

# FCC TEST REPORT

For

General Procurement, Inc

Hyundai Koral\_7XL

Model No.: Koral\_7XL

Prepared For : General Procurement, Inc  
Address : 800 E Dyer Road , Santa Ana, California, United States 92705

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# TEST REPORT

Applicant : General Procurement, Inc  
Manufacturer : Shen Zhen Cheng Fong Digital-Tech Limited  
Product Name : Hyundai Koral\_7XL  
Model No. : Koral\_7XL  
Trade Mark : Hyundai  
Rating(s) : Input: DC 5V, 2A(Via adapter Input: AC 100~240V, 50/60Hz, Max: 0.35A;  
with DC 3.7V, 2500mAh Battery inside)

**Test Standard(s) : FCC PART 2, FCC Part 22(H) :2018, FCC Part 24(E):2018, FCC Part 27: 2018**

**Test Method(s) : ANSI/TIAC603 D: 2010, KDB971168 D01 v03**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 22/FCC Part 24/FCC Part 27 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Dec. 06, 2018~Jan. 10, 2019

Prepared by :



*Oliay Yang*

(Engineer / Oliay Yang)

Reviewer :

*Snowy Meng*

(Supervisor / Snowy Meng)

Approved & Authorized Signer :

*Sally Zhang*

(Manager / Sally Zhang)

# 1. General Information

## 1.1. Client Information

Applicant	:	General Procurement, Inc
Address	:	800 E Dyer Road , Santa Ana, California, United States 92705
Manufacturer	:	Shen Zhen Cheng Fong Digital-Tech Limited
Address	:	Building A, ChengFong Industrial Area, Huaxing road, Dalang, Longhua, Shen Zhen, China
Factory	:	Shen Zhen Cheng Fong Digital-Tech Limited
Address	:	Building A, ChengFong Industrial Area, Huaxing road, Dalang, Longhua, Shen Zhen, China

## 1.2. Description of Device (EUT)

Product Name	:	Hyundai Koral_7XL
Model No.	:	Koral_7XL
Trade Mark	:	Hyundai
Test Sample NO.	:	S1
Test Power Supply	:	AC 240V, 60Hz for adapter/ AC 120V, 60Hz for adapter/ DC 3.7V Battery inside
Product Description	Operation Frequency:	GSM/GPRS 850 TX:824.2~848.8 MHz; RX:869.2~893.8 MHz PCS/GPRS 1900 TX:1850.2~1909.8 MHz; RX:1930.2~1989.8 MHz UMTS-FDD Band 5 TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band 2 TX:1852.4~1907.6 MHz; RX: 1932.4~1987.6 MHz LTE-FDD Band 2 TX: 1850.7 ~ 1909.3 MHz; RX: 1930.7 ~ 1989.3 MHz LTE-FDD Band 4 TX:1710.7 ~ 1754.3 MHz; RX: 2110.7 ~ 2154.3 MHz
	GPRS Class	8/10/12
	Modulation Type:	GSM/GPRS: GMSK WCDMA: BPSK, 16QAM LTE: QPSK, 16QAM
	Antenna Type:	PIFA Antenna
	Antenna Gain(Peak):	GSM 850: 2.5 dBi PCS 1900: 2.5 dBi UMTS-FDD Band 2: 2.5 dBi UMTS-FDD Band 5: 2.5 dBi LTE-FDD Band 2: 2.5 dBi

LTE-FDD Band 5: 2.5 dBi

**Remark:** 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.  
2) This report is for GSM&WCDMA&LTE module.

### 1.3. Auxiliary Equipment Used During Test

Adapter	:	Manufacturer: Shenzhen Jihongda Power Co., Ltd.
		M/N: JHD-AP013U-050200BB-B Input: 100-240V~ 50/60Hz, 0.35A Output: DC 5V, 2000mA

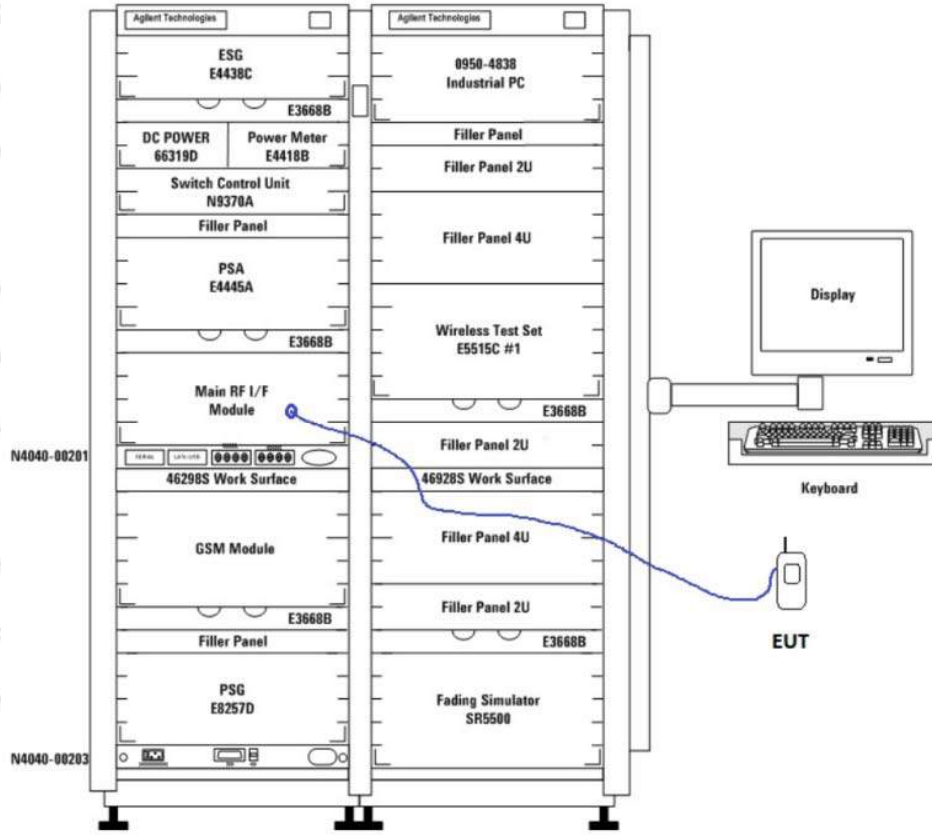
### 1.4. Description of Test Modes

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
Emissions Testing	The EUT was communicating with base station.
Others Testing	The EUT was communicating with base station.

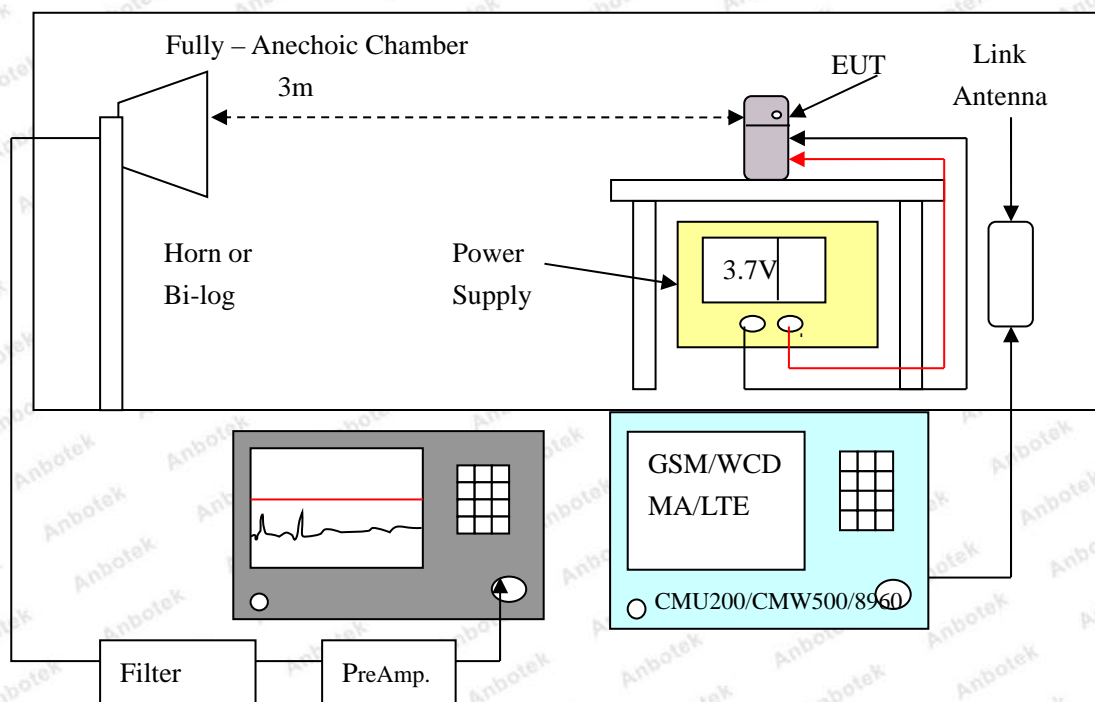
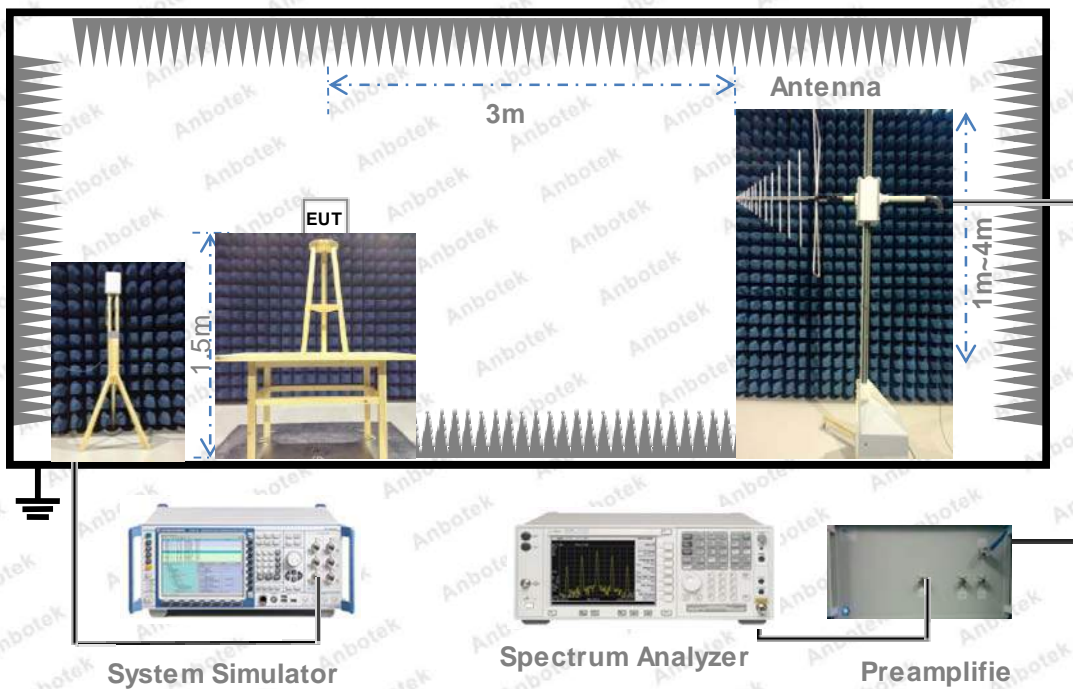
## 1.5. Description Of Test Setup

### 1.5.1 Conducted Test Setup





1.5.2 Radiated Test Setup



### 1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
2.	Preamplifier	SKET Electronic	BK1G18G30 D	KD17503	Nov. 05, 2018	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 19, 2018	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
6.	Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	01109	Nov. 20, 2018	1 Year
7.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
8.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
9.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
10.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
11.	DC Power Supply	IVYTECH	IV3605	1804D360510	Apr. 02, 2018	1 Year
12.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Nov. 01, 2018	1 Year
13.	Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	117888	Nov. 05, 2018	1 Year
14.	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	104209	Nov. 05, 2018	1 Year
15.	High-Pass Filter	CDKMV	ZHPF-BM110 0 -4000-0730	B2015094550	Nov. 08, 2018	1 Year
16.	High-Pass Filter	CDKMV	ZHPF-M3.5 -18G-3834	1307006523	Nov. 05, 2018	1 Year
17.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063507	Nov. 05, 2018	1 Year
18.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	Nov. 05, 2018	1 Year

### 1.7. Measurement Uncertainty

Maximum measurement uncertainty

Parameter	Uncertainty
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±1 °C
Humidity	±5 %
DC and low frequency voltages	±3 %
Time	±5 %
Confidence interval: 95%. Confidence factor:k=2	

### 1.8. Description of Test Facility

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

#### **FCC-Registration No.: 184111**

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, July 31, 2017.

#### **ISED-Registration No.: 8058A-1**

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

#### **Test Location**

All Emissions tests were performed at

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

## 2. Summary of Test

### 2.1. Summary of test result

FCC Rules	Description of Test	Result
§2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10); § 27.50(d.4)	RF Output Power	Compliance
§ 24.232 (d); § 27.50(d)	Peak-Average Ratio	Compliance
§ 2.1047	Modulation Characteristics	N/A
§ 2.1049; § 22.905; § 22.917; § 24.238; § 27.53(a.5)	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917(a); § 24.238(a); § 27.53(h)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917(a); § 24.238(a); § 27.53(h)	Field Strength of Spurious Radiation	Compliance
§ 22.917(a); § 24.238(a); § 27.53(h)	Out of band emission, Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; § 27.5(h); § 27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

### 2.2. Test mode

During all testing, EUT is in link mode with base station emulator at maximum power level in each test mode and channel as below:

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

Mode	Channel	Frequency(MHz)
GSM 850	128	824.2
	190	836.6
	251	848.8
PCS 1900	512	1850.2
	661	1880.0
	810	1909.8
UMTS BAND V	4132	826.4
	4182	836.4
	4233	846.6
UMTS BAND II	9262	1852.4
	9400	1880.0
	9538	1907.6

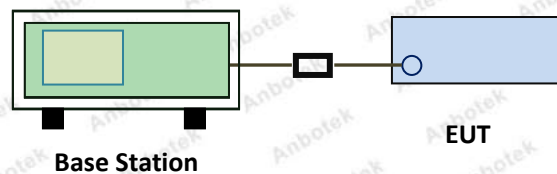
Support Band	Test Mode BW(MHz)	Channel Frequency	Channel Number
LTE Band 2	1.4	1850.7 MHz	18607
		1880.0 MHz	18900
		1909.3 MHz	19193
	3	1851.5 MHz	18615
		1880.0 MHz	18900
		1908.5 MHz	19185
	5	1852.5 MHz	18625
		1880.0 MHz	18900
		1907.5 MHz	19175
	10	1855.0 MHz	18650
		1880.0 MHz	18900
		1905.0 MHz	19150
	15	1857.5 MHz	18675
		1880.0 MHz	18900
		1902.5 MHz	19125
20	1860.0 MHz	18700	
	1880.0 MHz	18900	
	1900.0 MHz	19100	
LTE Band 4	1.4	1710.7 MHz	19957
		1732.5 MHz	20175
		1754.3 MHz	20393
	3	1711.5 MHz	19965
		1732.5 MHz	20175
		1753.5 MHz	20385
	5	1712.5 MHz	19975
		1732.5 MHz	20175
		1752.5 MHz	20375
	10	1715.0 MHz	20000
		1732.5 MHz	20175
		1750.0 MHz	20350
	15	1717.5 MHz	20025
		1732.5 MHz	20175
		1747.5 MHz	20325
20	1720.0 MHz	20050	
	1732.5 MHz	20175	
	1745.0 MHz	20300	

### 3. RF Output Power Test

#### 3.1. Test Standard and Limit

Spec	Item	Requirement
§22.913 (a)	a)	ERP:38.5dBm
§24.232 (c)	b)	EIRP:33dBm
§ 27.50 (c)	c)	EIRP:30dBm

#### 3.2. Test Setup



#### 3.3. Test Procedure

##### For Conducted Power:

The transmitter output port was connected to base station.

Set EUT at maximum power through base station.

Select lowest, middle, and highest channels for each band and different test mode.

##### For ERP/EIRP:

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 log (TX power in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts).

#### 3.4. Test Data

Please to see the following pages

### Conducted Power:

GSM Mode:

Band	Channel	PCL	Power(dBm)	Limit(dBm)	Verdict
GSM850	128	5	29.67	38.5	PASS
GSM850	190	5	30.01	38.5	PASS
GSM850	251	5	30.12	38.5	PASS
GSM1900	512	0	27.33	33	PASS
GSM1900	661	0	27.02	33	PASS
GSM1900	810	0	26.96	33	PASS

GPRS Mode:

Band	Channel	PCL	Slot	Power(dBm)	Limit(dBm)	Verdict
GPRS850	128	3	1	29.42	38.5	PASS
GPRS850	128	3	2	26.75	38.5	PASS
GPRS850	128	3	3	25.38	38.5	PASS
GPRS850	128	3	4	24.09	38.5	PASS
GPRS850	190	3	1	29.67	38.5	PASS
GPRS850	190	3	2	27.01	38.5	PASS
GPRS850	190	3	3	25.52	38.5	PASS
GPRS850	190	3	4	24.25	38.5	PASS
GPRS850	251	3	1	29.74	38.5	PASS
GPRS850	251	3	2	27.06	38.5	PASS
GPRS850	251	3	3	25.64	38.5	PASS
GPRS850	251	3	4	24.36	38.5	PASS
GPRS1900	512	3	1	27.42	33	PASS
GPRS1900	512	3	2	27.19	33	PASS
GPRS1900	512	3	3	25.23	33	PASS
GPRS1900	512	3	4	24.00	33	PASS
GPRS1900	661	3	1	27.06	33	PASS
GPRS1900	661	3	2	26.90	33	PASS
GPRS1900	661	3	3	24.94	33	PASS
GPRS1900	661	3	4	23.60	33	PASS
GPRS1900	810	3	1	27.02	33	PASS
GPRS1900	810	3	2	26.83	33	PASS
GPRS1900	810	3	3	24.70	33	PASS
GPRS1900	810	3	4	23.48	33	PASS



WCDMA Mode:

Band	Channel	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	22.11	33	PASS
Band II	9400	21.94	33	PASS
Band II	9538	22.18	33	PASS
Band V	4132	20.63	38.5	PASS
Band V	4182	20.73	38.5	PASS
Band V	4233	20.93	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	HSDPA_Sub1	21.68	33	PASS
Band II	9262	HSDPA_Sub2	20.66	33	PASS
Band II	9262	HSDPA_Sub3	21.46	33	PASS
Band II	9262	HSDPA_Sub4	21.77	33	PASS
Band II	9400	HSDPA_Sub1	21.85	33	PASS
Band II	9400	HSDPA_Sub2	20.99	33	PASS
Band II	9400	HSDPA_Sub3	20.93	33	PASS
Band II	9400	HSDPA_Sub4	21.32	33	PASS
Band II	9538	HSDPA_Sub1	22.38	33	PASS
Band II	9538	HSDPA_Sub2	22.06	33	PASS
Band II	9538	HSDPA_Sub3	21.17	33	PASS
Band II	9538	HSDPA_Sub4	21.15	33	PASS
Band V	4132	HSDPA_Sub1	20.72	38.5	PASS
Band V	4132	HSDPA_Sub2	20.69	38.5	PASS
Band V	4132	HSDPA_Sub3	20.71	38.5	PASS
Band V	4132	HSDPA_Sub4	20.86	38.5	PASS
Band V	4182	HSDPA_Sub1	20.11	38.5	PASS
Band V	4182	HSDPA_Sub2	21.25	38.5	PASS
Band V	4182	HSDPA_Sub3	21.09	38.5	PASS
Band V	4182	HSDPA_Sub4	21.00	38.5	PASS
Band V	4233	HSDPA_Sub1	21.26	38.5	PASS
Band V	4233	HSDPA_Sub2	20.49	38.5	PASS
Band V	4233	HSDPA_Sub3	21.49	38.5	PASS
Band V	4233	HSDPA_Sub4	20.63	38.5	PASS

Band	Channel	SubTest	Power(dBm)	Limit(dBm)	Verdict
Band II	9262	HSUPA_Sub1	20.46	33	PASS
Band II	9262	HSUPA_Sub2	20.86	33	PASS
Band II	9262	HSUPA_Sub3	21.41	33	PASS
Band II	9262	HSUPA_Sub4	20.71	33	PASS
Band II	9262	HSUPA_Sub5	20.43	33	PASS
Band II	9400	HSUPA_Sub1	21.46	33	PASS
Band II	9400	HSUPA_Sub2	21.27	33	PASS
Band II	9400	HSUPA_Sub3	21.14	33	PASS
Band II	9400	HSUPA_Sub4	21.41	33	PASS
Band II	9400	HSUPA_Sub5	21.04	33	PASS
Band II	9538	HSUPA_Sub1	20.38	33	PASS
Band II	9538	HSUPA_Sub2	20.71	33	PASS
Band II	9538	HSUPA_Sub3	20.42	33	PASS
Band II	9538	HSUPA_Sub4	20.59	33	PASS
Band II	9538	HSUPA_Sub5	20.97	33	PASS
Band V	4132	HSUPA_Sub1	20.41	38.5	PASS
Band V	4132	HSUPA_Sub2	20.33	38.5	PASS
Band V	4132	HSUPA_Sub3	20.11	38.5	PASS
Band V	4132	HSUPA_Sub4	20.51	38.5	PASS
Band V	4132	HSUPA_Sub5	20.56	38.5	PASS
Band V	4182	HSUPA_Sub1	20.64	38.5	PASS
Band V	4182	HSUPA_Sub2	20.41	38.5	PASS
Band V	4182	HSUPA_Sub3	21.09	38.5	PASS
Band V	4182	HSUPA_Sub4	20.57	38.5	PASS
Band V	4182	HSUPA_Sub5	20.85	38.5	PASS
Band V	4233	HSUPA_Sub1	20.81	38.5	PASS
Band V	4233	HSUPA_Sub2	20.52	38.5	PASS
Band V	4233	HSUPA_Sub3	20.35	38.5	PASS
Band V	4233	HSUPA_Sub4	20.82	38.5	PASS
Band V	4233	HSUPA_Sub5	20.94	38.5	PASS

LTE Mode:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	25.53	PASS
Band2	1.4MHz	QPSK	18607	1RB#2	25.40	PASS
Band2	1.4MHz	QPSK	18607	1RB#5	25.58	PASS
Band2	1.4MHz	QPSK	18607	3RB#0	25.49	PASS
Band2	1.4MHz	QPSK	18607	3RB#1	25.38	PASS
Band2	1.4MHz	QPSK	18607	3RB#3	25.68	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	24.57	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	25.40	PASS
Band2	1.4MHz	QPSK	18900	1RB#2	25.55	PASS
Band2	1.4MHz	QPSK	18900	1RB#5	25.31	PASS
Band2	1.4MHz	QPSK	18900	3RB#0	25.29	PASS
Band2	1.4MHz	QPSK	18900	3RB#1	25.32	PASS
Band2	1.4MHz	QPSK	18900	3RB#3	25.37	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	24.09	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	25.58	PASS
Band2	1.4MHz	QPSK	19193	1RB#2	25.51	PASS
Band2	1.4MHz	QPSK	19193	1RB#5	25.51	PASS
Band2	1.4MHz	QPSK	19193	3RB#0	25.59	PASS
Band2	1.4MHz	QPSK	19193	3RB#1	25.62	PASS
Band2	1.4MHz	QPSK	19193	3RB#3	25.54	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	24.45	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	24.77	PASS
Band2	1.4MHz	16QAM	18607	1RB#2	25.15	PASS
Band2	1.4MHz	16QAM	18607	1RB#5	24.92	PASS
Band2	1.4MHz	16QAM	18607	3RB#0	24.79	PASS
Band2	1.4MHz	16QAM	18607	3RB#1	24.64	PASS
Band2	1.4MHz	16QAM	18607	3RB#3	24.67	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	23.50	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	23.79	PASS
Band2	1.4MHz	16QAM	18900	1RB#2	23.99	PASS
Band2	1.4MHz	16QAM	18900	1RB#5	23.90	PASS
Band2	1.4MHz	16QAM	18900	3RB#0	23.82	PASS
Band2	1.4MHz	16QAM	18900	3RB#1	23.86	PASS
Band2	1.4MHz	16QAM	18900	3RB#3	24.78	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	23.49	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	24.15	PASS
Band2	1.4MHz	16QAM	19193	1RB#2	24.61	PASS
Band2	1.4MHz	16QAM	19193	1RB#5	24.33	PASS
Band2	1.4MHz	16QAM	19193	3RB#0	24.68	PASS
Band2	1.4MHz	16QAM	19193	3RB#1	24.48	PASS
Band2	1.4MHz	16QAM	19193	3RB#3	24.70	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	23.26	PASS

Band2	3MHz	QPSK	18615	1RB#0	25.61	PASS
Band2	3MHz	QPSK	18615	1RB#8	25.52	PASS
Band2	3MHz	QPSK	18615	1RB#14	25.46	PASS
Band2	3MHz	QPSK	18615	8RB#0	24.58	PASS
Band2	3MHz	QPSK	18615	8RB#4	24.59	PASS
Band2	3MHz	QPSK	18615	8RB#7	24.44	PASS
Band2	3MHz	QPSK	18615	15RB#0	24.54	PASS
Band2	3MHz	QPSK	18900	1RB#0	25.21	PASS
Band2	3MHz	QPSK	18900	1RB#8	25.40	PASS
Band2	3MHz	QPSK	18900	1RB#14	25.12	PASS
Band2	3MHz	QPSK	18900	8RB#0	24.15	PASS
Band2	3MHz	QPSK	18900	8RB#4	24.06	PASS
Band2	3MHz	QPSK	18900	8RB#7	24.10	PASS
Band2	3MHz	QPSK	18900	15RB#0	24.05	PASS
Band2	3MHz	QPSK	19185	1RB#0	25.51	PASS
Band2	3MHz	QPSK	19185	1RB#8	25.39	PASS
Band2	3MHz	QPSK	19185	1RB#14	25.47	PASS
Band2	3MHz	QPSK	19185	8RB#0	24.48	PASS
Band2	3MHz	QPSK	19185	8RB#4	24.47	PASS
Band2	3MHz	QPSK	19185	8RB#7	24.41	PASS
Band2	3MHz	QPSK	19185	15RB#0	24.36	PASS
Band2	3MHz	16QAM	18615	1RB#0	24.60	PASS
Band2	3MHz	16QAM	18615	1RB#8	24.89	PASS
Band2	3MHz	16QAM	18615	1RB#14	24.68	PASS
Band2	3MHz	16QAM	18615	8RB#0	23.47	PASS
Band2	3MHz	16QAM	18615	8RB#4	23.87	PASS
Band2	3MHz	16QAM	18615	8RB#7	23.67	PASS
Band2	3MHz	16QAM	18615	15RB#0	23.34	PASS
Band2	3MHz	16QAM	18900	1RB#0	24.53	PASS
Band2	3MHz	16QAM	18900	1RB#8	24.24	PASS
Band2	3MHz	16QAM	18900	1RB#14	24.14	PASS
Band2	3MHz	16QAM	18900	8RB#0	23.21	PASS
Band2	3MHz	16QAM	18900	8RB#4	23.21	PASS
Band2	3MHz	16QAM	18900	8RB#7	23.25	PASS
Band2	3MHz	16QAM	18900	15RB#0	23.21	PASS
Band2	3MHz	16QAM	19185	1RB#0	24.79	PASS
Band2	3MHz	16QAM	19185	1RB#8	24.79	PASS
Band2	3MHz	16QAM	19185	1RB#14	24.85	PASS
Band2	3MHz	16QAM	19185	8RB#0	23.34	PASS
Band2	3MHz	16QAM	19185	8RB#4	23.71	PASS
Band2	3MHz	16QAM	19185	8RB#7	23.70	PASS
Band2	3MHz	16QAM	19185	15RB#0	23.51	PASS
Band2	5MHz	QPSK	18625	1RB#0	25.52	PASS

Band2	5MHz	QPSK	18625	1RB#12	25.45	PASS
Band2	5MHz	QPSK	18625	1RB#24	25.24	PASS
Band2	5MHz	QPSK	18625	12RB#0	24.48	PASS
Band2	5MHz	QPSK	18625	12RB#6	24.47	PASS
Band2	5MHz	QPSK	18625	12RB#13	24.35	PASS
Band2	5MHz	QPSK	18625	25RB#0	24.51	PASS
Band2	5MHz	QPSK	18900	1RB#0	25.00	PASS
Band2	5MHz	QPSK	18900	1RB#12	24.99	PASS
Band2	5MHz	QPSK	18900	1RB#24	24.93	PASS
Band2	5MHz	QPSK	18900	12RB#0	24.02	PASS
Band2	5MHz	QPSK	18900	12RB#6	24.09	PASS
Band2	5MHz	QPSK	18900	12RB#13	24.14	PASS
Band2	5MHz	QPSK	18900	25RB#0	24.06	PASS
Band2	5MHz	QPSK	19175	1RB#0	25.34	PASS
Band2	5MHz	QPSK	19175	1RB#12	25.34	PASS
Band2	5MHz	QPSK	19175	1RB#24	25.44	PASS
Band2	5MHz	QPSK	19175	12RB#0	24.31	PASS
Band2	5MHz	QPSK	19175	12RB#6	24.32	PASS
Band2	5MHz	QPSK	19175	12RB#13	24.31	PASS
Band2	5MHz	QPSK	19175	25RB#0	24.35	PASS
Band2	5MHz	16QAM	18625	1RB#0	24.29	PASS
Band2	5MHz	16QAM	18625	1RB#12	24.46	PASS
Band2	5MHz	16QAM	18625	1RB#24	24.16	PASS
Band2	5MHz	16QAM	18625	12RB#0	23.54	PASS
Band2	5MHz	16QAM	18625	12RB#6	23.38	PASS
Band2	5MHz	16QAM	18625	12RB#13	23.32	PASS
Band2	5MHz	16QAM	18625	25RB#0	23.65	PASS
Band2	5MHz	16QAM	18900	1RB#0	23.55	PASS
Band2	5MHz	16QAM	18900	1RB#12	23.82	PASS
Band2	5MHz	16QAM	18900	1RB#24	23.71	PASS
Band2	5MHz	16QAM	18900	12RB#0	22.90	PASS
Band2	5MHz	16QAM	18900	12RB#6	22.94	PASS
Band2	5MHz	16QAM	18900	12RB#13	22.83	PASS
Band2	5MHz	16QAM	18900	25RB#0	22.90	PASS
Band2	5MHz	16QAM	19175	1RB#0	23.96	PASS
Band2	5MHz	16QAM	19175	1RB#12	24.50	PASS
Band2	5MHz	16QAM	19175	1RB#24	24.07	PASS
Band2	5MHz	16QAM	19175	12RB#0	23.28	PASS
Band2	5MHz	16QAM	19175	12RB#6	23.12	PASS
Band2	5MHz	16QAM	19175	12RB#13	23.29	PASS
Band2	5MHz	16QAM	19175	25RB#0	23.44	PASS
Band2	10MHz	QPSK	18650	1RB#0	25.55	PASS
Band2	10MHz	QPSK	18650	1RB#24	25.37	PASS
Band2	10MHz	QPSK	18650	1RB#49	25.42	PASS

Band2	10MHz	QPSK	18650	25RB#0	24.52	PASS
Band2	10MHz	QPSK	18650	25RB#12	24.40	PASS
Band2	10MHz	QPSK	18650	25RB#25	24.45	PASS
Band2	10MHz	QPSK	18650	50RB#0	24.39	PASS
Band2	10MHz	QPSK	18900	1RB#0	25.41	PASS
Band2	10MHz	QPSK	18900	1RB#24	25.48	PASS
Band2	10MHz	QPSK	18900	1RB#49	25.10	PASS
Band2	10MHz	QPSK	18900	25RB#0	24.08	PASS
Band2	10MHz	QPSK	18900	25RB#12	24.14	PASS
Band2	10MHz	QPSK	18900	25RB#25	24.03	PASS
Band2	10MHz	QPSK	18900	50RB#0	24.13	PASS
Band2	10MHz	QPSK	19150	1RB#0	25.36	PASS
Band2	10MHz	QPSK	19150	1RB#24	25.42	PASS
Band2	10MHz	QPSK	19150	1RB#49	25.52	PASS
Band2	10MHz	QPSK	19150	25RB#0	24.38	PASS
Band2	10MHz	QPSK	19150	25RB#12	24.38	PASS
Band2	10MHz	QPSK	19150	25RB#25	24.33	PASS
Band2	10MHz	QPSK	19150	50RB#0	24.28	PASS
Band2	10MHz	16QAM	18650	1RB#0	24.71	PASS
Band2	10MHz	16QAM	18650	1RB#24	24.93	PASS
Band2	10MHz	16QAM	18650	1RB#49	24.70	PASS
Band2	10MHz	16QAM	18650	25RB#0	23.48	PASS
Band2	10MHz	16QAM	18650	25RB#12	23.46	PASS
Band2	10MHz	16QAM	18650	25RB#25	23.39	PASS
Band2	10MHz	16QAM	18650	50RB#0	23.37	PASS
Band2	10MHz	16QAM	18900	1RB#0	23.75	PASS
Band2	10MHz	16QAM	18900	1RB#24	23.96	PASS
Band2	10MHz	16QAM	18900	1RB#49	23.75	PASS
Band2	10MHz	16QAM	18900	25RB#0	23.12	PASS
Band2	10MHz	16QAM	18900	25RB#12	23.21	PASS
Band2	10MHz	16QAM	18900	25RB#25	22.93	PASS
Band2	10MHz	16QAM	18900	50RB#0	23.02	PASS
Band2	10MHz	16QAM	19150	1RB#0	24.44	PASS
Band2	10MHz	16QAM	19150	1RB#24	24.97	PASS
Band2	10MHz	16QAM	19150	1RB#49	24.40	PASS
Band2	10MHz	16QAM	19150	25RB#0	23.26	PASS
Band2	10MHz	16QAM	19150	25RB#12	23.23	PASS
Band2	10MHz	16QAM	19150	25RB#25	23.27	PASS
Band2	10MHz	16QAM	19150	50RB#0	23.35	PASS
Band2	15MHz	QPSK	18675	1RB#0	25.43	PASS
Band2	15MHz	QPSK	18675	1RB#38	25.54	PASS
Band2	15MHz	QPSK	18675	1RB#74	25.14	PASS
Band2	15MHz	QPSK	18675	38RB#0	24.42	PASS
Band2	15MHz	QPSK	18675	38RB#18	24.46	PASS

Band2	15MHz	QPSK	18675	38RB#37	24.36	PASS
Band2	15MHz	QPSK	18675	75RB#0	24.43	PASS
Band2	15MHz	QPSK	18900	1RB#0	25.38	PASS
Band2	15MHz	QPSK	18900	1RB#38	25.41	PASS
Band2	15MHz	QPSK	18900	1RB#74	25.18	PASS
Band2	15MHz	QPSK	18900	38RB#0	24.24	PASS
Band2	15MHz	QPSK	18900	38RB#18	24.13	PASS
Band2	15MHz	QPSK	18900	38RB#37	24.13	PASS
Band2	15MHz	QPSK	18900	75RB#0	24.13	PASS
Band2	15MHz	QPSK	19125	1RB#0	25.26	PASS
Band2	15MHz	QPSK	19125	1RB#38	25.34	PASS
Band2	15MHz	QPSK	19125	1RB#74	25.55	PASS
Band2	15MHz	QPSK	19125	38RB#0	24.32	PASS
Band2	15MHz	QPSK	19125	38RB#18	24.27	PASS
Band2	15MHz	QPSK	19125	38RB#37	24.36	PASS
Band2	15MHz	QPSK	19125	75RB#0	24.30	PASS
Band2	15MHz	16QAM	18675	1RB#0	25.01	PASS
Band2	15MHz	16QAM	18675	1RB#38	24.83	PASS
Band2	15MHz	16QAM	18675	1RB#74	24.70	PASS
Band2	15MHz	16QAM	18675	38RB#0	23.40	PASS
Band2	15MHz	16QAM	18675	38RB#18	23.28	PASS
Band2	15MHz	16QAM	18675	38RB#37	23.33	PASS
Band2	15MHz	16QAM	18675	75RB#0	23.40	PASS
Band2	15MHz	16QAM	18900	1RB#0	24.09	PASS
Band2	15MHz	16QAM	18900	1RB#38	23.71	PASS
Band2	15MHz	16QAM	18900	1RB#74	23.86	PASS
Band2	15MHz	16QAM	18900	38RB#0	23.25	PASS
Band2	15MHz	16QAM	18900	38RB#18	22.99	PASS
Band2	15MHz	16QAM	18900	38RB#37	23.03	PASS
Band2	15MHz	16QAM	18900	75RB#0	23.08	PASS
Band2	15MHz	16QAM	19125	1RB#0	24.79	PASS
Band2	15MHz	16QAM	19125	1RB#38	24.57	PASS
Band2	15MHz	16QAM	19125	1RB#74	24.64	PASS
Band2	15MHz	16QAM	19125	38RB#0	23.24	PASS
Band2	15MHz	16QAM	19125	38RB#18	23.23	PASS
Band2	15MHz	16QAM	19125	38RB#37	23.31	PASS
Band2	15MHz	16QAM	19125	75RB#0	23.28	PASS
Band2	20MHz	QPSK	18700	1RB#0	25.47	PASS
Band2	20MHz	QPSK	18700	1RB#49	25.54	PASS
Band2	20MHz	QPSK	18700	1RB#99	25.26	PASS
Band2	20MHz	QPSK	18700	50RB#0	24.40	PASS
Band2	20MHz	QPSK	18700	50RB#25	24.43	PASS
Band2	20MHz	QPSK	18700	50RB#50	24.32	PASS
Band2	20MHz	QPSK	18700	100RB#0	24.36	PASS

Band2	20MHz	QPSK	18900	1RB#0	25.33	PASS
Band2	20MHz	QPSK	18900	1RB#49	25.48	PASS
Band2	20MHz	QPSK	18900	1RB#99	25.20	PASS
Band2	20MHz	QPSK	18900	50RB#0	24.17	PASS
Band2	20MHz	QPSK	18900	50RB#25	24.09	PASS
Band2	20MHz	QPSK	18900	50RB#50	23.99	PASS
Band2	20MHz	QPSK	18900	100RB#0	24.12	PASS
Band2	20MHz	QPSK	19100	1RB#0	25.36	PASS
Band2	20MHz	QPSK	19100	1RB#49	25.20	PASS
Band2	20MHz	QPSK	19100	1RB#99	25.24	PASS
Band2	20MHz	QPSK	19100	50RB#0	24.27	PASS
Band2	20MHz	QPSK	19100	50RB#25	24.30	PASS
Band2	20MHz	QPSK	19100	50RB#50	24.28	PASS
Band2	20MHz	QPSK	19100	100RB#0	24.30	PASS
Band2	20MHz	16QAM	18700	1RB#0	24.55	PASS
Band2	20MHz	16QAM	18700	1RB#49	24.35	PASS
Band2	20MHz	16QAM	18700	1RB#99	24.74	PASS
Band2	20MHz	16QAM	18700	50RB#0	23.38	PASS
Band2	20MHz	16QAM	18700	50RB#25	23.39	PASS
Band2	20MHz	16QAM	18700	50RB#50	23.30	PASS
Band2	20MHz	16QAM	18700	100RB#0	23.49	PASS
Band2	20MHz	16QAM	18900	1RB#0	23.83	PASS
Band2	20MHz	16QAM	18900	1RB#49	24.11	PASS
Band2	20MHz	16QAM	18900	1RB#99	24.29	PASS
Band2	20MHz	16QAM	18900	50RB#0	23.03	PASS
Band2	20MHz	16QAM	18900	50RB#25	23.12	PASS
Band2	20MHz	16QAM	18900	50RB#50	23.18	PASS
Band2	20MHz	16QAM	18900	100RB#0	23.11	PASS
Band2	20MHz	16QAM	19100	1RB#0	24.12	PASS
Band2	20MHz	16QAM	19100	1RB#49	24.14	PASS
Band2	20MHz	16QAM	19100	1RB#99	23.47	PASS
Band2	20MHz	16QAM	19100	50RB#0	23.32	PASS
Band2	20MHz	16QAM	19100	50RB#25	23.37	PASS
Band2	20MHz	16QAM	19100	50RB#50	23.09	PASS
Band2	20MHz	16QAM	19100	100RB#0	23.23	PASS
Band4	1.4MHz	QPSK	19957	1RB#0	25.40	PASS
Band4	1.4MHz	QPSK	19957	1RB#2	25.27	PASS
Band4	1.4MHz	QPSK	19957	1RB#5	25.22	PASS
Band4	1.4MHz	QPSK	19957	3RB#0	25.20	PASS
Band4	1.4MHz	QPSK	19957	3RB#1	25.26	PASS
Band4	1.4MHz	QPSK	19957	3RB#3	25.22	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	24.19	PASS
Band4	1.4MHz	QPSK	20175	1RB#0	25.24	PASS
Band4	1.4MHz	QPSK	20175	1RB#2	25.17	PASS



Band4	1.4MHz	QPSK	20175	1RB#5	25.18	PASS
Band4	1.4MHz	QPSK	20175	3RB#0	25.05	PASS
Band4	1.4MHz	QPSK	20175	3RB#1	25.11	PASS
Band4	1.4MHz	QPSK	20175	3RB#3	25.08	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	24.04	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	25.11	PASS
Band4	1.4MHz	QPSK	20393	1RB#2	25.23	PASS
Band4	1.4MHz	QPSK	20393	1RB#5	24.98	PASS
Band4	1.4MHz	QPSK	20393	3RB#0	25.15	PASS
Band4	1.4MHz	QPSK	20393	3RB#1	25.18	PASS
Band4	1.4MHz	QPSK	20393	3RB#3	25.02	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	23.98	PASS
Band4	1.4MHz	16QAM	19957	1RB#0	24.19	PASS
Band4	1.4MHz	16QAM	19957	1RB#2	24.53	PASS
Band4	1.4MHz	16QAM	19957	1RB#5	24.51	PASS
Band4	1.4MHz	16QAM	19957	3RB#0	24.27	PASS
Band4	1.4MHz	16QAM	19957	3RB#1	24.30	PASS
Band4	1.4MHz	16QAM	19957	3RB#3	24.07	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	22.83	PASS
Band4	1.4MHz	16QAM	20175	1RB#0	24.14	PASS
Band4	1.4MHz	16QAM	20175	1RB#2	24.18	PASS
Band4	1.4MHz	16QAM	20175	1RB#5	24.11	PASS
Band4	1.4MHz	16QAM	20175	3RB#0	24.17	PASS
Band4	1.4MHz	16QAM	20175	3RB#1	24.03	PASS
Band4	1.4MHz	16QAM	20175	3RB#3	23.94	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	22.76	PASS
Band4	1.4MHz	16QAM	20393	1RB#0	24.31	PASS
Band4	1.4MHz	16QAM	20393	1RB#2	24.42	PASS
Band4	1.4MHz	16QAM	20393	1RB#5	24.28	PASS
Band4	1.4MHz	16QAM	20393	3RB#0	24.00	PASS
Band4	1.4MHz	16QAM	20393	3RB#1	24.05	PASS
Band4	1.4MHz	16QAM	20393	3RB#3	24.01	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	23.18	PASS
Band4	3MHz	QPSK	19965	1RB#0	25.16	PASS
Band4	3MHz	QPSK	19965	1RB#8	25.14	PASS
Band4	3MHz	QPSK	19965	1RB#14	25.20	PASS
Band4	3MHz	QPSK	19965	8RB#0	24.26	PASS
Band4	3MHz	QPSK	19965	8RB#4	24.27	PASS
Band4	3MHz	QPSK	19965	8RB#7	24.31	PASS
Band4	3MHz	QPSK	19965	15RB#0	24.26	PASS
Band4	3MHz	QPSK	20175	1RB#0	25.00	PASS
Band4	3MHz	QPSK	20175	1RB#8	24.90	PASS
Band4	3MHz	QPSK	20175	1RB#14	25.04	PASS
Band4	3MHz	QPSK	20175	8RB#0	24.12	PASS

Band4	3MHz	QPSK	20175	8RB#4	24.19	PASS
Band4	3MHz	QPSK	20175	8RB#7	24.05	PASS
Band4	3MHz	QPSK	20175	15RB#0	24.14	PASS
Band4	3MHz	QPSK	20385	1RB#0	25.07	PASS
Band4	3MHz	QPSK	20385	1RB#8	24.93	PASS
Band4	3MHz	QPSK	20385	1RB#14	24.97	PASS
Band4	3MHz	QPSK	20385	8RB#0	24.25	PASS
Band4	3MHz	QPSK	20385	8RB#4	24.22	PASS
Band4	3MHz	QPSK	20385	8RB#7	24.18	PASS
Band4	3MHz	QPSK	20385	15RB#0	24.12	PASS
Band4	3MHz	16QAM	19965	1RB#0	24.46	PASS
Band4	3MHz	16QAM	19965	1RB#8	24.51	PASS
Band4	3MHz	16QAM	19965	1RB#14	24.45	PASS
Band4	3MHz	16QAM	19965	8RB#0	23.09	PASS
Band4	3MHz	16QAM	19965	8RB#4	23.00	PASS
Band4	3MHz	16QAM	19965	8RB#7	23.04	PASS
Band4	3MHz	16QAM	19965	15RB#0	23.36	PASS
Band4	3MHz	16QAM	20175	1RB#0	23.88	PASS
Band4	3MHz	16QAM	20175	1RB#8	24.16	PASS
Band4	3MHz	16QAM	20175	1RB#14	24.16	PASS
Band4	3MHz	16QAM	20175	8RB#0	22.90	PASS
Band4	3MHz	16QAM	20175	8RB#4	22.90	PASS
Band4	3MHz	16QAM	20175	8RB#7	23.44	PASS
Band4	3MHz	16QAM	20175	15RB#0	23.01	PASS
Band4	3MHz	16QAM	20385	1RB#0	24.27	PASS
Band4	3MHz	16QAM	20385	1RB#8	24.26	PASS
Band4	3MHz	16QAM	20385	1RB#14	24.27	PASS
Band4	3MHz	16QAM	20385	8RB#0	23.32	PASS
Band4	3MHz	16QAM	20385	8RB#4	23.02	PASS
Band4	3MHz	16QAM	20385	8RB#7	23.00	PASS
Band4	3MHz	16QAM	20385	15RB#0	23.21	PASS
Band4	5MHz	QPSK	19975	1RB#0	25.11	PASS
Band4	5MHz	QPSK	19975	1RB#12	25.32	PASS
Band4	5MHz	QPSK	19975	1RB#24	25.12	PASS
Band4	5MHz	QPSK	19975	12RB#0	24.13	PASS
Band4	5MHz	QPSK	19975	12RB#6	24.21	PASS
Band4	5MHz	QPSK	19975	12RB#13	24.20	PASS
Band4	5MHz	QPSK	19975	25RB#0	24.16	PASS
Band4	5MHz	QPSK	20175	1RB#0	24.98	PASS
Band4	5MHz	QPSK	20175	1RB#12	25.05	PASS
Band4	5MHz	QPSK	20175	1RB#24	24.94	PASS
Band4	5MHz	QPSK	20175	12RB#0	24.01	PASS
Band4	5MHz	QPSK	20175	12RB#6	23.95	PASS
Band4	5MHz	QPSK	20175	12RB#13	23.90	PASS

Band4	5MHz	QPSK	20175	25RB#0	23.98	PASS
Band4	5MHz	QPSK	20375	1RB#0	25.14	PASS
Band4	5MHz	QPSK	20375	1RB#12	25.38	PASS
Band4	5MHz	QPSK	20375	1RB#24	24.93	PASS
Band4	5MHz	QPSK	20375	12RB#0	24.09	PASS
Band4	5MHz	QPSK	20375	12RB#6	24.14	PASS
Band4	5MHz	QPSK	20375	12RB#13	24.06	PASS
Band4	5MHz	QPSK	20375	25RB#0	24.13	PASS
Band4	5MHz	16QAM	19975	1RB#0	23.80	PASS
Band4	5MHz	16QAM	19975	1RB#12	24.44	PASS
Band4	5MHz	16QAM	19975	1RB#24	23.85	PASS
Band4	5MHz	16QAM	19975	12RB#0	23.16	PASS
Band4	5MHz	16QAM	19975	12RB#6	23.24	PASS
Band4	5MHz	16QAM	19975	12RB#13	23.21	PASS
Band4	5MHz	16QAM	19975	25RB#0	23.33	PASS
Band4	5MHz	16QAM	20175	1RB#0	23.61	PASS
Band4	5MHz	16QAM	20175	1RB#12	24.16	PASS
Band4	5MHz	16QAM	20175	1RB#24	23.64	PASS
Band4	5MHz	16QAM	20175	12RB#0	22.89	PASS
Band4	5MHz	16QAM	20175	12RB#6	22.89	PASS
Band4	5MHz	16QAM	20175	12RB#13	23.09	PASS
Band4	5MHz	16QAM	20175	25RB#0	22.97	PASS
Band4	5MHz	16QAM	20375	1RB#0	23.83	PASS
Band4	5MHz	16QAM	20375	1RB#12	24.10	PASS
Band4	5MHz	16QAM	20375	1RB#24	24.21	PASS
Band4	5MHz	16QAM	20375	12RB#0	23.16	PASS
Band4	5MHz	16QAM	20375	12RB#6	23.03	PASS
Band4	5MHz	16QAM	20375	12RB#13	23.22	PASS
Band4	5MHz	16QAM	20375	25RB#0	23.11	PASS
Band4	10MHz	QPSK	20000	1RB#0	25.29	PASS
Band4	10MHz	QPSK	20000	1RB#24	25.34	PASS
Band4	10MHz	QPSK	20000	1RB#49	25.25	PASS
Band4	10MHz	QPSK	20000	25RB#0	24.31	PASS
Band4	10MHz	QPSK	20000	25RB#12	24.33	PASS
Band4	10MHz	QPSK	20000	25RB#25	24.32	PASS
Band4	10MHz	QPSK	20000	50RB#0	24.33	PASS
Band4	10MHz	QPSK	20175	1RB#0	25.08	PASS
Band4	10MHz	QPSK	20175	1RB#24	24.96	PASS
Band4	10MHz	QPSK	20175	1RB#49	24.97	PASS
Band4	10MHz	QPSK	20175	25RB#0	24.11	PASS
Band4	10MHz	QPSK	20175	25RB#12	24.07	PASS
Band4	10MHz	QPSK	20175	25RB#25	23.98	PASS
Band4	10MHz	QPSK	20175	50RB#0	24.01	PASS
Band4	10MHz	QPSK	20350	1RB#0	25.18	PASS

Band4	10MHz	QPSK	20350	1RB#24	24.95	PASS
Band4	10MHz	QPSK	20350	1RB#49	25.14	PASS
Band4	10MHz	QPSK	20350	25RB#0	24.14	PASS
Band4	10MHz	QPSK	20350	25RB#12	24.16	PASS
Band4	10MHz	QPSK	20350	25RB#25	24.07	PASS
Band4	10MHz	QPSK	20350	50RB#0	24.10	PASS
Band4	10MHz	16QAM	20000	1RB#0	24.41	PASS
Band4	10MHz	16QAM	20000	1RB#24	24.56	PASS
Band4	10MHz	16QAM	20000	1RB#49	24.49	PASS
Band4	10MHz	16QAM	20000	25RB#0	23.29	PASS
Band4	10MHz	16QAM	20000	25RB#12	23.40	PASS
Band4	10MHz	16QAM	20000	25RB#25	23.32	PASS
Band4	10MHz	16QAM	20000	50RB#0	23.46	PASS
Band4	10MHz	16QAM	20175	1RB#0	23.84	PASS
Band4	10MHz	16QAM	20175	1RB#24	24.43	PASS
Band4	10MHz	16QAM	20175	1RB#49	24.14	PASS
Band4	10MHz	16QAM	20175	25RB#0	23.09	PASS
Band4	10MHz	16QAM	20175	25RB#12	23.23	PASS
Band4	10MHz	16QAM	20175	25RB#25	22.96	PASS
Band4	10MHz	16QAM	20175	50RB#0	23.18	PASS
Band4	10MHz	16QAM	20350	1RB#0	24.54	PASS
Band4	10MHz	16QAM	20350	1RB#24	24.70	PASS
Band4	10MHz	16QAM	20350	1RB#49	24.49	PASS
Band4	10MHz	16QAM	20350	25RB#0	23.14	PASS
Band4	10MHz	16QAM	20350	25RB#12	23.17	PASS
Band4	10MHz	16QAM	20350	25RB#25	23.04	PASS
Band4	10MHz	16QAM	20350	50RB#0	23.11	PASS
Band4	15MHz	QPSK	20025	1RB#0	25.23	PASS
Band4	15MHz	QPSK	20025	1RB#38	25.17	PASS
Band4	15MHz	QPSK	20025	1RB#74	25.33	PASS
Band4	15MHz	QPSK	20025	38RB#0	24.23	PASS
Band4	15MHz	QPSK	20025	38RB#18	24.23	PASS
Band4	15MHz	QPSK	20025	38RB#37	24.40	PASS
Band4	15MHz	QPSK	20025	75RB#0	24.40	PASS
Band4	15MHz	QPSK	20175	1RB#0	24.89	PASS
Band4	15MHz	QPSK	20175	1RB#38	24.83	PASS
Band4	15MHz	QPSK	20175	1RB#74	24.75	PASS
Band4	15MHz	QPSK	20175	38RB#0	24.03	PASS
Band4	15MHz	QPSK	20175	38RB#18	24.03	PASS
Band4	15MHz	QPSK	20175	38RB#37	24.01	PASS
Band4	15MHz	QPSK	20175	75RB#0	24.09	PASS
Band4	15MHz	QPSK	20325	1RB#0	24.96	PASS
Band4	15MHz	QPSK	20325	1RB#38	24.98	PASS
Band4	15MHz	QPSK	20325	1RB#74	25.01	PASS

Band4	15MHz	QPSK	20325	38RB#0	24.03	PASS
Band4	15MHz	QPSK	20325	38RB#18	24.17	PASS
Band4	15MHz	QPSK	20325	38RB#37	24.00	PASS
Band4	15MHz	QPSK	20325	75RB#0	24.09	PASS
Band4	15MHz	16QAM	20025	1RB#0	24.56	PASS
Band4	15MHz	16QAM	20025	1RB#38	24.52	PASS
Band4	15MHz	16QAM	20025	1RB#74	24.61	PASS
Band4	15MHz	16QAM	20025	38RB#0	23.31	PASS
Band4	15MHz	16QAM	20025	38RB#18	23.29	PASS
Band4	15MHz	16QAM	20025	38RB#37	23.46	PASS
Band4	15MHz	16QAM	20025	75RB#0	23.47	PASS
Band4	15MHz	16QAM	20175	1RB#0	24.62	PASS
Band4	15MHz	16QAM	20175	1RB#38	23.94	PASS
Band4	15MHz	16QAM	20175	1RB#74	24.02	PASS
Band4	15MHz	16QAM	20175	38RB#0	23.15	PASS
Band4	15MHz	16QAM	20175	38RB#18	23.04	PASS
Band4	15MHz	16QAM	20175	38RB#37	23.09	PASS
Band4	15MHz	16QAM	20175	75RB#0	23.01	PASS
Band4	15MHz	16QAM	20325	1RB#0	24.11	PASS
Band4	15MHz	16QAM	20325	1RB#38	23.90	PASS
Band4	15MHz	16QAM	20325	1RB#74	23.78	PASS
Band4	15MHz	16QAM	20325	38RB#0	23.00	PASS
Band4	15MHz	16QAM	20325	38RB#18	23.15	PASS
Band4	15MHz	16QAM	20325	38RB#37	23.11	PASS
Band4	15MHz	16QAM	20325	75RB#0	23.16	PASS
Band4	20MHz	QPSK	20050	1RB#0	25.11	PASS
Band4	20MHz	QPSK	20050	1RB#49	25.24	PASS
Band4	20MHz	QPSK	20050	1RB#99	25.30	PASS
Band4	20MHz	QPSK	20050	50RB#0	24.21	PASS
Band4	20MHz	QPSK	20050	50RB#25	24.32	PASS
Band4	20MHz	QPSK	20050	50RB#50	24.28	PASS
Band4	20MHz	QPSK	20050	100RB#0	24.31	PASS
Band4	20MHz	QPSK	20175	1RB#0	25.16	PASS
Band4	20MHz	QPSK	20175	1RB#49	25.10	PASS
Band4	20MHz	QPSK	20175	1RB#99	25.07	PASS
Band4	20MHz	QPSK	20175	50RB#0	24.08	PASS
Band4	20MHz	QPSK	20175	50RB#25	23.98	PASS
Band4	20MHz	QPSK	20175	50RB#50	23.92	PASS
Band4	20MHz	QPSK	20175	100RB#0	24.01	PASS
Band4	20MHz	QPSK	20300	1RB#0	25.17	PASS
Band4	20MHz	QPSK	20300	1RB#49	25.42	PASS
Band4	20MHz	QPSK	20300	1RB#99	25.09	PASS
Band4	20MHz	QPSK	20300	50RB#0	24.05	PASS
Band4	20MHz	QPSK	20300	50RB#25	23.99	PASS

Band4	20MHz	QPSK	20300	50RB#50	24.11	PASS
Band4	20MHz	QPSK	20300	100RB#0	24.07	PASS
Band4	20MHz	16QAM	20050	1RB#0	24.16	PASS
Band4	20MHz	16QAM	20050	1RB#49	24.12	PASS
Band4	20MHz	16QAM	20050	1RB#99	24.11	PASS
Band4	20MHz	16QAM	20050	50RB#0	23.31	PASS
Band4	20MHz	16QAM	20050	50RB#25	23.36	PASS
Band4	20MHz	16QAM	20050	50RB#50	23.42	PASS
Band4	20MHz	16QAM	20050	100RB#0	23.35	PASS
Band4	20MHz	16QAM	20175	1RB#0	23.87	PASS
Band4	20MHz	16QAM	20175	1RB#49	23.97	PASS
Band4	20MHz	16QAM	20175	1RB#99	23.76	PASS
Band4	20MHz	16QAM	20175	50RB#0	23.12	PASS
Band4	20MHz	16QAM	20175	50RB#25	23.04	PASS
Band4	20MHz	16QAM	20175	50RB#50	23.05	PASS
Band4	20MHz	16QAM	20175	100RB#0	23.11	PASS
Band4	20MHz	16QAM	20300	1RB#0	23.72	PASS
Band4	20MHz	16QAM	20300	1RB#49	23.95	PASS
Band4	20MHz	16QAM	20300	1RB#99	24.19	PASS
Band4	20MHz	16QAM	20300	50RB#0	23.13	PASS
Band4	20MHz	16QAM	20300	50RB#25	22.99	PASS
Band4	20MHz	16QAM	20300	50RB#50	22.97	PASS
Band4	20MHz	16QAM	20300	100RB#0	23.13	PASS

**Radiated Output power:**

**ERP & EIRP**

**ERP for Cellular Band (Part 22H)**

**GSM Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	23.44	V	6.8	0.53	29.71	38.45
824.2	23.72	H	6.8	0.53	29.99	38.45
836.6	23.30	V	6.8	0.53	29.57	38.45
836.6	24.01	H	6.8	0.53	30.28	38.45
848.8	23.08	V	6.9	0.53	29.45	38.45
848.8	21.43	H	6.9	0.53	27.80	38.45

**GPRS Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	23.19	V	6.8	0.53	29.46	38.45
824.2	23.71	H	6.8	0.53	29.98	38.45
836.6	22.21	V	6.8	0.53	28.48	38.45
836.6	22.77	H	6.8	0.53	29.04	38.45
848.8	22.40	V	6.9	0.53	28.77	38.45
848.8	23.18	H	6.9	0.53	29.55	38.45

**ERP for UMTS-FDD Band V (Part 22H)  
WCDMA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	13.46	V	6.8	0.53	19.73	38.45
826.4	15.76	H	6.8	0.53	22.03	38.45
836.4	14.47	V	6.8	0.53	20.74	38.45
836.4	13.71	H	6.8	0.53	19.98	38.45
846.6	13.70	V	6.9	0.53	20.07	38.45
846.6	15.18	H	6.9	0.53	21.55	38.45

**HSDPA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	15.00	V	6.8	0.53	21.27	38.45
826.4	13.78	H	6.8	0.53	20.05	38.45
836.4	14.35	V	6.8	0.53	20.62	38.45
836.4	13.97	H	6.8	0.53	20.24	38.45
846.6	13.87	V	6.9	0.53	20.24	38.45
846.6	13.92	H	6.9	0.53	20.29	38.45

**HSUPA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	13.84	V	6.8	0.53	20.11	38.45
826.4	14.26	H	6.8	0.53	20.53	38.45
836.4	14.30	V	6.8	0.53	20.57	38.45
836.4	13.60	H	6.8	0.53	19.87	38.45
846.6	14.46	V	6.9	0.53	20.83	38.45
846.6	14.83	H	6.9	0.53	21.20	38.45



**EIRP for PCS Band (Part 24E)  
GSM Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	21.53	V	7.88	0.85	28.56	33
1850.2	21.95	H	7.88	0.85	28.98	33
1880	21.11	V	7.88	0.85	28.14	33
1880	22.05	H	7.88	0.85	29.08	33
1909.8	20.55	V	7.86	0.85	27.56	33
1909.8	21.55	H	7.86	0.85	28.56	33

**GPRS Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	19.94	V	7.88	0.85	26.97	33
1850.2	21.48	H	7.88	0.85	28.51	33
1880	20.09	V	7.88	0.85	27.12	33
1880	20.31	H	7.88	0.85	27.34	33
1909.8	20.65	V	7.86	0.85	27.66	33
1909.8	20.58	H	7.86	0.85	27.59	33

**EIRP for UMTS-FDD Band II (Part 24E)  
WCDMA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	14.13	V	7.88	0.85	21.16	33
1852.4	12.64	H	7.88	0.85	19.67	33
1880	14.55	V	7.88	0.85	21.58	33
1880	13.64	H	7.88	0.85	20.67	33
1907.6	14.47	V	7.86	0.85	21.48	33
1907.6	15.32	H	7.86	0.85	22.33	33

**HSDPA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	12.44	V	7.88	0.85	19.47	33
1852.4	12.93	H	7.88	0.85	19.96	33
1880	11.92	V	7.88	0.85	18.95	33
1880	12.25	H	7.88	0.85	19.28	33
1907.6	13.69	V	7.86	0.85	20.70	33
1907.6	12.93	H	7.86	0.85	19.94	33

**HSUPA Mode**

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	12.61	V	7.88	0.85	19.64	33
1852.4	12.15	H	7.88	0.85	19.18	33
1880	12.85	V	7.88	0.85	19.88	33
1880	12.29	H	7.88	0.85	19.32	33
1907.6	11.91	V	7.86	0.85	18.92	33
1907.6	13.32	H	7.86	0.85	20.33	33

**EIRP for LTE Band 2 (Part 24E)**

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.7	1.4	QPSK	1/0	10.12	V	7.88	0.85	17.15	33
1880	1.4	QPSK	1/0	10.70	V	7.88	0.85	17.73	33
1909.3	1.4	QPSK	1/0	10.16	V	7.88	0.85	17.19	33
1850.7	1.4	QPSK	1/0	10.60	H	7.88	0.85	17.63	33
1880	1.4	QPSK	1/0	9.97	H	7.88	0.85	17.00	33
1909.3	1.4	QPSK	1/0	9.68	H	7.88	0.85	16.71	33
1850.7	1.4	16-QAM	1/0	9.95	V	7.88	0.85	16.98	33
1880	1.4	16-QAM	1/0	9.60	V	7.88	0.85	16.63	33
1909.3	1.4	16-QAM	1/0	10.05	V	7.88	0.85	17.08	33
1850.7	1.4	16-QAM	1/0	10.14	H	7.88	0.85	17.17	33
1880	1.4	16-QAM	1/0	9.55	H	7.88	0.85	16.58	33
1909.3	1.4	16-QAM	1/0	9.57	H	7.88	0.85	16.60	33
1851.5	3	QPSK	1/0	9.10	V	7.88	0.85	16.13	33
1880	3	QPSK	1/0	10.50	V	7.88	0.85	17.53	33
1908.5	3	QPSK	1/0	9.77	V	7.88	0.85	16.80	33
1851.5	3	QPSK	1/0	10.99	H	7.88	0.85	18.02	33
1880	3	QPSK	1/0	10.76	H	7.88	0.85	17.79	33
1908.5	3	QPSK	1/0	9.33	H	7.88	0.85	16.36	33
1851.5	3	16-QAM	1/0	10.38	V	7.88	0.85	17.41	33
1880	3	16-QAM	1/0	10.39	V	7.88	0.85	17.42	33
1908.5	3	16-QAM	1/0	9.68	V	7.88	0.85	16.71	33
1851.5	3	16-QAM	1/0	9.90	H	7.88	0.85	16.93	33
1880	3	16-QAM	1/0	9.73	H	7.88	0.85	16.76	33
1908.5	3	16-QAM	1/0	10.49	H	7.88	0.85	17.52	33
1852.5	5	QPSK	1/24	10.37	V	7.88	0.85	17.40	33
1880	5	QPSK	1/0	10.04	V	7.88	0.85	17.07	33
1907.5	5	QPSK	1/24	9.64	V	7.88	0.85	16.67	33
1852.5	5	QPSK	1/24	9.84	H	7.88	0.85	16.87	33
1880	5	QPSK	1/0	10.25	H	7.88	0.85	17.28	33
1907.5	5	QPSK	1/24	10.39	H	7.88	0.85	17.42	33
1852.5	5	16-QAM	1/24	9.84	V	7.88	0.85	16.87	33
1880	5	16-QAM	1/0	10.33	V	7.88	0.85	17.36	33
1907.5	5	16-QAM	1/24	10.78	V	7.88	0.85	17.81	33
1852.5	5	16-QAM	1/24	10.33	H	7.88	0.85	17.36	33

1880	5	16-QAM	1/0	10.46	H	7.88	0.85	17.49	33
1907.5	5	16-QAM	1/24	10.51	H	7.88	0.85	17.54	33
1855	10	QPSK	1/0	10.15	V	7.88	0.85	17.18	33
1880	10	QPSK	1/0	10.32	V	7.88	0.85	17.35	33
1905	10	QPSK	1/49	10.15	V	7.88	0.85	17.18	33
1855	10	QPSK	1/0	9.54	H	7.88	0.85	16.57	33
1880	10	QPSK	1/0	10.58	H	7.88	0.85	17.61	33
1905	10	QPSK	1/49	9.40	H	7.88	0.85	16.43	33
1855	10	16-QAM	1/0	9.55	V	7.88	0.85	16.58	33
1880	10	16-QAM	1/0	10.35	V	7.88	0.85	17.38	33
1905	10	16-QAM	1/49	9.75	V	7.88	0.85	16.78	33
1855	10	16-QAM	1/0	11.01	H	7.88	0.85	18.04	33
1880	10	16-QAM	1/0	9.58	H	7.88	0.85	16.61	33
1905	10	16-QAM	1/49	10.15	H	7.88	0.85	17.18	33
1857.5	15	QPSK	1/0	9.67	V	7.88	0.85	16.70	33
1880	15	QPSK	1/0	9.56	V	7.88	0.85	16.59	33
1902.5	15	QPSK	1/0	8.84	V	7.88	0.85	15.87	33
1857.5	15	QPSK	1/0	9.90	H	7.88	0.85	16.93	33
1880	15	QPSK	1/0	10.47	H	7.88	0.85	17.50	33
1902.5	15	QPSK	1/0	9.32	H	7.88	0.85	16.35	33
1857.5	15	16-QAM	1/0	10.18	V	7.88	0.85	17.21	33
1880	15	16-QAM	1/0	10.30	V	7.88	0.85	17.33	33
1902.5	15	16-QAM	1/0	9.42	V	7.88	0.85	16.45	33
1857.5	15	16-QAM	1/0	9.94	H	7.88	0.85	16.97	33
1880	15	16-QAM	1/0	9.63	H	7.88	0.85	16.66	33
1902.5	15	16-QAM	1/0	10.76	H	7.88	0.85	17.79	33
1860	20	QPSK	1/0	9.96	V	7.88	0.85	16.99	33
1880	20	QPSK	1/0	10.53	V	7.88	0.85	17.56	33
1900	20	QPSK	1/0	8.75	V	7.88	0.85	15.78	33
1860	20	QPSK	1/0	10.45	H	7.88	0.85	17.48	33
1880	20	QPSK	1/0	10.35	H	7.88	0.85	17.38	33
1900	20	QPSK	1/0	9.64	H	7.88	0.85	16.67	33
1860	20	16-QAM	1/0	10.70	V	7.88	0.85	17.73	33
1880	20	16-QAM	1/0	9.51	V	7.88	0.85	16.54	33
1900	20	16-QAM	1/0	10.04	V	7.88	0.85	17.07	33
1860	20	16-QAM	1/0	10.27	H	7.88	0.85	17.30	33
1880	20	16-QAM	1/0	10.00	H	7.88	0.85	17.03	33
1900	20	16-QAM	1/0	9.16	H	7.88	0.85	16.19	33

**EIRP for LTE Band 4 (Part 27)**

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1710.7	1.4	QPSK	1/0	10.33	V	7.95	0.79	17.49	30
1732.5	1.4	QPSK	1/0	10.30	V	7.95	0.79	17.46	30
1754.3	1.4	QPSK	1/0	10.20	V	7.95	0.79	17.36	30
1710.7	1.4	QPSK	1/0	9.89	H	7.95	0.79	17.05	30
1732.5	1.4	QPSK	1/0	10.12	H	7.95	0.79	17.28	30
1754.3	1.4	QPSK	1/0	10.20	H	7.95	0.79	17.36	30
1710.7	1.4	16-QAM	1/5	10.49	V	7.95	0.79	17.65	30
1732.5	1.4	16-QAM	1/0	10.70	V	7.95	0.79	17.86	30
1754.3	1.4	16-QAM	1/0	9.98	V	7.95	0.79	17.14	30
1710.7	1.4	16-QAM	1/5	9.24	H	7.95	0.79	16.40	30
1732.5	1.4	16-QAM	1/0	10.01	H	7.95	0.79	17.17	30
1754.3	1.4	16-QAM	1/0	10.09	H	7.95	0.79	17.25	30
1711.5	3	QPSK	1/0	9.34	V	7.95	0.79	16.50	30
1732.5	3	QPSK	1/0	9.26	V	7.95	0.79	16.42	30
1753.5	3	QPSK	1/0	9.48	V	7.95	0.79	16.64	30
1711.5	3	QPSK	1/0	10.76	H	7.95	0.79	17.92	30
1732.5	3	QPSK	1/0	9.21	H	7.95	0.79	16.37	30
1753.5	3	QPSK	1/0	9.44	H	7.95	0.79	16.60	30
1711.5	3	16-QAM	1/0	9.82	V	7.95	0.79	16.98	30
1732.5	3	16-QAM	1/0	10.25	V	7.95	0.79	17.41	30
1753.5	3	16-QAM	1/0	10.33	V	7.95	0.79	17.49	30
1711.5	3	16-QAM	1/0	10.02	H	7.95	0.79	17.18	30
1732.5	3	16-QAM	1/0	9.82	H	7.95	0.79	16.98	30
1753.5	3	16-QAM	1/0	10.08	H	7.95	0.79	17.24	30
1712.5	5	QPSK	1/0	10.38	V	7.95	0.79	17.54	30
1732.5	5	QPSK	1/0	9.86	V	7.95	0.79	17.02	30
1752.5	5	QPSK	1/24	10.85	V	7.95	0.79	18.01	30
1712.5	5	QPSK	1/0	10.18	H	7.95	0.79	17.34	30
1732.5	5	QPSK	1/0	9.20	H	7.95	0.79	16.36	30
1752.5	5	QPSK	1/24	9.61	H	7.95	0.79	16.77	30
1712.5	5	16-QAM	1/0	9.94	V	7.95	0.79	17.10	30
1732.5	5	16-QAM	1/0	10.43	V	7.95	0.79	17.59	30
1752.5	5	16-QAM	1/24	10.86	V	7.95	0.79	18.02	30
1712.5	5	16-QAM	1/0	9.99	H	7.95	0.79	17.15	30
1732.5	5	16-QAM	1/0	9.40	H	7.95	0.79	16.56	30
1752.5	5	16-QAM	1/24	9.71	H	7.95	0.79	16.87	30
1715	10	QPSK	1/0	10.66	V	7.95	0.79	17.82	30
1732.5	10	QPSK	1/49	9.83	V	7.95	0.79	16.99	30

1750	10	QPSK	1/0	9.61	V	7.95	0.79	16.77	30
1715	10	QPSK	1/0	9.75	H	7.95	0.79	16.91	30
1732.5	10	QPSK	1/49	10.59	H	7.95	0.79	17.75	30
1750	10	QPSK	1/0	10.00	H	7.95	0.79	17.16	30
1715	10	16-QAM	1/0	10.53	V	7.95	0.79	17.69	30
1732.5	10	16-QAM	1/49	9.75	V	7.95	0.79	16.91	30
1750	10	16-QAM	1/0	10.44	V	7.95	0.79	17.60	30
1715	10	16-QAM	1/0	10.02	H	7.95	0.79	17.18	30
1732.5	10	16-QAM	1/49	10.24	H	7.95	0.79	17.40	30
1750	10	16-QAM	1/0	10.46	H	7.95	0.79	17.62	30
1717.5	15	QPSK	1/0	10.30	V	7.95	0.79	17.46	30
1732.5	15	QPSK	1/74	9.74	V	7.95	0.79	16.90	30
1747.5	15	QPSK	1/0	9.84	V	7.95	0.79	17.00	30
1717.5	15	QPSK	1/0	9.96	H	7.95	0.79	17.12	30
1732.5	15	QPSK	1/74	10.68	H	7.95	0.79	17.84	30
1747.5	15	QPSK	1/0	9.97	H	7.95	0.79	17.13	30
1717.5	15	16-QAM	1/0	9.98	V	7.95	0.79	17.14	30
1732.5	15	16-QAM	1/74	10.10	V	7.95	0.79	17.26	30
1747.5	15	16-QAM	1/0	10.42	V	7.95	0.79	17.58	30
1717.5	15	16-QAM	1/0	10.27	H	7.95	0.79	17.43	30
1732.5	15	16-QAM	1/74	9.67	H	7.95	0.79	16.83	30
1747.5	15	16-QAM	1/0	10.06	H	7.95	0.79	17.22	30
1720	20	QPSK	1/99	10.24	V	7.95	0.79	17.40	30
1732.5	20	QPSK	1/99	9.33	V	7.95	0.79	16.49	30
1745	20	QPSK	1/0	9.45	V	7.95	0.79	16.61	30
1720	20	QPSK	1/99	10.38	H	7.95	0.79	17.54	30
1732.5	20	QPSK	1/99	9.81	H	7.95	0.79	16.97	30
1745	20	QPSK	1/0	9.24	H	7.95	0.79	16.40	30
1720	20	16-QAM	1/99	10.03	V	7.95	0.79	17.19	30
1732.5	20	16-QAM	1/99	10.11	V	7.95	0.79	17.27	30
1745	20	16-QAM	1/0	9.65	V	7.95	0.79	16.81	30
1720	20	16-QAM	1/99	9.54	H	7.95	0.79	16.70	30
1732.5	20	16-QAM	1/99	9.71	H	7.95	0.79	16.87	30
1745	20	16-QAM	1/0	9.57	H	7.95	0.79	16.73	30

Note:

Absolute level=Substituted Level-Cable loss+Antenna Gain

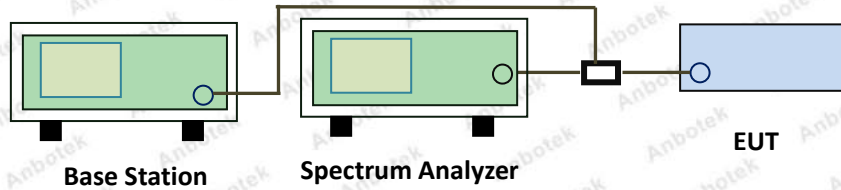
Margin=Limit -Absolute Level

## 4. Peak-Average Ratio

### 4.1. Test Standard and Limit

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### 4.2. Test Setup



### 4.3. Test Procedure

#### According with KDB 971168

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

### 4.4. Test Data

GSM Mode:

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
GSM850	128	0.11	13	PASS
GSM850	190	0.12	13	PASS
GSM850	251	0.15	13	PASS
GPRS850	128	0.12	13	PASS
GPRS850	190	0.11	13	PASS
GPRS850	251	0.12	13	PASS
GSM1900	512	0.13	13	PASS
GSM1900	661	0.12	13	PASS
GSM1900	810	0.12	13	PASS
GPRS1900	512	0.13	13	PASS
GPRS1900	661	0.13	13	PASS
GPRS1900	810	0.13	13	PASS

WCDMA Mode:

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band II	9262	2.67	13	PASS
Band II	9400	3.34	13	PASS
Band II	9538	3.44	13	PASS
Band V	4132	3.13	13	PASS
Band V	4182	3.39	13	PASS
Band V	4233	3.04	13	PASS



LTE Mode:

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	1.4MHz	QPSK	18607	6RB#0	4.17	13	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	5.21	13	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	5.43	13	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	4.93	13	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	6.05	13	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	6.32	13	PASS
Band2	3MHz	QPSK	18615	15RB#0	4.25	13	PASS
Band2	3MHz	QPSK	18900	15RB#0	5.28	13	PASS
Band2	3MHz	QPSK	19185	15RB#0	5.55	13	PASS
Band2	3MHz	16QAM	18615	15RB#0	5.07	13	PASS
Band2	3MHz	16QAM	18900	15RB#0	6.06	13	PASS
Band2	3MHz	16QAM	19185	15RB#0	6.46	13	PASS
Band2	5MHz	QPSK	18625	25RB#0	4.33	13	PASS
Band2	5MHz	QPSK	18900	25RB#0	5.49	13	PASS
Band2	5MHz	QPSK	19175	25RB#0	5.60	13	PASS
Band2	5MHz	16QAM	18625	25RB#0	4.94	13	PASS
Band2	5MHz	16QAM	18900	25RB#0	6.28	13	PASS
Band2	5MHz	16QAM	19175	25RB#0	6.38	13	PASS
Band2	10MHz	QPSK	18650	50RB#0	4.87	13	PASS
Band2	10MHz	QPSK	18900	50RB#0	5.39	13	PASS
Band2	10MHz	QPSK	19150	50RB#0	5.39	13	PASS
Band2	10MHz	16QAM	18650	50RB#0	5.55	13	PASS
Band2	10MHz	16QAM	18900	50RB#0	6.15	13	PASS
Band2	10MHz	16QAM	19150	50RB#0	6.13	13	PASS
Band2	15MHz	QPSK	18675	75RB#0	5.15	13	PASS
Band2	15MHz	QPSK	18900	75RB#0	5.16	13	PASS
Band2	15MHz	QPSK	19125	75RB#0	5.19	13	PASS
Band2	15MHz	16QAM	18675	75RB#0	6.14	13	PASS
Band2	15MHz	16QAM	18900	75RB#0	6.36	13	PASS
Band2	15MHz	16QAM	19125	75RB#0	6.31	13	PASS
Band2	20MHz	QPSK	18700	100RB#0	6.06	13	PASS
Band2	20MHz	QPSK	18900	100RB#0	5.99	13	PASS
Band2	20MHz	QPSK	19100	100RB#0	5.99	13	PASS
Band2	20MHz	16QAM	18700	100RB#0	6.74	13	PASS
Band2	20MHz	16QAM	18900	100RB#0	6.76	13	PASS
Band2	20MHz	16QAM	19100	100RB#0	6.72	13	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	4.15	13	PASS

Band4	1.4MHz	QPSK	20175	6RB#0	4.55	13	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	4.68	13	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	4.91	13	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	5.38	13	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	5.58	13	PASS
Band4	3MHz	QPSK	19965	15RB#0	4.24	13	PASS
Band4	3MHz	QPSK	20175	15RB#0	4.59	13	PASS
Band4	3MHz	QPSK	20385	15RB#0	4.73	13	PASS
Band4	3MHz	16QAM	19965	15RB#0	5.13	13	PASS
Band4	3MHz	16QAM	20175	15RB#0	5.32	13	PASS
Band4	3MHz	16QAM	20385	15RB#0	5.56	13	PASS
Band4	5MHz	QPSK	19975	25RB#0	4.33	13	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.60	13	PASS
Band4	5MHz	QPSK	20375	25RB#0	4.88	13	PASS
Band4	5MHz	16QAM	19975	25RB#0	5.03	13	PASS
Band4	5MHz	16QAM	20175	25RB#0	5.31	13	PASS
Band4	5MHz	16QAM	20375	25RB#0	5.73	13	PASS
Band4	10MHz	QPSK	20000	50RB#0	4.76	13	PASS
Band4	10MHz	QPSK	20175	50RB#0	4.86	13	PASS
Band4	10MHz	QPSK	20350	50RB#0	5.05	13	PASS
Band4	10MHz	16QAM	20000	50RB#0	5.57	13	PASS
Band4	10MHz	16QAM	20175	50RB#0	5.62	13	PASS
Band4	10MHz	16QAM	20350	50RB#0	5.79	13	PASS
Band4	15MHz	QPSK	20025	75RB#0	5.14	13	PASS
Band4	15MHz	QPSK	20175	75RB#0	5.19	13	PASS
Band4	15MHz	QPSK	20325	75RB#0	5.12	13	PASS
Band4	15MHz	16QAM	20025	75RB#0	6.21	13	PASS
Band4	15MHz	16QAM	20175	75RB#0	6.19	13	PASS
Band4	15MHz	16QAM	20325	75RB#0	6.20	13	PASS
Band4	20MHz	QPSK	20050	100RB#0	6.16	13	PASS
Band4	20MHz	QPSK	20175	100RB#0	6.15	13	PASS
Band4	20MHz	QPSK	20300	100RB#0	6.07	13	PASS
Band4	20MHz	16QAM	20050	100RB#0	6.75	13	PASS
Band4	20MHz	16QAM	20175	100RB#0	6.76	13	PASS
Band4	20MHz	16QAM	20300	100RB#0	6.65	13	PASS

Test Graphs

Band2\_1.4MHz\_QPSK\_18607\_6RB#0



Band2\_1.4MHz\_QPSK\_18900\_6RB#0



Band2\_1.4MHz\_QPSK\_19193\_6RB#0



Band2\_1.4MHz\_16QAM\_18607\_6RB#0



Band2\_1.4MHz\_16QAM\_18900\_6RB#0



Band2\_1.4MHz\_16QAM\_19193\_6RB#0



Band2\_3MHz\_QPSK\_18615\_15RB#0



Band2\_3MHz\_QPSK\_18900\_15RB#0



Band2\_3MHz\_QPSK\_19185\_15RB#0



Band2\_3MHz\_16QAM\_18615\_15RB#0



Band2\_3MHz\_16QAM\_18900\_15RB#0



Band2\_3MHz\_16QAM\_19185\_15RB#0



Band2\_5MHz\_QPSK\_18625\_25RB#0



Band2\_5MHz\_QPSK\_18900\_25RB#0



Band2\_5MHz\_QPSK\_19175\_25RB#0



Band2\_5MHz\_16QAM\_18625\_25RB#0



Band2\_5MHz\_16QAM\_18900\_25RB#0



Band2\_5MHz\_16QAM\_19175\_25RB#0



Band2\_10MHz\_QPSK\_18650\_50RB#0





Band2\_10MHz\_QPSK\_18900\_50RB#0



Band2\_10MHz\_QPSK\_19150\_50RB#0



Band2\_10MHz\_16QAM\_18650\_50RB#0



Band2\_10MHz\_16QAM\_18900\_50RB#0



Band2\_10MHz\_16QAM\_19150\_50RB#0



Band2\_15MHz\_QPSK\_18675\_75RB#0



Band2\_15MHz\_QPSK\_18900\_75RB#0



Band2\_15MHz\_QPSK\_19125\_75RB#0



Band2\_15MHz\_16QAM\_18675\_75RB#0



Band2\_15MHz\_16QAM\_18900\_75RB#0



Band2\_15MHz\_16QAM\_19125\_75RB#0



Band2\_20MHz\_QPSK\_18700\_100RB#0



Band2\_20MHz\_QPSK\_18900\_100RB#0



Band2\_20MHz\_QPSK\_19100\_100RB#0



Band2\_20MHz\_16QAM\_18700\_100RB#0



Band2\_20MHz\_16QAM\_18900\_100RB#0



Band2\_20MHz\_16QAM\_19100\_100RB#0



Band4\_1.4MHz\_QPSK\_19957\_6RB#0



Band4\_1.4MHz\_QPSK\_20175\_6RB#0



Band4\_1.4MHz\_QPSK\_20393\_6RB#0



Band4\_1.4MHz\_16QAM\_19957\_6RB#0



Band4\_1.4MHz\_16QAM\_20175\_6RB#0



Band4\_1.4MHz\_16QAM\_20393\_6RB#0



Band4\_3MHz\_QPSK\_19965\_15RB#0





Band4\_3MHz\_QPSK\_20175\_15RB#0



Band4\_3MHz\_QPSK\_20385\_15RB#0



Band4\_3MHz\_16QAM\_19965\_15RB#0



Band4\_3MHz\_16QAM\_20175\_15RB#0



Band4\_3MHz\_16QAM\_20385\_15RB#0



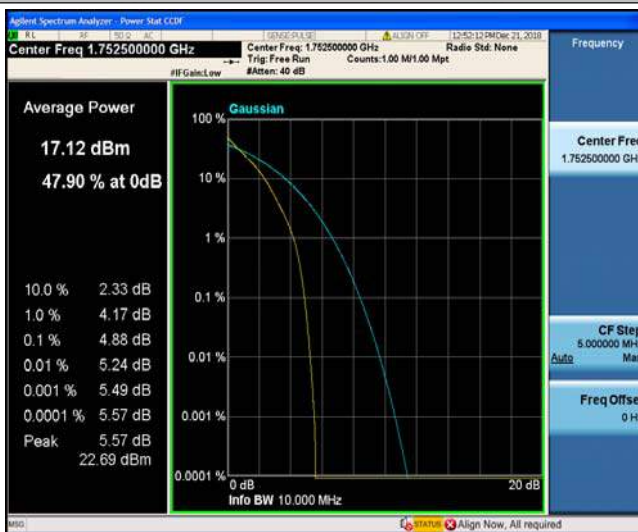
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Band4\_5MHz\_QPSK\_20175\_25RB#0



Band4\_5MHz\_QPSK\_20375\_25RB#0



Band4\_5MHz\_16QAM\_19975\_25RB#0



Band4\_5MHz\_16QAM\_20175\_25RB#0



Band4\_5MHz\_16QAM\_20375\_25RB#0



Band4\_10MHz\_QPSK\_20000\_50RB#0



Band4\_10MHz\_QPSK\_20175\_50RB#0



Band4\_10MHz\_QPSK\_20350\_50RB#0



Band4\_10MHz\_16QAM\_20000\_50RB#0



Band4\_10MHz\_16QAM\_20175\_50RB#0



Band4\_10MHz\_16QAM\_20350\_50RB#0



Band4\_15MHz\_QPSK\_20025\_75RB#0



Band4\_15MHz\_QPSK\_20175\_75RB#0



Band4\_15MHz\_QPSK\_20325\_75RB#0



Band4\_15MHz\_16QAM\_20025\_75RB#0



Band4\_15MHz\_16QAM\_20175\_75RB#0



Band4\_15MHz\_16QAM\_20325\_75RB#0



Band4\_20MHz\_QPSK\_20050\_100RB#0





Band4\_20MHz\_QPSK\_20175\_100RB#0



Band4\_20MHz\_QPSK\_20300\_100RB#0



Band4\_20MHz\_16QAM\_20050\_100RB#0