



# FCC TEST REPORT

# (Part 15, Subpart E)

Applicant:	Power Idea Technology (Shenzhen) Co., Ltd.	
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Manufacturer or Supplier:	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:

## FCC Part 15, Subpart E, Section 15.407

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

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Approved by Peibo Sun

Manager / Mobile Department

Date: Sep.27, 2024

Date: Sep.27, 2024

In ins report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <a href="http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/">http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/</a> 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 thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accordited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. 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 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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Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province





## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2406210109RF09	Original release	Sep.27, 2024

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## **1 SUMMARY OF TEST RESULTS**

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E		
STANDARD SECTION	TANDARD TEST TYPE AND LIMIT	
15.407(b)(9)	AC Power Conducted Emission	Compliance
15.407(b) (1/2/3/4/5)	Radiated Emission & Band Edge Measurement	Compliance
15.407(a/1/2/3)	Maximum conducted output Power	Compliance
15.407(a/1/2/3)	Peak Power Spectral Density	Compliance
15.407(a)(2)(12)	26 dB Bandwidth	Compliance
15.407(e)	6 dB Bandwidth	Compliance
15.203	Antenna Requirement	Compliance

NOTE:

1. Except the data of RSE and Band Edge Measurement, other data please refer to the appendix.

2. For 802.11n HT20/ ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing is assessed only 802.11n HT20/ HT40 by referring to their higher conducted power.

## \*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.



## 1.1 MEASUREMENT UNCERTAINTY

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
Radiated emissions (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

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.

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2.1 GENERAL DESCRIPTION OF EUT			
PRODUCT*	Smart Phone		
BRAND NAME*	RugGear		
MODEL NAME*	PSM05G		
MARKETING NAME*	RG880i		
NOMINAL VOLTAGE*	5.0Vdc/ 9.0Vdc/ 12.0Vdc(Adapter) 3.85Vdc (Battery)		
MODULATION	OFDM		
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 150.0Mbps 802.11ac: up to 433.3Mbps		
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5745 ~ 5825MHz		
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n, 802.11ac (20MHz) 2 for 802.11n, 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n, 802.11ac (20MHz) 2 for 802.11n, 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n, 802.11ac (20MHz) 3 for 802.11n, 802.11ac (40MHz) 1 for 802.11ac (80MHz)		
AVERAGE POWER	29.58 mW for 5180 ~ 5240MHz 34.75 mW for 5260 ~ 5320MHz 30.62 mW for 5745 ~ 5825MHz		
ANTENNA TYPE*	PIFA Antenna		
ANTENNA GAIN*	0.8dBi for 5180 ~ 5240MHz 0.8dBi for 5260 ~ 5320MHz 0.8dBi for 5745 ~ 5825MHz		
HW VERSION*	N* V02		
SW VERSION* RG880i_EAA_00.00_1			
I/O PORTS*	Refer to user's manual		
CABLE SUPPLIED*	USB cable: non-shielded cable, with w/o ferrite core, 1.0 meter		

# 2 GENERAL INFORMATION

#### NOTE:

1. \*Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



- 2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX/1RX
802.11n/802.11ac (20MHz)	1TX/1RX
802.11n/802.11ac (40MHz)	1TX/1RX
802.11ac (80MHz)	1TX/1RX

- 4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the test report.
- 5. 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	

## 6. List of Accessory:



## 2.2 DESCRIPTION OF TEST MODES

## FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n, 802.11ac (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY	
36	5180 MHz	44	5220 MHz	
40	5200 MHz	48	5240 MHz	

2 channels are provided for 802.11n, 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

## FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n, 802.11ac (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n, 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

## 1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

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## FOR 5745 ~ 5825MHz

5 channels are provided for 802.11a, 802.11n, 802.11ac (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n, 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
142	5710 MHz	159	5795 MHz
151	5755 MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
155	5775 MHz

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## 2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT		APPLIC	ABLE TO	DESCRIPTION		
MODE	RE≥1G	RE<1G	PLC	APCM	DESCRIPTION	
Α	$\checkmark$	$\checkmark$	$\checkmark$	-	Powered by Adapter with wifi(5G) link	
В	-	-	-	$\checkmark$	Powered by Battery with wifi(5G) link	
С	-	-	-	-	Powered by USB with wifi(5G) link	
Where	RE≥1G: Radia	ted Emission a	bove 1GHz	<b>RE&lt;1G:</b> Radiated Emission below 1GHz		

PLC: Power Line Conducted Emission

**RE<1G:** Radiated Emission below 1GHz **APCM:** Antenna Port Conducted Measurement

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**. **NOTE:** "-"means no effect

#### RADIATED EMISSION TEST (BELOW 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
А	802.11n (40MHz)	5745-5825	151 to 159	151	OFDM	MCS0



#### RADIATED EMISSION TEST (ABOVE 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- $\boxtimes$  The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
А	802.11a		36 to 48	36, 40, 48	OFDM	6.0
А	802.11n/ac (20MHz)	E180 E240	36 to 48	36, 40, 48	OFDM	MCS0
А	802.11n/ac (40MHz)	5160-5240	38 to 46	38, 46	OFDM	MCS0
А	802.11ac (80MHz)		42	42	OFDM	MCS0
А	802.11a		52 to 64	52, 60, 64	OFDM	6.0
А	802.11n/ac (20MHz)	5000 5000	52 to 64	52, 60, 64	OFDM	MCS0
А	802.11n/ac (40MHz)	5260-5320	54 to 62	54, 62	OFDM	MCS0
А	802.11ac (80MHz)		58	58	OFDM	MCS0
А	802.11a		149 to 165	149, 157,165	OFDM	6.0
A	802.11n/ac (20MHz)	E74E E82E	149 to 165	149, 157,165	OFDM	MCS0
А	802.11n/ac (40MHz)	5745-5825	151 to 159	151, 159	OFDM	MCS0
А	802.11ac (80MHz)		155	155	OFDM	MCS0



#### POWER LINE CONDUCTED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
А	802.11n (40MHz)	5745-5825	151 to 159	151	OFDM	MCS0

#### **BANDEDGE MEASUREMENT:**

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATIO N	DATA RATE (Mbps)
А	802.11a		36 to 48	36, 40, 48	OFDM	6.0
А	802.11n/ac (20MHz)	E190 E240	36 to 48	36, 40, 48	OFDM	MCS0
А	802.11n/ac (40MHz)	5160-5240	38 to 46	38, 46	OFDM	MCS0
А	802.11ac (80MHz)		42	42	OFDM	MCS0
А	802.11a		52 to 64	52, 60, 64	OFDM	6.0
А	802.11n/ac (20MHz)	5260 5220	52 to 64	52, 60, 64	OFDM	MCS0
А	802.11n/ac (40MHz	5260-5320	54 to 62	54, 62	OFDM	MCS0
А	802.11ac (80MHz)		58	58	OFDM	MCS0
А	802.11a		149 to 165	149, 157,165	OFDM	6.0
А	802.11n/ac (20MHz)		149 to 165	149, 157,165	OFDM	MCS0
А	802.11n/ac (40MHz)	5745-5825	151 to 159	151, 159	OFDM	MCS0
А	802.11ac (80MHz)		155	155	OFDM	MCS0

The following channel(s) was (were) selected for the final test as listed below.

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#### ANTENNA PORT CONDUCTED MEASUREMENT:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- The following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATIO N	DATA RATE (Mbps)
В	802.11a		36 to 48	36, 40, 48	OFDM	6.0
В	802.11n/ac (20MHz)	E180 E240	36 to 48	36, 40, 48	OFDM	MCS0
В	802.11n/ac (40MHz)	5160-5240	38 to 46	38, 46	OFDM	MCS0
В	802.11ac (80MHz)		42	42	OFDM	MCS0
В	802.11a		52 to 64	52, 60, 64	OFDM	6.0
В	802.11n/ac (20MHz)	5000 5000	52 to 64	52, 60, 64	OFDM	MCS0
В	802.11n/ac (40MHz)	5260-5320	54 to 62	54, 62	OFDM	MCS0
В	802.11ac (80MHz)		58	58	OFDM	MCS0
В	802.11a		149 to 165	149, 157,165	OFDM	6.0
В	802.11n/ac (20MHz)	E74E E90E	149 to 165	149, 157,165	OFDM	MCS0
В	802.11n/ac (40MHz)	5745-5625	151 to 159	151, 159	OFDM	MCS0
В	802.11ac (80MHz)		155	155	OFDM	MCS0



## **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
RE≥1G	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
PLC	25deg. C, 52%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
АРСМ	25deg. C, 60%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu

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## 2.3 DUTY CYCLE OF TEST SIGNAL

Please Refer to Appendix A Of this test report.

## WORST-CASE DATA:

Measured Duty Cycle				
	Mode	Duty Cycle [%]		
Mode		ANT0		
	11a	98.39		
	11n20	98.27		
5047	11n40	97.97		
5GHZ	11ac20	96.35		
	11ac40	96.36		
	11ac80	92.80		

Note:

Duty cycle of test signal is < 98%, duty factor shall be considered.



## 2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

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

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: Shielded, Detachable 1.0m;

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## 2.1.1 CONFIGURATION OF SYSTEM UNDER TEST









## 2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

## FCC Part 15, Subpart E (15.407) KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10-2020

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.



## **3 TEST TYPES AND RESULTS**

## 3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

## 3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (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

#### NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

## 3.1.2 LIMITS OF UNWANTED EMISSION

	APPLICABLE TO	LIMIT			
RESTRICTED BANDS	789033 D02 General	FIELD STRENGTH AT 3m (dBµV/m)			
BANDO	UNII Test Procedures New Rules v02r01	PK : 74	AV : 54		
	APPLICABLE TO	EIRP LIMIT (dBm/MHz)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)		
	15.407(b)(1)				
RESTRICTED	15.407(b)(2)	PK : -27	PK : 68.2		
DANDO	15.407(b)(3)				
	15.407(b)(4)	See note	2 (FCC 16-24)		



**NOTE:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \quad \mu V/m, \text{ where P is the eirp (Watts).}$$

2. All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.29,24	Aug.28,26
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
Signal Generator	R&S	SMB100A	182185	Mar.29,24	Mar.28,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC- 01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	ток	9m*6m*6m	HRSW-SZ-EMC- 02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26
Bilog Antenna	SCHWARZBEC K	VULB 9163	1264	Dec.26,23	Dec.25,25
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.21,24	Aug.20,26
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Jul.15,24	Jul.14,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.21,24	Aug.20,26
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
DC Source	HYELEC	HY3010B	551016	Aug.30,24	Aug.29,26
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
Hygrothermograph	DELI	20210528	SZ014	Sep.05,24	Sep.04,26
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
PC	LENOVO	E14	HRSW0024	N/A	N/A

## 3.1.3 TEST INSTRUMENTS

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



TMC-AMI18843A(CA BLE)	R&S	HF290-NMNM- 7.00M	N/A	N/A	N/A
TMC-AMI18843A(CA BLE)	R&S	HF290-NMNM- 4.00M	N/A	N/A	N/A
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 the 3m Chamber.
- 3. The FCC Site Registration No. is 434559; The Designation No. is CN1325.



## 3.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3-meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height varies 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.
- d. 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.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise, the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

## NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
- 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
  - 5. All modes of operation were investigated, and the worst-case emissions are reported.

## 3.1.5 DEVIATION FROM TEST STANDARD

No deviation.

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## 3.1.6 TEST SETUP

<Frequency Range 9KHz~30MHz >



< Frequency Range 30MHz~1GHz >





## <Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 3.1.7 EUT OPERATING CONDITION

- a. Set the EUT under full load condition and placed it on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



## 3.1.8 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

## BAND EDGE MEASUREMENT

Band 1

802.11a

CHANNEL	TX Channel 36		Peak (PK)	
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)	



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## **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5180MHz: Fundamental frequency.



CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,145.700	54.78	74.0	19.22	13.92	H	1.0	2.0
2	5,150.000	52.36	74.0	21.64	13.95	н	1.0	2.0
2	5,199.100	102.26			14.3	н	359.1	1.0
$\begin{array}{c} 11175,520,520,520,520,520,520,520,520,520,52$								
20	i.11 G 5.115 G 5.	125 G 5.135 G	5.145 G 5.	155 G 5.165 (	G 5.175 G	5.185 G 5.195 G	5.205 G 5.21	5 G 5. Frequency i





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## **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5200MHz: Fundamental frequency.



CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,116.375	52.49	74.0	21.51	13.76	н	44.9	1.0
3	5,150.000	50.45	74.0	23.55	13.95	н	241.0	1.0
3	5,239.380	104.09			14.19	н	5.0	1.0
2 102.5: 9 102								

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# **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5240MHz: Fundamental frequency.

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802.11n (20MHz)

CHANNEL	TX Channel 36		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)



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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5180MHz: Fundamental frequency.



CHANNEL	TX Channel 40		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,148.400	56.32	74.0	17.68	13.94	н	104.8	2.0
2	5,150.000	54.72	74.0	19.28	13.95	н	104.8	2.0
2	5,198.800	100.9			14.3	н	209.9	2.0
5 - 110 100 - 100 97.5 - 500 97.5								

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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5200MHz: Fundamental frequency.



CHANNEL	TX Channel 48		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	5,148.625	52.58	74.0	21.42	13.94	н	266.1	1.0
3	5,150.000	51.15	74.0	22.85	13.95	н	353.8	1.0
3	5,242.380	102.07			14.18	Н	5.1	1.0
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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5240MHz: Fundamental frequency.



802.11n (40MHz)

CHANNEL	TX Channel 38		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)











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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5190MHz: Fundamental frequency.



CHANNEL	TX Channel 46		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)

ng	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,136.250	51.87	74.0	22.13	13.87	н.	359.1	1.0
2	5,150.000	50.59	74.0	23.41	13.95	H	6.2	1.0
2	5,223.400	96.98			14.23	н	28.4	1.0
97.5 92.5 92.5 90 87.5 85 82.5 80 77.5 75								

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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5230MHz: Fundamental frequency.



802.11ac (20MHz)

CHANNEL	TX Channel 36		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)



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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5180MHz: Fundamental frequency.



CHANNEL	TX Channel 40		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)



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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5200MHz: Fundamental frequency.



CHANNEL	TX Channel 48		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)

Rg Fr	equency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3 5,	146.375	52.02	74.0	21.98	13.93	н	297.2	1.0
3 5,	150.000	49.96	74.0	24.04	13.94	н	359.2	1.0
3 5,	238.625	98.82			14.19	Н	46.1	1.0
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- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5240MHz: Fundamental frequency.



802.11ac (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)







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# **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5190MHz: Fundamental frequency.



CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,145.000	52.23	74.0	21.77	13.92	н	91.6	2.0
2	5,150.000	51.01	74.0	22.99	13.95	н	55.3	1.0
2	5,221.650	97.02			14.24	Н	135.3	1.0
ID5 ID5   ID2 ID5   ID2 ID0   ID0								

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# **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5230MHz: Fundamental frequency.



802.11ac (80MHz)

CHANNEL	TX Channel 42		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)



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# **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5210MHz: Fundamental frequency.

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Band 2:	
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802.11a

CHANNEL	TX Channel 52		Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	DETECTOR FUNCTION	Average (AV)

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,257.000	103.0			14.15	н	48.5	1.0
4	5,350.000	51.5	74.0	22.5	14.27	H	165.7	2.0
4	5,351.525	53.41	74.0	20.59	14.28	н	114.2	2.0
10 10   10 102.5   102.5 102.5   97.5 92.5   96.5 92.5   97.5 92.5   98.5 80.6   97.75 77.5   77.5 75.5   50.5 50.5   50.5	26 5216 5220	5 523 G 524 G	5256 5286 53	27 G 528 G 52	96 5.306 5.316	5.26 5.33G 5.34G	5.35 G 5.36 G	5.37 G 5.39





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# **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5260MHz: Fundamental frequency.

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CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)



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#### **REMARKS**:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor Margin value = Limit value- Emission level.
- 2. 5300MHz: Fundamental frequency.