

TEST REPORT

Reference No..... : WTN24X03049252W001
FCC ID : 2BAZE-JF2117S
Applicant : Ningbo Weijia Electronics Technology Co.,LTD.
Address : 188, Dagutang Road, Industrial Park, Simen, Yuyao, Ningbo, Zhejiang,
China
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Wireless Charger
Model No..... : JF2117S
Standards : FCC Part 18
Date of Receipt sample : 2024-03-13
Date of Test..... : 2024-03-13 to 2024-03-25
Date of Issue : 2024-03-25
Test Report Form No. : WTX_Part 18W
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.

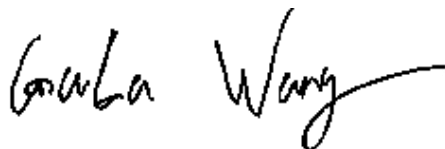
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Approved by:



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TABLE OF CONTENTS

1. GENERAL INFORMATION.....	4
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	4
1.2 TEST STANDARDS.....	5
1.3 TEST METHODOLOGY.....	5
1.4 TEST FACILITY	5
1.5 EUT SETUP AND OPERATION MODE	6
1.6 MEASUREMENT UNCERTAINTY	7
1.7 TEST EQUIPMENT LIST AND DETAILS	8
2. SUMMARY OF TEST RESULTS	9
3. CONDUCTED EMISSIONS	10
3.1 STANDARD APPLICABLE.....	10
3.2 TEST PROCEDURE.....	10
3.3 BASIC TEST SETUP BLOCK DIAGRAM.....	10
3.4 ENVIRONMENTAL CONDITIONS	10
3.5 TEST RECEIVER SETUP	11
3.6 SUMMARY OF TEST RESULTS/PLOTS	11
4. RADIATED EMISSIONS.....	14
4.1 TEST PROCEDURE.....	14
4.2 TEST RECEIVER SETUP	15
4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	15
4.4 ENVIRONMENTAL CONDITIONS	16
4.5 SUMMARY OF TEST RESULTS/PLOTS	16
APPENDIX PHOTOGRAPHS.....	19

Report version

Version No.	Date of issue	Description
Rev.00	2024-03-25	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Wireless Charger
Trade Name:	/
Model No.:	JF2117S
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
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Antenna Gain	0dBi
Rated Voltage:	Input: 5-9V DC
Wireless output:	10W MAX
Rated Power:	Total: 10W (Wireless output)
<i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

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 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 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	Connect to the Adapter	AC120V 60Hz for adapter, Wireless Charging (MAX OUTPUT)

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	GaN2 Pro	CCDAN65C2	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Type-C Cable	1.2	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	2805A0347 5	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	9163-333	2024-02-24	2025-02-23
Amplifier	Agilent	8447D	2944A1045 7	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)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 1#)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 2#)*	SKET	EMC-I	V2.0

*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:

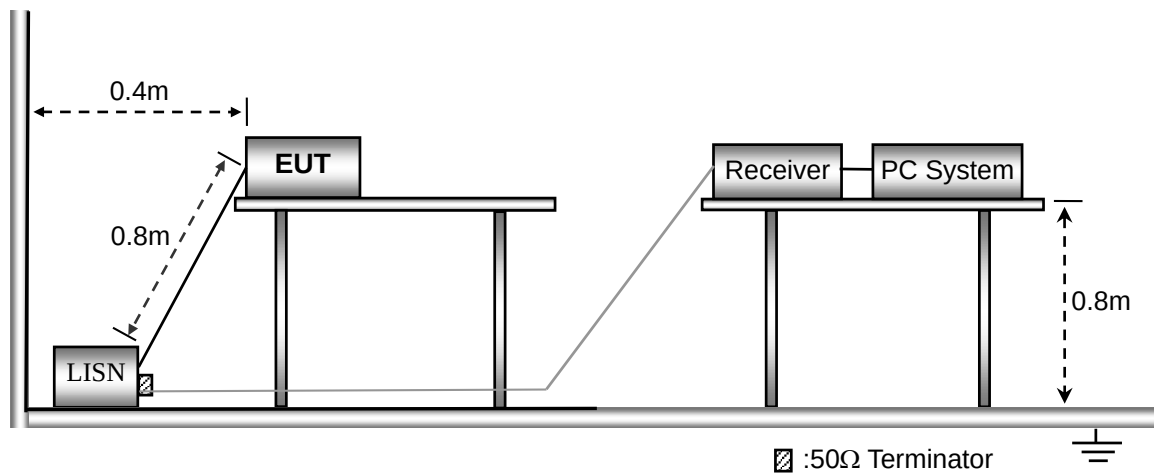
Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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:	25° C
Relative Humidity:	45%
ATM Pressure:	1016 mbar

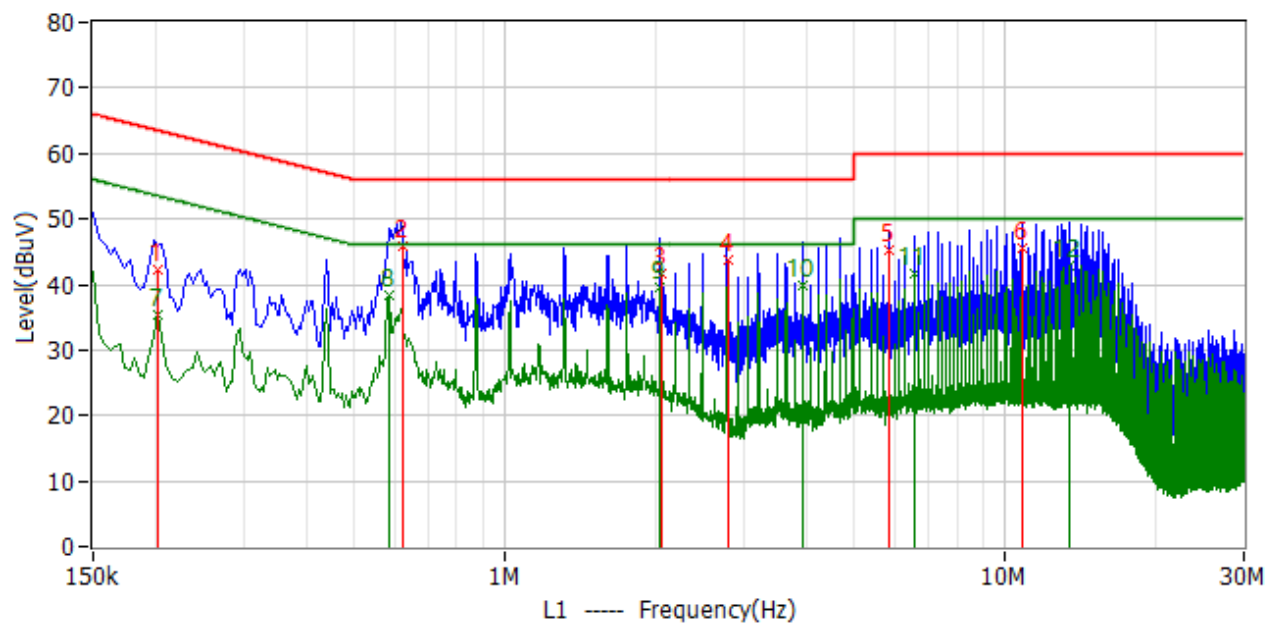
3.5 Test Receiver Setup

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

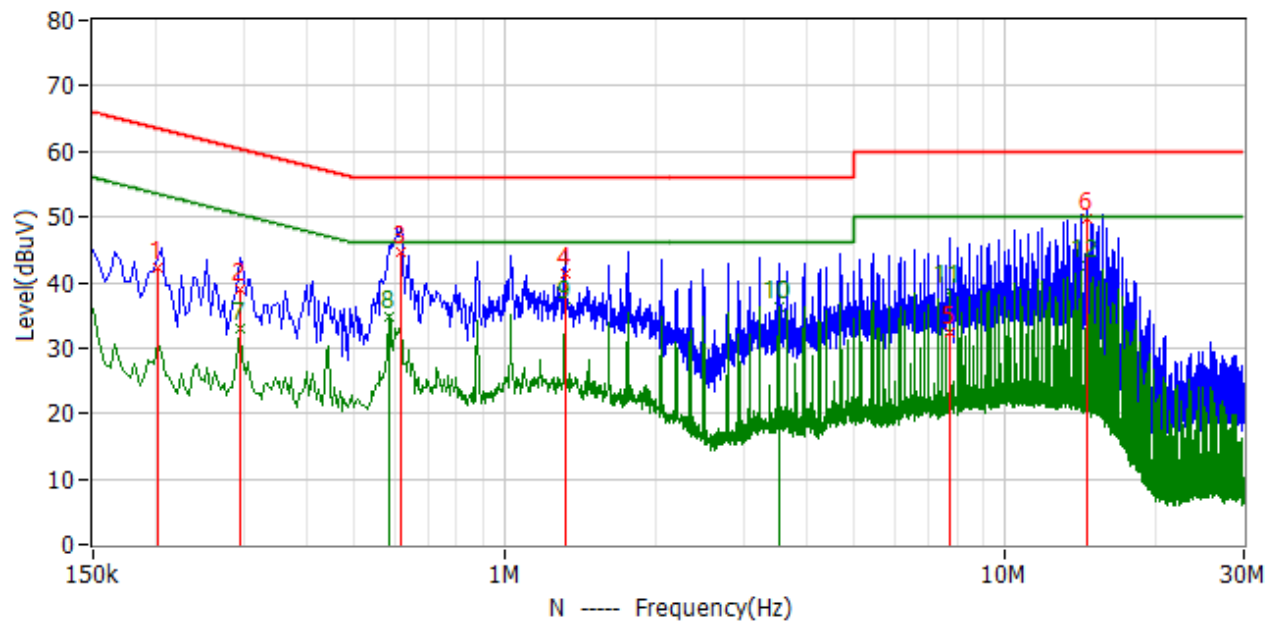
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
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No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Delta dB	Detector
1	202.000kHz	32.5	9.6	42.1	63.5	-21.5	QP
2	622.000kHz	36.1	9.7	45.8	56.0	-10.2	QP
3	2.050MHz	31.8	9.8	41.6	56.0	-14.4	QP
4	2.786MHz	33.9	9.9	43.8	56.0	-12.2	QP
5	5.866MHz	35.5	9.8	45.3	60.0	-14.7	QP
6	10.850MHz	35.6	9.8	45.4	60.0	-14.6	QP
7*	202.000kHz	25.9	9.6	35.5	53.5	-18.0	AV
8*	586.000kHz	28.7	9.7	38.4	46.0	-7.6	AV
9*	2.042MHz	29.8	9.8	39.6	46.0	-6.4	AV
10*	3.938MHz	30.1	9.9	40.0	46.0	-6.0	AV
11*	6.582MHz	31.8	9.7	41.5	50.0	-8.5	AV
12*	13.454MHz	33.1	9.8	42.9	50.0	-7.1	AV

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Delta dB	Detector
1	202.000kHz	32.4	9.7	42.1	63.5	-21.4	QP
2	294.000kHz	29.0	10.0	39.0	60.4	-21.4	QP
3	618.000kHz	34.8	9.7	44.5	56.0	-11.5	QP
4	1.318MHz	31.7	9.7	41.4	56.0	-14.6	QP
5	7.770MHz	22.7	9.8	32.5	60.0	-27.5	QP
6	14.510MHz	40.1	9.7	49.8	60.0	-10.2	QP
7*	294.000kHz	23.1	10.0	33.1	50.4	-17.3	AV
8*	586.000kHz	25.2	9.7	34.9	46.0	-11.1	AV
9*	1.318MHz	26.5	9.7	36.2	46.0	-9.8	AV
10*	3.518MHz	26.5	9.8	36.3	46.0	-9.7	AV
11*	7.770MHz	28.9	9.8	38.7	50.0	-11.3	AV
12*	14.514MHz	32.8	9.7	42.5	50.0	-7.5	AV

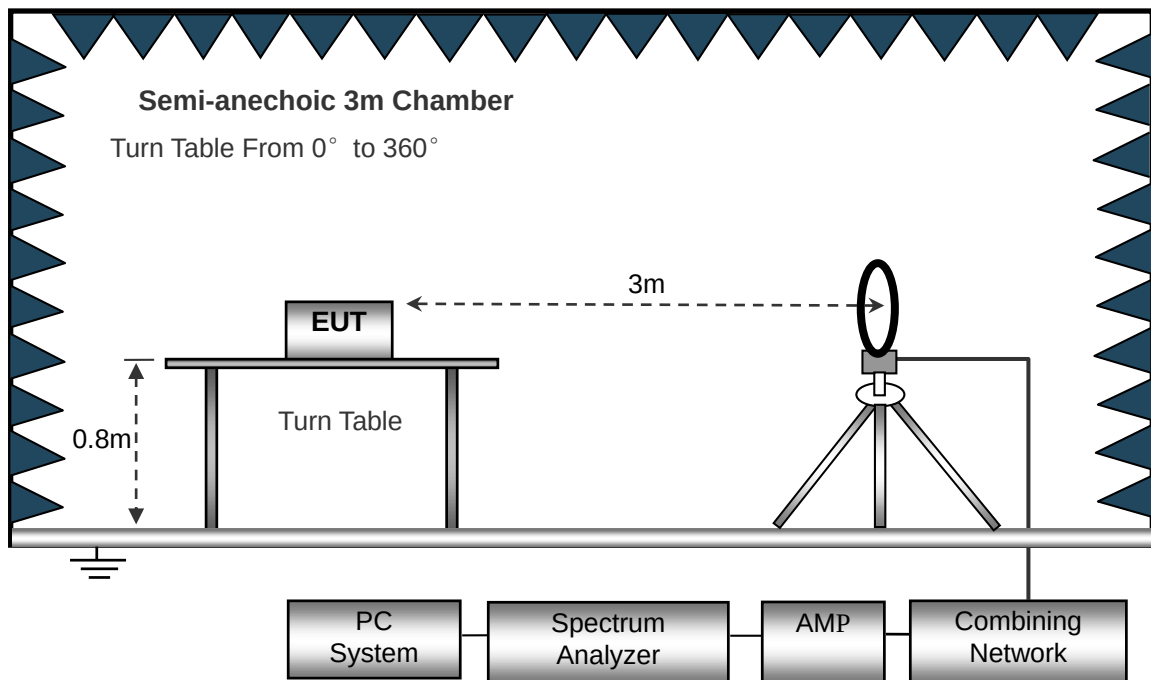
4. Radiated Emissions

4.1 Test Procedure

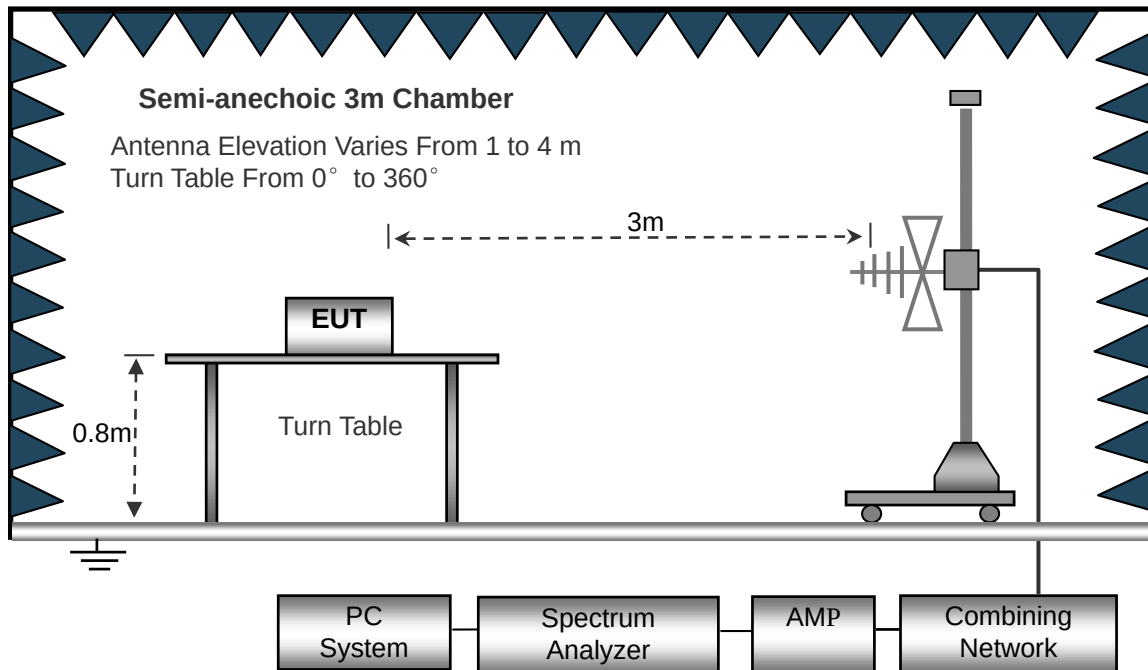
The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Any non-ISM frequency device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 18.305 Limit}$$

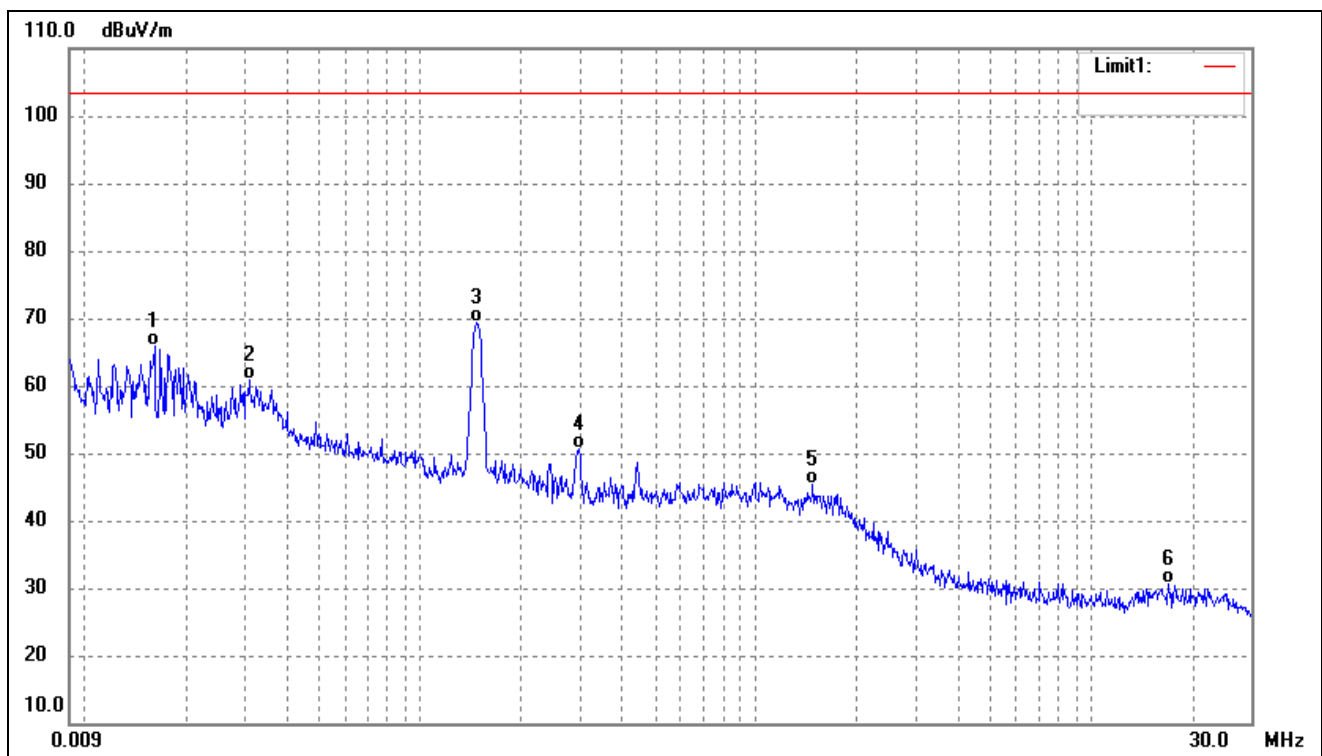
4.4 Environmental Conditions

Temperature:	22 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

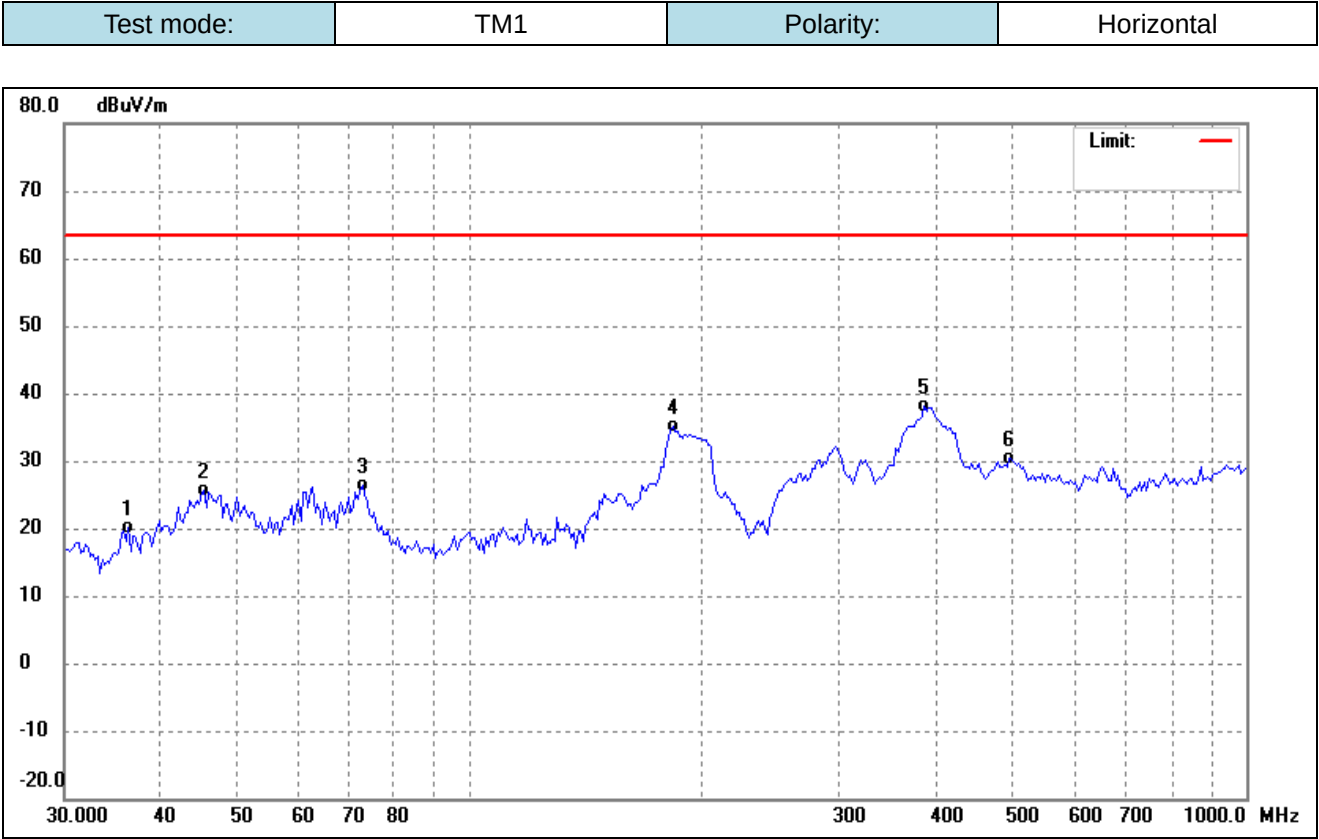
Plot of Radiated Emissions Test Data (Below 30MHz)

Test mode:	TM1	Polarity:	Vertical
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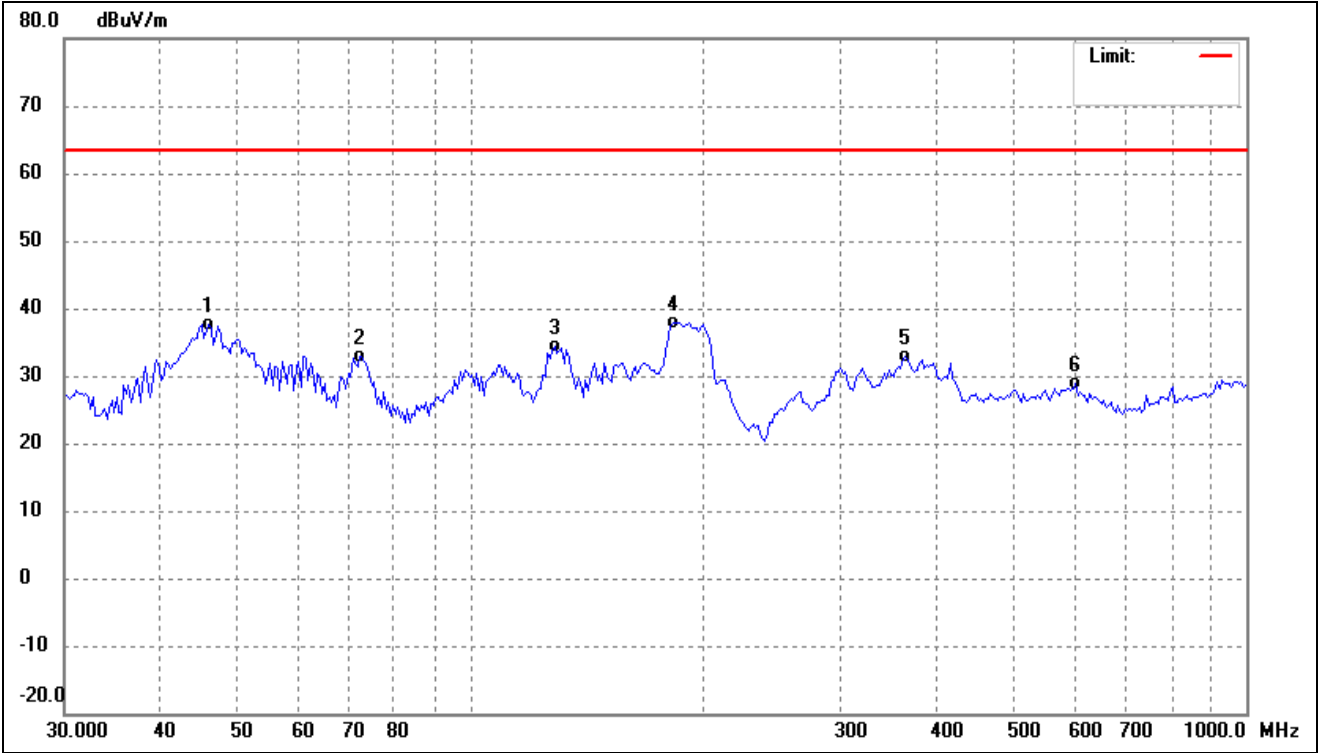
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0160	72.80	-7.02	65.78	103.50	-37.72	-	-	peak
2	0.0309	67.33	-6.46	60.87	103.50	-42.63	-	-	peak
3	0.1477	75.72	-6.34	69.38	103.50	-34.12	-	-	peak
4	0.2968	58.52	-7.82	50.70	103.50	-52.80	-	-	peak
5	1.4796	51.50	-6.12	45.38	103.50	-58.12	-	-	peak
6	17.0028	35.22	-4.54	30.68	103.50	-72.82	-	-	peak

Plot of Radiated Emissions Test Data (Above 30MHz)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	36.2678	33.29	-13.28	20.01	63.50	-43.49	-	-	QP
2	45.4131	37.94	-12.43	25.51	63.50	-37.99	-	-	QP
3	72.7203	41.78	-15.36	26.42	63.50	-37.08	-	-	QP
4	182.5785	49.83	-14.60	35.23	63.50	-28.27	-	-	QP
5	384.5447	48.30	-10.28	38.02	63.50	-25.48	-	-	QP
6	495.2379	38.36	-7.97	30.39	63.50	-33.11	-	-	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	46.0558	50.07	-12.38	37.69	63.50	-25.81	-	-	QP
2	72.2111	48.23	-15.26	32.97	63.50	-30.53	-	-	QP
3	128.4862	48.25	-13.96	34.29	63.50	-29.21	-	-	QP
4	182.5785	52.57	-14.60	37.97	63.50	-25.53	-	-	QP
5	363.5231	43.56	-10.76	32.80	63.50	-30.70	-	-	QP
6	602.9287	34.60	-5.71	28.89	63.50	-34.61	-	-	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 *****