FCC Part 15B
Measurement and Test Report

For

Guizhou Fortuneship Technology Co., Ltd

No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone,

Zunyi, China

FCC ID: 2ALQJ-WILDFIREE

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	4G Smart Phone
Tested Model:	Wildfire E
Report No.:	WTX19X09062799W-6
Sample Receipt Date:	2019-09-09
Tested Date:	2019-09-09 to 2019-10-10
Issued Date:	2019-10-10
Tested By:	Jason Su / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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Report version

Version No.	Date of issue	Description
Rev.00	2019-10-10	Original
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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Guizhou Fortuneship Technology Co., Ltd
Address of applicant:	No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone, Zunyi, China
Manufacturer:	Guizhou Fortuneship Technology Co., Ltd
Address of manufacturer:	No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone, Zunyi, China

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

Technical Characteristics of EUT	
Rated Voltage:	DC3.85V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	ES568-U050150XYF INPUT: AC100-240V, 50/60Hz, 0.5A; Output: DC 5V, 1500mA
Lowest Internal Frequency:	26MHz
Highest Internal Frequency:	2480MHz
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

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

Address of the test laboratory

Laboratory: Shenzhen SEM Test Technology Co., Ltd.

Address: 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101）

FCC – Registration No.: 125990

Shenzhen SEM Test Technology 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 maintain ed in our files. The Designation Number is CN5010

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology 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	/	AC120V 60Hz for adapter
TM2	Downloading	/	AC120V 60Hz for adapter
TM3	Camera	/	AC120V 60Hz for adapter
TM4	FM	Receiver	AC120V 60Hz for adapter
TM5	GPS	Receiver	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 Core/Without Core
USB-C Cable	1.0	Unshielded	Without Ferrite
Earphone Cable	1.2	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E445	/

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 ±3.74dB
		0.15-30MHz ±3.34dB
Radiated Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2019-04-30	2020-04-29
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2019-04-30	2020-04-29
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2019-04-30	2020-04-29
Amplifier	Agilent	8447F	3113A06717	2019-04-30	2020-04-29
Amplifier	C&D	PAP-1G18	2002	2019-04-30	2020-04-29
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2019-04-30	2020-04-29
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2019-04-30	2020-04-29
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2019-04-30	2020-04-29

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

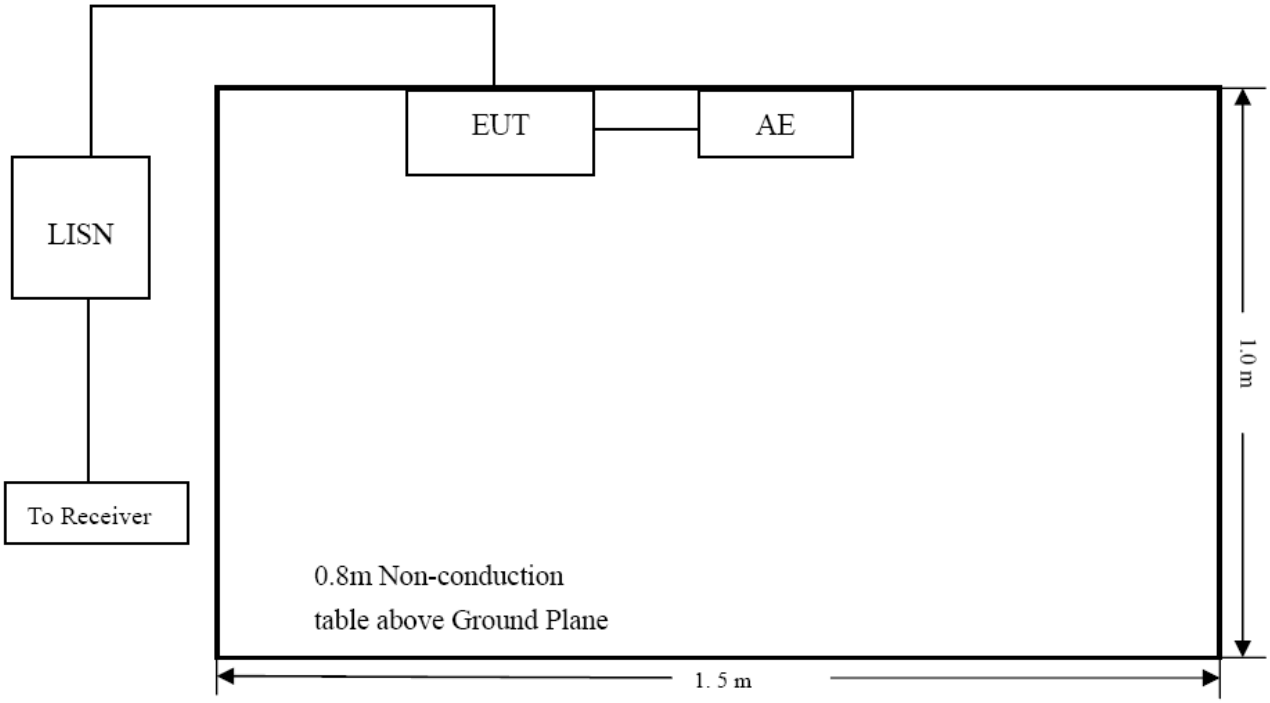
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

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:	26 °C
Relative Humidity:	60%
ATM Pressure:	1011 mbar

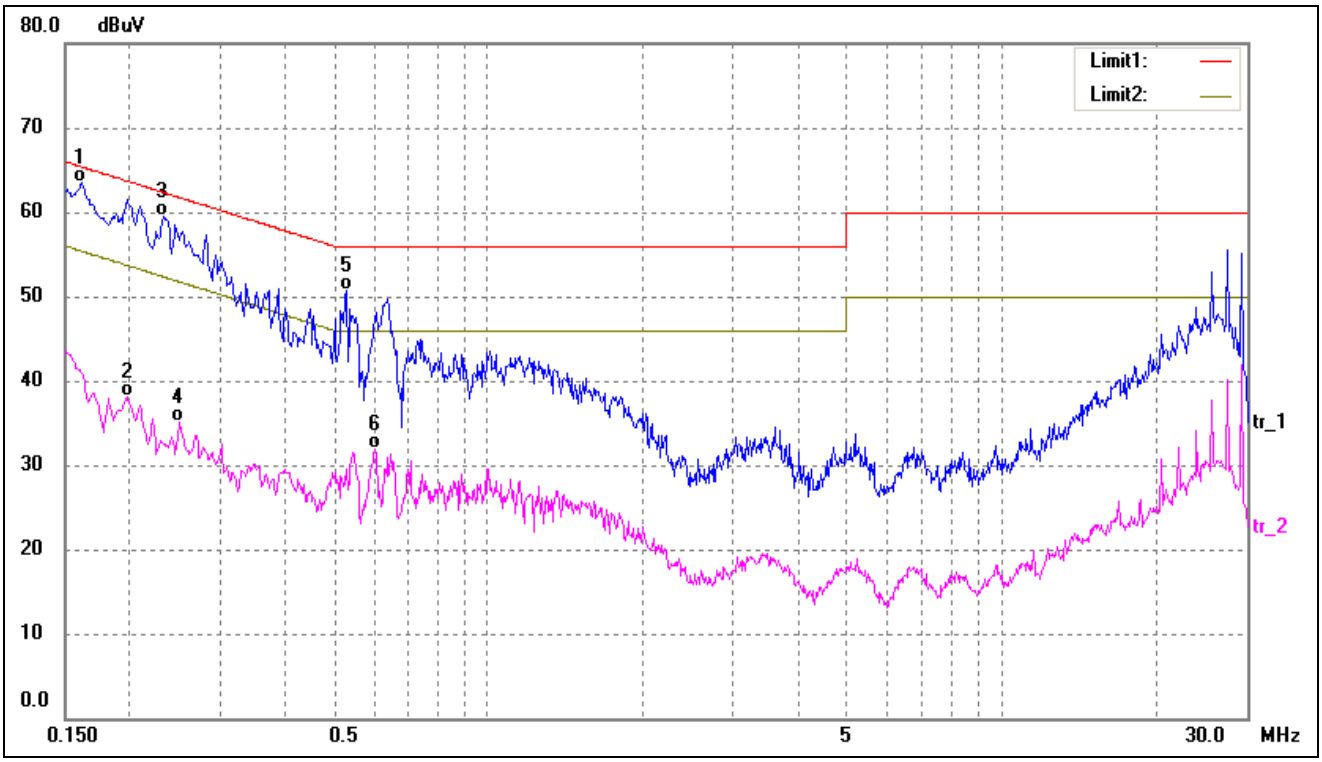
3.4 Summary of Test Results/Plots

According to the data in section 3.5, the EUT complied with the FCC Part 15.107(a) conducted margin for a Class B device, with the *worst* margin reading of:

-1.82 dB at **0.1620 MHz** in the **Line**, **QP** detector, 0.15-30 MHz

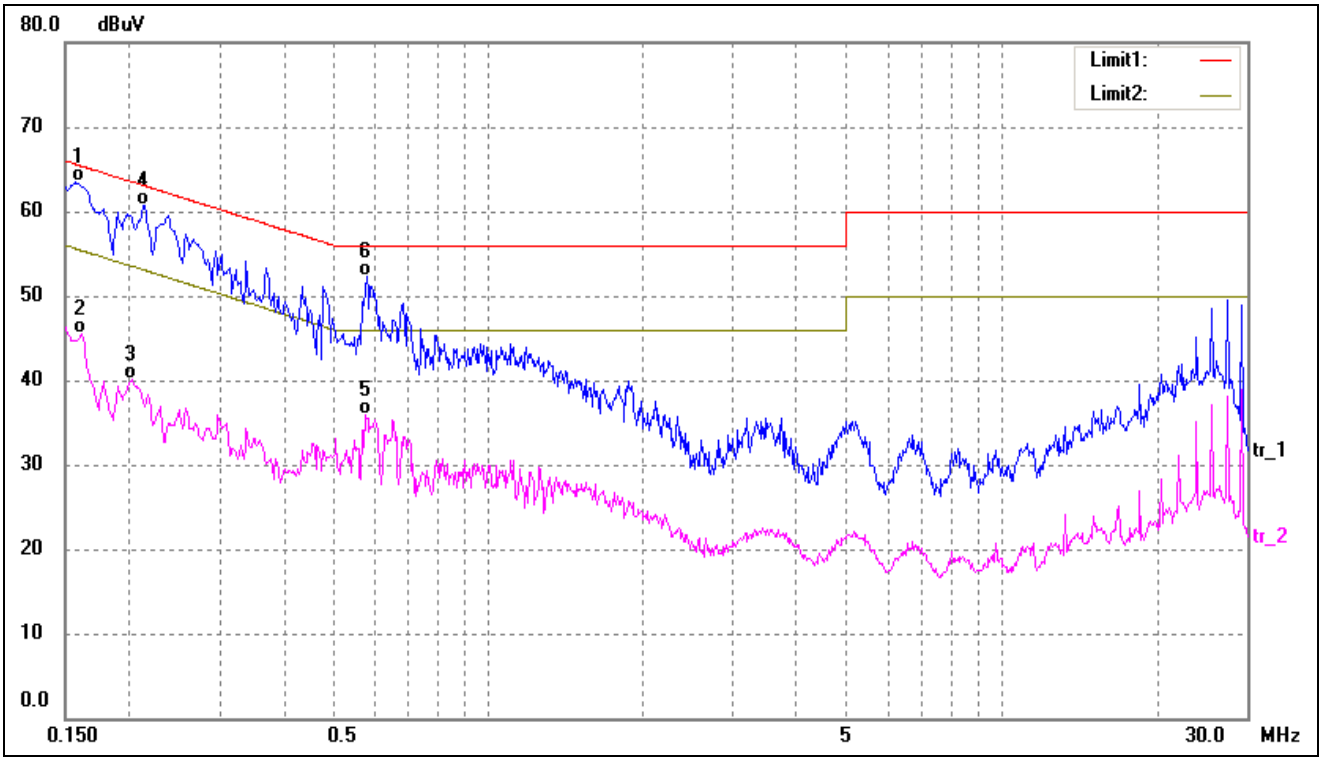
3.5 Conducted Emissions Test Data

Test mode:	TM1	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1620	53.59	9.95	63.54	65.36	-1.82	QP
2	0.1980	28.23	9.97	38.20	53.69	-15.49	AVG
3	0.2340	49.51	10.00	59.51	62.30	-2.79	QP
4	0.2500	25.19	10.01	35.20	51.75	-16.55	AVG
5	0.5299	40.60	10.03	50.63	56.00	-5.37	QP

Test mode:	TM1	Polarity:	Neutral

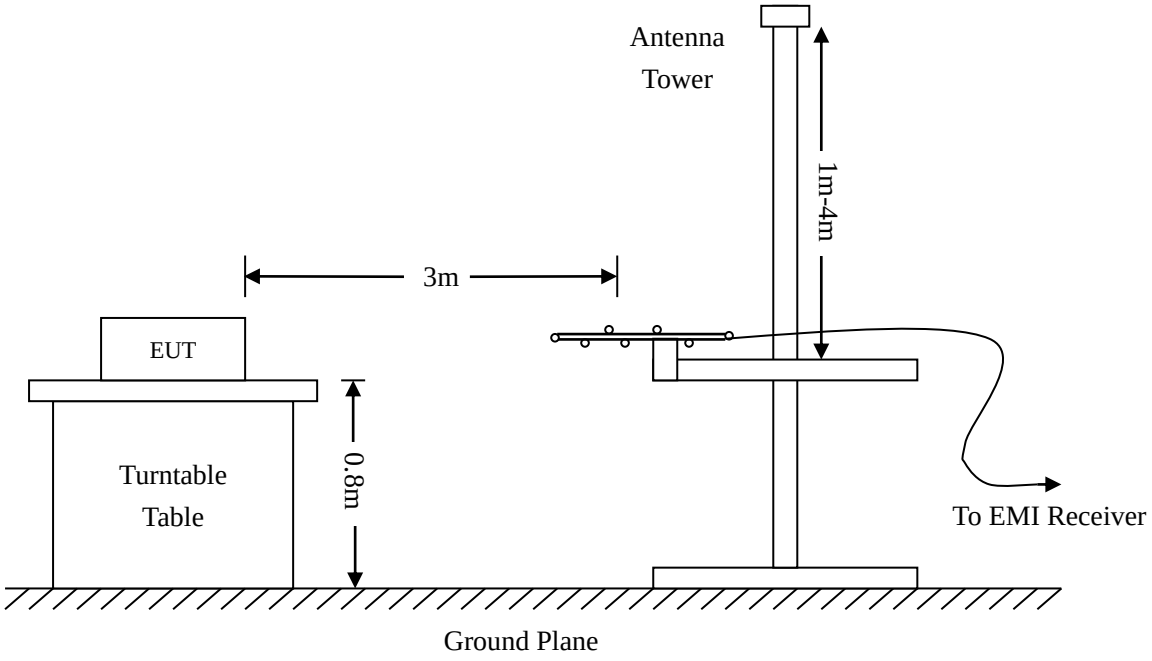


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1580	53.51	9.95	63.46	65.56	-2.10	QP
2	0.1620	35.57	9.95	45.52	55.36	-9.84	AVG
3	0.2020	30.21	9.97	40.18	53.52	-13.34	AVG
4	0.2140	50.72	9.98	60.70	63.04	-2.34	QP
5	0.5780	25.87	10.05	35.92	46.00	-10.08	AVG
6	0.5820	42.27	10.05	52.32	56.00	-3.68	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 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.3 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:

Corr. Ampl. = Indicated Reading + Correct
Correct=Ant.Factor + Cable Loss - Ampl.Gain

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:

Margin = Corr. Ampl. – FCC Part 15.109(a) Limit

4.4 Environmental Conditions

Temperature:	22 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

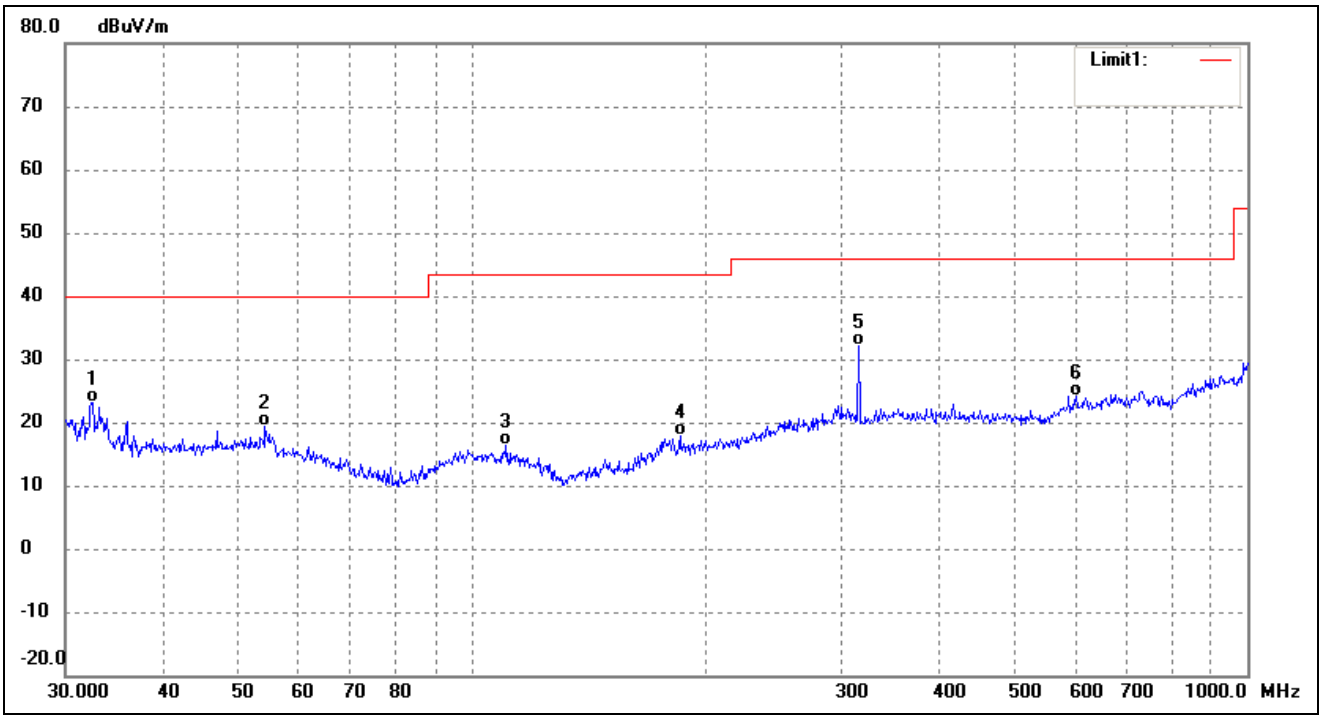
4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-3.41 dB at **65.5725 MHz** in the **Horizontal** polarization, **TM2** mode, **30 MHz** to **6 GHz**, **3 Meters**

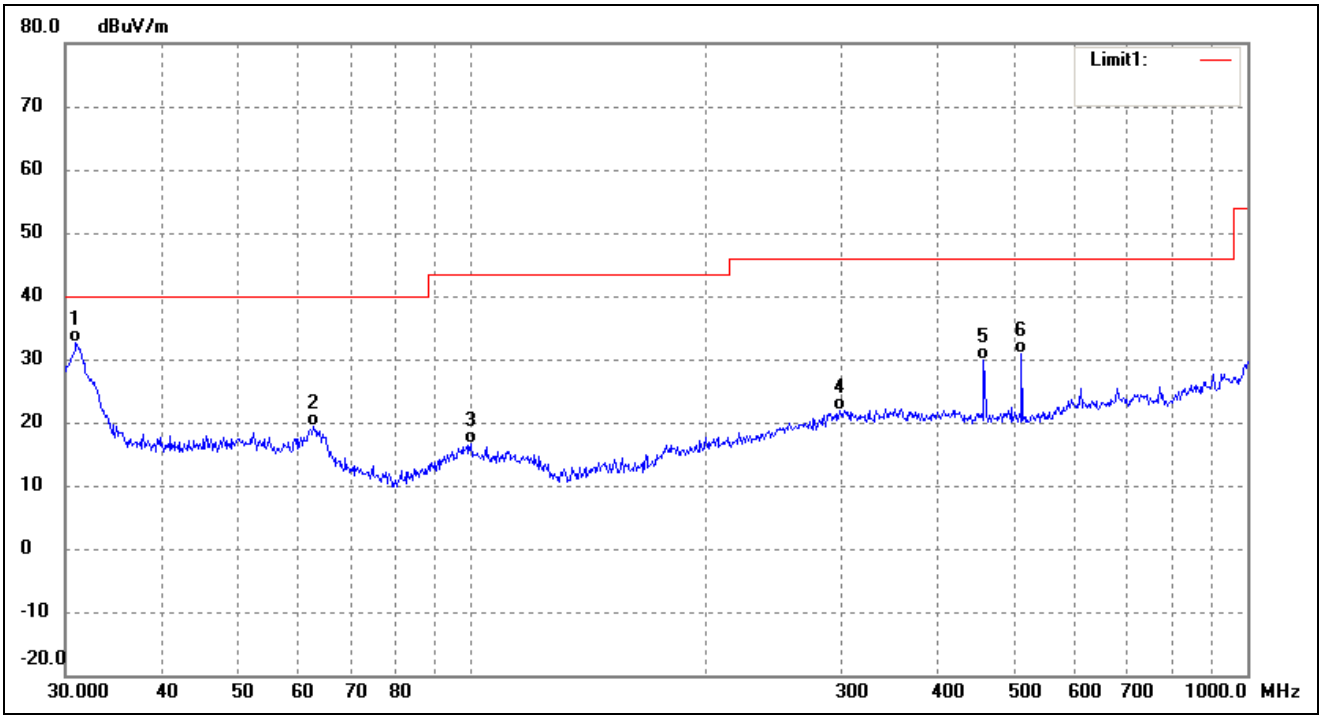
➢ Below 1GHz

Test mode:	TM1	Polarity:	Horizontal



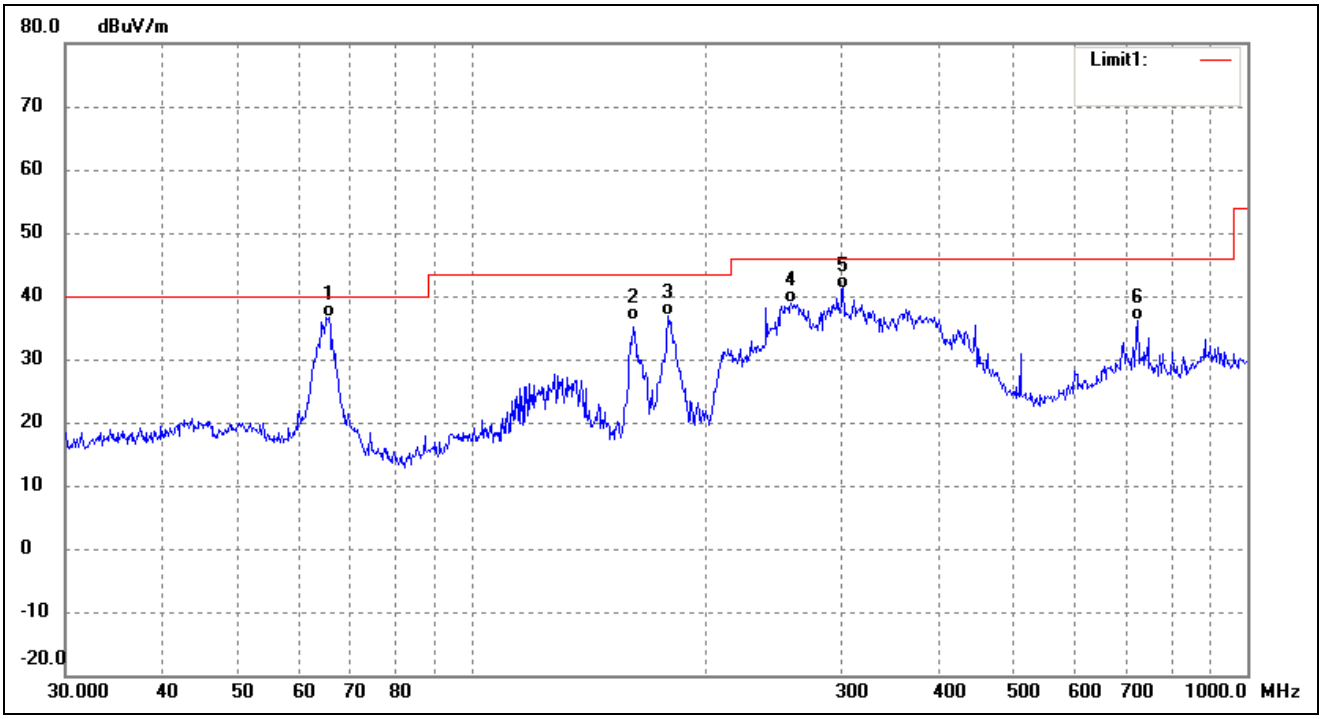
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	32.5198	43.20	-19.99	23.21	40.00	-16.79	82	100	QP
2	54.2610	37.64	-18.19	19.45	40.00	-20.55	126	100	QP
3	110.9571	35.58	-19.19	16.39	43.50	-27.11	70	100	QP
4	185.7882	36.52	-18.74	17.78	43.50	-25.72	115	100	QP
5	315.4808	45.54	-13.48	32.06	46.00	-13.94	265	100	QP
6	601.4265	35.69	-11.64	24.05	46.00	-21.95	174	100	QP

Test mode:	TM1	Polarity:	Vertical



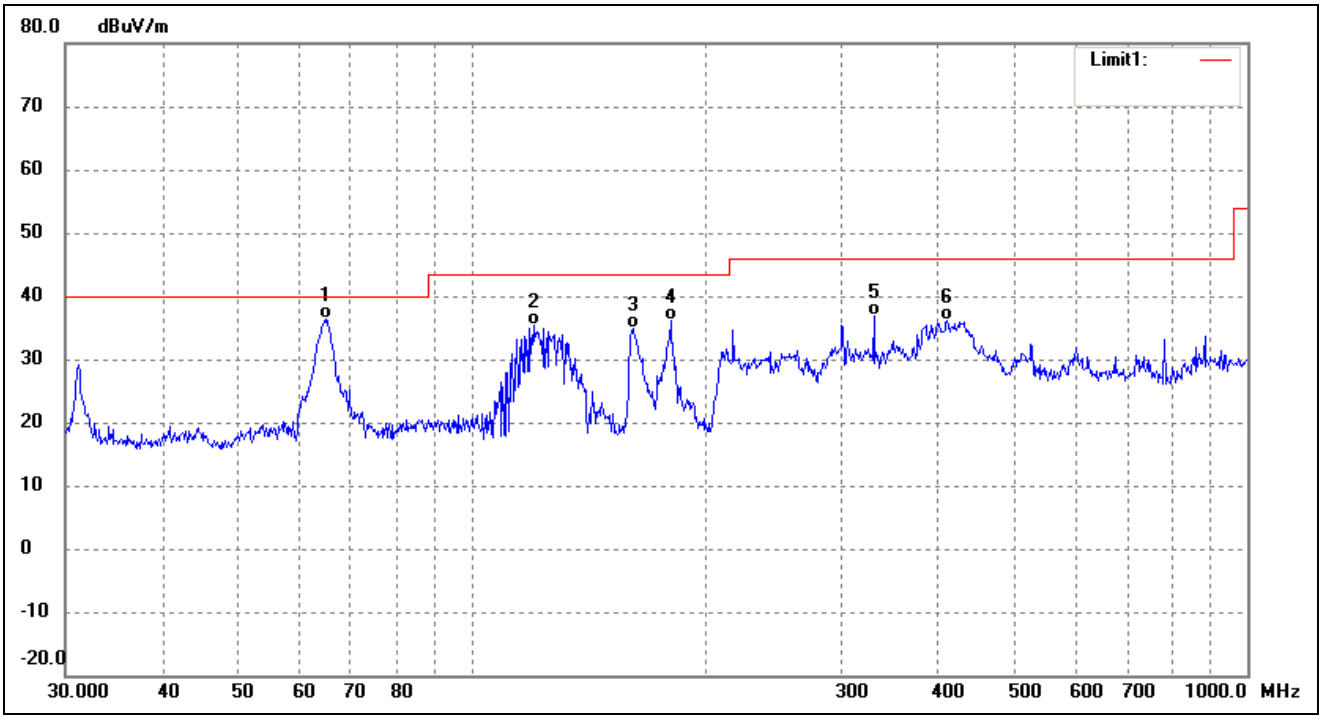
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	30.9619	52.72	-20.06	32.66	40.00	-7.34	103	100	QP
2	62.6507	39.01	-19.70	19.31	40.00	-20.69	159	100	QP
3	99.8777	35.74	-19.22	16.52	43.50	-26.98	62	100	QP
4	298.2681	35.07	-13.14	21.93	46.00	-24.07	324	100	QP
5	457.5073	43.80	-13.82	29.98	46.00	-16.02	51	100	QP
6	511.8352	44.53	-13.75	30.78	46.00	-15.22	276	100	QP

Test mode:	TM2	Polarity:	Horizontal



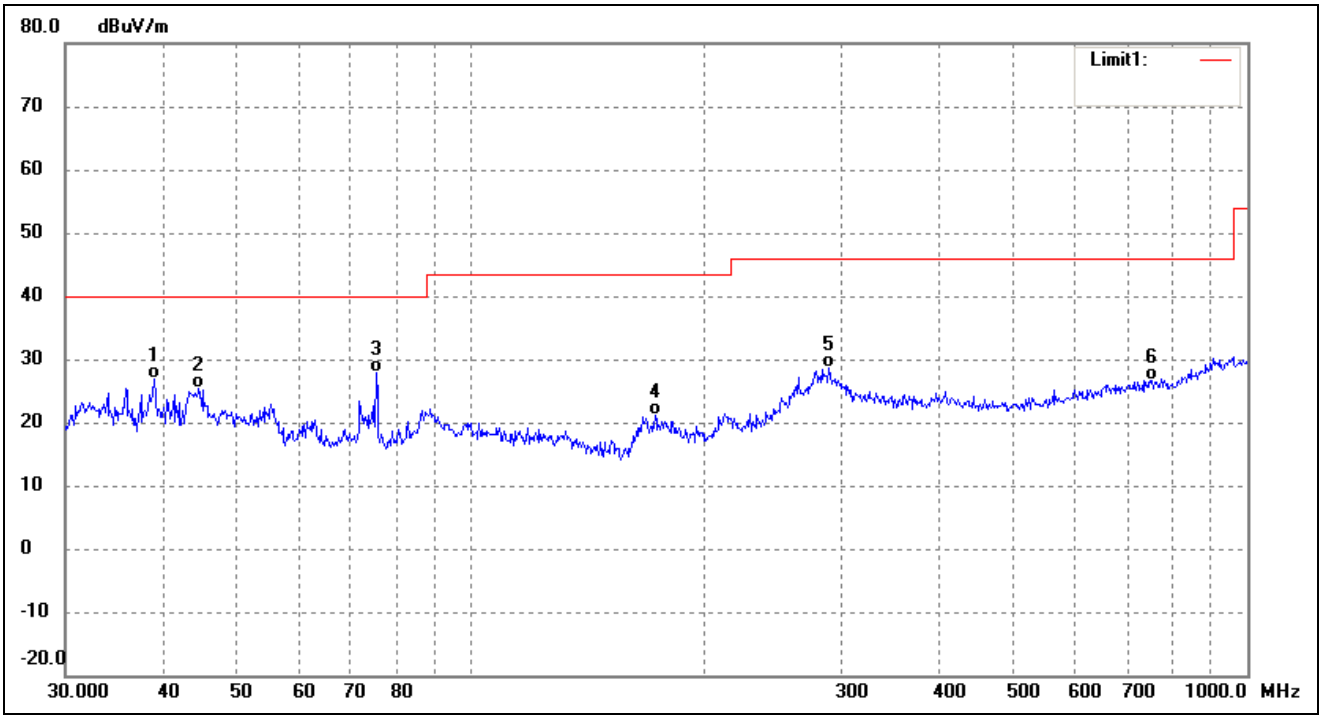
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	65.5725	52.80	-16.21	36.59	40.00	-3.41	73	100	QP
2	161.4739	52.24	-16.23	36.01	43.50	-7.49	209	100	QP
3	179.3863	51.80	-14.88	36.92	43.50	-6.58	59	100	QP
4	258.3263	49.27	-10.31	38.96	46.00	-7.04	145	100	QP
5	301.4223	49.11	-7.86	41.25	46.00	-4.75	175	100	QP
6	721.7259	40.53	-4.48	36.05	46.00	-9.95	277	100	QP

Test mode:	TM2	Polarity:	Vertical



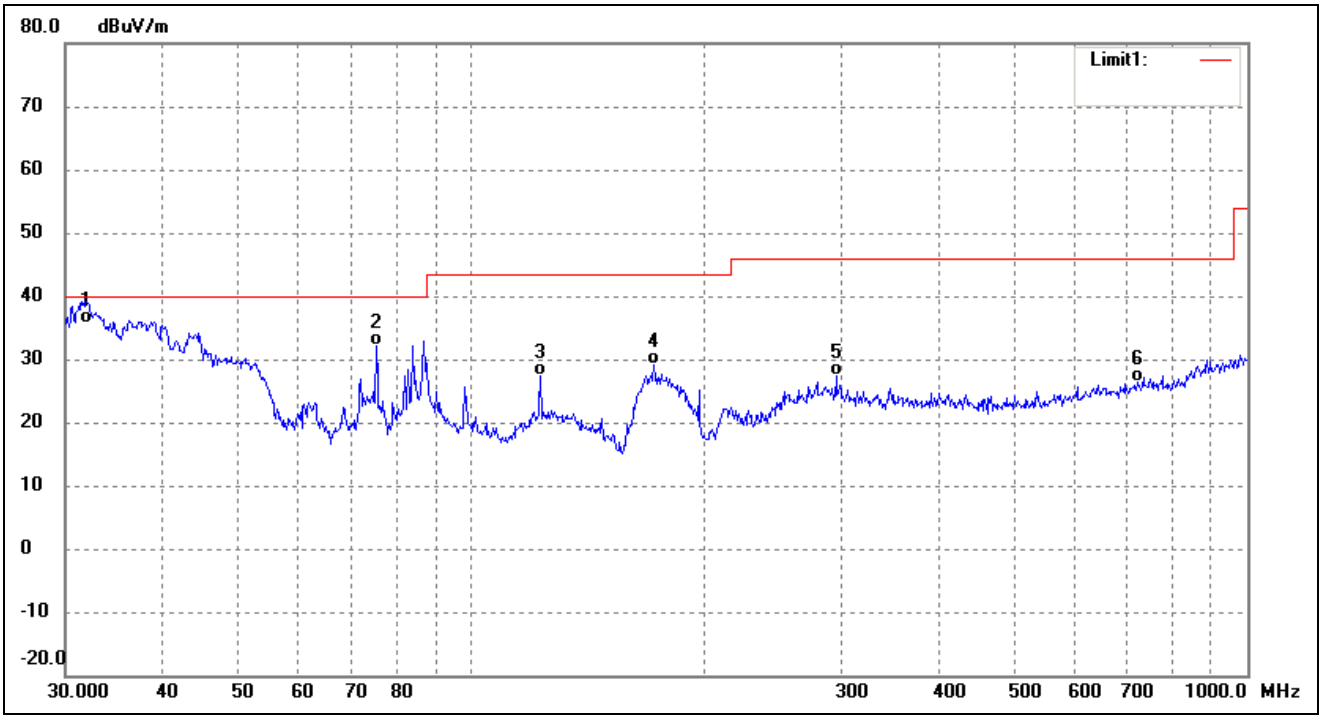
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	64.8863	52.38	-16.11	36.27	40.00	-3.73	100	100	QP
2	120.2766	51.07	-15.70	35.37	43.50	-8.13	93	100	QP
3	161.4738	51.14	-16.23	34.91	43.50	-8.59	138	100	QP
4	180.6484	50.95	-14.75	36.20	43.50	-7.30	149	100	QP
5	330.1949	45.17	-8.29	36.88	46.00	-9.12	147	100	QP
6	410.3824	43.95	-7.88	36.07	46.00	-9.93	271	100	QP

Test mode:	TM3	Polarity:	Horizontal



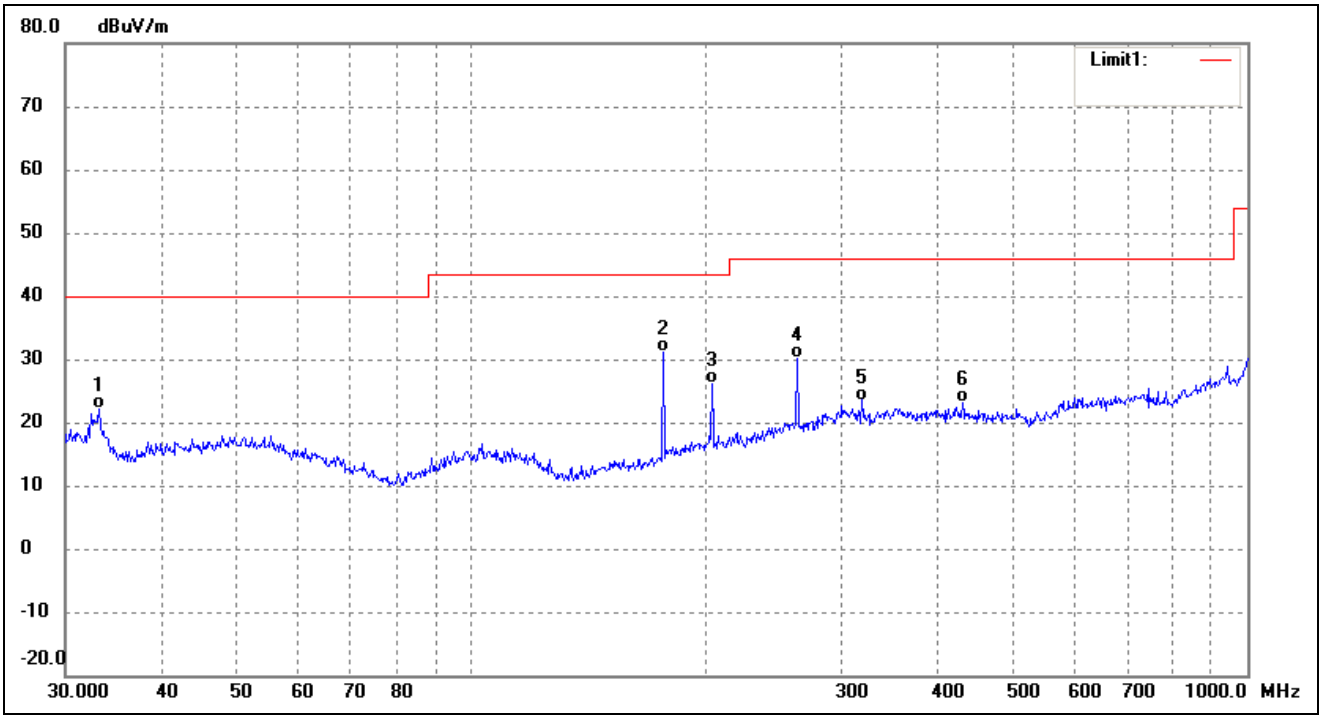
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	39.0245	41.40	-14.53	26.87	40.00	-13.13	164	100	QP
2	44.5868	39.46	-13.96	25.50	40.00	-14.50	269	100	QP
3	75.4464	46.30	-18.37	27.93	40.00	-12.07	66	100	QP
4	172.5988	36.49	-15.46	21.03	43.50	-22.47	194	100	QP
5	289.0021	37.42	-8.77	28.65	46.00	-17.35	193	100	QP
6	752.7432	31.32	-4.58	26.74	46.00	-19.26	248	100	QP

Test mode:	TM3	Polarity:	Vertical



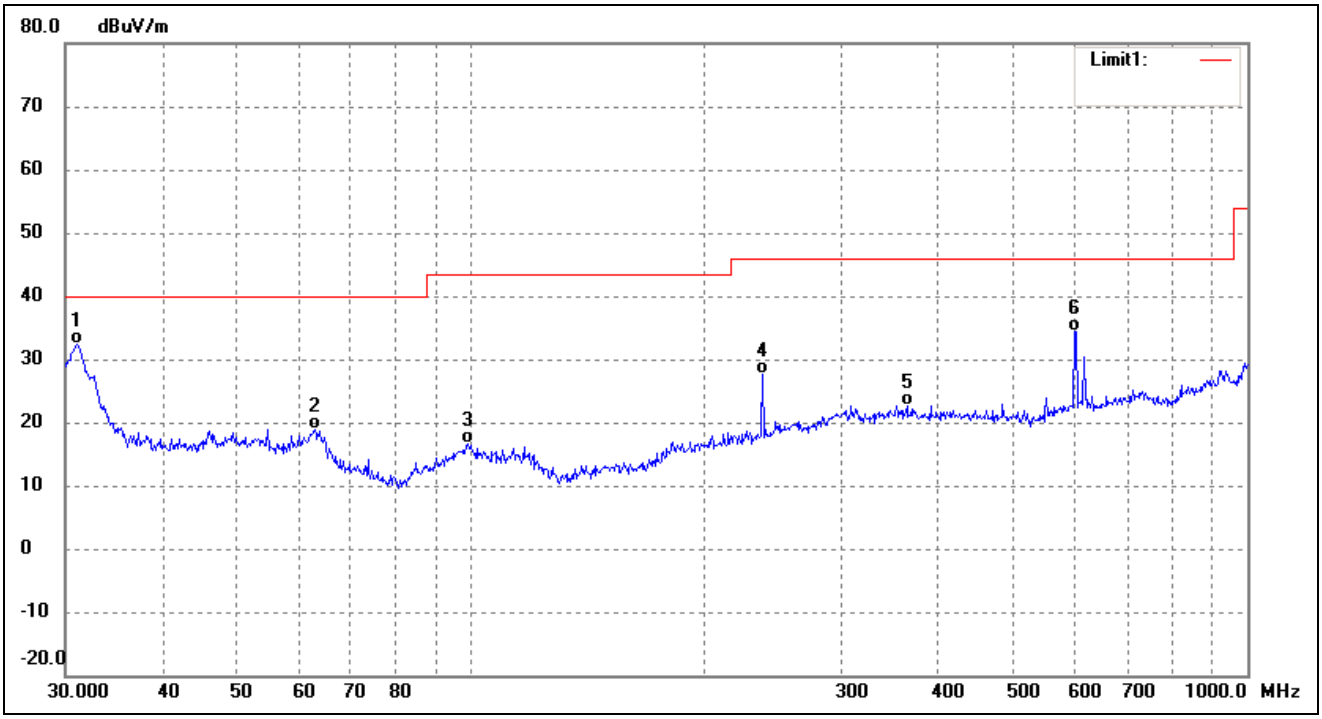
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.9546	51.80	-16.27	35.53	40.00	-4.47	63	100	QP
2	75.4464	50.50	-18.37	32.13	40.00	-7.87	101	100	QP
3	122.8340	43.78	-16.34	27.44	43.50	-16.06	121	100	QP
4	171.9946	44.63	-15.51	29.12	43.50	-14.38	135	100	QP
5	295.1469	35.62	-8.24	27.38	46.00	-18.62	64	100	QP
6	721.7259	30.75	-4.48	26.27	46.00	-19.73	242	100	QP

Test mode:	TM4	Polarity:	Horizontal



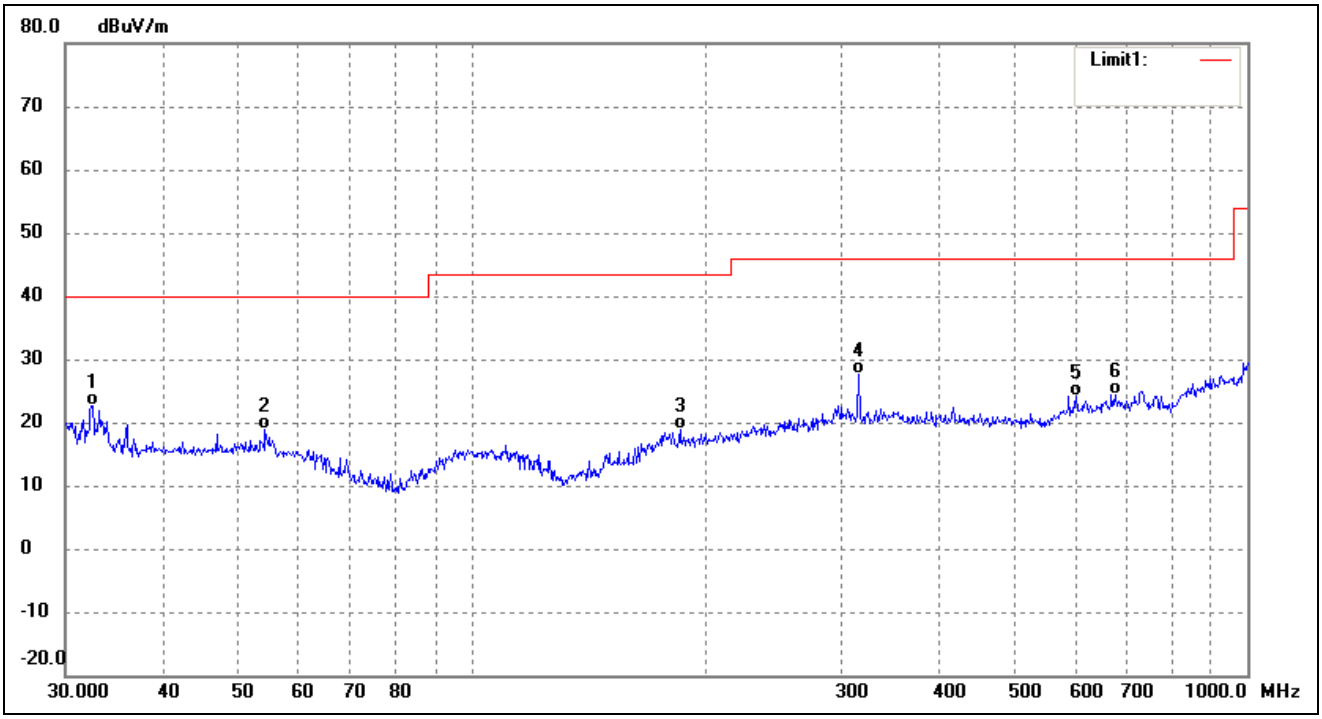
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	33.0950	41.99	-19.96	22.03	40.00	-17.97	161	100	QP
2	176.8878	50.96	-19.75	31.21	43.50	-12.29	302	100	QP
3	204.2377	43.46	-17.32	26.14	43.50	-17.36	56	100	QP
4	262.8955	45.51	-15.29	30.22	46.00	-15.78	274	100	QP
5	318.8170	37.09	-13.59	23.50	46.00	-22.50	144	100	QP
6	429.5228	36.69	-13.54	23.15	46.00	-22.85	270	100	QP

Test mode:	TM4	Polarity:	Vertical



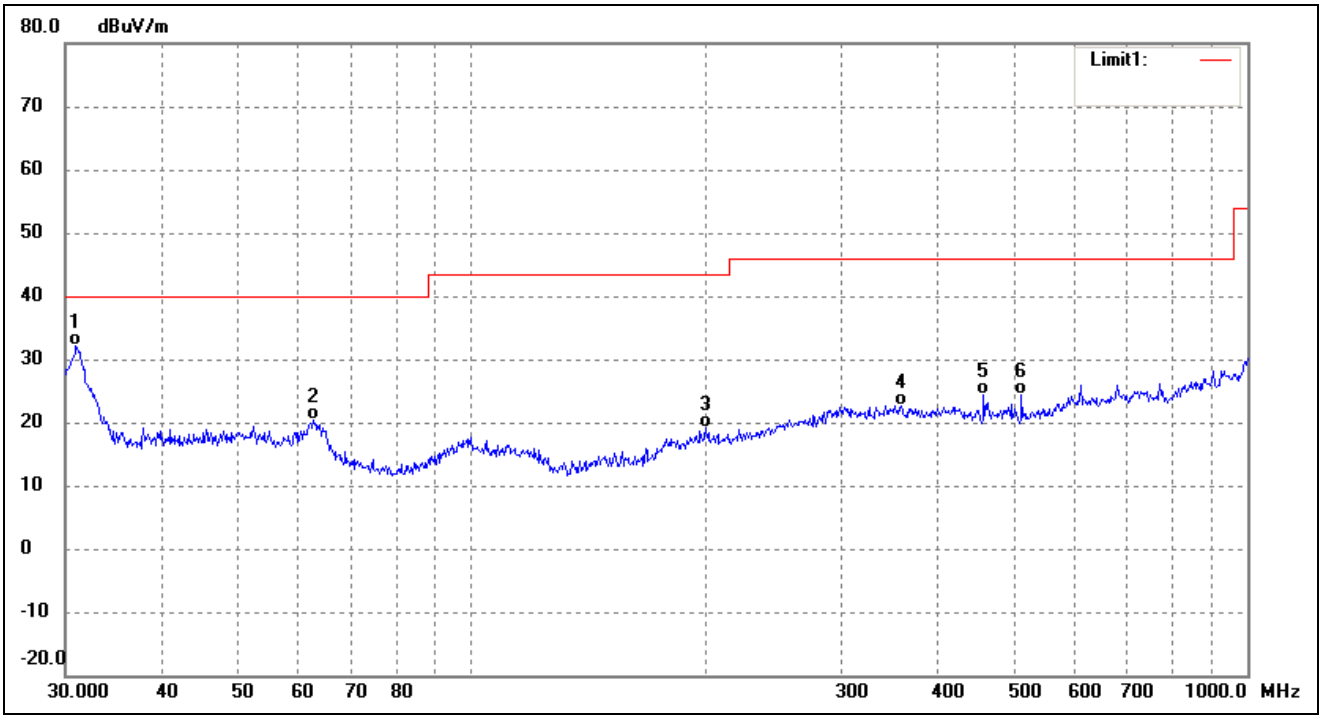
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	31.0706	52.44	-20.05	32.39	40.00	-7.61	279	100	QP
2	62.8708	38.72	-19.74	18.98	40.00	-21.02	90	100	QP
3	99.1797	36.05	-19.36	16.69	43.50	-26.81	134	100	QP
4	237.4760	43.88	-16.20	27.68	46.00	-18.32	105	100	QP
5	364.2595	35.91	-13.22	22.69	46.00	-23.31	87	100	QP
6	599.3212	46.15	-11.65	34.50	46.00	-11.50	307	100	QP

Test mode:	TM5	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	32.5197	42.70	-19.99	22.71	40.00	-17.29	325	100	QP
2	54.2610	37.14	-18.19	18.95	40.00	-21.05	141	100	QP
3	185.7880	37.52	-18.74	18.78	43.50	-24.72	62	100	QP
4	315.4806	41.04	-13.48	27.56	46.00	-18.44	127	100	QP
5	601.4265	35.69	-11.64	24.05	46.00	-21.95	136	100	QP
6	675.2078	36.14	-11.66	24.48	46.00	-21.52	250	100	QP

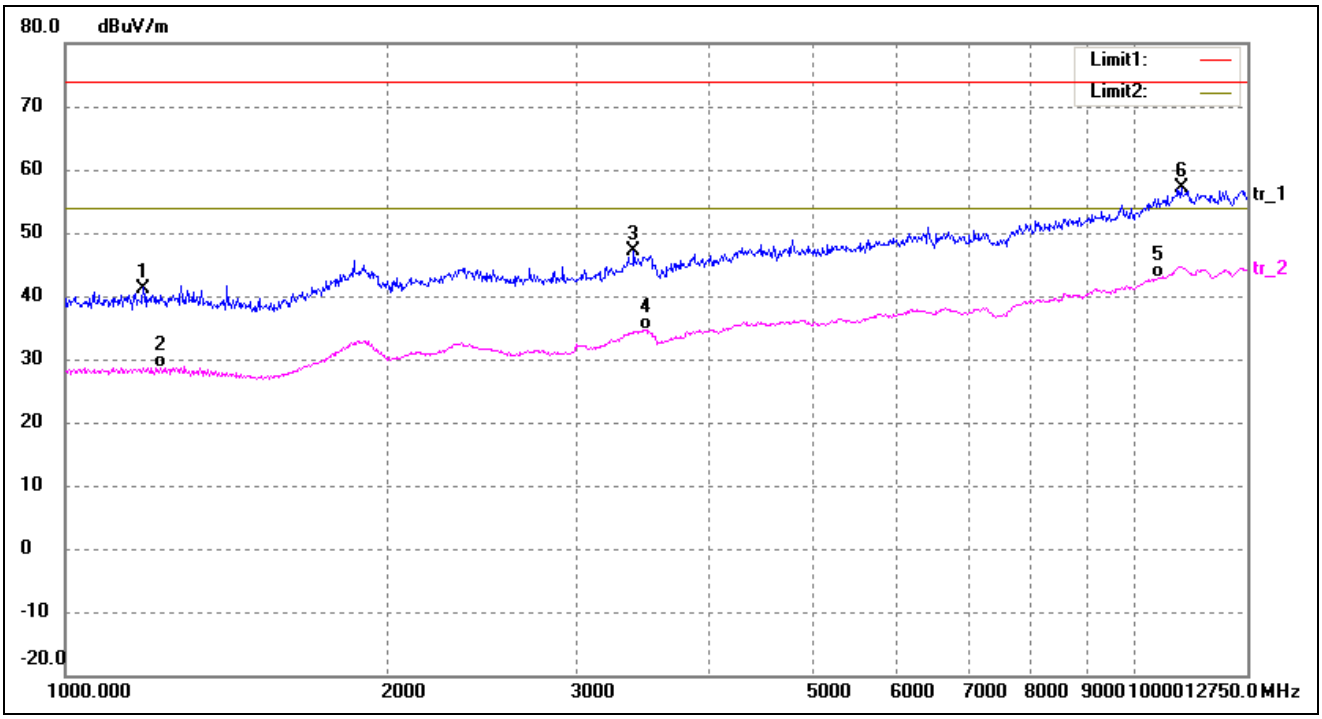
Test mode:	TM5	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	30.9618	52.22	-20.06	32.16	40.00	-7.84	71	100	QP
2	62.6507	40.01	-19.70	20.31	40.00	-19.69	246	100	QP
3	200.6879	36.50	-17.39	19.11	43.50	-24.39	53	100	QP
4	357.9286	35.84	-13.10	22.74	46.00	-23.26	345	100	QP
5	457.5072	38.31	-13.83	24.48	46.00	-21.52	209	100	QP
6	511.8351	38.03	-13.75	24.28	46.00	-21.72	346	100	QP

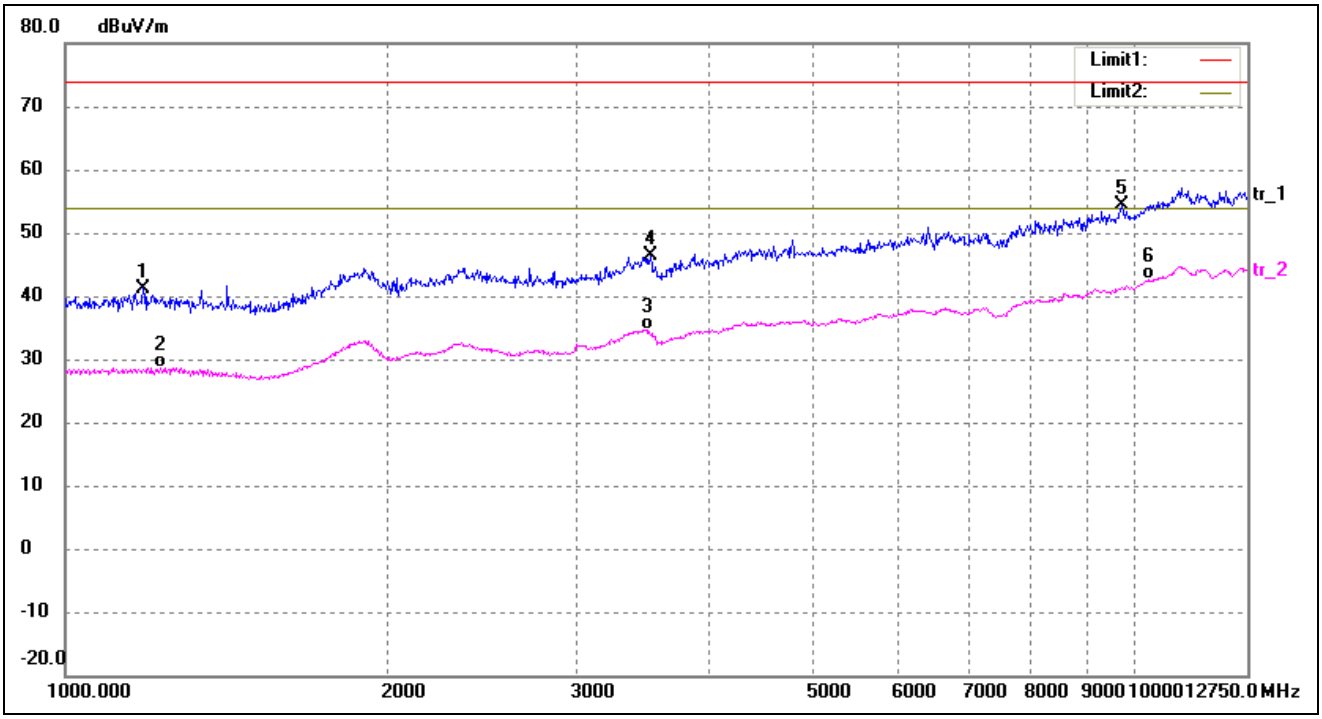
➢ Above 1GHz

Test mode:	TM1	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	1182.943	55.13	-13.88	41.25	74.00	-32.75	244	100	peak
2	1225.860	42.62	-13.89	28.73	54.00	-25.27	98	100	AVG
3	3402.126	54.58	-7.49	47.09	74.00	-26.91	233	100	peak
4	3489.840	41.92	-7.22	34.70	54.00	-19.30	108	100	AVG
5	10534.087	39.29	3.62	42.91	54.00	-11.09	162	100	AVG
6	11056.091	52.18	4.98	57.16	74.00	-16.84	119	100	peak

Test mode:	TM1	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	1182.943	55.13	-13.88	41.25	74.00	-32.75	325	100	peak
2	1225.860	42.62	-13.89	28.73	54.00	-25.27	141	100	AVG
3	3489.840	41.92	-7.22	34.70	54.00	-19.30	62	100	AVG
4	3525.555	53.45	-7.17	46.28	74.00	-27.72	127	100	peak
5	9734.779	52.35	1.91	54.26	74.00	-19.74	136	100	peak
6	10295.497	39.51	3.02	42.53	54.00	-11.47	250	100	AVG

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