






TEST REPORT

Report Number: C21T00097-RF02-V01

Applicant	Shanghai Sunmi Technology Co., Ltd.
Product Name	L2Ks Handheld Wireless Terminal
Model Name	T8A10
Brand Name	SUNMI
FCC ID	2AH25T8A10
IC ID	22621-T8A10

Industrial Internet Innovation Center (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC Part 2/22/24/90, ANSI/TIA-603-E, ANSI C63.26, KDB 971168 D01, RSS-Gen Issue 5, RSS-130 Issue 2; RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3; RSS-199 Issue 3.

Prepared by		Reviewed by	
Approved by		Issue Date	2021-12-17

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



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Test Laboratory:

Industrial Internet Innovation Center (Shanghai) Co., Ltd.
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Revision Version

Report Number	Revision	Date	Memo
C21T00097-RF02-V00	00	2021-11-19	Initial creation of test report
C21T00097-RF02-V01	01	2021-12-17	Update the FCC Rule Part Version.

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1. Test Laboratory

1.1. Testing Location

Company Name	Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Address	Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
FCC Registration No.	958356
FCC Degistration No.	CN1177
IC Degistration No.	CN0067

1.2. Testing Environment

Normal Temperature	15°C~35°C
Relative Humidity	30%RH~60%RH
Supply Voltage	120V/60Hz

1.3. Project Information

Project Leader	Wang Wenwen
Testing Start Date	2021-08-05
Testing End Date	2021-10-18



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	+86 18501703215

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	+86 18501703215

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

3.1. About EUT

Product Name	L2Ks Handheld Wireless Terminal
Model name	T8A10
Supported Radio Technology and Bands	GSM850/GSM900/DCS1800/PCS1900 WCDMA Band I/II/ IV/V/VIII LTE Band 1/2/3/4/5/7/12/13/17/18/19/25/26/38/41/66/71 BT 5.0,BLE WLAN 802.11b,g,n WLAN 802.11a,n,ac NFC GPS
Hardware Version	V4
Software Version	V025
FCC ID	2AH25T8A10
IC	22621-T8A10
Extreme Temperature	-20°C~55°C
Nominal Voltage	3.87V
Extreme High Voltage	4.45V
Extreme Low Voltage	3.45V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
N03	866584051015622 866584051015630	V4	V025	2021-08-04
N04	866584051015705 866584051015713	V4	V025	2021-08-04
N08	866584051015747 866584051015754	V4	V025	2021-08-04

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

3.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN/Remark
AE1	RF cable	N/A	N/A

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

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	2020-10-01
FCC Part 22	PUBLIC MOBILE SERVICES	2020-10-01
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	2020-10-01
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	2020-10-01
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
RSS-Gen Issue 5	RSS-Gen —General Requirements for Compliance of Radio Apparatus	2021-05
RSS-130 Issue 2	Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz	2019-01
RSS-132 Issue 3	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz	2013-01
RSS-133 Issue 6	2 GHz Personal Communications Services	2018-01
RSS-139 Issue 3	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz	2015-07
RSS-199 Issue 3	Broadband Radio Service (BRS) Equipment Operating in the Band 2500–2690 MHz	2016-12

4.2. Reference Information from client

Antenna gain Information of the test sample provided by Shanghai Sunmi Technology Co., Ltd.

Antenna Gain:

LTE Band 2: 2 dBi.	LTE Band 13: -3 dBi	LTE Band 26: -2 dBi.
LTE Band 4: 1 dBi	LTE Band 17: -3 dBi.	LTE Band 38: 3 dBi
LTE Band 5: -2 dBi.	LTE Band 18: -2 dBi	LTE Band 41: 3 dBi.
LTE Band 7: 3 dBi	LTE Band 19: -2 dBi.	LTE Band 66: 1 dBi
LTE Band 12: -3 dBi.	LTE Band 25: 2 dBi	LTE Band 71: -3.7 dBi.

5. Test Summary

5.1. 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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	24.238(a)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	24.238(a)	RSS-133 6.5	Pass
7	Conducted Spurious Emission	24.238, 2.1057	RSS-133 6.5	Pass
8	Peak to Average Power Ratio	24.232 (d)	RSS-133 6.4	Pass

LTE Band 4

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-139 6.5	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-139 6.6	Pass
3	Frequency Stability	27.54, 2.1055	RSS-139 6.4	Pass
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(h)	RSS-139 6.6	Pass
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-139 6.6	Pass
8	Peak to Average Power Ratio	27.50(a)	RSS-139 6.5	Pass

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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	22.917(b)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	22.917(b)	RSS-132 5.5	Pass

7	Conducted Spurious Emission	22.917, 2.1057	RSS-132 5.5	Pass
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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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(h)	RSS-199 4.5	Pass
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-199 4.5	Pass
8	Peak to Average Power Ratio	27.50(a)	RSS-199 4.4	Pass

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

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

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

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
4	Occupied Bandwidth	2.1049,24.238	RSS-Gen 6.7	Pass
5	Emission Bandwidth	2.1049,24.238	RSS-Gen 6.7	Pass
6	Band Edge Compliance	2.1049,24.238	RSS-133 6.5	Pass
7	Conducted Spurious Emission	2.1049,24.238	RSS-133 6.5	Pass
8	Peak to Average Power Ratio	2.1049,24.238	RSS-133 6.4	Pass

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
4	Occupied Bandwidth	2.1049(h)(i)	N/A	Pass
5	Emission Bandwidth	90.209 (b)	N/A	Pass
6	Band Edge Compliance	90.669	N/A	Pass
7	Conducted Spurious Emission	90.669	N/A	Pass

LTE Band 38

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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(h)	RSS-199 4.5	Pass
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-199 4.5	Pass
8	Peak to Average Power Ratio	27.50(a)	RSS-199 4.4	Pass

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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(h)	RSS-199 4.5	Pass
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-199 4.5	Pass
8	Peak to Average Power Ratio	27.50(a)	RSS-199 4.4	Pass

LTE Band 66

Items	Test Name	Clause in FCC rules	Sub-clause of IC	Verdict
1	Output Power	27.50(d)(4)	RSS-139 6.5	Pass
2	Emission Limit	27.53(h), 2.1051	RSS-139 6.6	Pass
3	Frequency Stability	27.54, 2.1055	RSS-139 6.4	Pass
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(h)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(h)	RSS-139 6.6	Pass
7	Conducted Spurious Emission	27.53(h), 2.1057	RSS-139 6.6	Pass
8	Peak to Average Power Ratio	27.50(a)	RSS-139 6.5	Pass

LTE Band 71

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
4	Occupied Bandwidth	2.1049(h)(i)	RSS-Gen 6.7	Pass
5	Emission Bandwidth	27.53(g)	RSS-Gen 6.7	Pass
6	Band Edge Compliance	27.53(g)	RSS-130 4.7	Pass
7	Conducted Spurious Emission	27.53(g),2.1057	RSS-130 4.7	Pass
8	Peak to AveragePower Ratio	27.50(a)	RSS-130 4.4	Pass

Test Conditions

Tnom	Normal Temperature
Tmin	Low Temperature
Tmax	High Temperature
Vnom	Normal Voltage
Vmin	Low Voltage
Vmax	High Voltage
Hnom	Norm Humidity
Anom	Norm Air Pressure

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	Tnom	25°C
Voltage	Vnom	3.80V
Humidity	Hnom	48%
Air Pressure	Anom	1010hPa

5.2. Statements

The T8A10, manufactured by Shanghai Sunmi Technology Co., Ltd. is a new product for testing.

The test data in the report conform to current IC valid standards.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 5.1.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

6. Measurement Results

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

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
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 °C, Max. = 35 °C
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

6.1. 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 6.6; Rule RSS-199 4.5

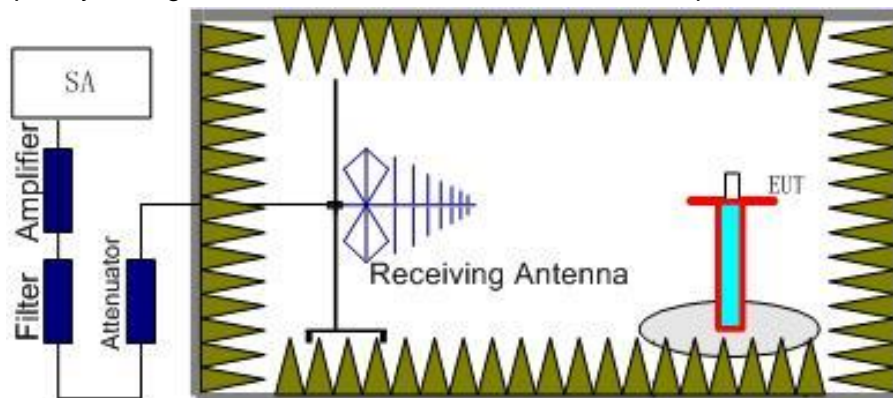
6.1.1 Measurement Method

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

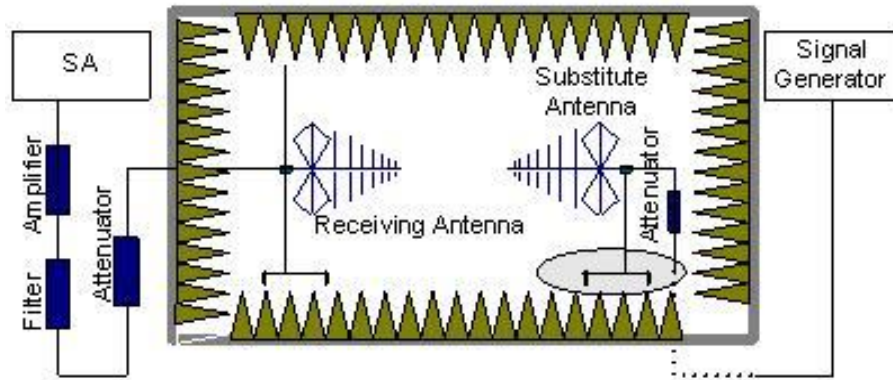
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz as outlined in Part 27.53(g), Part 27.53(h), Part 27.53(m). The spectrum was scanned with the mobile station transmitting 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, 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:

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

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, $ERP = EIRP - 2.15\text{dBi}$.

6.1.2 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 6.6 specifies that "In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, Footnote2 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

6.1.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands 7. 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 7. 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
12	L	23017	Pass
	M	23095	Pass
	H	23173	Pass
13	L	23205	Pass
	M	23230	Pass
	H	23255	Pass
17	L	23755	Pass
	M	23790	Pass
	H	23825	Pass
25	L	26047	Pass
	M	26365	Pass
	H	26683	Pass
26	L	26697	Pass
	M	26740	Pass
	H	26783	Pass
38	L	37775	Pass
	M	38000	Pass
	H	38225	Pass
41	L	40065	Pass
	M	40640	Pass
	H	41215	Pass

66	L	131979	Pass
	M	132322	Pass
	H	132665	Pass
71	L	133147	Pass
	M	133297	Pass
	H	133447	Pass

RSE-LTE2-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3700.4	-36.82	6.6	7.9	-35.52	-13	V
5550.4	-38.29	8.2	9.8	-36.69	-13	V
7394.8	-52.04	9.7	11.6	-50.14	-13	V
9251.6	-50.46	10.7	12.7	-48.46	-13	H
11103.6	-47.27	12.1	12.3	-47.07	-13	V
13384.2	-41.92	13.7	12.3	-43.32	-13	V

RSE-LTE2-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3758.8	-41.12	6.6	7.9	-39.82	-13	H
5638.4	-38.48	8.3	10.2	-36.58	-13	V
7518.0	-51.29	9.7	11.6	-49.39	-13	V
9397.6	-50.03	10.7	12.7	-48.03	-13	V
11273.0	-46.62	12.1	12.3	-46.42	-13	H
14984.4	-41.81	14.4	12.3	-43.91	-13	V

RSE-LTE2-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3817.6	-40.11	6.7	7.9	-38.91	-13	V
5726.4	-50.13	8.5	10.2	-48.43	-13	H

7641.2	-53.59	9.7	11.8	-51.49	-13	H
9637.2	-50.5	10.8	12.7	-48.6	-13	H
11478.8	-46.4	12.3	12.3	-46.4	-13	V
13332.4	-43.89	13.6	12.3	-45.19	-13	H

RSE-LTE4-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3420.4	-36.82	6.3	7.8	-35.32	-13	H
5130.8	-51.28	7.9	9.4	-49.78	-13	H
6828.0	-52.81	9.2	10.9	-51.11	-13	H
8672.0	-50.97	10.3	12.7	-48.57	-13	V
10369.2	-47.24	11.6	12.3	-46.54	-13	V
12037.4	-46.07	12.6	12.3	-46.37	-13	V

RSE-LTE4-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3464.0	-38.75	6.4	7.8	-37.35	-13	H
5196.4	-50.26	8.0	9.4	-48.86	-13	V
6927.6	-53.24	9.3	11.1	-51.44	-13	V
8681.2	-51.31	10.4	12.7	-49.01	-13	V
10763.6	-46.45	11.7	12.3	-45.85	-13	V
12843.8	-43.79	12.5	12.3	-43.99	-13	V

RSE-LTE4-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3507.6	-41.11	6.4	7.8	-39.71	-13	V
5207.6	-50.14	8.0	9.4	-48.74	-13	H
7033.6	-52.49	9.4	11.1	-50.79	-13	H
8670.8	-52.15	10.3	12.7	-49.75	-13	V
10802.4	-46.94	11.7	12.3	-46.34	-13	V
12775.2	-45.54	12.5	12.3	-45.74	-13	V



RSE-LTE5-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1713.4	-47.23	4.5	4.7	-47.03	-13	V
2472.7	-36.36	5.4	5.6	-36.16	-13	H
3232.8	-52.85	6.1	6.9	-52.05	-13	H
4121.2	-51.78	7.0	8.6	-50.18	-13	H
4975.6	-54.45	7.8	9.6	-52.65	-13	H
5955.6	-52.55	8.5	10.2	-50.85	-13	V

RSE-LTE5-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1713.4	-49.32	4.5	4.7	-49.12	-13	V
2508.5	-36.81	5.4	5.6	-36.61	-13	V
3362.4	-53.27	6.2	6.9	-52.57	-13	H
4180.0	-52.69	7.0	8.9	-50.79	-13	H
4996.8	-54.5	7.8	9.6	-52.7	-13	H
5826.8	-53.07	8.4	10.2	-51.27	-13	H

RSE-LTE5-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1711.0	-47.19	4.5	4.7	-46.99	-13	V
2543.5	-37.86	5.4	5.6	-37.66	-13	V
3250.0	-53.42	6.1	6.9	-52.62	-13	H
4239.2	-50.09	7.1	8.9	-48.29	-13	H
5089.2	-50.61	7.9	9.6	-48.91	-13	V
5926.8	-53.08	8.5	10.2	-51.38	-13	H

RSE-LTE7-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
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3792.8	-50.97	6.7	7.9	-49.77	-25	V
5422.8	-50.24	8.1	9.8	-48.54	-25	V
7868.4	-48.84	9.9	11.8	-46.94	-25	V
9698.8	-46.88	10.9	12.7	-45.08	-25	V
12464.8	-42.05	12.7	12.3	-42.45	-25	H
16736.5	-30.5	15.1	12.3	-33.3	-25	H

RSE-LTE7-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3686.0	-50.52	6.6	7.9	-49.22	-25	V
5316.8	-49.57	8.0	9.4	-48.17	-25	H
7925.6	-49.73	9.8	12.2	-47.33	-25	H
10666.0	-44.06	11.7	12.3	-43.46	-25	H
13359.0	-38.14	13.7	12.3	-39.54	-25	H
17671.0	-29.92	15.8	12.3	-33.42	-25	V

RSE-LTE7-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3723.6	-51.27	6.6	7.9	-49.97	-25	V
5419.2	-50.37	8.1	9.8	-48.67	-25	H
7695.6	-47.49	9.8	11.8	-45.49	-25	V
9661.2	-47.07	10.9	12.7	-45.27	-25	H
12127.0	-40.54	12.6	12.3	-40.84	-25	H
15763.5	-31.84	14.9	12.3	-34.44	-25	H

RSE-LTE12-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1395.6	-54.48	4.0	5.3	-53.18	-13	V
2097.3	-36.04	4.9	4.5	-36.44	-13	V

3496.4	-50.36	6.4	7.8	-48.96	-13	H
4240.8	-54.44	7.1	8.9	-52.64	-13	H
4889.2	-53	7.7	9.6	-51.1	-13	H
5565.2	-52.79	8.2	9.8	-51.19	-13	V

RSE-LTE12-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1452.0	-54.24	4.1	5.3	-53.04	-13	H
2120.8	-33.57	4.9	4.5	-33.97	-13	V
3535.2	-51.16	6.4	7.8	-49.76	-13	H
4266.4	-53.89	7.1	8.9	-52.09	-13	H
4930.4	-52.86	7.7	9.6	-50.96	-13	H
5639.6	-53.2	8.3	10.2	-51.3	-13	H

RSE-LTE12-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1484.2	-54.39	4.1	5.3	-53.19	-13	H
2144.2	-32.61	5.0	5.1	-32.51	-13	V
2876.5	-41.48	5.8	6.7	-40.58	-13	H
3574.0	-49.68	6.4	7.8	-48.28	-13	H
4244.8	-53.9	7.1	8.9	-52.1	-13	V
4994.0	-54.95	7.8	9.6	-53.15	-13	H

RSE-LTE13-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1554.5	-50.31	4.2	5.3	-49.21	-13	H
2331.9	-31.56	5.2	5.1	-31.66	-13	V
3067.6	-53.02	6.0	6.7	-52.32	-13	V
3886.0	-53.49	6.8	8.6	-51.69	-13	H
4890.0	-53.94	7.7	9.6	-52.04	-13	H



5801.6	-53.18	8.4	10.2	-51.38	-13	H
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RSE-LTE13-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1560.0	-46.94	4.2	5.3	-45.84	-13	H
2339.6	-31.92	5.2	5.1	-32.02	-13	V
3061.2	-52.27	6.0	6.7	-51.57	-13	H
3803.6	-53.15	6.7	7.9	-51.95	-13	H
4522.4	-52.11	7.3	8.7	-50.71	-13	V
5430.8	-52.45	8.1	9.8	-50.75	-13	H

RSE-LTE13-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1564.5	-46.69	4.2	5.3	-45.59	-13	H
2346.9	-31.82	5.2	5.1	-31.92	-13	V
3160.0	-53.52	6.0	6.9	-52.62	-13	H
3948.4	-54.34	6.8	8.6	-52.54	-13	H
4697.6	-53.46	7.5	9.0	-51.96	-13	H
5493.2	-52.52	8.2	9.8	-50.92	-13	V

RSE-LTE17-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1408.4	-54.24	4.0	5.3	-52.94	-13	H
2112.7	-40.3	4.9	4.5	-40.7	-13	V
2820.8	-42.17	5.7	6.1	-41.77	-13	H
3521.2	-51.56	6.4	7.8	-50.16	-13	H
4210.4	-54.21	7.0	8.9	-52.31	-13	H
4939.2	-53.93	7.7	9.6	-52.03	-13	H

RSE-LTE17-M

Frequency	PMea	Pcl (dBm)	Ga (dBd)	Peak ERP	Limit	Polarization
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(MHz)	(dBm)			(dBm)	(dBm)	
1482.8	-53.94	4.1	5.3	-52.74	-13	H
2123.1	-40.06	4.9	4.5	-40.46	-13	V
3539.2	-50.39	6.4	7.8	-48.99	-13	H
4324.8	-54.28	7.1	8.9	-52.48	-13	H
5072.4	-54.39	7.8	9.6	-52.59	-13	H
5953.6	-51.94	8.5	10.2	-50.24	-13	V

RSE-LTE17-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1711.7	-40.92	4.5	4.7	-40.72	-13	V
2133.8	-38.78	5.0	5.1	-38.68	-13	V
2821.9	-42.13	5.7	6.1	-41.73	-13	H
3556.8	-51.77	6.4	7.8	-50.37	-13	H
4261.6	-53.62	7.1	8.9	-51.82	-13	H
4960.8	-53.55	7.7	9.6	-51.65	-13	H

RSE-LTE25-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3700.4	-37.18	6.6	7.9	-35.88	-13	V
5550.8	-46.17	8.2	9.8	-44.57	-13	V
7419.6	-51.7	9.7	11.6	-49.8	-13	V
9169.6	-51.25	10.5	12.6	-49.15	-13	V
11200.2	-47.03	12.1	12.3	-46.83	-13	V
13377.2	-43.68	13.7	12.3	-45.08	-13	V

RSE-LTE25-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3764.0	-39.14	6.6	7.9	-37.84	-13	V

5646.0	-46.31	8.3	10.2	-44.41	-13	V
7471.2	-51.59	9.7	11.6	-49.69	-13	V
9295.2	-50.67	10.7	12.7	-48.67	-13	H
11126.0	-47.4	12.1	12.3	-47.2	-13	V
13041.2	-44.66	13.2	12.3	-45.56	-13	V

RSE-LTE25-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3827.6	-37.49	6.7	7.9	-36.29	-13	V
5742.0	-45.32	8.5	10.2	-43.62	-13	V
7707.6	-52.82	9.8	11.8	-50.82	-13	V
9658.8	-49.11	10.9	12.7	-47.31	-13	H
11662.2	-46.01	12.4	12.3	-46.11	-13	V
13588.6	-44.72	13.8	12.3	-46.22	-13	H

RSE-LTE26-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1711.0	-46.85	4.5	4.7	-46.65	-13	H
2544.2	-43.69	5.4	5.6	-43.49	-13	H
3370.0	-51.96	6.2	6.9	-51.26	-13	H
4196.4	-54.44	7.0	8.9	-52.54	-13	H
4982.0	-54.03	7.8	9.6	-52.23	-13	H
5807.6	-53.13	8.4	10.2	-51.33	-13	V

RSE-LTE26-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1714.8	-48.84	4.5	4.7	-48.64	-13	V
2492.7	-39.16	5.4	5.6	-38.96	-13	H
3314.8	-53.3	6.2	6.9	-52.6	-13	H
4155.2	-52.23	7.0	8.9	-50.33	-13	H

5089.2	-52.86	7.9	9.6	-51.16	-13	H
6052.0	-51.68	8.6	10.2	-50.08	-13	H

RSE-LTE26-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1492.5	-52.15	4.1	5.3	-50.95	-13	H
2543.5	-35.42	5.4	5.6	-35.22	-13	V
3292.4	-53.76	6.2	6.9	-53.06	-13	H
4239.2	-52.92	7.1	8.9	-51.12	-13	H
5106.4	-52.06	7.9	9.6	-50.36	-13	H
6084.0	-52.29	8.7	10.2	-50.79	-13	V

RSE-LTE38-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3666.0	-52.2	6.6	7.9	-50.9	-25	H
5145.6	-47.5	7.9	9.4	-46	-25	V
7716.4	-49.3	9.8	11.8	-47.3	-25	V
10290.0	-45.77	11.5	12.3	-44.97	-25	H
12860.2	-39.84	13.0	12.3	-40.54	-25	H
15452.0	-34.49	14.5	12.3	-36.69	-25	H

RSE-LTE38-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3745.2	-50.68	6.6	7.9	-49.38	-25	V
5192.4	-47.37	8.0	9.4	-45.97	-25	H
7786.4	-49.72	9.9	11.8	-47.82	-25	V
10386.4	-44.37	11.6	12.3	-43.67	-25	H
12979.2	-40.59	13.2	12.3	-41.49	-25	H
15721.5	-33.5	14.5	12.3	-35.7	-25	H

RSE-LTE38-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
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3560.4	-52.77	6.4	7.8	-51.37	-25	H
5232.4	-48.07	8.0	9.4	-46.67	-25	H
7852.0	-50.52	9.9	11.8	-48.62	-25	H
10472.0	-45.49	11.6	12.3	-44.79	-25	V
13086.0	-41.46	13.0	12.3	-42.16	-25	H
15702.2	-34.06	14.5	12.3	-36.26	-25	H

RSE-LTE41-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3624.4	-50.94	6.5	7.8	-49.64	-13	H
4990.8	-49.59	7.8	9.6	-47.79	-13	H
7488.8	-43.83	9.7	11.6	-41.93	-13	V
9945.6	-45.36	11.0	12.5	-43.86	-13	H
12750.0	-40.78	12.7	12.3	-41.18	-13	H
15732.0	-32.98	14.5	12.3	-35.18	-13	H

RSE-LTE41-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3690.4	-50.75	6.6	7.9	-49.45	-13	H
5165.2	-47.22	7.9	9.4	-45.72	-13	H
7824.0	-49.42	9.9	11.8	-47.52	-13	V
10243.6	-45	11.3	12.5	-43.8	-13	H
12916.2	-40.29	13.0	12.3	-40.99	-13	H
15917.5	-31.64	15.0	12.3	-34.34	-13	H

RSE-LTE41-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3470.0	-52.91	6.4	7.8	-51.51	-13	H
5446.0	-49.64	8.1	9.8	-47.94	-13	V
8030.0	-50.37	9.9	12.2	-48.07	-13	V
10499.6	-44.83	11.6	12.3	-44.13	-13	V
12676.5	-41.47	12.7	12.3	-41.87	-13	H

15714.5	-33.93	14.5	12.3	-36.13	-13	H
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RSE-LTE66-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3420.4	-36.92	6.3	7.8	-35.42	-13	H
5130.8	-43.16	7.9	9.4	-41.66	-13	V
6970.8	-53.17	9.3	11.1	-51.37	-13	V
8724.4	-51.78	10.4	12.7	-49.48	-13	V
10470.4	-48.8	11.6	12.3	-48.1	-13	H
12297.8	-45.86	12.7	12.3	-46.26	-13	V

RSE-LTE66-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3488.8	-41.58	6.4	7.8	-40.18	-13	H
5233.6	-47.01	8.0	9.4	-45.61	-13	V
7279.6	-51.84	9.6	11.4	-50.04	-13	H
9007.6	-51.03	10.4	12.6	-48.83	-13	V
10764.8	-47.62	11.7	12.3	-47.02	-13	V
12745.8	-45.97	12.7	12.3	-46.37	-13	H

RSE-LTE66-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
3557.6	-35.04	6.4	7.8	-33.64	-13	H
5336.8	-46.49	8.1	9.4	-45.19	-13	H
7032.0	-52.54	9.4	11.1	-50.84	-13	V
8913.6	-52	10.4	12.6	-49.8	-13	H
10612.8	-47.29	11.6	12.3	-46.59	-13	V
12442.0	-46.7	12.5	12.3	-46.9	-13	H

RSE-LTE71-L

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1252.7	-51.95	3.8	3.0	-52.75	-13	H
1825.9	-49.06	4.6	4.7	-48.96	-13	V

2464.2	-40.24	5.4	5.6	-40.04	-13	V
2972.3	-40.77	5.8	6.7	-39.87	-13	H
3639.2	-53.8	6.6	7.9	-52.5	-13	H
4253.6	-53.87	7.1	8.9	-52.07	-13	H

RSE-LTE71-M

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1376.2	-55.52	4.0	5.3	-54.22	-13	V
2035.0	-42.03	4.9	4.5	-42.43	-13	V
2711.9	-42.4	5.6	6.1	-41.9	-13	H
3032.8	-52.18	6.0	6.7	-51.48	-13	H
3825.6	-53.47	6.7	7.9	-52.27	-13	V
4572.4	-52.49	7.4	8.7	-51.19	-13	H

RSE-LTE71-H

Frequency (MHz)	PMea (dBm)	Pcl (dBm)	Ga (dBd)	Peak ERP (dBm)	Limit (dBm)	Polarization
1305.3	-52.89	3.9	3.0	-53.79	-13	V
1851.8	-49.91	4.6	4.7	-49.81	-13	V
2548.1	-43.77	5.4	5.6	-43.57	-13	H
3047.2	-52.73	6.0	6.7	-52.03	-13	H
3785.2	-53.24	6.7	7.9	-52.04	-13	H
4557.2	-52.6	7.4	8.7	-51.3	-13	V

6.2. Frequency Stability

Reference

CFR Part 2.1055,22.235,24.235,27.54,90.213(a).

Rule RSS-130 4.5;Rule RSS-132 5.3; Rule RSS-133 6.3; Rule RSS-139 6.4; Rule RSS-199 4.3

6.2.1 Method of Measurement

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -10°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel for LTE band 7. Measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -10°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C decrements from +50°C to -10°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

6.2.2 Measurement Limit

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d) (2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.6VDC and 4.35VDC, with a nominal voltage of 3.8VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. For the purposes of measuring frequency stability these voltage limits are to be used.

Rule RSS-132 5.3 specifies that "The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations." Limits $\leq \pm 2.5$ ppm

Rule RSS-133 6.3 specifies that "The carrier frequency shall not depart from the reference frequency, in excess of ± 2.5 ppm for mobile stations." Limit $\leq \pm 2.5$ ppm

Rule RSS-139 6.4 specifies that "The frequency stability shall be sufficient to ensure that the occupied



bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.”

6.2.3 Measurement results

LTE Band 2, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-27.476	-79.748	17.963	0.015	0.042	0.010
3.87	-13.391	-78.436	22.092	0.007	0.042	0.012
4.45	-12.843	-66.688	25.376	0.007	0.035	0.013

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-7.690	-73.174	22.222	0.004	0.039	0.012
40	-15.838	-71.960	23.406	0.008	0.038	0.012
30	10.045	-67.211	20.350	0.005	0.036	0.011
20	-5.138	-80.395	12.008	0.003	0.043	0.006
10	-12.644	-80.385	23.993	0.007	0.043	0.013
0	-12.716	-75.659	21.711	0.007	0.040	0.012
-10	-13.569	-78.429	23.608	0.007	0.042	0.013
-20	-5.337	-76.882	14.456	0.003	0.041	0.008
-30	-9.993	-72.396	27.469	0.005	0.039	0.015

LTE Band 4, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-11.567	-72.116	19.781	0.007	0.042	0.011
3.87	-9.376	-63.919	30.287	0.005	0.037	0.017
4.45	-14.222	-72.708	26.240	0.008	0.042	0.015

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-6.117	-73.465	27.688	0.004	0.042	0.016
40	-4.429	-73.903	18.082	0.003	0.043	0.010
30	-11.734	-75.718	28.768	0.007	0.044	0.017
20	-6.887	-72.539	26.724	0.004	0.042	0.015
10	-10.197	-71.108	18.839	0.006	0.041	0.011
0	-14.296	-73.269	30.194	0.008	0.042	0.017
-10	-5.737	-74.626	19.830	0.003	0.043	0.011
-20	-10.991	-74.192	19.830	0.006	0.043	0.016
-30	-8.659	-72.573	23.194	0.005	0.042	0.013

LTE Band 5, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-7.263	25.075	-67.081	0.009	0.030	0.080
3.87	-9.466	22.151	-64.387	0.011	0.026	0.077
4.45	-7.118	21.970	-58.294	0.009	0.026	0.070

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-4.931	26.540	-62.733	0.006	0.032	0.075
40	-6.255	27.823	-67.935	0.007	0.033	0.081
30	-10.828	25.454	-61.490	0.013	0.030	0.074
20	-7.421	26.157	-64.725	0.009	0.031	0.077
10	-6.792	27.866	-63.180	0.008	0.033	0.076
0	-7.372	27.927	-64.271	0.009	0.033	0.077
-10	-8.792	26.421	-64.836	0.011	0.032	0.078
-20	-8.778	24.404	-58.410	0.010	0.029	0.070
-30	5.530	31.589	-61.535	0.007	0.038	0.074

LTE Band 7, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-12.106	31.397	-50.099	0.005	0.012	0.020
3.87	-9.806	25.133	-58.107	0.004	0.010	0.023
4.45	-13.316	35.959	-50.466	0.005	0.014	0.020

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-14.295	49.317	-55.960	0.006	0.019	0.022
40	6.889	14.486	-59.446	0.003	0.006	0.023
30	-13.896	15.928	-46.290	0.005	0.006	0.018
20	-14.780	28.035	-56.729	0.006	0.011	0.022
10	-12.201	13.261	-56.921	0.005	0.005	0.022
0	6.300	17.168	-38.212	0.002	0.007	0.015
-10	3.175	33.197	-63.487	0.001	0.013	0.025
-20	-22.085	24.651	-41.712	0.009	0.010	0.016
-30	-22.044	25.228	-62.577	0.009	0.010	0.025

LTE Band 12, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-9.599	-8.068	-13.833	0.014	0.011	0.020
3.87	-10.257	-8.097	-6.881	0.014	0.011	0.010
4.45	-10.772	-10.829	-11.315	0.015	0.015	0.016

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-16.007	-10.386	-11.830	0.023	0.015	0.017
40	-13.518	-9.556	-8.883	0.019	0.014	0.013
30	-11.086	-8.411	-9.713	0.016	0.012	0.014
20	-7.668	-10.471	-8.826	0.011	0.015	0.012
10	-9.284	-12.431	-10.200	0.013	0.018	0.014
0	-8.154	-9.127	-11.945	0.012	0.013	0.017
-10	-13.618	-9.713	-10.214	0.019	0.014	0.014
-20	-5.879	-10.786	-10.700	0.008	0.015	0.015
-30	-13.289	-8.755	-10.643	0.019	0.012	0.015

LTE Band 13, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-8.627	20.515	-48.212	0.011	0.026	0.062
3.87	-10.920	24.720	-50.291	0.014	0.032	0.064
4.45	-7.762	23.300	-52.019	0.010	0.030	0.067

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-6.359	17.066	-57.963	0.008	0.022	0.074
40	-8.696	20.794	-53.309	0.011	0.027	0.068
30	-9.991	21.704	-47.879	0.013	0.028	0.061
20	-10.770	19.745	-52.432	0.014	0.025	0.067
10	-8.140	22.251	-47.601	0.010	0.028	0.061
0	-13.207	26.589	-53.993	0.017	0.034	0.069
-10	-9.319	22.425	-47.157	0.012	0.029	0.060
-20	-5.872	26.045	-49.668	0.008	0.033	0.064
-30	-10.426	20.440	-50.866	0.013	0.026	0.065

LTE Band 17, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-13.468	42.087	-54.533	0.019	0.059	0.077
3.87	-10.174	35.919	-50.763	0.077	0.014	0.051
4.45	-5.644	30.793	-50.298	0.008	0.043	0.071

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-9.081	41.450	-52.773	0.013	0.058	0.074
40	-10.543	33.538	-57.418	0.015	0.047	0.081
30	-14.436	32.164	-52.613	0.020	0.045	0.074
20	-9.069	34.902	-51.008	0.013	0.049	0.072
10	-11.209	35.417	-57.065	0.016	0.050	0.080
0	-8.706	31.964	-49.100	0.012	0.045	0.069
-10	-10.121	34.361	-50.819	0.014	0.048	0.072
-20	-10.937	34.516	-47.494	0.015	0.049	0.067
-30	-10.671	34.292	-54.145	0.015	0.048	0.076

LTE Band 25, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-11.251	-80.621	13.181	0.006	0.043	0.007
3.87	-10.122	-80.953	19.320	0.005	0.043	0.010
4.45	-14.981	-82.747	25.523	0.008	0.044	0.014

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-7.118	-68.671	18.130	0.004	0.036	0.010
40	-14.507	-81.060	16.643	0.008	0.043	0.009
30	-13.483	-78.755	19.093	0.007	0.042	0.010
20	-10.504	-76.108	22.592	0.006	0.040	0.012
10	-11.711	-79.487	25.748	0.006	0.042	0.014
0	-5.349	-79.976	-11.933	0.003	0.042	0.006
-10	-14.688	-64.982	22.095	0.008	0.035	0.012
-20	5.194	-80.438	21.879	0.003	0.043	0.012
-30	-12.822	-76.636	14.000	0.007	0.041	0.007

LTE Band 26 (Part90) , 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-11.888	-15.049	-9.427	0.015	0.018	0.012
3.87	-5.865	-10.772	-9.470	0.007	0.013	0.012
4.45	-9.198	-9.427	-8.440	0.011	0.012	0.010

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-6.609	-8.269	-7.839	0.008	0.010	0.010
40	-7.896	-6.824	-9.785	0.010	0.008	0.012
30	-12.746	-8.497	-9.041	0.016	0.010	0.011
20	-9.828	-12.460	-9.584	0.012	0.015	0.012
10	-7.181	-9.284	-8.612	0.009	0.011	0.011
0	-8.683	-10.471	-12.174	0.011	0.013	0.015
-10	-9.027	-8.955	14.577	0.011	0.011	0.018
-20	-10.400	-7.482	-10.142	0.013	0.009	0.012
-30	-4.106	-10.300	-7.768	0.005	0.013	0.009

LTE Band 38, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	9.306	-20.900	41.927	0.004	0.008	0.016
3.87	-13.741	-33.557	45.224	0.005	0.013	0.017
4.45	-18.213	-32.400	42.632	0.007	0.012	0.016

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	4.188	-31.357	45.487	0.002	0.012	0.018
40	-9.676	-34.660	39.157	0.004	0.013	0.015
30	-10.005	-29.995	41.294	0.004	0.012	0.016
20	-11.815	-27.422	-41.272	0.005	0.011	0.016
10	-7.397	-36.303	-43.428	-13.759	-28.102	44.995
0	-13.759	-28.102	44.995	0.005	0.011	0.017
-10	-11.616	-25.422	40.048	0.004	0.010	0.015
-20	-5.838	-26.535	40.493	0.002	0.010	0.016
-30	-6.355	-21.834	40.099	0.002	0.008	0.015

LTE Band 41, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	10.811	-23.266	37.372	0.004	0.009	0.014
3.87	-4.500	-30.430	39.790	0.002	0.012	0.015
4.45	-21.710	-26.690	-38.573	0.008	0.010	0.015

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-18.567	-28.628	38.069	0.007	0.011	0.015
40	-13.545	-20.268	38.907	0.005	0.008	0.015
30	-10.926	-29.065	42.864	0.004	0.011	0.017
20	-14.890	-23.072	37.062	0.006	0.009	0.014
10	-13.367	-38.642	-38.489	0.005	0.015	0.015
0	-10.800	-30.768	-34.940	0.004	0.012	0.013
-10	-12.592	-31.568	-37.467	0.005	0.012	0.014
-20	-11.709	-22.385	42.083	0.005	0.009	0.016
-30	-12.192	-38.630	-39.731	0.005	0.015	0.015

LTE Band 66, 1.4MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-15.599	-73.386	20.346	0.009	0.042	0.012
3.87	-8.056	-74.249	23.813	0.005	0.043	0.014
4.45	-5.731	-73.743	23.111	0.003	0.042	0.013

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-10.778	-76.834	20.967	0.006	0.044	0.012
40	-15.319	-72.943	23.218	0.009	0.042	0.013
30	17.630	-70.866	25.558	0.010	0.041	0.015
20	-9.196	-77.675	22.774	0.005	0.045	0.013
10	-5.497	-72.377	26.199	0.003	0.041	0.015
0	-9.906	-75.813	18.534	0.006	0.043	0.011
-10	-7.039	-72.219	25.596	0.004	0.041	0.015
-20	-9.754	-73.778	20.896	0.006	0.042	0.012
-30	-7.680	-71.100	25.715	0.004	0.041	0.015



LTE Band 71, 5MHz bandwidth (worst case of all bandwidths)

Frequency Error vs Voltage

Voltage (V)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
3.45	-9.548	21.015	-49.074	0.014	0.031	0.072
3.87	-8.266	20.296	-49.495	0.012	0.030	0.073
4.45	-6.722	22.604	-47.065	0.010	0.033	0.069

Frequency Error vs Temperature

Temperature (°C)	Frequency error (Hz)			Frequency error (ppm)		
	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
50	-14.435	19.289	-52.122	0.021	0.028	0.077
40	-8.532	18.221	-46.158	0.013	0.027	0.068
30	-5.793	18.622	-51.463	0.009	0.027	0.076
20	-13.192	23.025	-53.496	0.019	0.034	0.079
10	-9.050	18.728	-52.288	0.013	0.028	0.077
0	-9.318	22.309	-52.085	0.014	0.033	0.077
-10	-13.088	21.888	-51.161	0.019	0.032	0.075
-20	-11.720	22.548	-48.582	0.017	0.033	0.071
-30	-6.156	19.662	-52.804	0.009	0.029	0.078

6.3. Output Power

6.3.1. 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

6.3.2. Conducted

6.3.2.1. 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.

6.3.2.2 Measurement result

LTE band 2

LTE 2			Output power (dBm)				
Modulation	RB	RB Offset	Tune up	1.4MHz			
				18607	18900	19193	
QPSK	1	Low	21	20.03	19.82	19.41	
		Middle		20.09	20.00	19.55	
		High		20.00	19.74	19.43	
	50%	Low	21	20.07	19.81	19.54	
		Middle		20.11	19.98	19.64	
		High		20.11	19.78	19.56	
	100%	/	20	19.08	18.79	18.60	
	16QAM	1	Low	20	19.22	19.06	18.69
			Middle		19.24	19.00	18.82
High			19.30		18.92	18.64	
5		Low	20	19.18	18.88	18.55	
		Middle		19.15	18.95	18.58	
		High		19.10	18.93	18.49	
100%		/	19	18.17	17.85	17.58	
64QAM		1	Low	19.5	17.68	18.14	17.87
			Middle		17.89	18.33	18.03
	High		17.69		18.12	17.82	
	5	Low	19.5	17.56	18.02	18.04	
		Middle		17.58	18.04	18.04	
		High		17.60	18.05	18.03	
	100%	/	18.5	16.46	16.92	17.13	
	Modulation	RB	RB Offset	Tune up	3MHz		
	QPSK	1	Low	21	18615	18900	19185
				20.08	19.87	19.51	



		Middle		20.14	19.94	19.82	
		High		20.09	19.84	19.54	
		Low		19.08	18.87	18.74	
	50%	Middle	20	19.08	18.88	18.69	
		High		19.03	18.86	18.67	
		/		20	19.07	18.91	18.60
16QAM	1	Low	20	19.11	19.28	18.83	
		Middle		19.27	19.49	18.91	
		High		19.26	19.13	18.80	
	50%	Low	20	18.12	17.96	17.63	
		Middle		18.19	17.91	17.73	
		High		18.11	17.96	17.62	
	100%	/	19	18.03	17.88	17.62	
	64QAM	1	Low	19.5	18.89	19.06	19.11
			Middle		19.01	19.04	18.98
High			18.51		19.08	18.91	
50%		Low	19	18.08	18.03	18.11	
		Middle		18.12	18.06	18.02	
		High		18.11	18.05	17.98	
100%		/	19	17.87	17.91	17.88	
Modulation		RB	RB Offset	Tune up	5MHz		
					18625	18900	19175
QPSK	1	Low	21	20.22	20.02	19.68	
		Middle		20.28	20.12	19.93	
		High		20.07	19.86	19.61	
	50%	Low	20	19.11	19.05	18.68	
		Middle		19.36	19.07	18.80	
		High		19.16	18.97	18.67	
	100%	/	20	19.17	19.03	18.77	
16QAM	1	Low	20	19.40	19.18	19.02	
		Middle		19.59	19.42	19.30	
		High		19.37	19.06	18.91	
	50%	Low	20	18.07	17.92	17.66	
		Middle		18.18	18.03	17.74	
		High		18.22	17.96	17.68	
	100%	/	19	18.22	17.95	17.73	
64QAM	1	Low	19.5	18.37	18.70	18.69	
		Middle		18.52	18.81	18.81	
		High		18.47	18.72	18.74	
	50%	Low	19	17.42	17.80	17.89	
		Middle		17.50	17.77	17.81	
		High		17.52	17.80	17.81	



	100%	/	19	17.55	17.88	17.91
Modulation	RB	RB Offset	Tune up	10MHz		
				18650	18900	19150
QPSK	1	Low	21	20.30	20.15	19.86
		Middle		20.44	20.24	20.02
		High		20.23	20.00	19.74
	50%	Low	20	19.17	19.18	18.91
		Middle		19.33	19.11	18.91
		High		19.24	19.06	18.81
	100%	/	20	19.21	19.13	18.81
16QAM	1	Low	20	19.66	19.44	19.21
		Middle		19.80	19.49	19.18
		High		19.61	19.25	19.04
	50%	Low	20	18.14	18.13	17.82
		Middle		18.32	18.05	17.82
		High		18.28	18.11	17.78
	100%	/	19	18.20	18.07	17.82
64QAM	1	Low	19.5	18.60	19.03	18.85
		Middle		18.83	19.24	19.02
		High		18.70	19.08	18.92
	50%	Low	19	17.61	17.99	18.07
		Middle		17.78	17.98	17.98
		High		17.81	17.87	17.96
	100%	/	19	17.68	17.91	17.93
Modulation	RB	RB Offset	Tune up	15MHz		
				18675	18900	19125
QPSK	1	Low	21	20.29	20.13	19.89
		Middle		20.24	20.11	19.84
		High		20.08	19.89	19.68
	50%	Low	20	19.26	19.17	18.97
		Middle		19.32	19.17	18.93
		High		19.23	19.10	18.80
	100%	/	20	19.28	19.10	18.92
16QAM	1	Low	20	19.50	19.32	19.17
		Middle		19.51	19.24	19.02
		High		19.29	19.09	19.05
	50%	Low	20	18.19	18.08	17.96
		Middle		18.28	18.08	17.91
		High		18.18	18.00	17.87
	100%	/	19	18.12	18.09	17.89
64QAM	1	Low	19.5	18.46	18.87	18.75
		Middle		18.70	19.02	18.88



		High		18.66	18.93	18.84
	50%	Low	19	18.45	18.86	18.75
		Middle		18.55	18.97	18.88
		High		18.67	18.96	18.85
	100%	/	19	17.66	17.88	17.88
Modulation	RB	RB Offset	Tune up	20MHz		
				18700	18900	19100
QPSK	1	Low	21	20.10	20.00	19.77
		Middle		20.22	20.17	19.96
		High		19.82	19.65	19.54
	50%	Low	20	19.21	19.16	19.11
		Middle		19.28	19.14	18.97
		High		19.13	19.05	18.88
100%	/	20	19.17	19.11	19.01	
16QAM	1	Low	20	19.57	19.18	18.97
		Middle		19.72	19.33	19.13
		High		19.34	18.88	18.82
	50%	Low	20	18.23	18.21	18.08
		Middle		18.27	18.14	17.90
		High		18.11	18.08	17.86
100%	/	19	18.18	18.15	17.98	
64QAM	1	Low	19.5	18.51	18.65	18.83
		Middle		19.05	19.10	19.03
		High		18.77	18.73	18.93
	50%	Low	19	17.57	17.97	17.76
		Middle		17.62	17.93	17.81
		High		17.76	17.90	17.65
100%	/	19	17.65	17.96	17.64	

LTE band 4

LTE 4			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				19957	20175	20393
QPSK	1	Low	21.5	20.61	20.67	20.67
		Middle		20.78	20.71	20.80
		High		20.66	20.59	20.69
	50%	Low	21.5	20.75	20.69	20.72
		Middle		20.79	20.73	20.79
		High		20.80	20.78	20.78
100%	/	21	19.76	19.70	19.76	
16QAM	1	Low	21	20.04	20.04	19.96
		Middle		20.21	20.09	19.96
		High		20.04	20.22	19.90

	5	Low	20.5	19.84	19.78	19.67
		Middle		19.87	19.74	19.74
		High		19.78	19.78	19.65
	100%	/	20.5	18.91	18.87	18.85
64QAM	1	Low	19.5	18.54	18.56	18.12
		Middle		18.73	18.77	18.31
		High		18.54	18.57	18.07
	5	Low	19.5	18.53	18.50	18.35
		Middle		18.52	18.51	18.35
		High		18.51	18.51	18.34
	100%	/	18.5	17.29	17.26	17.33
Modulation	RB	RB Offset	Tune up	3MHz		
				19965	20175	20385
QPSK	1	Low	21.5	20.71	20.70	20.79
		Middle		20.87	20.90	20.79
		High		20.75	20.77	20.80
	50%	Low	21	19.86	19.81	19.77
		Middle		19.87	19.86	19.84
		High		19.75	19.81	19.88
	100%	/	21	19.84	19.82	19.82
16QAM	1	Low	21	20.09	20.22	20.02
		Middle		20.14	20.19	19.99
		High		20.01	20.14	20.04
	50%	Low	20.5	18.86	18.98	18.80
		Middle		18.90	18.93	18.89
		High		18.93	18.93	18.82
	100%	/	20.5	18.71	18.76	18.83
64QAM	1	Low	19.5	18.43	18.51	18.64
		Middle		18.41	18.55	18.36
		High		18.38	18.49	18.07
	50%	Low	18.5	17.36	17.44	17.57
		Middle		17.35	17.43	17.56
		High		17.34	17.42	17.55
	100%	/	18.5	17.38	17.29	17.19
Modulation	RB	RB Offset	Tune up	5MHz		
				19975	20175	20375
QPSK	1	Low	21.5	20.67	20.72	20.64
		Middle		20.91	20.79	20.91
		High		20.64	20.69	20.64
	50%	Low	21	19.78	19.80	19.82
		Middle		19.87	19.88	19.84
		High		19.80	19.86	19.77



	100%	/	21	19.78	19.81	19.85
16QAM	1	Low	21	19.88	20.11	19.98
		Middle		20.19	20.53	19.84
		High		20.04	20.08	19.73
	50%	Low	20.5	18.91	18.77	18.80
		Middle		18.82	18.91	18.89
		High		18.74	18.80	18.70
	100%	/	20.5	18.84	18.85	18.78
64QAM	1	Low	19.5	18.21	18.20	18.06
		Middle		18.33	18.30	18.16
		High		18.20	18.12	18.03
	50%	Low	18.5	17.26	17.19	17.11
		Middle		17.26	17.20	17.07
		High		17.25	17.20	17.03
	100%	/	18.5	17.35	17.25	17.17
Modulation	RB	RB Offset	Tune up	10MHz		
				20000	20175	20350
QPSK	1	Low	21.5	20.79	20.83	20.89
		Middle		20.92	20.89	20.82
		High		20.74	20.67	20.72
	50%	Low	21	19.84	19.81	19.96
		Middle		19.90	19.89	19.89
		High		19.85	19.90	19.81
	100%	/	21	19.83	19.88	19.89
16QAM	1	Low	21	20.01	20.21	20.05
		Middle		20.14	20.15	19.96
		High		19.94	20.06	20.08
	50%	Low	20.5	18.85	18.85	18.88
		Middle		18.81	18.86	18.81
		High		18.83	18.83	18.84
	100%	/	20.5	18.89	18.79	18.94
64QAM	1	Low	19.5	18.39	18.50	18.20
		Middle		18.53	18.72	18.39
		High		18.35	18.49	18.17
	50%	Low	18.5	17.46	17.38	17.27
		Middle		17.44	17.38	17.27
		High		17.41	17.37	17.27
	100%	/	18.5	17.40	17.34	17.22
Modulation	RB	RB Offset	Tune up	15MHz		
				20025	20175	20325
QPSK	1	Low	21.5	20.70	20.89	20.83
		Middle		20.80	20.74	20.88

		High		20.67	20.63	20.69
	50%	Low	21	19.97	19.92	19.93
		Middle		19.98	19.91	19.97
		High		19.93	19.92	19.83
	100%	/	21	19.87	19.88	19.88
16QAM	1	Low	21	20.00	20.40	20.12
		Middle		20.09	20.16	20.12
		High		19.95	20.03	19.95
	50%	Low	20.5	18.87	18.85	18.89
		Middle		18.87	18.91	18.91
		High		18.82	18.91	18.83
100%	/	20.5	18.85	18.86	18.88	
64QAM	1	Low	19.5	18.36	18.48	18.10
		Middle		18.40	18.11	18.16
		High		18.27	18.40	18.01
	50%	Low	18.5	18.34	18.15	18.27
		Middle		18.31	18.10	18.23
		High		18.28	18.05	18.19
100%	/	18.5	17.35	17.02	17.29	
Modulation	RB	RB Offset	Tune up	20MHz		
				20050	20175	20300
QPSK	1	Low	21.5	20.61	20.58	20.68
		Middle		20.84	20.82	20.87
		High		20.50	20.52	20.49
	50%	Low	21	19.89	19.88	19.90
		Middle		19.82	19.85	19.91
		High		19.80	19.88	19.77
100%	/	21	19.86	19.86	19.80	
16QAM	1	Low	21	19.84	20.08	20.24
		Middle		20.08	20.21	20.36
		High		19.74	19.91	19.96
	50%	Low	20.5	18.93	18.87	18.84
		Middle		18.95	18.85	18.86
		High		18.86	18.87	18.81
100%	/	20.5	18.83	18.87	18.85	
64QAM	1	Low	19.5	18.41	18.03	18.32
		Middle		18.68	18.39	18.68
		High		18.27	17.92	18.29
	50%	Low	18.5	17.39	17.12	17.35
		Middle		17.37	17.12	17.36
		High		17.34	17.12	17.36
100%	/	18.5	17.33	17.14	17.34	



LTE band 5

LTE 5			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				20407	20525	20643
QPSK	1	Low	23	21.94	21.70	21.86
		Middle		21.95	21.91	21.92
		High		21.72	21.74	21.84
	50%	Low	23	21.99	21.91	21.94
		Middle		22.09	21.91	22.09
		High		22.08	21.88	21.89
100%	/	22	21.09	20.94	20.95	
16QAM	1	Low	22	21.06	21.18	21.09
		Middle		21.10	21.32	21.22
		High		21.06	21.13	21.04
	5	Low	22	21.00	20.92	20.98
		Middle		21.16	20.96	21.01
		High		21.12	20.90	20.94
100%	/	21	20.22	20.01	20.00	
64QAM	1	Low	21	19.82	19.71	19.51
		Middle		20.05	19.93	19.78
		High		19.82	19.77	19.50
	5	Low	21	19.82	19.67	19.79
		Middle		19.83	19.67	19.75
		High		19.83	19.66	19.71
100%	/	20	18.62	18.50	18.76	
Modulation	RB	RB Offset	Tune up	3MHz		
				20415	20525	20635
QPSK	1	Low	23	22.03	21.94	22.06
		Middle		22.16	21.90	22.00
		High		22.03	21.94	22.00
	50%	Low	22	21.12	21.11	21.02
		Middle		21.17	21.06	21.21
		High		21.15	21.07	21.13
100%	/	22	21.11	21.09	21.08	
16QAM	1	Low	22	21.57	21.44	21.37
		Middle		21.74	21.54	21.47
		High		21.49	21.43	21.31
	50%	Low	21	20.16	20.06	20.18
		Middle		20.19	20.11	20.14
		High		20.18	20.04	20.11
100%	/	21	20.12	20.07	20.14	
64QAM	1	Low	21	19.70	19.68	19.66



		Middle		19.68	19.65	19.62
		High		19.67	19.69	19.58
		Low		18.63	18.61	18.59
	50%	Middle	20	18.63	18.62	18.59
		High		18.64	18.62	18.60
		/		20	18.48	18.46
100%						
Modulation	RB	RB Offset	Tune up		5MHz	
QPSK	1	Low	23	20425	20525	20625
		Middle		21.84	21.80	21.93
		High		22.19	22.00	22.04
	50%	Low	22	21.82	21.82	21.94
		Middle		21.10	20.93	21.16
		High		21.09	21.06	21.06
	100%	/	22	21.03	20.96	21.05
				21.06	20.97	21.05
16QAM	1	Low	22	21.24	21.17	21.07
		Middle		21.30	21.47	21.21
		High		21.19	21.15	21.03
	50%	Low	21	20.11	19.96	20.07
		Middle		20.11	20.08	20.15
		High		20.04	20.05	20.05
	100%	/	21	20.14	20.01	20.09
64QAM	1	Low	21	19.40	19.33	19.41
		Middle		19.49	19.45	19.54
		High		19.35	19.31	19.40
	50%	Low	20	18.51	18.36	18.50
		Middle		18.46	18.41	18.52
		High		18.41	18.45	18.53
	100%	/	20	18.56	18.47	18.63
Modulation	RB	RB Offset	Tune up	10MHz		
QPSK	1	Low	23	20450	20525	20600
		Middle		21.57	21.62	21.45
		High		21.77	21.60	21.67
	50%	Low	22	21.51	21.52	21.53
		Middle		21.17	20.52	20.78
		High		20.93	20.74	20.69
	100%	/	22	20.69	20.60	20.82
				20.70	20.58	20.72
16QAM	1	Low	22	21.21	21.39	20.85
		Middle		21.21	21.18	21.04
		High		20.74	21.26	21.10
	50%	Low	21	19.63	19.65	20.09



		Middle		19.56	19.83	19.64
		High		19.90	20.11	19.76
	100%	/	21	19.62	19.55	20.02
64QAM	1	Low	21	19.51	19.74	19.54
		Middle		19.70	19.82	19.72
		High		19.62	19.73	19.57
	50%	Low	20	18.72	18.56	18.74
		Middle		18.67	18.59	18.75
		High		18.61	18.62	18.75
	100%	/	20	18.64	18.59	18.69

LTE band 7

LTE 7			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				20775	21100	21425
QPSK	1	Low	21.5	20.45	20.44	20.50
		Middle		20.79	20.74	20.93
		High		20.44	20.51	20.61
	50%	Low	20.5	19.56	19.57	19.74
		Middle		19.66	19.68	19.81
		High		19.70	19.63	19.69
100%	/	20.5	19.64	19.66	19.73	
16QAM	1	Low	20.5	19.90	19.61	19.66
		Middle		20.18	20.08	20.20
		High		20.07	19.75	19.93
	5	Low	19.5	18.52	18.62	18.76
		Middle		18.67	18.75	18.82
		High		18.72	18.64	18.75
100%	/	19.5	18.68	18.60	18.71	
64QAM	1	Low	19.5	17.72	16.74	16.87
		Middle		17.68	16.72	16.98
		High		17.74	16.58	16.80
	5	Low	18.5	16.66	15.76	15.84
		Middle		16.72	15.67	15.81
		High		16.77	15.58	15.77
100%	/	18.5	16.80	15.75	15.90	
Modulation	RB	RB Offset	Tune up	10MHz		
				20800	21100	21400
QPSK	1	Low	21.5	20.53	20.58	20.61
		Middle		20.65	20.64	20.76
		High		20.54	20.66	20.67
	50%	Low	20.5	19.54	19.68	19.81
		Middle		19.69	19.68	19.80



		High		19.72	19.70	19.74
	100%	/	20.5	19.70	19.66	19.80
16QAM	1	Low	20.5	19.92	19.84	19.98
		Middle		20.09	19.98	20.12
		High		19.94	19.67	19.78
	50%	Low	19.5	18.53	18.66	18.84
		Middle		18.66	18.66	18.76
		High		18.80	18.76	18.74
100%	/	19.5	18.65	18.63	18.71	
64QAM	1	Low	19.5	17.68	16.96	16.66
		Middle		17.67	17.13	16.98
		High		17.60	17.00	16.93
	50%	Low	18.5	16.50	15.89	15.92
		Middle		16.55	15.88	15.83
		High		16.59	15.86	15.73
100%	/	18.5	16.59	15.90	15.84	
Modulation	RB	RB Offset	Tune up	15MHz		
				20825	21100	21375
QPSK	1	Low	21.5	20.42	20.47	20.39
		Middle		20.62	20.58	20.63
		High		20.48	20.44	20.52
	50%	Low	20.5	19.47	19.62	19.76
		Middle		19.69	19.65	19.72
		High		19.63	19.66	19.75
100%	/	20.5	19.60	19.67	19.68	
16QAM	1	Low	20.5	19.70	19.63	19.56
		Middle		20.03	19.75	19.75
		High		19.96	19.95	19.71
	50%	Low	19.5	18.51	18.64	18.72
		Middle		18.63	18.72	18.68
		High		18.58	18.69	18.69
100%	/	19.5	18.62	18.71	18.70	
64QAM	1	Low	19.5	17.46	16.98	16.89
		Middle		17.47	17.00	16.87
		High		17.39	16.94	16.76
	50%	Low	18.5	17.12	16.90	16.87
		Middle		17.08	16.87	16.87
		High		17.04	16.84	16.87
100%	/	18.5	16.22	15.81	15.80	
Modulation	RB	RB Offset	Tune up	20MHz		
				20850	21100	21350
QPSK	1	Low	21.5	20.23	20.23	20.24

		Middle		20.69	20.65	20.74	
		High		20.42	20.28	20.45	
		Low		19.40	19.59	19.68	
	50%	20.5	Middle	19.64	19.58	19.70	
			High	19.63	19.65	19.54	
			/	19.53	19.59	19.65	
100%		20.5	19.53	19.59	19.65		
16QAM	1	Low	20.5	19.54	19.63	19.68	
		Middle		19.93	20.08	20.07	
		High		19.52	19.49	19.83	
	50%	19.5	Low	18.42	18.65	18.69	
			Middle	18.65	18.68	18.75	
			High	18.66	18.67	18.59	
	100%		19.5	18.52	18.65	18.64	
	64QAM	1	Low	19.5	17.38	16.83	16.80
			Middle		17.70	17.16	17.23
High			17.07		16.75	16.77	
50%		18.5	Low	16.23	15.75	15.89	
			Middle	16.26	15.76	15.83	
			High	16.29	15.76	15.77	
100%			18.5	16.00	15.58	15.88	

LTE band 12

LTE 12			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				23017	23095	23173
QPSK	1	Low	23.5	22.78	22.77	22.71
		Middle		22.91	22.94	22.88
		High		22.80	22.76	22.79
	50%	23.5	Low	22.91	22.81	22.83
			Middle	22.92	22.92	22.96
			High	22.87	22.97	22.87
100%	/	22.5	21.88	21.89	21.87	
16QAM	1	Low	22.5	22.06	22.18	21.83
		Middle		22.28	22.29	22.01
		High		22.14	22.24	22.04
	5	22.5	Low	21.84	21.81	21.88
			Middle	21.90	21.88	21.97
			High	21.92	21.76	21.94
100%	/	21.5	20.93	20.92	20.97	
64QAM	1	Low	21.5	20.38	20.30	19.86
		Middle		20.61	20.48	20.02
		High		20.45	20.30	19.79



	5	Low	21.5	20.34	20.22	20.08
		Middle		20.39	20.23	20.06
		High		20.43	20.24	20.04
	100%	/	20.5	19.22	19.10	19.13
Modulation	RB	RB Offset	Tune up	3MHz		
				23025	23095	23165
QPSK	1	Low	23.5	22.84	22.89	22.89
		Middle		23.03	23.02	23.09
		High		22.88	22.94	22.93
	50%	Low	22.5	21.82	21.91	21.85
		Middle		21.86	21.93	21.95
		High		21.94	21.93	21.90
	100%	/	22.5	21.92	21.88	21.86
16QAM	1	Low	22.5	22.24	22.18	22.06
		Middle		22.37	22.35	22.38
		High		22.21	21.99	22.18
	50%	Low	21.5	21.04	20.89	21.06
		Middle		20.96	20.97	20.98
		High		20.99	20.89	20.92
	100%	/	21.5	20.83	20.86	20.98
64QAM	1	Low	21.5	20.24	20.22	20.20
		Middle		20.23	20.25	20.06
		High		20.23	20.20	19.92
	50%	Low	20.5	19.25	19.23	19.21
		Middle		19.23	19.22	19.19
		High		19.22	19.20	19.18
	100%	/	20.5	19.11	19.09	19.07
Modulation	RB	RB Offset	Tune up	5MHz		
				23035	23095	23155
QPSK	1	Low	23.5	22.80	22.81	22.79
		Middle		23.04	23.29	23.03
		High		22.81	22.83	22.82
	50%	Low	22.5	21.82	21.89	22.05
		Middle		21.95	21.95	21.93
		High		21.89	21.92	21.92
	100%	/	22.5	21.84	21.96	21.90
16QAM	1	Low	22.5	21.84	21.99	22.07
		Middle		22.01	22.23	22.24
		High		22.17	22.07	22.08
	50%	Low	21.5	20.85	20.83	20.97
		Middle		21.01	20.92	20.96
		High		20.95	20.86	20.84



	100%	/	21.5	20.83	20.92	20.86
64QAM	1	Low	21.5	19.88	19.88	19.74
		Middle		19.98	20.00	19.75
		High		19.91	19.89	19.59
	50%	Low	20.5	19.05	19.01	18.85
		Middle		19.09	18.97	18.83
		High		19.12	18.92	18.81
	100%	/	20.5	19.12	19.02	18.91
Modulation	RB	RB Offset	Tune up	10MHz		
				23060	23095	23130
QPSK	1	Low	23.5	22.88	22.85	22.91
		Middle		23.04	23.03	22.96
		High		22.97	22.95	22.94
	50%	Low	22.5	21.95	21.95	22.00
		Middle		22.01	21.94	22.01
		High		22.09	21.90	21.96
	100%	/	22.5	22.00	21.91	22.01
16QAM	1	Low	22.5	22.16	21.91	22.11
		Middle		22.33	22.08	22.14
		High		22.28	22.21	22.19
	50%	Low	21.5	20.98	20.90	20.89
		Middle		21.02	20.98	20.90
		High		21.15	20.91	20.88
	100%	/	21.5	21.02	20.91	20.91
64QAM	1	Low	21.5	20.08	20.31	19.99
		Middle		20.16	20.39	20.06
		High		20.03	20.14	19.81
	50%	Low	20.5	19.14	19.11	19.28
		Middle		19.19	19.06	19.17
		High		19.23	19.01	19.05
	100%	/	20.5	19.15	19.11	19.15

LTE Band 13

LTE 13				Output power (dBm)		
Modulation	RB	RB Offset	Tune up	5MHz		
				23205	23230	23255
QPSK	1	Low	23	22.33	22.39	22.30
		Middle		22.63	22.68	22.51
		High		22.40	22.36	22.36
	50%	Low	22.5	21.49	21.45	21.48
		Middle		21.56	21.54	21.56
		High		21.59	21.50	21.49



	100%	/	22.5	21.57	21.49	21.51
16QAM	1	Low	22.5	21.68	21.64	21.61
		Middle		22.19	22.00	22.00
		High		21.67	21.57	21.65
	50%	Low	21	20.43	20.50	20.52
		Middle		20.56	20.59	20.54
		High		20.60	20.45	20.50
	100%	/	21	20.57	20.51	20.48
64QAM	1	Low	21	19.33	19.33	19.42
		Middle		19.49	19.35	19.43
		High		19.35	19.33	19.49
	50%	Low	20	18.39	18.32	18.48
		Middle		18.42	18.34	18.43
		High		18.45	18.36	18.37
	100%	/	20	18.53	18.45	18.50
Modulation	RB	RB Offset	Tune up	10MHz		
				23230	23230	23230
QPSK	1	Low	23	22.39	22.39	22.39
		Middle		22.54	22.54	22.54
		High		22.46	22.46	22.46
	50%	Low	22.5	21.49	21.49	21.49
		Middle		21.55	21.55	21.55
		High		21.51	21.51	21.51
	100%	/	22.5	21.56	21.56	21.56
16QAM	1	Low	22.5	21.68	21.68	21.68
		Middle		21.87	21.87	21.87
		High		21.79	21.79	21.79
	50%	Low	21	20.50	20.50	20.50
		Middle		20.56	20.56	20.56
		High		20.58	20.58	20.58
	100%	/	21	20.52	20.52	20.52
64QAM	1	Low	21	19.67	19.63	19.46
		Middle		19.85	19.64	19.53
		High		19.64	19.61	19.48
	50%	Low	20	18.48	18.42	18.30
		Middle		18.50	18.49	18.38
		High		18.51	18.55	18.45
	100%	/	20	18.51	18.51	18.45

LTE 17			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				23755	23790	23825
QPSK	1	Low	23.5	22.90	22.86	22.88
		Middle		23.44	23.20	23.28
		High		22.97	22.88	22.94
	50%	Low	22.5	22.07	22.05	22.06
		Middle		22.11	22.08	22.11
		High		22.05	21.97	22.00
	100%	/	22.5	22.05	21.91	22.06
16QAM	1	Low	22.5	22.19	22.14	22.08
		Middle		22.49	22.27	22.45
		High		22.27	22.17	22.15
	5	Low	21.5	21.01	21.08	21.08
		Middle		21.10	21.07	21.13
		High		21.08	20.99	21.04
	100%	/	21.5	21.06	21.02	21.06
64QAM	1	Low	21.5	20.22	19.93	19.99
		Middle		20.27	20.00	20.04
		High		20.14	19.84	19.90
	5	Low	20.5	19.16	19.16	18.99
		Middle		19.12	19.07	18.99
		High		19.08	18.97	18.98
	100%	/	20.5	19.16	19.10	19.05
Modulation	RB	RB Offset	Tune up	10MHz		
				23780	23790	23800
QPSK	1	Low	23.5	22.96	23.00	23.01
		Middle		23.16	23.22	23.08
		High		23.05	23.03	23.03
	50%	Low	22.5	21.99	22.11	22.08
		Middle		22.09	22.12	22.06
		High		22.00	22.01	22.01
	100%	/	22.5	21.99	22.09	22.06
16QAM	1	Low	22.5	22.39	22.33	22.30
		Middle		22.45	22.46	22.34
		High		22.22	22.19	22.31
	50%	Low	21.5	21.08	21.00	21.05
		Middle		21.07	21.07	21.07
		High		21.03	20.97	21.08
	100%	/	21.5	21.09	21.03	21.00
64QAM	1	Low	21.5	20.15	20.30	20.06



		Middle		20.27	20.44	20.18
		High		20.02	20.10	19.88
		Low		19.29	19.37	19.39
	50%	Middle	20.5	19.22	19.23	19.28
		High		19.15	19.09	19.17
	100%	/	20.5	19.17	19.20	19.26

LTE band 25

LTE 25			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				26047	26365	26683
QPSK	1	Low	21	19.97	19.68	19.39
		Middle		20.08	19.89	19.49
		High		19.93	19.67	19.37
	50%	Low	21	20.08	19.78	19.51
		Middle		20.07	19.89	19.62
		High		19.96	19.79	19.39
100%	/	20	19.04	18.73	18.47	
16QAM	1	Low	20	19.35	18.96	18.54
		Middle		19.42	19.08	18.64
		High		19.36	19.00	18.55
	50%	Low	20	19.08	18.77	18.52
		Middle		19.19	18.92	18.55
		High		19.10	18.70	18.51
100%	/	19	18.15	17.82	17.52	
64QAM	1	Low	19.5	18.80	19.09	18.35
		Middle		18.90	19.28	18.54
		High		18.83	19.08	18.32
	5	Low	19.5	18.52	19.01	18.59
		Middle		18.57	19.00	18.58
		High		18.61	18.98	18.56
100%	/	18.5	17.57	17.87	17.64	
Modulation	RB	RB Offset	Tune up	3MHz		
				26055	26365	26675
QPSK	1	Low	21	19.97	19.76	19.38
		Middle		20.30	20.10	19.52
		High		19.92	19.70	19.37
	50%	Low	20	18.99	18.75	18.46
		Middle		19.02	18.73	18.45
		High		18.96	18.69	18.40
100%	/	20	18.94	18.72	18.37	
16QAM	1	Low	20	19.17	19.04	18.75
		Middle		19.52	19.12	18.93

	50%	High	20	19.12	18.95	18.55
		Low		17.99	17.76	17.45
		Middle		18.06	17.81	17.46
	100%	/	19	17.99	17.82	17.40
64QAM	1	Low	19.5	18.01	17.77	17.42
		Middle		19.01	18.99	18.97
		High		18.78	18.99	18.69
	50%	Low	19	18.55	19.00	18.41
		Middle		17.94	17.92	17.90
		High		17.97	17.95	17.93
	100%	/	19	18.00	17.98	17.96
Modulation	RB	RB Offset	Tune up	5MHz		
				26065	26365	26665
QPSK	1	Low	21	19.88	19.63	19.33
		Middle		20.25	19.91	19.45
		High		19.81	19.53	19.25
	50%	Low	20	18.88	18.75	18.50
		Middle		19.03	18.78	18.54
		High		18.97	18.69	18.29
	100%	/	20	18.97	18.75	18.40
16QAM	1	Low	20	19.12	18.97	18.58
		Middle		19.35	19.26	18.81
		High		19.02	18.82	18.37
	50%	Low	20	17.87	17.72	17.45
		Middle		18.00	17.78	17.50
		High		17.94	17.69	17.22
	100%	/	19	18.01	17.70	17.40
64QAM	1	Low	19.5	18.37	18.67	18.20
		Middle		18.47	18.76	18.32
		High		18.34	18.67	18.24
	50%	Low	19	17.34	17.74	17.34
		Middle		17.40	17.74	17.32
		High		17.46	17.73	17.29
	100%	/	19	17.50	17.78	17.39
Modulation	RB	RB Offset	Tune up	10MHz		
				26090	26365	26640
QPSK	1	Low	21	19.98	19.80	19.48
		Middle		20.00	19.86	19.59
		High		19.89	19.72	19.41
	50%	Low	20	18.83	18.82	18.51
		Middle		19.04	18.80	18.56



		High		19.00	18.74	18.29
	100%	/	20	18.95	18.73	18.46
16QAM	1	Low	20	19.35	19.09	18.83
		Middle		19.41	19.10	18.63
		High		19.10	18.81	18.74
	50%	Low	20	17.87	17.79	17.53
		Middle		18.04	17.79	17.47
		High		17.99	17.73	17.32
100%	/	19	17.94	17.74	17.44	
64QAM	1	Low	19.5	18.57	18.95	18.36
		Middle		18.73	19.18	18.55
		High		18.53	18.96	18.34
	50%	Low	19	17.53	17.85	17.57
		Middle		17.61	17.86	17.52
		High		17.69	17.87	17.46
100%	/	19	17.57	17.89	17.47	
Modulation	RB	RB Offset	Tune up	15MHz		
				26115	26365	26615
QPSK	1	Low	21	19.98	19.80	19.48
		Middle		19.98	19.74	19.50
		High		19.76	19.50	19.30
	50%	Low	20	18.94	18.87	18.54
		Middle		19.05	18.81	18.54
		High		18.87	18.78	18.42
100%	/	20	18.93	18.81	18.54	
16QAM	1	Low	20	19.29	19.12	18.55
		Middle		19.29	19.08	18.63
		High		19.12	18.76	18.50
	50%	Low	20	17.93	17.81	17.56
		Middle		17.96	17.80	17.52
		High		17.91	17.65	17.34
100%	/	19	17.90	17.73	17.46	
64QAM	1	Low	19.5	18.50	18.88	18.29
		Middle		18.63	19.06	18.52
		High		18.58	18.93	18.34
	50%	Low	19	18.50	18.91	18.46
		Middle		18.56	18.93	18.40
		High		18.61	18.94	18.34
100%	/	19	17.58	17.90	17.45	
Modulation	RB	RB Offset	Tune up	20MHz		
				26140	26365	26590
QPSK	1	Low	21	19.85	19.72	19.37

		Middle	20	20.07	19.88	19.59
		High		19.57	19.35	19.17
		Low		18.99	18.85	18.65
	50%	Middle	20	18.81	18.80	18.58
		High		19.23	18.66	18.45
	100%	/	20	18.89	18.75	18.57
16QAM	1	Low	20	18.86	18.89	18.62
		Middle		19.06	19.02	18.97
		High		18.64	18.56	18.38
	50%	Low	20	17.94	17.84	17.70
		Middle		18.03	17.82	17.60
		High		17.90	17.72	17.36
100%	/	19	17.83	17.75	17.55	
64QAM	1	Low	19.5	18.48	18.66	18.33
		Middle		18.98	19.15	18.81
		High		18.72	18.72	18.39
	50%	Low	19	17.48	17.95	17.79
		Middle		17.61	17.94	17.68
		High		17.73	17.92	17.56
100%	/	19	17.55	17.91	17.58	

LTE band 26(part90)

LTE 26			Output power (dBm)		
Modulation	RB	RB Offset	1.4MHz		
			26697	26740	26783
QPSK	1	Low	22.38	22.23	22.29
		Middle	22.43	22.34	22.46
		High	22.26	22.21	22.30
	50%	Low	22.48	22.34	22.41
		High	22.41	22.33	22.41
100%	/	21.46	21.36	21.40	
16QAM	1	Low	21.50	21.29	21.51
		Middle	21.72	21.43	21.72
		High	21.55	21.25	21.52
	50%	Low	21.45	21.51	21.36
		High	21.41	21.53	21.39
100%	/	16.93	20.35	20.44	
64QAM	1	Low	21.53	21.30	21.54
		Middle	21.76	21.44	21.70
		High	21.59	21.26	21.52
	50%	Low	21.42	21.44	21.40
		High	21.42	21.48	21.43



	100%	/	18.95	20.36	20.43
Modulation	RB	RB Offset	3MHz		
			26705	26740	26775
QPSK	1	Low	22.44	22.40	22.36
		Middle	21.53	22.34	22.35
		High	22.38	22.33	22.42
	50%	Low	21.46	21.41	21.40
		High	21.48	21.36	21.36
	100%	/	19.85	21.36	21.34
16QAM	1	Low	21.62	21.92	21.60
		Middle	21.53	21.87	21.59
		High	21.58	21.87	21.62
	50%	Low	20.38	20.52	20.40
		High	16.78	20.52	20.27
	100%	/	20.42	20.43	20.34
64QAM	1	Low	21.60	21.93	21.62
		Middle	21.56	21.86	21.59
		High	21.59	21.88	21.62
	50%	Low	20.43	20.50	20.38
		High	19.29	20.52	20.40
	100%	/	16.75	20.43	20.33
Modulation	RB	RB Offset	5MHz		
			26715	26740	26765
QPSK	1	Low	22.44	22.40	22.36
		Middle	21.53	22.34	22.35
		High	22.38	22.33	22.42
	50%	Low	21.46	21.41	21.40
		High	21.48	21.36	21.36
	100%	/	19.85	21.36	21.34
16QAM	1	Low	21.62	21.92	21.60
		Middle	21.53	21.87	21.59
		High	21.58	21.87	21.62
	50%	Low	20.38	20.52	20.40
		High	16.78	20.52	20.27
	100%	/	20.42	20.43	20.34
64QAM	1	Low	21.60	21.93	21.62
		Middle	21.56	21.86	21.59
		High	21.59	21.88	21.62
	50%	Low	20.43	20.50	20.38
		High	19.29	20.52	20.40
	100%	/	16.75	20.43	20.33
Modulation	RB	RB Offset	10MHz		

			N/A	26740	N/A
QPSK	1	Low	N/A	22.42	N/A
		Middle	N/A	22.48	N/A
		High	N/A	22.38	N/A
	50%	Low	N/A	21.39	N/A
		High	N/A	21.37	N/A
	100%	/	N/A	21.38	N/A
16QAM	1	Low	N/A	21.93	N/A
		Middle	N/A	22.03	N/A
		High	N/A	21.98	N/A
	50%	Low	N/A	20.43	N/A
		High	N/A	20.44	N/A
	100%	/	N/A	20.38	N/A
64QAM	1	Low	N/A	21.92	N/A
		Middle	N/A	22.02	N/A
		High	N/A	21.97	N/A
	50%	Low	N/A	20.44	N/A
		High	N/A	20.42	N/A
	100%	/	N/A	20.35	N/A

LTE Band 38

LTE 38			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				37775	38000	38225
QPSK	1	Low	22	21.01	21.06	21.12
		Middle		21.17	21.20	21.27
		High		21.02	21.08	21.21
	50%	Low	21	20.16	20.19	20.21
		Middle		20.21	20.13	20.39
		High		20.14	20.15	20.35
100%	/	21	20.13	20.20	20.30	
16QAM	1	Low	21	20.23	20.24	20.32
		Middle		20.41	20.36	20.46
		High		20.27	20.38	20.41
	5	Low	20	19.17	19.19	19.27
		Middle		19.25	19.30	19.39
		High		19.18	19.14	19.33
100%	/	20	19.21	19.25	19.37	
64QAM	1	Low	20	17.37	17.16	17.60
		Middle		17.49	17.31	17.72
		High		17.32	17.15	17.62
	5	Low	19	16.51	16.29	16.38



		Middle		16.48	16.28	16.39
		High		16.45	16.26	16.40
	100%	/	19	16.48	16.26	16.36
Modulation	RB	RB Offset	Tune up	10MHz		
				37800	38000	38200
QPSK	1	Low	22	21.13	21.10	21.24
		Middle		21.26	21.31	21.36
		High		21.22	21.18	21.32
	50%	Low	21	20.25	20.33	20.36
		Middle		20.25	20.25	20.29
		High		20.23	20.24	20.42
	100%	/	21	20.23	20.22	20.33
16QAM	1	Low	21	20.32	20.42	20.46
		Middle		20.50	20.54	20.65
		High		20.45	20.44	20.62
	50%	Low	20	19.24	19.36	19.44
		Middle		19.28	19.35	19.40
		High		19.26	19.29	19.45
	100%	/	20	19.25	19.36	19.43
64QAM	1	Low	20	17.79	17.18	17.53
		Middle		18.04	17.43	17.86
		High		17.69	17.13	17.63
	50%	Low	19	16.52	16.33	16.29
		Middle		16.47	16.31	16.31
		High		16.42	16.29	16.32
	100%	/	19	16.51	16.27	16.35
Modulation	RB	RB Offset	Tune up	15MHz		
				37825	38000	38175
QPSK	1	Low	22	21.07	20.98	21.06
		Middle		20.96	21.18	21.22
		High		21.05	21.11	21.13
	50%	Low	21	20.13	20.19	20.19
		Middle		20.17	20.23	20.32
		High		20.24	20.24	20.37
	100%	/	21	20.13	20.20	20.23
16QAM	1	Low	21	20.21	20.34	20.35
		Middle		20.36	20.42	20.48
		High		20.34	20.24	20.45
	50%	Low	20	19.10	19.14	19.20
		Middle		19.09	19.16	19.19
		High		19.12	19.17	19.26
	100%	/	20	19.14	19.22	19.23



64QAM	1	Low	20	17.70	17.10	17.46
		Middle		17.75	17.16	17.60
		High		17.52	17.01	17.58
	50%	Low	19	17.70	17.08	17.44
		Middle		17.61	17.05	17.51
		High		17.51	17.02	17.57
	100%	/	19	16.38	16.26	16.30
Modulation	RB	RB Offset	Tune up	20MHz		
				37850	38000	38150
QPSK	1	Low	22	20.81	20.89	20.81
		Middle		21.15	21.21	21.26
		High		20.88	21.00	20.94
	50%	Low	21	20.10	20.15	20.17
		Middle		20.09	20.15	20.22
		High		20.12	20.14	20.19
	100%	/	21	20.13	20.14	20.20
16QAM	1	Low	21	20.09	20.12	20.14
		Middle		20.39	20.43	20.50
		High		20.17	20.19	20.29
	50%	Low	20	19.08	19.13	19.17
		Middle		19.08	19.20	19.19
		High		19.19	19.16	19.22
	100%	/	20	19.14	19.16	19.24
64QAM	1	Low	20	17.20	17.38	16.90
		Middle		17.50	17.45	17.40
		High		16.94	17.89	17.02
	50%	Low	19	16.46	16.31	16.24
		Middle		16.39	16.26	16.27
		High		16.31	16.20	16.30
	100%	/	19	16.41	16.27	16.29

LTE band 41

LTE 41			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				40065	40640	41215
QPSK	1	Low	22	20.84	21.02	21.33
		Middle		20.98	21.12	21.59
		High		20.92	21.04	21.52
	50%	Low	21	20.01	20.05	20.61
		Middle		20.03	20.18	20.71
		High		20.00	20.17	20.68
100%	/	21	20.02	20.15	20.58	

16QAM	1	Low	21	20.09	20.29	20.67
		Middle		20.22	20.35	20.73
		High		20.10	20.24	20.75
	5	Low	20	18.97	19.13	19.60
		Middle		19.11	19.14	19.68
		High		19.07	19.18	19.66
	100%	/	20	19.06	19.20	19.70
64QAM	1	Low	20	17.39	17.21	17.56
		Middle		17.48	17.30	17.60
		High		17.39	17.19	17.52
	5	Low	19	16.47	16.32	16.32
		Middle		16.46	16.31	16.31
		High		16.45	16.30	16.29
	100%	/	19	16.43	16.29	16.27
Modulation	RB	RB Offset	Tune up	10MHz		
				40090	40640	41190
QPSK	1	Low	22	20.98	20.97	21.53
		Middle		21.10	21.26	21.72
		High		21.04	21.16	21.54
	50%	Low	21	20.05	20.16	20.60
		Middle		20.11	20.23	20.63
		High		20.10	20.26	20.79
	100%	/	21	20.08	20.22	20.74
16QAM	1	Low	21	20.26	20.35	20.72
		Middle		20.30	20.51	20.90
		High		20.29	20.44	20.84
	50%	Low	20	19.16	19.22	19.73
		Middle		19.13	19.28	19.73
		High		19.19	19.29	19.81
	100%	/	20	19.06	19.25	19.77
64QAM	1	Low	20	17.78	17.27	17.62
		Middle		18.02	17.47	17.79
		High		17.75	17.19	17.52
	50%	Low	19	16.45	16.42	16.35
		Middle		16.47	16.40	16.31
		High		16.49	16.37	16.27
	100%	/	19	16.49	16.41	16.33
Modulation	RB	RB Offset	Tune up	15MHz		
				40115	40640	41165
QPSK	1	Low	22	20.90	20.94	21.35
		Middle		21.05	21.10	21.55
		High		20.93	21.12	21.56

	50%	Low	21	20.03	20.18	20.56
		Middle		19.99	20.18	20.65
		High		20.08	20.21	20.67
	100%	/	21	20.06	20.10	20.62
16QAM	1	Low	21	20.07	20.23	20.53
		Middle		20.24	20.36	20.74
		High		20.17	20.31	20.75
	50%	Low	20	18.96	19.05	19.53
		Middle		18.98	19.12	19.58
		High		18.96	19.11	19.62
	100%	/	20	19.03	19.22	19.62
64QAM	1	Low	20	17.69	17.16	17.58
		Middle		17.77	17.20	17.61
		High		17.73	17.11	17.47
	50%	Low	19	17.69	17.18	17.60
		Middle		17.70	17.13	17.54
		High		17.70	17.08	17.47
	100%	/	19	16.48	16.31	16.38
Modulation	RB	RB Offset	Tune up	20MHz		
				40140	40640	41140
QPSK	1	Low	22	20.73	20.85	21.13
		Middle		21.07	21.16	21.57
		High		20.77	20.95	21.34
	50%	Low	21	19.96	20.09	20.49
		Middle		20.02	20.14	20.64
		High		20.05	20.18	20.66
	100%	/	21	20.01	20.11	20.59
16QAM	1	Low	21	20.00	20.04	20.34
		Middle		20.38	20.44	20.81
		High		20.01	20.13	20.57
	50%	Low	20	19.00	19.14	19.51
		Middle		19.07	19.22	19.66
		High		19.10	19.25	19.74
	100%	/	20	19.00	19.17	19.60
64QAM	1	Low	20	17.17	17.57	17.13
		Middle		17.64	17.95	17.49
		High		17.18	17.46	16.92
	50%	Low	19	16.41	16.39	16.38
		Middle		16.46	16.36	16.35
		High		16.51	16.32	16.32
	100%	/	19	16.46	16.35	16.36

LTE 66			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	1.4MHz		
				131979	132322	132665
QPSK	1	Low	21.5	20.90	20.97	20.85
		Middle		21.07	21.03	20.90
		High		20.93	20.99	20.77
	50%	Low	21.5	21.06	21.04	20.96
		Middle		21.16	21.11	21.03
		High		21.10	20.96	20.99
	100%	/	21.5	20.07	20.04	20.01
16QAM	1	Low	21.5	20.12	20.95	20.08
		Middle		20.55	21.08	20.19
		High		20.43	20.98	20.10
	5	Low	20.5	20.15	20.12	20.03
		Middle		20.16	20.23	20.04
		High		20.08	20.18	19.98
	100%	/	20.5	19.34	19.22	19.03
64QAM	1	Low	19.5	18.83	18.74	18.37
		Middle		19.06	18.96	18.57
		High		18.83	18.79	18.32
	5	Low	19.5	18.74	18.71	18.60
		Middle		18.77	18.72	18.60
		High		18.80	18.72	18.59
	100%	/	18.5	17.51	17.45	17.58
Modulation	RB	RB Offset	Tune up	3MHz		
				131987	132322	132657
QPSK	1	Low	21.5	21.01	21.06	20.98
		Middle		21.21	21.07	20.98
		High		21.04	21.00	20.92
	50%	Low	21.5	20.11	20.14	20.02
		Middle		20.16	20.17	20.09
		High		20.09	20.08	20.02
	100%	/	21.5	20.12	20.06	19.99
16QAM	1	Low	21.5	21.02	20.29	20.13
		Middle		21.13	20.53	20.33
		High		20.99	20.21	20.15
	50%	Low	20.5	19.26	19.16	19.10
		Middle		19.28	19.25	19.06
		High		19.21	19.23	19.03
	100%	/	20.5	19.10	19.01	19.02
64QAM	1	Low	19.5	18.71	18.69	18.67



		Middle	18.5	18.66	18.66	18.54	
		High		18.62	18.66	18.42	
		Low		17.64	17.62	17.60	
	50%	Middle	18.5	17.63	17.62	17.59	
		High		17.63	17.61	17.59	
		Low		17.50	17.48	17.46	
100%	/	18.5	17.50	17.48	17.46		
Modulation	RB	RB Offset	Tune up	5MHz			
				131997	132322	132647	
QPSK	1	Low	21.5	20.90	20.98	20.78	
		Middle		21.18	21.27	21.09	
		High		20.90	20.81	20.81	
	50%	Low	21.5	20.08	20.14	20.05	
		Middle		20.17	20.06	20.05	
		High		20.08	20.01	19.93	
	100%	/	21.5	20.04	20.03	20.00	
	16QAM	1	Low	21.5	20.31	20.26	20.16
			Middle		20.48	20.57	20.23
High			20.25		20.12	20.08	
50%		Low	20.5	19.01	19.09	19.02	
		Middle		19.14	19.13	19.06	
		High		19.06	19.04	18.97	
100%		/	20.5	19.07	19.12	18.98	
64QAM		1	Low	19.5	18.39	18.35	18.25
			Middle		18.54	18.45	18.36
	High		18.37		18.28	18.20	
	50%	Low	18.5	17.43	17.37	17.30	
		Middle		17.43	17.37	17.28	
		High		17.43	17.37	17.26	
	100%	/	18.5	17.52	17.45	17.36	
	Modulation	RB	RB Offset	Tune up	10MHz		
					132022	132322	132622
QPSK	1	Low	21.5	21.06	21.07	20.95	
		Middle		21.12	21.23	20.94	
		High		21.02	20.94	20.87	
	50%	Low	21.5	20.08	20.12	20.09	
		Middle		20.19	20.15	20.00	
		High		20.03	20.04	19.99	
	100%	/	21.5	20.11	20.07	19.95	
	16QAM	1	Low	21.5	20.56	20.45	20.43
			Middle		20.55	20.50	20.28
High			20.51		20.36	20.12	
50%		Low	20.5	19.16	19.00	19.02	



		Middle		19.22	19.06	19.06
		High		19.04	19.01	18.94
	100%	/	20.5	19.18	19.05	18.99
64QAM	1	Low	19.5	18.60	18.68	18.45
		Middle		18.70	18.84	18.62
		High		18.62	18.63	18.38
	50%	Low	18.5	17.61	17.47	17.54
		Middle		17.61	17.49	17.49
		High		17.61	17.51	17.43
	100%	/	18.5	17.61	17.51	17.42
Modulation	RB	RB Offset	Tune up	15MHz		
				132047	132322	132597
QPSK	1	Low	21.5	21.04	21.11	20.91
		Middle		21.11	21.09	21.00
		High		20.99	20.84	20.82
	50%	Low	21.5	20.21	20.16	20.00
		Middle		20.23	20.09	20.05
		High		20.12	20.05	20.02
	100%	/	21.5	20.10	20.10	20.05
16QAM	1	Low	21.5	20.25	21.03	20.39
		Middle		20.32	21.07	20.37
		High		20.18	20.87	20.18
	50%	Low	20.5	19.17	19.11	19.09
		Middle		19.09	19.11	19.04
		High		19.07	19.07	19.00
	100%	/	20.5	19.11	19.07	19.02
64QAM	1	Low	19.5	18.54	18.61	18.46
		Middle		18.65	18.71	18.52
		High		18.46	18.55	18.30
	50%	Low	19	18.55	18.59	18.41
		Middle		18.51	18.57	18.37
		High		18.46	18.55	18.32
	100%	/	18.5	17.58	17.50	17.45
Modulation	RB	RB Offset	Tune up	20MHz		
				132072	132322	132572
QPSK	1	Low	21.5	20.82	20.83	20.86
		Middle		21.18	21.10	21.07
		High		20.63	20.61	20.59
	50%	Low	21.5	20.19	20.17	20.18
		Middle		20.13	20.15	20.06
		High		20.06	20.06	19.93
	100%	/	21.5	20.18	20.06	20.12



16QAM	1	Low	21.5	20.38	20.19	20.09
		Middle		20.60	20.52	20.22
		High		20.29	19.93	19.88
	50%	Low	20.5	19.18	19.16	19.12
		Middle		19.15	19.14	19.08
		High		19.10	19.06	18.94
	100%	/	20.5	19.19	19.05	19.06
64QAM	1	Low	19.5	18.61	18.41	18.48
		Middle		18.95	18.80	18.85
		High		18.56	18.35	18.36
	50%	Low	18.5	17.62	17.54	17.54
		Middle		17.57	17.54	17.48
		High		17.52	17.53	17.42
	100%	/	18.5	17.53	17.49	17.46

LTE Band 71

LTE 71			Output power (dBm)			
Modulation	RB	RB Offset	Tune up	5MHz		
				133147	133297	133447
QPSK	1	Low	23	22.29	22.19	22.11
		Middle		22.30	22.32	22.25
		High		22.23	22.07	22.13
	50%	Low	22	21.10	21.26	21.16
		Middle		21.18	21.25	21.31
		High		21.36	21.29	21.21
	100%	/	22	21.33	21.23	21.24
16QAM	1	Low	22	21.03	21.27	21.51
		Middle		20.96	21.36	21.46
		High		20.98	21.25	21.42
	50%	Low	21	20.23	20.28	20.37
		Middle		20.29	20.33	20.27
		High		20.41	20.31	20.48
	100%	/	21	20.37	20.44	20.31
64QAM	1	Low	20	18.97	18.97	18.84
		Middle		19.12	19.07	18.95
		High		18.95	18.90	18.79
	50%	Low	20	18.01	17.99	17.89
		Middle		18.01	17.99	17.87
		High		18.01	17.99	17.85
	100%	/	20	18.10	18.07	17.95
Modulation	RB	RB Offset	Tune up	10MHz		
				133172	133297	133422

QPSK	1	Low	23	22.17	22.28	22.19
		Middle		22.50	22.58	22.36
		High		22.24	22.25	22.20
	50%	Low	22	21.18	21.30	21.36
		Middle		21.26	21.38	21.31
		High		21.28	21.35	21.27
	100%	/	22	21.27	21.26	21.38
16QAM	1	Low	22	21.61	21.43	21.94
		Middle		21.69	21.49	22.08
		High		21.41	21.48	21.97
	50%	Low	21	20.45	20.39	20.56
		Middle		20.38	20.47	20.38
		High		20.54	20.52	20.40
	100%	/	21	20.39	20.48	20.45
64QAM	1	Low	20	19.18	19.30	19.04
		Middle		19.28	19.46	19.21
		High		19.20	19.25	18.97
	50%	Low	20	18.19	18.09	18.13
		Middle		18.19	18.11	18.08
		High		18.19	18.13	18.02
	100%	/	20	18.19	18.13	18.01
Modulation	RB	RB Offset	Tune up	15MHz		
				133197	133297	133397
QPSK	1	Low	23	22.39	22.17	22.12
		Middle		22.30	22.40	22.31
		High		22.24	22.27	22.12
	50%	Low	22	21.22	21.28	21.35
		Middle		21.32	21.35	21.29
		High		21.40	21.27	21.39
	100%	/	22	21.31	21.34	21.39
16QAM	1	Low	22	21.91	21.39	21.66
		Middle		21.97	21.45	21.68
		High		21.85	21.32	21.89
	50%	Low	21	20.27	20.34	20.44
		Middle		20.31	20.27	20.41
		High		20.38	20.43	20.36
	100%	/	21	20.36	20.42	20.35
64QAM	1	Low	20	19.12	19.23	19.05
		Middle		19.23	19.33	19.11
		High		19.04	19.17	18.89
	50%	Low	20	19.13	19.21	19.00
		Middle		19.09	19.19	18.96

		High		19.04	19.17	18.91
	100%	/	20	18.16	18.12	18.04
Modulation	RB	RB Offset	Tune up	20MHz		
				133222	133322	133372
QPSK	1	Low	23	22.08	22.15	21.97
		Middle		22.43	22.48	22.47
		High		22.10	22.08	21.99
	50%	Low	22	20.95	21.07	21.19
		Middle		21.18	21.01	21.11
		High		21.26	21.28	21.22
	100%	/	22	21.10	20.90	21.24
16QAM	1	Low	22	21.56	21.35	21.43
		Middle		21.95	21.71	21.71
		High		21.68	21.24	21.36
	50%	Low	21	20.09	20.19	20.35
		Middle		20.21	20.11	20.36
		High		20.39	20.10	20.30
	100%	/	21	20.23	20.16	20.37
64QAM	1	Low	20	19.19	19.03	19.07
		Middle		19.53	19.42	19.44
		High		19.14	18.97	18.95
	50%	Low	20	18.20	18.16	18.13
		Middle		18.15	18.16	18.07
		High		18.10	18.15	18.01
	100%	/	20	18.11	18.11	18.05

6.1.3 Radiated

6.1.3.1 Description

This is the test for the maximum radiated power from the EUT.

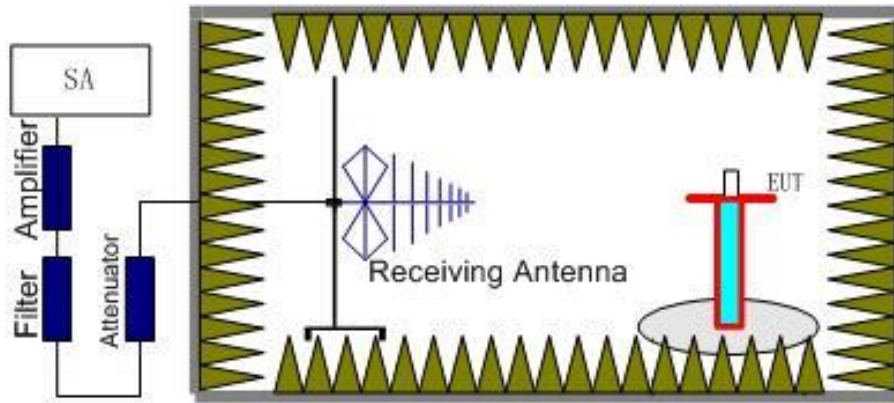
Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

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".

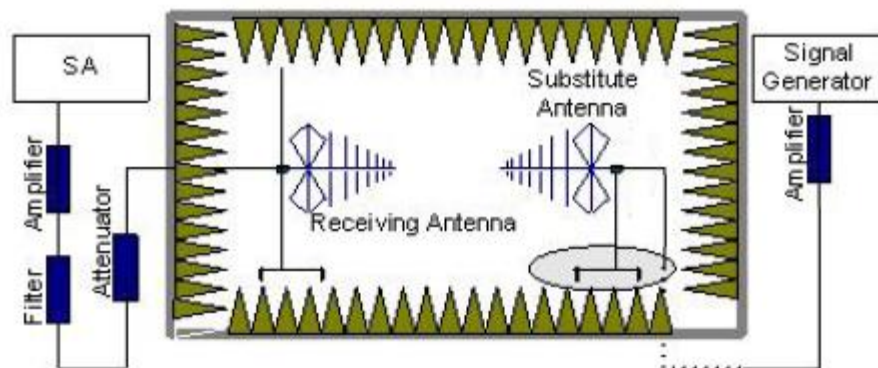
Rule Part 27.50(c) specifies "Portable stations (hand-held de-vices) are limited to 3 watts ERP".

6.1.3.2 Method of Measurement



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

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:



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

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, $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$.



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	22.11	33.00	H
1880	22.00	33.00	H
1909.3	21.64	33.00	H

LTE Band 2_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	22.14	33.00	H
1880	21.94	33.00	H
1908.5	21.82	33.00	H

LTE Band 2_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	22.28	33.00	H
1880	22.12	33.00	H
1907.5	21.93	33.00	H

LTE Band 2_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	22.44	33.00	H
1880	22.24	33.00	H
1905	22.02	33.00	H

LTE Band 2_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	22.29	33.00	H
1880	22.13	33.00	H
1902.5	21.89	33.00	H

LTE Band 2_20 MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	22.22	33.00	H
1880	22.17	33.00	H
1900	21.96	33.00	H

LTE Band 2_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	21.30	33.00	H
1880	21.06	33.00	H
1909.3	20.82	33.00	H

LTE Band 2_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	21.27	33.00	H



1880	21.49	33.00	H
1908.5	20.91	33.00	H

LTE Band 2_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	21.59	33.00	H
1880	21.42	33.00	H
1907.5	21.30	33.00	H

LTE Band 2_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	21.80	33.00	H
1880	21.49	33.00	H
1905	21.21	33.00	H

LTE Band 2_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	21.51	33.00	H
1880	21.32	33.00	H
1902.5	21.17	33.00	H

LTE Band 2_20 MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	21.72	33.00	H
1880	21.33	33.00	H
1900	21.13	33.00	H

LTE Band 2_1.4MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	19.89	33.00	H
1880	20.33	33.00	H
1909.3	20.04	33.00	H

LTE Band 2_3MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	21.01	33.00	H
1880	21.08	33.00	H
1908.5	21.11	33.00	H

LTE Band 2_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	20.52	33.00	H
1880	20.81	33.00	H
1907.5	20.81	33.00	H

LTE Band 2_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	20.83	33.00	H
1880	21.24	33.00	H

1905	21.02	33.00	H
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LTE Band 2_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	20.70	33.00	H
1880	21.02	33.00	H
1902.5	20.88	33.00	H

LTE Band 2_20 MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	21.05	33.00	H
1880	21.10	33.00	H
1900	21.03	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	22.80	30.00	H
1732.5	22.78	30.00	H
1754.3	22.80	30.00	H

LTE Band 4_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	22.87	30.00	H
1732.5	22.90	30.00	H
1753.5	22.80	30.00	H

LTE Band 4_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	22.91	30.00	H
1732.5	22.79	30.00	H
1752.5	22.91	30.00	H

LTE Band 4_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	22.92	30.00	H
1732.5	22.89	30.00	H
1750	22.89	30.00	H

LTE Band 4_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	22.80	30.00	H
1732.5	22.89	30.00	H
1747.5	22.88	30.00	H

**LTE Band 4_20MHz_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	22.84	30.00	H
1732.5	22.82	30.00	H
1745	22.87	30.00	H

LTE Band 4_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	22.21	30.00	H
1732.5	22.22	30.00	H
1754.3	21.96	30.00	H

LTE Band 4_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	22.14	30.00	H
1732.5	22.22	30.00	H
1753.5	22.04	30.00	H

LTE Band 4_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	22.19	30.00	H
1732.5	22.53	30.00	H
1752.5	21.98	30.00	H

LTE Band 4_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	22.14	30.00	H
1732.5	22.21	30.00	H
1750.5	22.08	30.00	H

LTE Band 4_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	22.09	30.00	H
1732.5	22.40	30.00	H
1747.5	22.12	30.00	H

LTE Band 4_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	22.08	30.00	H
1732.5	22.21	30.00	H
1745	22.36	30.00	H

LTE Band 4_1.4MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	20.73	30.00	H
1732.5	20.77	30.00	H
1754.3	20.35	30.00	H

**LTE Band 4_3MHz_64QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	20.43	30.00	H
1732.5	20.55	30.00	H
1753.5	20.64	30.00	H

LTE Band 4_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	20.33	30.00	H
1732.5	20.30	30.00	H
1752.5	20.16	30.00	H

LTE Band 4_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	20.53	30.00	H
1732.5	20.72	30.00	H
1750.5	20.39	30.00	H

LTE Band 4_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	20.40	30.00	H
1732.5	20.48	30.00	H
1747.5	20.27	30.00	H

LTE Band 4_20MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	20.68	30.00	H
1732.5	20.39	30.00	H
1745	20.68	30.00	H

LTE Band 5- ERP/EIRP 22.913(a)

Limits: ≤38.45dBm (7W)

LTE Band 5_1.4MHz_QPSK

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
824.70	17.94	20.09	38.45	H
836.50	17.76	19.91	38.45	H
848.30	17.94	20.09	38.45	H

LTE Band 5_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
825.50	18.01	20.16	38.45	H
836.50	17.79	19.94	38.45	H
847.50	17.91	20.06	38.45	H

LTE Band 5_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
826.50	18.04	20.19	38.45	H
836.50	17.85	20.00	38.45	H

846.50	17.89	20.04	38.45	H
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LTE Band 5_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
829.00	17.62	19.77	38.45	H
836.50	17.47	19.62	38.45	H
844.00	17.52	19.67	38.45	H

LTE Band 5_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
824.70	17.01	19.16	38.45	H
836.50	17.17	19.32	38.45	H
848.30	17.07	19.22	38.45	H

LTE Band 5_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
825.50	17.59	19.74	38.45	H
836.50	17.39	19.54	38.45	H
847.50	17.32	19.47	38.45	H

LTE Band 5_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
826.50	17.15	19.30	38.45	H
836.50	17.32	19.47	38.45	H
846.50	17.06	19.21	38.45	H

LTE Band 5_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
829.00	17.06	19.21	38.45	H
836.50	17.24	19.39	38.45	H
844.00	16.95	19.10	38.45	H

LTE Band 5_1.4MHz_64QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
824.70	18.05	15.90	38.45	H
836.50	17.93	15.78	38.45	H
848.30	17.79	15.64	38.45	H

LTE Band 5_3MHz_64QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
825.50	15.55	17.70	38.45	H
836.50	15.54	17.69	38.45	H
847.50	15.51	17.66	38.45	H

LTE Band 5_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
826.50	17.49	15.34	38.45	H
836.50	17.45	15.30	38.45	H
846.50	17.54	15.39	38.45	H



LTE Band 5_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	EIRP(dBm)	Limit(dBm)	Polarization
829.00	15.55	17.70	38.45	H
836.50	15.67	17.82	38.45	H
844.00	15.57	17.72	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	23.79	33.00	H
2535	23.74	33.00	H
2567.5	23.93	33.00	H

LTE Band 7_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	23.65	33.00	H
2535	23.66	33.00	H
2565	23.76	33.00	H

LTE Band 7_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	23.62	33.00	H
2535	23.58	33.00	H
2562.5	23.63	33.00	H

LTE Band 7_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	23.69	33.00	H
2535	23.65	33.00	H
2560	23.74	33.00	H

LTE Band 7_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2502.5	23.18	33.00	H
2535	23.08	33.00	H
2567.5	23.20	33.00	H

LTE Band 7_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	23.09	33.00	H
2535	22.98	33.00	H
2565	23.12	33.00	H

LTE Band 7_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	23.03	33.00	H
2535	22.95	33.00	H



2562.5	22.75	33.00	H
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LTE Band 7_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	22.93	33.00	H
2535	23.08	33.00	H
2560	23.07	33.00	H

LTE Band 7_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2502.5	20.74	33.00	H
2535	19.74	33.00	H
2567.5	19.98	33.00	H

LTE Band 7_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2505	20.68	33.00	H
2535	20.13	33.00	H
2565	19.98	33.00	H

LTE Band 7_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2507.5	20.47	33.00	H
2535	20.00	33.00	H
2562.5	19.89	33.00	H

LTE Band 7_20MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2510	20.70	33.00	H
2535	20.16	33.00	H
2560	20.23	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	17.77	38.45	H
707.5	17.82	38.45	H
715.3	17.81	38.45	H

LTE Band 12_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	17.88	38.45	H
707.5	17.87	38.45	H
714.5	17.94	38.45	H

LTE Band 12_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	17.89	38.45	H



707.5	18.14	38.45	H
713.5	17.88	38.45	H

LTE Band 12_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	17.89	38.45	H
707.5	17.88	38.45	H
711	17.81	38.45	H

LTE Band 12_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
699.7	17.13	38.45	H
707.5	17.14	38.45	H
715.3	16.89	38.45	H

LTE Band 12_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	17.22	38.45	H
707.5	17.20	38.45	H
714.5	17.23	38.45	H

LTE Band 12_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	17.02	38.45	H
707.5	17.08	38.45	H
713.5	17.09	38.45	H

LTE Band 12_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	17.18	38.45	H
707.5	17.06	38.45	H
711	17.04	38.45	H

LTE Band 12_1.4MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
699.7	15.46	38.45	H
707.5	15.33	38.45	H
715.3	14.93	38.45	H

LTE Band 12_3MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
700.5	15.09	38.45	H
707.5	15.10	38.45	H
714.5	15.05	38.45	H

LTE Band 12_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
701.5	14.83	38.45	H
707.5	14.85	38.45	H



713.5	14.60	38.45	H
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LTE Band 12_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
704	15.01	38.45	H
707.5	15.24	38.45	H
711	14.91	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	17.48	38.45	H
782	17.53	38.45	H
784.5	17.36	38.45	H

LTE Band 13_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
782	17.39	38.45	H
782	17.39	38.45	H
782	17.39	38.45	H

LTE Band 13_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
779.5	17.04	38.45	H
782	16.85	38.45	H
784.5	16.85	38.45	H

LTE Band 13_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
782	16.72	38.45	H
782	16.72	38.45	H
782	16.72	38.45	H

LTE Band 13_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
779.5	14.34	38.45	H
782	14.20	38.45	H
784.5	14.34	38.45	H

LTE Band 13_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
782	14.70	38.45	H
782	14.49	38.45	H
782	14.38	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	18.29	34.77	H
710	18.05	34.77	H
713.5	18.13	34.77	H

LTE Band 17_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	18.01	34.77	H
710	18.07	34.77	H
711	17.93	34.77	H

LTE Band 17_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
706.5	17.34	34.77	H
710	17.12	34.77	H
713.5	17.30	34.77	H

LTE Band 17_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	17.30	34.77	H
710	17.31	34.77	H
711	17.19	34.77	H

LTE Band 17_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
706.5	15.12	34.77	H
710	14.85	34.77	H
713.5	14.89	34.77	H

LTE Band 17_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
709	15.12	34.77	H
710	15.29	34.77	H
711	15.03	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	22.08	30.00	H
1882.5	21.89	30.00	H
1914.3	21.62	30.00	H

**LTE Band 25_3MHz_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	22.30	30.00	H
1882.5	22.10	30.00	H
1913.5	21.52	30.00	H

LTE Band 25_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	22.25	30.00	H
1882.5	21.91	30.00	H
1912.5	21.45	30.00	H

LTE Band 25_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	22.00	30.00	H
1882.5	21.86	30.00	H
1910	21.59	30.00	H

LTE Band 25_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	21.98	30.00	H
1882.5	21.80	30.00	H
1907.5	21.50	30.00	H

LTE Band 25_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	22.07	30.00	H
1882.5	21.88	30.00	H
1905	21.59	30.00	H

LTE Band 25_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	21.42	30.00	H
1882.5	21.08	30.00	H
1914.3	20.64	30.00	H

LTE Band 25_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	21.52	30.00	H
1882.5	21.12	30.00	H
1913.5	20.93	30.00	H

LTE Band 25_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	21.35	30.00	H
1882.5	21.26	30.00	H
1912.5	20.81	30.00	H

**LTE Band 25_10MHz_16QAM**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	21.41	30.00	H
1882.5	21.10	30.00	H
1910	20.83	30.00	H

LTE Band 25_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	21.29	30.00	H
1882.5	21.12	30.00	H
1907.5	20.63	30.00	H

LTE Band 25_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	21.06	30.00	H
1882.5	21.02	30.00	H
1905	20.97	30.00	H

LTE Band 25_1.4MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1850.7	20.90	30.00	H
1882.5	21.28	30.00	H
1914.3	20.59	30.00	H

LTE Band 25_3MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1851.5	21.01	30.00	H
1882.5	21.00	30.00	H
1913.5	20.97	30.00	H

LTE Band 25_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1852.5	20.47	30.00	H
1882.5	20.76	30.00	H
1912.5	20.32	30.00	H

LTE Band 25_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1855	20.73	30.00	H
1882.5	21.18	30.00	H
1910	20.55	30.00	H

LTE Band 25_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1857.5	20.63	30.00	H
1882.5	21.06	30.00	H
1907.5	20.52	30.00	H

LTE Band 25_20MHz_64QAM



Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1860	20.98	30.00	H
1882.5	21.15	30.00	H
1905	20.81	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	18.33	30.00	H
819.0	18.19	30.00	H
823.3	18.31	30.00	H

LTE Band 26(part90)_3MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.5	18.29	30.00	H
819.0	18.25	30.00	H
822.5	18.27	30.00	H

LTE Band 26(part90)_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.5	18.29	30.00	H
819.0	18.25	30.00	H
821.5	18.27	30.00	H

LTE Band 26(part90)_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.0	18.33	30.00	H

LTE Band 26(part90)_1.4MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.7	17.57	30.00	H
819.0	17.38	30.00	H
823.3	17.57	30.00	H

LTE Band 26(part90)_3MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.5	17.47	30.00	H
819.0	17.77	30.00	H
822.5	17.47	30.00	H

LTE Band 26(part90)_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.5	17.47	30.00	H
819.0	17.77	30.00	H
821.5	17.47	30.00	H

**LTE Band 26(part90)_10MHz_16QAM**

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.0	17.88	30.00	H

LTE Band 26(part90)_1.4MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
814.7	17.61	30.00	H
819.0	17.33	30.00	H
823.3	17.55	30.00	H

LTE Band 26(part90)_3MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
815.5	17.45	30.00	H
819.0	17.78	30.00	H
822.5	17.47	30.00	H

LTE Band 26(part90)_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
816.5	17.45	30.00	H
819.0	17.78	30.00	H
821.5	17.47	30.00	H

LTE Band 26(part90)_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
819.0	17.87	30.00	H

LTE Band 38- EIRP 27.50(h)(2)

Limits: ≤33 dBm (2W)

LTE Band 38_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2572.5	24.17	33.00	H
2595	24.20	33.00	H
2617.5	24.27	33.00	H

LTE Band 38_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2575	24.26	33.00	H
2595	24.31	33.00	H
2615	24.36	33.00	H

LTE Band 38_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2577.5	24.07	33.00	H
2595	24.18	33.00	H
2612.5	24.22	33.00	H

**LTE Band 38_20MHz_QPSK**

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2580	24.15	33.00	H
2595	24.21	33.00	H
2610	24.26	33.00	H

LTE Band 38_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2572.5	23.41	33.00	H
2595	23.38	33.00	H
2617.5	23.46	33.00	H

LTE Band 38_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2575	23.50	33.00	H
2595	23.54	33.00	H
2615	23.65	33.00	H

LTE Band 38_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2577.5	23.36	33.00	H
2595	23.42	33.00	H
2612.5	23.48	33.00	H

LTE Band 38_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2580	23.39	33.00	H
2595	23.43	33.00	H
2610	23.50	33.00	H

LTE Band 38_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2572.5	20.49	33.00	H
2595	20.31	33.00	H
2617.5	20.72	33.00	H

LTE Band 38_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2575	21.04	33.00	H
2595	20.43	33.00	H
2615	20.86	33.00	H

LTE Band 38_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2577.5	20.75	33.00	H
2595	20.16	33.00	H
2612.5	20.60	33.00	H



LTE Band 38_20MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2580	20.50	33.00	H
2595	20.89	33.00	H
2610	20.40	33.00	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	23.98	33.00	H
2593	24.12	33.00	H
2687.5	24.59	33.00	H

LTE Band 41_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2501	24.10	33.00	H
2593	24.26	33.00	H
2685	24.72	33.00	H

LTE Band 41_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2503.5	24.05	33.00	H
2593	24.12	33.00	H
2682.5	24.56	33.00	H

LTE Band 41_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2506	24.07	33.00	H
2593	24.16	33.00	H
2680	24.57	33.00	H

LTE Band 41_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2498.5	23.22	33.00	H
2593	23.35	33.00	H
2687.5	23.75	33.00	H

LTE Band 41_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2501	23.30	33.00	H
2593	23.51	33.00	H
2685	23.90	33.00	H

LTE Band 41_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2503.5	23.24	33.00	H
2593	23.36	33.00	H



2682.5	23.75	33.00	H
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LTE Band 41_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2506	23.38	33.00	H
2593	23.44	33.00	H
2680	23.81	33.00	H

LTE Band 41_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2498.5	20.48	33.00	H
2593	20.30	33.00	H
2687.5	20.60	33.00	H

LTE Band 41_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2501	21.02	33.00	H
2593	20.47	33.00	H
2685	20.79	33.00	H

LTE Band 41_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2503.5	20.77	33.00	H
2593	20.20	33.00	H
2682.5	20.61	33.00	H

LTE Band 41_20MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
2506	20.64	33.00	H
2593	20.95	33.00	H
2680	20.49	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	22.16	30.00	H
1745	22.11	30.00	H
1779.3	22.03	30.00	H

LTE Band 66_3MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	22.21	30.00	H
1745	22.07	30.00	H
1778.5	21.98	30.00	H

LTE Band 66_5MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	22.18	30.00	H



1745	22.27	30.00	H
1777.5	22.09	30.00	H

LTE Band 66_10MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	22.12	30.00	H
1745	22.23	30.00	H
1775	21.95	30.00	H

LTE Band 66_15MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	22.11	30.00	H
1745	22.11	30.00	H
1772.5	22.00	30.00	H

LTE Band 66_20MHz_QPSK

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	22.18	30.00	H
1745	22.10	30.00	H
1770	22.07	30.00	H

LTE Band 66_1.4MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	21.55	30.00	H
1745	22.08	30.00	H
1779.3	21.19	30.00	H

LTE Band 66_3MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	22.13	30.00	H
1745	21.53	30.00	H
1778.5	21.33	30.00	H

LTE Band 66_5MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	21.48	30.00	H
1745	21.57	30.00	H
1777.5	21.23	30.00	H

LTE Band 66_10MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	21.56	30.00	H
1745	21.50	30.00	H
1775	21.43	30.00	H

LTE Band 66_15MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	21.32	30.00	H
1745	22.07	30.00	H



1772.5	21.39	30.00	H
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LTE Band 66_20MHz_16QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	21.60	30.00	H
1745	21.52	30.00	H
1770	21.22	30.00	H

LTE Band 66_1.4MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1710.7	20.06	30.00	H
1745	19.96	30.00	H
1779.3	19.60	30.00	H

LTE Band 66_3MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1711.5	19.71	30.00	H
1745	19.69	30.00	H
1778.5	19.67	30.00	H

LTE Band 66_5MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1712.5	19.54	30.00	H
1745	19.45	30.00	H
1777.5	19.36	30.00	H

LTE Band 66_10MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1715	19.70	30.00	H
1745	19.84	30.00	H
1775	19.62	30.00	H

LTE Band 66_15MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1717.5	19.65	30.00	H
1745	19.71	30.00	H
1772.5	19.52	30.00	H

LTE Band 66_20MHz_64QAM

Frequency(MHz)	EIRP(dBm)	Limit(dBm)	Polarization
1720	19.95	30.00	H
1745	19.80	30.00	H
1770	19.85	30.00	H

LTE Band 71- ERP 27.50(c)

Limits: ≤38.45dBm (7W)

LTE Band 71_5MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
665.5	16.45	38.45	H



680.5	16.47	38.45	H
695.5	16.40	38.45	H

LTE Band 71_10MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
668.0	16.65	38.45	H
680.5	16.73	38.45	H
693.0	16.51	38.45	H

LTE Band 71_15MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
670.5	16.54	38.45	H
680.5	16.55	38.45	H
690.5	16.46	38.45	H

LTE Band 71_20MHz_QPSK

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
673.0	16.58	38.45	H
683.0	16.63	38.45	H
688.0	16.62	38.45	H

LTE Band 71_5MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
665.5	15.18	38.45	H
680.5	15.51	38.45	H
695.5	15.66	38.45	H

LTE Band 71_10MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
668.0	15.84	38.45	H
680.5	15.64	38.45	H
693.0	16.23	38.45	H

LTE Band 71_15MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
670.5	16.12	38.45	H
680.5	15.60	38.45	H
690.5	16.04	38.45	H

LTE Band 71_20MHz_16QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
673.0	16.10	38.45	H
683.0	15.86	38.45	H
688.0	15.86	38.45	H

LTE Band 71_5MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
665.5	13.27	38.45	H
680.5	13.22	38.45	H



695.5	13.10	38.45	H
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LTE Band 71_10MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
668.0	13.43	38.45	H
680.5	13.61	38.45	H
693.0	13.36	38.45	H

LTE Band 71_15MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
670.5	13.38	38.45	H
680.5	13.48	38.45	H
690.5	13.26	38.45	H

LTE Band 71_20MHz_64QAM

Frequency(MHz)	ERP(dBm)	Limit(dBm)	Polarization
673.0	13.68	38.45	H
683.0	13.57	38.45	H
688.0	13.59	38.45	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.

6.4. Occupied Bandwidth

Reference

CFR Part 2.1049(h) (i)

No specific occupied bandwidth requirements in RSS-Gen: 6.7.

6.4.1 Occupied Bandwidth Results

Occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the extreme and mid frequencies of the US Cellular/PCS frequency bands. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.

The measurement method is from KDB 971168 4:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

Occupied Bandwidth Measurement Results:
LTE band 2, 1.4MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)		
1880.0	QPSK	16QAM	64QAM
	1.09	1.09	1.09
QPSK(99% BW)	16QAM(99% BW)		
<p>Date: 26.AUG.2021 23:26:32</p>	<p>Date: 26.AUG.2021 23:27:00</p>		
64QAM(99% BW)	/		
<p>Date: 26.AUG.2021 23:27:28</p>	/		