

TEST REPORT

According to : FCC 47CFR part 15 subpart C

Test Report No. : CTK-2013-00856

Date of Issue : May 21, 2013

FCC ID : SKUEPP100IJWU

Equipment Under Test : EP-P100IJWU

Kind of Product : S Charger Pad

Applicant : DONGYANG E&P Inc.

Applicant Address : 31B 3-1, Jinwi Industrial Estate, Cheongho-Ri, Jinwi-Myeon,
Pyeongtaek-Si, Gyeonggi-Do, 451-862, Korea

Manufacturer : DONGYANG E&P Inc.

Manufacturer Address : 31B 3-1, Jinwi Industrial Estate, Cheongho-Ri, Jinwi-Myeon,
Pyeongtaek-Si, Gyeonggi-Do, 451-862, Korea

Contact Person : Jin-bum, Kim / Project Manager

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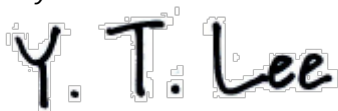
Received Date : May 7, 2013

Test period : Start : May 7, 2013 End : May 21, 2013

Test Results : ☒ In Compliance ☐ Not in Compliance

The test results presented in this report relate only to the object tested.

Tested by



Young-taek Lee
Test Engineer
Date: May 21, 2013

Reviewed by



Young-Joon, Park
Technical Manager
Date: May 21, 2013



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REPORT REVISION HISTORY

Date	Revision	Page No
May 21, 2013	Issued (CTK-2013-00856)	All

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1.0 General Product Description

Type of equipment	S Charger Pad
Equipment model name	EP-P100IJWU
Frequency Range	112 kHz – 205 kHz
Antenna type	Coil antenna
Power Source	TRAVEL ADAPTER Input : AC 100-240 V, 50/60 Hz Output : DC 5 V, 2.0 A Test Voltage and Frequency : AC 120 V, 60 Hz

1.1 Model Differences

Not applicable

1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC
TRAVEL ADAPTER	TIANJIN E&P ELECTRONICS Inc.	ETA-U90KWK	DK3D301TS/B-E	Verification
Wireless Charging Cover	RFTech Co., Ltd.	EBC-1G6WWE	RT0C802AS/4-E	-
Mobile Phone	Samsung Electronics Co., Ltd.	SCH-I535	-	A3LSCHI535

1.4 EUT Operating Modes

Equipment under test was operated during the measurement under the following conditions:

☒ Charging and communication mode

Modulation Type : CW (Continuous Wave)

Output Power : Max. 5.49 dBuV/m (Frequency 119.34 kHz, Test Distance 3 m)

TX Duty Cycle : 100 % by measurement

1.5 Test Modes

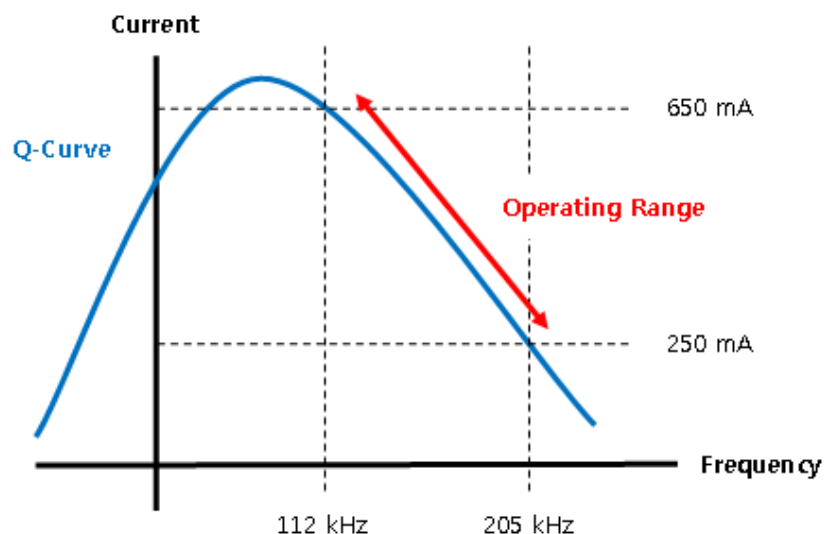
This device has been tested below conditions:

[Test Mode #1]

Frequency	Charging current	Note
112 kHz	650 mA	Low Frequency, Max. Load
158.5 kHz	425 mA	Middle Frequency, Medium Load
205 kHz	250 mA	High Frequency, Min. Load

This device has been tested with the various resistors to simulate the various load conditions of the client device. The charging current was controlled from 250 mA (Min.) to 650 mA (Max.) using the resistors and three types of Jig board with circular coil.

- 1) EUT has a range of the operating frequency from 112 kHz to 205 kHz and It has a range of the output current from 250 mA to 650 mA when output voltage is DC 5 V.
- 2) If the operating frequency is 112 kHz, the maximum output current is 650 mA and If the operating frequency is 205 kHz, the minimum output current is 250 mA.



- 3) To the simulation of the power transmission in from 112 kHz to 205 kHz. In the full range of the operating frequency, Normal operating condition, the test frequency is three which are the High, Middle and Low frequency of 112 kHz, 158.5 kHz and 205 kHz.
- 4) In order to operate EUT in three operating frequencies, three types of Test Jig were used.
- 5) The Wireless Charging Cover was used as Test Jig is actually used with the EUT.
- 6) The EUT to operate at a steady-state output current, the Wireless Charging Cover was not to combined with a smart phone. The DC output of the Wireless Charging Cover was connected to the resistor. As follows, the three types of Test Jig was prepared and tested.
- 7) Test Jig #1
Operating Frequency : 112 kHz, Output Voltage : DC 5 V, Output Current : 0.65 A
Calculation of resistor value : $I = \frac{V}{R}$, $0.65 \text{ A} = \frac{5 \text{ V}}{R}$, $R = \frac{5 \text{ V}}{0.65 \text{ A}}$, $R \approx 7.69 \Omega$
- 8) Test Jig #2
Operating Frequency : 158.5 kHz, Output Voltage : DC 5 V, Output Current : 0.425 A
Calculation of resistor value : $I = \frac{V}{R}$, $0.425 \text{ A} = \frac{5 \text{ V}}{R}$, $R = \frac{5 \text{ V}}{0.425 \text{ A}}$, $R \approx 11.76 \Omega$
- 9) Test Jig #3
Operating Frequency : 205 kHz, Output Voltage : DC 5 V, Output Current : 0.25 A
Calculation of resistor value : $I = \frac{V}{R}$, $0.25 \text{ A} = \frac{5 \text{ V}}{R}$, $R = \frac{5 \text{ V}}{0.25 \text{ A}}$, $R = 20 \Omega$

[Test Mode #2]

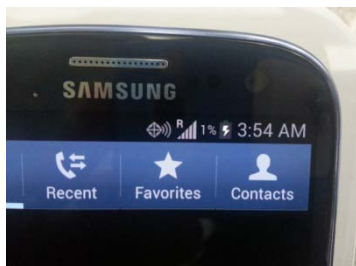
Support Equipment	Battery status	Note
Mobile Phone	< 1%	Max. Load
Mobile Phone	50 %	Medium Load

Note : The Charging is not operation when 100% fully charged status.

This device has been tested with the Mobile phone.

Mobile phone is on Airplane Mode.

Mobile phone's battery status was checked by display battery percentage function.





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1.6 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.7 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea.

1.8 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 m & 10 m OATS, 3 m & 10 m SAC and Conducted Test Site to perform FCC Part 15/18 measurements	 805871
JAPAN	VCCI	10 m OATS, 3 m & 10 m SAC and Conducted Test Site	 R-948, C-986 T-1843
KOREA	KCC	EMI (10 m OATS, 10 m SAC and Conducted Test Site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and Interruptions)	 No. 51, KR0025
International	KOLAS	EMC	



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2.0 Summary of tests

FCC Part Section(s)	Parameter	Status (note 1)
15.203	Antenna requirement	N/A
15.204	External radio frequency power amplifier and antenna modifications	N/A
15.207	Conducted emissions	Complies
15.209	Radiated emissions	Complies

Footnotes for N/A's:

§ 15.203 is not applicable because the transmitter is provided with an integral antenna.

§ 15.204 is not applicable because the transmitter is provided with an integral antenna.



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2.1 Power line conducted emissions (Section 15.207)

Test Location

Shielded Room

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

* Measurement procedures was In accordance with ANSI C63.4-2009 7.3.3, 7.3.4

Limit

-15.207(a)

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency.

EUT Operating Modes

The EUT is an intentional radiator is operated at 112 kHz to 205 kHz.

We have tested three frequencies, Low (112 kHz), Middle (158.5 kHz), High (205 kHz), for power line conducted emissions test.

* Middle (158.5 kHz) : Exactly half way between 112 kHz and 205 kHz.

Test Results

The requirements are:

☒ Complies

[Test Mode #1]

[Operating Frequency : 112 kHz]

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
4.326 0	29.8	16.2	Average

[Operating Frequency : 158.5 kHz]

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
3.291 0	31.6	14.4	Average

[Operating Frequency : 205 kHz]

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
13.560 0	36.0	14.0	Average

[Test Mode #2]

[< 1 % Battery Status]

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
2.535 0	30.5	15.5	Average

[50 % Battery Status]

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
0.510 0	30.1	15.9	Average

Test Data

[Operating Frequency : 110 kHz]

[HOT : AC 120 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	45.4	1000.0	9.000	On	L1	10.0	20.1	65.5
0.159000	45.2	1000.0	9.000	On	L1	10.0	20.3	65.5
0.492000	35.5	1000.0	9.000	On	L1	10.1	20.6	56.1
2.161500	35.8	1000.0	9.000	On	L1	9.8	20.2	56.0
2.431500	35.6	1000.0	9.000	On	L1	9.8	20.4	56.0
2.971500	34.6	1000.0	9.000	On	L1	9.7	21.4	56.0
3.516000	34.5	1000.0	9.000	On	L1	9.7	21.5	56.0
4.056000	35.9	1000.0	9.000	On	L1	9.7	20.1	56.0
4.596000	35.7	1000.0	9.000	On	L1	9.7	20.3	56.0
5.406000	35.9	1000.0	9.000	On	L1	9.7	24.1	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.487500	28.1	1000.0	9.000	On	L1	10.1	18.1	46.2
1.621500	27.0	1000.0	9.000	On	L1	9.8	19.0	46.0
2.161500	29.2	1000.0	9.000	On	L1	9.8	16.8	46.0
2.431500	29.5	1000.0	9.000	On	L1	9.8	16.5	46.0
2.971500	29.5	1000.0	9.000	On	L1	9.7	16.5	46.0
3.241500	29.3	1000.0	9.000	On	L1	9.7	16.7	46.0
4.056000	29.6	1000.0	9.000	On	L1	9.7	16.4	46.0
4.326000	29.8	1000.0	9.000	On	L1	9.7	16.2	46.0
5.136000	29.7	1000.0	9.000	On	L1	9.7	20.3	50.0
6.220500	27.9	1000.0	9.000	On	L1	9.7	22.1	50.0

[NEUTRAL : AC 0 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.154500	41.7	1000.0	9.000	On	N	9.9	24.0	65.8
0.406500	29.6	1000.0	9.000	On	N	10.1	28.2	57.7
0.487500	33.5	1000.0	9.000	On	N	10.1	22.7	56.2
0.537000	29.2	1000.0	9.000	On	N	10.1	26.8	56.0
0.676500	27.9	1000.0	9.000	On	N	10.0	28.1	56.0
2.166000	29.8	1000.0	9.000	On	N	9.8	26.2	56.0
2.706000	29.9	1000.0	9.000	On	N	9.8	26.1	56.0
3.250500	30.4	1000.0	9.000	On	N	9.7	25.6	56.0
4.330500	30.3	1000.0	9.000	On	N	9.7	25.7	56.0
4.605000	29.7	1000.0	9.000	On	N	9.7	26.3	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.487500	28.7	1000.0	9.000	On	N	10.1	17.5	46.2
0.555000	22.7	1000.0	9.000	On	N	10.1	23.3	46.0
1.356000	21.1	1000.0	9.000	On	N	9.8	24.9	46.0
1.896000	24.3	1000.0	9.000	On	N	9.8	21.7	46.0
2.166000	25.5	1000.0	9.000	On	N	9.8	20.5	46.0
2.706000	25.9	1000.0	9.000	On	N	9.8	20.1	46.0
3.520500	26.3	1000.0	9.000	On	N	9.7	19.7	46.0
4.330500	25.6	1000.0	9.000	On	N	9.7	20.4	46.0
4.605000	24.5	1000.0	9.000	On	N	9.7	21.5	46.0
5.955000	24.1	1000.0	9.000	On	N	9.7	25.9	50.0



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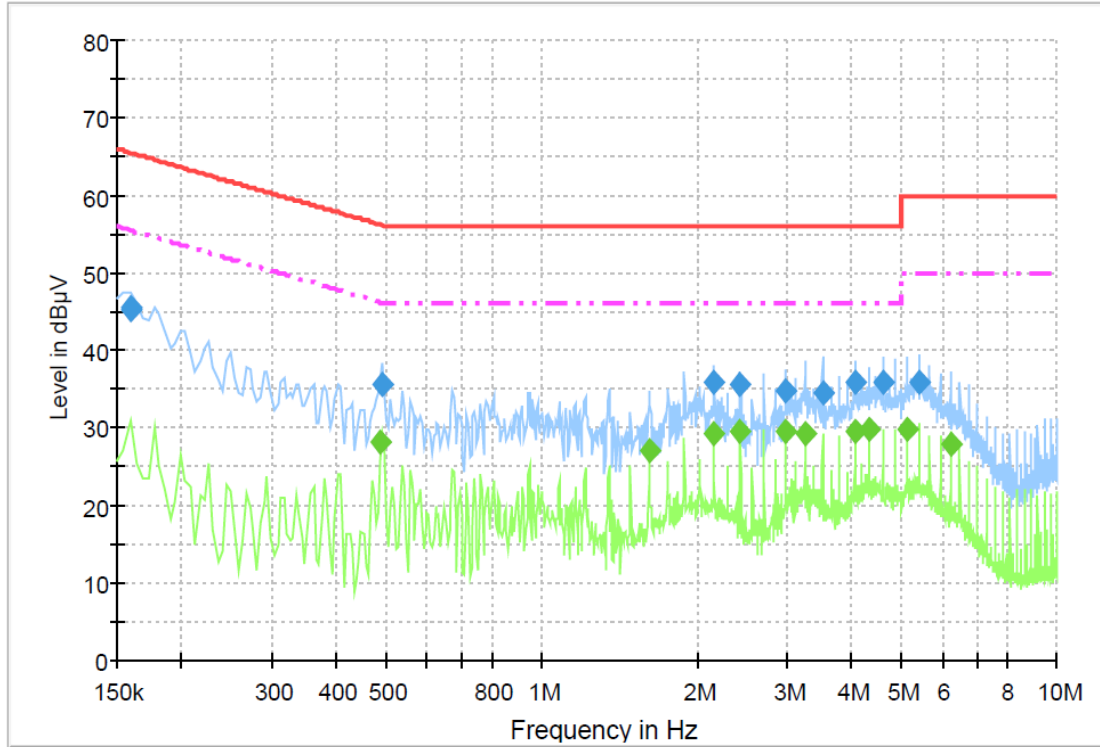
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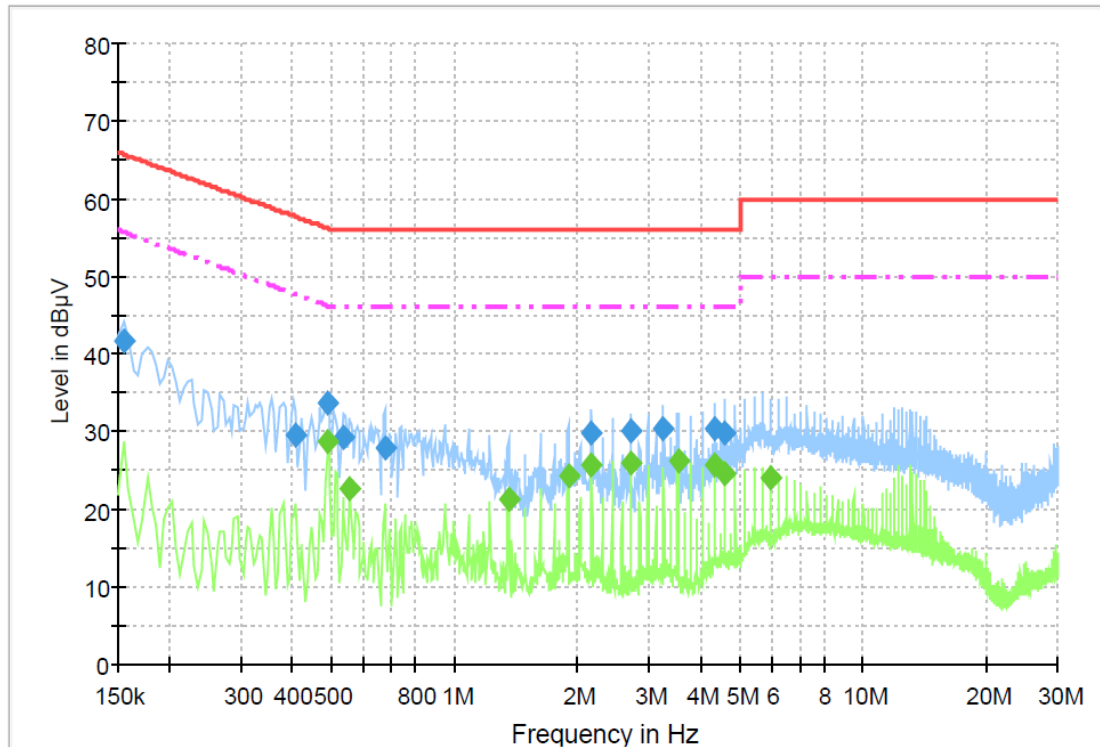
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[HOT : AC 120 V]



[NEUTRAL : AC 0 V]



[Operating Frequency : 157.5 kHz]

[HOT : AC 120 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.514500	37.4	1000.0	9.000	On	L1	10.1	18.6	56.0
0.825000	33.8	1000.0	9.000	On	L1	10.0	22.2	56.0
1.234500	33.5	1000.0	9.000	On	L1	9.9	22.5	56.0
1.648500	34.8	1000.0	9.000	On	L1	9.8	21.2	56.0
2.058000	36.9	1000.0	9.000	On	L1	9.8	19.1	56.0
2.467500	34.9	1000.0	9.000	On	L1	9.8	21.1	56.0
2.881500	35.4	1000.0	9.000	On	L1	9.7	20.6	56.0
3.291000	36.8	1000.0	9.000	On	L1	9.7	19.2	56.0
3.912000	34.6	1000.0	9.000	On	L1	9.7	21.4	56.0
4.524000	32.9	1000.0	9.000	On	L1	9.7	23.1	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.514500	28.3	1000.0	9.000	On	L1	10.1	17.7	46.0
1.234500	29.2	1000.0	9.000	On	L1	9.9	16.8	46.0
1.851000	30.6	1000.0	9.000	On	L1	9.8	15.4	46.0
2.058000	29.8	1000.0	9.000	On	L1	9.8	16.2	46.0
2.472000	30.4	1000.0	9.000	On	L1	9.8	15.6	46.0
2.881500	29.6	1000.0	9.000	On	L1	9.7	16.4	46.0
3.291000	31.6	1000.0	9.000	On	L1	9.7	14.4	46.0
3.705000	29.0	1000.0	9.000	On	L1	9.7	17.0	46.0
4.528500	27.2	1000.0	9.000	On	L1	9.7	18.8	46.0
9.879000	34.1	1000.0	9.000	On	L1	9.8	15.9	50.0

[NEUTRAL : AC 0 V]

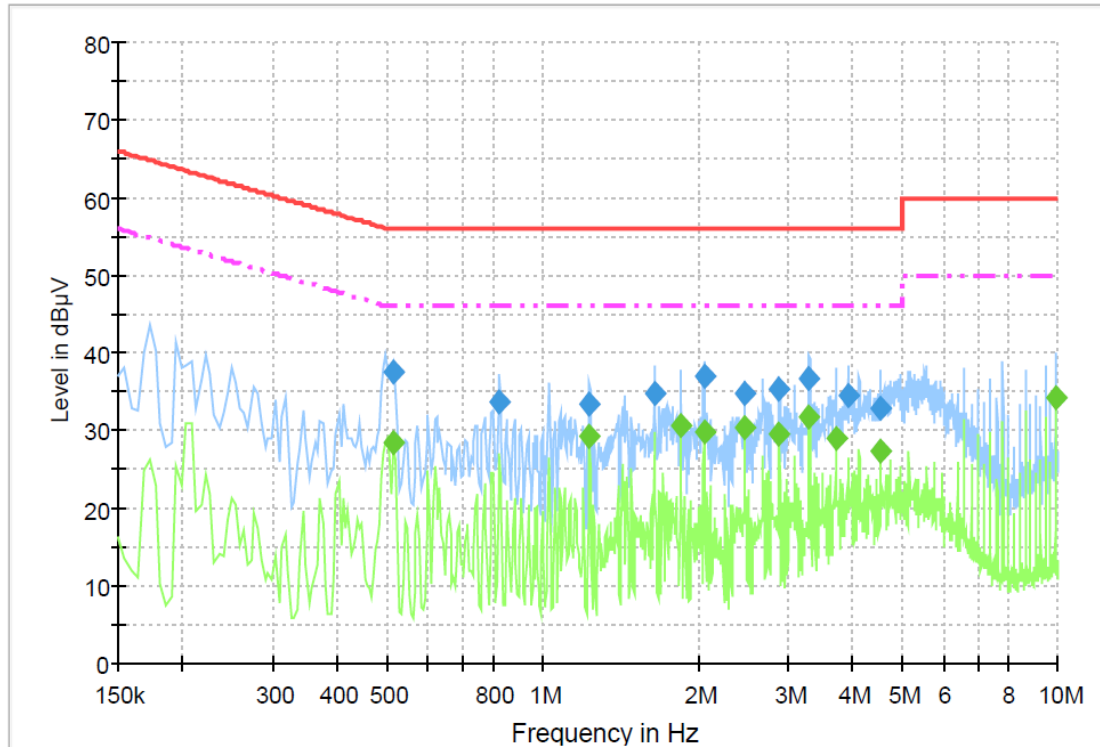
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.204000	37.9	1000.0	9.000	On	N	9.9	25.6	63.4
0.510000	32.6	1000.0	9.000	On	N	10.1	23.4	56.0
0.618000	28.1	1000.0	9.000	On	N	10.1	27.9	56.0
3.291000	32.1	1000.0	9.000	On	N	9.7	23.9	56.0
7.818000	34.7	1000.0	9.000	On	N	9.8	25.3	60.0
9.883500	32.7	1000.0	9.000	On	N	9.8	27.3	60.0
12.759000	37.8	1000.0	9.000	On	N	9.8	22.2	60.0
13.173000	37.9	1000.0	9.000	On	N	9.8	22.1	60.0
16.053000	33.8	1000.0	9.000	On	N	9.9	26.2	60.0
29.638500	27.0	1000.0	9.000	On	N	10.2	33.0	60.0

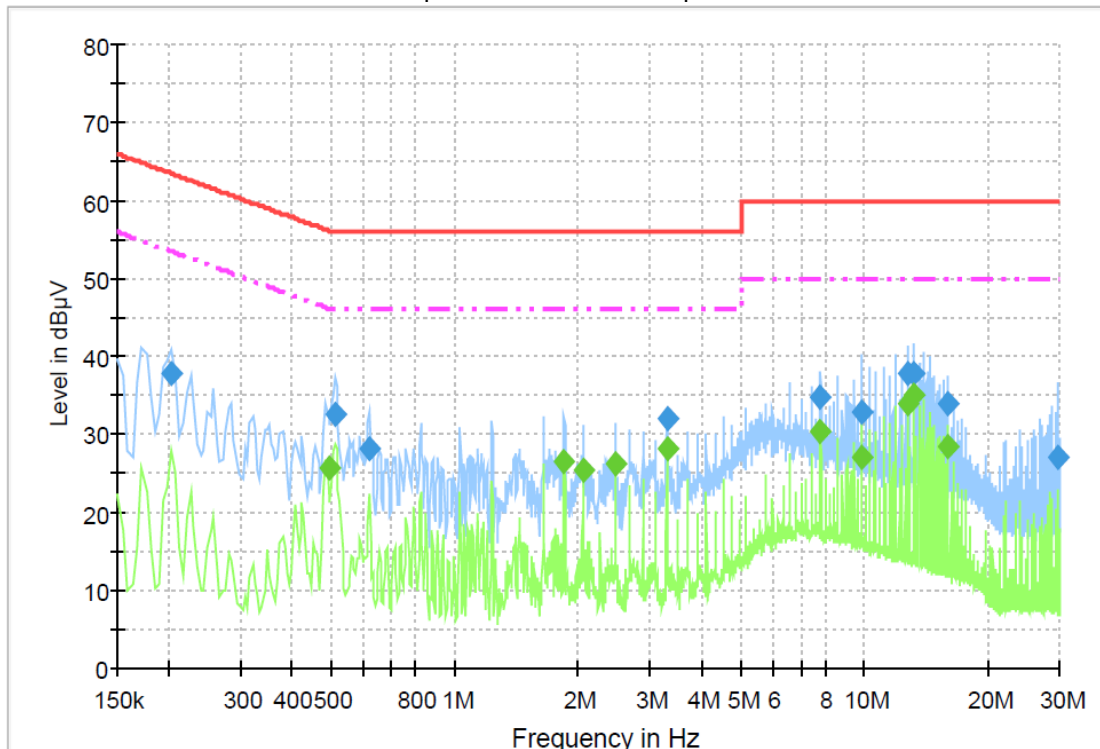
Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.496500	25.6	1000.0	9.000	On	N	10.1	20.4	46.1
1.851000	26.5	1000.0	9.000	On	N	9.8	19.6	46.0
2.058000	25.4	1000.0	9.000	On	N	9.8	20.6	46.0
2.467500	26.3	1000.0	9.000	On	N	9.8	19.7	46.0
3.291000	28.2	1000.0	9.000	On	N	9.7	17.8	46.0
7.818000	30.4	1000.0	9.000	On	N	9.8	19.6	50.0
9.879000	27.1	1000.0	9.000	On	N	9.8	22.9	50.0
12.754500	34.0	1000.0	9.000	On	N	9.8	16.0	50.0
13.168500	35.0	1000.0	9.000	On	N	9.8	15.0	50.0
16.048500	28.3	1000.0	9.000	On	N	9.9	21.7	50.0

[HOT : AC 120 V]



[NEUTRAL : AC 0 V]



[Operating Frequency : 205 kHz]

[HOT : AC 120 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.496500	37.5	1000.0	9.000	On	L1	10.1	18.6	56.1
1.234500	33.9	1000.0	9.000	On	L1	9.9	22.1	56.0
1.644000	33.3	1000.0	9.000	On	L1	9.8	22.7	56.0
2.053500	34.5	1000.0	9.000	On	L1	9.8	21.5	56.0
2.467500	31.6	1000.0	9.000	On	L1	9.8	24.4	56.0
3.084000	30.4	1000.0	9.000	On	L1	9.7	25.6	56.0
4.110000	34.5	1000.0	9.000	On	L1	9.7	21.5	56.0
4.929000	34.8	1000.0	9.000	On	L1	9.7	21.2	56.0
7.399500	31.4	1000.0	9.000	On	L1	9.7	28.6	60.0
9.861000	38.6	1000.0	9.000	On	L1	9.8	21.4	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.492000	28.7	1000.0	9.000	On	L1	10.1	17.5	46.1
0.618000	27.6	1000.0	9.000	On	L1	10.1	18.4	46.0
1.234500	28.4	1000.0	9.000	On	L1	9.9	17.6	46.0
1.644000	28.2	1000.0	9.000	On	L1	9.8	17.8	46.0
2.053500	30.6	1000.0	9.000	On	L1	9.8	15.4	46.0
2.467500	25.3	1000.0	9.000	On	L1	9.8	20.7	46.0
4.110000	28.3	1000.0	9.000	On	L1	9.7	17.7	46.0
4.933500	28.0	1000.0	9.000	On	L1	9.7	18.0	46.0
8.218500	31.1	1000.0	9.000	On	L1	9.8	18.9	50.0
9.861000	33.9	1000.0	9.000	On	L1	9.8	16.1	50.0

[NEUTRAL : AC 0 V]

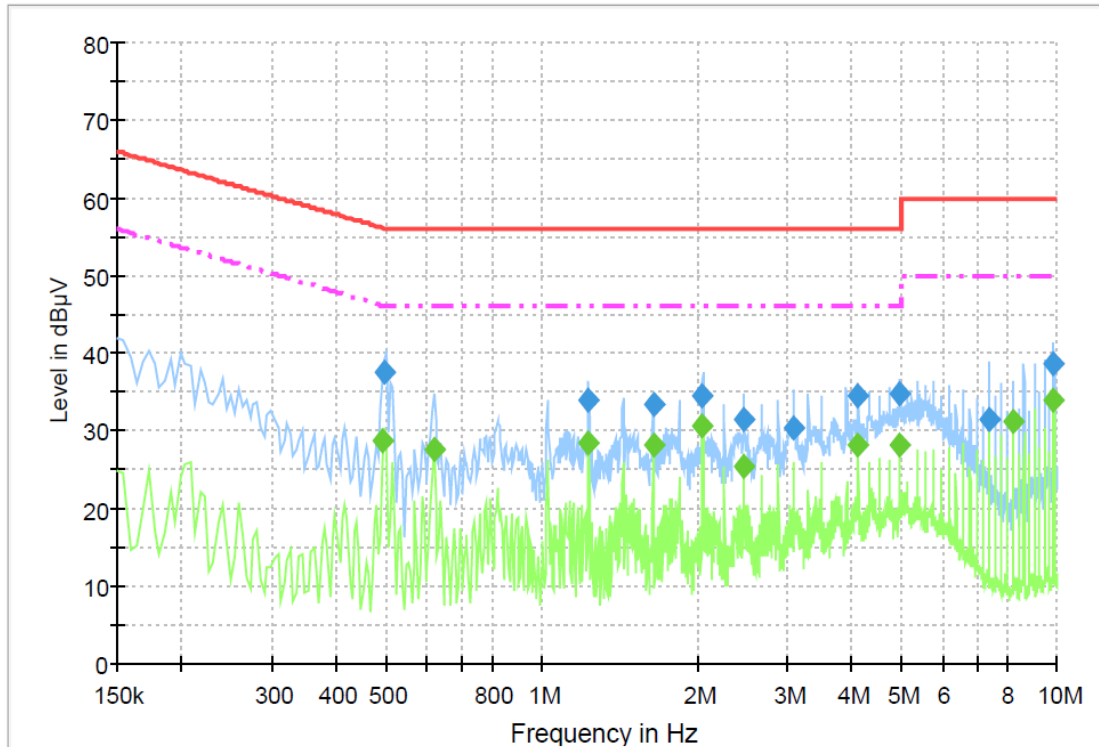
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	42.0	1000.0	9.000	On	N	10.0	23.6	65.5
0.177000	39.8	1000.0	9.000	On	N	10.1	24.9	64.6
0.226500	36.3	1000.0	9.000	On	N	9.9	26.3	62.6
0.510000	32.6	1000.0	9.000	On	N	10.1	23.4	56.0
0.618000	28.9	1000.0	9.000	On	N	10.1	27.1	56.0
2.053500	30.2	1000.0	9.000	On	N	9.8	25.8	56.0
10.275000	33.8	1000.0	9.000	On	N	9.8	26.2	60.0
12.741000	37.7	1000.0	9.000	On	N	9.8	22.3	60.0
13.150500	39.2	1000.0	9.000	On	N	9.8	20.8	60.0
16.021500	34.2	1000.0	9.000	On	N	9.9	25.8	60.0

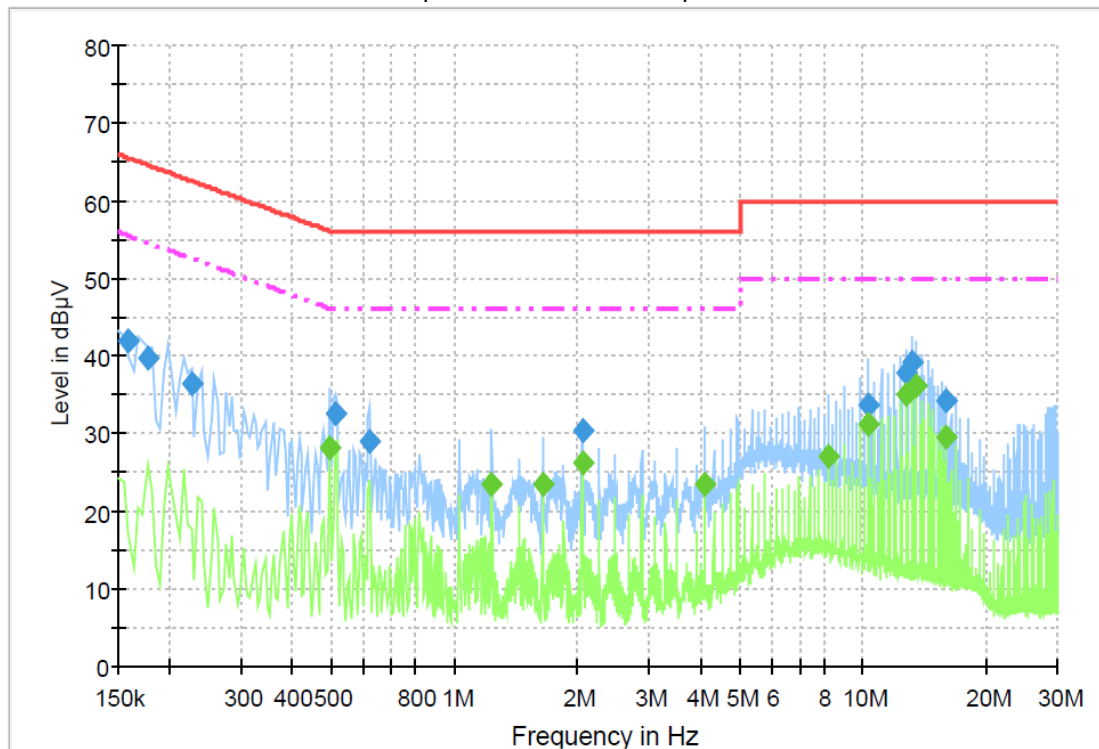
Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.492000	28.1	1000.0	9.000	On	N	10.1	18.1	46.1
1.234500	23.5	1000.0	9.000	On	N	9.9	22.5	46.0
1.644000	23.3	1000.0	9.000	On	N	9.8	22.7	46.0
2.053500	26.2	1000.0	9.000	On	N	9.8	19.8	46.0
4.110000	23.4	1000.0	9.000	On	N	9.7	22.6	46.0
8.218500	27.0	1000.0	9.000	On	N	9.8	23.0	50.0
10.270500	31.2	1000.0	9.000	On	N	9.8	18.8	50.0
12.736500	35.0	1000.0	9.000	On	N	9.8	15.0	50.0
13.560000	36.0	1000.0	9.000	On	N	9.8	14.0	50.0
16.026000	29.6	1000.0	9.000	On	N	9.9	20.4	50.0

[HOT : AC 120 V]



[NEUTRAL : AC 0 V]



[< 1 % Battery Status]

[HOT : AC 120 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.181500	43.4	1000.0	9.000	On	L1	10.1	21.0	64.4
0.181500	43.3	1000.0	9.000	On	L1	10.1	21.1	64.4
0.505500	38.1	1000.0	9.000	On	L1	10.1	17.9	56.0
1.446000	32.9	1000.0	9.000	On	L1	9.8	23.1	56.0
1.810500	36.2	1000.0	9.000	On	L1	9.8	19.8	56.0
2.175000	34.7	1000.0	9.000	On	L1	9.8	21.3	56.0
2.535000	34.8	1000.0	9.000	On	L1	9.8	21.2	56.0
2.899500	35.0	1000.0	9.000	On	L1	9.7	21.0	56.0
3.619500	32.2	1000.0	9.000	On	L1	9.7	23.8	56.0
4.893000	31.5	1000.0	9.000	On	L1	9.7	24.5	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.181500	35.3	1000.0	9.000	On	L1	10.1	19.2	54.4
0.505500	25.9	1000.0	9.000	On	L1	10.1	20.1	46.0
1.086000	26.7	1000.0	9.000	On	L1	9.9	19.3	46.0
1.450500	28.2	1000.0	9.000	On	L1	9.8	17.8	46.0
1.810500	30.1	1000.0	9.000	On	L1	9.8	15.9	46.0
2.175000	30.3	1000.0	9.000	On	L1	9.8	15.7	46.0
2.535000	30.5	1000.0	9.000	On	L1	9.8	15.5	46.0
2.899500	28.8	1000.0	9.000	On	L1	9.7	17.2	46.0
3.624000	25.5	1000.0	9.000	On	L1	9.7	20.5	46.0
7.606500	29.0	1000.0	9.000	On	L1	9.7	21.0	50.0

[NEUTRAL : AC 0 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	46.7	1000.0	9.000	On	N	10.0	18.8	65.5
0.172500	40.1	1000.0	9.000	On	N	10.1	24.8	64.8
0.235500	38.6	1000.0	9.000	On	N	10.0	23.6	62.3
0.267000	36.9	1000.0	9.000	On	N	10.0	24.3	61.2
0.339000	30.8	1000.0	9.000	On	N	10.0	28.4	59.2
0.505500	35.6	1000.0	9.000	On	N	10.1	20.4	56.0
1.810500	29.8	1000.0	9.000	On	N	9.8	26.2	56.0
2.535000	30.4	1000.0	9.000	On	N	9.8	25.6	56.0
24.261000	35.6	1000.0	9.000	On	N	10.2	24.4	60.0
29.341500	40.7	1000.0	9.000	On	N	10.2	19.3	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.154500	28.8	1000.0	9.000	On	N	9.9	27.0	55.8
0.181500	32.2	1000.0	9.000	On	N	10.1	22.2	54.4
0.510000	25.5	1000.0	9.000	On	N	10.1	20.5	46.0
1.450500	23.4	1000.0	9.000	On	N	9.8	22.6	46.0
1.810500	26.3	1000.0	9.000	On	N	9.8	19.7	46.0
2.170500	25.2	1000.0	9.000	On	N	9.8	20.8	46.0
2.535000	26.3	1000.0	9.000	On	N	9.8	19.7	46.0
18.109500	25.1	1000.0	9.000	On	N	10.0	24.9	50.0
23.541000	27.2	1000.0	9.000	On	N	10.2	22.8	50.0
29.337000	33.3	1000.0	9.000	On	N	10.2	16.7	50.0



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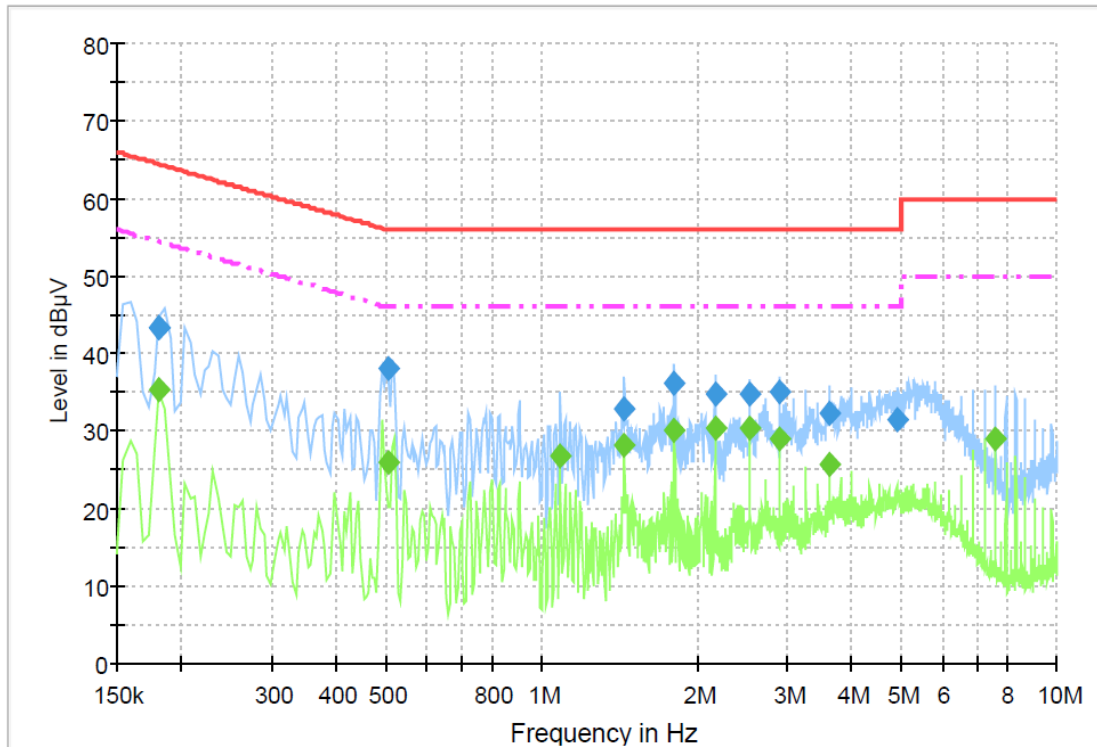
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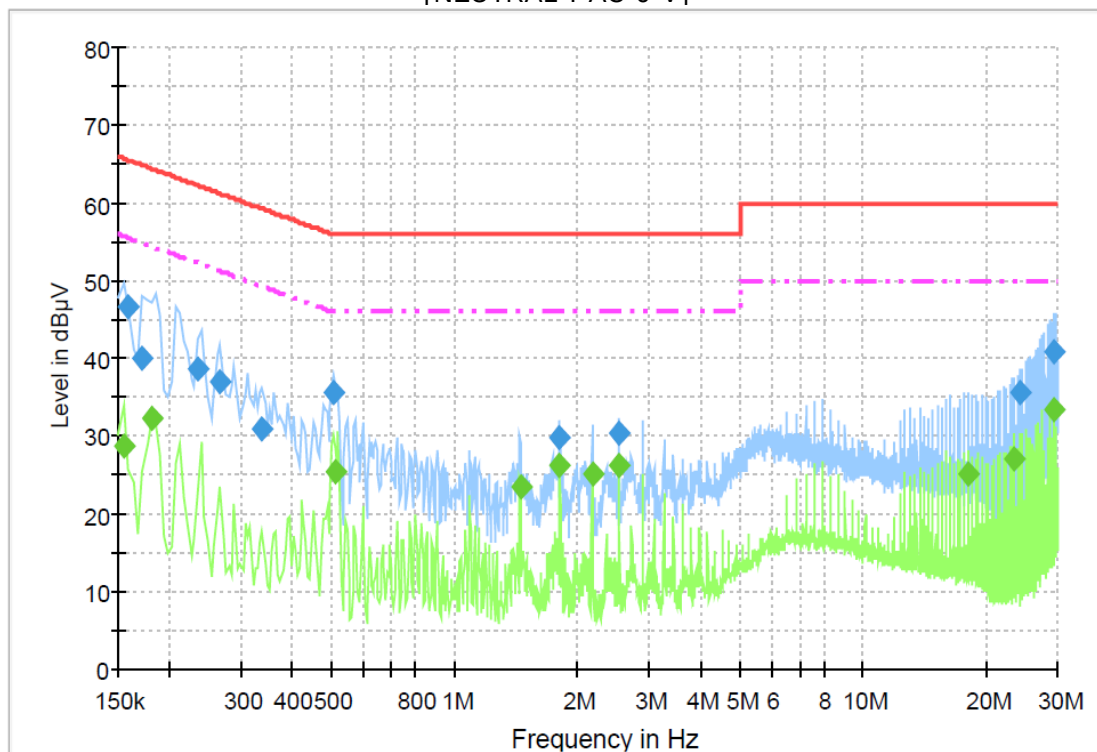
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[HOT : AC 120 V]



[NEUTRAL : AC 0 V]



[50 % Battery Status]

[HOT : AC 120 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.177000	45.0	1000.0	9.000	On	L1	10.1	19.6	64.6
0.177000	45.1	1000.0	9.000	On	L1	10.1	19.5	64.6
0.199500	42.5	1000.0	9.000	On	L1	9.9	21.2	63.6
0.240000	38.3	1000.0	9.000	On	L1	10.0	23.8	62.1
0.505500	38.1	1000.0	9.000	On	L1	10.1	17.9	56.0
1.734000	34.0	1000.0	9.000	On	L1	9.8	22.0	56.0
2.080500	34.8	1000.0	9.000	On	L1	9.8	21.2	56.0
2.427000	35.1	1000.0	9.000	On	L1	9.8	20.9	56.0
2.773500	34.9	1000.0	9.000	On	L1	9.7	21.1	56.0
3.120000	34.0	1000.0	9.000	On	L1	9.7	22.0	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.172500	34.2	1000.0	9.000	On	L1	10.1	20.6	54.8
0.510000	30.1	1000.0	9.000	On	L1	10.1	15.9	46.0
1.041000	24.5	1000.0	9.000	On	L1	9.9	21.5	46.0
1.387500	26.7	1000.0	9.000	On	L1	9.8	19.3	46.0
1.734000	28.4	1000.0	9.000	On	L1	9.8	17.6	46.0
2.080500	29.4	1000.0	9.000	On	L1	9.8	16.6	46.0
2.427000	29.9	1000.0	9.000	On	L1	9.8	16.1	46.0
2.773500	29.7	1000.0	9.000	On	L1	9.7	16.3	46.0
3.466500	27.7	1000.0	9.000	On	L1	9.7	18.3	46.0
3.813000	25.9	1000.0	9.000	On	L1	9.7	20.1	46.0

[NEUTRAL : AC 0 V]

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.154500	45.1	1000.0	9.000	On	N	9.9	20.6	65.8
0.177000	43.4	1000.0	9.000	On	N	10.1	21.2	64.6
0.222000	39.0	1000.0	9.000	On	N	9.9	23.8	62.7
0.298500	29.7	1000.0	9.000	On	N	10.0	30.6	60.3
0.348000	30.1	1000.0	9.000	On	N	10.1	28.9	59.0
0.505500	35.9	1000.0	9.000	On	N	10.1	20.1	56.0
0.568500	24.9	1000.0	9.000	On	N	10.1	31.1	56.0
2.787000	28.1	1000.0	9.000	On	N	9.7	27.9	56.0
23.667000	33.4	1000.0	9.000	On	N	10.2	26.6	60.0
28.891500	39.6	1000.0	9.000	On	N	10.2	20.4	60.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.177000	29.5	1000.0	9.000	On	N	10.1	25.1	54.6
0.505500	29.6	1000.0	9.000	On	N	10.1	16.4	46.0
1.392000	23.5	1000.0	9.000	On	N	9.8	22.5	46.0
1.738500	24.2	1000.0	9.000	On	N	9.8	21.8	46.0
2.089500	25.3	1000.0	9.000	On	N	9.8	20.7	46.0
2.782500	24.9	1000.0	9.000	On	N	9.7	21.1	46.0
3.133500	24.0	1000.0	9.000	On	N	9.7	22.0	46.0
17.398500	25.4	1000.0	9.000	On	N	9.9	24.6	50.0
24.009000	24.6	1000.0	9.000	On	N	10.2	25.4	50.0
29.575500	31.8	1000.0	9.000	On	N	10.2	18.2	50.0



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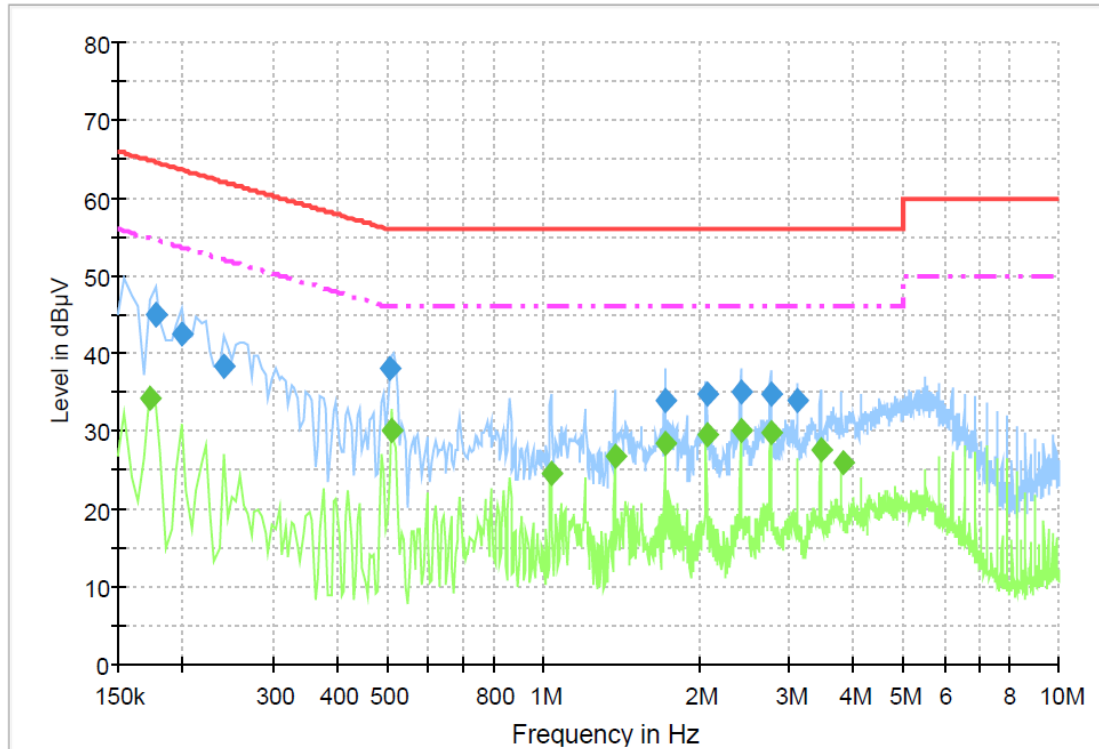
386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea

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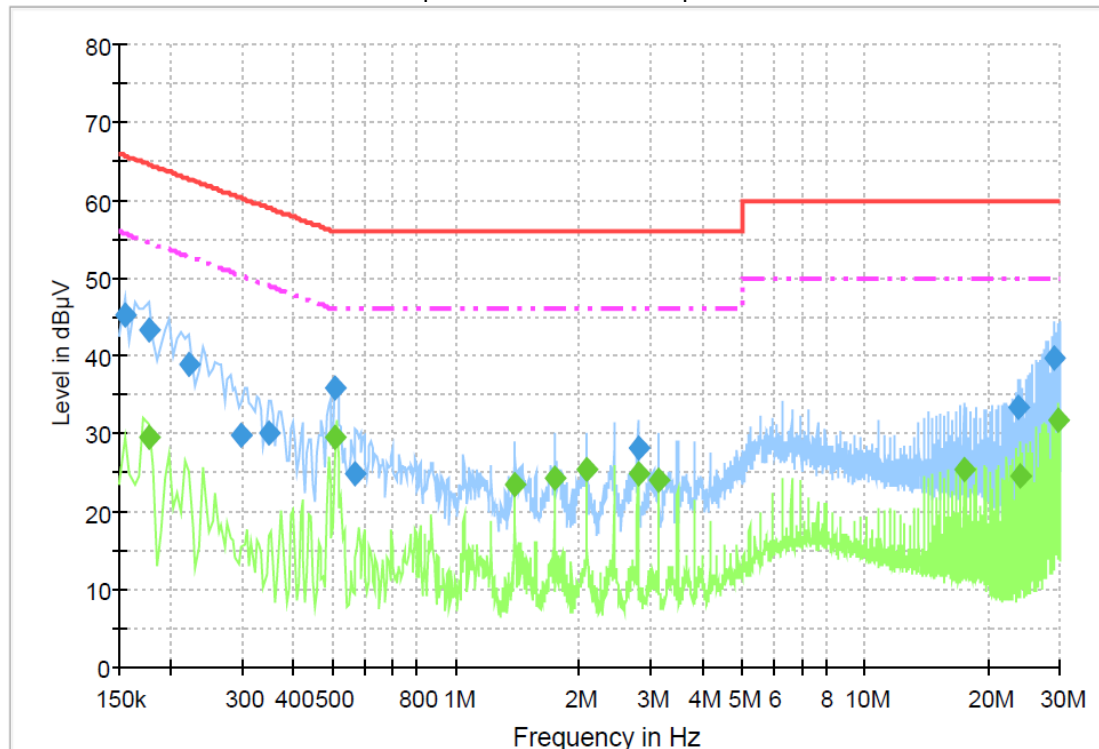
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[HOT : AC 120 V]



[NEUTRAL : AC 0 V]



2.2 Radiated emissions (Section 15.209)

Test Location

- ☒ 10 m SAC (test distance : ☐ 10 m, ☒ 3 m)
☐ 3 m SAC (test distance : 3 m)

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

The spectrum analyzer is set to:

Frequency Range = 9 kHz ~ 1 GHz

RBW = 100 kHz for $f < 1$ GHz, 9 kHz for $f < 30$ MHz

VBW $\geq$ RBW

Sweep = Auto

Limit

- 15.209(a)

Frequency [MHz]	Field Strength [μ V/m]	Measurement Distance [Meters]
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

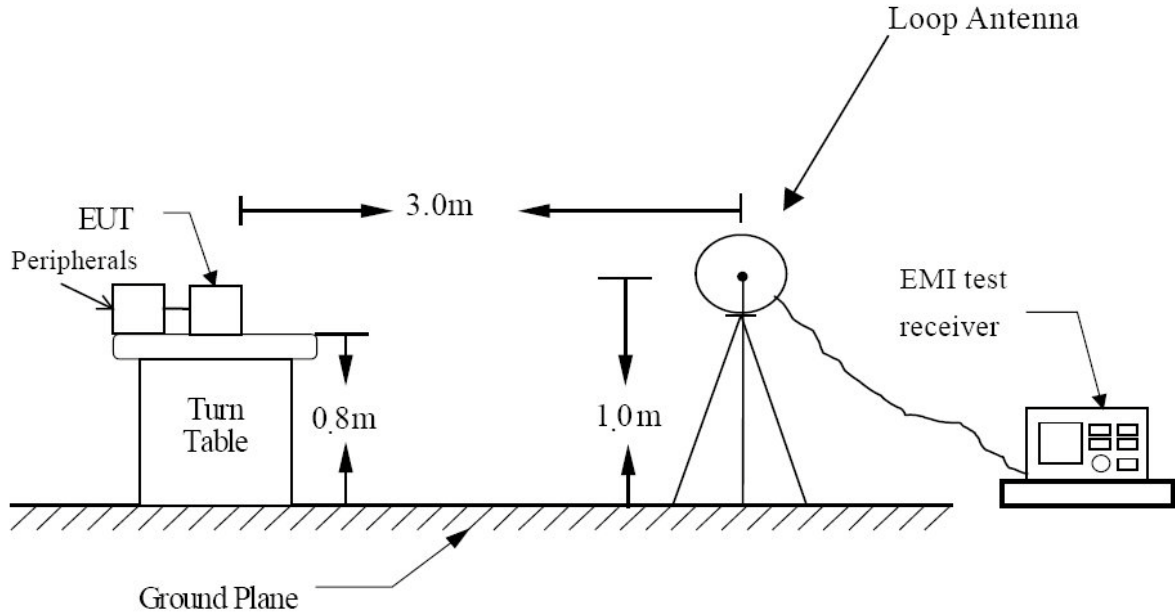
** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Note :

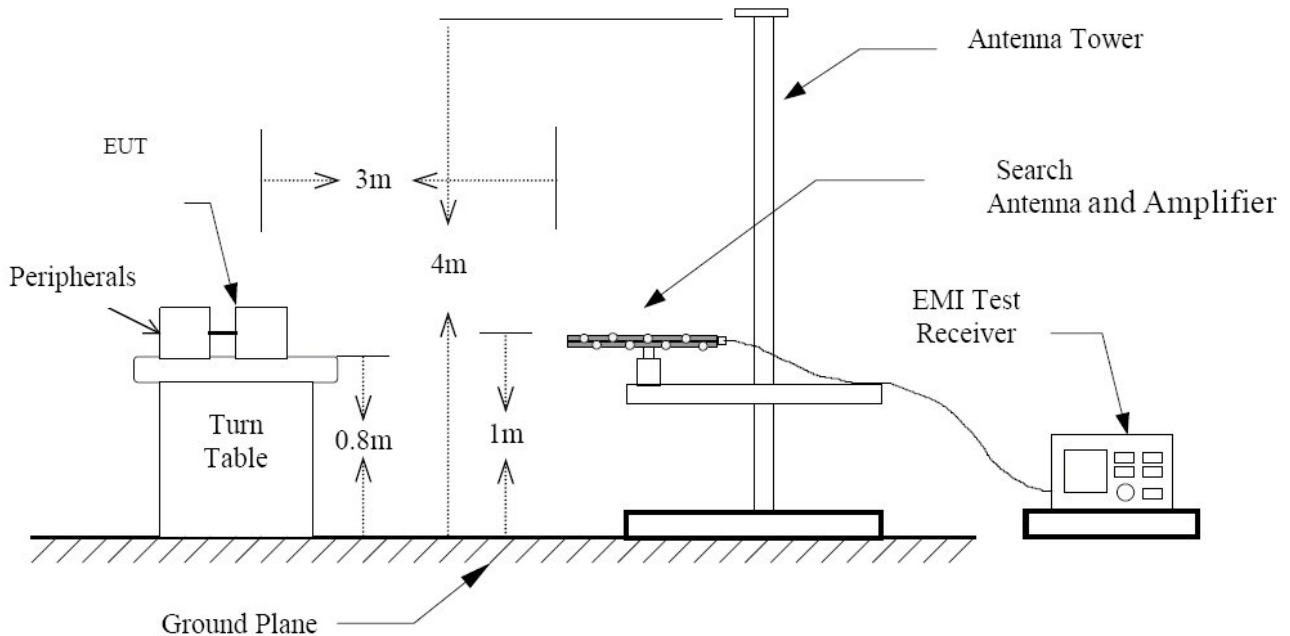
- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Test Setup:

- 1) For field strength of emissions from 9 kHz to 30 MHz



- 2) For field strength of emissions from 30 MHz to 1 GHz



Test Results

EUT	S Charger Pad	Model	EP-P100IJWU
Frequency Range	9 kHz ~ 1 GHz	Test mode	TX

The requirements are:

☒ Complies

Test Data

Fundamental Test Data

[Test Mode #1]

Operating Frequency : 112 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
112.83	58.77	20.18	5.9	-80	4.85	45.47	40.62	Peak
112.83	58.65	20.18	5.9	-80	4.73	25.47	20.74	Average

Operating Frequency : 158.5 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
158.27	57.68	20.18	5.9	-80	3.76	44.92	41.16	Peak
158.27	57.52	20.18	5.9	-80	3.60	24.92	21.32	Average

Operating Frequency : 205 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
204.15	56.13	20.18	5.9	-80	2.21	44.55	42.34	Peak
204.15	56.02	20.18	5.9	-80	2.10	24.55	22.45	Average

[Test Mode #2]

< 1 % Battery Status

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
119.34	59.41	20.18	5.9	-80	5.49	46.07	40.58	Peak
119.34	59.33	20.18	5.9	-80	5.41	26.07	20.66	Average

50 % Battery Status

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
123.67	57.37	20.18	5.9	-80	3.45	45.76	42.31	Peak
123.67	57.22	20.18	5.9	-80	3.30	25.76	22.46	Average



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Spurious Test Data

[Test Mode #1]

Operating Frequency : 112 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
225.66	35.61	20.18	5.9	-80	-18.31	40.54	58.85	Peak
225.66	35.55	20.18	5.9	-80	-18.37	20.54	38.91	Average

Operating Frequency : 158.5 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
316.54	33.61	20.18	5.9	-80	-20.31	37.60	57.91	Peak
316.54	33.51	20.18	5.9	-80	-20.41	17.60	38.01	Average

Operating Frequency : 205 kHz

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
408.30	32.94	20.18	5.9	-80	-20.98	35.38	56.36	Peak
408.30	32.83	20.18	5.9	-80	-21.09	15.38	36.47	Average

[Test Mode #2]

< 1 % Battery Status

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
357.88	34.61	20.18	5.9	-80	-19.31	36.53	55.84	Peak
357.88	34.52	20.18	5.9	-80	-19.40	16.53	35.93	Average

50 % Battery Status

Freq. (kHz)	Reading (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Distance Correction	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	Detect Mode
371.53	33.46	20.18	5.9	-80	-20.46	36.20	56.66	Peak
371.53	33.33	20.18	5.9	-80	-20.59	16.20	36.79	Average



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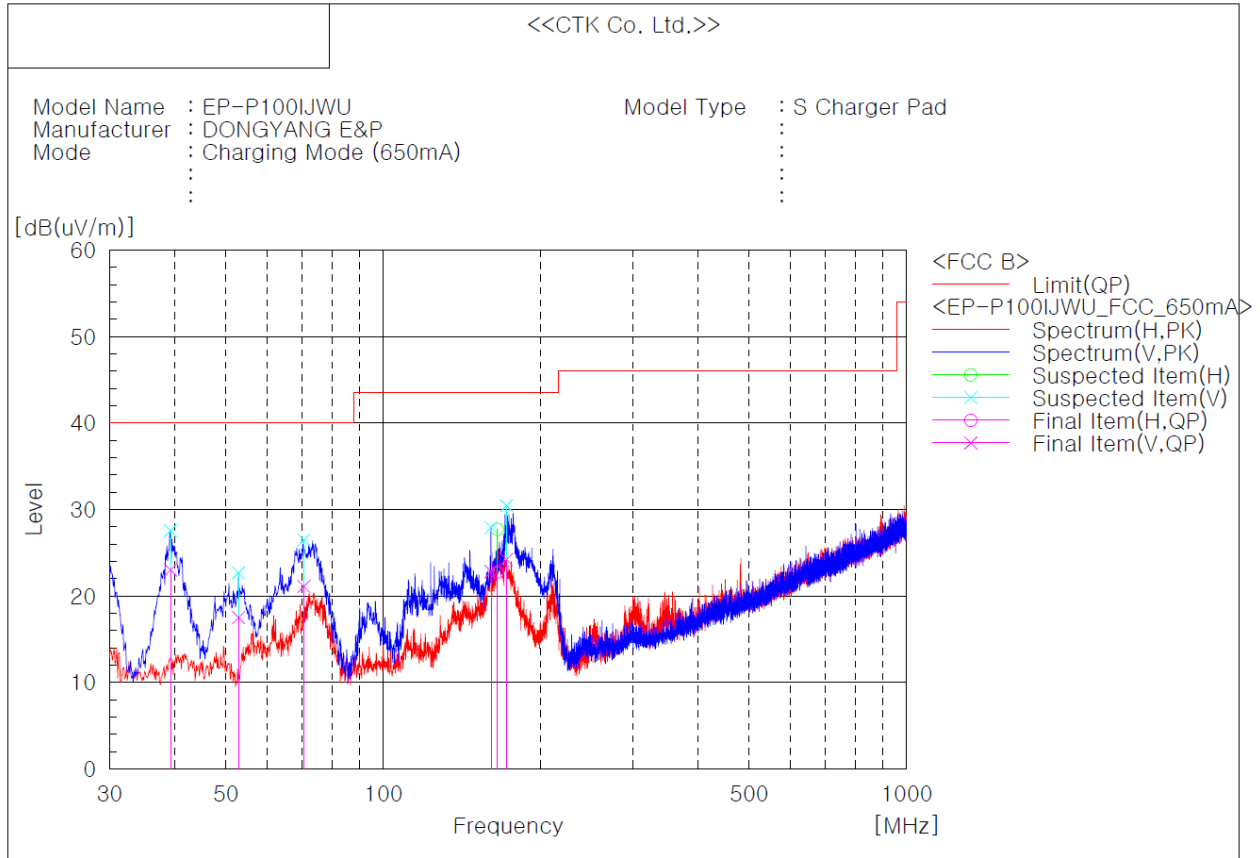
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[Operating Frequency : 112 kHz]



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	39.215	V	36.6	-13.6	23.0	40.0	17.0	100.0	0.0
2	52.916	V	32.4	-14.9	17.5	40.0	22.5	100.0	145.0
3	70.498	V	38.0	-16.9	21.1	40.0	18.9	100.0	108.0
4	160.708	V	28.5	-5.7	22.8	43.5	20.7	100.0	71.0
5	165.194	H	27.6	-4.9	22.7	43.5	20.8	209.0	0.0
6	171.984	V	32.5	-8.3	24.2	43.5	19.3	100.0	71.0



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<<CTK Co. Ltd.>>

Model Name : EP-P100IJWU	Model Type : S Charger Pad
Manufacturer : DONGYANG E&P	:
Mode : Charging Mode (425mA)	:
:	:
:	:

[dB(uV/m)]

Frequency [MHz]

<FCC B>

— Limit(QP)

— Spectrum(H,PK)

— Spectrum(V,PK)

× Suspected Item(V)

× Final Item(V,QP)

No.	Frequency [MHz]	(P) V	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	39.215	V	37.2	-13.6	23.6	40.0	16.4	100.0	66.0
2	48.673	V	32.5	-13.5	19.0	40.0	21.0	100.0	29.0
3	125.545	V	31.6	-13.1	18.5	43.5	25.0	100.0	290.0
4	145.794	V	27.4	-8.9	18.5	43.5	25.0	100.0	29.0
5	174.530	V	28.3	-8.7	19.6	43.5	23.9	100.0	290.0
6	212.118	V	31.0	-12.6	18.4	43.5	25.1	100.0	141.0



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Model Name : EP-P100IJWU	Model Type : S Charger Pad
Manufacturer : DONGYANG E&P	:
Mode : Charging Mode (250mA)	:
:	:

[dB(uV/m)]

The graph displays the radio frequency interference (RFI) test results for the EP-P100IJWU S Charger Pad in Charging Mode (250mA). The Y-axis represents the signal level in dB(uV/m), ranging from 0 to 60. The X-axis represents the frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC B limit, which is 40 dB(uV/m) from 30 to 87 MHz, 44 dB(uV/m) from 87 to 150 MHz, and 54 dB(uV/m) from 150 to 1000 MHz. The blue line represents the measured spectrum, which remains below the limit. Cyan 'x' marks indicate suspected items, and magenta 'x' marks indicate the final items. The spectrum shows several peaks, with the highest being around 150 MHz, reaching approximately 30 dB(uV/m).

Line/Marker Color	Symbol	Description
Red	—	Limit(QP)
Red	—	<EP-P100IJWU_FCC_250mA>
Blue	—	Spectrum(H,PK)
Blue	—	Spectrum(V,PK)
Cyan	x	Suspected Item(V)
Magenta	x	Final Item(V,QP)

No.	Frequency [MHz]	(P) V	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	39.336	V	36.5	-13.6	22.9	40.0	17.1	100.0	290.0
2	50.734	V	33.3	-14.1	19.2	40.0	20.8	100.0	104.0
3	75.226	V	35.5	-18.3	17.2	40.0	22.8	100.0	29.0
4	127.606	V	34.1	-12.7	21.4	43.5	22.1	100.0	179.0
5	144.339	V	33.3	-9.1	24.2	43.5	19.3	100.0	142.0
6	176.470	V	28.2	-9.1	19.1	43.5	24.4	100.0	0.0



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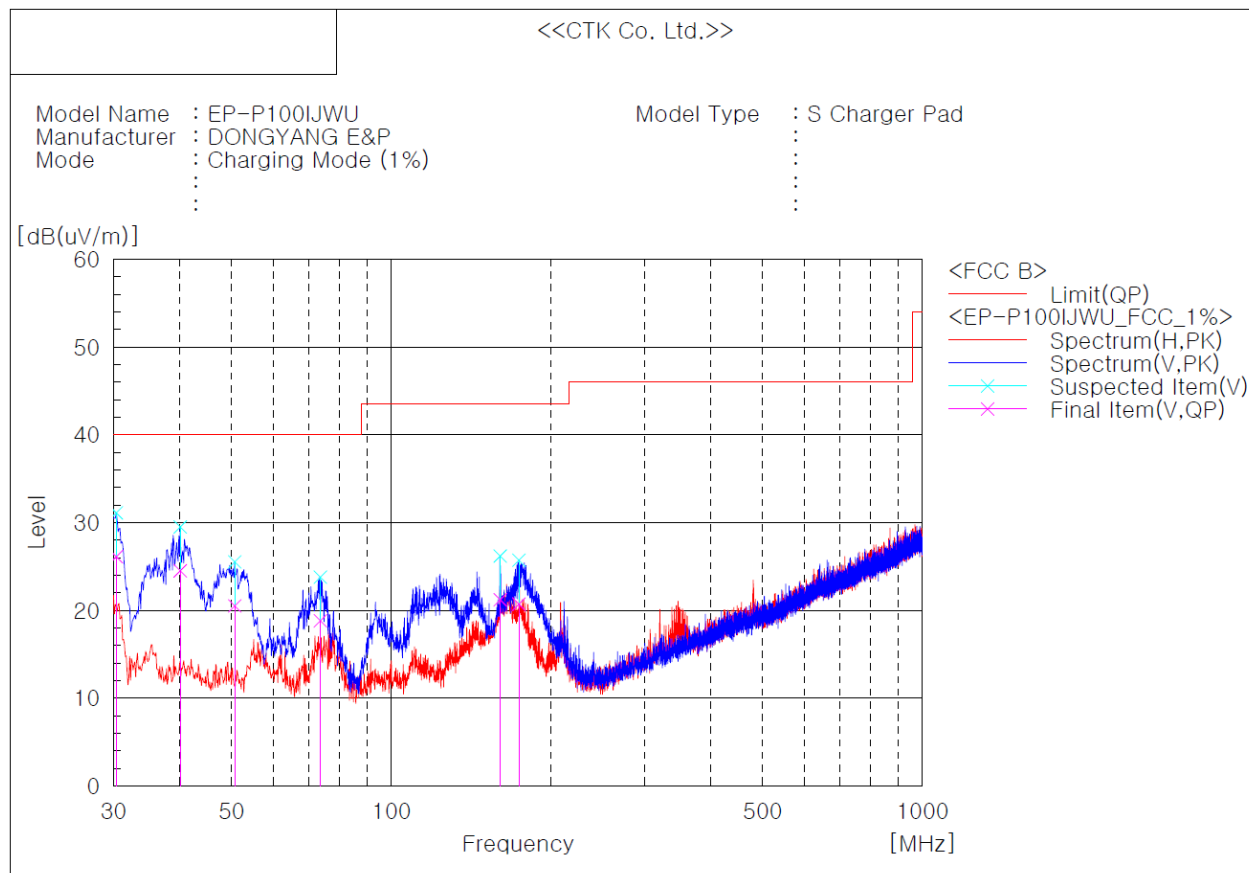
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[< 1 % Battery Status]



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	30.364	V	40.9	-14.8	26.1	40.0	13.9	100.0	290.0
2	40.064	V	38.0	-13.5	24.5	40.0	15.5	100.0	141.0
3	50.734	V	34.6	-14.1	20.5	40.0	19.5	100.0	141.0
4	73.529	V	36.9	-18.1	18.8	40.0	21.2	100.0	29.0
5	160.344	V	27.0	-5.8	21.2	43.5	22.3	100.0	29.0
6	173.924	V	29.3	-8.6	20.7	43.5	22.8	100.0	0.0



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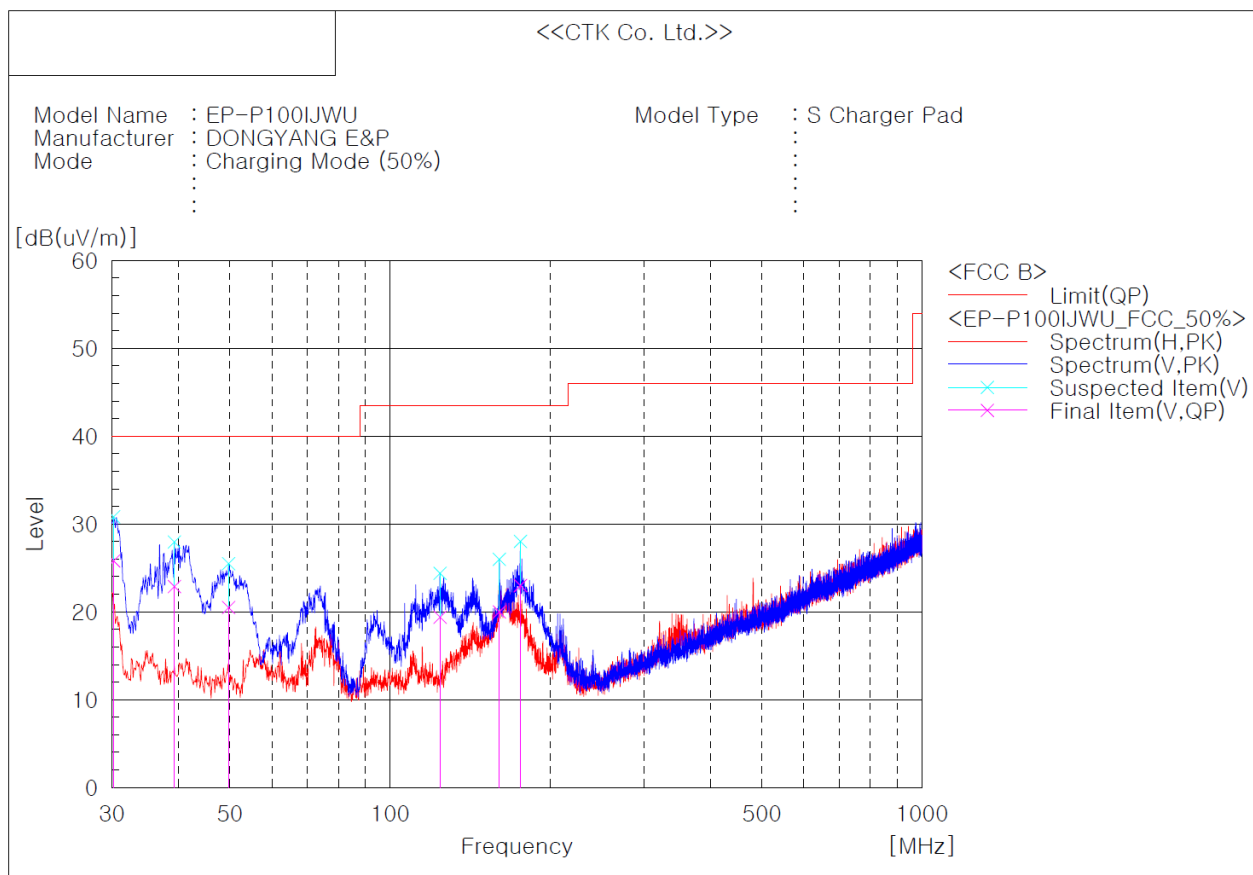
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[50 % Battery Status]



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	30.243	V	40.6	-14.8	25.8	40.0	14.2	100.0	253.0
2	39.336	V	36.5	-13.6	22.9	40.0	17.1	100.0	29.0
3	49.764	V	34.2	-13.7	20.5	40.0	19.5	100.0	142.0
4	124.211	V	32.6	-13.2	19.4	43.5	24.1	100.0	253.0
5	160.586	V	25.8	-5.8	20.0	43.5	23.5	100.0	0.0
6	175.864	V	32.0	-9.0	23.0	43.5	20.5	100.0	0.0



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APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESCI7	100816	2013-12-15
2	LISN	Rohde & Schwarz	ENV216	101235	2013-08-18
3	LISN	Rohde & Schwarz	ENV216	101236	2013-08-06
4	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2013-12-15
5	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2014-06-06
6	Trilog Broadband Antenna	Rohde & Schwarz	VULB 9161 SE	9161-4133	2014-06-11
7	6dB Attenuator	Rohde & Schwarz	DNF	272.4110.50	2013-11-14
8	AMPLIFIER	Sonoma Instrument Co.	310	291721	2014-03-21
9	Radio Communication Tester	Rohde & Schwarz	CMU200	106765	2014-02-04