FCC PART 22/24/27/90 TEST REPORT

Report Reference No: FCC ID: Date of Issue. Testing Laboratory Name Address Address Address	LCS211119087AEC 2AK5K201910BG95M3 March 09, 2022 Shenzhen LCS Compliance Testing Laboratory Ltd. 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China Shenzhen Urion Technology Co.,Ltd. 4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China FCC CFR Title 47 Part 2, Part 22H, Part 24E, Part 27, Part 90
Date of Issue: Testing Laboratory Name: Address Applicant's name:	March 09, 2022Shenzhen LCS Compliance Testing Laboratory Ltd.101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, ChinaShenzhen Urion Technology Co.,Ltd.4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China
Testing Laboratory Name : Address : Applicant's name :	 Shenzhen LCS Compliance Testing Laboratory Ltd. 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China Shenzhen Urion Technology Co.,Ltd. 4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China
Address: Applicant's name:	 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China Shenzhen Urion Technology Co.,Ltd. 4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China
Applicant's name:	Shajing Street, Baoan District, Shenzhen, 518000, ChinaShenzhen Urion Technology Co.,Ltd.4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China
	4F,Bldg. 4,Hi-tech Industrial Zone,Heping Community,Fuyong St.,Bao'an Dist.,Shenzhen,China
Address:	Dist.,Shenzhen,China
	FCC CFR Title 47 Part 2. Part 22H. Part 24E. Part 27. Part 90
Test specification:	FCC CFR Title 47 Part 2. Part 22H. Part 24E. Part 27. Part 90
Standard:	TIA-603-E: 2016
	KDB971168 D01 Power Meas License Digital Systems v03r01
Test Report Form No:	LCSEMC-1.0
TRF Originator:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF:	Dated 2011-03
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Test item description:	Body weight scale
Trade Mark:	N/A
Test Model:	U30A
Modulation Type:	QPSK, 16QAM
Rating:	Input: DC 5V, 2A, 10W
	DC 3.7V by Rechargeable Li-ion Battery, 700mAh
Hardware version:	/
Software version:	/
Result:	PASS
Compiled by:	Supervised by: Approved by:

Ner- Dang

Vera Deng/ Administrator

Jin Wang/ Technique principal

Jin

Wang

Gavin Liang/ Manager

Grins Ling



TEST REPORT

Test Deport No	st Report No. : LCS211119087AEC	
Test Report No. :	LC5211119087AEC	Date of issue
EUT	: Body weight scale	
Гest Model	: U30A	
Applicant	: Shenzhen Urion Technology C	Co.,Ltd.
Address	: 4F,Bldg. 4,Hi-tech Industrial Zo	one,Heping Community,Fuyong
	St.,Bao'an Dist.,Shenzhen,China	a
Felephone	: /	
Fax	: /	
Manufacturer	: Shenzhen Urion Technology C	Co.,Ltd.
Address	: 4F,Bldg. 4,Hi-tech Industrial Zo St.,Bao'an Dist.,Shenzhen,China	
Felephone	:/	
Fax	: /	
Factory	: Shenzhen Urion Technology C	Co.,Ltd.
Address	: 4F,Bldg. 4,Hi-tech Industrial Zo	one,Heping Community,Fuyong
	St.,Bao'an Dist.,Shenzhen,Chin	
Felephone	: /	
Fax	: /	

Test Result: PASS

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



Revison History

Revision	Issue Date	Revisions	Revised By
000	March 09, 2022	Initial Issue	Gavin Liang



Contents

<u>1</u>	TEST STANDARDS	<u>5</u>
<u>2</u>	SUMMARY	6
2.1	General Remarks	6
2.2	Product Description	6
2.3	Equipment under Test	7
2.4	Short description of the Equipment under Test (EUT)	7
2.5	Internal Identification of AE used during the test	7
2.6	Normal Accessory setting	7
2.7	EUT configuration	8
2.8	Related Submittal(s) / Grant (s)	8
2.9	Modifications	8
2.10	General Test Conditions/Configurations	8
<u>3</u>	TEST ENVIRONMENT	<u>9</u>
3.1	Address of the test laboratory	9
3.2	Test Facility	9
3.3	Environmental conditions	9
3.4	Test Description	9
3.5	Equipments Used during the Test	14
3.6	Measurement uncertainty	15
<u>4</u>	TEST CONDITIONS AND RESULTS	
4.1	Output Power	16
4.2	Peak-to-Average Ratio (PAR)	25
4.3	Occupied Bandwidth and Emission Bandwidth	26
4.4	Band Edge compliance	27
1.1	Spurious Emssion on Antenna Port	29
4.5	Radiated Spurious Emssion	31
4.6	Frequency Stability under Temperature & Voltage Variations	42
<u>5</u>	TEST SETUP PHOTOS OF THE EUT	
<u>6</u>	EXTERNAL PHOTOS OF THE EUT	
7	INTERNAL PHOTOS OF THE EUT	49

TEST STANDARDS 1

The tests were performed according to following standards: FCC Part 22H: Cellular Radiotelephone Service FCC Part 24E: Broadband PCS FCC Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES FCC Part 90: PRIVATE LAND MOBILE RADIO SERVICES TIA-603-E March 2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards. 47 CFR FCC Part 15 Subpart B: Unintentional Radiators FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS ANSI C63.4:2014: Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic

Equipment in the Range of 9 kHz to 40 GHz FCC KDB971168 D01 Power Meas License Digital Systems v03r01



2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	November 26, 2021
Date of Test	:	November 26, 2021 ~ March 07, 2022
Date of Report	:	March 09, 2022

2.2 Product Description

The **Shenzhen Urion Technology Co.,Ltd.**'s Model: U30A or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

EUT	: Body weight scale
Test Model	: U30A
Additional Model	: U30B, TS-B8057
Model Declaration	PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Power Supply	[:] Input: DC 5V, 2A, 10W
Hardware Version	DC 3.7V by Rechargeable Li-ion Battery, 700mAh : /
Software Version	: /
2G	:
Support Band	: ⊠GSM 900 (EU-Band) ⊠DCS 1800 (EU-Band) ⊠GSM 850 (U.SBand) ⊠PCS 1900 (U.SBand)
Release Version	: R99
GPRS Class	: Class 12
EGPRS Class	: Class 12
Type Of Modulation	: 8PSK for EGPRS
Antenna Description	: Internal Antenna OdBi (max.) For GSM 850 OdBi (max.) For PCS 1900
LTE	:
LTE Support Band	: : ⊠E-UTRA Band 2(U.SBand) ⊠E-UTRA Band 4(U.SBand) ⊠E-UTRA Band 5(U.SBand) ⊠E-UTRA Band 12(U.SBand) ⊠E-UTRA Band 25(U.SBand) ⊠E-UTRA Band 26(U.SBand) ⊠E-UTRA Band 66(U.SBand)
	 : ⊠E-UTRA Band 2(U.SBand) ⊠E-UTRA Band 4(U.SBand) ⊠E-UTRA Band 5(U.SBand) ⊠E-UTRA Band 12(U.SBand) ⊠E-UTRA Band 13(U.SBand) ⊠E-UTRA Band 25(U.SBand) ⊠E-UTRA Band 26(U.SBand)
Support Band	 : ⊠E-UTRA Band 2(U.SBand) ⊠E-UTRA Band 4(U.SBand) ⊠E-UTRA Band 5(U.SBand) ⊠E-UTRA Band 12(U.SBand) ⊠E-UTRA Band 13(U.SBand) ⊠E-UTRA Band 25(U.SBand) ⊠E-UTRA Band 26(U.SBand) ⊠E-UTRA Band 66(U.SBand)
Support Band LTE Release Version	 E-UTRA Band 2(U.SBand) E-UTRA Band 4(U.SBand) E-UTRA Band 5(U.SBand) E-UTRA Band 12(U.SBand) E-UTRA Band 13(U.SBand) E-UTRA Band 25(U.SBand) E-UTRA Band 26(U.SBand) E-UTRA Band 66(U.SBand) E-UTRA Band 66(U.SBand) E-UTRA Band 66(U.SBand) R8 QPSK/16QAM Internal Antenna odBi (max.) For E-UTRA Band 2 odBi (max.) For E-UTRA Band 4 odBi (max.) For E-UTRA Band 5 odBi (max.) For E-UTRA Band 12 odBi (max.) For E-UTRA Band 13 odBi (max.) For E-UTRA Band 25
Support Band LTE Release Version Type Of Modulation	 ∷ E-UTRA Band 2(U.SBand) ○ E-UTRA Band 4(U.SBand) ○ E-UTRA Band 5(U.SBand) ○ E-UTRA Band 12(U.SBand) ○ E-UTRA Band 25(U.SBand) ○ E-UTRA Band 26(U.SBand) ○ E-UTRA Band 66(U.SBand) ○ E-UTRA Band 66(U.SBand) : R8 : QPSK/16QAM : Internal Antenna odBi (max.) For E-UTRA Band 2 odBi (max.) For E-UTRA Band 5 odBi (max.) For E-UTRA Band 12 odBi (max.) For E-UTRA Band 13 odBi (max.) For E-UTRA Band 13 odBi (max.) For E-UTRA Band 25

Extreme vol. Limits : 3.3VDC to 4.2VDC (nominal: 3.7VDC)

2.3 Equipment under Test

Power supply system utilised

Power supply voltage	:	0	120V / 60 Hz	0	115V / 60Hz
		0	12 V DC	0	24 V DC
		٠	Other (specified in blank below) 3.7V DC		

2.4 Short description of the Equipment under Test (EUT)

2.4.1 GeneralDescription

Body weight scale is subscriber equipment in the GSM/LTE system. EGPRS frequency band is Band II//V. LTE frequency band is band 2/4/5/12/13/25/26/66. The Body weight scale implements such functions as RF signal receiving/transmitting, EGPRS/LTE protocol processing, video MMS service and etc. Externally it provides SIM card interface.

2.5 Internal Identification of AE used during the test

AE ID*	Description
AE1	Rechargeable Li-Polymer Battery
AE2	Switching Adapter

2.6 Normal Accessory setting

Fully charged battery was used during the test.

2.7 EUT configuration

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

- - supplied by the manufacturer
- - supplied by the lab

0	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
0	Multimeter	Manufacturer :	/
		Model No. :	/

2.8 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2AK5K201910BG95M3 filing to comply with FCC Part 22, Part 24, Part 27 Rules

2.9 Modifications

No modifications were implemented to meet testing criteria.

2.10 General Test Conditions/Configurations

2.10.1 Test Environment

EnvironmentParameter	SelectedValuesDuringTests			
Relative Humidity	Ambient			
Temperature	TN	Ambient		
	VL	DC 3.3V		
Voltage	VN	DC 3.7V		
	VH	DC 4.2V		

NOTE:VL=lower extreme testvoltage VN=nominal voltage VH=upper extreme testvoltage TN=normal temperature



3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen LCS Compliance Testing Laboratory Ltd 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China The sites are constructed in conformance with the requirements of ANSI C63.4 (2014) and CISPR Publication 22.

3.2 Test Facility

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

NVLAP Accreditation Code is 600167-0. FCC Designation Number is CN5024. CAB identifier is CN0071. CNAS Registration Number is L4595. Test Firm Registration Number: 254912.

3.3 Environmental conditions

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

Temperature:	15-35 °C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4 Test Description

Band 2 (1850-1910MHz paired with 1930-1990MHz)

Test Item	FCC Rule	Requirements	Verdict	
	No.			
Effective(Isotropic)	§2.1046,	$EIRP \le 2W$	PASS	
Radiated Output Power	§24.232	$EIRI \ge 2W$	TASS	
Peak-Average Ratio	§2.1046,	FCC:Limit≤13dB	PASS	
Feak-Average Ratio	§24.232	FCC.Linit <u>S</u> 150B	TASS	
Modulation Characteristics	§2.1047	Digital modulation	N/A	
Bandwidth	\$2 1040	OBW: No limit.	PASS	
Balluwidui	§2.1049	EBW: No limit.	FASS	
	\$2,1051	\leq -13dBm/1% *EBW,		
Band Edges Compliance	\$2.1051, \$24.238	In 1MHz bands immediately outside and adjacent to	PASS	
		the frequency block.		
Spurious Emission at	\$2,1051	\leq -13dBm/1MHz,		
Spurious Emission at Antenna Terminals	§2.1051,	from 9kHz to10 th harmonics but outside authorized	PASS	
Antenna Terminais	§24.238	Operating frequency ranges.		
Field Strength of Spurious	§2.1053,	<-13dBm/1MHz.	DASS	
Radiation	§24.238	\geq -150DIII/1MITZ.	PASS	
Engine av Stability	§2.1055,	FCC: within authorized frequency	DACC	
Frequency Stability	§24.235	block.	PASS	
NOTE 1:For the verdict, the	'N/A"denotes"not	applicable",the"N/T"de notes "not tested".		

Band 4 (1710-1755MHz paired with 2110-2155MHz)

Test Item	FCC RuleNo.	Requirements	Verdict		
Effective(Isotropic) Radiated		EIRP $\leq 1W$;	PASS		
Power Output Data	§27.50(d)		11100		
Peak-Average Ratio	§2.1046,	Limit≤13dB	Pass		
I cak-Average Rano	§27.50(d)	Linit <u>s</u> i3dD	1 455		
Modulation Characteristics	dulation Characteristics §2.1047 Digital modulation		N/A		
Bandwidth	\$2.1049	OBW: Nolimit.	PASS		
Daliuwiutii	§2.1049	EBW: Nolimit.	I ASS		
BandEdges Compliance	§2.1051,	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside	PASS		
0 1	§27.53(h)	and adjacent to the frequency block.	PASS		
Spurious Emission at	§2.1051,	\leq -13dBm/1MHz, from 9kHz to10 th harmonics but outside	PASS		
Antenna Terminals	§27.53(h)	authorized operating frequency ranges.	PASS		
Frequency Stability	§2.1055,	Within authorized bands of	DASS		
Frequency Stability	§27.54	operation/frequency block.	PASS		
Radiated spurious emission	§2.1053,	<-13dBm/1MHz.	PASS		
Radiated spurious emission	§27.53(h)	\geq -1500 III/ IMHZ.	rass		
NOTE 1: For the verdict, the "	'N/A" denotes "no	ot applicable", the "N/T" de notes "not tested"			

Band 5 (824-849MHz paired with 869-894MHz)

Test Item	FCC Rule No.	Requirements	Verdict	
Effective(Isotropic)	§2.1046,	FCC: ERP \leq 7W.	Pass	
Radiated Output Power	§22.913	1 CC . Eld $\geq 7 \text{ W}$.	1 455	
Modulation Characteristics	§2.1047	Digital modulation	N/A	
Bandwidth	82 1040	OBW: No limit.	Pass	
Dandwidth	§2.1049	EBW: No limit.	Pass	
	\$2,1051	$\leq \leq -13$ dBm/1%*EBW,		
Band Edges Compliance	\$2.1051, \$22.917	In 1MHz bands immediately outside and adjacent to	Pass	
		The frequency block.		
Sourious Emission at	82 1051	FCC: ≤ -13 dBm/100kHz,		
Spurious Emission at Antenna Terminals	§2.1051,	from 9kHz to 10th harmonics but outside authorized	Pass	
Antenna Terminais	§22.917	operating frequency ranges.		
Field Strength of Spurious	§2.1053,	FCC: ≤ -13dBm/100kHz.	Pass	
Radiation	§22.917	$\Gamma CC. \geq -1500 \text{ m}/100 \text{ kHz}.$	F 888	
Eraguanay Stability	§2.1055,	< +2 5mm	Pass	
Frequency Stability	§22.355	$\leq \pm 2.5$ ppm.	Pass	
NOTE 1:For the verdict, the	'N/A"denotes"not	t applicable", the "N/T" de notes "not tested".	•	



Test Item	FCC Rule No.	Requirements	Verdict		
Effective(Isotropic) Radiated Power Output Data	\$2.1046, \$27.50(c)	$ERP \leq 3W;$	PASS		
Peak-Average Ratio	§2.1046, §27.50(c)	Limit≤13dB	PASS		
Modulation Characteristics	Iodulation Characteristics §2.1047 Digital modulation				
Bandwidth	§2.1049	OBW: Nolimit. EBW: Nolimit.	PASS		
BandEdges Compliance	\$2.1051, \$27.53(g)	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block.	PASS		
Spurious Emission at Antenna Terminals	\$2.1051, \$27.53(g)	outside authorized			
Frequency Stability§2.1055, §27.54Within authorized bands of operation/frequency block.		PASS			
Radiatedspurious emission	§2.1053, §27.53(g)	\leq -13dBm/100KHz.	PASS		

Band 12 (699-716MHz paired with 729-746MHz)

Band 13 (777-787MHz paired with 746-756MHz)

Test Item	FCC Rule No.	Requirements	Verdict			
Effective(Isotropic) Radiated Power Output Data	\$2.1046, \$27.50(b)	$ERP \leq 3W;$	PASS			
Peak-Average Ratio§2.1046, §27.50(b)Limit≤13dB						
Modulation Characteristics	§2.1047	2.1047 Digitalmodulation				
Bandwidth	Bandwidth§2.1049OBW: Nolimit. EBW: Nolimit.					
BandEdges Compliance	\$2.1051, \$27.53(c)	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block.	PASS			
Spurious Emission at Antenna Terminals	Spurious Emission at $\$2.1051$, ≤ -13 dBm/100KHz, from 9kHz to10th harmonics but outside authorized		PASS			
Frequency Stability	\$2.1055, \$27.54	Within authorized bands of operation/frequency block.				
Radiatedspurious emission	\leq -13dBm/100KHz.	PASS				
NOTE 1: For the verdict, the'	'N/A"denotes"not	applicable",the"N/T"de notes "not tested".				



Band 25(1850-1915MHz paired with 1930-1995MHz)

Test Item	FCC Rule No.	Requirements	Verdict	
Effective(Isotropic) Radiated Power Output Data	\$2.1046, \$24.232	$\text{ERP} \leq 2\text{W};$	PASS	
Peak-Average Ratio	Limit≤13dB	PASS		
Modulation Characteristics	§2.1047	Digitalmodulation	N/A	
Bandwidth §2.1049 OBW: Nolimit. EBW: Nolimit.				
BandEdges Compliance	\$2.1051, \$24.238	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block.	PASS	
Spurious Emission at Antenna Terminals\$2.1051, \$24.238		≤ -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized Operating frequency ranges.	PASS	
Frequency Stability\$2.1053, \$24.238Within authorized bands of operation/frequency block.			PASS	
Radiated spurious emission	\$2.1055, \$24.235	≤ -13dBm/100KHz.	PASS	
NOTE 1:For the verdict, the	"N/A" denotes "not	applicable", the "N/T" de notes "not tested".		

Band 26(814-824MHz paired with 859-869MHz)

Test Item	FCC Rule No.	Requirements	Verdict	
Effective(Isotropic) Radiated Power Output Data	§2.1046, §90.635	$ERP \le 100W;$	PASS	
Peak-Average Ratio	§2.1046,	Limit≤13dB	PASS	
Modulation Characteristics	§2.1047	Digitalmodulation	N/A	
Bandwidth	Bandwidth §2.1049 OBW: Nolimit. EBW: Nolimit.			
BandEdges Compliance	§2.1051, §90.669	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block.	PASS	
Spurious Emission at Antenna Terminals	§2.1051, §90.669	≤ -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized Operating frequency ranges.	PASS	
Frequency Stability	82 1055		PASS	
Radiated spurious emission	≤ -130 Bm/100K HZ.		PASS	
NOTE 1:For the verdict, the	'N/A"denotes"not	t applicable", the "N/T" de notes "not tested".		

Band 26(824-849MHz paired with 869-894MHz)

Test Item	FCC Rule No.	Requirements	Verdict		
Effective(Isotropic) Radiated Power Output Data	\$2.1046, \$22.913	$\text{ERP} \leq 7\text{W};$	PASS		
Peak-Average Ratio	§2.1046,	Limit≤13dB	PASS		
Modulation Characteristics	§2.1047	Digitalmodulation	N/A		
Bandwidth	§2.1049	OBW: Nolimit. EBW: Nolimit.	PASS		
BandEdges Compliance	\$2.1051, \$22.917 \$90.691	≤ -13dBm/1%*EBW,in1 MHz bands immediately outside and adjacent to The frequency block.			
Spurious Emission at Antenna Terminals	\$2.1051, \$22.917	 < -13dBm/100KHz, from 9kHz to10th harmonics but outside authorized Operating frequency ranges. 	PASS		
Frequency Stability	§2.1055, §22.355	≤ <u>+2</u> .5ppm.	PASS		
Radiated spurious emission	§2.1053, §22.917	≤ -13dBm/100KHz.	PASS		
NOTE 1:For the verdict, the	'N/A"denotes"not	applicable", the "N/T" de notes "not tested".			

Band 66 (1710-1780MHz paired with 2110-2200MHz)

Test Item	FCC RuleNo.	Requirements	Verdict	
Effective(Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)	EIRP \leq 1W;	PASS	
Peak-Average Ratio	\$2.1046, \$27.50(d)	Limit≤13dB	Pass	
Modulation Characteristics	§2.1047	Digitalmodulation	N/A	
Bandwidth	§2.1049	OBW: Nolimit. EBW: Nolimit.	PASS	
Band Edges Compliance	§2.1051, §27.53(g)	≤ -13dBm/1% *EBW,in1 MHz bands immediately outside and adjacent to the frequency block.	PASS	
Spurious Emission at Antenna Terminals	\$2.1051, \$27.53(g)	\leq -13dBm/1MHz, from 9kHz to10 th harmonics but outside authorized operating frequency ranges.	PASS	
Frequency Stability	\$2.1055, \$27.54	Within authorized bands of operation/frequency block.	PASS	
Radiated spurious emission	\$2.1053, \$27.53(g)	\leq -13dBm/1MHz.	PASS	
NOTE 1: For the verdict, the '	'N/A" denotes "ne	ot applicable", the "N/T" de notes "not tested"		

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Power Meter	R&S	NRVS	100444	2021-06-21	2022-06-20
2	Power Sensor	R&S	NRV-Z81	100458	2021-06-21	2022-06-20
3	Power Sensor	R&S	NRV-Z32	10057	2021-06-21	2022-06-20
4	LTE Test Software	Tonscend	JS1120-1	N/A	N/A	N/A
5	RF Control Unit	Tonscend	JS0806	158060009	2021-11-25	2022-11-24
6	MXA Signal Analyzer	Agilent	N9020A	MY51250905	2021-11-16	2022-11-15
7	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW 500	103818	2021-06-21	2022-06-20
8	DC Power Supply	Agilent	E3642A	N/A	2021-11-25	2022-11-24
9	EMI Test Software	AUDIX	E3	/	N/A	N/A
10	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2021-06-21	2022-06-20
11	Positioning Controller	MF	MF7082	MF78020803	2021-06-21	2022-06-20
12	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2021-07-25	2024-07-24
13	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-07-25	2024-07-24
14	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-07-01	2024-06-30
15	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2020-09-20	2023-09-19
16	Broadband Preamplifier	SCHWARZBECK	BBV9745	9719-025	2021-06-21	2022-06-20
17	EMI Test Receiver	R&S	ESR 7	101181	2021-06-21	2022-06-20
18	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2021-11-16	2022-11-15
19	Broadband Preamplifier	/	BP- 01M18G	P190501	2021-06-21	2022-06-20
20	6dB Attenuator	/	100W/6dB	1172040	2021-06-21	2022-06-20
21	3dB Attenuator	/	2N-3dB	/	2021-11-16	2022-11-15
22	Temperature & Humidity Chamber	GUANGZHOU GOGNWEN	GDS-100	70932	2021-10-07	2022-10-06
23	EMI Test Software	Farad	EZ	N/A	N/A	N/A

3.5 Equipments Used during the Test

henzhen LCS Compliance Testing Laboratory Ltd. FCC ID: 2AK5K201910BG95M3 Report No.: LCS211119087AEC

3.6 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 ETSI TR 100 028"Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics" and is documented in the Shenzhen LCS Compliance Testing Laboratory 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 LCS Compliance Testing Laboratory Ltd. is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	3.10 dB	(1)
Radiated Emission	1~18GHz	3.80 dB	(1)
Radiated Emission	18-40GHz	3.90 dB	(1)
Conducted Disturbance	0.15~30MHz	1.63 dB	(1)
Conducted Power	9KHz~18GHz	0.61 dB	(1)
Spurious RF Conducted Emission	9KHz~40GHz	1.22 dB	(1)
Band Edge Compliance of RF Emission	9KHz~40GHz	1.22 dB	(1)
Occuiped Bandwidth	9KHz~40GHz	-	(1)

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

4 TEST CONDITIONS AND RESULTS

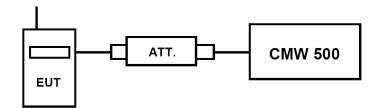
4.1 Output Power

TEST APPLICABLE

During the process of testing, the EUT was controlled via R&S Digital Radio Communication tester (CMW 500) to ensure max power transmission and proper modulation. This result contains output power and EIRP measurements for the EUT. In all cases, output power is within the specified limits.

4.1.1. Conducted Output Power

TEST CONFIGURATION



TEST PROCEDURE

Conducted Power Measurement:

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a CMW 500 by an Att.
- c) EUT Communicate with CMW 500 then selects a channel for testing.
- d) Add a correction factor to the display CMW 500, and then test.

TEST RESULTS

Remark:

- 1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. For E-UTRA Band 2, please refer to Appendix A: Section A.1
- 3. For E-UTRA Band 4, please refer to Appendix B: Section B.1
- 4. For E-UTRA Band 5, please refer to Appendix C: Section C.1
- 5. For E-UTRA Band 12, please refer to Appendix D: Section D.1
- 6. For E-UTRA Band 13, please refer to Appendix E: Section E.1
- 7. For E-UTRA Band 25, please refer to Appendix F: Section F.1
- 8. For E-UTRA Band 26, please refer to Appendix G & Appendix I: Section G.1 & Section I.1
- 9. For E-UTRA Band 66, please refer to Appendix H: Section H.1

4.1.2. Radiated Output Power

LIMIT

This is the test for the maximum radiated power from the EUT.

Per §22.913(2) Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in §22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

Rule Part 24.232(c) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(e) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

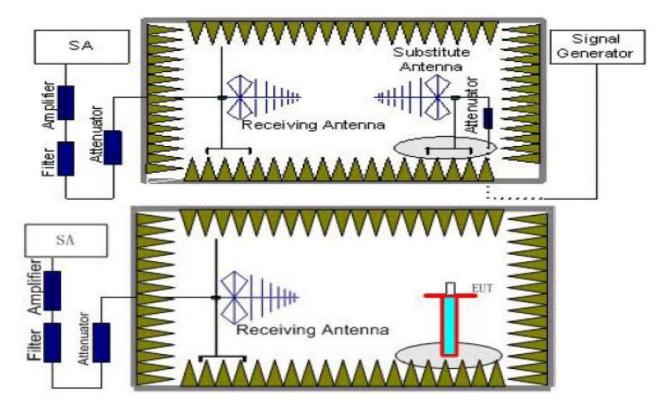
Per Part 27.50(d) (4) specifies, Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755MHz band are limited to 1W EIRP. Fixed stations operating in this band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in this band must employ a means for limiting power to the minimum necessary for successful communications.

Per Part 27.50(c) (10)specifies, Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

Per Part 27.50(h) (2)specifies Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Per Part 90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TEST CONFIGURATION



TEST PROCEDURE

- EUT was placed on a 1.50 meter 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 1.50m. 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 logperiodic 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.

henzhen LCS Compliance Testing Laboratory Ltd. FCC ID: 2AK5K201910BG95M3 Report No.: LCS211119087AEC

- 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, And the maximum value of the receiver should be recorded as (P_r) .
- 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 is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) 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 (P_r). The power of signal source (P_{Mea}) 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 (P_{cl}) ,the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test. The measurement results are obtained as described below:

 $Power(EIRP) = P_{Mea} + P_{Ag} - P_{cl} + G_{a}$

- 6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
- 7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST RESULTS

Radiated Measurement:

Remark:

- We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. $EIRP = P_{Mea}(dBm) P_{cl}(dB) + P_{Ag}(dB) + G_a(dBi)$
- 3. ERP = EIRP 2.15 dBi as EIRP by subtracting the gain of the dipole.
- 4. Margin = Emission Level Limit.
- 5. We tested the worst-case records for H and V directions, and only the worst-case records for V direction were recorded in the report.

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.5	-20.77	4.03	8.38	35.51	19.09	33.01	-13.92	V
1880.0	-20.36	4.08	8.33	35.56	19.45	33.01	-13.56	V
1907.5	-20.66	4.14	8.26	35.63	19.09	33.01	-13.92	V

LTE FDD Band 2_Channel Bandwidth 5MHz_QPSK

LTE FDD Band 2_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.0	-21.02	4.03	8.38	35.51	18.84	33.01	-14.17	V
1880.0	-21.13	4.08	8.33	35.56	18.68	33.01	-14.33	V
1905.0	-20.95	4.14	8.26	35.63	18.80	33.01	-14.21	V

LTE FDD Band 2_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.5	-20.66	4.03	8.38	35.51	19.20	33.01	-13.81	V
1880.0	-20.85	4.08	8.33	35.56	18.96	33.01	-14.05	V
1907.5	-21.49	4.14	8.26	35.63	18.26	33.01	-14.75	V

LTE FDD Band 2_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.0	-21.85	4.03	8.38	35.51	18.01	33.01	-15.00	V
1880.0	-21.07	4.08	8.33	35.56	18.74	33.01	-14.27	V
1905.0	-21.52	4.14	8.26	35.63	18.23	33.01	-14.78	V

LTE FDD Band 4_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.5	-19.06	3.93	9.05	34.96	21.02	30.00	-8.98	V
1732.5	-18.82	3.93	8.89	35.01	21.15	30.00	-8.85	V
1752.5	-19.01	3.94	8.76	35.08	20.89	30.00	-9.11	V

LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.0	-19.71	3.93	9.05	34.96	20.37	30.00	-9.63	V
1732.5	-19.89	3.93	8.89	35.01	20.08	30.00	-9.92	V
1750.0	-19.12	3.94	8.76	35.08	20.78	30.00	-9.22	V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.5	-19.38	3.93	9.05	34.96	20.70	30.00	-9.30	V
1732.5	-19.31	3.93	8.89	35.01	20.66	30.00	-9.34	V
1752.5	-19.88	3.94	8.76	35.08	20.02	30.00	-9.98	V

LTE FDD Band 4_Channel Bandwidth 5MHz_16QAM

LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Avergae EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.0	-19.22	3.93	9.05	34.96	20.86	30.00	-9.14	V
1732.5	-18.66	3.93	8.89	35.01	21.31	30.00	-8.69	V
1750.0	-18.75	3.94	8.76	35.08	21.15	30.00	-8.85	V

LTE FDD Band 5_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-15.67	3.45	8.45	2.15	33.79	20.97	38.45	-17.48	V
836.50	-15.96	3.49	8.45	2.15	33.85	20.70	38.45	-17.75	V
846.50	-15.50	3.55	8.36	2.15	33.88	21.04	38.45	-17.41	V

LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-15.71	3.45	8.45	2.15	33.79	20.93	38.45	-17.52	V
836.50	-16.36	3.49	8.45	2.15	33.85	20.30	38.45	-18.15	V
844.00	-15.56	3.55	8.36	2.15	33.88	20.98	38.45	-17.47	V

LTE FDD Band 5_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-17.10	3.45	8.45	2.15	33.79	19.54	38.45	-18.91	V
836.50	-17.04	3.49	8.45	2.15	33.85	19.62	38.45	-18.83	V
846.50	-17.42	3.55	8.36	2.15	33.88	19.12	38.45	-19.33	V

LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	Correction (dB)	P _{Ag} (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-17.07	3.45	8.45	2.15	33.79	19.57	38.45	-18.88	V
836.50	-17.35	3.49	8.45	2.15	33.85	19.31	38.45	-19.14	V
844.00	-16.83	3.55	8.36	2.15	33.88	19.71	38.45	-18.74	V

	DD Dana 12_Channel Danawall Shint_Q1 Sh										
	Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization	
	701.50	-15.54	3.01	8.29	2.15	33.52	21.11	34.77	-13.66	V	
	707.50	-15.52	3.02	8.29	2.15	33.52	21.12	34.77	-13.65	V	
ĺ	713.50	-15.40	3.06	8.29	2.15	33.52	21.20	34.77	-13.57	V	

LTE FDD Band 12_Channel Bandwidth 5MHz_QPSK

LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
704.00	-16.42	3.01	8.29	2.15	33.52	20.23	34.77	-14.54	V
707.50	-16.47	3.02	8.29	2.15	33.52	20.17	34.77	-14.60	V
711.00	-15.80	3.06	8.29	2.15	33.52	20.80	34.77	-13.97	V

LTE FDD Band 12_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
701.50	-16.10	3.01	8.29	2.15	33.52	20.55	34.77	-14.22	V
707.50	-15.52	3.02	8.29	2.15	33.52	21.12	34.77	-13.65	V
713.50	-15.72	3.06	8.29	2.15	33.52	20.88	34.77	-13.89	V

LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
704.00	-16.93	3.01	8.29	2.15	33.52	19.72	34.77	-15.05	V
707.50	-16.57	3.02	8.29	2.15	33.52	20.07	34.77	-14.70	V
711.00	-16.22	3.06	8.29	2.15	33.52	20.38	34.77	-14.39	V

LTE FDD Band 13_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
779.5	-18.21	3.21	9.61	33.89	2.15	19.93	34.77	-14.84	V
782.0	-17.73	3.23	9.52	34.74	2.15	21.15	34.77	-13.62	V
784.5	-17.93	3.25	9.43	34.85	2.15	20.95	34.77	-13.82	V

LTE FDD Band 13_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
782.0	-17.21	3.23	9.52	34.74	2.15	21.67	34.77	-13.10	V

LTE FDD Band 13_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
779.5	-18.86	3.21	9.61	33.89	2.15	19.28	34.77	-15.49	V
782.0	-18.52	3.23	9.52	34.74	2.15	20.36	34.77	-14.41	V
784.5	-18.55	3.25	9.43	34.85	2.15	20.33	34.77	-14.44	V

LTE FDD Band 13_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
782.0	-18.36	3.23	9.52	34.74	2.15	20.52	34.77	-14.25	V

LTE FDD Band 25_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.5	-19.41	4.03	8.38	35.51	20.45	33.01	-12.56	V
1882.5	-18.06	4.08	8.33	35.56	21.75	33.01	-11.26	V
1912.5	-18.14	4.14	8.26	35.63	21.61	33.01	-11.40	V

LTE FDD Band 25_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.0	-17.89	4.03	8.38	35.51	21.97	33.01	-11.04	V
1882.5	-19.37	4.08	8.33	35.56	20.44	33.01	-12.57	V
1910.0	-19.86	4.14	8.26	35.63	19.89	33.01	-13.12	V

LTE FDD Band 25_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.5	-19.58	4.03	8.38	35.51	20.28	33.01	-12.73	V
1882.5	-17.41	4.08	8.33	35.56	22.40	33.01	-10.61	V
1912.5	-17.23	4.14	8.26	35.63	22.52	33.01	-10.49	V

LTE FDD Band 25_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.0	-18.68	4.03	8.38	35.51	21.18	33.01	-11.83	V
1882.5	-19.95	4.08	8.33	35.56	19.86	33.01	-13.15	V
1910.0	-20.35	4.14	8.26	35.63	19.40	33.01	-13.61	V

LTE FDD Band 26: 814MHz~824MHz

LTE FDD Band 26_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Ga Antenna Gain (dB)	PAg (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.50	-16.83	3.58	9.62	33.79	2.15	20.85	50.00	-29.15	V
819.00	-17.08	3.61	9.22	34.64	2.15	21.02	50.00	-28.98	V
821.50	-16.57	3.64	9.04	34.75	2.15	21.43	50.00	-28.57	V

LTE FDD Band 26_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Ga Antenna Gain (dB)	PAg (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.00	-16.46	3.64	9.04	34.75	2.15	21.54	50.00	-28.46	V

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Ga Antenna Gain (dB)	PAg (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.50	-17.95	3.58	9.62	33.79	2.15	19.73	50.00	-30.27	V
819.00	-17.78	3.61	9.22	34.64	2.15	20.32	50.00	-29.68	V
821.50	-17.85	3.64	9.04	34.75	2.15	20.15	50.00	-29.85	V

LTE FDD Band 26_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	PMea (dBm)	Pcl (dB)	Ga Antenna Gain (dB)	PAg (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.00	-16.95	3.64	9.04	34.75	2.15	21.05	50.00	-28.95	V

LTE FDD Band 26: 824MHz~849MHz

LTE FDD Band 26_Channel Bandwidth 5MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-17.47	3.58	9.62	33.79	2.15	20.21	38.45	-18.24	V
836.50	-17.40	3.61	9.22	34.64	2.15	20.70	38.45	-17.75	V
846.50	-17.32	3.64	9.04	34.75	2.15	20.68	38.45	-17.77	V

LTE FDD Band 26_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-16.15	3.58	9.62	33.79	2.15	21.53	38.45	-16.92	V
836.50	-16.76	3.61	9.22	34.64	2.15	21.34	38.45	-17.11	V
844.00	-16.09	3.64	9.04	34.75	2.15	21.91	38.45	-16.54	V

LTE FDD Band 26_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-17.30	3.58	9.62	33.79	2.15	20.38	38.45	-18.07	V
836.50	-17.37	3.61	9.22	34.64	2.15	20.73	38.45	-17.72	V
846.50	-17.38	3.64	9.04	34.75	2.15	20.62	38.45	-17.83	V

LTE FDD Band 26_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain (dB)	P _{Ag} (dB)	Correction (dB)	Burst Avergae ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-16.77	3.58	9.62	33.79	2.15	20.91	38.45	-17.54	V
836.50	-17.26	3.61	9.22	34.64	2.15	20.84	38.45	-17.61	V
844.00	-16.61	3.64	9.04	34.75	2.15	21.39	38.45	-17.06	V

]	Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
	1712.5	-18.84	3.93	9.05	34.96	21.24	30.00	-8.76	V
	1745.0	-19.41	3.93	8.89	35.01	20.56	30.00	-9.44	V
	1777.5	-18.86	3.94	8.76	35.08	21.04	30.00	-8.96	V

LTE FDD Band 66_Channel Bandwidth 5MHz_QPSK

LTE FDD Band 66_Channel Bandwidth 10MHz_QPSK

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.0	-19.09	3.93	9.05	34.96	20.99	30.00	-9.01	V
1745.0	-19.80	3.93	8.89	35.01	20.17	30.00	-9.83	V
1775.0	-18.94	3.94	8.76	35.08	20.96	30.00	-9.04	V

LTE FDD Band 66_Channel Bandwidth 5MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.5	-19.06	3.93	9.05	34.96	21.02	30.00	-8.98	V
1745.0	-18.99	3.93	8.89	35.01	20.98	30.00	-9.02	V
1777.5	-19.76	3.94	8.76	35.08	20.14	30.00	-9.86	V

LTE FDD Band 66_Channel Bandwidth 10MHz_16QAM

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	G _a Antenna Gain(dB)	P _{Ag} (dB)	Burst Avergae EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.0	-19.00	3.93	9.05	34.96	21.08	30.00	-8.92	V
1745.0	-19.01	3.93	8.89	35.01	20.96	30.00	-9.04	V
1775.0	-18.80	3.94	8.76	35.08	21.10	30.00	-8.90	V

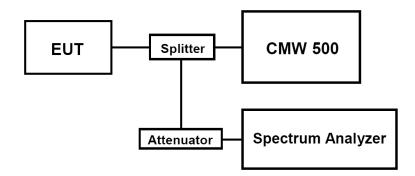
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4.2 Peak-to-Average Ratio (PAR)

<u>LIMIT</u>

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

TEST CONFIGURATION



TEST PROCEDURE

- 1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- 2. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- 3. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 4. Set the measurement interval as follows:
 - 1). for continuous transmissions, set to 1 ms,

2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

5. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

Remark:

- We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. For E-UTRA Band 2, please refer to Appendix A: Section A.2
- 3. For E-UTRA Band 4, please refer to Appendix B: Section B.2
- 4. For E-UTRA Band 5, please refer to Appendix C: Section C.2
- 5. For E-UTRA Band 12, please refer to Appendix D: Section D.2
- 6. For E-UTRA Band 13, please refer to Appendix E: Section E.2
- 7. For E-UTRA Band 25, please refer to Appendix F: Section F.2
- 8. For E-UTRA Band 26, please refer to Appendix G & Appendix I: Section G.2 & Section I.2
- 9. For E-UTRA Band 66, please refer to Appendix H: Section H.2

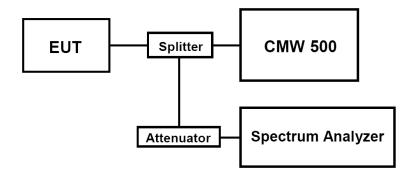


4.3 Occupied Bandwidth and Emission Bandwidth

<u>LIMIT</u>

N/A

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at low, middle and high channel in each band. The -26dBc Emission bandwidth was also measured and recorded.

Set RBW was set to about 1% of emission BW, VBW≥3 times RBW.

-26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

TEST RESULTS

Remark:

- We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. For E-UTRA Band 2, please refer to Appendix A: Section A.3
- 3. For E-UTRA Band 4, please refer to Appendix B: Section B.3
- 4. For E-UTRA Band 5, please refer to Appendix C: Section C.3
- 5. For E-UTRA Band 12, please refer to Appendix D: Section D.3
- 6. For E-UTRA Band 13, please refer to Appendix E: Section E.3
- 7. For E-UTRA Band 25, please refer to Appendix F: Section F.3
- 8. For E-UTRA Band 26, please refer to Appendix G & Appendix I: Section G.3 & Section I.3
- 9. For E-UTRA Band 66, please refer to Appendix H: Section H.3

4.4 Band Edge compliance

<u>LIMIT</u>

For LTE FDD Band 2:Per FCC 24.238 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.

For LTE FDD Band 4: Per 27.53(h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.

For LTE FDD Band 5:Per FCC 22.917 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.

For LTE FDD Band 7: Per FCC §27.53 (m)(4): For mobile digital stations, the attenuation factor shall be not less than:

 \bigcirc 40+10logP dB (-10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge,

 \bigcirc 43+10logP dB (-13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge, and \bigcirc 55+10logP dB (-25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB). [§27.53(m)(4)]

In addition, the attenuation factor (fixed limit) shall not be less than:

 \bigcirc 43+10logP dB on all frequencies between 2490.5 MHz and 2496 MHz, and

 \bigcirc 55+10logP dB at or below 2490.5 MHz. [§ 27.53(m)(4)]

For LTE FDD Band 12: Per 27.53 (g): For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

For LTE FDD Band 13: Per §27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: 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; 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;

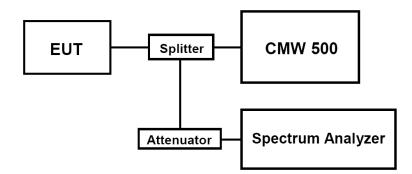
For LTE FDD Band 25:Per FCC \$24.238 the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

For LTE FDD Band 26: Per FCC §90.669 the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10$ (P) decibels or 80 decibels, whichever is the lesser attenuation. Per FCC §22.917 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.

For LTE FDD Band 66: Per 27.53(h): For operations in the 1710–1780 MHz and 2110–2200 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.

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TEST CONFIGURATION



TEST PROCEDURE

- 1. The transmitter output port was connected to base station.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
- 3. Set EUT at maximum power through base station.
- 4. Select lowestand highest channels for each band and different modulation.
- 5. Measure Band edge using RMS (Average) detector by spectrum

TEST RESULTS

Remark:

- We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. For E-UTRA Band 2, please refer to Appendix A: Section A.4
- 3. For E-UTRA Band 4, please refer to Appendix B: Section B.4
- 4. For E-UTRA Band 5, please refer to Appendix C: Section C.4
- 5. For E-UTRA Band 12, please refer to Appendix D: Section D.4
- 6. For E-UTRA Band 13, please refer to Appendix E: Section E.4
- 7. For E-UTRA Band 25, please refer to Appendix F: Section F.4
- 8. For E-UTRA Band 26, please refer to Appendix G & Appendix I: Section G.4 & Section I.4
- 9. For E-UTRA Band 66, please refer to Appendix H: Section H.4

1.1 Spurious Emssion on Antenna Port

LIMIT

For LTE FDD Band 2:Per FCC 24.238 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.

For LTE FDD Band 4: Per 27.53(h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.

For LTE FDD Band 5:Per FCC 22.917 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.

For LTE FDD Band 12: Per 27.53 (g): For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P) dB$.

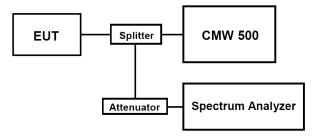
For LTE FDD Band 13: Per §27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: 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; 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;

For LTE FDD Band 25:Per FCC \$24.238 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 + 10log(P) dB.

For LTE FDD Band 26: Per FCC 90.669 the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10$ (P) decibels or 80 decibels, whichever is the lesser attenuation. Per FCC 22.917 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.

For LTE FDD Band 66: Per 27.53(h): For operations in the 1710–1780 MHz and 2110–2200 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was setup according to TIA-603-E

- a. Place the EUT on a bench and set it in transmitting mode.
- b. Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW 500 by a Directional Couple.
- c. EUT Communicate with CMW 500, then select a channel for testing.
- d. Add a correction factor to the display of spectrum, and then test.
- e. The resolution bandwidth of the spectrum analyzer was setsufficient scans were taken to show the out of band Emission if any up to 10^{th} harmonic.
- f. Please refer to following tables for test antenna conducted emissions.

Working Frequency	Sub range (GHz)	RBW	VBW	Sweep time (s)
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 2	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 4	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 5	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 12	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 13	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 25	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 26	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26	1 MHz	3 MHz	Auto
	0.000009~0.000015	1KHz	3KHz	Auto
LTE FDD Band 66	0.000015~0.03	10KHz	30KHz	Auto
	0.03~26.5	1 MHz	3 MHz	Auto

TEST RESULTS

Remark:

- We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.
- 2. For E-UTRA Band 2, please refer to Appendix A: Section A.5
- 3. For E-UTRA Band 4, please refer to Appendix B: Section B.5
- 4. For E-UTRA Band 5, please refer to Appendix C: Section C.5
- 5. For E-UTRA Band 12, please refer to Appendix D: Section D.5
- 6. For E-UTRA Band 13, please refer to Appendix E: Section E.5
- 7. For E-UTRA Band 25, please refer to Appendix F: Section F.5
- 8. For E-UTRA Band 26, please refer to Appendix G & Appendix I: Section G.5 & Section I.5
- 9. For E-UTRA Band 66, please refer to Appendix H: Section H.5



4.5 Radiated Spurious Emssion

LIMIT

For LTE FDD Band 2:Per FCC §24.238 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 + 10log(P) dB.

For LTE FDD Band 4: Per 27.53(h): For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10(P) dB$.

For LTE FDD Band 5:Per FCC 22.917 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.

For LTE FDD Band 12: Per 27.53 (g): For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P) dB$.

For LTE FDD Band 13: Per \$27.53 (c): For operations in the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: 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;

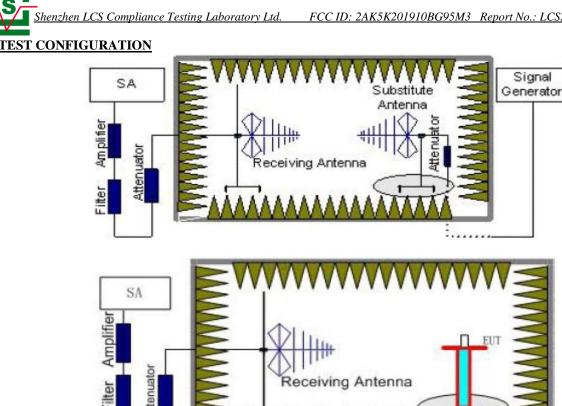
On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P) dB$ in a 6.25 kHz band segment, for mobile and portable stations;

For LTE FDD Band 25:Per FCC \$24.238 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 + 10log(P) dB.

For LTE FDD Band 26: Per FCC \$0.669 the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log 10$ (P) decibels or 80 decibels, whichever is the lesser attenuation. Per FCC \$22.917 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 $43 + 10\log(P) dB$.

For LTE FDD Band 66: Per 27.53(h): For operations in the 1710–1780 MHz and 2110–2200 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

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TEST PROCEDURE

- 1. EUT was placed on a 1.50 meter 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 1.50m. 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 logperiodic 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, And the maximum value of the receiver should be recorded as (\mathbf{P}_r) .
- The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band 4. of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) 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 (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- A amplifier should be connected to the Signal Source output port. And the cable should be connect between the 5. Amplifier and the Substitution Antenna. The cable loss (Pel), the Substitution Antenna Gain (Ga) and the Amplifier Gain (P_{Ag}) should be recorded after test.

The measurement results are obtained as described below:

Power(EIRP)= P_{Mea} + P_{Ag} - P_{cl} + G_a

- 6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
- 7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.
- In order to make sure test results more clearly, we set frequency range and sweep time for difference frequency range 8. as follows table:



Working	Subrange	RBW	VBW	Sweep time
Frequency	(GHz)	KBW	V B VV	(s)
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
LTE EDD Dand 2	2~5	1 MHz	3 MHz	3
LTE FDD Band 2	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
	18~20	1 MHz	3 MHz	2
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
LTE FDD Band 4	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
·	14~18	1 MHz	3 MHz	3
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
LTE FDD Band 5	1~2	1 MHz	3 MHz	2
LILIDD Duild 9	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~9	1 MHz	3 MHz	3
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
LTE FDD Band 12	5~8	1 MHz	3 MHz	3
	0.00009~0.15	1 KHz	3 KHz	30
	0.00015~0.03	10KHz	30KHz	10
·	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	0.00009~0.15	1 KHz	3 KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	10KHz	300KHz	10
LTE FDD Band 13	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	<u> </u>	1 MHz	3 MHz	3
		1 MHZ 1KHz	3 MHZ 3KHz	30
	0.00009~0.15	-		
•	0.00015~0.03	10KHz	30KHz	10
•	0.03~1	100KHz	300KHz	10
•	1~2	1 MHz	3 MHz	2
LTE FDD Band 25	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3
	18~20	1 MHz	3 MHz	2
	0.00009~0.15	1KHz	3KHz	30
LTE FDD Band 26	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10

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	1~2	1 MHz	3 MHz	2
	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	0.00009~0.15	1KHz	3KHz	30
	0.00015~0.03	10KHz	30KHz	10
	0.03~1	100KHz	300KHz	10
	1~2	1 MHz	3 MHz	2
LTE TDD Band 66	2~5	1 MHz	3 MHz	3
	5~8	1 MHz	3 MHz	3
	8~11	1 MHz	3 MHz	3
	11~14	1 MHz	3 MHz	3
	14~18	1 MHz	3 MHz	3

Frequency	Channel	Frequency Range	Verdict
	Low	9KHz -20GHz	PASS
LTE FDD Band 2	Middle	9KHz -20GHz	PASS
	High	9KHz -20GHz	PASS
	Low	9KHz -18GHz	PASS
LTE FDD Band 4	Middle	9KHz -18GHz	PASS
	High	9KHz -18GHz	PASS
	Low	9KHz -9GHz	PASS
LTE FDD Band 5	Middle	9KHz -9GHz	PASS
	High	9KHz -26GHz	PASS
	Low	9KHz -8GHz	PASS
LTE FDD Band 12	Middle	9KHz -8GHz	PASS
	High	9KHz -8GHz	PASS
	Low	9KHz -8GHz	PASS
LTE FDD Band 13	Middle	9KHz -8GHz	PASS
	High	9KHz -8GHz	PASS
	Low	9KHz -20GHz	PASS
LTE FDD Band 25	Middle	9KHz -20GHz	PASS
	High	9KHz -20GHz	PASS
	Low	9KHz -8GHz	PASS
LTE FDD Band 26	Middle	9KHz -8GHz	PASS
	High	9KHz -8GHz	PASS
	Low	9KHz -18GHz	PASS
LTE TDD Band 66	Middle	9KHz -18GHz	PASS
	High	9KHz -18GHz	PASS

TEST RESULTS

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66. 3. We were not recorded other points as values lower than limits.

4. Power(EIRP)= P_{Mea} + P_{Ag} - P_{cl} + G_a

5. Margin = EIRP - Limit

			z = z					
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3710.00	-40.23	5.26	3.00	9.88	-35.61	-13.00	-22.61	Н
5565.00	-43.70	6.11	3.00	11.36	-38.45	-13.00	-25.45	Н
3710.00	-28.97	5.26	3.00	9.88	-24.35	-13.00	-11.35	V
5565.00	-35.77	6.11	3.00	11.36	-30.52	-13.00	-17.52	V

LTE FDD Band 2_Channel Bandwidth 10MHz_QPSK_ Low Channel

LTE FDD Band 2_Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-40.44	5.32	3.00	10.03	-35.73	-13.00	-22.73	Н
5640.00	-46.75	6.19	3.00	11.41	-41.53	-13.00	-28.53	Н
3760.00	-29.84	5.32	3.00	10.03	-25.13	-13.00	-12.13	V
5640.00	-34.77	6.19	3.00	11.41	-29.55	-13.00	-16.55	V

LTE FDD Band 2_Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3810.00	-40.98	5.36	3.00	9.62	-36.72	-13.00	-23.72	Н
5715.00	-46.63	6.24	3.00	11.46	-41.41	-13.00	-28.41	Н
3810.00	-30.02	5.36	3.00	9.62	-25.76	-13.00	-12.76	V
5715.00	-35.71	6.24	3.00	11.46	-30.49	-13.00	-17.49	V

LTE FDD Band 2_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3710.00	-40.05	5.26	3.00	9.88	-35.43	-13.00	-22.43	Н
5565.00	-49.32	6.11	3.00	11.36	-44.07	-13.00	-31.07	Н
3710.00	-34.62	5.26	3.00	9.88	-30.00	-13.00	-17.00	V
5565.00	-41.12	6.11	3.00	11.36	-35.87	-13.00	-22.87	V

LTE FDD Band 2_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-43.69	5.32	3.00	10.03	-38.98	-13.00	-25.98	Н
5640.00	-49.06	6.19	3.00	11.41	-43.84	-13.00	-30.84	Н
3760.00	-34.18	5.32	3.00	10.03	-29.47	-13.00	-16.47	V
5640.00	-41.55	6.19	3.00	11.41	-36.33	-13.00	-23.33	V

LTE FDD Band 2_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3810.00	-41.07	5.36	3.00	9.62	-36.81	-13.00	-23.81	Н
5715.00	-49.19	6.24	3.00	11.46	-43.97	-13.00	-30.97	Н
3810.00	-32.06	5.36	3.00	9.62	-27.80	-13.00	-14.80	V
5715.00	-38.57	6.24	3.00	11.46	-33.35	-13.00	-20.35	V

			<u></u>	_				
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.00	-42.81	4.62	3.00	9.81	-37.62	-13.00	-24.62	Н
5145.00	-46.29	5.94	3.00	10.86	-41.37	-13.00	-28.37	Н
3430.00	-36.39	4.62	3.00	9.81	-31.20	-13.00	-18.20	V
5145.00	-38.57	5.94	3.00	10.86	-33.65	-13.00	-20.65	V

LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK_ Low Channel

LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-42.00	4.63	3.00	9.84	-36.79	-13.00	-23.79	Н
5197.50	-46.75	5.94	3.00	10.86	-41.83	-13.00	-28.83	Н
3465.00	-36.51	4.63	3.00	9.84	-31.30	-13.00	-18.30	V
5197.50	-41.01	5.94	3.00	10.86	-36.09	-13.00	-23.09	V

LTE FDD Band 4_Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.00	-43.40	4.65	3.00	9.9	-38.15	-13.00	-25.15	Н
5250.00	-46.11	5.95	3.00	10.91	-41.15	-13.00	-28.15	Н
3500.00	-35.89	4.65	3.00	9.9	-30.64	-13.00	-17.64	V
5250.00	-39.96	5.95	3.00	10.91	-35.00	-13.00	-22.00	V

LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.00	-43.29	4.62	3.00	9.81	-38.10	-13.00	-25.10	Н
5145.00	-50.52	5.94	3.00	10.86	-45.60	-13.00	-32.60	Н
3430.00	-38.73	4.62	3.00	9.81	-33.54	-13.00	-20.54	V
5145.00	-41.28	5.94	3.00	10.86	-36.36	-13.00	-23.36	V

LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-43.49	4.63	3.00	9.84	-38.28	-13.00	-25.28	Н
5197.50	-50.59	5.94	3.00	10.86	-45.67	-13.00	-32.67	Н
3465.00	-39.88	4.63	3.00	9.84	-34.67	-13.00	-21.67	V
5197.50	-42.97	5.94	3.00	10.86	-38.05	-13.00	-25.05	V

LTE FDD Band 4_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.00	-44.76	4.65	3.00	9.9	-39.51	-13.00	-26.51	Н
5250.00	-49.28	5.95	3.00	10.91	-44.32	-13.00	-31.32	Н
3500.00	-36.00	4.65	3.00	9.9	-30.75	-13.00	-17.75	V
5250.00	-41.97	5.95	3.00	10.91	-37.01	-13.00	-24.01	V

			z = z					
Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1658.00	-39.45	3.86	3.00	8.56	-34.75	-13.00	-21.75	Н
2487.00	-46.66	4.29	3.00	6.98	-43.97	-13.00	-30.97	Н
1658.00	-36.77	3.86	3.00	8.56	-32.07	-13.00	-19.07	V
2487.00	-36.80	4.29	3.00	6.98	-34.11	-13.00	-21.11	V

LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_ Low Channel

LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-40.01	3.9	3.00	8.58	-35.33	-13.00	-22.33	Н
2509.50	-47.05	4.32	3.00	6.8	-44.57	-13.00	-31.57	Н
1673.00	-35.51	3.9	3.00	8.58	-30.83	-13.00	-17.83	V
2509.50	-39.58	4.32	3.00	6.8	-37.10	-13.00	-24.10	V

LTE FDD Band 5_Channel Bandwidth 10MHz_QPSK_ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1688.00	-40.12	3.91	3.00	9.06	-34.97	-13.00	-21.97	Н
2532.00	-45.72	4.32	3.00	6.65	-43.39	-13.00	-30.39	Н
1688.00	-34.14	3.91	3.00	9.06	-28.99	-13.00	-15.99	V
2532.00	-37.15	4.32	3.00	6.65	-34.82	-13.00	-21.82	V

LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1658.00	-44.94	3.86	3.00	8.56	-40.24	-13.00	-27.24	Н
2487.00	-47.09	4.29	3.00	6.98	-44.40	-13.00	-31.40	Н
1658.00	-38.53	3.86	3.00	8.56	-33.83	-13.00	-20.83	V
2487.00	-41.76	4.29	3.00	6.98	-39.07	-13.00	-26.07	V

LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-42.43	3.9	3.00	8.58	-37.75	-13.00	-24.75	Н
2509.50	-47.65	4.32	3.00	6.8	-45.17	-13.00	-32.17	Н
1673.00	-38.77	3.9	3.00	8.58	-34.09	-13.00	-21.09	V
2509.50	-40.32	4.32	3.00	6.8	-37.84	-13.00	-24.84	V

LTE FDD Band 5_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1688.00	-43.93	3.91	3.00	9.06	-38.78	-13.00	-25.78	Н
2532.00	-46.56	4.32	3.00	6.65	-44.23	-13.00	-31.23	Н
1688.00	-36.56	3.91	3.00	9.06	-31.41	-13.00	-18.41	V
2532.00	-40.15	4.32	3.00	6.65	-37.82	-13.00	-24.82	V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1408.00	-39.88	3.71	3.00	9.02	-34.57	-13.00	-21.57	Н
2112.00	-46.53	4.22	3.00	8.64	-42.11	-13.00	-29.11	Н
1408.00	-34.19	3.71	3.00	9.02	-28.88	-13.00	-15.88	V
2112.00	-37.99	4.22	3.00	8.64	-33.57	-13.00	-20.57	V

LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ Low Channel

LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-39.60	3.72	3.00	9.04	-34.28	-13.00	-21.28	Н
2122.50	-45.26	4.23	3.00	8.6	-40.89	-13.00	-27.89	Н
1415.00	-33.74	3.72	3.00	9.04	-28.42	-13.00	-15.42	V
2122.50	-37.19	4.23	3.00	8.6	-32.82	-13.00	-19.82	V

LTE FDD Band 12_Channel Bandwidth 10MHz_QPSK _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422.00	-40.10	4.78	3.00	8.91	-35.97	-13.00	-22.97	Н
2133.00	-46.96	4.25	3.00	8.26	-42.95	-13.00	-29.95	Н
1422.00	-34.41	4.78	3.00	8.91	-30.28	-13.00	-17.28	V
2133.00	-37.59	4.25	3.00	8.26	-33.58	-13.00	-20.58	V

LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1408.00	-41.41	3.71	3.00	9.02	-36.10	-13.00	-23.10	Н
2112.00	-47.89	4.22	3.00	8.64	-43.47	-13.00	-30.47	Н
1408.00	-34.35	3.71	3.00	9.02	-29.04	-13.00	-16.04	V
2112.00	-39.14	4.22	3.00	8.64	-34.72	-13.00	-21.72	V

LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-41.55	3.72	3.00	9.04	-36.23	-13.00	-23.23	Н
2122.50	-47.00	4.23	3.00	8.6	-42.63	-13.00	-29.63	Н
1415.00	-35.25	3.72	3.00	9.04	-29.93	-13.00	-16.93	V
2122.50	-38.69	4.23	3.00	8.6	-34.32	-13.00	-21.32	V

LTE FDD Band 12_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422.00	-40.51	4.78	3.00	8.91	-36.38	-13.00	-23.38	Н
2133.00	-44.96	4.25	3.00	8.26	-40.95	-13.00	-27.95	Н
1422.00	-35.48	4.78	3.00	8.91	-31.35	-13.00	-18.35	V
2133.00	-37.20	4.25	3.00	8.26	-33.19	-13.00	-20.19	V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.00	-58.41	4.99	3.00	11.12	-52.28	-13.00	-12.28	Н
2346.00	-45.05	5.85	3.00	12.02	-38.88	-13.00	-25.88	Н
1564.00	-58.16	4.99	3.00	11.12	-52.03	-13.00	-12.03	V
2346.00	-38.78	5.85	3.00	12.02	-32.61	-13.00	-19.61	V

LTE FDD Band 13_Channel Bandwidth 10MHz_QPSK_ Middle Channel

LTE FDD Band 13_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.0	-59.18	4.99	3.00	11.12	-53.05	-13.00	-40.05	Н
2346.0	-44.77	5.85	3.00	12.02	-38.60	-13.00	-25.60	Н
1564.0	-59.55	4.99	3.00	11.12	-53.42	-13.00	-40.42	V
2346.0	-38.47	5.85	3.00	12.02	-32.30	-13.00	-19.30	V

LTE FDD Band 25_Channel Bandwidth 10MHz_QPSK_ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3710.0	-39.21	5.26	3.00	9.88	-34.59	-13.00	-21.59	Н
5565.0	-48.51	6.11	3.00	11.36	-43.26	-13.00	-30.26	Н
3710.0	-43.23	5.26	3.00	9.88	-38.61	-13.00	-25.61	V
5565.0	-46.36	6.11	3.00	11.36	-41.11	-13.00	-28.11	V

LTE FDD Band 25_Channel Bandwidth 10MHz_QPSK_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3766.0	-42.42	5.32	3.00	10.03	-37.71	-13.00	-24.71	Н
5649.0	-49.51	6.19	3.00	11.41	-44.29	-13.00	-31.29	Н
3766.0	-46.42	5.32	3.00	10.03	-41.71	-13.00	-28.71	V
5649.0	-51.95	6.19	3.00	11.41	-46.73	-13.00	-33.73	V

LTE FDD Band 25_Channel Bandwidth 10MHz_QPSK_ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3820.0	-41.29	5.36	3.00	9.62	-37.03	-13.00	-24.03	Н
5730.0	-46.47	6.24	3.00	11.46	-41.25	-13.00	-28.25	Н
3820.0	-40.51	5.36	3.00	9.62	-36.25	-13.00	-23.25	V
5730.0	-53.82	6.24	3.00	11.46	-48.60	-13.00	-35.60	V

LTE FDD Band 25_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3710.0	-42.28	5.26	3.00	9.88	-37.66	-13.00	-24.66	Н
5565.0	-45.46	6.11	3.00	11.36	-40.21	-13.00	-27.21	Н
3710.0	-44.18	5.26	3.00	9.88	-39.56	-13.00	-26.56	V
5565.0	-53.06	6.11	3.00	11.36	-47.81	-13.00	-34.81	V

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3766.0	-44.85	5.32	3.00	10.03	-40.14	-13.00	-27.14	Н
5649.0	-47.82	6.19	3.00	11.41	-42.60	-13.00	-29.60	Н
3766.0	-40.27	5.32	3.00	10.03	-35.56	-13.00	-22.56	V
5649.0	-49.87	6.19	3.00	11.41	-44.65	-13.00	-31.65	V

LTE FDD Band 25_Channel Bandwidth 10MHz_16QAM _ Middle Channel

LTE FDD Band 25_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3820.0	-40.48	5.36	3.00	9.62	-36.22	-13.00	-23.22	Н
5730.0	-54.91	6.24	3.00	11.46	-49.69	-13.00	-36.69	Н
3820.0	-41.69	5.36	3.00	9.62	-37.43	-13.00	-24.43	V
5730.0	-56.46	6.24	3.00	11.46	-51.24	-13.00	-38.24	V

LTE FDD Band 26: 814-824MHz

LTE FDD Band 26_Channel Bandwidth 10MHz_QPSK_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638.00	-40.13	3.86	3.00	8.56	-35.43	-13.00	-22.43	Н
2457.00	-44.32	4.29	3.00	6.98	-41.63	-13.00	-28.63	Н
1638.00	-36.94	3.86	3.00	8.56	-32.24	-13.00	-19.24	V
2457.00	-38.98	4.29	3.00	6.98	-36.29	-13.00	-23.29	V

LTE FDD Band 26_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1638.00	-40.69	3.86	3.00	8.56	-35.99	-13.00	-22.99	Н
2457.00	-45.86	4.29	3.00	6.98	-43.17	-13.00	-30.17	Н
1638.00	-36.58	3.86	3.00	8.56	-31.88	-13.00	-18.88	V
2457.00	-36.85	4.29	3.00	6.98	-34.16	-13.00	-21.16	V

LTE FDD Band 26: 824-849MHz

LTE FDD Band 26_Channel Bandwidth 10MHz_QPSK_ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-39.92	3.90	3.00	8.58	-35.24	-13.00	-22.24	Н
2509.50	-44.55	4.32	3.00	6.80	-42.07	-13.00	-29.07	Н
1673.00	-36.94	3.90	3.00	8.58	-32.26	-13.00	-19.26	V
2509.50	-37.28	4.32	3.00	6.80	-34.80	-13.00	-21.80	V

LTE FDD Band 26_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-43.14	3.90	3.00	8.58	-38.46	-13.00	-25.46	Н
2509.50	-49.69	4.32	3.00	6.80	-47.21	-13.00	-34.21	Н
1673.00	-39.89	3.90	3.00	8.58	-35.21	-13.00	-22.21	V
2509.50	-40.52	4.32	3.00	6.80	-38.04	-13.00	-25.04	V

Shenzhen LCS Compliance Testing Laboratory Ltd. FCC ID: 2AK5K201910BG95M3 Report No.: LCS211119087AEC

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.00	-43.44	4.92	3.00	10.45	-37.91	-13.00	-24.91	Н
5145.00	-48.84	5.78	3.00	12.32	-42.30	-13.00	-29.30	Н
3430.00	-36.38	4.92	3.00	10.45	-30.85	-13.00	-17.85	V
5145.00	-40.28	5.78	3.00	12.32	-33.74	-13.00	-20.74	V

LTE FDD Band 66_Channel Bandwidth 10MHz_QPSK _ Low Channel

LTE FDD Band 66_Channel Bandwidth 10MHz_QPSK _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-40.87	4.99	3.00	11.12	-34.74	-13.00	-21.74	Н
5197.50	-46.76	5.85	3.00	12.02	-40.59	-13.00	-27.59	Н
3465.00	-34.67	4.99	3.00	11.12	-28.54	-13.00	-15.54	V
5197.50	-41.06	5.85	3.00	12.02	-34.89	-13.00	-21.89	V

LTE FDD Band 66_Channel Bandwidth 10MHz_QPSK _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.00	-42.95	5.12	3.00	9.98	-38.09	-13.00	-25.09	Н
5250.00	-45.24	5.93	3.00	11.66	-39.51	-13.00	-26.51	Н
3500.00	-33.49	5.12	3.00	9.98	-28.63	-13.00	-15.63	V
5250.00	-41.18	5.93	3.00	11.66	-35.45	-13.00	-22.45	V

LTE FDD Band 66_Channel Bandwidth 10MHz_16QAM _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.00	-46.85	4.92	3.00	10.45	-41.32	-13.00	-28.32	Н
5145.00	-50.75	5.78	3.00	12.32	-44.21	-13.00	-31.21	Н
3430.00	-38.21	4.92	3.00	10.45	-32.68	-13.00	-19.68	V
5145.00	-43.18	5.78	3.00	12.32	-36.64	-13.00	-23.64	V

LTE FDD Band 66_Channel Bandwidth 10MHz_16QAM _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.00	-45.50	4.99	3.00	11.12	-39.37	-13.00	-26.37	Н
5197.50	-50.66	5.85	3.00	12.02	-44.49	-13.00	-31.49	Н
3465.00	-37.67	4.99	3.00	11.12	-31.54	-13.00	-18.54	V
5197.50	-43.40	5.85	3.00	12.02	-37.23	-13.00	-24.23	V

LTE FDD Band 66_Channel Bandwidth 10MHz_16QAM _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.00	-43.44	5.12	3.00	9.98	-38.58	-13.00	-25.58	Н
5250.00	-50.76	5.93	3.00	11.66	-45.03	-13.00	-32.03	Н
3500.00	-39.77	5.12	3.00	9.98	-34.91	-13.00	-21.91	V
5250.00	-41.06	5.93	3.00	11.66	-35.33	-13.00	-22.33	V

Notes: All channel bandwidth were tested, the report recorded the worst data.

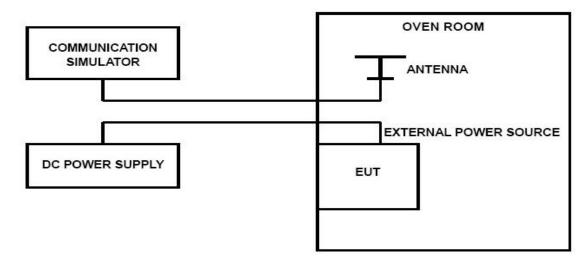


4.6 Frequency Stability under Temperature & Voltage Variations

LIMIT

According to FCC §2.1055, §22.355, §24.235, §27.54 requirement, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation and should not exceed 2.5ppm.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was setup according to TIA-603-E

Frequency Stability Under Temperature Variations:

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW 500 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.

2. Subject the EUT to overnight soak at -30° C.

3. With the EUT, powered via nominal voltage, connected to the CMW 500 and in a simulated call on middle channel for LTE LTE band 4; measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

4. Repeat the above measurements at 10° C increments from -30° C to $+50^{\circ}$ C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.

5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.

6. Subject the EUT to overnight soak at $+50^{\circ}$ C.

7. With the EUT, powered via nominal voltage, connected to the CMW 500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

8. Repeat the above measurements at 10 $^{\circ}$ C increments from +50 $^{\circ}$ C to -30 $^{\circ}$ C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements

9. At all temperature levels hold the temperature to $+/-0.5^{\circ}$ C during the measurement procedure.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20° C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

TEST RESULTS

Remark:

We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66; recorded worst case for each Channel Bandwidth of LTE FDD Band 2, LTE FDD Band 4, LTE FDD Band 5, LTE FDD Band 12, LTE FDD Band 13, LTE FDD Band 25, LTE FDD Band 26, LTE FDD Band 66.

LTE Band 2, QPSK,	10MHz bandwidth	(worst case o	f all bandwidths)
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		LTE FDI	D Band 2		
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict
3.3	20	19	0.010	±2.50	PASS
3.7	20	-35	-0.019	±2.50	PASS
4.2	20	11	0.006	±2.50	PASS
3.7	0	-15	-0.008	±2.50	PASS
3.7	10	-8	-0.004	±2.50	PASS
3.7	20	-33	-0.017	±2.50	PASS
3.7	30	-37	-0.019	±2.50	PASS
3.7	40	-67	-0.036	±2.50	PASS
3.7	50	-48	-0.026	±2.50	PASS
3.7	20	68	0.036	±2.50	PASS
3.7	20	63	0.034	±2.50	PASS
3.7	20	48	0.026	±2.50	PASS

LTE Band 2, 16QAM, 10MHz bandwidth (worst case of all bandwidths)

LTE FDD Band 2								
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict			
3.3	20	-18	-0.010	±2.50	PASS			
3.7	20	3	0.002	±2.50	PASS			
4.2	20	-35	-0.019	±2.50	PASS			
3.7	0	-13	-0.007	±2.50	PASS			
3.7	10	68	0.036	±2.50	PASS			
3.7	20	-54	-0.029	±2.50	PASS			
3.7	30	-33	-0.018	±2.50	PASS			
3.7	40	-56	-0.030	±2.50	PASS			
3.7	50	21	0.011	±2.50	PASS			
3.7	20	60	0.032	±2.50	PASS			
3.7	20	-13	-0.007	±2.50	PASS			
3.7	20	18	0.010	±2.50	PASS			

LTE Band 4, QPSK,	10MHz bandwidth (worst case of	fall bandwidths)

LTE FDD Band 4								
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict			
3.3	20	-2	-0.001	±2.50	PASS			
3.7	20	51	0.029	±2.50	PASS			
4.2	20	-12	-0.007	±2.50	PASS			
3.7	0	-12	-0.007	±2.50	PASS			
3.7	10	-39	-0.023	±2.50	PASS			
3.7	20	-38	-0.022	±2.50	PASS			
3.7	30	-10	-0.006	±2.50	PASS			
3.7	40	-39	-0.023	±2.50	PASS			
3.7	50	-13	-0.007	±2.50	PASS			
3.7	20	51	0.030	±2.50	PASS			
3.7	20	-54	-0.031	±2.50	PASS			
3.7	20	20	0.012	±2.50	PASS			

LTE FDD Band 4								
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict			
3.3	20	-21	-0.012	±2.50	PASS			
3.7	20	10	0.006	±2.50	PASS			
4.2	20	-64	-0.037	±2.50	PASS			
3.7	0	-68	-0.039	±2.50	PASS			
3.7	10	26	0.015	±2.50	PASS			
3.7	20	-60	-0.034	±2.50	PASS			
3.7	30	25	0.015	±2.50	PASS			
3.7	40	6	0.004	±2.50	PASS			
3.7	50	-28	-0.016	±2.50	PASS			
3.7	20	46	0.027	±2.50	PASS			
3.7	20	34	0.019	±2.50	PASS			
3.7	20	-37	-0.022	±2.50	PASS			

LTE Band 4, 16QAM, 10MHz bandwidth (worst case of all bandwidths)

LTE Band 5, QPSK, 10MHz bandwidth(worst case of all bandwidths)

LTE FDD Band 5							
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict		
3.3	20	-40	-0.047	±2.50	PASS		
3.7	20	-34	-0.041	±2.50	PASS		
4.2	20	-1	-0.002	±2.50	PASS		
3.7	0	-24	-0.028	±2.50	PASS		
3.7	10	-11	-0.013	±2.50	PASS		
3.7	20	45	0.054	±2.50	PASS		
3.7	30	6	0.007	±2.50	PASS		
3.7	40	-47	-0.056	±2.50	PASS		
3.7	50	-9	-0.010	±2.50	PASS		
3.7	20	-3	-0.003	±2.50	PASS		
3.7	20	-5	-0.006	±2.50	PASS		
3.7	20	-4	-0.004	±2.50	PASS		

LTE Band 5, 16QAM,	10MHz bandwidth(worst case of	f all bandwidths)

LTE FDD Band 5							
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict		
3.3	20	-37	-0.044	±2.50	PASS		
3.7	20	21	0.025	±2.50	PASS		
4.2	20	55	0.065	±2.50	PASS		
3.7	0	-20	-0.023	±2.50	PASS		
3.7	10	20	0.023	±2.50	PASS		
3.7	20	-18	-0.022	±2.50	PASS		
3.7	30	55	0.066	±2.50	PASS		
3.7	40	-53	-0.064	±2.50	PASS		
3.7	50	-37	-0.044	±2.50	PASS		
3.7	20	-12	-0.015	±2.50	PASS		
3.7	20	-37	-0.045	±2.50	PASS		
3.7	20	51	0.061	±2.50	PASS		

LTE FDD Band 12						
DC Power	Temperature	Frequency	Frequency	Limit	Verdict	
DC FOWEI	(°C)	error(Hz)	error(ppm)	(ppm)	veruici	
3.3	20	11	0.015	±2.50	PASS	
3.7	20	8	0.011	±2.50	PASS	
4.2	20	24	0.034	±2.50	PASS	
3.7	-30	-3	-0.005	±2.50	PASS	
3.7	-20	4	0.006	±2.50	PASS	
3.7	-10	67	0.095	±2.50	PASS	
3.7	0	-17	-0.025	±2.50	PASS	
3.7	10	35	0.049	±2.50	PASS	
3.7	20	-31	-0.044	±2.50	PASS	
3.7	30	37	0.052	±2.50	PASS	
3.7	40	64	0.090	±2.50	PASS	
3.7	50	-53	-0.074	±2.50	PASS	

LTE Band 12, QPSK, 10MHz bandwidth (worst case of all bandwidths and modulation type)

LTE Band 12, 16QAM, 10MHz bandwidth (worst case of all bandwidths and modulation type)

	LTE FDD Band 12							
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict			
3.3	20	57	0.081	±2.50	PASS			
3.7	20	24	0.034	±2.50	PASS			
4.2	20	62	0.088	±2.50	PASS			
3.7	-30	-5	-0.008	±2.50	PASS			
3.7	-20	25	0.035	±2.50	PASS			
3.7	-10	24	0.034	±2.50	PASS			
3.7	0	61	0.087	±2.50	PASS			
3.7	10	-8	-0.012	±2.50	PASS			
3.7	20	30	0.043	±2.50	PASS			
3.7	30	50	0.071	±2.50	PASS			
3.7	40	6	0.008	±2.50	PASS			
3.7	50	65	0.092	±2.50	PASS			

LTE Band 13, 10MHz bandwidth, QPSK (worst case of all bandwidths)

	LTE FDD Band 13						
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict		
3.3	20	30	0.039	2.50	PASS		
3.7	20	29	0.037	2.50	PASS		
4.2	20	-41	-0.053	2.50	PASS		
3.7	-30	9	0.011	2.50	PASS		
3.7	-20	26	0.034	2.50	PASS		
3.7	-10	-10	-0.013	2.50	PASS		
3.7	0	-52	-0.066	2.50	PASS		
3.7	10	19	0.025	2.50	PASS		
3.7	20	13	0.017	2.50	PASS		
3.7	30	40	0.051	2.50	PASS		
3.7	40	-32	-0.041	2.50	PASS		
3.7	50	61	0.078	2.50	PASS		

LTE FDD Band 13						
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict	
3.3	20	16	0.021	2.50	PASS	
3.7	20	-56	-0.071	2.50	PASS	
4.2	20	-5	-0.007	2.50	PASS	
3.7	-30	-70	-0.089	2.50	PASS	
3.7	-20	-17	-0.022	2.50	PASS	
3.7	-10	-2	-0.002	2.50	PASS	
3.7	0	42	0.054	2.50	PASS	
3.7	10	-39	-0.050	2.50	PASS	
3.7	20	-29	-0.037	2.50	PASS	
3.7	30	23	0.030	2.50	PASS	
3.7	40	34	0.043	2.50	PASS	
3.7	50	3	0.004	2.50	PASS	

LTE Band 13, 10MHz bandwidth, 16QAM (worst case of all bandwidths)

LTE Band 25, 10MHz bandwidth, QPSK (worst case of all bandwidths)

LTE FDD Band 25							
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict		
3.3	20	-21	-0.029	2.50	PASS		
3.7	20	17	0.024	2.50	PASS		
4.2	20	-60	-0.084	2.50	PASS		
3.7	-30	6	0.008	2.50	PASS		
3.7	-20	46	0.064	2.50	PASS		
3.7	-10	-17	-0.023	2.50	PASS		
3.7	0	-33	-0.047	2.50	PASS		
3.7	10	-43	-0.060	2.50	PASS		
3.7	20	68	0.095	2.50	PASS		
3.7	30	-22	-0.031	2.50	PASS		
3.7	40	56	0.079	2.50	PASS		
3.7	50	-46	-0.065	2.50	PASS		

LTE Band 25, 10MHz bandwidth, 16QAM (worst case of all bandwidths)

	LTE FDD Band 25						
DC Power	Temperature	Frequency	Frequency	Limit	Vandiat		
DC Power	(°C)	error(Hz)	error(ppm)	(ppm)	Verdict		
3.3	20	62	0.087	2.50	PASS		
3.7	20	2	0.003	2.50	PASS		
4.2	20	70	0.099	2.50	PASS		
3.7	-30	-3	-0.004	2.50	PASS		
3.7	-20	19	0.027	2.50	PASS		
3.7	-10	67	0.094	2.50	PASS		
3.7	0	19	0.027	2.50	PASS		
3.7	10	59	0.083	2.50	PASS		
3.7	20	29	0.041	2.50	PASS		
3.7	30	21	0.030	2.50	PASS		
3.7	40	45	0.064	2.50	PASS		
3.7	50	12	0.016	2.50	PASS		

LTE FDD Band 26						
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict	
3.3	20	33	0.040	2.50	PASS	
3.7	20	17	0.021	2.50	PASS	
4.2	20	67	0.081	2.50	PASS	
3.7	-30	-52	-0.063	2.50	PASS	
3.7	-20	38	0.045	2.50	PASS	
3.7	-10	-54	-0.064	2.50	PASS	
3.7	0	-13	-0.016	2.50	PASS	
3.7	10	-5	-0.006	2.50	PASS	
3.7	20	36	0.043	2.50	PASS	
3.7	30	14	0.017	2.50	PASS	
3.7	40	-59	-0.070	2.50	PASS	
3.7	50	-45	-0.054	2.50	PASS	

LTE Band 26, 10MHz bandwidth, QPSK (worst case of all bandwidths)

LTE Band 26, 10MHz bandwidth, 16QAM (worst case of all bandwidths)

	LTE FDD Band 26							
DC Power	Temperature (°C)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict			
3.3	20	-24	-0.029	2.50	PASS			
3.7	20	39	0.046	2.50	PASS			
4.2	20	-30	-0.035	2.50	PASS			
3.7	-30	40	0.048	2.50	PASS			
3.7	-20	-33	-0.040	2.50	PASS			
3.7	-10	41	0.049	2.50	PASS			
3.7	0	43	0.051	2.50	PASS			
3.7	10	50	0.059	2.50	PASS			
3.7	20	-42	-0.050	2.50	PASS			
3.7	30	20	0.023	2.50	PASS			
3.7	40	6	0.007	2.50	PASS			
3.7	50	-56	-0.067	2.50	PASS			

	LTE FDD Band 66						
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict		
3.3	20	22	0.008	2.50	PASS		
3.7	20	-4	-0.002	2.50	PASS		
4.2	20	41	0.016	2.50	PASS		
3.7	-30	-26	-0.010	2.50	PASS		
3.7	-20	-49	-0.019	2.50	PASS		
3.7	-10	14	0.005	2.50	PASS		
3.7	0	-14	-0.005	2.50	PASS		
3.7	10	-15	-0.006	2.50	PASS		
3.7	20	-52	-0.020	2.50	PASS		
3.7	30	-68	-0.026	2.50	PASS		
3.7	40	-19	-0.007	2.50	PASS		
3.7	50	-49	-0.019	2.50	PASS		

LTE Band 66, 10MHz bandwidth, QPSK (worst case of all bandwidths)

LTE Band 66, 10MHz bandwidth, 16QAM (worst case of all bandwidths)

LTE FDD Band 66					
DC Power	Temperature (℃)	Frequency error(Hz)	Frequency error(ppm)	Limit (ppm)	Verdict
3.3	20	9	0.003	2.50	PASS
3.7	20	69	0.027	2.50	PASS
4.2	20	-31	-0.012	2.50	PASS
3.7	-30	-32	-0.013	2.50	PASS
3.7	-20	-69	-0.026	2.50	PASS
3.7	-10	2	0.001	2.50	PASS
3.7	0	4	0.001	2.50	PASS
3.7	10	29	0.011	2.50	PASS
3.7	20	-7	-0.003	2.50	PASS
3.7	30	-51	-0.020	2.50	PASS
3.7	40	8	0.003	2.50	PASS
3.7	50	13	0.005	2.50	PASS

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5 <u>Test Setup Photos of the EUT</u>

Pleaserefer to separated files for Test Setup Photos of the EUT.

6 External Photos of the EUT

Pleaserefer to separated files for External Photos of the EUT.

7 <u>Internal Photos of the EUT</u>

Pleaserefer to separated files for Internal Photos of the EUT.