FCC Part 18
Measurement and Test Report

For

Trippe Manufacturing Company

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

FCC ID: 2AV4C-U280-Q01FL-BK

Test Rule(s):	FCC Part 18
Product Description:	Wireless Charger
Tested Model:	U280-Q01FL-BK（CU89BC）
Report No.:	WTX20X03014944W-1
Sample Receipt Date:	Mar.31, 2020
Tested Date:	Mar.31, 2020 to Apr.08, 2020
Issued Date:	Apr.08, 2020
Tested By:	Jason Su / Engineer
Reviewed By:	Lion Cai / RF Manager
Approved & Authorized By:	Silin Chen / Manager

Prepared By:

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Report version

Version No.	Date of issue	Description
Rev.00	Apr.08, 2020	Original
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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.:	U280-Q01FL-BK（CU89BC）
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

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/1.8A; 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

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

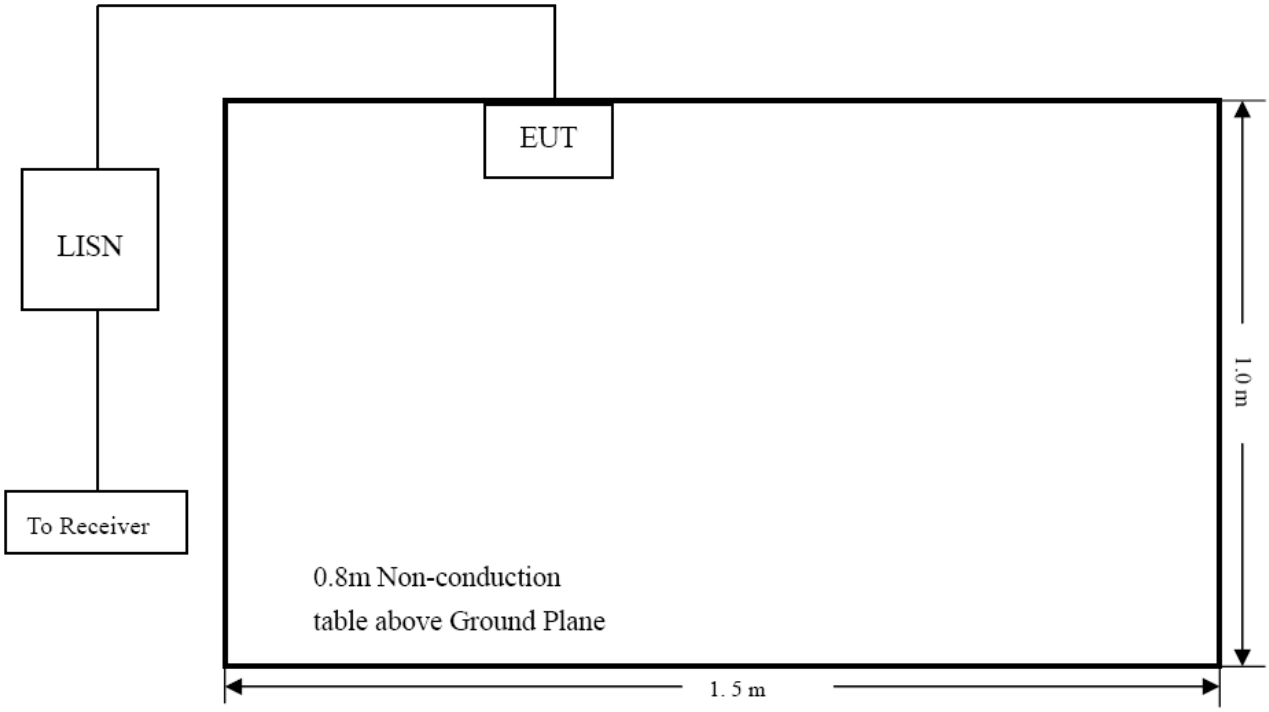
According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

Frequency (MHz)	Conducted limit (dBμV)	
	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:

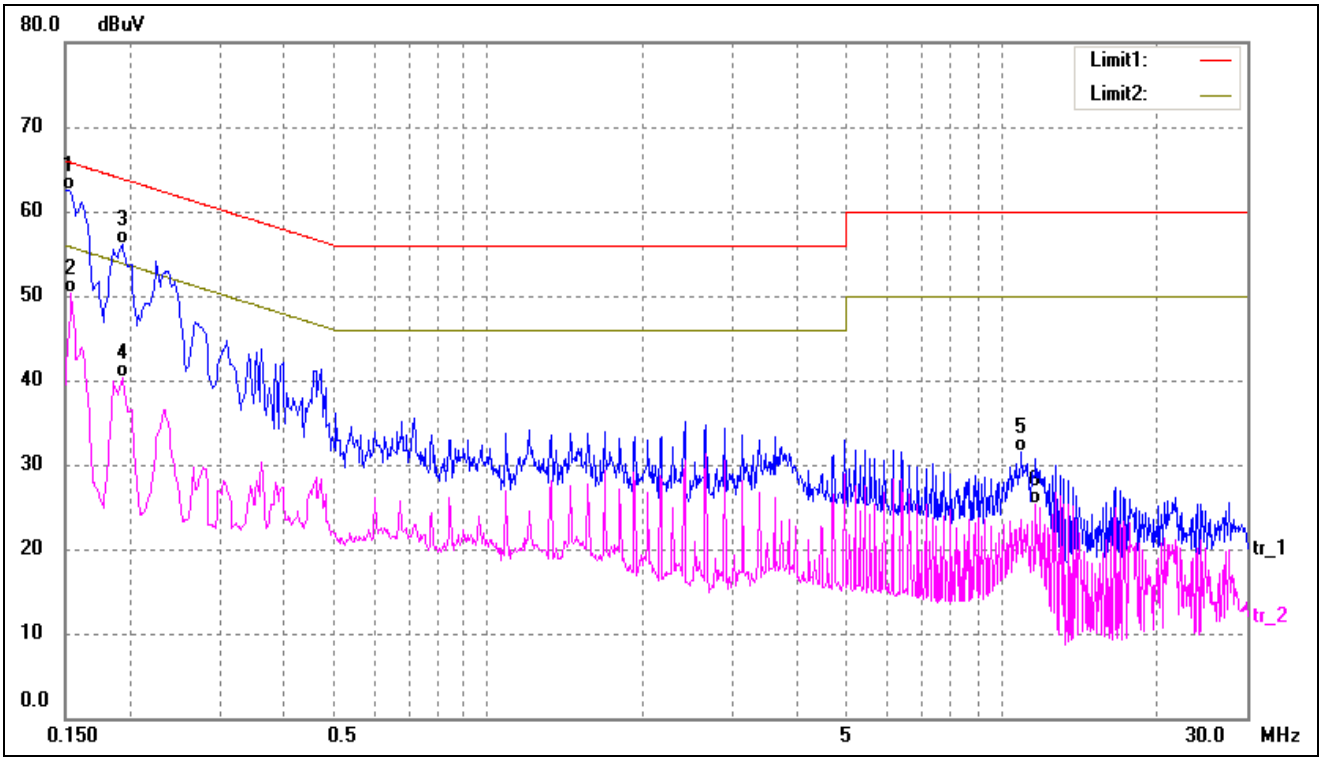
Start Frequency ..... 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

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:

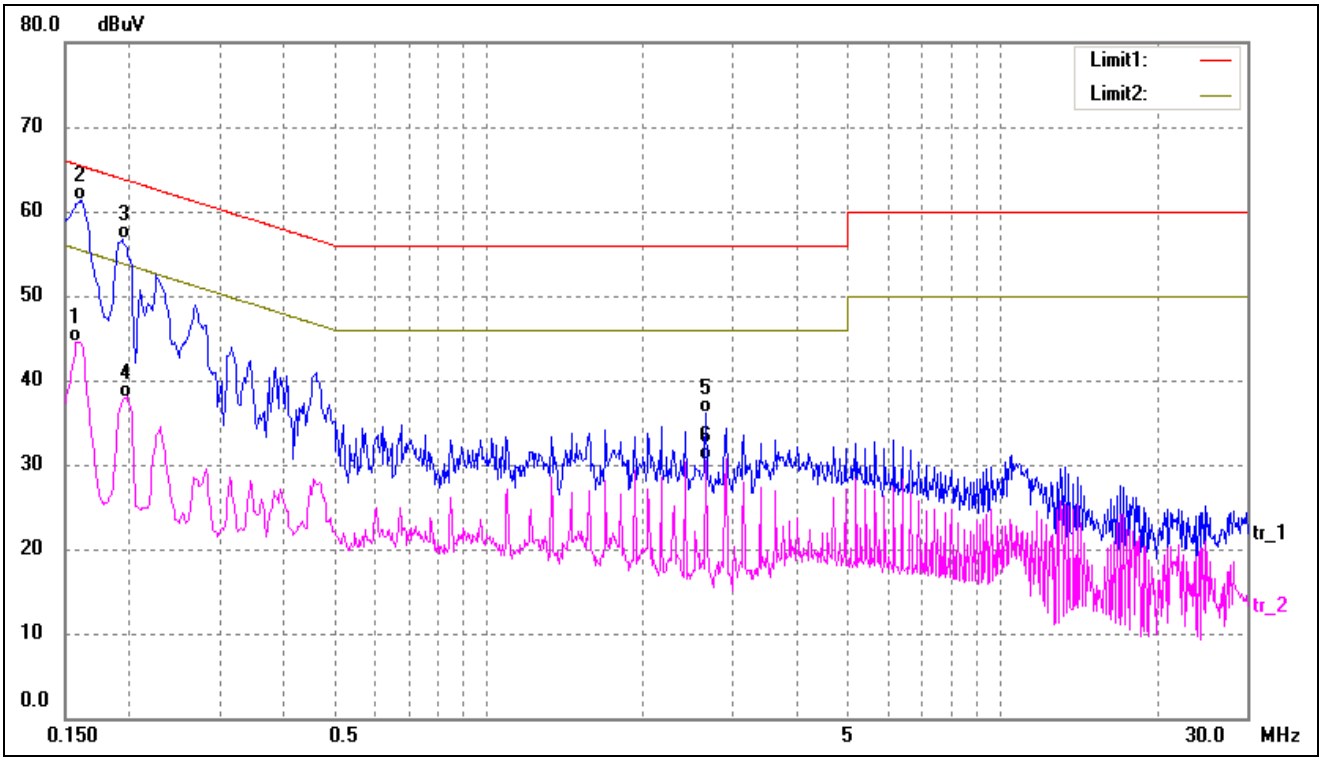
-3.45 dB at **0.1780 MHz** in the **Neutral**, **QP** detector, **TM2** detector, **0.15-30MHz**

Test mode:	TM1	Polarity:	Line



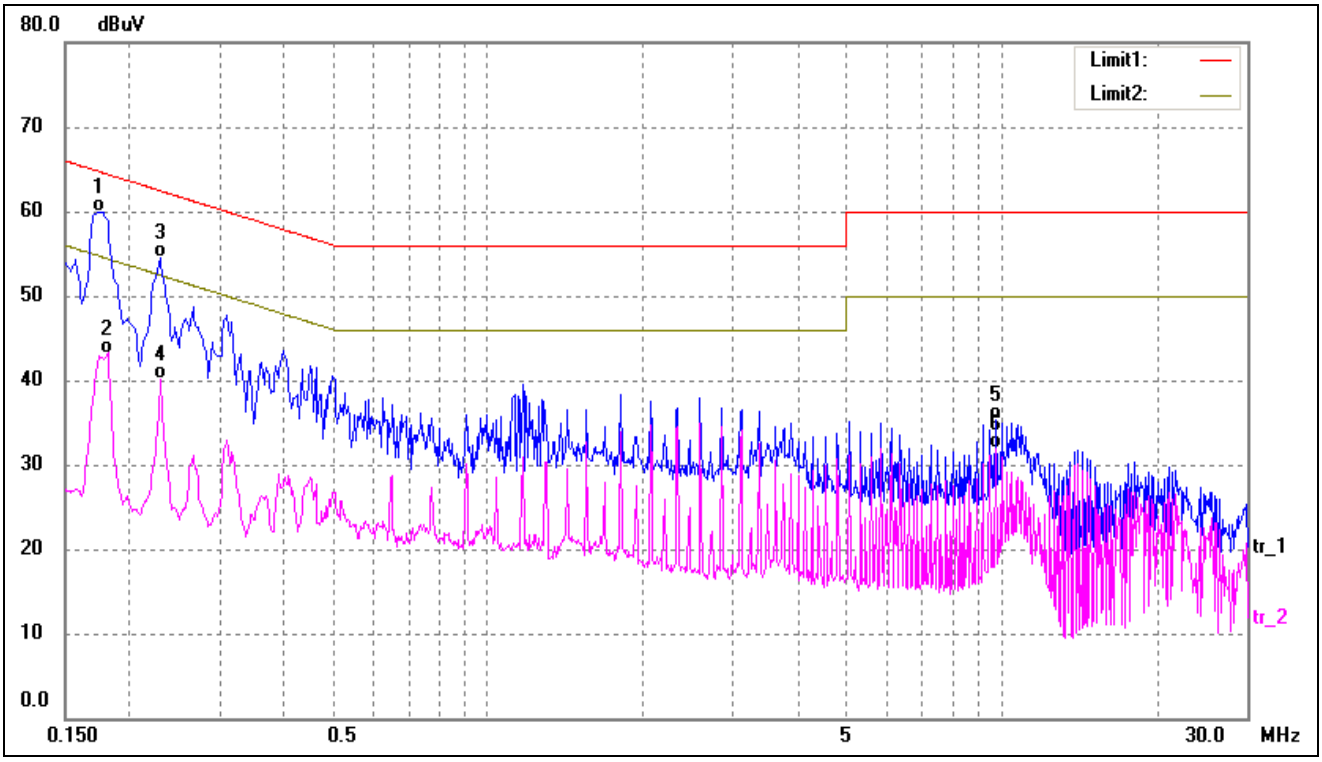
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1500	52.46	9.96	62.42	66.00	-3.58	QP
2	0.1540	40.42	9.95	50.37	55.78	-5.41	AVG
3	0.1940	46.13	9.97	56.10	63.86	-7.76	QP
4	0.1940	30.41	9.97	40.38	53.86	-13.48	AVG
5	10.9580	21.01	10.58	31.59	60.00	-28.41	QP
6	11.6820	14.63	10.59	25.22	50.00	-24.78	AVG

Test mode:	TM1	Polarity:	Neutral



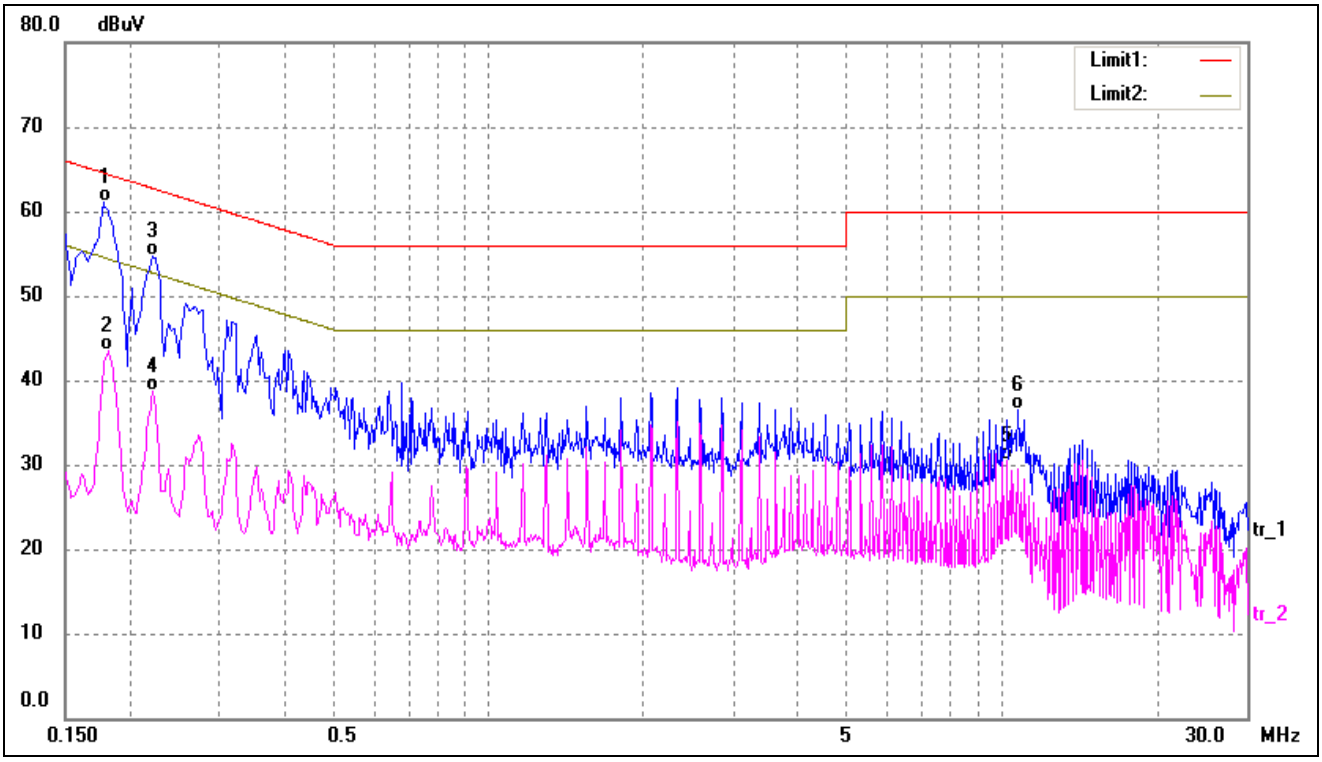
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1580	34.59	9.95	44.54	55.57	-11.03	AVG
2*	0.1620	51.32	9.95	61.27	65.36	-4.09	QP
3	0.1940	46.64	9.97	56.61	63.86	-7.25	QP
4	0.1980	28.03	9.97	38.00	53.69	-15.69	AVG
5	2.6580	25.68	10.37	36.05	56.00	-19.95	QP
6	2.6580	20.09	10.37	30.46	46.00	-15.54	AVG

Test mode:	TM2	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1740	49.96	9.95	59.91	64.77	-4.86	QP
2	0.1820	33.24	9.96	43.20	54.39	-11.19	AVG
3	0.2300	44.50	9.99	54.49	62.45	-7.96	QP
4	0.2300	30.10	9.99	40.09	52.45	-12.36	AVG
5	9.7180	24.72	10.56	35.28	60.00	-24.72	QP
6	9.7180	21.39	10.56	31.95	50.00	-18.05	AVG

Test mode:	TM2	Polarity:	Neutral

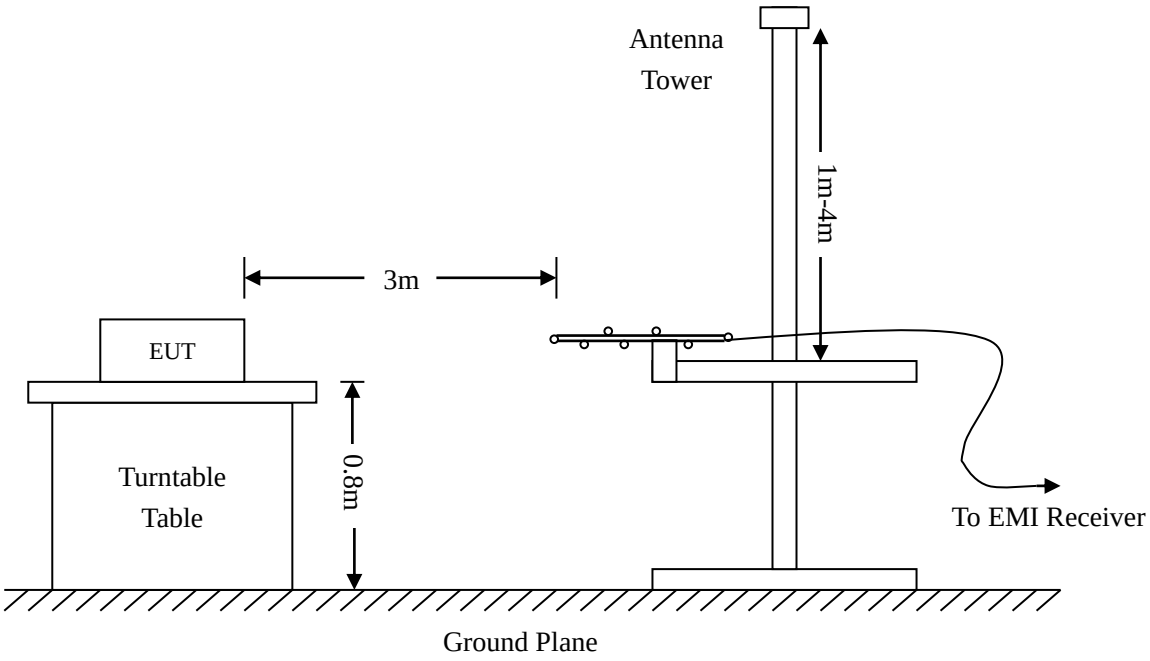


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1780	51.17	9.96	61.13	64.58	-3.45	QP
2	0.1820	33.59	9.96	43.55	54.39	-10.84	AVG
3	0.2220	44.71	9.99	54.70	62.74	-8.04	QP
4	0.2220	28.67	9.99	38.66	52.74	-14.08	AVG
5	10.2460	19.98	10.57	30.55	50.00	-19.45	AVG
6	10.7660	25.88	10.58	36.46	60.00	-23.54	QP

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	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 – Corr. Factor

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 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

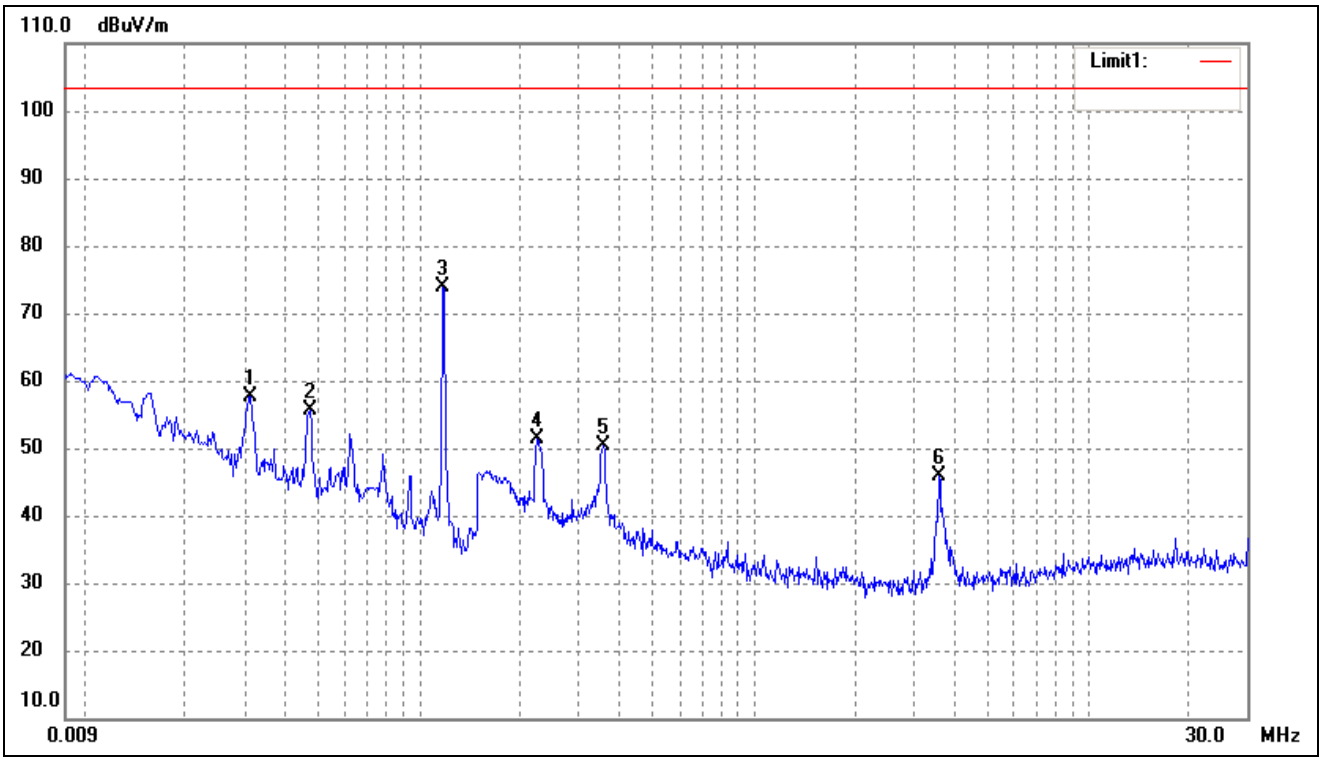
4.5 Summary of Test Results/Plots

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

-15.86 dB at **178.1326 MHz** in the **Horizontal** polarization, **TM2** mode, **3Meters**

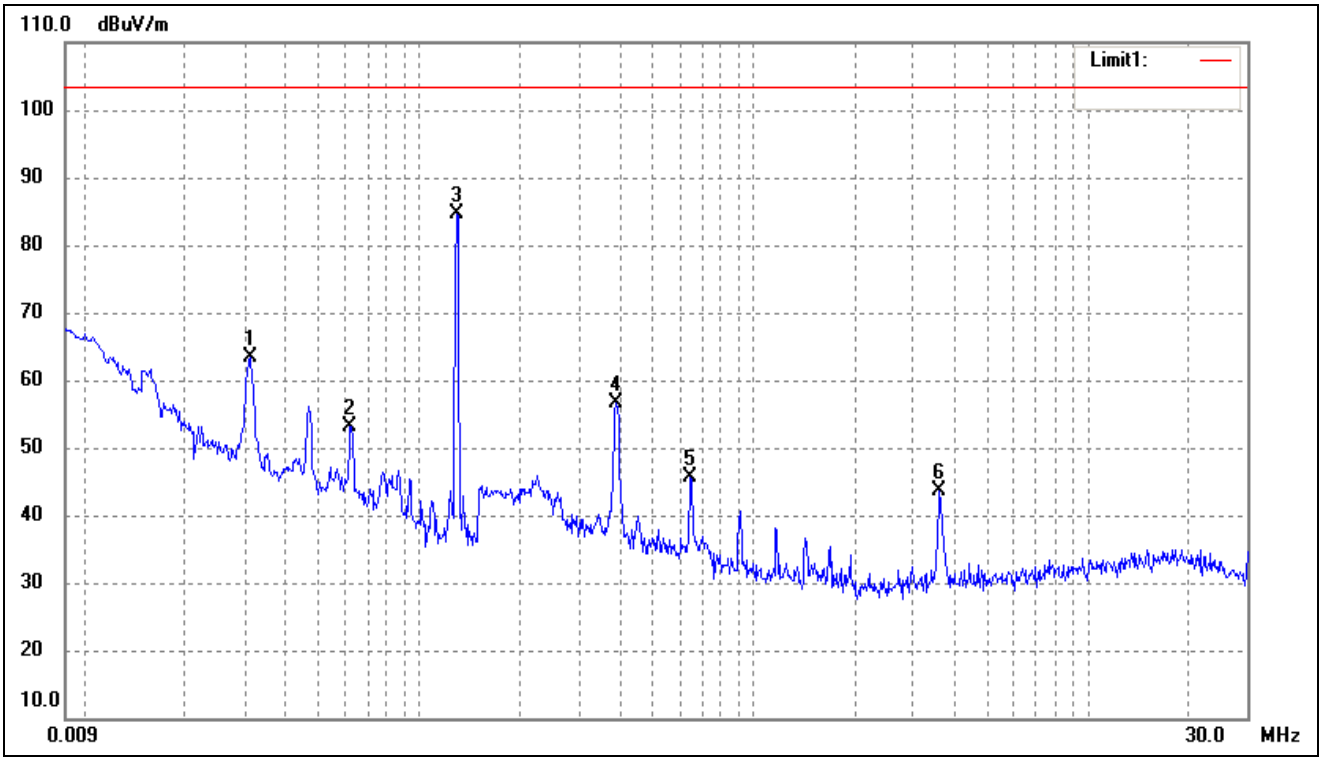
Plot of Radiated Emissions Test Data (Below 30MHz)

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	0.0314	62.79	-5.04	57.75	103.50	-45.75	351	100	peak
2	0.0471	59.88	-4.17	55.71	103.50	-47.79	96	100	peak
3	0.1180	78.83	-4.91	73.92	103.50	-29.58	87	100	peak
4	0.2255	56.80	-5.46	51.34	103.50	-52.16	111	100	peak
5	0.3558	56.41	-6.04	50.37	103.50	-53.13	195	100	peak
6	3.5842	53.41	-7.59	45.82	103.50	-57.68	323	100	peak

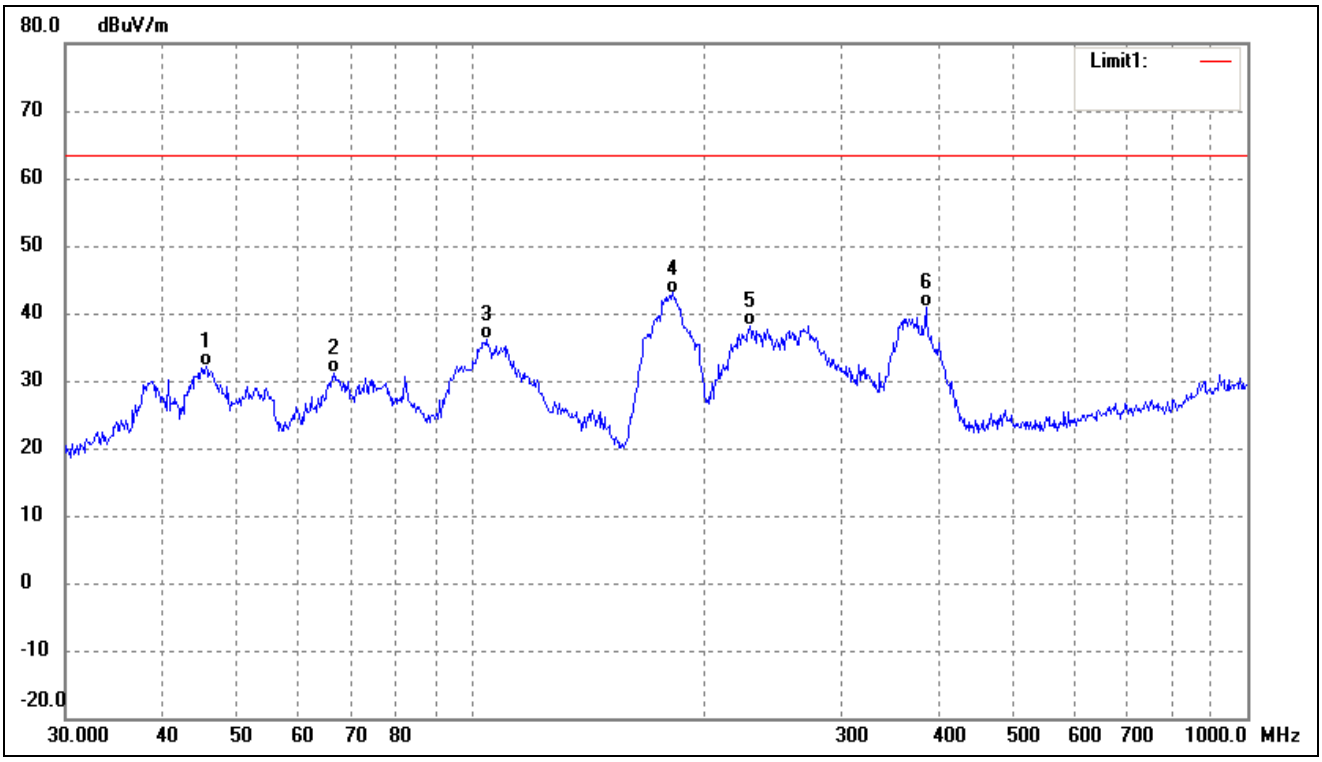
Test mode:	TM2	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0313	68.34	-5.05	63.29	103.50	-40.21	288	100	peak
2	0.0625	57.56	-4.48	53.08	103.50	-50.42	96	100	peak
3	0.1300	89.47	-4.81	84.66	103.50	-18.84	144	100	peak
4	0.3871	62.74	-6.20	56.54	103.50	-46.96	120	100	peak
5	0.6473	52.72	-7.06	45.66	103.50	-57.84	360	100	peak
6	3.5842	51.31	-7.59	43.72	103.50	-59.78	306	100	peak

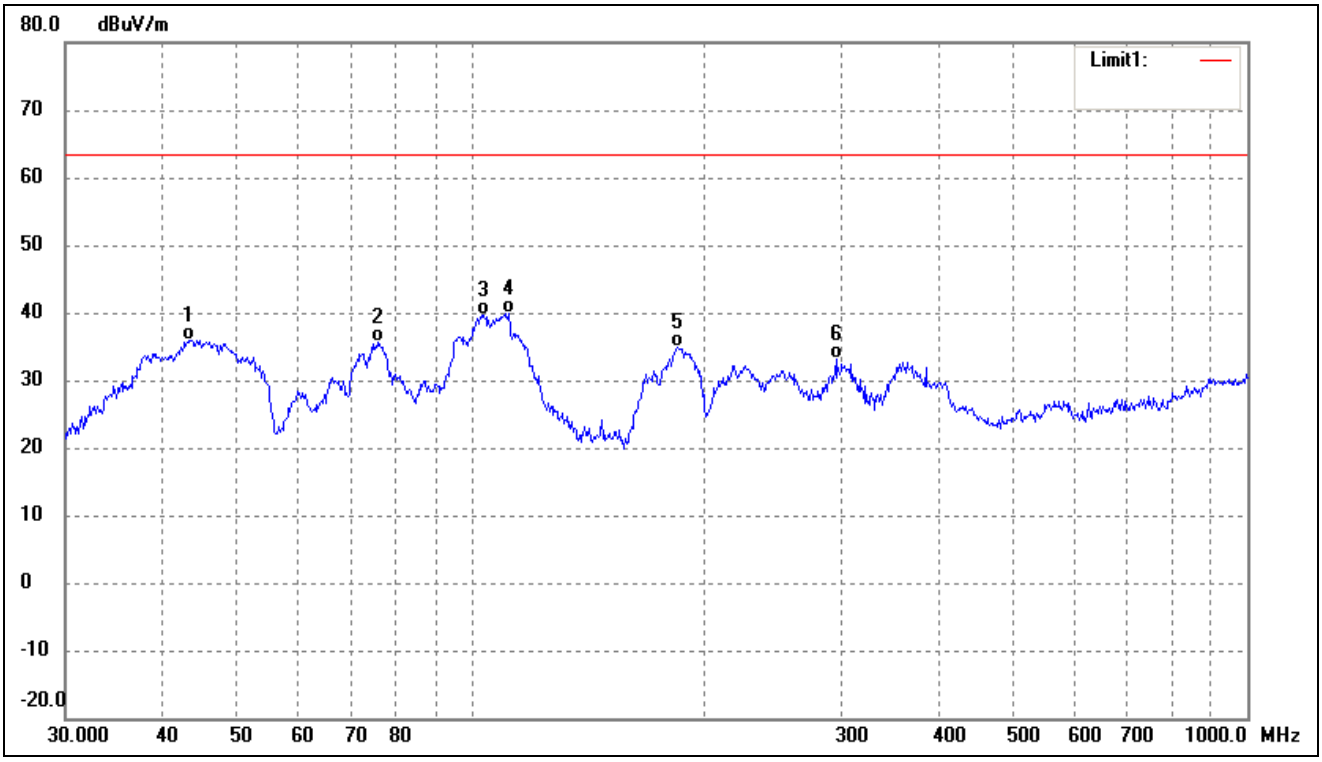
Plot of Radiated Emissions Test Data (Above 30MHz)

Test mode:	TM1	Polarity:	Horizontal



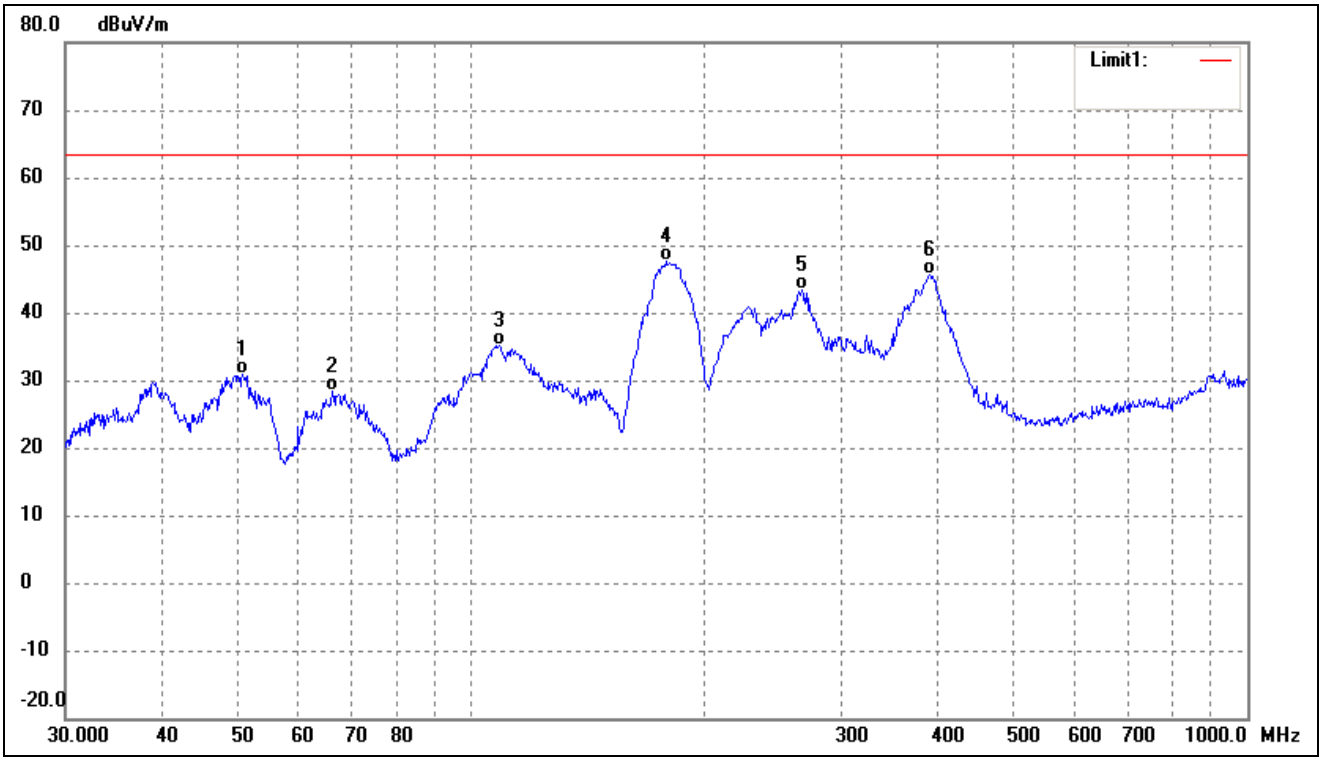
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	45.5347	46.14	-13.90	32.24	63.50	-31.26	269	100	QP
2	66.4989	47.38	-16.34	31.04	63.50	-32.46	96	100	QP
3	104.5361	50.91	-14.86	36.05	63.50	-27.45	143	100	QP
4	181.9201	57.57	-14.57	43.00	63.50	-20.50	127	100	QP
5	228.4903	50.06	-11.83	38.23	63.50	-25.27	284	100	QP
6	385.2805	48.72	-7.91	40.81	63.50	-22.69	145	100	QP

Test mode:	TM1	Polarity:	Vertical



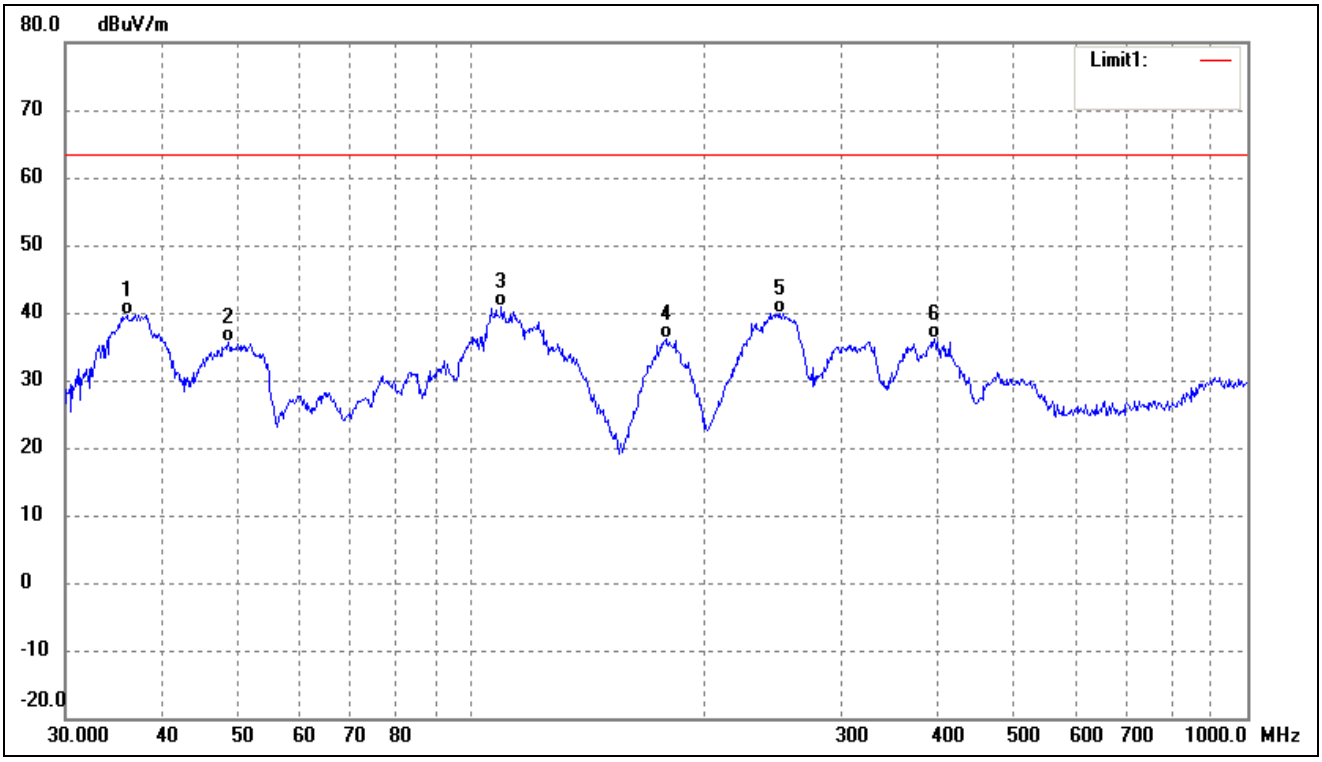
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	43.2017	50.00	-14.01	35.99	63.50	-27.51	91	100	QP
2	75.7113	53.93	-18.42	35.51	63.50	-27.99	182	100	QP
3	103.8054	54.40	-14.86	39.54	63.50	-23.96	62	100	QP
4	111.7379	54.74	-14.93	39.81	63.50	-23.69	133	100	QP
5	184.4898	49.24	-14.24	35.00	63.50	-28.50	117	100	QP
6	295.1469	41.35	-8.24	33.11	63.50	-30.39	184	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	50.7637	44.62	-13.85	30.77	63.50	-32.73	217	100	QP
2	66.2661	44.62	-16.32	28.30	63.50	-35.20	278	100	QP
3	108.6470	49.83	-14.80	35.03	63.50	-28.47	71	100	QP
4	178.1326	62.63	-14.99	47.64	63.50	-15.86	164	100	QP
5	266.6089	53.62	-10.16	43.46	63.50	-20.04	93	100	QP
6	389.3548	53.45	-7.90	45.55	63.50	-17.95	258	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	36.0007	55.41	-15.70	39.71	63.50	-23.79	81	100	QP
2	48.6719	49.27	-13.71	35.56	63.50	-27.94	181	100	QP
3	109.4116	55.77	-14.78	40.99	63.50	-22.51	61	100	QP
4	178.1326	51.23	-14.99	36.24	63.50	-27.26	92	100	QP
5	249.4250	50.46	-10.54	39.92	63.50	-23.58	278	100	QP
6	394.8544	43.95	-7.88	36.07	63.50	-27.43	311	100	QP

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