



EMC-TRF-01 Rev 1.0

Report No.: GZCR210802081407

Page: 1 of 29

FCC ID: V5PSK700

TEST REPORT

Application No.: GZCR2108020814AT
Applicant: PAX Technology Limited
Address of Applicant: Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour, Hong Kong, China
Manufacturer: PAX Computer Technology(Shenzhen) Co., Ltd.
Address of Manufacturer: 4/F, No.3 Building, Software Park, Second Central Science-Tech Road, High-Tech industrial Park, Shenzhen, Guangdong, P.R.C.
Equipment Under Test (EUT):
EUT Name: Smart Kiosk
Model No.: SK700
Trade mark: PAX
Standard(s) : 47 CFR Part 2
47 CFR Part 22 subpart H
47 CFR Part 24 subpart E
47 CFR Part 27 subpart C
Date of Receipt: 2021-06-21
Date of Test: 2021-06-29 to 2021-08-25
Date of Issue: 2021-08-27

Test Result:	Pass
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* In the configuration tested, the EUT complied with the standards specified above.

Kobe Jian
EMC Laboratory Manager



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SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch EMC Laboratory

No.198 Kezhu Road, Sciotech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn
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Report No.: GZCR210802081407

Page:

2 of 29

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-08-27		Original

Authorized for issue by				
				
		Curry Wu/Project Engineer		
				
		Ricky Liu/Reviewer		



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2 Test Summary

Test Item	FCC Rule No.	Requirements	Verdict
Effective (Isotropic) Radiated Output Power Data	§2.1046 §22.913 §24.232 §27.50(b) §27.50(c) §27.50(d)	ERP≤ 7W(LTE Band 5) EIRP≤ 2W(LTE Band 2) ERP≤ 3W(LTE Band 13) ERP≤ 3W(LTE Band 12,17) EIRP≤ 1W(LTE Band 4)	PASS
Peak-Average Ratio	§22.913 §24.232 §27.50(d)	≤13dB	PASS
Modulation Characteristics	§2.1047	Digital modulation	PASS
Bandwidth	§2.1049(h)	OBW: No limit EBW: No limit	PASS
Band Edge Compliance	§2.1051 §22.917 §24.238 §27.53(c) §27.53(g) §27.53(h)	≤ -13dBm (LTE Band5) ≤ -13dBm (LTE Band2) Refer to clause 6.4 for LTE Band13 ≤ -13dBm (LTE Band12,17) ≤ -13dBm (LTE Band4)	PASS
Spurious emissions at antenna terminals	§2.1051 §22.917 §24.238 §27.53(c) §27.53(g) §27.53(h)	≤ -13dBm (LTE Band5) ≤ -13dBm (LTE Band2) Refer to clause 6.4 for LTE Band13 ≤ -13dBm (LTE Band12,17) ≤ -13dBm (LTE Band4)	PASS
Field strength of spurious radiation	§2.1051 §22.917 §24.238 §27.53(c) §27.53(g) §27.53(h)	≤ -13dBm (LTE Band5) ≤ -13dBm (LTE Band2) Refer to clause 6.4 for LTE Band13 ≤ -13dBm (LTE Band12,17) ≤ -13dBm (LTE Band4)	PASS
Frequency stability	§2.1055 §22.355 §24.235 §27.54	≤ ±2.5ppm.	PASS

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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3 Contents

	Page
1 COVER PAGE	1
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	6
4.1 DETAILS OF E.U.T.	6
4.2 TEST FREQUENCY	7
4.3 TEST ENVIRONMENT	9
4.4 DESCRIPTION OF SUPPORT UNITS	9
4.5 MEASUREMENT UNCERTAINTY	9
4.6 TEST LOCATION.....	10
4.7 TEST FACILITY.....	11
4.8 DEVIATION FROM STANDARDS.....	11
4.9 ABNORMALITIES FROM STANDARD CONDITIONS	11
5 EQUIPMENT LIST.....	12
6 RADIO SPECTRUM MATTER TEST RESULTS.....	14
6.1 EFFECTIVE (ISOTROPIC) RADIATED OUTPUT POWER DATA	14
6.1.1 E.U.T. Operation	14
6.1.2 Test Setup Diagram	14
6.1.3 Measurement Data	14
6.2 PEAK-AVERAGE RATIO	15
6.2.1 E.U.T. Operation	15
6.2.2 Test Setup Diagram	15
6.2.3 Measurement Data	15
6.3 BANDWIDTH	16
6.3.1 E.U.T. Operation	16
6.3.2 Test Setup Diagram	16
6.3.3 Measurement Data	16
6.4 BAND EDGE COMPLIANCE	17
6.4.1 E.U.T. Operation	17
6.4.2 Test Setup Diagram	17
6.4.3 Measurement Data	17
6.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS	18
6.5.1 E.U.T. Operation	18
6.5.2 Test Setup Diagram	18
6.5.3 Measurement Data	18
6.6 FIELD STRENGTH OF SPURIOUS RADIATION.....	19
6.6.1 E.U.T. Operation	19
6.6.2 Test Setup Diagram	19
6.6.3 Measurement Procedure and Data.....	20
6.7 FREQUENCY STABILITY.....	27
6.7.1 E.U.T. Operation	27



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6.7.2	Test Setup Diagram	27
6.7.3	Measurement Data	27
6.8	MODULATION CHARACTERISTICS	28
6.8.1	E.U.T. Operation	28
6.8.2	Test Setup Diagram	28
6.8.3	Measurement Data	28
7	PHOTOGRAPHS	29
7.1	TEST SETUP PHOTOS	29
7.2	EUT CONSTRUCTIONAL DETAILS (EUT PHOTOS)	29



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4 General Information

4.1 Details of E.U.T.

Power supply:	AC100-240V, 50/60Hz, 65W Max
Cable(s):	AC power cable: 1m unshielded cable without ferrite core
Sample Type:	Fixed production
Sample NO.:	2190000239
Function:	Smart Kiosk with LTE function
LTE Operation Frequency Band:	LTE FDD Band 2, 4, 5, 12, 13, 17
Modulation Type:	QPSK, 16QAM
LTE Power Class:	Level 3
Antenna Type:	PIFA Antenna
	LTE band 2: 0.8dBi;
	band 4: 0.8dBi;
	band 5: 0.5dBi;
Antenna Gain:	band 12: 0.5dBi;
	band 13: 0.5dBi;
	band 17: 0.5dBi;
SIM Card:	This device has dual SIM Card sockets. Both the SIM sockets have been tested. SIM1 was worst case, only record SIM1.
Extreme temp. Tolerance:	-30°C to +50°C
Extreme vol. Limits:	108VAC to 132VAC (nominal: 120VAC)



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4.2 Test Frequency

Test Mode	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855.0	1880	1905.0
	15	1857.5	1880	1902.5
	20	1860.0	1880	1900.0
Test Mode	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715.0	1732.5	1750.0
	15	1717.5	1732.5	1747.5
	20	1720.0	1732.5	1745.0
Test Mode	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829.0	836.5	844.0
Test Mode	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704.0	707.5	711.0



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EMC-TRF-01 Rev 1.0

Report No.: GZCR210802081407

Page:

8 of 29

Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 13	5	779.5	782.0	784.5
	10	/	782.0	/
Test mode:	Nominal Bandwidth (MHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE FDD Band 17	5	706.5	710.0	713.5
	10	709.0	710.0	711.0



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4.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	52%	
Atmospheric Pressure:	1015Pa	
Temperature:	TL	-30°C
	TN	+20°C
	TH	+50°C
Voltage:	VL	AC108 V
	VN	AC120 V
	VH	AC132 V

NOTE: VL= lower extreme test voltage
VN= nominal voltage
VH= upper extreme test voltage
TL= lower extreme test temperature
TN= normal temperature
TH= upper extreme test temperature

4.4 Description of Support Units

The EUT has been tested independent unit.

4.5 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25×10^{-8}
2	Duty cycle	0.37%
3	Occupied Bandwidth	3%
4	RF conducted power	0.75dB
5	RF power density	2.84dB
6	Conducted Spurious emissions	0.75dB
7	RF Radiated power	5.14dB (below 1GHz)
		5.08dB (above 1GHz)
8	Radiated Spurious emission test	5.14dB (below 1GHz)
		5.08dB (above 1GHz)
9	Temperature test	1°C
10	Humidity test	3%
11	Supply voltages	1.5%
12	Time	3%



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4.6 Test Location

All tests were performed at:

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 Guangzhou, China 510663

Tel: +86 20 82155555

Fax: +86 20 82075059

No tests were sub-contracted.



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4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● NVLAP (Lab Code: 200611-0)

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● CNAS (Lab Code: L0167)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● ISED (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.8 Deviation from Standards

None

4.9 Abnormalities from Standard Conditions

None



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5 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
EXA Signal Analyzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2020-09-17	2021-09-16
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
MI CABLE	SGS-EMC	0.8M	EMC2136	2019-11-02	2021-11-01
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Wideband Radio Communication Tester(CMW500)	R&S	CMW500	EMC2215	2020-09-20	2021-09-19
Power Meter (U2021XA_Ch2)	Agilent Technologies	U2021XA_Ch 2	SEM009-02	2021-05-19	2022-05-18

RE in Chamber(below 1GHz)					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)	SCHWARZBECK	VULB 9160	EMC2025	2020-09-24	2023-09-23
Signal Generator (10MHz-20GHz)	Rohde & Schwarz	SMR20	EMC0516	2021-01-11	2022-01-10
Wideband Radio Communication Tester(CMW500)	R&S	CMW500	EMC2215	2020-09-20	2021-09-19

RE in Chamber(above 1GHz)					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date	Cal. Due date
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2020-09-09	2022-09-08
Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS- ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-01-08	2022-01-07
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2020-09-17	2021-09-16
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Horn Antenna(14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2020-06-28	2023-06-27
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2020-09-09	2021-09-08
Wideband Radio Communication Tester(CMW500)	R&S	CMW500	EMC2215	2020-09-20	2021-09-19
Substitution Antenna	SCHWARZBECK MESS- ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
Signal Generator (10MHz-20GHz)	Rohde & Schwarz	SMR20	EMC0516	2021-01-11	2022-01-10

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2020-07-06	2021-07-05
				2021-07-05	2022-07-04
DMM	Fluke	73	EMC0007	2020-07-06	2021-07-05
				2021-07-05	2022-07-04



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6 Radio Spectrum Matter Test Results

6.1 Effective (Isotropic) Radiated Output Power Data

Test Requirement: §2.1046, §22.913, §24.232, §27.50(b), §27.50(c), §27.50(d)

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit:
 ERP ≤ 7W(LTE Band 5)
 EIRP ≤ 2W(LTE Band 2)
 ERP ≤ 3W(LTE Band 13)
 ERP ≤ 3W(LTE Band 12,17)
 EIRP ≤ 1W(LTE Band 4)

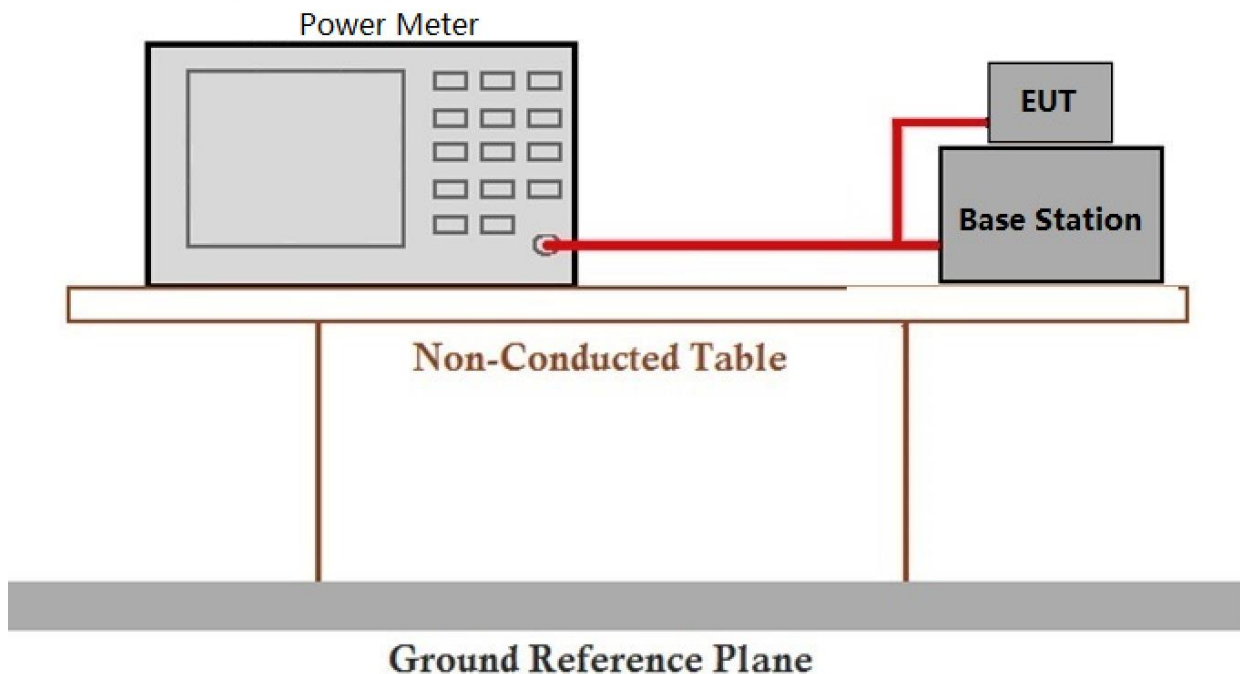
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

Please refer to Appendix FCC_LTE_power

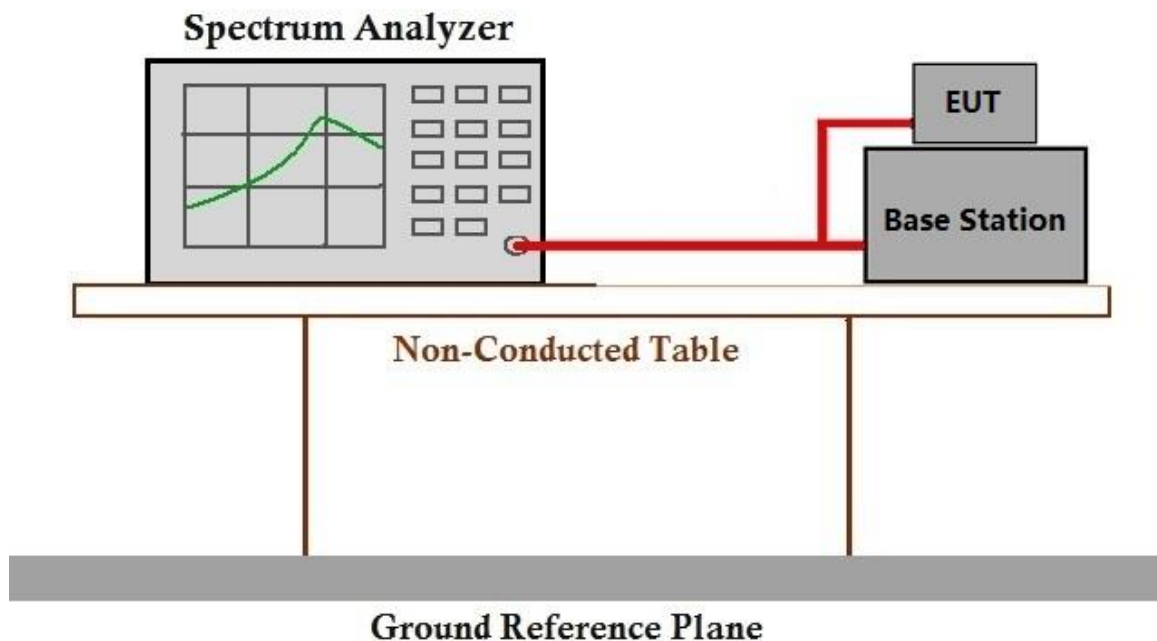
6.2 Peak-Average Ratio

Test Requirement: §22.913, §24.232, §27.50(d)
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: ≤13dB

6.2.1 E.U.T. Operation

Operating Environment:
Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar
Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

Please refer to Appendix FCC_LTE_Peak-Average Ratio

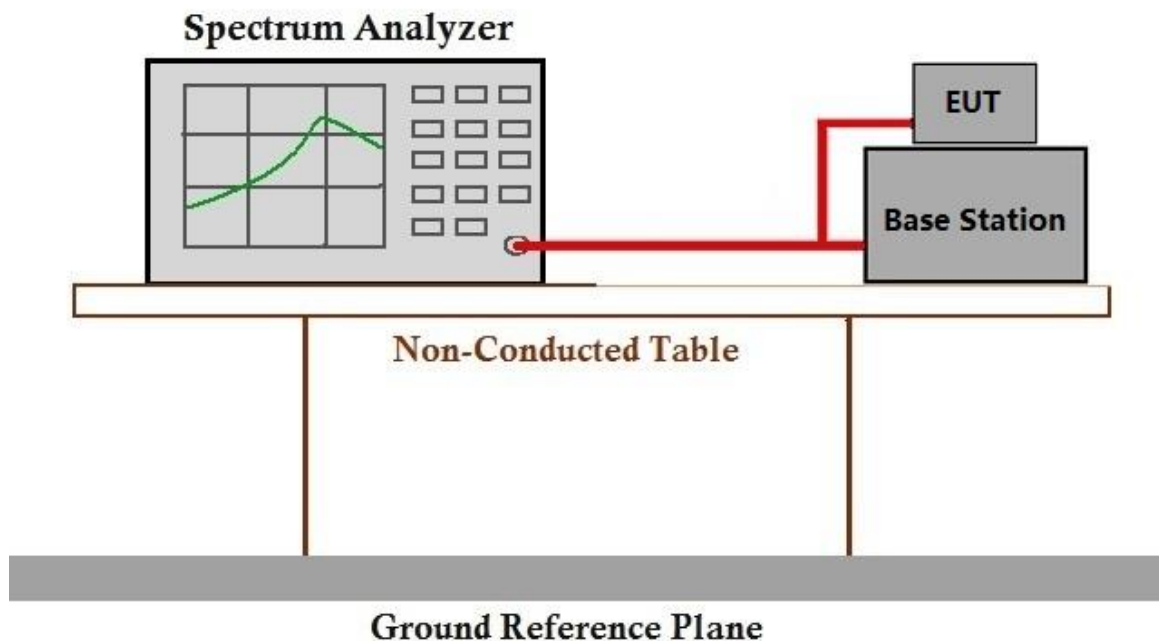
6.3 Bandwidth

Test Requirement: §2.1049(h)
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: OBW: No limit
EBW: No limit

6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar
Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

Please refer to Appendix FCC_LTE_99% & 26dB Bandwidth

6.4 Band Edge Compliance

Test Requirement: §2.1051, §22.917, §24.238, §27.53(c), §27.53(g), §27.53(h)

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: $\leq -13\text{dBm}$ (LTE Band2,4,5,12,17)

For band 13:

(1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

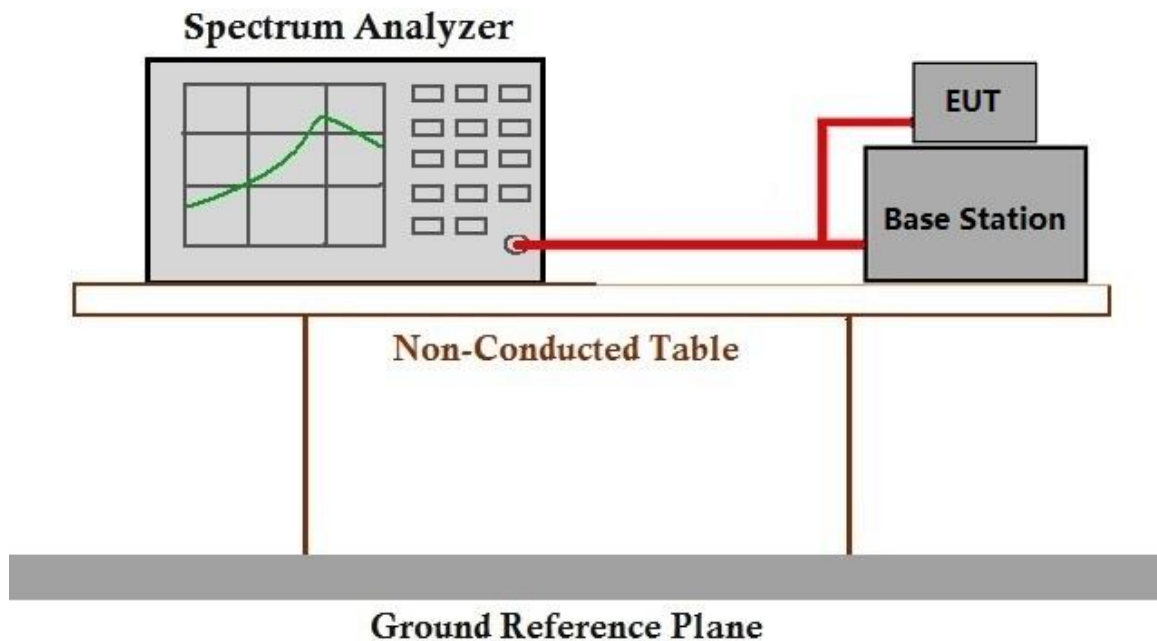
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

Please refer to Appendix FCC_LTE_Spurious Emission&Band edge



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6.5 Spurious emissions at antenna terminals

Test Requirement: §2.1051, §22.917, §24.238, §27.53(c), §27.53(g), §27.53(h)

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: $\leq -13\text{dBm}$ (LTE Band2,4,5,12,17)

For band 13:

(1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

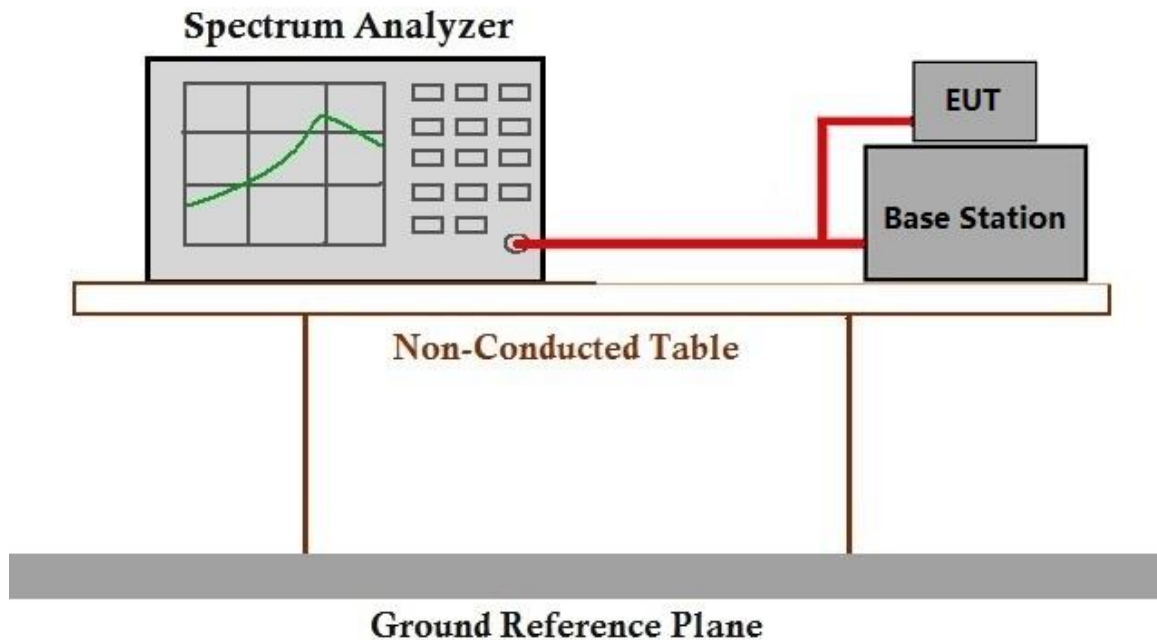
6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.5.2 Test Setup Diagram



6.5.3 Measurement Data

Please refer to Appendix FCC_LTE_Spurious Emission&Band edge

6.6 Field strength of spurious radiation

Test Requirement: §2.1051, §22.917, §24.238, §27.53(c), §27.53(g), §27.53(h)

Test Method: ANSI C63.26, KDB 971168 D01 v03

Limit: $\leq -13\text{dBm}$ (LTE Band2,4,5,12,17)

For band 13:

(1) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

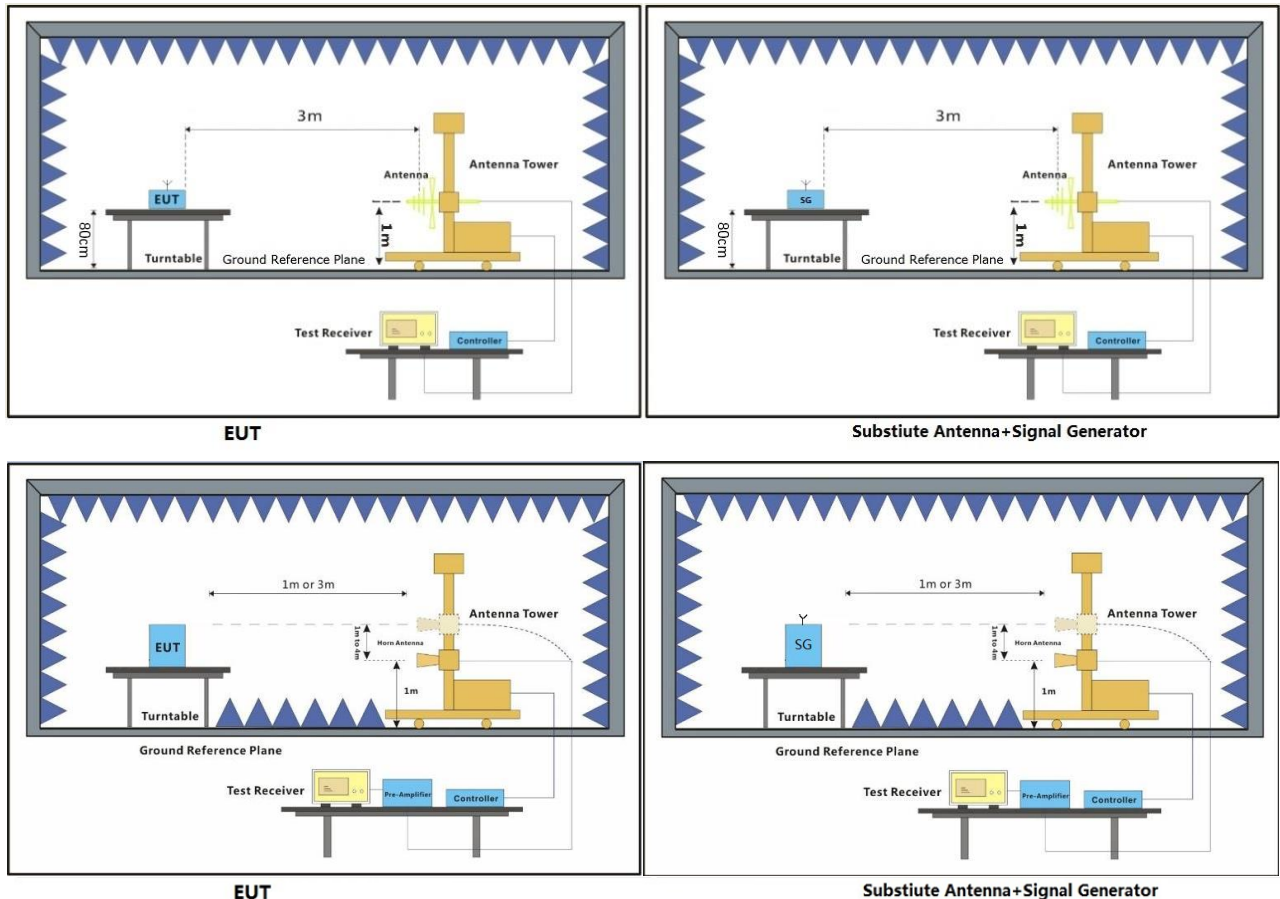
6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 18.5 °C Humidity: 39.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.6.2 Test Setup Diagram



6.6.3 Measurement Procedure and Data

Test Procedure:

- (1) On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

LTE Band 2-20M Low channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3702	-38.09	-13	-25.09	-47.77	2.92	12.6	Horizontal	Pass
5553	-41.84	-13	-28.84	-51.79	3.15	13.1	Horizontal	Pass
7404	-43.85	-13	-30.85	-52.15	3.4	11.7	Horizontal	Pass
3702	-29.18	-13	-16.18	-38.86	2.92	12.6	Vertical	Pass
5553	-37.25	-13	-24.25	-47.2	3.15	13.1	Vertical	Pass
7404	-44.03	-13	-31.03	-52.33	3.4	11.7	Vertical	Pass

LTE Band 2-20M Middle channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3742	-42.38	-13	-29.38	-52.06	2.92	12.6	Horizontal	Pass
5613	-33.35	-13	-20.35	-43.3	3.15	13.1	Horizontal	Pass
7484	-43.59	-13	-30.59	-51.89	3.4	11.7	Horizontal	Pass
3742	-40.11	-13	-27.11	-49.79	2.92	12.6	Vertical	Pass
5613	-28.02	-13	-15.02	-37.97	3.15	13.1	Vertical	Pass
7484	-41.11	-13	-28.11	-49.41	3.4	11.7	Vertical	Pass

LTE Band 2-20M High channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3782	-35.83	-13	-22.83	-45.51	2.92	12.6	Horizontal	Pass
5673	-41.16	-13	-28.16	-51.11	3.15	13.1	Horizontal	Pass
7564	-43.89	-13	-30.89	-51.44	3.85	11.4	Horizontal	Pass
3782	-31.75	-13	-18.75	-41.43	2.92	12.6	Vertical	Pass
5673	-33.75	-13	-20.75	-43.7	3.15	13.1	Vertical	Pass
7564	-42.76	-13	-29.76	-50.31	3.85	11.4	Vertical	Pass



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LTE Band 4-20M Low channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3422	-46.46	-13	-33.46	-54.97	2.99	11.5	Horizontal	Pass
5133	-43.31	-13	-30.31	-53.01	3	12.7	Horizontal	Pass
6844	-44.82	-13	-31.82	-54.24	3.08	12.5	Horizontal	Pass
3422	-41.46	-13	-28.46	-49.97	2.99	11.5	Vertical	Pass
5133	-39.26	-13	-26.26	-48.96	3	12.7	Vertical	Pass
6844	-40.17	-13	-27.17	-49.59	3.08	12.5	Vertical	Pass

LTE Band 4-20M Middle channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3447	-35.2	-13	-22.2	-43.71	2.99	11.5	Horizontal	Pass
5170.5	-39.46	-13	-26.46	-49.16	3	12.7	Horizontal	Pass
6894	-45.58	-13	-32.58	-55	3.08	12.5	Horizontal	Pass
3447	-41.4	-13	-28.4	-49.91	2.99	11.5	Vertical	Pass
5170.5	-41.98	-13	-28.98	-51.68	3	12.7	Vertical	Pass
6894	-43.75	-13	-30.75	-53.17	3.08	12.5	Vertical	Pass

LTE Band 4-20M High channel, Modulation: QPSK, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
3472	-46.25	-13	-33.25	-54.76	2.99	11.5	Horizontal	Pass
5208	-44.48	-13	-31.48	-54.18	3	12.7	Horizontal	Pass
6944	-44.71	-13	-31.71	-54.13	3.08	12.5	Horizontal	Pass
3472	-40.68	-13	-27.68	-49.19	2.99	11.5	Vertical	Pass
5208	-41.75	-13	-28.75	-51.45	3	12.7	Vertical	Pass
6944	-41.45	-13	-28.45	-50.87	3.08	12.5	Vertical	Pass



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FDD LTE Band 5-Low channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	ERP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1649	-43.97	-13	-30.97	-49.14	3.33	8.5	Horizontal	Pass
2473.5	-44.07	-13	-31.07	-51.07	3.4	10.4	Horizontal	Pass
3298	-49.93	-13	-36.93	-58.44	2.99	11.5	Horizontal	Pass
1649	-48.57	-13	-35.57	-53.74	3.33	8.5	Vertical	Pass
2473.5	-39.74	-13	-26.74	-46.74	3.4	10.4	Vertical	Pass
3298	-48.4	-13	-35.4	-56.91	2.99	11.5	Vertical	Pass

FDD LTE Band 5-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	ERP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1664	-48.62	-13	-35.62	-53.79	3.33	8.5	Horizontal	Pass
2496	-47.18	-13	-34.18	-54.18	3.4	10.4	Horizontal	Pass
3328	-49.14	-13	-36.14	-57.65	2.99	11.5	Horizontal	Pass
1664	-50.8	-13	-37.8	-55.97	3.33	8.5	Vertical	Pass
2496	-49.84	-13	-36.84	-56.84	3.4	10.4	Vertical	Pass
3328	-49.65	-13	-36.65	-58.16	2.99	11.5	Vertical	Pass

FDD LTE Band 5-High channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	ERP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1679	-52.79	-13	-39.79	-57.96	3.33	8.5	Horizontal	Pass
2518.5	-39.17	-13	-26.17	-46.56	3.21	10.6	Horizontal	Pass
3358	-47.17	-13	-34.17	-55.68	2.99	11.5	Horizontal	Pass
1679	-51.8	-13	-38.8	-56.97	3.33	8.5	Vertical	Pass
2518.5	-46.29	-13	-33.29	-53.68	3.21	10.6	Vertical	Pass
3358	-47.34	-13	-34.34	-55.85	2.99	11.5	Vertical	Pass



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Guangzhou Branch Testing Center EEC Laboratory 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

FDD LTE Band 12-Low channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1399	-54.71	-13	-41.71	-58.14	2.57	6	Horizontal	Pass
2098.5	-54.3	-13	-41.3	-61.3	3.4	10.4	Horizontal	Pass
2798	-51.17	-13	-38.17	-58.56	3.21	10.6	Horizontal	Pass
1399	-53.94	-13	-40.94	-57.37	2.57	6	Vertical	Pass
2098.5	-54.33	-13	-41.33	-61.33	3.4	10.4	Vertical	Pass
2798	-50.31	-13	-37.31	-57.7	3.21	10.6	Vertical	Pass

FDD LTE Band 12-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1406	-54.69	-13	-41.69	-58.12	2.57	6	Horizontal	Pass
2109	-54.52	-13	-41.52	-61.52	3.4	10.4	Horizontal	Pass
2812	-50.12	-13	-37.12	-57.51	3.21	10.6	Horizontal	Pass
1406	-53.15	-13	-40.15	-56.58	2.57	6	Vertical	Pass
2109	-53.39	-13	-40.39	-60.39	3.4	10.4	Vertical	Pass
2812	-49.45	-13	-36.45	-56.84	3.21	10.6	Vertical	Pass

FDD LTE Band 12-High channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1413	-54.29	-13	-41.29	-57.72	2.57	6	Horizontal	Pass
2119.5	-53.51	-13	-40.51	-60.51	3.4	10.4	Horizontal	Pass
2826	-49.64	-13	-36.64	-57.03	3.21	10.6	Horizontal	Pass
1413	-54.36	-13	-41.36	-57.79	2.57	6	Vertical	Pass
2119.5	-53.7	-13	-40.7	-60.7	3.4	10.4	Vertical	Pass
2826	-48.84	-13	-35.84	-56.23	3.21	10.6	Vertical	Pass



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FDD LTE Band 13-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1555	-54.82	-13	-41.82	-59.99	3.33	8.5	Horizontal	Pass
2332.5	-52.82	-13	-39.82	-59.82	3.4	10.4	Horizontal	Pass
3110	-48.58	-13	-35.58	-57.09	2.99	11.5	Horizontal	Pass
1555	-52.3	-13	-39.3	-57.47	3.33	8.5	Vertical	Pass
2332.5	-53.82	-13	-40.82	-60.82	3.4	10.4	Vertical	Pass
3110	-49.03	-13	-36.03	-57.54	2.99	11.5	Vertical	Pass

FDD LTE Band 17-Low channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1409	-54.26	-13	-41.26	-57.69	2.57	6	Horizontal	Pass
2113.5	-54.82	-13	-41.82	-61.82	3.4	10.4	Horizontal	Pass
2818	-50.78	-13	-37.78	-58.17	3.21	10.6	Horizontal	Pass
1409	-52.55	-13	-39.55	-55.98	2.57	6	Vertical	Pass
2113.5	-53.21	-13	-40.21	-60.21	3.4	10.4	Vertical	Pass
2818	-50.72	-13	-37.72	-58.11	3.21	10.6	Vertical	Pass

FDD LTE Band 17-Middle channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1411	-54.68	-13	-41.68	-58.11	2.57	6	Horizontal	Pass
2116.5	-53.97	-13	-40.97	-60.97	3.4	10.4	Horizontal	Pass
2822	-51.08	-13	-38.08	-58.47	3.21	10.6	Horizontal	Pass
1411	-54.05	-13	-41.05	-57.48	2.57	6	Vertical	Pass
2116.5	-54.36	-13	-41.36	-61.36	3.4	10.4	Vertical	Pass
2822	-47.86	-13	-34.86	-55.25	3.21	10.6	Vertical	Pass



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EMC-TRF-01 Rev 1.0

Report No.: GZCR210802081407

Page:

26 of 29

FDD LTE Band 17-High channel, Modulation: QPSK, Bandwidth: 10MHz, 1 RB#0								
Frequency (MHz)	EIRP (dBm)	Limit(dBm)	Over Limit (dB)	S.G. Power (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Polarization (H/V)	Result
1413	-54.77	-13	-41.77	-58.2	2.57	6	Horizontal	Pass
2119.5	-54.85	-13	-41.85	-61.85	3.4	10.4	Horizontal	Pass
2826	-49.79	-13	-36.79	-57.18	3.21	10.6	Horizontal	Pass
1413	-54.64	-13	-41.64	-58.07	2.57	6	Vertical	Pass
2119.5	-54.7	-13	-41.7	-61.7	3.4	10.4	Vertical	Pass
2826	-48.28	-13	-35.28	-55.67	3.21	10.6	Vertical	Pass

Note: All modes have been tested and we found QPSK test mode has the worst test result. Only record the worst test result.



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6.7 Frequency stability

Test Requirement: §2.1055, §22.355, §24.235, §27.54
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: $\leq \pm 2.5\text{ppm}$.

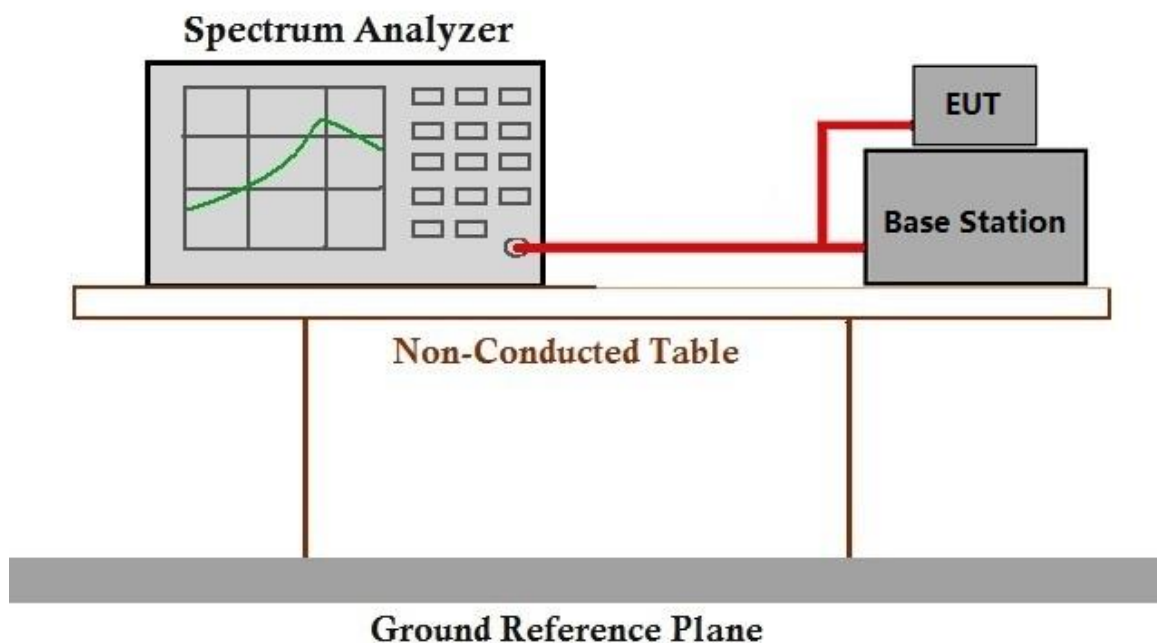
6.7.1 E.U.T. Operation

Operating Environment:

Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar

Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.7.2 Test Setup Diagram



6.7.3 Measurement Data

Please refer to Appendix FCC_LTE_Frequency stability

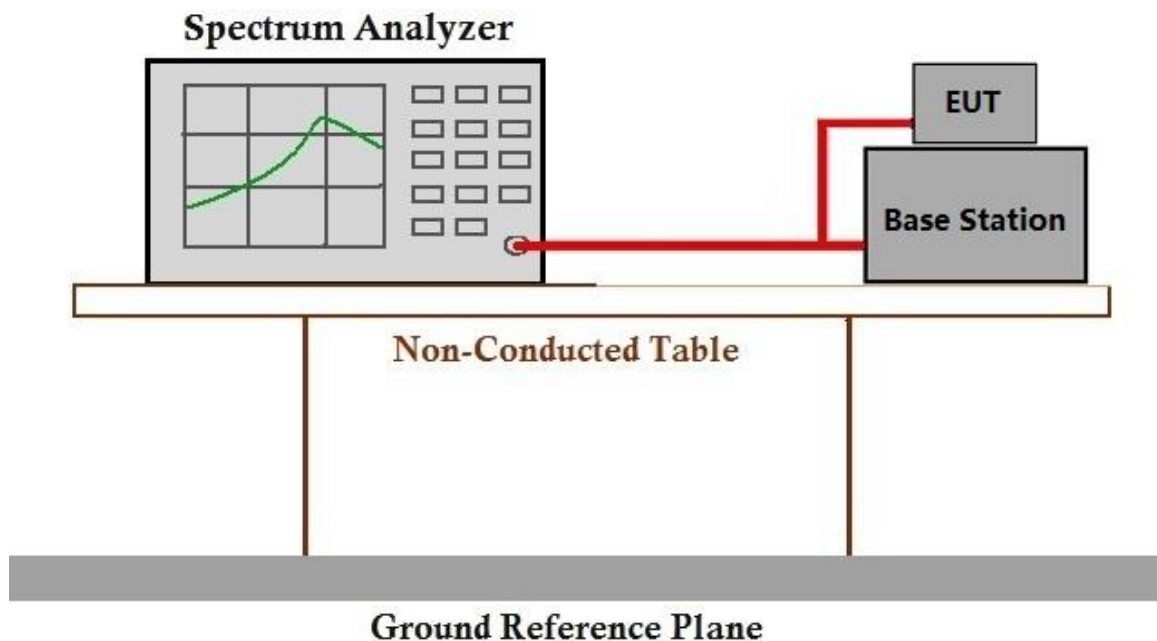
6.8 Modulation Characteristics

Test Requirement: §2.1047
Test Method: ANSI C63.26, KDB 971168 D01 v03
Limit: Digital modulation

6.8.1 E.U.T. Operation

Operating Environment:
Temperature: 19.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar
Test mode 21: Tx mode, Keep the EUT in transmitting mode.

6.8.2 Test Setup Diagram



6.8.3 Measurement Data

Please refer to Appendix FCC_LTE_Modulation Characteristics

7 Photographs

7.1 Test Setup Photos

Refer to Appendix - Setup Photos-WWAN for GZCR2108020814AT

7.2 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2108020814AT

- End of the Report -