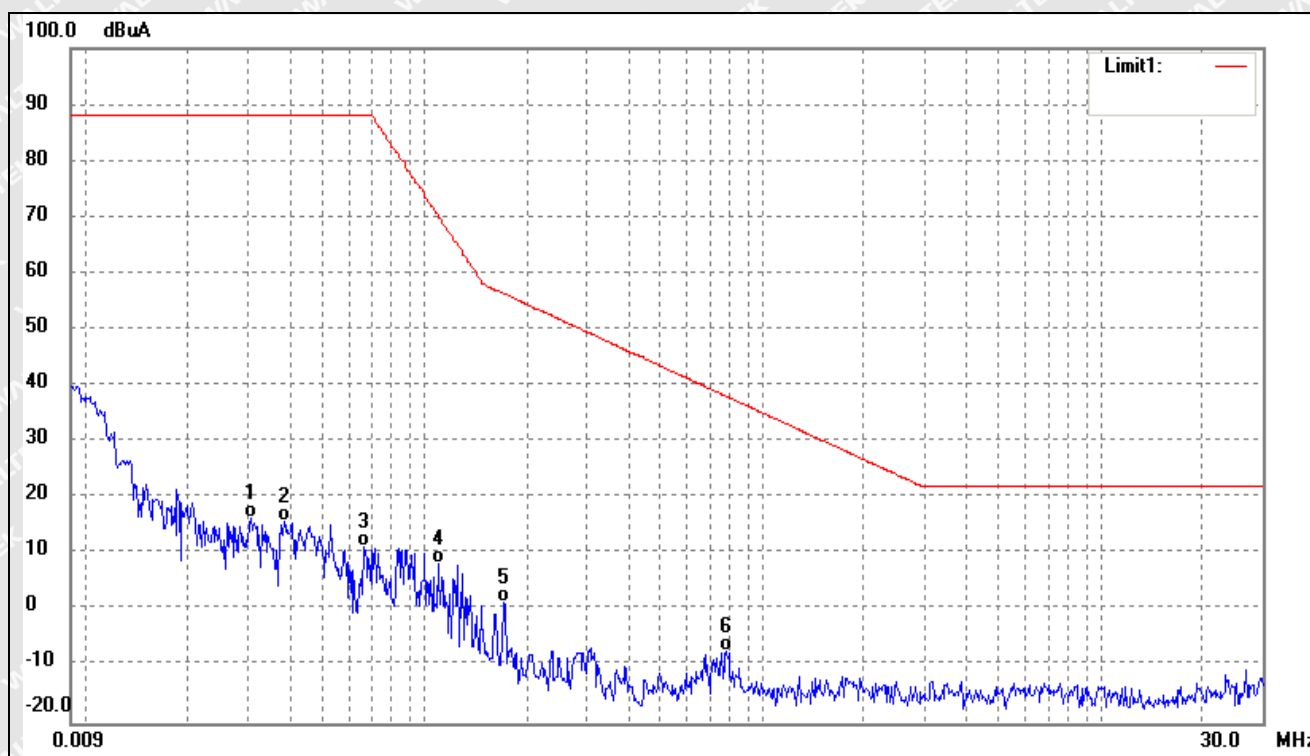
Test mode:	TM10	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0094	0.32	39.46	39.78	88.00	-48.22	QP
2	0.0183	-8.63	33.65	25.02	88.00	-62.98	QP
3	0.0761	-9.89	22.33	12.44	84.71	-72.27	QP
4	0.1794	-12.84	20.85	8.01	55.85	-47.84	QP
5	0.9497	-12.57	20.06	7.49	35.82	-28.33	QP
6*	1.6019	-14.43	20.36	5.93	29.54	-23.61	QP



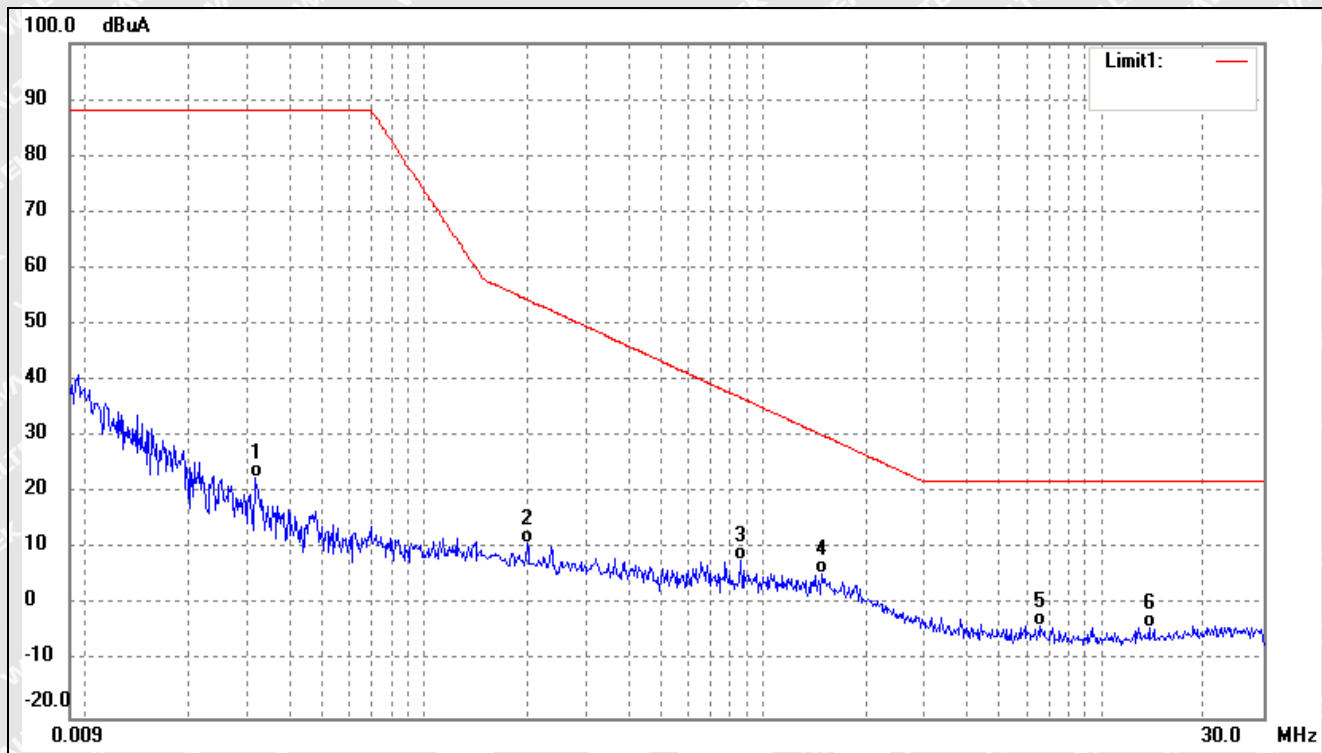
Test mode:	TM10	Polarity:	Y
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0305	-12.21	28.73	16.52	88.00	-71.48	QP
2	0.0383	-9.99	25.88	15.89	88.00	-72.11	QP
3	0.0661	-11.39	22.78	11.39	88.00	-76.61	QP
4	0.1097	-13.13	21.47	8.34	70.30	-61.96	QP
5	0.1710	-19.58	20.92	1.34	56.42	-55.08	QP
6*	0.7820	-27.39	20.07	-7.32	38.15	-45.47	QP



Test mode:	TM10	Polarity:	Z
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No.	Frequency (MHz)	Reading (dBuA)	Correct (dB/m)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector
1	0.0318	-5.61	28.25	22.64	88.00	-65.36	QP
2	0.2020	-9.64	20.66	11.02	54.42	-43.40	QP
3	0.8659	-12.15	20.06	7.91	36.93	-29.02	QP
4*	1.5020	-14.65	20.31	5.66	30.31	-24.65	QP
5	6.5899	-24.19	20.64	-3.55	22.00	-25.55	QP
6	13.8140	-24.46	20.64	-3.82	22.00	-25.82	QP



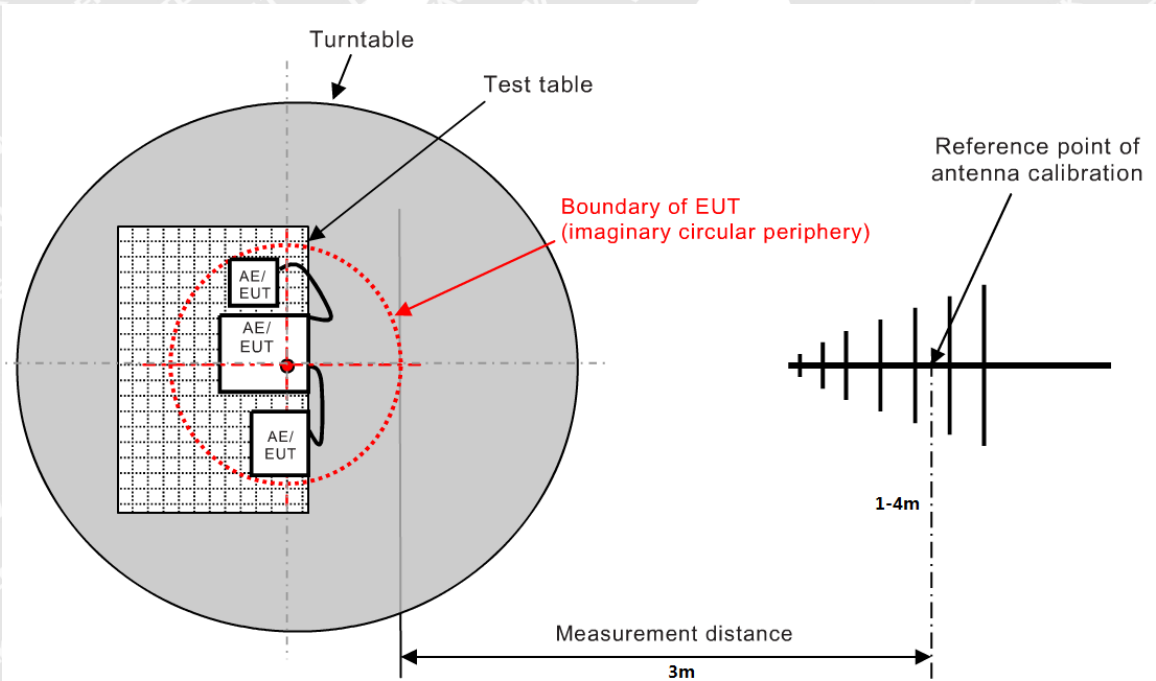
5. Radiated Electromagnetic Disturbances (30MHz to 300MHz)

5.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement:

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Radiated Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

5.2 Basic Test Setup Block Diagram





5.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\begin{aligned}\text{Corr. Ampl.} &= \text{Indicated Reading} + \text{Correct} \\ \text{Correct} &= \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}\end{aligned}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a lighting device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{EN 55015 Limit}$$

5.4 Environmental Conditions

Temperature:	22.5° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

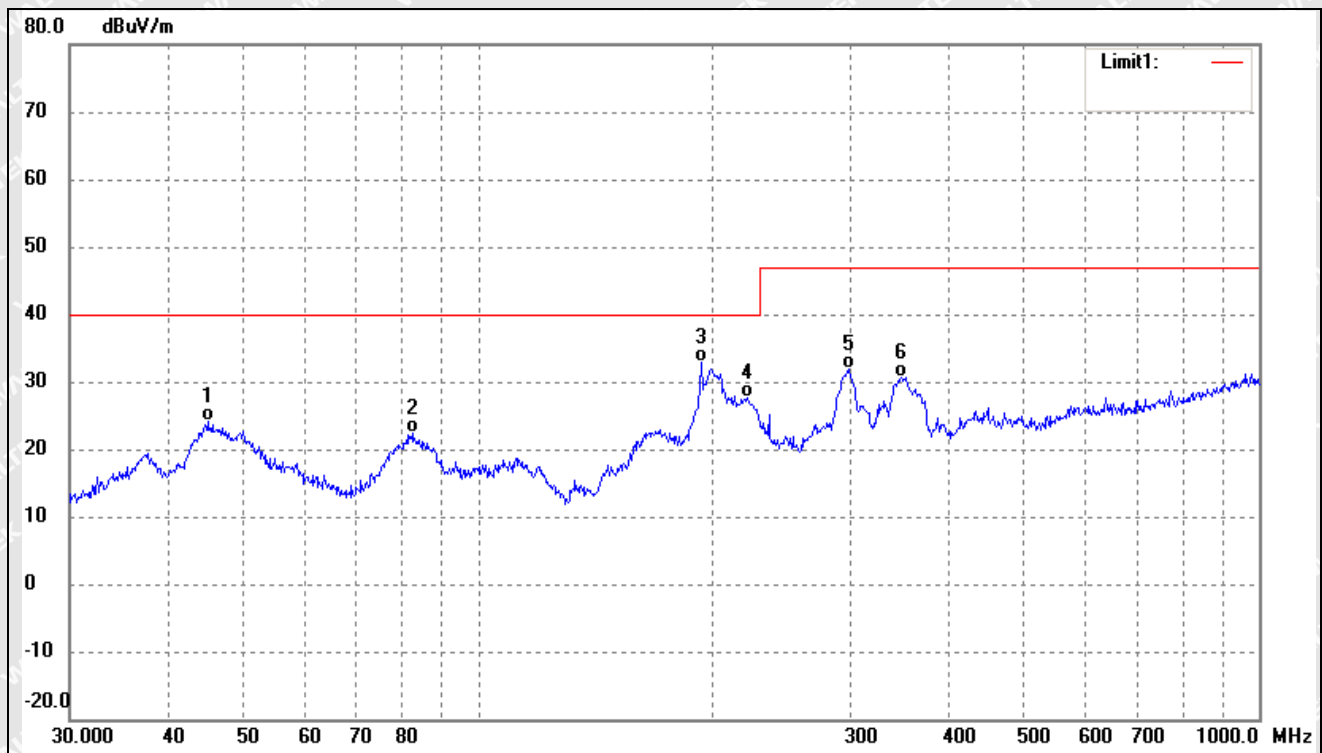
5.5 Summary of Test Results

Look at the graphs and data below:

WALTEK



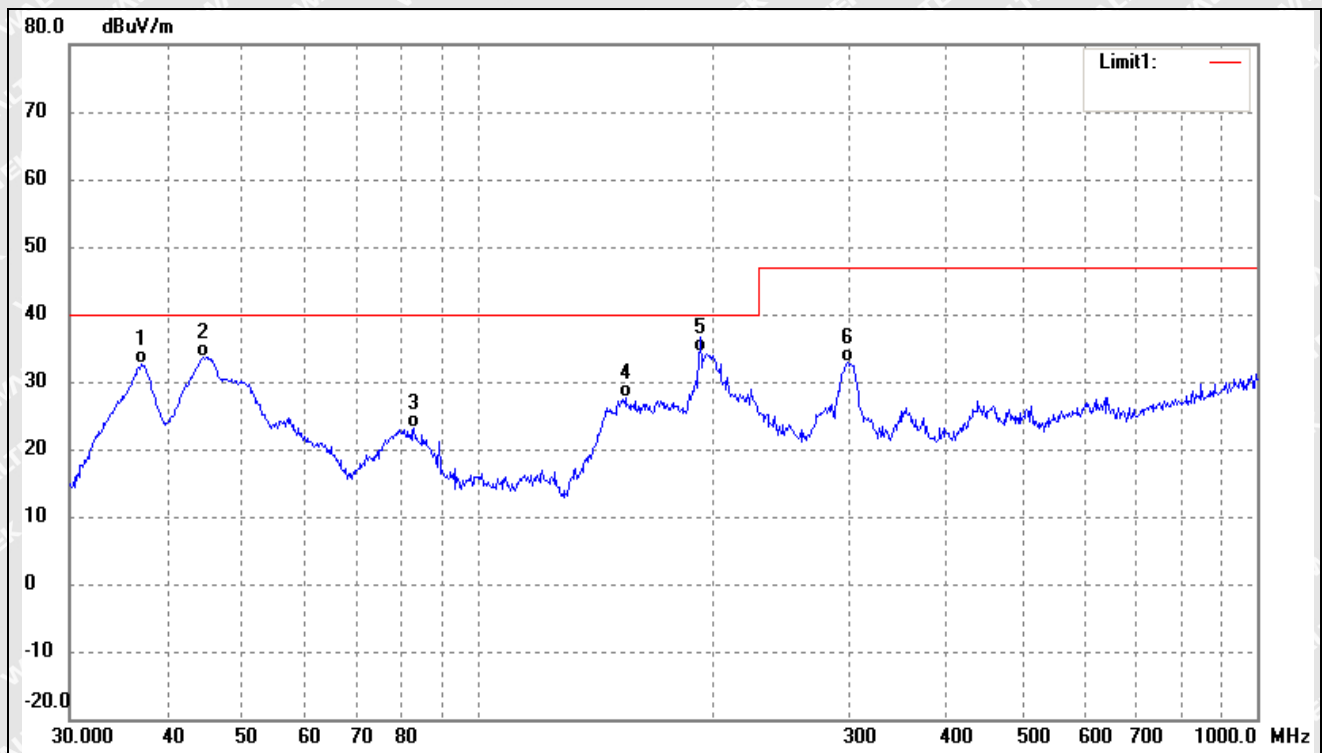
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	45.0583	34.75	-10.56	24.19	40.00	-15.81	281	100	QP
2	82.3588	36.56	-14.29	22.27	40.00	-17.73	92	100	QP
3	193.0945	44.59	-11.82	32.77	40.00	-7.23	331	100	QP
4	221.3921	38.37	-10.84	27.53	40.00	-12.47	97	100	QP
5	298.2681	39.22	-7.34	31.88	47.00	-15.12	217	100	QP
6	348.0274	36.94	-6.24	30.70	47.00	-16.30	115	100	QP



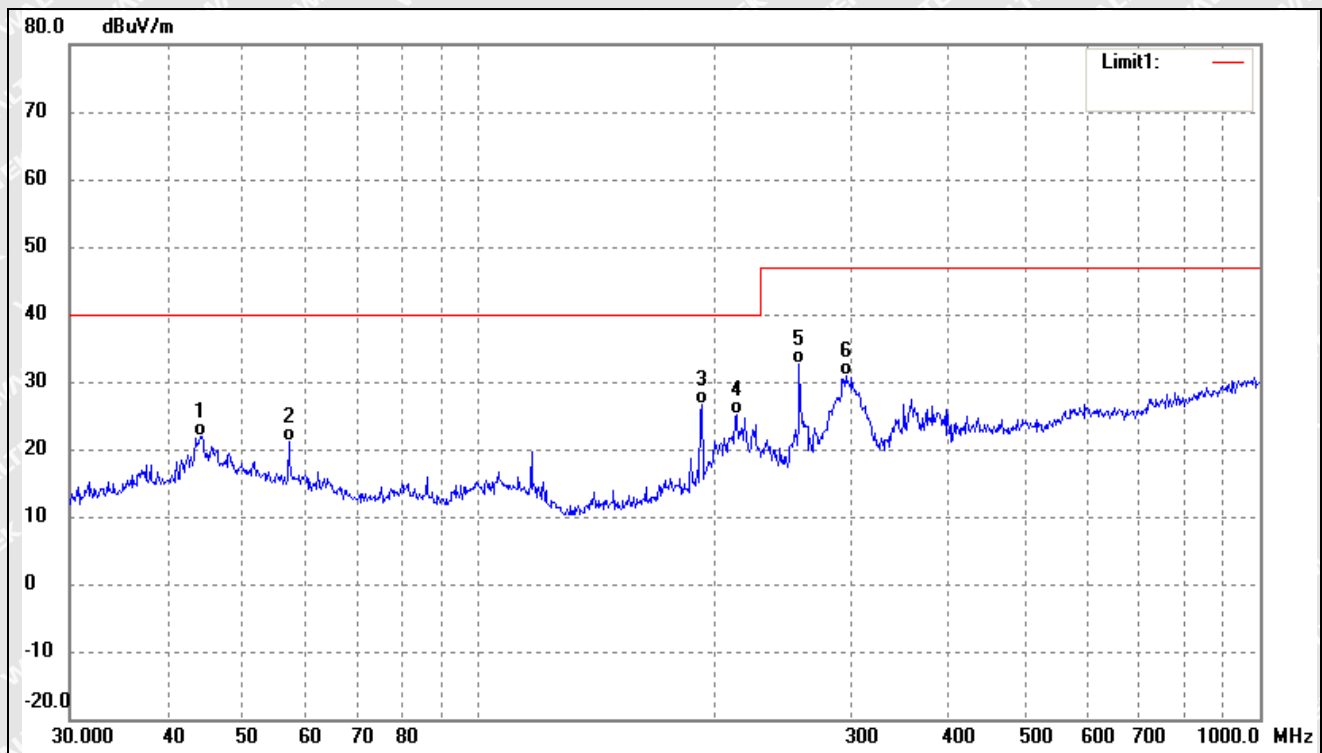
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.0248	44.88	-12.27	32.61	40.00	-7.39	149	100	QP
2	44.5868	44.27	-10.66	33.61	40.00	-6.39	114	100	QP
3	82.9385	37.50	-14.31	23.19	40.00	-16.81	97	100	QP
4	154.8204	42.15	-14.59	27.56	40.00	-12.44	132	100	QP
5	193.0945	46.32	-11.82	34.50	40.00	-5.50	184	100	QP
6	298.2681	40.21	-7.34	32.87	47.00	-14.13	308	100	QP



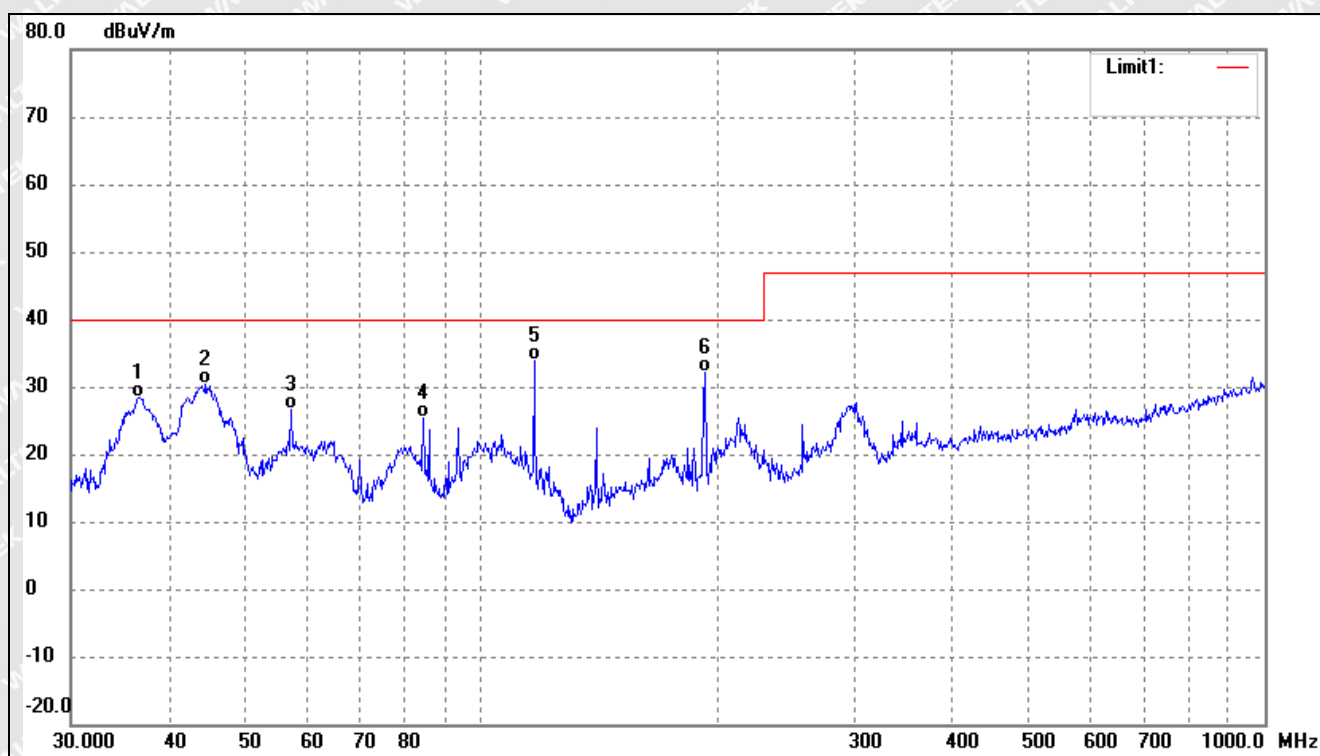
Test mode:	TM2	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.1202	32.71	-10.77	21.94	40.00	-18.06	127	100	QP
2	57.1914	32.80	-11.74	21.06	40.00	-18.94	145	100	QP
3	193.0945	38.49	-11.82	26.67	40.00	-13.33	94	100	QP
4	213.7634	36.19	-11.01	25.18	40.00	-14.82	120	100	QP
5	257.4222	41.85	-9.12	32.73	47.00	-14.27	69	100	QP
6	295.1469	38.48	-7.51	30.97	47.00	-16.03	322	100	QP



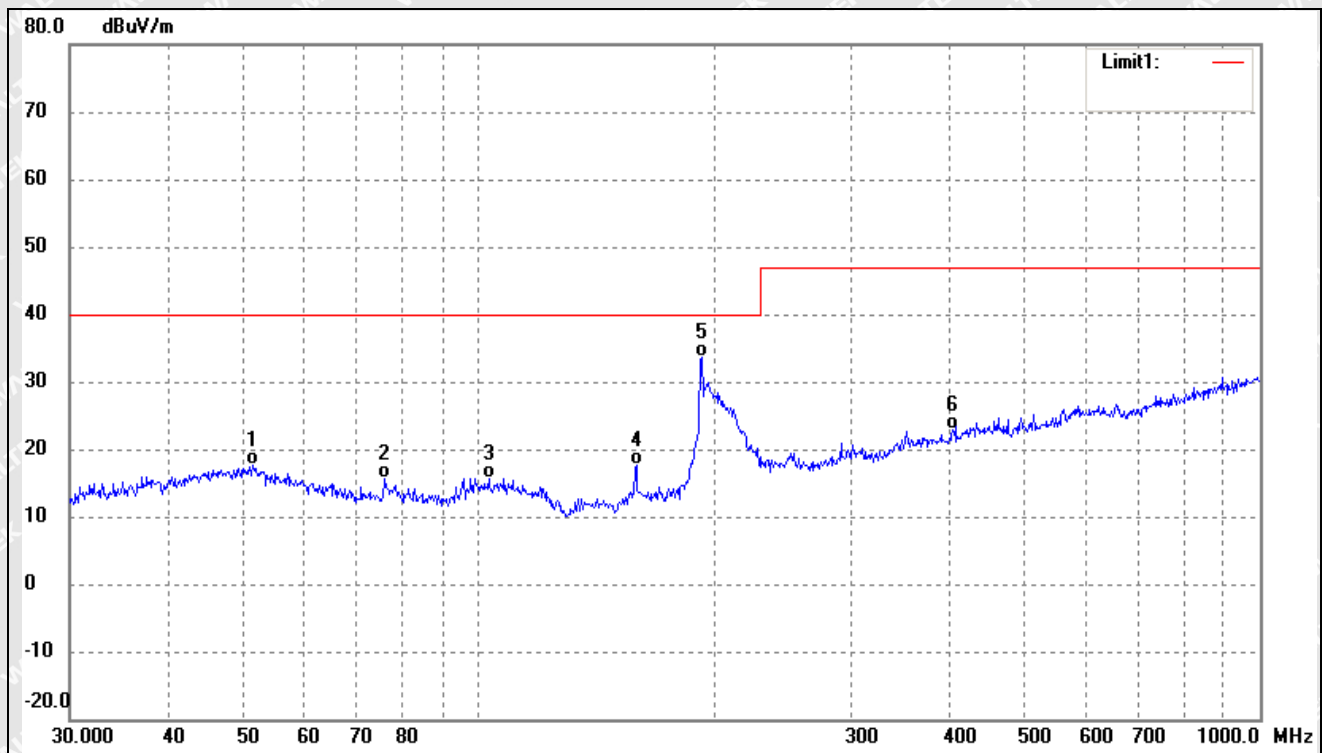
Test mode:	TM2	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	36.6375	40.82	-12.34	28.48	40.00	-11.52	81	100	QP
2	44.5868	40.98	-10.66	30.32	40.00	-9.68	165	100	QP
3	57.1914	38.34	-11.74	26.60	40.00	-13.40	83	100	QP
4	84.4054	39.66	-14.39	25.27	40.00	-14.73	100	100	QP
5	116.9495	46.66	-12.90	33.76	40.00	-6.24	208	100	QP
6	193.0945	43.89	-11.82	32.07	40.00	-7.93	180	100	QP



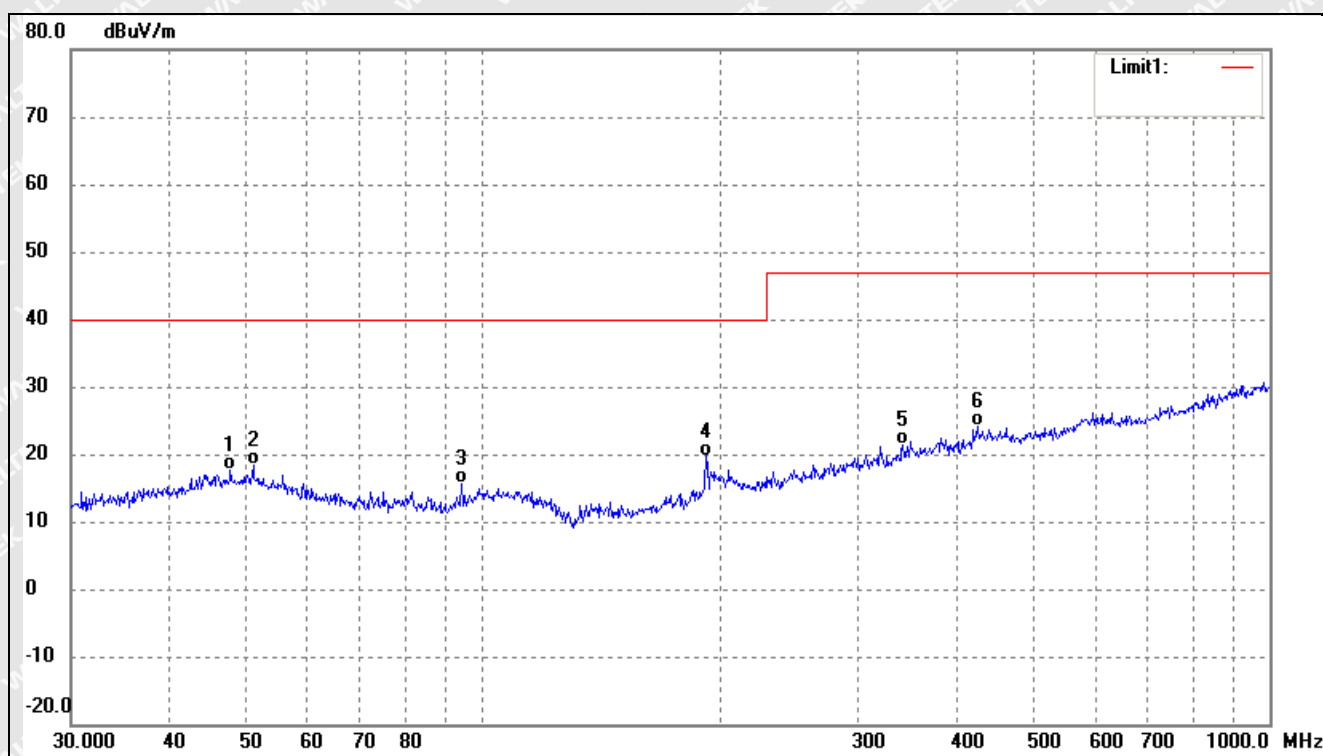
Test mode:	TM3	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	51.4807	28.16	-10.51	17.65	40.00	-22.35	180	100	QP
2	75.7114	29.49	-13.96	15.53	40.00	-24.47	176	100	QP
3	103.0800	27.99	-12.31	15.68	40.00	-24.32	122	100	QP
4	159.2251	31.86	-14.35	17.51	40.00	-22.49	109	100	QP
5	193.0945	45.41	-11.82	33.59	40.00	-6.41	256	100	QP
6	404.6665	28.31	-5.54	22.77	47.00	-24.23	127	100	QP



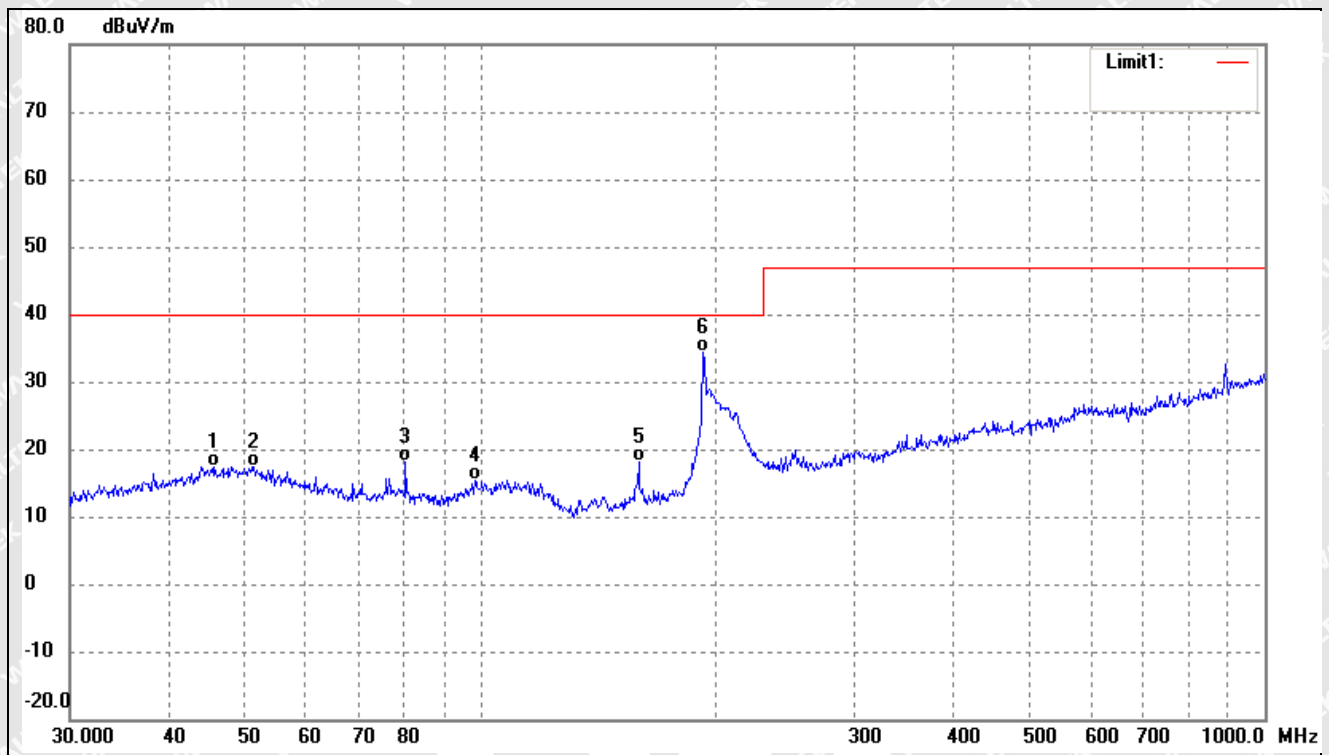
Test mode:	TM3	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	47.8260	27.90	-10.35	17.55	40.00	-22.45	79	100	QP
2	51.1209	28.72	-10.43	18.29	40.00	-21.71	106	100	QP
3	94.0979	29.15	-13.60	15.55	40.00	-24.45	56	100	QP
4	192.4186	31.63	-11.88	19.75	40.00	-20.25	143	100	QP
5	341.9786	28.06	-6.57	21.49	47.00	-25.51	283	100	QP
6	425.0280	28.48	-4.38	24.10	47.00	-22.90	241	100	QP



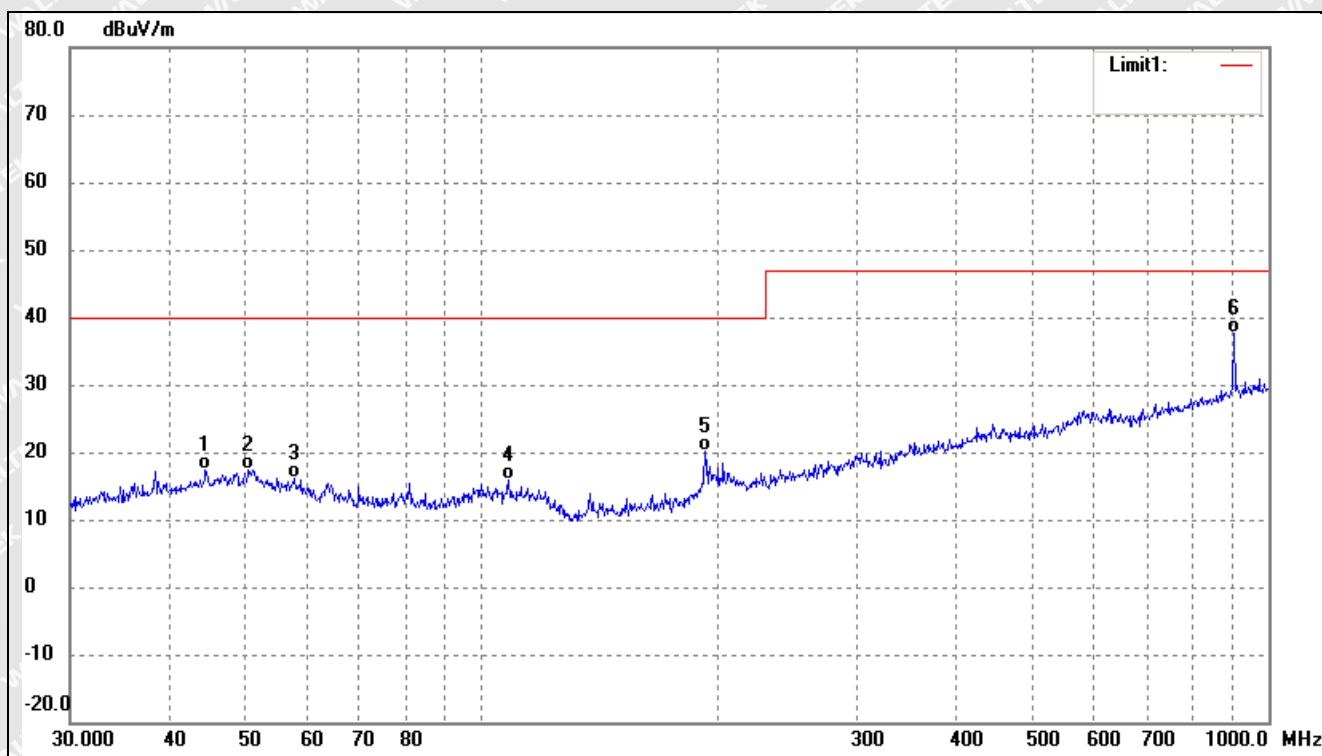
Test mode:	TM4	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	45.8553	27.89	-10.50	17.39	40.00	-22.61	265	100	QP
2	51.4807	27.99	-10.51	17.48	40.00	-22.52	94	100	QP
3	80.3619	32.43	-14.19	18.24	40.00	-21.76	241	100	QP
4	98.4866	28.04	-12.69	15.35	40.00	-24.65	94	100	QP
5	159.2251	32.40	-14.35	18.05	40.00	-21.95	307	100	QP
6	192.4186	46.24	-11.88	34.36	40.00	-5.64	196	100	QP



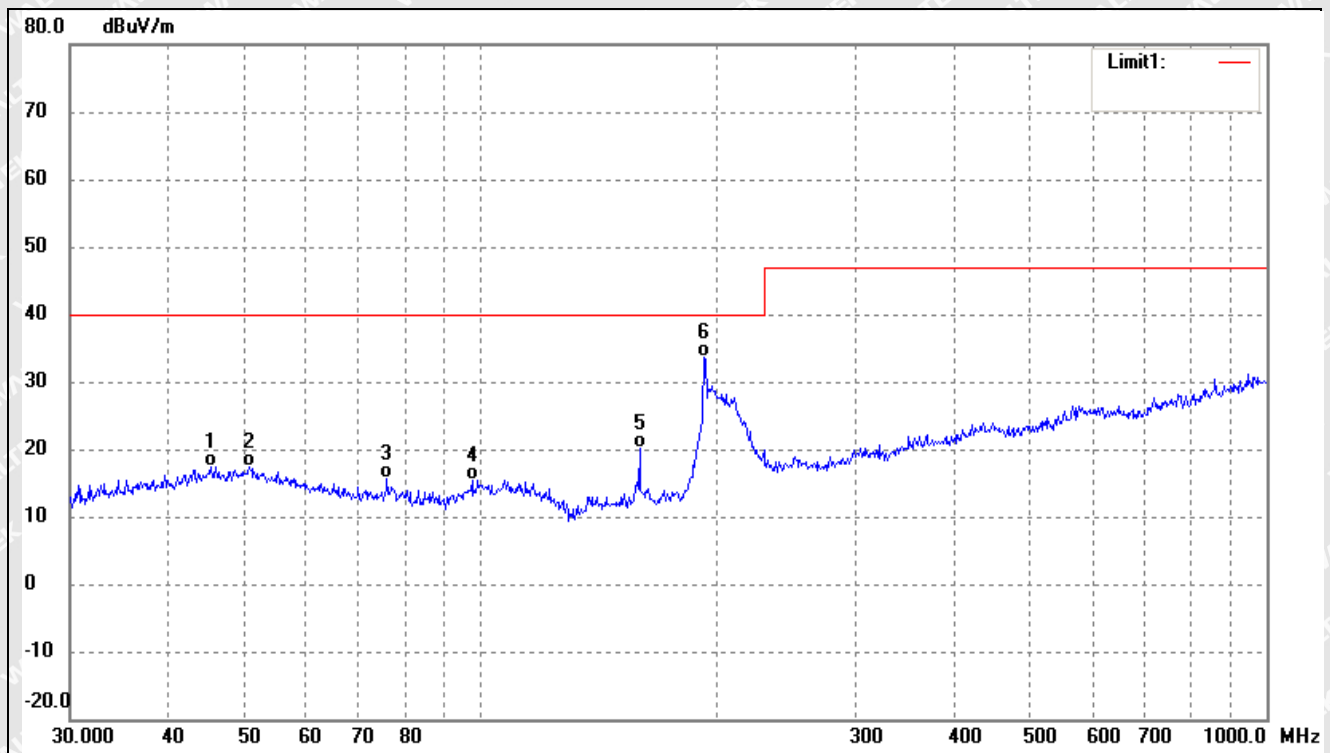
Test mode:	TM4	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.5868	28.02	-10.66	17.36	40.00	-22.64	205	100	QP
2	50.5860	27.62	-10.32	17.30	40.00	-22.70	93	100	QP
3	57.7962	28.05	-11.89	16.16	40.00	-23.84	284	100	QP
4	108.2667	28.06	-12.20	15.86	40.00	-24.14	97	100	QP
5	192.4186	32.08	-11.88	20.20	40.00	-19.80	326	100	QP
6	903.3094	36.01	1.65	37.66	47.00	-9.34	187	100	QP



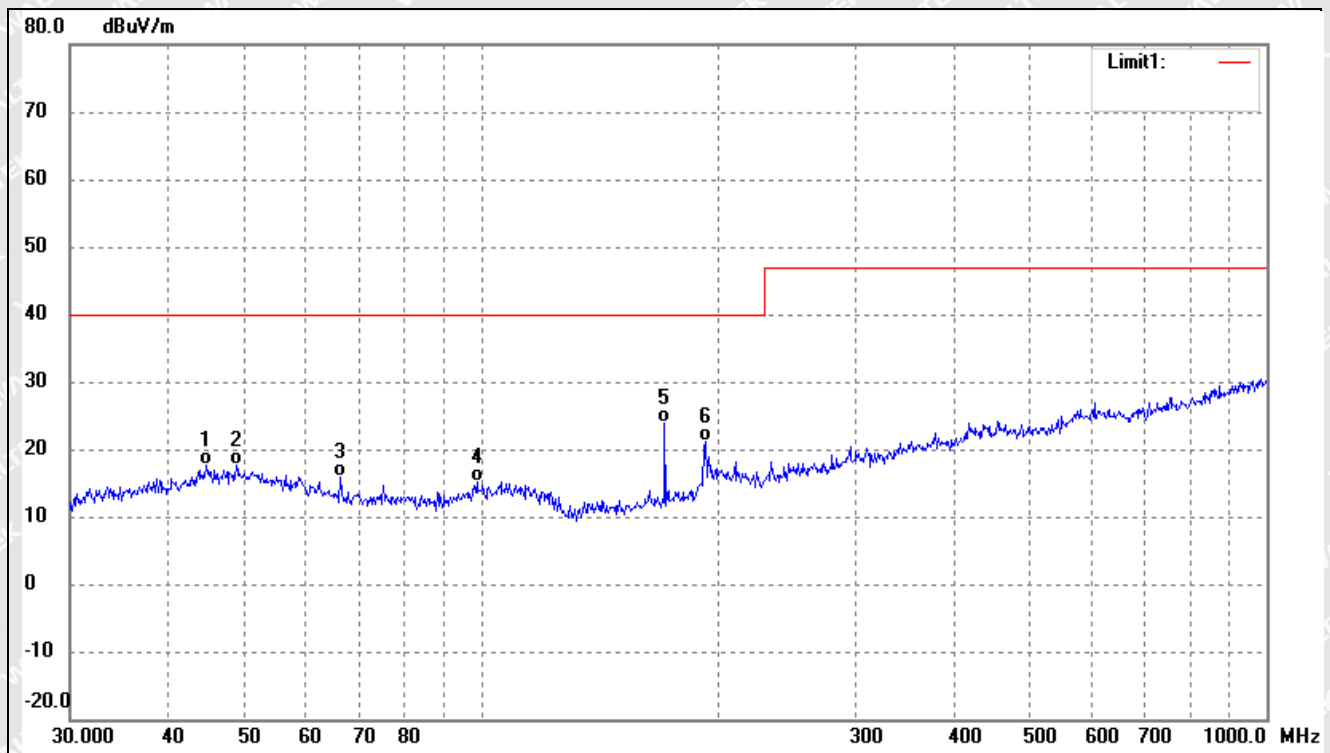
Test mode:	TM5	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	45.3755	27.88	-10.54	17.34	40.00	-22.66	131	100	QP
2	50.7637	27.75	-10.35	17.40	40.00	-22.60	311	100	QP
3	75.9773	29.67	-13.98	15.69	40.00	-24.31	62	100	QP
4	97.4560	28.35	-12.90	15.45	40.00	-24.55	144	100	QP
5	159.2251	34.40	-14.35	20.05	40.00	-19.95	258	100	QP
6	192.4186	45.49	-11.88	33.61	40.00	-6.39	246	100	QP



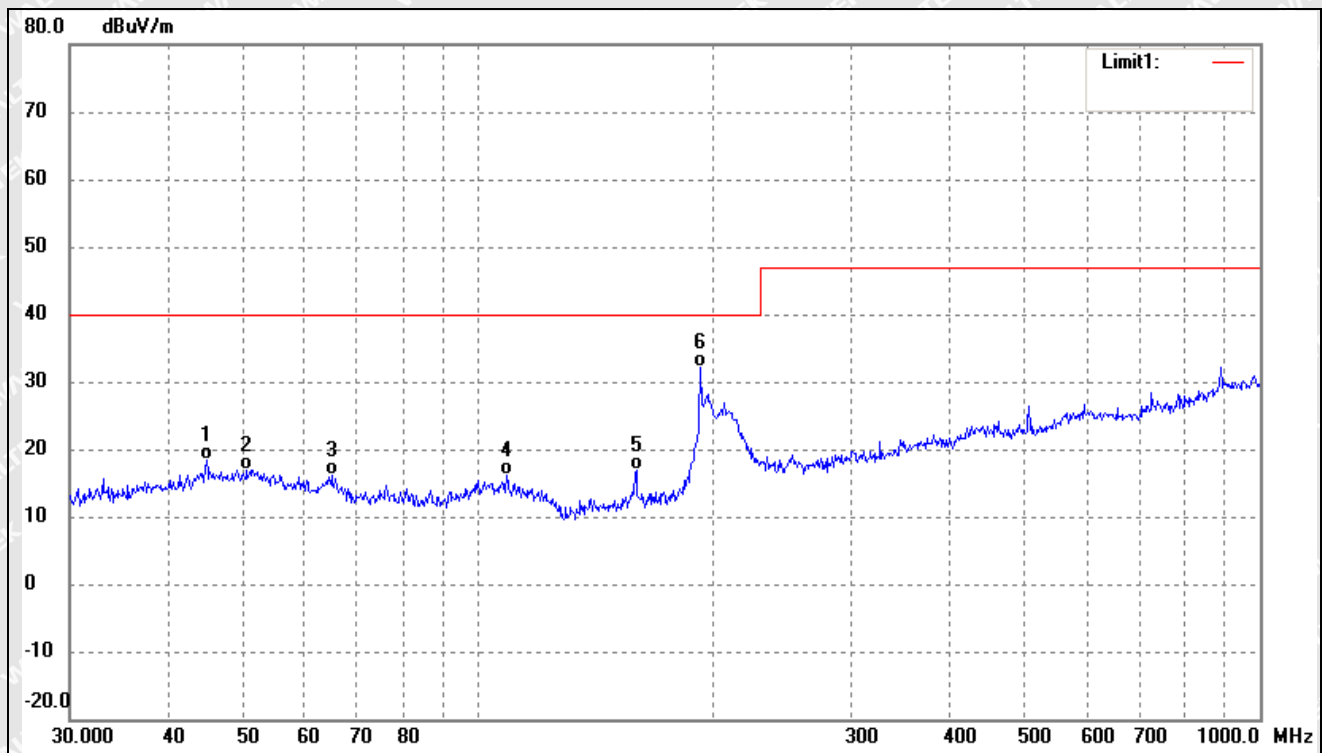
Test mode:	TM5	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.7433	28.27	-10.63	17.64	40.00	-22.36	197	100	QP
2	48.8429	27.82	-10.28	17.54	40.00	-22.46	187	100	QP
3	66.2662	29.20	-13.29	15.91	40.00	-24.09	50	100	QP
4	98.8326	27.74	-12.62	15.12	40.00	-24.88	121	100	QP
5	171.3926	37.43	-13.62	23.81	40.00	-16.19	176	100	QP
6	193.0945	32.95	-11.82	21.13	40.00	-18.87	276	100	QP



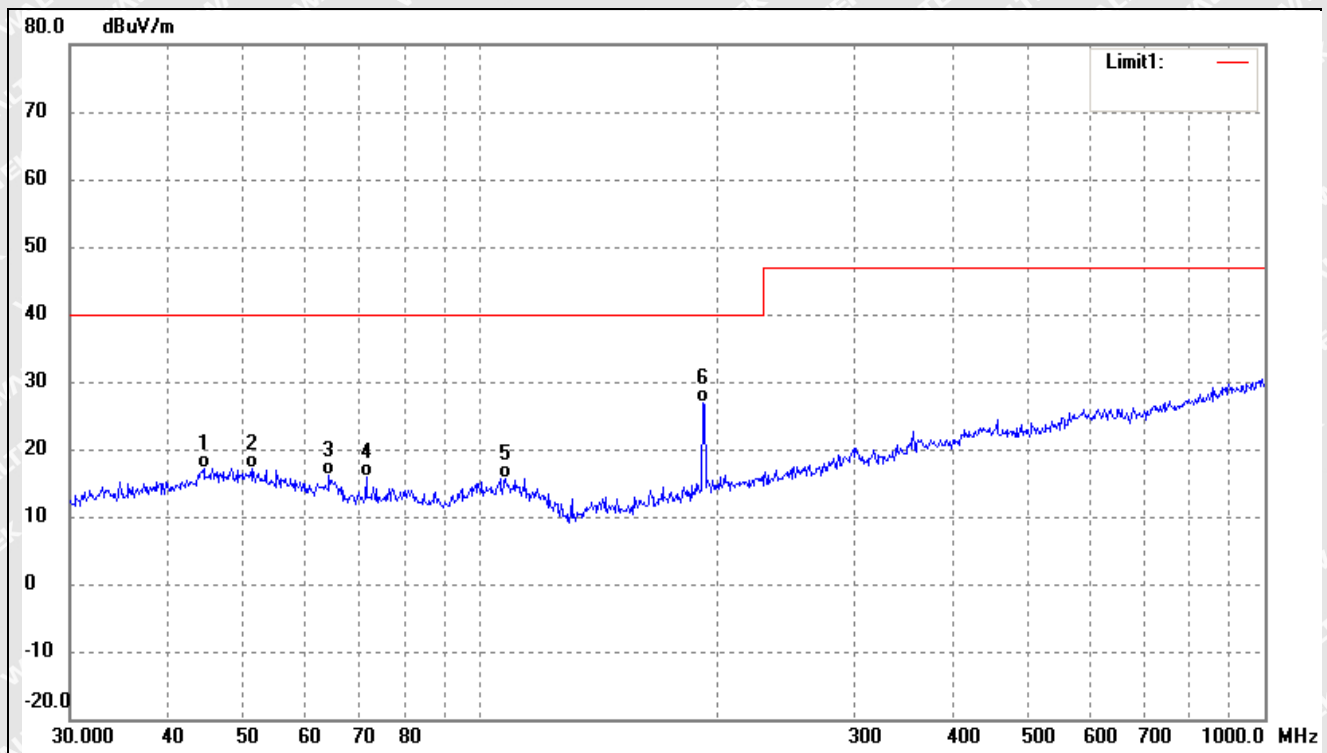
Test mode:	TM6	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.9006	29.07	-10.59	18.48	40.00	-21.52	197	100	QP
2	50.5860	27.26	-10.32	16.94	40.00	-23.06	185	100	QP
3	64.8865	29.04	-13.00	16.04	40.00	-23.96	104	100	QP
4	108.6470	28.19	-12.18	16.01	40.00	-23.99	130	100	QP
5	159.2251	31.19	-14.35	16.84	40.00	-23.16	321	100	QP
6	192.4186	43.96	-11.87	32.09	40.00	-7.91	322	100	QP



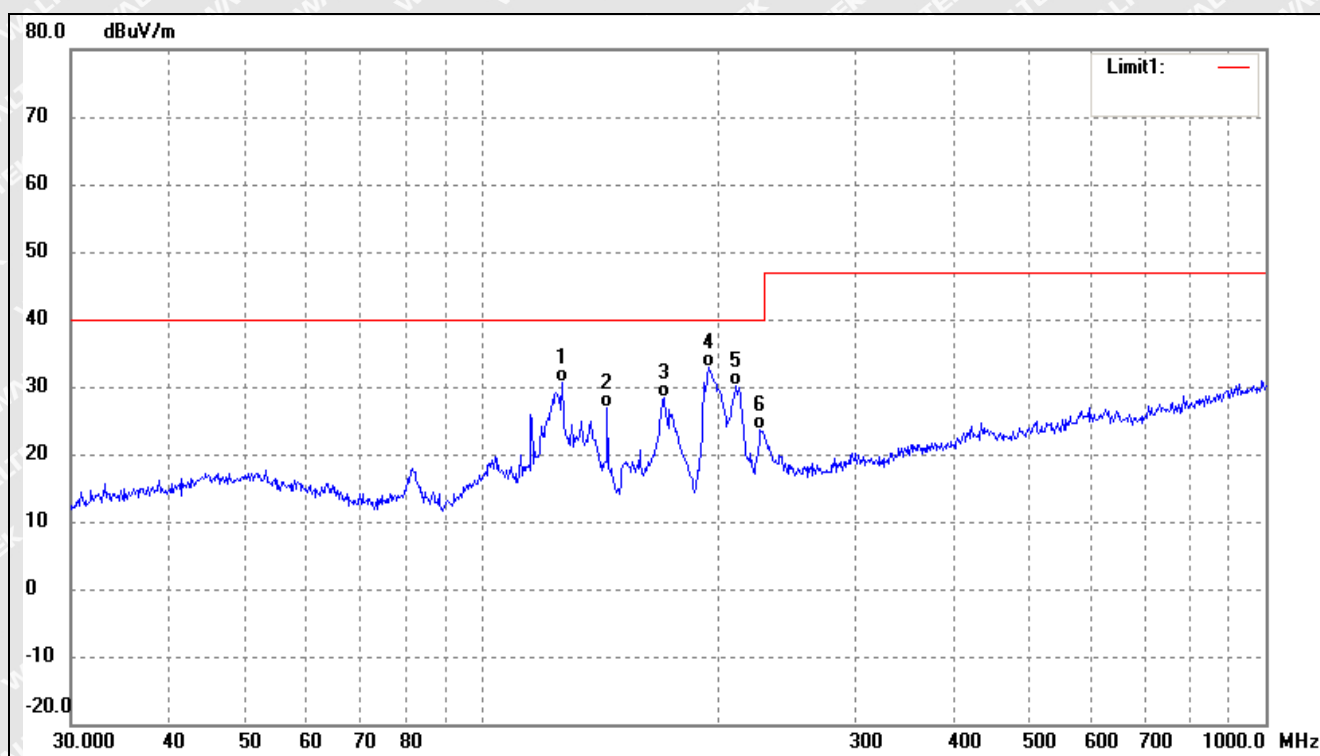
Test mode:	TM6	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.4308	27.93	-10.70	17.23	40.00	-22.77	97	100	QP
2	51.3005	27.59	-10.47	17.12	40.00	-22.88	149	100	QP
3	64.2074	28.97	-12.92	16.05	40.00	-23.95	116	100	QP
4	71.5806	29.81	-14.03	15.78	40.00	-24.22	139	100	QP
5	107.8877	27.82	-12.20	15.62	40.00	-24.38	296	100	QP
6	192.4186	38.68	-11.88	26.80	40.00	-13.20	166	100	QP



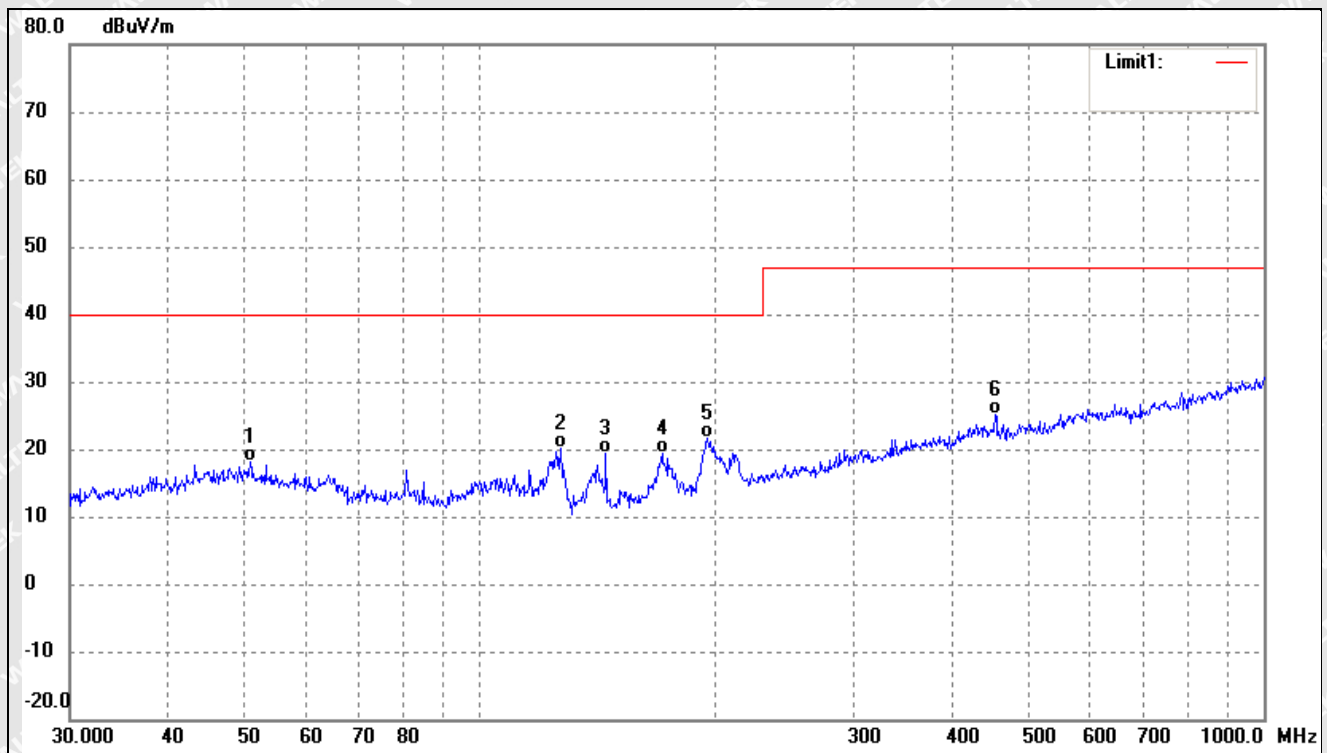
Test mode:	TM7	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	126.7723	45.72	-15.01	30.71	40.00	-9.29	157	100	QP
2	144.8418	41.60	-14.66	26.94	40.00	-13.06	168	100	QP
3	170.7926	42.04	-13.63	28.41	40.00	-11.59	52	100	QP
4	195.1365	44.64	-11.66	32.98	40.00	-7.02	108	100	QP
5	211.5265	41.22	-11.06	30.16	40.00	-9.84	181	100	QP
6	226.8936	34.35	-10.66	23.69	40.00	-16.31	254	100	QP



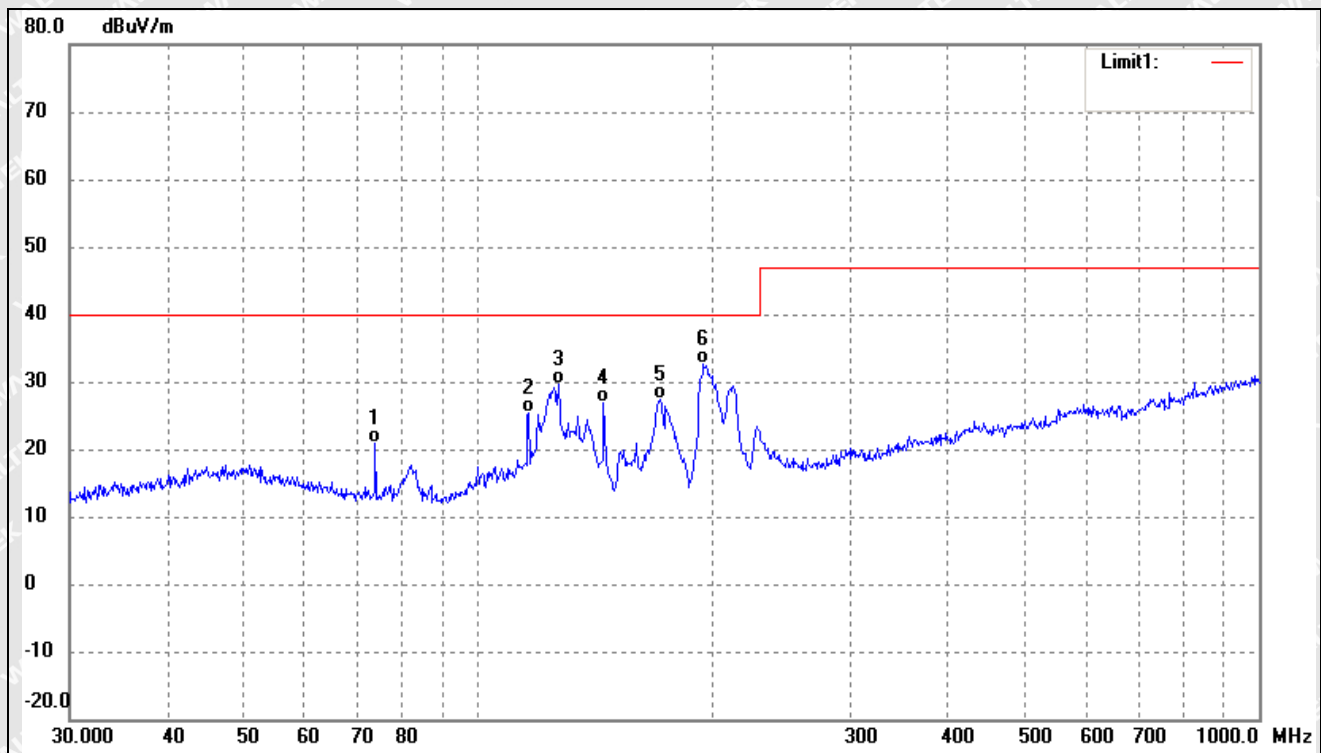
Test mode:	TM7	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	50.9420	28.53	-10.39	18.14	40.00	-21.86	61	100	QP
2	126.7723	35.23	-15.01	20.22	40.00	-19.78	120	100	QP
3	144.8418	34.11	-14.66	19.45	40.00	-20.55	144	100	QP
4	170.7925	32.90	-13.63	19.27	40.00	-20.73	108	100	QP
5	195.1365	33.29	-11.66	21.63	40.00	-18.37	242	100	QP
6	454.3100	29.94	-4.69	25.25	47.00	-21.75	112	100	QP



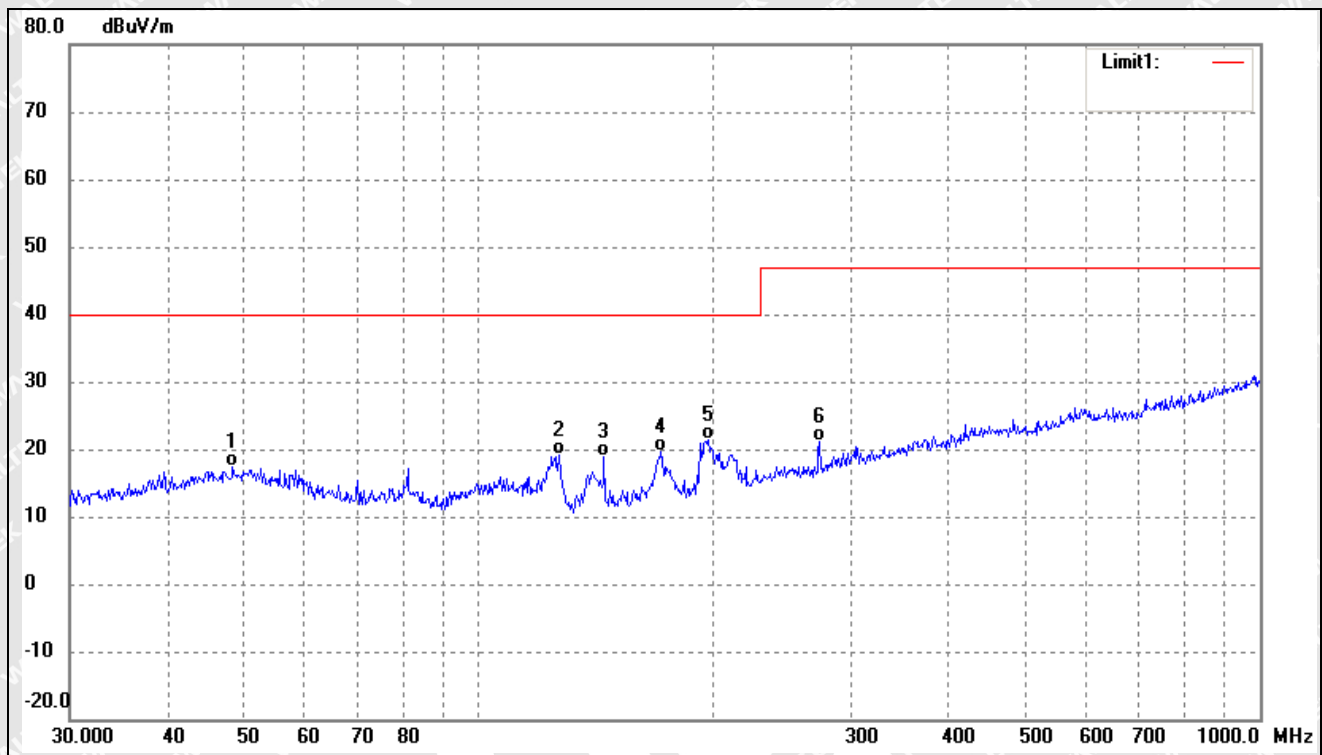
Test mode:	TM8	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	73.8756	34.80	-13.96	20.84	40.00	-19.16	166	100	QP
2	116.1321	38.24	-12.81	25.43	40.00	-14.57	160	100	QP
3	126.7723	44.57	-15.01	29.56	40.00	-10.44	58	100	QP
4	144.8418	41.65	-14.66	26.99	40.00	-13.01	132	100	QP
5	171.3926	40.95	-13.62	27.33	40.00	-12.67	280	100	QP
6	194.4534	44.42	-11.72	32.70	40.00	-7.30	341	100	QP



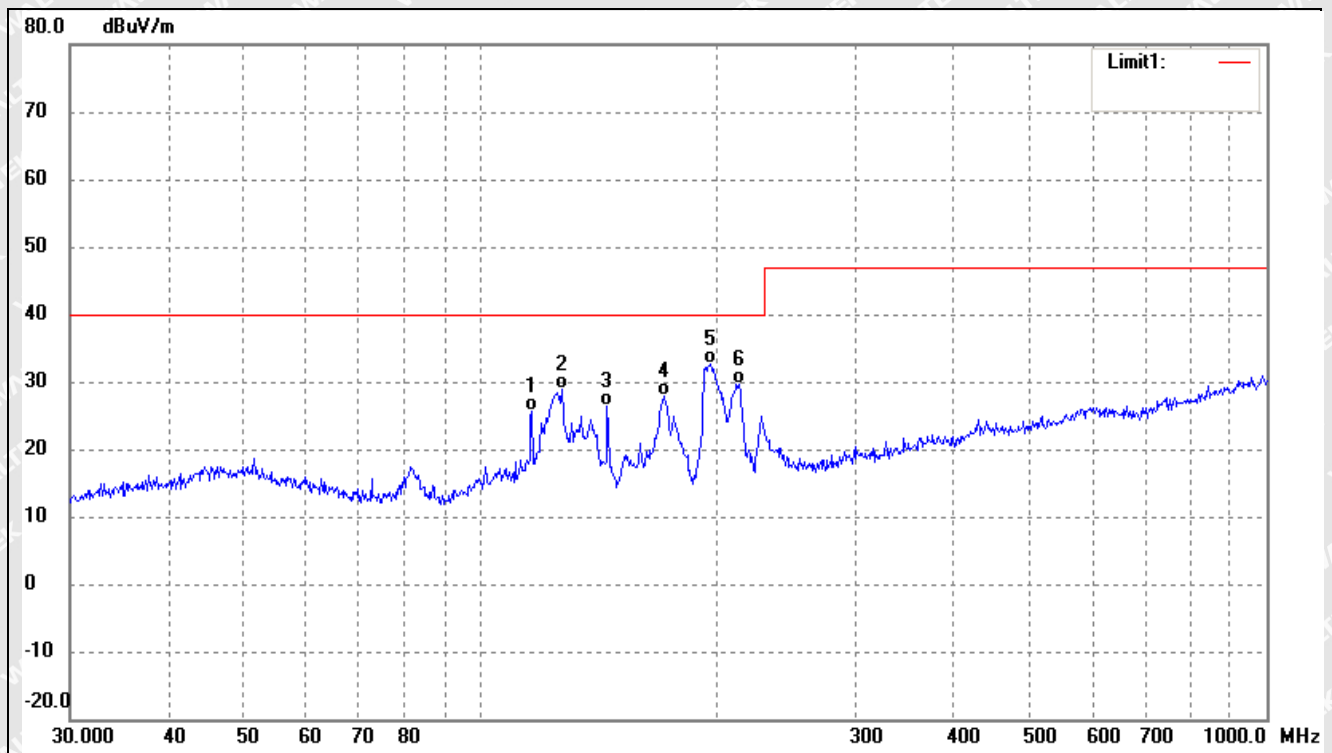
Test mode:	TM8	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	48.5016	27.69	-10.30	17.39	40.00	-22.61	69	100	QP
2	126.7723	34.06	-15.01	19.05	40.00	-20.95	191	100	QP
3	144.8418	33.63	-14.66	18.97	40.00	-21.03	86	100	QP
4	171.3926	33.26	-13.62	19.64	40.00	-20.36	94	100	QP
5	197.2001	32.81	-11.52	21.29	40.00	-18.71	355	100	QP
6	273.2341	29.79	-8.74	21.05	47.00	-25.95	139	100	QP



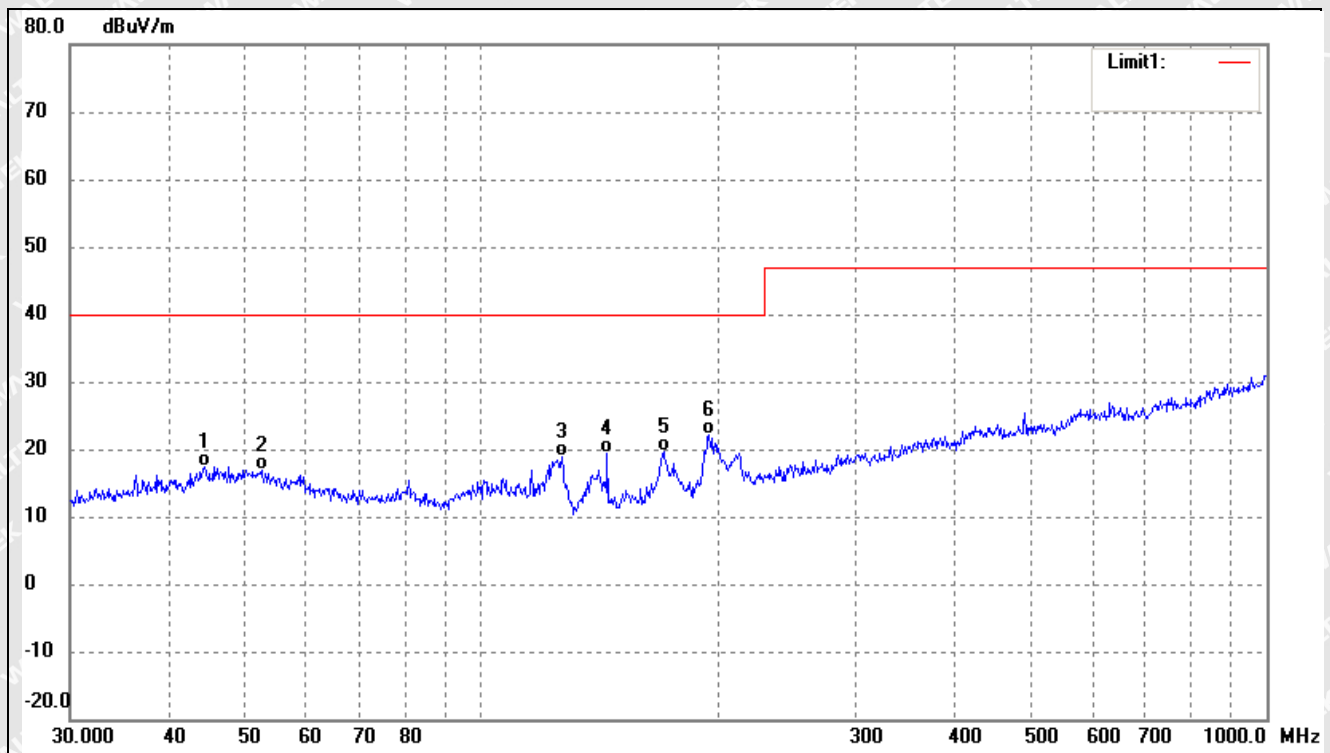
Test mode:	TM9	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	116.1321	38.47	-12.81	25.66	40.00	-14.34	196	100	QP
2	126.7723	43.87	-15.01	28.86	40.00	-11.14	307	100	QP
3	144.8418	41.08	-14.66	26.42	40.00	-13.58	94	100	QP
4	171.3926	41.38	-13.62	27.76	40.00	-12.24	241	100	QP
5	195.8220	44.28	-11.62	32.66	40.00	-7.34	94	100	QP
6	213.0151	40.70	-11.02	29.68	40.00	-10.32	265	100	QP



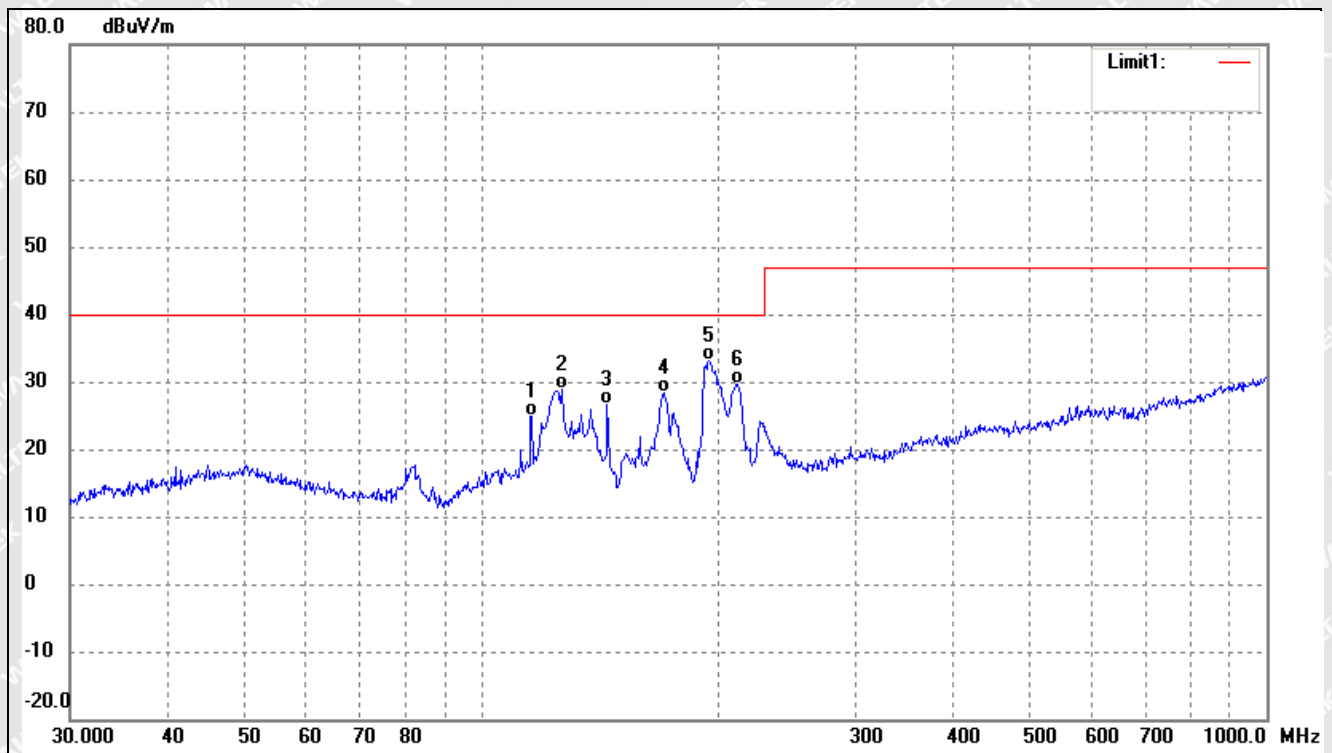
Test mode:	TM9	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.4308	28.12	-10.70	17.42	40.00	-22.58	187	100	QP
2	52.5753	27.62	-10.75	16.87	40.00	-23.13	326	100	QP
3	126.7723	33.86	-15.01	18.85	40.00	-21.15	97	100	QP
4	144.8418	34.03	-14.66	19.37	40.00	-20.63	284	100	QP
5	170.7926	33.30	-13.63	19.67	40.00	-20.33	93	100	QP
6	195.1365	33.75	-11.66	22.09	40.00	-17.91	205	100	QP



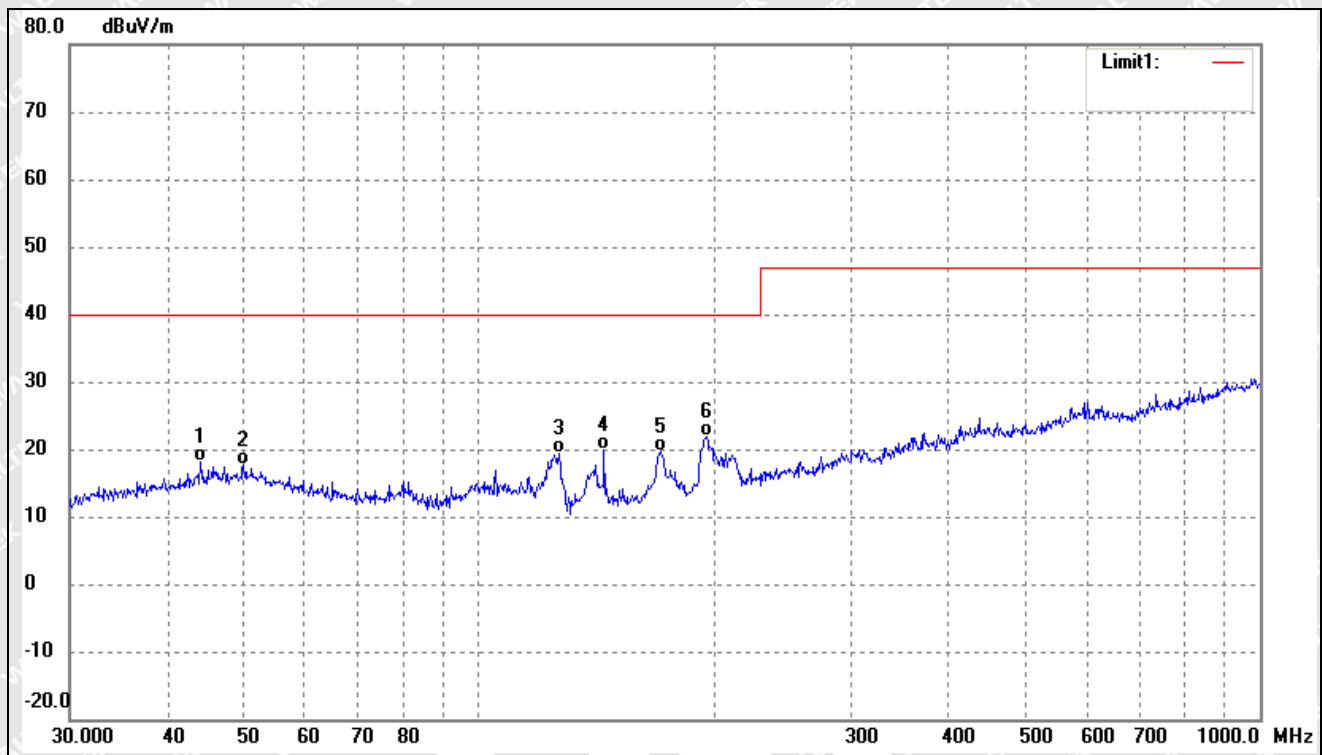
Test mode:	TM10	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	116.1321	37.67	-12.81	24.86	40.00	-15.14	341	100	QP
2	126.7723	43.79	-15.01	28.78	40.00	-11.22	280	100	QP
3	144.8418	41.20	-14.66	26.54	40.00	-13.46	132	100	QP
4	170.7926	41.91	-13.63	28.28	40.00	-11.72	58	100	QP
5	195.1365	44.78	-11.66	33.12	40.00	-6.88	160	100	QP
6	212.2695	40.72	-11.03	29.69	40.00	-10.31	166	100	QP



Test mode:	TM10	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	44.1202	28.86	-10.77	18.09	40.00	-21.91	139	100	QP
2	50.0566	27.79	-10.20	17.59	40.00	-22.41	355	100	QP
3	126.7723	34.48	-15.01	19.47	40.00	-20.53	94	100	QP
4	144.8418	34.42	-14.66	19.76	40.00	-20.24	86	100	QP
5	171.3926	33.33	-13.62	19.71	40.00	-20.29	191	100	QP
6	195.8220	33.48	-11.62	21.86	40.00	-18.14	69	100	QP



6. Electrostatic Discharges (ESD)

6.1 Test Procedure

Test is conducting under the description of EN 61000-4-2.

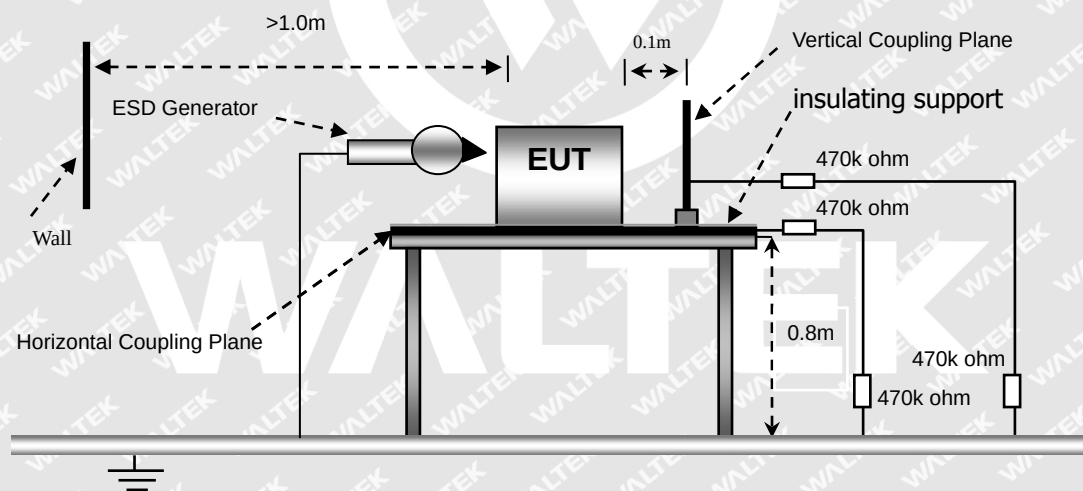
6.2 Test Performance

Performance Criterion: B

6.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

6.4 Basic Test Setup Block Diagram





6.5 Electrostatic Discharge Immunity Test Data

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2	Test Voltage (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
/	/	/	/	/	/	/	/	/	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2	Test Voltage (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
Metal case	A	A	A	A	/	/	/	/	/	/
Type-C port	A	A	A	A	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP & VCP)

EN 61000-4-2	Test Voltage (kV)									
Test Points	-2	+2	-4	+4	-6	+6	-8	+8	-15	+15
HCP (6 Sides)	A	A	A	A	/	/	/	/	/	/
VCP (4 Sides)	A	A	A	A	/	/	/	/	/	/

Test Result: Pass

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7. Continuous RF electromagnetic field Disturbances (RS)

7.1 Test Procedure

Test is conducting under the description of EN 61000-4-3.

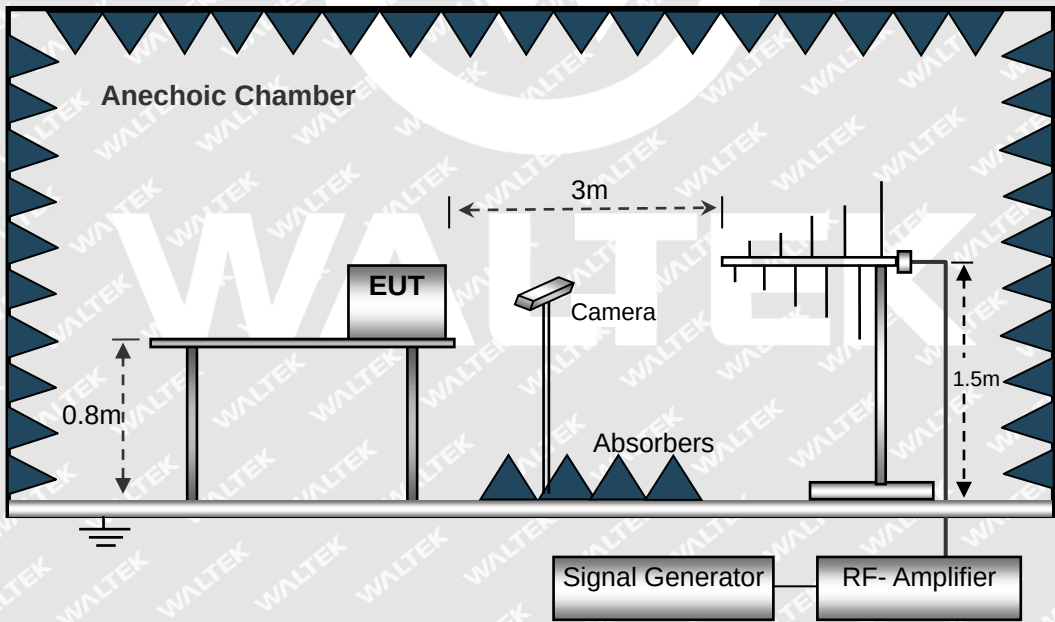
7.2 Test Performance

Performance Criterion: A

7.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

7.4 Basic Test Setup Block Diagram





7.5 Continuous Radiated Disturbances Test Data

Frequency step: 1% of fundamental
Dwell time: 1 second
Modulation: AM by 1kHz sine wave with 80% modulation depth

Frequency Range(MHz)	Field (V/m)	Front		Rear		Left Side		Right Side	
		VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	3	A	A	A	A	A	A	A	A

Test Result: Pass



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8. Electrical Fast Transients (EFT)

8.1 Test Procedure

Test is conducting under the description of EN 61000-4-4.

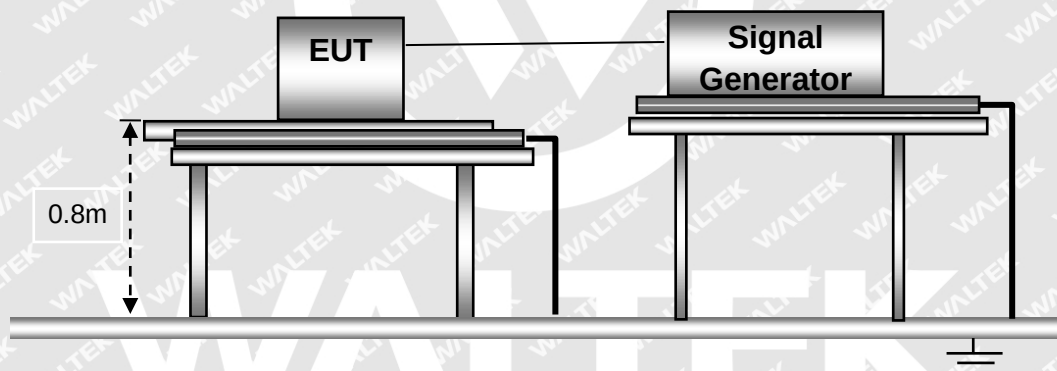
8.2 Test Performance

Performance Criterion: B

8.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

8.4 Basic Test Setup Block Diagram



**8.5 Electrical Fast Transients Test Data**

EN 61000-4-4 Test Points		Test Voltage (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Port of EUT	L1	/	/	B	B	/	/	/	/
	L2	/	/	B	B	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1+L2	/	/	B	B	/	/	/	/
	L1 + PE	/	/	/	/	/	/	/	/
	L2 + PE	/	/	/	/	/	/	/	/
	L1+L2+PE	/	/	/	/	/	/	/	/
Signal ports	RJ45	/	/	/	/	/	/	/	/

Test Result: Pass


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9. Surges

9.1 Test Procedure

Test is conducting under the description of EN 61000-4-5.

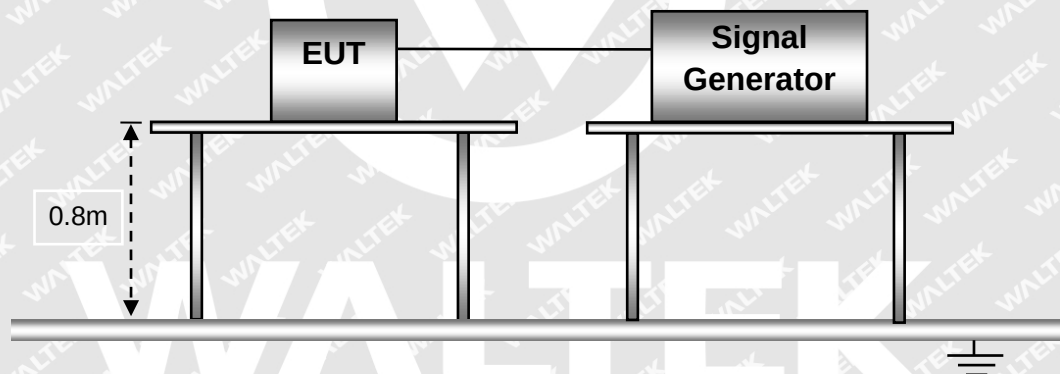
9.2 Test Performance

Performance Criterion: C

9.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.4 Basic Test Setup Block Diagram





9.5 Surge Test Data

Test Voltage	Poll	Path	Pass	Fail
0.5kV	±	L-N	/	/
1kV	±	L-N	B	/
2kV	±	L-PE, N-PE	/	/
4kV	±	L-N, L-PE, N-PE	/	/

Test Result: Pass



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10. Continuous induced RF disturbances (C/S)

10.1 Test Procedure

Test is conducting under the description of EN 61000-4-6.

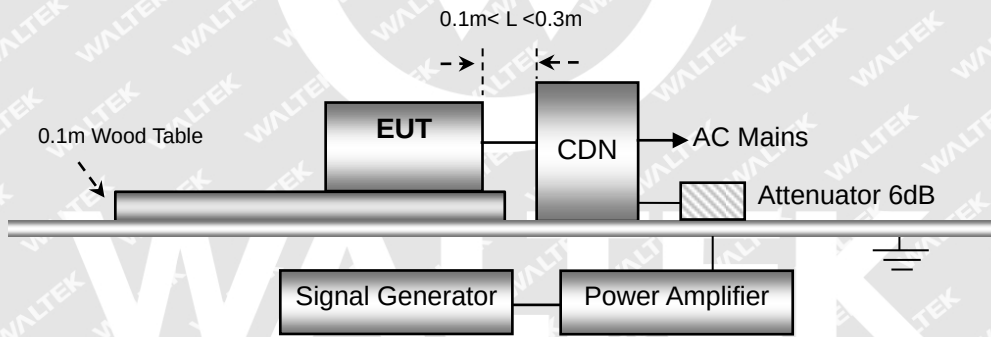
10.2 Test Performance

Performance Criterion: A

10.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

10.4 Basic Test Setup Block Diagram





10.5 Continuous Conducted Disturbances Test Data

Sweep frequency range: 0.15 MHz to 80 MHz

Frequency step: 1% of fundamental

Dwell time: 1 second

AC Port

Frequency MHz	Injected Position	Voltage level (e.m.f.)	Observations (Performance Criterion)	Result
0.15-80	AC Mains	1V	/	/
0.15-80	AC Mains	3V	A	Pass
0.15-80	AC Mains	10V	/	/

Test Result: Pass



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11. Power-Frequency Magnetic Fields (PFMF)

11.1 Test Procedure

Test is conducting under the description of EN 61000-4-8.

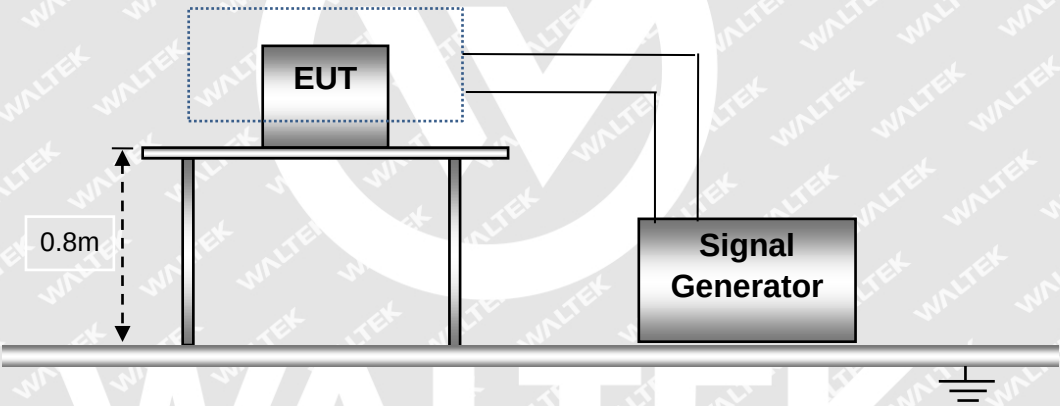
11.2 Test Performance

Performance Criterion: A

11.3 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

11.4 Basic Test Setup Block Diagram





11.5 Power-Frequency Magnetic Field Test Data

Level	Magnetic Field Strength (r.m.s) A/m	Frequency Hz	Induction Coil Position	Pass	Fail
1	1	50	X, Y, Z	/	/
2	3	50	X, Y, Z	A	/
3	10	50	X, Y, Z	/	/
X	Special	/	/	/	/

Test Result: Pass



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EXHIBIT 1 - PRODUCT LABELING

Proposed CE Label Format

Flashlight

Model: Marauder 2

Brand: OLIGHT

Importer Name: XXX

Importer Address: XXX

Dongguan Olight E-Commerce Technology Co., Ltd

4th Floor Building 4 Kegou Industrial Park No6

Zhongnan Road, Changan Town, Dongguan City ,
Guangdong, China



Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The 'CE' marking must be affixed to the EUT or to its data plate. Where this is not possible or not warranted on account of the nature of the apparatus, it must be affixed to the packaging, if any, and to the accompanying documents. The 'CE' marking is allowed less than 5 mm but must clear. If the 'CE' marking is reduced or enlarged the proportions given in the above graduated drawing must be respected. The Importer name, address and Manufacturer name and address should indicate on marking label or packaging or in a document accompanying

Proposed Label Location on EUT

CE Label Location





EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1



EUT View 2





EUT View 3



EUT View 4





EUT View 5



EUT View 6





EUT View 7

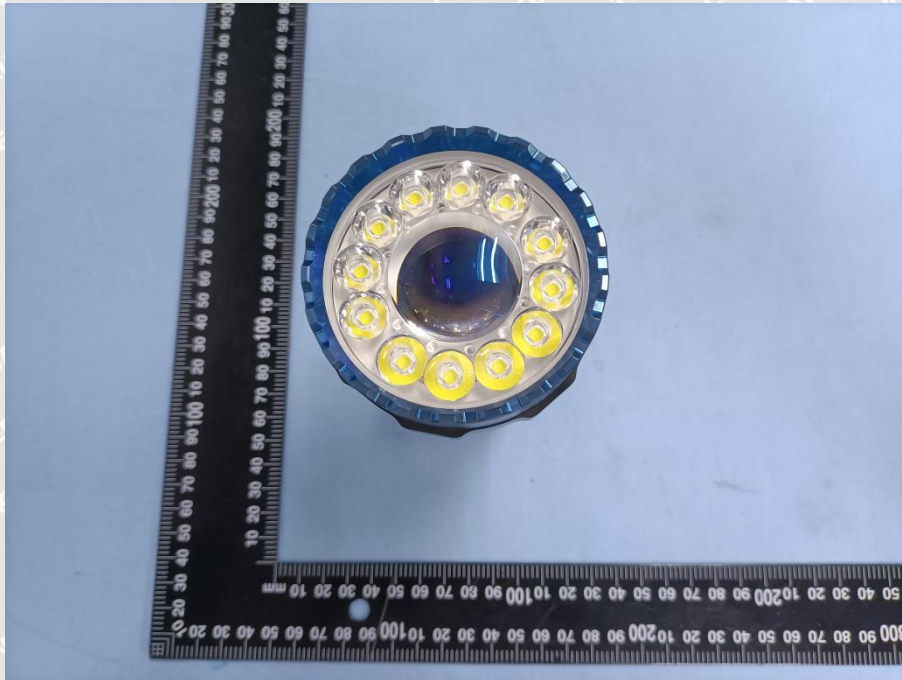




EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conduction Emission Test View

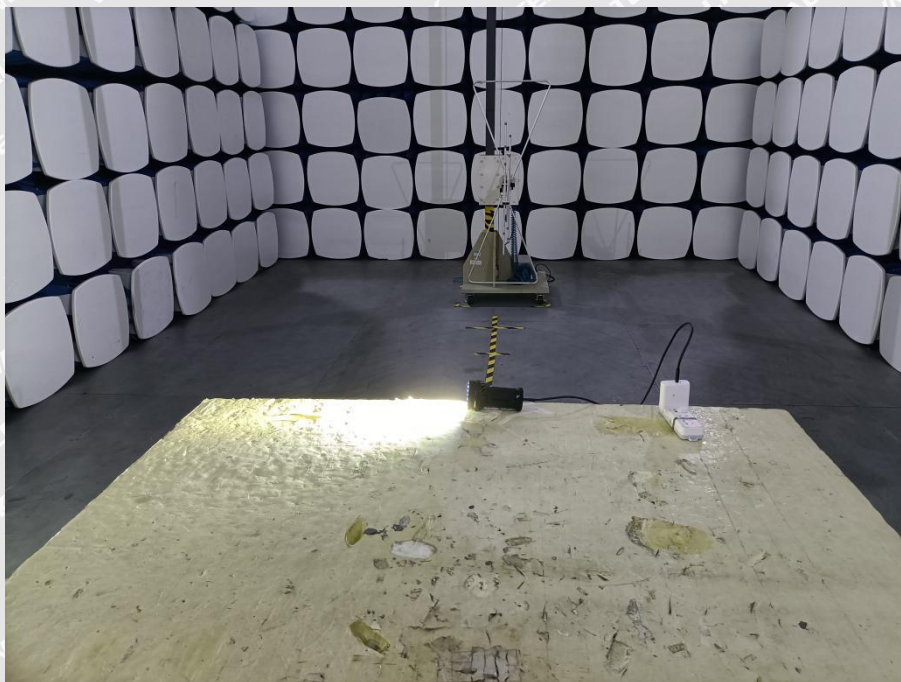


Radiation Emission Test View (9kHz to 30MHz)

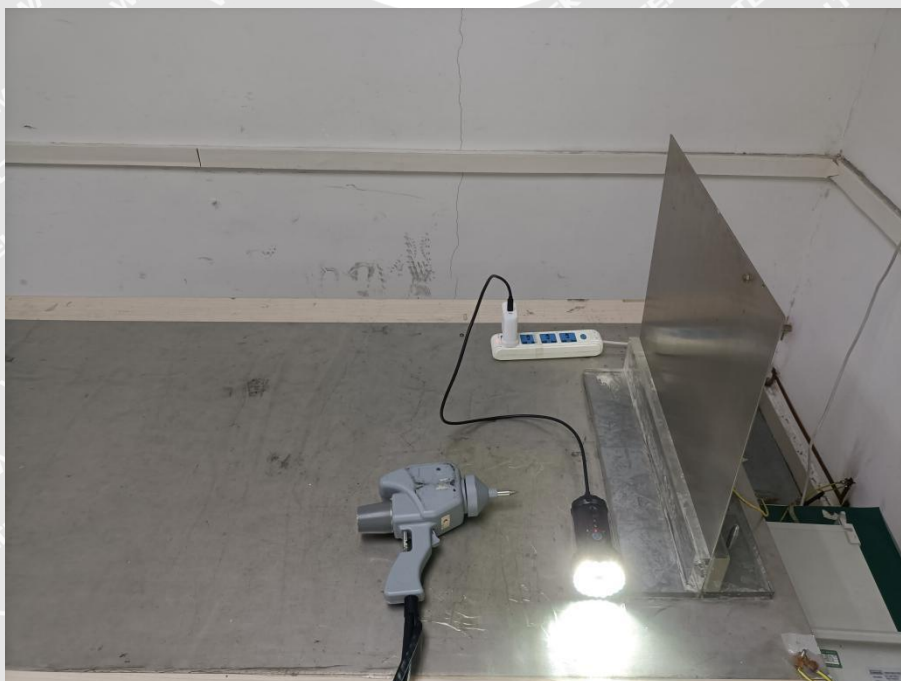




Radiation Emission Test View (30MHz to 300MHz)

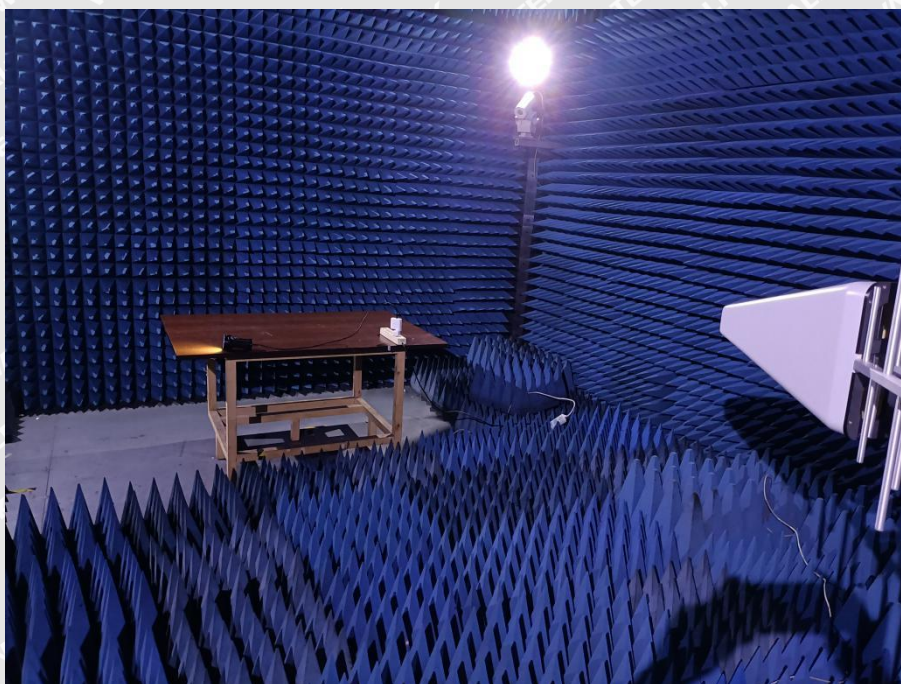


EN 61000-4-2 Test View





EN 61000-4-3 Test View

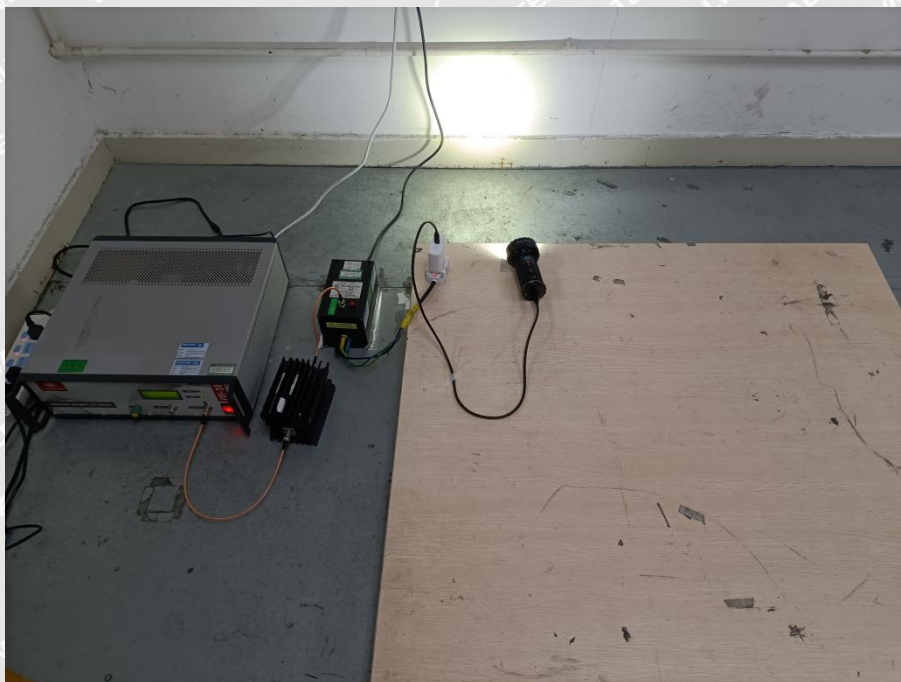


EN 61000-4-4/5 Test View

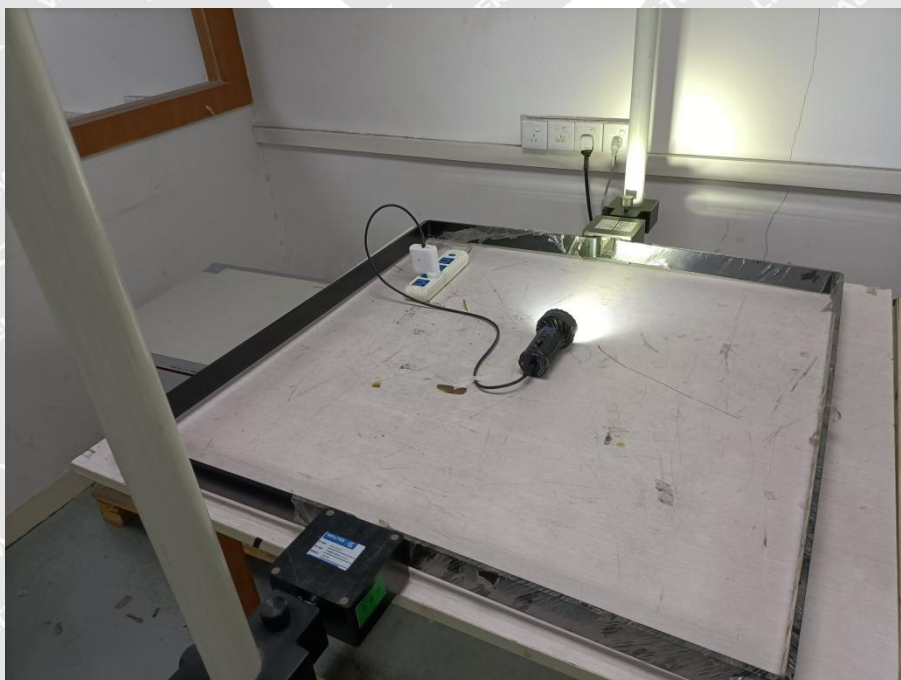




EN 61000-4-6 Test View



EN 61000-4-8 Test View



******* END OF REPORT *******