



TEST REPORT

No. I18Z60261-WMD03

for

TCL Communication Ltd.

GSM Quad-band/HSPA-UMTS Six-band/LTE 17-bands mobile phone

Model Name: BBE100-1

FCC ID: 2ACCJN028

with

Hardware Version: 04

Software Version: V6R13-6

Issued Date: 2018-07-12



Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I18Z60261-WMD03	Rev.0	1 st edition	2018-06-15
I18Z60261-WMD03	Rev.1	2nd edition KDB 484596 Update the conducted output power, bandEdge and conducted emission of Band 12	2018-07-12



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1. Test Laboratory

1.1. Testing Location

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China 100191

Location 2: CTTL(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road,
Haidian District, Beijing, P. R. China 100191

1.2. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2018-05-08

Testing End Date: 2018-07-12

1.4. Signature



Dong Yuan
(Prepared this test report)



Zhou Yu
(Reviewed this test report)



Zhao Hui Lin
Deputy Director of the laboratory
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd.
Address /Post: 7/F, Block F4, TCL International E City, Zhong Shan Yuan Road,
Nanshan District, Shenzhen, Guangdong, P.R. China 518052
Contact: Gong Zhizhou
Email: zhizhou.gong@tcl.com
Telephone: 0086-755-36611722
Fax: 0086-75536612000-81722

2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
Address /Post: 7/F, Block F4, TCL International E City, Zhong Shan Yuan Road,
Nanshan District, Shenzhen, Guangdong, P.R. China 518052
Contact: Gong Zhizhou
Email: zhizhou.gong@tcl.com
Telephone: 0086-755-36611722
Fax: 0086-75536612000-81722

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

3.1. About EUT

Description	GSM Quad-band/HSPA-UMTS Six-band/LTE 17-bands mobile phone
Model Name	BBE100-1
FCC ID	2ACCJN028
Antenna	Embedded
Output power	23.43dBm maximum EIRP measured for Band 7
Extreme vol. Limits	3.6VDC to 4.4VDC (nominal: 3.85VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT12a	356787090005721	04	V6R13-6	2018-05-07
UT10a	356787090005812	04	V6R13-6	2018-05-07

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

3.3. Internal Identification of AE used during the test

AE ID*	Description
AE1	Battery
AE2	Charger
AE3	Charger
AE1	
Model	TLp029C1
Manufacturer	BYD
Capacitance	2900mAh
AE2	
Model	CBA0064AABC1/CBA0064AKBC1/ CBA0064ACBC1/CBA0064ABBC1
Manufacturer	BYD
AE3	
Model	CBA0064AGBC1/CBA0064AHBC1
Manufacturer	BYD

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

3.4. General Description

The Equipment Under Test (EUT) is a model of GSM Quad-band/HSPA-UMTS Six-band/LTE 17-bands mobile phone with embedded antenna. Manual and specifications of the EUT were provided to fulfil the test.



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 24	PERSONAL COMMUNICATIONS SERVICES	10-1-17 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-17 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-17 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-17 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
TIA-102.CAAA-E	DIGITAL C4FMCQPSK TRANSCEIVER MEASUREMENT METHODS	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015

5. LABORATORY ENVIRONMENT

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber 2 (8.6 meters X 6.1 meters X 3.85 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 1 Ω
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 4000 MHz

Semi-anechoic chamber 2 / Fully-anechoic chamber 3 (10 meters X 6.7 meters X 6.15 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of test results

LTE Band 2

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

LTE Band 4

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



LTE Band 5

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	§2.1046(a), 22.913(a)	A.1	BR
2	Emission Limit	22.917, 2.1051	A.2	BR
3	Frequency Stability	22.235, 2.1055	A.3	BR
4	Occupied Bandwidth	2.1049(h)(i)	A.4	BR
5	Emission Bandwidth	22.917(b)	A.5	BR
6	Band Edge Compliance	22.917(b)	A.6	BR
7	Conducted Spurious Emission	22.917, 2.1057	A.7	BR

LTE Band 7

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

LTE Band 12

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



LTE Band 26(814MHz~824MHz)

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

LTE Band 26(824MHz~849MHz)

Items	Test Name	Clause in FCC rules	Section in this report	Verdict
1	Output Power	§2.1046(a), 22.913(a)	A.1	P
2	Emission Limit	22.917, 2.1051	A.2	P
3	Frequency Stability	22.235, 2.1055	A.3	P
4	Occupied Bandwidth	2.1049(h)(i)	A.4	P
5	Emission Bandwidth	22.917(b)	A.5	P
6	Band Edge Compliance	22.917(b)	A.6	P
7	Conducted Spurious Emission	22.917, 2.1057	A.7	P

LTE Band 38

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

LTE Band 41

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

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
NA	Not Applicable, The test was not applicable
BR	Re-use test data from basic model report.
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Explanation of re-use of test data

The Equipment Under Test (EUT) model BBE100-1 (FCC ID: 2ACCJN028) is a variant product of BBE100-2 (FCC ID: 2ACCJN024), according to the declaration of changes provided by the applicant and KDB 484596, only LTE Band 4 ,26 and output power, ERP/RSE,BandEdge,Conducted Emission of Band 12 are tested, the other test results are derived from test report No.I18Z60272-WMD03. For detail differences between two models please refer the Declaration of Changes document.



6.3. Statements

The test cases listed in section 6.1 of this report for the EUT specified in section 3 were performed by CTTL according to the standards or reference documents in section 4.1

The EUT met all applicable requirements of the standards or reference documents in section 4.1.

This report only deals with the LTE functions among the features described in section 3.

7. Test Equipments Utilized

NO.	Description	TYPE	series number	MANUFACTURE	CAL DUE DATE	Calibration interval
1	Test Receiver	ESU26	100235	R&S	2019-03-31	1 year
2	Test Receiver	ESU26	100376	R&S	2018-12-27	1 year
3	EMI Antenna	3117	00058889	ETS-Lindgren	2020-05-27	3 year
4	Universal Radio Communication Tester	CMW500	159082	R&S	2019-01-05	1 year
5	Spectrum Analyzer	FSU26	200030	R&S	2019-06-04	1 year
6	EMI Antenna	VULB9163	9163-235	Schwarzbeck	2019-05-10	3 year
7	Signal Generator	SMF100A	101295	R&S	2018-12-23	1 year
8	Climate chamber	SH-242	93008556	ESPEC	2019-12-21	2 year
9	Loop Antenna	HFH2-Z2	829324/007	R&S	2018-12-14	3 year

ANNEX A: MEASUREMENT RESULTS

A.1 OUTPUT POWER

A.1.1 Summary

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

A.1.2 Conducted

A.1.2.1 Method of Measurements

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

A.1.2.2 Measurement result

LTE band 2

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1909.3	23.40	22.37	21.40
		1880.0	23.35	22.75	21.47
		1850.7	23.30	22.37	21.43
	1 RB low	1909.3	23.39	22.38	21.42
		1880.0	23.36	22.77	21.32
		1850.7	23.27	22.31	21.33
	50% RB mid	1909.3	23.37	22.44	21.36
		1880.0	23.46	22.71	21.44
		1850.7	23.32	22.66	21.38
	100% RB	1909.3	22.41	21.57	20.18
		1880.0	22.34	21.31	20.17
		1850.7	22.32	21.53	20.35
3MHz	1 RB high	1908.5	23.45	22.34	21.29
		1880.0	23.36	22.30	21.42
		1851.5	23.35	22.73	21.41
	1 RB low	1908.5	23.43	22.43	21.42
		1880.0	23.33	22.30	21.43
		1851.5	23.35	22.71	21.40
	50% RB mid	1908.5	22.47	21.55	20.24
		1880.0	22.44	21.64	20.33
		1851.5	22.44	21.56	20.24

	100% RB	1908.5	22.47	21.46	20.18
		1880.0	22.41	21.56	20.24
		1851.5	22.39	21.45	20.30
5MHz	1 RB high	1907.5	23.49	22.47	21.31
		1880.0	23.47	22.61	21.37
		1852.5	23.31	22.89	21.41
	1 RB low	1907.5	23.44	22.48	21.33
		1880.0	23.47	22.60	21.38
		1852.5	23.33	22.84	21.35
	50% RB mid	1907.5	22.48	21.59	20.30
		1880.0	22.46	21.62	20.31
		1852.5	22.40	21.63	20.20
	100% RB	1907.5	22.44	21.47	20.18
		1880.0	22.44	21.54	20.20
		1852.5	22.35	21.50	20.29
10MHz	1 RB high	1905.0	23.41	22.31	21.30
		1880.0	23.43	22.42	21.36
		1855.0	23.44	22.82	21.39
	1 RB low	1905.0	23.42	22.43	21.33
		1880.0	23.47	22.43	21.39
		1855.0	23.49	22.81	21.35
	50% RB mid	1905.0	22.47	21.62	20.27
		1880.0	22.48	21.57	20.31
		1855.0	22.41	21.52	20.25
	100% RB	1905.0	22.46	21.53	20.14
		1880.0	22.45	21.53	20.17
		1855.0	22.38	21.51	20.28
15MHz	1 RB high	1902.5	23.50	22.64	21.31
		1880.0	23.29	22.29	21.37
		1857.5	23.27	22.64	21.40
	1 RB low	1902.5	23.48	22.79	21.39
		1880.0	23.35	22.32	21.38
		1857.5	23.33	22.68	21.35
	50% RB mid	1902.5	22.47	21.54	20.24
		1880.0	22.44	21.54	20.29
		1857.5	22.34	21.51	20.28
	100% RB	1902.5	22.49	21.55	20.11
		1880.0	22.37	21.49	20.18
		1857.5	22.32	21.47	20.26



20MHz	1 RB high	1900.0	23.44	22.75	21.36
		1880.0	23.38	22.82	21.43
		1860.0	23.37	22.97	21.44
	1 RB low	1900.0	23.27	22.76	21.40
		1880.0	23.40	22.75	21.40
		1860.0	23.27	22.84	21.37
	50% RB mid	1900.0	22.49	21.59	20.28
		1880.0	22.42	21.48	20.30
		1860.0	22.38	21.51	20.27
	100% RB	1900.0	22.36	21.47	20.15
		1880.0	22.38	21.46	20.23
		1860.0	22.41	21.55	20.31

LTE band 4

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1754.3	23.12	22.20	21.20
		1732.5	23.25	22.52	21.39
		1710.7	23.44	22.82	21.51
	1 RB low	1754.3	23.15	22.18	21.56
		1732.5	23.25	22.50	21.63
		1710.7	23.38	22.80	21.61
	50% RB mid	1754.3	23.26	22.52	21.27
		1732.5	23.42	22.67	21.52
		1710.7	23.41	22.81	21.67
	100% RB	1754.3	22.09	21.40	20.14
		1732.5	22.30	21.58	20.39
		1710.7	22.38	21.38	20.40
3MHz	1 RB high	1753.5	23.25	22.56	21.19
		1732.5	23.32	22.44	21.44
		1711.5	23.38	22.33	21.50
	1 RB low	1753.5	22.92	22.57	21.51
		1732.5	23.33	22.49	21.65
		1711.5	23.41	22.32	21.67
	50% RB mid	1753.5	22.30	21.43	20.27
		1732.5	22.42	21.58	20.36
		1711.5	22.51	21.70	20.46
	100% RB	1753.5	22.24	21.32	20.17
		1732.5	22.43	21.50	20.34
		1711.5	22.45	21.63	20.51
5MHz	1 RB high	1752.5	23.18	22.31	21.12
		1732.5	23.41	22.59	21.47
		1712.5	23.38	22.98	21.48
	1 RB low	1752.5	23.21	22.35	21.52
		1732.5	23.39	22.60	21.74
		1712.5	23.36	22.94	21.62
	50% RB mid	1752.5	22.30	21.44	20.25
		1732.5	22.44	21.67	20.38
		1712.5	22.50	21.78	20.51
	100% RB	1752.5	22.21	21.31	20.19
		1732.5	22.46	21.58	20.39
		1712.5	22.50	21.65	20.45
10MHz	1 RB high	1750	23.08	22.25	21.21
		1732.5	23.31	22.34	21.43

	1 RB low	1715	23.38	22.85	21.57
		1750	23.13	22.24	21.52
		1732.5	23.30	22.38	21.66
	50% RB mid	1715	23.43	22.82	21.71
		1750	22.27	21.44	20.27
		1732.5	22.46	21.61	20.44
	100% RB	1715	22.51	21.65	20.46
		1750	22.21	21.38	20.19
		1732.5	22.40	21.57	20.37
15MHz	1 RB high	1747.5	23.18	22.61	21.21
		1732.5	23.25	22.32	21.49
		1717.5	23.35	22.84	21.49
	1 RB low	1747.5	23.33	22.83	21.47
		1732.5	23.30	22.36	21.65
		1717.5	23.45	22.86	21.64
	50% RB mid	1747.5	22.32	21.34	20.17
		1732.5	22.46	21.59	20.43
		1717.5	22.51	21.66	20.47
	100% RB	1747.5	22.37	21.45	20.23
		1732.5	22.45	21.55	20.41
		1717.5	22.52	21.65	20.50
20MHz	1 RB high	1745	23.14	22.71	21.18
		1732.5	23.33	22.83	21.46
		1720	23.35	22.93	21.53
	1 RB low	1745	23.27	22.89	21.52
		1732.5	23.36	22.87	21.70
		1720	23.39	22.99	21.69
	50% RB mid	1745	22.45	21.58	20.24
		1732.5	22.51	21.60	20.41
		1720	22.55	21.73	20.48
	100% RB	1745	22.36	21.51	20.19
		1732.5	22.47	21.59	20.38
		1720	22.49	21.66	20.48

LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	22.99	22.23	21.38
		836.5	23.08	22.56	21.44
		824.7	22.95	22.14	21.46
	1 RB low	848.3	22.99	22.28	21.49
		836.5	23.07	22.55	21.41
		824.7	22.94	22.13	21.37
	50% RB mid	848.3	23.14	22.31	20.16
		836.5	23.14	22.43	20.33
		824.7	23.08	22.40	20.31
	100% RB	848.3	21.99	21.26	20.25
		836.5	22.05	21.08	20.27
		824.7	21.96	21.24	20.25
3MHz	1 RB high	847.5	23.02	22.21	21.42
		836.5	23.06	22.08	21.42
		825.5	23.02	22.48	21.42
	1 RB low	847.5	23.06	22.25	21.40
		836.5	23.08	22.08	21.42
		825.5	23.06	22.54	21.42
	50% RB mid	847.5	22.12	21.35	20.22
		836.5	22.17	21.38	20.32
		825.5	22.07	21.27	20.30
	100% RB	847.5	22.12	21.17	20.25
		836.5	22.16	21.30	20.35
		825.5	22.07	21.22	20.26
5MHz	1 RB high	846.5	23.10	22.24	21.40
		836.5	23.14	22.45	21.48
		826.5	23.12	22.71	21.43
	1 RB low	846.5	23.01	22.21	21.50
		836.5	23.12	22.39	21.39
		826.5	23.01	22.64	21.41
	50% RB mid	846.5	22.16	21.36	20.24
		836.5	22.16	21.37	20.29
		826.5	22.23	21.47	20.26
	100% RB	846.5	22.06	21.14	20.21
		836.5	22.17	21.27	20.35
		826.5	22.18	21.32	20.30
10MHz	1 RB high	844.0	23.07	22.54	21.40
		836.5	23.13	22.25	21.46



		829.0	23.15	22.12	21.44
1 RB low		844.0	23.08	22.54	21.46
		836.5	23.04	22.20	21.46
		829.0	22.99	22.05	21.41
50% RB mid		844.0	22.09	21.27	20.23
		836.5	22.20	21.40	20.32
		829.0	22.20	21.32	20.28
100% RB		844.0	22.09	21.22	20.23
		836.5	22.16	21.28	20.32
		829.0	22.18	21.28	20.28

LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	23.44	22.52	21.06
		2535	23.54	22.63	21.02
		2502.5	23.45	22.99	20.71
	1 RB low	2567.5	23.42	22.44	21.11
		2535	23.46	22.60	20.92
		2502.5	23.42	22.94	20.75
	50% RB mid	2567.5	22.45	21.55	19.98
		2535	22.46	21.65	19.87
		2502.5	22.53	21.73	19.62
	100% RB	2567.5	22.42	21.46	19.95
		2535	22.46	21.57	19.89
		2502.5	22.49	21.64	19.52
10MHz	1 RB high	2565	23.45	22.40	21.05
		2535	23.49	22.44	21.04
		2505	23.52	22.92	20.67
	1 RB low	2565	23.41	22.45	21.08
		2535	23.43	22.38	20.92
		2505	23.50	22.83	20.84
	50% RB mid	2565	22.50	21.65	20.06
		2535	22.57	21.68	19.89
		2505	22.56	21.65	19.67
	100% RB	2565	22.45	21.58	20.01
		2535	22.50	21.61	19.85
		2505	22.49	21.60	19.50
15MHz	1 RB high	2562.5	23.45	22.34	21.15
		2535	23.57	22.88	21.12
		2507.5	23.59	22.89	20.64
	1 RB low	2562.5	23.40	22.36	21.15
		2535	23.49	22.86	20.96
		2507.5	23.49	22.87	20.76
	50% RB mid	2562.5	22.49	21.57	20.05
		2535	22.52	21.68	19.95
		2507.5	22.56	21.55	19.64
	100% RB	2562.5	22.44	21.52	20.01
		2535	22.53	21.66	19.89
		2507.5	22.50	21.59	19.53
20MHz	1 RB high	2560	23.41	22.81	21.11



		2535	23.53	22.87	21.09
		2510	23.37	22.99	20.68
	1 RB low	2560	23.36	22.85	21.12
		2535	23.41	22.85	20.99
		2510	23.42	22.99	20.82
	50% RB mid	2560	22.47	21.55	20.03
		2535	22.57	21.65	19.91
		2510	22.55	21.68	19.66
	100% RB	2560	22.44	21.53	20.00
		2535	22.50	21.60	19.87
		2510	22.37	21.54	19.56

LTE band 12

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	22.95	22.24	21.03
		707.5	23.02	22.21	21.24
		699.7	22.94	22.38	21.26
	1 RB low	715.3	22.87	22.28	21.12
		707.5	23.03	22.18	21.25
		699.7	22.98	22.37	21.27
	50% RB mid	715.3	22.92	22.22	21.11
		707.5	23.09	22.21	21.30
		699.7	23.02	22.28	21.26
	100% RB	715.3	21.87	20.89	20.00
		707.5	21.96	21.22	20.17
		699.7	21.93	20.94	20.10
3MHz	1 RB high	714.5	22.99	22.33	21.10
		707.5	23.04	22.10	21.34
		700.5	23.02	21.93	21.24
	1 RB low	714.5	22.94	22.34	21.19
		707.5	23.07	22.18	21.35
		700.5	23.02	21.91	21.27
	50% RB mid	714.5	22.01	21.11	20.15
		707.5	22.13	21.26	20.31
		700.5	22.10	21.30	20.31
	100% RB	714.5	21.99	21.10	20.07
		707.5	22.10	21.13	20.23
		700.5	22.06	21.19	20.22
5MHz	1 RB high	713.5	22.85	22.05	21.13
		707.5	22.98	22.21	21.27
		701.5	23.07	22.67	21.37
	1 RB low	713.5	22.89	22.06	21.24
		707.5	22.99	22.27	21.34
		701.5	23.03	22.53	21.36
	50% RB mid	713.5	22.02	21.16	20.16
		707.5	22.12	21.30	20.33
		701.5	22.08	21.34	20.28
	100% RB	713.5	21.99	21.03	20.10
		707.5	22.12	21.22	20.23
		701.5	22.15	21.32	20.31
10MHz	1 RB high	711.0	23.06	21.90	21.22
		707.5	23.01	22.42	21.27



		704.0	23.04	22.10	21.34
	1 RB low	711.0	23.00	21.99	21.40
		707.5	22.99	22.41	21.35
		704.0	22.98	22.06	21.37
	50% RB mid	711.0	22.12	21.20	20.24
		707.5	22.13	21.26	20.28
		704.0	22.17	21.36	20.36
	100% RB	711.0	22.07	21.16	20.22
		707.5	22.11	21.24	20.28
		704.0	22.10	21.28	20.31

LTE band 26(814MHz~824MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	823.3	23.20	22.35	20.31
		819.0	23.18	22.26	20.28
		814.7	23.18	22.27	20.32
	1 RB low	823.3	23.26	22.56	20.35
		819.0	23.10	22.32	20.31
		814.7	23.18	22.22	20.40
	50% RB mid	823.3	23.25	22.25	20.27
		819.0	23.25	22.35	20.26
		814.7	23.31	22.59	20.28
	100% RB	823.3	22.28	21.28	19.23
		819.0	22.14	21.15	19.16
		814.7	22.22	21.28	19.22
3MHz	1 RB high	822.5	23.28	22.22	20.38
		819.0	23.29	22.73	20.41
		815.5	23.25	22.49	20.42
	1 RB low	822.5	23.36	22.45	20.46
		819.0	23.25	22.74	20.38
		815.5	23.40	22.61	20.47
	50% RB mid	822.5	22.40	21.47	19.30
		819.0	22.26	21.39	19.26
		815.5	22.25	21.35	19.28
	100% RB	822.5	22.30	21.37	19.31
		819.0	22.34	21.45	19.36
		815.5	22.24	21.33	19.29
5MHz	1 RB high	821.5	23.25	22.38	20.34
		819.0	23.34	22.59	20.40
		816.5	23.20	22.72	20.37
	1 RB low	821.5	23.33	22.37	20.43
		819.0	23.26	22.39	20.46
		816.5	23.21	22.38	20.43
	50% RB mid	821.5	22.37	21.37	19.36
		819.0	22.37	21.47	19.39
		816.5	22.31	21.31	19.31
	100% RB	821.5	22.32	21.40	19.29
		819.0	22.32	21.36	19.30
		816.5	22.29	21.33	19.24
10MHz	1 RB high	819.0	23.40	22.60	20.32



	1 RB low	819.0	23.34	22.29	20.49
	50% RB mid	819.0	22.43	21.44	19.35
	100% RB	819.0	22.38	21.46	19.36

LTE band 26(824MHz~849MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	23.36	22.34	20.47
		836.5	23.29	22.75	20.41
		824.7	23.17	22.15	20.31
	1 RB low	848.3	23.27	22.63	20.50
		836.5	23.25	22.36	20.49
		824.7	23.20	22.14	20.33
	50% RB mid	848.3	23.35	22.41	20.39
		836.5	23.36	22.34	20.35
		824.7	23.23	22.33	20.25
	100% RB	848.3	22.37	21.50	19.42
		836.5	22.27	21.34	19.31
		824.7	22.24	21.28	19.20
3MHz	1 RB high	847.5	23.37	22.51	20.55
		836.5	23.31	22.22	20.48
		825.5	23.20	22.61	20.38
	1 RB low	847.5	23.43	22.68	20.64
		836.5	23.34	22.48	20.54
		825.5	23.29	22.38	20.38
	50% RB mid	847.5	22.49	21.61	19.46
		836.5	22.39	21.48	19.37
		825.5	22.32	21.53	19.26
	100% RB	847.5	22.44	21.57	19.46
		836.5	22.32	21.43	19.37
		825.5	22.24	21.32	19.25
5MHz	1 RB high	846.5	23.38	22.67	20.50
		836.5	23.37	22.90	20.45
		826.5	23.40	22.50	20.46
	1 RB low	846.5	23.50	22.55	20.64
		836.5	23.40	22.63	20.44
		826.5	23.37	22.42	20.39
	50% RB mid	846.5	22.49	21.69	19.51
		836.5	22.42	21.44	19.40
		826.5	22.30	21.36	19.25
	100% RB	846.5	22.43	21.50	19.46
		836.5	22.33	21.44	19.33
		826.5	22.36	21.39	19.34
10MHz	1 RB high	844.0	23.41	22.78	20.55
		836.5	23.32	22.47	20.48

	1 RB low	829.0	23.24	22.49	20.46
		844.0	23.40	22.79	20.60
		836.5	23.34	22.39	20.54
	50% RB mid	829.0	23.26	22.56	20.43
		844.0	22.39	21.46	19.42
		836.5	22.37	21.45	19.42
	100% RB	829.0	22.38	21.48	19.35
		844.0	22.36	21.49	19.40
		836.5	22.29	21.38	19.28
15MHz	1 RB high	829.0	22.34	21.44	19.34
		841.5	23.50	22.13	20.60
		836.5	23.45	22.62	20.53
	1 RB low	831.5	23.41	23.08	20.49
		841.5	23.41	22.08	20.67
		836.5	23.47	22.68	20.58
	50% RB mid	831.5	23.34	22.98	20.53
		841.5	22.32	21.32	19.37
		836.5	22.25	21.37	19.44
	100% RB	831.5	22.27	21.42	19.39
		841.5	22.29	21.36	19.38
		836.5	22.23	21.34	19.28
		831.5	22.26	21.40	19.34

LTE band 38

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2617.5	23.60	22.98	20.88
		2595.0	23.70	22.86	20.79
		2572.5	23.54	22.91	20.77
	1 RB low	2617.5	23.53	22.86	20.90
		2595.0	23.54	22.97	20.89
		2572.5	23.45	22.90	20.98
	50% RB mid	2617.5	22.58	21.73	20.03
		2595.0	22.64	21.72	19.92
		2572.5	22.50	21.67	19.99
	100% RB	2617.5	22.57	21.65	19.99
		2595.0	22.57	21.70	19.95
		2572.5	22.49	21.58	20.03
10MHz	1 RB high	2615.0	23.63	22.95	20.89
		2595.0	23.62	22.96	20.84
		2575.0	23.51	22.90	20.85
	1 RB low	2615.0	23.56	23.00	20.88
		2595.0	23.62	22.99	20.92
		2575.0	23.45	22.77	21.05
	50% RB mid	2615.0	22.62	21.72	20.01
		2595.0	22.59	21.71	19.92
		2575.0	22.55	21.62	20.01
	100% RB	2615.0	22.52	21.64	20.04
		2595.0	22.60	21.75	19.96
		2575.0	22.58	21.61	19.95
15MHz	1 RB high	2612.5	23.57	22.98	20.85
		2595.0	23.67	22.95	20.81
		2577.5	23.67	22.96	20.79
	1 RB low	2612.5	23.62	22.92	20.96
		2595.0	23.61	23.00	20.91
		2577.5	23.52	22.89	21.01
	50% RB mid	2612.5	22.57	21.72	20.01
		2595.0	22.62	21.76	20.01
		2577.5	22.55	21.70	20.00
	100% RB	2612.5	22.62	21.76	19.99
		2595.0	22.59	21.74	19.95
		2577.5	22.53	21.64	19.96
20MHz	1 RB high	2610.0	23.70	22.88	20.88



		2595.0	23.71	22.98	20.86
		2580.0	23.63	23.00	20.84
	1 RB low	2610.0	23.72	22.88	20.93
		2595.0	23.63	22.98	20.96
		2580.0	23.58	22.83	21.02
	50% RB mid	2610.0	22.74	21.74	20.02
		2595.0	22.67	21.80	19.97
		2580.0	22.63	21.70	20.01
	100% RB	2610.0	22.66	21.70	20.01
		2595.0	22.66	21.75	19.95
		2580.0	22.56	21.65	20.00

LTE band 41

Bandwidth	RB size/offset	Frequency (MHz)	Power(dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2687.5	23.58	22.90	21.46
		2593.0	23.58	22.76	20.70
		2498.5	23.46	22.61	20.50
	1 RB low	2687.5	23.60	22.95	21.70
		2593.0	23.40	22.78	21.11
		2498.5	23.51	22.51	20.59
	50% RB mid	2687.5	22.70	21.82	20.69
		2593.0	22.58	21.67	19.84
		2498.5	22.54	21.64	19.60
	100% RB	2687.5	22.66	21.75	20.72
		2593.0	22.52	21.68	19.92
		2498.5	22.47	21.54	19.55
10MHz	1 RB high	2685.0	23.60	22.91	21.51
		2593.0	23.51	22.88	20.72
		2501.0	23.57	22.69	20.57
	1 RB low	2685.0	23.66	22.99	21.73
		2593.0	23.52	22.91	21.07
		2501.0	23.56	22.58	20.50
	50% RB mid	2685.0	22.62	21.83	20.70
		2593.0	22.62	21.73	19.84
		2501.0	22.53	21.61	19.57
	100% RB	2685.0	22.71	21.79	20.69
		2593.0	22.50	21.64	19.88
		2501.0	22.53	21.62	19.59
15MHz	1 RB high	2682.5	23.63	22.92	21.51
		2593.0	23.49	22.64	20.68
		2503.5	23.50	22.69	20.48
	1 RB low	2682.5	23.72	22.92	21.71
		2593.0	23.67	22.70	21.05
		2503.5	23.59	22.73	20.60
	50% RB mid	2682.5	22.59	21.81	20.65
		2593.0	22.48	21.65	19.90
		2503.5	22.54	21.59	19.55
	100% RB	2682.5	22.71	21.76	20.73
		2593.0	22.53	21.65	19.85
		2503.5	22.55	21.64	19.61
20MHz	1 RB high	2680.0	23.70	22.82	21.53



		2593.0	23.39	22.98	20.71
		2506.0	23.37	22.59	20.54
	1 RB low	2680.0	23.84	22.85	21.76
		2593.0	23.62	22.96	21.08
		2506.0	23.65	22.60	20.56
	50% RB mid	2680.0	22.78	21.81	20.71
		2593.0	22.62	21.73	19.89
		2506.0	22.61	21.66	19.59
	100% RB	2680.0	22.66	21.74	20.71
		2593.0	22.60	21.67	19.89
		2506.0	22.56	21.63	19.58

A.1.3 Radiated

A.1.3.1 Description

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

Rule Part 22.913(a) specifies "Mobile stations are limited to 2.0 watts EIRP."

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

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

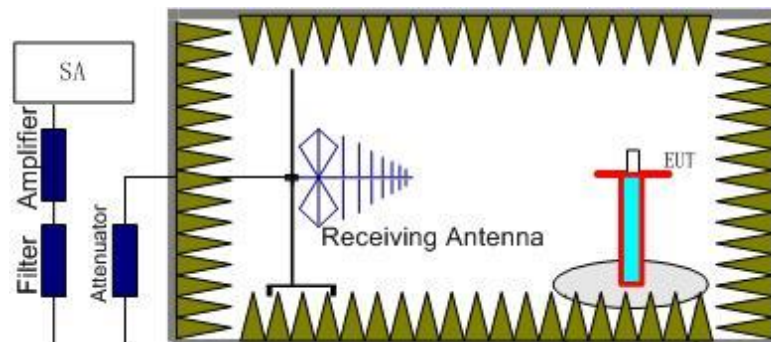
Rule Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP."

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

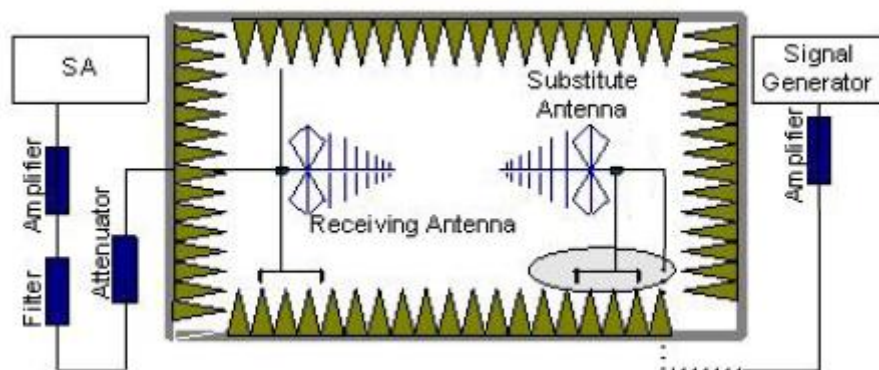
A.1.3.2 Method of Measurement

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

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



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

4. An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna. The cable loss (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be recorded after test.

The measurement results are obtained as described below:

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

5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15$.

A.1.3.3 Measurement result

LTE Band 2- EIRP 24. 232(b)

Limits: ≤33dBm (2W)

LTE Band 2_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-23.26	2.92	43.75	4.87	22.44	33.00	10.56	H
1880.00	-23.79	2.85	43.75	4.82	21.93	33.00	11.07	H
1909.30	-22.72	2.87	43.77	4.76	22.94	33.00	10.06	H

LTE Band 2_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-23.32	2.87	43.75	4.87	22.43	33.00	10.57	H
1880.00	-23.84	2.85	43.75	4.82	21.88	33.00	11.12	H
1908.50	-22.70	2.89	43.78	4.76	22.95	33.00	10.05	H

LTE Band 2_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-23.29	2.87	43.75	4.87	22.46	33.00	10.54	H
1880.00	-23.87	2.85	43.75	4.82	21.85	33.00	11.15	H
1907.50	-22.90	2.84	43.77	4.77	22.80	33.00	10.20	H

LTE Band 2_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-23.39	2.88	43.74	4.86	22.33	33.00	10.67	H
1880.00	-23.89	2.85	43.75	4.82	21.83	33.00	11.17	H
1905.00	-23.25	2.87	43.77	4.77	22.42	33.00	10.58	H

LTE Band 2_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-23.42	2.87	43.75	4.86	22.32	33.00	10.68	H
1880.00	-23.92	2.85	43.75	4.82	21.80	33.00	11.20	H
1902.50	-23.50	2.86	43.77	4.78	22.19	33.00	10.81	H

LTE Band 2_20 MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-23.24	2.86	43.75	4.85	22.50	33.00	10.50	H
1880.00	-23.95	2.85	43.75	4.82	21.77	33.00	11.23	H
1900.00	-23.67	2.87	43.77	4.78	22.01	33.00	10.99	H

LTE Band 2_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-24.12	2.92	43.75	4.87	21.58	33.00	11.42	H
1880.00	-24.66	2.85	43.75	4.82	21.06	33.00	11.94	H
1909.30	-23.83	2.87	43.77	4.76	21.83	33.00	11.17	H

LTE Band 2_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-24.22	2.87	43.75	4.87	21.53	33.00	11.47	H
1880.00	-24.59	2.85	43.75	4.82	21.13	33.00	11.87	H
1908.50	-23.82	2.89	43.78	4.76	21.83	33.00	11.17	H

LTE Band 2_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-24.04	2.87	43.75	4.87	21.71	33.00	11.29	H
1880.00	-24.65	2.85	43.75	4.82	21.07	33.00	11.93	H
1907.50	-23.79	2.84	43.77	4.77	21.91	33.00	11.09	H

LTE Band 2_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-24.26	2.88	43.74	4.86	21.46	33.00	11.54	H
1880.00	-24.60	2.85	43.75	4.82	21.12	33.00	11.88	H
1905.00	-24.16	2.87	43.77	4.77	21.51	33.00	11.49	H

LTE Band 2_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-24.30	2.87	43.75	4.86	21.44	33.00	11.56	H
1880.00	-24.62	2.85	43.75	4.82	21.10	33.00	11.90	H
1902.50	-24.37	2.86	43.77	4.78	21.32	33.00	11.68	H

LTE Band 2_20 MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-24.24	2.86	43.75	4.85	21.50	33.00	11.50	H
1880.00	-24.64	2.85	43.75	4.82	21.08	33.00	11.92	H
1900.00	-24.57	2.87	43.77	4.78	21.11	33.00	11.89	H



LTE Band 2_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1850.70	-23.91	2.92	43.75	4.87	21.79	33.00	11.21	H
1880.00	-23.57	2.85	43.75	4.82	22.15	33.00	10.85	H
1909.30	-23.38	2.87	43.77	4.76	22.28	33.00	10.72	H

LTE Band 2_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1851.50	-23.99	2.87	43.75	4.87	21.76	33.00	11.24	H
1880.00	-23.56	2.85	43.75	4.82	22.16	33.00	10.84	H
1908.50	-23.47	2.89	43.78	4.76	22.18	33.00	10.82	H

LTE Band 2_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1852.50	-23.98	2.87	43.75	4.87	21.77	33.00	11.23	H
1880.00	-23.51	2.85	43.75	4.82	22.21	33.00	10.79	H
1907.50	-23.62	2.84	43.77	4.77	22.08	33.00	10.92	H

LTE Band 2_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1855.00	-24.12	2.88	43.74	4.86	21.60	33.00	11.40	H
1880.00	-23.62	2.85	43.75	4.82	22.10	33.00	10.90	H
1905.00	-23.95	2.87	43.77	4.77	21.72	33.00	11.28	H

LTE Band 2_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1857.50	-24.07	2.87	43.75	4.86	21.67	33.00	11.33	H
1880.00	-23.58	2.85	43.75	4.82	22.14	33.00	10.86	H
1902.50	-24.14	2.86	43.77	4.78	21.55	33.00	11.45	H

LTE Band 2_20 MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1860.00	-23.84	2.86	43.75	4.85	21.90	33.00	11.10	H
1880.00	-23.60	2.85	43.75	4.82	22.12	33.00	10.88	H
1900.00	-24.21	2.87	43.77	4.78	21.47	33.00	11.53	H



LTE Band 4- EIRP 27.50(d)

Limits: ≤30dBm (1W)

LTE Band 4_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1710.70	-24.00	3.17	44.10	5.12	22.05	30.00	7.95	H
1732.50	-24.59	3.33	44.14	5.08	21.30	30.00	8.70	H
1754.30	-23.12	3.76	44.14	5.04	22.30	30.00	7.70	H

LTE Band 4_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1711.50	-23.88	3.40	44.10	5.12	21.94	30.00	8.06	H
1732.50	-24.64	3.33	44.14	5.08	21.25	30.00	8.75	H
1753.50	-23.07	3.80	44.13	5.04	22.30	30.00	7.70	H

LTE Band 4_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1712.50	-23.61	3.66	44.10	5.12	21.95	30.00	8.05	H
1732.50	-24.61	3.33	44.14	5.08	21.28	30.00	8.72	H
1752.50	-23.16	3.82	44.14	5.05	22.21	30.00	7.79	H

LTE Band 4_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1715.00	-23.91	3.56	44.10	5.11	21.74	30.00	8.26	H
1732.50	-24.66	3.33	44.14	5.08	21.23	30.00	8.77	H
1750.00	-24.30	3.00	44.15	5.05	21.90	30.00	8.10	H

LTE Band 4_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1717.50	-24.22	3.47	44.11	5.11	21.53	30.00	8.47	H
1732.50	-24.69	3.33	44.14	5.08	21.20	30.00	8.80	H
1747.50	-24.15	3.34	44.15	5.05	21.71	30.00	8.29	H

LTE Band 4_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1720.00	-24.40	3.37	44.11	5.10	21.44	30.00	8.56	H
1732.50	-24.72	3.33	44.14	5.08	21.17	30.00	8.83	H
1745.00	-23.72	3.68	44.16	5.06	21.82	30.00	8.18	H



LTE Band 4_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1710.70	-24.81	3.17	44.10	5.12	21.24	30.00	8.76	H
1732.50	-25.44	3.33	44.14	5.08	20.45	30.00	9.55	H
1754.30	-23.94	3.76	44.14	5.04	21.48	30.00	8.52	H

LTE Band 4_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1711.50	-24.60	3.40	44.10	5.12	21.22	30.00	8.78	H
1732.50	-25.41	3.33	44.14	5.08	20.48	30.00	9.52	H
1753.50	-24.15	3.80	44.13	5.04	21.22	30.00	8.78	H

LTE Band 4_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1712.50	-24.18	3.66	44.10	5.12	21.38	30.00	8.62	H
1732.50	-25.44	3.33	44.14	5.08	20.45	30.00	9.55	H
1752.50	-23.85	3.82	44.14	5.05	21.52	30.00	8.48	H

LTE Band 4_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1715.00	-24.64	3.56	44.10	5.11	21.01	30.00	8.99	H
1732.50	-25.48	3.33	44.14	5.08	20.41	30.00	9.59	H
1750.00	-25.09	3.00	44.15	5.05	21.11	30.00	8.89	H

LTE Band 4_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1717.50	-24.84	3.47	44.11	5.11	20.91	30.00	9.09	H
1732.50	-25.42	3.33	44.14	5.08	20.47	30.00	9.53	H
1747.50	-24.90	3.34	44.15	5.05	20.96	30.00	9.04	H

LTE Band 4_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1720.00	-25.28	3.37	44.11	5.10	20.56	30.00	9.44	H
1732.50	-25.42	3.33	44.14	5.08	20.47	30.00	9.53	H
1745.00	-24.66	3.68	44.16	5.06	20.88	30.00	9.12	H



LTE Band 4_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1710.70	-23.86	3.17	44.10	5.12	22.19	30.00	7.81	H
1732.50	-25.20	3.33	44.14	5.08	20.69	30.00	9.31	H
1754.30	-23.37	3.76	44.14	5.04	22.05	30.00	7.95	H

LTE Band 4_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1711.50	-23.68	3.40	44.10	5.12	22.14	30.00	7.86	H
1732.50	-25.18	3.33	44.14	5.08	20.71	30.00	9.29	H
1753.50	-23.33	3.80	44.13	5.04	22.04	30.00	7.96	H

LTE Band 4_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1712.50	-23.42	3.66	44.10	5.12	22.14	30.00	7.86	H
1732.50	-25.15	3.33	44.14	5.08	20.74	30.00	9.26	H
1752.50	-23.37	3.82	44.14	5.05	22.00	30.00	8.00	H

LTE Band 4_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1715.00	-23.74	3.56	44.10	5.11	21.91	30.00	8.09	H
1732.50	-25.24	3.33	44.14	5.08	20.65	30.00	9.35	H
1750.00	-24.58	3.00	44.15	5.05	21.62	30.00	8.38	H

LTE Band 4_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1717.50	-24.05	3.47	44.11	5.11	21.70	30.00	8.30	H
1732.50	-25.21	3.33	44.14	5.08	20.68	30.00	9.32	H
1747.50	-24.33	3.34	44.15	5.05	21.53	30.00	8.47	H

LTE Band 4_20 MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
1720.00	-24.32	3.37	44.11	5.10	21.52	30.00	8.48	H
1732.50	-25.22	3.33	44.14	5.08	20.67	30.00	9.33	H
1745.00	-24.13	3.68	44.16	5.06	21.41	30.00	8.59	H



LTE Band 5- ERP 22.913(a)

Limits: ≤38.45dBm (7W)

LTE Band 5_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-28.10	2.26	45.79	0.95	2.15	18.53	38.45	19.92	H
836.50	-27.78	2.26	45.66	0.82	2.15	18.59	38.45	19.86	H
848.30	-28.24	2.27	45.55	0.80	2.15	17.99	38.45	20.46	V

LTE Band 5_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-23.88	2.26	45.79	0.94	2.15	18.44	38.45	20.01	H
836.50	-23.52	2.26	45.66	0.82	2.15	18.55	38.45	19.90	V
847.50	-23.87	2.27	45.56	0.81	2.15	18.08	38.45	20.37	V

LTE Band 5_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-23.73	2.25	45.77	0.93	2.15	18.57	38.45	19.88	H
836.50	-23.48	2.26	45.66	0.82	2.15	18.59	38.45	19.86	H
846.50	-23.77	2.26	45.56	0.82	2.15	18.20	38.45	20.25	V

LTE Band 5_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-23.94	2.13	45.74	0.90	2.15	18.42	38.45	20.03	H
836.50	-23.55	2.26	45.66	0.82	2.15	18.52	38.45	19.93	H
844.00	-23.97	2.26	45.59	0.82	2.15	18.03	38.45	20.42	V



LTE Band 5_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-28.94	2.26	45.79	0.95	2.15	17.69	38.45	20.76	H
836.50	-28.67	2.26	45.66	0.82	2.15	17.70	38.45	20.75	H
848.30	-29.00	2.27	45.55	0.80	2.15	17.23	38.45	21.22	V

LTE Band 5_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-24.73	2.26	45.79	0.94	2.15	17.59	38.45	20.86	H
836.50	-24.26	2.26	45.66	0.82	2.15	17.81	38.45	20.64	H
847.50	-24.67	2.27	45.56	0.81	2.15	17.28	38.45	21.17	V

LTE Band 5_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-24.40	2.25	45.77	0.93	2.15	17.90	38.45	20.55	H
836.50	-24.30	2.26	45.66	0.82	2.15	17.77	38.45	20.68	H
846.50	-24.42	2.26	45.56	0.82	2.15	17.55	38.45	20.90	V

LTE Band 5_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-24.62	2.13	45.74	0.90	2.15	17.74	38.45	20.71	H
836.50	-24.30	2.26	45.66	0.82	2.15	17.77	38.45	20.68	V
844.00	-24.74	2.26	45.59	0.82	2.15	17.26	38.45	21.19	V



LTE Band 5_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-30.07	2.26	45.79	0.95	2.15	16.56	38.45	21.89	H
836.50	-29.81	2.26	45.66	0.82	2.15	16.56	38.45	21.89	H
848.30	-30.21	2.27	45.55	0.80	2.15	16.02	38.45	22.43	V

LTE Band 5_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-25.81	2.26	45.79	0.94	2.15	16.51	38.45	21.94	H
836.50	-25.52	2.26	45.66	0.82	2.15	16.55	38.45	21.90	H
847.50	-25.80	2.27	45.56	0.81	2.15	16.15	38.45	22.30	V

LTE Band 5_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-25.65	2.25	45.77	0.93	2.15	16.65	38.45	21.80	H
836.50	-25.45	2.26	45.66	0.82	2.15	16.62	38.45	21.83	H
846.50	-25.70	2.26	45.56	0.82	2.15	16.27	38.45	22.18	V

LTE Band 5_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-25.84	2.13	45.74	0.90	2.15	16.52	38.45	21.93	H
836.50	-25.53	2.26	45.66	0.82	2.15	16.54	38.45	21.91	H
844.00	-25.86	2.26	45.59	0.82	2.15	16.14	38.45	22.31	V



LTE Band 7- EIRP 27.50(h)(2)

Limits: ≤33 dBm (2W)

LTE Band 7_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2502.50	-25.20	3.58	45.68	6.10	23.00	33.00	10.00	H
2535.00	-23.92	3.63	44.82	6.16	23.43	33.00	9.57	H
2567.50	-25.27	3.65	44.92	6.22	22.22	33.00	10.78	H

LTE Band 7_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2505.00	-25.21	3.59	45.64	6.11	22.95	33.00	10.05	H
2535.00	-24.11	3.63	44.82	6.16	23.24	33.00	9.76	H
2565.00	-25.33	3.65	44.97	6.22	22.21	33.00	10.79	H

LTE Band 7_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2507.50	-24.40	3.59	44.92	6.11	23.04	33.00	9.96	H
2535.00	-23.98	3.63	44.82	6.16	23.37	33.00	9.63	H
2562.50	-25.95	3.65	45.67	6.21	22.28	33.00	10.72	H

LTE Band 7_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2510.00	-24.86	3.58	45.36	6.12	23.04	33.00	9.96	H
2535.00	-24.01	3.63	44.82	6.16	23.34	33.00	9.66	H
2560.00	-26.19	3.64	45.98	6.21	22.36	33.00	10.64	H

LTE Band 7_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2502.50	-26.07	3.58	45.68	6.10	22.13	33.00	10.87	H
2535.00	-24.68	3.63	44.82	6.16	22.67	33.00	10.33	H
2567.50	-26.07	3.65	44.92	6.22	21.42	33.00	11.58	H

LTE Band 7_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2505.00	-26.14	3.59	45.64	6.11	22.02	33.00	10.98	H
2535.00	-24.91	3.63	44.82	6.16	22.44	33.00	10.56	H
2565.00	-26.19	3.65	44.97	6.22	21.35	33.00	11.65	H

LTE Band 7_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2507.50	-25.20	3.59	44.92	6.11	22.24	33.00	10.76	H
2535.00	-24.85	3.63	44.82	6.16	22.50	33.00	10.50	H
2562.50	-26.84	3.65	45.67	6.21	21.39	33.00	11.61	H

LTE Band 7_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2510.00	-25.71	3.58	45.36	6.12	22.19	33.00	10.81	H
2535.00	-24.83	3.63	44.82	6.16	22.52	33.00	10.48	H
2560.00	-27.07	3.64	45.98	6.21	21.48	33.00	11.52	H



LTE Band 7_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2502.50	-27.20	3.58	45.68	6.10	21.00	33.00	12.00	H
2535.00	-26.27	3.63	44.82	6.16	21.08	33.00	11.92	H
2567.50	-27.24	3.65	44.92	6.22	20.25	33.00	12.75	H

LTE Band 7_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2505.00	-27.22	3.59	45.64	6.11	20.94	33.00	12.06	H
2535.00	-26.36	3.63	44.82	6.16	20.99	33.00	12.01	H
2565.00	-27.22	3.65	44.97	6.22	20.32	33.00	12.68	H

LTE Band 7_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2507.50	-26.40	3.59	44.92	6.11	21.04	33.00	11.96	H
2535.00	-26.37	3.63	44.82	6.16	20.98	33.00	12.02	H
2562.50	-27.65	3.65	45.67	6.21	20.58	33.00	12.42	H

LTE Band 7_20 MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2510.00	-26.74	3.58	45.36	6.12	21.16	33.00	11.84	H
2535.00	-26.38	3.63	44.82	6.16	20.97	33.00	12.03	H
2560.00	-27.82	3.64	45.98	6.21	20.73	33.00	12.27	H



LTE Band 12 - ERP 27.50(c)(10)

Limits: ≤34.77dBm (3W)

LTE Band 12_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
699.70	-23.56	1.90	44.66	0.77	2.15	17.82	34.77	16.95	V
707.50	-23.50	1.91	44.94	0.62	2.15	18.00	34.77	16.77	V
715.30	-23.91	1.92	45.26	0.50	2.15	17.78	34.77	16.99	V

LTE Band 12_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
700.50	-23.49	1.90	44.68	0.76	2.15	17.90	34.77	16.87	V
707.50	-23.49	1.91	44.94	0.62	2.15	18.01	34.77	16.76	V
714.50	-23.85	1.92	45.26	0.50	2.15	17.84	34.77	16.93	V

LTE Band 12_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
701.50	-23.37	1.90	44.81	0.74	2.15	18.13	34.77	16.64	V
707.50	-23.46	1.91	44.94	0.62	2.15	18.04	34.77	16.73	V
713.50	-23.67	1.92	45.22	0.50	2.15	17.98	34.77	16.79	V

LTE Band 12_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
704.00	-23.50	1.91	44.93	0.70	2.15	18.07	34.77	16.70	V
707.50	-23.53	1.91	44.94	0.62	2.15	17.97	34.77	16.80	V
711.00	-23.71	1.92	45.19	0.53	2.15	17.94	34.77	16.83	V



LTE Band 12_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
699.70	-24.37	1.90	44.66	0.77	2.15	17.01	34.77	17.76	V
707.50	-24.37	1.91	44.94	0.62	2.15	17.13	34.77	17.64	V
715.30	-24.80	1.92	45.26	0.50	2.15	16.89	34.77	17.88	V

LTE Band 12_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
700.50	-24.28	1.90	44.68	0.76	2.15	17.11	34.77	17.66	V
707.50	-24.25	1.91	44.94	0.62	2.15	17.25	34.77	17.52	V
714.50	-24.75	1.92	45.26	0.50	2.15	16.94	34.77	17.83	V

LTE Band 12_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
701.50	-24.08	1.90	44.81	0.74	2.15	17.42	34.77	17.35	V
707.50	-24.27	1.91	44.94	0.62	2.15	17.23	34.77	17.54	V
713.50	-24.47	1.92	45.22	0.50	2.15	17.18	34.77	17.59	V

LTE Band 12_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
704.00	-24.32	1.91	44.93	0.70	2.15	17.25	34.77	17.52	V
707.50	-24.37	1.91	44.94	0.62	2.15	17.13	34.77	17.64	V
711.00	-24.27	1.92	45.19	0.53	2.15	17.38	34.77	17.39	V



LTE Band 12_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
699.70	-25.46	1.90	44.66	0.77	2.15	15.92	34.77	18.85	V
707.50	-25.36	1.91	44.94	0.62	2.15	16.14	34.77	18.63	V
715.30	-25.83	1.92	45.26	0.50	2.15	15.86	34.77	18.91	V

LTE Band 12_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
700.50	-25.40	1.90	44.68	0.76	2.15	15.99	34.77	18.78	V
707.50	-25.42	1.91	44.94	0.62	2.15	16.08	34.77	18.69	V
714.50	-25.83	1.92	45.26	0.50	2.15	15.86	34.77	18.91	V

LTE Band 12_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
701.50	-25.29	1.90	44.81	0.74	2.15	16.21	34.77	18.56	V
707.50	-25.36	1.91	44.94	0.62	2.15	16.14	34.77	18.63	V
713.50	-25.66	1.92	45.22	0.50	2.15	15.99	34.77	18.78	V

LTE Band 12_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
704.00	-25.41	1.91	44.93	0.70	2.15	16.16	34.77	18.61	V
707.50	-25.43	1.91	44.94	0.62	2.15	16.07	34.77	18.70	V
711.00	-25.66	1.92	45.19	0.53	2.15	15.99	34.77	18.78	V



LTE Band 26(814MHz~824MHz)- ERP 90.635(b)

Limits: ≤50dBm (100W)

LTE Band 26_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-24.55	2.13	45.86	0.89	2.15	17.92	50.00	32.08	H
819.00	-24.59	2.19	45.84	1.05	2.15	17.96	50.00	32.04	H
823.30	-23.65	2.24	45.79	0.55	2.15	18.30	50.00	31.70	H

LTE Band 26_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-24.59	2.14	45.87	0.93	2.15	17.92	50.00	32.08	H
819.00	-24.59	2.19	45.84	1.05	2.15	17.96	50.00	32.04	H
822.50	-23.56	2.23	45.81	0.33	2.15	18.20	50.00	31.80	H

LTE Band 26_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-24.65	2.16	45.88	0.98	2.15	17.90	50.00	32.10	H
819.00	-24.56	2.19	45.84	1.05	2.15	17.99	50.00	32.01	H
821.50	-24.00	2.22	45.82	0.71	2.15	18.16	50.00	31.84	H

LTE Band 26_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-24.60	2.19	45.84	1.05	2.15	17.95	50.00	32.05	H



LTE Band 26_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-25.43	2.13	45.86	0.89	2.15	17.04	50.00	32.96	H
819.00	-25.50	2.19	45.84	1.05	2.15	17.05	50.00	32.95	H
823.30	-24.47	2.24	45.79	0.55	2.15	17.48	50.00	32.52	H

LTE Band 26_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-25.50	2.14	45.87	0.93	2.15	17.01	50.00	32.99	H
819.00	-25.35	2.19	45.84	1.05	2.15	17.20	50.00	32.80	H
822.50	-24.41	2.23	45.81	0.33	2.15	17.35	50.00	32.65	H

LTE Band 26_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-25.40	2.16	45.88	0.98	2.15	17.15	50.00	32.85	H
819.00	-25.40	2.19	45.84	1.05	2.15	17.15	50.00	32.85	H
821.50	-24.71	2.22	45.82	0.71	2.15	17.45	50.00	32.55	H

LTE Band 26_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-25.37	2.19	45.84	1.05	2.15	17.18	50.00	32.82	H



LTE Band 26_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
814.70	-26.35	2.13	45.86	0.89	2.15	16.12	50.00	33.88	H
819.00	-26.55	2.19	45.84	1.05	2.15	16.00	50.00	34.00	H
823.30	-25.50	2.24	45.79	0.55	2.15	16.45	50.00	33.55	H

LTE Band 26_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
815.50	-26.45	2.14	45.87	0.93	2.15	16.06	50.00	33.94	H
819.00	-26.58	2.19	45.84	1.05	2.15	15.97	50.00	34.03	H
822.50	-25.40	2.23	45.81	0.33	2.15	16.36	50.00	33.64	H

LTE Band 26_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
816.50	-26.51	2.16	45.88	0.98	2.15	16.04	50.00	33.96	H
819.00	-26.54	2.19	45.84	1.05	2.15	16.01	50.00	33.99	H
821.50	-25.87	2.22	45.82	0.71	2.15	16.29	50.00	33.71	H

LTE Band 26_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
819.00	-26.62	2.19	45.84	1.05	2.15	15.93	50.00	34.07	H



LTE Band 26(824MHz~849MHz)- ERP 22.913(a)

Limits: ≤38.45dBm (7W)

LTE Band 26_1.4MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-24.02	2.26	45.79	0.95	2.15	18.31	38.45	20.14	H
836.50	-23.65	2.26	45.66	0.82	2.15	18.42	38.45	20.03	H
848.30	-24.04	2.27	45.55	0.80	2.15	17.89	38.45	20.56	H

LTE Band 26_3MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-24.09	2.26	45.79	0.94	2.15	18.23	38.45	20.22	H
836.50	-23.69	2.26	45.66	0.82	2.15	18.38	38.45	20.07	H
847.50	-23.98	2.27	45.56	0.81	2.15	17.97	38.45	20.48	H

LTE Band 26_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-24.02	2.25	45.77	0.93	2.15	18.28	38.45	20.17	H
836.50	-23.65	2.26	45.66	0.82	2.15	18.42	38.45	20.03	H
846.50	-23.87	2.26	45.56	0.82	2.15	18.10	38.45	20.35	H

LTE Band 26_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-24.11	2.13	45.74	0.90	2.15	18.25	38.45	20.20	H
836.50	-23.70	2.26	45.66	0.82	2.15	18.37	38.45	20.08	H
844.00	-24.06	2.26	45.59	0.82	2.15	17.94	38.45	20.51	H

LTE Band 26_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-24.01	2.12	45.71	0.87	2.15	18.30	38.45	20.15	H
836.50	-23.71	2.26	45.66	0.82	2.15	18.36	38.45	20.09	H
841.50	-24.12	2.26	45.61	0.82	2.15	17.90	38.45	20.55	H



LTE Band 26_1.4MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-24.84	2.26	45.79	0.95	2.15	17.49	38.45	20.96	H
836.50	-24.49	2.26	45.66	0.82	2.15	17.58	38.45	20.87	H
848.30	-24.93	2.27	45.55	0.80	2.15	17.00	38.45	21.45	H

LTE Band 26_3MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-24.91	2.26	45.79	0.94	2.15	17.41	38.45	21.04	H
836.50	-24.41	2.26	45.66	0.82	2.15	17.66	38.45	20.79	H
847.50	-24.85	2.27	45.56	0.81	2.15	17.10	38.45	21.35	H

LTE Band 26_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-24.72	2.25	45.77	0.93	2.15	17.58	38.45	20.87	H
836.50	-24.46	2.26	45.66	0.82	2.15	17.61	38.45	20.84	H
846.50	-24.66	2.26	45.56	0.82	2.15	17.31	38.45	21.14	H

LTE Band 26_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-24.91	2.13	45.74	0.90	2.15	17.45	38.45	21.00	H
836.50	-24.43	2.26	45.66	0.82	2.15	17.64	38.45	20.81	H
844.00	-24.97	2.26	45.59	0.82	2.15	17.03	38.45	21.42	H

LTE Band 26_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{ci} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-24.76	2.12	45.71	0.87	2.15	17.55	38.45	20.90	H
836.50	-24.41	2.26	45.66	0.82	2.15	17.66	38.45	20.79	H
841.50	-25.02	2.26	45.61	0.82	2.15	17.00	38.45	21.45	H



LTE Band 26_1.4MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
824.70	-25.92	2.26	45.79	0.95	2.15	16.41	38.45	22.04	H
836.50	-25.60	2.26	45.66	0.82	2.15	16.47	38.45	21.98	H
848.30	-26.00	2.27	45.55	0.80	2.15	15.93	38.45	22.52	H

LTE Band 26_3MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
825.50	-25.97	2.26	45.79	0.94	2.15	16.35	38.45	22.10	H
836.50	-25.59	2.26	45.66	0.82	2.15	16.48	38.45	21.97	H
847.50	-25.95	2.27	45.56	0.81	2.15	16.00	38.45	22.45	H

LTE Band 26_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
826.50	-25.84	2.25	45.77	0.93	2.15	16.46	38.45	21.99	H
836.50	-25.53	2.26	45.66	0.82	2.15	16.54	38.45	21.91	H
846.50	-25.90	2.26	45.56	0.82	2.15	16.07	38.45	22.38	H

LTE Band 26_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
829.00	-25.91	2.13	45.74	0.90	2.15	16.45	38.45	22.00	H
836.50	-25.58	2.26	45.66	0.82	2.15	16.49	38.45	21.96	H
844.00	-25.93	2.26	45.59	0.82	2.15	16.07	38.45	22.38	H

LTE Band 26_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	Correction (dB)	ERP(dBm)	Limit(dBm)	Margin(dB)	Polarization
831.50	-25.89	2.12	45.71	0.87	2.15	16.42	38.45	22.03	H
836.50	-25.56	2.26	45.66	0.82	2.15	16.51	38.45	21.94	H
841.50	-25.99	2.26	45.61	0.82	2.15	16.03	38.45	22.42	H



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

Limits: ≤33dBm (2W)

LTE Band 38_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2572.50	-29.53	3.66	44.92	6.23	17.96	33.00	15.04	H
2595.00	-31.23	3.68	44.91	6.27	16.27	33.00	16.73	H
2617.50	-31.95	3.68	44.94	6.31	15.62	33.00	17.38	H

LTE Band 38_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2575.00	-29.79	3.66	44.92	6.23	17.70	33.00	15.30	H
2595.00	-31.22	3.68	44.91	6.27	16.28	33.00	16.72	H
2615.00	-32.06	3.68	44.94	6.31	15.51	33.00	17.49	H

LTE Band 38_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2577.50	-29.95	3.66	44.92	6.23	17.54	33.00	15.46	H
2595.00	-31.26	3.68	44.91	6.27	16.24	33.00	16.76	H
2612.50	-32.26	3.68	44.94	6.30	15.30	33.00	17.70	H

LTE Band 38_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2580.00	-30.12	3.67	44.92	6.24	17.37	33.00	15.63	H
2595.00	-31.21	3.68	44.91	6.27	16.29	33.00	16.71	H
2610.00	-32.43	3.68	44.94	6.30	15.13	33.00	17.87	H



LTE Band 38_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2572.50	-30.26	3.66	44.92	6.23	17.23	33.00	15.77	H
2595.00	-31.95	3.68	44.91	6.27	15.55	33.00	17.45	H
2617.50	-32.71	3.68	44.94	6.31	14.86	33.00	18.14	H

LTE Band 38_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2575.00	-30.76	3.66	44.92	6.23	16.73	33.00	16.27	H
2595.00	-31.98	3.68	44.91	6.27	15.52	33.00	17.48	H
2615.00	-32.87	3.68	44.94	6.31	14.70	33.00	18.30	H

LTE Band 38_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2577.50	-30.71	3.66	44.92	6.23	16.78	33.00	16.22	H
2595.00	-32.05	3.68	44.91	6.27	15.45	33.00	17.55	H
2612.50	-33.17	3.68	44.94	6.30	14.39	33.00	18.61	H

LTE Band 38_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2580.00	-30.98	3.67	44.92	6.24	16.51	33.00	16.49	H
2595.00	-31.94	3.68	44.91	6.27	15.56	33.00	17.44	H
2610.00	-33.33	3.68	44.94	6.30	14.23	33.00	18.77	H



LTE Band 38_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2572.50	-31.58	3.66	44.92	6.23	15.91	33.00	17.09	H
2595.00	-33.51	3.68	44.91	6.27	13.99	33.00	19.01	H
2617.50	-33.96	3.68	44.94	6.31	13.61	33.00	19.39	H

LTE Band 38_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2575.00	-31.90	3.66	44.92	6.23	15.59	33.00	17.41	H
2595.00	-33.55	3.68	44.91	6.27	13.95	33.00	19.05	H
2615.00	-34.07	3.68	44.94	6.31	13.50	33.00	19.50	H

LTE Band 38_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2577.50	-32.05	3.66	44.92	6.23	15.44	33.00	17.56	H
2595.00	-33.57	3.68	44.91	6.27	13.93	33.00	19.07	H
2612.50	-34.14	3.68	44.94	6.30	13.42	33.00	19.58	H

LTE Band 38_20 MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2580.00	-32.20	3.67	44.92	6.24	15.29	33.00	17.71	H
2595.00	-33.58	3.68	44.91	6.27	13.92	33.00	19.08	H
2610.00	-34.45	3.68	44.94	6.30	13.11	33.00	19.89	H



LTE Band 41- EIRP Part 27.50(h)(2)

Limits: ≤33dBm (2W)

LTE Band 41_5MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-29.82	3.58	45.59	6.10	18.29	33.00	14.71	H
2593.00	-30.79	3.68	44.93	6.27	16.73	33.00	16.27	H
2687.50	-31.35	3.73	44.98	6.44	16.34	33.00	16.66	H

LTE Band 41_10MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-29.92	3.58	45.65	6.10	18.25	33.00	14.75	H
2593.00	-30.85	3.68	44.93	6.27	16.67	33.00	16.33	H
2685.00	-31.51	3.73	44.98	6.43	16.17	33.00	16.83	H

LTE Band 41_15MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-29.74	3.58	45.65	6.11	18.44	33.00	14.56	H
2593.00	-30.84	3.68	44.93	6.27	16.68	33.00	16.32	H
2682.50	-31.50	3.73	44.98	6.43	16.18	33.00	16.82	H

LTE Band 41_20MHz_QPSK

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-29.16	3.59	45.15	6.11	18.51	33.00	14.49	H
2593.00	-30.78	3.68	44.93	6.27	16.74	33.00	16.26	H
2680.00	-31.51	3.73	44.97	6.42	16.15	33.00	16.85	H



LTE Band 41_5MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-30.63	3.58	45.59	6.10	17.48	33.00	15.52	H
2593.00	-31.46	3.68	44.93	6.27	16.06	33.00	16.94	H
2687.50	-32.07	3.73	44.98	6.44	15.62	33.00	17.38	H

LTE Band 41_10MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-30.88	3.58	45.65	6.10	17.29	33.00	15.71	H
2593.00	-31.60	3.68	44.93	6.27	15.92	33.00	17.08	H
2685.00	-32.31	3.73	44.98	6.43	15.37	33.00	17.63	H

LTE Band 41_15MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-30.70	3.58	45.65	6.11	17.48	33.00	15.52	H
2593.00	-31.62	3.68	44.93	6.27	15.90	33.00	17.10	H
2682.50	-32.23	3.73	44.98	6.43	15.45	33.00	17.55	H

LTE Band 41_20MHz_16QAM

Frequency(MHz)	P _{Mea} (dBm)	P _c (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-30.00	3.59	45.15	6.11	17.67	33.00	15.33	H
2593.00	-31.51	3.68	44.93	6.27	16.01	33.00	16.99	H
2680.00	-32.41	3.73	44.97	6.42	15.25	33.00	17.75	H



LTE Band 41_5MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2498.50	-31.52	3.58	45.59	6.10	16.59	33.00	16.41	H
2593.00	-32.78	3.68	44.93	6.27	14.74	33.00	18.26	H
2687.50	-33.01	3.73	44.98	6.44	14.68	33.00	18.32	H

LTE Band 41_10MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2501.00	-31.51	3.58	45.65	6.10	16.66	33.00	16.34	H
2593.00	-32.86	3.68	44.93	6.27	14.66	33.00	18.34	H
2685.00	-33.19	3.73	44.98	6.43	14.49	33.00	18.51	H

LTE Band 41_15MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2503.50	-31.37	3.58	45.65	6.11	16.81	33.00	16.19	H
2593.00	-32.88	3.68	44.93	6.27	14.64	33.00	18.36	H
2682.50	-33.21	3.73	44.98	6.43	14.47	33.00	18.53	H

LTE Band 41_20 MHz_64QAM

Frequency(MHz)	P _{Mea} (dBm)	P _{cl} (dB)	P _{Ag} (dB)	G _a Antenna Gain(dB)	EIRP(dBm)	Limit(dBm)	Margin(dB)	Polarization
2506.00	-30.79	3.59	45.15	6.11	16.88	33.00	16.12	H
2593.00	-32.89	3.68	44.93	6.27	14.63	33.00	18.37	H
2680.00	-33.22	3.73	44.97	6.42	14.44	33.00	18.56	H

Peak EIRP(dBm) = P_{Mea}(-23.92dBm) - G_a (-6.16dBi) - P_{Ag} (-44.82dB) - P_{cl} (3.63dB) = 23.43dBm

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.

Note: Expanded measurement uncertainty is $U = 0.96$ dB, $k = 2$.

A.2 EMISSION LIMIT

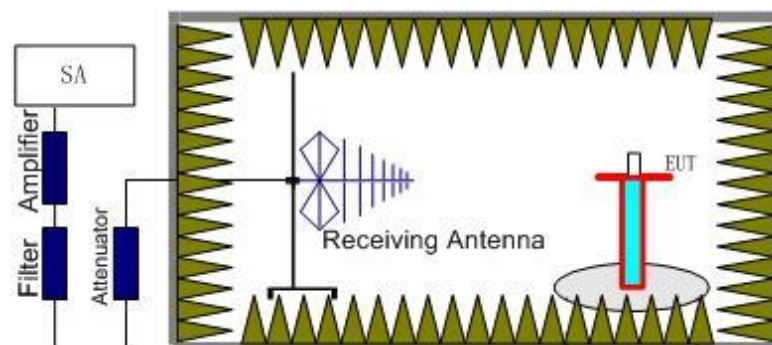
A.2.1 Measurement Method

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

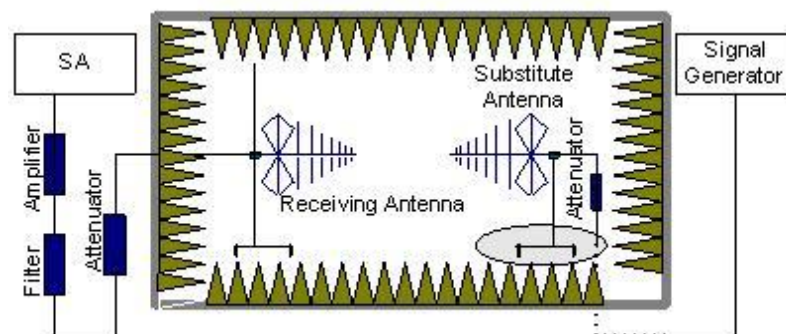
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of the LTE Bands 2 4 5 7 12 26 38 41.

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere

with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

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

An amplifier should be connected in for the test.

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

The measurement results are obtained as described below:

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

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

A.2.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) specify that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE Bands 2 4 5 7 12 26 38 41. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the LTE Bands 2 4 5 7 12 26 38 41 into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this. The evaluated frequency range is from 30MHz to 26GHz.

LTE Band 2, 1.4MHz, QPSK, Channel 18607

Frequency(MHz)	P _{Mea} (dB m)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5555.02	-41.40	7.19	10.59	-38.00	-13.00	25.00	H
7407.01	-44.85	8.14	12.09	-40.90	-13.00	27.90	H
9263.01	-26.98	9.07	13.26	-22.79	-13.00	9.79	H
11117.01	-35.69	9.76	13.18	-32.27	-13.00	19.27	V
12971.01	-36.66	10.48	13.48	-33.66	-13.00	20.66	H
16675.00	-28.54	11.80	13.67	-26.67	-13.00	13.67	V

LTE Band 2, 1.4MHz, QPSK, Channel 18900

Frequency(MHz)	P _{Mea} (dB m)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5646.02	-42.13	7.27	10.57	-38.83	-13.00	25.83	H
7526.01	-44.93	8.28	12.22	-40.99	-13.00	27.99	H
9410.01	-28.52	9.09	13.35	-24.26	-13.00	11.26	H
11292.01	-33.23	9.95	13.14	-30.04	-13.00	17.04	V
13181.01	-35.15	10.58	13.75	-31.98	-13.00	18.98	V
16961.00	-31.08	12.23	13.78	-29.53	-13.00	16.53	H

LTE Band 2, 1.4MHz, QPSK, Channel 19193

Frequency(MHz)	P _{Mea} (dB m)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5731.02	-42.39	7.29	10.55	-39.13	-13.00	26.13	H
7643.01	-47.05	8.17	12.31	-42.91	-13.00	29.91	V
9557.01	-29.23	9.34	13.34	-25.23	-13.00	12.23	H
11468.01	-31.46	9.89	13.11	-28.24	-13.00	15.24	V
13386.01	-35.19	10.57	14.04	-31.72	-13.00	18.72	V
17226.00	-32.85	12.36	14.30	-30.91	-13.00	17.91	H



LTE Band 2, 1.4MHz, 16QAM, Channel 18607

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5555.02	-40.47	7.19	10.59	-37.07	-13.00	24.07	H
7409.01	-43.45	8.14	12.09	-39.50	-13.00	26.50	H
9264.01	-25.63	9.07	13.26	-21.44	-13.00	8.44	H
11117.01	-32.97	9.76	13.18	-29.55	-13.00	16.55	V
12970.01	-36.09	10.48	13.48	-33.09	-13.00	20.09	H
16676.00	-28.22	11.80	13.67	-26.35	-13.00	13.35	V

LTE Band 2, 1.4MHz, 16QAM, Channel 18900

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5646.02	-41.18	7.27	10.57	-37.88	-13.00	24.88	H
7527.01	-44.39	8.28	12.22	-40.45	-13.00	27.45	H
9410.01	-27.41	9.09	13.35	-23.15	-13.00	10.15	H
11292.01	-30.13	9.95	13.14	-26.94	-13.00	13.94	V
13184.01	-34.56	10.57	13.76	-31.37	-13.00	18.37	V
16963.00	-29.13	12.23	13.79	-27.57	-13.00	14.57	H

LTE Band 2, 1.4MHz, 16QAM, Channel 19193

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5734.02	-42.18	7.29	10.55	-38.92	-13.00	25.92	H
7643.01	-47.04	8.17	12.31	-42.90	-13.00	29.90	V
9557.01	-28.29	9.34	13.34	-24.29	-13.00	11.29	H
11464.01	-30.92	9.90	13.11	-27.71	-13.00	14.71	V
13385.01	-34.59	10.57	14.04	-31.12	-13.00	18.12	V
17231.00	-32.53	12.36	14.31	-30.58	-13.00	17.58	H



LTE Band 2, 1.4MHz, 64QAM, Channel 18607

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3702.02	-55.54	6.42	8.48	-53.48	-13.00	40.48	H
5555.02	-40.64	7.19	10.59	-37.24	-13.00	24.24	H
7409.01	-43.25	8.14	12.09	-39.30	-13.00	26.30	H
9264.01	-25.39	9.07	13.26	-21.20	-13.00	8.20	H
11129.01	-33.13	9.71	13.17	-29.67	-13.00	16.67	H
12976.01	-36.96	10.48	13.49	-33.95	-13.00	20.95	V

LTE Band 2, 1.4MHz, 64QAM, Channel 18900

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3760.02	-52.62	6.26	8.56	-50.32	-13.00	37.32	H
5643.02	-40.78	7.27	10.57	-37.48	-13.00	24.48	H
7522.01	-44.67	8.30	12.22	-40.75	-13.00	27.75	V
9407.01	-26.30	9.07	13.34	-22.03	-13.00	9.03	H
11298.01	-31.18	9.98	13.14	-28.02	-13.00	15.02	H
13169.01	-39.01	10.63	13.74	-35.90	-13.00	22.90	V

LTE Band 2, 1.4MHz, 64QAM, Channel 19193

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3819.02	-53.88	6.08	8.65	-51.31	-13.00	38.31	H
5731.02	-42.44	7.29	10.55	-39.18	-13.00	26.18	H
7644.01	-48.71	8.17	12.32	-44.56	-13.00	31.56	V
9553.01	-25.85	9.35	13.35	-21.85	-13.00	8.85	H
11464.01	-36.99	9.90	13.11	-33.78	-13.00	20.78	V
13386.01	-40.36	10.57	14.04	-36.89	-13.00	23.89	V

LTE Band 4, 1.4MHz QPSK, Channel 19957

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5136.02	-36.73	6.86	10.09	-33.50	-13.00	20.50	H
8558.01	-35.09	8.57	13.01	-30.65	-13.00	17.65	H
10271.01	-44.77	9.54	13.01	-41.30	-13.00	28.30	V
11987.01	-35.88	10.11	13.00	-32.99	-13.00	19.99	V
13710.01	-40.29	10.60	14.33	-36.56	-13.00	23.56	V
17154.00	-34.54	12.50	14.14	-32.90	-13.00	19.90	H

LTE Band 4, 1.4MHz, QPSK, Channel 20175

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
5202.02	-39.97	6.96	10.18	-36.75	-13.00	23.75	H
6935.01	-47.12	7.80	11.52	-43.40	-13.00	30.40	H
8667.01	-36.44	8.40	13.03	-31.81	-13.00	18.81	H
10405.01	-45.64	9.79	13.06	-42.37	-13.00	29.37	H
12143.01	-39.64	10.22	13.06	-36.80	-13.00	23.80	V
13876.01	-43.57	10.76	14.43	-39.90	-13.00	26.90	V

LTE Band 4, 1.4MHz, QPSK, Channel 20393

Frequency(MHz)	P _{Mea} (dBm)	Path Loss	Antenna Gain	Peak EIRP(dBm)	Limit (dBm)	Margin(dB)	Polarization
3509.02	-55.24	5.54	8.21	-52.57	-13.00	39.57	H
5267.02	-36.99	6.99	10.27	-33.71	-13.00	20.71	H
7024.01	-42.61	8.26	11.63	-39.24	-13.00	26.24	H
8777.01	-31.45	8.59	13.06	-26.98	-13.00	13.98	H
10535.01	-44.84	9.52	13.11	-41.25	-13.00	28.25	H
12296.01	-34.85	10.00	13.12	-31.73	-13.00	18.73	V