

TEST REPORT

Reference No...... : WTX21X05048097W-6
FCC ID : 2AVFE-EULTRA
Applicant..... : Fortune Ship International Industrial Limited
Address..... : Unit C, 24/F, Golden Bear Industrial Centre, 66-82 Chai Wan Kok Street,
Tsuen Wan NT, HONGKONG
Product Name : 4G Smart Phone
Test Model..... : Wildfire E ultra
Standards..... : **FCC PART15 SUBPART B**
Date of Receipt sample.... : May. 19, 2021
Date of Test : May. 19, 2021 to Jun. 04, 2021
Date of Issue : Jun. 04, 2021
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.

Prepared By:

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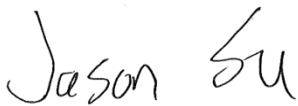
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Report version

Version No.	Date of issue	Description
Rev.00	Jun. 04, 2021	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Fortune Ship International Industrial Limited
Address of applicant: Unit C, 24/F, Golden Bear Industrial Centre, 66-82 Chai Wan Kok Street, Tsuen Wan NT, HONGKONG

Manufacturer: Fortune Ship International Industrial Limited
Address of manufacturer: Unit C, 24/F, Golden Bear Industrial Centre, 66-82 Chai Wan Kok Street, Tsuen Wan NT, HONGKONG

General Description of EUT	
Product Name:	4G Smart Phone
Trade Name:	HTC
Model No.:	Wildfire E ultra
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC3.7V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	TPA-97050100UU INPUT: AC100-240V, 50/60Hz, 0.15A Output: DC5V, 1.0A
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	Charging And Playing	Connect to the Adapter	AC120V 60Hz for adapter
TM2	Downloading	Connect to the Notebook	AC120V 60Hz for PC
TM3	Camera	Camera On	AC120V 60Hz for adapter
TM4	FM	Worst case FM 98MHz	AC120V 60Hz for adapter
TM5	GPS	Receive 1575.42MHz	AC120V 60Hz for adapter
TM6	2G	Receiver	AC120V 60Hz for adapter
TM7	3G	Receiver	AC120V 60Hz for adapter
TM8	4G	Receiver	AC120V 60Hz for adapter
TM9	WIFI	Receiver	AC120V 60Hz for adapter
TM10	BT	Receiver	AC120V 60Hz for adapter
Remark: Only show the worst case(TM1-TM5) in the test report			

EUT Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Core
USB-C Cable	0.98	Unshielded	Without Ferrite	/
Earphone Cable	1.18	Unshielded	Without Ferrite	/

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	TianYi310-14ISK	/

1.6 Measurement Uncertainty

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

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2021-03-30	2022-03-29
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-04-12	2022-04-11
Amplifier	Agilent	8447F	3113A06717	2021-04-12	2022-04-11
Amplifier	C&D	PAP-1G18	2002	2021-04-12	2022-04-11
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2021-05-06	2022-05-05
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
Amplifier	Agilent	8447D	2944A10179	2021-04-12	2022-04-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-04-15	2022-04-14

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

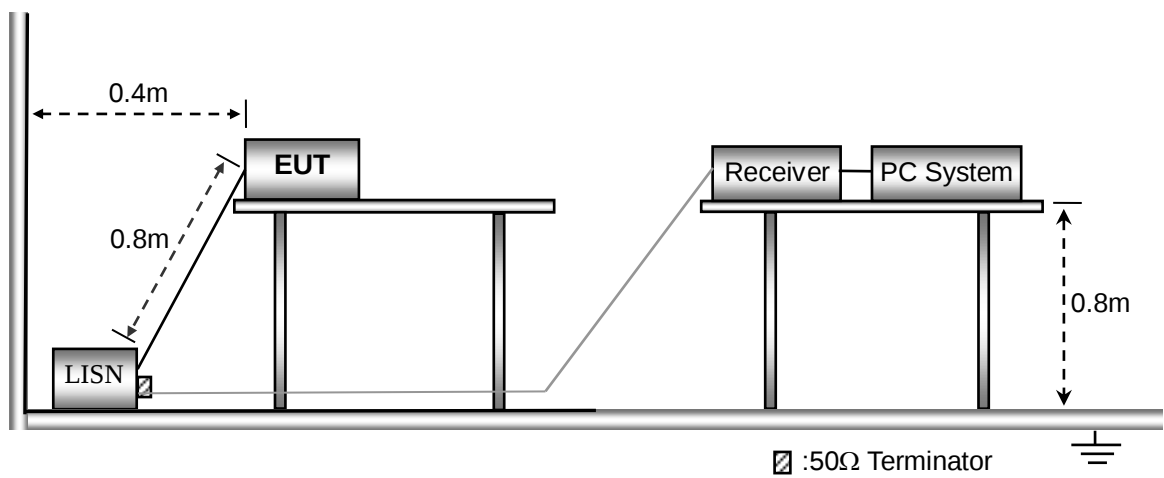
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

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

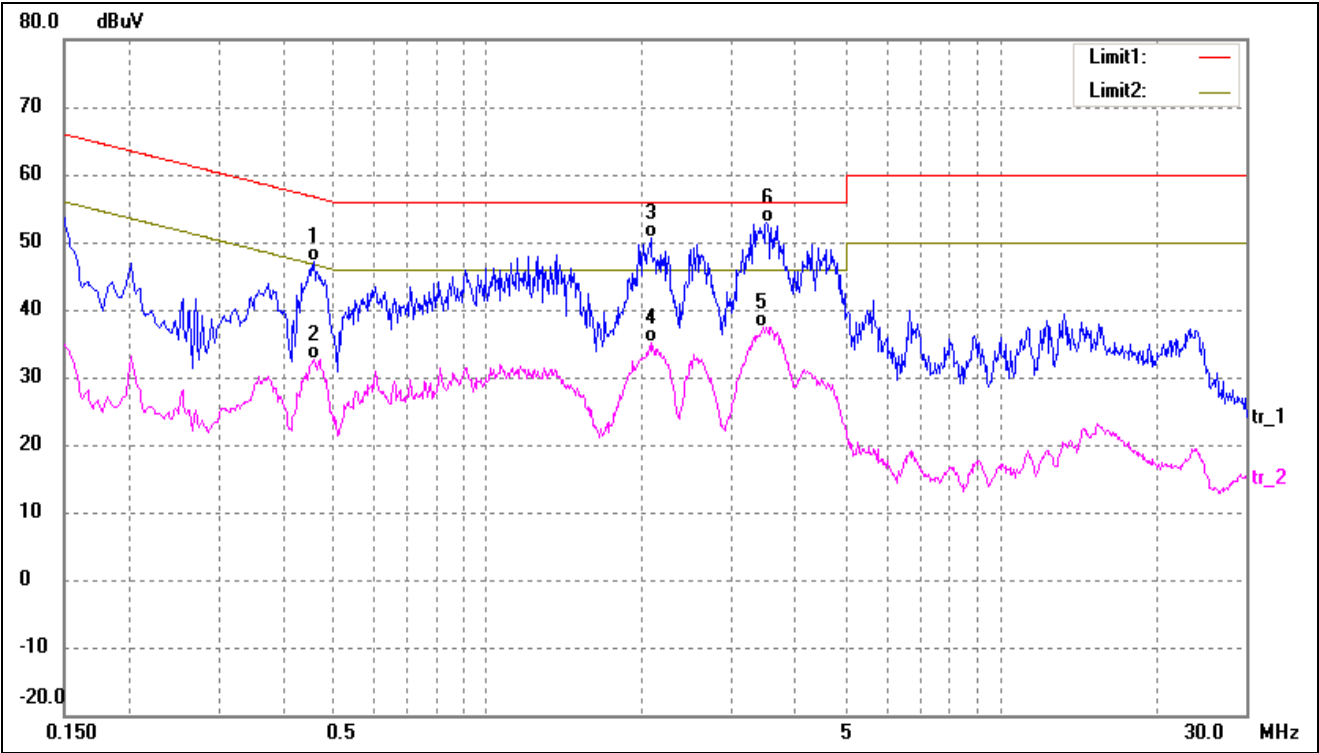
Temperature:	23.5 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

3.4 Summary of Test Results

Look at the graphs and data below:

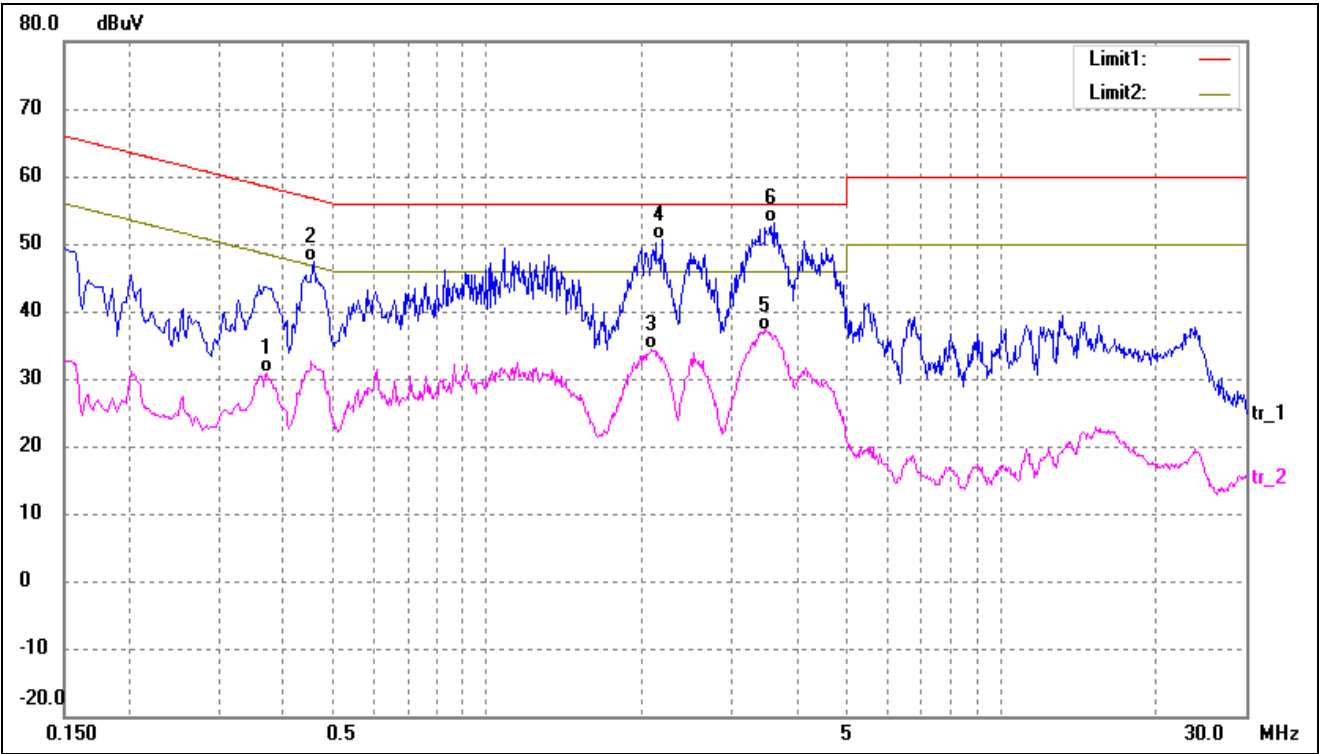
3.5 Conducted Emissions Test Data

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4580	36.79	10.22	47.01	56.73	-9.72	QP
2	0.4580	22.33	10.22	32.55	46.73	-14.18	AVG
3	2.0779	40.31	10.29	50.60	56.00	-5.40	QP
4	2.0939	24.88	10.29	35.17	46.00	-10.83	AVG
5	3.4380	27.22	10.25	37.47	46.00	-8.53	AVG
6*	3.4980	42.64	10.25	52.89	56.00	-3.11	QP

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.3700	20.53	10.24	30.77	48.50	-17.73	AVG
2	0.4580	37.17	10.22	47.39	56.73	-9.34	QP
3	2.0980	24.08	10.29	34.37	46.00	-11.63	AVG
4	2.1980	40.27	10.29	50.56	56.00	-5.44	QP
5	3.4540	27.00	10.25	37.25	46.00	-8.75	AVG
6*	3.6060	42.80	10.25	53.05	56.00	-2.95	QP

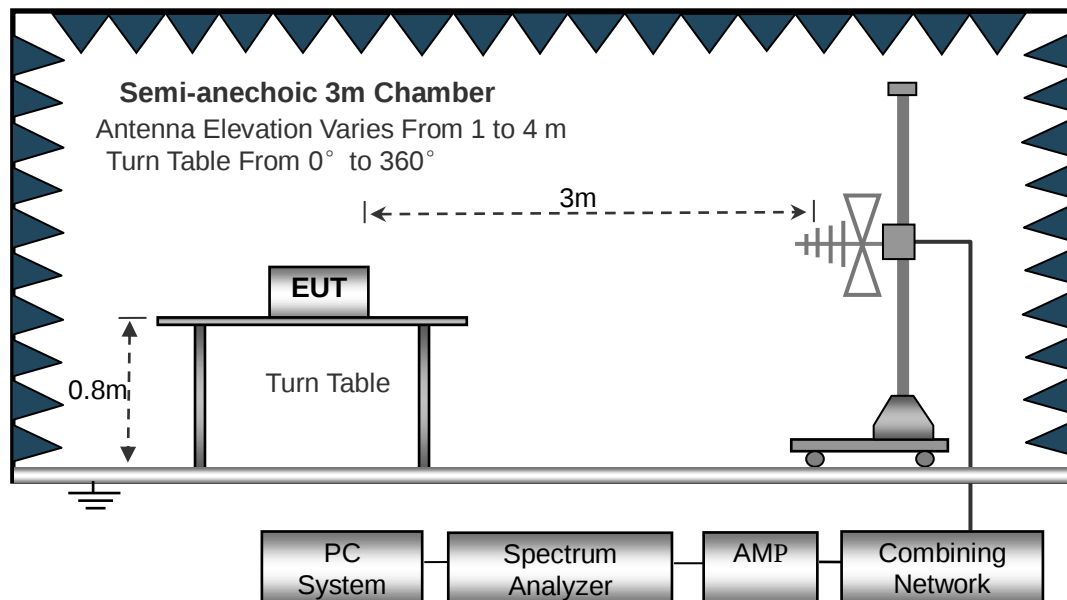
4. RADIATED EMISSION

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 -6dBμV means the emission is 6dBμV 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

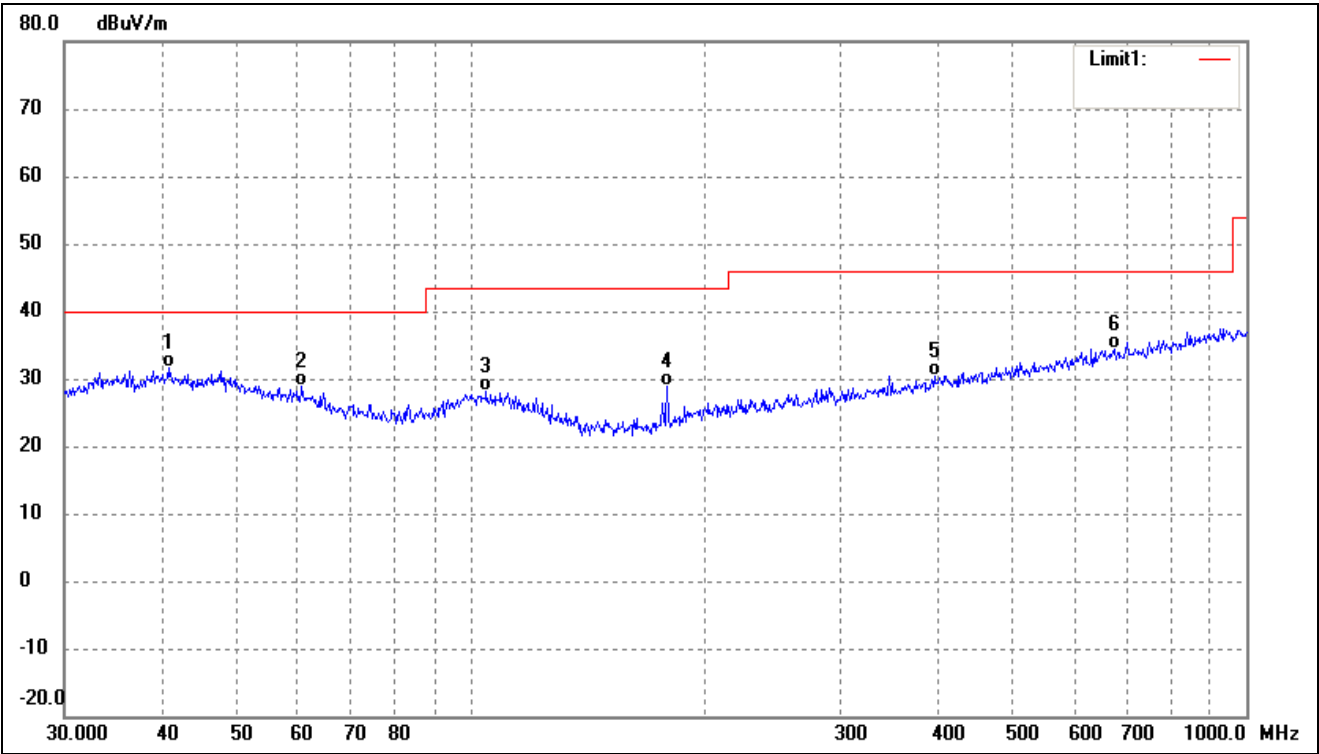
Temperature:	23.5 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results

Look at the graphs and data below:

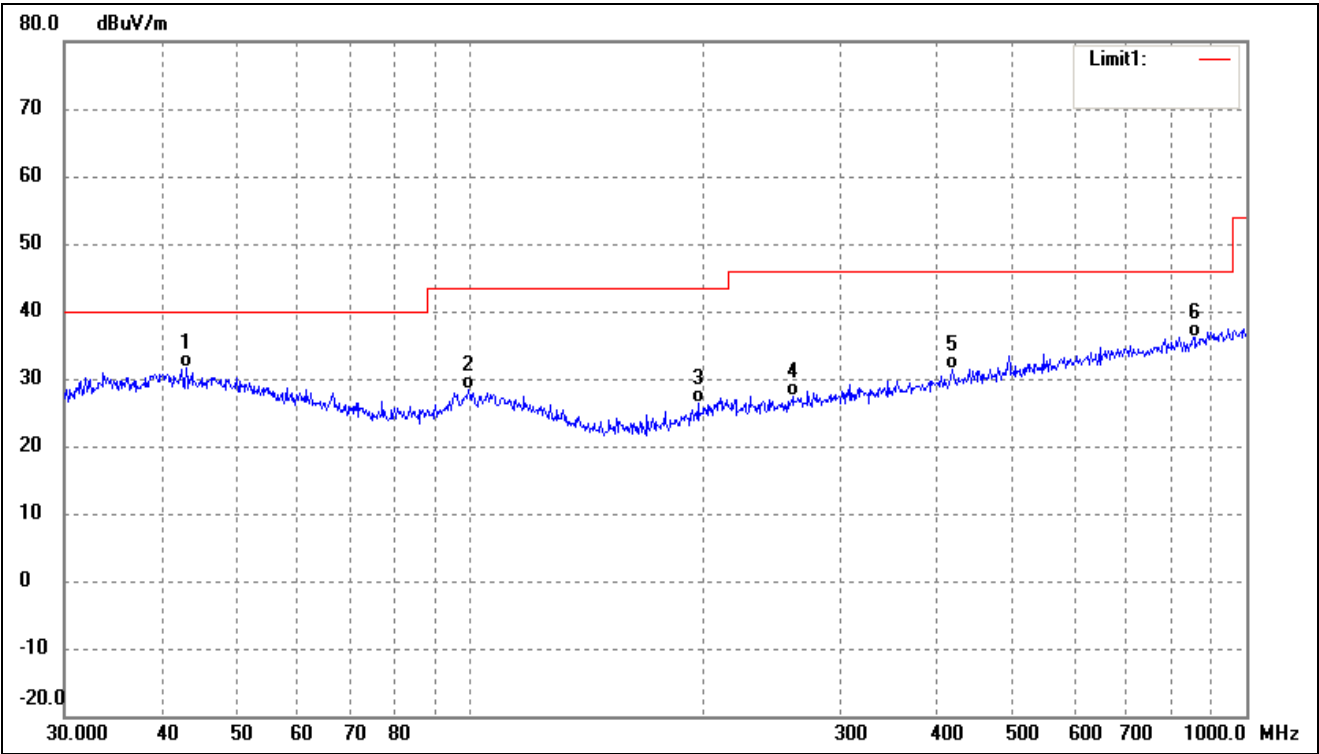
Below 1GHz

Test mode:	TM1	Polarity:	Horizontal
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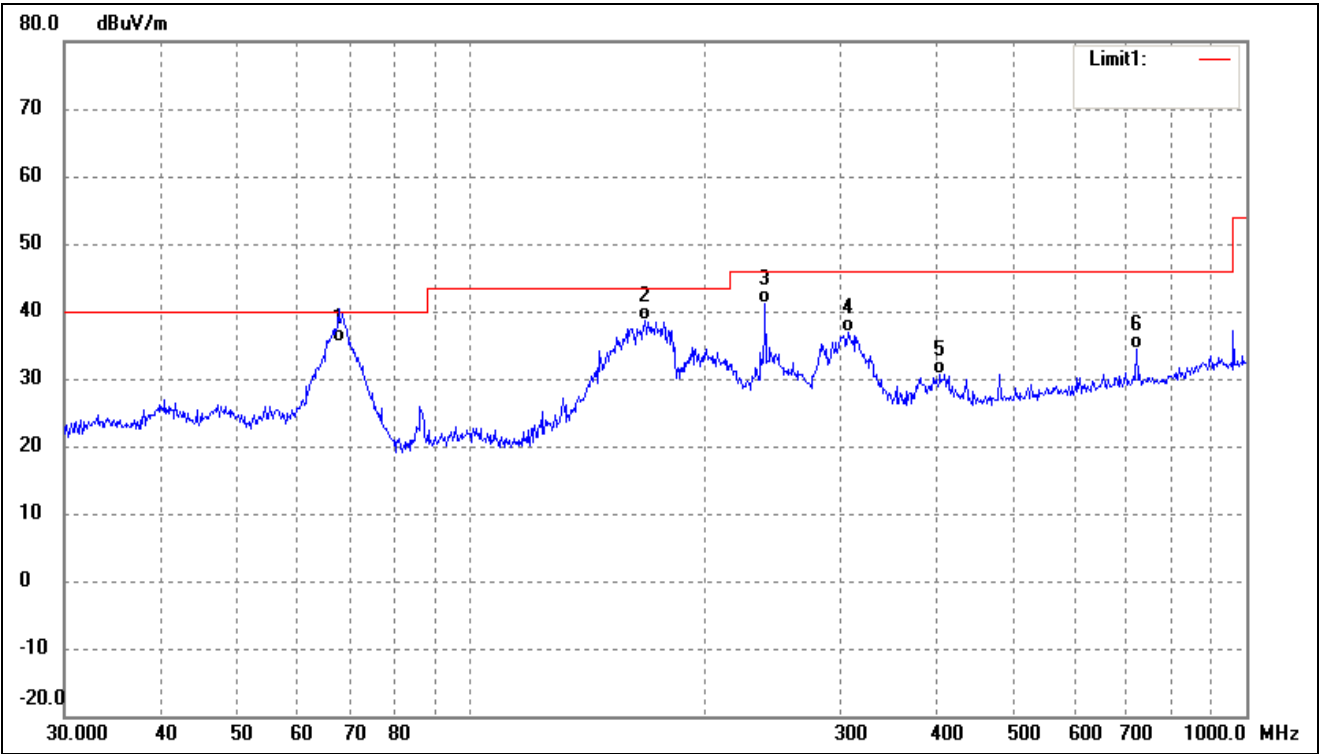
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	40.8445	38.45	-6.84	31.61	40.00	-8.39	-	-	QP
2	60.7043	37.73	-8.96	28.77	40.00	-11.23	-	-	QP
3	104.9033	36.13	-7.90	28.23	43.50	-15.27	-	-	QP
4	179.3863	39.30	-10.45	28.85	43.50	-14.65	-	-	QP
5	396.2414	34.03	-3.65	30.38	46.00	-15.62	-	-	QP
6	675.2078	33.09	1.33	34.42	46.00	-11.58	-	-	QP

Test mode:	TM1	Polarity:	Vertical
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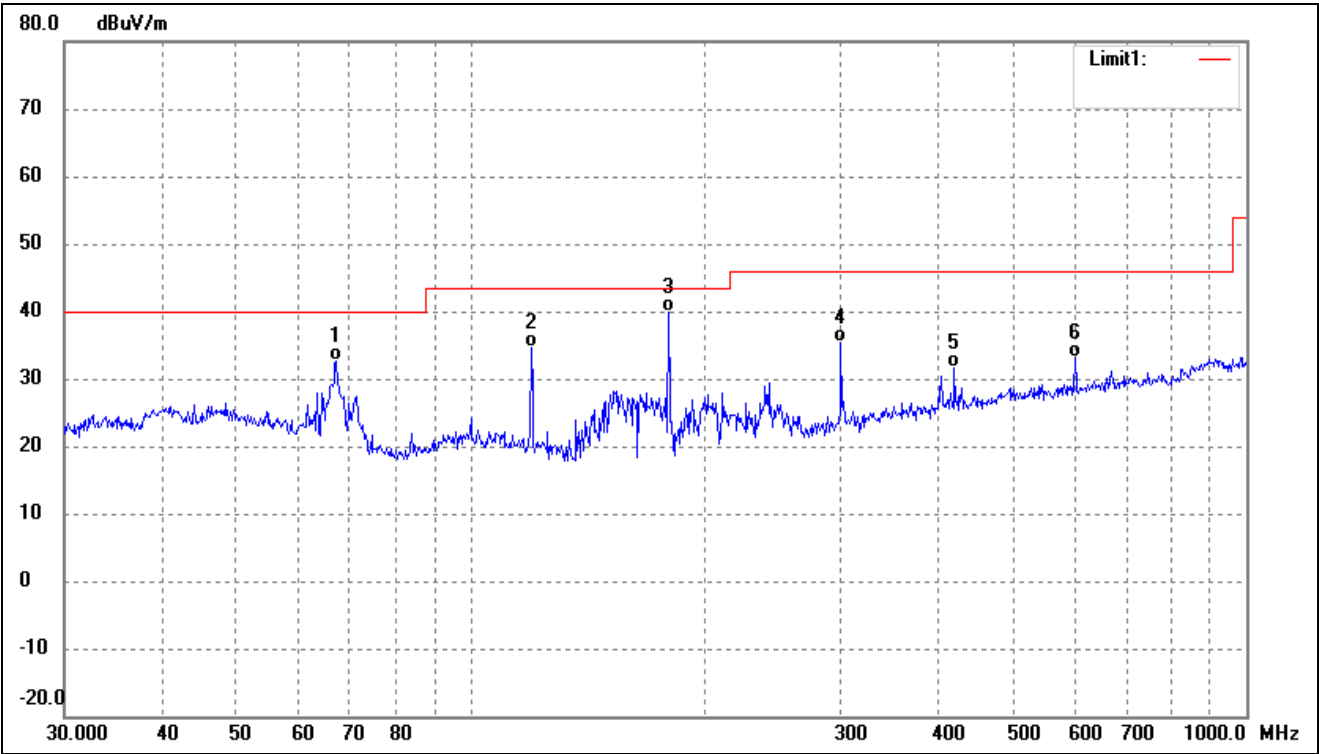
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	43.0505	38.42	-6.90	31.52	40.00	-8.48	-	-	QP
2	99.5281	36.44	-7.94	28.50	43.50	-15.00	-	-	QP
3	196.5098	35.26	-8.98	26.28	43.50	-17.22	-	-	QP
4	260.1444	34.45	-7.10	27.35	46.00	-18.65	-	-	QP
5	417.6411	34.70	-3.24	31.46	46.00	-14.54	-	-	QP
6	857.0247	32.49	3.58	36.07	46.00	-9.93	-	-	QP

Test mode:	TM2	Polarity:	Horizontal
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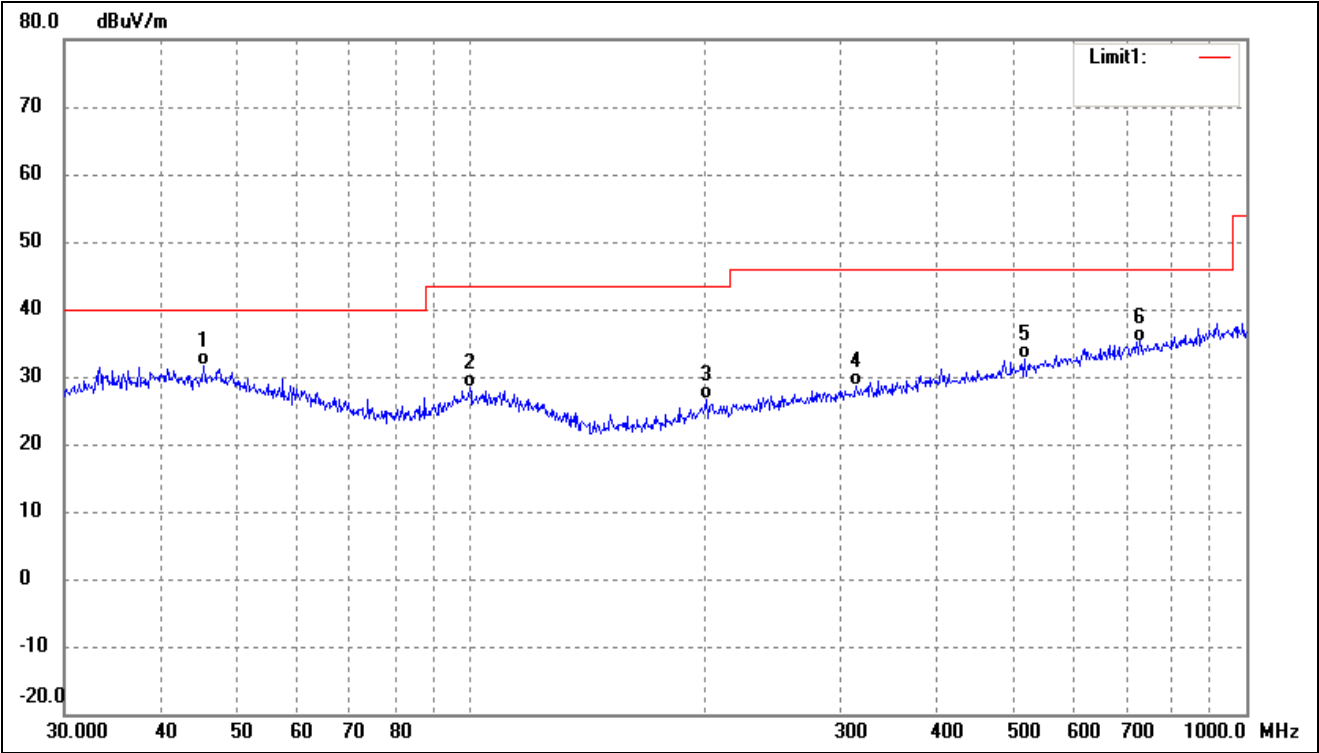
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	67.6751	49.80	-14.30	35.50	40.00	-4.50	-	-	QP
2	167.8243	53.69	-15.14	38.55	43.50	-4.95	-	-	QP
3	239.9874	52.63	-11.42	41.21	46.00	-4.79	-	-	QP
4	306.7537	45.83	-8.93	36.90	46.00	-9.10	-	-	QP
5	403.2500	37.14	-6.39	30.75	46.00	-15.25	-	-	QP
6	721.7259	35.37	-1.10	34.27	46.00	-11.73	-	-	QP

Test mode:	TM2	Polarity:	Vertical
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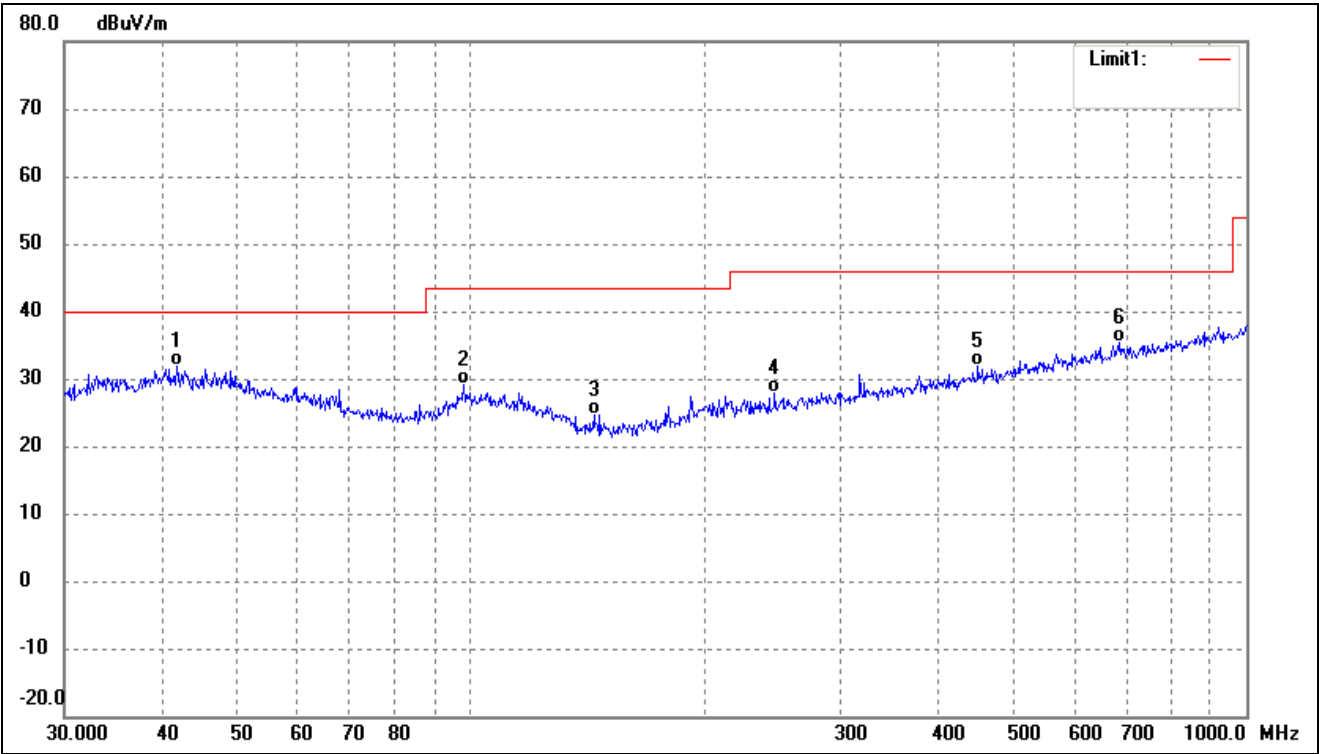
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	67.2022	46.78	-14.23	32.55	40.00	-7.45	-	-	QP
2	119.8556	48.88	-14.28	34.60	43.50	-8.90	-	-	QP
3	180.0165	54.13	-14.31	39.82	43.50	-3.68	-	-	QP
4	300.3672	44.29	-8.92	35.37	46.00	-10.63	-	-	QP
5	420.5803	37.70	-5.99	31.71	46.00	-14.29	-	-	QP
6	601.4265	34.95	-1.94	33.01	46.00	-12.99	-	-	QP

Test mode:	TM3	Polarity:	Horizontal
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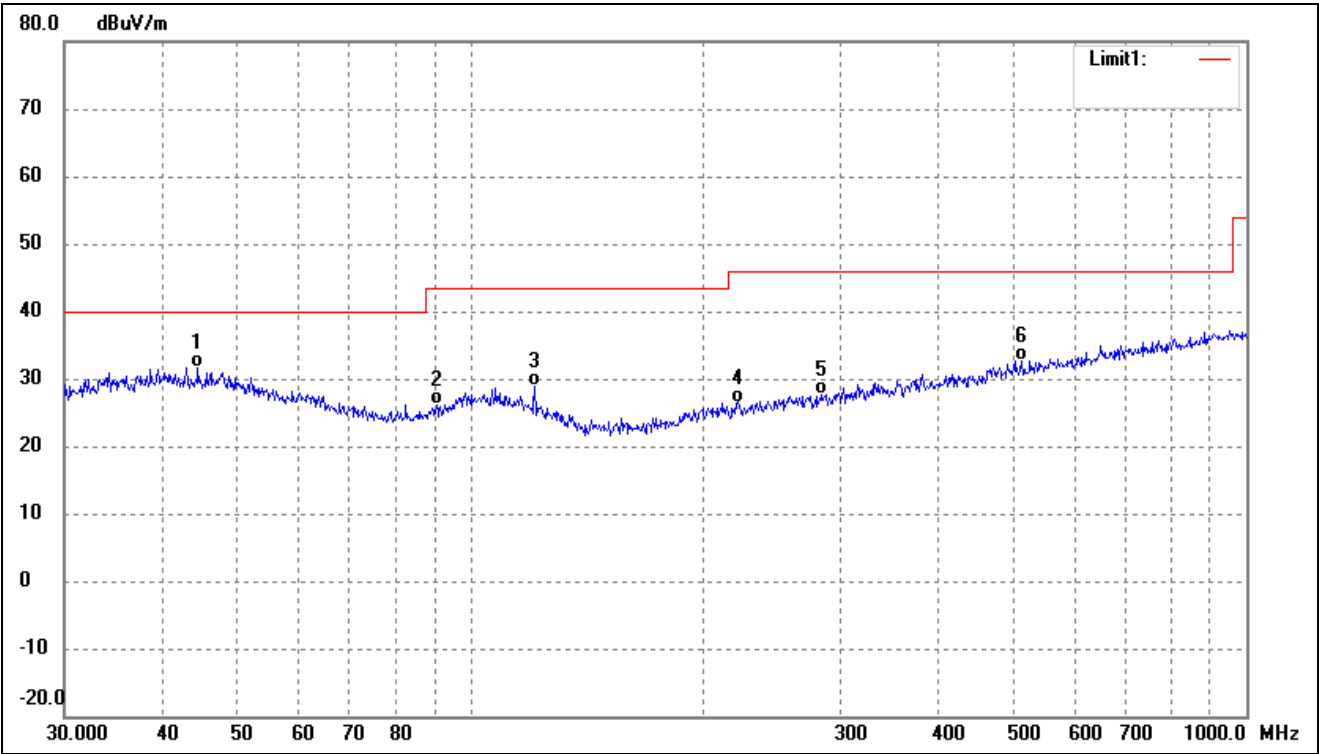
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.3755	38.50	-6.97	31.53	40.00	-8.47	-	-	QP
2	99.8777	36.17	-7.85	28.32	43.50	-15.18	-	-	QP
3	201.3930	35.47	-8.83	26.64	43.50	-16.86	-	-	QP
4	314.3765	34.17	-5.66	28.51	46.00	-17.49	-	-	QP
5	517.2480	33.88	-1.35	32.53	46.00	-13.47	-	-	QP
6	729.3583	33.28	1.97	35.25	46.00	-10.75	-	-	QP

Test mode:	TM3	Polarity:	Vertical
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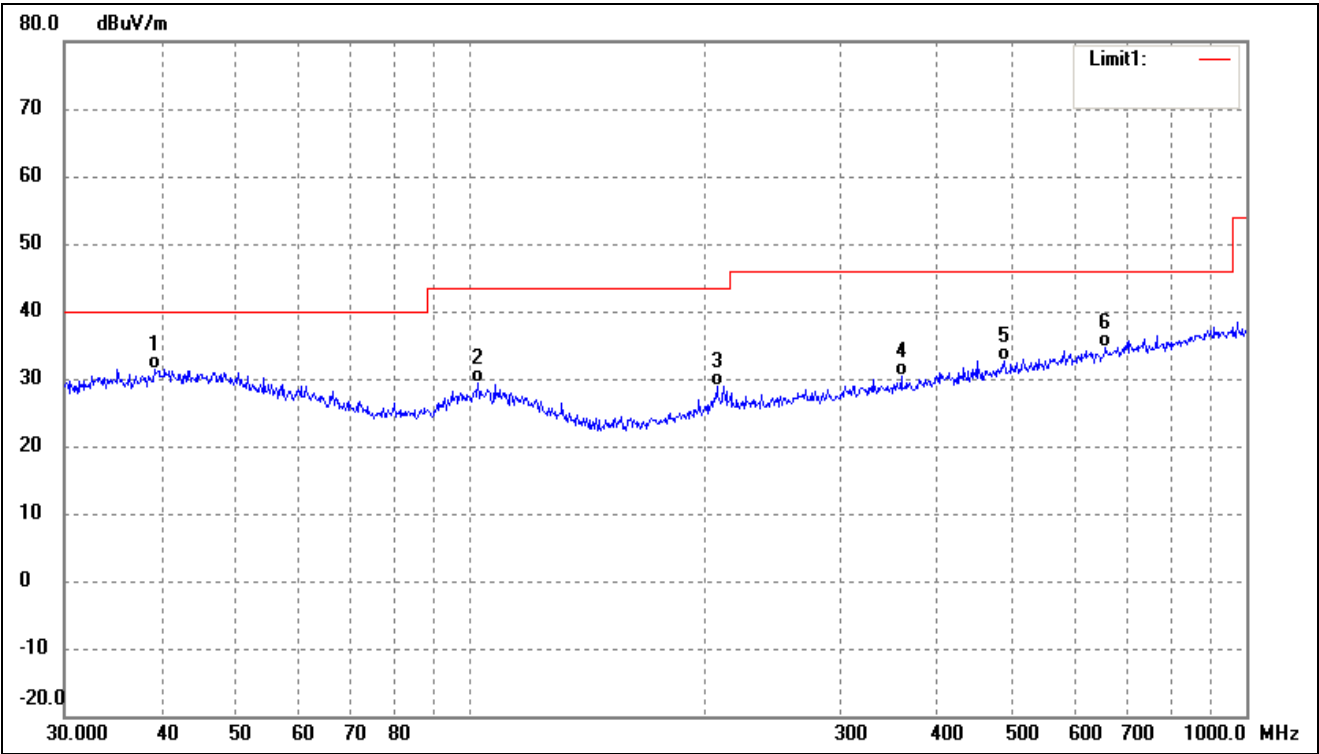
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	41.8596	38.67	-6.87	31.80	40.00	-8.20	-	-	QP
2	98.1419	37.55	-8.33	29.22	43.50	-14.28	-	-	QP
3	144.3348	36.20	-11.55	24.65	43.50	-18.85	-	-	QP
4	246.8149	35.27	-7.51	27.76	46.00	-18.24	-	-	QP
5	451.1350	34.42	-2.62	31.80	46.00	-14.20	-	-	QP
6	687.1507	33.93	1.49	35.42	46.00	-10.58	-	-	QP

Test mode:	TM4	Polarity:	Horizontal
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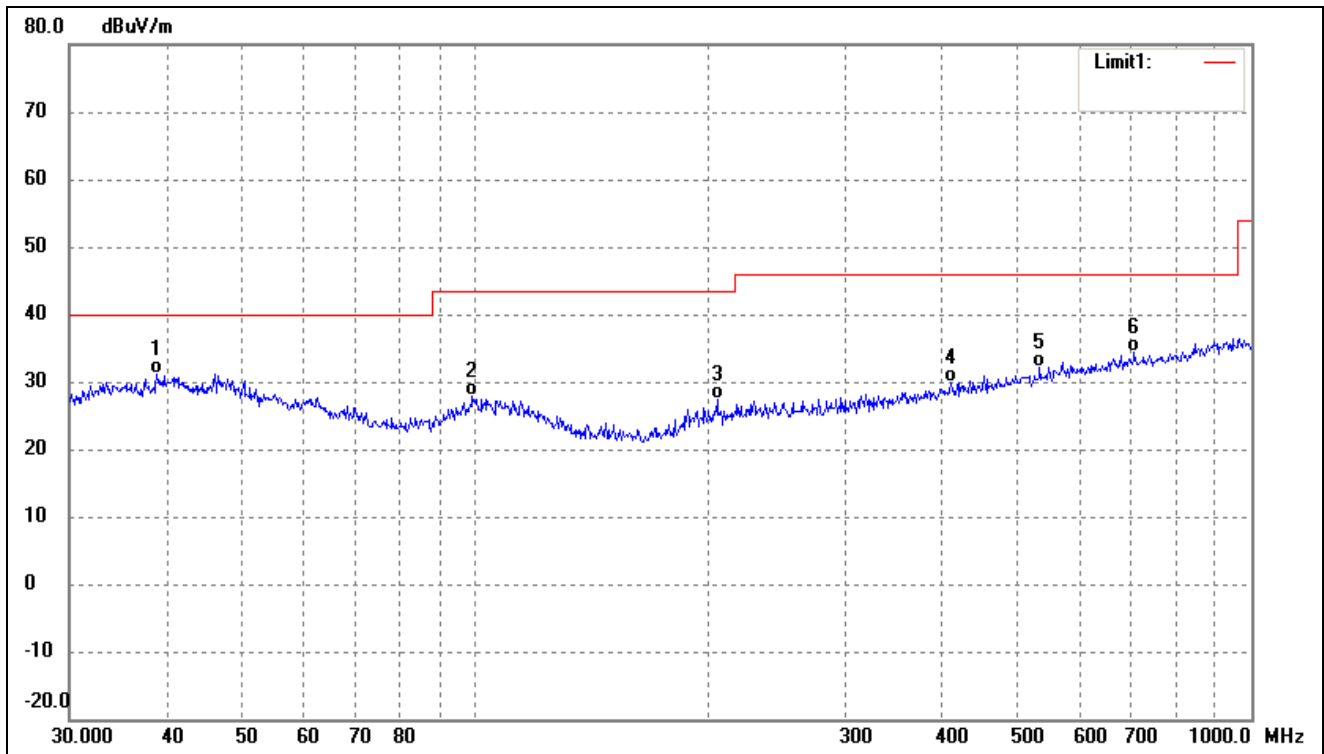
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	44.5868	38.62	-6.95	31.67	40.00	-8.33	-	-	QP
2	90.5374	36.63	-10.40	26.23	43.50	-17.27	-	-	QP
3	121.1231	37.78	-8.93	28.85	43.50	-14.65	-	-	QP
4	221.3921	34.75	-8.25	26.50	46.00	-19.50	-	-	QP
5	282.9852	34.21	-6.48	27.73	46.00	-18.27	-	-	QP
6	513.6331	34.13	-1.41	32.72	46.00	-13.28	-	-	QP

Test mode:	TM4	Polarity:	Vertical
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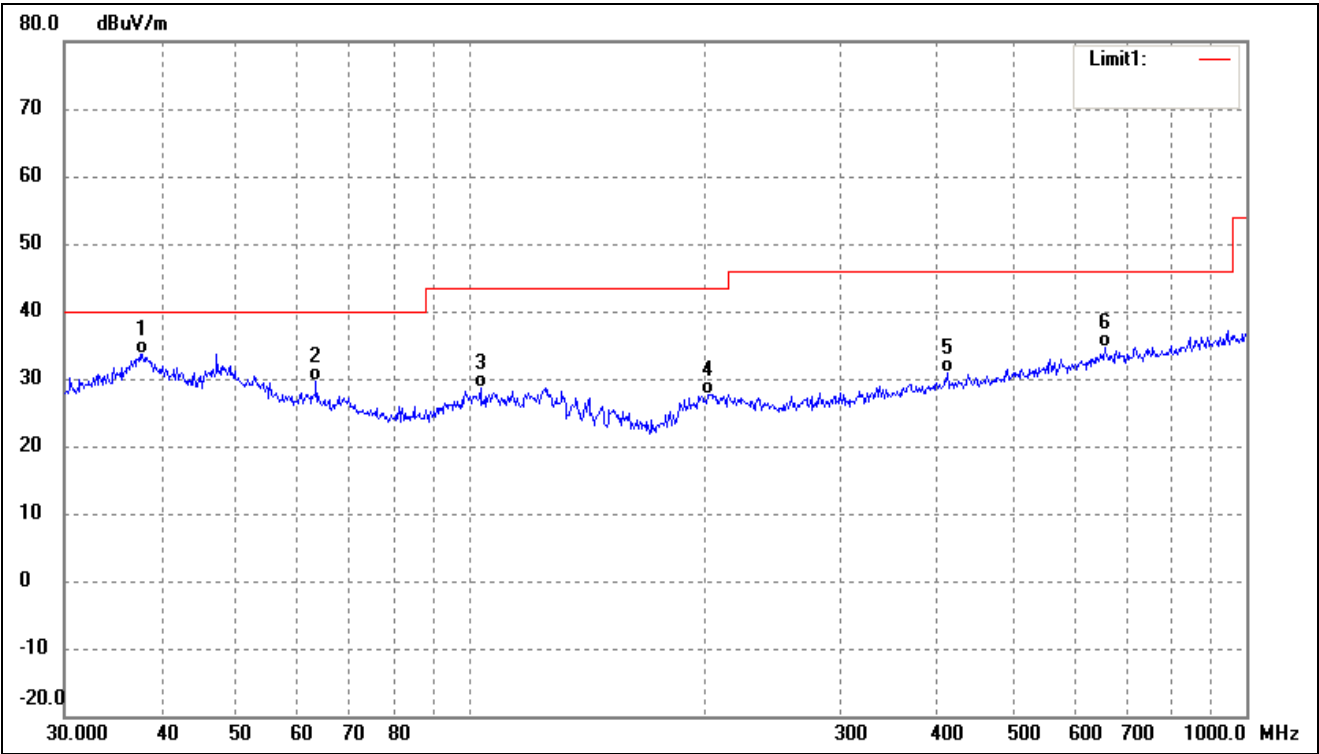
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	39.1616	38.45	-7.01	31.44	40.00	-8.56	-	-	QP
2	102.3597	37.20	-7.86	29.34	43.50	-14.16	-	-	QP
3	207.8501	37.56	-8.64	28.92	43.50	-14.58	-	-	QP
4	359.1860	35.02	-4.56	30.46	46.00	-15.54	-	-	QP
5	487.3151	34.64	-1.90	32.74	46.00	-13.26	-	-	QP
6	658.8362	33.49	1.10	34.59	46.00	-11.41	-	-	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	38.8878	38.14	-7.06	31.08	40.00	-8.92	-	-	QP
2	99.1797	35.95	-8.04	27.91	43.50	-15.59	-	-	QP
3	204.9551	36.10	-8.73	27.37	43.50	-16.13	-	-	QP
4	410.3825	33.24	-3.37	29.87	46.00	-16.13	-	-	QP
5	533.8321	33.18	-1.04	32.14	46.00	-13.86	-	-	QP
6	706.6999	32.69	1.74	34.43	46.00	-11.57	-	-	QP

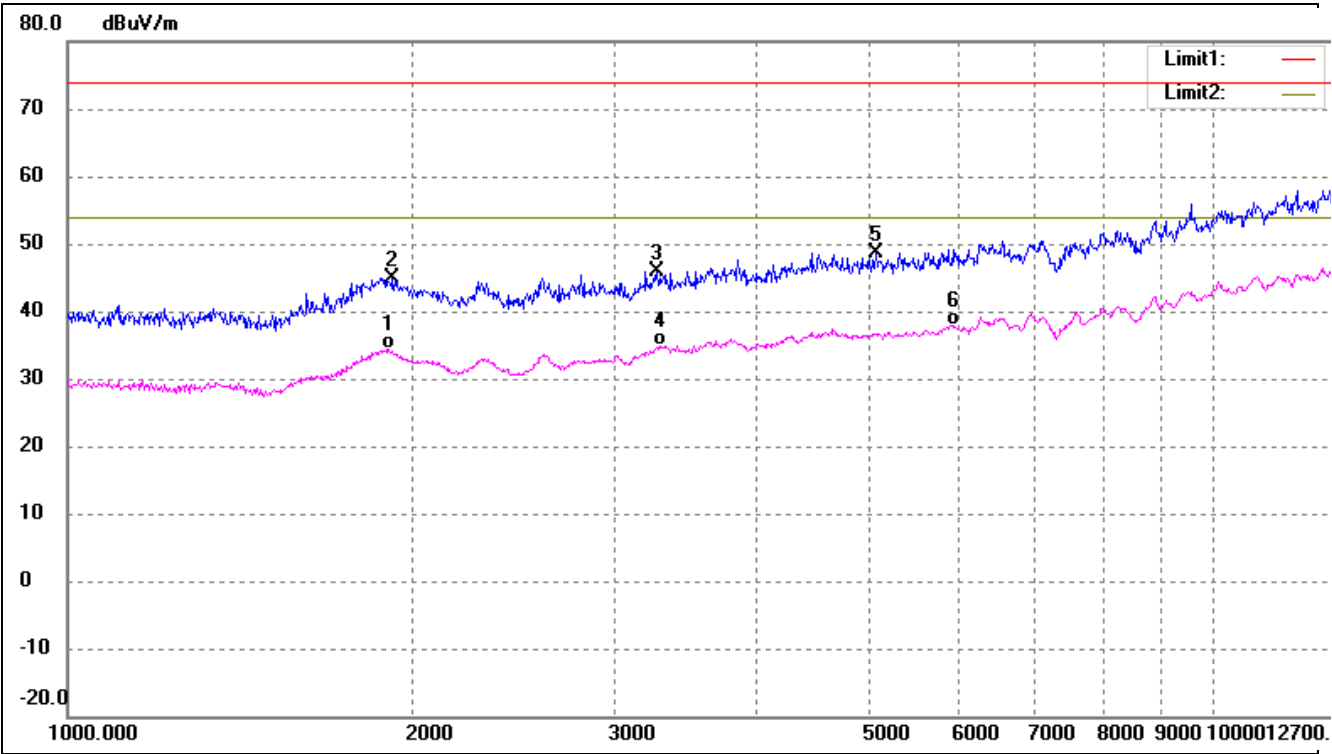
Test mode:	TM5	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	37.8121	40.96	-7.31	33.65	40.00	-6.35	-	-	QP
2	63.3132	39.04	-9.46	29.58	40.00	-10.42	-	-	QP
3	103.0800	36.48	-7.87	28.61	43.50	-14.89	-	-	QP
4	202.8104	36.51	-8.79	27.72	43.50	-15.78	-	-	QP
5	411.8240	34.25	-3.35	30.90	46.00	-15.10	-	-	QP
6	656.5300	33.52	1.07	34.59	46.00	-11.41	-	-	QP

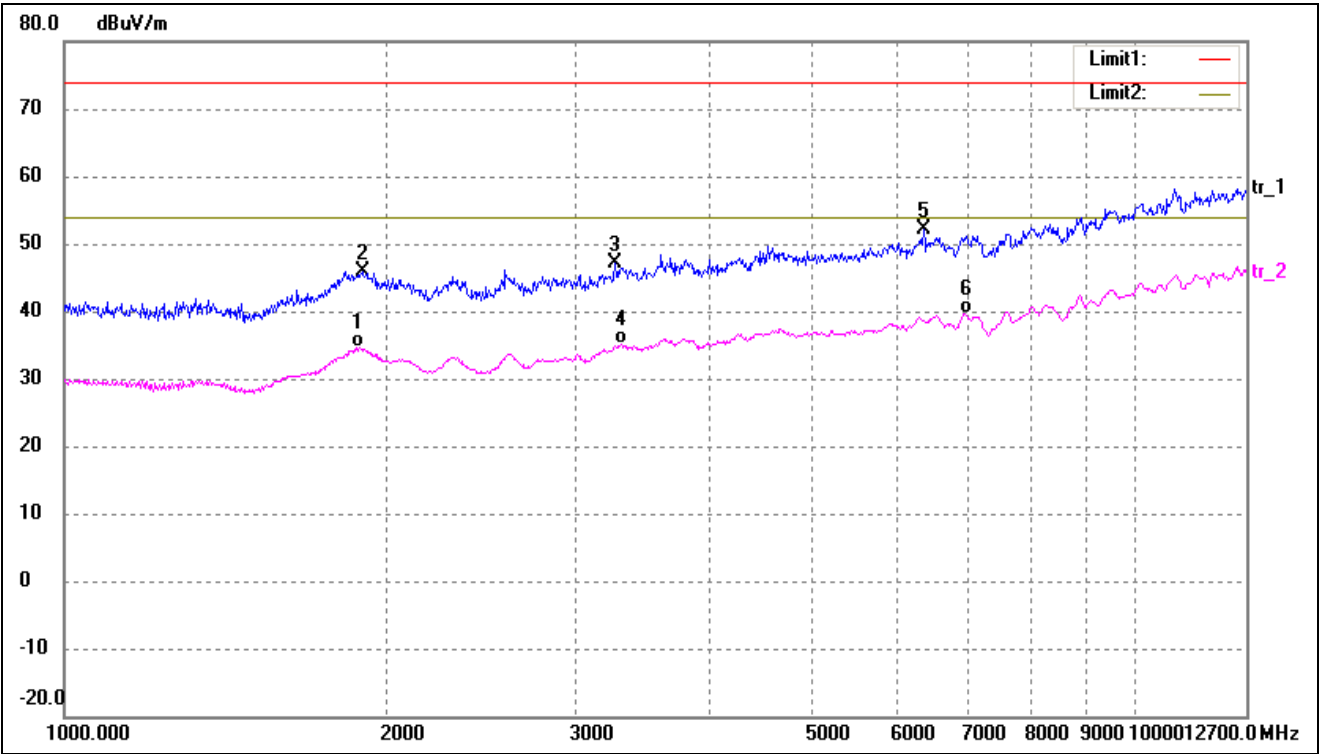
Above 1GHz

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	1907.068	43.01	-8.67	34.34	54.00	-19.66	-	-	AVG
2	1921.665	53.91	-8.92	44.99	74.00	-29.01	-	-	peak
3	3268.681	53.78	-7.87	45.91	74.00	-28.09	-	-	peak
4	3285.339	42.67	-7.81	34.86	54.00	-19.14	-	-	AVG
5	5073.768	52.99	-4.35	48.64	74.00	-25.36	-	-	peak
6	5924.649	41.04	-3.17	37.87	54.00	-16.13	-	-	AVG

Test mode:	TM1(worst case)	Polarity:	Vertical
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	1873.439	43.30	-8.79	34.51	54.00	-19.49	-	-	AVG
2	1897.398	54.58	-8.58	46.00	74.00	-28.00	-	-	peak
3	3268.681	54.91	-7.87	47.04	74.00	-26.96	-	-	peak
4	3310.485	42.95	-7.75	35.20	54.00	-18.80	-	-	AVG
5	6345.492	54.70	-2.50	52.20	74.00	-21.80	-	-	peak
6	6935.830	41.82	-2.27	39.55	54.00	-14.45	-	-	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.

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