

FCC Part 18

Measurement and Test Report

For

Fuse Chicken LLC

2251 Front Street, Suite 200, Cuyahoga Falls, Ohio, 44221 USA

FCC ID: 2ARVW-WGL

Test Rule(s):	<u>FCC Part 18</u>
Product Description:	<u>Gravity Lift</u>
Tested Model:	<u>WGL</u>
Report No.:	<u>STR18118256I-1</u>
Sample Receipt Date:	<u>2018-11-21</u>
Tested Date:	<u>2018-11-21 to 2018-12-04</u>
Issued Date:	<u>2018-12-04</u>
Tested By:	<u>Jason Su / Engineer</u>
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Approved & Authorized By:	<u>Jandy So / PSQ Manager</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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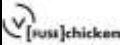
1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Fuse Chicken LLC
Address of applicant: 2251 Front Street, Suite 200, Cuyahoga Falls, Ohio,
44221 USA

Manufacturer: Shenzhen Ucool Technology Co., Ltd
Address of manufacturer: 3/f, building A, datang industrial area, datang road,
guanlan street, longhua district, Shenzhen city

General Description of EUT	
Product Name:	Gravity Lift
Trade Name:	
Model No.:	WGL
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Frequency Range:	110~205kHz
Antenna Type:	Coil Antenna
Rated Voltage:	DC5V/DC 9V (Wireless output)
Rated Current:	1A (Wireless output)
Rated Power:	5W/9W(Wireless output)

1.2 Test Standards

The tests were performed according to following standards:

FCC Part 18 Subpart C: Industrial, Scientific, and medical medical equipment.

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

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

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 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	Wireless Output	/	Input DC5V2A; Output:DC5V1A
TM2	Wireless Output	/	Input DC9V1.67A; Output:DC9V1A

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.18	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Quick Charge	UGREE	CD122	30387
iPhone 8 Plus	Apple	MQ8E2CH/A	/

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
Spectrum Analyzer	Agilent	E4407B	MY41440400	2018-05-22	2019-05-21
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2018-05-22	2019-05-21
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2018-05-22	2019-05-21
Amplifier	Agilent	8447F	3113A06717	2018-05-22	2019-05-21
Amplifier	C&D	PAP-1G18	2002	2018-05-22	2019-05-21
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2018-06-07
Horn Antenna	ETS	3117	00086197	2017-06-08	2018-06-07
Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2018-06-07
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2018-05-22	2019-05-21
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2018-05-22	2019-05-21
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2018-05-22	2019-05-21

2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 18.307 (b)	Conducted Emission	Compliant
§ 18.305 (b)	Radiated Emission	Compliant

3. Conducted Emissions

3.1 Standard Applicable

According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

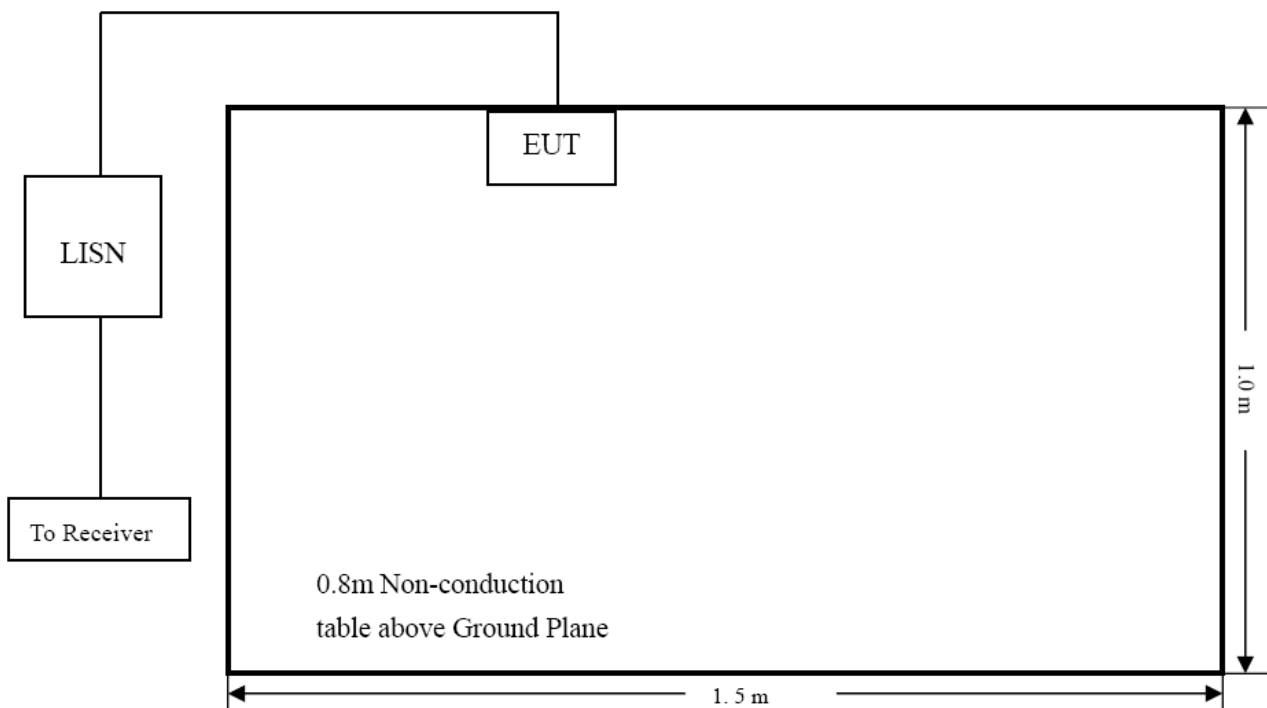
Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

3.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.307 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.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	25° C
Relative Humidity:	54%
ATM Pressure:	1016 mbar

3.5 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

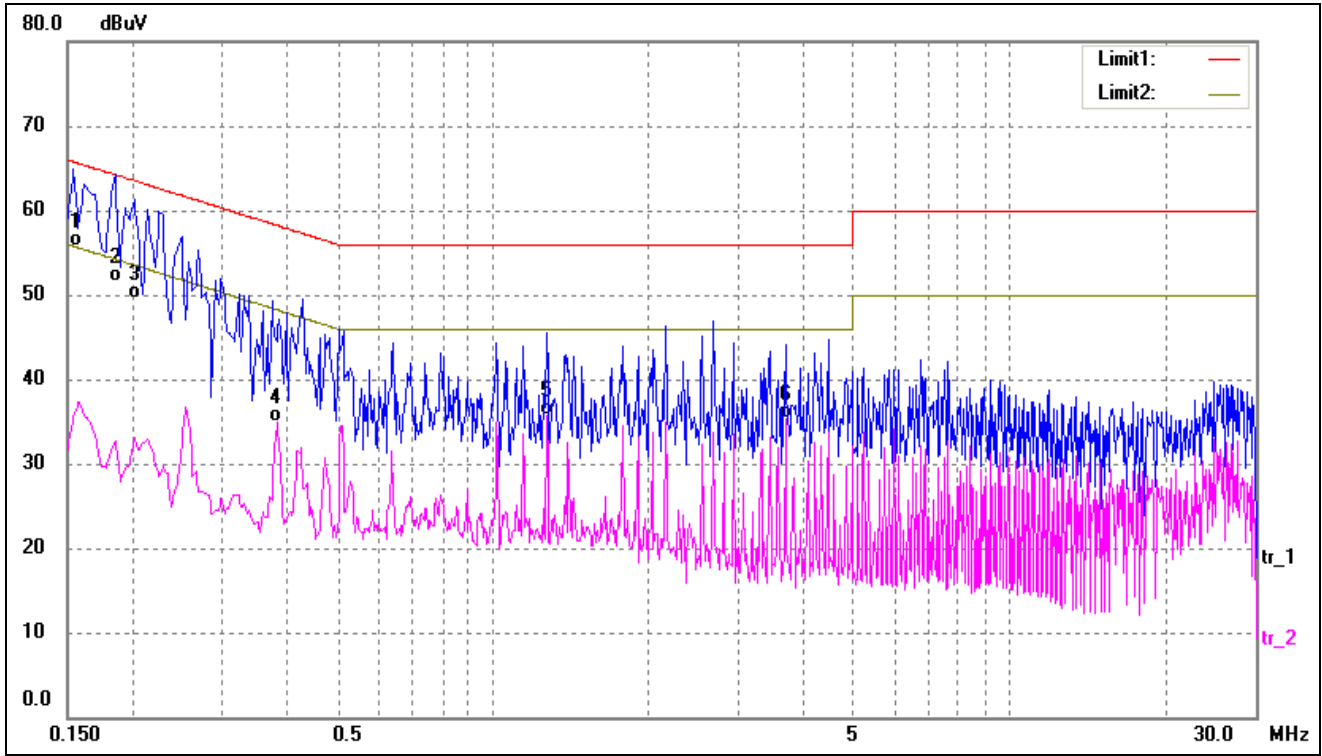
Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

3.6 Summary of Test Results/Plots

According to the data in this section, the EUT complied with the FCC Part 18C Conducted margin for Any non-ISM frequency device, with the *worst* margin reading of:

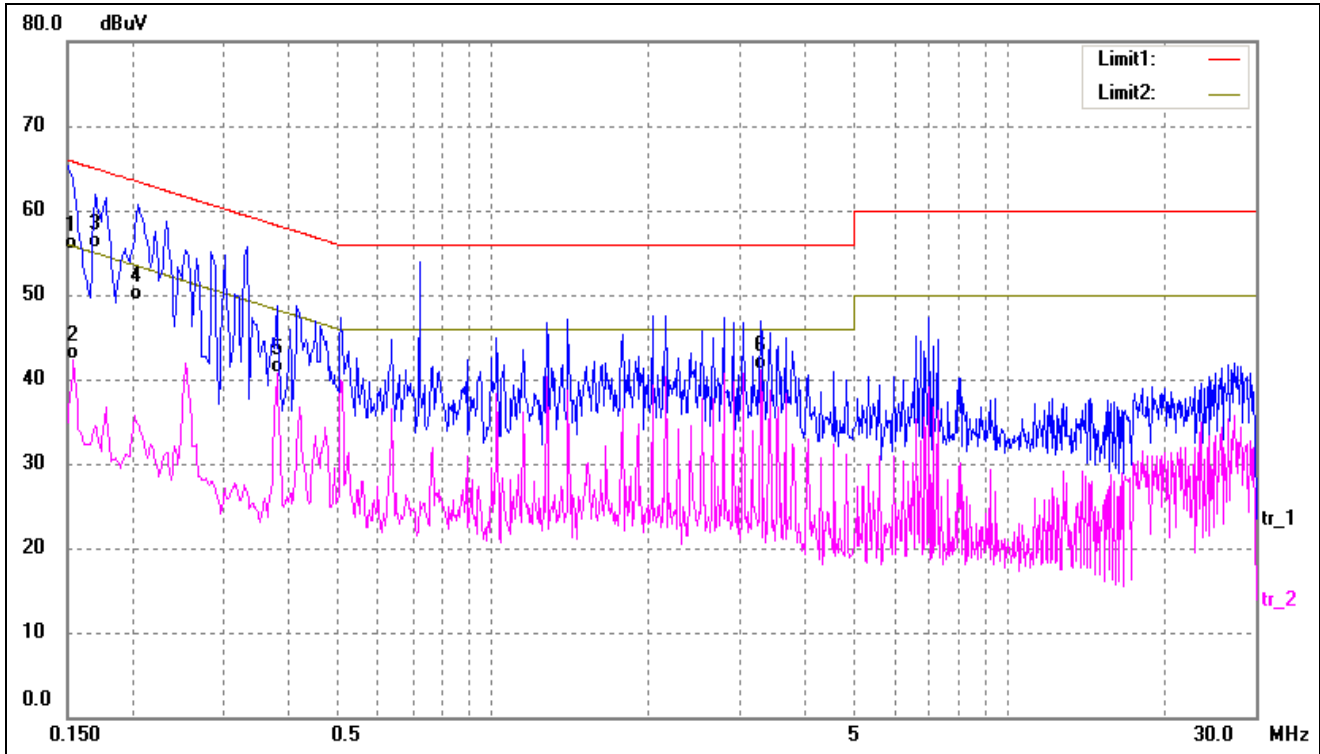
-4.75 dB at 1.2740 MHz in the Neutral, AVG detector, TM2 detector, 0.15-30MHz

Test mode:	TM1	Polarity:	Line
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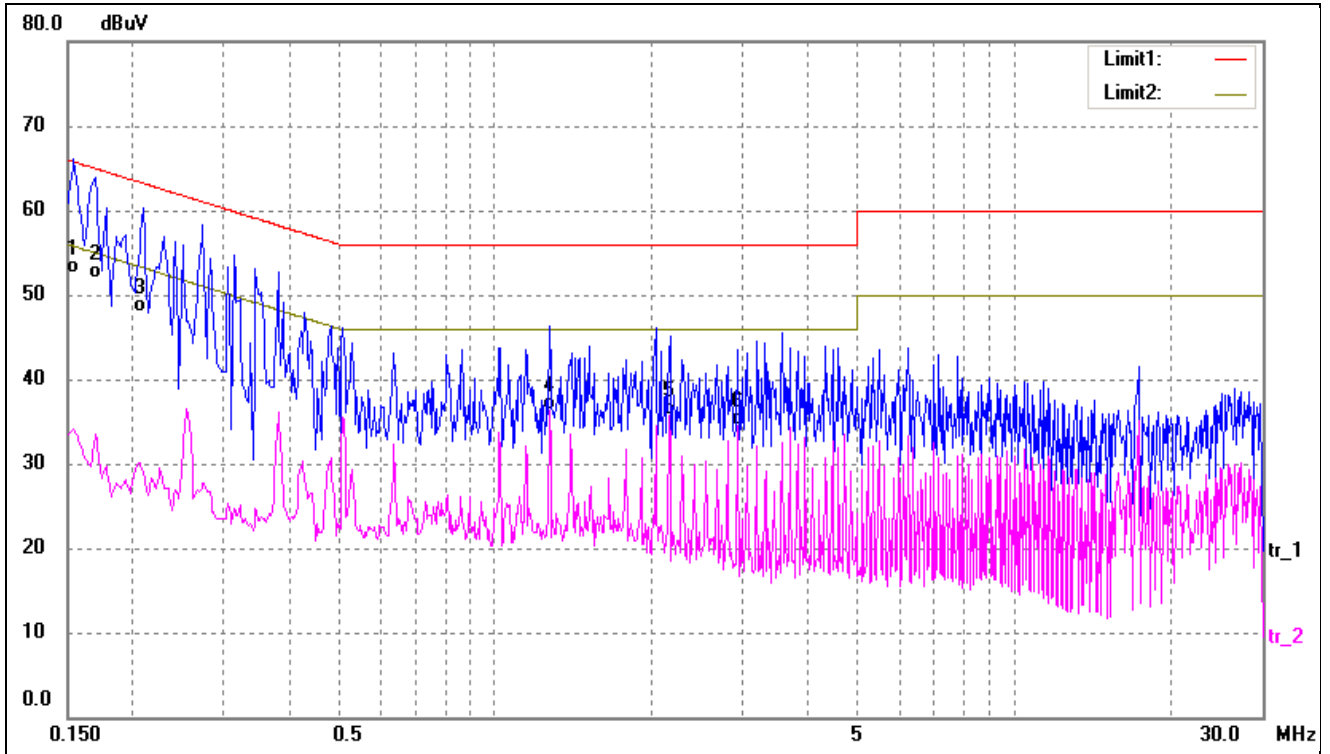
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1539	45.66	10.10	55.76	65.78	-10.02	QP
2	0.1860	41.47	10.11	51.58	64.21	-12.63	QP
3	0.2020	39.47	10.12	49.59	63.52	-13.93	QP
4	0.3820	24.59	10.24	34.83	48.23	-13.40	AVG
5	1.2740	25.18	10.53	35.71	46.00	-10.29	AVG
6	3.6940	24.57	10.70	35.27	46.00	-10.73	AVG

Test mode:	TM1	Polarity:	Neutral
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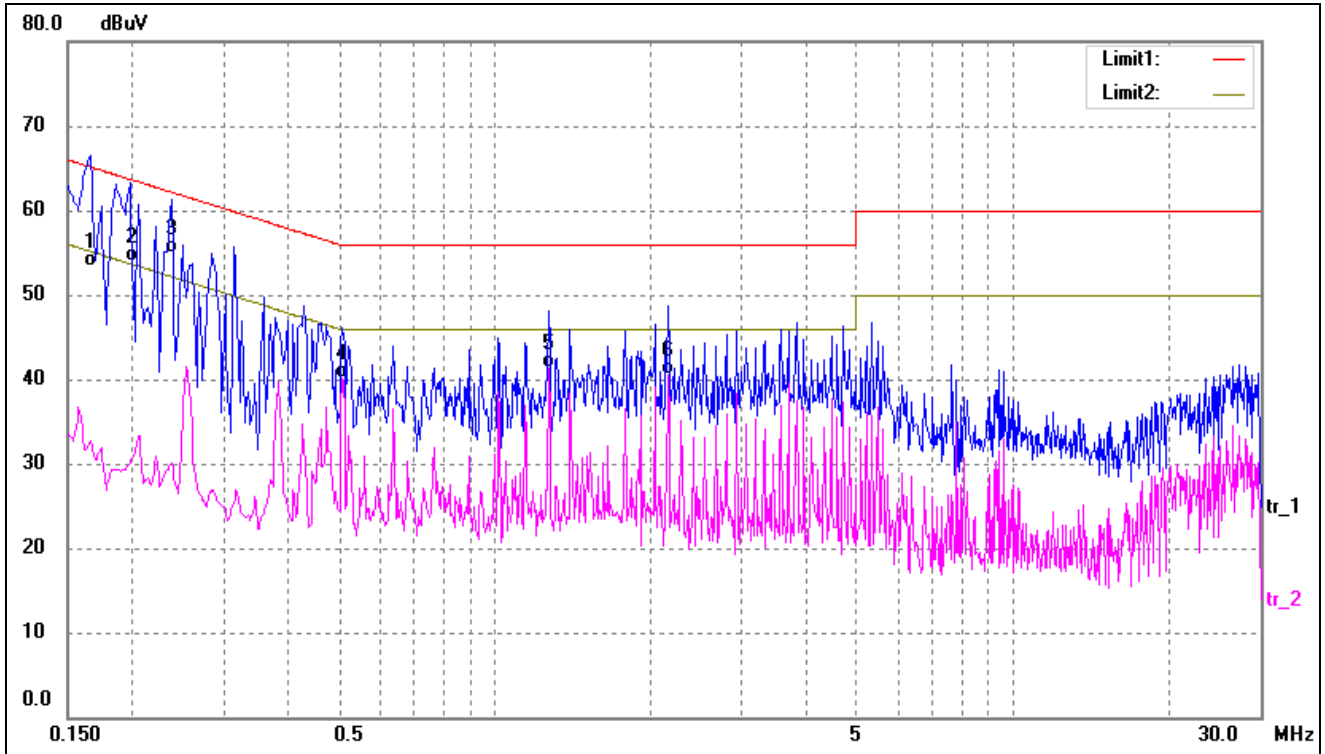
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	45.20	10.10	55.30	65.99	-10.69	QP
2	0.1539	32.15	10.10	42.25	55.78	-13.53	AVG
3	0.1700	45.42	10.11	55.53	64.96	-9.43	QP
4	0.2060	39.24	10.12	49.36	63.36	-14.00	QP
5	0.3820	30.48	10.24	40.72	48.23	-7.51	AVG
6*	3.3100	30.47	10.69	41.16	46.00	-4.84	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	0.1540	42.33	10.10	52.43	65.78	-13.35	QP
2	0.1700	41.81	10.11	51.92	64.96	-13.04	QP
3	0.2100	37.77	10.13	47.90	63.21	-15.31	QP
4*	1.2740	25.70	10.53	36.23	46.00	-9.77	AVG
5	2.1660	25.12	10.62	35.74	46.00	-10.26	AVG
6	2.9300	23.86	10.68	34.54	46.00	-11.46	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	0.1660	43.27	10.11	53.38	65.16	-11.78	QP
2	0.1980	43.75	10.12	53.87	63.69	-9.82	QP
3	0.2380	44.79	10.15	54.94	62.17	-7.23	QP
4	0.5100	29.80	10.29	40.09	46.00	-5.91	AVG
5*	1.2740	30.72	10.53	41.25	46.00	-4.75	AVG
6	2.1660	29.89	10.62	40.51	46.00	-5.49	AVG

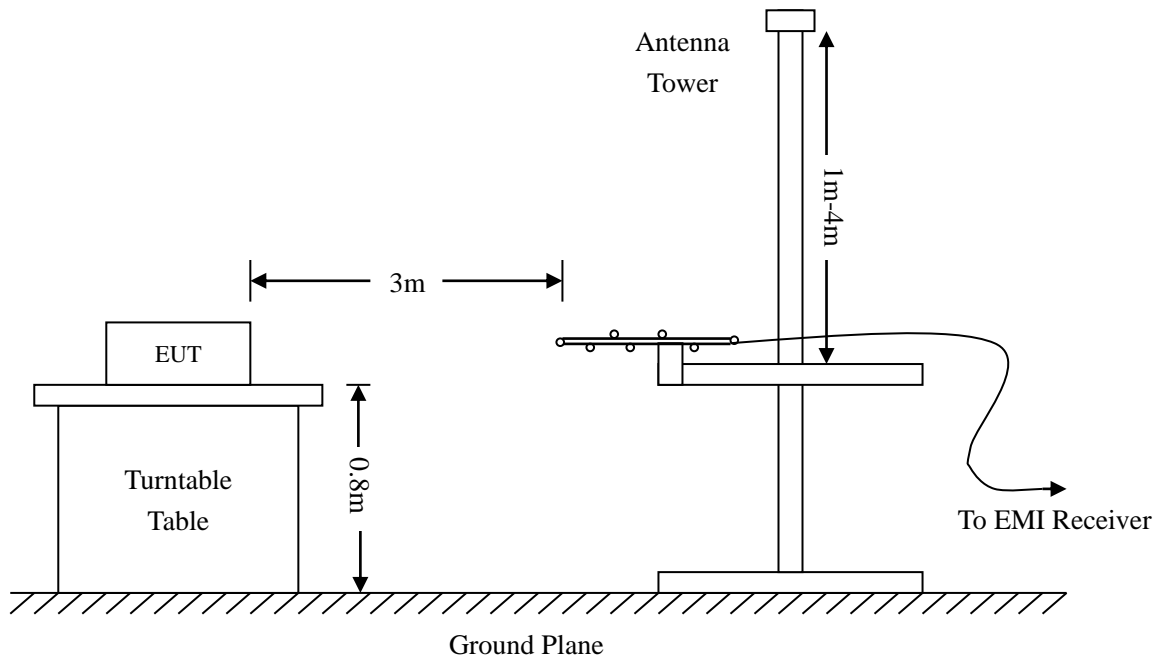
4. Radiated Emissions

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 18.305 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

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

4.3 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of $-6\text{dB}\mu\text{V}$ means the emission is $6\text{dB}\mu\text{V}$ below the maximum limit for Any non-ISM frequency device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 18.305 Limit

4.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

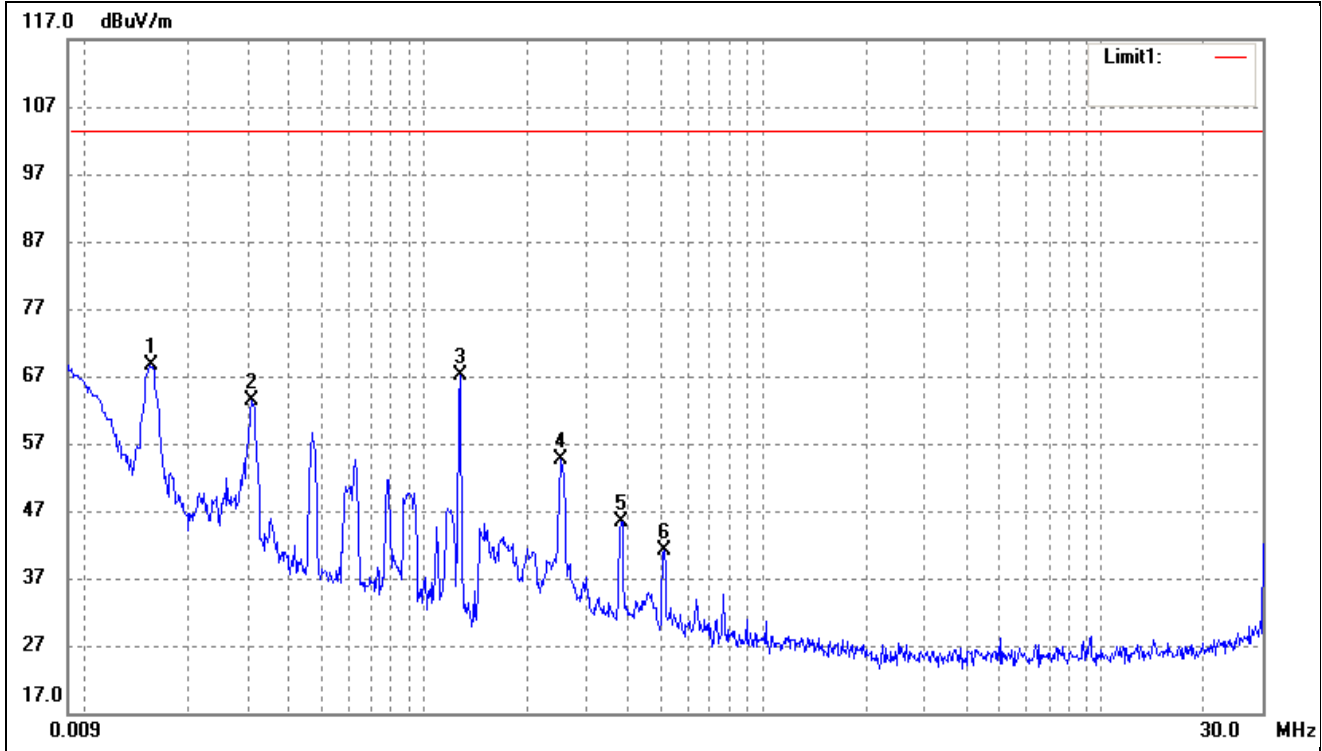
4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 18.305 rule, and had the worst margin of:

-27.28 dB at **59.8588 MHz** in the **Horizontal** polarization, **TM1** mode **3Meters**

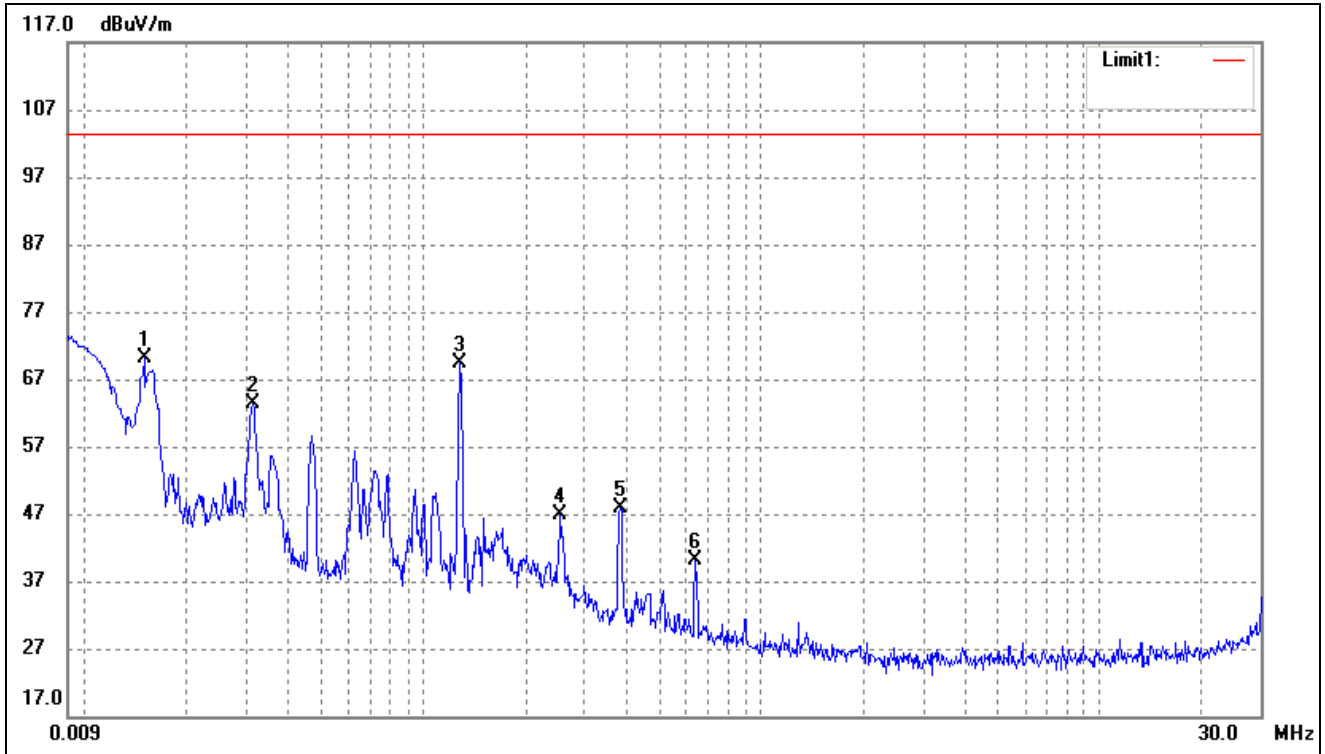
Plot of Radiated Emissions Test Data (Below 30MHz)

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	0.0156	75.01	-6.48	68.53	103.50	-34.97	288	100	peak
2	0.0310	70.49	-7.10	63.39	103.50	-40.11	92	100	peak
3	0.1274	72.73	-5.62	67.11	103.50	-36.39	109	100	peak
4	0.2548	61.07	-6.47	54.60	103.50	-48.90	92	100	peak
5	0.3811	53.03	-7.65	45.38	103.50	-58.12	284	100	peak
6	0.5101	41.08	0.00	41.08	103.50	-62.42	245	100	peak

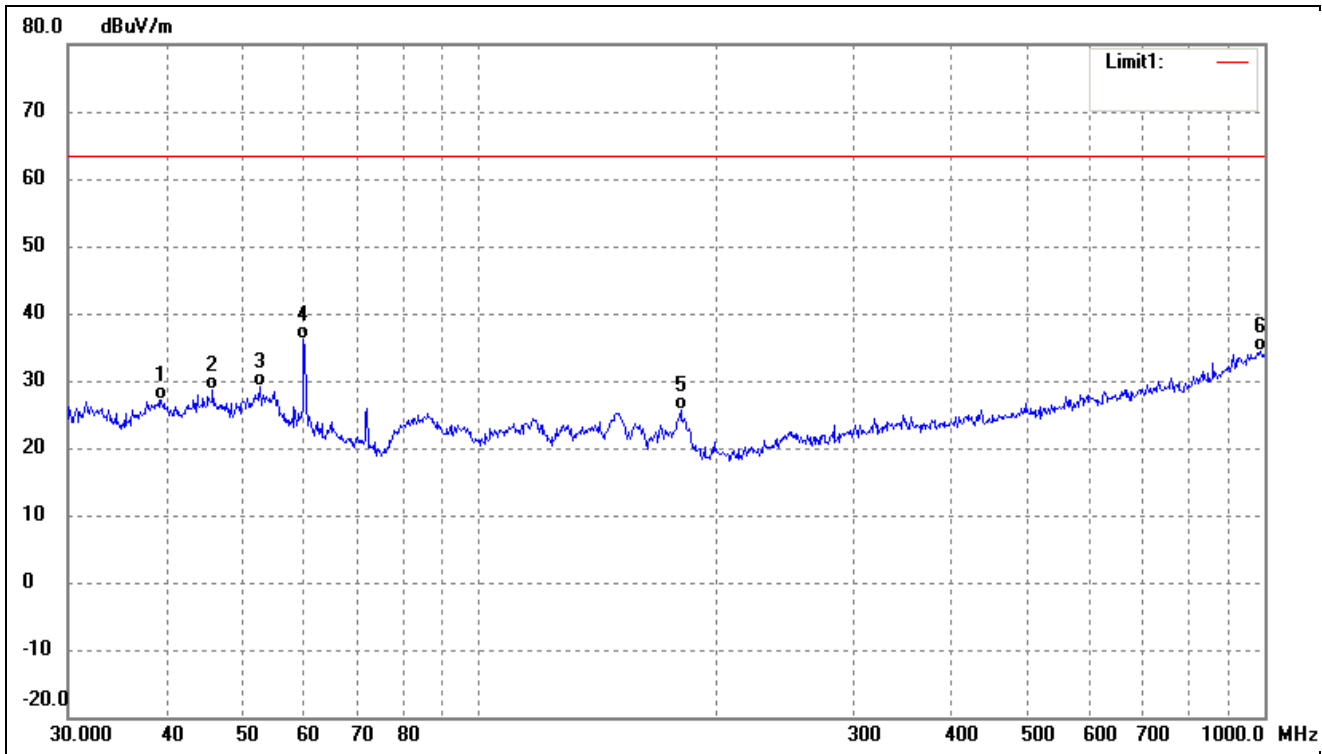
Test mode:	TM2	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0150	76.60	-6.38	70.22	103.50	-33.28	245	100	peak
2	0.0313	70.40	-7.09	63.31	103.50	-40.19	98	100	peak
3	0.1285	75.08	-5.61	69.47	103.50	-34.03	186	100	peak
4	0.2548	53.24	-6.47	46.77	103.50	-56.73	105	100	peak
5	0.3811	55.45	-7.65	47.80	103.50	-55.70	302	100	peak
6	0.6372	49.11	-8.89	40.22	103.50	-63.28	307	100	peak

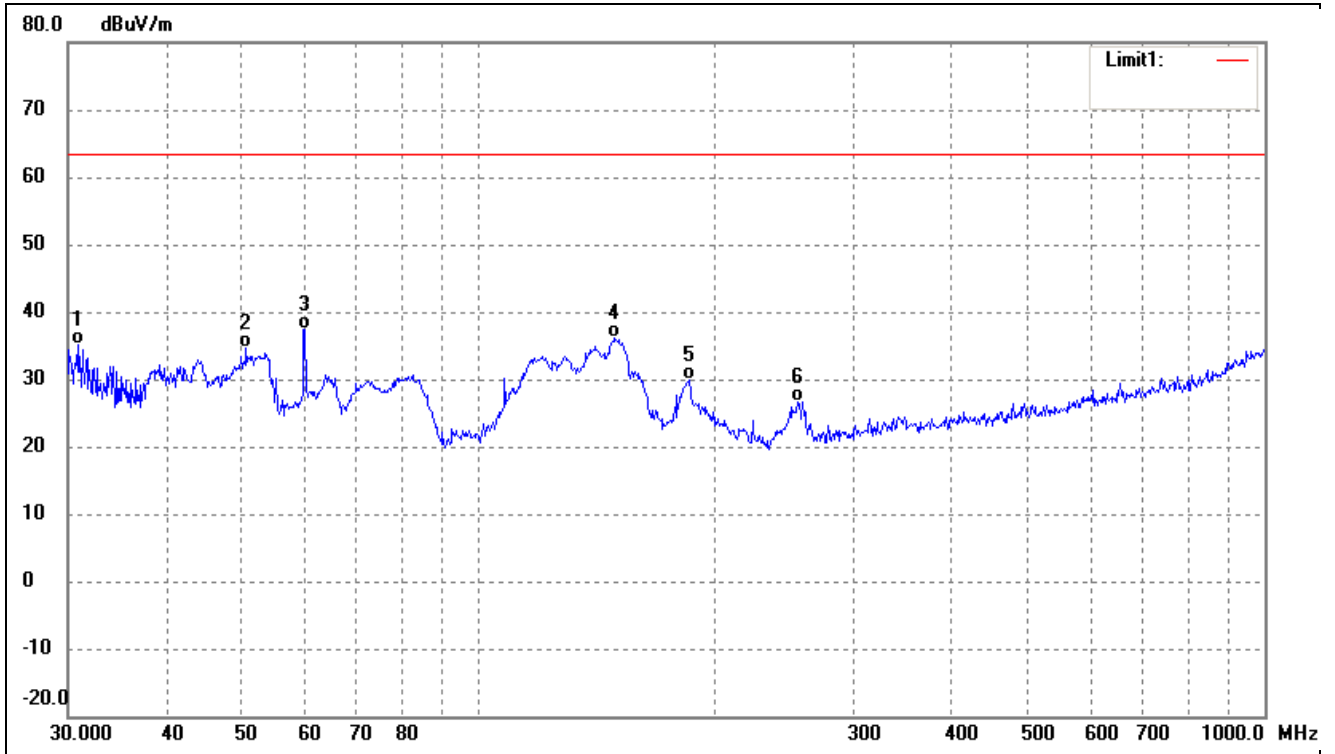
Plot of Radiated Emissions Test Data (Above 1GHz)

Test mode:	TM1	Polarity:	Horizontal
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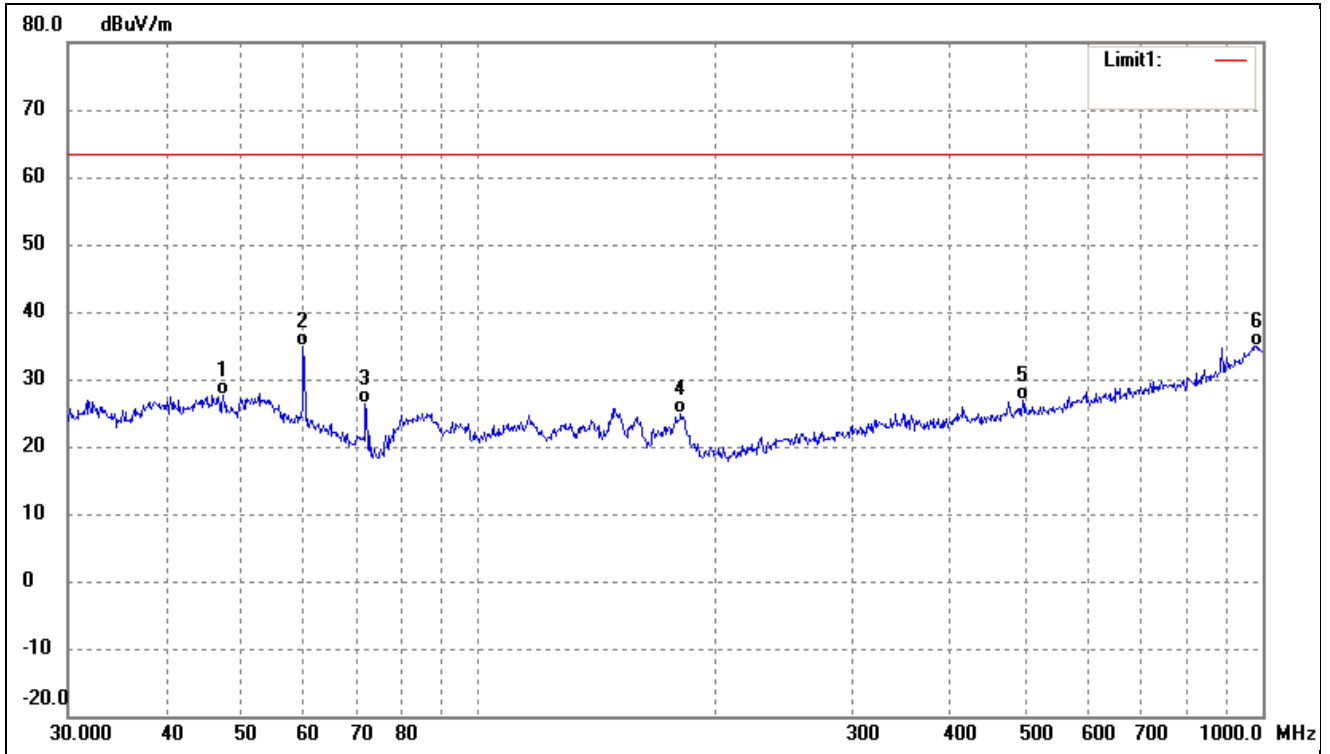
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.4371	35.78	-8.61	27.17	63.50	-36.33	229	100	QP
2	45.8553	36.65	-8.08	28.57	63.50	-34.93	112	100	QP
3	52.5753	37.80	-8.69	29.11	63.50	-34.39	88	100	QP
4	59.8588	47.26	-11.04	36.22	63.50	-27.28	275	100	QP
5	180.6488	40.69	-15.06	25.63	63.50	-37.87	317	100	QP
6	989.5355	30.52	3.88	34.40	63.50	-29.10	169	100	QP

Test mode:	TM1	Polarity:	Vertical
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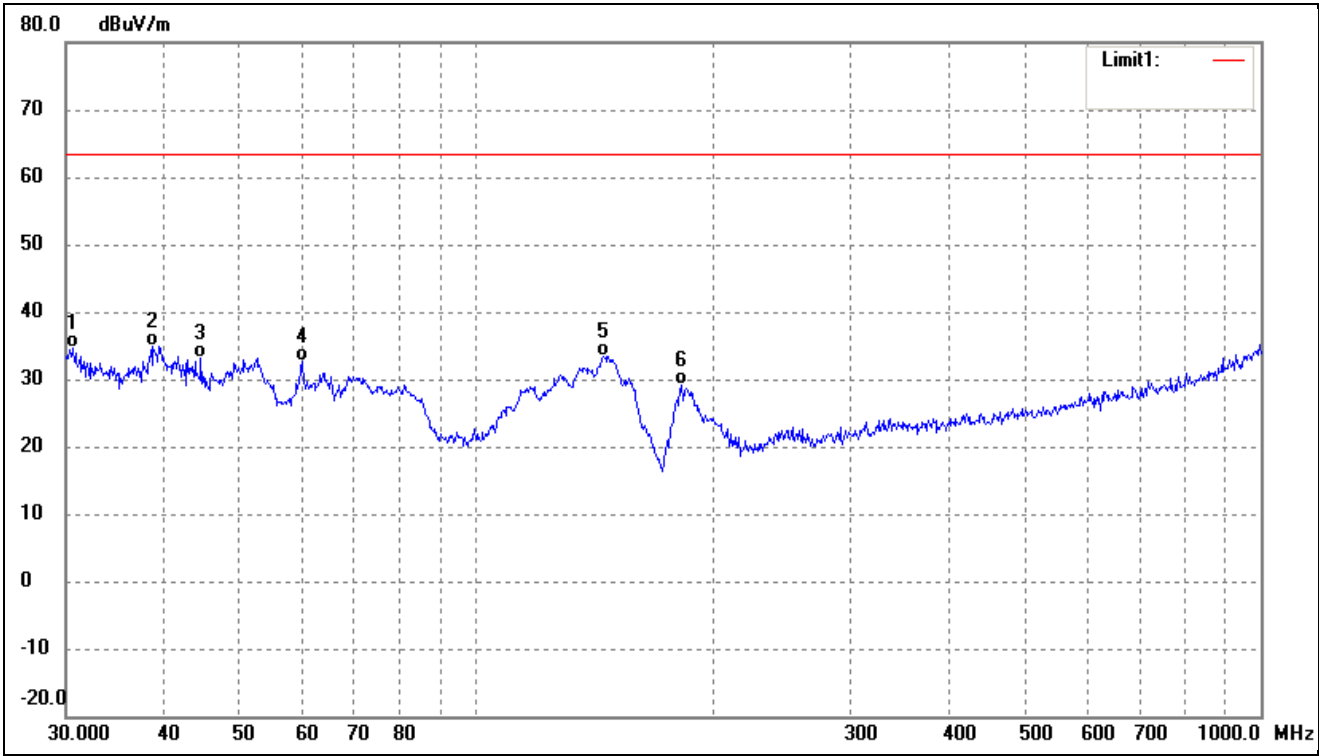
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	30.8535	44.67	-9.51	35.16	63.50	-28.34	52	100	QP
2	50.5860	43.09	-8.55	34.54	63.50	-28.96	314	100	QP
3	60.0691	48.49	-11.10	37.39	63.50	-26.11	88	100	QP
4	148.9625	53.71	-17.53	36.18	63.50	-27.32	155	100	QP
5	185.1379	44.31	-14.54	29.77	63.50	-33.73	194	100	QP
6	254.7284	37.76	-11.12	26.64	63.50	-36.86	319	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	47.3255	35.80	-8.14	27.66	63.50	-35.84	161	100	QP
2	59.8588	45.94	-11.04	34.90	63.50	-28.60	112	100	QP
3	71.8320	41.52	-15.22	26.30	63.50	-37.20	89	100	QP
4	181.2834	39.82	-14.98	24.84	63.50	-38.66	140	100	QP
5	494.1984	32.93	-6.04	26.89	63.50	-36.61	232	100	QP
6	982.6200	31.03	3.77	34.80	63.50	-28.70	101	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	30.6379	43.97	-9.46	34.51	63.50	-28.99	59	100	QP
2	38.7518	43.60	-8.69	34.91	63.50	-28.59	113	100	QP
3	44.5868	41.19	-8.03	33.16	63.50	-30.34	132	100	QP
4	60.0691	43.74	-11.10	32.64	63.50	-30.86	94	100	QP
5	145.3506	51.13	-17.75	33.38	63.50	-30.12	304	100	QP
6	182.5592	43.84	-14.83	29.01	63.50	-34.49	198	100	QP

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