Shenzhen Huatongwei International Inspection Co., Ltd.
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FCC REPORT

Report Reference No. ..... :	**TRE1809020703**	R/C…….: 57803
FCC ID ..... :	**2AJZP-D450A2**	
Applicant's name ..... :	**Mason America, Inc.**	
Manufacturer.....:	506 2nd Ave, Suite 1400 Seattle, WA 98104, United States	
Address.....:	Mason America, Inc.	
Test item description ..... :	506 2nd Ave, Suite 1400 Seattle, WA 98104, United States	
Trade Mark .....:	**Mobile phone**	
Model/Type reference.....:	MASON	
Listed Model(s) .....:	D450A	
Standard ..... :	**FCC CFR Title 47 Part 2** **FCC CFR Title 47 Part 22** **FCC CFR Title 47 Part 24** **FCC CFR Title 47 Part 27**	
Date of receipt of test sample…….:	Sep 29,2018	
Date of testing……...:	Sep 30,2018- Oct 19,2018	
Date of issue…….:	Oct 22,2018	
Result..... ……...:	**Pass**	

Compiled by (position+printedname+signature)...:	File administrators Silvia Li	Silvia Li
Supervised by (position+printedname+signature)....:	Project Engineer Aaron Fang	Aaron.Fang
Approved by (position+printedname+signature)....:	Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Applicable Standards

The tests were performed according to following standards:

FCC Rules Part 2: FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
FCC Rules Part 22: PUBLIC MOBILE SERVICES
FCC Rules Part 24: PERSONAL COMMUNICATIONS SERVICES
FCC Rules Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES
ANSI C63.26: 2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
KDB 971168 D01 Power Meas License Digital Systems v03: MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2018-10-22	Original

2. Test Description

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Output Power	Part 2.1046 Part 22.913(a) Part 24.232(c) Part 27.50	Pass	Jiongsheng Feng
Peak-to-Average Ratio	Part 24.232 Part 27.50	Pass	Jiongsheng Feng
99% Occupied Bandwidth & 26 dB Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238(b) Part 27.53	Pass	Jiongsheng Feng
Band Edge	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass	Jiongsheng Feng
Conducted Spurious Emissions	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass	Jiongsheng Feng
Frequency stability VS Temperature	Part 2.1055(a)(1)(b) Part 22.355 Part 24.235 Part 27.54	Pass	Jiongsheng Feng
Frequency stability VS Voltage	Part 2.1055(d)(1)(2) Part 22.355 Part 24.235 Part 27.54	Pass	Jiongsheng Feng
ERP and EIRP	Part 22.913(a) Part 24.232(b) Part 27.50	Pass	Shower Dai
Radiated Spurious Emissions	Part 2.1053 Part 22.917 Part 24.238 Part 27.53	Pass	Shower Dai

Note: The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Mason America, Inc.
Address:	506 2nd Ave, Suite 1400 Seattle, WA 98104, United States
Manufacturer:	Mason America, Inc.
Address:	506 2nd Ave, Suite 1400 Seattle, WA 98104, United States

3.2. Product Description

Name of EUT:	Mobile phone		
Trade Mark:	MASON		
Model No.:	D450A		
Listed Model(s):	-		
IMEI Code:	Conducted: 359333090022635 Radiated: 359333090022742		
SIM Information:	Support Two SIM Card		
Power supply:	DC 3.85V		
Adapter information:	Model:TPA-10120150UU Input:100-240Va.c. 50-60Hz 0.6A Output:5.0Vd.c. 3A		
Hardware version:	X57_PCB_V1.03_171226		
Software version:	Mason D450A-H01A-S005		
4G			
Operation Band:	☒ FDD Band 2	☒ FDD Band 4	☒ FDD Band 5
	☒ FDD Band 7	☒ FDD Band 12	☒ FDD Band 17
Transmit frequency:	FDD Band 2:	1850.7 MHz – 1909.3 MHz	
	FDD Band 4:	1710.7 MHz – 1754.3 MHz	
	FDD Band 5:	824.7 MHz – 848.3 MHz	
	FDD Band 7:	2502.5 MHz – 2567.5 MHz	
	FDD Band 12:	699.7 MHz – 715.3 MHz	
	FDD Band 17:	706.5 MHz – 713.5 MHz	
Receive frequency:	FDD Band 2:	1930.7 MHz – 1989.3 MHz	
	FDD Band 4:	2110.7 MHz – 2154.3 MHz	
	FDD Band 5:	869.7 MHz – 893.3 MHz	
	FDD Band 7:	2622.5 MHz – 2687.5 MHz	
	FDD Band 12:	729.7 MHz – 745.3 MHz	
	FDD Band 17:	736.5 MHz – 743.5 MHz	

Channel bandwidth:	FDD Band 2:	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	FDD Band 4:	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
	FDD Band 5:	1.4MHz, 3MHz, 5MHz, 10MHz
	FDD Band 7:	5MHz, 10MHz, 15MHz, 20MHz
	FDD Band 12:	1.4MHz, 3MHz, 5MHz, 10MHz
	FDD Band 17:	5MHz, 10MHz
Power Class:	Class 3	
Modulation type:	QPSK, 16QAM	
Antenna type	Integral Antenna	
Antenna Gain	Band2: -0.6dBi Band4: -0.46dBi Band5: 0.16dBi Band7: -1.32dBi Band12: -1.8dBi Band17:-1.8dBi	

3.3. Operation state

➢ **Test frequency list**

FDD Band 2

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15 [1]	18675	1857.5	675	1937.5
	20 [1]	18700	1860	700	1940
Mid Range	1.4/3/5/10 15 [1]/20 [1]	18900	1880	900	1960
High Range	1.4	19193	1909.3	1193	1989.3
	3	19185	1908.5	1185	1988.5
	5	19175	1907.5	1175	1987.5
	10	19150	1905	1150	1985
	15 [1]	19125	1902.5	1125	1982.5
	20 [1]	19100	1900	1100	1980

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 4

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

FDD Band 5

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10 [1]	20450	829	2450	874
Mid Range	1.4/3/5 10 [1]	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10 [1]	20600	844	2600	889

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 7

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	20775	2502.5	2775	2622.5
	10	20800	2505	2800	2625
	15	20825	2507.5	2825	2627.5
	20 [1]	20850	2510	2850	2630
Mid Range	5/10/15 20 [1]	21100	2535	3100	2655
High Range	5	21425	2567.5	3425	2687.5
	10	21400	2565	3400	2685
	15	21375	2562.5	3375	2682.5
	20 [1]	21350	2560	3350	2680

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 12

Table 4.3.1.1.12-1: Test frequencies for E-UTRA channel bandwidth for operating band 12

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	23017	699.7	5017	729.7
	3	23025	700.5	5025	730.5
	5 [1]	23035	701.5	5035	731.5
	10 [1]	23060	704	5060	734
Mid Range	1.4/3 5 [1]/10 [1]	23095	707.5	5095	737.5
High Range	1.4	23173	715.3	5173	745.3
	3	23165	714.5	5165	744.5
	5 [1]	23155	713.5	5155	743.5
	10 [1]	23130	711	5130	741

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 17

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5 [1]	23755	706.5	5755	736.5
	10 [1]	23780	709	5780	739
Mid Range	5 [1]/10 [1]	23790	710	5790	740
High Range	5 [1]	23825	713.5	5825	743.5
	10 [1]	23800	711	5800	741

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

3.4. EUT operation mode

For RF test items
The EUT has been tested under typical operating condition. Testing was performed by configuring EUT to maximum output power status. The Test EUT support two SIM card(SIM1,SIM2),so all the tests are performed at each SIM card (SIM1,SIM2) mode, the datum recorded is the worst case for all the mode at SIM1 Card mode.

Test Items	Band	Bandwidth (MHz)						Modulation		RB #		
		1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full
Conducted Output Power	2	○	○	○	○	○	○	○	○	○	○	○
	4	○	○	○	○	○	○	○	○	○	○	○
	5	○	○	○	○	-	-	○	○	○	○	○
	7	-	-	○	○	○	○	○	○	○	○	○
	12	○	○	○	○	-	-	○	○	○	○	○
	17	-	-	○	○	-	-	○	○	○	○	○
Peak-to-Average Ratio	2	○	○	○	○	○	○	○	○	○	-	○
	4	○	○	○	○	○	○	○	○	○	-	○
	5	○	○	○	○	-	-	○	○	○	-	○
	7	-	-	○	○	○	○	○	○	○	-	○
	12	○	○	○	○	-	-	○	○	○	-	○
	17	-	-	○	○	-	-	○	○	○	-	○
99% Occupied Bandwidth & 26 dB Bandwidth	2	○	○	○	○	○	○	○	○	-	-	○
	4	○	○	○	○	○	○	○	○	-	-	○
	5	○	○	○	○	-	-	○	○	-	-	○
	7	-	-	○	○	○	○	○	○	-	-	○
	12	○	○	○	○	-	-	○	○	○	-	○
	17	-	-	○	○	-	-	○	○	-	-	○
Band Edge	2	○	○	○	○	○	○	○	○	○	-	○
	4	○	○	○	○	○	○	○	○	○	-	○
	5	○	○	○	○	-	-	○	○	○	-	○
	7	-	-	○	○	○	○	○	○	○	-	○
	12	○	○	○	○	-	-	○	○	○	-	○
	17	-	-	○	○	-	-	○	○	○	-	○
Conducted Spurious Emission	2	○	○	○	○	○	○	○	○	○	-	-
	4	○	○	○	○	○	○	○	○	○	-	-
	5	○	○	○	○	-	-	○	○	○	-	-
	7	-	-	○	○	○	○	○	○	○	-	-
	12	○	○	○	○	-	-	○	○	○	-	-
	17	-	-	○	○	-	-	○	○	○	-	-
Frequency Stability	2	○	○	○	○	○	○	○	○	-	-	○
	4	○	○	○	○	○	○	○	○	-	-	○
	5	○	○	○	○	-	-	○	○	-	-	○
	7	-	-	○	○	○	○	○	○	-	-	○
	12	○	○	○	○	-	-	○	○	-	-	○
	17	-	-	○	○	-	-	○	○	-	-	○
ERP and EIRP	2	○	○	○	○	○	○	○	○	○	-	-
	4	○	○	○	○	○	○	○	○	○	-	-
	5	○	○	○	○	-	-	○	○	○	-	-
	7	-	-	○	○	○	○	○	○	○	-	-
	12	○	○	○	○	-	-	○	○	○	-	-
	17	-	-	○	○	-	-	○	○	○	-	-
Radiated Spurious Emission	2	○	○	○	○	○	○	○	-	○	-	-
	4	○	○	○	○	○	○	○	-	○	-	-
	5	○	○	○	○	-	-	○	-	○	-	-
	7	-	-	○	○	○	○	○	-	○	-	-
	12	○	○	○	○	-	-	○	○	○	-	-
	17	-	-	○	○	-	-	○	-	○	-	-

Remark	1. The mark " ○"means that this configuration is chosenfor testing 2. The mark "-"means that this bandwidth is not test. 3. The device is investigatedfrom 30MHz to10 times offundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

3.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- ● - supplied by the manufacturer
- ○ - supplied by the lab

○	/	Manufacturer:	/
		Model No.:	/
○	/	Manufacturer:	/
		Model No.:	/

3.6. Modifications

No modifications were implemented to meet testing criteria.

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

4.2. Test Facility

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files.

IC-Registration No.:5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No.: 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Equipments Used during the Test

RF Conducted Test						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018
2	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/26/2017	10/25/2018
3	Spectrum Analyzer	Rohde&Schwarz	FSW26	103440	11/11/2017	11/10/2018
4	MXA Signal Analyzer	Agilent	N9020A	MY5050187	11/10/2017	11/09/2018
5	Splitter	Mini-Circuit	ZAPD-4	400059	03/19/2018	03/18/2019
6	Climate Chamber	ESPEC	EL-10KA	05107008	11/10/2017	11/09/2018

Radiated Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	EMI Test Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018
2	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2018
3	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	04/05/2017	04/04/2020
4	Preamplifier	SCHWARZBECK	BBV 9743	9743-0022	10/16/2018	10/15/2019
5	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	11/21/2017	11/20/2018
6	EMI Test Software	R&S	ESK1	N/A	N/A	N/A
7	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018
8	Horn Antenna	SCHWARZBECK	9120D	1011	03/27/2017	03/26/2020
9	Horn Antenna	SCHWARZBECK	BBHA9170	25841	03/27/2017	03/26/2020
10	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-248	10/16/2018	10/15/2019
11	High pass filter	Compliance Direction systems	BSU-6	34202	11/11/2017	11/10/2018
12	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	11/21/2017	11/20/2018
13	Signal Generator	Rohde&Schwarz	SMB100A	114360	06/12/2018	06/11/2019
14	Universal Radio Communication	Rohde&Schwarz	CMU200	112012	11/11/2017	11/11/2018
15	Wide Radio communication tester	Rohde&Schwarz	CMW500	137688	10/26/2017	10/25/2018
16	EMI Test Software	Audix	E3	N/A	N/A	N/A
17	Turntable	MATURO	TT2.0	N/A	N/A	N/A
18	Antenna Mast	MATURO	TAM-4.0-P	N/A	N/A	N/A

4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Voltage	VN=Nominal Voltage	DC 3.85V
	VL=Lower Voltage	DC 3.60V
	VH=Higher Voltage	DC 4.20V
Temperature	TN=Normal Temperature	25 °C
	Extreme Temperature	From −30° to + 50° centigrade
Humidity	30~60 %	
Air Pressure	950-1050 hPa	

4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01”Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 1”and TR-100028-02 “Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2 “ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongweilaboratory is reported:

Test Items	MeasurementUncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	---------	(1)
Emission Mask	---------	(1)
Modulation Characteristic	---------	(1)
Transmitter Frequency Behavior	---------	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

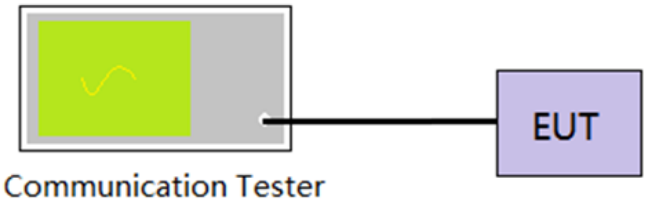
5. TEST CONDITIONS AND RESULTS

5.1. Conducted Output Power

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT output port was connected to communication tester.
2. Set EUT at maximum power through communication tester.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

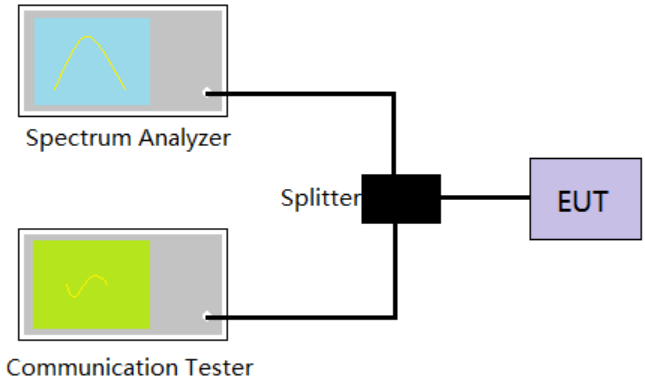
Refer to appendix A on the section 8 appendix report

5.2. Peak-to-Average Ratio

LIMIT

13dB

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
2. Set EUT in maximum power output.
3. Center Frequency = Carrier frequency, RBW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed.
   i. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.
   ii. For bursttransmissions, the spectrum analyzer is set to use an internal " RF Burst" trigger that issynced with an incoming pulse and the measurement interval is set to less than the durationof the " on time" of one burst to ensure that energy is only captured during a time in whichthetransmitter is operating at maximum power
6. Record the maximum PAPR level associated with a probability of 0.1%.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

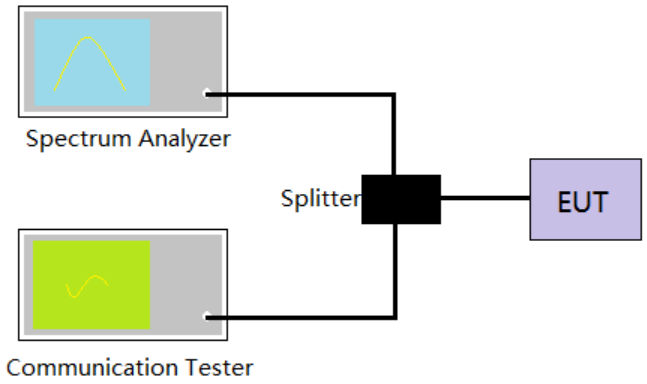
Refer to appendix B on the section 8 appendix report

5.3. 99% Occupied Bandwidth & 26 dB Bandwidth

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
2. Set EUT in maximum power output.
3. Spectrum analyzer setting as follow:

   Center Frequency= Carrier frequency, RBW=1% to 5% of the anticipated OBW, VBW= 3 * RBW, Detector=Peak,

   Trace maximum hold.
4. Record the value of 99% Occupied bandwidth and 26dB bandwidth.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Refer to appendix C on the section 8 appendix report

5.4. Band Edge

LIMIT

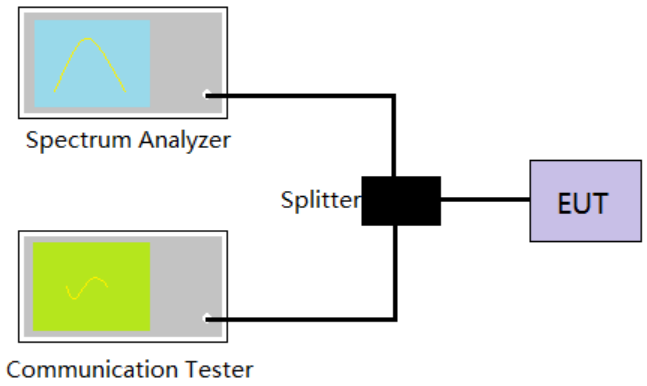
Part 24.238 and Part 22.917 and Part 27.53 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

LTE Band 7

Part 27.53 m(4) 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.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
2. Set EUT in maximum power output.
3. The band edges of low and high channels were measured.
4. Spectrum analyzer setting as follow:

   RBW= no less than 1% of the OBW, VBW =3 * RBW, Sweep time= Auto
5. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Refer to appendix D on the section 8 appendix report

5.5. Conducted Spurious Emissions

LIMIT

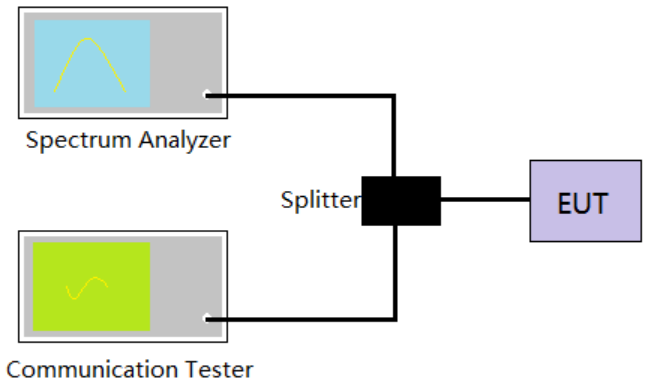
Part 24.238 and Part 22.917 and Part 27.53 specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

LTE Band 7

Part 27.53 m(4) 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. Limit <-25 dBm

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was connected to the spectrum analyzer and communication tester via a power splitter
2. Set EUT in maximum power output.
3. Spectrum analyzer setting as follow:

   Below 1GHz, RBW=100KHz, VBW = 300KHz, Detector=Peak, Sweep time= Auto

   Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peak, Sweep time= Auto

   Scan frequency range up to 10th harmonic.
4. Record the test plot.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

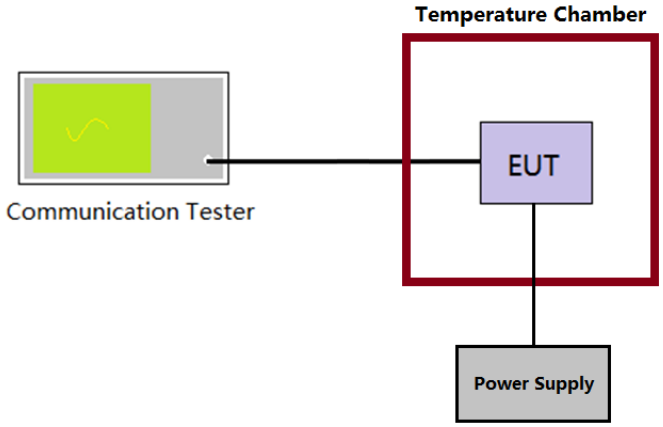
Refer to appendix E on the section 8 appendix report

5.6. Frequency stability VS Temperature measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. The EUT output port was connected to communication tester.
3. The EUT was placed inside the temperature chamber.
4. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.
5. Repeat step 4 measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

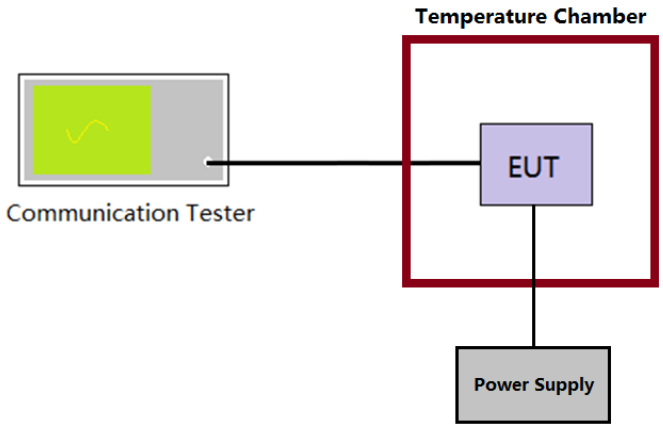
Refer to appendix F on the section 8 appendix report

5.7. Frequency stability VS Voltage measurement

LIMIT

2.5ppm

TEST CONFIGURATION



TEST PROCEDURE

1. The equipment under test was connected to an external DC power supply and input rated voltage.
2. The EUT output port was connected to communication tester.
3. The EUT was placed inside the temperature chamber at 25°C
4. The power supply voltage to the EUT was varied ±15% of the nominal value measured at the input to the EUT
5. Record the maximum frequency change.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Refer to appendix F on the section 8 appendix report

5.8. ERP and EIRP

LIMIT

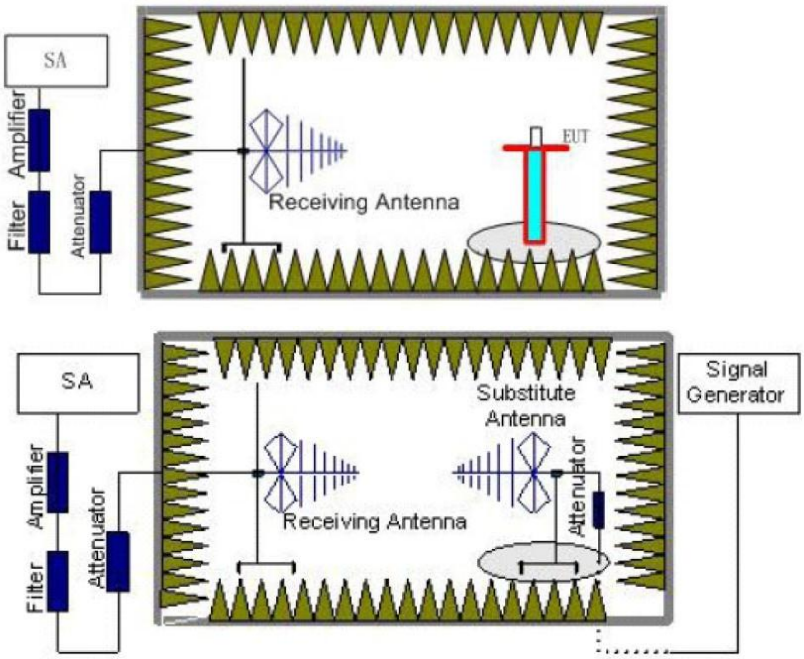
LTE Band 2/7: 2W(33dBm) EIRP

LTE Band 4: 1W(30dBm) EIRP

LTE Band 5: 7W(38.50dBm) ERP

LTE Band 12/17: 3W(34.77dBm) ERP

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz,, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

LTE Band 2-1.4MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.29	18.06	≤33.00	PASS
	Mid	21.24	17.95		
	High	21.57	18.04		
16QAM	Low	20.06	16.88		PASS
	Mid	20.20	17.03		
	High	20.07	17.27		

LTE Band 2-3MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.75	17.81	≤33.00	PASS
	Mid	22.23	17.93		
	High	21.93	18.00		
16QAM	Low	19.71	17.09		PASS
	Mid	20.00	17.16		
	High	19.87	17.21		

LTE Band 2-5MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.17	18.30	≤33.00	PASS
	Mid	20.84	18.20		
	High	20.97	17.68		
16QAM	Low	19.58	17.66		PASS
	Mid	19.52	17.50		
	High	19.38	16.88		

LTE Band 2-10MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.08	17.99	≤33.00	PASS
	Mid	21.42	17.92		
	High	21.12	17.71		
16QAM	Low	19.43	17.22		PASS
	Mid	19.63	17.09		
	High	19.48	17.06		

LTE Band 2-15MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.18	18.31	≤33.00	PASS
	Mid	19.54	18.43		
	High	19.84	17.69		
16QAM	Low	19.06	17.59		PASS
	Mid	18.48	19.00		
	High	18.56	17.15		

LTE Band 2-20MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.26	17.85	≤33.00	PASS
	Mid	19.99	18.10		
	High	19.96	17.72		
16QAM	Low	18.94	17.56		PASS
	Mid	18.96	17.87		
	High	19.02	17.51		

LTE Band 4-1.4MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	22.01	19.93	≤30.00	PASS
	Mid	22.20	19.89		
	High	22.51	19.72		
16QAM	Low	20.39	19.28		PASS
	Mid	20.60	19.16		
	High	20.49	19.28		

LTE Band 4-3MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.54	19.25	≤30.00	PASS
	Mid	21.38	19.47		
	High	21.06	19.36		
16QAM	Low	20.68	19.07		PASS
	Mid	20.10	19.15		
	High	21.46	19.64		

LTE Band 4-5MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.76	20.33	≤30.00	PASS
	Mid	21.97	19.58		
	High	21.87	19.64		
16QAM	Low	20.71	19.68		PASS
	Mid	20.94	18.97		
	High	20.45	19.13		

LTE Band 4-10MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	22.04	20.22	≤30.00	PASS
	Mid	21.94	19.50		
	High	21.39	19.71		
16QAM	Low	21.16	19.64		PASS
	Mid	21.35	18.89		
	High	20.77	19.12		

LTE Band 4-15MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.97	18.30	≤30.00	PASS
	Mid	20.80	18.55		
	High	21.20	18.66		
16QAM	Low	19.97	17.80		PASS
	Mid	19.94	17.95		
	High	20.11	18.22		

LTE Band 4-20MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.14	18.35	≤30.00	PASS
	Mid	21.41	18.75		
	High	21.46	18.82		
16QAM	Low	19.88	17.78		PASS
	Mid	19.54	18.04		
	High	19.73	18.23		

LTE Band 5-1.4MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.85	21.11	≤38.50	PASS
	Mid	21.91	20.76		
	High	21.89	21.00		
16QAM	Low	20.73	19.68		PASS
	Mid	20.55	19.80		
	High	20.58	19.79		

LTE Band 5-3MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	22.20	20.42	≤38.50	PASS
	Mid	22.54	20.56		
	High	22.40	20.61		
16QAM	Low	20.23	19.99		PASS
	Mid	20.21	19.73		
	High	20.26	19.75		

LTE Band 5-5MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.78	20.08	≤38.50	PASS
	Mid	21.92	18.96		
	High	21.77	18.80		
16QAM	Low	21.22	19.78		PASS
	Mid	21.34	18.58		
	High	21.19	18.46		

LTE Band 5-10MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.65	20.05	≤38.50	PASS
	Mid	21.79	19.00		
	High	21.55	18.85		
16QAM	Low	21.09	19.54		PASS
	Mid	21.25	18.57		
	High	21.09	18.42		

LTE Band 7-5MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.63	18.55	≤33.00	PASS
	Mid	20.92	18.83		
	High	21.40	18.56		
16QAM	Low	19.28	17.93		PASS
	Mid	19.42	18.17		
	High	19.65	18.16		

LTE Band 7-10MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.98	18.40	≤33.00	PASS
	Mid	21.76	18.64		
	High	21.57	18.60		
16QAM	Low	19.46	17.97		PASS
	Mid	19.94	18.12		
	High	19.95	18.02		

LTE Band 7-15MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.21	19.17	≤33.00	PASS
	Mid	20.96	18.58		
	High	21.04	18.74		
16QAM	Low	20.23	18.34		PASS
	Mid	20.00	17.81		
	High	20.18	18.06		

LTE Band 7-20MHz					
Modulation	Channel	EIRP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.40	19.09	≤33.00	PASS
	Mid	21.53	18.71		
	High	21.58	18.85		
16QAM	Low	19.97	18.41		PASS
	Mid	20.01	17.93		
	High	20.18	18.11		

LTE Band 12-1.4MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.71	19.65	≤34.77	PASS
	Mid	21.72	19.62		
	High	21.94	19.67		
16QAM	Low	20.97	19.03		PASS
	Mid	20.96	18.96		
	High	21.05	19.19		

LTE Band 12-3MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.22	19.39	≤34.77	PASS
	Mid	21.46	19.25		
	High	21.52	19.22		
16QAM	Low	20.44	19.22		PASS
	Mid	20.29	18.95		
	High	22.07	19.42		

LTE Band 12-5MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.76	19.87	≤34.77	PASS
	Mid	21.91	20.20		
	High	22.26	20.01		
16QAM	Low	20.58	18.99		PASS
	Mid	20.80	19.59		
	High	20.68	19.34		

LTE Band 12-10MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	22.07	19.73	≤34.77	PASS
	Mid	22.68	20.09		
	High	22.41	19.86		
16QAM	Low	20.43	19.23		PASS
	Mid	20.91	19.52		
	High	20.79	19.37		

LTE Band 17-5MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	20.85	19.07	≤34.77	PASS
	Mid	21.12	19.08		
	High	21.68	19.09		
16QAM	Low	19.49	17.97		PASS
	Mid	19.85	18.20		
	High	19.90	18.03		

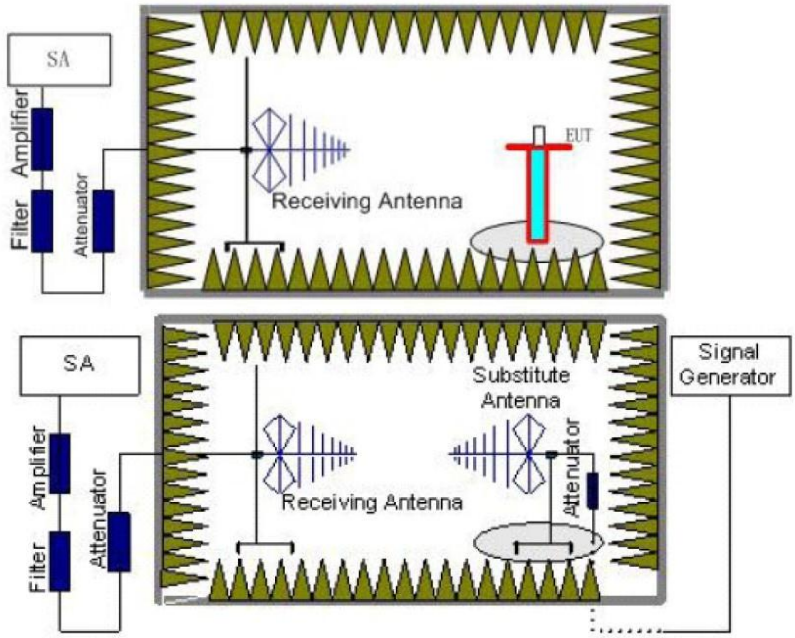
LTE Band 17-10MHz					
Modulation	Channel	ERP (dBm)		Limit (dBm)	Result
		Vertical	Horizontal		
QPSK	Low	21.17	18.89	≤34.77	PASS
	Mid	21.96	18.94		
	High	21.85	18.69		
16QAM	Low	19.32	18.27		PASS
	Mid	20.18	18.25		
	High	20.21	18.08		

5.9. Radiated Spurious Emission

LIMIT

LTE Band 2/4/5/12/17: -13dBm;
LTE Band 7: -25dBm

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 0.8 meter for below 1GHz and 1.5 meter for above 1GHz high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz for above 1GHz and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest isconnected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.

6. The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl + Ga
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl + Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
   ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

LTE Band 2-1.4MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3701.40	Vertical	-32.48	≤-13.00	Pass
	5552.10	V	-35.12		
	7402.80	V	---		
	3701.40	Horizontal	-34.57	≤-13.00	Pass
	5552.10	H	-38.61		
	7402.80	H	---		
Mid	3760.00	Vertical	-31.65	≤-13.00	Pass
	5640.00	V	-35.29		
	7520.00	V	---		
	3760.00	Horizontal	-34.39	≤-13.00	Pass
	5640.00	H	-38.43		
	7520.00	H	---		
High	3818.60	Vertical	-31.96	≤-13.00	Pass
	5727.90	V	-35.57		
	7637.20	V	---		
	3818.60	Horizontal	-34.44	≤-13.00	Pass
	5727.90	H	-38.38		
	7637.20	H	---		

LTE Band 2-3MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3703.00	Vertical	-33.26	≤-13.00	Pass
	5554.50	V	-34.87		
	7406.00	V	---		
	3703.00	Horizontal	-34.38	≤-13.00	Pass
	5554.50	H	-34.64		
	7406.00	H	---		
Mid	3760.00	Vertical	-34.20	≤-13.00	Pass
	5640.00	V	-33.89		
	7520.00	V	---		
	3760.00	Horizontal	-34.02	≤-13.00	Pass
	5640.00	H	-33.24		
	7520.00	H	---		
High	3817.00	Vertical	-35.15	≤-13.00	Pass
	5725.50	V	-33.45		
	7634.00	V	---		
	3817.00	Horizontal	-34.19	≤-13.00	Pass
	5725.50	H	-33.25		
	7634.00	H	---		

LTE Band 2-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3705.00	Vertical	-34.05	≤-13.00	Pass
	5557.50	V	-34.71		
	7410.00	V	---		
	3705.00	Horizontal	-34.78	≤-13.00	Pass
	5557.50	H	-34.56		
	7410.00	H	---		
Mid	3760.00	Vertical	-34.66	≤-13.00	Pass
	5640.00	V	-34.08		
	7520.00	V	---		
	3760.00	Horizontal	-35.15	≤-13.00	Pass
	5640.00	H	-33.54		
	7520.00	H	---		
High	3815.00	Vertical	-36.08	≤-13.00	Pass
	5722.50	V	-33.71		
	7630.00	V	---		
	3815.00	Horizontal	-35.57	≤-13.00	Pass
	5722.50	H	-33.61		
	7630.00	H	---		

LTE Band 2-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3710.00	Vertical	-34.57	≤-13.00	Pass
	5565.00	V	-34.62		
	7420.00	V	---		
	3710.00	Horizontal	-34.97	≤-13.00	Pass
	5565.00	H	-34.54		
	7420.00	H	---		
Mid	3760.00	Vertical	-34.90	≤-13.00	Pass
	5640.00	V	-34.28		
	7520.00	V	---		
	3760.00	Horizontal	-35.16	≤-13.00	Pass
	5640.00	H	-33.83		
	7520.00	H	---		
High	3810.00	Vertical	-35.94	≤-13.00	Pass
	5715.00	V	-33.98		
	7620.00	V	---		
	3810.00	Horizontal	-35.18	≤-13.00	Pass
	5715.00	H	-33.82		
	7620.00	H	---		

LTE Band 2-15MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3715.00	Vertical	-34.85	≤-13.00	Pass
	5572.50	V	-34.51		
	7430.00	V	---		
	3715.00	Horizontal	-35.35	≤-13.00	Pass
	5572.50	H	-34.41		
	7430.00	H	---		
Mid	3760.00	Vertical	-35.27	≤-13.00	Pass
	5640.00	V	-34.08		
	7520.00	V	---		
	3760.00	Horizontal	-35.60	≤-13.00	Pass
	5640.00	H	-33.69		
	7520.00	H	---		
High	3805.00	Vertical	-36.27	≤-13.00	Pass
	5707.50	V	-33.82		
	7610.00	V	---		
	3805.00	Horizontal	-36.52	≤-13.00	Pass
	5707.50	H	-33.87		
	7610.00	H	---		

LTE Band 2-20MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3720.00	Vertical	-35.20	≤-13.00	Pass
	5580.00	V	-34.42		
	7440.00	V	---		
	3720.00	Horizontal	-35.61	≤-13.00	Pass
	5580.00	H	-34.34		
	7440.00	H	---		
Mid	3760.00	Vertical	-35.54	≤-13.00	Pass
	5640.00	V	-34.07		
	7520.00	V	---		
	3760.00	Horizontal	-35.81	≤-13.00	Pass
	5640.00	H	-33.78		
	7520.00	H	---		
High	3800.00	Vertical	-36.31	≤-13.00	Pass
	5700.00	V	-33.88		
	7600.00	V	---		
	3800.00	Horizontal	-36.02	≤-13.00	Pass
	5700.00	H	-33.82		
	7600.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

LTE Band 4-1.4MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3421.40	Vertical	-34.58	≤-13.00	Pass
	5132.10	V	-36.41		
	6842.80	V	---		
	3421.40	Horizontal	-35.87	≤-13.00	Pass
	5132.10	H	-34.05		
	6842.80	H	---		
Mid	3465.00	Vertical	-34.75	≤-13.00	Pass
	5197.50	V	-36.25		
	6930.00	V	---		
	3465.00	Horizontal	-35.66	≤-13.00	Pass
	5197.50	H	-33.88		
	6930.00	H	---		
High	3508.60	Vertical	-35.02	≤-13.00	Pass
	5262.90	V	-36.51		
	7017.20	V	---		
	3508.60	Horizontal	-35.70	≤-13.00	Pass
	5262.90	H	-33.92		
	7017.20	H	---		

LTE Band 4-3MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3423.00	Vertical	-35.31	≤-13.00	Pass
	5134.50	V	-36.19		
	6846.00	V	---		
	3423.00	Horizontal	-35.44	≤-13.00	Pass
	5134.50	H	-33.84		
	6846.00	H	---		
Mid	3465.00	Vertical	-35.48	≤-13.00	Pass
	5197.50	V	-36.34		
	6930.00	V	---		
	3465.00	Horizontal	-35.27	≤-13.00	Pass
	5197.50	H	-33.98		
	6930.00	H	---		
High	3507.00	Vertical	-35.72	≤-13.00	Pass
	5260.50	V	-36.13		
	7014.00	V	---		
	3507.00	Horizontal	-35.08	≤-13.00	Pass
	5260.50	H	-34.16		
	7014.00	H	---		

LTE Band 4-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3425.00	Vertical	-36.03	≤-13.00	Pass
	5137.50	V	-36.06		
	6850.00	V	---		
	3425.00	Horizontal	-34.95	≤-13.00	Pass
	5137.50	H	-34.04		
	6850.00	H	---		
Mid	3465.00	Vertical	-36.12	≤-13.00	Pass
	5197.50	V	-36.15		
	6930.00	V	-		
	3465.00	Horizontal	-35.08	≤-13.00	Pass
	5197.50	H	-34.15		
	6930.00	H	---		
High	3505.00	Vertical	-35.93	≤-13.00	Pass
	5257.50	V	-35.97		
	7010.00	V	-		
	3505.00	Horizontal	-34.99	≤-13.00	Pass
	5257.50	H	-34.06		
	7010.00	H	---		

LTE Band 4-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3430.00	Vertical	-36.44	≤-13.00	Pass
	5145.00	V	-35.93		
	6860.00	V	---		
	3430.00	Horizontal	-35.21	≤-13.00	Pass
	5145.00	H	-34.25		
	6860.00	H	---		
Mid	3465.00	Vertical	-36.35	≤-13.00	Pass
	5197.50	V	-35.84		
	6930.00	V	---		
	3465.00	Horizontal	-35.08	≤-13.00	Pass
	5197.50	H	-34.14		
	6930.00	H	-		
High	3500.00	Vertical	-36.53	≤-13.00	Pass
	5250.00	V	-36.01		
	7000.00	V	-		
	3500.00	Horizontal	-34.91	≤-13.00	Pass
	5250.00	H	-33.99		
	7000.00	H	---		

LTE Band 4-15MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3435.00	Vertical	-36.85	≤-13.00	Pass
	5152.50	V	-35.83		
	6870.00	V	---		
	3435.00	Horizontal	-34.81	≤-13.00	Pass
	5152.50	H	-34.09		
	6870.00	H	---		
Mid	3465.00	Vertical	-36.77	≤-13.00	Pass
	5197.50	V	-35.75		
	6930.00	V	---		
	3465.00	Horizontal	-34.92	≤-13.00	Pass
	5197.50	H	-34.18		
	6930.00	H	---		
High	3495.00	Vertical	-36.61	≤-13.00	Pass
	5242.50	V	-35.61		
	6990.00	V	---		
	3495.00	Horizontal	-34.86	≤-13.00	Pass
	5242.50	H	-34.13		
	6990.00	H	---		

LTE Band 4-20MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	3440.00	Vertical	-37.19	≤-13.00	Pass
	5160.00	V	-35.50		
	6880.00	V	---		
	3440.00	Horizontal	-34.97	≤-13.00	Pass
	5160.00	H	-34.03		
	6880.00	H	---		
Mid	3465.00	Vertical	-37.27	≤-13.00	Pass
	5197.50	V	-35.58		
	6930.00	V	---		
	3465.00	Horizontal	-35.05	≤-13.00	Pass
	5197.50	H	-33.97		
	6930.00	H	---		
High	3490.00	Vertical	-37.15	≤-13.00	Pass
	5235.00	V	-33.93		
	6980.00	V	---		
	3490.00	Horizontal	-35.05	≤-13.00	Pass
	5235.00	H	-34.11		
	6980.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

LTE Band 5-1.4MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1649.40	Vertical	-35.74	≤-13.00	Pass
	2474.10	V	-41.80		
	3298.80	V	---		
	1649.40	Horizontal	-42.89	≤-13.00	Pass
	2474.10	H	-43.27		
	3298.80	H	---		
Mid	1673.00	Vertical	-35.60	≤-13.00	Pass
	2509.50	V	-41.67		
	3346.00	V	---		
	1673.00	Horizontal	-43.08	≤-13.00	Pass
	2509.50	H	-43.43		
	3346.00	H	---		
High	1696.60	Vertical	-35.33	≤-13.00	Pass
	2544.90	V	-41.42		
	3393.20	V	-		
	1696.60	Horizontal	-43.15	≤-13.00	Pass
	2544.90	H	-43.49		
	3393.20	H	---		

LTE Band 5-3MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1651.00	Vertical	-35.98	≤-13.00	Pass
	2476.50	V	-41.56		
	3302.00	V	---		
	1651.00	Horizontal	-43.91	≤-13.00	Pass
	2476.50	H	-43.49		
	3302.00	H	---		
Mid	1673.00	Vertical	-36.79	≤-13.00	Pass
	2509.50	V	-42.28		
	3346.00	V	---		
	1673.00	Horizontal	-43.75	≤-13.00	Pass
	2509.50	H	-43.62		
	3346.00	H	---		
High	1695.00	Vertical	-37.34	≤-13.00	Pass
	2542.50	V	-43.19		
	3390.00	V	---		
	1695.00	Horizontal	-44.66	≤-13.00	Pass
	2542.50	H	-44.48		
	3390.00	H	---		

LTE Band 5-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1653.00	Vertical	-36.12	≤-13.00	Pass
	2479.50	V	-41.42		
	3306.00	V	---		
	1653.00	Horizontal	-44.53	≤-13.00	Pass
	2479.50	H	-43.63		
	3306.00	H	---		
Mid	1673.00	Vertical	-36.62	≤-13.00	Pass
	2509.50	V	-41.86		
	3346.00	V	---		
	1673.00	Horizontal	-44.39	≤-13.00	Pass
	2509.50	H	-42.34		
	3346.00	H	---		
High	1693.00	Vertical	-37.11	≤-13.00	Pass
	2539.50	V	-42.66		
	3386.00	V	---		
	1693.00	Horizontal	-44.54	≤-13.00	Pass
	2539.50	H	-42.48		
	3386.00	H	---		

LTE Band 5-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1658.00	Vertical	-36.25	≤-13.00	Pass
	2487.00	V	-41.29		
	3316.00	V	---		
	1658.00	Horizontal	-45.09	≤-13.00	Pass
	2487.00	H	-43.75		
	3316.00	H	---		
Mid	1673.00	Vertical	-36.70	≤-13.00	Pass
	2509.50	V	-41.68		
	3346.00	V	---		
	1673.00	Horizontal	-44.49	≤-13.00	Pass
	2509.50	H	-43.65		
	3346.00	H	---		
High	1688.00	Vertical	-36.51	≤-13.00	Pass
	2532.00	V	-41.85		
	3376.00	V	-		
	1688.00	Horizontal	-44.46	≤-13.00	Pass
	2532.00	H	-43.67		
	3376.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

LTE Band 7-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	5005.00	Vertical	-36.29	≤-25.00	Pass
	7507.50	V	-40.73		
	10010.00	V	---		
	5005.00	Horizontal	-47.06	≤-25.00	Pass
	7507.50	H	-46.14		
	10010.00	H	---		
Mid	5070.00	Vertical	-36.50	≤-25.00	Pass
	7605.00	V	-40.92		
	10140.00	V	---		
	5070.00	Horizontal	-46.22	≤-25.00	Pass
	7605.00	H	-41.56		
	10140.00	H	---		
High	5135.00	Vertical	-37.14	≤-25.00	Pass
	7702.50	V	-41.98		
	10270.00	V	---		
	5135.00	Horizontal	-45.96	≤-25.00	Pass
	7702.50	H	-42.03		
	10270.00	H	---		

LTE Band 7-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	5010.00	Vertical	-36.33	≤-25.00	Pass
	7515.00	V	-40.69		
	10020.00	V	---		
	5010.00	Horizontal	-47.22	≤-25.00	Pass
	7515.00	H	-46.18		
	10020.00	H	---		
Mid	5070.00	Vertical	-36.46	≤-25.00	Pass
	7605.00	V	-40.81		
	10140.00	V	---		
	5070.00	Horizontal	-46.48	≤-25.00	Pass
	7605.00	H	-41.38		
	10140.00	H	---		
High	5130.00	Vertical	-37.03	≤-25.00	Pass
	7695.00	V	-41.75		
	10260.00	V	---		
	5130.00	Horizontal	-46.28	≤-25.00	Pass
	7695.00	H	-41.79		
	10260.00	H	---		

LTE Band 7-15MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	5015.00	Vertical	-36.48	≤-25.00	Pass
	7522.50	V	-40.54		
	10030.00	V	---		
	5015.00	Horizontal	-47.86	≤-25.00	Pass
	7522.50	H	-46.32		
	10030.00	H	---		
Mid	5070.00	Vertical	-36.99	≤-25.00	Pass
	7605.00	V	-40.99		
	10140.00	V	---		
	5070.00	Horizontal	-47.19	≤-25.00	Pass
	7605.00	H	-41.51		
	10140.00	H	---		
High	5125.00	Vertical	-37.50	≤-25.00	Pass
	7687.50	V	-41.84		
	10250.00	V	---		
	5125.00	Horizontal	-47.02	≤-25.00	Pass
	7687.50	H	-41.88		
	10250.00	H	---		

LTE Band 7-20MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	5020.00	Vertical	-36.59	≤-25.00	Pass
	7530.00	V	-40.43		
	10040.00	V	---		
	5020.00	Horizontal	-48.32	≤-25.00	Pass
	7530.00	H	-46.46		
	10040.00	H	---		
Mid	5070.00	Vertical	-36.96	≤-25.00	Pass
	7605.00	V	-40.76		
	10140.00	V	---		
	5070.00	Horizontal	-47.75	≤-25.00	Pass
	7605.00	H	-41.20		
	10140.00	H	---		
High	5120.00	Vertical	-37.40	≤-25.00	Pass
	7680.00	V	-41.49		
	10240.00	V	---		
	5120.00	Horizontal	-47.63	≤-25.00	Pass
	7680.00	H	-41.51		
	10240.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

LTE Band 12-1.4MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1399.40	Vertical	-35.45	≤-13.00	Pass
	2099.10	V	-41.39		
	2798.80	V	---		
	1399.40	Horizontal	-47.85	≤-13.00	Pass
	2099.10	H	-48.73		
	2798.80	H	---		
Mid	1415.00	Vertical	-35.16	≤-13.00	Pass
	2122.50	V	-41.12		
	2830.00	V	---		
	1415.00	Horizontal	-48.09	≤-13.00	Pass
	2122.50	H	-48.92		
	2830.00	H	---		
High	1430.60	Vertical	-34.83	≤-13.00	Pass
	2145.90	V	-40.82		
	2861.20	V	-		
	1430.60	Horizontal	-48.18	≤-13.00	Pass
	2145.90	H	-49.01		
	2861.20	H	---		

LTE Band 12-3MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1401.00	Vertical	-35.97	≤-13.00	Pass
	2101.50	V	-40.87		
	2802.00	V	---		
	1401.00	Horizontal	-48.72	≤-13.00	Pass
	2101.50	H	-48.92		
	2802.00	H	---		
Mid	1415.00	Vertical	-36.67	≤-13.00	Pass
	2122.50	V	-41.48		
	2830.00	V	---		
	1415.00	Horizontal	-48.51	≤-13.00	Pass
	2122.50	H	-49.09		
	2830.00	H	---		
High	1429.00	Vertical	-37.38	≤-13.00	Pass
	2143.50	V	-42.67		
	2858.00	V	---		
	1429.00	Horizontal	-49.70	≤-13.00	Pass
	2143.50	H	-50.21		
	2858.00	H	---		

LTE Band 12-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1403.00	Vertical	-36.13	≤-13.00	Pass
	2104.50	V	-40.71		
	2806.00	V	---		
	1403.00	Horizontal	-49.40	≤-13.00	Pass
	2104.50	H	-49.07		
	2806.00	H	---		
Mid	1415.00	Vertical	-36.68	≤-13.00	Pass
	2122.50	V	-41.19		
	2830.00	V	---		
	1415.00	Horizontal	-49.24	≤-13.00	Pass
	2122.50	H	-41.77		
	2830.00	H	---		
High	1427.00	Vertical	-37.26	≤-13.00	Pass
	2140.50	V	-42.14		
	2854.00	V	---		
	1427.00	Horizontal	-49.45	≤-13.00	Pass
	2140.50	H	-41.96		
	2854.00	H	---		

LTE Band 12-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1408.00	Vertical	-36.33	≤-13.00	Pass
	2112.00	V	-40.51		
	2816.00	V	---		
	1408.00	Horizontal	-50.23	≤-13.00	Pass
	2112.00	H	-49.25		
	2816.00	H	---		
Mid	1415.00	Vertical	-36.99	≤-13.00	Pass
	2122.50	V	-41.10		
	2830.00	V	---		
	1415.00	Horizontal	-49.63	≤-13.00	Pass
	2122.50	H	-49.15		
	2830.00	H	---		
High	1422.00	Vertical	-36.80	≤-13.00	Pass
	2133.00	V	-41.27		
	2844.00	V	-		
	1422.00	Horizontal	-49.60	≤-13.00	Pass
	2133.00	H	-49.17		
	2844.00	H	---		

Remark:
1. Remark"---" means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

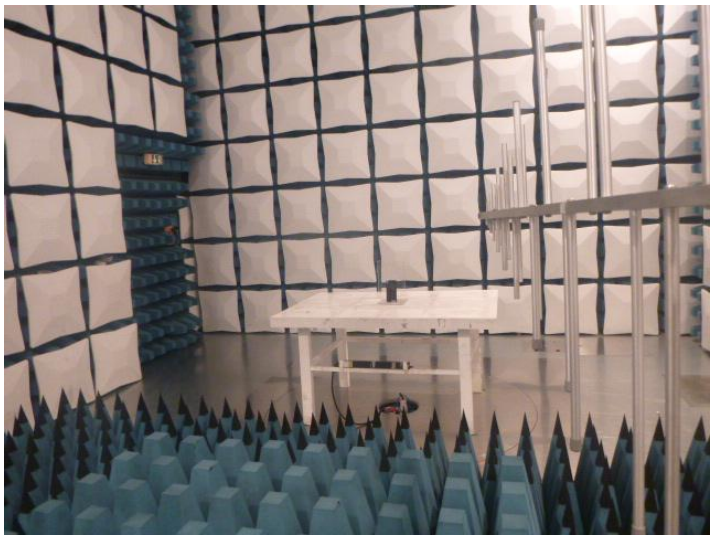
LTE Band 17-5MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1413.00	Vertical	-39.84	≤-13.00	Pass
	2119.50	V	-41.88		
	2826.00	V	---		
	1413.00	Horizontal	-44.79	≤-13.00	Pass
	2119.50	H	-44.28		
	2826.00	H	---		
Mid	1420.00	Vertical	-40.49	≤-13.00	Pass
	2130.00	V	-42.46		
	2840.00	V	---		
	1420.00	Horizontal	-44.02	≤-13.00	Pass
	2130.00	H	-43.05		
	2840.00	H	---		
High	1427.00	Vertical	-41.09	≤-13.00	Pass
	2140.50	V	-43.44		
	2854.00	V	---		
	1427.00	Horizontal	-43.79	≤-13.00	Pass
	2140.50	H	-43.49		
	2854.00	H	---		

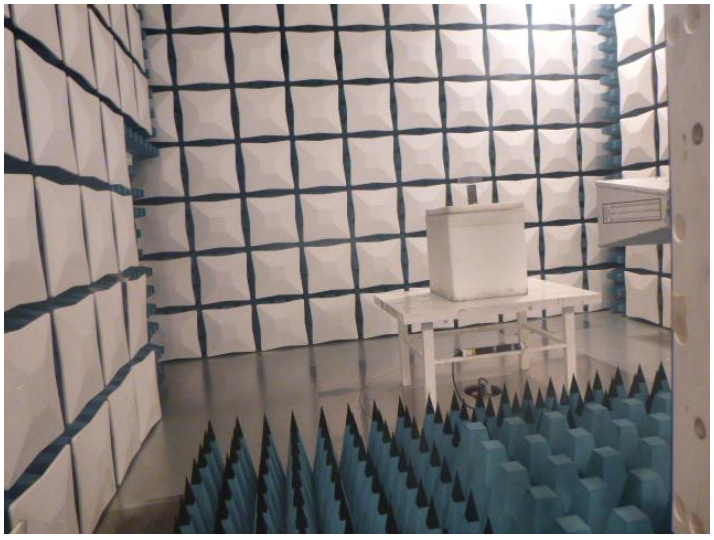
LTE Band 17-10MHz					
Channel	Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
		Polarization	Level (dBm)		
Low	1418.00	Vertical	-40.04	≤-13.00	Pass
	2127.00	V	-41.68		
	2836.00	V	---		
	1418.00	Horizontal	-45.54	≤-13.00	Pass
	2127.00	H	-44.45		
	2836.00	H	---		
Mid	1420.00	Vertical	-40.64	≤-13.00	Pass
	2130.00	V	-42.21		
	2840.00	V	---		
	1420.00	Horizontal	-44.91	≤-13.00	Pass
	2130.00	H	-42.70		
	2840.00	H	---		
High	1422.00	Vertical	-41.13	≤-13.00	Pass
	2133.00	V	-43.02		
	2844.00	V	---		
	1422.00	Horizontal	-44.76	≤-13.00	Pass
	2133.00	H	-43.05		
	2844.00	H	---		

Remark：

1. Remark”---“ means that the emission level is too low to be measured
2. The emission levels of below 1 GHz are very lower than the limit and not show in test report

6. TEST SETUP PHOTOS OF THE EUT





7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Refere to the test report No.: TRE1809020701

8. APPENDIX REPORT