

VARIANT FCC TEST REPORT

(PART 22)

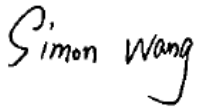
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Manufacturer or Supplier:	Power Idea Technology (Shenzhen) Co., Ltd.
Address:	4th Floor, A Section, Languang Science&technology Building, No.7 Xinxi RD, Hi-Tech Industrial Park North, Nanshan District, ShenZhen, P.R.C.
Product:	Smartphone
Brand Name:	RugGear
Model Name:	PSH02G
Marketing Name:	RG540
FCC ID:	ZLE-RG540
Date of tests:	Nov. 24, 2022 ~ Feb. 03, 2023

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

- ☒ **FCC PART 22, Subpart H** ☒ **FCC Part 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI C63.26-2015**
☒ **ANSI/TIA/EIA-603-E**

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Mar. 14, 2023	Date: Mar. 14, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22110036RF04	Original release	Feb. 03, 2023
W7L-P23030016RF04	Based on the original product changing the model name and FCC ID, marketing name, brand name, applicant and manufacturer information and battery model.	Mar. 14, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2		
STANDARD SECTION	TEST TYPE	RESULT
§2.1046	Conducted Output Power	See Note 2
§22.913 (a)(5)	Effective Radiated Power	See Note 2
§2.1055 §22.355	Frequency Stability	See Note 2
§2.1049	Occupied Bandwidth	See Note 2
§22.913 (d)	Peak to average ratio*	See Note 2
§22.917(a)	Band Edge Measurements	See Note 2
§2.1051 §22.917(a)	Conducted Spurious Emissions	See Note 2
§2.1053 §22.917(a)	Radiated Spurious Emissions	See Note 2

NOTE: 1. * Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.
 2. Please refer to the original report W7L-P22110036RF04, FCC ID: 2AACZ-M540A01.

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
Maximum Peak Output Power	$\pm 2.06\text{dB}$
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Band Edge Measurements	$\pm 4.70\text{dB}$
Peak to average ratio	$\pm 0.76\text{dB}$

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

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 21,22	Feb. 20,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.15,22	May.14,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.04,22	Sep.03,23
Bilog Antenna	ETS-LINDGRE N	3143B	00161965	Mar. 06,22	Mar. 05,23
Horn Antenna	ETS-LINDGRE N	3117	00168692	Mar. 06,22	Mar. 05,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K- SG/QMS-00361	15433	Aug. 24, 22	Aug. 23, 23
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 15,22	Feb. 14,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 21,22	Feb.20,23
3m Semi-anechoic Chamber	ETS-LINDGRE N	9m*6m*6m	Euroshieldpn- CT0001143-121 6	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	May. 07,22	May. 06,23
Power Meter	Anritsu	ML2495A	1506002	Feb. 22,22	Feb. 21,23
Power Sensor	Anritsu	MA2411B	1339352	May. 07,22	May. 06,23
Temperature Chamber	ESPEC	SH-242	93000855	May. 12,22	May. 11,23
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 18,22	Feb. 17,23
Base station R&S CMW500	Rohde&Schwa rz	CMW500	153085	May.12,22	May.11,23
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 24,22	Aug. 23,23

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

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Smartphone	
BRAND NAME	RugGear	
MODEL NAME	PSH02G	
MARKETING NAME	RG540	
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.7Vdc (Li-ion, battery)	
MODULATION TYPE	GSM/EDGE	GMSK, 8PSK
	WCDMA	BPSK, QPSK
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	GSM/EDGE	824.2MHz ~ 848.8MHz
	WCDMA	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 15MHz)	831.5MHz ~ 841.5MHz
MAX. ERP POWER	GSM	497.74mW
	EDGE	123.59mW
	WCDMA	57.94mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	56.49mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	56.36mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	56.62mW



	LTE Band 5 (Channel Bandwidth: 10MHz)	57.28mW
MAX. ERP POWER	LTE Band 26 (Channel Bandwidth: 1.4MHz)	53.33mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	53.83mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	53.83mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	53.7mW
	LTE Band 26 (Channel Bandwidth: 15MHz)	54.08mW
EMISSION DESIGNATOR GOGN	GSM	247KGXW
	EDGE	243KG7W
	WCDMA	4M15F9W
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M09G7D
		16QAM: 1M09W7D
		64QAM: 1M09W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 2M70G7D
		16QAM: 2M69W7D
		64QAM: 2M70W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M50G7D
		16QAM: 4M51W7D
		64QAM: 4M50W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 8M98G7D
		16QAM: 8M96W7D
		64QAM: 8M97W7D
	LTE Band 26 (Channel Bandwidth: 15MHz)	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
ANTENNA TYPE	PIFA Antenna with -3dBi gain for GSM850/WCDMA V/LTE B5/LTE B26	
HW VERSION	V02	
SW VERSION	IS540_ROW_00.00_1_20221017	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable1: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable2: non-shielded cable, with w/o ferrite core, 1.0 meter	
EXTREME TEMPERATURE	-10-50 °C	
EXTREME VOLTAGE	3.6V - 4.2V	



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NOTE:

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

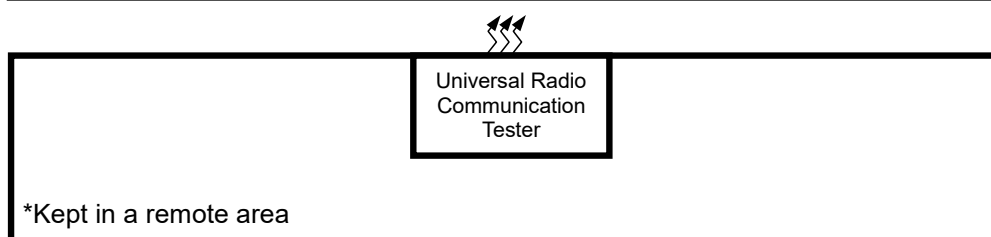
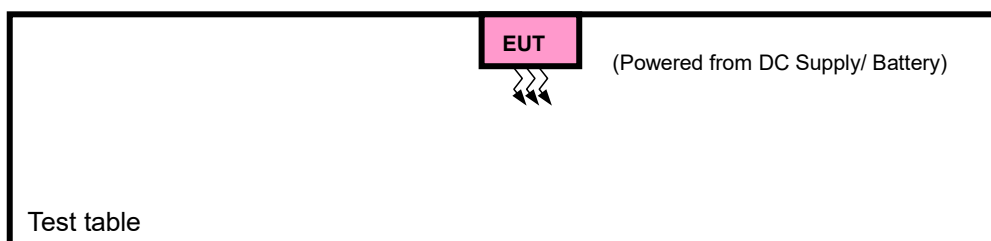
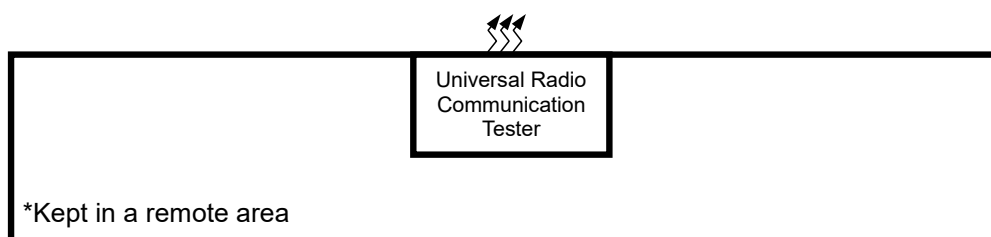
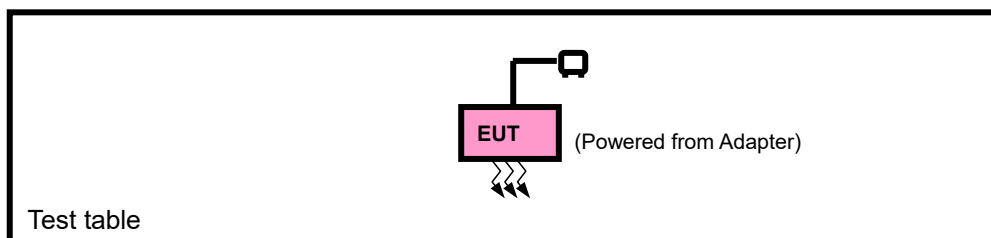
MODULATION MODE	TX FUNCTION
GSM/GPRS/EDGE	1TX/1RX
WCDMA	1TX/1RX
LTE	1TX/1RX

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

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	N/A	FPR Connectivity Technology Inc.	BL440ACP	Capacity: 3.7Vdc, 4400mAh
AC Adapter	N/A	SHENZHEN SHI YINGYUAN POWER SUPPLY TECHNOLOGY CO., LTD.	ICP12-050-2000B	I/P: 100-240Vac, 0.3A, O/P: 5.0Vdc, 2A
USB Cable 1	N/A	Winpower Technology Co., LTD	USB2.0	Signal Line, 1.0meter
USB Cable 2	N/A	Winpower Technology Co., LTD	PROTECTOR 2.0	Signal Line, 1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST FOR RADIATION EMISSION



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	DC source	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, 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 in ERP and radiated emission was found when positioned on X-plane for GSM /EDGE /LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with GSM or WCDMA or LTE link
B	EUT + DC Supply with GSM or WCDMA or LTE link

GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	ERP	128 to 251	128, 189, 251	GSM,EDGE
B	FREQUENCY STABILITY	128 to 251	128, 189, 251	GSM,EDGE
A	OCCUPIED BANDWIDTH	128 to 251	128, 189, 251	GSM,EDGE
A	BAND EDGE	128 to 251	128, 251	GSM,EDGE
A	CONDCUDETED EMISSION	128 to 251	128, 189, 251	GSM,EDGE
A	RADIATED EMISSION	128 to 251	128, 189, 251	GSM,EDGE
A	PEAK TO AVERAGE RATIO	128 to 251	128, 189, 251	GSM,EDGE

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
B	FREQUENCY STABILITY	4132 to 4233	4132, 4182, 4233	WCDMA
A	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
A	BAND EDGE	4132 to 4233	4132, 4233	WCDMA
A	CONDCUDETED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	RADIATED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4182, 4233	WCDMA

LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset

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

2. LTE Band 5 are covered by LTE Band 26, Because it is a subset of LTE Band 26 with the same output power and supported bandwidths, So the test data please refer to LTE Band 26

LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset 6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset 15 RB / 0 RB Offset



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		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	26797 to 27033	26797	1.4 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 6 RB / 0 RB Offset
		26797 to 27033	27033	1.4 MHz	QPSK, 16QAM, 64QAM	1 RB / 5 RB Offset 6 RB / 0 RB Offset
		26805 to 27025	26805	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 15 RB / 0 RB Offset
		26805 to 27025	27025	3 MHz	QPSK, 16QAM, 64QAM	1 RB / 14 RB Offset 15 RB / 0 RB Offset
		26815 to 27015	26815	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		26815 to 27015	27015	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		26840 to 26990	26840	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
		26840 to 26990	26990	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		26865 to 26965	26865	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
		26865 to 26965	26965	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset 75 RB / 0 RB Offset
A	CONDCUETED EMISSION	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26797 to 27033	26915	1.4MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26915	3MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26915	5MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26915	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK	1 RB / 0 RB 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
ERP	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/3.7V/4.2V By DC Supply	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC5V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC5V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC5V By Adapter	James Fu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 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 22

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

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP 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 determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

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);

L_{C} = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GSM850		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GSM	32.05	32.12	32.02
GPRS (GMSK, 1Tx-slot)	32.04	32.10	31.99
GPRS (GMSK, 2Tx-slot)	30.25	30.09	30.23
GPRS (GMSK, 3Tx-slot)	28.73	28.64	28.65
GPRS (GMSK, 4Tx-slot)	27.20	27.07	27.16
EDGE (8PSK, 1Tx-slot)	25.71	26.07	25.95
EDGE (8PSK, 2Tx-slot)	25.42	25.77	25.69
EDGE (8PSK, 3Tx-slot)	21.71	21.69	21.70
EDGE (8PSK, 4Tx-slot)	20.68	20.65	20.63

Band	WCDMA V		
Channel	4132	4182	4233
Frequency	826.4	836.4	846.6
RMC 12.2K	22.78	22.76	22.75
HSDPA Subtest-1	21.76	21.68	21.73
HSDPA Subtest-2	21.73	21.68	21.74
HSDPA Subtest-3	21.24	21.21	21.20
HSDPA Subtest-4	21.20	21.25	21.20
DC-HSDPA Subtest-1	21.74	21.71	21.74
DC-HSDPA Subtest-2	21.72	21.74	21.70
DC-HSDPA Subtest-3	21.21	21.21	21.23
DC-HSDPA Subtest-4	21.20	21.24	21.20
HSUPA Subtest-1	19.26	19.18	19.23
HSUPA Subtest-2	19.20	19.20	19.17
HSUPA Subtest-3	19.22	19.24	19.19
HSUPA Subtest-4	19.21	19.21	19.23
HSUPA Subtest-5	21.42	21.39	21.40



LTE Band 5

Band/BW	Modulation	RB Size	RB Offset	Low CH 20407	Mid CH 20525	High CH 20643
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz
5/ 1.4	QPSK	1	0	22.50	22.67	22.50
		1	2	22.13	22.41	22.18
		1	5	22.25	22.41	22.30
		3	0	22.24	22.48	22.31
		3	1	22.22	22.46	22.28
		3	3	22.25	22.61	22.33
		6	0	21.25	21.41	21.30
	16QAM	1	0	21.40	21.69	21.43
		1	2	21.39	21.68	21.46
		1	5	21.42	21.73	21.52
		3	0	21.25	21.41	21.28
		3	1	21.26	21.53	21.33
		3	3	21.34	21.67	21.38
		6	0	20.26	20.53	20.38
	64QAM	1	0	20.28	20.49	20.25
		1	2	20.28	20.64	20.39
		1	5	20.41	20.57	20.39
		3	0	20.19	20.48	20.24
		3	1	20.23	20.57	20.31
		3	3	20.36	20.55	20.38
		6	0	19.28	19.54	19.32



Band/BW	Modulation	RB Size	RB Offset	Low CH 20415	Mid CH 20525	High CH 20635
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz
5/ 3	QPSK	1	0	22.45	22.66	22.47
		1	7	22.11	22.43	22.21
		1	14	22.19	22.47	22.26
		8	0	21.21	21.55	21.30
		8	3	21.22	21.46	21.25
		8	7	21.25	21.61	21.36
		15	0	21.24	21.41	21.27
	16QAM	1	0	21.44	21.63	21.47
		1	7	21.38	21.69	21.43
		1	14	21.47	21.69	21.55
		8	0	20.25	20.42	20.25
		8	3	20.28	20.51	20.39
		8	7	20.39	20.67	20.36
		15	0	20.26	20.53	20.33
	64QAM	1	0	20.31	20.48	20.28
		1	7	20.31	20.64	20.37
		1	14	20.41	20.57	20.40
		8	0	19.19	19.50	19.27
		8	3	19.27	19.51	19.36
		8	7	19.33	19.59	19.34
		15	0	19.30	19.51	19.36

Band/BW	Modulation	RB Size	RB Offset	Low CH 20425	Mid CH 20525	High CH 20625
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz
5/ 5	QPSK	1	0	22.47	22.68	22.47
		1	12	22.10	22.47	22.18
		1	24	22.23	22.44	22.31
		12	0	21.23	21.54	21.27
		12	6	21.19	21.46	21.31
		12	13	21.25	21.60	21.33
		25	0	21.27	21.38	21.29
	16QAM	1	0	21.38	21.65	21.40
		1	12	21.40	21.71	21.42
		1	24	21.43	21.70	21.55
		12	0	20.21	20.42	20.25
		12	6	20.27	20.54	20.39
		12	13	20.32	20.67	20.38
		25	0	20.23	20.60	20.37
	64QAM	1	0	20.28	20.49	20.22
		1	12	20.28	20.65	20.42
		1	24	20.39	20.60	20.33
		12	0	19.21	19.52	19.29
		12	6	19.21	19.58	19.35
		12	13	19.37	19.58	19.31
		25	0	19.26	19.57	19.34

Band/BW	Modulation	RB Size	RB Offset	Low CH 20450	Mid CH 20525	High CH 20600
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz
5/ 10	QPSK	1	0	22.51	22.73	22.52
		1	24	22.18	22.48	22.23
		1	49	22.27	22.49	22.32
		25	0	21.29	21.56	21.32
		25	12	21.26	21.51	21.33
		25	25	21.33	21.62	21.38
		50	0	21.29	21.46	21.31
	16QAM	1	0	21.46	21.71	21.48
		1	24	21.46	21.73	21.48
		1	49	21.50	21.75	21.57
		25	0	20.27	20.49	20.30
		25	12	20.34	20.59	20.41
		25	25	20.40	20.69	20.44
		50	0	20.31	20.61	20.39
	64QAM	1	0	20.32	20.54	20.30
		1	24	20.36	20.66	20.44
		1	49	20.43	20.65	20.41
		25	0	19.27	19.54	19.32
		25	12	19.29	19.59	19.37
		25	25	19.41	19.63	19.39
		50	0	19.32	19.59	19.37



LTE BAND 26

Band/BW	Modulation	RB Size	RB Offset	Low CH 26797	Mid CH 26915	High CH 27033
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz
26/ 1.4	QPSK	1	0	22.32	22.26	22.42
		1	2	22.35	22.25	22.40
		1	5	22.13	22.16	22.30
		3	0	22.21	22.05	22.25
		3	1	22.13	22.06	22.21
		3	3	22.15	22.17	22.32
		6	0	21.37	21.34	21.48
	16QAM	1	0	21.48	21.52	21.65
		1	2	21.79	21.79	21.93
		1	5	21.78	21.71	21.87
		3	0	21.30	21.28	21.47
		3	1	21.35	21.23	21.43
		3	3	21.30	21.37	21.46
		6	0	20.31	20.20	20.42
	64QAM	1	0	20.39	20.45	20.54
		1	2	20.26	20.16	20.26
		1	5	20.02	19.92	20.14
		3	0	20.42	20.39	20.56
		3	1	20.49	20.41	20.47
		3	3	20.37	20.34	20.57
		6	0	19.41	19.36	19.50



Band/BW	Modulation	RB Size	RB Offset	Low CH 26805	Mid CH 26915	High CH 27025
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz
26/ 3	QPSK	1	0	22.29	22.26	22.41
		1	7	22.35	22.25	22.46
		1	14	22.16	22.12	22.31
		8	0	21.40	21.26	21.45
		8	3	21.27	21.32	21.40
		8	7	21.37	21.40	21.52
		15	0	21.32	21.34	21.41
	16QAM	1	0	21.48	21.55	21.68
		1	7	21.74	21.83	21.94
		1	14	21.78	21.70	21.87
		8	0	20.28	20.30	20.47
		8	3	20.31	20.29	20.43
		8	7	20.31	20.36	20.46
		15	0	20.27	20.21	20.42
	64QAM	1	0	20.40	20.44	20.54
		1	7	20.21	20.20	20.26
		1	14	19.96	19.98	20.13
		8	0	19.44	19.42	19.54
		8	3	19.42	19.42	19.52
		8	7	19.38	19.37	19.53
		15	0	19.36	19.40	19.54

Band/BW	Modulation	RB Size	RB Offset	Low CH 26815	Mid CH 26915	High CH 27015
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz
26/ 5	QPSK	1	0	22.28	22.26	22.46
		1	12	22.30	22.28	22.43
		1	24	22.13	22.18	22.31
		12	0	21.36	21.30	21.46
		12	6	21.31	21.28	21.41
		12	13	21.33	21.44	21.52
		25	0	21.33	21.31	21.44
	16QAM	1	0	21.53	21.52	21.68
		1	12	21.74	21.81	21.90
		1	24	21.77	21.72	21.82
		12	0	20.34	20.29	20.50
		12	6	20.31	20.23	20.40
		12	13	20.37	20.39	20.49
		25	0	20.28	20.20	20.38
	64QAM	1	0	20.46	20.43	20.60
		1	12	20.24	20.20	20.24
		1	24	20.02	19.91	20.13
		12	0	19.40	19.43	19.53
		12	6	19.48	19.35	19.50
		12	13	19.34	19.38	19.56
		25	0	19.40	19.34	19.49



**BUREAU
VERITAS**

Test Report No.: W7L-P23030016RF04

Band/BW	Modulation	RB Size	RB Offset	Low CH 26840	Mid CH 26915	High CH 26990
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz
26/10	QPSK	1	0	22.33	22.27	22.45
		1	24	22.32	22.26	22.43
		1	49	22.19	22.12	22.34
		25	0	21.39	21.23	21.39
		25	12	21.31	21.28	21.40
		25	25	21.33	21.44	21.52
		50	0	21.34	21.31	21.44
	16QAM	1	0	21.49	21.58	21.68
		1	24	21.75	21.80	21.97
		1	49	21.72	21.76	21.83
		25	0	20.34	20.28	20.51
		25	12	20.29	20.25	20.40
		25	25	20.32	20.39	20.49
		50	0	20.28	20.20	20.39
	64QAM	1	0	20.43	20.44	20.60
		1	24	20.21	20.20	20.24
		1	49	20.02	19.91	20.09
		25	0	19.40	19.41	19.59
		25	12	19.44	19.41	19.45
		25	25	19.37	19.34	19.57
		50	0	19.38	19.37	19.53

Band/BW	Modulation	RB Size	RB Offset	Low CH 26865	Mid CH 26915	High CH 26965
				Frequency 831.5 MHz	Frequency 836.5 MHz	Frequency 841.5 MHz
26/ 15	QPSK	1	0	22.34	22.33	22.47
		1	37	22.37	22.33	22.48
		1	74	22.21	22.20	22.36
		36	0	21.44	21.31	21.47
		36	19	21.35	21.33	21.46
		36	39	21.41	21.45	21.54
		75	0	21.38	21.36	21.49
	16QAM	1	0	21.55	21.60	21.70
		1	37	21.82	21.85	21.98
		1	74	21.80	21.78	21.88
		36	0	20.36	20.36	20.52
		36	19	20.37	20.31	20.45
		36	39	20.38	20.41	20.51
		75	0	20.33	20.28	20.44
	64QAM	1	0	20.47	20.49	20.62
		1	37	20.29	20.22	20.32
		1	74	20.04	19.99	20.15
		36	0	19.48	19.47	19.61
		36	19	19.50	19.43	19.53
		36	39	19.42	19.42	19.58
		75	0	19.42	19.42	19.55

ERP POWER (dBm)

GSM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	32.05	-3	26.9	489.78	7
189	836.4	32.12	-3	26.97	497.74	7
251	848.8	32.02	-3	26.87	486.41	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

EDGE

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	25.71	-3	20.56	113.76	7
189	836.4	26.07	-3	20.92	123.59	7
251	848.8	25.95	-3	20.8	120.23	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

WCDMA

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
4132	826.4	22.78	-3	17.63	57.94	7
4182	836.4	22.76	-3	17.61	57.68	7
4233	846.6	22.75	-3	17.6	57.54	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 5

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	22.5	-3	17.35	54.33	7
20525	836.5	22.67	-3	17.52	56.49	7
20643	848.3	22.5	-3	17.35	54.33	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	21.42	-3	16.27	42.36	7
20525	836.5	21.73	-3	16.58	45.5	7
20643	848.3	21.52	-3	16.37	43.35	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	20.41	-3	15.26	33.57	7
20525	836.5	20.64	-3	15.49	35.4	7
20643	848.3	20.39	-3	15.24	33.42	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	22.45	-3	17.3	53.7	7
20525	836.5	22.66	-3	17.51	56.36	7
20635	847.5	22.47	-3	17.32	53.95	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	21.47	-3	16.32	42.85	7
20525	836.5	21.69	-3	16.54	45.08	7
20635	847.5	21.55	-3	16.4	43.65	7

**CHANNEL BANDWIDTH: 3MHz 64QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	20.41	-3	15.26	33.57	7
20525	836.5	20.64	-3	15.49	35.4	7
20635	847.5	20.4	-3	15.25	33.5	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	22.47	-3	17.32	53.95	7
20525	836.5	22.68	-3	17.53	56.62	7
20625	846.5	22.47	-3	17.32	53.95	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	21.43	-3	16.28	42.46	7
20525	836.5	21.71	-3	16.56	45.29	7
20625	846.5	21.55	-3	16.4	43.65	7

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	20.39	-3	15.24	33.42	7
20525	836.5	20.65	-3	15.5	35.48	7
20625	846.5	20.42	-3	15.27	33.65	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	22.51	-3	17.36	54.45	7
20525	836.5	22.73	-3	17.58	57.28	7
20600	844.0	22.52	-3	17.37	54.58	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	21.5	-3	16.35	43.15	7
20525	836.5	21.75	-3	16.6	45.71	7
20600	844.0	21.57	-3	16.42	43.85	7

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829.0	20.43	-3	15.28	33.73	7
20525	836.5	20.66	-3	15.51	35.56	7
20600	844.0	20.44	-3	15.29	33.81	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	22.35	-3	17.2	52.48	7
26915	836.5	22.26	-3	17.11	51.4	7
27033	848.3	22.42	-3	17.27	53.33	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	21.79	-3	16.64	46.13	7
26915	836.5	21.79	-3	16.64	46.13	7
27033	848.3	21.93	-3	16.78	47.64	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	20.49	-3	15.34	34.2	7
26915	836.5	20.45	-3	15.3	33.88	7
27033	848.3	20.57	-3	15.42	34.83	7

**CHANNEL BANDWIDTH: 3MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	22.35	-3	17.2	52.48	7
26915	836.5	22.26	-3	17.11	51.4	7
27025	847.5	22.46	-3	17.31	53.83	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	21.78	-3	16.63	46.03	7
26915	836.5	21.83	-3	16.68	46.56	7
27025	847.5	21.94	-3	16.79	47.75	7

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	20.4	-3	15.25	33.5	7
26915	836.5	20.44	-3	15.29	33.81	7
27025	847.5	20.54	-3	15.39	34.59	7