FCC Part 18
Measurement and Test Report

For

MobilePal LLC

248 Route 25A Suite 99, East Setauket, NY 11733, USA

FCC ID: 2AEUJ-QIWI-G2

Test Rule(s):	FCC Part 18
Product Description:	Wireless power bank
Tested Model:	QIWI-G2
Report No.:	STR15058110I-2
Tested Date:	2015-05-28 to 2015-06-01
Issued Date:	2015-06-02
Tested By:	Jason Su / Engineer
Reviewed By:	Lahm Peng / 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

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	MobilePal LLC
Address of applicant:	248 Route 25A Suite 99, East Setauket, NY 11733, USA
Manufacturer:	HONGKONG ITUS CO.,LTD
Address of manufacturer:	C-520,C Bldg Tianhui Building, Donghuan 1st Road, LongHua New District, Shenzhen, Guangdong

General Description of EUT	
Product Name:	Wireless power bank
Trade Name:	MobilePal
Model No.:	QIWI-G2
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
Rated Voltage:	DC 5V
Rated Current:	1A
Rated Power:	5W (Wireless output)

1.2 Test Standards

The following report is prepared on behalf of MobilePal LLC in accordance with FCC Part 18, Subpart C, and section 18.307 and 18.311 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 18, Subpart C, and section 18.307 and 18.311 of the Federal Communication Commissions rules.

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 C63.4-2009, 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

FCC – Registration No.: 934118
Shenzhen SEM.Test Technology 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 and the Registration is 934118.

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.

CNAS Registration No.: L4062
Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).

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
TM1	Discharging	Wireless Output
TM2	Charging	USB Input and Wireless Output

EUT Cable List and Details

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

Auxiliary Equipment List and Details

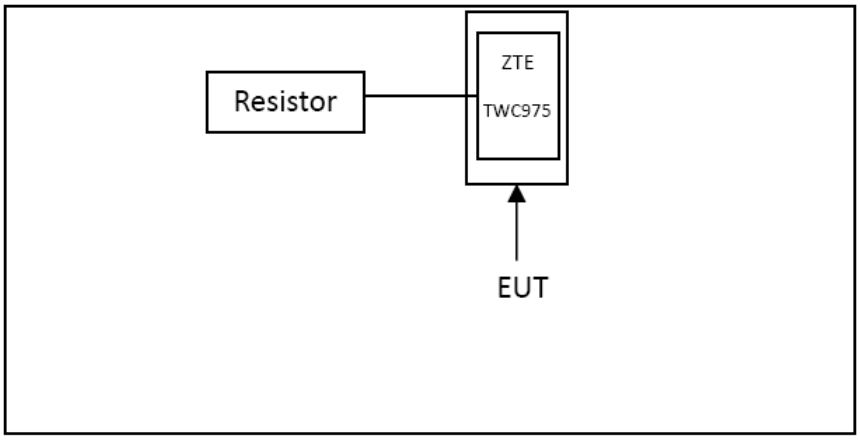
Description	Manufacturer	Model	Serial Number
AC Adaptor	DELL	PSAI10R-050Q	/
Wireless Charger	ZTE	TWC975R	/
Resistor	SEM	5 ohm	/

Special Cable List and Details

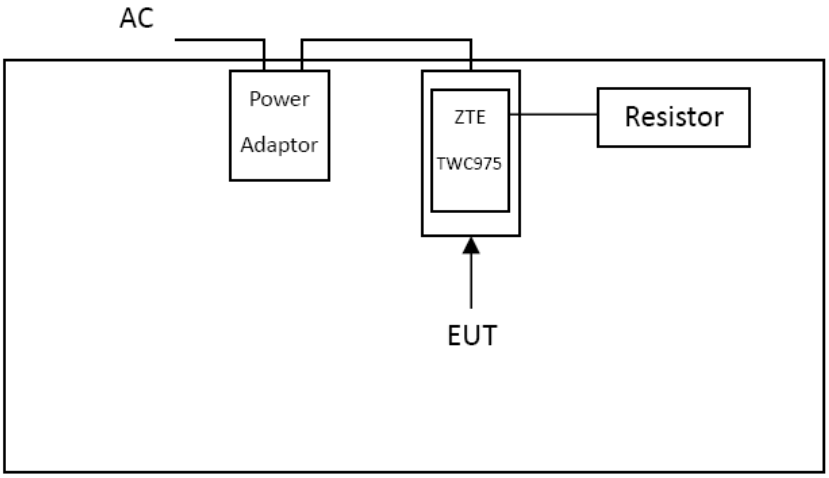
Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.8	Unshielded	Without Core

1.6 Set up Drawing Diagram

TM1 (Wireless Discharging Mode)



TM2 (USB Input and Wireless Output)



2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 18.307 (c)	Conducted Emission	Compliant
§ 18.305 (c)	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 (dBuV)	
	Quais-Peak	Average
0.15 to 0.5	66 to 56	56 to 46
0.5 to 5	56	46
5 to 30	60	50

3.2 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is $\pm$ 2.88 dB.

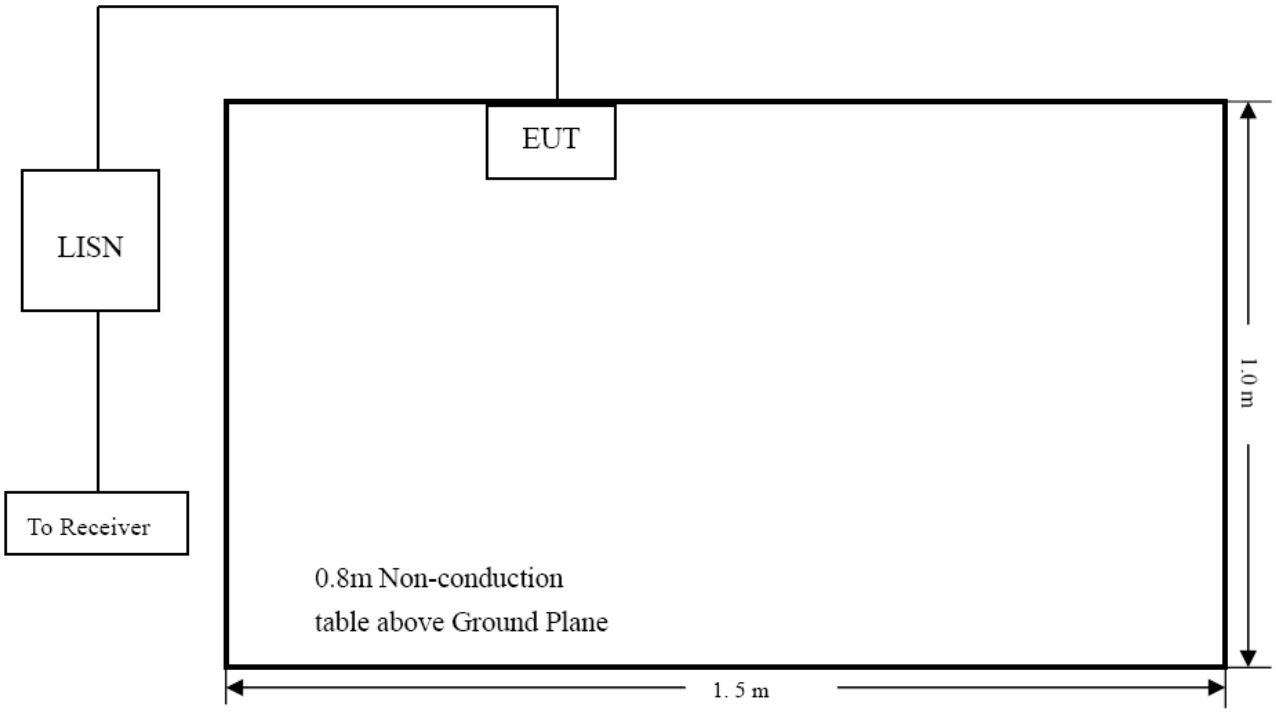
3.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-05-28	2016-05-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-05-28	2016-05-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-05-28	2016-05-27

3.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2009 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.

3.5 Basic Test Setup Block Diagram



3.6 Environmental Conditions

Temperature:	25° C
Relative Humidity:	54%
ATM Pressure:	1016 mbar

3.7 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 450 kHz
Stop Frequency..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

3.8 Summary of Test Results/Plots

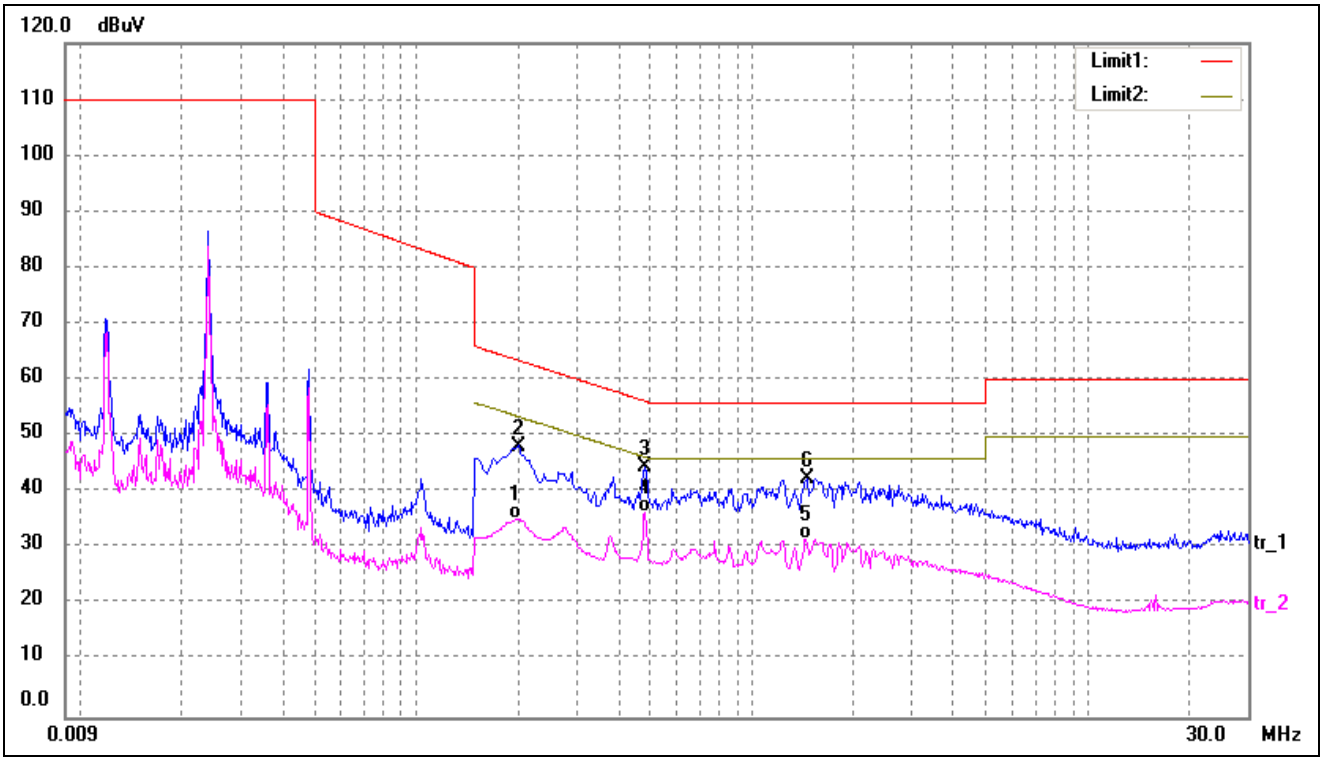
According to the data in this section, the EUT complied with the FCC Part 18.307(b) Conducted margin, with the *worst* margin reading of:

-5.17 dB at **0.482 MHz** in the **Live**, **Average** detector, 0.15-30MHz

Plot of Conducted Emissions Test Data

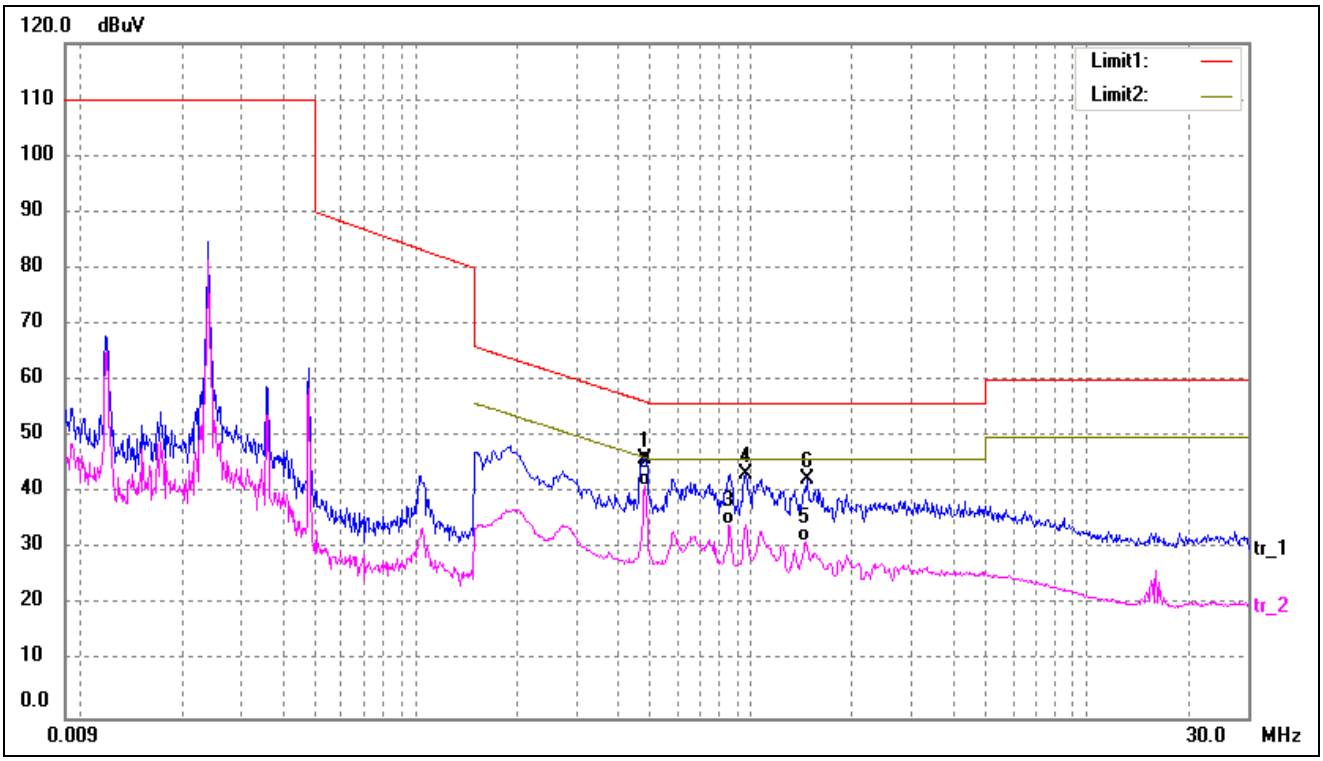
EUT: *Wireless power bank*
Tested Model: *QIWI-G2*
Operating Condiation: *TM2*
Comment:

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1980	25.88	9.50	35.38	53.69	-18.31	AVG
2	0.2020	38.80	9.50	48.30	63.53	-15.23	peak
3	0.4820	35.15	9.50	44.65	56.30	-11.65	peak
4*	0.4820	27.00	9.50	36.50	46.30	-9.80	AVG
5	1.4460	21.76	10.00	31.76	46.00	-14.24	AVG
6	1.4580	32.47	10.00	42.47	56.00	-13.53	peak

Test Specification: *Live*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.4820	36.66	9.50	46.16	56.30	-10.14	peak
2*	0.4820	31.63	9.50	41.13	46.30	-5.17	AVG
3	0.8580	24.42	9.86	34.28	46.00	-11.72	AVG
4	0.9580	33.54	9.96	43.50	56.00	-12.50	peak
5	1.4460	21.24	10.00	31.24	46.00	-14.76	AVG
6	1.4580	32.35	10.00	42.35	56.00	-13.65	peak

4. Radiated Emissions

4.1 Measurement Uncertainty

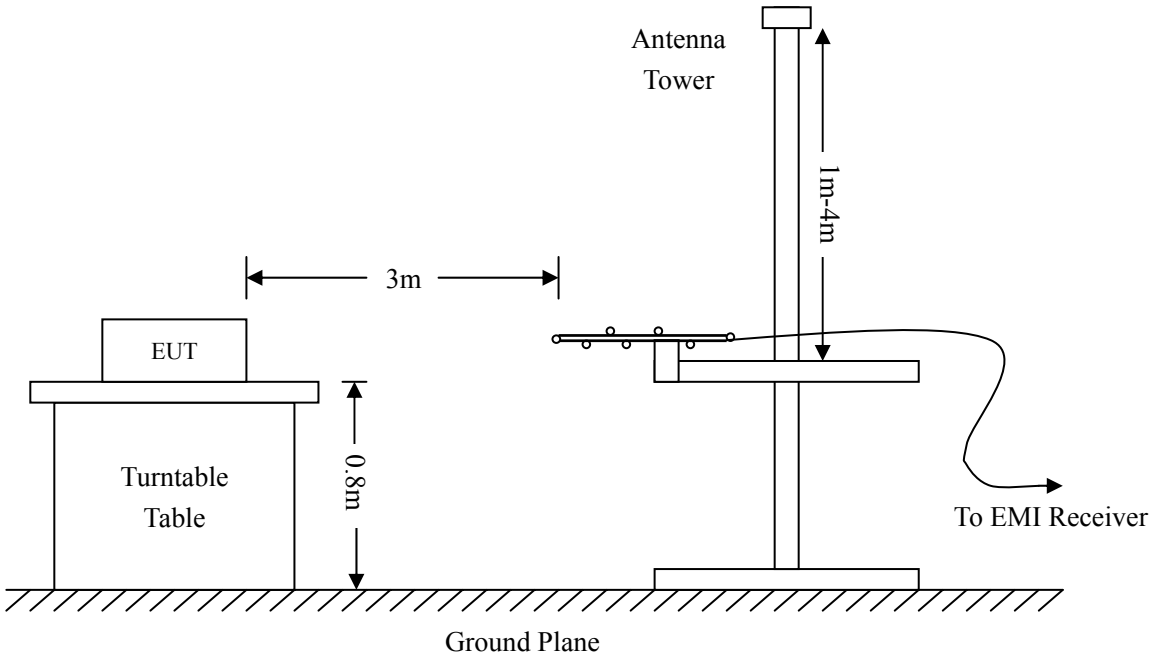
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2015-05-28	2016-05-27
EMI Test Receiver	R&S	ESVB	825471/005	2015-05-28	2016-05-27
Pre-amplifier	Agilent	8447F	3113A06717	2015-05-28	2016-05-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2015-05-28	2016-05-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2015-05-28	2016-05-27
Loop Antenna	SCHWARZBECK	FMZB 1516	9773	2015-05-28	2016-05-27

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2009 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.



4.4 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 30 MHz
Stop Frequency..... 1000 MHz
Sweep Speed ..... Auto
Quasi-Peak Adapter Bandwidth ..... 120 kHz
Quasi-Peak Adapter Mode ..... Normal

4.5 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 a RF lighting device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 18.305 Limit

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

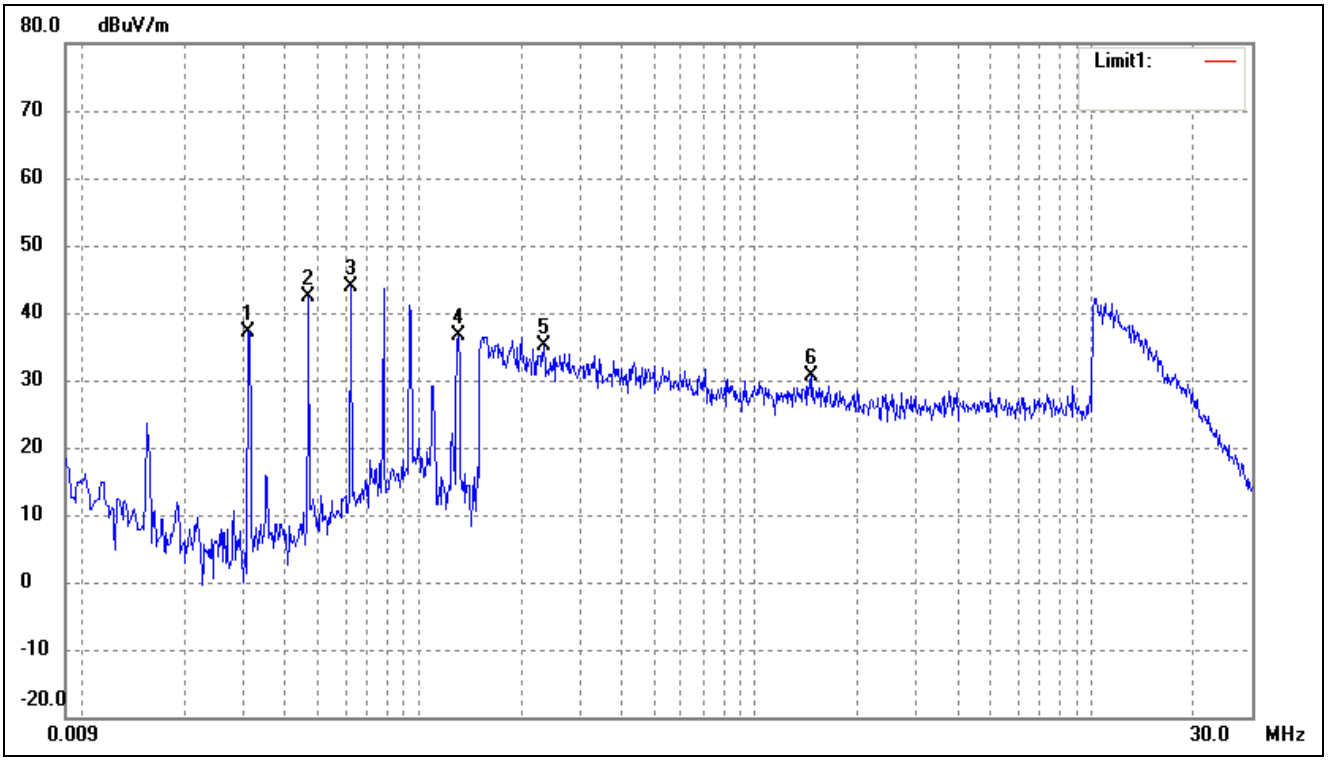
According to the data, the EUT complied with the FCC Part 18.305 rule, and had the worst margin of:

-12.76 dB at **1.4485 MHz** in the **Loop Antenna**, **9kHz** to **30MHz**, **3Meters**

Plot of Radiated Emissions Test Data(Below 30MHz)

EUT: *Wireless power bank*
Tested Model: *QIWI-G2*
Operating Condition: *TM1*
Comment:

Test Specification: *Loop Antenna*

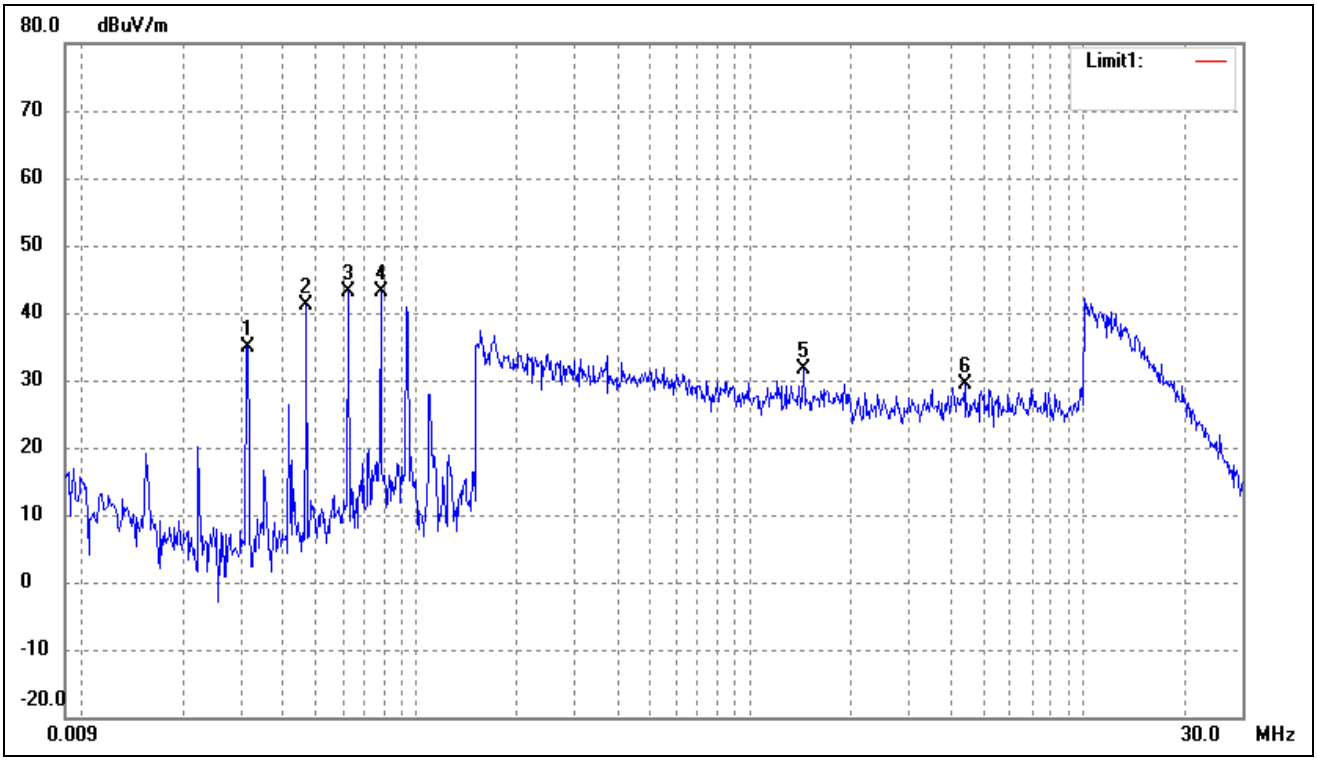


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	0.0312	31.31	5.80	37.11	77.72	-40.61	56	100	peak
2	0.0469	36.12	6.22	42.34	74.18	-29.35	126	100	peak
3	0.0625	37.48	6.35	43.83	71.69	-27.86	231	100	peak
4	0.1300	29.52	7.16	36.68	65.33	-28.64	59	100	peak
5	0.2341	25.84	9.29	35.13	60.22	-25.09	265	100	peak
6	1.4718	17.96	12.64	30.60	44.25	-13.65	31	100	peak

Plot of Radiated Emissions Test Data(Below 30MHz)

EUT: *Wireless power bank*
Tested Model: *QIWI-G2*
Operating Condition: *TM2*
Comment:

Test Specification: *Loop Antenna*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	0.0313	34.91	0.00	34.91	77.69	-42.78	231	100	peak
2	0.0469	41.01	0.00	41.01	74.18	-33.17	156	100	peak
3	0.0625	43.03	0.00	43.03	71.69	-28.66	56	100	peak
4	0.0781	43.03	0.00	43.03	69.75	-26.72	136	100	peak
5	1.4485	19.00	12.63	31.63	44.39	-12.76	231	100	peak
6	4.4071	16.17	13.12	29.29	43.50	-14.21	156	100	peak

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