



FCC - TEST REPORT

Report Number : **68.950.19.2677.01** Date of Issue: July 9, 2019

Model : **CP61**

Product Type : **Wireless Charger**

Applicant : **Huawei Technologies Co., Ltd.**

Address : **Administration Building, Headquarters of Huawei Technologies Co.,
Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C**

Manufacturer : **Huawei Technologies Co., Ltd.**

Address : **Administration Building, Headquarters of Huawei Technologies Co.,
Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C**

Test Result : **Positive** **Negative**

Total pages including Appendices : **23**

TÜV SÜD Certification and Testing (China) Co., Ltd. – Shenzhen Branch is a subcontractor to TÜV SÜD Product Service GmbH according to the principles outlined in ISO 17025.

TÜV SÜD Certification and Testing (China) Co., Ltd. – Shenzhen Branch reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. TÜV SÜD Certification and Testing (China) Co., Ltd. – Shenzhen Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD Certification and Testing (China) Co., Ltd. – Shenzhen Branch issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval



1 Table of Contents

1	Table of Contents	2
2	Details about the Test Laboratory.....	3
3	Description of the Equipment Under Test.....	4
4	Summary of Test Standards.....	5
5	Summary of Test Results.....	6
6	General Remarks	7
7	Test Setups	8
8	Systems test configuration.....	9
9	Technical Requirement	10
9.1	Conducted Emission Test	10
9.2	20 dB Bandwidth and 99% Occupied Bandwidth	15
9.3	Radiated Emission Test.....	16
10	Test Equipment List.....	22
11	System Measurement Uncertainty	23



2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12 & 13, Zhiheng Wisdomland Business Park, Nantou Checkpoint
Road 2, Nanshan District
Shenzhen 518052
P.R. China

Telephone: 86 755 8828 6998

Fax: 86 755 828 5299

FCC Registration No.: 514049

No.:

3 Description of the Equipment Under Test

Product:	Wireless Charger
Model no.:	CP61
FCC ID:	QISCP61
Options and accessories:	Adapter and USB Cable
Rating:	5-10Vdc 4A Max supplied by an external adapter
Adapter information:	Adapter 1: Manufacturer:Huawei Technologies Co.,Ltd. Model: HW-100400E00 Input voltage:100-240V 50/60Hz 1.2A Output voltage:5V \equiv 2A or 9V \equiv 2A or 10V \equiv 4A Max Adapter 2: Manufacturer:Huawei Technologies Co.,Ltd. Model: HW-100400E01 Input voltage:100-240V 50/60Hz 1.2A Output voltage:5V \equiv 2A or 9V \equiv 2A or 10V \equiv 4A Max
RF Transmission Frequency:	111-145KHz
Antenna Type:	Integrated coil antenna
Antenna Gain:	0dBi
Description of the EUT:	The Equipment Under Test (EUT) is a wireless charger which operated at 111-145kHz.



4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2018 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to ANSI C63.10 (2013).



5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C						
Test Condition		Pages	Test Site	Test Result		
				Pass	Fail	N/A
§15.207	Conducted emission AC power port	10	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	20dB bandwidth	15	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.205	Restricted bands of operation	16	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.209	Radiated emission	18	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.203	Antenna requirement	See note 1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note 1: The EUT uses an Integrated coil antenna, which gain is 0dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.

6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: QISCP61, complies with Section 15.207, 15.209, 15.205 of the FCC Part 15, Subpart C rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

The Equipment under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: July 1, 2019

Testing Start Date: July 4, 2019

Testing End Date: July 5, 2019

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:



John Zhi
Project Manager

Prepared by:



Moon Xiong
Project Engineer



Tested by:

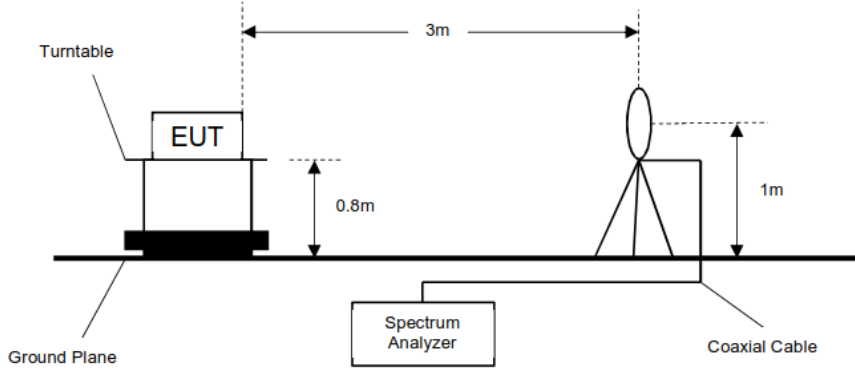


Tree Zhan
Test Engineer

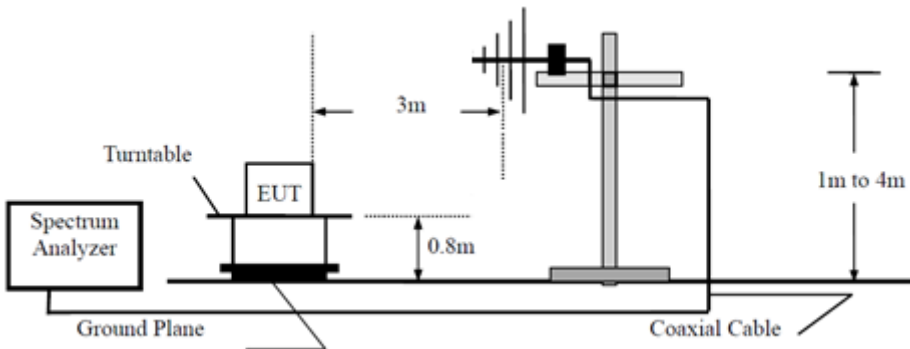
7 Test Setups

7.1 Radiated test setups

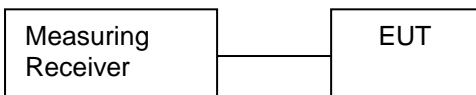
Below 30MHz



30MHz-1GHz



7.2 Conducted RF test setups





8 Systems test configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Mobile Phone	HUAWEI	---	---

Test mode:

Mode 1: standby
Mode 2: Charging

9 Technical Requirement

9.1 Conducted Emission Test

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

According to §15.207, conducted emissions limit as below:

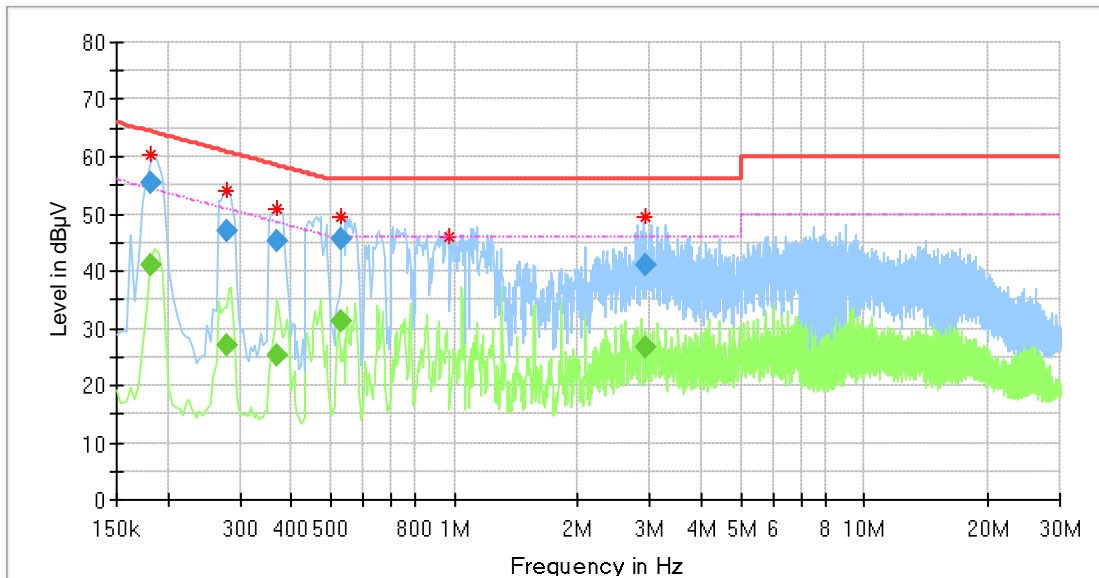
Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreasing linearly with logarithm of the frequency

Remark: all test modes were tested; the report only shows the worse test result.

Conducted Emission

Product Type : Wireless Charger
 M/N : CP61
 Operating Condition : Charging Mode
 Test Specification : Line
 Comment : AC 120V/60Hz
 Adapter model : HW-1004000E00



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.181500	60.30	---	64.21	3.91	L1	10.2
0.277500	53.87	---	60.76	6.89	L1	10.2
0.369500	50.88	---	58.41	7.53	L1	10.3
0.529500	49.62	---	56.00	6.38	L1	10.3
0.970000	46.00	---	56.00	10.00	L1	10.3
2.910500	49.62	---	56.00	6.38	L1	10.3

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.181500	---	41.11	54.42	13.31	L1	10.2
0.181500	55.58	---	64.42	8.84	L1	10.2
0.277500	---	26.93	50.89	23.96	L1	10.2
0.277500	46.91	---	60.89	13.98	L1	10.2
0.369500	---	25.21	48.51	23.30	L1	10.3
0.369500	45.38	---	58.51	13.13	L1	10.3
0.529500	---	31.33	46.00	14.67	L1	10.3
0.529500	45.49	---	56.00	10.51	L1	10.3
2.910500	---	26.82	46.00	19.18	L1	10.3
2.910500	41.18	---	56.00	14.82	L1	10.3

Remark :

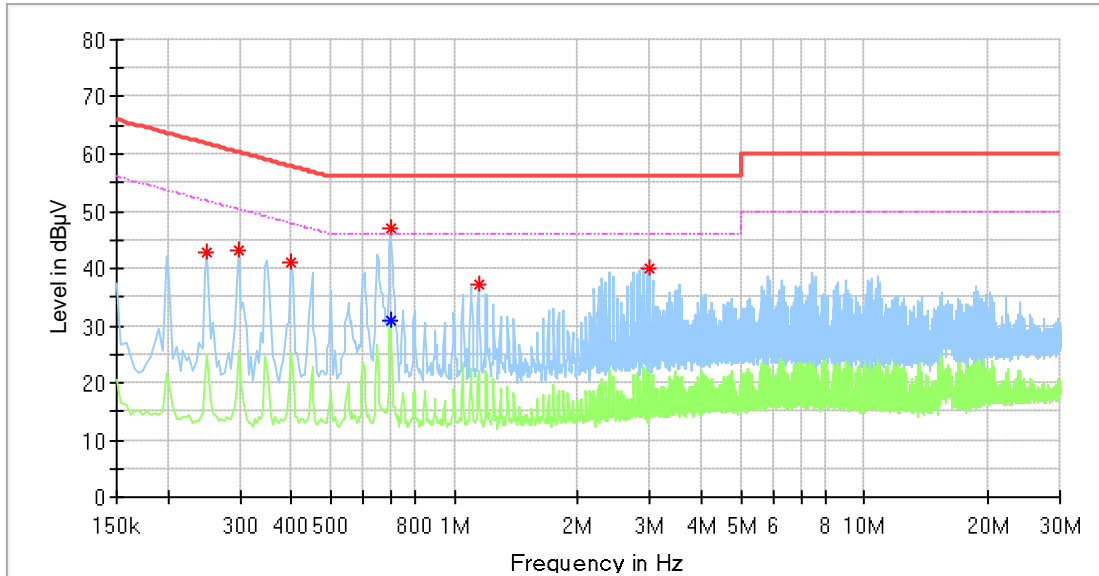
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : Wireless Charger
 M/N : CP61
 Operating Condition : Charging Mode
 Test Specification : Neutral
 Comment : AC 120V/60Hz
 Adapter model : HW-1004000E00



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.250000	42.91	---	61.76	18.84	N	10.2
0.298000	43.12	---	60.30	17.18	N	10.2
0.398000	41.07	---	57.90	16.82	N	10.3
0.698000	---	30.72	46.00	15.28	N	10.3
0.698000	47.02	---	56.00	8.98	N	10.3
1.146000	37.26	---	56.00	18.74	N	10.3
2.990000	39.97	---	56.00	16.03	N	10.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

Remark :

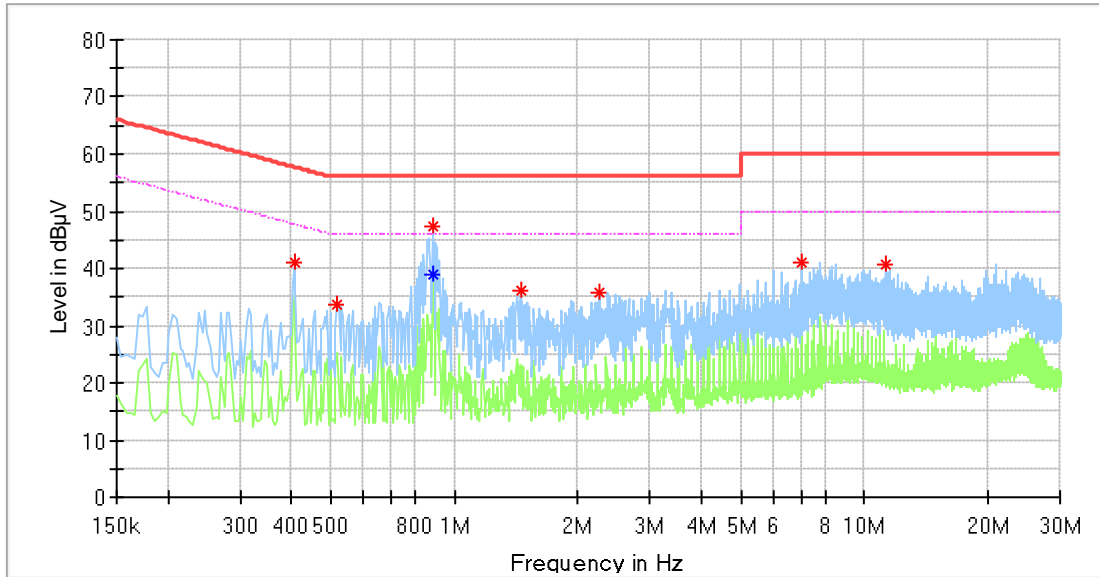
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : Wireless Charger
 M/N : CP61
 Operating Condition : Charging Mode
 Test Specification : Line
 Comment : AC 120V/60Hz
 Adapter model : HW-1004000E01



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.406000	40.90	---	57.73	16.83	L1	10.3
0.518000	33.76	---	56.00	22.24	L1	10.3
0.886000	47.49	---	56.00	8.51	L1	10.3
0.886000	---	39.07	46.00	6.93	L1	10.3
1.450000	36.05	---	56.00	19.95	L1	10.3
2.254000	35.62	---	56.00	20.38	L1	10.3
7.038000	41.19	---	60.00	18.81	L1	10.5
11.310000	40.57	---	60.00	19.43	L1	10.7

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Remark :

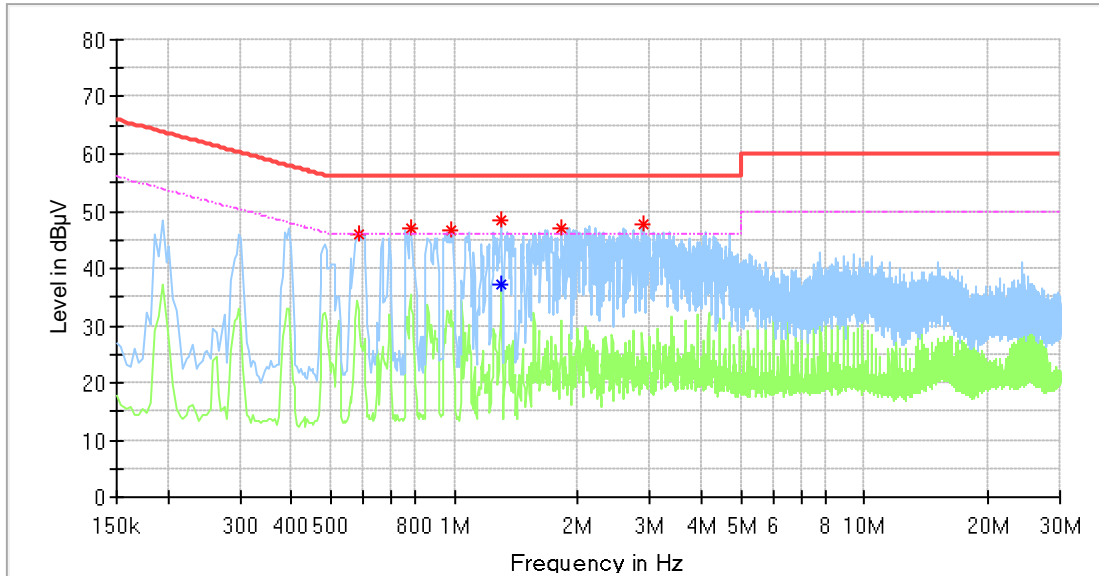
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : Wireless Charger
 M/N : CP61
 Operating Condition : Charging Mode
 Test Specification : Neutral
 Comment : AC 120V/60Hz
 Adapter model : HW-1004000E01



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.586000	46.10	---	56.00	9.90	N	10.3
0.782000	46.87	---	56.00	9.13	N	10.3
0.982000	46.57	---	56.00	9.43	N	10.3
1.302000	48.51	---	56.00	7.49	N	10.3
1.302000	---	37.11	46.00	8.89	N	10.3
1.822000	47.18	---	56.00	8.82	N	10.3
2.890000	47.89	---	56.00	8.11	N	10.4

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---	---	---

Remark :

Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)



9.2 20 dB Bandwidth

Test Method

1. Use the following spectrum analyzer settings:
RBW=200Hz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 20 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 20 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]

No Limit

Test result

Frequency KHz	20dB bandwidth Hz	Result		Result
		F _L (KHz)	F _H (KHz)	
111KHz	753.0	110.74	--	Pass
145KHz	521.0	--	145.718	Pass

The fundamental frequency is outside the restricted bands of 15.205 section.

9.3 Radiated Emission Test

Test Method

- 1: The EUT was placed on a turn table which is 0.8m above ground for below 1GHz at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2: The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
- 3: The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4: For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5: Use the following spectrum analyzer settings According to C63.10:

Limit

the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency MHz	Field Strength μ V/m	Field Strength dB μ V/m	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	QP	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: Limit 3m(dB μ V/m)=Limit 300m(dB μ V/m)+40Log(300m/3m) (Below 30MHz)

Note 2: Limit 3m(dB μ V/m)=Limit 30m(dB μ V/m)+40Log(30m/3m) (Below 30MHz)

Radiated emissions test (9KHz-30MHz)

Frequency Band	Frequency	Emission Level	Reading Level	Polarization	Limit	Detector	Margin	Correction factor	Result
	MHz	dB μ V/m			dB μ V/m		dB μ V/m	(dB)	
9KHz-30MHz	0.105209	53.89	34.19	H	93.8	QP	39.91	19.7	Pass
	0.150000	56.00	36.3	H	93.8	QP	37.80	19.7	Pass
	0.264425	51.93	32.23	H	93.8	QP	41.87	19.7	Pass
	Other frequency	--	--	H	93.8	QP	--	--	Pass
	0.027753	58.00	38.3	V	93.8	QP	35.80	19.7	Pass
	0.029492	52.10	32.4	V	93.8	QP	41.70	19.7	Pass
	0.055577	52.67	32.97	V	93.8	QP	41.13	19.7	Pass
	Other frequency	--	--	V	93.8	QP	--	--	Pass

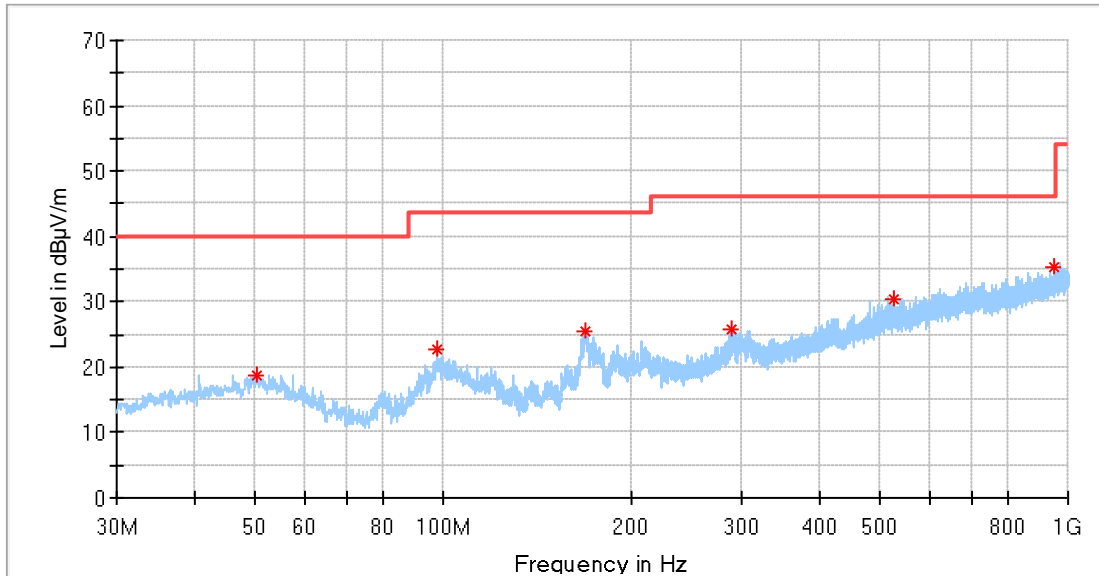
Remark:

- (1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Emission Level=Reading Level + Correction Factor
Correction factor = Loop Antenna Factor + Cable Loss
- (4) All tested frequencies comply for the strictest limit (93.8dB μ V/m). so the test result can considered as Pass.

Remark: all test modes were tested; the report only shows the worse test result.

Radiated emissions test (30MHz-1000MHz)

Model: CP61
 Test Mode: Charging Mode
 Test Voltage: AC 120V/60Hz
 Project No./Sample ID: 68.760.19.0415.01
 Adapter model: HW-1004000E00



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
50.188125	18.77	40.00	21.23	100.0	H	226.0	18.1
97.718125	22.80	43.50	20.70	200.0	H	5.0	15.5
168.649375	25.60	43.50	17.90	200.0	H	355.0	14.5
290.263125	25.81	46.00	20.19	100.0	H	46.0	19.7
527.185625	30.45	46.00	15.55	200.0	H	87.0	24.6
951.863750	35.17	46.00	10.83	100.0	H	249.0	30.8

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

Remark :

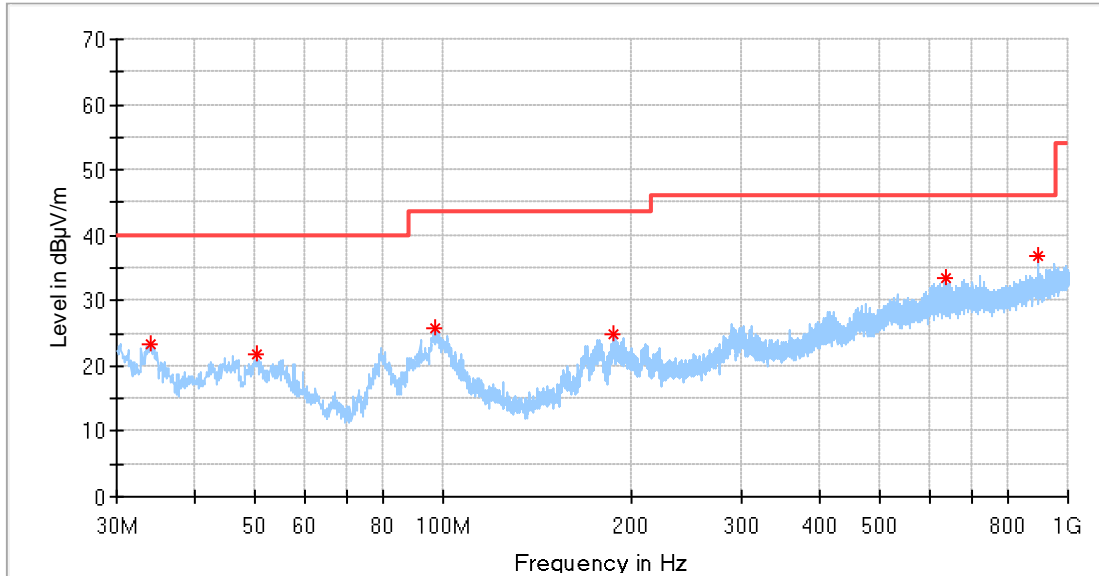
Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)



Model: CP61
 Test Mode: Charging Mode
 Test Voltage: AC 120V/60Hz
 Project No./Sample ID: 68.760.19.0415.01
 Adapter model: HW-1004000E00



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.061875	23.33	40.00	16.67	100.0	V	315.0	14.8
50.188125	21.85	40.00	18.15	200.0	V	204.0	18.1
96.687500	25.84	43.50	17.66	100.0	V	0.0	15.4
187.806875	24.85	43.50	18.65	100.0	V	182.0	15.1
635.461875	33.32	46.00	12.68	100.0	V	111.0	26.6
892.390625	36.88	46.00	9.12	100.0	V	158.0	29.9

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

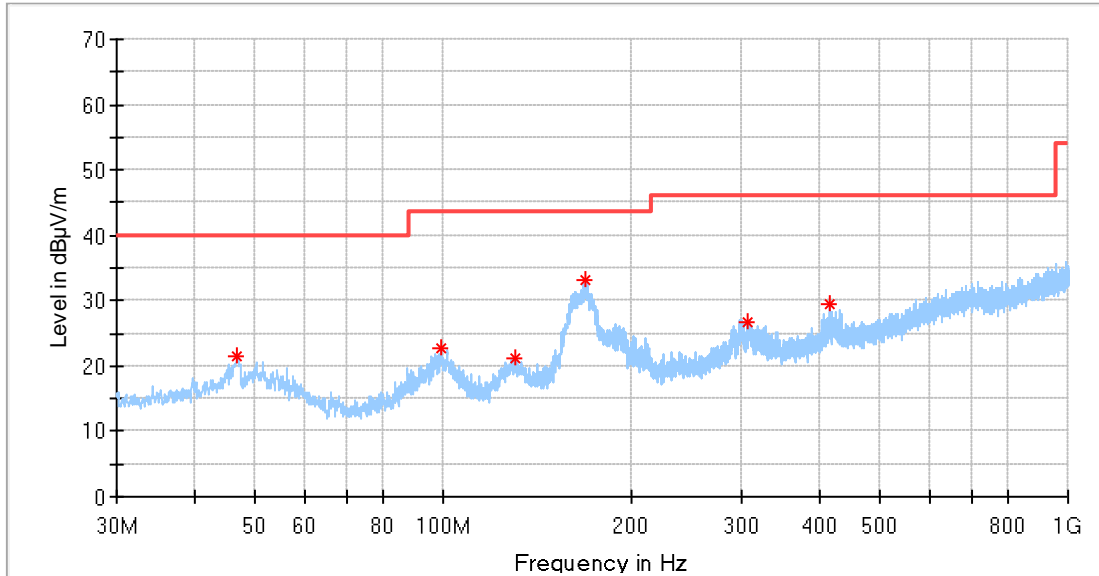
Remark :

Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)

Model: CP61
 Test Mode: Charging Mode
 Test Voltage: AC 120V/60Hz
 Project No./Sample ID: 68.760.19.0415.01
 Adapter model: HW-1004000E01



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
46.853750	21.51	40.00	18.49	100.0	H	356.0	17.6
99.233750	22.66	43.50	20.84	200.0	H	0.0	15.7
130.213125	21.12	43.50	22.38	200.0	H	17.0	13.5
169.376875	33.17	43.50	10.33	200.0	H	25.0	14.5
307.359375	26.84	46.00	19.16	100.0	H	0.0	20.2
415.453750	29.40	46.00	16.60	100.0	H	0.0	22.6

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

Remark :

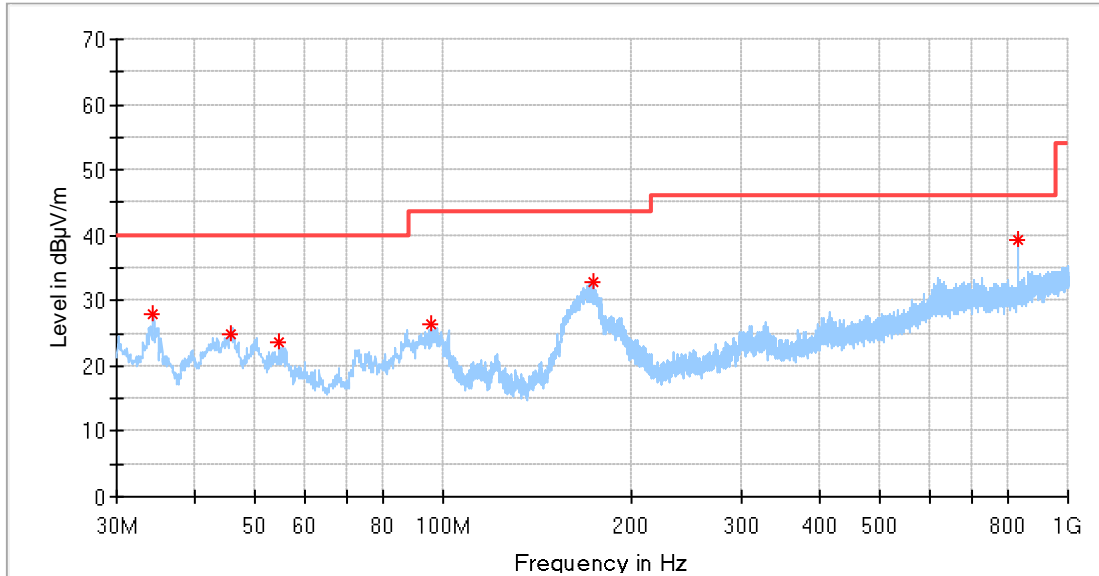
Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)



Model: CP61
 Test Mode: Charging Mode
 Test Voltage: AC 120V/60Hz
 Project No./Sample ID: 68.760.19.0415.01
 Remark: HW-1004000E01



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.365000	27.83	40.00	12.17	100.0	V	142.0	14.9
45.641250	24.89	40.00	15.11	100.0	V	32.0	17.4
54.553125	23.76	40.00	16.24	100.0	V	0.0	17.1
95.535625	26.49	43.50	17.01	100.0	V	0.0	15.2
173.923750	32.95	43.50	10.55	100.0	V	150.0	14.6
829.401250	39.26	46.00	6.74	200.0	V	0.0	28.9

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---		---	---

Remark :

Level=Reading Level + Correction Factor

Correction Factor=Antenna Factor + Cable Loss

(The Reading Level is recorded by software which is not shown in the sheet)

10 Test Equipment List

List of Test Instruments

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2019-7-6
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2019-7-6
Horn Antenna	Rohde & Schwarz	HF907	102294	2019-7-6
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100398	2019-7-6
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2019-7-6
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2019-7-6
Attenuator	Agilent	8491A	MY39264334	2019-7-6
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2019-7-6
LISN	Rohde & Schwarz	ENV4200	100249	2019-7-6
LISN	Rohde & Schwarz	ENV432	101318	2019-7-6
LISN	Rohde & Schwarz	ENV216	100326	2019-7-6
ISN	Rohde & Schwarz	ENY81	100177	2019-7-6
ISN	Rohde & Schwarz	ENY81-CA6	101664	2019-7-6
High Voltage Probe	Rohde & Schwarz	TK9420(VT9420)	9420-584	2020-6-29
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2020-6-29
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2019-7-6
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 9kHz-150KHz	3.62dB
Uncertainty for Radiated Emission in 3m chamber 9KHz-30MHz	4.46dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.91dB; Vertical: 4.89dB;