TEST REPORT

Reference No.	:	WTN24X09222286W001
FCC ID	:	2BLDD-P00-99
Applicant	:	CROCBIRD INNOVATION
Address	:	69 TREMAINE DR., KITCHENER,ON, N2A 4L7,CANADA
Manufacturer	:	CROCBIRD INNOVATION(Hangzhou)CO., LTD
Address	:	Room 5689, 5th Floor, 159 Longzhang Road, Xihu District, Hangzhou, Zhejiang,Province, China
Product Name	:	CrocBird linear motion toothbrush
Model No.	:	P80
Standards	:	**47 CFR FCC Part 18**
Date of Receipt sample	:	2024-09-23
Date of Test	:	2024-09-23 to 2024-10-18
Date of Issue	:	2024-10-18
Test Report Form No.	:	WTX_FCC Part 18_001
Test Result	:	**Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

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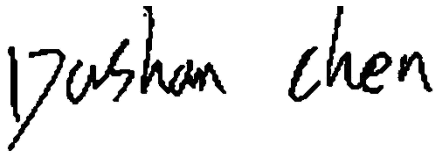
Tested by:



Dashan Chen

Approved by:

Jason Su

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Report version

Version No.	Date of issue	Description
Rev.00	2024-10-18	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	CrocBird linear motion toothbrush
Trade Name:	Crocbird
Model No.:	P80
Adding Model(s):	PXX, x=0~9
Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model P80, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	110kHz
Modulation Type:	/
Antenna Type:	Coil Antenna
Input:	DC5V 0.5A
Wireless output:	1W
Note The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

The tests were performed according to following standards:
47 CFR FCC Part 18: Industrial, Scientific, and medical medical equipment.
MP5-1986:FCC METHODS OF MESUREMENTS OF RADIO NOISE EMISSIONS FROM INDUSTRIAL,SCIENTIFIC,AND MEDICAL EQUIPMENT.

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 and FCC MP-5:1986, 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

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 mai ntained 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	Output 1W	Input 5V-0.5A

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
Adapter	Xiaomi	MDY-08-ES	/
linear motion toothbrush	CROCBIR	P80	

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.0	Shielded	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	Rohde & Schwarz	FSP	836079/035	2024-02-24	2025-02-23
EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
Amplifier	HP	8447F	2805A03475	2024-02-24	2025-02-23
Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25
Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
Amplifier	Agilent	8447D	2944A10457	2024-02-24	2025-02-23
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2024-02-24	2025-02-23

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*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

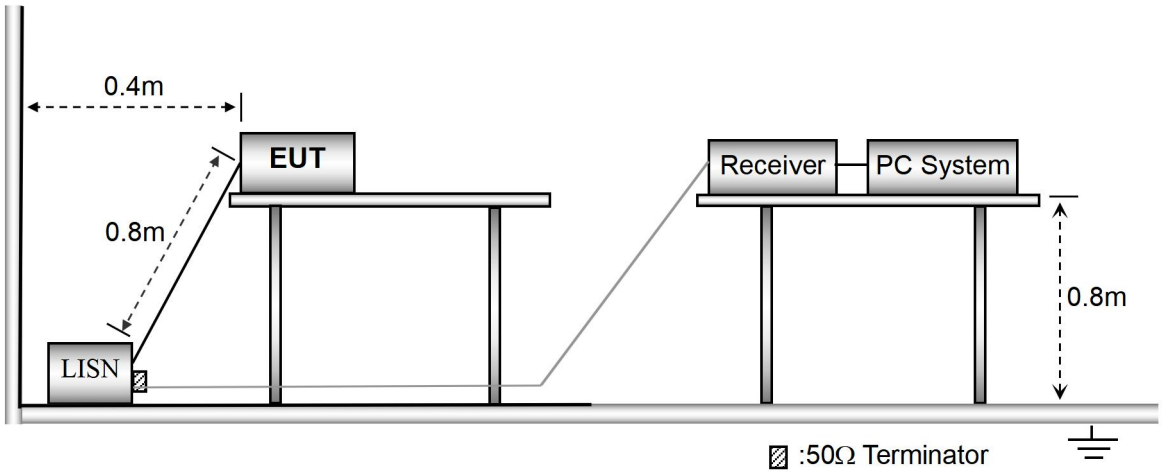
According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

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

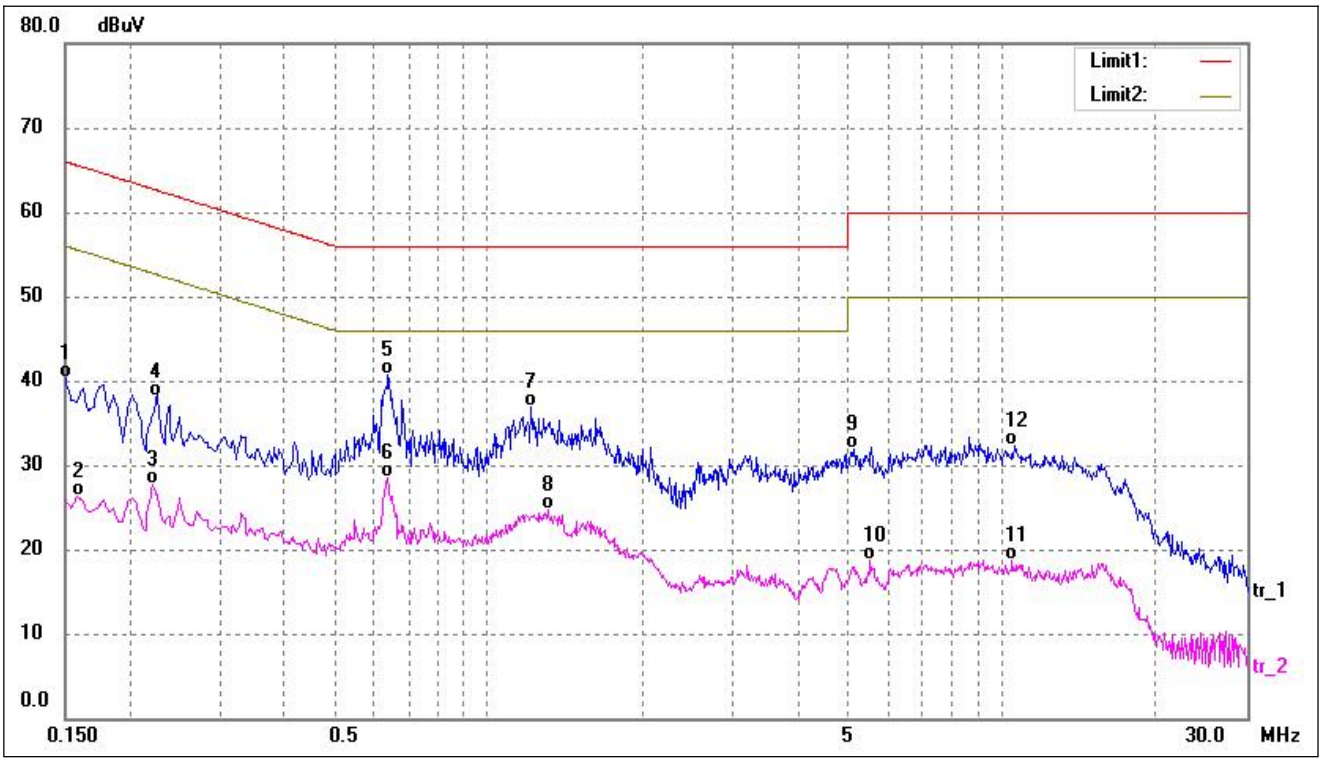
3.5 Test Receiver Setup

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

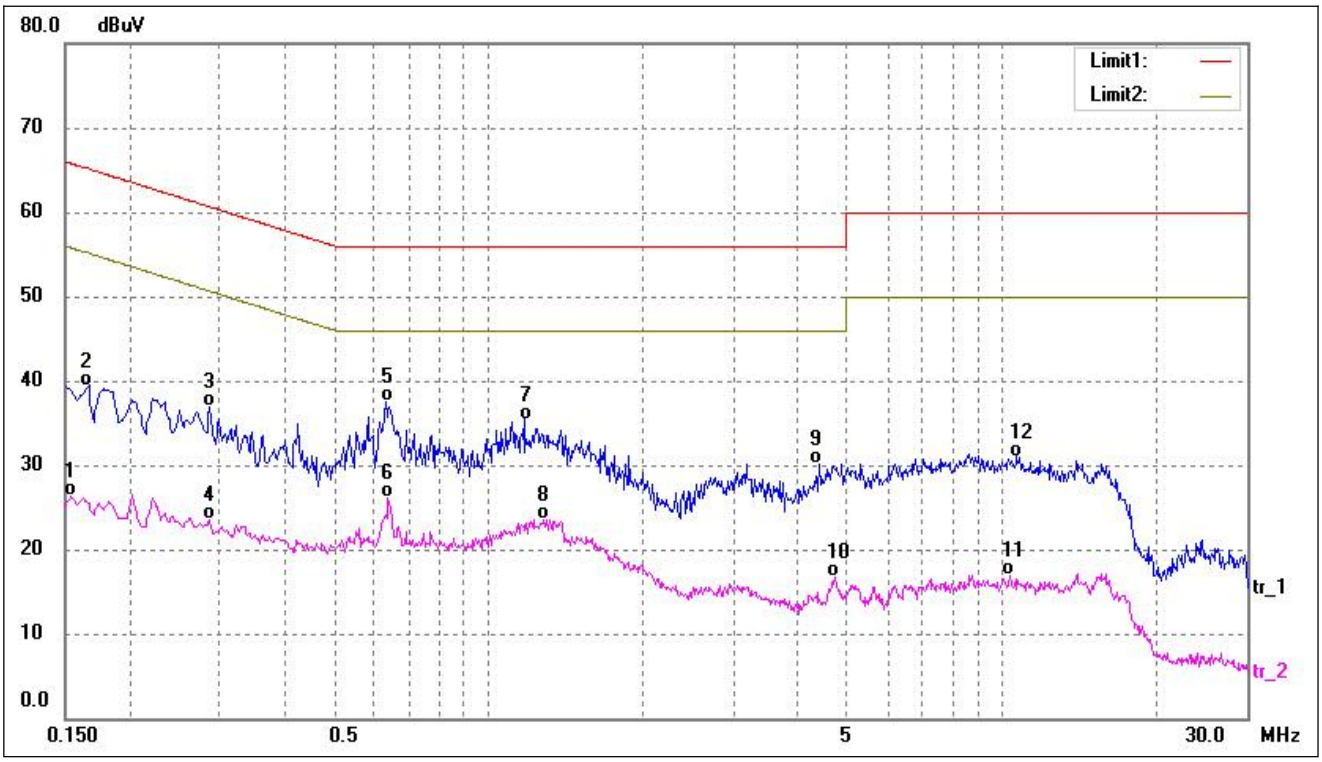
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	30.47	9.76	40.23	65.99	-25.76	QP
2	0.1580	16.59	9.73	26.32	55.56	-29.24	AVG
3	0.2220	18.20	9.59	27.79	52.74	-24.95	AVG
4	0.2260	28.61	9.59	38.20	62.59	-24.39	QP
5*	0.6380	31.08	9.70	40.78	56.00	-15.22	QP
6	0.6380	18.78	9.70	28.48	46.00	-17.52	AVG
7	1.2100	27.23	9.66	36.89	56.00	-19.11	QP
8	1.3060	15.10	9.65	24.75	46.00	-21.25	AVG
9	5.1500	22.18	9.71	31.89	60.00	-28.11	QP
10	5.5580	8.92	9.74	18.66	50.00	-31.34	AVG
11	10.4819	8.79	9.88	18.67	50.00	-31.33	AVG
12	10.5980	22.41	9.88	32.29	60.00	-27.71	QP

Test mode:	TM1	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1539	16.51	9.75	26.26	55.78	-29.52	AVG
2	0.1660	29.70	9.70	39.40	65.15	-25.75	QP
3	0.2860	27.18	9.63	36.81	60.64	-23.83	QP
4	0.2860	13.82	9.63	23.45	50.64	-27.19	AVG
5*	0.6300	27.81	9.70	37.51	56.00	-18.49	QP
6	0.6380	16.34	9.70	26.04	46.00	-19.96	AVG
7	1.1780	25.74	9.66	35.40	56.00	-20.60	QP
8	1.2860	13.89	9.66	23.55	46.00	-22.45	AVG
9	4.4300	20.45	9.68	30.13	56.00	-25.87	QP
10	4.7460	6.96	9.70	16.66	46.00	-29.34	AVG
11	10.3700	7.06	9.88	16.94	50.00	-33.06	AVG
12	10.8139	21.06	9.88	30.94	60.00	-29.06	QP

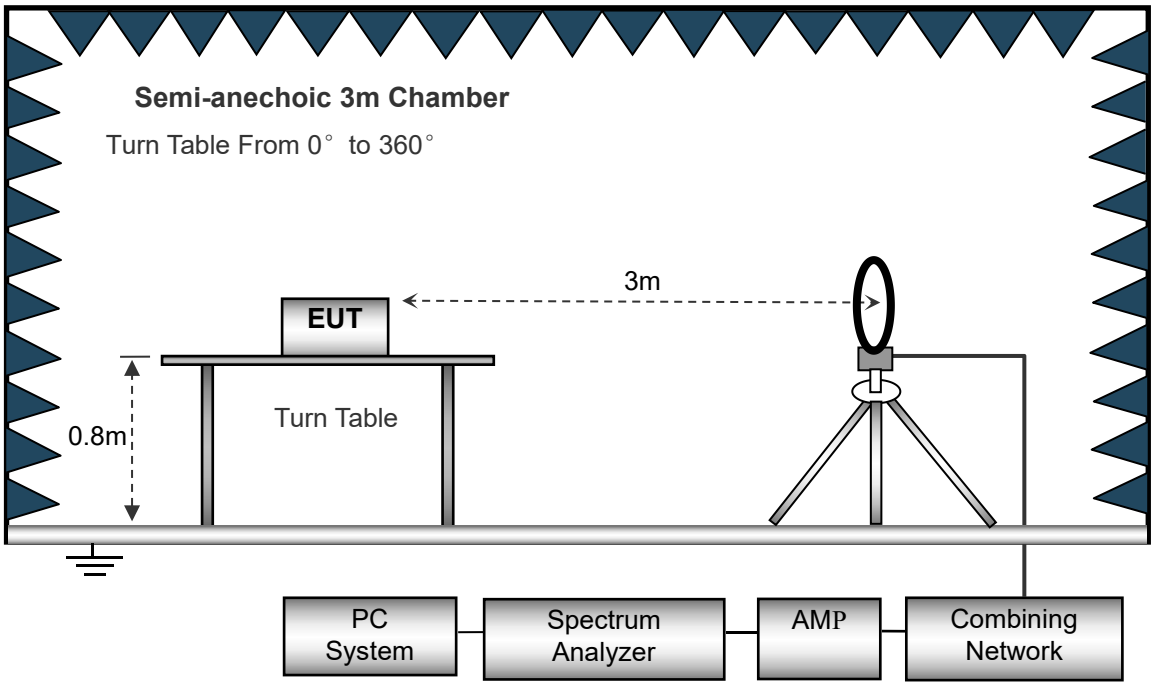
4. Radiated Emissions

4.1 Test Procedure

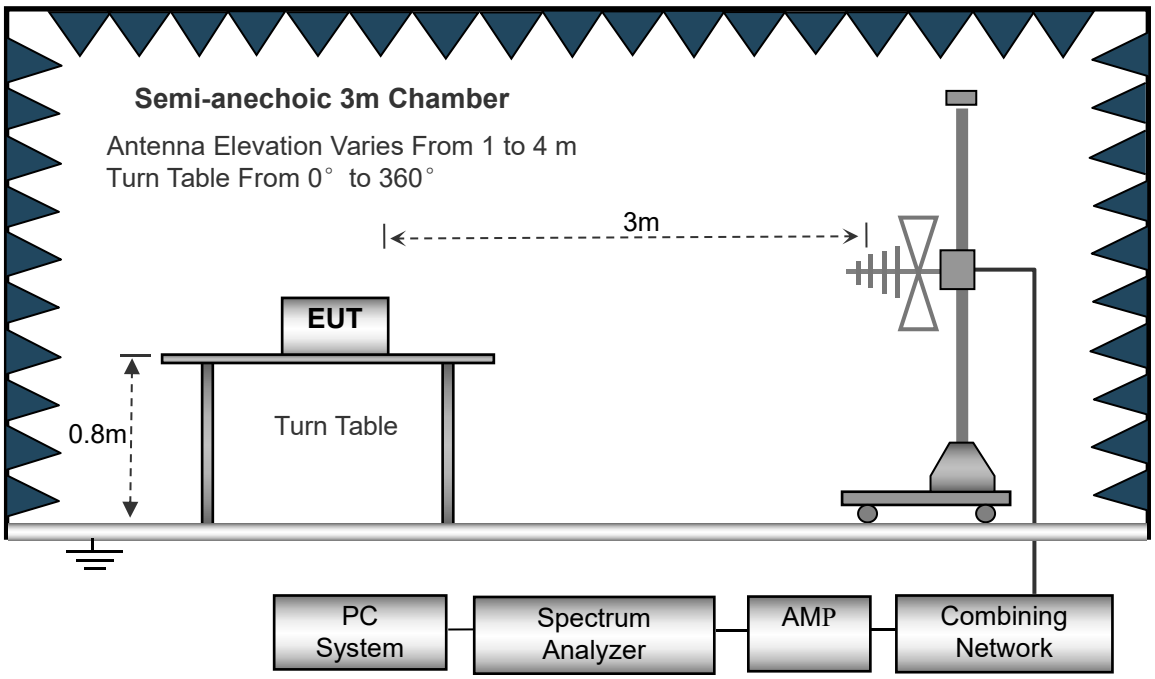
The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

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.

The test setup for emission measurement below 30MHz..



The test setup for emission measurement from 30 MHz to 1 GHz..



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

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

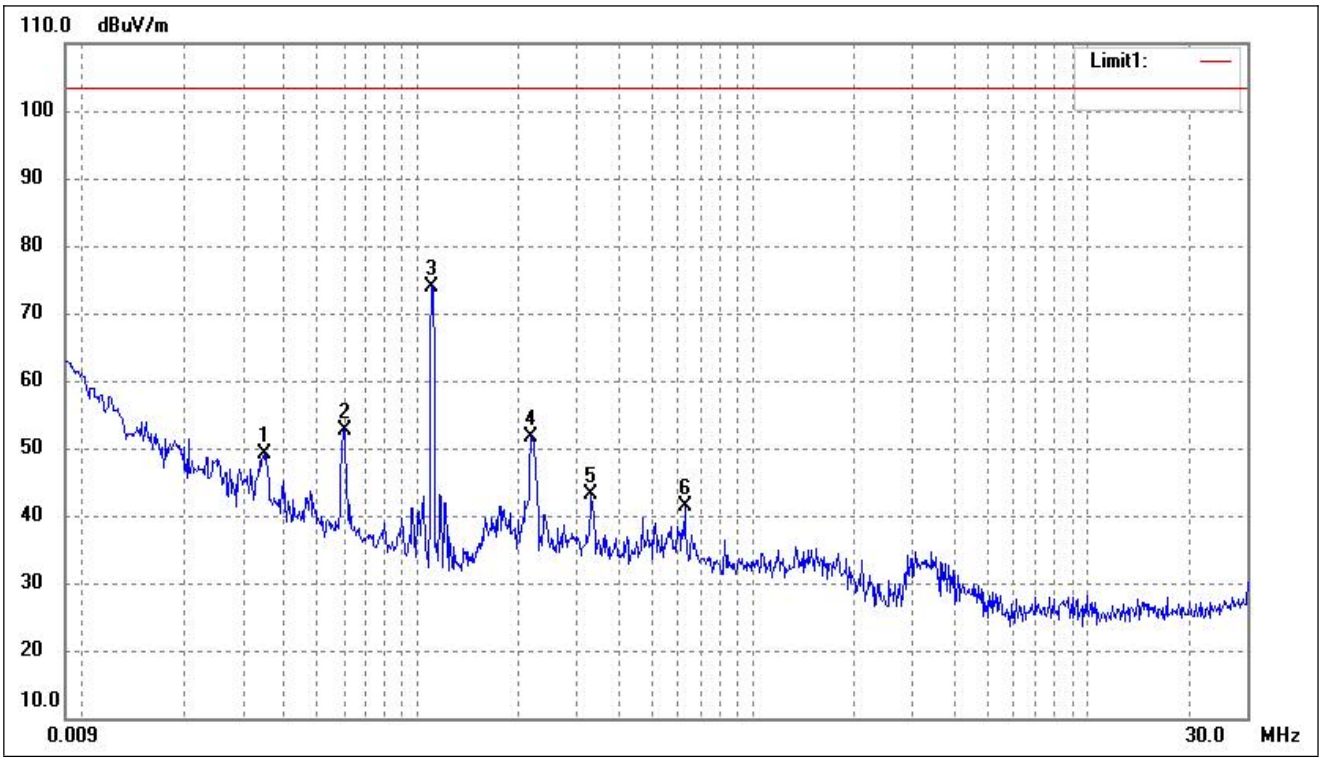
4.4 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

Plot of Radiated Emissions Test Data (Below 30MHz)

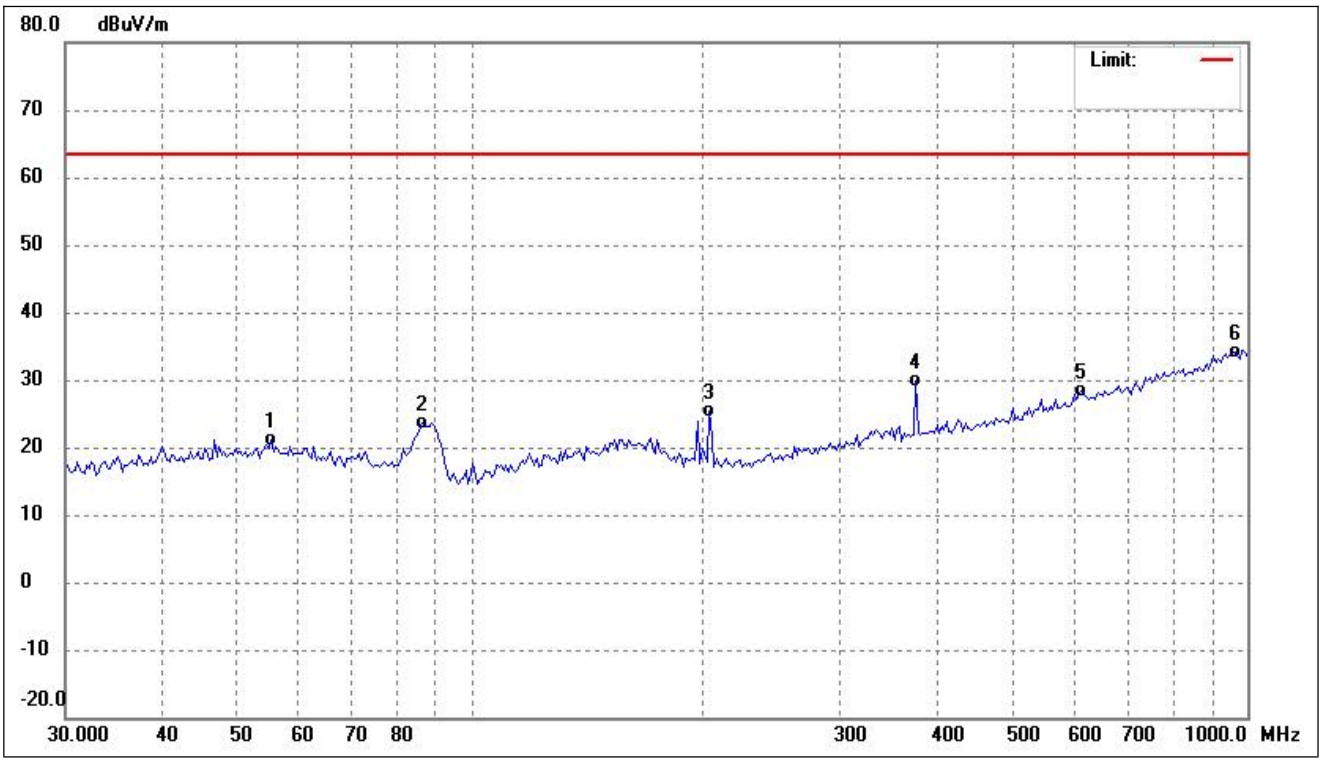
Test mode:	TM1	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0349	56.04	-6.90	49.14	103.50	-54.36	-	-	peak
2	0.0601	60.11	-7.42	52.69	103.50	-50.81	-	-	peak
3	0.1104	81.77	-7.92	73.85	103.50	-29.65	-	-	peak
4	0.2185	59.81	-8.15	51.66	103.50	-51.84	-	-	peak
5	0.3303	51.59	-8.37	43.22	103.50	-60.28	-	-	peak
6	0.6271	41.26	0.00	41.26	103.50	-62.24	-	-	peak

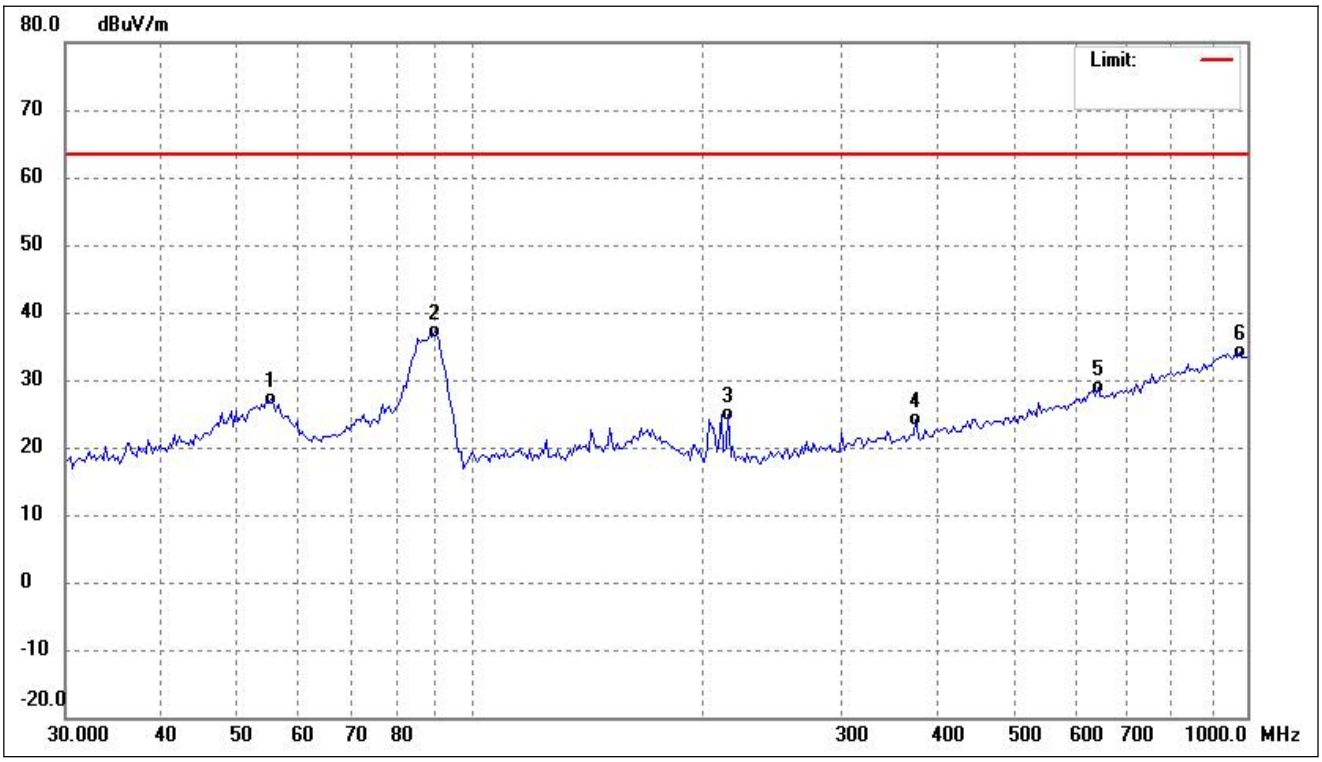
Plot of Radiated Emissions Test Data (Above 30MHz)

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	55.2883	29.30	-8.14	21.16	63.50	-42.34	-	-	QP
2	86.6867	36.25	-12.54	23.71	63.50	-39.79	-	-	QP
3	202.8745	36.83	-11.44	25.39	63.50	-38.11	-	-	QP
4	373.8861	36.44	-6.62	29.82	63.50	-33.68	-	-	QP
5	611.4623	30.39	-2.03	28.36	63.50	-35.14	-	-	QP
6	965.4742	30.73	3.37	34.10	63.50	-29.40	-	-	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	55.2883	35.34	-8.14	27.20	63.50	-36.30	-	-	QP
2	89.7866	49.84	-12.59	37.25	63.50	-26.25	-	-	QP
3	214.6063	36.35	-11.56	24.79	63.50	-38.71	-	-	QP
4	373.8861	30.72	-6.62	24.10	63.50	-39.40	-	-	QP
5	642.2923	30.40	-1.62	28.78	63.50	-34.72	-	-	QP
6	979.1392	30.63	3.42	34.05	63.50	-29.45	-	-	QP

Remark:‘-’Means’ the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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