



# FCC Part 18 Measurement and Test Report

For

**Trippe Manufacturing Company**

1111 W. 35th Street , Chicago, IL 60609 USA

**FCC ID: 2AV4C-U280-Q01ST-BK**

<b>Test Rule(s):</b>	<u>FCC Part 18</u>
<b>Product Description:</b>	<u>Wireless Charger</u>
<b>Tested Model:</b>	<u>U280-Q01ST-BK</u>
<b>Report No.:</b>	<u>WTX20X04018601W-1</u>
<b>Sample Receipt Date:</b>	<u>Apr.14, 2020</u>
<b>Tested Date:</b>	<u>Apr.14, 2020 to Apr.21, 2020</u>
<b>Issued Date:</b>	<u>Apr.21, 2020</u>
<b>Tested By:</b>	<u>Jason Su / Engineer</u>
<b>Reviewed By:</b>	<u>Lion Cai / RF Manager</u>
<b>Approved &amp; Authorized By:</b>	<u>Silin Chen / Manager</u>
<b>Prepared By:</b>	

*Jason Su*

*Lion Cai*

*Silin Chen*

**Waltek Testing Group (Shenzhen) Co., Ltd.**

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

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

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 Waltek Testing Group (Shenzhen) Co., Ltd.



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## Report version

Version No.	Date of issue	Description
Rev.00	Apr.21, 2020	Original
/	/	/



## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

**Client Information**

Applicant: Trippe Manufacturing Company  
Address of applicant: 1111 W. 35th Street , Chicago, IL 60609 USA

Manufacturer: SuiChuan CE LINK LIMITED.  
Address of manufacturer: SuiChuan county industrial park east zone, Ji' an city, Jiangxi province, China.

<b>General Description of EUT</b>	
Product Name:	Wireless Charger
Trade Name:	Tripp lite
Model No.:	U280-Q01ST-BK
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

<b>Technical Characteristics of EUT</b>	
Frequency Range:	110~205kHz
Antenna Type:	Coil Antenna
Rated Voltage:	DC5V / DC9V
Rated Current:	1A / 1.1A
Rated Power:	5W / 10W

## 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

### 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, Bao'an District, Shenzhen, P.R.C. (518101)

### 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 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 Charging	/	Input DC5V/2A; Output:DC5V/1A
TM2	Wireless Charging	/	Input DC9V/1.67A; Output:DC9V/1.1A

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.0	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Power Port Speed	ANKER	A2025	/
Smart Phone	HUAWEI P30 Pro	VOG-AL00	/

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



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## 2. SUMMARY OF TEST RESULTS

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<b>FCC RULES</b>	<b>DESCRIPTION OF TEST</b>	<b>RESULT</b>
§ 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:

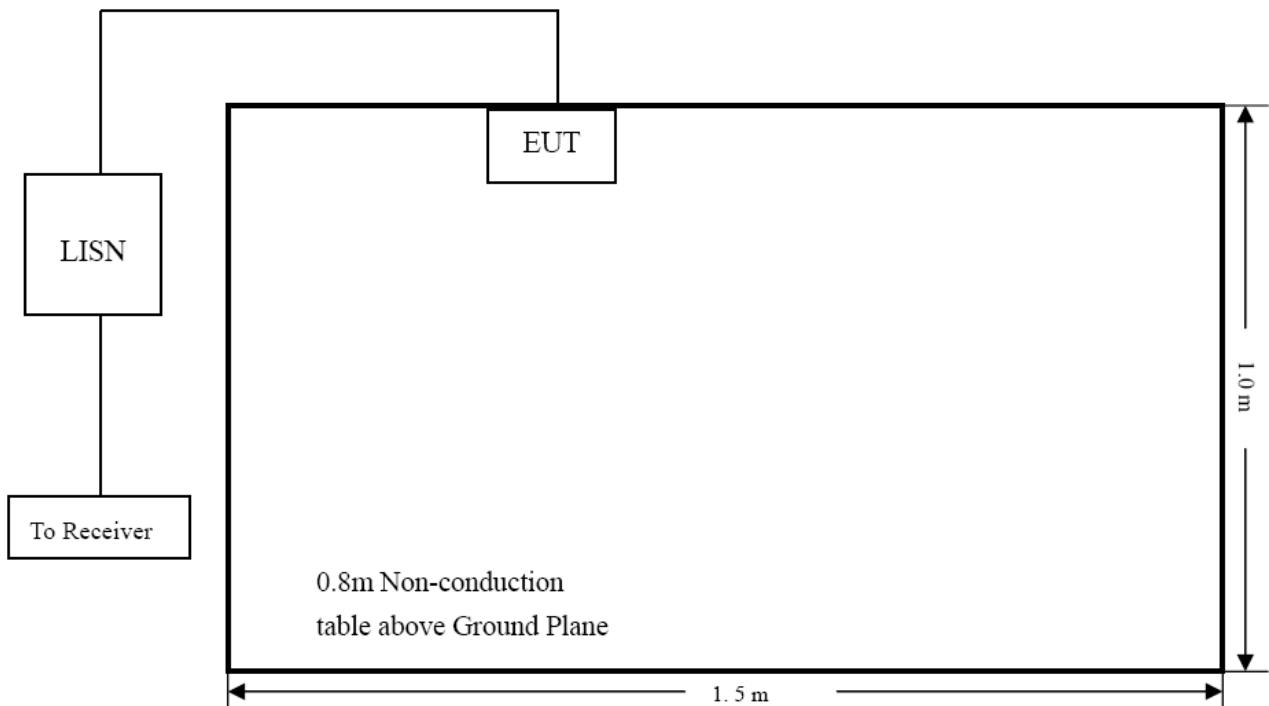
Frequency (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

#### 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:	26° C
Relative Humidity:	60%
ATM Pressure:	1016 mbar

### 3.5 Test Receiver Setup

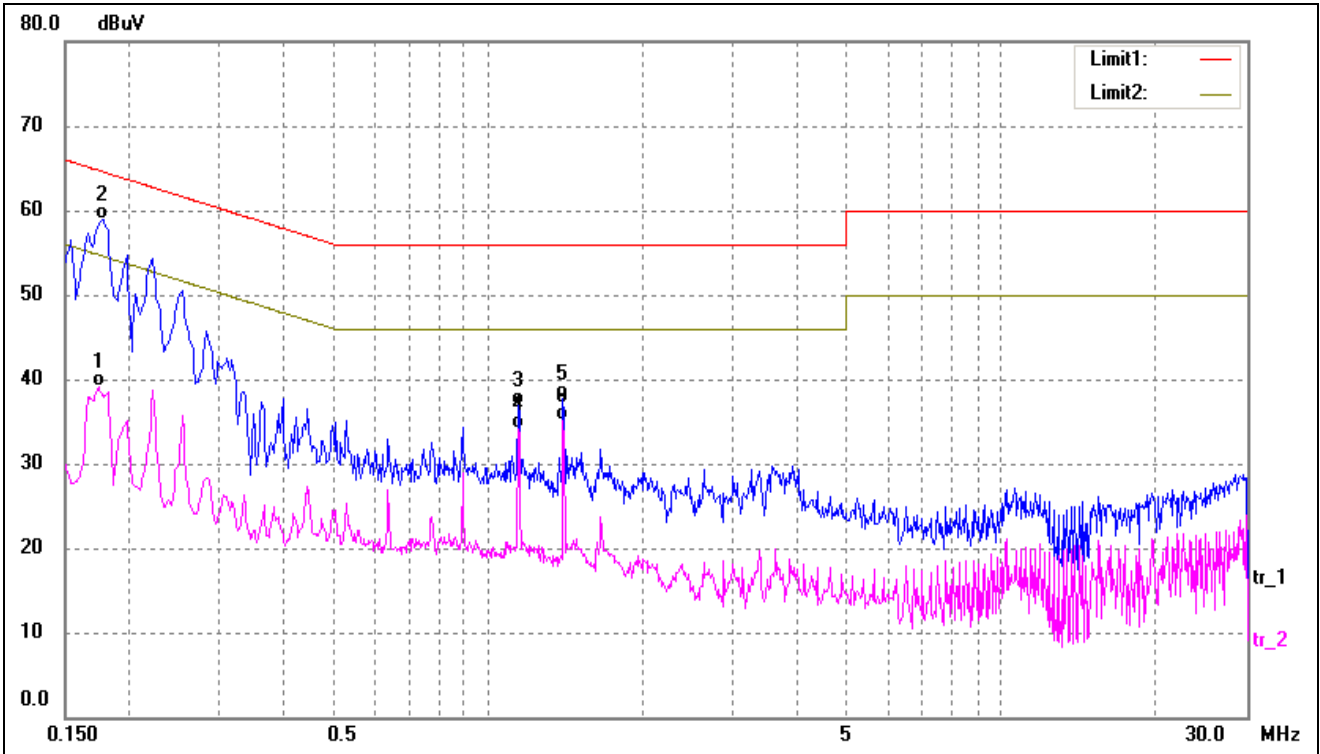
During the conducted emission test, the test receiver was set with the following configurations:

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



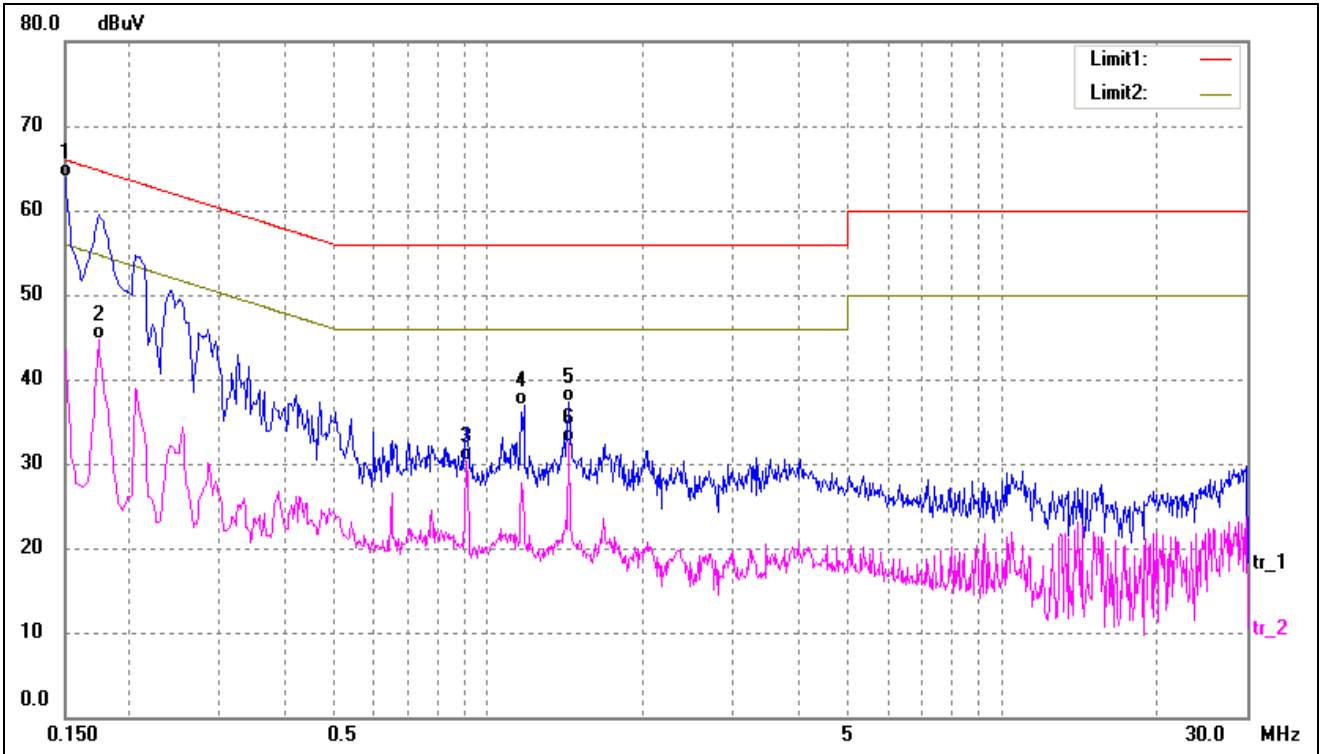
Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1740	29.07	9.95	39.02	54.77	-15.75	AVG
2*	0.1780	49.00	9.96	58.96	64.58	-5.62	QP
3	1.1460	26.43	10.38	36.81	56.00	-19.19	QP
4	1.1460	23.63	10.38	34.01	46.00	-11.99	AVG
5	1.4020	27.33	10.37	37.70	56.00	-18.30	QP
6	1.4020	24.75	10.37	35.12	46.00	-10.88	AVG



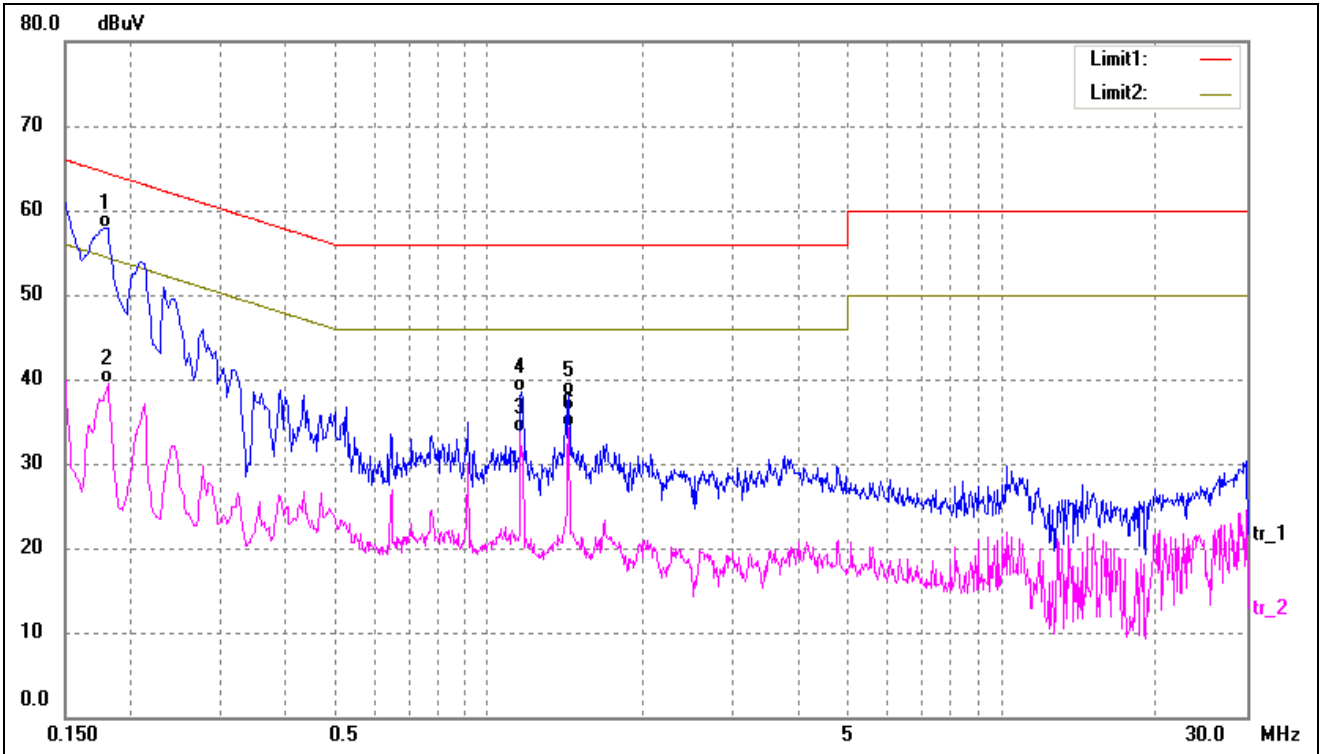
Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1500	53.93	9.95	63.88	66.00	-2.12	QP
2	0.1740	34.66	9.95	44.61	54.77	-10.16	AVG
3	0.9060	19.99	10.27	30.26	46.00	-15.74	AVG
4	1.1740	26.49	10.38	36.87	56.00	-19.13	QP
5	1.4380	26.87	10.36	37.23	56.00	-18.77	QP
6	1.4380	22.22	10.36	32.58	46.00	-13.42	AVG



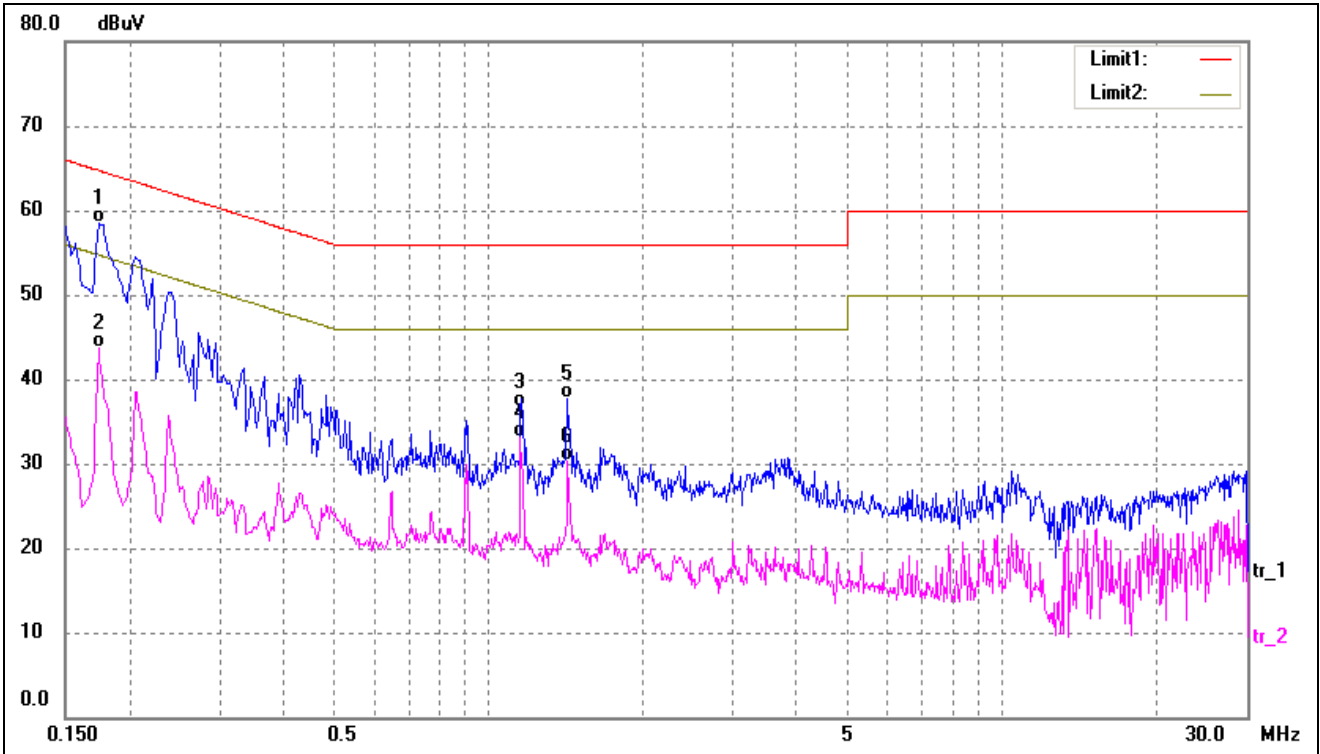
Test mode:	TM2	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1780	47.97	9.96	57.93	64.58	-6.65	QP
2	0.1820	29.58	9.96	39.54	54.39	-14.85	AVG
3	1.1580	23.35	10.38	33.73	46.00	-12.27	AVG
4	1.1620	28.17	10.38	38.55	56.00	-17.45	QP
5	1.4340	27.67	10.36	38.03	56.00	-17.97	QP
6	1.4340	24.04	10.36	34.40	46.00	-11.60	AVG



Test mode:	TM2	Polarity:	Neutral
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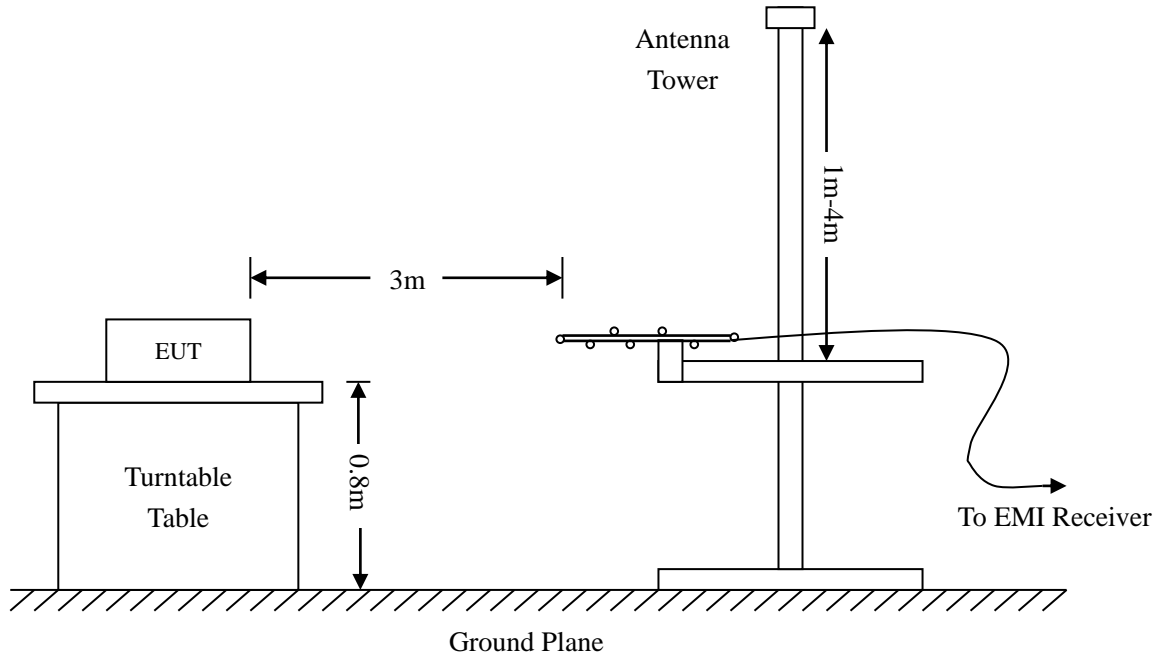
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1740	48.52	9.95	58.47	64.77	-6.30	QP
2	0.1740	33.74	9.95	43.69	54.77	-11.08	AVG
3	1.1580	26.25	10.38	36.63	56.00	-19.37	QP
4	1.1580	22.70	10.38	33.08	46.00	-12.92	AVG
5	1.4220	27.35	10.37	37.72	56.00	-18.28	QP
6	1.4260	19.96	10.36	30.32	46.00	-15.68	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 -6dB $\mu$ V means the emission is 6dB $\mu$ 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:	22 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

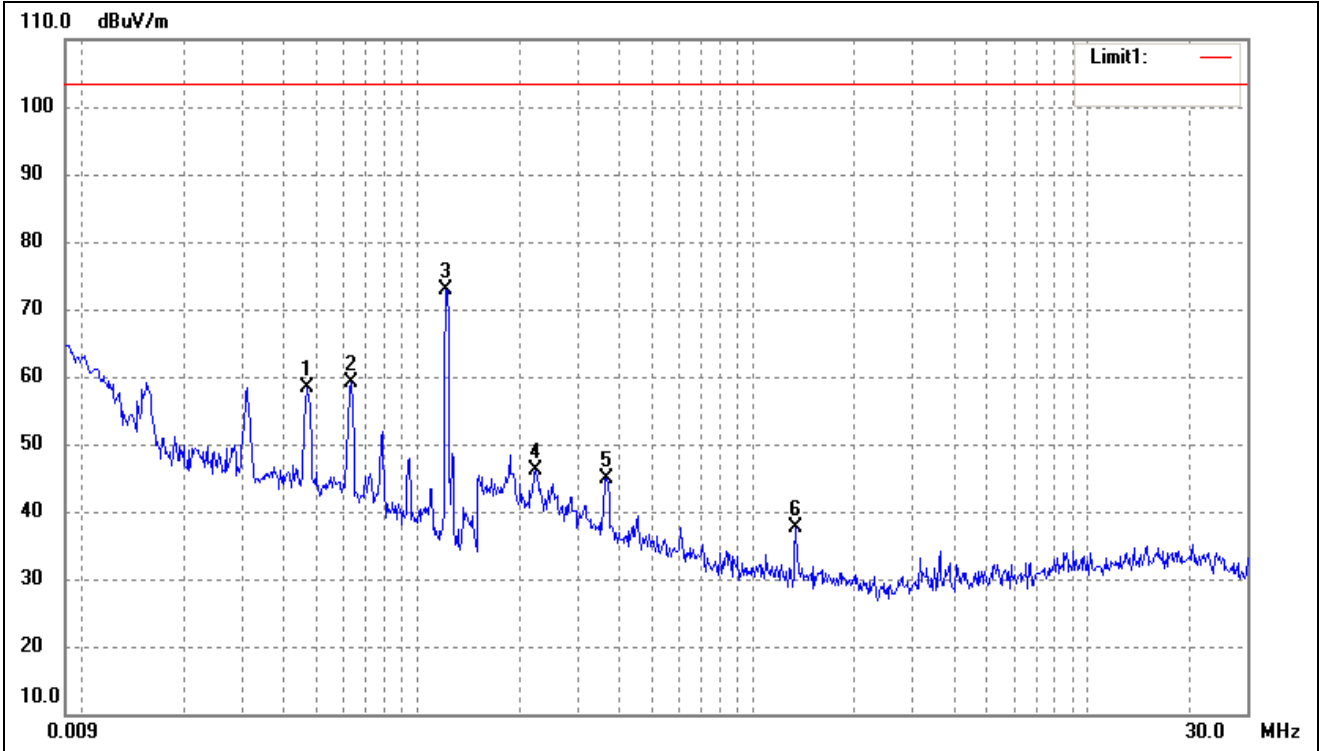
#### 4.5 Summary of Test Results/Plots





**Plot of Radiated Emissions Test Data (Below 30MHz)**

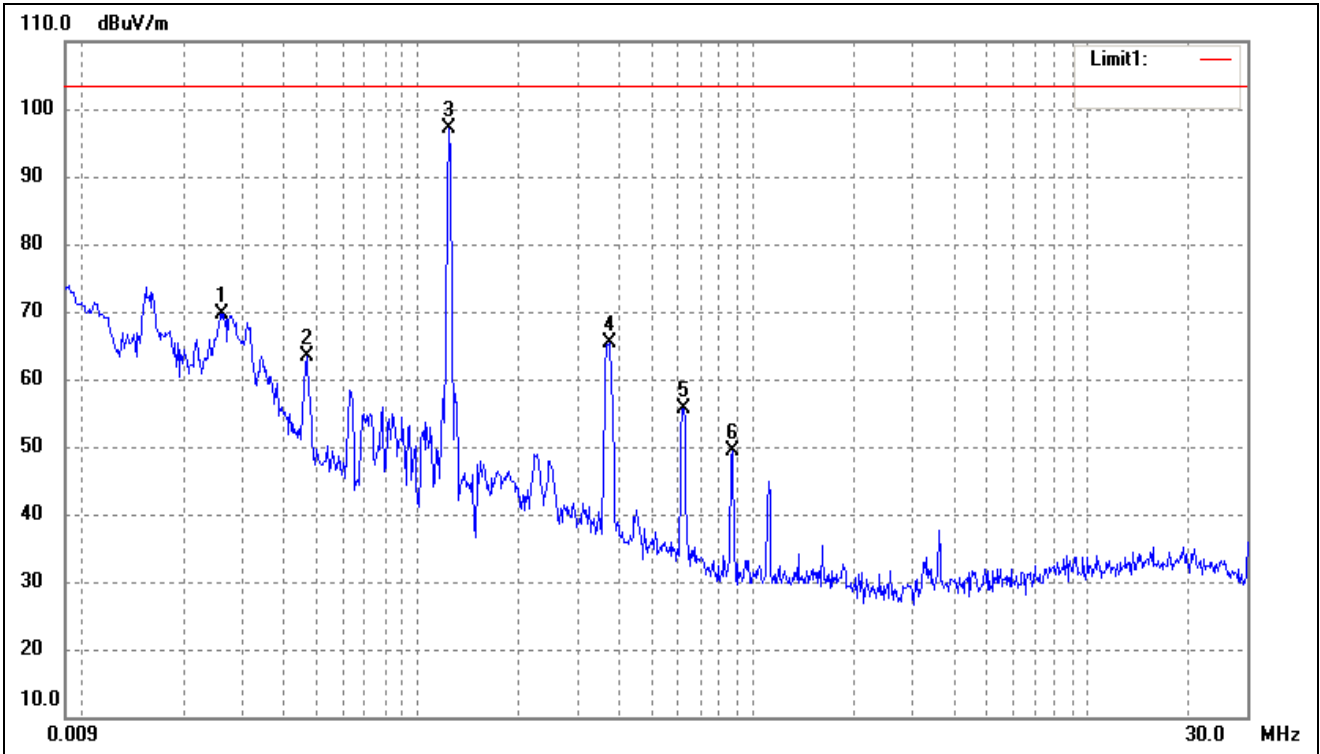
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0468	62.54	-4.19	58.35	103.50	-45.15	348	100	peak
2	0.0631	63.56	-4.50	59.06	103.50	-44.44	90	100	peak
3	0.1215	77.82	-4.87	72.95	103.50	-30.55	133	100	peak
4	0.2244	51.50	-5.45	46.05	103.50	-57.45	106	100	peak
5	0.3653	51.07	-6.09	44.98	103.50	-58.52	187	100	peak
6	1.3450	46.08	-8.56	37.52	103.50	-65.98	288	100	peak



Test mode:	TM2	Polarity:	Horizontal
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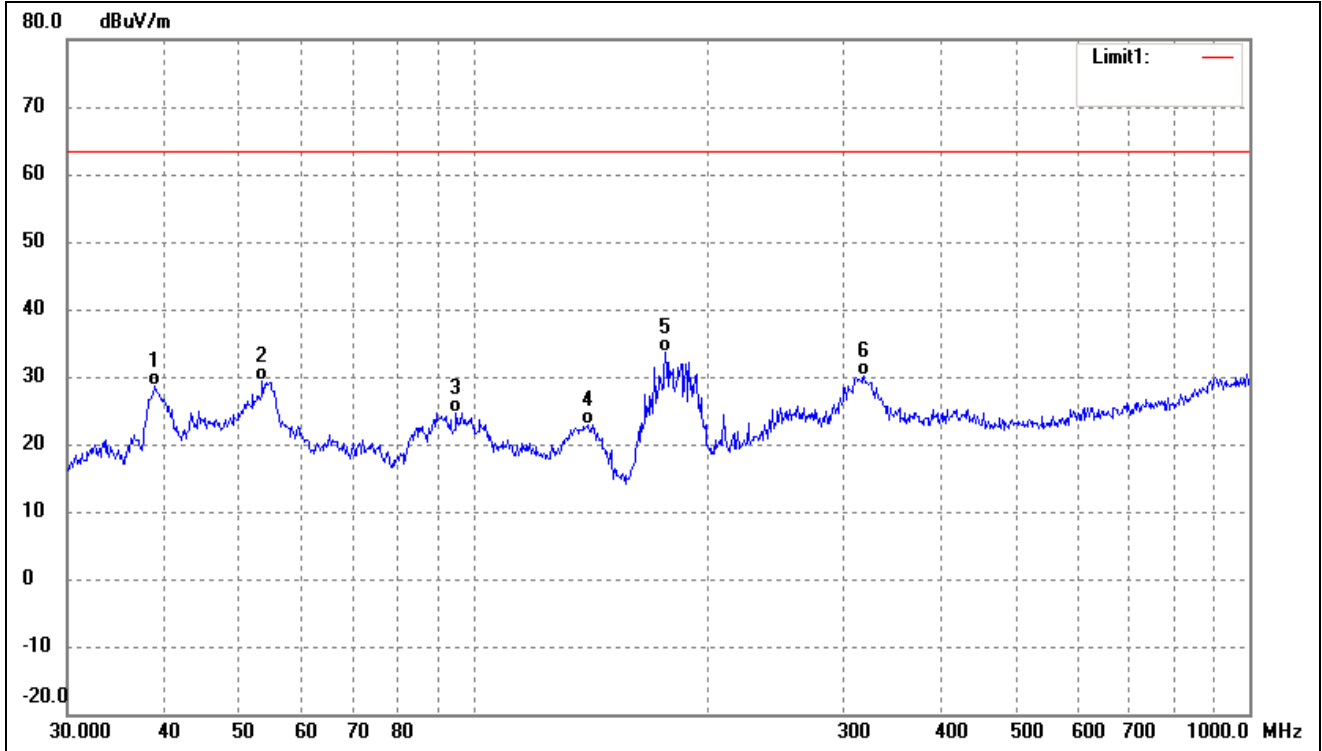


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0261	75.09	-5.35	69.74	103.50	-33.76	174	100	peak
2	0.0469	67.53	-4.19	63.34	103.50	-40.16	132	100	peak
3	0.1242	102.08	-4.86	97.22	103.50	-6.28	57	100	peak
4	0.3712	71.42	-6.12	65.30	103.50	-38.20	329	100	peak
5	0.6205	62.56	-7.02	55.54	103.50	-47.96	304	100	peak
6	0.8664	57.24	-7.95	49.29	103.50	-54.21	126	100	peak



**Plot of Radiated Emissions Test Data ( Above 30MHz)**

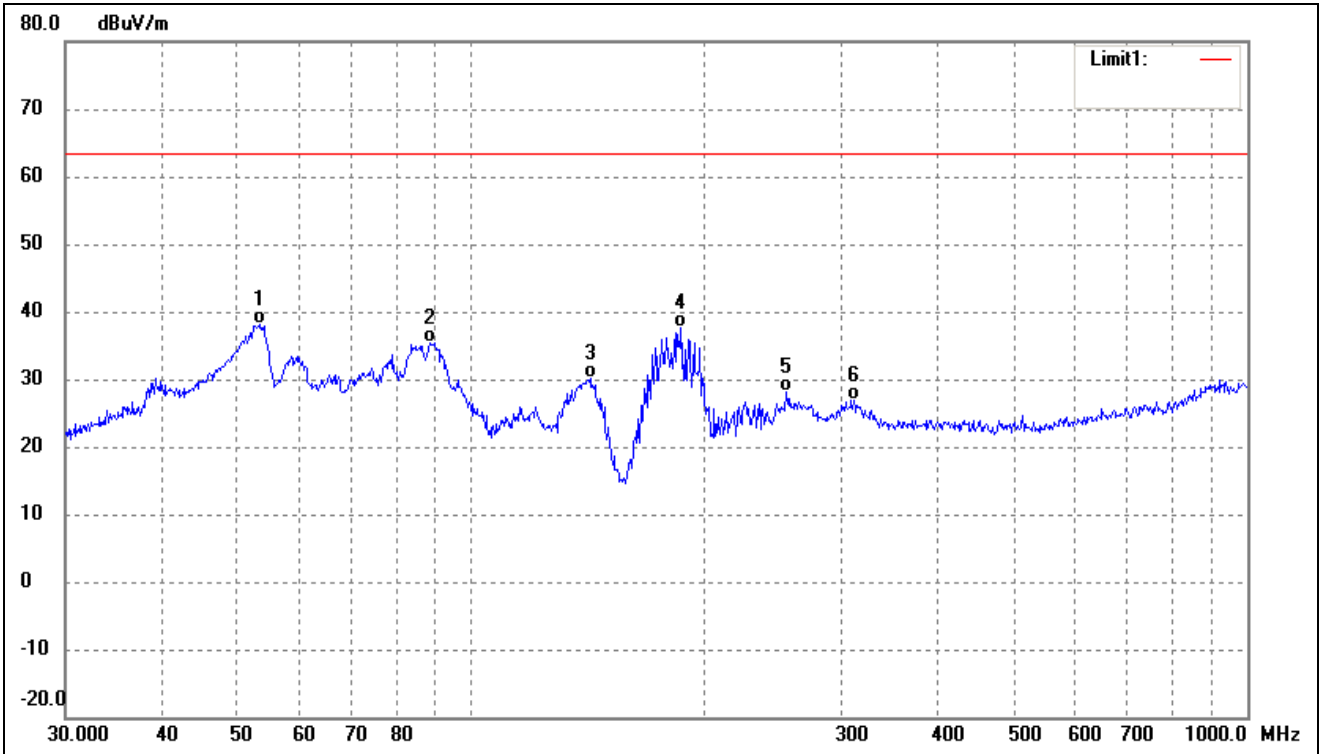
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	38.8878	43.13	-14.59	28.54	63.50	-34.96	61	100	QP
2	53.5052	43.99	-14.64	29.35	63.50	-34.15	190	100	QP
3	95.0930	40.63	-15.90	24.73	63.50	-38.77	51	100	QP
4	140.8351	40.22	-17.22	23.00	63.50	-40.50	91	100	QP
5	176.8878	48.61	-15.10	33.51	63.50	-29.99	60	100	QP
6	318.8170	38.43	-8.33	30.10	63.50	-33.40	267	100	QP



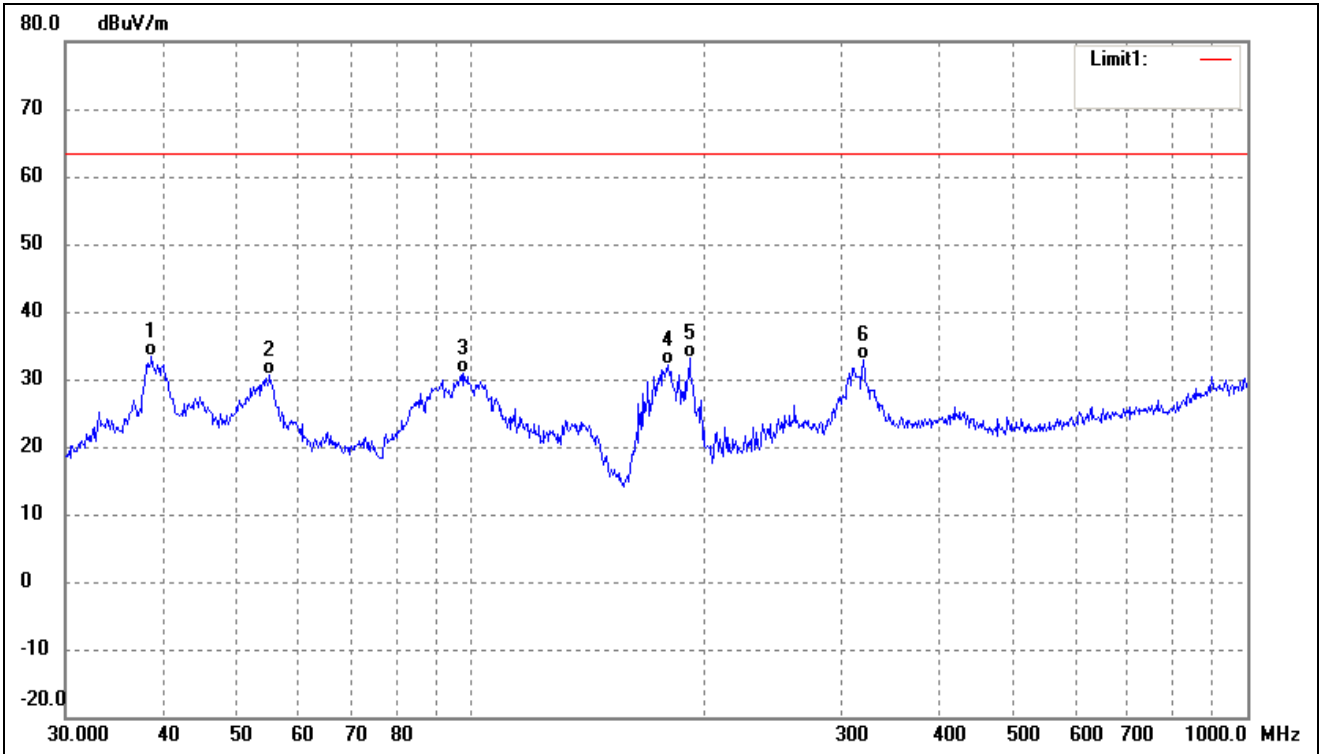
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	53.5052	52.69	-14.64	38.05	63.50	-25.45	146	100	QP
2	88.3421	52.75	-17.31	35.44	63.50	-28.06	184	100	QP
3	142.3243	47.31	-17.08	30.23	63.50	-33.27	52	100	QP
4	186.4409	51.64	-13.97	37.67	63.50	-25.83	261	100	QP
5	254.7284	38.53	-10.40	28.13	63.50	-35.37	201	100	QP
6	311.0867	35.05	-8.11	26.94	63.50	-36.56	118	100	QP



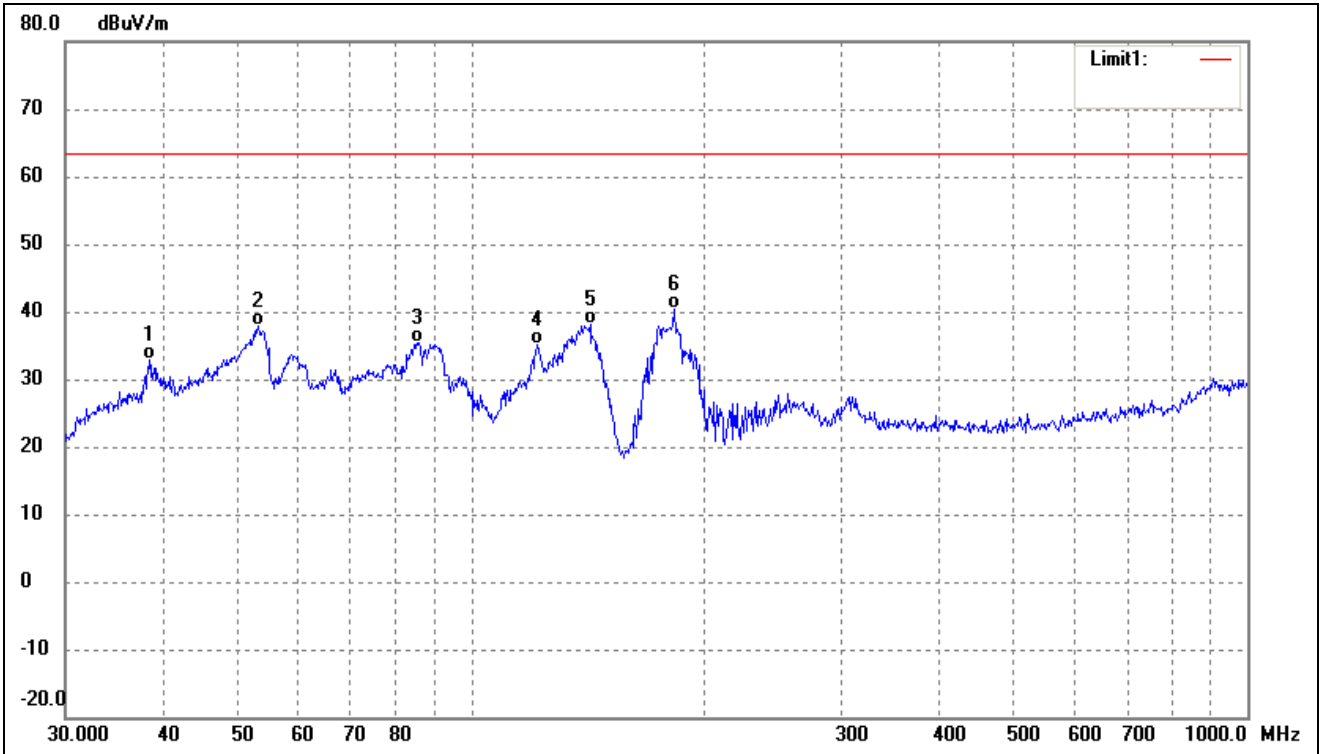
Test mode:	TM2	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	38.7518	47.90	-14.64	33.26	63.50	-30.24	320	100	QP
2	55.0274	45.82	-15.08	30.74	63.50	-32.76	91	100	QP
3	97.7983	46.13	-15.36	30.77	63.50	-32.73	81	100	QP
4	179.3863	46.91	-14.88	32.03	63.50	-31.47	109	100	QP
5	191.0738	46.62	-13.42	33.20	63.50	-30.30	216	100	QP
6	319.9370	41.13	-8.35	32.78	63.50	-30.72	255	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	38.4809	47.60	-14.75	32.85	63.50	-30.65	189	100	QP
2	53.1313	52.42	-14.53	37.89	63.50	-25.61	238	100	QP
3	85.2980	53.56	-18.09	35.47	63.50	-28.03	56	100	QP
4	121.5486	51.14	-16.02	35.12	63.50	-28.38	191	100	QP
5	142.3243	55.32	-17.08	38.24	63.50	-25.26	162	100	QP
6	182.5592	54.82	-14.49	40.33	63.50	-23.17	112	100	QP

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