FCC TEST REPORT
Part 24 Subpart E

Report Reference No.	UNIA20111736ER-08
FCC ID	2AI2O-OL737
Compiled by (position+printed name+signature) .	File administrators Bob liao
Supervised by (position+printed name+signature) .	Technique principal Kahn yang
Approved by (position+printed name+signature) .	Manager Liuze
Date of issue	Jun. 25, 2021

Applicant's name	**Shenzhen Omni Intelligent Technology Co., Ltd.**
Address	11th Floor Block 31, Lianchuang Technical Zone, Bulan Road, Longgang District, Shenzhen, P.R. China
Testing Laboratory Name	**Shenzhen United Testing Technology Co., Ltd.**
Address	2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China
Test specification	
Standard	**FCC CFR Title 47 Part 2, Part 24E** **EIA/TIA 603-D: 2010** **KDB 971168 D01**
TRF Originator	Shenzhen United Testing Technology Co., Ltd.

Test item description	Smart parking lock
Trade Mark	OMNI
Manufacturer	**Shenzhen Omni Intelligent Technology Co., Ltd.**
Model/Type reference	OL737
Listed Models	N/A
Modulation Type	QPSK, 16QAM
Rating	DC 6V
Hardware version	V2.0
Software version	V2.0
Result	**PASS**

TEST REPORT

Test Report No. :	UNIA20111736ER-08	Jun. 25, 2021 Date of issue

Equipment under Test	:	Smart parking lock
Model /Type	:	OL737
Listed Models	:	N/A
Applicant	:	**Shenzhen Omni Intelligent Technology Co., Ltd.**
Address	:	11th Floor Block 31, Lianchuang Technical Zone, Bulan Road, Longgang District, Shenzhen, P.R. China
Manufacturer	:	**Shenzhen Omni Intelligent Technology Co., Ltd.**
Address	:	11th Floor Block 31, Lianchuang Technical Zone, Bulan Road, Longgang District, Shenzhen, P.R. China

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	description	Revised By
V1.0	Jun. 25, 2021	Initial Issue	Kahn yang

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 24 :PUBLIC MOBILE SERVICES
TIA/EIA 603 D June 2010: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
KDB971168 D01:v02r02MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS
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

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	Jun. 11, 2021
Testing commenced on	:	Jun. 11, 2021
Testing concluded on	:	Jun. 25, 2021

2.2 Product Description

The**Smart parking lock AB**'s Model:OL737or 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.

Name of EUT	Smart parking lock
Model/Type reference:	OL737
List Model:	N/A
Power supply:	DC 6V
Adapter Information	N/A
Modilation Type	QPSK,16QAM
Antenna Type	Internal Antenna
Antenna Gain	-1.01dBi
Operation Frequency Band	LTE Band 2
Operation frequency	LTE Band 2: 1850.7~1909.3 MHz
LTE Release	R8
Extreme temp. Tolerance	-30°C to +50°C
Extreme vol. Limits	5.1 VDC to 6.9 VDC (nominal: 6 VDC)

2.3 Equipment under Test

Power supply system utilised

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

DC 6V

2.4 Short description of the Equipment under Test (EUT)

2.4.1 GeneralDescription

OL737 is subscriber equipment in the WCDMA /LTE system. The HSPA/UMTS frequency band is Band 2 and Band 5,LTE frequency band is band 2. band 4. band 12; The Smart parking lock implements such functions as RF signal receiving/transmitting, HSPA/UMTS ,LTE protocol processing, etc. Externally it provides micro SD card interface and SIM card interface.

2.5 Normal Accessory setting

Fully charged battery was used during the test.

2.6 EUT configuration

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

● - supplied by the manufacturer

○ - supplied by the lab

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

2.7 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2AI2O-OL737** filing to comply with FCC Part 24, Rules.

2.8 Modifications

No modifications were implemented to meet testing criteria.

2.9 GeneralTest Conditions/Configurations

2.10.1 TestEnvironment

EnvironmentParameter	SelectedValuesDuringTests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	5.1V
	VN	6V
	VH	6.9V

NOTE:VL=lowerextreme testvoltageVN=nominalvoltage
VH=upperextreme testvoltageTN=normaltemperature

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen United Testing Technology Co., Ltd.
2F, Annex Bldg, Jiahuangyuan Tech Park, #365 Baotian 1 Rd, Tiegang Community, Xixiang Str, Bao'an District, Shenzhen, China

3.2 Environmental conditions

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

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

3.3 Test Description

PCSBand (1850-1915MHz pairedwith 1930-1995MHz)

Test Item	FCCRuleNo.	Requirements	Verdict
Effective(Isotropic)RadiatedOutputPower	§2.1046, §24.232	EIRP ≤ 2W	Pass
Peak-AverageRatio	§2.1046, §24.232	FCC:Limit≤13dB	Pass
ModulationCharacteristics	§2.1047	Digitalmodulation	N/A
Bandwidth	§2.1049	OBW: Nolimit. EBW: Nolimit.	Pass
BandEdgesCompliance	§2.1051, §24.238	≤ -13dBm/1%*EBW, In1MHzbandsimmediatelyoutsideandadjacentto Thefrequency block.	Pass
SpuriousEmissionatAntennaTerminals	§2.1051, §24.238	≤-13dBm/1MHz, from9kHzto10thharmonicsbut outsideauthorized Operatingfrequency ranges.	Pass
Field Strengthof Spurious Radiation	§2.1053, §24.238	≤ -13dBm/1MHz.	Pass
Frequency Stability	§2.1055, §24.235	FCC:withinauthorizedfrequency block.	Pass
NOTE 1:For theverdict,the“N/A”denotes“not applicable”,the“N/T”denotes “nottested”.			

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

3.4 Equipments Used during the Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
Conduction Emissions Measurement					
1	Conducted Emission Test Software	EZ-EMC	Ver.CCS-3A1-CE	N/A	N/A
2	AMN	Schwarzbeck	NNLK8121	8121370	2021.10.12
3	AAN	TESEQ	T8-Cat6	38888	2021.10.12
4	Pulse Limiter	CYBRTEK	EM5010	E115010056	2022.05.17
5	EMI Test Receiver	Rohde&Schwarz	ESCI	101210	2021.10.12
Radiated Emissions Measurement					
1	Radiated Emission Test Software	EZ-EMC	Ver.CCS-03A1	N/A	N/A
2	Horn Antenna	Sunol	DRH-118	A101415	2021.10.18
3	Broadband Hybrid Antenna	Sunol	JB1	A090215	2022.03.01
4	PREAMP	HP	8449B	3008A00160	2021.10.18
5	PREAMP	HP	8447D	2944A07999	2022.05.17
6	EMI TEST RECEIVER	Rohde&Schwarz	ESR3	101891	2021.10.12
7	VECTOR Signal Generator	Rohde&Schwarz	SMU200A	101521	2021.10.12
8	Signal Generator	Agilent	E4421B	MY4335105	2021.11.11
9	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2021.10.12
10	MXA Signal Analyzer	Keysight	N9020A	MY51110104	2021.10.12
11	RF Power sensor	DARE	RPR3006W	15I00041SNO88	2022.05.17
12	RF Power sensor	DARE	RPR3006W	15I00041SNO89	2022.05.17
13	RF power divider	Anritsu	K241B	992289	2021.10.12
14	Wideband radio communication tester	Rohde&Schwarz	CMW500	154987	2021.10.12
15	Active Loop Antenna	Com-Power	AL-130R	10160009	2022.05.17
16	Broadband Hybrid Antennas	Schwarzbeck	VULB9163	VULB9163#958	2022.05.17
17	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2022.05.17
18	Horn Antenna	A-INFOMW	LB-180400-KF	J211060660	2021.11.04
19	Microwave Broadband Preamplifier	Schwarzbeck	BBV 9721	100472	2022.05.17
20	Signal Generator	Agilent	N5183A	MY47420153	2022.05.17
21	Spctrum Analyzer	Rohde&Schwarz	FSP 40	100501	2022.05.17
22	Power Meter	KEYSIGHT	N1911A	MY50520168	2022.05.17
23	Frequency Meter	VICTOR	VC2000	997406086	2022.05.17
24	DC Power Source	HYELEC	HY5020E	055161818	2022.05.17

4 TEST CONDITIONS AND RESULTS

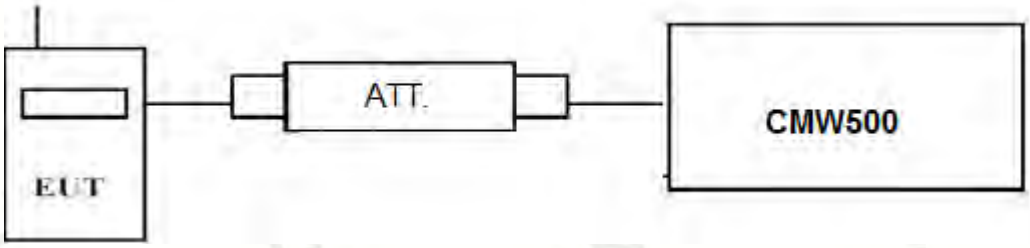
4.1 Output Power

4.1.1 Coducted Output Power

TEST APPLICABLE

During the process of testing, the EUT was controlled via R&S Digital Radio Communication tester (CMW500) 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.

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 CMW500 by an Att.
c) EUT Communicate with CMW500 then selects a channel for testing.
d) Add a correction factor to the display CMW500, and then test.

TEST RESULTS

Remark:

1. *We measured all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2;*

LTE FDD Band 2				
TX Channel Bandwidth	Frequency (MHz)	RB Size/Offset	Burst Average Power [dBm]	
			QPSK	16QAM
1.4 MHz	1850.7	1 RB low	24.01	23.18
		1 RB high	24.05	23.25
		50% RB mid	23.78	22.91
		100% RB	23.87	22.70
	1880.0	1 RB low	23.97	22.59
		1 RB high	23.93	22.67
		50% RB mid	23.08	21.97
		100% RB	22.70	21.75
	1909.3	1 RB low	22.97	22.03
		1 RB high	22.95	21.91
		50% RB mid	22.68	21.56
		100% RB	22.65	21.23
3 MHz	1851.5	1 RB low	24.42	23.31
		1 RB high	23.98	23.16
		50% RB mid	24.29	23.18
		100% RB	23.22	22.11
	1880.0	1 RB low	23.01	22.17
		1 RB high	23.06	22.25
		50% RB mid	23.16	22.06

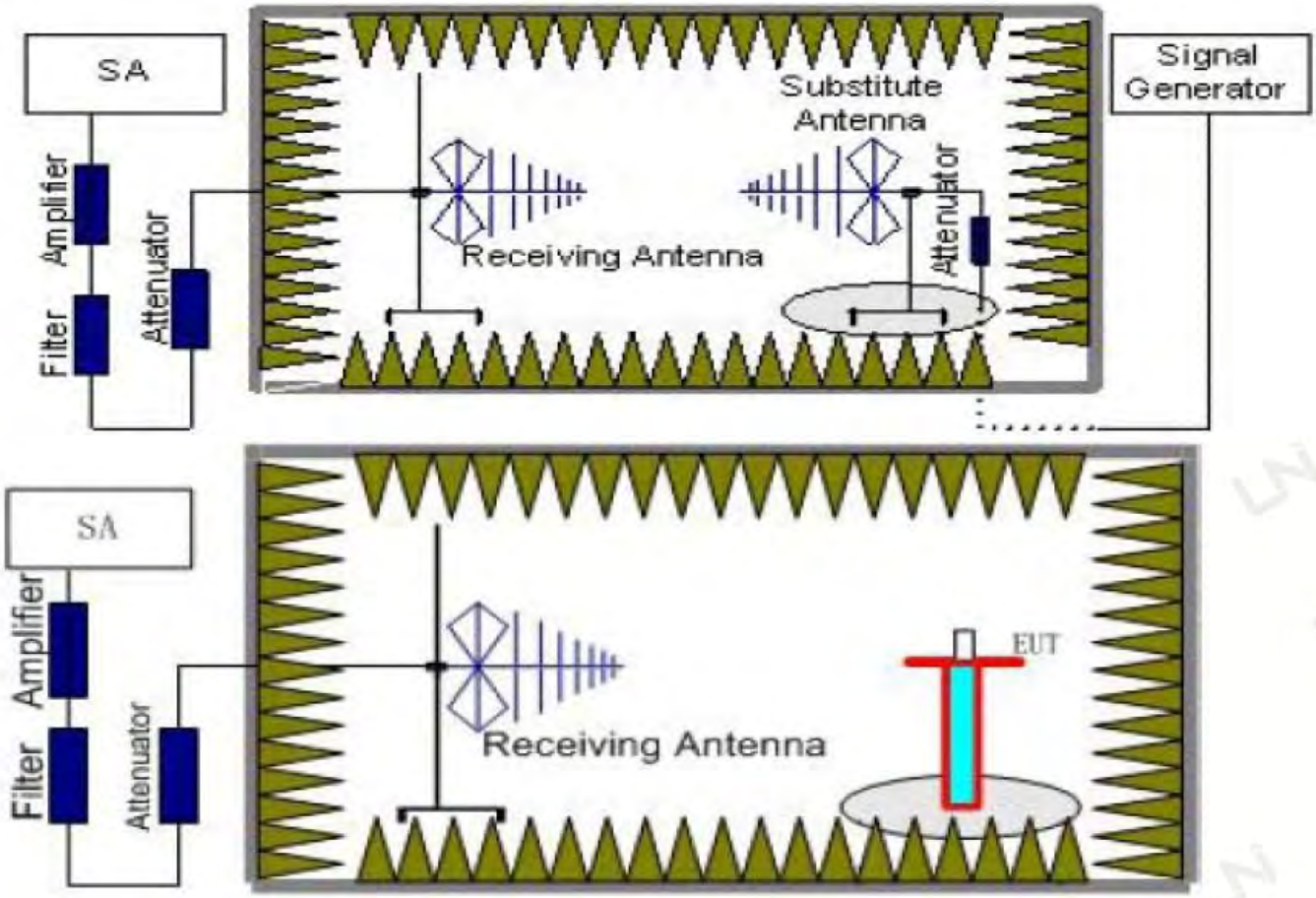
		100% RB	22.95	22.06
	1908.5	1 RB low	22.78	21.97
		1 RB high	23.17	21.99
		50% RB mid	21.89	20.89
		100% RB	21.78	20.86
5 MHz	1852.5	1 RB low	23.98	22.88
		1 RB high	23.97	22.86
		50% RB mid	23.95	22.86
		100% RB	22.91	21.87
	1880.0	1 RB low	22.91	21.87
		1 RB high	23.01	21.99
		50% RB mid	22.94	21.96
		100% RB	23.80	22.85
	1907.5	1 RB low	23.89	22.92
		1 RB high	23.92	22.95
		50% RB mid	22.89	21.95
		100% RB	22.88	21.93
10 MHz	1855.0	1 RB low	23.98	22.97
		1 RB high	23.97	22.96
		50% RB mid	23.94	22.92
		100% RB	22.85	21.81
	1880.0	1 RB low	22.84	21.83
		1 RB high	22.97	21.96
		50% RB mid	23.11	22.65
		100% RB	23.85	22.83
	1905.0	1 RB low	24.04	22.85
		1 RB high	24.07	21.89
		50% RB mid	22.87	21.89
		100% RB	22.87	20.51
15 MHz	1857.5	1 RB low	24.09	23.02
		1 RB high	23.93	22.91
		50% RB mid	23.84	22.80
		100% RB	23.02	23.01
	1880.0	1 RB low	22.91	22.92
		1 RB high	22.81	22.82
		50% RB mid	23.01	21.91
		100% RB	23.76	22.86
	1902.5	1 RB low	23.93	23.04
		1 RB high	23.92	23.00
		50% RB mid	22.87	22.87
		100% RB	23.05	23.05
20 MHz	1860.0	1 RB low	24.22	23.00
		1 RB high	24.00	22.84
		50% RB mid	23.99	22.79
		100% RB	22.86	21.83
	1880.0	1 RB low	22.85	21.83
		1 RB high	22.85	21.85
		50% RB mid	22.85	21.83
		100% RB	23.95	22.98
	1900.0	1 RB low	24.08	23.17
		1 RB high	23.99	23.03
		50% RB mid	22.91	21.95
		100% RB	22.92	21.95

4.1.2. Radiated Output Power

LIMIT

This is the test for the maximum radiated power from the EUT.
Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p.

TEST CONFIGURATION



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 log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, 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 isconnected 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
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=P_{Mea}- 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:

1. *We measured all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2; recorded worst case for each Channel Bandwidth of LTE FDD Band 2.*
2. *EIRP=P_{Mea}(dBm)-P_{cl}(dB)+P_{Ag}(dB)+G_a(dBi)*
3. *We measured both Horizontal and Vertical direction, recorded worst case direction.*

LTE FDD Band 2_Channel Bandwidth 1.4MHz_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
1850.7	-15.46	3.41	10.24	33.6	24.97	33.01	8.04	V
1880.0	-15.81	3.49	10.24	33.6	24.54	33.01	8.47	V
1909.3	-16.12	3.55	10.23	33.6	24.16	33.01	8.85	V
1850.7	-14.75	3.41	10.24	33.6	25.68	33.01	7.33	H
1880.0	-15.39	3.49	10.24	33.6	24.96	33.01	8.05	H
1909.3	-15.73	3.55	10.23	33.6	24.55	33.01	8.46	H

LTE FDD Band 2_Channel Bandwidth 3MHz_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
1851.5	-15.37	3.41	10.24	33.6	25.06	33.01	7.95	V
1880.0	-15.76	3.49	10.24	33.6	24.59	33.01	8.42	V
1908.5	-16.25	3.55	10.23	33.6	24.03	33.01	8.98	V
1851.5	-14.49	3.41	10.24	33.6	25.94	33.01	7.07	H
1880.0	-15.55	3.49	10.24	33.6	24.8	33.01	8.21	H
1908.5	-15.2	3.55	10.23	33.6	25.08	33.01	7.93	H

LTE FDD Band 2_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	-14.73	3.41	10.24	33.6	25.7	33.01	7.31	V
1880.0	-16.32	3.49	10.24	33.6	24.03	33.01	8.98	V
1907.5	-15.6	3.55	10.23	33.6	24.68	33.01	8.33	V
1852.5	-14.45	3.41	10.24	33.6	25.98	33.01	7.03	H
1880.0	-16.18	3.49	10.24	33.6	24.17	33.01	8.84	H
1907.5	-15.06	3.55	10.23	33.6	25.22	33.01	7.79	H

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	-15.23	3.41	10.24	33.6	25.2	33.01	7.81	V
1880.0	-15.68	3.49	10.24	33.6	24.67	33.01	8.34	V
1905.0	-16.25	3.55	10.23	33.6	24.03	33.01	8.98	V
1855.0	-14.57	3.41	10.24	33.6	25.86	33.01	7.15	H
1880.0	-15.63	3.49	10.24	33.6	24.72	33.01	8.29	H
1905.0	-15.17	3.55	10.23	33.6	25.11	33.01	7.9	H

LTE FDD Band 2_Channel Bandwidth 15MHz_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
1857.5	-15.27	3.41	10.24	33.6	25.16	33.01	7.85	V
1880.0	-15.63	3.49	10.24	33.6	24.72	33.01	8.29	V
1902.5	-16.36	3.55	10.23	33.6	23.92	33.01	9.09	V
1857.5	-15.1	3.41	10.24	33.6	25.33	33.01	7.68	H
1880.0	-15.43	3.49	10.24	33.6	24.92	33.01	8.09	H
1902.5	-15.33	3.55	10.23	33.6	24.95	33.01	8.06	H

LTE FDD Band 2_Channel Bandwidth 20MHz_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
1860.0	-14.77	3.41	10.24	33.6	25.66	33.01	7.35	V
1880.0	-16.3	3.49	10.24	33.6	24.05	33.01	8.96	V
1900.0	-15.62	3.55	10.23	33.6	24.66	33.01	8.35	V
1860.0	-15.05	3.41	10.24	33.6	25.38	33.01	7.63	H
1880.0	-16.05	3.49	10.24	33.6	24.3	33.01	8.71	H
1900.0	-15.09	3.55	10.23	33.6	25.19	33.01	7.82	H

LTE FDD Band 2_Channel Bandwidth 1.4MHz_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
1850.7	-15.3	3.41	10.24	33.6	25.13	33.01	7.88	V
1880.0	-15.58	3.49	10.24	33.6	24.77	33.01	8.24	V
1909.3	-16.18	3.55	10.23	33.6	24.1	33.01	8.91	V
1850.7	-15.19	3.41	10.24	33.6	25.24	33.01	7.77	H
1880.0	-15.5	3.49	10.24	33.6	24.85	33.01	8.16	H
1909.3	-15.76	3.55	10.23	33.6	24.52	33.01	8.49	H

LTE FDD Band 2_Channel Bandwidth 3MHz_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
1851.5	-15.1	3.41	10.24	33.6	25.33	33.01	7.68	V
1880.0	-15.99	3.49	10.24	33.6	24.36	33.01	8.65	V
1908.5	-16.28	3.55	10.23	33.6	24	33.01	9.01	V
1851.5	-14.79	3.41	10.24	33.6	25.64	33.01	7.37	H
1880.0	-16	3.49	10.24	33.6	24.35	33.01	8.66	H
1908.5	-14.95	3.55	10.23	33.6	25.33	33.01	7.68	H

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	-15.31	3.41	10.24	33.6	25.12	33.01	7.89	V
1880.0	-16.22	3.49	10.24	33.6	24.13	33.01	8.88	V
1907.5	-15.86	3.55	10.23	33.6	24.42	33.01	8.59	V
1852.5	-14.6	3.41	10.24	33.6	25.83	33.01	7.18	H
1880.0	-15.97	3.49	10.24	33.6	24.38	33.01	8.63	H
1907.5	-15.11	3.55	10.23	33.6	25.17	33.01	7.84	H

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	-14.97	3.41	10.24	33.6	25.46	33.01	7.55	V
1880.0	-16.4	3.49	10.24	33.6	23.95	33.01	9.06	V
1905.0	-15.81	3.55	10.23	33.6	24.47	33.01	8.54	V
1855.0	-15.24	3.41	10.24	33.6	25.19	33.01	7.82	H
1880.0	-15.32	3.49	10.24	33.6	25.03	33.01	7.98	H
1905.0	-15.56	3.55	10.23	33.6	24.72	33.01	8.29	H

LTE FDD Band 2_Channel Bandwidth 15MHz_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
1857.5	-15.32	3.41	10.24	33.6	25.11	33.01	7.9	V
1880.0	-16.08	3.49	10.24	33.6	24.27	33.01	8.74	V
1902.5	-16.22	3.55	10.23	33.6	24.06	33.01	8.95	V
1857.5	-14.31	3.41	10.24	33.6	26.12	33.01	6.89	H
1880.0	-16.22	3.49	10.24	33.6	24.13	33.01	8.88	H
1902.5	-15.46	3.55	10.23	33.6	24.82	33.01	8.19	H

LTE FDD Band 2_Channel Bandwidth 20MHz_16QAM

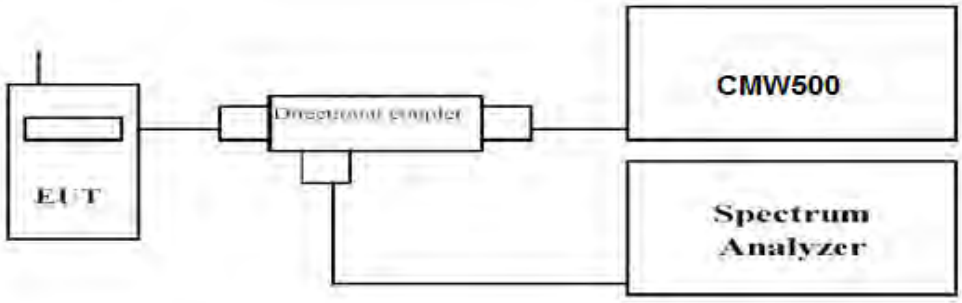
Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	G_a Antenna Gain(dB)	P_{Ag} (dB)	Burst Average EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1860.0	-15.64	3.41	10.24	33.6	24.79	33.01	8.22	V
1880.0	-16.21	3.49	10.24	33.6	24.14	33.01	8.87	V
1900.0	-15.67	3.55	10.23	33.6	24.61	33.01	8.4	V
1860.0	-15.13	3.41	10.24	33.6	25.3	33.01	7.71	H
1880.0	-16.24	3.49	10.24	33.6	24.11	33.01	8.9	H
1900.0	-15.7	3.55	10.23	33.6	24.58	33.01	8.43	H

4.2 Peak-to-Average Ratio (PAR)

LIMIT

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

TEST CONFIGURATION



TEST PROCEDURE

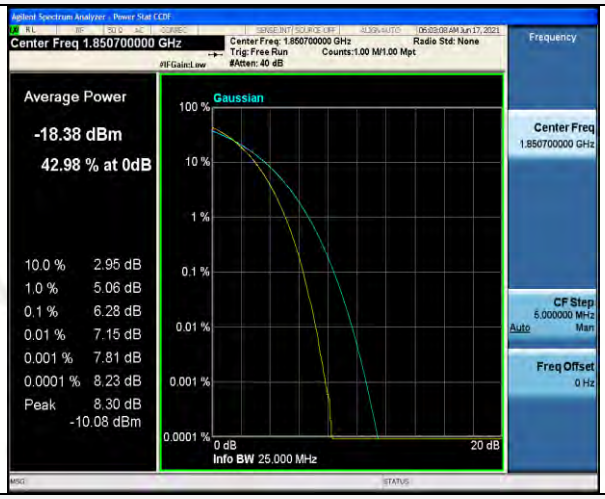
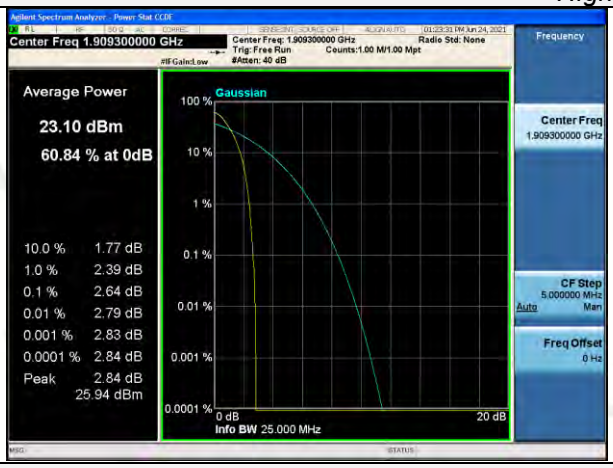
1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
2. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
3. Set the number of counts to a value that stabilizes the measured CCDF curve;
4. Set the measurement interval as 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%.

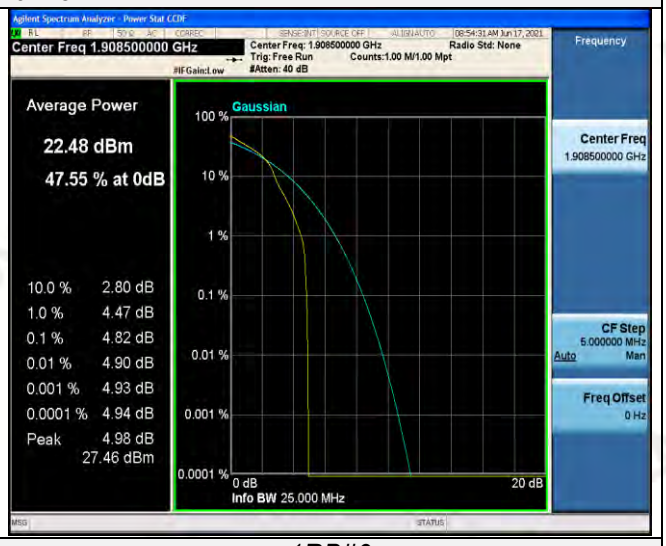
TEST RESULTS

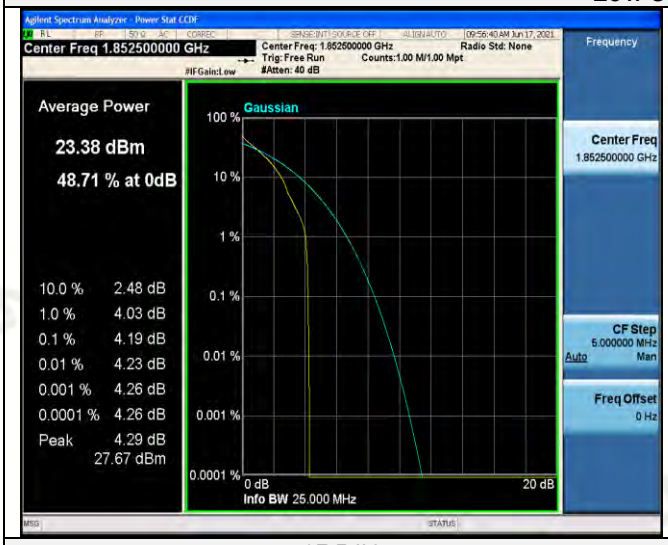
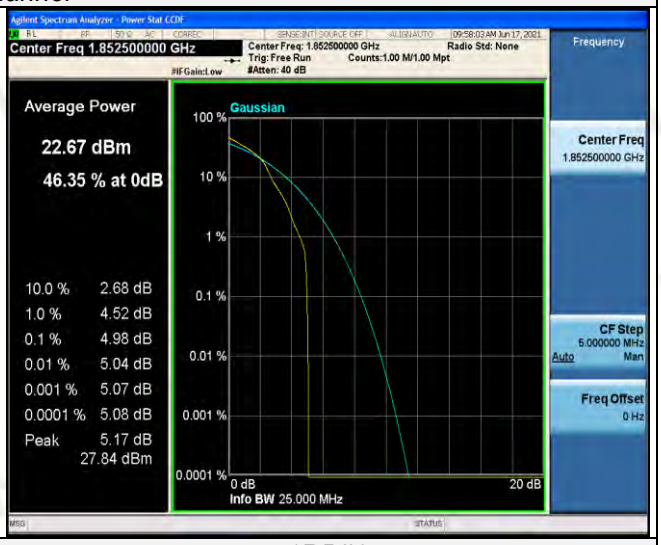
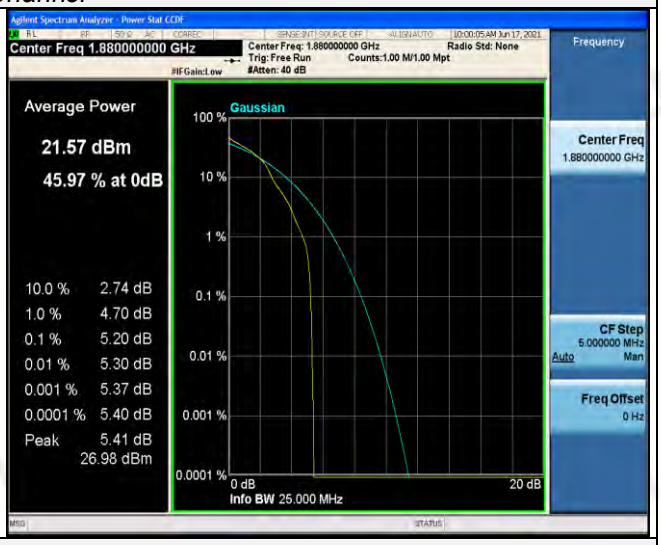
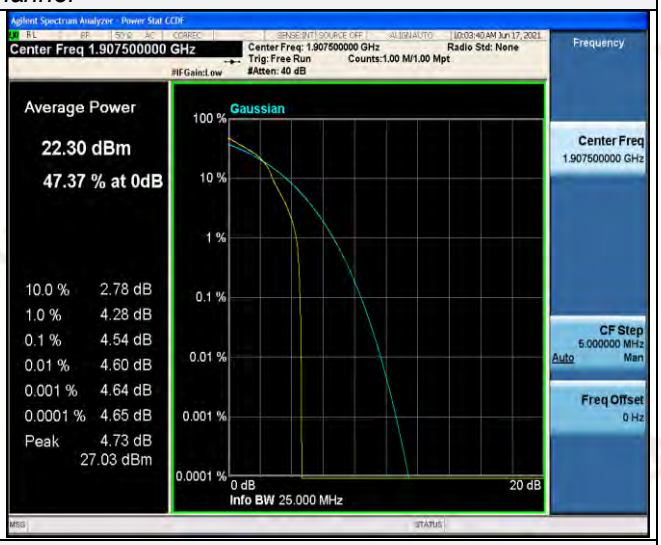
Remark:

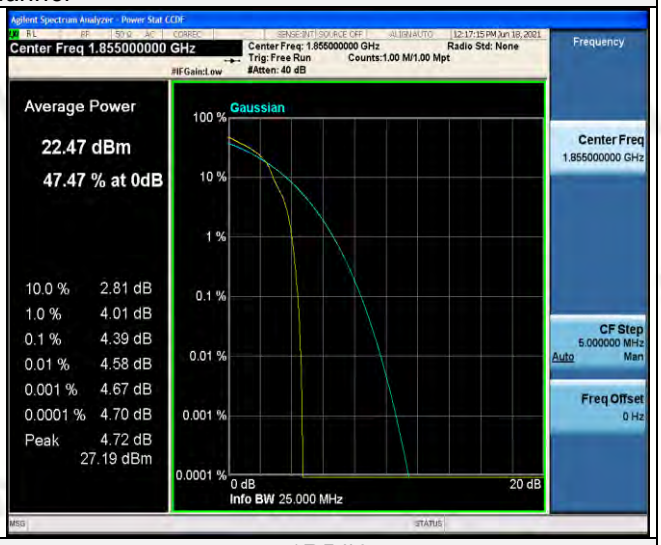
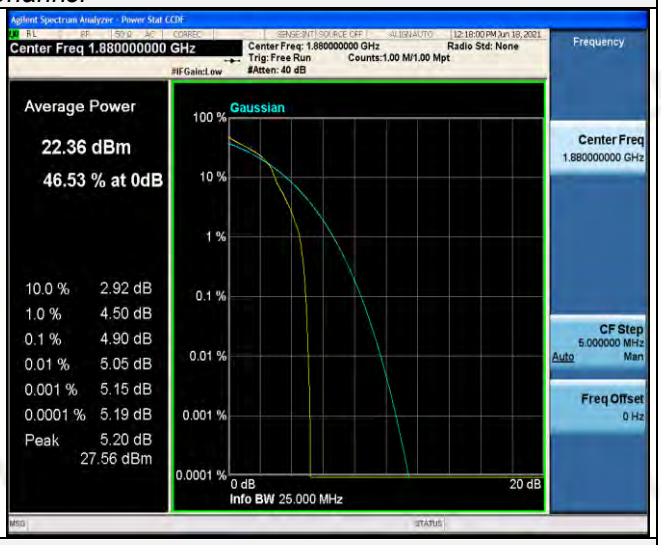
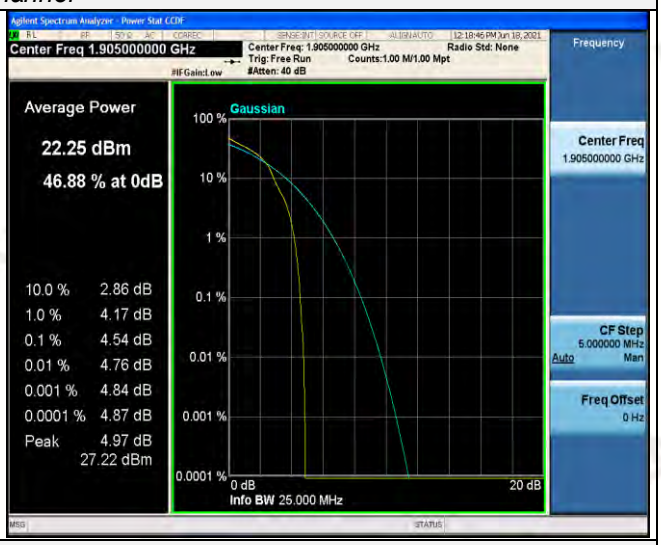
1. *We measured all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2; recorded worst case for each Channel Bandwidth of LTE FDD Band 2.*

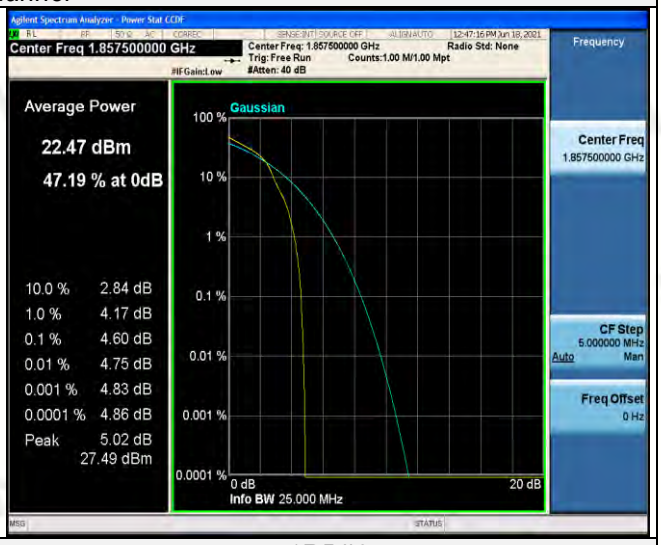
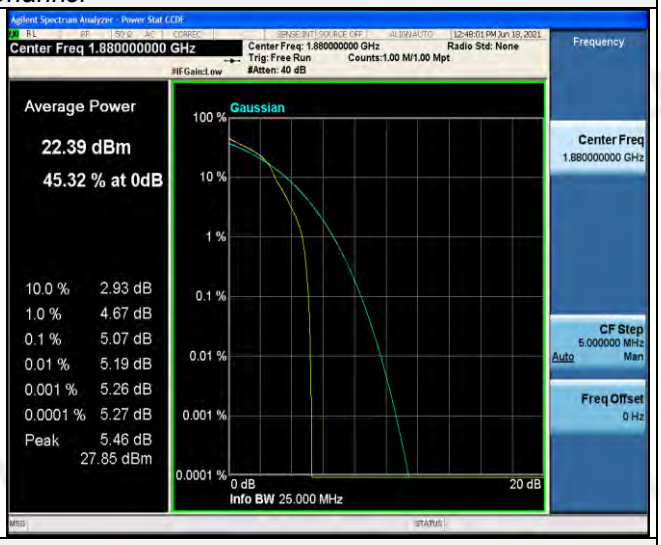
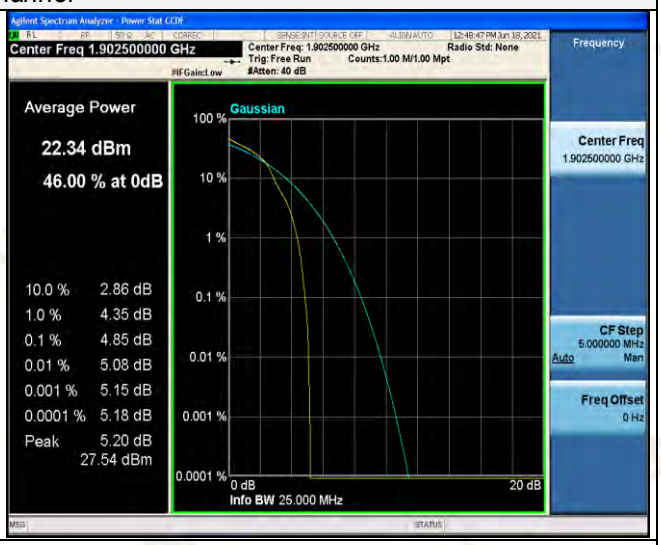
LTE FDD Band 2				
TX Channel Bandwidth	Frequency (MHz)	RB Size/Offset	PAPR(dB)	
			QPSK	16QAM
1.4 MHz	1850.7	*1RB#0*	6.28	*5.03*
	1880.0		8.46	*5.99*
	1909.3		*5.48*	*6.37*
3 MHz	1851.5	*1RB#0*	*4.26*	*5.03*
	1880.0		*5.30*	*6.04*
	1908.5		*5.60*	*6.54*
5 MHz	1852.5	*1RB#0*	*4.33*	*5.10*
	1880.0		*5.39*	*6.27*
	1907.5		*5.55*	*6.34*
10 MHz	1855.0	*1RB#0*	*4.78*	*5.44*
	1880.0		*5.38*	*6.00*
	1905.0		*5.36*	*6.17*
15 MHz	1857.5	*1RB#0*	*5.16*	*6.12*
	1880.0		*5.12*	*6.36*
	1902.5		*5.16*	*6.30*
20 MHz	1860.0	*1RB#0*	*6.04*	*6.76*
	1880.0		*6.01*	*6.79*
	1900.0		*6.00*	*6.71*

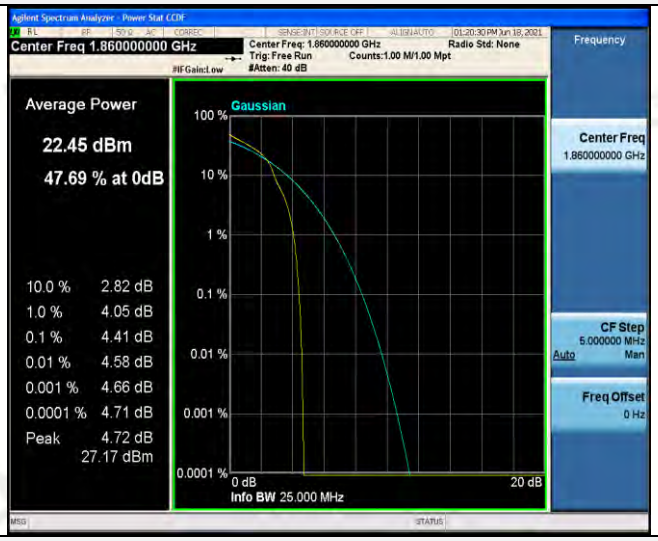
LTE FDD Band 2 – 1.4 MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

LTE FDD Band 2–3MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

LTE FDD Band 2–5MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

LTE FDD Band 2–10MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

LTE FDD Band 2– 15 MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

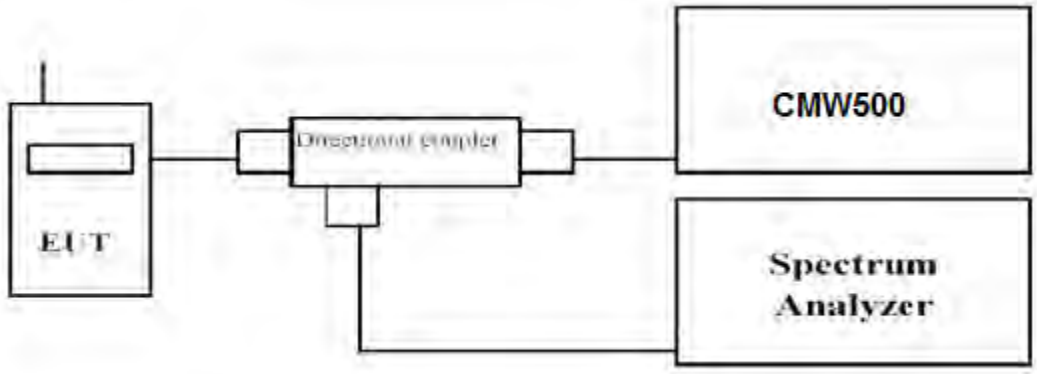
LTE FDD Band 2–20MHz Channel BandwidthPAPR	
QPSK	16QAM
Low Channel	
	
1RB#0	1RB#0
Middle Channel	
	
1RB#0	1RB#0
High Channel	
	
1RB#0	1RB#0

4.3 Occupied Bandwidth and Emission Bandwidth

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

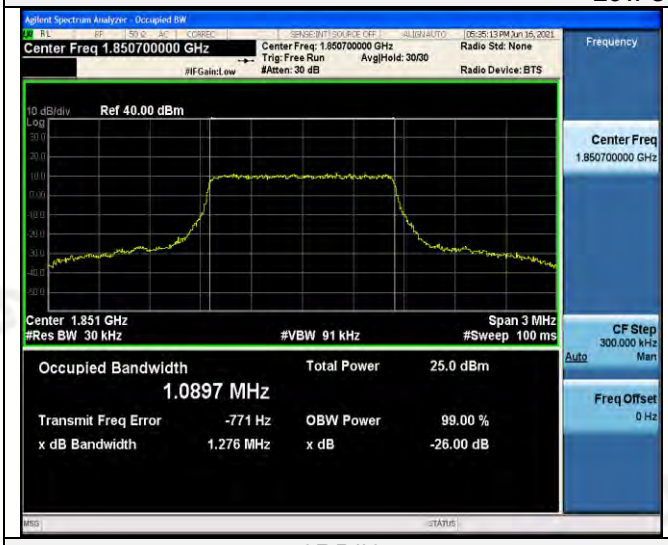
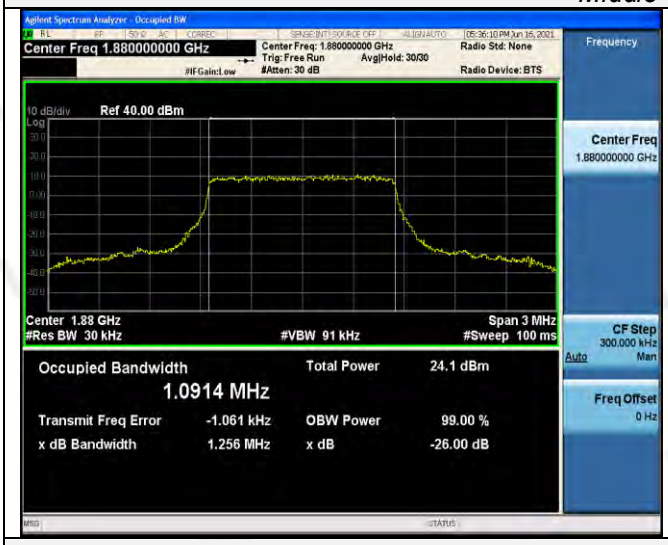
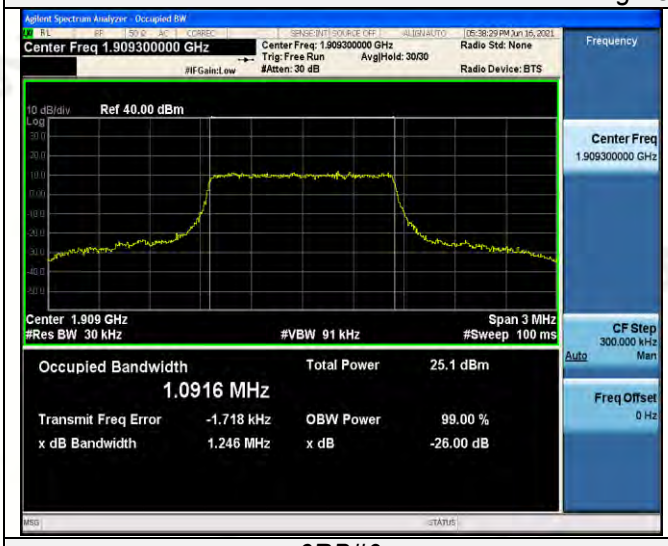
The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at low, middle and high channel in each band. The -26dBc Emission bandwidth was also measured and recorded.
Set RBWwas 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 isthe delta frequency between the two points where the display line intersects the signal trace.

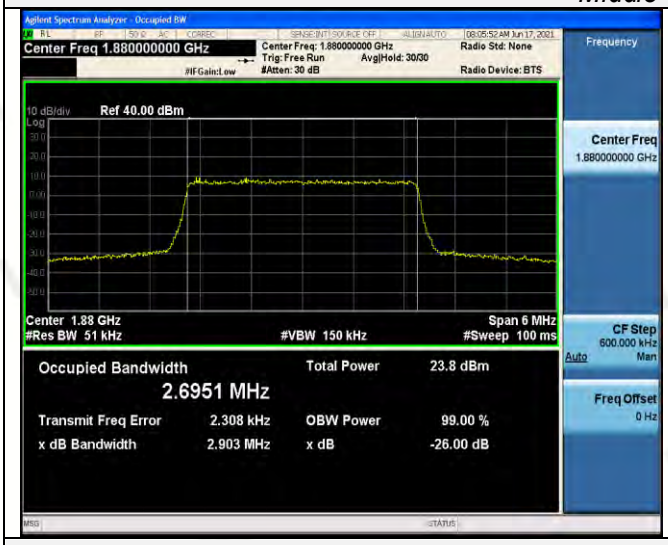
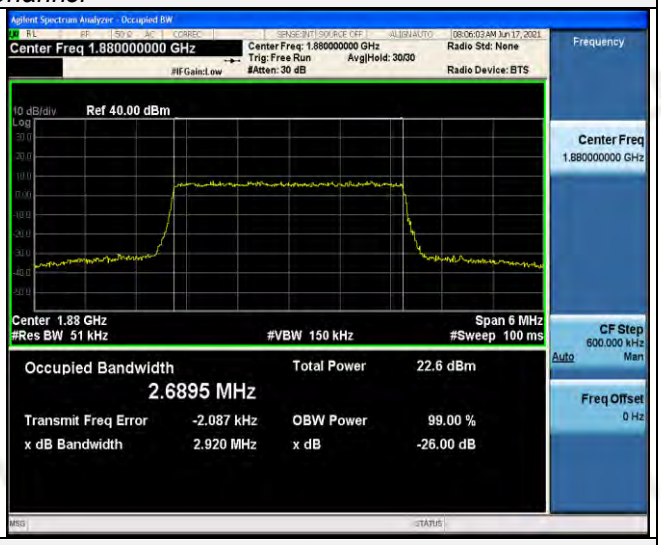
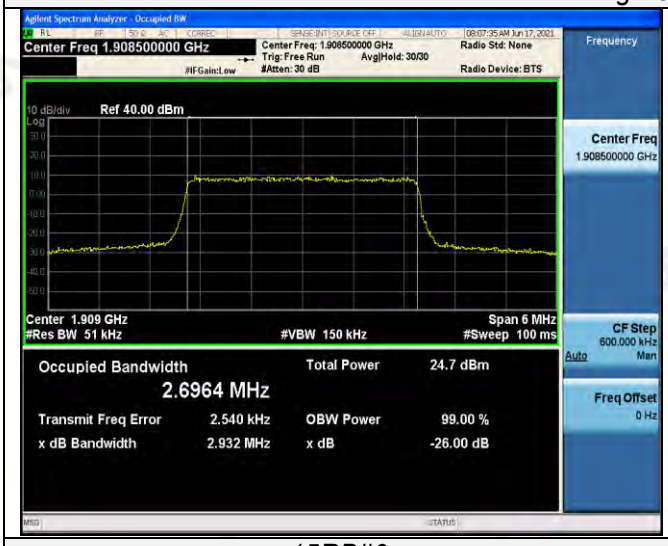
TEST RESULTS

Remark:

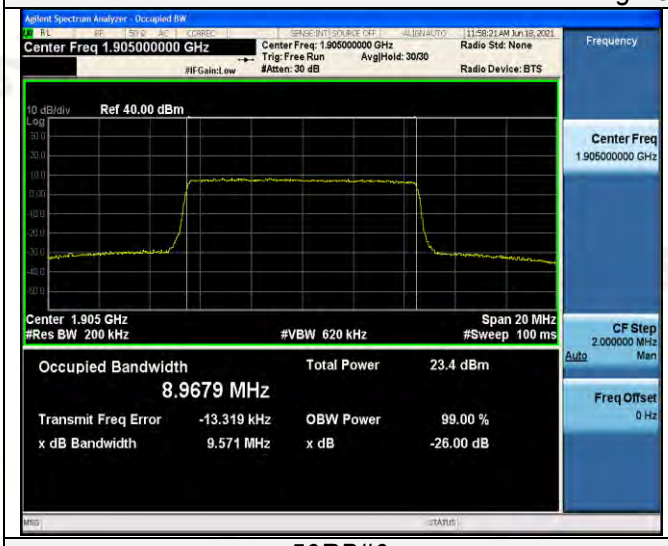
1. *We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2; recorded worst case for each Channel Bandwidth of LTE FDD Band 2.*

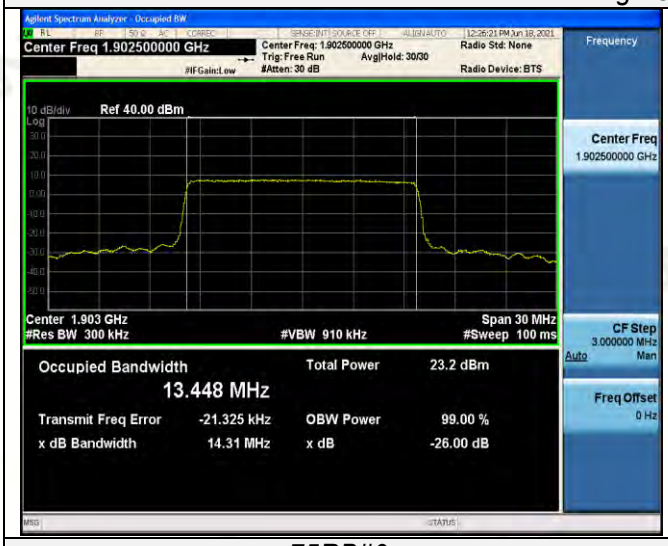
LTE FDD Band 2						
TX Channel Bandwidth	RB Size/Offset	Frequency (MHz)	-26dBc Emission bandwidth (MHz)		99% Occupied bandwidth (MHz)	
			QPSK	16QAM	QPSK	16QAM
1.4 MHz	*6RB#0*	1850.7	1.276	1.259	1.0897	1.0922
		1880.0	1.256	1.242	1.0914	1.0912
		1909.3	1.246	1.273	1.0916	1.0907
3 MHz	*15RB#0*	1851.5	2.913	2.923	2.7046	2.6976
		1880.0	2.903	2.920	2.6951	2.6895
		1908.5	2.932	2.910	2.6964	2.6920
5 MHz	*25RB#0*	1852.5	4.912	4.851	4.5024	4.5046
		1880.0	4.818	4.898	4.4927	4.5079
		1907.5	4.909	4.857	4.4996	4.4955
10 MHz	*50RB#0*	1855.0	9.555	9.545	8.9769	8.9639
		1880.0	9.585	9.567	8.9780	8.9818
		1905.0	9.571	9.560	8.9679	8.9643
15 MHz	*75RB#0*	1857.5	14.27	14.26	13.457	13.438
		1880.0	14.27	14.29	13.466	13.458
		1902.5	14.31	14.24	13.448	13.436
20 MHz	*100RB#0*	1860.0	18.97	18.95	17.917	17.900
		1880.0	19.02	18.98	17.931	17.941
		1900.0	18.97	18.96	17.918	17.910

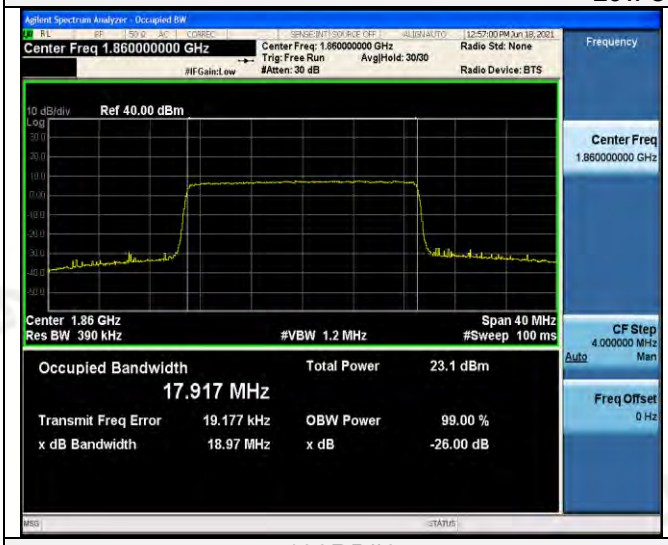
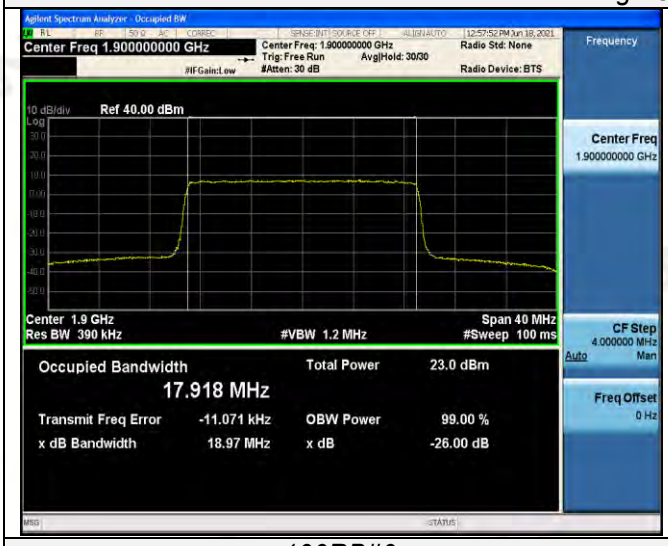
LTE FDD Band 2 – 1.4 MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
6RB#0	6RB#0
Middle Channel	
	
6RB#0	6RB#0
High Channel	
	
6RB#0	6RB#0

LTE FDD Band 2–3MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
15RB#0	15RB#0
Middle Channel	
	
15RB#0	15RB#0
High Channel	
	
15RB#0	15RB#0

LTE FDD Band 2–5MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
25RB#0	25RB#0
Middle Channel	
	
25RB#0	25RB#0
High Channel	
	
25RB#0	25RB#0

LTE FDD Band 2–10MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
50RB#0	50RB#0
Middle Channel	
	
50RB#0	50RB#0
High Channel	
	
50RB#0	50RB#0

LTE FDD Band 2–15MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
75RB#0	75RB#0
Middle Channel	
	
75RB#0	75RB#0
High Channel	
	
75RB#0	75RB#0

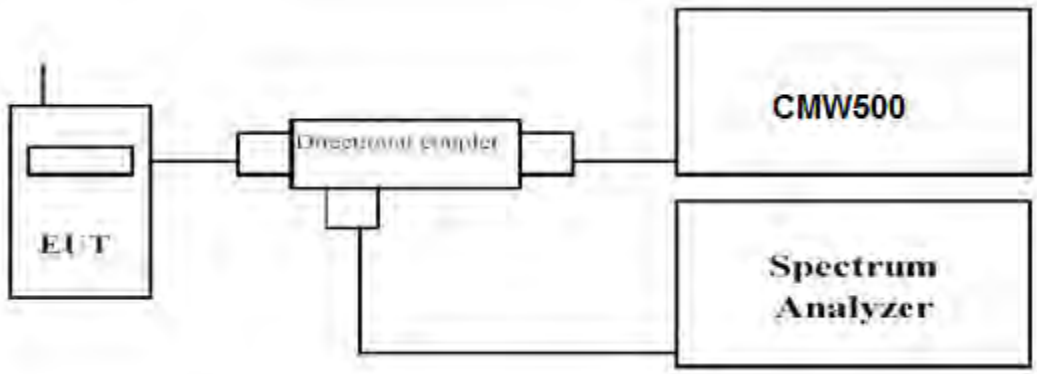
LTE FDD Band 2–20MHz Channel Bandwidth Occupied Bandwidth and Emission Bandwidth	
QPSK	16QAM
Low Channel	
	
100RB#0	100RB#0
Middle Channel	
	
100RB#0	100RB#0
High Channel	
	
100RB#0	100RB#0

4.4 Band Edge compliance

LIMIT

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.

TEST CONFIGURATION



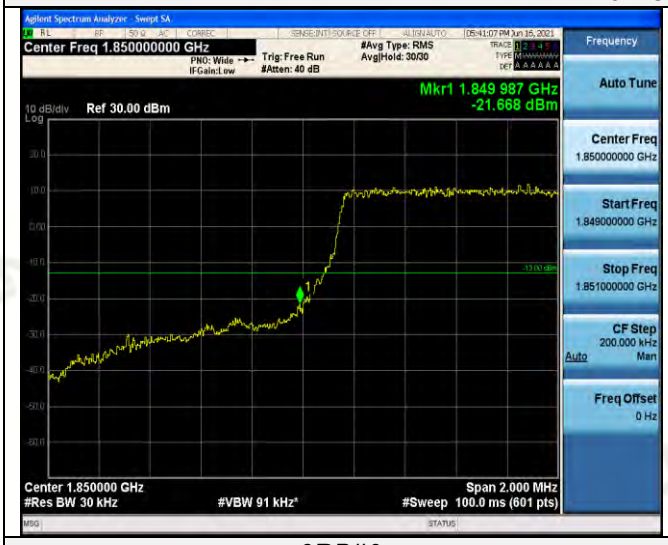
TEST PROCEDURE

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:

1. *We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of LTE FDD Band 2; recorded worst case for each Channel Bandwidth of LTE FDD Band 2.*

LTE FDD Band 2 – 1.4 MHz Channel BandwidthBand Edge Compliance	
QPSK	16QAM
Low Channel	
	
6RB#0	6RB#0
High Channel	
	
6RB#0	6RB#0

LTE FDD Band 2–3MHz Channel BandwidthBand Edge Compliance	
QPSK	16QAM
Low Channel	
	
15RB#0	15RB#0
High Channel	
	
15RB#0	15RB#0

LTE FDD Band 2–5MHz Channel BandwidthBand Edge Compliance	
QPSK	16QAM
Low Channel	
	
25RB#0	25RB#0
High Channel	
	
25RB#0	25RB#0