



FCC TEST REPORT (PART 27)

Applicant:	Power Idea Technology (Shenzhen) Co., Ltd.			
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Manufacturer or Supplier:	Power Idea Technology (Shenzhe	n) Co., Ltd.		
Address:	4th Floor, A Section, Languang Sc Industrial Park North, Nanshan Dis	ience&technology Building, No.7 Xinxi RD, Hi-Tech strict, ShenZhen, P.R.C.		
Product:	Smart Phone			
Brand Name:	RugGear			
Model Name:	PSM03G			
Marketing name:	RG880			
FCC ID	ZLE-RG880			
Date of tests	Dec. 20, 2023 ~Mar. 20, 2024			
The tests have bee	en carried out according to the requi	rements of the following standard:		
 ⊆ FCC Part 27				
CONCLUSION: The submitted sample was found to COMPLY with the test requirement				
	Prepared by Hanwen Xu Engineer / Mobile Department Approved by Peibo Sun Manager / Mobile Department			
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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/ferms-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 set soft 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 not provided upon request for accredited 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 completeness of this report, the tests conducted and the correctness of the report contents.

Date: Mar. 20, 2024

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2312200110RF05	Original release	Mar. 20, 2024



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

	APPLIED STANDARD: FCC PART 27 & PART 2				
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	TEST LAB*		
§2.1046	Conducted Output Power	Compliance	А		
§27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 7C) (Band 41C)	Compliance	Α		
§2.1055 §27.54	Frequency Stability	Compliance	Α		
§2.1049	Occupied Bandwidth	Compliance	А		
§2.1051 §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 7C) (Band 41C)	Compliance	А		
§2.1051 §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 7C) (Band 41C)	Compliance	А		
§2.1051 §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 7C) (Band 41C)	Compliance	А		
NA	Peak to average ratio	Compliance	Α		



*Test Lab Information Reference

Lab A:

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

Lab Address:

Tower N, Innovation Center, 88 Zhuyi 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.

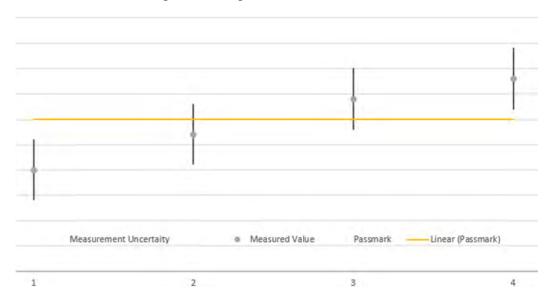


1.1 MEASREMENT UNCERTAINTY

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
Frequency Stability	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (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
Band Edge Measurements	±4.70dB

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.



1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,22	Feb.15,24
Vector Signal Generator	R&S	SMBV100B	102176	Feb.15,24	Feb.14,26
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Feb.15,24
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-01Cham ber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-02Cham ber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Feb.25,22	Feb.24,24
EMI TEST Receiver	R&S	ESR26	101734	Feb.24,24	Feb.23,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,24
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBEC K	VULB 9163	1264	Feb.28,22	Feb.27,24
Bilog Antenna	SCHWARZBEC K	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Oct.01,22	Sep.30,24
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CAB LE)	R&S	HF290-NMNM-7.0 0M	N/A	N/A	N/A
TMC-AMI18843A(CAB LE)	R&S	HF290-NMNM-4.0 0M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W12.14	N/A	Apr.28,23	Apr.27,24

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

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

Tel: +86 (0557) 368 1008



CABLE	R&S		SEP-03-20-0 69		
CABLE	R&S	J12J103539-00-1	SEP-03-20-0 70	Apr.28,23	Apr.27,24
Temperature Chamber	votsch	VT4002	5856607810 0050	May.31,22	May.30,24



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Smart Phone			
BRAND NAME*	RugGear			
MODEL NAME*	PSM03G			
MARKETING NAME*	RG880			
NOMINAL VOLTAGE*	5.0Vdc/ 9.0Vdc/ 12.0Vdc(Adapter) 3.85Vdc (Battery)			
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM		
	LTE Band CA_7C Channel Bandwidth: 10MHz+20MHz	2505.5MHz ~ 2560MHz		
	LTE Band CA_7C Channel Bandwidth: 15MHz+10MHz	2507.5MHz ~ 2564.7MHz		
	LTE Band CA_7C Channel Bandwidth: 15MHz+15MHz	2507.5MHz ~ 2562.5MHz		
	LTE Band CA_7C Channel Bandwidth: 15MHz+20MHz	2507.8MHz ~ 2560MHz		
	LTE Band CA_7C Channel Bandwidth: 20MHz+10MHz	2510MHz ~ 2564.5MHz		
FREQUENCY RANGE	LTE Band CA_7C Channel Bandwidth: 20MHz+15MHz	2510MHz ~ 2562.2MHz		
	LTE Band CA_7C Channel Bandwidth: 20MHz+20MHz	2510MHz ~ 2560MHz		
	LTE Band CA_41C Channel Bandwidth: 5MHz+20MHz	2499.3MHz ~ 2680MHz		
	LTE Band CA_41C Channel Bandwidth: 10MHz+15MHz	2501.3MHz ~ 2682.5MHz		
	LTE Band CA_41C Channel Bandwidth: 10MHz+20MHz	2501.5MHz ~ 2680MHz		
	LTE Band CA_41C Channel Bandwidth: 15MHz+10MHz	2503.5MHz ~ 2684.7MHz		



	1	
	LTE Band CA_41C Channel Bandwidth: 15MHz+15MHz	2496MHz ~ 2682.5MHz
	LTE Band CA_41C Channel Bandwidth: 15MHz+20MHz	2503.8MHz ~ 2680MHz
	LTE Band CA_41C Channel Bandwidth: 20MHz+5MHz	2506MHz ~ 2686.7MHz
	LTE Band CA_41C Channel Bandwidth: 20MHz+10MHz	2506MHz ~ 2684.5MHz
	LTE Band CA_41C Channel Bandwidth: 20MHz+15MHz	2506MHz ~ 2682.2MHz
	LTE Band CA_41C Channel Bandwidth: 20MHz+20MHz	2506MHz ~ 2680MHz
MAX. EIRP POWER	LTE Band CA_7C Channel Bandwidth: 20MHz+20MHz	354mW
MAX. EIRI TOWER	LTE Band CA_41C Channel Bandwidth: 20MHz+20MHz	357.27mW
	LTE Band CA_7C Channel Bandwidth: 10MHz+20MHz	QPSK: 27M7G7D
		16QAM: 27M7W7D
		64QAM: 27M7W7D
	LTE Band CA 7C	QPSK: 23M4G7D
	Channel Bandwidth:	16QAM: 23M4W7D
	15MHz +10MHz	64QAM: 23M4W7D
	LTE Band CA_7C	QPSK: 28M4G7D
EMISSION DESIGNATOR	Channel Bandwidth:	16QAM: 29M4W7D
	15MHz +15MHz	64QAM: 28M4W7D
	LTE Band CA 7C	QPSK: 32M8G7D
	Channel Bandwidth:	16QAM: 32M7W7D
	15MHz +20MHz	64QAM: 32M7W7D
	LTE Band CA 7C	QPSK: 27M9G7D
	Channel Bandwidth: 20MHz +10MHz	16QAM: 27M9W7D
		64QAM: 27M9W7D



		<u> </u>
	LTE Band CA_7C	QPSK: 32M6G7D
	Channel Bandwidth:	16QAM: 32M6W7D
	20MHz +15MHz	64QAM: 32M6W7D
	LTE Band CA 7C	QPSK: 37M3G7D
	Channel Bandwidth: 20MHz +20MHz	16QAM: 37M2W7D
	ZOWI IZ · ZOWI IZ	64QAM: 37M1W7D
	LTE Band CA 41C	QPSK: 22M9G7D
	Channel Bandwidth: 5MHz+20MHz	16QAM: 22M9W7D
	SIVITIZ+ZUIVITIZ	64QAM: 22M9W7D
	LTE Band CA 41C	QPSK: 23M0G7D
	Channel Bandwidth:	16QAM: 23M0W7D
	20MHz+5MHz	64QAM: 23M0W7D
	LTE Band CA 41C	QPSK: 22M8G7D
	Channel Bandwidth:	16QAM: 22M8W7D
EMISSION DESIGNATOR	10MHz+15MHz	64QAM: 22M8W7D
	LTE Band CA_41C Channel Bandwidth: 15MHz+10MHz	QPSK: 23M3G7D
		16QAM: 23M3W7D
		64QAM: 23M3W7D
	LTE Band CA_41C Channel Bandwidth:	QPSK: 28M4G7D
		16QAM: 28M3W7D
	15MHz+15MHz	64QAM: 28M3W7D
	LTE Band CA_41C	QPSK: 27M8G7D
	Channel Bandwidth:	16QAM: 27M8W7D
	10MHz+20MHz	64QAM: 27M7W7D
	LTE Band CA 41C	QPSK: 27M8G7D
	Channel Bandwidth: 20MHz+10MHz LTE Band CA_41C Channel Bandwidth: 15MHz+20MHz	16QAM: 27M8W7D
		64QAM: 27M8W7D
		QPSK: 32M6G7D
		16QAM: 32M6W7D
		64QAM: 32M6W7D



	LTE Band CA 41C	QPSK: 32M6G7D
	Channel Bandwidth:	16QAM: 32M6W7D
EMISSION DESIGNATOR	20MHz+15MHz	64QAM: 32M6W7D
EMISSION DESIGNATOR	LTE Band CA 41C	QPSK: 37M4G7D
	Channel Bandwidth:	16QAM: 37M4W7D
	20MHz+20MHz	64QAM: 37M4W7D
ANTENNA TYPE*	PIFA Antenna with 1.6dBi gain	for LTE CA 7C/ LTE CA 41C
HW VERSION*	MP619_MB_V1.02_PCB	
SW VERSION*	RG880_EEA_00.00_1_2024030	05
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED*	USB cable: non-shielded cable,	with w/o ferrite core, 1.0 meter
EXTREME TEMPERATURE*	-10℃-50 ℃	

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 two receivers.

MODULATION MODE	TX FUNCTION
LTE	1TX/2RX

- 4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in 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.
- 6. For Band Edge and Emission Mask: The all BW combinations were tested. Combination pairs of the same BW are considered generally equivalent. The RB combinations were selected such that the signal is active closest to the band limit, as this is the worst case.
- 7. For Out of Band Emissions: The all combination was tested. The highest power RB combination was selected as worst case.

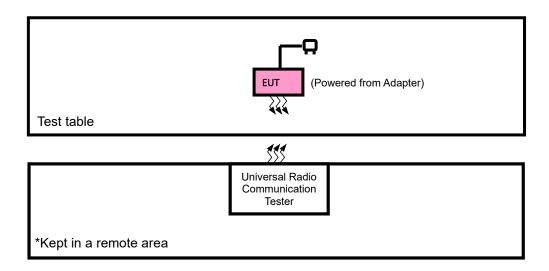


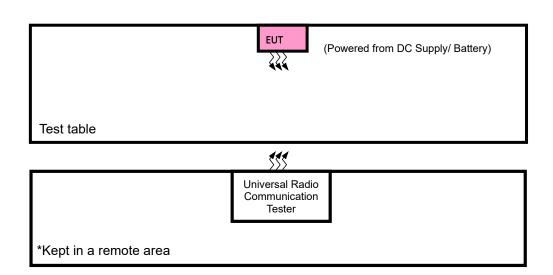
8. List of Accessory:								
ACCESSORIES BRAND		MANUFACTUR ER	MODEL	SPECIFICATION				
CPU	QUALCOMM	N/A	SM6225	N/A				
eMMC 1 (=ROM 1)	SAMSUNG	N/A	KM2L9001CM-B518	N/A				
eMMC 2 (=ROM 2)	Hynix	N/A	H9QT0GECN6X145R	N/A				
RAM 1	N/A	N/A	N/A	N/A				
RAM 2	N/A	N/A	N/A	N/A				
BT/WLAN Module	N/A	N/A	N/A	N/A				
NFC chipset	NXP	N/A	N/A	N/A				
Battery	N/A	N/A	BL450AGP	Power Rating: 4.4V 4500mAh				
Adapter	N/A	SHENZHEN MERRYKING ELECTRONICS CO LTD	MK-Q181US	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	Huizhou Huating Technology Co., Ltd	USB1.0	Signal Line,1.0meter				



2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST







2.3 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;

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on Y-plane for EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
Α	EUT + Adapter + USB Cable with LTE link
В	EUT + Battery with LTE link



LTE BAND CA_7C MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABL E PCC CHANNEL	E SCC	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
		20805 to 21206	20949 to 21350	Low, Middle, High	10MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		20825 to 21277	20945 to 21397	Low, Middle, High	15MHz+10MHz	QPSK, 16QAM, 64QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
		20825 to 21225	20975 to 21375	Low, Middle, High	15MHz+15MHz	QPSK, 16QAM, 64QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
Α	EIRP	20828 to 21179	20999 to 21350	Low, Middle, High	15MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
		20850 to 21251	20994 to 21395	Low, Middle, High	20MHz+10MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		20850 to 21201	21201 to 21372	Low, Middle, High	20MHz+15MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		20850 to 21152	21048 to 21350	Low, Middle, High	20MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		20805 to 21206	20949 to 21350	Low, Middle, High	10MHz+20MHz	QPSK, 16QAM, 64QAM	50RB/ 0RB Offset	100RB/ 0RB Offset
		20825 to 21277	20945 to 21397	Low, Middle, High	15MHz+10MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	50RB/ 0RB Offset
	OCCUPIED BANDWIDTH	20825 to 21225	20975 to 21375	Low, Middle, High	15MHz+15MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	75RB/ 0RB Offset
А		20828 to 21179	20999 to 21350	Low, Middle, High	15MHz+20MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	100RB/ 0RB Offset
		20850 to 21251	20994 to 21395	Low, Middle, High	20MHz+10MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	50RB/ 0RB Offset
		20850 to 21201	21201 to 21372	Low, Middle, High	20MHz+15MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	75RB/ 0RB Offset
		20850 to 21152	21048 to 21350	Low, Middle, High	20MHz+20MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	100RB/ 0RB Offset
							1RB/ 0RB Offset	1RB/ 99RB Offset
				Low	20MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
							100RB/ 0RB	100RB/ 0RB
Α	BAND EDGE	20850 to 21152	21048 to 21350				Offset 1RB/ 0RB	Offset 1RB/ 99RB
				High	20MHz+20MHz	QPSK, 16QAM, 64QAM	Offset 1RB/ 99RB Offset	Offset 1RB/ 0RB Offset
				Ŭ			100RB/ 0RB	100RB/ 0RB
							Offset	Offset
Α	CONDUCTE D EMISSION	20850 to 21152	21048 to 21350	Low, Middle, High	20MHz+20MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset
А	RADIATED EMISSION	20850 to 21152	21048 to 21350	Low, Middle, High	20MHz+20MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset

Note: 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



LTE	BAND CA_41C I	MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE PCC CHANNEL	AVAILABLE SCC CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
		39750 to 41341	39921 to 41512	Low, Middle, High	20MHz+15MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		39728 to 41319	39899 to 41490	Low, Middle, High	15MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
		39750 to 41391	39894 to 41535	Low, Middle, High	20MHz+10MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		39705 to 41346	39849 to 41490	Low, Middle, High	10MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		39725 to 41365	39875 to 41515	Low, Middle, High	15MHz +15MHz	QPSK, 16QAM, 64QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
А	EIRP	39725 to 41417	39845 to 41537	Low, Middle, High	15MHz +10MHz	QPSK, 16QAM, 64QAM	1RB / 74RB Offset	1RB / 0RB Offset
		39703 to 41395	39823 to 41515	Low, Middle, High	10MHz +15MHz	QPSK, 16QAM, 64QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		39750 to 41440	39867 to 41557	Low, Middle, High	20MHz +5MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
		39683 to 41373	39800 to 41490	Low, Middle, High	5MHz +20MHz	QPSK, 16QAM, 64QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		39750 to 41292	39948 to 41490	Low, Middle, High	20MHz +20MHz	QPSK, 16QAM, 64QAM	1RB / 99RB Offset 1RB / 0RB Offset	1RB/ 0RB Offset
		39750 to 41341	39921 to 41512	Low, Middle, High	20MHz+15MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	75RB/ 0RB Offset
		39728 to 41319	39899 to 41490	Low, Middle, High	15MHz+20MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	100RB/ 0RB Offset
		39750 to 41391	39894 to 41535	Low, Middle, High	20MHz+10MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	50RB/ 0RB Offset
		39705 to 41346	39849 to 41490	Low, Middle, High	10MHz+20MHz	QPSK, 16QAM, 64QAM	50RB/ 0RB Offset	100RB/ 0RB Offset
А	OCCUPIED BANDWIDTH	39725 to 41365	39875 to 41515	Low, Middle, High	15MHz +15MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	75RB/ 0RB Offset
		39725 to 41417	39845 to 41537	Low, Middle, High	15MHz +10MHz	QPSK, 16QAM, 64QAM	75RB/ 0RB Offset	50RB/ 0RB Offset
		39703 to 41395	39823 to 41515	Low, Middle, High	10MHz +15MHz	QPSK, 16QAM, 64QAM	50RB/ 0RB Offset	75RB/ 0RB Offset
		39750 to 41440	39867 to 41557	Low, Middle, High	20MHz +5MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	25RB/ 0RB Offset
		39683 to 41373	39800 to 41490	Low, Middle, High	5MHz +20MHz	QPSK, 16QAM, 64QAM	25RB/ 0RB Offset	100RB/ 0RB Offset



А	OCCUPIED BANDWIDTH	39750 to 41292	39948 to 41490	Low, Middle, High	20MHz +20MHz	QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	100RB/ 0RB Offset
							1RB/ 0RB Offset	1RB/ 99RB Offset
			39948 to 41490	Low	20MHz+20MHz		1RB/ 99RB Offset	1RB/ 0RB Offset
	BAND EDGE	39750 to 41292				QPSK, 16QAM, 64QAM	100RB/ 0RB Offset	100RB/ 0RB Offset
Α	DAND EDGE						1RB/ 0RB Offset	1RB/ 99RB Offset
				High	20MHz+20MHz		1RB/ 99RB Offset	1RB/ 0RB Offset
							100RB/ 0RB Offset	100RB/ 0RB Offset
А	CONDUCTED EMISSION	39750 to 41292	39948 to 41490	Low, Middle, High	20MHz+20MHz	QPSK, 16QAM, 64QAM	1RB/ 99RB Offset	1RB/ 0RB Offset
А	RADIATED EMISSION	39750 to 41292	39948 to 41490	Middle	20MHz+20MHz	QPSK	1RB / 99RB Offset	1RB/ 0RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/ 3.85V/ 4.4V By Battery	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
CONDUCTED EMISSION	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5.0V/ 9.0V/ 12.0V By Adapter	Hanwen Xu



2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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



3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that "User stations are limited to 2 watts" and 27.50(i) specific that "Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage."

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = PMeas + GT - LC

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

 G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

Lc = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

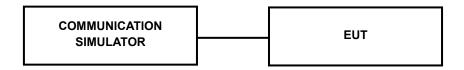
CONDUCTED POWER MEASUREMENT:

- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band CA_7C

	CA_7C									
Combination 20MHz+20MHz (100RB+100RB)										
PCC	scc		Р	CC	S	CC	Total RB	Measured Power		
Channel	Channel	Modulation	RB Size	RB offset	RB Size	RB offset	Size	(dBm)		
		QPSK	1	0	0	0	1	23.86		
20805	21048	16QAM	1	0	0	0	1	23.24		
		64QAM	1	0	0	0	1	22.26		
		QPSK	1	0	0	0	1	23.78		
21100	21298	16QAM	1	0	0	0	1	23.15		
		64QAM	1	0	0	0	1	22.30		
		QPSK	1	0	0	0	1	23.89		
21350	21152	16QAM	1	0	0	0	1	23.18		
		64QAM	1	0	0	0	1	22.12		

LTE Band CA_41C

	CA_41C										
	Combination 20MHz+20MHz (100RB+100RB)										
PCC	SCC		P	CC	S	CC	Total RB	Measured Power			
Channel	Channel	Modulation	RB Size	RB offset	RB Size	RB offset	Size	(dBm)			
		QPSK	1	0	0	0	1	23.53			
39750	39948	16QAM	1	0	0	0	1	22.98			
		64QAM	1	0	0	0	1	21.35			
		QPSK	1	0	0	0	1	23.93			
40620	40422	16QAM	1	0	0	0	1	22.73			
		64QAM	1	0	0	0	1	21.10			
		QPSK	1	0	0	0	1	23.85			
41490	41490 41292	16QAM	1	0	0	0	1	22.88			
		64QAM	1	0	0	0	1	21.16			



ERP/EIRP LTE BAND CA_7C

CHANNEL BANDWIDTH: 20MHz+20MHz QPSK

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21048	2529.8	23.86	1.6	25.46	351.56	2
21100	2535	21298	2554.8	23.78	1.6	25.38	345.14	2
21350	2560	21152	2540.2	23.89	1.6	25.49	354	2

CHANNEL BANDWIDTH: 20MHz+20MHz 16QAM

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21048	2529.8	23.24	1.6	24.84	304.79	2
21100	2535	21298	2554.8	23.15	1.6	24.75	298.54	2
21350	2560	21152	2540.2	23.18	1.6	24.78	300.61	2

CHANNEL BANDWIDTH: 20MHz+20MHz 64QAM

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21048	2529.8	22.26	1.6	23.86	243.22	2
21100	2535	21298	2554.8	22.3	1.6	23.9	245.47	2
21350	2560	21152	2540.2	22.12	1.6	23.72	235.5	2



LTE BAND CA_41C

CHANNEL BANDWIDTH: 20MHz+20MHz QPSK

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506	39948	2525.8	23.53	1.6	25.13	325.84	2
40620	2593	40422	2573.2	23.93	1.6	25.53	357.27	2
41490	2680	41292	2660.2	23.85	1.6	25.45	350.75	2

CHANNEL BANDWIDTH: 20MHz+20MHz 16QAM

Channel	Frequency	Channel	Frequency	Conducted Power	G⊤-Lc	EIRP (dBm)	EIRP (mW)	Limit
	(MHz)		(MHz)	(dBm)	(dB)	(abiii)	(11177)	(W)
39750	2506	39948	2525.8	22.98	1.6	24.58	287.08	2
40620	2593	40422	2573.2	22.73	1.6	24.33	271.02	2
41490	2680	41292	2660.2	22.88	1.6	24.48	280.54	2

CHANNEL BANDWIDTH: 20MHz+20MHz 64QAM

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506	39948	2525.8	21.35	1.6	22.95	197.24	2
40620	2593	40422	2573.2	21.098	1.6	22.698	186.12	2
41490	2680	41292	2660.2	21.16	1.6	22.76	188.8	2



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

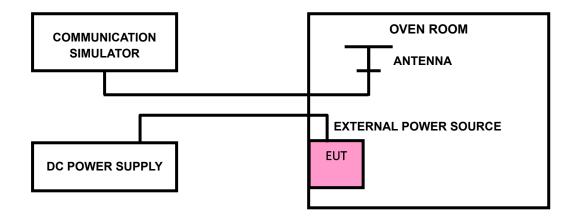
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ± 0.5 °C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP





3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

LTE BAND CA_7C

LTE BAND CA_7C channel and Frequency List									
BW(MHz)	Channel/Fre	equency(MHz)	Lowest	Middle	Highest				
	PCC	channel	20805	21006	21206				
40.00	PCC	Frequency	2505.5	2525.6	2545.6				
10+20	000	channel	20949	21150	21350				
	SCC	Frequency	2519.9	Dwest Middle 0805 21006 505.5 2525.6 0949 21150 519.9 2540 0825 21051 507.5 2530.1 0945 21171 519.5 2542.1 0825 21025 507.5 2527.5 0975 21175 522.5 2542.5 0828 21003 507.8 2525.3 0999 21174 524.9 2542.4 0850 21051 2510 2530.1 0994 21195 524.4 2544.5 0850 21026 2510 2527.6 1021 21197 527.1 2544.7 0850 21001 2510 2525.1 1048 21199	2560				
	DOO	channel	20825	21051	21277				
45.40	PCC	Frequency	2507.5	2530.1	2552.7				
15+10	000	channel	20945	21171	21397				
	SCC	Frequency	2519.5	2542.1	2564.7				
	DOO	channel	20825	21025	21225				
	PCC	Frequency	2507.5	2527.5	2547.5				
15+15	SCC	channel	20975	21175	21375				
		Frequency	2522.5	2542.5	2562.5				
	500	channel	20828	21003	21179				
45.00	PCC	Frequency	2507.8	2525.3	2542.9				
15+20	SCC	channel	20999	21174	21350				
		Frequency	2524.9	2542.4	2560				
	500	channel	20850	21051	21251				
00.40	PCC	Frequency	2510	2530.1	2550.1				
20+10	000	channel	20994	21195	21395				
	SCC	Frequency	2524.4	2544.5	2564.5				
	D00	channel	20850	21026	21201				
00:45	PCC	Frequency	2510	2527.6	2545.1				
20+15	000	channel	21021	21197	21372				
	SCC	Frequency	2527.1	2544.7	2562.2				
	PCC	channel	20850	21001	21152				
20+20	FUU	Frequency	2510	2525.1	2540.2				
	SCC	channel	21048		21350				
		Frequency	2529.8	2544.9	2560				



LTE BAND CA_41C

LTE BAND CA_41C channel and Frequency List									
BW(MHz)	Channel/Fr	equcncy(MHz)	Lowest	Middle	Highest				
		channel	39683	40528	41373				
5+20	PCC	Frequency	2499.3	2583.8	2668.3				
	200	channel	39800	40645	41490				
	SCC	Frequency	2511	2595.5	2680				
	DOO	channel	39703	40549	41395				
40.45	PCC	Frequency	2501.3	2585.9	2670.5				
10+15	200	channel	39823	40669	41515				
	SCC	Frequency	2513.3	2597.9	2682.5				
	D00	channel	39705	40526	41346				
40.00	PCC	Frequency	2501.5	2583.6	2665.6				
10+20	SCC	channel	39849	40670	41490				
		Frequency	2515.9	2598.0	2680				
	PCC	channel	39725	40571	41417				
45.40		Frequency	2503.5	2588.1	2672.7				
15+10	SCC	channel	39845	40691	41537				
		Frequency	2515.5	2600.1	2684.7				
	PCC	channel	39725	40545	41365				
45.45		Frequency	2503.5	2585.5	2667.5				
15+15	200	channel	39875	40695	41515				
	SCC	Frequency	2518.5	2600.5	2682.5				
	PCC	channel	39728	40523	41319				
15+20	PCC	Frequency	2503.8	2583.3	2662.9				
15+20	800	channel	39899	40694	41490				
	SCC	Frequency	2520.9	2600.4	2680				
	PCC	channel	39750	40595	41440				
20+5	P00	Frequency	2506	2590.5	2675				
∠∪+5	900	channel	39867	40712	41557				
	SCC	Frequency	2517.7	2602.2	2686.7				
20+40	PCC	channel	39750	40571	41391				
20+10	P00	Frequency	2506	2588.1	2670.1				



	SCC	channel	39894	40715	41535
	800	Frequency	2520.4	2602.5	2684.5
	PCC	channel	39750	40546	41341
20+15	PCC	Frequency	2506	2585.6	2665.1
20+15	000	channel	39921	40717	41512
	SCC	Frequency	2523.1	2602.7	2682.2
	PCC	channel	39750	40521	41292
20.120	PCC	Frequency	2506	2583.1	2660.2
20+20	SCC	channel	39948	40719	41490
	300	Frequency	2525.8	2602.9	2680

Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.85V); VH = High voltage(4.4V); NT = Normal temperature (25 $^{\circ}$ C)

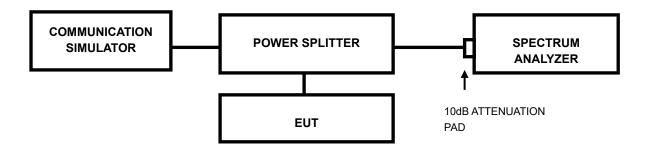


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

- a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.

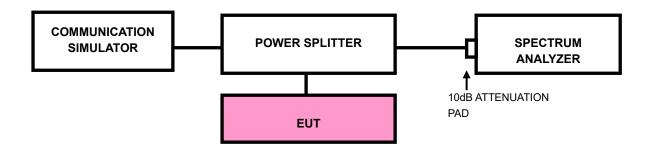


3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.

3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

- a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
- c) Set the resolution bandwidth (RBW) ≥ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
- d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- e) Set the video bandwidth (VBW) to $\ge 3 \times RBW$.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to ≥ 1001 .
- h) Use auto-coupled sweep time.
- i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- k) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.



3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

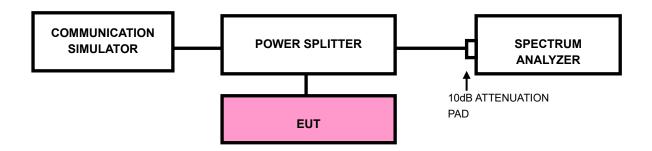
For: LTE Band7C/Band41C

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

3.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP





3.5.4 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.

Please Refer to Appendix Of this test report.



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

For: LTE Band7/ Band41

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

.

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15dBi.

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

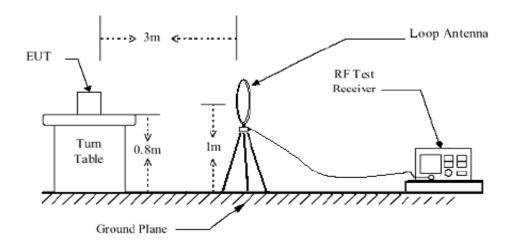
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

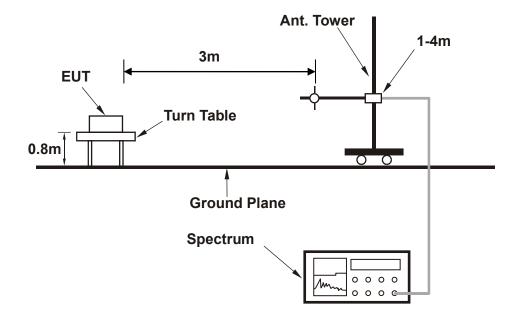


3.6.4 TEST SETUP

< Frequency Range below 30MHz >

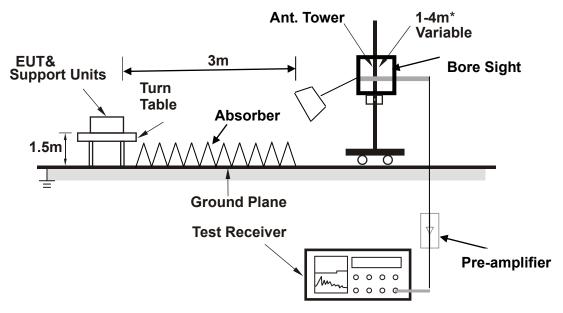


< Frequency Range 30MHz~1GHz >





<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).



3.6.5 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.

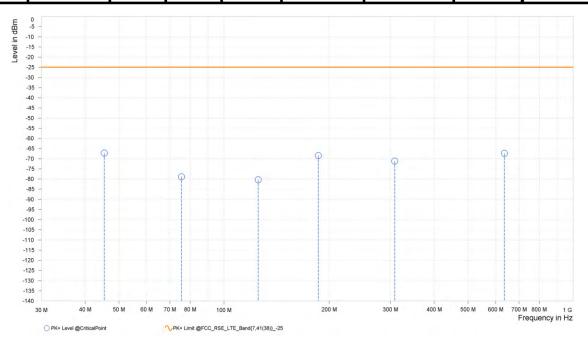
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data: LTE Band CA_41C

CHANNEL BANDWIDTH: 20MHz + 20MHz / QPSK

MODE	TX channel PCC 41490	EDECHENCY DANCE	Above 1000MHz		
WIODE	TX channel SCC 41292	FREQUENCY RANGE	Above 1000IVIH2		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu		•		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M					

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	45.400	-67.24	-25.00	42.24	4.79	Н	1.5	2.00
1	75.550	-78.90	-25.00	53.90	-6.91	Н	29.6	2.00
1	125.250	-80.37	-25.00	55.37	-6.09	Н	229.2	2.00
1	186.300	-68.45	-25.00	43.45	0.42	Н	232.3	1.00
1	308.300	-71.19	-25.00	46.19	2.08	Н	262.7	2.00
2	635.396	-67.37	-25.00	42.37	7.44	Н	146.3	1.00



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

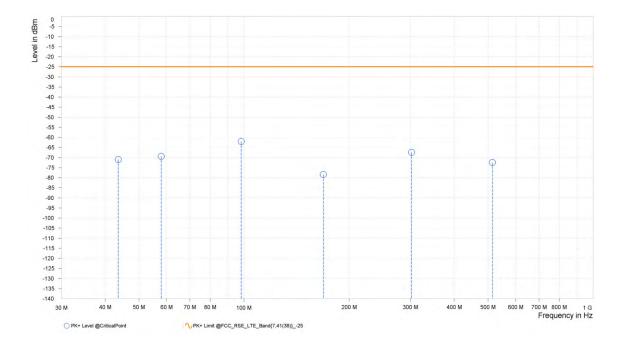
Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Tel: +86 (0557) 368 1008



	TX channel PCC 41490	EDECLIENCY DANCE	Above 1000MHz	
MODE	TX channel SCC 41292	FREQUENCY RANGE	Above 1000MHz	
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ	
TESTED BY	Hanwen Xu			
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M				

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	43.650	-70.95	-25.00	45.95	-0.86	V	269.5	1.00
1	57.900	-69.38	-25.00	44.38	2.04	V	124.9	1.00
1	98.150	-61.99	-25.00	36.99	10.55	V	125.1	2.00
1	168.700	-78.38	-25.00	53.38	-3.32	V	353.8	1.00
1	302.050	-67.39	-25.00	42.39	4.18	V	190.6	1.00
2	514.579	-72.49	-25.00	47.49	4.89	V	344.3	1.00





ABOVE 1GHz

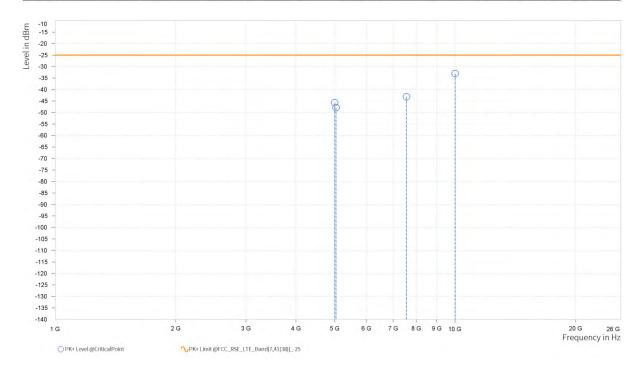
Note: For higher frequency, the emission is too low to be detected.

LTE Band CA _7C

CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 20850	FREQUENCY RANGE	Above 1000MHz	
	TX channel SCC 21048	FREQUENCT RANGE	Above 1000IVIH2	
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ	
TESTED BY	Hanwen Xu			
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M				

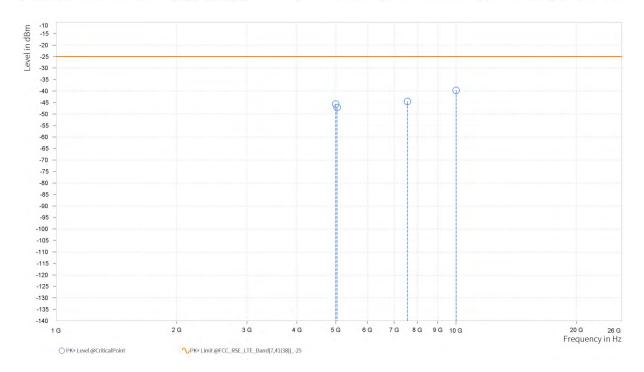
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,002.000	-45.72	-25.00	20.72	25.27	Н	159.4	1.00
4	5,041.500	-47.84	-25.00	22.84	25.57	Н	203	2.00
5	7,562.500	-43.09	-25.00	18.09	29.26	Н	359	2.00
6	10,004.500	-33.04	-25.00	8.04	17.69	Н	15	2.00





MODE	TX channel PCC 20850	EDECHENCY DANCE	Above 1000MUz		
	TX channel SCC 21048	FREQUENCY RANGE	Above 1000MHz		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu				
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M					

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,002.000	-45.66	-25.00	20.66	25.49	V	198.1	2.00
4	5,041.500	-47.22	-25.00	22.22	25.94	V	359	2.00
5	7,562.500	-44.51	-25.00	19.51	29.09	٧	18.7	2.00
6	10,004.500	-39.69	-25.00	14.69	17.49	V	1	1.00

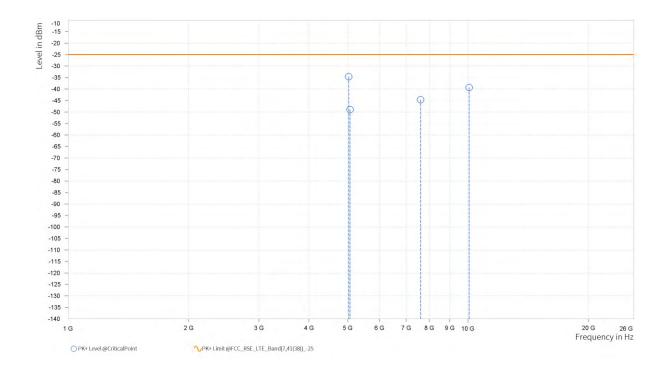




CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 21100	FREQUENCY RANGE	Above 1000MUz		
MODE	TX channel SCC 21298	FREQUENCY RANGE	Above 1000ivinz		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu				
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M					

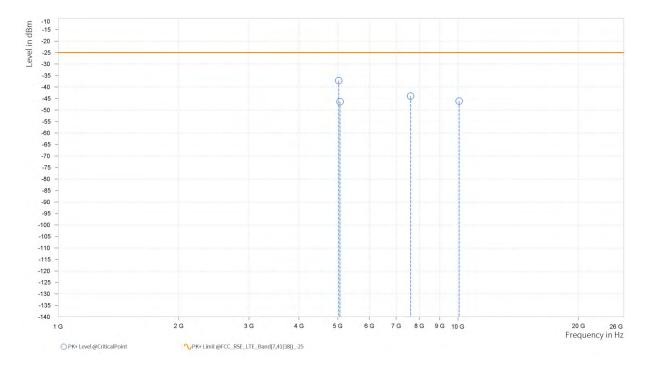
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,032.500	-34.59	-25.00	9.59	25.62	Н	154.6	1.00
4	5,071.500	-48.89	-25.00	23.89	25.25	Н	154.6	1.00
5	7,607.500	-44.63	-25.00	19.63	29.36	Н	150.2	2.00
6	10,064.500	-39.31	-25.00	14.31	17.74	Н	359	2.00





MODE	TX channel PCC 21100	EDECLIENCY DANCE	Above 1000MUz		
	TX channel SCC 21298	FREQUENCY RANGE	Above 1000MHz		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu				
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M					

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,032.500	-37.14	-25.00	12.14	25.95	V	166.6	1.00
4	5,071.500	-46.37	-25.00	21.37	25.72	V	1	1.00
5	7,607.500	-43.90	-25.00	18.90	29.16	٧	219.3	1.00
6	10,064.500	-46.07	-25.00	21.07	17.44	V	1	1.00

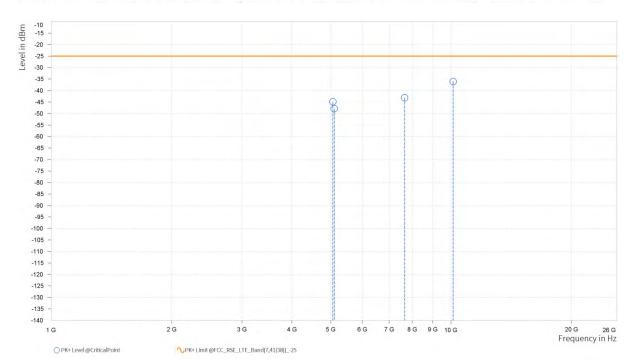




CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 21350	FREQUENCY RANGE	Above 1000MHz	
MODE	TX channel SCC 21152	FREQUENCY RANGE	Above 1000MHz	
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ	
TESTED BY	Hanwen Xu			
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M				

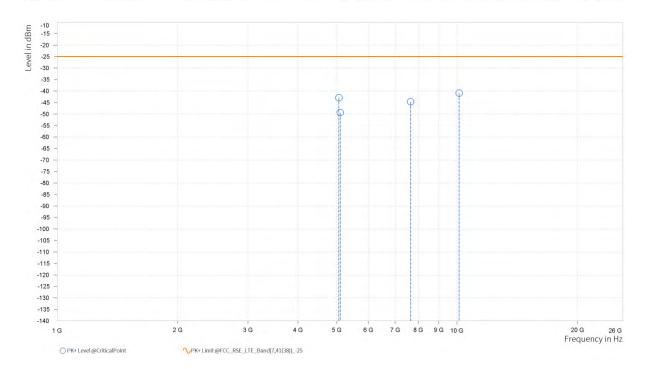
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,062.500	-44.85	-25.00	19.85	25.44	Н	202.9	2.00
4	5,102.000	-47.83	-25.00	22.83	24.83	Н	16.3	2.00
5	7,653.000	-43.08	-25.00	18.08	29.19	— H	1	1.00
6	10,125.000	-36.04	-25.00	11.04	17.55	Н	359	2.00





MODE	TX channel PCC 21350	EDECHENCY DANCE	Above 1000MUz		
	TX channel SCC 21152	FREQUENCY RANGE	Above 1000MHz		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu				
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M					

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,062.500	-42.88	-25.00	17.88	25.88	V	358.1	1.00
4	5,102.000	-49.39	-25.00	24.39	25.35	٧	30.7	2.00
5	7,653.000	-44.66	-25.00	19.66	29.04	V	359	1.00
6	10,125.000	-40.87	-25.00	15.87	17.14	V	1	1.00



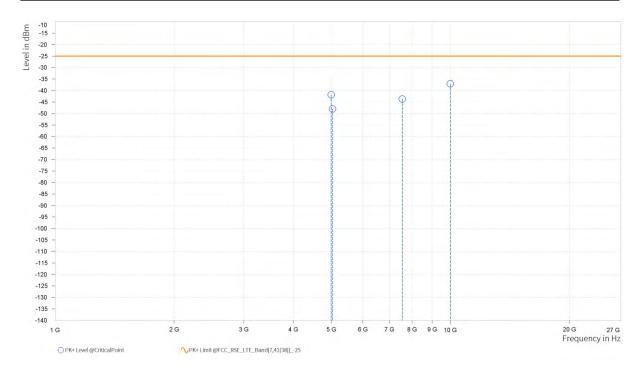


LTE Band CA _41C

CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 39750	FREQUENCY RANGE	Above 1000MHz		
WIODE	TX channel SCC 39948	FREQUENCY RANGE	Above 1000MH2		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu		•		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M					

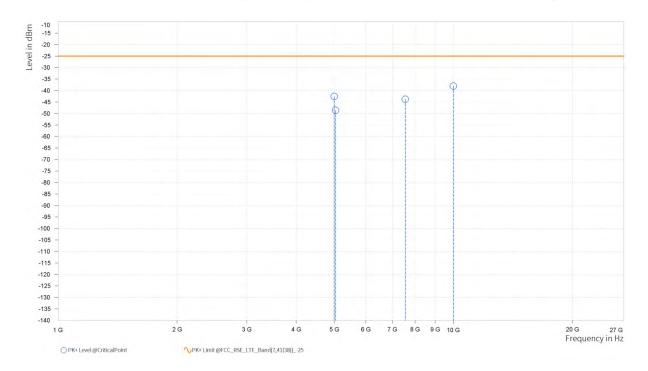
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,994.000	-41.82	-25.00	16.82	25.15	Н	1	1.00
4	5,034.000	-48.00	-25.00	23.00	25.61	Н	359	2.00
5	7,550.000	-43.68	-25.00	18.68	29.11	Н	359	2.00
6	9,988.000	-37.04	-25.00	12.04	17.68	Н	0.9	2.00





MODE	TX channel PCC 39750	EDECLIENCY DANCE	Above 1000MUz	
	TX channel SCC 39948	FREQUENCY RANGE	Above 1000MHz	
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ	
TESTED BY	Hanwen Xu			
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M				

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,994.000	-42.57	-25.00	17.57	25.38	V	1	1.00
4	5,034.000	-48.57	-25.00	23.57	25.95	V	359	2.00
5	7,550.000	-43.75	-25.00	18.75	28.97	V	0.9	2.00
6	9,988.000	-38.03	-25.00	13.03	17.49	V	359	2.00

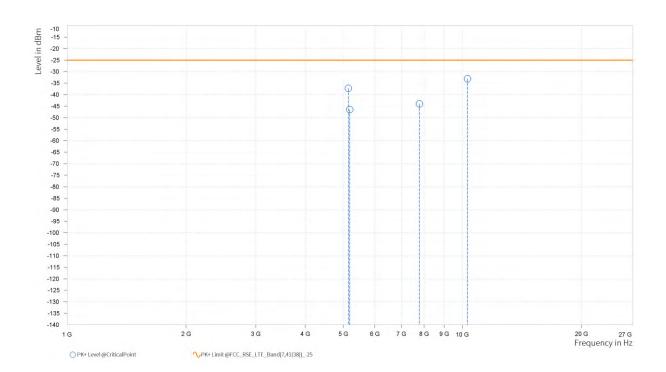




CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 40620	FREQUENCY RANGE	Above 1000MHz		
MODE	TX channel SCC 40422	FREQUENCY RANGE	Above 1000MH2		
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ		
TESTED BY	Hanwen Xu				
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M					

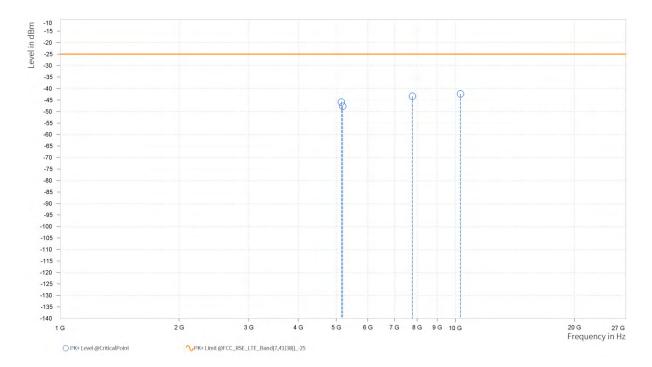
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,148.000	-37.22	-25.00	12.22	25.37	V	338.5	1.00
4	5,188.000	-46.47	-25.00	21.47	25.88	V	197	2.00
5	7,782.000	-44.00	-25.00	19.00	29.31	٧	359.1	1.00
6	10,296.500	-33.12	-25.00	8.12	17.23	V	89.3	2.00





MODE	TX channel PCC 40620	FREQUENCY RANGE	Above 1000MUz	
WODE	TX channel SCC 40422	FREQUENCY RANGE	Above 1000MHz	
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ	
TESTED BY	Hanwen Xu			
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M				

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,148.000	-45.85	-25.00	20.85	25.16	Н	332.8	1.00
4	5,188.000	-47.68	-25.00	22.68	25.37	Н	332.8	1.00
5	7,782.000	-43.31	-25.00	18.31	29.51	H	359	2.00
6	10,296.500	-42.32	-25.00	17.32	17.53	H,	1	2.00

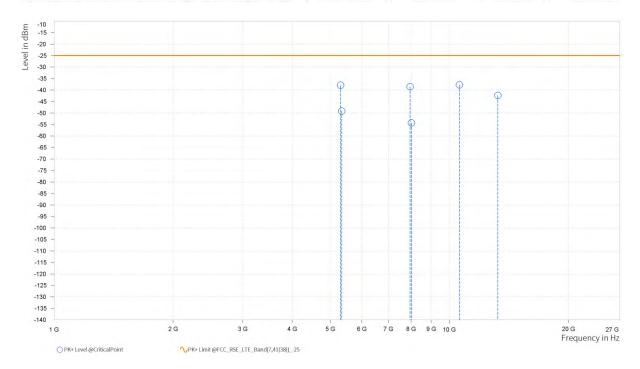




CHANNEL BANDWIDTH: 20MHz + 20MHz

MODE	TX channel PCC 41490	FREQUENCY RANGE	Above 1000MHz			
MODE	TX channel SCC 41292	FREQUENCY RANGE	Above 1000MH2			
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ			
TESTED BY	Hanwen Xu					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						

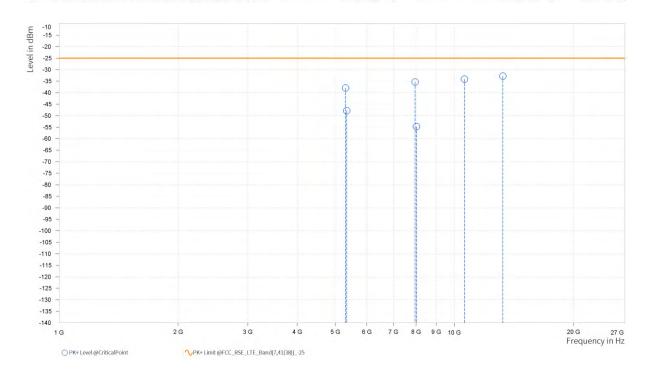
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,302.500	-37.89	-25.00	12.89	25.52	Н	359	2.00
4	5,342.000	-49.13	-25.00	24.13	25.77	Н	199.4	2.00
5	7,954.000	-38.57	-25.00	13.57	29.88	Н	144.3	2.00
6	8,013.000	-54.28	-25.00	29.28	17.10	Н	1	2.00
6	10,605.000	-37.73	-25.00	12.73	18.87	Н	349.4	1.00
6	13,257.000	-42.32	-25.00	17.32	21.56	Н	91.7	2.00





MODE	TX channel PCC 41490	EDECHENCY DANCE	Above 1000MHz			
MODE	TX channel SCC 41292	FREQUENCY RANGE				
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH INPUT POWER		AC 120V/60HZ			
TESTED BY	Hanwen Xu					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,302.500	-37.99	-25.00	12.99	26.05	٧	1	2.00
4	5,342.000	-47.81	-25.00	22.81	26.24	V	158.3	1.00
5	7,954.000	-35.32	-25.00	10.32	29.64	٧	147.9	2.00
6	8,013.000	-54.74	-25.00	29.74	16.91	٧	95.3	2.00
6	10,605.000	-34.14	-25.00	9.14	18.54	V	1	2.00
6	13,256.500	-32.77	-25.00	7.77	21.30	٧	12.6	2.00



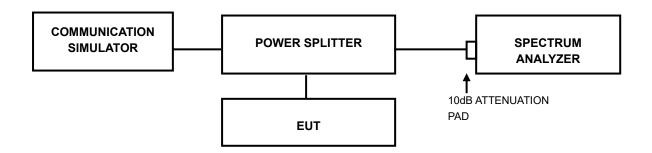


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

- 1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 3. Record the maximum PAPR level associated with a probability of 0.1%.



3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd., were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:

Tel: +86 (0557) 368 1008



5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



6 APPENDIX

LTE BAND CA_7C

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration Occupied Bandwidth (MHz)		26dB Bandwidth (MHz)	Verdict
7-7	10MHz-20MHz	QPSK-QPSK	20805-20949			PASS	
7-7	10MHz-20MHz	QPSK-QPSK	21006-21150	50RB#0-100RB#0	27.639	29.82	PASS
7-7	10MHz-20MHz	QPSK-QPSK	21206-21350	50RB#0-100RB#0	27.692	29.86	PASS
7-7	10MHz-20MHz	16QAM-16QAM	20805-20949	50RB#0-100RB#0	27.675	29.84	PASS
7-7	10MHz-20MHz	16QAM-16QAM	21006-21150	50RB#0-100RB#0	27.534	29.82	PASS
7-7	10MHz-20MHz	16QAM-16QAM	21206-21350	50RB#0-100RB#0	27.663	29.84	PASS
7-7	10MHz-20MHz	64QAM-64QAM	20805-20949	50RB#0-100RB#0	27.583	29.88	PASS
7-7	10MHz-20MHz	64QAM-64QAM	21006-21150	50RB#0-100RB#0	27.576	29.81	PASS
7-7	10MHz-20MHz	64QAM-64QAM	21206-21350	50RB#0-100RB#0	27.653	29.85	PASS
7-7	15MHz-10MHz	QPSK-QPSK	20825-20945	75RB#0-50RB#0	23.379	25.91	PASS
7-7	15MHz-10MHz	QPSK-QPSK	21051-21171	75RB#0-50RB#0	23.250	25.46	PASS
7-7	15MHz-10MHz	QPSK-QPSK	21277-21397	75RB#0-50RB#0	23.429	25.80	PASS
7-7	15MHz-10MHz	16QAM-16QAM	20825-20945	75RB#0-50RB#0	23.361	25.48	PASS
7-7	15MHz-10MHz	16QAM-16QAM	21051-21171	75RB#0-50RB#0	23.206	25.35	PASS
7-7	15MHz-10MHz	16QAM-16QAM	21277-21397	75RB#0-50RB#0	23.426	25.41	PASS
7-7	15MHz-10MHz	64QAM-64QAM	20825-20945	75RB#0-50RB#0	23.405	25.47	PASS
7-7	15MHz-10MHz	64QAM-64QAM	21051-21171	75RB#0-50RB#0	23.202	25.39	PASS
7-7	15MHz-10MHz	64QAM-64QAM	21277-21397	75RB#0-50RB#0	23.350	25.44	PASS
7-7	15MHz-15MHz	QPSK-QPSK	20825-20975	75RB#0-75RB#0	28.375	30.62	PASS
7-7	15MHz-15MHz	QPSK-QPSK	21025-21175	5RB#0-75RB#0	28.248	30.51	PASS
7-7	15MHz-15MHz	QPSK-QPSK	21225-21375	5RB#0-75RB#0	28.424	30.59	PASS
7-7	15MHz-15MHz	16QAM-16QAM	20825-20975	5RB#0-75RB#0	28.355	30.57	PASS
7-7	15MHz-15MHz	16QAM-16QAM	21025-21175	5RB#0-75RB#0	28.203	30.46	PASS
7-7	15MHz-15MHz	16QAM-16QAM	21225-21375	5RB#0-75RB#0	29.424	30.59	PASS
7-7	15MHz-15MHz	64QAM-64QAM	20825-20975	5RB#0-75RB#0	28.407	30.59	PASS
7-7	15MHz-15MHz	64QAM-64QAM	21025-21175	5RB#0-75RB#0	28.160	30.51	PASS
7-7	15MHz-15MHz	64QAM-64QAM	21225-21375	5RB#0-75RB#0	28.438	30.55	PASS
7-7	15MHz-20MHz	QPSK-QPSK	20828-20999	75RB#0-100RB#0	32.827	35.09	PASS
7-7	15MHz-20MHz	QPSK-QPSK	21003-21174	75RB#0-100RB#0	32.610	34.92	PASS
7-7	15MHz-20MHz	QPSK-QPSK	21179-21350	75RB#0-100RB#0	32.722	35.08	PASS
7-7	15MHz-20MHz	16QAM-16QAM	20828-20999	75RB#0-100RB#0	32.742	35.06	PASS
7-7	15MHz-20MHz	16QAM-16QAM	21003-21174	75RB#0-100RB#0	32.564	34.98	PASS
7-7	15MHz-20MHz	16QAM-16QAM	21179-21350	75RB#0-100RB#0	32.685	35.04	PASS
7-7	15MHz-20MHz	64QAM-64QAM	20828-20999	75RB#0-100RB#0	32.716	34.98	PASS
7-7	15MHz-20MHz	64QAM-64QAM	21003-21174	75RB#0-100RB#0	32.579	34.88	PASS
7-7	15MHz-20MHz	64QAM-64QAM	21179-21350	75RB#0-100RB#0	32.663	34.91	PASS
7-7	20MHz-10MHz	QPSK-QPSK	20850-20994	100RB#0-50RB#0	27.916	30.12	PASS
7-7	20MHz-10MHz	QPSK-QPSK	21051-21195	100RB#0-50RB#0	27.734	30.05	PASS
7-7	20MHz-10MHz	QPSK-QPSK	21251-21395	100RB#0-50RB#0	27.906	30.13	PASS



7-7	20MHz-10MHz	16QAM-16QAM	20850-20994	100RB#0-50RB#0	27.877	30.12	PASS
7-7	20MHz-10MHz	16QAM-16QAM	21051-21195	100RB#0-50RB#0	27.708	30.04	PASS
7-7	20MHz-10MHz	16QAM-16QAM	21251-21395	100RB#0-50RB#0	27.889	30.12	PASS
7-7	20MHz-10MHz	64QAM-64QAM	20850-20994	100RB#0-50RB#0	27.883	30.14	PASS
7-7	20MHz-10MHz	64QAM-64QAM	21051-21195	100RB#0-50RB#0	27.776	30.03	PASS
7-7	20MHz-10MHz	64QAM-64QAM	21251-21395	100RB#0-50RB#0	27.884	30.12	PASS
7-7	20MHz-15MHz	QPSK-QPSK	20850-21021	100RB#0-75RB#0	32.565	35.01	PASS
7-7	20MHz-15MHz	QPSK-QPSK	21026-21197	100RB#0-75RB#0	32.364	34.85	PASS
7-7	20MHz-15MHz	QPSK-QPSK	21201-21372	100RB#0-75RB#0	32.427	34.98	PASS
7-7	20MHz-15MHz	16QAM-16QAM	20850-21021	100RB#0-75RB#0	32.576	35.02	PASS
7-7	20MHz-15MHz	16QAM-16QAM	21026-21197	100RB#0-75RB#0	32.371	34.86	PASS
7-7	20MHz-15MHz	16QAM-16QAM	21201-21372	100RB#0-75RB#0	32.525	34.96	PASS
7-7	20MHz-15MHz	64QAM-64QAM	20850-21021	100RB#0-75RB#0	32.599	35.01	PASS
7-7	20MHz-15MHz	64QAM-64QAM	21026-21197	100RB#0-75RB#0	32.403	34.84	PASS
7-7	20MHz-15MHz	64QAM-64QAM	21201-21372	100RB#0-75RB#0	32.526	34.95	PASS
7-7	20MHz-20MHz	QPSK-QPSK	20850-21048	100RB#0-100RB#0	37.266	39.81	PASS
7-7	20MHz-20MHz	QPSK-QPSK	21001-21199	100RB#0-100RB#0	36.890	39.68	PASS
7-7	20MHz-20MHz	QPSK-QPSK	21152-21350	100RB#0-100RB#0	37.067	39.73	PASS
7-7	20MHz-20MHz	16QAM-16QAM	20850-21048	100RB#0-100RB#0	37.229	39.82	PASS
7-7	20MHz-20MHz	16QAM-16QAM	21001-21199	100RB#0-100RB#0	36.872	39.67	PASS
7-7	20MHz-20MHz	16QAM-16QAM	21152-21350	100RB#0-100RB#0	36.950	39.75	PASS
7-7	20MHz-20MHz	64QAM-64QAM	20850-21048	100RB#0-100RB#0	37.104	39.85	PASS
7-7	20MHz-20MHz	64QAM-64QAM	21001-21199	100RB#0-100RB#0	36.782	39.67	PASS
7-7	20MHz-20MHz	64QAM-64QAM	21152-21350	100RB#0-100RB#0	36.918	39.73	PASS



Test Graphs

