



# **RADIO TEST REPORT**

# (FCC Part 15 Subpart C)

Applicant:	Power Idea Technology (Shenzhen) Co., Ltd.
Address:	4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech
Address.	Industrial Park North, Nanshan District, ShenZhen, P.R.C.

Manufacturer:	Power Idea Technology (Shenzhen) Co., Ltd.
Address:	4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech
	Industrial Park North, Nanshan District, ShenZhen, P.R.C.
Product:	Smart Phone
Brand Name:	RugGear
Model Name:	PSM05G
Marketing name :	RG880i
FCC ID:	ZLE-PSM05G
Date of tests:	Aug. 28, 2024 ~ Sep.27, 2024

The tests have been carried out according to the requirements of the following standard:

**Part 15 Subpart C §15. 225** 

RSS-Gen Issue 5, Amendment 2 (February 2021)

ANSI C63.10-2020

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department

U Mannen

Date: Sep.27, 2024

Simfei bo

Approved by Peibo Sun

Manager / Mobile Department

Date: Sep.27, 2024

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results set levels to the test. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty is notentify into. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report contents.

Huarui 7layers High Technology (Suzhou) Co., Ltd.

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province



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(Suz	hou) (	Co., Ltd.		High-tech District,	Suzhou City, Anhui	Province	Tel: +86 (0557) 368 1008	



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## **REPORT REVISE RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2406210109RF10	Original release	Sep.27, 2024



FCC Rule	IC Rule	Description	Limit	Result	Remark
-	RSS-Gen 6.7	99% Bandwidth	-	Pass	-
15.225(a)(b)(c)	RSS-210 Annex B.6	Field Strength of Fundamental Emissions	15.225(a)(b)(c) RSS-210 Annex B.6	Pass	-
15.215	-	20dB Spectrum Bandwidth	15.215	Pass	-
15.225(d) 15.209	RSS-210 Annex B.6	Radiated Emission	15.225(d) & 15.209 RSS-210 Annex B.6	Pass	-
15.207	RSS-GEN 8.8	AC Conducted Emission	15.207(a)	Note	
15.225(e)	Annex B.6	Frequency Stability	< ±100 ppm	Pass	-
15.203	RSS-Gen 6.8	Antenna Requirement	N/A	Pass	-

## SUMMARY OF TEST RESULT

## \*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

#### Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.



# **1 GENERAL DESCRIPTION**

## **1.1 GENERAL DESCRIPTION OF EUT**

Items	Description
Tx/Rx Frequency Range	13.553MHz ~ 13.567MHz
Channel Number	1
20dBW	2.489 kHz
99%OBW	2.098 kHz
Antenna Type	LOOP Antenna
Type of Modulation	ASK
HW Version	V02
SW Version (FVIN)	RG880i_EAA_00.00_1

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

**NOTE:** Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

ACCESSORIES	BRAND	MANUFACTUR ER	MODEL	SPECIFICATION
CPU	QUALCOMM	N/A	SM6225	N/A
eMMC 1 (=ROM 1)	SAMSUNG	N/A	KM2L9001CM-B518	N/A
eMMC 2 (=ROM 2)	Hynix	N/A	H9QT0GECN6X145R	N/A
RAM 1	N/A	N/A	N/A	N/A
RAM 2	N/A	N/A	N/A	N/A
BT/WLAN Module	N/A	N/A	N/A	N/A
NFC chipset	NXP	N/A	N/A	N/A
Battery	N/A	N/A	BL450AGP	Power Rating: 4.4V 4500mAh
Adapter	N/A	Huizhou Juwei Electronics Co.,Ltd	FG18AQC3.0UU	I/P: 100-240Vac, 50/60Hz, 0.5A, O/P:5.0V 3.0A or 9.0V 2.0A or 12.0V 1.5A
USB Cable	N/A	N/A	N/A	N/A

#### List of Accessory:

Huarui 7layers High Technology (Suzhou) Co., Ltd.

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province



## **1.2 MODIFICATION OF EUT**

No modifications are made to the EUT during all test items.

## **1.3 APPLICABLE STANDARDS**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.225
- ANSI C63.10-2020
- RSS-210 Issue 10
- RSS-Gen Issue 5



# **2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST**

## 2.1 DESCRIPTIONS OF TEST MODE

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items							
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions						
20dB Spectrum Bandwidth	Frequency Stability						
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz						

#### Note:

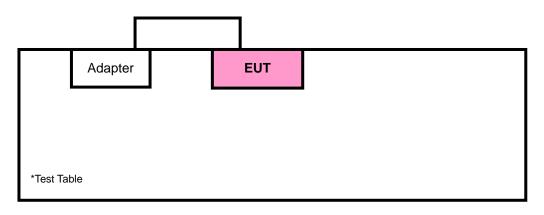
- 1. The EUT was programmed to be in continuously transmitting mode.
- The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmit at 13.56MHz and is placed around 3 cm gap to the EUT.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, work in modes and data rates. Selected for the final test as listed below.

Frequency	Work in Modes	Туре	Data Rate (Kbps)				
13.56 MHz	Card Emulation <ul> <li>Reader/Writer</li> <li>Peer-to-Peer</li> </ul>	□ A □ B □ F □ V	☐ 106 ✓ 212 ☐ 424 ☐ 848				
Remark: The mark <sup>™</sup> <sup>™</sup> means is chosen for testing; The mark <sup>™</sup> <sup>™</sup> means is not chosen for testing.							

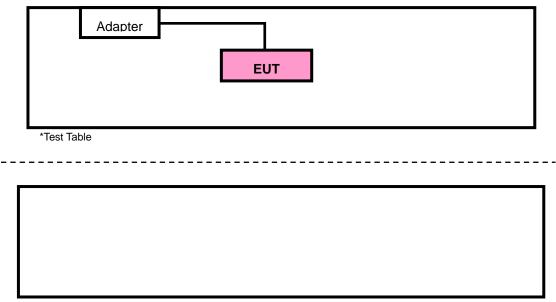


## **2.2 TEST CONFIGURATIONS**

#### <AC Conducted Emissions>



#### < For Fundamental Emissions and Mask and Radiated Emissions Measurement >



\* Kept in a remote area



## 2.3 SUPPORT EQUIPMENT

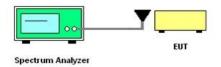
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A	N/A	N/A	N/A	N/A

## 2.4 TEST SETUP

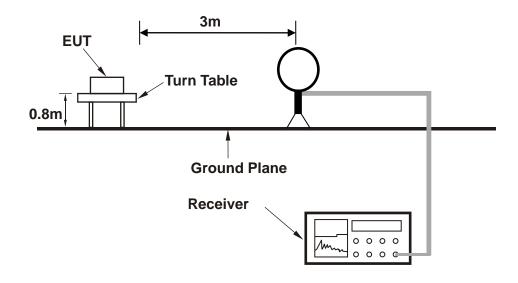
The EUT is continuously communicating during the tests.

EUT was set in the Hidden menu mode to enable NFC communications.

#### Setup diagram for Conducted Test

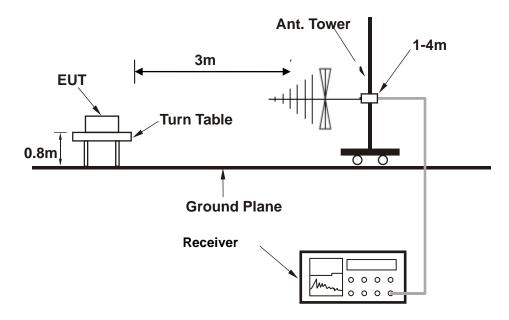


Setup diagram for Radiation(9KHz~30MHz) Test





Setup diagram for Radiation(Below 1G) Test





## 2.5 MEASUREMENT RESULTS EXPLANATION EXAMPLE

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5 dB and 10dB attenuator.

 $Offset(dB) = RF \ cable \ loss(dB) + attenuator \ factor(dB).$ = 5 + 10 = 15 (dB)



## **3 TEST RESULT**

## 3.1 20DB AND 99% BANDWIDTH MEASUREMENT

## 3.1.1 LIMIT OF 20DB AND 99% BANDWIDTH

Intentional radiators must be designed to ensure that the 20dB and 99% emission bandwidth in the specific band 13.553~13.567MHz.

## 3.1.2 TEST PROCEDURES

- 1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
- The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used. (Since the signal being measured is CW or CW-like, it is impractical to adjust RBW according to C63.10 because the bandwidth measured will always follow RBW and the result will be approximately twice as large as RBW.)
- 3. Measured the spectrum width with power higher than 20dB below carrier.
- 4. Measured the 99% OBW.



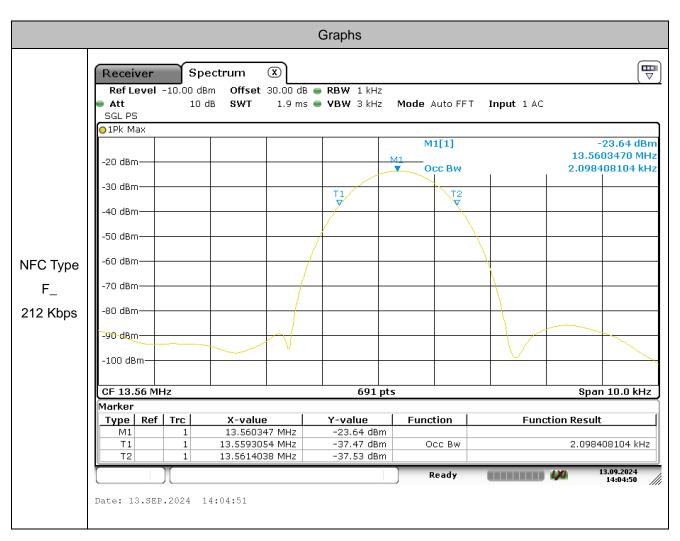
## 3.1.3 TEST RESULT OF 20DB AND 99% BANDWIDTH

Test Mode :	NFC		Temperature :		<b>23</b> ℃	
Test Engineer :	Hanwen Xu		Relative Humidity :		50%	
Mode	Frequency 20dB Ban		dwidth [kHz]	99% OBW[kHz]		Verdict
NFC Type F_212 Kbps	13.56MHz	2	.489		2.098	PASS

#### 20dB Bandwidth & 99% Bandwidth Plot

		Graphs	
	Receiver         Spectrum         X           Ref Level         -10.00 dBm         Offset         30.00 dB	• RBW 1 kHz	
		• VBW 3 kHz Mode Auto FFT Input 1 AC	
	01Pk Max		
	-20 dBm	M1[1]	-26.15 dBm 13.5603620 MHz
	-30 dBm	M1 ndB Bw	20.00 dB 2.489000000 kHz
	-40 dBm	Q factor	5447.8
NFC	-50 dBm		
Туре	-60 dBm		
F_	-70 dBm		
212	-80 dBm		
Kbps	-90 dBm		
	-100 dBm		
	CF 13.56 MHz	691 pts	Span 10.0 kHz
	Marker		
	Type         Ref         Trc         X-value           M1         1         13.560362 MHz	Y-value         Function         Func           -26,15 dBm         ndB down	tion Result 2,489 kHz
	T1 1 13.559117 MHz	-46.06 dBm ndB	20.00 dB
	T2 1 13.561606 MHz	-46.26 dBm	5447.8
		) Measuring 🔳 🖬 🖬	13.09.2024 12:38:39
	Date: 13.SEP.2024 12:38:39		







## **3.2 FREQUENCY STABILITY MEASUREMENT**

## 3.2.1 LIMIT OF FREQUENCY STABILITY

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

## 3.2.2 TEST PROCEDURES

- 1. The spectrum analyzer connected via a receive antenna placed near the EUT.
- 2. EUT have transmitted signal and fixed channelize.
- 3. Set the spectrum analyzer span to view the entire emissions bandwidth.
- 4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
- 5. The fc is declaring of channel frequency. Then the frequency error formula is  $(fc-f)/fc \times 10^6$  ppm and the limit is less than ±100ppm.
- 6. Extreme temperature rule is -20°C~50°C.

## 3.2.3 TEST RESULT OF FREQUENCY STABILITY

The NFC Type F\_212 Kbps is the worst case, Only report worst mode data



#### NFC Type F\_212 Kbps

Voltage (Vdc)	Temperature (℃)	Measurement Frequency (MHz)	Frequency Tolerance(ppm)	Limit(ppm)	Result
3.6	20	13.5601	7.37		Pass
4.4	20	13.56029	21.39		Pass
	-20	13.5602	14.75		Pass
	-10	13.56005	3.69		Pass
	0	13.55996	-2.95	±100	Pass
3.85	10	13.55992	-5.90	100	Pass
3.60	20	13.55991	-6.64		Pass
	30	13.55992	-5.90		Pass
	40	13.55984	-11.80		Pass
	50	13.56008	5.90		Pass



# 3.3 FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK MEASUREMENT

## 3.3.1 LIMIT OF FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK

Rules and specifications	FCC CFR 47 Part 15 section 15.225						
Rules and specifications	IC RSS-210 B.6						
Description	Compliance with th	e spectrum mask is t	ested with RBW set t	o 9kHz.			
Freq. of Emission (MHz)	Field Strength	Field Strength	Field Strength	Field Strength			
Freq. of Emission (MHz)	(µV/m) at 30m	(dBµV/m) at 30m	(dBµV/m) at 10m	(dBµV/m) at 3m			
1.705~13.110	30	29.5	48.58	69.5			
13.110~13.410	106	40.5	59.58	80.5			
13.410~13.553	334	50.5	69.58	90.5			
13.553~13.567	15848	84.0	103.08	124.0			
13.567~13.710	334	50.5	69.58	90.5			
13.710~14.010	106	40.5	59.58	80.5			
14.010~30.000	30	29.5	48.58	69.5			

## 3.3.2 TEST PROCEDURES

- Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the receiving antenna was fixed at one meter above ground to find the maximum emissions field strength.
- 4. For Fundamental emissions, use the receiver to measure QP reading.
- 5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
- Compliance with the spectrum mask is tested with RBW set to 9kHz.
   Note: Emission level (dBμV/m) = 20 log Emission level (μV/m).



# 3.3.3 TEST RESULTS OF FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK (1.705 MHZ ~ 30 MHZ)

st Mod	e :	NFC (13.56	MHz)		Tem	perature :	<b>23</b> ℃	2
est Engineer : requency Range		Hanwen Xu 13.11MHz~14.01MHz			Rela	ative Humidit	<b>y</b> : 50%	)
					Pola	Polarization :		Horizontal
130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 40 30 25 20 15 10 55 50 50 15 10 15 10 15 10 10 10 10 10 10 10 10 10 10	15 M 13.20 M 13.2 evel @CriticalPoint		M 13.40 M 13.45		13.55 M 13.60 M 13	2.65 M 13.70 M 13.75 M	13.80 M 13.85	M 13.90 M 13.95 M Frequence
	Frequency	PK+ Level [dBµV/m]	PK+: QPK Limit	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
Rg	[MHz]	Fer = h / 1	[dBµV/m]	[ub]				La construction de la constructi



## 3.4 RADIATED EMISSIONS MEASUREMENT

#### 3.4.1 LIMIT

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies	Field Strength	Measurement Distance
(MHz)	(μV/m)	(meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

#### 3.4.2 MEASURING INSTRUMENT SETTING

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

#### 3.4.3 **TEST PROCEDURES**

- 1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.

For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the 4. Huarui 7layers High Technology Tower N, Innovation Center, 88 Zuyi Road, Tel: +86 (0557) 368 1008 (Suzhou) Co., Ltd. High-tech District, Suzhou City, Anhui Province

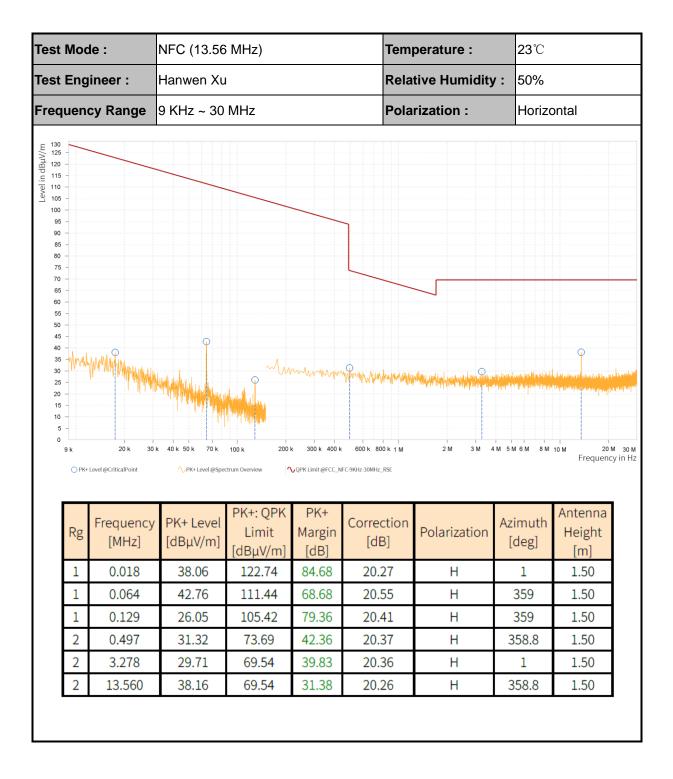


turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

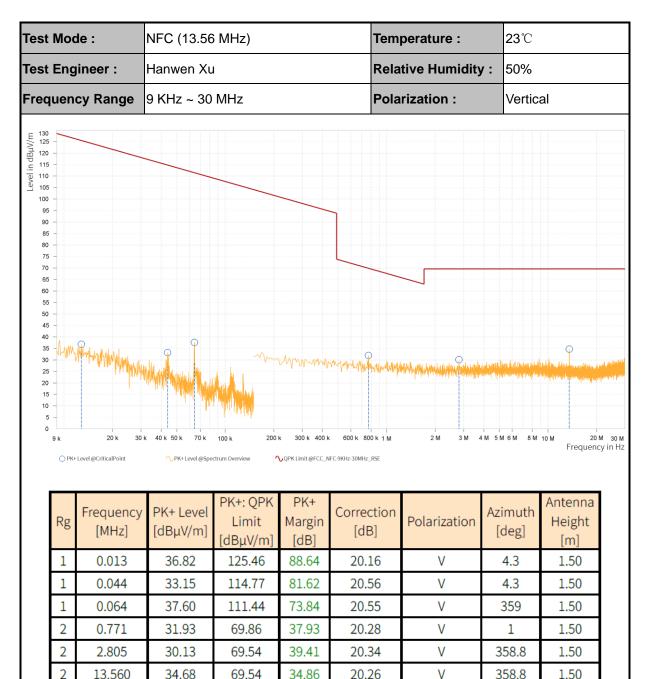
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
- 7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver.



## 3.4.4 TEST RESULTS OF RADIATED EMISSIONS (9 KHZ ~ 30 MHZ)









## 3.4.5 TEST RESULT OF RADIATED SPURIOUS EMISSION (30MHZ ~ 1GHZ)

Test	Mode :	NFC	(13.56MHz	<u>z</u> )		Temperatu	re :	<b>23</b> ℃	
Test							umidity :	50%	
Freq	uency Ran	<b>ge</b> 30M⊦	lz~1GHz			Polarization :		Horizontal	
ш/Лпдр иі 190-9 37.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5 10, 7.5 12.5 12.5 2.5 2.5 2.5 2.5 10, 10, 7.5 12, 10, 10, 12,5 12,5 10, 10, 12,5 12,5 10, 10, 12,5 12,5 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,									
	30 M 40 M	50 M 60 M esults QPK Li	1 70 M 80 M	100 M	20	D M 300 M	400 M	500 M 600 M 7	00 M 800 M 1 G Frequency in Hz
Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
Rg 1	Frequency [MHz] 39.083		QPK Limit [dBµV/m] 40.0	Margin	Correction [dB]	Polarization H		Height	
	[MHz]	[dBµV/m]	[dBµV/m]	Margin [dB]	[dB]		[deg]	Height [m]	[kHz]
1	[MHz] 39.083	[dBµV/m] 29.14	[dBµV/m] 40.0	Margin [dB] 10.86	[dB] -5.0	Н	[deg] 359.0	Height [m] 1.0	[kHz] 120.0
1	[MHz] 39.083 55.837	[dBµV/m] 29.14 28.3	[dBµV/m] 40.0 40.0	Margin [dB] 10.86 11.7	[dB] -5.0 -4.16	H	[deg] 359.0 270.7	Height [m] 1.0 1.0	[kHz] 120.0 120.0
1 1 1	[MHz] 39.083 55.837 106.806	[dBµV/m] 29.14 28.3 23.51	[dBµV/m] 40.0 40.0 43.5	Margin [dB] 10.86 11.7 19.99	[dB] -5.0 -4.16 -5.87	H H H	[deg] 359.0 270.7 359.0	Height [m] 1.0 1.0 1.0	[kHz] 120.0 120.0 120.0



Test	Mode :	NFC	(13.56MHz	<u>z</u> )		Temperatu	re :	<b>23</b> ℃	
Test	Engineer	: Hanv	Hanwen Xu			Relative H	umidity :	50%	
Freq	ency Range 30MHz~1GHz					Polarization :		Vertical	
55 50 50 50 50 50 50 50 50 50 50 50 50 5		50 M 60 P 2esults ♪ QPK L	A 70 M 80 M	Ф 100 М	20	0 M 300 M	ф 400 М		00 M 800 M 1 G Frequency in Hz
Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	33.924	29.43	40.0	10.57	-8.42	v	140.3	1.0	120.0
1	50.767	30.06	40.0	9.94	-4.66	v	8.7	1.0	120.0
1	61.481	26.58	40.0	13.42	-7.74	V	140.3	1.0	120.0
1	101.648	28.64	43.5	14.86	-6.04	V	359.0	1.0	120.0
1	215.711	21.96	43.5	21.54	-5.34	V	8.7	1.0	120.0
1	359.976	22.62	46.0	23.38	1.1	v	8.7	1.0	120.0



## 3.5 AC CONDUCTED EMISSION MEASUREMENT

## 3.5.1 LIMIT OF AC CONDUCTED EMISSION

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission	Conducted Limit (dBµV)				
(MHz)	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.

## 3.5.2 TEST PROCEDURES

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6.Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8.Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

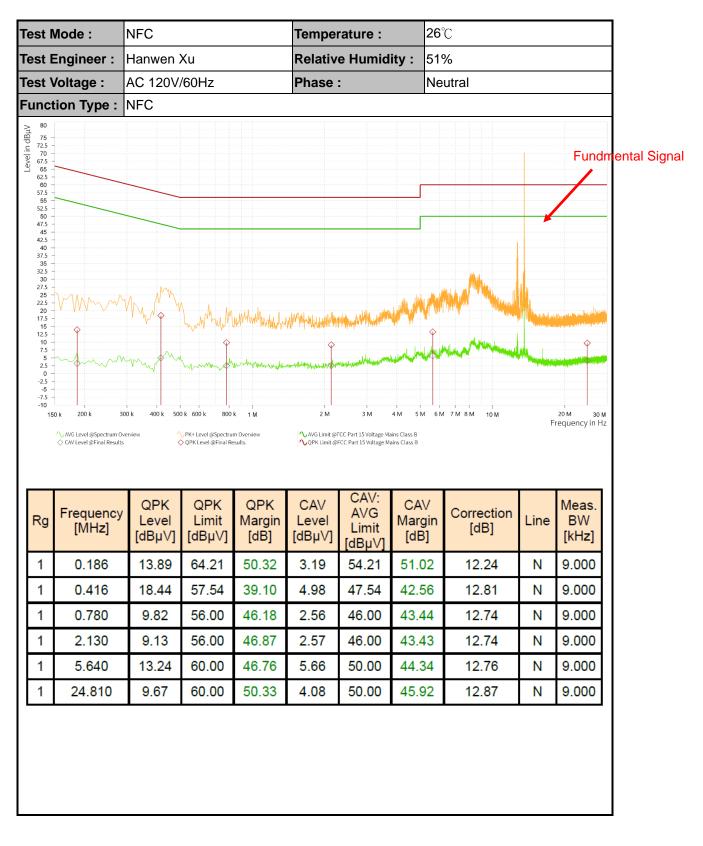


## 3.5.3 TEST RESULT OF AC CONDUCTED EMISSION

Test Mode :					Temper	ature :	26°	<b>26</b> ℃			
Test Engineer : Test Voltage :		Hanwen Xu 120Vac / 60Hz		Relativ	e Humid	ity : 519	%				
				Phase :		Lin	Line				
Function Type : NFC											
80 75 - 72.5 - 70.5 -											
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$			0 k 600 k 800		2 M			1 7M 8M 10M	F	20 M 30 requercy in F	
30 - 27.5 - 25.5 - 20.5 - 20.5 - 17.5 - 12.5 - 10 7.5 - 0 2.5 - 0 -2.5 - -5 -7.5 - -10 -150	0 k 200 k 3	erview 🗸	OK 600 K 800 PK Level @Final Re QPK Limit [dBµV]	m Overview	∕ AVG Limit @F	CC Part 15 Voltage Ma CC Part 15 Voltage Ma CAV: AVG Limit	ins Class B	Correction [dB]	F		
30 - 27.5 - 22.5 - 20.5 - 17.5 - 15.5 - 15.5 - 15.5 - 15.5 - 10.5 - 5.5 - 5.5 - 5.5 - 5.5 - 5.5 - 5.5 - 10. 15.0 - 10. 1500 - 1000 -	AVG Level @Spectrum O	QPK Level	OFK+ Level @Spectru ≥ QPK Level @Final Re QPK Limit	QPK Margin	AVG Limit @F ∿QPK Limit @F CAV Level	CC Part 15 Voltage Ma CC Part 15 Voltage Ma CC Part 15 Voltage Ma	ins Class B ains Class B CAV Margin	Correction		Meas. BW	
30 - 275 - 225 - 225 - 225 - 225 - 2175 - 21	AVG Level @Spectrum O	QPK Level [dBµV]	QPK Level @Spectru ≥ QPK Level @Final Re Limit [dBµV]	QPK Margin [dB]		CC Part 15 Voltage Ma CCC Part 15 Voltage Ma CAV: AVG Limit [dBµV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	
30 - 275 - 25 - 25 - 20 - 175 - 10 - 25 - 10 - 25 - 25 - 25 - 10 - 25 - 3 - 5 - 5 - 757510 - 150 - 1	<ul> <li>AVG Level @Spectrum O</li> <li>CAV Level @Final Results</li> <li>Frequency [MHz]</li> <li>0.218</li> </ul>	erview QPK Level [dBµV] 13.38	QPK Level @Spectru OPK Level @Final Re Limit [dBµV] 62.91	QPK Margin [dB] 49.53	<ul> <li>AVG Limit @F</li> <li>QPK Limit @F</li> <li>CAV</li> <li>Level</li> <li>[dBμV]</li> <li>3.65</li> </ul>	CC Part 15 Voltage Ma CCC Part 15 Voltage Ma CAV: AVG Limit [dBµV] 52.91	Ins Class B CAV Margin [dB] 49.26	Correction [dB] 11.97	Line L1	Meas. BW [kHz] 9.000	
30 - 275 - 2	AVG Level ⊗Spectrum 0 CAV Level ⊗Final Results Frequency [MHz] 0.218 0.470	QPK           Level           [dBµV]           13.38           18.29	\PK+Level @Spectru             \PK+Level @Final Re                 QPK             Limit             [dBµV]                 62.91                 56.52	QPK Margin [dB] 49.53 38.23	\_AVG Limit @F     \_QPK Limit @F     Level     [dBµV]     3.65     6.27	CC Part 15 Voltage Ma CCCPart 15 Voltage Ma AVG Limit [dBµV] 52.91 46.52	CAV Margin [dB] 49.26 40.25	Correction [dB] 11.97 11.75	Line L1 L1	Meas. BW [kHz] 9.000 9.000	
30 - 275 - 2	AVG Level @Spectrum O CAV Level @Final Results Frequency [MHz] 0.218 0.470 0.798	QPK           Level           [dBµV]           13.38           18.29           14.12	\PK+Level @Spectru             \PK+Level @Final Re                 QPK             Limit             [dBµV]                 62.91                 56.52                 56.00	QPK Margin [dB] 49.53 38.23 41.88	AVG Limit @F	СС Ран 15 Voltage Ma ССС Ран 15 Voltage Ma AVG Limit [dBµV] 52.91 46.52 46.00	CAV Margin [dB] 49.26 40.25 41.54	Correction [dB] 11.97 11.75 11.74	Line 11 11 11	Meas. BW [kHz] 9.000 9.000 9.000	

Huarui 7layers High Technology (Suzhou) Co., Ltd. Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province







## **3.6 ANTENNA REQUIREMENTS**

## 3.6.1 STANDARD APPLICABLE

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

## 3.6.2 ANTENNA CONNECTED CONSTRUCTION

A LOOP Antenna design is used.

## 3.6.3 ANTENNA GAIN

The antenna peak gain of EUT is less than 6 dBi.



# 4 LIST OF MEASURING EQUIPMENT

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.	
WIDEBANDRADIO						
COMMUNICATION	Rohde&Schwarz	CMW500	169399	Jun.19,24	Jun.18,26	
TESTER						
3m Semi-anechoic	ТДК	9m*6m*6m	HRSW-SZ-EMC-	Nov.24,22	Nov.23,25	
Chamber	IDK		02Chamber	1100.24,22	1000.23,25	
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Dec.26,23	Dec.25,25	
Loop Antonno	Die	HFH2-Z2/Z2	100076	Eab 22.24	Eab 21 26	
Loop Antenna	R&S	E	100976	Feb.22,24	Feb.21,26	
Antenna Power	RS	N/A	N/A	N/A	N/A	
Supply	KO	N/A	IN/A	IN/A	IN/A	
EMI Test Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26	
Measurement	R&S	ELEKTRA	N/A	N/A	N/A	
Software	Ras	ELENIKA	IN/A	IN/A	IN/A	
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24	
Pre-Amplifier	R&S	SCU08F1	101028	Sep.15,24	Sep.14,26	
CABLE	R&S	W13.01	N/A	Apr.27,24	Apr.26,25	
CABLE	R&S	W13.02	N/A	Apr.27,24	Apr.26,25	
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25	

**NOTE:** 1. The calibration interval of the above test instruments is 12/24/36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Chamber.

3. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

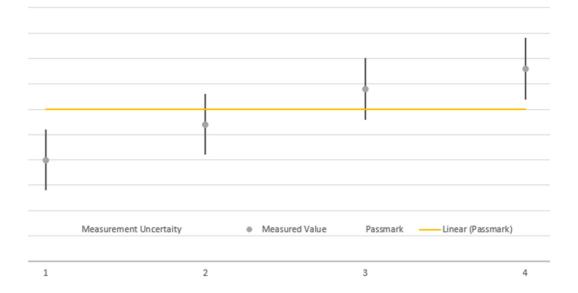


# **5 UNCERTAINTY OF EVALUATION**

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions (30MHz~1GHz)	±4.98dB
Occupied Channel Bandwidth	±43.58KHz
Frequency Stability	±76.97Hz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

-----End of the report-----

Huarui 7layers High Technology (Suzhou) Co., Ltd. Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province