




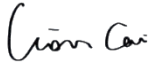

# FCC Part 18 Measurement and Test Report

For

**Trippe Manufacturing Company**

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

**FCC ID: 2AV4C-UPB-10K0**

<b>Test Rule(s):</b>	<u>FCC Part 18</u>
<b>Product Description:</b>	<u>Wireless Charger</u>
<b>Tested Model:</b>	<u>UPB-10K0-1U1CQ (CU89BD)</u>
<b>Report No.:</b>	<u>WTX20X04017595W-1</u>
<b>Sample Receipt Date:</b>	<u>Apr.09, 2020</u>
<b>Tested Date:</b>	<u>Apr.09, 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>	

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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 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

## 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.

General Description of EUT	
Product Name:	Wireless Charger
Trade Name:	Tripp lite
Model No.:	UPB-10K0-1U1CQ (CU89BD)
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 / 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/1.1A; 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	/

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

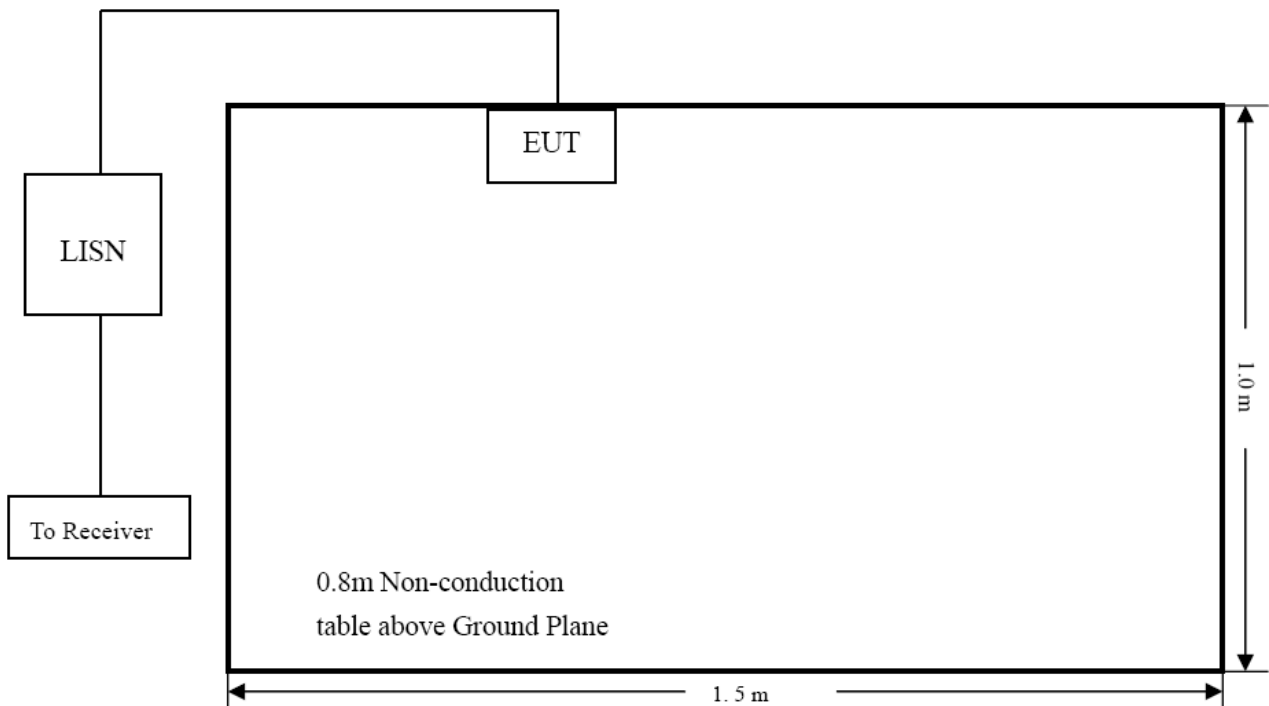
#### 3.2 Test Procedure

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

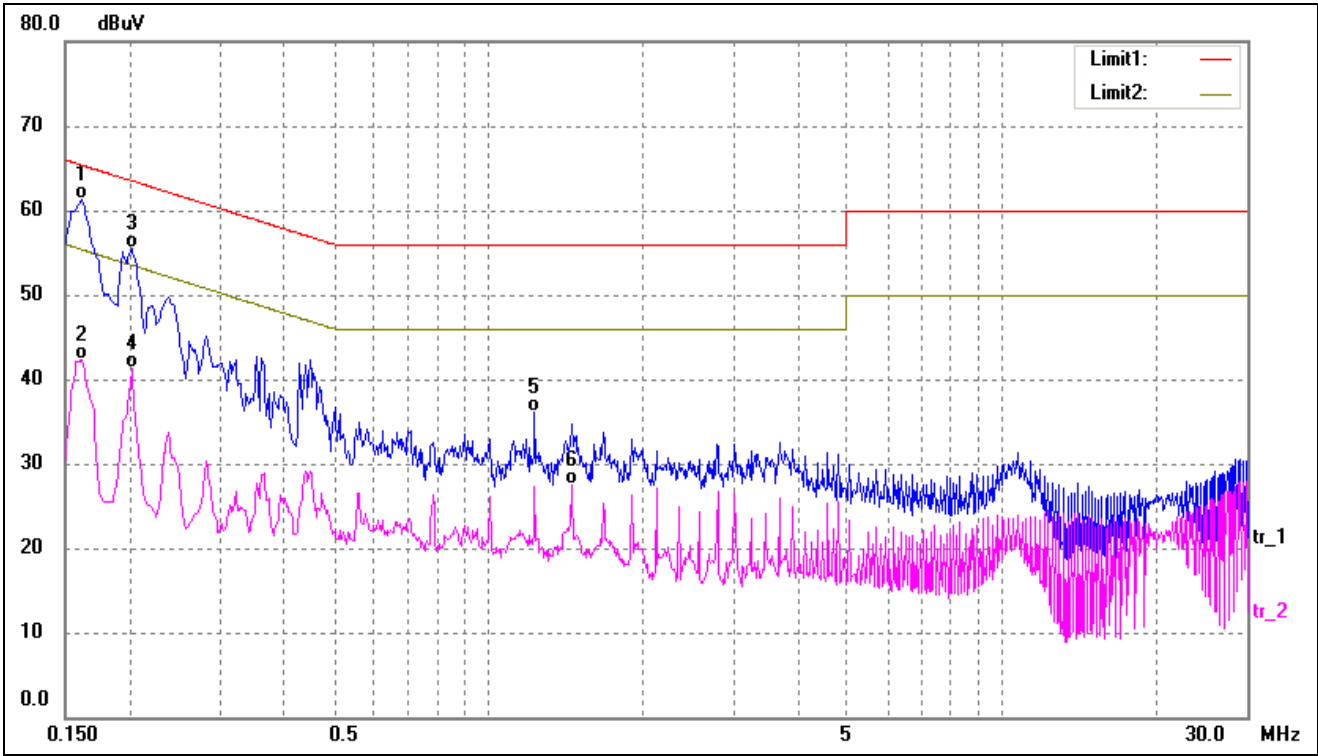
### 3.6 Summary of Test Results/Plots

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:

**-2.81 dB at 0.1500 MHz in the Line, QP detector, TM2 detector, 0.15-30MHz**

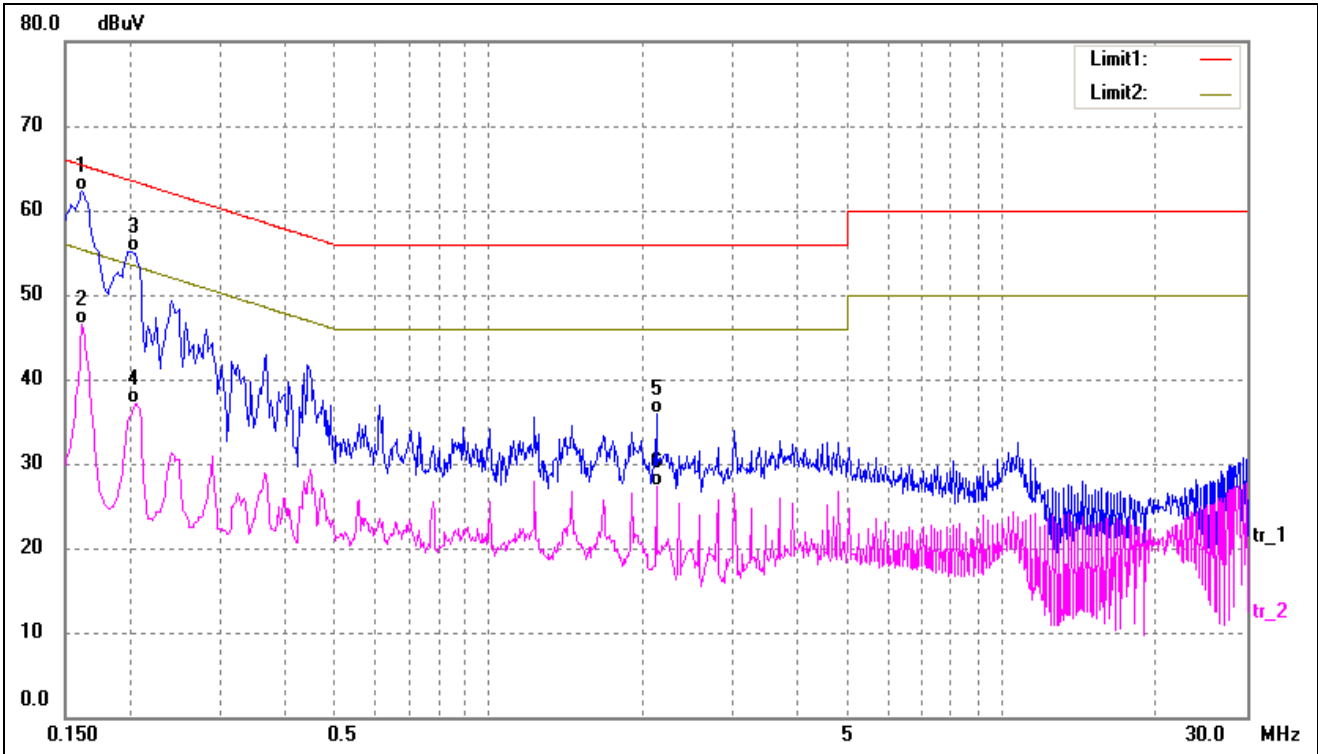


Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1620	51.43	9.95	61.38	65.36	-3.98	QP
2	0.1620	32.38	9.95	42.33	55.36	-13.03	AVG
3	0.2020	45.62	9.97	55.59	63.53	-7.94	QP
4	0.2020	31.30	9.97	41.27	53.53	-12.26	AVG
5	1.2300	25.67	10.38	36.05	56.00	-19.95	QP
6	1.4540	17.23	10.36	27.59	46.00	-18.41	AVG

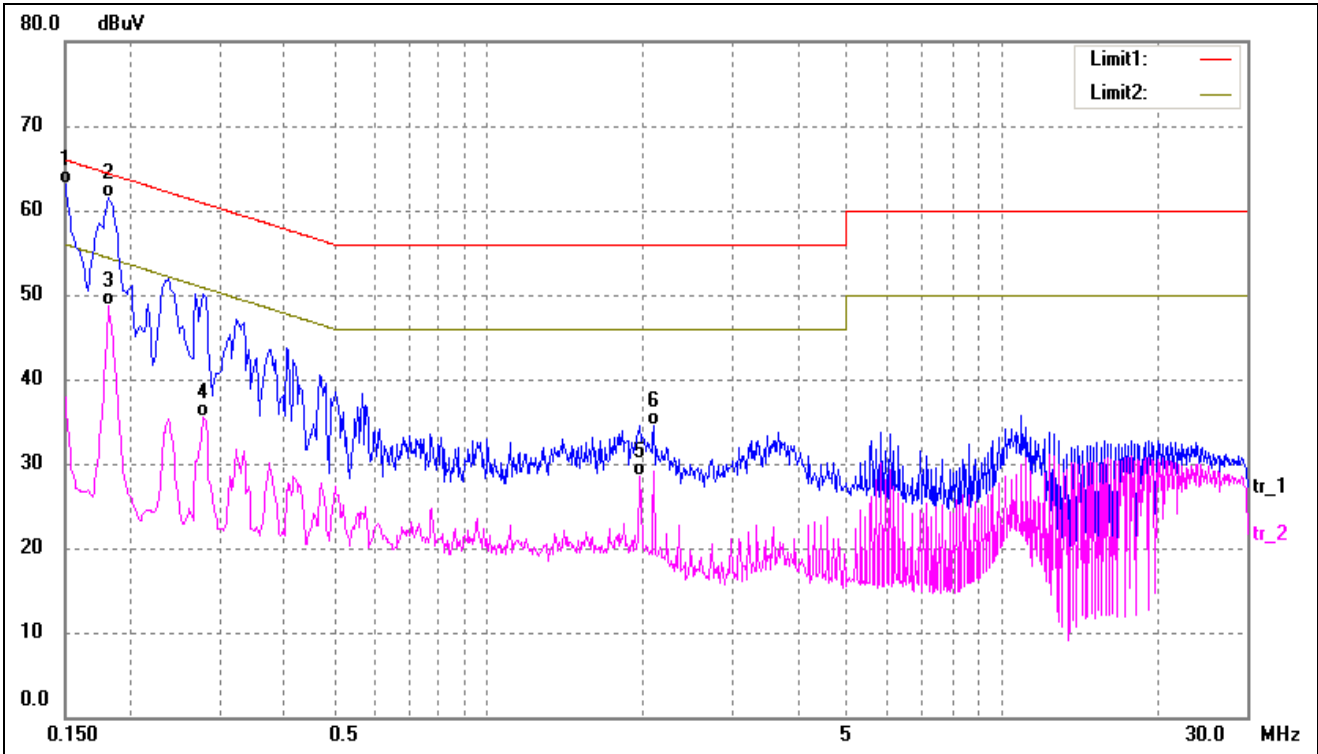
Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1620	52.38	9.95	62.33	65.36	-3.03	QP
2	0.1620	36.64	9.95	46.59	55.36	-8.77	AVG
3	0.2020	45.19	9.97	55.16	63.53	-8.37	QP
4	0.2060	27.11	9.97	37.08	53.37	-16.29	AVG
5	2.1260	25.49	10.37	35.86	56.00	-20.14	QP
6	2.1260	16.88	10.37	27.25	46.00	-18.75	AVG



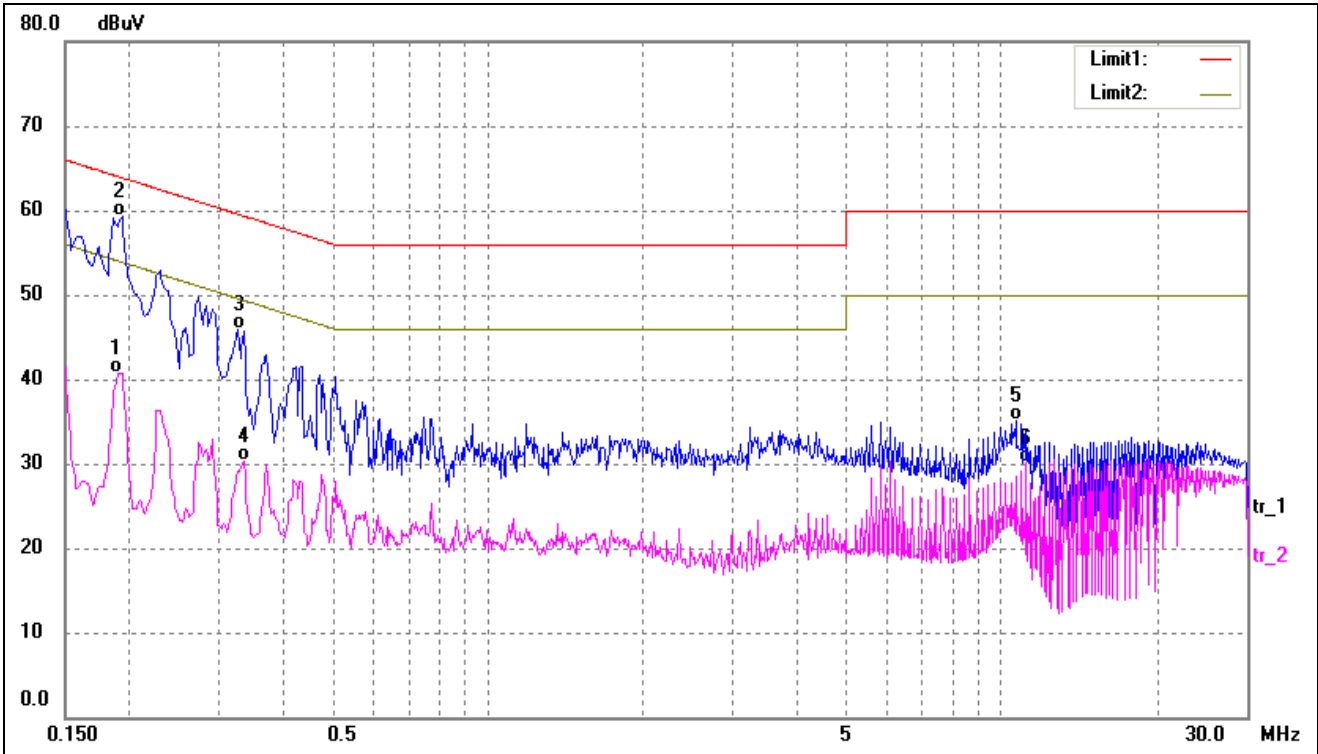
Test mode:	TM2	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1500	53.24	9.95	63.19	66.00	-2.81	QP
2	0.1820	51.58	9.96	61.54	64.39	-2.85	QP
3	0.1820	38.68	9.96	48.64	54.39	-5.75	AVG
4	0.2780	25.57	10.01	35.58	50.88	-15.30	AVG
5	1.9780	18.15	10.37	28.52	46.00	-17.48	AVG
6	2.1020	24.19	10.37	34.56	56.00	-21.44	QP



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	0.1900	30.79	9.96	40.75	54.04	-13.29	AVG
2*	0.1940	49.42	9.97	59.39	63.86	-4.47	QP
3	0.3260	35.81	10.02	45.83	59.55	-13.72	QP
4	0.3340	20.32	10.02	30.34	49.35	-19.01	AVG
5	10.6620	24.45	10.58	35.03	60.00	-24.97	QP
6	11.1580	19.49	10.59	30.08	50.00	-19.92	AVG

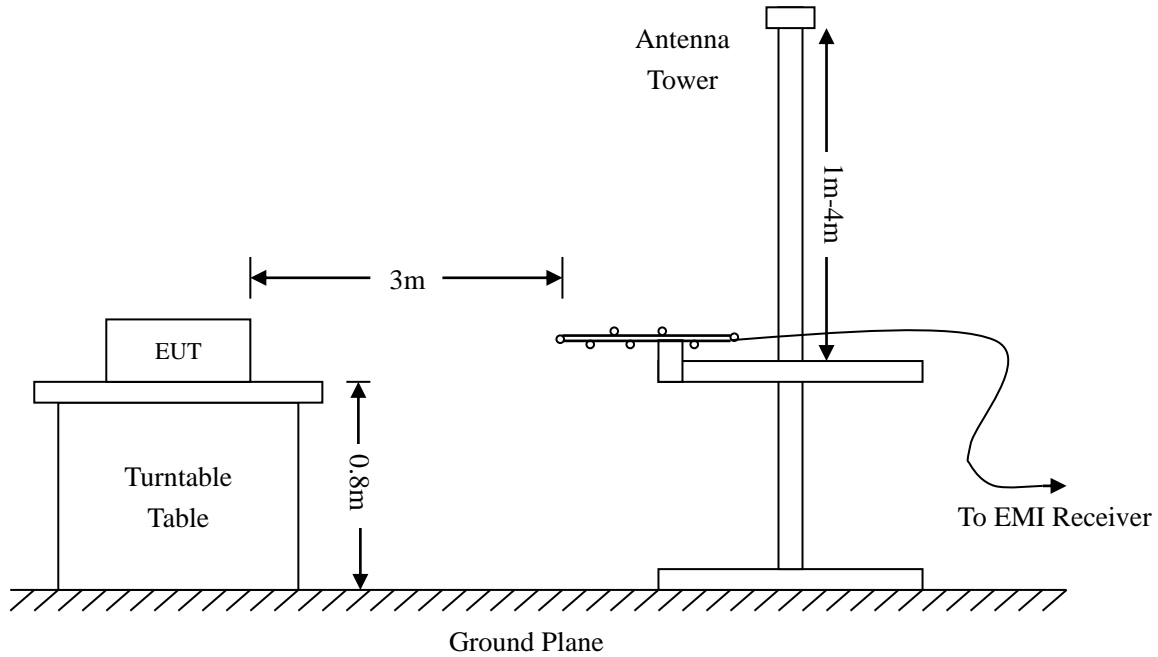
## 4. Radiated Emissions

### 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

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

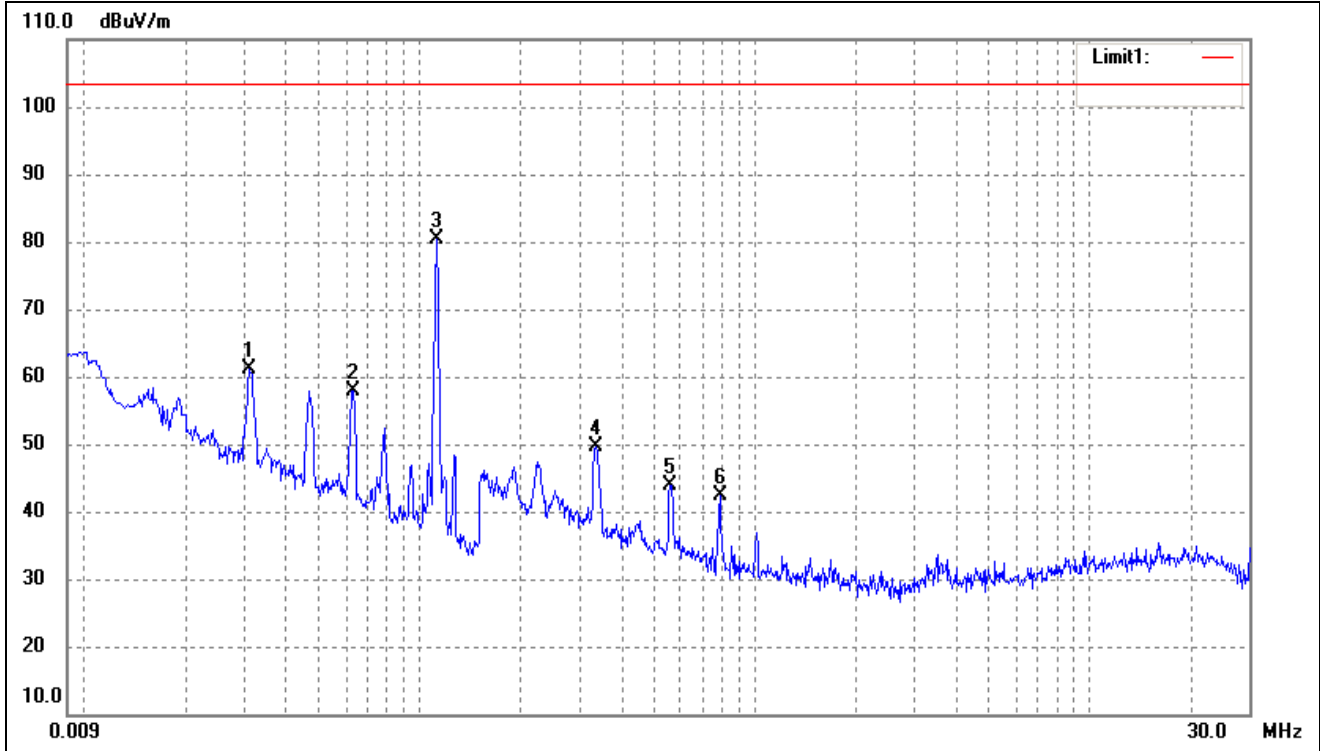
**-20.87 dB at 304.6099 MHz in the Horizontal polarization, TM2 mode, 3Meters**





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

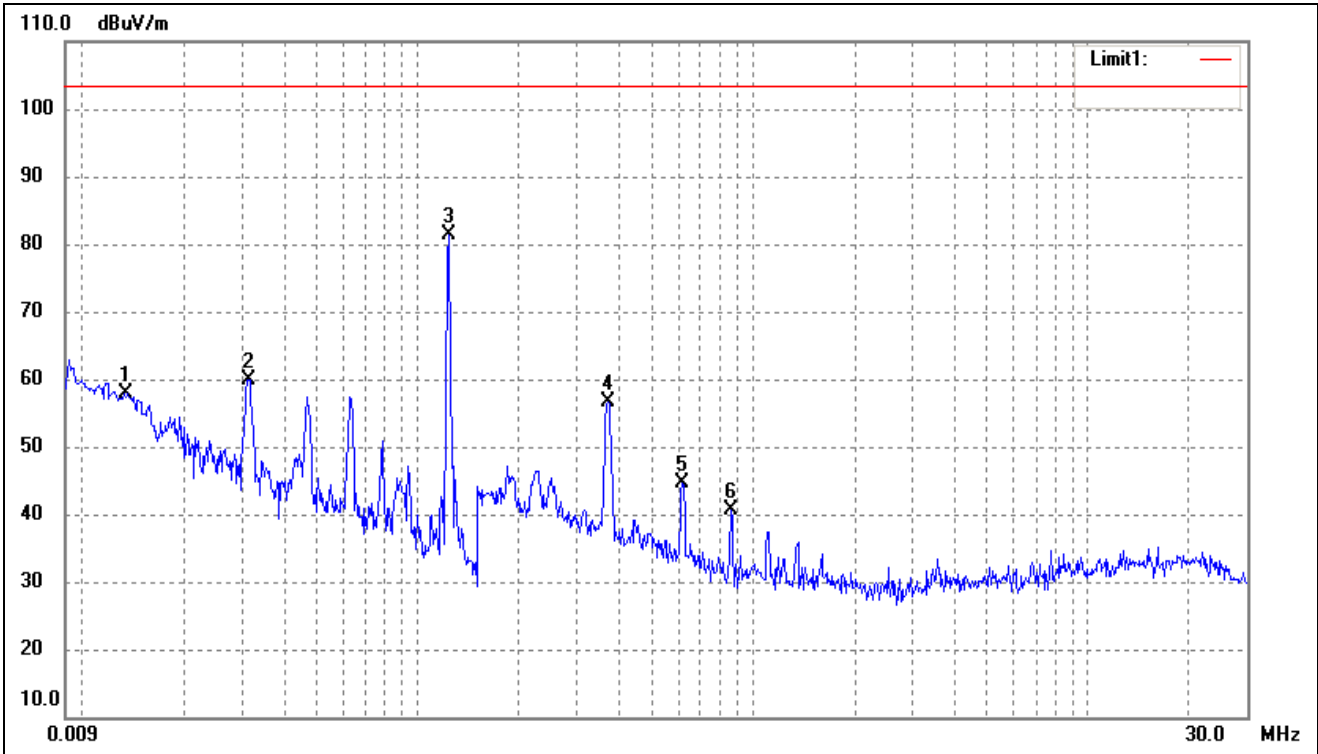
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0312	66.11	-5.06	61.05	103.50	-42.45	207	100	peak
2	0.0631	62.40	-4.50	57.90	103.50	-45.60	140	100	peak
3	0.1123	85.43	-4.96	80.47	103.50	-23.03	98	100	peak
4	0.3356	55.53	-5.93	49.60	103.50	-53.90	245	100	peak
5	0.5581	50.77	-6.89	43.88	103.50	-59.62	163	100	peak
6	0.7876	49.81	-7.48	42.33	103.50	-61.17	244	100	peak



Test mode:	TM2	Polarity:	Horizontal
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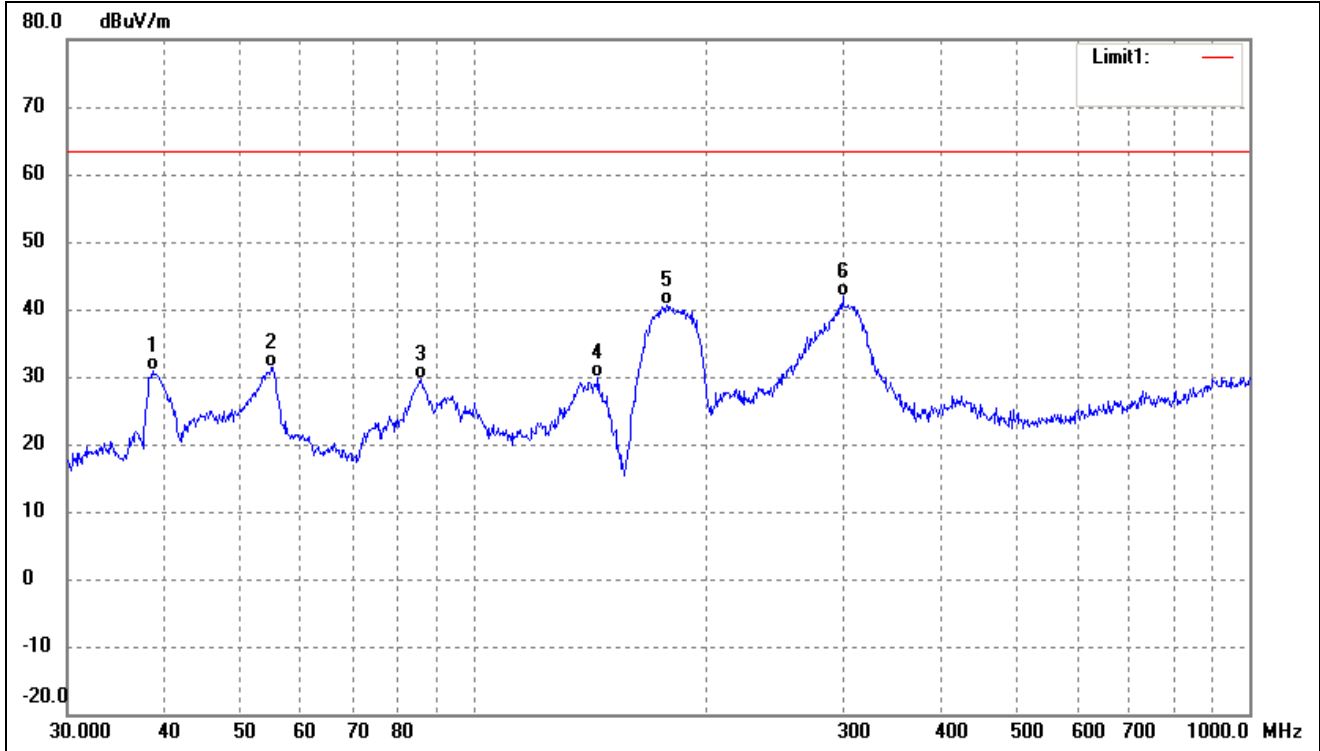


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0135	63.23	-5.28	57.95	103.50	-45.55	52	100	peak
2	0.0313	64.89	-5.05	59.84	103.50	-43.66	131	100	peak
3	0.1232	86.26	-4.87	81.39	103.50	-22.11	98	100	peak
4	0.3692	62.84	-6.12	56.72	103.50	-46.78	149	100	peak
5	0.6140	51.73	-7.00	44.73	103.50	-58.77	224	100	peak
6	0.8618	48.46	-7.93	40.53	103.50	-62.97	128	100	peak



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

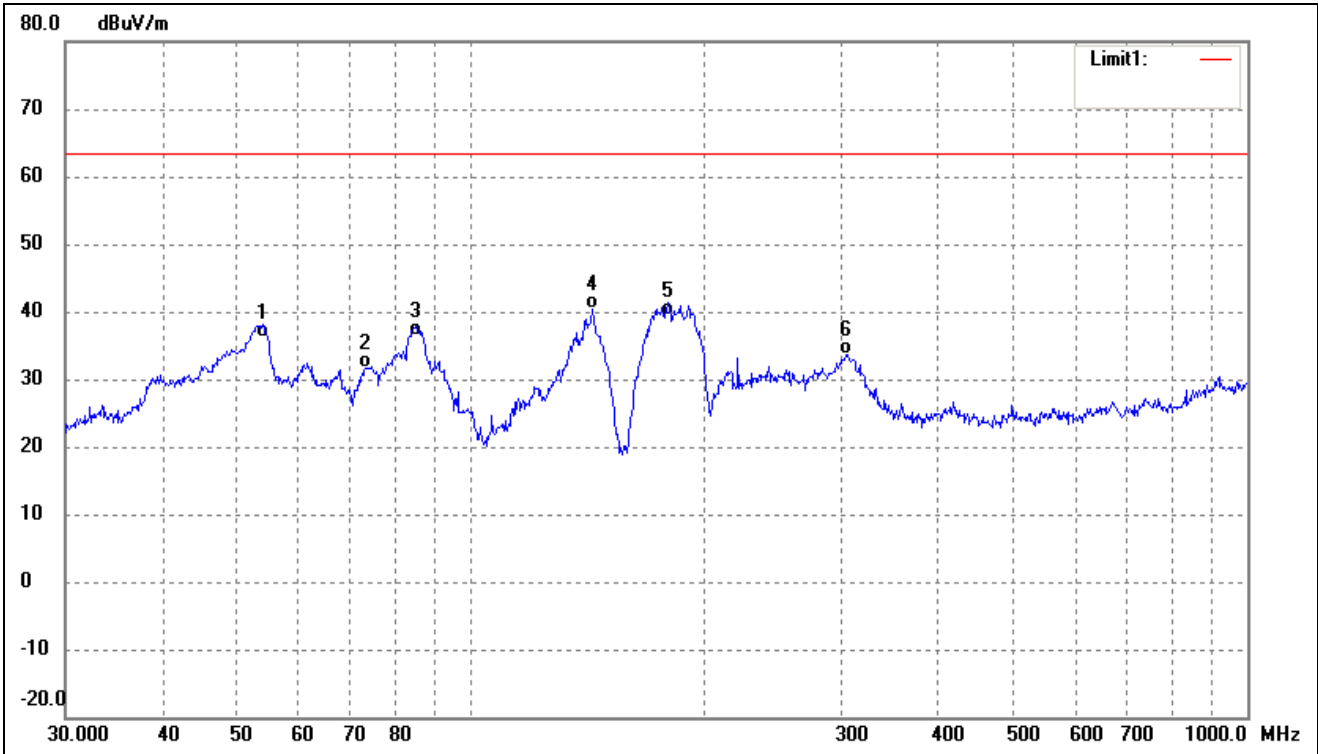
Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	38.6160	45.52	-14.70	30.82	63.50	-32.68	235	100	QP
2	55.0274	46.53	-15.08	31.45	63.50	-32.05	129	100	QP
3	85.5977	47.53	-18.02	29.51	63.50	-33.99	68	100	QP
4	144.8418	46.82	-16.84	29.98	63.50	-33.52	98	100	QP
5	177.5092	55.66	-15.04	40.62	63.50	-22.88	175	100	QP
6	299.3158	49.63	-7.87	41.76	63.50	-21.74	122	100	QP



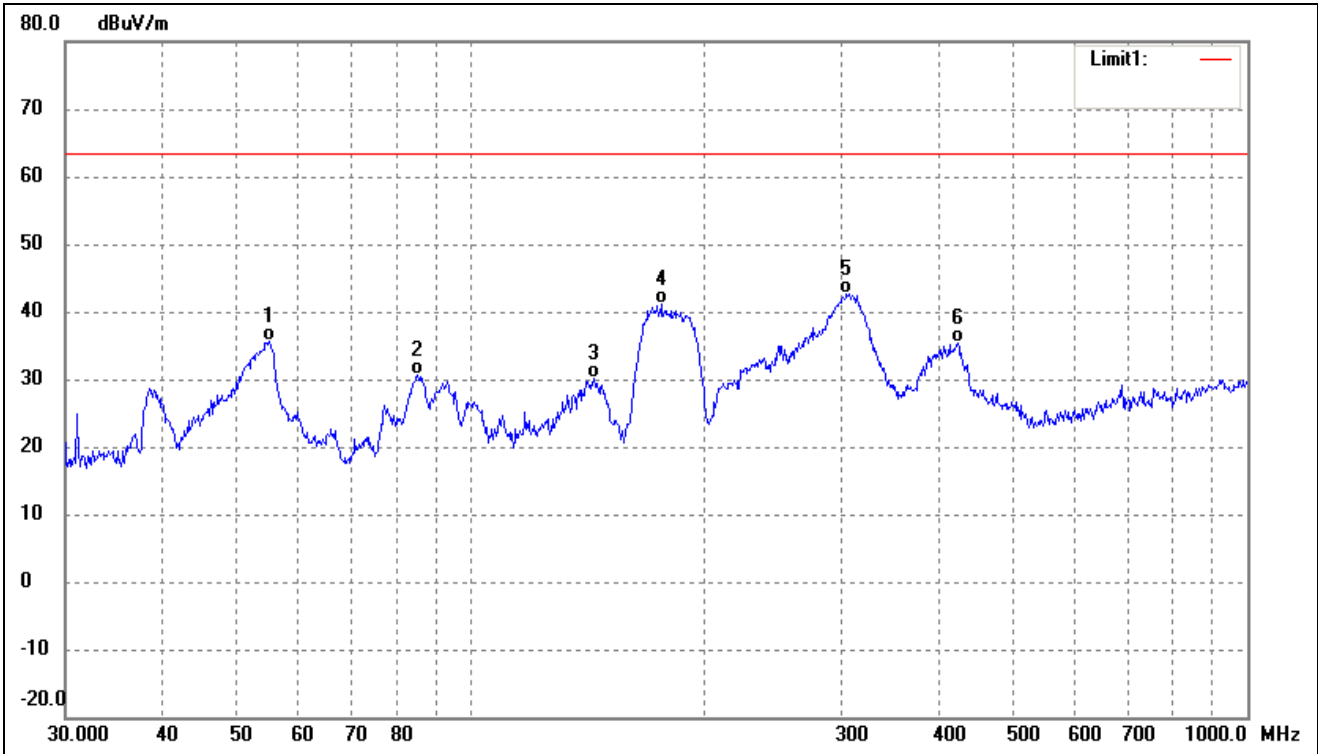
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	53.8818	50.95	-14.75	36.20	63.50	-27.30	295	100	QP
2	73.1025	49.50	-17.76	31.74	63.50	-31.76	98	100	QP
3	84.9995	54.55	-18.16	36.39	63.50	-27.11	83	100	QP
4	143.3261	57.44	-16.99	40.45	63.50	-23.05	104	100	QP
5	179.3863	54.28	-14.88	39.40	63.50	-24.10	144	100	QP
6	303.5437	41.58	-7.91	33.67	63.50	-29.83	98	100	QP



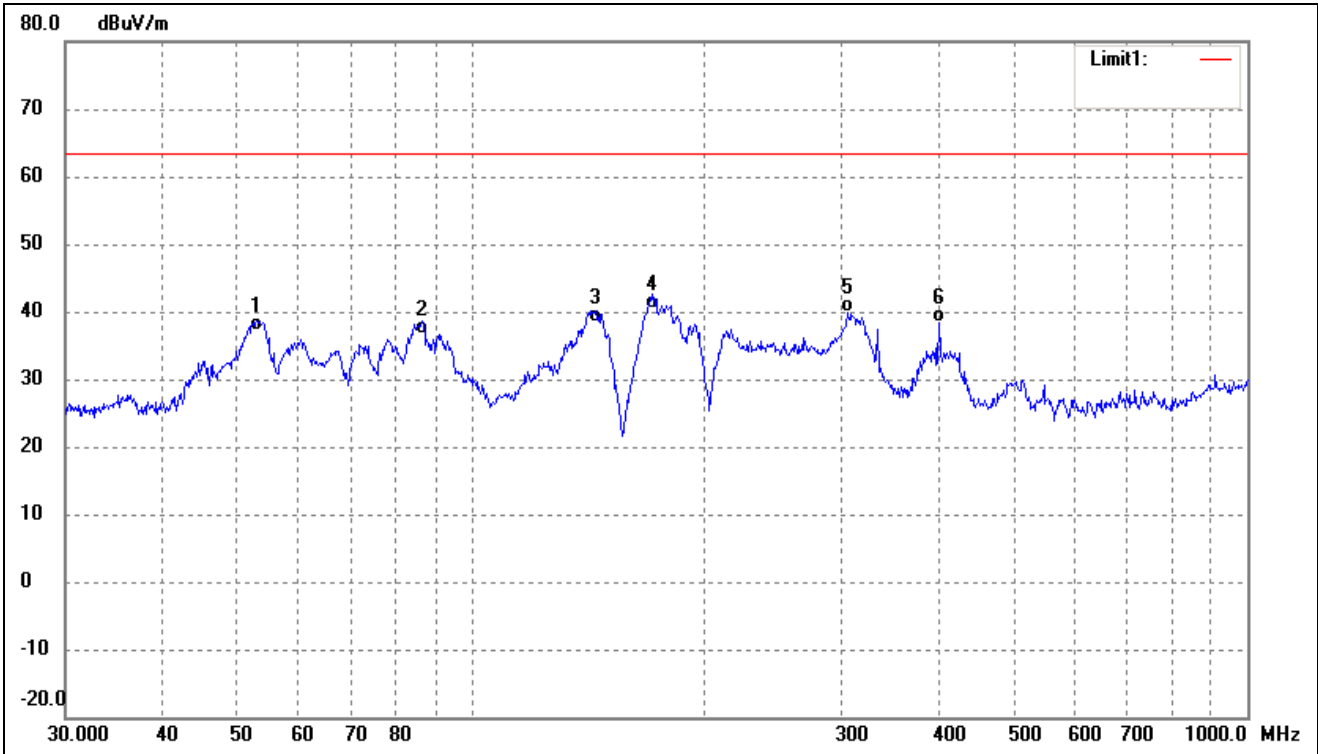
Test mode:	TM2	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	55.0274	50.81	-15.08	35.73	63.50	-27.77	276	100	QP
2	85.2980	48.62	-18.09	30.53	63.50	-32.97	97	100	QP
3	143.8295	47.19	-16.94	30.25	63.50	-33.25	54	100	QP
4	175.6516	56.44	-15.20	41.24	63.50	-22.26	102	100	QP
5	304.6099	50.58	-7.95	42.63	63.50	-20.87	215	100	QP
6	423.5403	43.23	-7.90	35.33	63.50	-28.17	254	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	52.9453	51.61	-14.48	37.13	63.50	-26.37	337	100	QP
2	86.5029	54.44	-17.78	36.66	63.50	-26.84	141	100	QP
3	144.8418	55.14	-16.84	38.30	63.50	-25.20	95	100	QP
4	170.7926	56.11	-15.61	40.50	63.50	-23.00	167	100	QP
5	305.6800	47.77	-7.97	39.80	63.50	-23.70	332	100	QP
6	400.4319	46.33	-7.86	38.47	63.50	-25.03	98	100	QP

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