

## FCC - TEST REPORT

Report Number : **68.950.21.0633.01** Date of Issue: **2021-09-18**

Model : Y1822

Product Type : Anker Wireless Charging Dock for Kindle Paperwhite (Signature Edition)

Brand name : ANKER

Applicant : Anker Innovations Limited

Address : Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok,  
Kowloon, Hongkong

Manufacturer : Anker Innovations Limited

Address : Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok,  
Kowloon, Hongkong

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

Total pages including Appendices : **18**

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## 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:	Anker Wireless Charging Dock for Kindle Paperwhite (Signature Edition)
Model no.:	Y1822
FCC ID:	2AOKB-Y1822
Rating:	Input:9.0V $\overline{=}$ 1.5A
Adapter information:	Model:YJS015F-0901500U Input:100-240V~50/60Hz 0.5A Output:9.0V $\overline{=}$ 1.5A
RF Transmission Frequency:	115KHz and 148KHz
Antenna Type:	Integrated coil antenna
Antenna Gian:	0dBi
Description of the EUT:	The Equipment Under Test (EUT) is a Anker Wireless Charging Dock for Kindle Paperwhite (Signature Edition) which operated at 115KHz and 148KHz.



## 4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2019 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		Test Site	Test Result		
			Pass	Fail	N/A
§15.207	Conducted emission AC power port	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	20dB bandwidth	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.205	Restricted bands of operation	Site 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
§15.209	Radiated emission	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) 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: 2021-09-03

Testing Start Date: 2021-09-10

Testing End Date: 2021-09-16

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

Reviewed by:

Prepared by:

Tested by:



John Zhi  
Project Manager

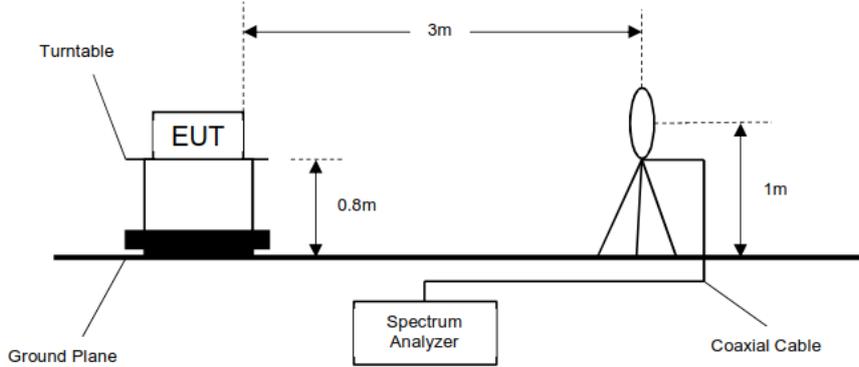
Warlen Song  
Project Engineer

Carry Cai  
Test Engineer

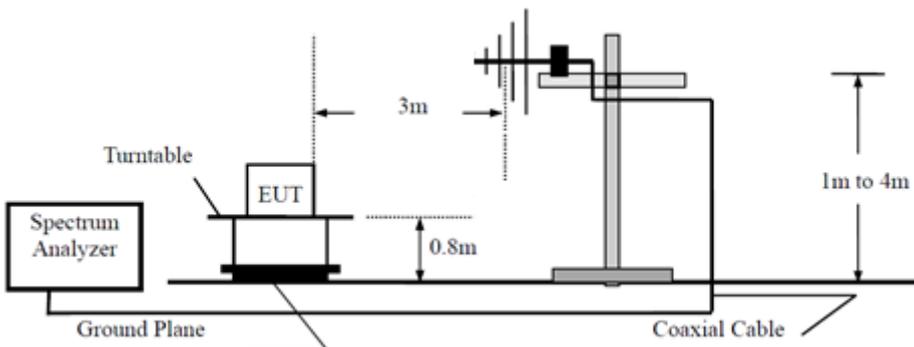
## 7 Test Setups

### 7.1 Radiated test setups

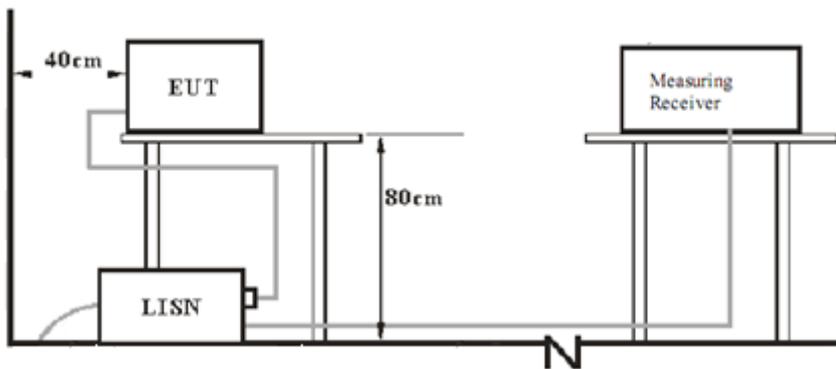
#### Below 30MHz



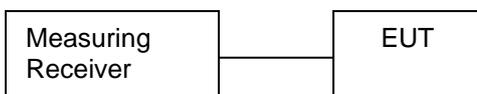
#### 30MHz-1GHz



### 7.2 AC Power Conducted test setups



### 7.3 Conducted RF test setups



## 8 Technical Requirement

### 8.1 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

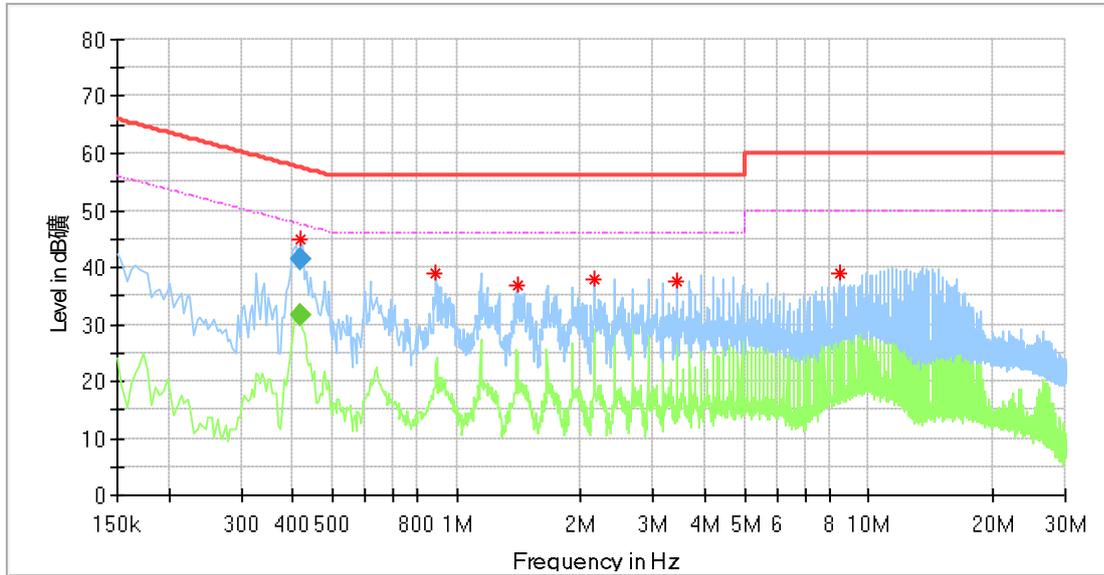
According to §15.207, conducted emissions limit as below:

Frequency MHz	QP Limit dB $\mu$ V	AV Limit dB $\mu$ 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

## Conducted Emission

Model: Y1822  
 Test mode: Normal Charging  
 Test Voltage: AC 120V/60Hz  
 Remark:



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.417500	44.87	---	57.41	12.54	L1	9.66
0.890000	39.04	---	56.00	16.96	L1	9.66
1.402000	36.88	---	56.00	19.12	L1	9.67
2.158000	37.79	---	56.00	18.21	L1	9.69
3.422000	37.60	---	56.00	18.40	L1	9.75
8.466000	39.10	---	60.00	20.90	L1	10.06

### Final\_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.417500	---	31.63	47.50	15.87	L1	9.66
0.417500	41.51	---	57.50	15.99	L1	9.66

Remark:

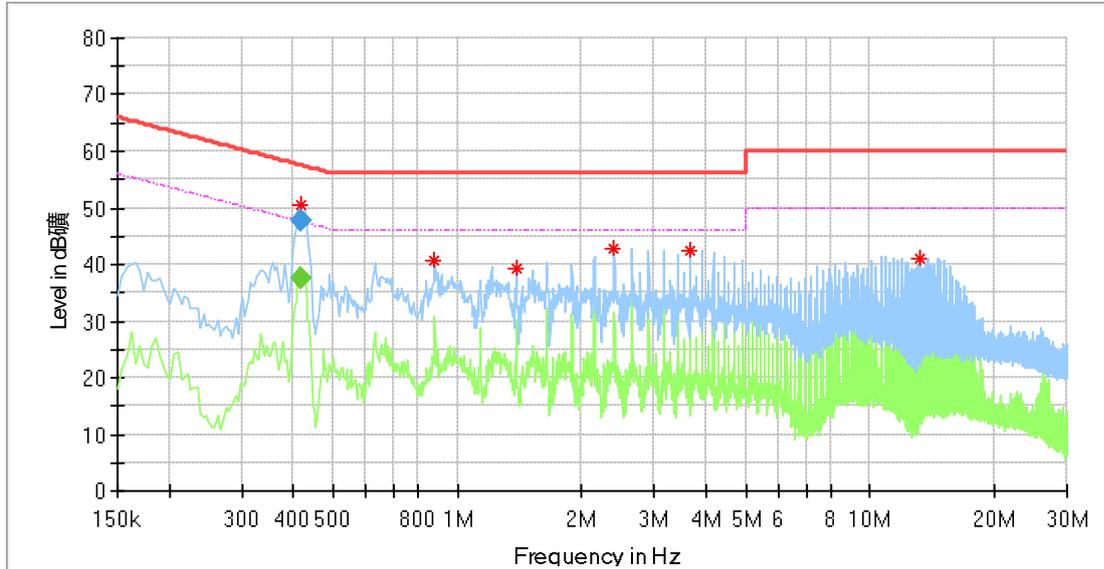
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

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

## Conducted Emission

Model: Y1822  
 Test mode: Normal Charging  
 Test Voltage: AC 120V/60Hz  
 Remark:



### Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.417500	50.40	---	57.41	7.00	N	9.69
0.882000	40.53	---	56.00	15.47	N	9.69
1.390000	39.14	---	56.00	16.86	N	9.71
2.398000	42.88	---	56.00	13.12	N	9.75
3.666000	42.59	---	56.00	13.41	N	9.81
13.258000	41.00	---	60.00	19.00	N	10.28

### Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.417500	---	37.46	47.50	10.04	N	9.69
0.417500	47.64	---	57.50	9.86	N	9.69

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)



## 8.2 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 KHz	Result		Result
		F <sub>L</sub> (KHz)	F <sub>H</sub> (KHz)	
114.91KHz	2.51	114.616	--	Pass
145.30KHz	2.60	--	147.90	Pass

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

## 8.3 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 $\mu\text{V/m}$	Field Strength $\text{dB}\mu\text{V/m}$	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	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:  $\text{Limit } 3\text{m}(\text{dB}\mu\text{V/m}) = \text{Limit } 300\text{m}(\text{dB}\mu\text{V/m}) + 40\text{Log}(300\text{m}/3\text{m})$  (Below 30MHz)

Note 2:  $\text{Limit } 3\text{m}(\text{dB}\mu\text{V/m}) = \text{Limit } 30\text{m}(\text{dB}\mu\text{V/m}) + 40\text{Log}(30\text{m}/3\text{m})$  (Below 30MHz)

### Radiated emissions test (9KHz-30MHz)

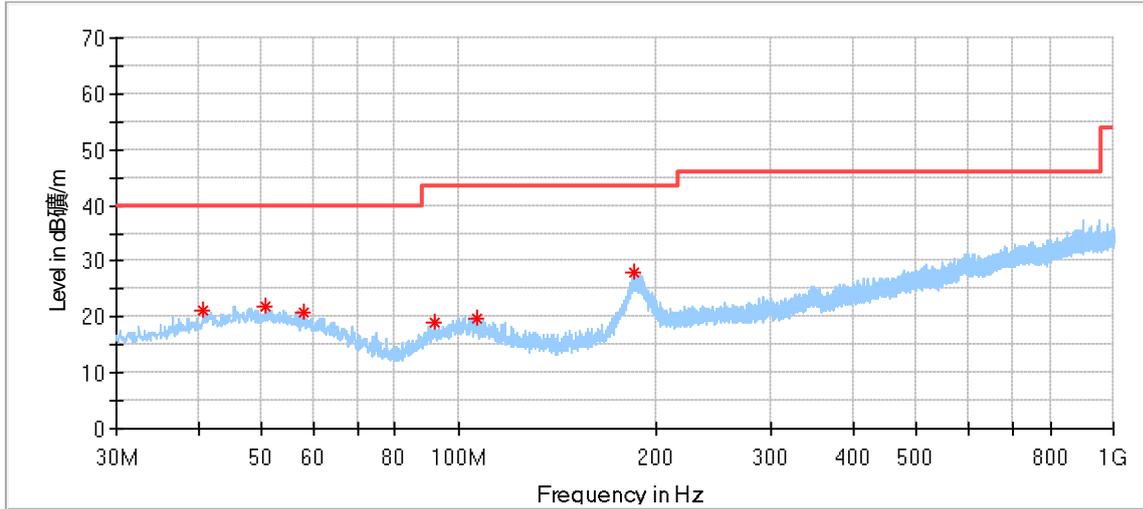
Frequency Band	Frequency	Emission Level	Polarization	Limit	Detector	Margin	Correct factor	Result
	MHz	dB $\mu$ V/m		dB $\mu$ V/m		dB $\mu$ V/m		
9KHz-30MHz	0.047822	57.72	H	125.70	Average	67.98	19.67	Pass
	0.049843	56.2	H	125.55	Average	69.35	19.67	Pass
	0.060935	54.17	H	124.75	Average	70.58	19.70	Pass
	0.064883	53.92	H	124.47	Average	70.55	19.62	Pass
	0.123821*	86.98	H	120.22	Average	33.24	19.60	Pass
	0.123163*	93.54	H	120.26	Average	26.72	19.66	Pass
	0.3689	72.43	H	102.53	Average	30.11	19.68	Pass
	0.612675	57.72	H	72.71	Average	9.37	19.69	Pass
	0.861425	56.2	H	70.50	Average	13.09	19.69	Pass
	1.1052	54.17	H	68.33	Average	15.41	19.70	Pass
	Other frequency	--	H	--	Average	--	--	Pass
	0.027659	49.09	V	127.15	Average	78.06	19.67	Pass
	0.047587	54.32	V	125.71	Average	71.40	19.67	Pass
	0.049561	51.96	V	125.57	Average	73.61	19.68	Pass
	0.121142*	49.58	V	120.41	Average	70.83	19.67	Pass
	0.12321*	87.63	V	120.26	Average	32.63	19.66	Pass
	0.123821*	68.84	V	120.22	Average	51.38	19.62	Pass
	0.125137*	49.28	V	120.12	Average	70.84	19.60	Pass
	0.3689	66.4	V	102.53	Average	36.14	19.71	Pass
	0.612675	57.39	V	72.71	Average	9.37	19.69	Pass
0.861425	51.68	V	70.50	Average	13.09	19.69	Pass	
Other frequency	--	V	--	Average	--	--	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) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain  
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss

**Radiated emissions test (30MHz-1000MHz)**

Model: Y1822  
 Test Mode: Normal Charging  
 Test Voltage: AC 120V/60Hz  
 Remark:



**Critical Freqs**

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.723889	21.08	40.00	18.92	100.0	H	268.0	19.79
50.747222	21.99	40.00	18.01	200.0	H	173.0	20.86
57.914444	20.74	40.00	19.26	200.0	H	205.0	19.99
91.918333	19.13	43.50	24.37	200.0	H	205.0	17.17
106.306667	19.83	43.50	23.67	100.0	H	29.0	18.39
184.715000	27.87	43.50	15.63	200.0	H	0.0	17.17

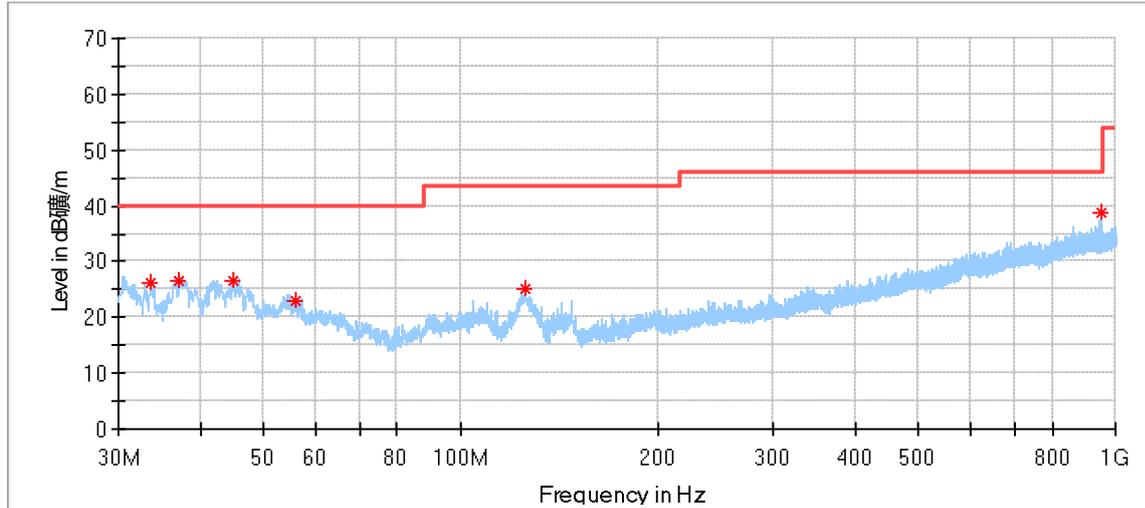
Remark:

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: Y1822  
 Test Mode: Normal Charging  
 Test Voltage: AC 120V/50Hz  
 Remark



### Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
33.664444	26.24	40.00	13.76	200.0	V	226.0	17.10
37.167222	26.68	40.00	13.32	200.0	V	226.0	18.60
44.981111	26.48	40.00	13.52	200.0	V	226.0	20.78
56.136111	23.10	40.00	16.90	100.0	V	320.0	20.25
125.113889	25.09	43.50	18.41	100.0	V	331.0	16.05
948.590000	38.88	46.00	7.12	100.0	V	58.0	31.84

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)

## 9 Test Equipment List

### Radiated Emission Test 1# Test

DESCRIPTION	MANUFACTURE R	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 7	68-4-74-19-001	102176	1	2022-6-4
Loop Antenna	Rohde & Schwarz	HFH2-Z2	68-4-80-14-006	100398	1	2022-9-1
Pre-amplifier	Rohde & Schwarz	SCU 18	68-4-29-14-001	102230	1	2022-6-6
Attenuator	Agilent	8491A	68-4-81-16-001	MY39264334	1	2022-6-3
3m Semi-anechoic chamber	TDK	SAC-3 #1	68-4-90-14-001	----	3	2022-10-28
Test software	Rohde & Schwarz	EMC32	68-4-90-14-001-A10	Version10.35.02	N/A	N/A

### Radiated Emission Test

DESCRIPTION	MANUFACTURE R	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2022-6-4
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2022-2-2
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2021-10-25
Pre-amplifier	Rohde & Schwarz	SCU 08F2	68-4-29-19-004	08400018	1	2021-10-25
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2022-7-27
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	3	2022-12-29
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.3 5.02	N/A	N/A

### Conducted Emission Test

DESCRIPTION	MANUFACTURE R	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-14-001	101782	1	2022-6-4
LISN	Rohde & Schwarz	ENV4200	68-4-87-14-001	100249	1	2022-6-5
LISN	Rohde & Schwarz	ENV432	68-4-87-16-001	101318	1	2022-6-5
LISN	Rohde & Schwarz	ENV216	68-4-87-14-002	100326	1	2022-6-5
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2022-6-3
Test software	Rohde & Schwarz	EMC32	68-4-90-14-003-A10	Version9.15.00	N/A	N/A
Shielding Room	TDK	CSR #1	68-4-90-19-004	----	1	2022-11-07

### RF Test

DESCRIPTION	MANUFACTURE R	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2022-6-3

## 10 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 150kHz-30MHz (for test using AMN ENV432 or ENV4200)	3. 21dB
Uncertainty for Radiated Emission in 3m chamber 9KHz-30MHz	4.60 dB
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.70dB; Vertical: 4.67dB