FCC Part 15B
Measurement and Test Report

For

K-Mark Industrial Limited.

Flat A, 7/F., Mai On Ind. Bldg, 17-21 Kung Yip St., Kwai Chung, Hong Kong

FCC ID: VEP-EGC02A

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	FRED EICHLER PREDATOR CALL
Tested Model:	WRC-EGC-DS
Report No.:	WTX19X07048662W
Sample Receipt Date:	2019-07-18
Tested Date:	2019-07-18 to 2019-08-22
Issued Date:	2019-08-22
Tested By:	Mike Shi / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

Shenzhen SEM Test Technology Co., Ltd.
1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,
Bao'an District, Shenzhen, P.R.C.（518101）
Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

TABLE OF CONTENTS

Report version

Version No.	Date of issue	Description
Rev.00	2019-08-22	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	K-Mark Industrial Limited.
Address of applicant:	Flat A, 7/F., Mai On Ind. Bldg, 17-21 Kung Yip St., Kwai Chung, Hong Kong
Manufacturer:	NEW JIN DIAN TECHNOLOGY (SHENZHEN) COMPANY LIMITED.
Address of manufacturer:	Building 1/3 NO 43 Jinshi Road, Guangpei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong Province, China

General Description of EUT	
Product Name:	FRED EICHLER PREDATOR CALL
Trade Name:	/
Model No.:	WRC-EGC-DS
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	Battery: DC1.5V*8
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	30MHz
Highest Internal Frequency:	433.92 MHz
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:

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. 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	Normal Playing	Power supply by Battery	DC1.5V*8
TM2	Downloading	Connect to Computer	AC120V 60Hz for PC

EUT Cable List and Details

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

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E445	EB12648265

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.9	Shielded	Without Ferrite

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

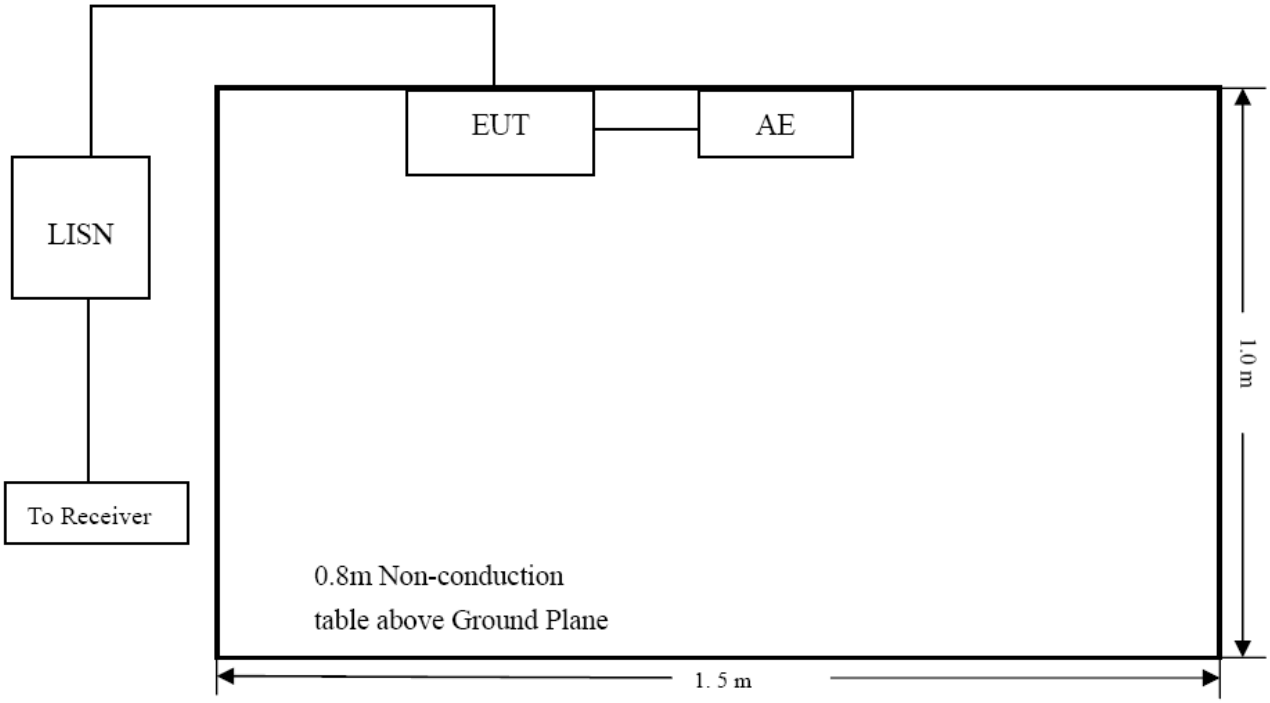
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

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:	23.5 °C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

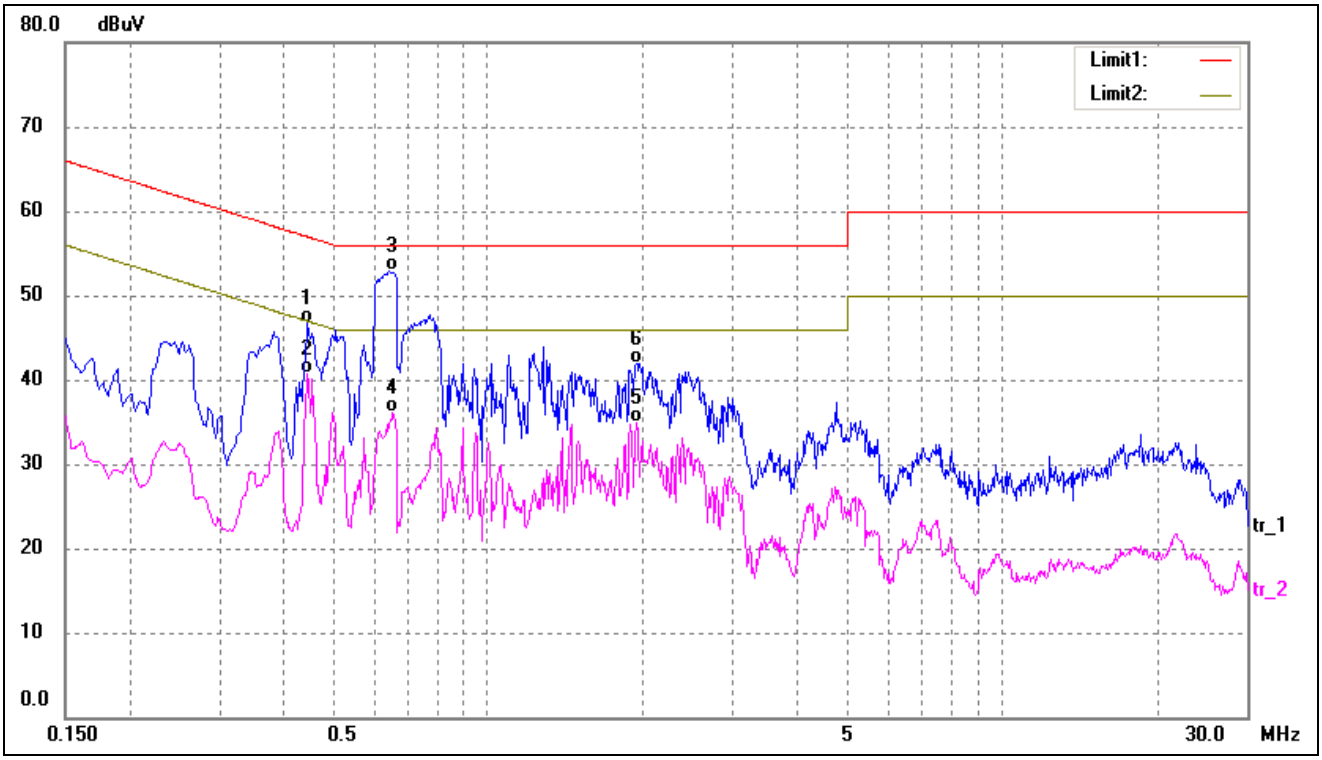
3.4 Summary of Test Results/Plots

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:

-3.14 dB at **0.6420 MHz** in the **Line**, **QP** detector, **TM2** mode, 0.15-30 MHz

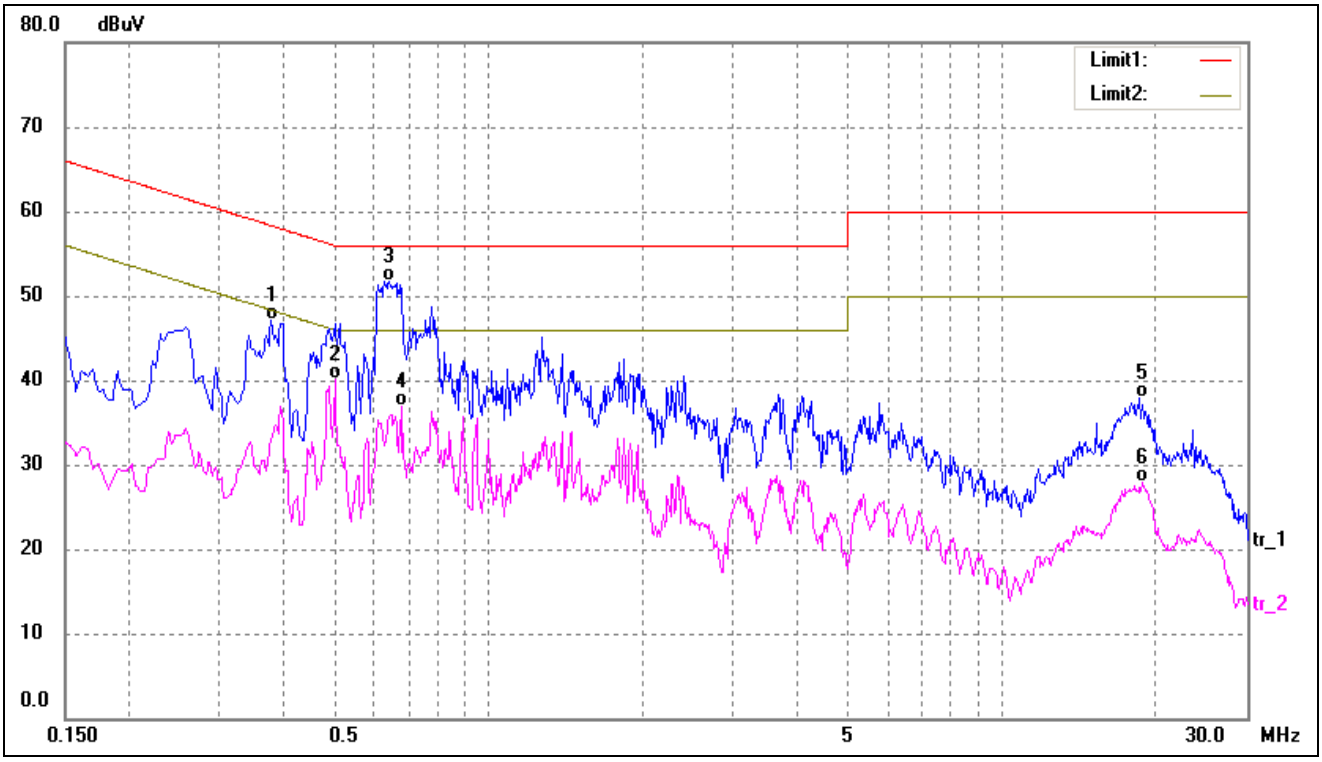
3.5 Conducted Emissions Test Data

Test mode:	TM2	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.4460	36.34	10.27	46.61	56.95	-10.34	QP
2	0.4460	30.36	10.27	40.63	46.95	-6.32	AVG
3*	0.6420	42.50	10.36	52.86	56.00	-3.14	QP
4	0.6540	25.67	10.36	36.03	46.00	-9.97	AVG
5	1.9460	24.29	10.60	34.89	46.00	-11.11	AVG
6	1.9500	31.36	10.60	41.96	56.00	-14.04	QP

Test mode:	TM2	Polarity:	Neutral

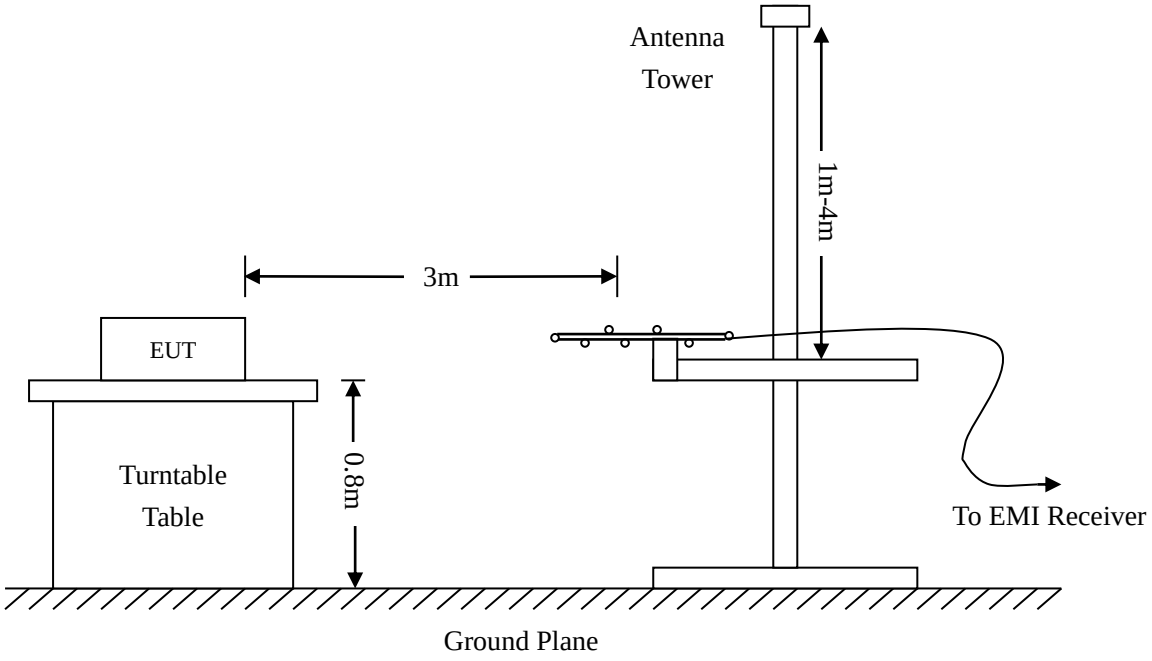


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.3780	36.91	10.24	47.15	58.32	-11.17	QP
2	0.5020	29.82	10.29	40.11	46.00	-5.89	AVG
3*	0.6420	41.35	10.36	51.71	56.00	-4.29	QP
4	0.6820	26.58	10.38	36.96	46.00	-9.04	AVG
5	18.5820	26.75	11.13	37.88	60.00	-22.12	QP
6	18.7460	16.87	11.13	28.00	50.00	-22.00	AVG

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:	25 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

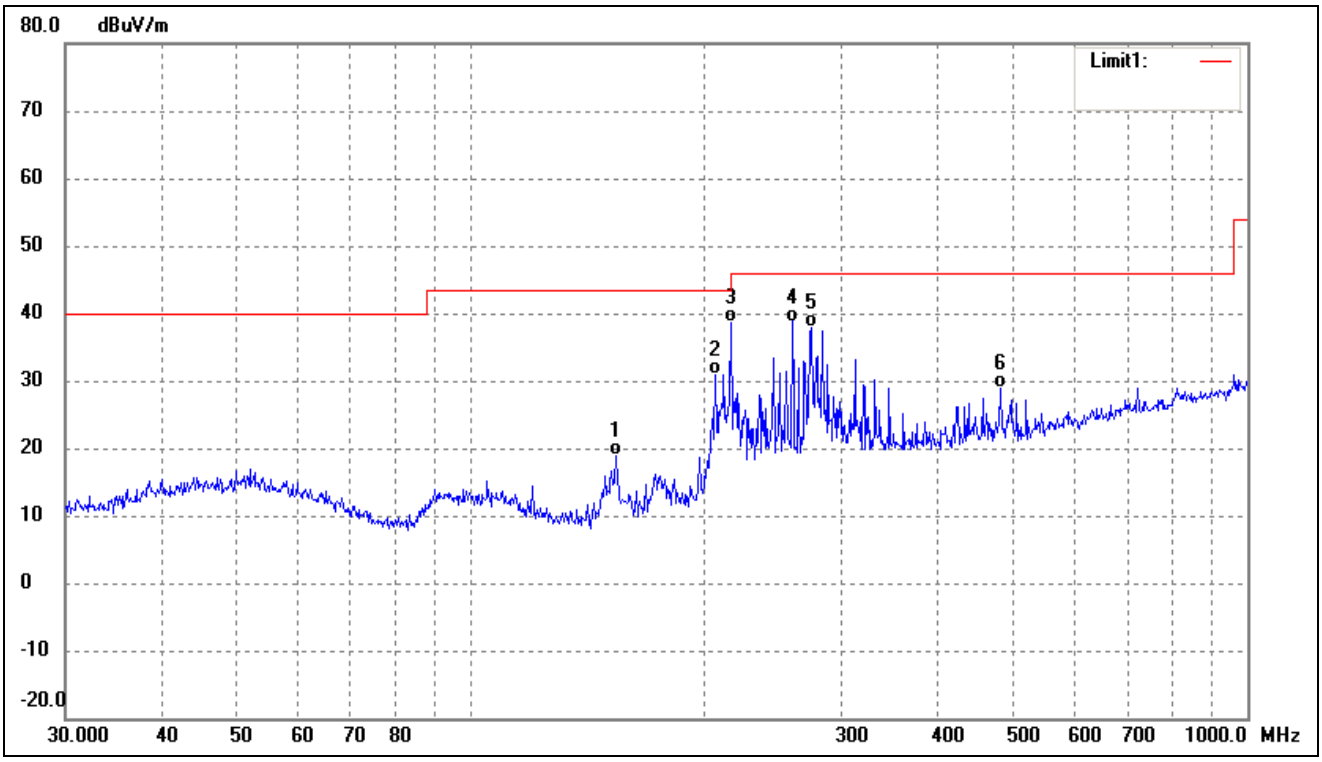
4.5 Summary of Test Results/Plots

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

-5.87 dB at **260.1444 MHz** in the **Horizontal** polarization, **TM2** mode, **30 MHz** to **1 GHz**, **3 Meters**

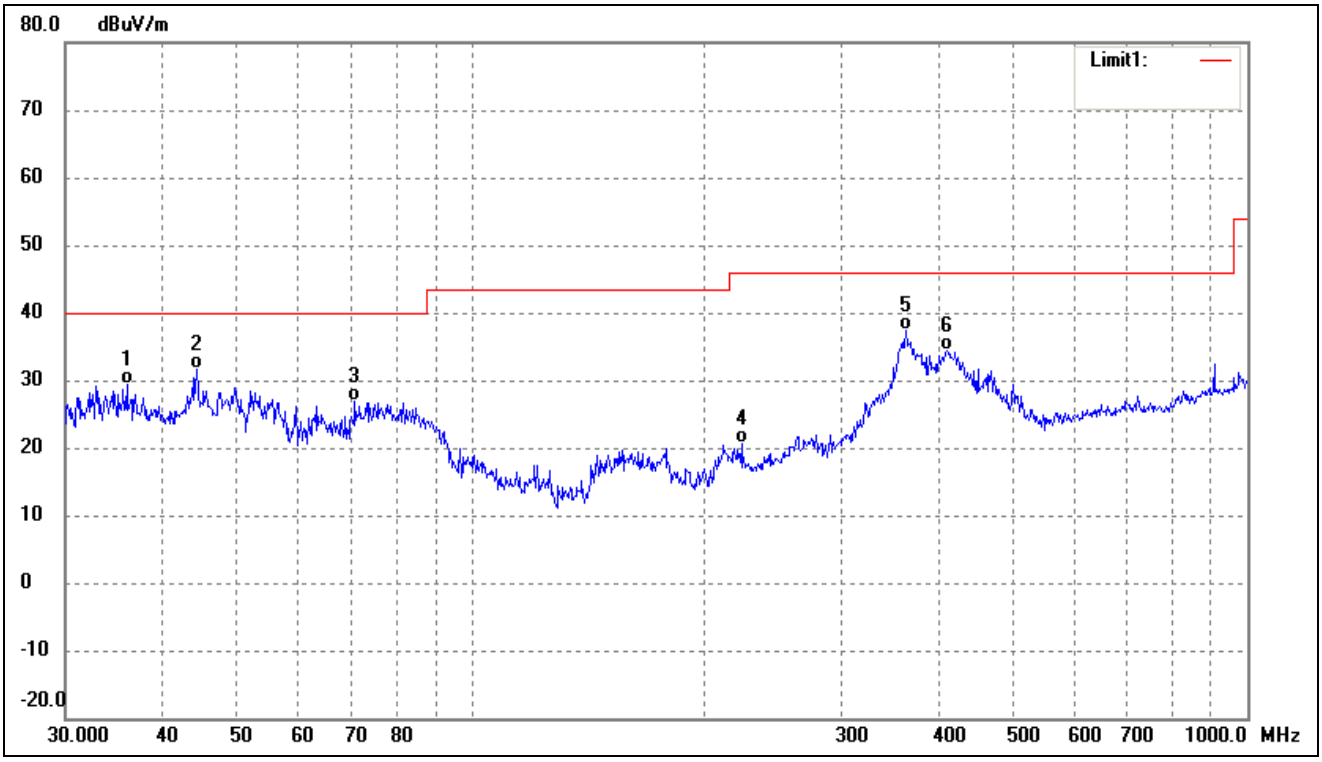
➢ Below 1GHz

Test mode:	TM1	Polarity:	Horizontal



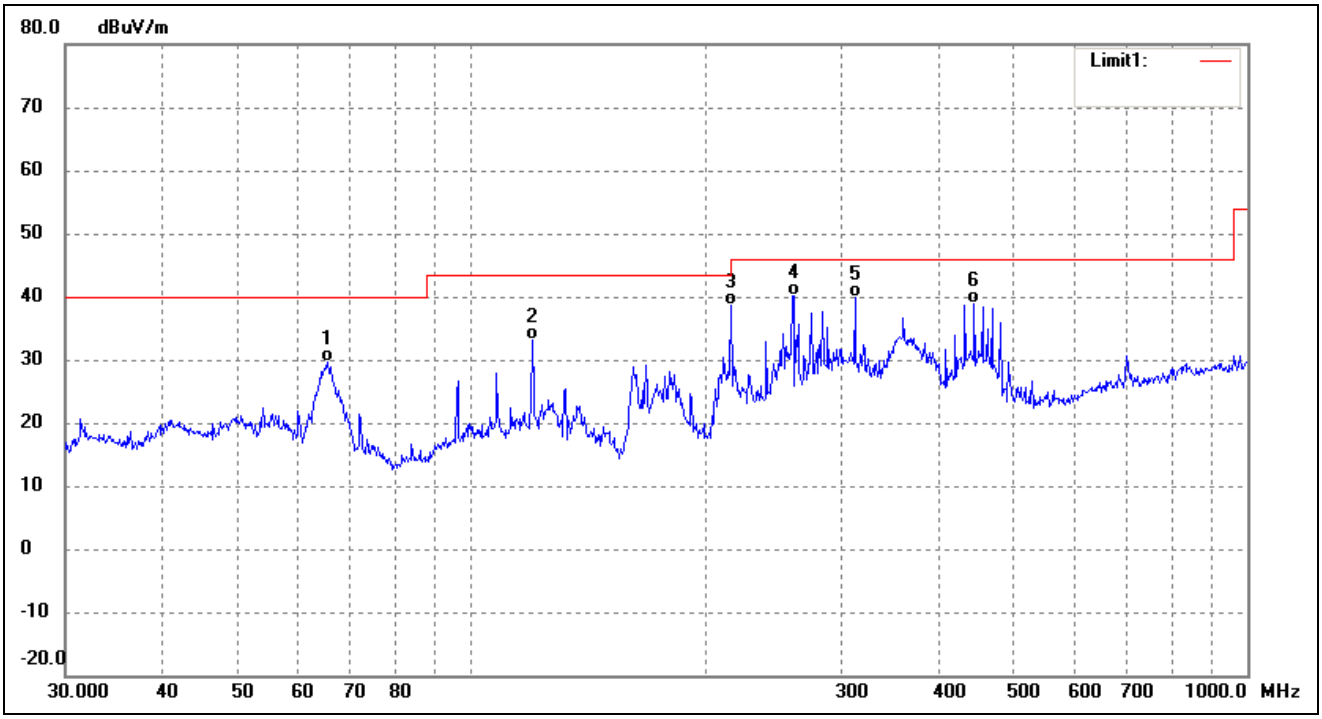
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	153.7385	35.84	-17.00	18.84	43.50	-24.66	197	100	QP
2	206.3976	43.99	-13.07	30.92	43.50	-12.58	344	100	QP
3	216.0240	51.21	-12.65	38.56	46.00	-7.44	81	100	QP
4	259.2338	48.13	-9.38	38.75	46.00	-7.25	184	100	QP
5	274.1939	46.93	-9.00	37.93	46.00	-8.07	178	100	QP
6	480.5276	34.68	-5.77	28.91	46.00	-17.09	181	100	QP

Test mode:	TM1	Polarity:	Vertical



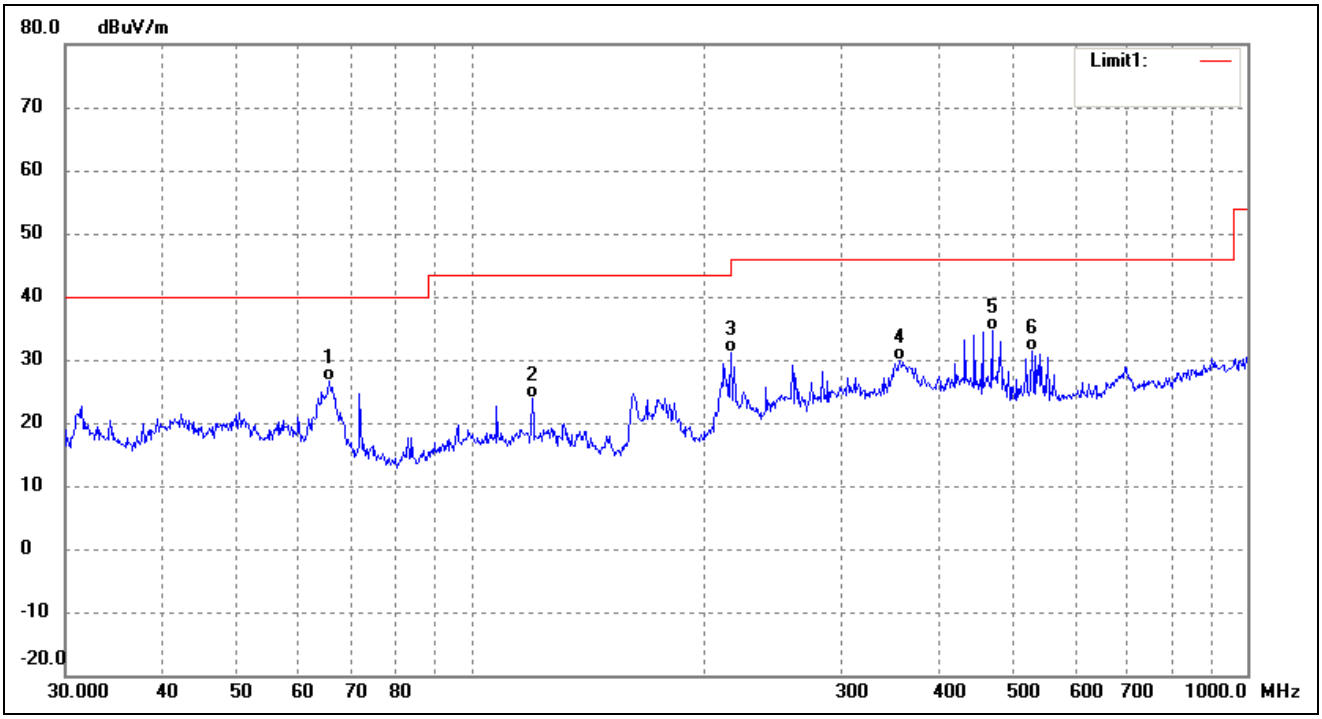
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	36.0007	43.37	-14.10	29.27	40.00	-10.73	322	100	QP
2	44.2752	43.68	-12.01	31.67	40.00	-8.33	98	100	QP
3	70.8315	43.01	-16.03	26.98	40.00	-13.02	254	100	QP
4	222.9502	32.59	-11.94	20.65	46.00	-25.35	101	100	QP
5	362.9844	44.62	-7.23	37.39	46.00	-8.61	348	100	QP
6	410.3825	40.89	-6.48	34.41	46.00	-11.59	211	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	65.3432	45.70	-16.18	29.52	40.00	-10.48	235	100	QP
2	119.8556	48.69	-15.61	33.08	43.50	-10.42	125	100	QP
3	216.0240	50.86	-12.27	38.59	46.00	-7.41	59	100	QP
4	260.1444	50.41	-10.28	40.13	46.00	-5.87	232	100	QP
5	312.1794	47.91	-8.15	39.76	46.00	-6.24	356	100	QP
6	444.8514	47.15	-8.17	38.98	46.00	-7.02	184	100	QP

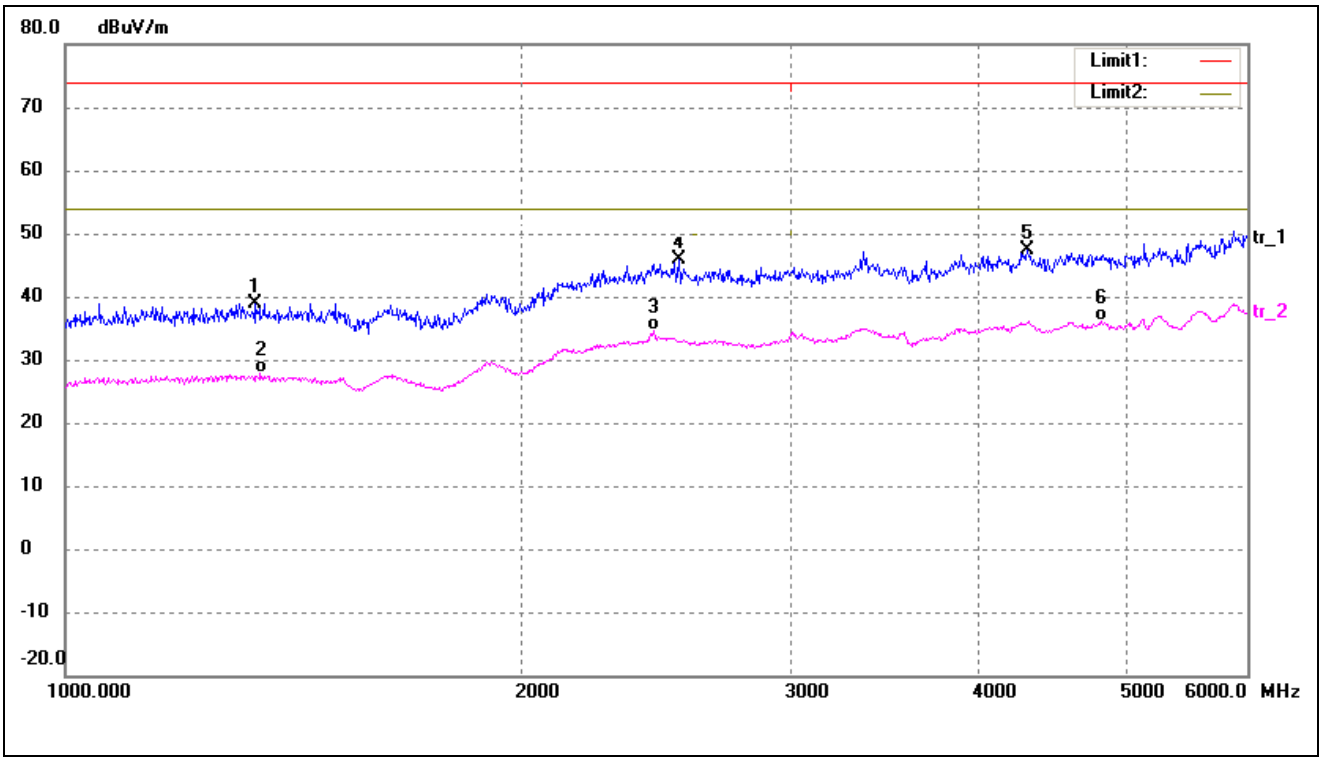
Test mode:	TM2	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	65.5727	42.74	-16.21	26.53	40.00	-13.47	241	100	QP
2	119.8556	39.44	-15.61	23.83	43.50	-19.67	99	100	QP
3	216.0240	43.40	-12.27	31.13	46.00	-14.87	147	100	QP
4	356.6758	37.54	-7.69	29.85	46.00	-16.15	93	100	QP
5	468.8762	42.65	-8.12	34.53	46.00	-11.47	151	100	QP
6	528.2458	39.44	-7.96	31.48	46.00	-14.52	303	100	QP

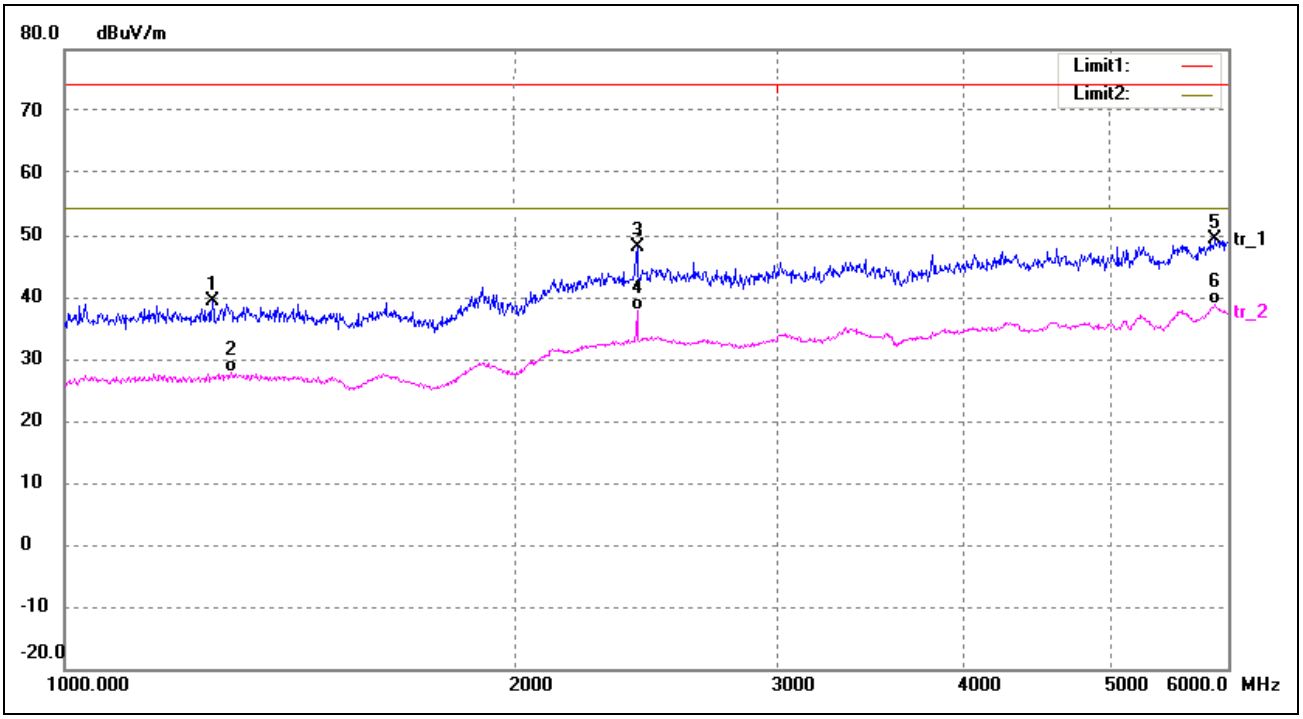
➢ Above 1GHz

Test mode:	TM1(worst case)	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	1334.389	52.56	-13.63	38.93	74	-35.07	110	100	peak
2	1343.987	41.58	-13.61	27.97	54	-26.03	140	100	AVG
3	2440.728	41.55	-7.01	34.54	54	-19.46	56	100	AVG
4	2534.314	52.51	-6.62	45.89	74	-28.11	135	100	peak
5	4299.472	51.56	-4.25	47.31	74	-26.69	186	100	peak
6	4804.636	39.58	-3.53	36.05	54	-17.95	266	100	AVG

Test mode:	TM1(worst case)	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	1255.524	53.30	-13.83	39.47	74	-34.53	73	100	peak
2	1292.039	41.64	-13.75	27.89	54	-26.11	140	100	AVG
3	2414.629	55.20	-7.18	48.02	74	-25.98	110	100	peak
4	2414.629	45.07	-7.18	37.89	54	-16.11	92	100	AVG
5	5882.902	50.52	-1.12	49.4	74	-24.6	173	100	peak
6	5882.902	39.90	-1.12	38.78	54	-15.22	320	100	AVG