

TEST REPORT

Reference No..... : WTX22X10201967W
FCC ID : 2A9FO-MD319
Applicant : ZHUHAI MEDING TECHNOLOGY CO.,LTD
Address..... : Floor 2,Building 3, ZHIZAO DA JIE, JINHE ROAD,HONGQI TOWN,
JINWAN DISTRICT, ZHUHAI, GUANGDONG
Manufacturer : The same as Applicant
Address..... : The same as Applicant
Product Name : Weather Alert Radio
Model No..... : MD319
Standards : **FCC PART15 SUBPART B**
Date of Receipt sample : 2022-10-11
Date of Test..... : 2022-10-11 to 2022-11-08
Date of Issue : 2022-11-08
Test Report Form No. : WTX_FCC PART15B_001
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 approver.

Prepared By:

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Report version

Version No.	Date of issue	Description
Rev.00	2022-11-08	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Weather Alert Radio
Trade Name:	/
Model No.:	MD319
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 12V Battery DC 1.5V*4
Rated Current:	/
Rated Power:	/
Power Adapter Model:	MODEL: D12-03A INPUT: AC 120V 60Hz 0.1A OUTPUT: DC 12V-0.3A
Lowest Internal Frequency:	/
Highest Internal Frequency:	Above 108MHz
Classification of ITE:	Class B

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15 Subpart B: Unintentional Radiators.

ANSI C63.4-2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

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

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. 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 our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. 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	162.5MHz Receiver Working	Power On	Connect to the Adapter; AC120V 60Hz for Adapter
TM2	162.5MHz Receiver Working	Power On	By Battery 6V

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
DC JACK Cable	1.56	Unshielded	Without Ferrite
ETX. ALERT Cable	1.62	Unshielded	Without Ferrite
ANT. Cable	1.88	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ± 3.74 dB
		0.15-30MHz ± 3.34 dB
Radiated Emissions	Radiated	30-200MHz ± 4.52 dB
		0.2-1GHz ± 5.56 dB
		1-6GHz ± 3.84 dB
		6-18GHz ± 3.92 dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
☒ Chamber A:Below 1GHz					
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2022-03-22	2023-03-21
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-22	2023-03-21
Amplifier	Agilent	8447F	3113A06717	2022-01-07	2023-01-06
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
☒ Chamber A:Above 1GHz					
Amplifier	C&D	PAP-1G18	2002	2022-03-22	2023-03-21
Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
☐ Chamber B:Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2022-03-25	2023-03-24
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
Amplifier	Agilent	8447D	2944A10179	2022-03-22	2023-03-21
☐ Chamber C:Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2022-01-07	2023-01-06
Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2023-05-27
Amplifier	HP	8447F	2944A03869	2022-03-22	2023-03-21
☒ Conducted Room 1#					
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2022-03-25	2023-03-24
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2022-03-22	2023-03-21
AC LISN	Schwarz beck	NSLK8126	8126-224	2022-03-22	2023-03-21
☐ Conducted Room 2#					
EMI Test Receiver	Rohde & Schwarz	ESPI	10129	2022-03-22	2023-03-21
LISN	Rohde & Schwarz	ENV 216	100097	2022-03-22	2023-03-21

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

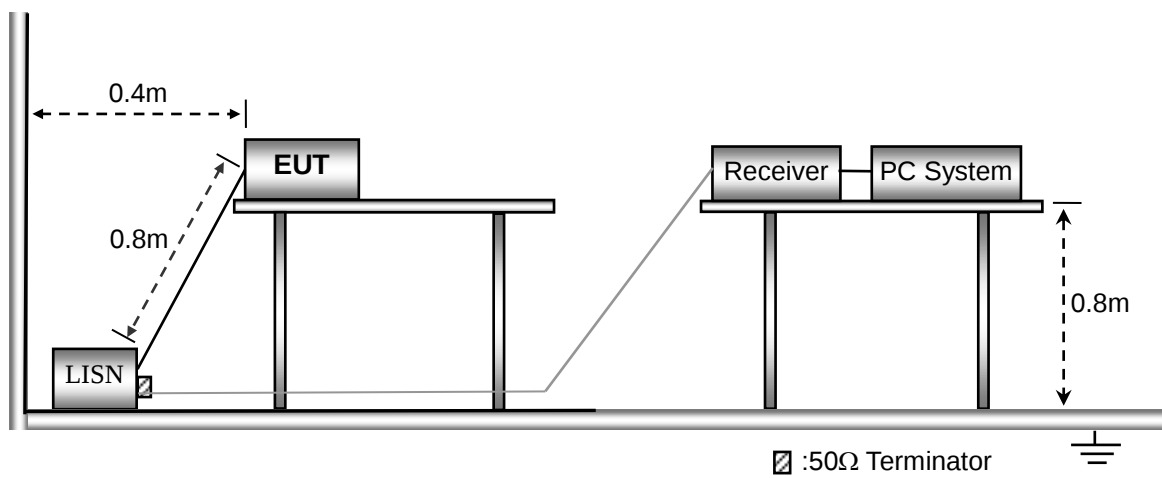
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



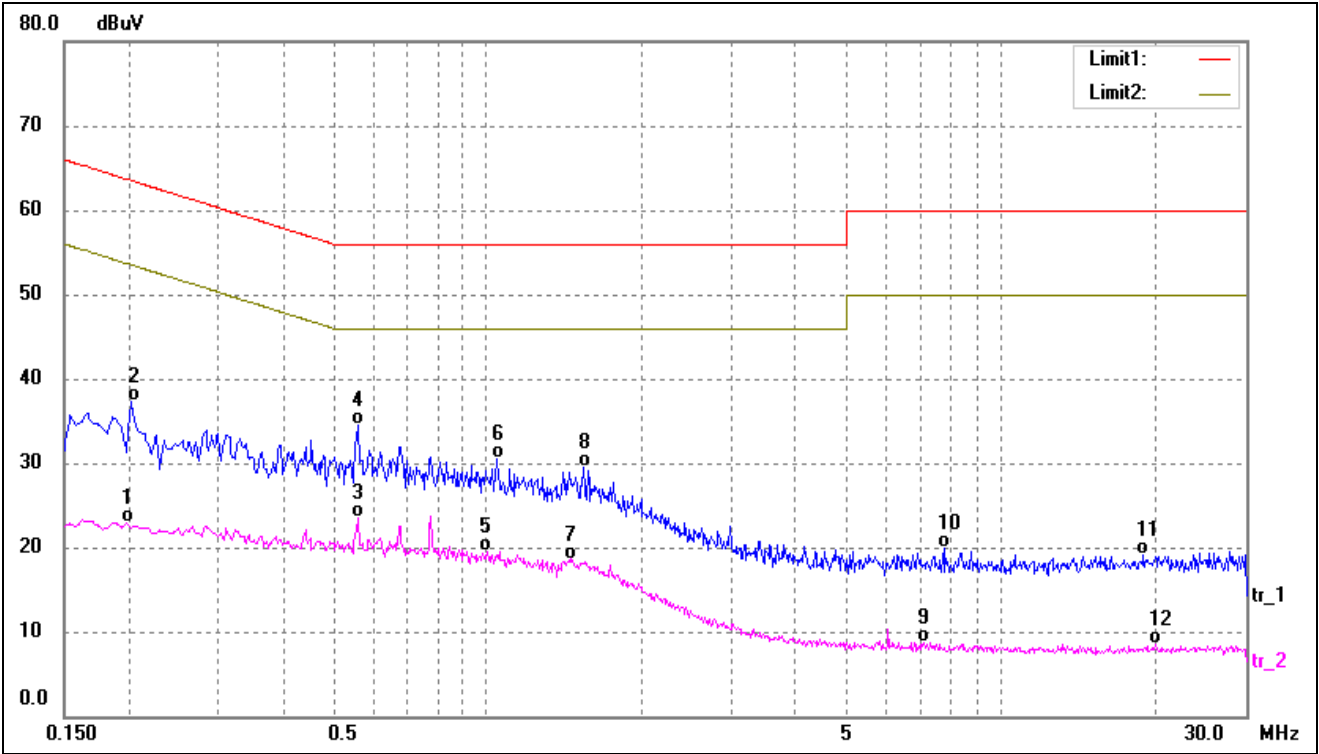
3.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

3.4 Summary of Test Results

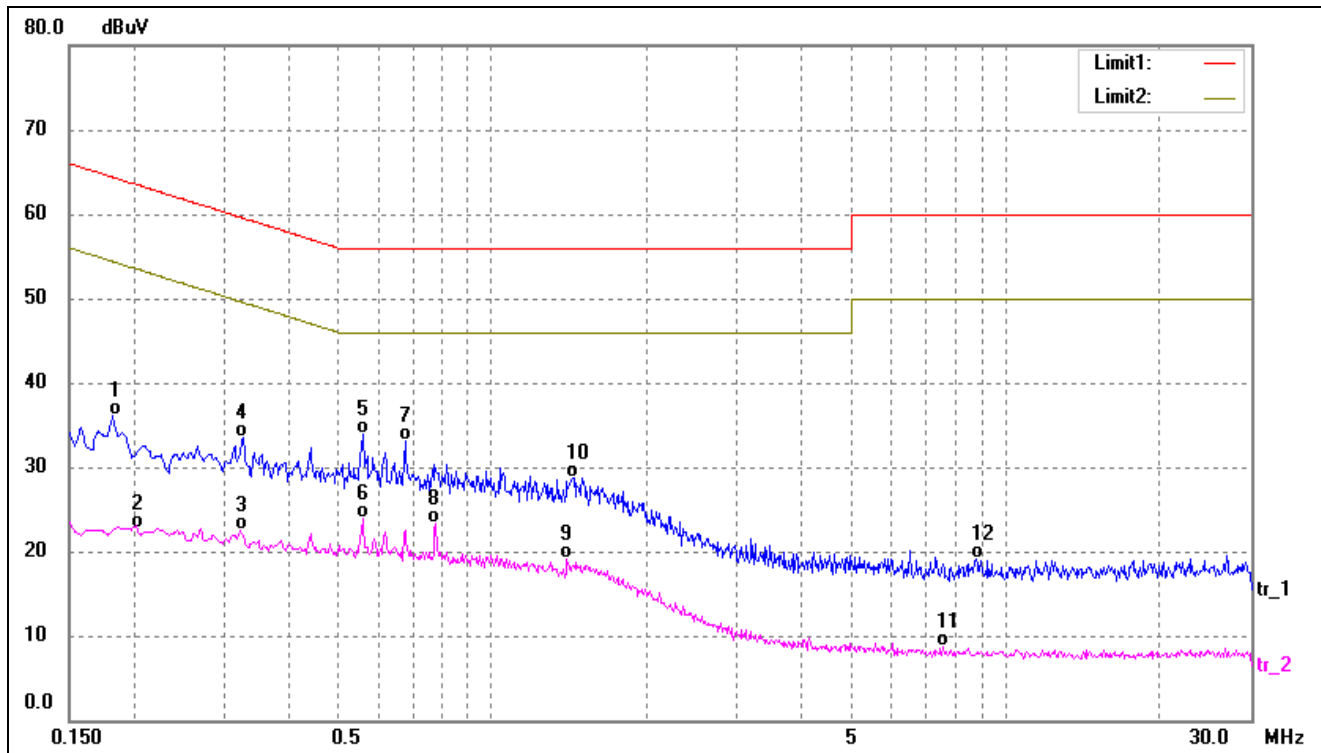
Look at the graphs and data below:

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1980	12.60	10.30	22.90	53.69	-30.79	AVG
2	0.2020	27.05	10.30	37.35	63.52	-26.17	QP
3	0.5580	13.24	10.21	23.45	46.00	-22.55	AVG
4*	0.5620	24.31	10.21	34.52	56.00	-21.48	QP
5	1.0020	9.46	10.14	19.60	46.00	-26.40	AVG
6	1.0460	20.27	10.14	30.41	56.00	-25.59	QP
7	1.4660	8.24	10.19	18.43	46.00	-27.57	AVG
8	1.5420	19.33	10.20	29.53	56.00	-26.47	QP
9	7.0940	-1.68	10.34	8.66	50.00	-41.34	AVG
10	7.7420	9.47	10.34	19.81	60.00	-40.19	QP
11	18.9780	8.83	10.34	19.17	60.00	-40.83	QP
12	19.9500	-1.85	10.37	8.52	50.00	-41.48	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1819	25.76	10.31	36.07	64.39	-28.32	QP
2	0.2020	12.32	10.30	22.62	53.52	-30.90	AVG
3	0.3220	12.34	10.24	22.58	49.65	-27.07	AVG
4	0.3260	23.35	10.24	33.59	59.55	-25.96	QP
5*	0.5580	23.76	10.21	33.97	56.00	-22.03	QP
6	0.5580	13.73	10.21	23.94	46.00	-22.06	AVG
7	0.6780	22.81	10.20	33.01	56.00	-22.99	QP
8	0.7780	13.18	10.17	23.35	46.00	-22.65	AVG
9	1.4020	8.84	10.18	19.02	46.00	-26.98	AVG
10	1.4340	18.60	10.18	28.78	56.00	-27.22	QP
11	7.5260	-1.69	10.34	8.65	50.00	-41.35	AVG
12	8.7580	8.81	10.34	19.15	60.00	-40.85	QP

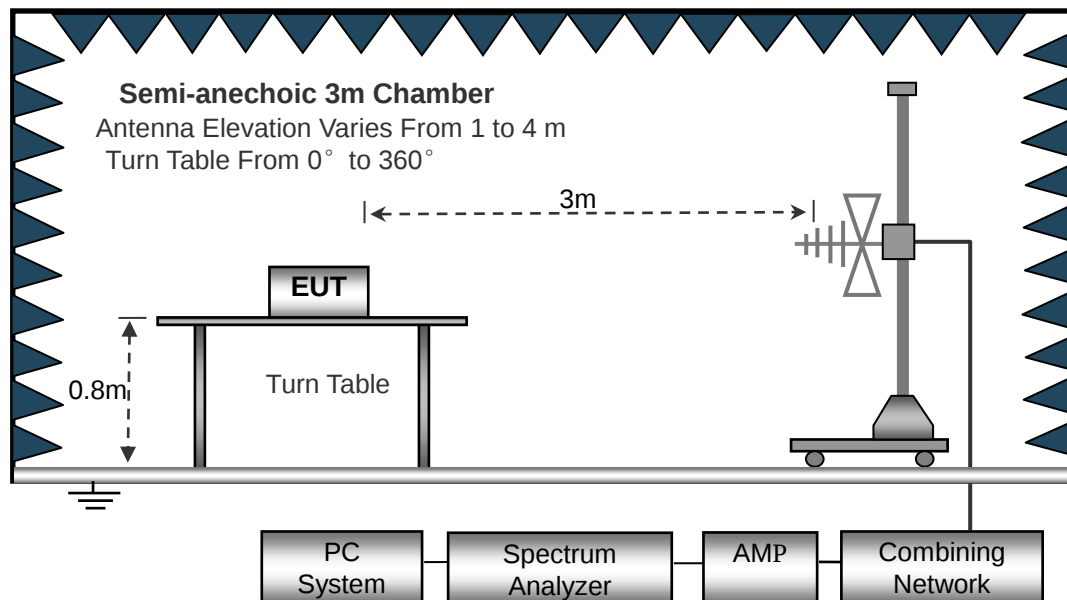
4. RADIATED EMISSION

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

4.2 Block Diagram of Test Setup



4.3 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

4.4 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 -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.5 Environmental Conditions

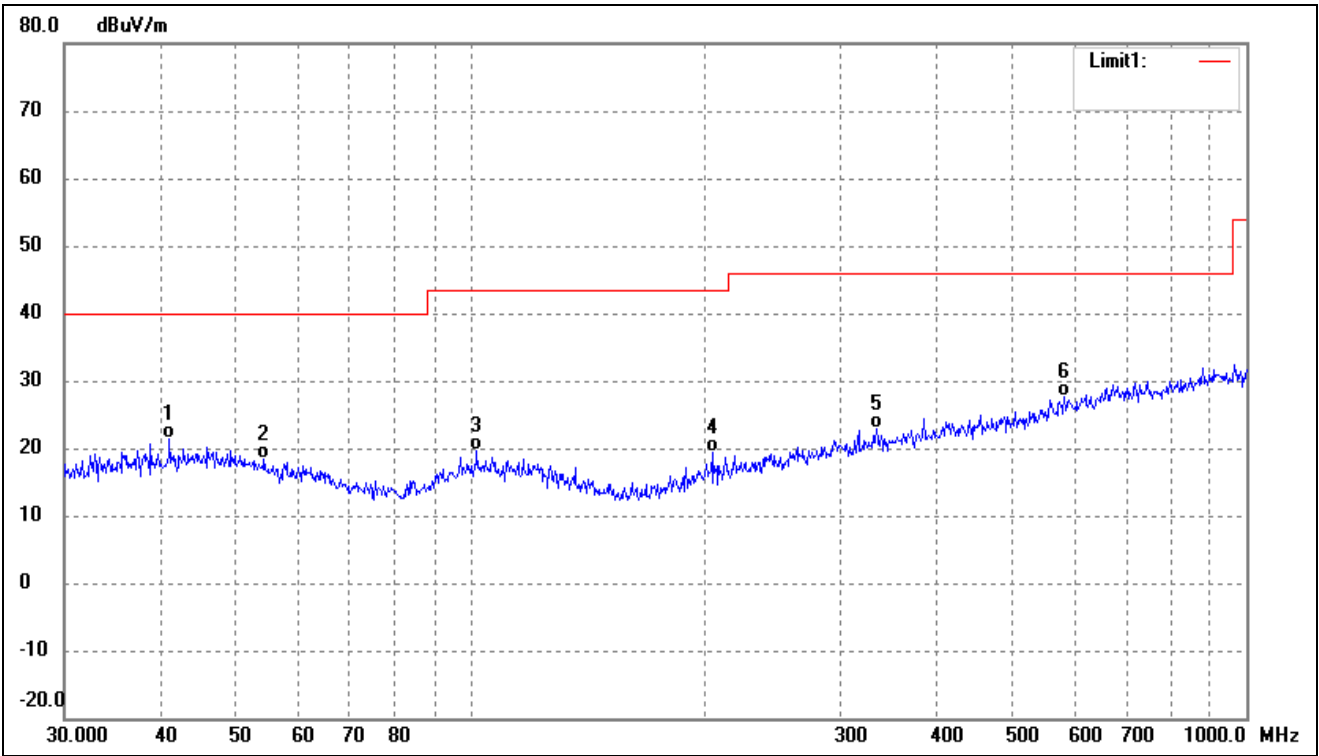
Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results

Look at the graphs and data below:

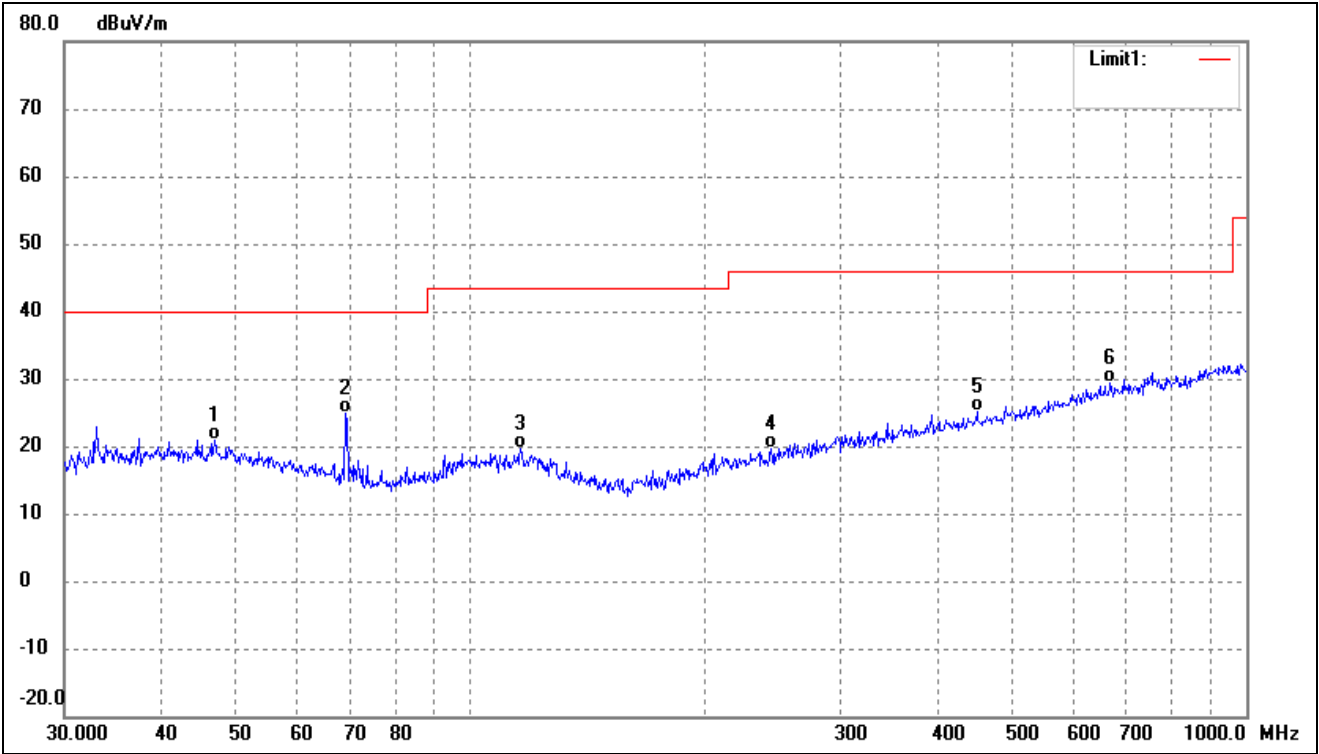
➤ 30MHz-1GHz

Test mode:	TM1	Polarity:	Horizontal
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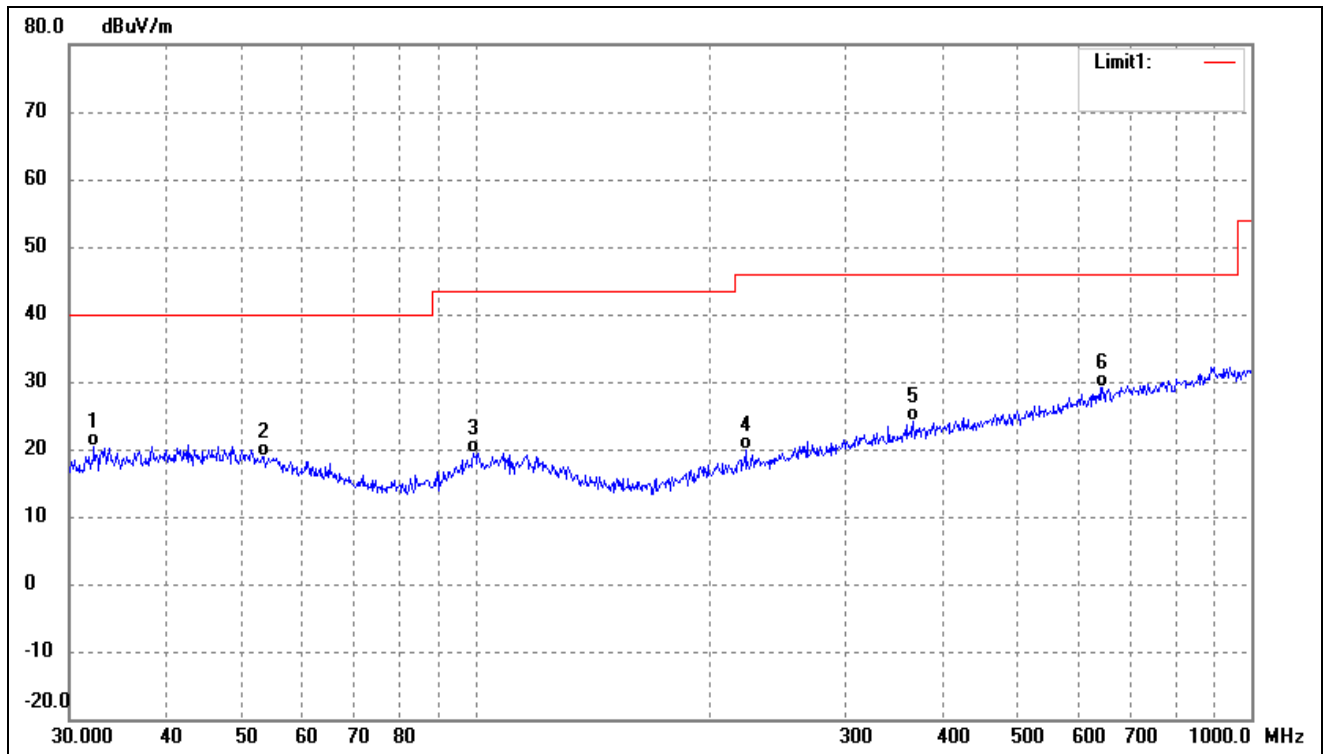
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.9881	28.42	-7.14	21.28	40.00	-18.72	-	-	QP
2	54.2610	26.42	-8.06	18.36	40.00	-21.64	-	-	QP
3	102.0014	27.59	-8.08	19.51	43.50	-23.99	-	-	QP
4	204.9551	27.52	-8.25	19.27	43.50	-24.23	-	-	QP
5	333.6867	27.27	-4.43	22.84	46.00	-23.16	-	-	QP
6	582.7425	28.04	-0.47	27.57	46.00	-18.43	-	-	QP

Test mode:	TM1	Polarity:	Vertical
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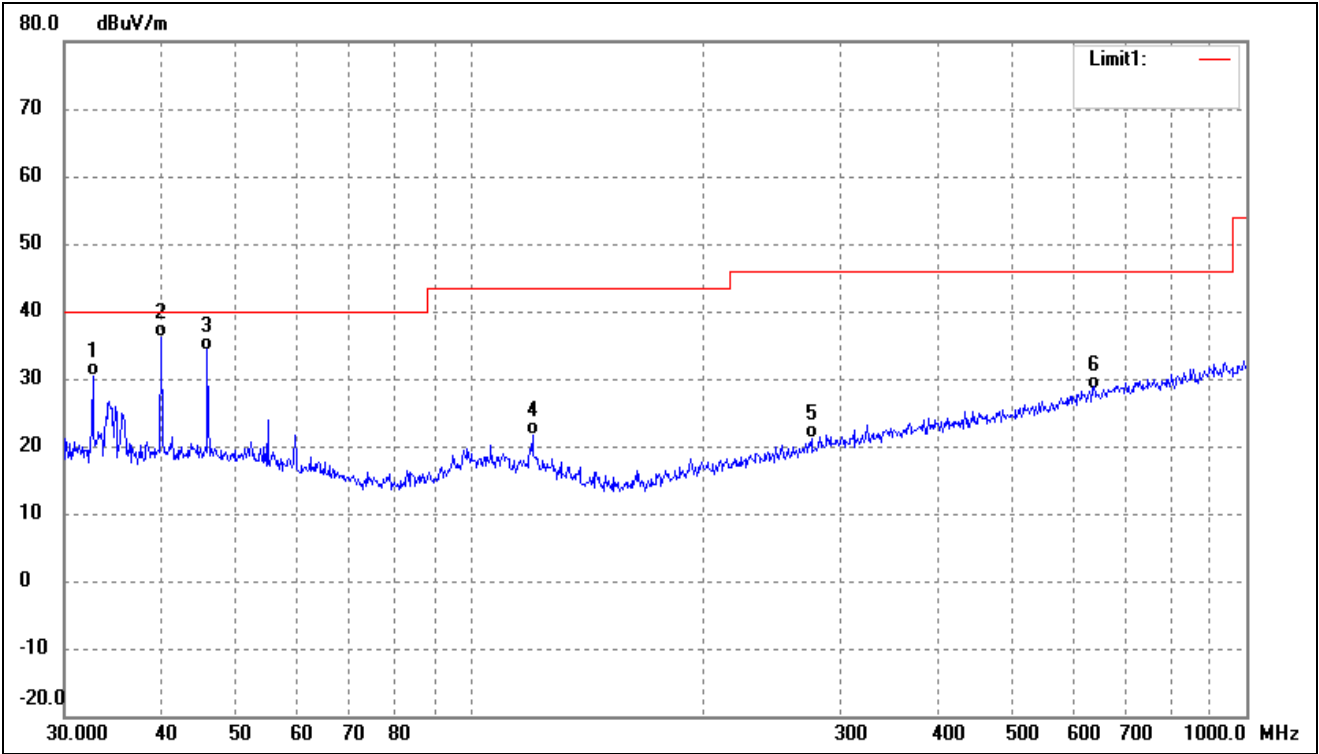
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.8303	28.05	-7.26	20.79	40.00	-19.21	-	-	QP
2	69.1141	35.77	-10.89	24.88	40.00	-15.12	-	-	QP
3	116.1321	28.17	-8.56	19.61	43.50	-23.89	-	-	QP
4	244.2321	26.63	-6.91	19.72	46.00	-26.28	-	-	QP
5	449.5558	27.97	-2.78	25.19	46.00	-20.81	-	-	QP
6	668.1423	28.62	0.86	29.48	46.00	-16.52	-	-	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	32.2925	29.19	-8.82	20.37	40.00	-19.63	-	-	QP
2	53.5052	26.91	-7.93	18.98	40.00	-21.02	-	-	QP
3	99.5281	27.56	-8.18	19.38	43.50	-24.12	-	-	QP
4	222.9502	27.57	-7.64	19.93	46.00	-26.07	-	-	QP
5	366.8231	27.95	-3.86	24.09	46.00	-21.91	-	-	QP
6	642.8613	28.68	0.47	29.15	46.00	-16.85	-	-	QP

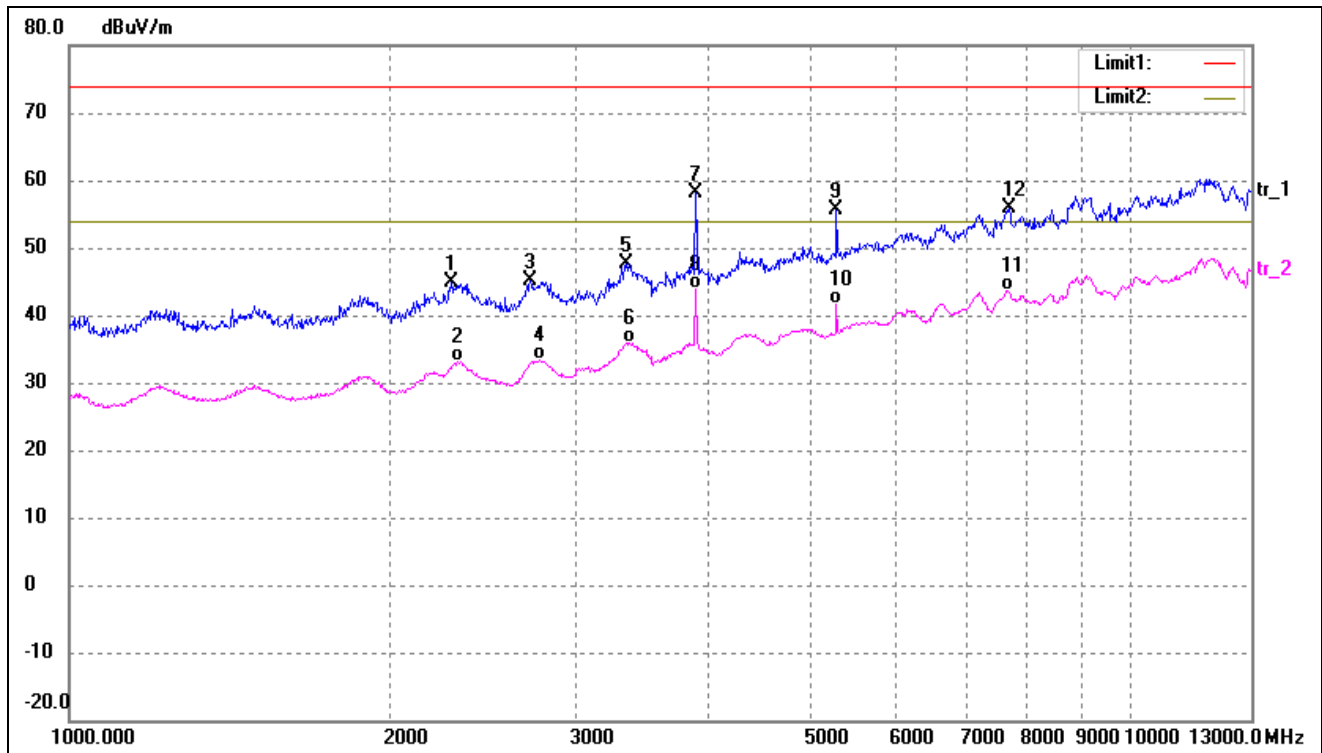
Test mode:	TM2	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.6340	39.06	-8.75	30.31	40.00	-9.69	-	-	QP
2	39.9942	43.26	-7.11	36.15	40.00	-3.85	-	-	QP
3	45.8553	41.49	-7.24	34.25	40.00	-5.75	-	-	QP
4	120.2766	30.59	-8.87	21.72	43.50	-21.78	-	-	QP
5	275.1570	27.00	-5.85	21.15	46.00	-24.85	-	-	QP
6	633.9073	28.04	0.34	28.38	46.00	-17.62	-	-	QP

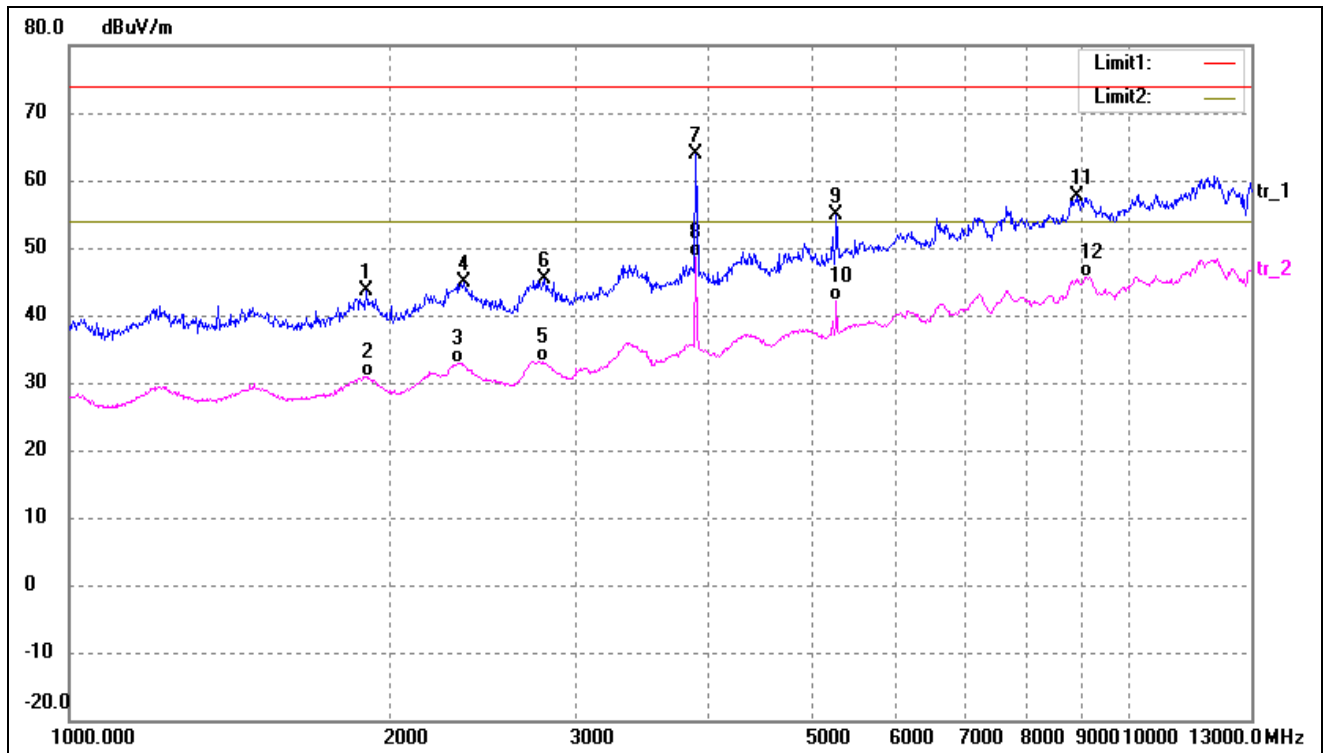
➤ Above 1GHz

Test mode:	TM1(worst case)	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	2289.832	53.81	-8.85	44.96	74.00	-29.04	-	-	peak
2	2319.388	41.87	-8.74	33.13	54.00	-20.87	-	-	AVG
3	2719.180	52.88	-7.82	45.06	74.00	-28.94	-	-	peak
4	2775.552	41.06	-7.75	33.31	54.00	-20.69	-	-	AVG
5	3347.090	53.77	-6.20	47.57	74.00	-26.43	-	-	peak
6	3372.944	42.04	-6.11	35.93	54.00	-18.07	-	-	AVG
7	3893.947	63.91	-5.70	58.21	74.00	-15.79	-	-	peak
8	3893.947	49.55	-5.70	43.85	54.00	-10.15	-	-	AVG
9	5283.835	57.60	-2.00	55.60	74.00	-18.40	-	-	peak
10	5283.835	43.67	-2.00	41.67	54.00	-12.33	-	-	AVG
11	7644.641	40.11	3.54	43.65	54.00	-10.35	-	-	AVG
12	7683.958	52.29	3.48	55.77	74.00	-18.23	-	-	peak

Test mode:	TM1(worst case)	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	1903.706	53.88	-10.23	43.65	74.00	-30.35	-	-	peak
2	1913.496	41.18	-10.21	30.97	54.00	-23.03	-	-	AVG
3	2325.345	41.64	-8.72	32.92	54.00	-21.08	-	-	AVG
4	2355.359	53.41	-8.61	44.80	74.00	-29.20	-	-	peak
5	2789.827	40.86	-7.73	33.13	54.00	-20.87	-	-	AVG
6	2804.176	53.08	-7.70	45.38	74.00	-28.62	-	-	peak
7	3893.947	69.67	-5.70	63.97	74.00	-10.03	-	-	peak
8	3893.947	54.36	-5.70	48.66	54.00	-5.34	-	-	AVG
9	5283.835	56.80	-2.00	54.80	74.00	-19.20	-	-	peak
10	5283.835	44.02	-2.00	42.02	54.00	-11.98	-	-	AVG
11	8893.644	51.75	5.77	57.52	74.00	-16.48	-	-	peak
12	9078.023	39.48	6.17	45.65	54.00	-8.35	-	-	AVG

Remark: '-Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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