TEST REPORT

No. I19D00143-SRD06

For

Client:	**Shanghai Sunmi Technology Co.,Ltd.**
Production:	**Smart POS System**
Model Name:	**T6800**
Brand Name:	**SUNMI**
FCC ID:	**2AH25T6800**
Hardware Version:	**V1**
Software Version:	**SP2186_769__P2LITELA_ patchbuild _20190808165765_DCC**
Issued date:	**2019-11-15**

NOTE

1. The test results in this test report relate only to the devices specified in this report.
2. This report shall not be reproduced except in full without the written approval of East China Institute of Telecommunications.
3. ANSI/TIA-603-E and KDB 971168 D01 has not been accredited by A2LA.
4. For the test results, the uncertainty of measurement is not taken into account when judging the compliance with specification, and the results of measurement or the average value of measurement results are taken as the criterion of the compliance with specification directly.

Test Laboratory:
East China Institute of Telecommunications
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Revision Version

Report Number	Revision	Date	Memo
I19D00143-SRD06	00	2019-09-19	Initial creation of test report
I19D00143-SRD06	01	2019-11-15	Second creation of test report

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1. Test Laboratory

1.1. Testing Location

Company Name	ECIT Shanghai, East China Institute of Telecommunications
Address	7-8/F., Area G, No.668, Beijing East Road, Shanghai, China
Postal Code	200001
Telephone	(+86)-021-63843300
Fax	(+86)-021-63843301
FCC registration No	CN1177

1.2. Testing Environment

Normal Temperature	15℃-35℃
Relative Humidity	25%-75%

1.3. Project data

Project Leader	Yu Anlu
Testing Start Date	2019-08-21
Testing End Date	2019-09-09

1.4. Signature

Wang Liang
(Prepared this test report)

Fan Songyan
(Reviewed this test report)

Zheng Zhongbin
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Telephone	18721763396
Postcode	/

2.2. Manufacturer Information

Company Name	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China
Telephone	18721763396
Postcode	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Production	Smart POS System
Model name	T6800
FCC ID	2AH25T6900
LTE Frequency Band	1/2/3/4/5/7/9/12/17/18/19/25/26/38/41/66
Extreme Temperature	-10/+45℃
Nominal Voltage	3.80V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.00V

Note:

a. Photographs of EUT are shown in ANNEX A of this test report.

b. The value of the antenna gain is provided by the customer. For specific antenna information, please check the antenna specifications of the customer.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N01	81256040029551	V1	SP2186_769__P2LITELA_patchbuild_20190808165765_DCC	2019-08-19
N03	81256040030997	V1	SP2186_769__P2LITELA_patchbuild_20190808165765_DCC	2019-08-19
N07	81256040032522	V1	SP2186_769__P2LITELA_patchbuild_20190808165765_DCC	2019-08-19
N08	81256040030922	V1	SP2186_769__P2LITELA_patchbuild_20190808165765_DCC	2019-08-19

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN
AE1	RF cable	---

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	2018-10-01
FCC Part 22	PUBLIC MOBILE SERVICES	2018-10-01
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2018-10-01
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	2018-10-01
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	2018-10-01
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard of Procedures for Compliance Testing of Licensed Transmitters Used in Licensed Radio	2015
KDB 971168 D01	Measurement Guidance for Certification of Licensed Digital Transmitters	v03r01

5. Test Results

5.1. Summary of Test Results

LTE Band 2

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	24.232(c)	A.1	P
2	Emission Limit	24.238(a), 2.1051	A.2	P
3	Frequency Stability	24.235, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	24.238(a)	A.5	P
6	Band Edge Compliance	24.238(a)	A.6	P
7	Conducted Spurious Emission	24.238, 2.1057	A.7	P
8	Peak to Average Power Ratio	24.232 (d)	A.8	P

LTE Band 4

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(d)(4)	A.1	P
2	Emission Limit	27.53(h), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(h)	A.5	P
6	Band Edge Compliance	27.53(h)	A.6	P
7	Conducted Spurious Emission	27.53(h), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 5

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	§2.1046(a), 22.913(a)	A.1	P
2	Emission Limit	22.917, 2.1051	A.2	P
3	Frequency Stability	22.235, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	22.917(b)	A.5	P
6	Band Edge Compliance	22.917(b)	A.6	P

7	Conducted Spurious Emission	22.917, 2.1057	A.7	P

LTE Band 7

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(h)(2)	A.1	P
2	Emission Limit	27.53(m), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(m)	A.5	P
6	Band Edge Compliance	27.53(m)	A.6	P
7	Conducted Spurious Emission	27.53(m), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 12

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(c)(10)	A.1	P
2	Emission Limit	27.53(g), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(g)	A.5	P
6	Band Edge Compliance	27.53(g)	A.6	P
7	Conducted Spurious Emission	27.53(g), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 17

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(c)(10)	A.1	P
2	Emission Limit	27.53(g), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(g)	A.5	P
6	Band Edge Compliance	27.53(g)	A.6	P
7	Conducted Spurious Emission	27.53(g), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 25

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/24.232	A.1	P
2	Emission Limit	2.1053/24.238	A.2	P
3	Frequency Stability	2.1055/24.235	A.3	P
4	Occupied Bandwidth	2.1049/24.238	A.4	P
5	Emission Bandwidth	2.1049/24.238	A.5	P
6	Band Edge Compliance	2.1049/24.238	A.6	P
7	Conducted Spurious Emission	2.1049/24.238	A.7	P
8	Peak to Average Power Ratio	2.1049/24.238	A.8	P

LTE Band 26(Part 22)

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/22.913	A.1	P
2	Emission Limit	2.1053/22.917	A.2	P
3	Frequency Stability	2.1055/22.355	A.3	P
4	Occupied Bandwidth	2.1049/22.917	A.4	P
5	Emission Bandwidth	2.1049/22.917	A.5	P
6	Band Edge Compliance	2.1051/22.917	A.6	P
7	Conducted Spurious Emission	2.1046/22.913	A.7	P

LTE Band 26 (Part 90)

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	2.1046/90.635	A.1	P
2	Emission Limit	2.1053/90.691	A.2	P
3	Frequency Stability	2.1055/90.213	A.3	P
4	Occupied Bandwidth	2.1049/90.1215	A.4	P
5	Emission Bandwidth	2.1049/90.1215	A.5	P
6	Band Edge Compliance	2.1051/90.691	A.6	P
7	Conducted Spurious Emission	2.1051/90.691	A.7	P

LTE Band 41

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(h)(2)	A.1	P
2	Emission Limit	27.53(m), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(m)	A.5	P
6	Band Edge Compliance	27.53(m)	A.6	P
7	Conducted Spurious Emission	27.53(m), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

LTE Band 66

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	27.50(d)(4)	A.1	P
2	Emission Limit	27.53(h), 2.1051	A.2	P
3	Frequency Stability	27.54, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	27.53(h)	A.5	P
6	Band Edge Compliance	27.53(h)	A.6	P
7	Conducted Spurious Emission	27.53(h), 2.1057	A.7	P
8	Peak to Average Power Ratio	27.50(a)	A.8	P

Note: please refer to Annex C in this test report for the detailed test results.

The following terms are used in the above table.

P	Pass,the EUT complies with the essential requirements in the standard.
NM	Not measure, the test was not measured by ECIT.
NA	Not applicable, the test was not applicable.
F	Fail, the EUT does not comply with the essential requirements in the standard.

5.2. Statements

The T6800 is a new product for testing.
ECIT only performed test cases which identified with P/NM/NA/F results in Annex C.

ECIT has verified that the compliance of the tested device specified in section 5 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 5 of this test report

6. Test Equipment Utilized

Climate chamber

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Climate chamber	SH-641	92012011	ESPEC	2017-12-25	2 years

Radiated emission test system

The test equipment and ancillaries used are as follows.

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Cal.interval
1	Universal Radio Communication Tester	CMW500	104178	R&S	2019-05-10	1 year
2	Test Receiver	ESU40	100307	R&S	2019-05-10	1 year
3	TRILOG Broadband Antenna	VULB9163	VULB9163-515	Schwarzbeck	2017-02-25	3 years
4	Double Ridged Guide Antenna	ETS-3117	135890	ETS	2017-01-11	3 years
5	2-Line V-Network	ENV216	101380	R&S	2019-05-10	1 year
6	Substitution Antenna	ETS-3117	00135890	ETS	2017-01-11	3 year
7	RF Signal Generator	SMF100A	102314	R&S	2019-05-10	1 year
8	Substitution Antenna	VUBA9117	9117-266	Schwarzbeck	2017-11-18	3 years
9	Amplifier	SCU08	10146	R&S	2019-05-10	1 year

Conducted test system

No.	Name	Type	SN	Manufacture	Calibration date	Cal.interval
1	Vector Signal Analyser	FSQ40	200063	R&S	2019-05-10	1 year
2	Wireless communication comprehensive tester	CMW500	148904	R&S	2019-05-10	1 year
3	DC Power Supply	ZUP60-14	LOC-220Z006-0007	TDL-Lambda	2019-05-10	1 year

Software

Name	Version
Eagle FCC LTE auto test system	V3.0
EMC32	V9.15

7. Test Environment

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

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

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

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =25 %, Max. =75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

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

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB,30MHz to 1GHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

8. Measurement Uncertainty

Measurement uncertainty for all the testing in this report are within the limit specified in ECIT documents. The detailed measurement uncertainty to see the column, k=2

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

ANNEX A. MEASUREMENT RESULTS

ANNEX A.1. OUTPUT POWER

A.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

A.1.2. Conducted

A.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.

A.1.2.2 Measurement result

LTE band 2

LTE					
Modulation	RB	RB Offset	1.4MHz		
			19193	18900	18607
QPSK	1	Low	22.03	22.07	22.11
		Middle	22.14	22.25	22.17
		High	21.92	22.03	22.04
	50%	Low	22.29	22.38	22.33
		Middle	22.31	22.33	22.49
		High	22.37	22.42	22.32
	100%	/	21.20	21.31	21.23
16QAM	1	Low	20.68	20.74	20.67
		Middle	20.93	20.91	20.87
		High	20.59	20.84	20.69
	5	Low	21.08	21.06	21.12
		Middle	21.09	21.13	21.04
		High	21.04	21.13	21.03
	100%	/	20.02	20.01	19.96
Modulation	RB	RB Offset	3MHz		
			19185	18900	18615
QPSK	1	Low	22.27	22.18	22.21
		Middle	22.24	22.07	22.21

		High	22.27	22.13	22.33
	50%	Low	21.30	21.30	21.18
		Middle	21.19	21.31	21.25
		High	21.17	21.28	21.31
	100%	/	21.16	21.29	21.28
16QAM	1	Low	20.52	20.98	20.88
		Middle	20.80	20.82	20.83
		High	20.62	20.61	21.45
	50%	Low	20.47	20.44	20.12
		Middle	20.14	20.44	19.92
		High	20.20	20.30	20.24
	100%	/	20.18	20.19	20.09
Modulation	RB	RB Offset	5MHz		
			19175	18900	18625
QPSK	1	Low	22.20	22.07	22.00
		Middle	22.10	22.12	22.14
		High	22.12	22.08	21.97
	50%	Low	21.14	21.19	21.15
		Middle	21.14	21.24	21.14
		High	21.03	21.21	21.17
	100%	/	21.02	21.24	21.15
16QAM	1	Low	20.92	20.68	20.67
		Middle	20.85	20.86	20.61
		High	20.46	20.58	20.54
	50%	Low	20.14	20.01	19.81
		Middle	20.15	20.04	19.79
		High	20.03	20.04	19.82
	100%	/	20.12	20.23	20.00
Modulation	RB	RB Offset	10MHz		
			19150	18900	18650
QPSK	1	Low	22.15	22.12	22.03
		Middle	22.30	22.28	22.03
		High	22.22	22.09	22.09
	50%	Low	21.21	21.20	21.12
		Middle	21.14	21.18	21.12
		High	21.05	21.12	20.99
	100%	/	21.18	21.19	21.13
16QAM	1	Low	20.79	20.72	20.61
		Middle	20.88	20.98	20.82
		High	20.75	20.73	20.52
	50%	Low	20.19	20.10	19.85
		Middle	20.14	19.99	20.03

		High	19.94	20.11	20.00
	100%	/	20.18	20.14	20.05
Modulation	RB	RB Offset	15MHz		
			19125	18900	18675
QPSK	1	Low	21.96	22.10	21.94
		Middle	22.14	22.10	22.06
		High	22.21	22.09	22.15
	50%	Low	21.19	21.26	21.06
		Middle	21.14	21.15	20.98
		High	21.09	21.04	21.03
	100%	/	21.20	21.04	21.05
16QAM	1	Low	20.93	20.65	20.29
		Middle	20.98	20.60	20.72
		High	20.75	20.24	20.73
	50%	Low	20.04	20.03	19.97
		Middle	20.04	19.91	19.87
		High	20.00	19.94	20.03
	100%	/	20.08	20.02	19.98
Modulation	RB	RB Offset	20MHz		
			19100	18900	18700
QPSK	1	Low	22.09	21.95	21.85
		Middle	22.12	22.21	22.09
		High	22.13	22.18	21.99
	50%	Low	21.15	21.16	21.06
		Middle	21.12	21.17	21.07
		High	20.97	21.00	21.09
	100%	/	21.08	21.05	21.09
16QAM	1	Low	20.74	20.79	20.74
		Middle	20.79	20.71	20.60
		High	20.49	20.53	20.54
	50%	Low	20.05	20.07	20.09
		Middle	20.04	20.09	19.91
		High	19.89	19.93	20.02
	100%	/	19.97	20.05	19.99

LTE band 4

LTE					
Modulation	RB	RB Offset	1.4MHz		
			20393	20175	19957
QPSK	1	Low	21.83	21.97	21.87
		Middle	21.99	21.98	22.07
		High	21.74	21.92	21.93
	50%	Low	22.12	22.17	22.07
		Middle	22.04	22.05	22.04
		High	22.12	22.11	22.11
	100%	/	20.94	21.00	20.99
16QAM	1	Low	20.24	20.56	20.57
		Middle	20.65	20.63	20.85
		High	20.54	20.38	20.59
	50%	Low	20.81	21.02	20.82
		Middle	20.92	21.04	21.25
		High	20.84	20.93	20.82
	100%	/	19.88	19.94	19.43
Modulation	RB	RB Offset	3MHz		
			20385	20175	19965
QPSK	1	Low	21.88	22.01	21.86
		Middle	21.92	22.09	21.94
		High	22.02	21.98	22.04
	50%	Low	20.99	21.10	21.10
		Middle	20.98	21.10	21.15
		High	20.89	21.07	21.12
	100%	/	20.95	21.05	21.11
16QAM	1	Low	20.61	20.75	20.71
		Middle	20.51	20.74	20.65
		High	20.32	20.78	20.98
	50%	Low	20.01	20.11	19.95
		Middle	19.89	20.17	19.99
		High	20.12	20.25	19.94
	100%	/	19.82	19.69	19.79
Modulation	RB	RB Offset	5MHz		
			20375	20175	19975
QPSK	1	Low	22.13	22.11	21.91
		Middle	22.01	21.91	22.27
		High	22.11	21.89	21.91
	50%	Low	21.01	21.05	21.12
		Middle	20.89	21.08	21.08
		High	21.04	21.05	21.06

	100%	/	21.03	20.99	21.12
16QAM	1	Low	20.80	20.94	20.69
		Middle	20.44	20.84	20.71
		High	20.56	20.43	20.53
	50%	Low	19.85	19.83	20.06
		Middle	20.05	19.84	19.95
		High	19.86	19.88	19.77
	100%	/	19.95	19.95	20.00
Modulation	RB	RB Offset	10MHz		
			20350	20175	20000
QPSK	1	Low	21.85	22.04	22.15
		Middle	21.97	22.11	22.00
		High	21.97	21.93	22.18
	50%	Low	21.06	21.13	21.26
		Middle	20.97	21.09	21.14
		High	21.02	21.01	21.10
	100%	/	20.98	21.00	21.24
16QAM	1	Low	20.67	20.86	20.79
		Middle	20.92	20.83	20.83
		High	20.94	20.37	20.79
	50%	Low	19.92	20.06	20.10
		Middle	19.94	20.03	20.18
		High	20.08	20.07	20.05
	100%	/	19.84	19.89	19.91
Modulation	RB	RB Offset	15MHz		
			20325	20175	20025
QPSK	1	Low	22.05	22.21	22.08
		Middle	21.97	22.06	21.84
		High	21.97	21.91	21.91
	50%	Low	21.05	21.10	21.18
		Middle	20.87	21.07	21.14
		High	21.04	21.10	21.19
	100%	/	20.95	21.07	21.23
16QAM	1	Low	20.48	20.75	20.69
		Middle	20.15	20.64	20.81
		High	20.29	20.25	20.84
	50%	Low	19.92	19.99	20.04
		Middle	19.96	20.08	20.07
		High	19.94	20.01	20.06
	100%	/	19.92	19.94	20.10
Modulation	RB	RB Offset	20MHz		
			22.22	22.33	21.95

QPSK	1	Low	21.95	22.23	22.02
		Middle	22.04	21.96	21.89
		High	21.14	21.18	21.13
	50%	Low	21.02	21.10	21.23
		Middle	21.00	21.10	21.23
		High	21.05	21.06	21.14
	100%	/	20.96	20.58	20.60
16QAM	1	Low	20.66	20.71	20.83
		Middle	20.25	20.57	20.22
		High	20.04	20.19	20.08
	50%	Low	20.02	20.13	20.08
		Middle	20.01	20.03	20.11
		High	19.93	20.06	20.07
	100%	/	22.22	22.33	21.95

LTE band 5

LTE					
Modulation	RB	RB Offset	1.4MHz		
			20643	20525	20407
QPSK	1	Low	22.13	21.92	22.13
		Middle	22.12	21.84	21.95
		High	22.10	21.96	22.21
	50%	Low	22.32	22.07	22.08
		Middle	22.23	22.13	22.24
		High	22.27	22.01	22.23
	100%	/	21.28	21.12	21.26
16QAM	1	Low	20.85	20.68	20.73
		Middle	20.92	20.87	20.84
		High	20.72	20.77	20.85
	50%	Low	21.06	21.00	21.10
		Middle	21.19	21.06	21.09
		High	21.06	20.92	21.00
	100%	/	20.14	19.84	19.70
Modulation	RB	RB Offset	3MHz		
			20635	20525	20415
QPSK	1	Low	21.92	22.14	21.97
		Middle	22.16	21.96	22.12
		High	22.07	21.97	22.04
	50%	Low	21.26	21.12	21.29
		Middle	21.31	21.10	21.38
		High	21.28	21.18	21.23
	100%	/	21.32	21.17	21.21

16QAM	1	Low	20.80	20.97	20.56
		Middle	20.93	20.81	21.07
		High	21.01	20.71	20.81
	50%	Low	20.33	20.23	20.30
		Middle	20.46	20.43	20.38
		High	20.23	20.28	20.24
	100%	/	20.32	19.93	20.30
Modulation	RB	RB Offset	5MHz		
			20625	20525	20425
QPSK	1	Low	21.96	21.77	21.87
		Middle	21.99	21.86	22.25
		High	22.15	21.98	22.10
	50%	Low	21.22	21.14	21.34
		Middle	21.23	21.15	21.27
		High	21.28	21.16	21.18
	100%	/	20.99	21.20	21.16
16QAM	1	Low	20.84	20.86	20.87
		Middle	20.79	20.77	21.02
		High	20.95	20.77	21.11
	50%	Low	20.01	20.06	20.15
		Middle	20.06	20.09	20.17
		High	20.29	20.00	20.11
	100%	/	20.32	20.29	20.30
Modulation	RB	RB Offset	10MHz		
			20600	20525	20450
QPSK	1	Low	22.02	22.21	22.14
		Middle	22.18	22.13	22.23
		High	22.08	22.03	21.94
	50%	Low	21.23	21.21	21.24
		Middle	21.27	21.21	21.17
		High	21.26	21.11	21.21
	100%	/	21.27	21.21	21.22
16QAM	1	Low	20.94	21.04	20.95
		Middle	20.96	20.80	21.07
		High	20.94	20.67	20.70
	50%	Low	20.24	20.23	20.27
		Middle	20.28	20.23	20.21
		High	20.08	20.25	20.25
	100%	/	20.30	20.24	20.26

LTE band 7

LTE					
Modulation	RB	RB Offset	5MHz		
			21425	21100	20775
QPSK	1	Low	22.68	22.63	22.79
		Middle	22.66	22.89	22.81
		High	22.58	22.61	22.67
	50%	Low	21.78	21.77	21.92
		Middle	21.77	21.75	21.79
		High	21.74	21.79	21.86
	100%	/	21.72	21.80	21.88
16QAM	1	Low	21.16	21.34	21.52
		Middle	21.61	21.43	21.49
		High	21.42	21.27	21.34
	50%	Low	20.68	20.68	20.68
		Middle	20.88	20.82	20.81
		High	20.76	20.60	20.80
	100%	/	20.82	20.80	20.75
Modulation	RB	RB Offset	10MHz		
			21400	21100	20800
QPSK	1	Low	22.75	22.88	22.94
		Middle	22.98	22.87	22.79
		High	22.99	22.89	22.89
	50%	Low	21.83	21.93	21.93
		Middle	21.98	21.96	21.92
		High	21.94	21.94	21.94
	100%	/	21.82	21.95	21.84
16QAM	1	Low	21.54	21.51	21.70
		Middle	21.74	21.64	21.64
		High	21.75	21.64	21.65
	50%	Low	20.75	20.82	20.85
		Middle	21.01	20.84	20.84
		High	20.96	20.83	20.70
	100%	/	20.87	20.82	20.87
Modulation	RB	RB Offset	15MHz		
			21375	21100	20825
QPSK	1	Low	22.63	22.89	22.76
		Middle	22.52	22.93	22.67
		High	22.70	22.94	22.74
	50%	Low	21.94	21.83	21.92
		Middle	21.89	21.98	21.86
		High	22.00	21.99	21.92

	100%	/	21.86	21.87	21.82
16QAM	1	Low	21.60	21.36	21.68
		Middle	21.52	21.05	21.60
		High	21.58	21.03	21.68
	50%	Low	20.73	20.72	20.67
		Middle	20.78	20.75	20.80
		High	20.90	20.78	20.92
	100%	/	20.79	20.86	20.85
Modulation	RB	RB Offset	20MHz		
			22.94	22.80	23.02
QPSK	1	Low	22.92	23.07	23.05
		Middle	22.94	22.90	22.91
		High	21.97	21.88	21.94
	50%	Low	21.93	21.95	22.04
		Middle	21.98	22.01	21.99
		High	21.98	21.91	21.94
	100%	/	21.56	21.41	21.73
16QAM	1	Low	21.72	21.54	21.84
		Middle	21.65	21.69	21.55
		High	20.79	20.88	20.87
	50%	Low	20.73	20.97	20.82
		Middle	20.70	21.04	20.79
		High	20.80	20.90	20.94
	100%	/	22.94	22.80	23.02

LTE band 12

LTE					
Modulation	RB	RB Offset	1.4MHz		
			23173	23095	23017
QPSK	1	Low	22.36	22.57	22.37
		Middle	22.42	22.53	22.40
		High	22.49	22.52	22.43
	50%	Low	22.54	22.55	22.55
		Middle	22.60	22.70	22.65
		High	22.58	22.67	22.63
	100%	/	21.54	21.61	21.61
16QAM	1	Low	21.08	21.18	21.14
		Middle	21.21	21.29	21.48
		High	21.07	21.22	21.30
	50%	Low	21.39	21.46	21.42
		Middle	21.66	21.66	21.47
		High	21.41	21.62	21.42

	100%	/	20.28	20.60	20.34
Modulation	RB	RB Offset	3MHz		
			22.48	22.62	22.28
QPSK	1	Low	22.53	22.60	22.61
		Middle	22.39	22.47	22.30
		High	21.70	21.69	21.63
	50%	Low	21.58	21.63	21.53
		Middle	21.51	21.67	21.59
		High	21.67	21.60	21.60
	100%	/	21.00	21.14	21.07
16QAM	1	Low	21.12	21.30	21.26
		Middle	20.99	20.95	21.05
		High	20.66	20.64	20.56
	50%	Low	20.62	20.62	20.67
		Middle	20.72	20.74	20.82
		High	20.61	20.53	20.26
	100%	/	22.48	22.62	22.28
Modulation	RB	RB Offset	5MHz		
			23155	23095	23035
QPSK	1	Low	22.24	22.31	22.18
		Middle	22.45	22.41	22.38
		High	22.27	22.43	22.51
	50%	Low	21.52	21.62	21.57
		Middle	21.54	21.62	21.54
		High	21.45	21.59	21.40
	100%	/	21.53	21.64	21.48
16QAM	1	Low	20.99	21.10	20.93
		Middle	21.07	21.09	21.28
		High	20.82	20.90	20.93
	50%	Low	20.33	20.32	20.20
		Middle	20.42	20.35	20.22
		High	20.38	20.33	20.15
	100%	/	20.44	20.46	20.42
Modulation	RB	RB Offset	10MHz		
			23130	23095	23060
QPSK	1	Low	22.54	22.19	22.24
		Middle	22.43	22.57	22.48
		High	22.30	22.55	22.39
	50%	Low	21.54	21.54	21.51
		Middle	21.65	21.60	21.54
		High	21.60	21.58	21.58
	100%	/	21.62	21.57	21.46

16QAM	1	Low	21.31	21.04	20.96
		Middle	21.25	21.03	21.24
		High	20.90	20.80	21.07
	50%	Low	20.59	20.51	20.53
		Middle	20.40	20.50	20.41
		High	20.56	20.58	20.59
	100%	/	20.53	20.57	20.47

LTE band 17

LTE					
Modulation	RB	RB Offset	5MHz		
			23825	23790	23755
QPSK	1	Low	22.20	22.29	22.22
		Middle	22.10	22.39	22.30
		High	22.05	22.05	22.36
	50%	Low	21.37	21.41	21.43
		Middle	21.39	21.40	21.44
		High	21.30	21.37	21.46
	100%	/	21.37	21.37	21.48
16QAM	1	Low	21.02	20.80	20.86
		Middle	21.11	21.04	21.06
		High	21.04	21.04	20.84
	50%	Low	20.29	20.45	20.28
		Middle	20.20	20.24	20.50
		High	20.24	20.27	20.31
	100%	/	20.40	20.52	20.33
Modulation	RB	RB Offset	10MHz		
			23800	23790	23780
QPSK	1	Low	22.23	22.41	22.25
		Middle	22.39	22.43	22.38
		High	22.15	22.45	22.45
	50%	Low	21.41	21.39	21.48
		Middle	21.43	21.37	21.51
		High	21.47	21.51	21.55
	100%	/	21.49	21.45	21.51
16QAM	1	Low	20.90	20.68	21.19
		Middle	20.99	21.20	21.30
		High	20.90	20.91	21.24
	50%	Low	20.45	20.44	20.62
		Middle	20.48	20.50	20.65
		High	20.49	20.49	20.59
	100%	/	20.46	20.53	20.58

LTE band 25

LTE					
Modulation	RB	RB Offset	1.4MHz		
			26683	26365	26047
QPSK	1	Low	22.17	22.19	21.83
		Middle	21.99	22.35	21.93
		High	21.92	22.23	21.91
	50%	Low	22.40	22.32	22.09
		Middle	22.40	22.24	22.07
		High	22.18	22.40	22.00
	100%	/	21.21	21.22	20.97
16QAM	1	Low	20.69	20.95	20.23
		Middle	20.74	21.08	20.54
		High	20.63	20.78	21.04
	50%	Low	21.46	21.03	20.76
		Middle	21.32	21.03	20.80
		High	20.99	21.10	20.77
	100%	/	20.06	20.00	19.32
Modulation	RB	RB Offset	3MHz		
			26675	26365	26055
QPSK	1	Low	22.25	22.19	21.86
		Middle	22.52	22.31	21.88
		High	22.42	22.16	22.05
	50%	Low	21.44	21.26	21.08
		Middle	21.43	21.25	21.03
		High	21.31	21.36	21.15
	100%	/	21.37	21.22	20.96
16QAM	1	Low	20.70	20.83	20.44
		Middle	21.06	20.89	20.73
		High	20.78	20.69	21.12
	50%	Low	20.35	20.41	19.99
		Middle	20.48	20.29	19.95
		High	20.44	20.31	20.06
	100%	/	20.42	20.32	19.85
Modulation	RB	RB Offset	5MHz		
			26665	26365	26065
QPSK	1	Low	22.18	21.98	21.78
		Middle	22.44	22.16	21.82
		High	22.32	22.04	21.84
	50%	Low	21.35	21.30	21.02
		Middle	21.30	21.25	21.07
		High	21.21	21.30	20.99

	100%	/	21.22	21.24	20.99
16QAM	1	Low	21.34	20.87	20.54
		Middle	21.12	20.84	20.59
		High	20.68	20.85	20.64
	50%	Low	20.17	20.01	19.76
		Middle	20.16	20.06	19.74
		High	20.06	20.03	19.61
	100%	/	20.21	20.25	20.01
Modulation	RB	RB Offset	10MHz		
			26640	26365	26090
QPSK	1	Low	22.25	22.31	22.08
		Middle	22.40	22.22	22.07
		High	22.38	22.34	22.07
	50%	Low	21.35	21.24	21.12
		Middle	21.39	21.27	21.13
		High	21.24	21.24	21.11
	100%	/	21.25	21.17	21.05
16QAM	1	Low	20.74	20.93	20.76
		Middle	20.74	20.97	20.90
		High	21.00	21.05	20.83
	50%	Low	20.36	20.23	19.95
		Middle	20.33	20.23	20.09
		High	20.27	20.25	20.05
	100%	/	20.19	20.06	19.89
Modulation	RB	RB Offset	15MHz		
			26615	26365	26115
QPSK	1	Low	22.49	22.22	22.14
		Middle	22.46	22.34	22.05
		High	22.15	22.24	21.82
	50%	Low	21.43	21.25	21.17
		Middle	21.40	21.24	21.18
		High	21.29	21.29	21.15
	100%	/	21.17	21.23	21.16
16QAM	1	Low	21.01	20.84	20.76
		Middle	20.53	20.94	21.29
		High	20.46	20.87	21.24
	50%	Low	20.44	20.16	20.02
		Middle	20.32	20.16	20.01
		High	20.26	20.22	19.98
	100%	/	20.19	20.14	20.09
Modulation	RB	RB Offset	20MHz		
			22.19	22.20	21.86

QPSK	1	Low	22.43	22.35	22.32
		Middle	22.31	22.33	22.24
		High	21.37	21.24	21.22
	50%	Low	21.37	21.39	21.14
		Middle	21.27	21.29	21.10
		High	21.30	21.23	21.17
	100%	/	21.06	20.97	20.66
16QAM	1	Low	21.01	20.89	20.77
		Middle	20.96	20.73	21.39
		High	20.41	20.18	20.05
	50%	Low	20.41	20.19	20.07
		Middle	20.22	20.14	20.05
		High	20.22	20.15	20.10
	100%	/	22.19	22.20	21.86

LTE band 26(part22)

LTE					
Modulation	RB	RB Offset	1.4MHz		
			27033	26865	26697
QPSK	1	Low	22.62	22.71	22.83
		Middle	22.87	22.81	22.88
		High	22.83	22.57	22.87
	50%	Low	22.98	22.88	22.98
		Middle	22.89	22.93	22.93
		High	23.00	23.04	22.94
	100%	/	21.86	21.88	21.87
16QAM	1	Low	21.36	21.39	21.57
		Middle	21.84	21.55	21.69
		High	21.52	21.37	21.50
	50%	Low	21.76	22.24	21.87
		Middle	22.05	21.77	21.78
		High	21.79	21.67	21.76
	100%	/	20.71	20.73	20.80
Modulation	RB	RB Offset	3MHz		
			27025	26865	26075
QPSK	1	Low	22.80	22.75	22.10
		Middle	22.86	22.72	22.12
		High	22.78	22.76	22.03
	50%	Low	21.94	21.89	21.09
		Middle	21.92	21.85	21.09
		High	21.92	21.93	21.12
	100%	/	21.93	21.82	21.07

16QAM	1	Low	21.33	21.59	20.49
		Middle	21.40	21.61	20.63
		High	21.34	21.46	20.60
	50%	Low	21.07	21.01	20.05
		Middle	21.06	21.07	20.12
		High	21.14	21.05	19.98
	100%	/	20.82	20.79	20.06
Modulation	RB	RB Offset	5MHz		
			27015	26865	26715
QPSK	1	Low	22.70	22.76	22.87
		Middle	22.70	22.80	22.73
		High	22.76	22.52	22.59
	50%	Low	21.85	21.84	21.79
		Middle	21.95	21.87	21.83
		High	21.84	21.80	21.88
	100%	/	21.86	21.76	21.93
16QAM	1	Low	21.39	21.31	21.97
		Middle	21.51	21.61	21.38
		High	21.27	21.47	21.45
	50%	Low	20.92	20.82	20.63
		Middle	20.99	20.99	20.79
		High	20.90	20.70	20.79
	100%	/	21.08	21.07	21.08
Modulation	RB	RB Offset	10MHz		
			26690	26865	26750
QPSK	1	Low	22.93	22.97	22.86
		Middle	22.74	22.98	23.03
		High	22.97	22.87	23.01
	50%	Low	21.93	21.99	22.02
		Middle	21.85	21.92	21.96
		High	21.94	21.95	22.00
	100%	/	21.84	21.94	21.97
16QAM	1	Low	21.59	21.84	21.61
		Middle	21.63	21.71	21.64
		High	21.41	21.44	21.48
	50%	Low	20.92	20.90	21.07
		Middle	20.94	20.91	21.10
		High	20.94	20.96	20.83
	100%	/	20.96	20.87	21.10
Modulation	RB	RB Offset	15MHz		
			26965	26865	26775
QPSK	1	Low	22.95	22.81	22.96

		Middle	22.90	22.92	22.94
		High	22.85	22.83	22.78
	50%	Low	21.98	21.94	21.95
		Middle	21.86	21.91	21.97
		High	21.88	21.93	21.91
	100%	/	21.85	22.00	22.01
16QAM	1	Low	21.51	21.21	21.52
		Middle	21.41	21.12	21.10
		High	21.53	21.14	21.64
	50%	Low	21.00	20.93	20.93
		Middle	20.95	20.86	21.03
		High	20.79	20.87	20.98
	100%	/	20.86	20.98	21.05

LTE band 26(part90)

LTE					
Modulation	RB	RB Offset	1.4MHz		
			27033	26865	26697
QPSK	1	Low	22.61	22.70	22.82
		Middle	22.85	22.79	22.86
		High	22.81	22.55	22.85
	50%	Low	22.97	22.87	22.97
		Middle	22.86	22.91	22.91
		High	23.00	23.04	22.94
	100%	/	21.87	21.89	21.88
16QAM	1	Low	21.34	21.37	21.55
		Middle	21.82	21.53	21.67
		High	21.54	21.39	21.52
	50%	Low	21.75	22.22	21.85
		Middle	22.07	21.79	21.80
		High	21.78	21.66	21.75
	100%	/	20.70	20.72	20.79
Modulation	RB	RB Offset	3MHz		
			27025	26865	26075
QPSK	1	Low	22.80	22.75	22.10
		Middle	22.87	22.73	22.13
		High	22.77	22.75	22.02
	50%	Low	21.93	21.88	21.08
		Middle	21.92	21.85	21.09
		High	21.91	21.92	21.11
	100%	/	21.94	21.83	21.08
16QAM	1	Low	21.34	21.60	20.50

		Middle	21.40	21.61	20.63
		High	21.30	21.43	20.57
	50%	Low	21.05	21.01	20.03
		Middle	21.09	21.08	20.13
		High	21.11	21.07	19.99
	100%	/	20.82	20.79	20.06
Modulation	RB	RB Offset	5MHz		
			27015	26865	26715
QPSK	1	Low	22.71	22.77	22.88
		Middle	22.71	22.81	22.74
		High	22.75	22.51	22.58
	50%	Low	21.84	21.83	21.76
		Middle	21.96	21.89	21.79
		High	21.83	21.81	21.87
	100%	/	21.86	21.76	21.93
16QAM	1	Low	21.38	21.30	21.96
		Middle	21.50	21.59	21.36
		High	21.23	21.45	21.43
	50%	Low	20.92	20.82	20.63
		Middle	20.98	20.95	20.77
		High	20.91	20.71	20.80
	100%	/	21.08	21.07	21.08
Modulation	RB	RB Offset	10MHz		
			26690	26865	26750
QPSK	1	Low	22.92	22.96	22.85
		Middle	22.75	22.97	23.02
		High	22.98	22.88	23.02
	50%	Low	21.92	21.99	22.02
		Middle	21.86	21.91	21.95
		High	21.94	21.93	22.01
	100%	/	21.85	21.95	21.98
16QAM	1	Low	21.58	21.83	21.60
		Middle	21.62	21.70	21.63
		High	21.40	21.43	21.47
	50%	Low	20.92	20.90	21.07
		Middle	20.95	20.92	21.11
		High	20.95	20.97	20.84
	100%	/	20.94	20.85	21.08

LTE band 41

LTE			
Modulation	RB	RB Offset	5MHz

			40065	40640	41215
QPSK	1	Low	22.18	22.73	22.45
		Middle	22.42	22.80	22.55
		High	22.34	22.76	22.47
	50%	Low	21.31	21.85	21.56
		Middle	21.47	21.85	21.70
		High	21.17	21.83	21.61
	100%	/	21.47	21.87	21.55
16QAM	1	Low	21.02	21.39	21.26
		Middle	20.98	21.56	21.35
		High	20.80	21.49	21.19
	50%	Low	20.36	20.63	20.72
		Middle	20.24	20.88	20.59
		High	20.39	21.06	20.68
	100%	/	20.37	20.65	20.83
Modulation	RB	RB Offset	10MHz		
			40090	40640	41190
QPSK	1	Low	22.48	22.84	22.55
		Middle	22.36	22.89	22.65
		High	22.53	23.02	22.56
	50%	Low	21.47	21.60	21.64
		Middle	21.38	21.75	21.56
		High	21.41	21.80	21.73
	100%	/	21.43	21.85	21.70
16QAM	1	Low	21.21	21.48	21.25
		Middle	21.06	21.64	21.35
		High	21.44	21.46	21.19
	50%	Low	20.61	20.89	20.49
		Middle	20.26	20.94	20.45
		High	20.64	20.95	20.78
	100%	/	20.26	20.74	20.45
Modulation	RB	RB Offset	15MHz		
			40115	40640	41165
QPSK	1	Low	22.43	22.76	22.31
		Middle	22.13	22.53	22.45
		High	22.36	22.72	22.40
	50%	Low	21.46	21.70	21.48
		Middle	21.36	21.87	21.44
		High	21.42	21.96	21.46
	100%	/	21.36	21.78	21.55
16QAM	1	Low	21.08	21.55	21.33
		Middle	20.97	21.45	21.06

		High	21.17	21.51	21.09
	50%	Low	20.37	20.76	20.41
		Middle	20.26	20.60	20.36
		High	20.24	20.81	20.46
	100%	/	20.41	20.88	20.52
Modulation	RB	RB Offset	20MHz		
			40140	40640	41140
QPSK	1	Low	22.47	22.59	22.49
		Middle	22.18	22.81	22.34
		High	22.22	22.69	22.48
	50%	Low	21.55	21.62	21.47
		Middle	21.33	21.79	21.53
		High	21.39	21.96	21.49
	100%	/	21.30	21.67	21.47
16QAM	1	Low	20.95	21.42	20.87
		Middle	21.25	21.61	21.30
		High	21.08	21.49	21.06
	50%	Low	20.29	20.72	20.55
		Middle	20.15	20.67	20.51
		High	20.30	20.69	20.51
	100%	/	20.30	20.76	20.44

LTE band 66

LTE					
Modulation	RB	RB Offset	1.4MHz		
			131979	132322	132665
QPSK	1	Low	22.71	22.63	21.39
		Middle	22.78	22.55	21.94
		High	22.68	22.50	21.70
	50%	Low	22.58	22.61	21.88
		Middle	22.72	22.83	22.06
		High	22.78	22.64	21.90
	100%	/	21.83	21.53	20.60
16QAM	1	Low	21.38	20.80	20.73
		Middle	21.29	21.04	20.53
		High	21.06	20.58	20.01
	50%	Low	21.81	21.65	20.57
		Middle	21.87	21.70	20.47
		High	21.84	21.73	21.03

	100%	/	20.52	20.61	19.91
Modulation	RB	RB Offset	3MHz		
			131987	132322	132657
QPSK	1	Low	22.96	22.62	21.88
		Middle	22.60	22.54	21.86
		High	22.44	22.78	21.67
	50%	Low	21.82	21.89	20.71
		Middle	21.89	21.68	20.82
		High	21.85	21.65	20.77
	100%	/	21.84	21.69	20.76
16QAM	1	Low	21.56	21.45	20.26
		Middle	21.77	21.66	20.73
		High	21.95	21.32	19.67
	50%	Low	21.00	20.60	19.99
		Middle	20.68	20.55	19.58
		High	20.84	20.53	19.52
	100%	/	20.86	20.77	19.77
Modulation	RB	RB Offset	5MHz		
			131997	132322	132647
QPSK	1	Low	22.63	22.57	21.42
		Middle	22.78	22.65	21.94
		High	22.67	22.50	21.70
	50%	Low	22.58	22.61	21.88
		Middle	22.72	22.82	22.07
		High	22.74	22.63	21.90
	100%	/	21.80	21.51	20.64
16QAM	1	Low	21.67	21.53	20.44
		Middle	21.76	21.71	20.82
		High	21.66	21.43	20.52
	50%	Low	21.64	21.54	20.64
		Middle	21.65	21.89	21.12
		High	21.66	21.65	20.82
	100%	/	20.70	20.46	19.61
Modulation	RB	RB Offset	10MHz		
			132022	132322	132622
QPSK	1	Low	22.66	22.81	22.22
		Middle	22.82	22.75	22.05
		High	22.72	22.41	21.66
	50%	Low	21.83	21.80	21.14
		Middle	21.71	21.83	20.87
		High	21.77	21.10	20.68
	100%	/	21.90	21.54	20.88

16QAM	1	Low	21.62	21.80	21.24
		Middle	21.80	21.76	21.03
		High	21.61	21.34	20.53
	50%	Low	20.79	20.72	20.15
		Middle	20.64	20.80	19.94
		High	20.79	20.12	19.56
	100%	/	20.80	20.50	19.86
Modulation	RB	RB Offset	15MHz		
			132047	132322	132597
QPSK	1	Low	22.77	22.64	21.79
		Middle	22.63	22.84	21.87
		High	22.45	22.75	21.69
	50%	Low	21.85	21.79	20.76
		Middle	21.88	21.68	20.82
		High	21.87	21.67	20.77
	100%	/	21.84	21.68	20.79
16QAM	1	Low	21.57	21.53	20.70
		Middle	21.61	21.85	20.79
		High	21.34	21.79	20.56
	50%	Low	20.91	20.71	19.71
		Middle	20.83	20.65	19.89
		High	20.89	20.57	19.65
	100%	/	20.74	20.64	19.57
Modulation	RB	RB Offset	20MHz		
			132072	132322	132572
QPSK	1	Low	22.75	22.77	22.16
		Middle	22.84	22.85	22.01
		High	22.76	22.38	21.65
	50%	Low	21.82	21.82	21.15
		Middle	21.70	21.85	20.88
		High	21.73	21.60	20.69
	100%	/	21.90	21.55	20.90
16QAM	1	Low	21.55	21.66	21.07
		Middle	21.82	21.86	20.93
		High	21.65	21.42	20.52
	50%	Low	20.88	20.74	20.10
		Middle	20.65	20.82	19.95
		High	20.75	20.50	19.57
	100%	/	20.80	20.51	19.68

A.1.3 Radiated

A.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”.

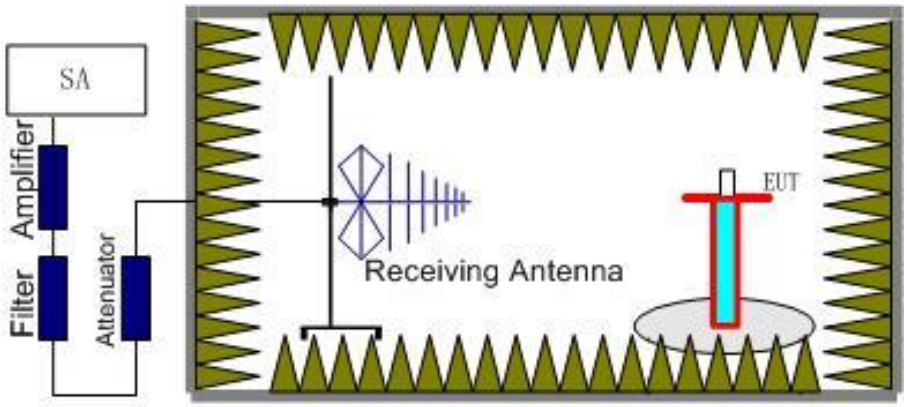
Rule Part 27.50(h)(2) specifies “Mobile stations are limited to 2.0 watts EIRP.”.

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

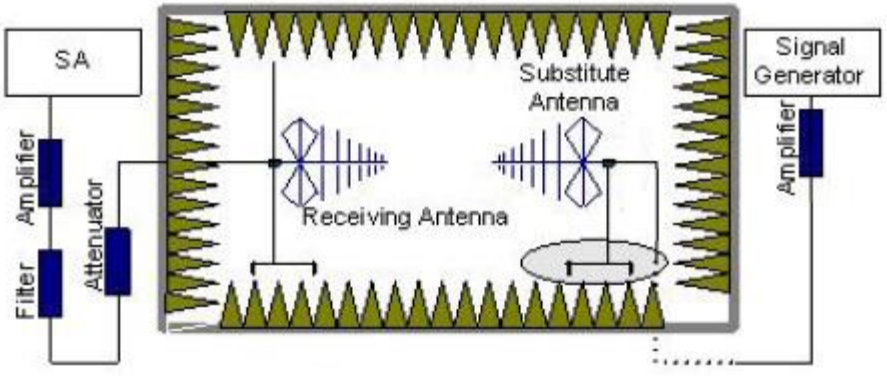
A.1.3.2 Method of Measurement

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

1. 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.



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. 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 (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be recorded after test.
   The measurement results are obtained as described below:
   Power (EIRP) = $P_{Mea} + P_{Ag} - P_{cl} + G_a$
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 -2.15dBi.

A.1.3.3 Measurement result

LTE Band 2- EIRP 24. 232(b)

Limits: ≤33dBm (2W)

LTE Band 2_1.4MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	23.86	33.00	H
1880	24.76	33.00	H
1909.3	25.14	33.00	H

LTE Band 2_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	23.97	33.00	H
1880	24.77	33.00	H
1908.5	25.02	33.00	H

LTE Band 2_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	23.95	33.00	H
1880	24.31	33.00	H
1907.5	24.73	33.00	H

LTE Band 2_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	24	33.00	H
1880	24.4	33.00	H
1905	25.03	33.00	H

LTE Band 2_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	24.05	33.00	H
1880	24.48	33.00	H
1902.5	25.02	33.00	H

LTE Band 2_20 MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	23.91	33.00	H
1880	24.3	33.00	H
1900	25.26	33.00	H

LTE Band 2_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	24.16	33.00	H
1880	24.37	33.00	H
1909.3	24.66	33.00	H

LTE Band 2_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	24.28	33.00	H
1880	24.62	33.00	H
1908.5	24.82	33.00	H

LTE Band 2_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	24.03	33.00	H
1880	24.5	33.00	H
1907.5	24.6	33.00	H

LTE Band 2_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	24.34	33.00	H
1880	24.62	33.00	H
1905	25.01	33.00	H

LTE Band 2_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	24.43	33.00	H
1880	24.61	33.00	H
1902.5	25.05	33.00	H

LTE Band 2_20 MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	23.89	33.00	H
1880	24.54	33.00	H
1900	24.86	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	22.91	30.00	H
1732.5	22.61	30.00	H
1754.3	22.79	30.00	H

LTE Band 4_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	23.06	30.00	H
1732.5	22.68	30.00	H
1753.5	22.71	30.00	H

LTE Band 4_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	22.85	30.00	H
1732.5	22.25	30.00	H
1752.5	22.77	30.00	H

LTE Band 4_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	23.31	30.00	H
1732.5	22.36	30.00	H
1750	23	30.00	H

LTE Band 4_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	23.25	30.00	H
1732.5	22.38	30.00	H
1747.5	22.75	30.00	H

LTE Band 4_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	22.77	30.00	H
1732.5	22.28	30.00	H
1745	22.89	30.00	H

LTE Band 4_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	23.22	30.00	H
1732.5	22.46	30.00	H
1754.3	22.6	30.00	H

LTE Band 4_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	23.44	30.00	H
1732.5	22.59	30.00	H

1753.5	22.65	30.00	H

LTE Band 4_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	22.77	30.00	H
1732.5	22.54	30.00	H
1752.5	22.49	30.00	H

LTE Band 4_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	23.17	30.00	H
1732.5	22.65	30.00	H
1750.5	22.62	30.00	H

LTE Band 4_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	23.16	30.00	H
1732.5	22.44	30.00	H
1747.5	22.7	30.00	H

LTE Band 4_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	23.12	30.00	H
1732.5	22.43	30.00	H
1745	22.55	30.00	H

LTE Band 5- ERP 22.913(a)

Limits: ≤38.45dBm (7W)

LTE Band 5_1.4MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
824.70	18.17	38.45	H
836.50	16.8	38.45	H
848.30	15.77	38.45	H

LTE Band 5_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	18.5	38.45	H
836.50	17.03	38.45	H
847.50	16.42	38.45	H

LTE Band 5_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	18.3	38.45	H
836.50	16.99	38.45	H
846.50	16.24	38.45	H

LTE Band 5_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	18.37	38.45	H

836.50	16.83	38.45	H
844.00	16.28	38.45	H

LTE Band 5_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
824.70	18.35	38.45	H
836.50	16.7	38.45	H
848.30	16.37	38.45	H

LTE Band 5_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	18.47	38.45	H
836.50	17.02	38.45	H
847.50	16.39	38.45	H

LTE Band 5_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	20.32	38.45	H
836.50	19.32	38.45	H
846.50	18.37	38.45	H

LTE Band 5_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	18.17	38.45	H
836.50	17.17	38.45	H
844.00	16.22	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
2502.5	26.39	33.00	H
2535	24.62	33.00	H
2567.5	24.76	33.00	H

LTE Band 7_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	26.1	33.00	H
2535	24.64	33.00	H
2565	23.97	33.00	H

LTE Band 7_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	26.83	33.00	H
2535	24.74	33.00	H
2562.5	25.13	33.00	H

LTE Band 7_20MHz_QPSK

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

2510	26.51	33.00	H
2535	24.56	33.00	H
2560	25.55	33.00	H

LTE Band 7_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2502.5	26.5	33.00	H
2535	24.7	33.00	H
2567.5	24.64	33.00	H

LTE Band 7_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	26.01	33.00	H
2535	24.77	33.00	H
2565	24.14	33.00	H

LTE Band 7_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	26.73	33.00	H
2535	24.48	33.00	H
2562.5	25.02	33.00	H

LTE Band 7_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	26.43	33.00	H
2535	24.53	33.00	H
2560	24.89	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	22.01	38.45	H
707.5	22.22	38.45	H
715.3	21.77	38.45	H

LTE Band 12_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	22.17	38.45	H
707.5	22.22	38.45	H
714.5	21.88	38.45	H

LTE Band 12_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	21.86	38.45	H
707.5	22.29	38.45	H
713.5	21.76	38.45	H

LTE Band 12_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	21.72	38.45	H
707.5	22.12	38.45	H
711	21.62	38.45	H

LTE Band 12_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
699.7	22.23	38.45	H
707.5	22.16	38.45	H
715.3	21.77	38.45	H

LTE Band 12_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	21.93	38.45	H
707.5	22.24	38.45	H
714.5	22.16	38.45	H

LTE Band 12_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	21.76	38.45	H
707.5	21.98	38.45	H
713.5	21.84	38.45	H

LTE Band 12_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	21.74	38.45	H
707.5	22.14	38.45	H
711	22.09	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	21.67	34.77	H
710	22.17	34.77	H
713.5	21.93	34.77	H

LTE Band 17_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	22.11	34.77	H
710	22.15	34.77	H
711	21.72	34.77	H

LTE Band 17_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
706.5	21.66	34.77	H
710	22.06	34.77	H
713.5	21.72	34.77	H

LTE Band 17_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	22.06	34.77	H
710	22.07	34.77	H
711	21.84	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	22.91	30.00	H
1882.5	22.61	30.00	H
1914.3	22.79	30.00	H

LTE Band 25_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	23.06	30.00	H
1882.5	22.68	30.00	H
1913.5	22.71	30.00	H

LTE Band 25_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	22.85	30.00	H
1882.5	22.25	30.00	H
1912.5	22.77	30.00	H

LTE Band 25_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	23.31	30.00	H
1882.5	22.36	30.00	H
1910	23	30.00	H

LTE Band 25_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	23.25	30.00	H
1882.5	22.38	30.00	H
1907.5	22.75	30.00	H

LTE Band 25_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	22.77	30.00	H
1882.5	22.28	30.00	H
1905	22.89	30.00	H

LTE Band 25_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	23.22	30.00	H
1882.5	22.46	30.00	H
1914.3	22.6	30.00	H

LTE Band 25_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	23.44	30.00	H
1882.5	22.59	30.00	H
1913.5	22.65	30.00	H

LTE Band 25_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	22.77	30.00	H
1882.5	22.54	30.00	H
1912.5	22.49	30.00	H

LTE Band 25_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	23.17	30.00	H
1882.5	22.65	30.00	H
1910	22.62	30.00	H

LTE Band 25_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	23.16	30.00	H
1882.5	22.44	30.00	H
1907.5	22.7	30.00	H

LTE Band 25_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	23.12	30.00	H
1882.5	22.43	30.00	H
1905	22.55	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	19.1	30.00	H
836.50	17.22	30.00	H
848.3	15.72	30.00	H

LTE Band 26(part22)_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	19.27	30.00	H
836.50	16.98	30.00	H
847.50	16.32	30.00	H

LTE Band 26(part22)_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	21.48	30.00	H
836.50	18.74	30.00	H
846.50	17.92	30.00	H

LTE Band 26(part22)_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	19.33	30.00	H
836.50	16.59	30.00	H
844.00	15.77	30.00	H

LTE Band 26(part22)_15MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
831.50	19.06	30.00	H
836.50	16.77	30.00	H
841.50	15.92	30.00	H

LTE Band 26(part22)_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
824.70	19.09	30.00	H
836.50	17.06	30.00	H
848.30	15.93	30.00	H

LTE Band 26(part22)_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
825.50	21.65	30.00	H
836.50	19.28	30.00	H
847.50	18.49	30.00	H

LTE Band 26(part22)_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
826.50	19.5	30.00	H
836.50	17.13	30.00	H
846.50	16.34	30.00	H

LTE Band 26(part22)_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
829.00	19.12	30.00	H
836.50	17.17	30.00	H
844.00	16.04	30.00	H

LTE Band 26(part22)_15MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
831.50	19.01	30.00	H
836.50	16.8	30.00	H
841.50	15.94	30.00	H

LTE Band 26(part90)- ERP 90.635

Limits: ≤30dBm (1W)

LTE Band 26(part90)_1.4MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.70	19.12	30.00	H
819.00	17.23	30.00	H
823.30	15.74	30.00	H

LTE Band 26(part90)_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.50	19.27	30.00	H
819.00	16.99	30.00	H
822.50	16.32	30.00	H

LTE Band 26(part90)_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.50	19.33	30.00	H
819.00	16.55	30.00	H
821.50	15.77	30.00	H

LTE Band 26(part90)_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.00	19.11	30.00	H
819.00	17.16	30.00	H
819.00	15.95	30.00	H

LTE Band 26(part90)_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.70	19.08	30.00	H
819.00	17.06	30.00	H
823.30	15.9	30.00	H

LTE Band 26(part90)_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.50	19.5	30.00	H
819.00	17.13	30.00	H
822.50	16.3	30.00	H

LTE Band 26(part90)_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.50	19.47	30.00	H
819.00	16.65	30.00	H
821.50	16.48	30.00	H

LTE Band 26(part90)_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.00	19.05	30.00	H
819.00	17.17	30.00	H
819.00	15.94	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
2498.5	25.95	33.00	H
2593	25.19	33.00	H
2687.5	24.62	33.00	H

LTE Band 41_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2501	26.37	33.00	H
2593	25.37	33.00	H
2685	25.04	33.00	H

LTE Band 41_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2503.5	26.22	33.00	H
2593	25.19	33.00	H
2682.5	24.88	33.00	H

LTE Band 41_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2506	26.1	33.00	H
2593	25.43	33.00	H
2680	24.89	33.00	H

LTE Band 41_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2498.5	26.21	33.00	H
2593	25.32	33.00	H
2687.5	25.02	33.00	H

LTE Band 41_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2501	26.34	33.00	H
2593	25.36	33.00	H
2685	24.98	33.00	H

LTE Band 41_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2503.5	26.3	33.00	H
2593	25.14	33.00	H
2682.5	25.54	33.00	H

LTE Band 41_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2506	26.21	33.00	H
2593	25.63	33.00	H
2680	25.35	33.00	H

LTE Band 66- EIRP 27.50(d)

Limits: ≤30dBm (1W)

LTE Band 66_1.4MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	23.44	30.00	H
1745	23.73	30.00	H
1779.3	23.31	30.00	H

LTE Band 66_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	23.35	30.00	H
1745	23.62	30.00	H
1778.5	23.31	30.00	H

LTE Band 66_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	23.2	30.00	H
1745	23.46	30.00	H

1777.5	23.25	30.00	H

LTE Band 66_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	23.52	30.00	H
1745	23.62	30.00	H
1775	23.17	30.00	H

LTE Band 66_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	23.82	30.00	H
1745	23.63	30.00	H
1772.5	23.28	30.00	H

LTE Band 66_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	23.36	30.00	H
1745	23.51	30.00	H
1770	23.95	30.00	H

LTE Band 66_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	23.61	30.00	H
1745	23.65	30.00	H
1779.3	23.27	30.00	H

LTE Band 66_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	23.81	30.00	H
1745	23.57	30.00	H
1778.5	23.34	30.00	H

LTE Band 66_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	23.22	30.00	H
1745	23.63	30.00	H
1777.5	22.95	30.00	H

LTE Band 66_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	23.58	30.00	H
1745	23.74	30.00	H
1775	23.26	30.00	H

LTE Band 66_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	23.61	30.00	H
1745	23.61	30.00	H
1772.5	23.33	30.00	H

LTE Band 66_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	23.81	30.00	H
1745	23.62	30.00	H
1770	23.23	30.00	H

ANALYZER SETTINGS:

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

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

ANNEX A.2. EMISSION LIMT

Reference

FCC: CFR 2.1051, 22.917,24.238(a), 27.53(g), 27.53(h) , 27.53(m),90.691.

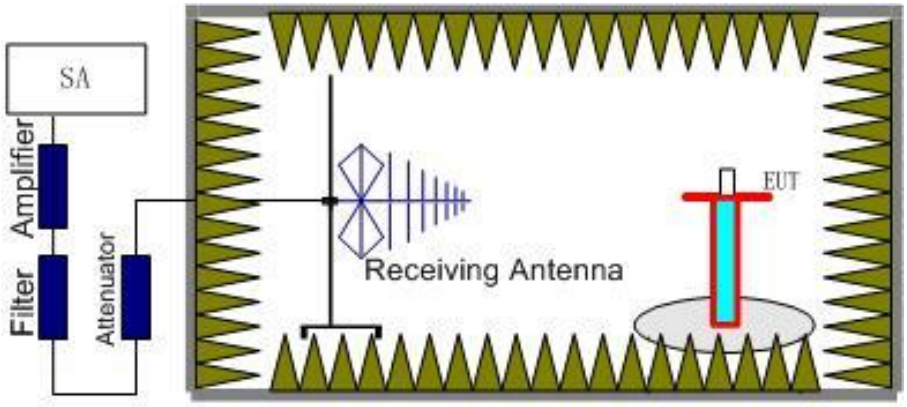
A.2.1 Measurement Method

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

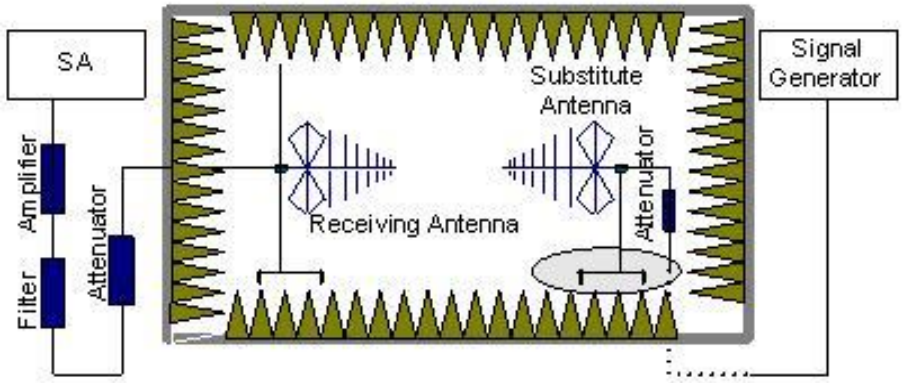
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz as outlined in Part 22.917,Part 24.238(a), Part 27.53(g), Part 27.53(h), Part 27.53(m), 90.691.The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the LTE Bands 2,4,5,7,12,17,25,26,41,66.

The procedure of radiated spurious emissions is as follows:

1. 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, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. 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:
   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 -2.15dBi.

A.2.2 Measurement Limi

Part 22.917,Part 24.238(a), Part 27.53(g), Part 27.53(h), Part 27.53(m) ,90.691 all specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.2.3 Measurement Results

7. Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands 2,4,5,7,12,17,25,26,41,66. 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 2,4,5,7,12,17,25,26,41,66. 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.

LTE Band 2, 1.4MHz, QPSK, Channel 18607

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3700.0	-48.66	6.6	7.7	-47.56	-13	H
5550.8	-37.95	8.2	9.5	-36.65	-13	H
7400.4	-43.41	9.7	14.6	-38.51	-13	V
9251.2	-51.03	10.6	18.5	-43.13	-13	V
11100.8	-50.58	12.1	18.1	-44.58	-13	V
12951.6	-41.03	13.2	20.2	-34.03	-13	V

LTE Band 2, 1.4MHz, QPSK, Channel 18900

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3760.0	-52.43	6.6	7.7	-51.33	-13	H
5640.0	-44.42	8.3	10.5	-42.22	-13	V
7520.0	-49.38	9.7	14.6	-44.48	-13	V
9400.0	-55.15	10.7	18.6	-47.25	-13	H
11280.0	-50.33	12.1	18.5	-43.93	-13	H
13160.2	-50.3	13.0	21.8	-41.5	-13	H

LTE Band 2, 1.4MHz, QPSK, Channel 19193

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit （dBm）	Polarization
3818.0	-46.59	6.7	7.7	-45.59	-13	H
5726.8	-35.25	8.5	10.5	-33.25	-13	H
7635.2	-42.04	9.7	15.3	-36.44	-13	V
9544.0	-51.24	10.7	18.6	-43.34	-13	H
11453.6	-49.85	12.3	18.1	-44.05	-13	H
13361.8	-43.7	13.7	21.8	-35.6	-13	H

LTE Band 4, 1.4MHz QPSK, Channel 19957

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
3420.4	-50.8	6.3	4.7	-52.4	-13	H
5130.8	-49.85	7.9	8.7	-49.05	-13	H
6841.2	-39.11	9.2	12.3	-36.01	-13	H
8551.2	-54.13	10.3	18.1	-46.33	-13	V
10264.4	-50.23	11.4	17.4	-44.23	-13	V
11973.0	-47.88	12.6	17.1	-43.38	-13	V

LTE Band 4, 1.4MHz, QPSK, Channel 20175

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
3464.0	-50	6.4	4.7	-51.7	-13	H
5196.0	-41.1	8.0	8.7	-40.4	-13	H
6928.4	-36.62	9.3	12.9	-33.02	-13	V
8660.4	-51.97	10.3	18.5	-43.77	-13	V
10390.4	-50.56	11.6	17.1	-45.06	-13	H
12124.2	-48.09	12.6	17.1	-43.59	-13	V

LTE Band 4, 1.4MHz, QPSK, Channel 20393

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
3507.6	-49.31	6.4	4.7	-51.01	-13	H
5261.6	-42.98	8.0	8.7	-42.28	-13	H
7015.2	-38.15	9.3	12.9	-34.55	-13	V
8769.2	-53.73	10.4	18.5	-45.63	-13	V
10522.8	-51.16	11.6	17.1	-45.66	-13	H
12278.2	-47.9	12.7	17.5	-43.1	-13	H

LTE Band 5, 1.4MHz, QPSK, Channel 20407

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization

1837.3	-41.21	4.6	2.9	-42.91	-13	H
2546.9	-38.53	5.4	3.7	-40.23	-13	V
3304.0	-49.26	6.2	4.7	-50.76	-13	H
4558.0	-49.86	7.4	7.3	-49.96	-13	V
5924.4	-53.14	8.5	10.4	-51.24	-13	H
7902.1	-54.39	9.9	16.6	-47.69	-13	H

LTE Band 5, 1.4MHz, QPSK, Channel 20525

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
1835.6	-41.59	4.6	2.9	-43.29	-13	H
2642.3	-37.77	5.5	4.1	-39.17	-13	H
3344.0	-49.97	6.2	4.7	-51.47	-13	H
4236.0	-53.2	7.1	7.7	-52.6	-13	V
5501.6	-52.54	8.2	9.5	-51.24	-13	V
7021.3	-52.77	9.3	12.9	-49.17	-13	V

LTE Band 5, 1.4 MHz, QPSK, Channel 20643

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
1695.7	-44.93	4.4	2.9	-46.43	-13	V
2543.5	-38.67	5.4	3.7	-40.37	-13	V
3391.2	-47.83	6.3	4.7	-49.43	-13	H
4520.8	-51.15	7.3	7.3	-51.15	-13	V
6230.4	-52.6	8.8	10.8	-50.6	-13	V
8010.1	-54.78	9.9	16.6	-48.08	-13	V

LTE Band 7, 5 MHz, QPSK, Channel 20775

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
5002.8	-43.48	7.8	9.0	-42.28	-13	V
7506.4	-42.53	9.7	14.6	-37.63	-13	V

9221.6	-48.67	10.5	18.5	-40.67	-13	V
11253.8	-42.8	12.1	18.5	-36.4	-13	H
13625.0	-40.31	13.8	23.4	-30.71	-13	H
17819.8	-30.22	16.0	20.6	-25.62	-13	H

LTE Band 7, 5 MHz, QPSK, Channel 21100

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
3952.0	-49.84	6.8	7.7	-48.94	-13	V
5070.0	-42.58	7.8	9.0	-41.38	-13	V
7605.2	-44.2	9.7	14.6	-39.3	-13	V
10134.8	-44.5	11.3	17.4	-38.4	-13	H
12834.0	-39.95	12.5	19.2	-33.25	-13	V
17856.5	-29.42	16.2	20.6	-25.02	-13	H

LTE Band 7, 5 MHz, QPSK, Channel 21425

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
5132.8	-39.78	7.9	8.7	-38.98	-13	V
7702.4	-44.06	9.8	15.3	-38.56	-13	V
9212.0	-49.22	10.5	18.5	-41.22	-13	H
10813.2	-42.34	11.7	17.3	-36.74	-13	V
12960.0	-39.85	13.2	20.2	-32.85	-13	V
16015.5	-32.8	15.0	20.4	-27.4	-13	H

LTE Band 12, 1.4MHz, QPSK, Channel 23017

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBi)	Peak EIRP (dBm)	Limit（dBm）	Polarization
1838.0	-41.41	4.6	2.9	-43.11	-13	H
2621.5	-38.03	5.5	3.7	-39.83	-13	H
3151.6	-38.41	6.0	4.7	-39.71	-13	H
4332.4	-53.7	7.2	7.7	-53.2	-13	V
5896.4	-52.41	8.5	10.4	-50.51	-13	H
7899.1	-54.49	9.9	16.6	-47.79	-13	V