

Partial FCC RF Test Report

APPLICANT : OnePlus Technology (Shenzhen) Co., Ltd.
EQUIPMENT : Smart Phone
BRAND NAME : ONEPLUS
MODEL NAME : LE2117
FCC ID : 2ABZ2-EF136
STANDARD : 47 CFR Part 2, 27
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Oct. 28, 2020 and completely tested on Dec. 22, 2020. We, Sporton International (ShenZhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.



Reviewed by: Derreck Chen / Supervisor



Approved by: Eric Shih / Manager



Sporton International (ShenZhen) Inc.

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG002801-02D	Rev. 01	Initial issue of report	Feb. 04, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§27.50 (a)(3)	EIRP	EIRP < 250mW/5MHz	PASS	-
4.4	§2.1053 §27.53 (a)(4)	Radiated Spurious Emission	< 70+10log ₁₀ (P[Watts])	PASS	Under limit 10.94 dB at 6923.250 MHz

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

OnePlus Technology (Shenzhen) Co., Ltd.

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.2 Manufacturer

OnePlus Technology (Shenzhen) Co., Ltd.

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	ONEPLUS
Model Name	LE2117
FCC ID	2ABZ2-EF136
EUT supports Radios application	CDMA/GSM/WCDMA/LTE/5G NR WLAN 2.4GHz 802.11b/g/n/ac HT20/HT40/VHT20/VHT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160 WLAN 5GHz 802.11ax HE20/HE40/HE80/HE160 Bluetooth BR / EDR / LE / ANT+ GNSS/NFC/WPT(Qi)
MEID Code	Conducted: N/A Radiation: 990017410024190
HW Version	22
SW Version	11.2.0.0.LE54CB
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Product Feature	
Tx Frequency	LTE Band 30 : 2307.5 MHz ~ 2312.5 MHz
Rx Frequency	LTE Band 30 : 2352.5 MHz ~ 2357.5 MHz
Bandwidth	5MHz / 10MHz
Maximum Output Power to Antenna	Top Antenna: 24.03 dBm Bottom Antenna: 24.00 dBm
Antenna Gain	Top Antenna: LTE Band 30 : -3.0 dBi Bottom Antenna: LTE Band 30 : -2.0 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum EIRP Power, Frequency Tolerance and Emission Designator

LTE Band 30				
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)		
		QPSK	16QAM	64QAM
5	2307.5 ~ 2312.5	0.1578	0.1452	0.1072
10	2310.0	0.1585	0.1422	0.1047

1.7 Testing Site

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH02-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a

1.9 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 2, Part 27(D)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

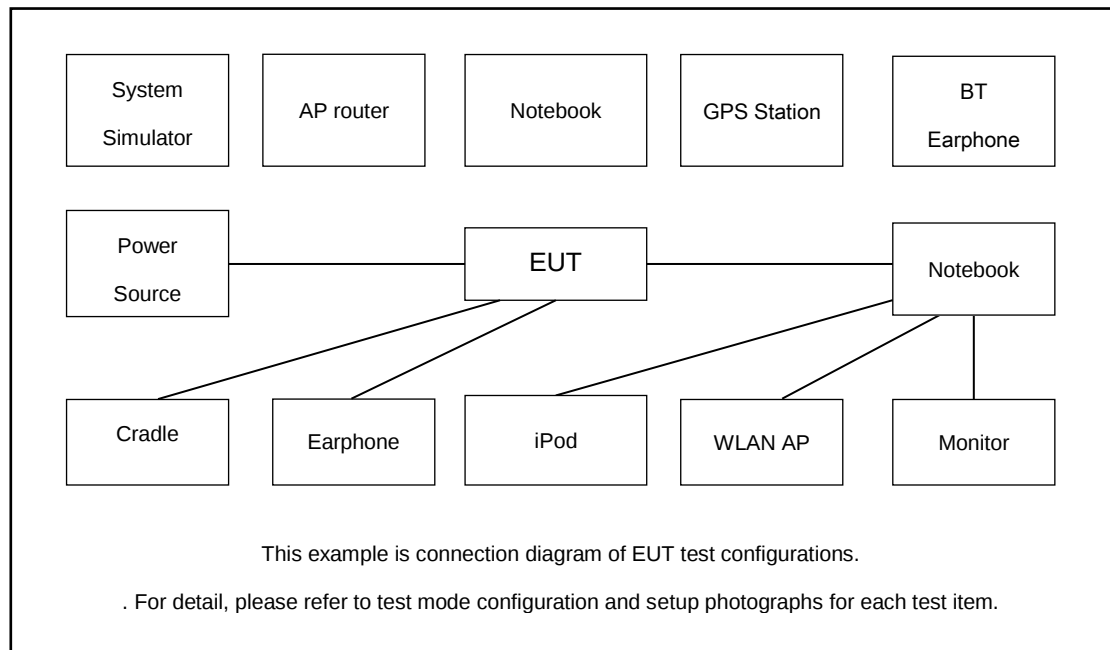
2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Conducted Test Cases	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	30	-	-	V		-	-	V	V	V	V	V	V	V	V	V
		-	-		V	-	-	V	V	V	V	V	V		V	
E.I.R.P	30	-	-	V		-	-	V	V	V	V			V	V	V
		-	-		V	-	-	V	V	V	V				V	
Radiated Spurious Emission	30	-	-	V		-	-	V			V				V	
					V			V			V				V	
Note	- The mark "v " means that this configuration is chosen for testing - The mark "-" means that this bandwidth is not supported. - The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	Base Station	Anritsu	MT8820C	Fcc DoC	N/A	Shielded, 1.5m

2.4 Frequency List of Low/Middle/High Channels

LTE Band 30 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	27710	-
	Frequency	-	2310	-
5	Channel	27685	27710	27735
	Frequency	2307.5	2310	2312.5

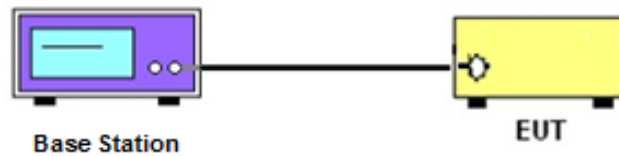
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power Measurement

3.4.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 EIRP

3.5.1 Description of EIRP

For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, *except that* for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

3.5.2 Test Procedures

1. According to KDB 412172 D01 Power Approach,
2. $EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where
 P_T = transmitter output power in dBm
 G_T = gain of the transmitting antenna in dBi
 L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

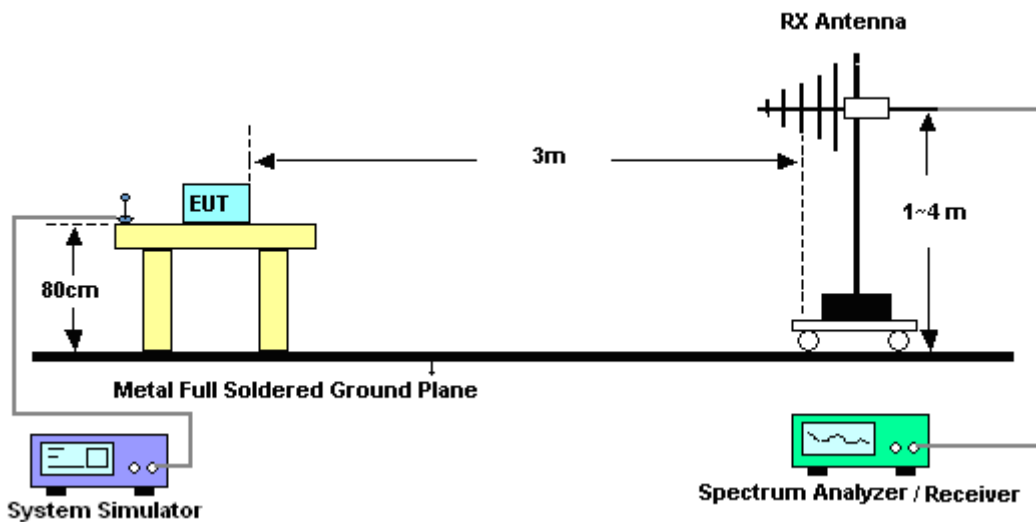
4 Radiated Test Items

4.1 Measuring Instruments

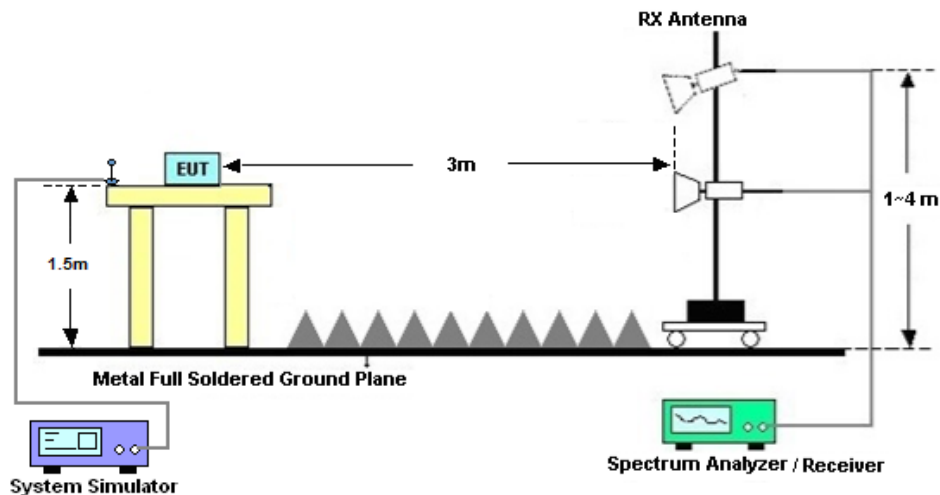
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $70 + 10 \log (P)$ dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
1. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

$$\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$$

$$\text{ERP (dBm)} = \text{EIRP} - 2.15$$

9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $70 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(W) - [70 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [70 + 10\log(P)] \text{ (dB)}$$

$$= -40\text{dBm}.$$

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 17, 2020	Dec. 22, 2020	Apr. 16, 2021	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 22, 2020	Dec. 22, 2020	Jul. 21, 2021	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 21, 2020	Dec. 14, 2020	Jul. 20, 2021	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Jul. 15, 2020	Dec. 14, 2020	Jul. 14, 2021	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 25, 2020	Dec. 14, 2020	Jul. 24, 2021	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 21, 2020	Dec. 14, 2020	Jul. 20, 2021	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 23, 2020	Dec. 14, 2020	Apr. 22, 2021	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 16,2020	Dec. 14, 2020	Oct. 15,2021	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 16,2020	Dec. 14, 2020	Oct. 15,2021	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Dec. 14, 2020	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Dec. 14, 2020	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Dec. 14, 2020	NCR	Radiation (03CH02-SZ)

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.47dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.31dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Top antenna:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				27710		
Frequency (MHz)				2310		
10	QPSK	1	0		24.00	
10	QPSK	1	25		24.03	
10	QPSK	1	49		23.93	
10	QPSK	25	0		23.09	
10	QPSK	25	12		23.19	
10	QPSK	25	25		23.13	
10	QPSK	50	0		23.16	
10	16QAM	1	0		23.39	
10	16QAM	1	25		23.46	
10	16QAM	1	49		23.24	
10	16QAM	25	0		22.08	
10	16QAM	25	12		22.20	
10	16QAM	25	25		22.05	
10	16QAM	50	0		22.14	
10	64QAM	1	0		22.28	
10	64QAM	1	25		22.32	
10	64QAM	1	49		22.22	
10	64QAM	25	0		20.91	
10	64QAM	25	12		21.23	
10	64QAM	25	25		21.28	
10	64QAM	50	0		21.14	
10	256QAM	1	0		19.15	
10	256QAM	1	25		19.20	
10	256QAM	1	49		19.24	



10	256QAM	25	0		19.33	
10	256QAM	25	12		19.35	
10	256QAM	25	25		19.37	
10	256QAM	50	0		19.40	
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	23.60	23.74	23.79
5	QPSK	1	12	23.58	23.83	23.93
5	QPSK	1	24	23.63	24.00	23.89
5	QPSK	12	0	23.13	23.09	23.19
5	QPSK	12	7	23.28	23.17	23.27
5	QPSK	12	13	23.33	23.13	23.27
5	QPSK	25	0	23.32	23.16	23.21
5	16QAM	1	0	23.52	23.52	23.42
5	16QAM	1	12	23.69	23.62	23.39
5	16QAM	1	24	23.51	23.28	23.30
5	16QAM	12	0	22.19	22.16	22.10
5	16QAM	12	7	22.24	22.19	22.22
5	16QAM	12	13	22.28	22.20	22.23
5	16QAM	25	0	22.32	22.24	22.20
5	64QAM	1	0	21.82	22.08	22.26
5	64QAM	1	12	21.79	22.13	21.99
5	64QAM	1	24	21.85	22.04	22.22
5	64QAM	12	0	21.02	21.20	21.30
5	64QAM	12	7	21.04	21.16	21.30
5	64QAM	12	13	21.35	21.28	21.21
5	64QAM	25	0	21.35	21.18	21.15
5	256QAM	1	0	19.24	19.32	19.35
5	256QAM	1	12	19.23	19.28	19.30
5	256QAM	1	24	19.40	19.48	19.46
5	256QAM	12	0	19.20	19.25	19.24
5	256QAM	12	7	19.38	19.46	19.50
5	256QAM	12	13	19.27	19.32	19.33
5	256QAM	25	0	19.32	19.37	19.41

Bottom antenna:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				27710		
Frequency (MHz)				2310		
10	QPSK	1	0		23.96	
10	QPSK	1	25		24.00	
10	QPSK	1	49		23.92	
10	QPSK	25	0		23.10	
10	QPSK	25	12		23.11	
10	QPSK	25	25		23.14	
10	QPSK	50	0		23.12	
10	16QAM	1	0		23.27	
10	16QAM	1	25		23.52	
10	16QAM	1	49		23.53	
10	16QAM	25	0		22.11	
10	16QAM	25	12		22.16	
10	16QAM	25	25		22.15	
10	16QAM	50	0		22.19	
10	64QAM	1	0		21.76	
10	64QAM	1	25		21.92	
10	64QAM	1	49		22.20	
10	64QAM	25	0		20.79	
10	64QAM	25	12		21.08	
10	64QAM	25	25		21.15	
10	64QAM	50	0		21.10	
10	256QAM	1	0		19.36	
10	256QAM	1	25		19.26	
10	256QAM	1	49		19.43	
10	256QAM	25	0		19.21	
10	256QAM	25	12		19.23	
10	256QAM	25	25		19.22	
10	256QAM	50	0		19.23	

Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	23.55	23.90	23.98
5	QPSK	1	12	23.78	23.98	23.92
5	QPSK	1	24	23.85	23.87	23.83
5	QPSK	12	0	23.12	23.16	23.15
5	QPSK	12	7	23.24	23.15	23.21
5	QPSK	12	13	23.22	23.13	23.25
5	QPSK	25	0	23.11	23.11	23.18
5	16QAM	1	0	23.23	23.13	23.62
5	16QAM	1	12	23.21	23.31	23.58
5	16QAM	1	24	23.34	23.37	23.53
5	16QAM	12	0	22.17	22.22	22.21
5	16QAM	12	7	22.28	22.29	22.22
5	16QAM	12	13	22.27	22.18	22.17
5	16QAM	25	0	22.13	22.23	22.06
5	64QAM	1	0	21.82	22.01	22.14
5	64QAM	1	12	21.84	22.02	22.30
5	64QAM	1	24	21.91	22.21	22.30
5	64QAM	12	0	20.91	21.14	21.16
5	64QAM	12	7	20.83	21.15	21.29
5	64QAM	12	13	21.02	21.21	21.28
5	64QAM	25	0	20.81	21.06	21.21
5	256QAM	1	0	19.08	19.11	19.20
5	256QAM	1	12	19.25	19.23	19.11
5	256QAM	1	24	19.27	19.13	19.16
5	256QAM	12	0	18.99	18.97	19.06
5	256QAM	12	7	19.05	18.98	19.07
5	256QAM	12	13	19.05	19.09	19.03
5	256QAM	25	0	19.09	19.02	19.05

EIRP
Top antenna:

LTE Band 30 (GT - LC = -3.0 dB) QPSK (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	23.63	24.00	23.89
Conducted Power (Watts)	0.2307	0.2512	0.2449
EIRP(dBm)	20.63	21.00	20.89
EIRP(Watts)	0.1156	0.1259	0.1227
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -3.0 dB) QPSK (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		24.03	
Conducted Power (Watts)		0.2529	
EIRP(dBm)		21.03	
EIRP(Watts)		0.1268	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -3.0 dB) 16QAM (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	23.69	23.62	23.39
Conducted Power (Watts)	0.2339	0.2301	0.2183
EIRP(dBm)	20.69	20.62	20.39
EIRP(Watts)	0.1172	0.1153	0.1094
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -3.0 dB) 16QAM (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		23.46	
Conducted Power (Watts)		0.2218	
EIRP(dBm)		20.46	
EIRP(Watts)		0.1112	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -3.0 dB) 64QAM (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	21.82	22.08	22.26
Conducted Power (Watts)	0.1521	0.1614	0.1683
EIRP(dBm)	18.82	19.08	19.26
EIRP(Watts)	0.0762	0.0809	0.0843
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -3.0 dB) 64QAM (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		22.32	
Conducted Power (Watts)		0.1706	
EIRP(dBm)		19.32	
EIRP(Watts)		0.0855	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

Bottom antenna:

LTE Band 30 (GT - LC = -2.0 dB) QPSK (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	23.78	23.98	23.92
Conducted Power (Watts)	0.2388	0.2500	0.2466
EIRP(dBm)	21.78	21.98	21.92
EIRP(Watts)	0.1507	0.1578	0.1556
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -2.0 dB) QPSK (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		24.00	
Conducted Power (Watts)		0.2512	
EIRP(dBm)		22.00	
EIRP(Watts)		0.1585	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -2.0 dB) 16QAM (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	23.23	23.13	23.62
Conducted Power (Watts)	0.2104	0.2056	0.2301
EIRP(dBm)	21.23	21.13	21.62
EIRP(Watts)	0.1327	0.1297	0.1452
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -2.0 dB) 16QAM (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		23.53	
Conducted Power (Watts)		0.2254	
EIRP(dBm)		21.53	
EIRP(Watts)		0.1422	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -2.0 dB) 64QAM (dBm/5MHz)			
Bandwidth	5M		
Channel	27685	27710	27735
	(Low)	(Mid)	(High)
Frequency	2307.5	2310	2312.5
(MHz)			
Conducted Power (dBm)	21.91	22.21	22.30
Conducted Power (Watts)	0.1552	0.1663	0.1698
EIRP(dBm)	19.91	20.21	20.30
EIRP(Watts)	0.0979	0.1050	0.1072
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

LTE Band 30 (GT - LC = -2.0 dB) 64QAM (dBm/5MHz)			
Bandwidth	10M		
Channel		27710	
		(Mid)	
Frequency		2310	
(MHz)			
Conducted Power (dBm)		22.20	
Conducted Power (Watts)		0.1660	
EIRP(dBm)		20.20	
EIRP(Watts)		0.1047	
Limit	250mW / 5MHz = 24dBm / 5MHz		PASS

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Top antenna:

LTE Band 30 / 5MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4615.50	-60.36	-40	-20.36	-58.61	-66.61	6.45	12.70	H
	6923.25	-50.94	-40	-10.94	-54.22	-54.34	8.40	11.80	H
	9231.00	-52.30	-40	-12.30	-62.36	-54.65	9.65	12.00	H
	4615.50	-60.37	-40	-20.37	-59	-66.62	6.45	12.70	V
	6923.25	-56.82	-40	-16.82	-60.58	-60.22	8.40	11.80	V
	9231.00	-53.22	-40	-13.22	-62.46	-55.57	9.65	12.00	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4611.00	-60.69	-40	-20.69	-58.93	-66.94	6.45	12.70	H
	6916.50	-57.59	-40	-17.59	-60.86	-60.99	8.40	11.80	H
	9222.00	-52.56	-40	-12.56	-62.62	-54.91	9.65	12.00	H
	4611.00	-60.46	-40	-20.46	-59.08	-66.71	6.45	12.70	V
	6916.50	-57.23	-40	-17.23	-60.98	-60.63	8.40	11.80	V
	9222.00	-53.10	-40	-13.10	-62.34	-55.45	9.65	12.00	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Bottom antenna:

LTE Band 30 / 5MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4615.50	-60.84	-40	-20.84	-59.09	-67.09	6.45	12.70	H
	6923.25	-57.15	-40	-17.15	-60.43	-60.55	8.40	11.80	H
	9231.00	-52.25	-40	-12.25	-62.31	-54.60	9.65	12.00	H
	4615.50	-60.44	-40	-20.44	-59.07	-66.69	6.45	12.70	V
	6923.25	-57.05	-40	-17.05	-60.81	-60.45	8.40	11.80	V
	9231.00	-53.03	-40	-13.03	-62.27	-55.38	9.65	12.00	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	4611.00	-60.60	-40	-20.60	-58.84	-66.85	6.45	12.70	H
	6916.50	-57.64	-40	-17.64	-60.91	-61.04	8.40	11.80	H
	9222.00	-52.17	-40	-12.17	-62.23	-54.52	9.65	12.00	H
	4611.00	-60.28	-40	-20.28	-58.9	-66.53	6.45	12.70	V
	6916.50	-57.10	-40	-17.10	-60.85	-60.50	8.40	11.80	V
	9222.00	-53.28	-40	-13.28	-62.52	-55.63	9.65	12.00	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.