

## Industrial Internet Innovation Center (Shanghai) Co.,Ltd.

### FCC/IC LTE TEST REPORT

<b>PRODUCT</b>	iHelp Max 4G mobile medical device
<b>BRAND</b>	iHelp
<b>MODEL</b>	EC4WHS
<b>APPLICANT</b>	Wearable Health Solutions, Inc
<b>FCC ID</b>	XWI-EC4WHS
<b>IC</b>	8730A-EC4WHS
<b>ISSUE DATE</b>	February 28,2023
<b>STANDARD(S)</b>	FCC Part 2, FCC Part 22, FCC Part 24, FCC Part 27, FCC Part 90, RSS-Gen Issue 5, RSS-130 Issue 2, RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 4, RSS-199 Issue 3

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## 1. Summary of Test Report

### 1.1 Test Standard (s)

No.	Test Standard	Title	Version
1	FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	2021-10-1
2	FCC Part 22	PUBLIC MOBILE SERVICES	2021-10-1
3	FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2021-10-1
4	FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	2021-10-1
5	FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	2021-10-1
6	RSS-Gen Issue 5	RSS-Gen —General Requirements for Compliance of Radio Apparatus	2021-02
7	RSS-130 Issue 2	Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz	2019-02
8	RSS-132 Issue 3	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz	2013-01
9	RSS-133 Issue 6	2 GHz Personal Communications Services	2018-01
10	RSS-139 Issue 4	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz	2022-09
11	RSS-199 Issue 3	Broadband Radio Service (BRS) Equipment Operating in the Band 2500–2690 MHz	2016-12

### 1.2 Reference Documents

No.	Test Standard	Title	Version
1	ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
2	ANSI C63.26	American National Standard of Procedures for Compliance Testing of Licensed Transmitters Used in Licensed Radio	2015
3	KDB 971168 D01	Measurement Guidance for Certification of Licensed Digital	v03r01

		Transmitters	
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### 1.3 Summary of Test Results

#### LTE Band 2

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	24.232(c)	RSS-133 6.4	Pass
2	Emission Limit	24.238(a), 2.1051	RSS-133 6.5	Pass
3	Frequency Stability	24.235, 2.1055	RSS-133 6.3	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	24.238(a)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	24.238(a)	RSS-133 6.5	Pass(NOTE2)
7	Conducted Spurious Emission	24.238, 2.1057	RSS-133 6.5	Pass(NOTE2)
8	Peak to Average Power Ratio	24.232 (d)	RSS-133 6.4	Pass(NOTE2)

#### LTE Band 4

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-139 5.5	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-139 5.6	Pass
3	Frequency Stability	27.54, 2.1055	RSS-139 5.4	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(h)	RSS-139 5.6	Pass(NOTE2)
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-139 5.6	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-139 5.5	Pass(NOTE2)

#### LTE Band 5

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	2.1046(a), 22.913(a)	RSS-132 5.4	Pass
2	Emission Limit	22.917, 2.1051	RSS-132 5.5	Pass
3	Frequency Stability	22.235, 2.1055	RSS-132 5.3	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	22.917(b)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	22.917(b)	RSS-132 5.5	Pass(NOTE2)
7	Conducted Spurious Emission	22.917, 2.1057	RSS-132 5.5	Pass(NOTE2)

#### LTE Band 7



Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-199 4.4	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-199 4.5	Pass
3	Frequency Stability	27.54, 2.1055	RSS-199 4.3	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(h)	RSS-199 4.5	Pass(NOTE2)
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-199 4.5	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-199 4.4	Pass(NOTE2)

## LTE Band 12

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-130 4.6	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-130 4.7	Pass
3	Frequency Stability	27.54, 2.1055	RSS-130 4.5	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(h)	RSS-130 4.7	Pass(NOTE2)
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-130 4.7	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-130 4.6	Pass(NOTE2)

## LTE Band 13

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(c)(10)	RSS-130 4.6	Pass
2	Emission Limit	27.53(g),2.1051	RSS-130 4.7	Pass
3	Frequency Stability	27.54, 2.1055	RSS-130 4.5	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(g)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(g)	RSS-130 4.7	Pass(NOTE2)
7	Conducted Spurious Emission	27.53(g),2.1057	RSS-130 4.7	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-130 4.6	Pass(NOTE2)

## LTE Band 17

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-130 4.6	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-130 4.7	Pass

3	Frequency Stability	27.54, 2.1055	RSS-130 4.5	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(h)	RSS-130 4.7	Pass(NOTE2)
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-130 4.7	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-130 4.6	Pass(NOTE2)

## LTE Band 25

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	2.1046,24.232	RSS-133 6.4	Pass
2	Emission Limit	2.1053,24.238	RSS-133 6.5	Pass
3	Frequency Stability	2.1055,24.235	RSS-133 6.3	Pass(NOTE2)
4	Occupied Bandwidth	2.1049,24.238	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	2.1049,24.238	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	2.1049,24.238	RSS-133 6.5	Pass(NOTE2)
7	Conducted Spurious Emission	2.1049,24.238	RSS-133 6.5	Pass(NOTE2)
8	Peak to Average Power Ratio	2.1049,24.238	RSS-133 6.4	Pass(NOTE2)

## LTE Band 26(Part 90)

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	90.635(b)	N/A	Pass
2	Emission Limit	90.669	N/A	Pass
3	Frequency Stability	90.213(a)	N/A	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	N/A	Pass(NOTE2)
5	Emission Bandwidth	90.209 (b)	N/A	Pass(NOTE2)
6	Band Edge Compliance	90.669	N/A	Pass(NOTE2)
7	Conducted Spurious Emission	90.669	N/A	Pass(NOTE2)

## LTE Band 41

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-199 4.4	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-199 4.5	Pass
3	Frequency Stability	27.54, 2.1055	RSS-199 4.3	Pass(NOTE2)
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass(NOTE2)
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass(NOTE2)
6	Band Edge Compliance	27.53(h)	RSS-199 4.5	Pass(NOTE2)



7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-199 4.5	Pass(NOTE2)
8	Peak to Average Power Ratio	27.50(a)	RSS-199 4.4	Pass(NOTE2)

**NOTE1:**

The EC4WHS, manufactured by Shenzhen Ecell Communication Technology Co.,Ltd is a variant product for testing.

This project is a variant project based on the C21T00135-RF02-V02, The original FCC ID is 2AJYU-8PSA302 and the IC is 23761-8PSA302. We tested the Output Power and radiated spurious emission. The rest of the data are reference original report data.

The data provided also meets the requirements of Issue 4 of RSS132.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 1.3.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 5.3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 6 of this test report.

**NOTE2:**

The test verdict of this item come form the original report.

#### 1.4 Data Provided by Applicant

No.	Item(s)	Data
1	Antenna gain of band 2	-4.28 dbi
2	Antenna gain of band 4	-3.57 dbi
3	Antenna gain of band 5	-0.64 dbi
4	Antenna gain of band 7	-2.55 dbi
5	Antenna gain of band 12	-5.36 dbi
6	Antenna gain of band 13	-2.39 dbi
7	Antenna gain of band 17	-5.36 dbi
8	Antenna gain of band 25	-4.28 dbi
9	Antenna gain of band 26	-0.64 dbi
10	Antenna gain of band 41	-0.31 dbi

Note: The data of Antenna gain is provided by the customer may affect the validity of the test results in this report, and the impact and consequences of this shall be undertaken by the customer.

## 2. General Information of The Laboratory

### 2.1 Testing Laboratory

Lab Name	Industrial Internet Innovation Center (Shanghai) Co.,Ltd.
Address	Building 4, No. 766, Jingang Road, Pudong, Shanghai, China
Telephone	021-68866880
FCC Registration No.	958356
FCC Designation No.	CN1177
IC Designation No.	10766A
CAB identifier	CN0067

### 2.2 Laboratory Environmental Requirements

Temperature	15°C~35°C
Relative Humidity	25%RH~75%RH
Atmospheric Pressure	101kPa

### 2.3 Project Information

Project Manager	Zhang Heng
Test Date	November 7, 2022 to January 17, 2023



### 3. General Information of The Customer

#### 3.1 Applicant

Company	Wearable Health Solutions, Inc
Address	2901 Pacific Coast Highway Ste. 200 Newport Beach, CA 92663
Telephone	+1 949 270 7460

#### 3.2 Manufacturer

Company	Shenzhen Ecell Communication Technology Co.,Ltd
Address	801-803, Floor 8, West Zone, Block B, Building 7, Gaoxin Nanjiudao Science and Technology Ecological Park, Nanshan District, Shenzhen

## 4. General Information of The Product

### 4.1 Product Description for Equipment under Test (EUT)

Product	iHelp Max 4G mobile medical device
Model	EC4WHS
Date of Receipt	S01aa: November 7,2022 S15aa :December 19,2022
EUT ID*	S01aa /S15aa
SN/IMEI	N/A
FCC ID	XWI-EC4WHS
IC	8730A-EC4WHS
Supported Radio Technology and Bands	LTE Band 2/4/5/7/12/13/17/25/26/41 BT BLE WLAN 802.11 b,g,n GPS/Glonass/BDS
Hardware Version	V1.1
Software Version	iHelp 4G V1.1
NOTE: EUT ID is the internal identification code of the laboratory.	

### 4.2 Description for Auxiliary Equipment (AE)

AE ID*	Description	Model	SN/Remark
AE1	RF Cable	N/A	N/A
NOTE: AE ID is the internal identification code of the laboratory.			

### 4.3 Additional Information

Type of modulation	QPSK/16QAM
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## 5. Test Configuration Information

### 5.1 Laboratory Environmental Conditions

#### 5.1.1 Permanent Facilities

<b>Relative Humidity</b>	Min. = 45%, Max. = 55 %		
<b>Atmospheric Pressure</b>	101kPa		
<b>Temperature</b>	Normal	Minimum	Maximum
	25°C	-10°C	55°C
<b>Working Voltage of EUT</b>	Normal	Minimum	Maximum
	3.8V	3.4V	4.35V

### 5.2 Test Equipments Utilized

#### 5.2.1 Test System

Radiated emission test system

No.	Name	Model	S/N	Manufacturer	Cal. Date	Cal. Interval
1	Universal Radio Communication Tester	CMU200	123123	R&S	October 17,2022	1Year
2	Universal Radio Communication Tester	CMW500	104178	R&S	October 17,2022	1Year
3	EMI Test Receiver	ESU40	100307	R&S	February 23, 2022	1 Year
4	TRILOG Broadband Antenna	VULB9163	VULB9163-515	Schwarzbeck	March 11, 2022	1 Year
5	Double- ridged Waveguide Antenna	ETS-3117	00135890	ETS	March 9, 2022	2 Years
6	2-Line V-Network	ENV216	101380	R&S	February 21, 2022	1 Year
7	EMI Test Software	EMC32 V9.15.00	N/A	R&S	N/A	N/A

Anechoic chamber

Fully anechoic chamber by ETS.

Conducted Test System

No.	Name	Model	S/N	Manufacturer	Cal. Date	Cal. Interval
1	Universal Radio Communication Tester	CMW500	148874	R&S	August. 23,2022	1 Year
2	Vector Signal Analyzer	FSQ26	101091	R&S	August. 23,2022	1 Year
3	Programmable power supply	Keithley 2303	4039070	Keithley	July 12,2022	1 Year
4	Eagle Test Software	Eagle V3.3	N/A	ECIT	N/A	N/A
5	Temperature Chamber	B-TF-107C	BTF107C-201804107	BoYi	June 30,2022	1Year

### 5.2.2 Test Environment

**Shielding Room1** (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

<b>Temperature</b>	Min. = 15 °C, Max. = 35 °C
<b>Relative humidity</b>	Min. = 20 %, Max. = 75 %
<b>Shielding effectiveness</b>	> 100 dB
<b>Ground system resistance</b>	< 0.5 Ω
<b>Temperature</b>	Min. = 15 °C, Max. = 35 °C

**Control room** did not exceed following limits along the EMC testing:

<b>Temperature</b>	Min. = 15 °C, Max. = 35 °C
<b>Relative humidity</b>	Min. = 30 %, Max. = 60 %
<b>Shielding effectiveness</b>	> 100 dB
<b>Electrical insulation</b>	> 10 kΩ
<b>Ground system resistance</b>	< 0.5 Ω

**Fully-anechoic chamber1** (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

<b>Temperature</b>	Min. = 15 °C, Max. = 35 °C
<b>Relative humidity</b>	Min. = 25 %, Max. = 75 %
<b>Shielding effectiveness</b>	> 100 dB
<b>Electrical insulation</b>	> 10 kΩ
<b>Ground system resistance</b>	< 0.5 Ω
<b>VSWR</b>	Between 0 and 6 dB, from 1GHz to 18GHz
<b>Site Attenuation Deviation</b>	Between -4 and 4 dB, 30MHz to 1GHz



### 5.3 Measurement Uncertainty

Measurement Items	Range	Confidence Level	Calculated Uncertainty
Maximum Peak Output Power	30MHz-3600MHz	95%	±0.544dB
EBW and VBW	30MHz-3600MHz	95%	±62.04Hz
Transmitter Spurious Emission-Conducted	30MHz-2GHz	95%	±0.90dB
Transmitter Spurious Emission-Conducted	2GHz-3.6GHz	95%	±0.88dB
Transmitter Spurious Emission-Conducted	3.6GHz-8GHz	95%	±0.96dB
Transmitter Spurious Emission-Conducted	8GHz-20GHz	95%	±0.94dB
Transmitter Spurious Emission-Radiated	9KHz-30MHz	95%	±5.66dB
Transmitter Spurious Emission-Radiated	30MHz-1000MHz	95%	±4.98dB
Transmitter Spurious Emission-Radiated	1000MHz -18000MHz	95%	±5.06dB
Transmitter Spurious Emission-Radiated	18000MHz -40000MHz	95%	±5.20dB
Frequency stability	1MHz-16GHz	95%	±62.04Hz

## 6. Test Results

### 6.1 Output Power

#### 6.1.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMW500) to ensure max power transmission and proper modulation. In all cases, output power is within the specified limits.

CMW500 setting:

1: CMW500 is connected to the DUT

2: Set RX Expected PEP to 30 dBm

#### 6.1.2 Conducted

##### 6.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation. These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

##### 6.1.2.2 Measurement result

###### LTE FDD 02

LTE			LTE B2				
Modulation	RB	RB Offset	Tune up	1.4MHz			
				18607	18900	19193	
QPSK	1	Low	23.00	22.11	22.08	22.06	
		Middle		22.51	22.43	22.05	
		High		21.90	22.12	21.91	
	50%	Low	23.00	21.99	22.03	21.84	
		Middle		21.99	21.99	21.86	
		High		21.76	22.00	21.80	
	100%	/	22.00	20.96	20.95	20.74	
	16QAM	1	Low	22.00	21.14	21.22	21.20
			Middle		21.12	21.24	21.19
High			21.06		21.05	21.11	
50%		Low	22.00	20.94	20.80	20.94	
		Middle		21.02	21.03	21.01	
		High		21.02	21.02	21.01	
100%		/	21.00	19.99	20.13	20.07	
Modulation		RB	RB Offset	Tune up	3MHz		
					18615	18900	19185
QPSK	1	Low	23.00	22.13	22.12	22.09	
		Middle		22.49	22.46	22.09	
		High		21.93	22.17	21.95	
	50%	Low	22.00	21.09	21.15	20.97	
		Middle		21.11	21.09	20.98	
		High		20.86	21.11	20.90	
	100%	/	22.00	20.96	20.99	20.77	
	16QAM	1	Low	22.00	21.17	21.24	21.23



	50%	Middle	21.00	21.15	21.24	21.23
		High		21.08	21.09	21.14
		Low		20.05	19.93	20.06
	100%	Middle	21.00	20.13	20.16	20.13
		High		20.12	20.14	20.14
		100%	/	21.00	20.02	20.17
Modulation	RB	RB Offset	Tune up	5MHz		
				18625	18900	19175
QPSK	1	Low	23.00	22.10	22.10	22.05
		Middle		22.47	22.42	22.06
		High		21.90	22.12	21.91
	50%	Low	22.00	21.06	21.10	20.93
		Middle		21.09	21.05	20.93
		High		20.84	21.09	20.86
100%	/	22.00	20.96	20.98	20.75	
16QAM	1	Low	22.00	21.14	21.20	21.20
		Middle		21.12	21.22	21.20
		High		21.05	21.07	21.10
	50%	Low	21.00	20.03	19.89	20.03
		Middle		20.10	20.11	20.09
		High		20.09	20.09	20.10
100%	/	21.00	20.00	20.13	20.05	
Modulation	RB	RB Offset	Tune up	10MHz		
				18650	18900	19150
QPSK	1	Low	23.00	22.12	22.11	22.08
		Middle		22.50	22.47	22.10
		High		21.92	22.16	21.94
	50%	Low	22.00	21.09	21.15	20.97
		Middle		21.12	21.10	20.97
		High		20.86	21.13	20.91
100%	/	22.00	21.00	21.00	20.79	
16QAM	1	Low	22.00	21.16	21.23	21.22
		Middle		21.15	21.26	21.23
		High		21.08	21.09	21.13
	50%	Low	21.00	20.06	19.94	20.07
		Middle		20.12	20.15	20.12
		High		20.12	20.14	20.14
100%	/	21.00	20.03	20.18	20.09	
Modulation	RB	RB Offset	Tune up	15MHz		
				18675	18900	19125
QPSK	1	Low	23.00	22.11	22.07	22.06
		Middle		22.48	22.46	22.07
		High		21.89	22.11	21.90
	50%	Low	22.00	21.07	21.11	20.94
		Middle		21.09	21.05	20.93
		High		20.83	21.10	20.87
100%	/	22.00	20.98	20.96	20.74	

16QAM	1	Low	22.00	21.11	21.21	21.20	
		Middle		21.13	21.23	21.21	
		High		21.05	21.05	21.10	
	50%	Low	21.00	20.03	19.92	20.04	
		Middle		20.09	20.10	20.08	
		High		20.10	20.10	20.11	
	100%	/	21.00	20.00	20.13	20.05	
	Modulation	RB	RB Offset	Tune up	20MHz		
					18700	18900	19100
QPSK	1	Low	23.00	22.08	22.03	22.03	
		Middle		22.47	22.42	22.05	
		High		21.87	22.10	21.87	
	50%	Low	22.00	21.04	21.06	20.90	
		Middle		21.07	21.01	20.90	
		High		20.80	21.05	20.83	
	100%	/	22.00	20.95	20.91	20.70	
	16QAM	1	Low	22.00	21.15	21.17	21.15
			Middle		21.09	21.21	21.17
High			21.03		21.02	21.08	
50%		Low	21.00	20.00	19.88	20.01	
		Middle		20.06	20.08	20.05	
		High		20.07	20.05	20.07	
100%		/	21.00	19.98	20.09	20.02	

**LTE FDD 04**

LTE				LTE B4			
Modulation	RB	RB Offset	Tune up	1.4MHz			
				19957	20175	20393	
QPSK	1	Low	23.00	22.51	22.30	22.51	
		Middle		22.56	22.61	22.51	
		High		22.33	22.02	22.50	
	50%	Low	23.00	22.26	22.32	22.22	
		Middle		22.25	22.17	22.21	
		High		22.13	22.12	22.17	
	100%	/	22.00	21.28	21.34	21.23	
	16QAM	1	Low	22.00	21.36	21.46	21.38
			Middle		21.34	21.43	21.33
High			21.33		21.26	21.41	
50%		Low	22.00	21.35	21.28	21.28	
		Middle		21.23	21.13	21.18	
		High		21.18	21.07	21.13	
100%		/	21.00	20.36	20.41	20.38	
Modulation		RB	RB Offset	Tune up	3MHz		
					19965	20175	20385
QPSK	1	Low	23.00	22.53	22.34	22.54	
		Middle		22.54	22.64	22.55	



	50%	High	22.00	22.36	22.07	22.54	
		Low		21.36	21.44	21.35	
		Middle		21.37	21.27	21.33	
		High		21.23	21.23	21.27	
	100%	/	22.00	21.28	21.38	21.26	
16QAM	1	Low	22.00	21.39	21.48	21.41	
		Middle		21.37	21.43	21.37	
		High		21.35	21.30	21.44	
	50%	Low	21.00	20.46	20.41	20.40	
		Middle		20.34	20.26	20.30	
		High		20.28	20.19	20.26	
	100%	/	21.00	20.39	20.45	20.41	
	Modulation	RB	RB Offset	Tune up	5MHz		
					19975	20175	20375
QPSK	1	Low	23.00	22.50	22.32	22.50	
		Middle		22.52	22.60	22.52	
		High		22.33	22.02	22.50	
	50%	Low	22.00	21.33	21.39	21.31	
		Middle		21.35	21.23	21.28	
		High		21.21	21.21	21.23	
	100%	/	22.00	21.28	21.37	21.24	
	16QAM	1	Low	22.00	21.36	21.44	21.38
			Middle		21.34	21.41	21.34
High			21.32		21.28	21.40	
50%		Low	21.00	20.44	20.37	20.37	
		Middle		20.31	20.21	20.26	
		High		20.25	20.14	20.22	
100%		/	21.00	20.37	20.41	20.36	
Modulation		RB	RB Offset	Tune up	10MHz		
					20000	20175	20350
QPSK	1	Low	23.00	22.52	22.33	22.53	
		Middle		22.55	22.65	22.56	
		High		22.35	22.06	22.53	
	50%	Low	22.00	21.36	21.44	21.35	
		Middle		21.38	21.28	21.32	
		High		21.23	21.25	21.28	
	100%	/	22.00	21.32	21.39	21.28	
	16QAM	1	Low	22.00	21.38	21.47	21.40
			Middle		21.37	21.45	21.37
High			21.35		21.30	21.43	
50%		Low	21.00	20.47	20.42	20.41	
		Middle		20.33	20.25	20.29	
		High		20.28	20.19	20.26	
100%		/	21.00	20.40	20.46	20.40	

Modulation	RB	RB Offset	Tune up	15MHz			
				20025	20175	20325	
QPSK	1	Low	23.00	22.51	22.29	22.51	
		Middle		22.53	22.64	22.53	
		High		22.32	22.01	22.49	
	50%	Low	22.00	21.34	21.40	21.32	
		Middle		21.35	21.23	21.28	
		High		21.20	21.22	21.24	
	100%	/	22.00	21.30	21.35	21.23	
	16QAM	1	Low	22.00	21.33	21.45	21.38
			Middle		21.35	21.42	21.35
High			21.32		21.26	21.40	
50%		Low	21.00	20.44	20.40	20.38	
		Middle		20.30	20.20	20.25	
		High		20.26	20.15	20.23	
100%		/	21.00	20.37	20.41	20.36	
Modulation		RB	RB Offset	Tune up	20MHz		
					20050	20175	20300
QPSK	1	Low	23.00	22.48	22.25	22.48	
		Middle		22.52	22.60	22.51	
		High		22.30	22.00	22.46	
	50%	Low	22.00	21.31	21.35	21.28	
		Middle		21.33	21.19	21.25	
		High		21.17	21.17	21.20	
	100%	/	22.00	21.27	21.30	21.19	
	16QAM	1	Low	22.00	21.28	21.41	21.33
			Middle		21.31	21.40	21.31
High			21.30		21.23	21.38	
50%		Low	21.00	20.41	20.36	20.35	
		Middle		20.27	20.18	20.22	
		High		20.23	20.10	20.19	
100%		/	21.00	20.35	20.37	20.33	

**LTE FDD 05**

LTE				LTE B5			
Modulation	RB	RB Offset	Tune up	1.4MHz			
				20407	20525	20643	
QPSK	1	Low	23.50	22.87	22.97	22.84	
		Middle		23.08	23.04	22.70	
		High		22.85	22.76	22.65	
	50%	Low	23.50	22.60	22.64	22.63	
		Middle		22.51	22.56	22.46	
		High		22.57	22.50	22.50	
	100%	/	22.50	21.59	21.64	21.61	
	16QAM	1	Low	22.50	21.72	21.85	21.72



	50%	Middle	22.50	21.70	21.71	21.72
		High		21.62	21.63	21.63
		Low		21.58	21.60	21.62
	50%	Middle	22.50	21.66	21.58	21.57
		High		21.54	21.53	21.48
	100%	/	21.50	20.57	20.56	20.64
Modulation	RB	RB Offset	Tune up	3MHz		
				20415	20525	20635
QPSK	1	Low	23.50	22.88	23.00	22.86
		Middle		23.07	23.08	22.75
		High		22.87	22.80	22.68
	50%	Low	22.50	21.70	21.76	21.76
		Middle		21.64	21.67	21.57
		High		21.67	21.63	21.61
100%	/	22.50	21.63	21.69	21.66	
16QAM	1	Low	22.50	21.74	21.86	21.74
		Middle		21.73	21.73	21.76
		High		21.64	21.67	21.65
	50%	Low	21.50	20.70	20.74	20.75
		Middle		20.76	20.70	20.68
		High		20.64	20.65	20.61
100%	/	21.50	20.61	20.61	20.66	
Modulation	RB	RB Offset	Tune up	5MHz		
				20425	20525	20625
QPSK	1	Low	23.50	22.87	22.96	22.84
		Middle		23.05	23.07	22.72
		High		22.84	22.75	22.64
	50%	Low	22.50	21.68	21.72	21.73
		Middle		21.61	21.62	21.53
		High		21.64	21.60	21.57
100%	/	22.50	21.61	21.65	21.61	
16QAM	1	Low	22.50	21.69	21.84	21.72
		Middle		21.71	21.70	21.74
		High		21.61	21.63	21.62
	50%	Low	21.50	20.67	20.72	20.72
		Middle		20.73	20.65	20.64
		High		20.62	20.61	20.58
100%	/	21.50	20.58	20.56	20.62	
Modulation	RB	RB Offset	Tune up	10MHz		
				20450	20525	20600
QPSK	1	Low	23.50	22.84	22.92	22.81
		Middle		23.04	23.03	22.70
		High		22.82	22.74	22.61
	50%	Low	22.50	21.65	21.67	21.69
		Middle		21.59	21.58	21.50
		High		21.61	21.55	21.53
100%	/	22.50	21.58	21.60	21.57	

Modulation	RB	RB Offset		Tune up	5MHz		
		Low	Middle		20775	21100	21425
16QAM	1	Low		22.50	21.60	21.80	21.67
		Middle			21.67	21.68	21.70
		High			21.59	21.60	21.60
	50%	Low		21.50	20.64	20.68	20.69
		Middle			20.70	20.63	20.61
		High			20.59	20.56	20.54
	100%	/		21.50	20.56	20.52	20.59

**LTE FDD 07**

LTE				LTE B7			
Modulation	RB	RB Offset	Tune up	5MHz			
				20775	21100	21425	
QPSK	1	Low	22.00	21.19	21.17	20.82	
		Middle			21.19	21.37	21.34
		High			20.78	20.90	20.82
	50%	Low		21.00	20.06	20.07	19.67
		Middle			19.80	20.10	19.81
		High			19.98	19.90	19.78
	100%	/		21.00	20.05	19.91	19.77
	16QAM	1	Low	21.00	20.49	20.07	20.14
			Middle			20.47	20.54
High					20.40	20.18	20.24
50%		Low		20.00	19.15	19.02	19.12
		Middle			19.13	19.05	19.01
		High			19.14	18.98	19.10
100%		/		20.00	19.00	18.96	19.05
Modulation		RB	RB Offset	Tune up	10MHz		
					20800	21100	21400
QPSK	1	Low	22.00	21.21	21.18	20.85	
		Middle			21.22	21.42	21.38
		High			20.80	20.94	20.85
	50%	Low		21.00	20.09	20.12	19.71
		Middle			19.83	20.15	19.85
		High			20.00	19.94	19.83
	100%	/		21.00	20.09	19.93	19.81
	16QAM	1	Low	21.00	20.51	20.10	20.16
			Middle			20.50	20.58
High					20.43	20.20	20.27
50%		Low		20.00	19.18	19.07	19.16
		Middle			19.15	19.09	19.04
		High			19.17	19.03	19.14
100%		/		20.00	19.03	19.01	19.09
Modulation		RB	RB Offset	Tune up	15MHz		
					20825	21100	21375
QPSK	1	Low	22.00	21.20	21.14	20.83	



	50%	Middle	21.00	21.20	21.41	21.35
		High		20.77	20.89	20.81
		Low		20.07	20.08	19.68
	100%	Middle	21.00	19.80	20.10	19.81
		High		19.97	19.91	19.79
		/	21.00	20.07	19.89	19.76
16QAM	1	Low	21.00	20.46	20.08	20.14
		Middle		20.48	20.55	20.35
		High		20.40	20.16	20.24
	50%	Low	20.00	19.15	19.05	19.13
		Middle		19.12	19.04	19.00
		High		19.15	18.99	19.11
100%	/	20.00	19.00	18.96	19.05	
Modulation	RB	RB Offset	Tune up	20MHz		
				20850	21100	21350
QPSK	1	Low	22.00	21.17	21.10	20.80
		Middle		21.19	21.37	21.33
		High		20.75	20.88	20.78
	50%	Low	21.00	20.04	20.03	19.64
		Middle		19.78	20.06	19.78
		High		19.94	19.86	19.75
100%	/	21.00	20.04	19.84	19.72	
16QAM	1	Low	21.00	20.11	20.04	20.09
		Middle		20.44	20.53	20.31
		High		20.38	20.13	20.22
	50%	Low	20.00	19.12	19.01	19.10
		Middle		19.09	19.02	18.97
		High		19.12	18.94	19.07
100%	/	20.00	18.98	18.92	19.02	

**LTE FDD 12**

LTE			LTE B12			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				23017	23095	23173
QPSK	1	Low	23.00	22.44	22.65	22.61
		Middle		22.35	22.59	22.56
		High		22.43	22.47	22.59
	50%	Low	23.00	22.21	22.27	22.18
		Middle		22.15	22.26	22.25
		High		22.17	22.22	22.14
100%	/	22.00	21.31	21.27	21.30	
16QAM	1	Low	22.00	21.41	21.22	21.25
		Middle		21.39	21.33	21.23
		High		21.33	21.29	21.33

	50%	Low		21.38	21.29	21.26
		Middle	22.00	21.37	21.45	21.37
		High		21.32	21.31	21.26
	100%	/	21.00	20.31	20.24	20.33
Modulation	RB	RB Offset	Tune up	3MHz		
				23025	23095	23165
QPSK	1	Low	23.00	22.45	22.68	22.63
		Middle		22.34	22.63	22.61
		High		22.45	22.51	22.62
	50%	Low	22.00	21.31	21.39	21.31
		Middle		21.28	21.37	21.36
		High		21.27	21.35	21.25
100%	/	22.00	21.35	21.32	21.35	
16QAM	1	Low	22.00	21.43	21.23	21.27
		Middle		21.42	21.35	21.27
		High		21.35	21.33	21.35
	50%	Low	21.00	20.50	20.43	20.39
		Middle		20.47	20.57	20.48
		High		20.42	20.43	20.39
100%	/	21.00	20.35	20.29	20.35	
Modulation	RB	RB Offset	Tune up	5MHz		
				23035	23095	23155
QPSK	1	Low	23.00	22.44	22.64	22.61
		Middle		22.32	22.62	22.58
		High		22.42	22.46	22.58
	50%	Low	22.00	21.29	21.35	21.28
		Middle		21.25	21.32	21.32
		High		21.24	21.32	21.21
100%	/	22.00	21.33	21.28	21.30	
16QAM	1	Low	22.00	21.38	21.21	21.25
		Middle		21.40	21.32	21.25
		High		21.32	21.29	21.32
	50%	Low	21.00	20.47	20.41	20.36
		Middle		20.44	20.52	20.44
		High		20.40	20.39	20.36
100%	/	21.00	20.32	20.24	20.31	
Modulation	RB	RB Offset	Tune up	10MHz		
				23060	23095	23130
QPSK	1	Low	23.00	22.41	22.60	22.58
		Middle		22.31	22.58	22.56
		High		22.40	22.45	22.55
	50%	Low	22.00	21.26	21.30	21.24
		Middle		21.23	21.28	21.29
		High		21.21	21.27	21.17



	100%	/	22.00	21.30	21.23	21.26
16QAM	1	Low	22.00	21.25	21.17	21.20
		Middle		21.36	21.30	21.21
		High		21.30	21.26	21.30
	50%	Low	21.00	20.44	20.37	20.33
		Middle		20.41	20.50	20.41
		High		20.37	20.34	20.32
	100%	/	21.00	20.30	20.20	20.28

**LTE FDD 13**

LTE			LTE B13			
Modulation	RB	RB Offset	Tune up	5MHz		
				23205	23230	23255
QPSK	1	Low	23.50	22.83	22.90	22.82
		Middle		22.82	22.92	22.77
		High		22.77	22.83	22.73
	50%	Low	22.50	21.88	21.95	21.83
		Middle		21.68	21.74	21.63
		High		21.74	21.82	21.70
	100%	/	22.50	21.64	21.71	21.62
16QAM	1	Low	22.50	21.81	21.90	21.78
		Middle		21.83	21.91	21.79
		High		21.92	21.99	21.90
	50%	Low	21.50	20.92	20.90	20.87
		Middle		20.87	20.93	20.83
		High		20.97	21.04	20.92
	100%	/	21.50	20.82	20.88	20.77
Modulation	RB	RB Offset	Tune up	10MHz		
				/	23230	/
QPSK	1	Low	23.50	/	22.86	/
		Middle		/	22.88	/
		High		/	22.82	/
	50%	Low	22.50	/	21.90	/
		Middle		/	21.70	/
		High		/	21.77	/
	100%	/	22.50	/	21.66	/
16QAM	1	Low	22.50	/	21.86	/
		Middle		/	21.89	/
		High		/	21.96	/
	50%	Low	21.50	/	20.97	/
		Middle		/	20.91	/
		High		/	20.99	/
	100%	/	21.50	/	20.84	/

**LTE FDD 17**

LTE			LTE B17				
Modulation	RB	RB Offset	Tune up	5MHz			
				23755	23790	23825	
QPSK	1	Low	23.00	22.57	22.47	22.48	
		Middle		22.56	22.59	22.44	
		High		22.33	22.17	22.50	
	50%	Low	22.00	21.35	21.38	21.16	
		Middle		21.18	21.07	21.06	
		High		21.20	21.02	21.00	
	100%	/	22.00	21.24	21.18	21.18	
	16QAM	1	Low	22.00	21.22	21.23	21.16
			Middle		21.24	21.15	21.24
High			21.01		21.03	21.11	
50%		Low	21.00	20.24	20.19	20.24	
		Middle		20.32	20.34	20.27	
		High		20.34	20.43	20.35	
100%		/	21.00	20.27	20.23	20.25	
Modulation		RB	RB Offset	Tune up	10MHz		
					23780	23790	23800
QPSK	1	Low	23.00	22.54	22.43	22.45	
		Middle		22.51	22.55	22.42	
		High		22.31	22.16	22.47	
	50%	Low	22.00	21.34	21.33	21.12	
		Middle		21.16	21.03	21.03	
		High		21.17	20.97	20.94	
	100%	/	22.00	21.21	21.13	21.14	
	16QAM	1	Low	22.00	21.17	21.19	21.11
			Middle		21.20	21.13	21.20
High			20.99		21.00	21.09	
50%		Low	21.00	20.21	20.15	20.21	
		Middle		20.29	20.32	20.24	
		High		20.31	20.38	20.31	
100%		/	21.00	20.25	20.19	20.22	

**LTE FDD 25**

LTE			LTE B25			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				26047	26365	26683
QPSK	1	Low	23.00	22.24	22.21	22.19
		Middle		22.58	22.56	22.18
		High		22.03	22.25	22.04
	50%	Low	23.00	22.12	22.16	21.97
		Middle		22.10	22.12	22.02



		High		21.89	22.13	21.93
	100%	/	22.00	21.09	21.13	20.85
16QAM	1	Low	22.00	21.27	21.35	21.33
		Middle		21.25	21.37	21.32
		High		21.19	21.15	21.24
	50%	Low	22.00	21.01	20.93	21.02
		Middle		21.15	21.16	21.07
		High		21.04	21.15	21.14
100%	/	21.00	20.12	20.26	20.18	
Modulation	RB	RB Offset	Tune up	3MHz		
				26055	26365	26675
QPSK	1	Low	23.00	22.26	22.25	22.22
		Middle		22.56	22.59	22.22
		High		22.06	22.30	22.08
	50%	Low	22.00	21.22	21.28	21.10
		Middle		21.22	21.22	21.14
		High		20.99	21.24	21.03
100%	/	22.00	21.09	21.17	20.88	
16QAM	1	Low	22.00	21.30	21.37	21.36
		Middle		21.28	21.37	21.36
		High		21.21	21.19	21.27
	50%	Low	21.00	20.12	20.06	20.14
		Middle		20.26	20.29	20.19
		High		20.14	20.27	20.27
100%	/	21.00	20.15	20.30	20.21	
Modulation	RB	RB Offset	Tune up	5MHz		
				26065	26365	26665
QPSK	1	Low	23.00	22.23	22.23	22.18
		Middle		22.54	22.55	22.19
		High		22.03	22.25	22.04
	50%	Low	22.00	21.19	21.23	21.06
		Middle		21.20	21.18	21.09
		High		20.97	21.22	20.99
100%	/	22.00	21.09	21.16	20.86	
16QAM	1	Low	22.00	21.27	21.33	21.33
		Middle		21.25	21.35	21.33
		High		21.18	21.17	21.23
	50%	Low	21.00	20.10	20.02	20.11
		Middle		20.23	20.24	20.15
		High		20.11	20.22	20.23
100%	/	21.00	20.13	20.26	20.16	
Modulation	RB	RB Offset	Tune up	10MHz		
				26090	26365	26640
QPSK	1	Low	23.00	22.25	22.24	22.21

	50%	Middle	22.00	22.57	22.60	22.23
		High		22.05	22.29	22.07
		Low		21.22	21.28	21.10
		Middle		21.23	21.23	21.13
		High		20.99	21.26	21.04
100%	/	22.00	21.13	21.18	20.90	
16QAM	1	Low	22.00	21.29	21.36	21.35
		Middle		21.28	21.39	21.36
		High		21.21	21.19	21.26
	50%	Low	21.00	20.13	20.07	20.15
		Middle		20.25	20.28	20.18
		High		20.14	20.27	20.27
100%	/	21.00	20.16	20.31	20.20	
Modulation	RB	RB Offset	Tune up	15MHz		
				26115	26365	26615
QPSK	1	Low	23.00	22.24	22.20	22.19
		Middle		22.55	22.59	22.20
		High		22.02	22.24	22.03
	50%	Low	22.00	21.20	21.24	21.07
		Middle		21.20	21.18	21.09
		High		20.96	21.23	21.00
100%	/	22.00	21.11	21.14	20.85	
16QAM	1	Low	22.00	21.24	21.34	21.33
		Middle		21.26	21.36	21.34
		High		21.18	21.15	21.23
	50%	Low	21.00	20.10	20.05	20.12
		Middle		20.22	20.23	20.14
		High		20.12	20.23	20.24
100%	/	21.00	20.13	20.26	20.16	
Modulation	RB	RB Offset	Tune up	20MHz		
				26140	26365	26590
QPSK	1	Low	23.00	22.21	22.16	22.16
		Middle		22.54	22.55	22.18
		High		22.00	22.23	22.00
	50%	Low	22.00	21.17	21.19	21.03
		Middle		21.18	21.14	21.06
		High		20.93	21.18	20.96
100%	/	22.00	21.08	21.09	20.81	
16QAM	1	Low	22.00	21.28	21.30	21.28
		Middle		21.22	21.34	21.30
		High		21.16	21.12	21.21
	50%	Low	21.00	20.07	20.01	20.09
		Middle		20.19	20.21	20.11
		High		20.09	20.18	20.20



	100%	/	21.00	20.11	20.22	20.13
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**LTE FDD 26**

Band	Frequency(MHz)	BandWidth	RB size/offset	QPSK(dBm)	Q16(dBm)
FDD26_90	814.7	1.4	One Rb High	23.11	21.65
FDD26_90	814.7	1.4	One Rb Low	23.13	21.75
FDD26_90	814.7	1.4	One Rb Middle	23.04	22.21
FDD26_90	814.7	1.4	Half Rb Low	23.08	22.07
FDD26_90	814.7	1.4	Half Rb Middle	23.07	22.21
FDD26_90	814.7	1.4	Half Rb High	23.06	22.18
FDD26_90	814.7	1.4	Fullrb	22.04	21.07
FDD26_90	815.5	3	One Rb High	23.1	22.03
FDD26_90	815.5	3	One Rb Low	23.12	22.2
FDD26_90	815.5	3	One Rb Middle	22.99	22
FDD26_90	815.5	3	Half Rb Low	22.07	21.04
FDD26_90	815.5	3	Half Rb Middle	22.07	21.03
FDD26_90	815.5	3	Half Rb High	22.11	21.35
FDD26_90	815.5	3	Fullrb	22.26	21.33
FDD26_90	816.5	5	One Rb High	23.16	21.82
FDD26_90	816.5	5	One Rb Low	23.28	22.33
FDD26_90	816.5	5	One Rb Middle	23.15	21.92
FDD26_90	816.5	5	Half Rb Low	22.18	21.31
FDD26_90	816.5	5	Half Rb Middle	22.17	21.3
FDD26_90	816.5	5	Half Rb High	22.3	21.45
FDD26_90	816.5	5	Fullrb	22.27	21.16
FDD26_90	819	1.4	One Rb High	22.99	22.21
FDD26_90	819	1.4	One Rb Low	23.19	22.32
FDD26_90	819	1.4	One Rb Middle	23.16	22.34
FDD26_90	819	1.4	Half Rb Low	23.12	22.34
FDD26_90	819	1.4	Half Rb Middle	23.12	22.33
FDD26_90	819	1.4	Half Rb High	23.11	22.29
FDD26_90	819	1.4	Fullrb	22.23	21.31
FDD26_90	819	3	One Rb High	23.01	22.15
FDD26_90	819	3	One Rb Low	23.08	22.36
FDD26_90	819	3	One Rb Middle	23.15	22.09
FDD26_90	819	3	Half Rb Low	22.34	21.72
FDD26_90	819	3	Half Rb Middle	22.34	21.63
FDD26_90	819	3	Half Rb High	22.14	21.43
FDD26_90	819	3	Fullrb	22.21	21.22
FDD26_90	819	5	One Rb High	22.7	21.39
FDD26_90	819	5	One Rb Low	23.01	21.54
FDD26_90	819	5	One Rb Middle	22.9	21.35
FDD26_90	819	5	Half Rb Low	22.26	21.12
FDD26_90	819	5	Half Rb Middle	22.27	21.39
FDD26_90	819	5	Half Rb High	22.06	21.29

FDD26_90	819	5	Fullrb	22.2	21.37
FDD26_90	819	10	One Rb High	22.94	22.18
FDD26_90	819	10	One Rb Low	23.22	22.27
FDD26_90	819	10	One Rb Middle	23.19	22.2
FDD26_90	819	10	Half Rb Low	22.26	21.34
FDD26_90	819	10	Half Rb Middle	22.28	21.35
FDD26_90	819	10	Half Rb High	22.18	21.15
FDD26_90	819	10	Fullrb	22.1	21.14
FDD26_90	823.3	1.4	One Rb High	22.93	21.95
FDD26_90	823.3	1.4	One Rb Low	22.94	21.98
FDD26_90	823.3	1.4	One Rb Middle	22.86	22.19
FDD26_90	823.3	1.4	Half Rb Low	23.02	22.16
FDD26_90	823.3	1.4	Half Rb Middle	22.92	22.15
FDD26_90	823.3	1.4	Half Rb High	22.9	21.81
FDD26_90	823.3	1.4	Fullrb	21.96	21.12
FDD26_90	822.5	3	One Rb High	22.8	22.02
FDD26_90	822.5	3	One Rb Low	22.92	22.01
FDD26_90	822.5	3	One Rb Middle	22.86	22.25
FDD26_90	822.5	3	Half Rb Low	22.08	21.05
FDD26_90	822.5	3	Half Rb Middle	22.09	21.04
FDD26_90	822.5	3	Half Rb High	22.03	21.35
FDD26_90	822.5	3	Fullrb	22.16	21.1
FDD26_90	821.5	5	One Rb High	22.92	22.21
FDD26_90	821.5	5	One Rb Low	22.95	22.3
FDD26_90	821.5	5	One Rb Middle	22.92	22.3
FDD26_90	821.5	5	Half Rb Low	22.12	21.23
FDD26_90	821.5	5	Half Rb Middle	21.95	20.97
FDD26_90	821.5	5	Half Rb High	22.01	21.01
FDD26_90	821.5	5	Fullrb	22.03	21.11
FDD26_22	824.7	1.4	One Rb High	22.97	22.08
FDD26_22	824.7	1.4	One Rb Low	22.93	21.99
FDD26_22	824.7	1.4	One Rb Middle	22.88	21.96
FDD26_22	824.7	1.4	Half Rb Low	22.84	22.19
FDD26_22	824.7	1.4	Half Rb Middle	22.89	22.17
FDD26_22	824.7	1.4	Half Rb High	22.85	21.95
FDD26_22	824.7	1.4	Fullrb	21.96	20.78
FDD26_22	825.5	3	One Rb High	22.99	22.29
FDD26_22	825.5	3	One Rb Low	22.99	22.03
FDD26_22	825.5	3	One Rb Middle	22.92	22.06
FDD26_22	825.5	3	Half Rb Low	21.97	21.1
FDD26_22	825.5	3	Half Rb Middle	21.97	21.09
FDD26_22	825.5	3	Half Rb High	22.08	21.01
FDD26_22	825.5	3	Fullrb	22.07	21.19
FDD26_22	826.5	5	One Rb High	23.07	22.24
FDD26_22	826.5	5	One Rb Low	22.8	22.15



FDD26_22	826.5	5	One Rb Middle	23	21.84
FDD26_22	826.5	5	Half Rb Low	22	20.91
FDD26_22	826.5	5	Half Rb Middle	22.01	21.1
FDD26_22	826.5	5	Half Rb High	22.05	21.22
FDD26_22	826.5	5	Fullrb	21.95	21.08
FDD26_22	829	10	One Rb High	23.08	22.24
FDD26_22	829	10	One Rb Low	23.07	22.17
FDD26_22	829	10	One Rb Middle	23.27	22.33
FDD26_22	829	10	Half Rb Low	21.92	21.09
FDD26_22	829	10	Half Rb Middle	22.11	21.08
FDD26_22	829	10	Half Rb High	21.96	20.96
FDD26_22	829	10	Fullrb	22.02	21.04
FDD26_22	831.5	15	One Rb High	22.99	22.27
FDD26_22	831.5	15	One Rb Low	22.91	22.28
FDD26_22	831.5	15	One Rb Middle	22.86	22.15
FDD26_22	831.5	15	Half Rb Low	22.13	21.11
FDD26_22	831.5	15	Half Rb Middle	22.16	21.17
FDD26_22	831.5	15	Half Rb High	22.19	21.21
FDD26_22	831.5	15	Fullrb	21.94	21.02
FDD26_22	836.5	1.4	One Rb High	22.87	22.12
FDD26_22	836.5	1.4	One Rb Low	22.8	21.87
FDD26_22	836.5	1.4	One Rb Middle	22.83	21.9
FDD26_22	836.5	1.4	Half Rb Low	22.9	21.72
FDD26_22	836.5	1.4	Half Rb Middle	22.9	22.14
FDD26_22	836.5	1.4	Half Rb High	22.8	22.23
FDD26_22	836.5	1.4	Fullrb	21.94	21.07
FDD26_22	836.5	3	One Rb High	22.66	22.27
FDD26_22	836.5	3	One Rb Low	23	22.27
FDD26_22	836.5	3	One Rb Middle	22.57	21.9
FDD26_22	836.5	3	Half Rb Low	21.87	21.02
FDD26_22	836.5	3	Half Rb Middle	21.87	21.12
FDD26_22	836.5	3	Half Rb High	21.89	21.24
FDD26_22	836.5	3	Fullrb	21.97	21.03
FDD26_22	836.5	5	One Rb High	22.7	20.99
FDD26_22	836.5	5	One Rb Low	22.87	21.86
FDD26_22	836.5	5	One Rb Middle	22.5	21.05
FDD26_22	836.5	5	Half Rb Low	21.95	21.06
FDD26_22	836.5	5	Half Rb Middle	21.96	21.07
FDD26_22	836.5	5	Half Rb High	21.78	20.97
FDD26_22	836.5	5	Fullrb	21.84	20.98
FDD26_22	836.5	10	One Rb High	22.72	21.93
FDD26_22	836.5	10	One Rb Low	23.05	22.27
FDD26_22	836.5	10	One Rb Middle	22.86	22.39
FDD26_22	836.5	10	Half Rb Low	21.9	20.97
FDD26_22	836.5	10	Half Rb Middle	21.92	20.97

FDD26_22	836.5	10	Half Rb High	21.85	20.89
FDD26_22	836.5	10	Fullrb	21.89	21.01
FDD26_22	836.5	15	One Rb High	22.82	22.23
FDD26_22	836.5	15	One Rb Low	23.01	22.28
FDD26_22	836.5	15	One Rb Middle	22.75	21.91
FDD26_22	836.5	15	Half Rb Low	22.14	21.14
FDD26_22	836.5	15	Half Rb Middle	22.14	21.14
FDD26_22	836.5	15	Half Rb High	21.92	21.86
FDD26_22	836.5	15	Fullrb	21.86	20.99
FDD26_22	848.3	1.4	One Rb High	22.59	22.27
FDD26_22	848.3	1.4	One Rb Low	22.65	21.79
FDD26_22	848.3	1.4	One Rb Middle	22.73	22.01
FDD26_22	848.3	1.4	Half Rb Low	22.86	21.84
FDD26_22	848.3	1.4	Half Rb Middle	22.69	21.84
FDD26_22	848.3	1.4	Half Rb High	22.6	21.74
FDD26_22	848.3	1.4	Fullrb	21.77	20.88
FDD26_22	847.5	3	One Rb High	22.68	22.29
FDD26_22	847.5	3	One Rb Low	22.78	22.18
FDD26_22	847.5	3	One Rb Middle	22.51	21.92
FDD26_22	847.5	3	Half Rb Low	21.76	20.78
FDD26_22	847.5	3	Half Rb Middle	21.78	20.78
FDD26_22	847.5	3	Half Rb High	21.75	20.96
FDD26_22	847.5	3	Fullrb	21.73	20.83
FDD26_22	846.5	5	One Rb High	22.71	21.49
FDD26_22	846.5	5	One Rb Low	22.93	21.92
FDD26_22	846.5	5	One Rb Middle	22.92	21.96
FDD26_22	846.5	5	Half Rb Low	21.87	20.81
FDD26_22	846.5	5	Half Rb Middle	21.79	21.02
FDD26_22	846.5	5	Half Rb High	21.58	20.67
FDD26_22	846.5	5	Fullrb	21.86	20.9
FDD26_22	844	10	One Rb High	22.67	21.95
FDD26_22	844	10	One Rb Low	23.02	22.11
FDD26_22	844	10	One Rb Middle	23.01	22.22
FDD26_22	844	10	Half Rb Low	21.86	20.93
FDD26_22	844	10	Half Rb Middle	21.86	20.93
FDD26_22	844	10	Half Rb High	21.8	20.89
FDD26_22	844	10	Fullrb	21.8	20.89
FDD26_22	841.5	15	One Rb High	22.74	22.04
FDD26_22	841.5	15	One Rb Low	23.12	22.18
FDD26_22	841.5	15	One Rb Middle	22.97	22.25
FDD26_22	841.5	15	Half Rb Low	22.89	21.09
FDD26_22	841.5	15	Half Rb Middle	22.89	21.49
FDD26_22	841.5	15	Half Rb High	21.58	20.56
FDD26_22	841.5	15	Fullrb	21.82	20.88



**LTE TDD 41**

LTE			LTE B41				
Modulation	RB	RB Offset	Tune up	5MHz			
				40265	40740	41215	
QPSK	1	Low	22.00	21.38	21.47	20.82	
		Middle		21.53	21.62	20.90	
		High		21.54	21.37	20.87	
	50%	Low	21.00	19.83	20.20	19.54	
		Middle		20.04	20.25	19.68	
		High		20.02	19.91	19.63	
	100%	/	21.00	20.05	19.90	19.88	
	16QAM	1	Low	21.00	20.02	19.93	19.49
			Middle		20.00	20.09	19.48
High			19.90		19.83	19.51	
50%		Low	20.00	18.85	18.89	18.62	
		Middle		18.83	18.84	18.52	
		High		18.98	18.98	18.73	
100%		/	20.00	19.00	18.99	18.92	
Modulation		RB	RB Offset	Tune up	10MHz		
					40290	40740	41190
QPSK	1	Low	22.00	21.40	21.48	20.85	
		Middle		21.56	21.67	20.94	
		High		21.56	21.41	20.90	
	50%	Low	21.00	19.86	20.25	19.58	
		Middle		20.07	20.30	19.72	
		High		20.04	19.95	19.68	
	100%	/	21.00	20.09	19.92	19.92	
	16QAM	1	Low	21.00	20.04	19.96	19.51
			Middle		20.03	20.13	19.51
High			19.93		19.85	19.54	
50%		Low	20.00	18.88	18.94	18.66	
		Middle		18.85	18.88	18.55	
		High		19.01	19.03	18.77	
100%		/	20.00	19.03	19.04	18.96	
Modulation		RB	RB Offset	Tune up	15MHz		
					40315	40740	41165
QPSK	1	Low	22.00	21.39	21.44	20.83	
		Middle		21.54	21.66	20.91	
		High		21.53	21.36	20.86	
	50%	Low	21.00	19.84	20.21	19.55	
		Middle		20.04	20.25	19.68	
		High		20.01	19.92	19.64	
	100%	/	21.00	20.07	19.88	19.87	

16QAM	1	Low	21.00	19.99	19.94	19.49	
		Middle		20.01	20.07	19.56	
		High		19.90	19.81	19.51	
	50%	Low	20.00	18.85	18.92	18.63	
		Middle		18.82	18.83	18.51	
		High		18.99	18.99	18.74	
	100%	/	20.00	19.00	18.99	18.92	
	Modulation	RB	RB Offset	Tune up	20MHz		
					40340	40740	41140
QPSK	1	Low	22.00	21.36	21.40	20.80	
		Middle		21.53	21.62	20.89	
		High		21.51	21.35	20.83	
	50%	Low	21.00	19.81	20.16	19.51	
		Middle		20.02	20.21	19.65	
		High		19.98	19.87	19.60	
	100%	/	21.00	20.04	19.83	19.83	
	16QAM	1	Low	21.00	19.78	19.90	19.44
			Middle		19.97	20.08	19.45
High			19.88		19.78	19.49	
50%		Low	20.00	18.82	18.88	18.60	
		Middle		18.79	18.81	18.48	
		High		18.96	18.94	18.70	
100%		/	20.00	18.98	18.95	18.89	

### 6.1.3 Radiated

#### 6.1.3.1 Description

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. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

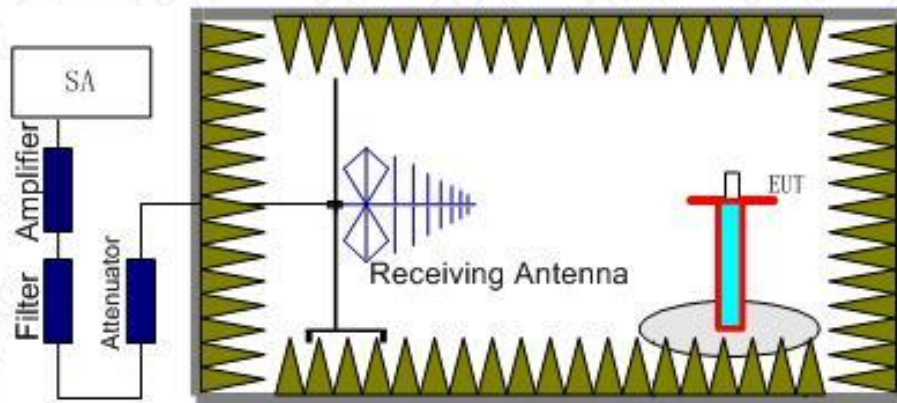
Rule Part 27.50(d) specifies "Fixed, mobile, and portable (handheld) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP".

Rule Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP".

Rule Part 27.50(c) specifies "Portable stations (hand-held de-vices) are limited to 3 watts ERP."

#### 6.1.3.2 Method of Measurement



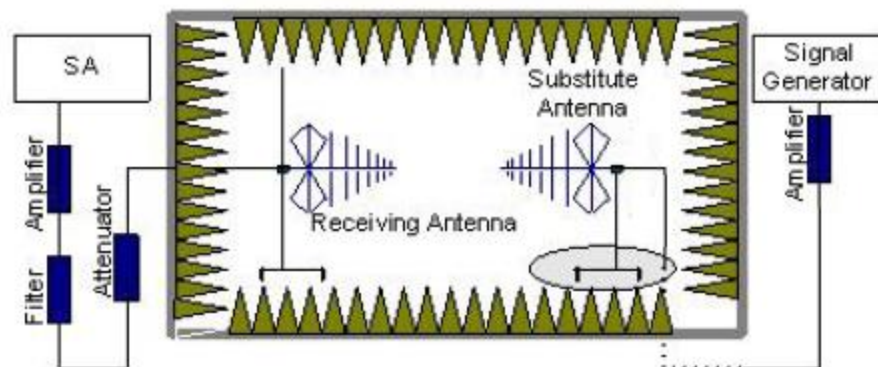


The measurements procedures in TIA-603E-2016 are used.

EUT was placed on a 1.5 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 1.5m. The test setup refers to figure below. 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.

The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).

The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna.

The cable loss (Pcl), the substitution antenna Gain (Ga) and the amplifier Gain (PAG) should be recorded after test.

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = \text{PMea} + \text{PAG} - \text{Pcl} + \text{Ga}$$

This value is EIRP since the measurement is calibrated using an antenna of known gain (unit dBi) and known input power.

$$\text{ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP} = \text{EIRP} - 2.15\text{dBi.}$$

### 6.1.3.3 Measurement result

#### LTE Band 2- EIRP 24. 232(b)

Limits:  $\leq 33\text{dBm}$  (2W)

##### LTE Band 2\_1.4MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	18.23	33.00	H
1880	18.15	33.00	H
1909.3	17.78	33.00	H

##### LTE Band 2\_3MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	18.21	33.00	H
1880	18.18	33.00	H
1908.5	17.81	33.00	H

##### LTE Band 2\_5MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	18.19	33.00	H
1880	18.14	33.00	H
1907.5	17.78	33.00	H

##### LTE Band 2\_10MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	18.22	33.00	H
1880	18.19	33.00	H
1905	17.82	33.00	H

##### LTE Band 2\_15MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	18.20	33.00	H
1880	18.18	33.00	H
1902.5	17.79	33.00	H

##### LTE Band 2\_20 MHz\_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	18.19	33.00	H
1880	18.14	33.00	H
1900	17.77	33.00	H

##### LTE Band 2\_1.4MHz\_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	16.86	33.00	H
1880	16.96	33.00	H
1909.3	16.92	33.00	H

##### LTE Band 2\_3MHz\_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	16.89	33.00	H
1880	16.96	33.00	H



1908.5	16.95	33.00	H
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**LTE Band 2\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	16.86	33.00	H
1880	16.94	33.00	H
1907.5	16.92	33.00	H

**LTE Band 2\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	16.88	33.00	H
1880	16.98	33.00	H
1905	16.95	33.00	H

**LTE Band 2\_15MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	16.85	33.00	H
1880	16.95	33.00	H
1902.5	16.93	33.00	H

**LTE Band 2\_20 MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	16.87	33.00	H
1880	16.93	33.00	H
1900	16.89	33.00	H

**LTE Band 4- EIRP 27.50(d)**
**Limits:** ≤30dBm (1W)

**LTE Band 4\_1.4MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	18.99	30.00	H
1732.5	19.04	30.00	H
1754.3	18.94	30.00	H

**LTE Band 4\_3MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	18.97	30.00	H
1732.5	19.07	30.00	H
1753.5	18.98	30.00	H

**LTE Band 4\_5MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	18.95	30.00	H
1732.5	19.03	30.00	H
1752.5	18.95	30.00	H

**LTE Band 4\_10MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	18.98	30.00	H
1732.5	19.08	30.00	H
1750	18.99	30.00	H

**LTE Band 4\_15MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	18.96	30.00	H
1732.5	19.07	30.00	H
1747.5	18.96	30.00	H

**LTE Band 4\_20MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	18.95	30.00	H
1732.5	19.03	30.00	H
1745	18.94	30.00	H

**LTE Band 4\_1.4MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	17.79	30.00	H
1732.5	17.89	30.00	H
1754.3	17.84	30.00	H

**LTE Band 4\_3MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	17.82	30.00	H
1732.5	17.91	30.00	H
1753.5	17.87	30.00	H

**LTE Band 4\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	17.79	30.00	H
1732.5	17.87	30.00	H
1752.5	17.83	30.00	H

**LTE Band 4\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	17.81	30.00	H
1732.5	17.90	30.00	H
1750.5	17.86	30.00	H

**LTE Band 4\_15MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	17.78	30.00	H
1732.5	17.88	30.00	H
1747.5	17.83	30.00	H

**LTE Band 4\_20MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	17.74	30.00	H
1732.5	17.84	30.00	H
1745	17.81	30.00	H

**LTE Band 5- ERP/EIRP 22.913(a)**
**Limits:** ≤38.45dBm (7W)

**LTE Band 5\_1.4MHz\_QPSK**



Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
824.70	22.44	20.29	38.45	H
836.50	22.40	20.25	38.45	H
848.30	22.20	20.05	38.45	H

**LTE Band 5\_3MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
825.50	22.43	20.28	38.45	H
836.50	22.44	20.29	38.45	H
847.50	22.22	20.07	38.45	H

**LTE Band 5\_5MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
826.50	22.41	20.26	38.45	H
836.50	22.43	20.28	38.45	H
846.50	22.20	20.05	38.45	H

**LTE Band 5\_10MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
829.00	22.40	20.25	38.45	H
836.50	22.39	20.24	38.45	H
844.00	22.17	20.02	38.45	H

**LTE Band 5\_1.4MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
824.70	21.08	18.93	38.45	H
836.50	21.21	19.06	38.45	H
848.30	21.08	18.93	38.45	H

**LTE Band 5\_3MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
825.50	21.10	18.95	38.45	H
836.50	21.22	19.07	38.45	H
847.50	21.12	18.97	38.45	H

**LTE Band 5\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
826.50	21.07	18.92	38.45	H
836.50	21.20	19.05	38.45	H
846.50	21.10	18.95	38.45	H

**LTE Band 5\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	ERP(dBm)	Limit(dBm)	Polarization
829.00	21.03	18.88	38.45	H
836.50	21.16	19.01	38.45	H
844.00	21.06	18.91	38.45	H

**LTE Band 7- EIRP 27.50(h)(2)**
**Limits:** ≤33 dBm (2W)

**LTE Band 7\_5MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
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2502.5	18.64	33.00	H
2535	18.82	33.00	H
2567.5	18.79	33.00	H

**LTE Band 7\_10MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	18.67	33.00	H
2535	18.87	33.00	H
2565	18.83	33.00	H

**LTE Band 7\_15MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	18.65	33.00	H
2535	18.86	33.00	H
2562.5	18.80	33.00	H

**LTE Band 7\_20MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	18.64	33.00	H
2535	18.82	33.00	H
2560	18.78	33.00	H

**LTE Band 7\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2502.5	17.94	33.00	H
2535	17.99	33.00	H
2567.5	17.79	33.00	H

**LTE Band 7\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	17.96	33.00	H
2535	18.03	33.00	H
2565	17.82	33.00	H

**LTE Band 7\_15MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	17.93	33.00	H
2535	18.00	33.00	H
2562.5	17.80	33.00	H

**LTE Band 7\_20MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	17.89	33.00	H
2535	17.98	33.00	H
2560	17.76	33.00	H

**LTE Band 12- ERP 27.50(c)**
**Limits:** ≤38.45dBm (7W)

**LTE Band 12\_1.4MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
699.7	14.93	38.45	H



707.5	15.14	38.45	H
715.3	15.10	38.45	H

**LTE Band 12\_3MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	14.94	38.45	H
707.5	15.17	38.45	H
714.5	15.12	38.45	H

**LTE Band 12\_5MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	14.93	38.45	H
707.5	15.13	38.45	H
713.5	15.10	38.45	H

**LTE Band 12\_10MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	14.90	38.45	H
707.5	15.09	38.45	H
711	15.07	38.45	H

**LTE Band 12\_1.4MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
699.7	13.90	38.45	H
707.5	13.94	38.45	H
715.3	13.86	38.45	H

**LTE Band 12\_3MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	13.92	38.45	H
707.5	13.84	38.45	H
714.5	13.84	38.45	H

**LTE Band 12\_5MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	13.89	38.45	H
707.5	13.81	38.45	H
713.5	13.81	38.45	H

**LTE Band 12\_10MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	13.85	38.45	H
707.5	13.79	38.45	H
711	13.79	38.45	H

**LTE Band 13- ERP 27.50(c)**
**Limits:** ≤38.45dBm (7W)

**LTE Band 13\_5MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
779.5	18.29	38.45	H
782	18.38	38.45	H

784.5	18.28	38.45	H
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**LTE Band 13\_10MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
782	18.34	38.45	H
782	18.34	38.45	H
782	18.34	38.45	H

**LTE Band 13\_5MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
779.5	17.38	38.45	H
782	17.45	38.45	H
784.5	17.36	38.45	H

**LTE Band 13\_10MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
782	17.42	38.45	H
782	17.42	38.45	H
782	17.42	38.45	H

**LTE Band 17- ERP 27.50(c)(10)**
**Limits:** ≤34.77dBm (3W)

**LTE Band 17\_5MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
706.5	15.06	34.77	H
710	15.08	34.77	H
713.5	14.99	34.77	H

**LTE Band 17\_10MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	15.03	34.77	H
710	15.04	34.77	H
711	14.96	34.77	H

**LTE Band 17\_5MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
706.5	13.73	34.77	H
710	13.72	34.77	H
713.5	13.73	34.77	H

**LTE Band 17\_10MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	13.69	34.77	H
710	13.68	34.77	H
711	13.69	34.77	H

**LTE Band 25- EIRP 24.229(c)**



**Limits:** ≤30dBm (1W)

**LTE Band 25\_1.4MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	18.30	30.00	H
1882.5	18.28	30.00	H
1914.3	17.91	30.00	H

**LTE Band 25\_3MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	18.28	30.00	H
1882.5	18.31	30.00	H
1913.5	17.94	30.00	H

**LTE Band 25\_5MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	18.26	30.00	H
1882.5	18.27	30.00	H
1912.5	17.91	30.00	H

**LTE Band 25\_10MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	18.29	30.00	H
1882.5	18.32	30.00	H
1910	17.95	30.00	H

**LTE Band 25\_15MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	18.27	30.00	H
1882.5	18.31	30.00	H
1907.5	17.92	30.00	H

**LTE Band 25\_20MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	18.26	30.00	H
1882.5	18.27	30.00	H
1905	17.90	30.00	H

**LTE Band 25\_1.4MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	16.99	30.00	H
1882.5	17.09	30.00	H
1914.3	17.05	30.00	H

**LTE Band 25\_3MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	17.02	30.00	H
1882.5	17.09	30.00	H
1913.5	17.08	30.00	H

**LTE Band 25\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization

1852.5	16.99	30.00	H
1882.5	17.07	30.00	H
1912.5	17.05	30.00	H

**LTE Band 25\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	17.01	30.00	H
1882.5	17.11	30.00	H
1910	17.08	30.00	H

**LTE Band 25\_15MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	16.98	30.00	H
1882.5	17.08	30.00	H
1907.5	17.06	30.00	H

**LTE Band 25\_20MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	17.00	30.00	H
1882.5	17.06	30.00	H
1905	17.02	30.00	H

**LTE Band 26(part22)- ERP 22.913(a)**

Limits: ≤30dBm (1W)

**LTE Band 26(part22)\_1.4MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
824.70	20.18	30.00	H
836.50	20.11	30.00	H
848.3	20.07	30.00	H

**LTE Band 26(part22)\_3MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	20.2	30.00	H
836.50	20.21	30.00	H
847.50	19.99	30.00	H

**LTE Band 26(part22)\_5MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	20.28	30.00	H
836.50	20.08	30.00	H
846.50	20.14	30.00	H

**LTE Band 26(part22)\_10MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	20.48	30.00	H
836.50	20.26	30.00	H
844.00	20.23	30.00	H

**LTE Band 26(part22)\_15MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization



831.50	20.2	30.00	H
836.50	20.22	30.00	H
841.50	20.33	30.00	H

**LTE Band 26(part22)\_1.4MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
824.70	19.4	30.00	H
836.50	19.44	30.00	H
848.30	19.48	30.00	H

**LTE Band 26(part22)\_3MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	19.5	30.00	H
836.50	19.48	30.00	H
847.50	19.5	30.00	H

**LTE Band 26(part22)\_5MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	19.45	30.00	H
836.50	19.07	30.00	H
846.50	19.17	30.00	H

**LTE Band 26(part22)\_10MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	19.54	30.00	H
836.50	19.6	30.00	H
844.00	19.43	30.00	H

**LTE Band 26(part22)\_15MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
831.50	19.49	30.00	H
836.50	19.49	30.00	H
841.50	19.46	30.00	H

**LTE Band 26(part90)- ERP 22.913(a)**

Limits: ≤30dBm (1W)

**LTE Band 26(part90)\_1.4MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.7	20.34	30.00	H
819.0	20.4	30.00	H
823.3	20.23	30.00	H

**LTE Band 26(part90)\_3MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.5	20.33	30.00	H
819.0	20.36	30.00	H
822.5	20.13	30.00	H

**LTE Band 26(part90)\_5MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.5	20.49	30.00	H
819.0	20.22	30.00	H
821.5	20.16	30.00	H

**LTE Band 26(part90)\_10MHz\_QPSK**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.0	20.43	30.00	H

**LTE Band 26(part90)\_1.4MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.7	19.42	30.00	H
819.0	19.55	30.00	H
823.3	19.4	30.00	H

**LTE Band 26(part90)\_3MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.5	19.41	30.00	H
819.0	19.57	30.00	H
822.5	19.46	30.00	H

**LTE Band 26(part90)\_5MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.5	19.54	30.00	H
819.0	18.75	30.00	H
821.5	19.51	30.00	H

**LTE Band 26(part90)\_10MHz\_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.0	19.48	30.00	H

**LTE Band 41- EIRP 27.50(h)(2)**
**Limits:** ≤33 dBm (2W)

**LTE Band 41\_5MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2557.5	21.23	33.00	H
2605	21.31	33.00	H
2652.5	20.59	33.00	H

**LTE Band 41\_10MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2560	21.25	33.00	H
2605	21.36	33.00	H
2650	20.63	33.00	H

**LTE Band 41\_15MHz\_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2562.5	21.23	33.00	H
2605	21.35	33.00	H
2647.5	20.60	33.00	H

**LTE Band 41\_20MHz\_QPSK**



Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2565	21.22	33.00	H
2605	21.31	33.00	H
2645	20.58	33.00	H

**LTE Band 41\_5MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2557.5	19.71	33.00	H
2605	19.78	33.00	H
2652.5	19.20	33.00	H

**LTE Band 41\_10MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2560	19.73	33.00	H
2605	19.82	33.00	H
2650	19.23	33.00	H

**LTE Band 41\_15MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2562.5	19.70	33.00	H
2605	19.76	33.00	H
2647.5	19.25	33.00	H

**LTE Band 41\_20MHz\_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2565	19.66	33.00	H
2605	19.77	33.00	H
2645	19.18	33.00	H

**ANALYZER SETTINGS:**

RBW = VBW = 8MHz for occupied bandwidths equal to or less than 5MHz.

RBW = VBW = 20MHz for occupied bandwidths equal to or greater than 10MHz.

## 6.2 Emission Limit

### Reference

CFR 2.1051,2.1053,22.917,24.238(a), 27.53(g), 27.53(h), 27.53(m),90.669.

Rule RSS-130 4.7; Rule RSS-132 5.5; Rule RSS-133 6.5; Rule RSS-139 5.6; Rule RSS-199 4.5

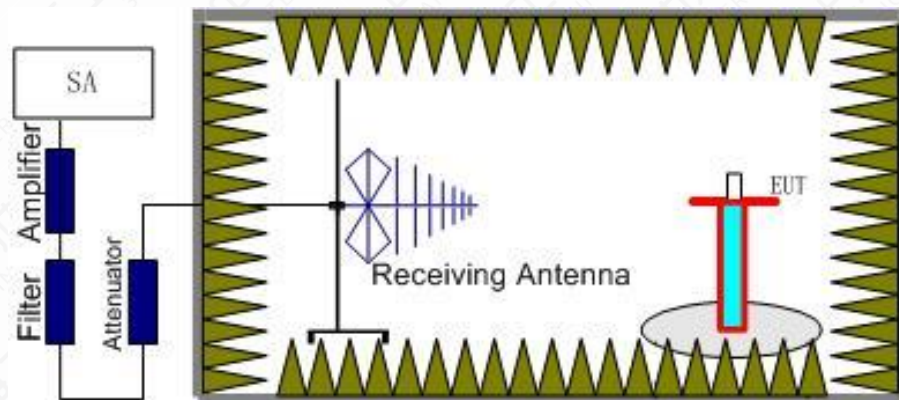
### 6.2.1 Measurement Method

The measurements procedures in TIA-603E-2016 are used. This measurement is carried out in fully-anechoic chamber FAC-3.

The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz as outlined in Part 27.53(g), Part 27.53(h), Part 27.53(m). The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the LTE Bands 7.

**The procedure of radiated spurious emissions is as follows:**

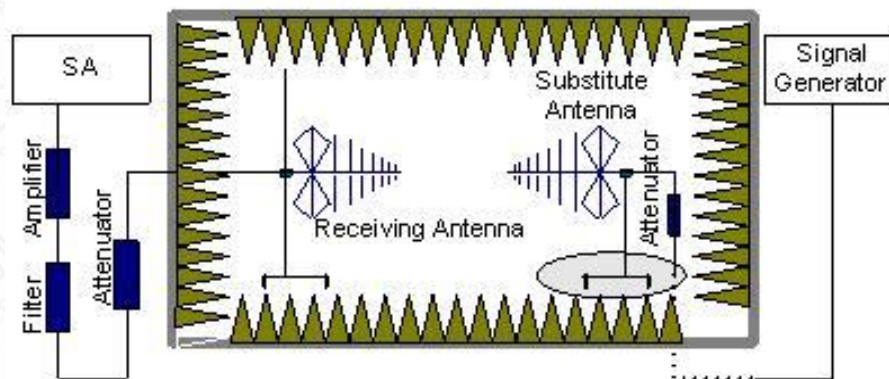
1. Below 1 GHz, EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. Above 1 GHz, EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. EUT was placed on a 1.5 meter high non-conductive stand 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 1.5m. The test setup refers to figure below. 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 non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).

3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.





In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches 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.

4. The Path loss ( $P_{pl}$ ) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain ( $G_a$ ) should be recorded after test.

An amplifier should be connected in for the test.

The Path loss ( $P_{pl}$ ) is the summation of the cable loss and the gain of the amplifier.

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{Mea} - P_{pl} + G_a$$

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit: dBi) and known input power.

6. ERP can be calculated from EIRP by subtracting the gain of the dipole,  $ERP = EIRP - 2.15\text{dBi}$ .

### 6.2.2 Measurement Limit

Part 27.53(g), 27.53(h), 27.53(m) state that on any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power ( $P$ , in Watts) by at least  $43 + 10\log(P)$  dB. For all power levels  $+30$  dBm to  $0$  dBm, this becomes a constant specification limit of  $-13$  dBm.

According to KDB 971168 6, a relaxation of the reference bandwidth is often provided for measurements within a specified frequency range at the edge of the authorized frequency block/band. This is often implemented by permitting the use of a narrower RBW (typically limited to a minimum RBW of 1% of the OBW) for measuring the out-of-band emissions without a requirement to integrate the result over the full reference bandwidth.

Part 27.53(m) states that for mobile digital stations, the attenuation factor shall be not less than  $40 + 10\log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10\log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10\log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10\log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10\log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Rule RSS-132: 5.5 specifies that " In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).

After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required. Limit -13 dBm

Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

Rule RSS-139 5.6 specifies that "In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, Footnote 2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p$  (watts) dB.

After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p$  (watts) dB.

Limit -13 dBm

### 6.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands 5. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the LTE Bands 5. Into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this. The evaluated frequency range is from 30MHz to 26GHz.

BAND	Channel		Result
2	L	18607	Pass
	M	18900	Pass
	H	19193	Pass
4	L	19957	Pass
	M	20175	Pass
	H	20393	Pass
5	L	20407	Pass
	M	20525	Pass



	H	20643	Pass
7	L	20775	Pass
	M	21100	Pass
	H	21425	Pass
	L	23017	Pass
12	M	23095	Pass
	H	23173	Pass
	L	23205	Pass
13	M	23230	Pass
	H	23255	Pass
	L	23755	Pass
17	M	23790	Pass
	H	23825	Pass
	L	26047	Pass
25	M	26365	Pass
	H	26683	Pass
	L	26697	Pass
26	M	26740	Pass
	H	26783	Pass
	L	40065	Pass
41	M	40640	Pass
	H	41215	Pass

**RSE-LTE2-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3814.4	-41.26	6.7	7.9	-40.06	-13	H
5727.6	-42.29	8.5	10.2	-40.59	-13	V
7634.0	-37.05	9.7	11.8	-34.95	-13	V
9539.2	-43.43	10.7	12.7	-41.43	-13	V

11446.6	-42.61	12.1	12.3	-42.41	-13	V
13360.4	-43.8	13.7	12.3	-45.2	-13	V

**RSE-LTE2-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3703.6	-42.57	6.6	7.9	-41.27	-13	H
5557.2	-47.41	8.2	9.8	-45.81	-13	V
7410.0	-37.74	9.7	11.6	-35.84	-13	V
9263.6	-43.26	10.7	12.7	-41.26	-13	V
11117.6	-43.1	12.1	12.3	-42.9	-13	V
15737.6	-39.75	14.5	12.3	-41.95	-13	H

**RSE-LTE2-M-S15aa-X**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3757.6	-42.47	6.6	7.9	-41.17	-13	V
5643.6	-46.5	8.3	10.2	-44.6	-13	V
7520.0	-38.44	9.7	11.6	-36.54	-13	V
9394.4	-46.02	10.7	12.7	-44.02	-13	V
12262.8	-44.47	12.7	12.3	-44.87	-13	V
16804.4	-39.05	15.8	12.3	-42.55	-13	V

**RSE-LTE4-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3812.8	-38.27	6.7	7.9	-37.07	-13	H
5718.8	-44.41	8.5	10.2	-42.71	-13	V
7630.0	-39.91	9.7	11.8	-37.81	-13	V
9532.0	-44.23	10.7	12.7	-42.23	-13	V
11438.2	-45.27	12.1	12.3	-45.07	-13	V
15309.2	-43.6	14.4	12.3	-45.7	-13	H

**RSE-LTE4-L-S15aa**



Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3702.4	-43.45	6.6	7.9	-42.15	-13	H
5561.2	-49.59	8.2	9.8	-47.99	-13	V
7410.0	-39.32	9.7	11.6	-37.42	-13	V
9262.8	-43	10.7	12.7	-41	-13	V
11114.8	-45.14	12.1	12.3	-44.94	-13	V
13598.4	-47.16	13.8	12.3	-48.66	-13	H

**RSE-LTE4-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3762.4	-39.99	6.6	7.9	-38.69	-13	H
5640.0	-47.73	8.3	10.2	-45.83	-13	V
7520.0	-41	9.7	11.6	-39.1	-13	V
9403.6	-40.49	10.7	12.7	-38.49	-13	V
11287.0	-44.67	12.1	12.3	-44.47	-13	V
14581.2	-46.23	14.0	12.3	-47.93	-13	V

**RSE-LTE5-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1818.6	-50.5	4.5	4.7	-50.3	-13	V
2785.4	-42.05	5.7	6.1	-41.65	-13	H
3385.6	-48.01	6.3	7.8	-46.51	-13	H
4238.8	-50.4	7.1	8.9	-48.6	-13	H
5196.0	-51.21	8.0	9.4	-49.81	-13	H
5927.2	-49.84	8.5	10.2	-48.14	-13	H

**RSE-LTE5-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1836.6	-48.24	4.6	4.7	-48.14	-13	V
2906.2	-41.55	5.8	6.7	-40.65	-13	V

3306.0	-47.87	6.2	6.9	-47.17	-13	H
4132.0	-47.85	7.0	8.9	-45.95	-13	H
5786.0	-48.04	8.4	10.2	-46.24	-13	H
7427.8	-48.73	9.7	11.6	-46.83	-13	V

**RSE-LTE5-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1948.1	-43.45	4.7	4.5	-43.65	-13	V
2818.5	-42.01	5.7	6.1	-41.61	-13	V
3350.4	-49.06	6.2	6.9	-48.36	-13	H
4188.0	-49.59	7.0	8.9	-47.69	-13	H
5014.0	-52.62	7.8	9.6	-50.82	-13	H
5855.6	-50.56	8.4	10.2	-48.76	-13	H

**RSE-LTE7-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3876.4	-52.35	6.8	8.6	-50.55	-13	H
5132.4	-39.34	7.9	9.4	-37.84	-13	H
7705.6	-39.14	9.8	11.8	-37.14	-13	H
9837.2	-46.66	11.0	12.5	-45.16	-13	V
12197.0	-41.38	12.6	12.3	-41.68	-13	H
17993.0	-28.39	16.4	12.3	-32.49	-13	V

**RSE-LTE7-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3993.2	-52.4	6.9	8.6	-50.7	-13	V
5002.0	-43.53	7.8	9.6	-41.73	-13	H
7507.2	-37.82	9.7	11.6	-35.92	-13	V
9018.4	-48.09	10.4	12.6	-45.89	-13	H
12099.0	-41.94	12.6	12.3	-42.24	-13	V



17994.8	-28.25	16.4	12.3	-32.35	-13	V
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**RSE-LTE7-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3922.0	-52.04	6.8	8.6	-50.24	-13	V
5070.4	-42.98	7.8	9.6	-41.18	-13	H
7605.2	-38.33	9.7	11.6	-36.43	-13	V
9874.8	-45.8	11.0	12.5	-44.3	-13	V
13387.0	-38.98	13.7	12.3	-40.38	-13	V
17991.2	-28.26	16.4	12.3	-32.36	-13	V

**RSE-LTE12-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1429.5	-51.36	4.1	5.3	-50.16	-13	V
1731.0	-49.99	4.5	4.7	-49.79	-13	H
2656.5	-42.35	5.5	6.1	-41.75	-13	H
3573.2	-33.64	6.4	7.8	-32.24	-13	V
4281.2	-40.82	7.1	8.9	-39.02	-13	H
5213.2	-51.75	8.0	9.4	-50.35	-13	H

**RSE-LTE12-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1403.2	-52.59	4.0	5.3	-51.29	-13	V
1925.9	-49.58	4.7	4.5	-49.78	-13	V
2786.2	-41.11	5.7	6.1	-40.71	-13	H
3513.2	-37.19	6.4	7.8	-35.79	-13	V
4202.0	-40.13	7.0	8.9	-38.23	-13	V
6029.6	-53.45	8.6	10.2	-51.85	-13	V

**RSE-LTE12-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
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1417.1	-48.85	4.0	5.3	-47.55	-13	V
1938.4	-39.32	4.7	4.5	-39.52	-13	H
2633.8	-42.46	5.5	6.1	-41.86	-13	V
3543.2	-32.39	6.4	7.8	-30.99	-13	V
4251.6	-39.59	7.1	8.9	-37.79	-13	V
4952.8	-50.93	7.7	9.6	-49.03	-13	H

**RSE-LTE13-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1573.2	-50.43	4.2	5.3	-49.33	-13	H
2402.3	-39.67	5.3	5.6	-39.37	-13	V
3146.4	-51.53	6.0	6.9	-50.63	-13	H
3932.8	-50.91	6.8	8.6	-49.11	-13	V
4720.0	-49.73	7.5	9.0	-48.23	-13	V
5506.8	-47.51	8.2	9.8	-45.91	-13	V

**RSE-LTE13-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1563.2	-46.19	4.2	5.3	-45.09	-13	H
2342.3	-45.03	5.2	5.1	-45.13	-13	H
3126.4	-52.55	6.0	6.9	-51.65	-13	H
3908.0	-52.48	6.8	8.6	-50.68	-13	V
4690.0	-49.74	7.5	9.0	-48.24	-13	V
5471.6	-48.81	8.1	9.8	-47.11	-13	V

**RSE-LTE13-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1568.0	-51.3	4.2	5.3	-50.2	-13	H
2366.2	-45.23	5.2	5.1	-45.33	-13	H
3136.4	-52.85	6.0	6.9	-51.95	-13	H



3920.8	-53.46	6.8	8.6	-51.66	-13	V
4704.8	-51.49	7.5	9.0	-49.99	-13	V
5489.2	-49.65	8.2	9.8	-48.05	-13	V

**RSE-LTE17-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1431.3	-48.57	4.1	5.3	-47.37	-13	V
2166.2	-46.45	5.0	5.1	-46.35	-13	H
2895.0	-41.49	5.8	6.7	-40.59	-13	V
3578.0	-30.83	6.5	7.8	-29.53	-13	V
4293.6	-36.6	7.1	8.9	-34.8	-13	H
5009.6	-48.46	7.8	9.6	-46.66	-13	V

**RSE-LTE17-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1417.1	-47.55	4.0	5.3	-46.25	-13	V
2178.8	-46.47	5.0	5.1	-46.37	-13	V
2871.9	-40.9	5.8	6.1	-40.6	-13	H
3543.2	-31.2	6.4	7.8	-29.8	-13	V
4251.6	-37.7	7.1	8.9	-35.9	-13	H
4960.4	-49.24	7.7	9.6	-47.34	-13	H

**RSE-LTE17-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1424.3	-52.57	4.0	5.3	-51.27	-13	V
2001.2	-49.38	4.8	4.5	-49.68	-13	H
2952.7	-40.91	5.8	6.7	-40.01	-13	V
3560.4	-34.61	6.4	7.8	-33.21	-13	H
4272.4	-38.15	7.1	8.9	-36.35	-13	H
4985.6	-51.62	7.8	9.6	-49.82	-13	H

**RSE-LTE25-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3828.4	-33.41	6.7	7.9	-32.21	-13	H
5743.2	-35.43	8.5	10.2	-33.73	-13	H
7657.2	-30.29	9.7	11.8	-28.19	-13	H
9570.4	-39.47	10.8	12.7	-37.57	-13	H
11485.8	-40.88	12.3	12.3	-40.88	-13	H
15314.8	-38.97	14.4	12.3	-41.07	-13	H

**RSE-LTE25-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3700.8	-40.07	6.6	7.9	-38.77	-13	V
5552.0	-42.1	8.2	9.8	-40.5	-13	H
7402.4	-31.51	9.7	11.6	-29.61	-13	H
9253.6	-35	10.7	12.7	-33	-13	V
11103.6	-41.83	12.1	12.3	-41.63	-13	H
12953.0	-43.68	13.2	12.3	-44.58	-13	V

**RSE-LTE25-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3764.4	-39.39	6.6	7.9	-38.09	-13	V
5647.6	-40.26	8.3	10.2	-38.36	-13	H
7529.6	-31.31	9.7	11.6	-29.41	-13	H
9412.4	-38.48	10.7	12.7	-36.48	-13	H
11294.0	-39.91	12.1	12.3	-39.71	-13	H
13178.4	-44.78	13.0	12.3	-45.48	-13	V

**RSE-LTE26-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1763.2	-47.51	4.5	4.7	-47.31	-13	H
2813.8	-41.69	5.7	6.1	-41.29	-13	H



3392.0	-48.56	6.3	7.8	-47.06	-13	V
4241.2	-48.71	7.1	8.9	-46.91	-13	V
5089.6	-45.24	7.9	9.6	-43.54	-13	V
5938.4	-45.16	8.5	10.2	-43.46	-13	V

**RSE-LTE26-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1738.3	-50.02	4.5	4.7	-49.82	-13	H
2463.1	-36.36	5.4	5.6	-36.16	-13	H
3258.8	-50.82	6.1	6.9	-50.02	-13	V
4072.8	-51.41	6.9	8.6	-49.71	-13	V
4888.4	-48.98	7.7	9.6	-47.08	-13	V
5702.8	-48.95	8.5	10.2	-47.25	-13	V

**RSE-LTE26-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1707.5	-51.04	4.5	4.7	-50.84	-13	H
2782.3	-41.03	5.7	6.1	-40.63	-13	V
3325.6	-49.56	6.2	6.9	-48.86	-13	V
4157.2	-51.08	7.0	8.9	-49.18	-13	V
4989.2	-49.59	7.8	9.6	-47.79	-13	V
5820.8	-46.5	8.4	10.2	-44.7	-13	V

**RSE-LTE41-H-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
5187.2	-42.52	8.0	9.4	-41.12	-13	H
6456.8	-49.62	8.9	10.6	-47.92	-13	H
7782.4	-41.78	9.9	11.8	-39.88	-13	V
11467.2	-43.57	12.3	12.3	-43.57	-13	V
15410.0	-35.42	14.4	12.3	-37.52	-13	H

18000.0	-28.09	16.4	12.3	-32.19	-13	V
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**RSE-LTE41-L-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
4058.4	-50.85	6.9	8.6	-49.15	-13	H
5185.6	-44.39	8.0	9.4	-42.99	-13	V
7775.2	-42.03	9.9	11.8	-40.13	-13	V
9860.0	-45.34	11.0	12.5	-43.84	-13	V
12876.0	-39.63	13.0	12.3	-40.33	-13	H
17998.2	-27.5	16.4	12.3	-31.6	-13	V

**RSE-LTE41-M-S15aa**

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
4243.6	-51.25	7.1	8.9	-49.45	-13	V
5188.8	-42.08	8.0	9.4	-40.68	-13	H
7778.8	-40.62	9.9	11.8	-38.72	-13	V
11201.2	-42.14	12.1	12.3	-41.94	-13	V
15352.2	-34.84	14.4	12.3	-36.94	-13	H
17994.8	-27.92	16.4	12.3	-32.02	-13	V



## Annex A: Revised History

Version	Revised Content
V00	Initial

## Annex B: Accreditation Certificate



**Accredited Laboratory**

A2LA has accredited

**INDUSTRIAL INTERNET INNOVATION CENTER  
(SHANGHAI) CO., LTD.**  
*Shanghai, People's Republic of China*

for technical competence in the field of  
**Electrical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 12<sup>th</sup> day of April 2021.



Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3682.01  
Valid to February 28, 2023

*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*

**END OF REPORT**