LTE TEST REPORT

No. 25T04Z100884-003

for

Shenzhen Tinno Mobile Technology Corp.

Smart Phone

Model Name: U656AA,U656AC

FCC ID: XD6U656AA

with

Hardware Version: V1.0

Software Version: U656AAV01.07.10/U656ACV01.18.10

Issued Date: 2025-07-01

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.

Test Laboratory:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
25T04Z100884-003	Rev.0	1st edition	2025-07-01

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

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

Location 2: CTTL (BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, P. R. China 100176

1.3. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2025-05-09

Testing End Date: 2025-06-27

1.5. Signature

Wang Xing

(Prepared this test report)

Zhou Yu

(Reviewed this test report)

Zhao Hui Lin

(Approved this test report)

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2. Client Information

2.1. Applicant Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address /Post:	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen ,PRC
Contact:	xiaoping.li
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2.2. Manufacturer Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address /Post:	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen ,PRC
Contact:	xiaoping.li
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3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model Name	U656AA,U656AC
FCC ID	XD6U656AA
Antenna	Embedded
Output power	23.98 dBm maximum EIRP measured for LTE B30
Extreme Voltage	3.6VDC to 4.45VDC (nominal: 3.87VDC)
Extreme Temperature	-10°C to 45°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT42A	868992070009948/ 868992070012942	V1.0	U656AAV01.07.10	2025-05-09
UT41A	868992070009609/ 868992070012603	V1.0	U656AAV01.07.10	2025-05-09
UT36a	868992070009138/ 868992070012132	V1.0	U656AAV01.07.10	2025-05-06

UT36a was used for emission limit test and UT42A, UT41A were used for other testing cases.
*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

AE1

Model	TM490M1
Manufacturer	HUNAN GAOYUAN BATTERY CO,LTD
Capacitance	4900mAh

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

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4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters are supplied by the customer, which are the bases of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

4.2. Reference Documents for testing

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

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-23 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-23 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-23 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-23 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01

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5. Summary of Test Result

LTE Band 2

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	P
2	Emission Limit	2.1051/24.238	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	24.238	P
6	Band Edge Compliance	24.238	P
7	Conducted Spurious Emission	24.238	P
8	Peak-to-Average Power Ratio	24.232	P

LTE Band 5

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

LTE Band 7

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

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LTE Band 12

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

LTE Band 14

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	90.542	P
2	Emission Limit	2.1051/90.543	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	2.1049	P
6	Band Edge Compliance	90.543	P
7	Conducted Spurious Emission	90.543	P

LTE Band 30

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

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LTE Band 66 (4)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. 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.

All the test results are based on normal power.

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, test data provided in this report covers Band 4, as well as Band 66.

Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the conducted output power measurement investigation results. Output power was measured on QPSK, 16QAM, 64QAM modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in the following sections represent the worst case emission.

For all the bands which support multi antenna emission in conducted test, output powers on each antenna are tested so that the antenna with the maximum output power values are chosen out. Then other conducted test cases are performed on this antenna for each band.

Note: According to the PED declaration file provided by customer, U656AA and U656AC use the same FCC ID. U656AA was used for the testing.

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6. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2025-12-03	1 year
Spectrum Analyzer	FSV	101576	R&S	2026-05-05	1 year
Climate chamber	SH-241	92004642	ESPEC	2025-10-29	1 year
Test Receiver	ESW44	103144	R&S	2026-01-15	1 year
EMI Antenna	VULB9163	9163-01223	Schwarzbeck	2025-09-11	1 year
EMI Antenna	9117	167	Schwarzbeck	2026-10-15	3 years
EMI Antenna	LB-7180-NF	2030013000041	A-INFO	2025-10-23	1 year
EMI Antenna	3117	00119024	ETS-Lindgren	2025-10-23	1 year
EMI Antenna	LB-180400-25-C-KF	J211060826	A-INFO	2025-08-29	1 year
EMI Antenna	3116	2663	ETS-Lindgren	2026-03-03	1 year
Universal Radio Communication Tester	CMW500	143008	R&S	2026-01-15	1 year
Signal Generator	SMF100A	101295	R&S	2026-02-16	1 year

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7. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.26. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

Test item		Measurement uncertainty
Output Power(dB)		1.90
Emission Limit (dB)	30MHz-1GHz	2.12
	1GHz-18GHz	3.10
	18GHz-40GHz	3.44
Frequency Stability	FE(ppm)	1.16
	F_LF_H(kHz)	173.51
Occupied Bandwidth(%)		0.72
Emission Bandwidth(%)		0.75
Band Edge Compliance(dB)		1.94
Conducted Spurious Emission(dB)		4.77(0-20GHz)
		6.27(20-30GHz)
Peak-to-Average Power Ratio(dB)		2.10

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Annex A: Measurement Results

A.1 Output Power

A.1.1 Summary

During the process of testing, the EUT was controlled via communication tester 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.

The results below include a correction factor for cable loss that is provided by the customer.

A.1.2.2 Measurement Result

LTE band 2-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1909.3	23.55	22.62	21.61
		1880.0	23.33	22.55	21.51
		1850.7	23.32	22.58	21.47
	1 RB low	1909.3	23.34	22.58	21.66
		1880.0	23.53	22.68	21.61
		1850.7	23.35	22.60	21.50
	50% RB mid	1909.3	23.28	22.26	21.40
		1880.0	23.37	22.25	21.47
		1850.7	23.31	22.43	21.43
	100% RB	1909.3	22.38	21.44	20.37
		1880.0	22.37	21.46	20.45
		1850.7	22.33	21.38	20.29
3MHz	1 RB high	1908.5	23.36	22.77	21.72
		1880.0	23.50	22.58	21.66
		1851.5	23.35	22.53	21.56
	1 RB low	1908.5	23.55	22.63	21.55
		1880.0	23.33	22.54	21.63
		1851.5	23.31	22.56	21.53
	50% RB mid	1908.5	22.43	21.48	20.45
		1880.0	22.35	21.40	20.45
		1851.5	22.34	21.39	20.41
	100% RB	1908.5	22.46	21.41	20.39

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		1880.0	22.34	21.43	20.39
		1851.5	22.35	21.33	20.27
5MHz	1 RB high	1907.5	23.60	22.71	21.72
		1880.0	23.50	22.59	21.64
		1852.5	23.49	22.56	21.61
	1 RB low	1907.5	23.60	22.70	21.71
		1880.0	23.44	22.66	21.55
		1852.5	23.49	22.69	21.56
	50% RB mid	1907.5	22.47	21.48	20.53
		1880.0	22.44	21.50	20.49
		1852.5	22.41	21.40	20.44
	100% RB	1907.5	22.52	21.45	20.44
		1880.0	22.48	21.47	20.44
		1852.5	22.44	21.44	20.41
10MHz	1 RB high	1905.0	23.59	22.85	21.70
		1880.0	23.59	22.67	21.70
		1855.0	23.46	22.62	21.65
	1 RB low	1905.0	23.54	22.78	21.70
		1880.0	23.43	22.65	21.58
		1855.0	23.36	22.65	21.60
	50% RB mid	1905.0	22.47	21.50	20.46
		1880.0	22.50	21.48	20.47
		1855.0	22.43	21.39	20.41
	100% RB	1905.0	22.47	21.52	20.52
		1880.0	22.46	21.48	20.46
		1855.0	22.44	21.47	20.45
15MHz	1 RB high	1902.5	23.42	22.67	21.65
		1880.0	23.59	22.66	21.71
		1857.5	23.46	22.63	21.67
	1 RB low	1902.5	23.58	22.63	21.74
		1880.0	23.39	22.71	21.59
		1857.5	23.66	22.61	21.60
	50% RB mid	1902.5	22.48	21.49	20.50
		1880.0	22.46	21.49	20.50
		1857.5	22.44	21.42	20.47
	100% RB	1902.5	22.48	21.49	20.46
		1880.0	22.49	21.49	20.52
		1857.5	22.48	21.49	20.47
20MHz	1 RB high	1900.0	23.54	22.73	21.67
		1880.0	23.49	22.78	21.69
		1860.0	23.45	22.69	21.60
	1 RB low	1900.0	23.48	22.72	21.71
		1880.0	23.56	22.58	21.63

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		1860.0	23.51	22.63	21.59
	50% RB mid	1900.0	22.52	21.53	20.55
		1880.0	22.54	21.57	20.51
		1860.0	22.51	21.46	20.48
	100% RB	1900.0	22.50	21.45	20.52
		1880.0	22.55	21.45	20.50
		1860.0	22.51	21.48	20.51

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LTE band 2-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1909.3	23.97	23.12	21.99
		1880.0	23.99	23.06	22.16
		1850.7	23.96	23.14	22.23
	1 RB low	1909.3	23.94	23.17	21.99
		1880.0	24.20	23.03	21.96
		1850.7	24.00	23.18	22.04
	50% RB mid	1909.3	22.91	21.87	22.06
		1880.0	22.90	22.04	21.95
		1850.7	22.84	22.04	22.01
	100% RB	1909.3	22.84	22.08	20.77
		1880.0	22.88	21.91	20.95
		1850.7	23.08	21.89	21.05
3MHz	1 RB high	1908.5	24.00	23.02	21.98
		1880.0	24.14	23.09	22.08
		1851.5	24.07	23.21	22.11
	1 RB low	1908.5	24.16	23.11	22.12
		1880.0	23.93	23.14	22.07
		1851.5	24.14	23.10	22.18
	50% RB mid	1908.5	22.97	21.90	20.81
		1880.0	22.94	21.79	20.95
		1851.5	22.98	21.90	20.94
	100% RB	1908.5	22.96	21.85	20.90
		1880.0	22.90	21.88	20.88
		1851.5	23.05	21.90	20.86
5MHz	1 RB high	1907.5	24.08	23.02	21.94
		1880.0	24.00	23.01	22.09
		1852.5	24.06	23.12	22.24
	1 RB low	1907.5	23.93	23.09	21.92
		1880.0	24.06	23.02	22.10
		1852.5	24.07	23.15	21.96
	50% RB mid	1907.5	22.98	21.88	20.81
		1880.0	22.83	21.93	20.75
		1852.5	22.87	22.10	20.89
	100% RB	1907.5	22.90	22.01	20.82
		1880.0	22.87	21.91	20.97
		1852.5	23.15	21.78	21.00
10MHz	1 RB high	1905.0	24.09	23.01	22.14
		1880.0	23.99	23.19	22.01
		1855.0	24.02	23.18	22.13
	1 RB low	1905.0	24.11	23.05	22.06

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		1880.0	23.96	23.21	22.11
		1855.0	24.02	23.02	22.01
	50% RB mid	1905.0	22.89	21.99	20.95
		1880.0	22.89	21.88	20.89
		1855.0	22.83	22.01	20.92
	100% RB	1905.0	22.80	21.86	20.87
		1880.0	22.84	21.83	20.81
		1855.0	23.05	21.93	20.84
15MHz	1 RB high	1902.5	24.04	23.07	21.98
		1880.0	23.96	23.05	22.06
		1857.5	23.98	23.07	22.19
	1 RB low	1902.5	23.99	23.09	22.01
		1880.0	24.10	23.10	22.03
		1857.5	24.09	23.20	22.06
	50% RB mid	1902.5	22.99	21.92	20.81
		1880.0	22.85	21.98	20.83
		1857.5	22.83	22.00	20.80
	100% RB	1902.5	22.85	22.01	20.79
		1880.0	22.91	21.94	20.90
		1857.5	23.06	21.87	21.01
20MHz	1 RB high	1900.0	23.99	23.08	22.06
		1880.0	24.06	23.12	22.08
		1860.0	24.04	23.13	22.09
	1 RB low	1900.0	24.04	23.13	22.09
		1880.0	24.03	23.11	22.08
		1860.0	24.04	23.12	22.08
	50% RB mid	1900.0	22.89	21.95	20.88
		1880.0	22.89	21.89	20.88
		1860.0	22.91	21.94	20.90
	100% RB	1900.0	22.90	21.93	20.89
		1880.0	22.96	21.92	20.91
		1860.0	22.93	21.93	20.92

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LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	23.86	23.22	22.11
		836.5	24.00	23.28	22.15
		824.7	24.04	23.02	22.07
	1 RB low	848.3	23.89	23.07	22.07
		836.5	24.01	23.27	22.20
		824.7	23.99	23.00	22.24
	50% RB mid	848.3	23.87	22.88	22.06
		836.5	23.80	22.91	22.04
		824.7	23.81	23.03	22.07
	100% RB	848.3	22.93	22.01	20.94
		836.5	22.99	22.03	20.95
		824.7	23.00	22.00	20.92
3MHz	1 RB high	847.5	24.01	23.04	22.17
		836.5	23.92	23.13	22.17
		825.5	23.90	23.06	22.14
	1 RB low	847.5	24.08	23.10	22.13
		836.5	23.95	23.20	22.15
		825.5	23.86	23.16	22.18
	50% RB mid	847.5	22.94	21.97	20.99
		836.5	22.98	22.00	20.99
		825.5	22.95	22.06	21.04
	100% RB	847.5	22.95	21.98	20.93
		836.5	22.98	22.01	20.95
		825.5	22.95	21.95	20.98
5MHz	1 RB high	846.5	24.03	23.15	22.26
		836.5	23.91	23.22	22.19
		826.5	23.97	23.35	22.10
	1 RB low	846.5	23.97	23.09	22.13
		836.5	24.06	23.18	22.33
		826.5	24.00	23.25	22.16
	50% RB mid	846.5	22.99	21.97	20.97
		836.5	23.03	21.98	21.09
		826.5	23.00	22.05	21.05
	100% RB	846.5	22.99	22.02	20.97
		836.5	23.09	22.04	21.01
		826.5	23.04	22.06	21.03
10MHz	1 RB high	844.0	24.11	23.28	22.20
		836.5	24.11	23.12	22.17
		829.0	24.00	23.16	22.23
	1 RB low	844.0	24.11	23.18	22.27

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		836.5	24.15	23.24	22.19
		829.0	24.07	23.26	22.16
	50% RB mid	844.0	22.96	21.98	20.96
		836.5	23.00	22.01	20.99
		829.0	22.98	22.00	20.97
	100% RB	844.0	22.97	21.99	21.00
		836.5	23.01	21.98	21.00
		829.0	23.00	21.97	20.99

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LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm) QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	22.75	21.86	20.7
		2535	22.54	21.85	20.77
		2502.5	22.56	21.89	20.69
	1 RB low	2567.5	22.82	21.9	20.95
		2535	22.76	21.85	20.87
		2502.5	22.57	21.97	20.65
	50% RB mid	2567.5	21.69	20.78	19.77
		2535	21.69	20.63	19.65
		2502.5	21.64	20.67	19.5
	100% RB	2567.5	21.68	20.86	19.71
		2535	21.66	20.75	19.77
		2502.5	21.5	20.5	19.51
10MHz	1 RB high	2565	22.64	21.91	20.68
		2535	22.61	21.83	20.83
		2505	22.69	21.8	20.81
	1 RB low	2565	22.88	21.89	20.97
		2535	22.59	21.96	20.91
		2505	22.61	21.88	20.78
	50% RB mid	2565	21.77	20.78	19.86
		2535	21.76	20.66	19.71
		2505	21.62	20.65	19.58
	100% RB	2565	21.58	20.71	19.78
		2535	21.81	20.66	19.63
		2505	21.63	20.68	19.63
15MHz	1 RB high	2562.5	22.67	21.88	20.82
		2535	22.55	21.84	20.88
		2507.5	22.63	21.98	20.81
	1 RB low	2562.5	22.77	21.93	20.95
		2535	22.57	21.9	20.89
		2507.5	22.51	21.94	20.7
	50% RB mid	2562.5	21.69	20.88	19.85
		2535	21.83	20.72	19.8
		2507.5	21.61	20.56	19.62
	100% RB	2562.5	21.67	20.75	19.78
		2535	21.76	20.79	19.73
		2507.5	21.55	20.67	19.56
20MHz	1 RB high	2560	22.69	21.9	20.78
		2535	22.64	21.83	20.82
		2510	22.65	21.88	20.78
	1 RB low	2560	22.78	21.94	20.92

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		2535	22.66	21.92	20.81
		2510	22.53	21.91	20.74
	50% RB mid	2560	21.75	20.78	19.84
		2535	21.78	20.7	19.75
		2510	21.58	20.58	19.56
	100% RB	2560	21.67	20.76	19.78
		2535	21.74	20.69	19.68
		2510	21.59	20.59	19.53

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LTE band 12-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.11	23.14	22.19
		707.5	24.14	23.18	22.30
		699.7	24.11	23.41	22.30
	1 RB low	715.3	23.96	23.20	22.27
		707.5	24.11	23.19	22.28
		699.7	24.24	23.22	22.20
	50% RB mid	715.3	23.97	22.95	22.19
		707.5	23.98	23.00	22.10
		699.7	23.99	22.96	22.14
	100% RB	715.3	22.98	22.10	21.01
		707.5	23.03	22.06	21.00
		699.7	23.00	22.07	21.05
3MHz	1 RB high	714.5	24.33	23.11	22.07
		707.5	23.92	23.10	22.24
		700.5	24.17	23.17	22.18
	1 RB low	714.5	23.89	23.18	22.20
		707.5	24.17	23.25	22.21
		700.5	24.11	23.25	22.22
	50% RB mid	714.5	23.02	22.11	21.07
		707.5	23.03	22.09	21.07
		700.5	23.06	22.09	21.12
	100% RB	714.5	23.02	22.04	21.00
		707.5	22.98	22.02	21.01
		700.5	23.08	22.04	21.14
5MHz	1 RB high	713.5	24.18	23.23	22.18
		707.5	24.15	23.24	22.30
		701.5	24.13	23.32	22.11
	1 RB low	713.5	24.08	23.29	22.21
		707.5	24.11	23.30	22.19
		701.5	24.18	23.38	22.29
	50% RB mid	713.5	23.04	22.02	21.08
		707.5	23.03	22.06	21.08
		701.5	23.09	22.12	21.11
	100% RB	713.5	23.11	22.14	21.11
		707.5	23.06	22.08	21.08
		701.5	23.09	22.11	21.12
10MHz	1 RB high	711.0	24.04	23.44	22.19
		707.5	24.11	23.34	22.20
		704.0	24.17	23.22	22.18
	1 RB low	711.0	24.07	23.42	22.33

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		707.5	24.19	23.29	22.25
		704.0	24.11	23.28	22.24
	50% RB mid	711.0	23.02	22.01	21.02
		707.5	23.11	22.04	21.01
		704.0	23.02	22.02	21.00
	100% RB	711.0	23.03	22.04	21.06
		707.5	23.04	22.02	21.03
		704.0	23.03	22.01	21.01

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LTE band 12-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.27	23.36	22.33
		707.5	24.13	23.36	22.25
		699.7	24.33	23.24	22.39
	1 RB low	715.3	24.51	23.33	22.57
		707.5	24.34	23.44	22.50
		699.7	24.32	23.34	22.37
	50% RB mid	715.3	23.32	22.22	22.27
		707.5	23.15	22.19	22.22
		699.7	23.22	22.16	22.22
	100% RB	715.3	23.12	22.32	21.24
		707.5	23.19	22.11	21.17
		699.7	23.33	22.39	21.10
3MHz	1 RB high	714.5	24.32	23.37	22.43
		707.5	24.30	23.40	22.43
		700.5	24.21	23.28	22.46
	1 RB low	714.5	24.29	23.36	22.41
		707.5	24.29	23.38	22.37
		700.5	24.38	23.36	22.42
	50% RB mid	714.5	23.28	22.19	21.14
		707.5	23.14	22.08	21.16
		700.5	23.24	22.23	21.22
	100% RB	714.5	23.17	22.18	21.19
		707.5	23.12	22.21	21.12
		700.5	23.33	22.31	21.15
5MHz	1 RB high	713.5	24.34	23.44	22.29
		707.5	24.17	23.28	22.32
		701.5	24.28	23.32	22.46
	1 RB low	713.5	24.44	23.42	22.48
		707.5	24.40	23.34	22.43
		701.5	24.36	23.37	22.43
	50% RB mid	713.5	23.30	22.27	21.32
		707.5	23.10	22.21	21.18
		701.5	23.20	22.17	21.26
	100% RB	713.5	23.18	22.29	21.26
		707.5	23.16	22.21	21.21
		701.5	23.25	22.35	21.19
10MHz	1 RB high	711.0	24.34	23.42	22.39
		707.5	24.26	23.36	22.35
		704.0	24.29	23.38	22.36
	1 RB low	711.0	24.32	23.43	22.39

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		707.5	24.35	23.41	22.38
		704.0	24.31	23.40	22.37
	50% RB mid	711.0	23.22	22.24	21.23
		707.5	23.31	22.17	21.20
		704.0	23.22	22.24	21.26
	100% RB	711.0	23.22	22.24	21.23
		707.5	23.25	22.22	21.20
		704.0	23.19	22.26	21.24

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LTE band 14

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	795.5	23.53	22.81	21.73
		793.0	23.53	22.85	21.77
		790.5	23.67	22.74	21.85
	1 RB low	795.5	23.64	22.78	21.77
		793.0	23.66	22.96	21.73
		790.5	23.50	22.91	21.71
	50% RB mid	795.5	22.59	21.58	20.59
		793.0	22.50	21.61	20.58
		790.5	22.55	21.57	20.57
	100% RB	795.5	22.52	21.58	20.61
		793.0	22.60	21.48	20.63
		790.5	22.74	21.57	20.56
10MHz	1 RB high	793.0	23.66	22.74	21.72
	1 RB low	793.0	23.70	22.99	21.89
	50% RB mid	793.0	22.57	21.53	20.55
	100% RB	793.0	22.50	21.52	20.54

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LTE band 30-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2312.5	23.43	22.79	21.57
		2310.0	23.35	22.71	21.75
		2307.5	23.46	22.48	21.75
	1 RB low	2312.5	23.46	22.52	21.64
		2310.0	23.50	22.51	21.69
		2307.5	23.37	22.59	21.49
	50% RB mid	2312.5	22.44	21.44	20.49
		2310.0	22.42	21.42	20.47
		2307.5	22.37	21.44	20.46
	100% RB	2312.5	22.44	21.45	20.44
		2310.0	22.46	21.46	20.44
		2307.5	22.43	21.48	20.42
10MHz	1 RB high	2310.0	23.41	22.63	21.63
	1 RB low	2310.0	23.37	22.61	21.59
	50% RB mid	2310.0	22.44	21.47	20.40
	100% RB	2310.0	22.48	21.46	20.42

LTE band 30-ANT4

Bandwidth	RB size/offset	Frequency	Power (dBm)		
		(MHz)	QPSK	16QAM	64QAM
5MHz	1 RB high	2312.5	22.61	22.13	21.07
		2310	22.61	22.12	21.14
		2307.5	22.64	22.11	21.16
	1 RB low	2312.5	22.7	22.1	21.12
		2310	22.62	22.1	21.09
		2307.5	22.66	22.1	21.09
	50% RB mid	2312.5	22.16	21.21	20.19
		2310	22.17	21.18	20.18
		2307.5	22.14	21.14	20.2
	100% RB	2312.5	22.21	21.16	20.17
		2310	22.2	21.16	20.19
		2307.5	22.17	21.2	20.17
10MHz	1 RB high	2310	22.65	22.19	21.13
	1 RB low	2310	22.68	22.22	21.14
	50% RB mid	2310	22.14	21.09	20.13
	100% RB	2310	22.13	21.09	20.11

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LTE band 66-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	23.24	22.39	21.33
		1745.0	23.26	22.51	21.53
		1710.7	23.18	22.47	21.37
	1 RB low	1779.3	23.10	22.43	21.40
		1745.0	23.38	22.51	21.55
		1710.7	23.38	22.53	21.54
	50% RB mid	1779.3	23.16	22.14	21.23
		1745.0	23.31	22.18	21.33
		1710.7	23.25	22.20	21.36
	100% RB	1779.3	22.12	21.22	20.16
		1745.0	22.26	21.34	20.26
		1710.7	22.25	21.36	20.25
3MHz	1 RB high	1778.5	23.20	22.35	21.22
		1745.0	23.28	22.53	21.46
		1711.5	23.28	22.57	21.48
	1 RB low	1778.5	23.25	22.31	21.35
		1745.0	23.35	22.64	21.45
		1711.5	23.25	22.48	21.39
	50% RB mid	1778.5	22.16	21.20	20.20
		1745.0	22.25	21.28	20.36
		1711.5	22.26	21.29	20.28
	100% RB	1778.5	22.18	21.16	20.16
		1745.0	22.25	21.26	20.33
		1711.5	22.28	21.27	20.27
5MHz	1 RB high	1777.5	23.28	22.36	21.39
		1745.0	23.34	22.48	21.63
		1712.5	23.30	22.46	21.45
	1 RB low	1777.5	23.28	22.39	21.38
		1745.0	23.42	22.53	21.49
		1712.5	23.21	22.46	21.45
	50% RB mid	1777.5	22.23	21.17	20.22
		1745.0	22.21	21.32	20.35
		1712.5	22.30	21.31	20.37
	100% RB	1777.5	22.30	21.18	20.15
		1745.0	22.38	21.29	20.30
		1712.5	22.30	21.33	20.32
10MHz	1 RB high	1775.0	23.28	22.46	21.44
		1745.0	23.46	22.68	21.56
		1715.0	23.44	22.69	21.54
	1 RB low	1775.0	23.27	22.65	21.38

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		1745.0	23.57	22.76	21.61
		1715.0	23.37	22.58	21.54
	50% RB mid	1775.0	22.27	21.23	20.24
		1745.0	22.39	21.37	20.36
		1715.0	22.40	21.38	20.40
	100% RB	1775.0	22.26	21.29	20.26
		1745.0	22.37	21.42	20.37
		1715.0	22.43	21.39	20.39
15MHz	1 RB high	1772.5	23.29	22.43	21.44
		1745.0	23.39	22.65	21.57
		1717.5	23.48	22.64	21.58
	1 RB low	1772.5	23.38	22.53	21.50
		1745.0	23.39	22.66	21.63
		1717.5	23.33	22.70	21.57
	50% RB mid	1772.5	22.30	21.28	20.28
		1745.0	22.37	21.39	20.40
		1717.5	22.38	21.37	20.41
	100% RB	1772.5	22.33	21.32	20.32
		1745.0	22.44	21.41	20.38
		1717.5	22.42	21.44	20.40
20MHz	1 RB high	1770.0	23.29	22.53	21.38
		1745.0	23.32	22.64	21.53
		1720.0	23.48	22.60	21.49
	1 RB low	1770.0	23.41	22.63	21.49
		1745.0	23.51	22.76	21.63
		1720.0	23.37	22.73	21.55
	50% RB mid	1770.0	22.31	21.34	20.30
		1745.0	22.47	21.41	20.44
		1720.0	22.44	21.40	20.42
	100% RB	1770.0	22.32	21.28	20.34
		1745.0	22.45	21.41	20.43
		1720.0	22.43	21.42	20.41

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LTE band 66-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	24.25	23.30	22.14
		1745.0	24.22	23.23	22.12
		1710.7	24.23	23.19	22.16
	1 RB low	1779.3	24.21	23.23	22.28
		1745.0	24.08	23.10	22.19
		1710.7	24.05	23.14	22.15
	50% RB mid	1779.3	23.12	22.12	22.11
		1745.0	22.99	21.89	22.10
		1710.7	23.08	22.14	22.04
	100% RB	1779.3	23.13	22.18	21.14
		1745.0	23.09	22.05	21.04
		1710.7	23.05	21.99	21.15
3MHz	1 RB high	1778.5	24.33	23.37	22.20
		1745.0	24.22	23.20	22.08
		1711.5	24.30	23.17	22.16
	1 RB low	1778.5	24.29	23.18	22.18
		1745.0	24.08	23.17	22.10
		1711.5	24.06	23.15	22.19
	50% RB mid	1778.5	23.13	22.17	21.14
		1745.0	22.95	21.94	21.14
		1711.5	23.06	22.04	21.14
	100% RB	1778.5	23.08	22.21	21.13
		1745.0	23.00	22.00	21.10
		1711.5	23.06	21.89	21.17
5MHz	1 RB high	1777.5	24.23	23.35	22.04
		1745.0	24.20	23.18	22.10
		1712.5	24.30	23.10	22.17
	1 RB low	1777.5	24.13	23.17	22.20
		1745.0	24.11	23.19	22.13
		1712.5	24.01	23.12	22.20
	50% RB mid	1777.5	23.05	22.04	21.16
		1745.0	22.99	21.91	21.11
		1712.5	23.07	22.05	21.08
	100% RB	1777.5	23.06	22.20	21.16
		1745.0	22.99	22.08	21.07
		1712.5	22.98	22.03	21.24
10MHz	1 RB high	1775.0	24.38	23.29	22.29
		1745.0	24.17	23.30	22.13
		1715.0	24.24	23.21	22.10
	1 RB low	1775.0	24.33	23.11	22.23

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		1745.0	24.11	23.18	22.10
		1715.0	24.03	23.25	22.23
	50% RB mid	1775.0	23.17	22.08	21.10
		1745.0	22.93	22.01	21.06
		1715.0	23.08	22.02	21.07
	100% RB	1775.0	22.98	22.19	21.03
		1745.0	23.08	22.02	21.01
		1715.0	23.06	21.93	21.07
15MHz	1 RB high	1772.5	24.41	23.34	22.14
		1745.0	24.17	23.16	22.17
		1717.5	24.32	23.18	22.14
	1 RB low	1772.5	24.19	23.19	22.17
		1745.0	24.05	23.24	22.06
		1717.5	24.08	23.20	22.16
	50% RB mid	1772.5	23.16	22.23	21.18
		1745.0	23.02	21.96	21.04
		1717.5	23.14	22.03	21.07
	100% RB	1772.5	23.15	22.31	21.10
		1745.0	23.08	21.94	21.04
		1717.5	23.04	21.96	21.10
20MHz	1 RB high	1770.0	24.17	23.26	22.23
		1745.0	24.15	23.24	22.21
		1720.0	24.17	23.26	22.23
	1 RB low	1770.0	24.17	23.26	22.23
		1745.0	24.03	23.13	22.11
		1720.0	24.13	23.22	22.19
	50% RB mid	1770.0	23.07	22.07	21.08
		1745.0	23.19	21.99	21.00
		1720.0	23.07	22.07	21.08
	100% RB	1770.0	23.08	22.08	21.09
		1745.0	23.03	22.03	21.04
		1720.0	23.09	22.09	21.10

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A.1.3 Radiated

A.1.3.1 Description

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

FDD Band 2: Part 24.232(c) specifies "Mobile and portable stations are limited to 2 watts EIRP".

FDD Band 7: Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP".

FDD Band 66: Part 27.50(d)(4) specifies "Fixed, mobile, and portable(handheld) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695–1710 MHz and 1755–1780 MHz bands are limited to 1 watt EIRP".

FDD Band 5: Part 22.913(a) specifies "The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts".

FDD Band 12: Part 27.50(c)(10) specifies "Portable stations(hand-held devices) in the 600 MHz uplink band and the 698–746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP".

LTE Band 14: Part 90.542(a) specifies "Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP".

FDD Band 30: Part 27.50(a) specifies "For mobile and portable stations transmitting in the 2305–2315 MHz band or the 2350–2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth".

A.1.3.2 Method of Measurement

According to KDB 412172 D01 and ANSI C63.26 the relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\mathbf{ERP\ or\ EIRP} = \mathbf{P_T} + \mathbf{G_T} - \mathbf{L_C}$$

where;

- $\mathbf{ERP\ or\ EIRP} =$ effective radiated power or equivalent isotropically radiated power(expressed in the same units as P_T.
- $\mathbf{P_T} =$ transmitter output power, in this report the unit express as dBm;
- $\mathbf{G_T} =$ gain of the transmitting antenna, in dBd(ERP) or dBi(EIRP);
- $\mathbf{L_C} =$ signal attenuation in the connecting cable between the transmitter and antenna, in dB.

Alternatively, the EIRP can be determined from Equation above and then converted to ERP based on the maximum antenna gain relationship by applying the following equation:

$$\mathbf{ERP} = \mathbf{EIRP} - \mathbf{2.15dB}$$

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Note: The antenna gain information was provided by the client. The laboratory is not responsible for identifying its authenticity during the test.

A.1.3.3 Limits and Measurement Results

LTE Band2-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-2.5)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1909.3	23.55	22.62	21.61	21.05	20.12	19.11
		1880	23.33	22.55	21.51	20.83	20.05	19.01
		1850.7	23.32	22.58	21.47	20.82	20.08	18.97
	1 RB low	1909.3	23.34	22.58	21.66	20.84	20.08	19.16
		1880	23.53	22.68	21.61	21.03	20.18	19.11
		1850.7	23.35	22.60	21.50	20.85	20.10	19.00
	50% RB mid	1909.3	23.28	22.26	21.40	20.78	19.76	18.90
		1880	23.37	22.25	21.47	20.87	19.75	18.97
		1850.7	23.31	22.43	21.43	20.81	19.93	18.93
	100% RB	1909.3	22.38	21.44	20.37	19.88	18.94	17.87
		1880	22.37	21.46	20.45	19.87	18.96	17.95
		1850.7	22.33	21.38	20.29	19.83	18.88	17.79
3MHz	1 RB high	1908.5	23.36	22.77	21.72	20.86	20.27	19.22
		1880	23.50	22.58	21.66	21.00	20.08	19.16
		1851.5	23.35	22.53	21.56	20.85	20.03	19.06
	1 RB low	1908.5	23.55	22.63	21.55	21.05	20.13	19.05
		1880	23.33	22.54	21.63	20.83	20.04	19.13
		1851.5	23.31	22.56	21.53	20.81	20.06	19.03
	50% RB mid	1908.5	22.43	21.48	20.45	19.93	18.98	17.95
		1880	22.35	21.40	20.45	19.85	18.90	17.95
		1851.5	22.34	21.39	20.41	19.84	18.89	17.91
	100% RB	1908.5	22.46	21.41	20.39	19.96	18.91	17.89
		1880	22.34	21.43	20.39	19.84	18.93	17.89
		1851.5	22.35	21.33	20.27	19.85	18.83	17.77
5MHz	1 RB high	1907.5	23.60	22.71	21.72	21.10	20.21	19.22
		1880	23.50	22.59	21.64	21.00	20.09	19.14
		1852.5	23.49	22.56	21.61	20.99	20.06	19.11
	1 RB low	1907.5	23.60	22.70	21.71	21.10	20.20	19.21
		1880	23.44	22.66	21.55	20.94	20.16	19.05
		1852.5	23.49	22.69	21.56	20.99	20.19	19.06
	50% RB mid	1907.5	22.47	21.48	20.53	19.97	18.98	18.03
		1880	22.44	21.50	20.49	19.94	19.00	17.99
		1852.5	22.41	21.40	20.44	19.91	18.90	17.94
	100% RB	1907.5	22.52	21.45	20.44	20.02	18.95	17.94
		1880	22.48	21.47	20.44	19.98	18.97	17.94
		1852.5	22.44	21.44	20.41	19.94	18.94	17.91

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10MHz	1 RB high	1905	23.59	22.85	21.70	21.09	20.35	19.20
		1880	23.59	22.67	21.70	21.09	20.17	19.20
		1855	23.46	22.62	21.65	20.96	20.12	19.15
	1 RB low	1905	23.54	22.78	21.70	21.04	20.28	19.20
		1880	23.43	22.65	21.58	20.93	20.15	19.08
		1855	23.36	22.65	21.60	20.86	20.15	19.10
	50% RB mid	1905	22.47	21.50	20.46	19.97	19.00	17.96
		1880	22.50	21.48	20.47	20.00	18.98	17.97
		1855	22.43	21.39	20.41	19.93	18.89	17.91
	100% RB	1905	22.47	21.52	20.52	19.97	19.02	18.02
		1880	22.46	21.48	20.46	19.96	18.98	17.96
		1855	22.44	21.47	20.45	19.94	18.97	17.95
15MHz	1 RB high	1902.5	23.42	22.67	21.65	20.92	20.17	19.15
		1880	23.59	22.66	21.71	21.09	20.16	19.21
		1857.5	23.46	22.63	21.67	20.96	20.13	19.17
	1 RB low	1902.5	23.58	22.63	21.74	21.08	20.13	19.24
		1880	23.39	22.71	21.59	20.89	20.21	19.09
		1857.5	23.66	22.61	21.60	21.16	20.11	19.10
	50% RB mid	1902.5	22.48	21.49	20.50	19.98	18.99	18.00
		1880	22.46	21.49	20.50	19.96	18.99	18.00
		1857.5	22.44	21.42	20.47	19.94	18.92	17.97
	100% RB	1902.5	22.48	21.49	20.46	19.98	18.99	17.96
		1880	22.49	21.49	20.52	19.99	18.99	18.02
		1857.5	22.48	21.49	20.47	19.98	18.99	17.97
20MHz	1 RB high	1900	23.54	22.73	21.67	21.04	20.23	19.17
		1880	23.49	22.78	21.69	20.99	20.28	19.19
		1860	23.45	22.69	21.60	20.95	20.19	19.10
	1 RB low	1900	23.48	22.72	21.71	20.98	20.22	19.21
		1880	23.56	22.58	21.63	21.06	20.08	19.13
		1860	23.51	22.63	21.59	21.01	20.13	19.09
	50% RB mid	1900	22.52	21.53	20.55	20.02	19.03	18.05
		1880	22.54	21.57	20.51	20.04	19.07	18.01
		1860	22.51	21.46	20.48	20.01	18.96	17.98
	100% RB	1900	22.50	21.45	20.52	20.00	18.95	18.02
		1880	22.55	21.45	20.50	20.05	18.95	18.00
		1860	22.51	21.48	20.51	20.01	18.98	18.01

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LTE Band2-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-3.7)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1909.3	23.97	23.12	21.99	20.27	19.42	18.29
		1880	23.99	23.06	22.16	20.29	19.36	18.46
		1850.7	23.96	23.14	22.23	20.26	19.44	18.53
	1 RB low	1909.3	23.94	23.17	21.99	20.24	19.47	18.29
		1880	24.20	23.03	21.96	20.50	19.33	18.26
		1850.7	24.00	23.18	22.04	20.30	19.48	18.34
	50% RB mid	1909.3	22.91	21.87	22.06	19.21	18.17	18.36
		1880	22.90	22.04	21.95	19.20	18.34	18.25
		1850.7	22.84	22.04	22.01	19.14	18.34	18.31
	100% RB	1909.3	22.84	22.08	20.77	19.14	18.38	17.07
		1880	22.88	21.91	20.95	19.18	18.21	17.25
		1850.7	23.08	21.89	21.05	19.38	18.19	17.35
3MHz	1 RB high	1908.5	24.00	23.02	21.98	20.30	19.32	18.28
		1880	24.14	23.09	22.08	20.44	19.39	18.38
		1851.5	24.07	23.21	22.11	20.37	19.51	18.41
	1 RB low	1908.5	24.16	23.11	22.12	20.46	19.41	18.42
		1880	23.93	23.14	22.07	20.23	19.44	18.37
		1851.5	24.14	23.10	22.18	20.44	19.40	18.48
	50% RB mid	1908.5	22.97	21.90	20.81	19.27	18.20	17.11
		1880	22.94	21.79	20.95	19.24	18.09	17.25
		1851.5	22.98	21.90	20.94	19.28	18.20	17.24
	100% RB	1908.5	22.96	21.85	20.90	19.26	18.15	17.20
		1880	22.90	21.88	20.88	19.20	18.18	17.18
		1851.5	23.05	21.90	20.86	19.35	18.20	17.16
5MHz	1 RB high	1907.5	24.08	23.02	21.94	20.38	19.32	18.24
		1880	24.00	23.01	22.09	20.30	19.31	18.39
		1852.5	24.06	23.12	22.24	20.36	19.42	18.54
	1 RB low	1907.5	23.93	23.09	21.92	20.23	19.39	18.22
		1880	24.06	23.02	22.10	20.36	19.32	18.40
		1852.5	24.07	23.15	21.96	20.37	19.45	18.26
	50% RB mid	1907.5	22.98	21.88	20.81	19.28	18.18	17.11
		1880	22.83	21.93	20.75	19.13	18.23	17.05
		1852.5	22.87	22.10	20.89	19.17	18.40	17.19
	100% RB	1907.5	22.90	22.01	20.82	19.20	18.31	17.12
		1880	22.87	21.91	20.97	19.17	18.21	17.27
		1852.5	23.15	21.78	21.00	19.45	18.08	17.30
10MHz	1 RB high	1905	24.09	23.01	22.14	20.39	19.31	18.44
		1880	23.99	23.19	22.01	20.29	19.49	18.31
		1855	24.02	23.18	22.13	20.32	19.48	18.43
	1 RB low	1905	24.11	23.05	22.06	20.41	19.35	18.36

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		1880	23.96	23.21	22.11	20.26	19.51	18.41
		1855	24.02	23.02	22.01	20.32	19.32	18.31
	50% RB mid	1905	22.89	21.99	20.95	19.19	18.29	17.25
		1880	22.89	21.88	20.89	19.19	18.18	17.19
		1855	22.83	22.01	20.92	19.13	18.31	17.22
	100% RB	1905	22.80	21.86	20.87	19.10	18.16	17.17
		1880	22.84	21.83	20.81	19.14	18.13	17.11
		1855	23.05	21.93	20.84	19.35	18.23	17.14
15MHz	1 RB high	1902.5	24.04	23.07	21.98	20.34	19.37	18.28
		1880	23.96	23.05	22.06	20.26	19.35	18.36
		1857.5	23.98	23.07	22.19	20.28	19.37	18.49
	1 RB low	1902.5	23.99	23.09	22.01	20.29	19.39	18.31
		1880	24.10	23.10	22.03	20.40	19.40	18.33
		1857.5	24.09	23.20	22.06	20.39	19.50	18.36
	50% RB mid	1902.5	22.99	21.92	20.81	19.29	18.22	17.11
		1880	22.85	21.98	20.83	19.15	18.28	17.13
		1857.5	22.83	22.00	20.80	19.13	18.30	17.10
	100% RB	1902.5	22.85	22.01	20.79	19.15	18.31	17.09
		1880	22.91	21.94	20.90	19.21	18.24	17.20
		1857.5	23.06	21.87	21.01	19.36	18.17	17.31
20MHz	1 RB high	1900	23.99	23.08	22.06	20.29	19.38	18.36
		1880	24.06	23.12	22.08	20.36	19.42	18.38
		1860	24.04	23.13	22.09	20.34	19.43	18.39
	1 RB low	1900	24.04	23.13	22.09	20.34	19.43	18.39
		1880	24.03	23.11	22.08	20.33	19.41	18.38
		1860	24.04	23.12	22.08	20.34	19.42	18.38
	50% RB mid	1900	22.89	21.95	20.88	19.19	18.25	17.18
		1880	22.89	21.89	20.88	19.19	18.19	17.18
		1860	22.91	21.94	20.90	19.21	18.24	17.20
	100% RB	1900	22.90	21.93	20.89	19.20	18.23	17.19
		1880	22.96	21.92	20.91	19.26	18.22	17.21
		1860	22.93	21.93	20.92	19.23	18.23	17.22

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LTE Band5-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-3.5)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	23.86	23.22	22.11	18.21	17.57	16.46
		836.5	24.00	23.28	22.15	18.35	17.63	16.50
		824.7	24.04	23.02	22.07	18.39	17.37	16.42
	1 RB low	848.3	23.89	23.07	22.07	18.24	17.42	16.42
		836.5	24.01	23.27	22.20	18.36	17.62	16.55
		824.7	23.99	23.00	22.24	18.34	17.35	16.59
	50% RB mid	848.3	23.87	22.88	22.06	18.22	17.23	16.41
		836.5	23.80	22.91	22.04	18.15	17.26	16.39
		824.7	23.81	23.03	22.07	18.16	17.38	16.42
	100% RB	848.3	22.93	22.01	20.94	17.28	16.36	15.29
		836.5	22.99	22.03	20.95	17.34	16.38	15.30
		824.7	23.00	22.00	20.92	17.35	16.35	15.27
3MHz	1 RB high	847.5	24.01	23.04	22.17	18.36	17.39	16.52
		836.5	23.92	23.13	22.17	18.27	17.48	16.52
		825.5	23.90	23.06	22.14	18.25	17.41	16.49
	1 RB low	847.5	24.08	23.10	22.13	18.43	17.45	16.48
		836.5	23.95	23.20	22.15	18.30	17.55	16.50
		825.5	23.86	23.16	22.18	18.21	17.51	16.53
	50% RB mid	847.5	22.94	21.97	20.99	17.29	16.32	15.34
		836.5	22.98	22.00	20.99	17.33	16.35	15.34
		825.5	22.95	22.06	21.04	17.30	16.41	15.39
	100% RB	847.5	22.95	21.98	20.93	17.30	16.33	15.28
		836.5	22.98	22.01	20.95	17.33	16.36	15.30
		825.5	22.95	21.95	20.98	17.30	16.30	15.33
5MHz	1 RB high	846.5	24.03	23.15	22.26	18.38	17.50	16.61
		836.5	23.91	23.22	22.19	18.26	17.57	16.54
		826.5	23.97	23.35	22.10	18.32	17.70	16.45
	1 RB low	846.5	23.97	23.09	22.13	18.32	17.44	16.48
		836.5	24.06	23.18	22.33	18.41	17.53	16.68
		826.5	24.00	23.25	22.16	18.35	17.60	16.51
	50% RB mid	846.5	22.99	21.97	20.97	17.34	16.32	15.32
		836.5	23.03	21.98	21.09	17.38	16.33	15.44
		826.5	23.00	22.05	21.05	17.35	16.40	15.40
	100% RB	846.5	22.99	22.02	20.97	17.34	16.37	15.32
		836.5	23.09	22.04	21.01	17.44	16.39	15.36
		826.5	23.04	22.06	21.03	17.39	16.41	15.38
10MHz	1 RB high	844	24.11	23.28	22.20	18.46	17.63	16.55
		836.5	24.11	23.12	22.17	18.46	17.47	16.52
		829	24.00	23.16	22.23	18.35	17.51	16.58
	1 RB low	844	24.11	23.18	22.27	18.46	17.53	16.62

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		836.5	24.15	23.24	22.19	18.50	17.59	16.54
		829	24.07	23.26	22.16	18.42	17.61	16.51
	50% RB mid	844	22.96	21.98	20.96	17.31	16.33	15.31
		836.5	23.00	22.01	20.99	17.35	16.36	15.34
		829	22.98	22.00	20.97	17.33	16.35	15.32
	100% RB	844	22.97	21.99	21.00	17.32	16.34	15.35
		836.5	23.01	21.98	21.00	17.36	16.33	15.35
		829	23.00	21.97	20.99	17.35	16.32	15.34

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LTE Band7-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-3.7)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	22.75	21.86	20.7	19.05	18.16	17
		2535	22.54	21.85	20.77	18.84	18.15	17.07
		2502.5	22.56	21.89	20.69	18.86	18.19	16.99
	1 RB low	2567.5	22.82	21.9	20.95	19.12	18.2	17.25
		2535	22.76	21.85	20.87	19.06	18.15	17.17
		2502.5	22.57	21.97	20.65	18.87	18.27	16.95
	50% RB mid	2567.5	21.69	20.78	19.77	17.99	17.08	16.07
		2535	21.69	20.63	19.65	17.99	16.93	15.95
		2502.5	21.64	20.67	19.5	17.94	16.97	15.8
	100% RB	2567.5	21.68	20.86	19.71	17.98	17.16	16.01
		2535	21.66	20.75	19.77	17.96	17.05	16.07
		2502.5	21.5	20.5	19.51	17.8	16.8	15.81
10MHz	1 RB high	2565	22.64	21.91	20.68	18.94	18.21	16.98
		2535	22.61	21.83	20.83	18.91	18.13	17.13
		2505	22.69	21.8	20.81	18.99	18.1	17.11
	1 RB low	2565	22.88	21.89	20.97	19.18	18.19	17.27
		2535	22.59	21.96	20.91	18.89	18.26	17.21
		2505	22.61	21.88	20.78	18.91	18.18	17.08
	50% RB mid	2565	21.77	20.78	19.86	18.07	17.08	16.16
		2535	21.76	20.66	19.71	18.06	16.96	16.01
		2505	21.62	20.65	19.58	17.92	16.95	15.88
	100% RB	2565	21.58	20.71	19.78	17.88	17.01	16.08
		2535	21.81	20.66	19.63	18.11	16.96	15.93
		2505	21.63	20.68	19.63	17.93	16.98	15.93
15MHz	1 RB high	2562.5	22.67	21.88	20.82	18.97	18.18	17.12
		2535	22.55	21.84	20.88	18.85	18.14	17.18
		2507.5	22.63	21.98	20.81	18.93	18.28	17.11
	1 RB low	2562.5	22.77	21.93	20.95	19.07	18.23	17.25
		2535	22.57	21.9	20.89	18.87	18.2	17.19
		2507.5	22.51	21.94	20.7	18.81	18.24	17
	50% RB mid	2562.5	21.69	20.88	19.85	17.99	17.18	16.15
		2535	21.83	20.72	19.8	18.13	17.02	16.1
		2507.5	21.61	20.56	19.62	17.91	16.86	15.92
	100% RB	2562.5	21.67	20.75	19.78	17.97	17.05	16.08
		2535	21.76	20.79	19.73	18.06	17.09	16.03
		2507.5	21.55	20.67	19.56	17.85	16.97	15.86
20MHz	1 RB high	2560	22.69	21.9	20.78	18.99	18.2	17.08
		2535	22.64	21.83	20.82	18.94	18.13	17.12
		2510	22.65	21.88	20.78	18.95	18.18	17.08
	1 RB low	2560	22.78	21.94	20.92	19.08	18.24	17.22

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		2535	22.66	21.92	20.81	18.96	18.22	17.11
		2510	22.53	21.91	20.74	18.83	18.21	17.04
	50% RB mid	2560	21.75	20.78	19.84	18.05	17.08	16.14
		2535	21.78	20.7	19.75	18.08	17	16.05
		2510	21.58	20.58	19.56	17.88	16.88	15.86
	100% RB	2560	21.67	20.76	19.78	17.97	17.06	16.08
		2535	21.74	20.69	19.68	18.04	16.99	15.98
		2510	21.59	20.59	19.53	17.89	16.89	15.83

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LTE Band12-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-2.2)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.11	23.14	22.19	19.76	18.79	17.84
		707.5	24.14	23.18	22.30	19.79	18.83	17.95
		699.7	24.11	23.41	22.30	19.76	19.06	17.95
	1 RB low	715.3	23.96	23.20	22.27	19.61	18.85	17.92
		707.5	24.11	23.19	22.28	19.76	18.84	17.93
		699.7	24.24	23.22	22.20	19.89	18.87	17.85
	50% RB mid	715.3	23.97	22.95	22.19	19.62	18.60	17.84
		707.5	23.98	23.00	22.10	19.63	18.65	17.75
		699.7	23.99	22.96	22.14	19.64	18.61	17.79
	100% RB	715.3	22.98	22.10	21.01	18.63	17.75	16.66
		707.5	23.03	22.06	21.00	18.68	17.71	16.65
		699.7	23.00	22.07	21.05	18.65	17.72	16.70
3MHz	1 RB high	714.5	24.33	23.11	22.07	19.98	18.76	17.72
		707.5	23.92	23.10	22.24	19.57	18.75	17.89
		700.5	24.17	23.17	22.18	19.82	18.82	17.83
	1 RB low	714.5	23.89	23.18	22.20	19.54	18.83	17.85
		707.5	24.17	23.25	22.21	19.82	18.90	17.86
		700.5	24.11	23.25	22.22	19.76	18.90	17.87
	50% RB mid	714.5	23.02	22.11	21.07	18.67	17.76	16.72
		707.5	23.03	22.09	21.07	18.68	17.74	16.72
		700.5	23.06	22.09	21.12	18.71	17.74	16.77
	100% RB	714.5	23.02	22.04	21.00	18.67	17.69	16.65
		707.5	22.98	22.02	21.01	18.63	17.67	16.66
		700.5	23.08	22.04	21.14	18.73	17.69	16.79
5MHz	1 RB high	713.5	24.18	23.23	22.18	19.83	18.88	17.83
		707.5	24.15	23.24	22.30	19.80	18.89	17.95
		701.5	24.13	23.32	22.11	19.78	18.97	17.76
	1 RB low	713.5	24.08	23.29	22.21	19.73	18.94	17.86
		707.5	24.11	23.30	22.19	19.76	18.95	17.84
		701.5	24.18	23.38	22.29	19.83	19.03	17.94
	50% RB mid	713.5	23.04	22.02	21.08	18.69	17.67	16.73
		707.5	23.03	22.06	21.08	18.68	17.71	16.73
		701.5	23.09	22.12	21.11	18.74	17.77	16.76
	100% RB	713.5	23.11	22.14	21.11	18.76	17.79	16.76
		707.5	23.06	22.08	21.08	18.71	17.73	16.73
		701.5	23.09	22.11	21.12	18.74	17.76	16.77
10MHz	1 RB high	711	24.04	23.44	22.19	19.69	19.09	17.84
		707.5	24.11	23.34	22.20	19.76	18.99	17.85
		704	24.17	23.22	22.18	19.82	18.87	17.83
	1 RB low	711	24.07	23.42	22.33	19.72	19.07	17.98

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		707.5	24.19	23.29	22.25	19.84	18.94	17.90
		704	24.11	23.28	22.24	19.76	18.93	17.89
	50% RB mid	711	23.02	22.01	21.02	18.67	17.66	16.67
		707.5	23.11	22.04	21.01	18.76	17.69	16.66
		704	23.02	22.02	21.00	18.67	17.67	16.65
	100% RB	711	23.03	22.04	21.06	18.68	17.69	16.71
		707.5	23.04	22.02	21.03	18.69	17.67	16.68
		704	23.03	22.01	21.01	18.68	17.66	16.66

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LTE Band12-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-8.8)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	24.27	23.36	22.33	13.32	12.41	11.38
		707.5	24.13	23.36	22.25	13.18	12.41	11.30
		699.7	24.33	23.24	22.39	13.38	12.29	11.44
	1 RB low	715.3	24.51	23.33	22.57	13.56	12.38	11.62
		707.5	24.34	23.44	22.50	13.39	12.49	11.55
		699.7	24.32	23.34	22.37	13.37	12.39	11.42
	50% RB mid	715.3	23.32	22.22	22.27	12.37	11.27	11.32
		707.5	23.15	22.19	22.22	12.20	11.24	11.27
		699.7	23.22	22.16	22.22	12.27	11.21	11.27
	100% RB	715.3	23.12	22.32	21.24	12.17	11.37	10.29
		707.5	23.19	22.11	21.17	12.24	11.16	10.22
		699.7	23.33	22.39	21.10	12.38	11.44	10.15
3MHz	1 RB high	714.5	24.32	23.37	22.43	13.37	12.42	11.48
		707.5	24.30	23.40	22.43	13.35	12.45	11.48
		700.5	24.21	23.28	22.46	13.26	12.33	11.51
	1 RB low	714.5	24.29	23.36	22.41	13.34	12.41	11.46
		707.5	24.29	23.38	22.37	13.34	12.43	11.42
		700.5	24.38	23.36	22.42	13.43	12.41	11.47
	50% RB mid	714.5	23.28	22.19	21.14	12.33	11.24	10.19
		707.5	23.14	22.08	21.16	12.19	11.13	10.21
		700.5	23.24	22.23	21.22	12.29	11.28	10.27
	100% RB	714.5	23.17	22.18	21.19	12.22	11.23	10.24
		707.5	23.12	22.21	21.12	12.17	11.26	10.17
		700.5	23.33	22.31	21.15	12.38	11.36	10.20
5MHz	1 RB high	713.5	24.34	23.44	22.29	13.39	12.49	11.34
		707.5	24.17	23.28	22.32	13.22	12.33	11.37
		701.5	24.28	23.32	22.46	13.33	12.37	11.51
	1 RB low	713.5	24.44	23.42	22.48	13.49	12.47	11.53
		707.5	24.40	23.34	22.43	13.45	12.39	11.48
		701.5	24.36	23.37	22.43	13.41	12.42	11.48
	50% RB mid	713.5	23.30	22.27	21.32	12.35	11.32	10.37
		707.5	23.10	22.21	21.18	12.15	11.26	10.23
		701.5	23.20	22.17	21.26	12.25	11.22	10.31
	100% RB	713.5	23.18	22.29	21.26	12.23	11.34	10.31
		707.5	23.16	22.21	21.21	12.21	11.26	10.26
		701.5	23.25	22.35	21.19	12.30	11.40	10.24
10MHz	1 RB high	711	24.34	23.42	22.39	13.39	12.47	11.44
		707.5	24.26	23.36	22.35	13.31	12.41	11.40
		704	24.29	23.38	22.36	13.34	12.43	11.41
	1 RB low	711	24.32	23.43	22.39	13.37	12.48	11.44

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		707.5	24.35	23.41	22.38	13.40	12.46	11.43
		704	24.31	23.40	22.37	13.36	12.45	11.42
	50% RB mid	711	23.22	22.24	21.23	12.27	11.29	10.28
		707.5	23.31	22.17	21.20	12.36	11.22	10.25
		704	23.22	22.24	21.26	12.27	11.29	10.31
	100% RB	711	23.22	22.24	21.23	12.27	11.29	10.28
		707.5	23.25	22.22	21.20	12.30	11.27	10.25
		704	23.19	22.26	21.24	12.24	11.31	10.29

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LTE Band14-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			ERP(dBm)(Gt-Lc =-3)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	795.5	23.53	22.81	21.73	18.38	17.66	16.58
		793	23.53	22.85	21.77	18.38	17.70	16.62
		790.5	23.67	22.74	21.85	18.52	17.59	16.70
	1 RB low	795.5	23.64	22.78	21.77	18.49	17.63	16.62
		793	23.66	22.96	21.73	18.51	17.81	16.58
		790.5	23.50	22.91	21.71	18.35	17.76	16.56
	50% RB mid	795.5	22.59	21.58	20.59	17.44	16.43	15.44
		793	22.50	21.61	20.58	17.35	16.46	15.43
		790.5	22.55	21.57	20.57	17.40	16.42	15.42
	100% RB	795.5	22.52	21.58	20.61	17.37	16.43	15.46
		793	22.60	21.48	20.63	17.45	16.33	15.48
		790.5	22.74	21.57	20.56	17.59	16.42	15.41
10MHz	1 RB high	793	23.66	22.74	21.72	18.51	17.59	16.57
	1 RB low	793	23.70	22.99	21.89	18.55	17.84	16.74
	50% RB mid	793	22.57	21.53	20.55	17.42	16.38	15.40
	100% RB	793	22.50	21.52	20.54	17.35	16.37	15.39

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LTE Band30-ANT0- EIRP

Limits: ≤250 milliwatts/5MHz

BW (MHz)	Freq (MHz)	Modulation	RB Allocation	Conducted Power (dBm/5MHz)	EIRP(Gt-Lc =-1) (dBm/5MHz)	Margin (dB)
5	2307.5	QPSK	1 RB low	24.07	23.07	0.93
5	2307.5	QPSK	1 RB high	24.01	23.01	0.99
5	2307.5	QPSK	100% RB	22.19	21.19	2.81
5	2307.5	16QAM	1 RB low	23.00	22.00	2.00
5	2307.5	16QAM	1 RB high	23.01	22.01	1.99
5	2307.5	16QAM	100% RB	21.12	20.12	3.88
5	2307.5	64QAM	1 RB low	22.05	21.05	2.95
5	2307.5	64QAM	1 RB high	22.05	21.05	2.95
5	2307.5	64QAM	100% RB	20.16	19.16	4.84
5	2310	QPSK	1 RB low	24.03	23.03	0.97
5	2310	QPSK	1 RB high	24.08	23.08	0.92
5	2310	QPSK	100% RB	22.18	21.18	2.82
5	2310	16QAM	1 RB low	23.03	22.03	1.97
5	2310	16QAM	1 RB high	23.12	22.12	1.88
5	2310	16QAM	100% RB	21.14	20.14	3.86
5	2310	64QAM	1 RB low	22.07	21.07	2.93
5	2310	64QAM	1 RB high	22.13	21.13	2.87
5	2310	64QAM	100% RB	20.13	19.13	4.87
5	2312.5	QPSK	1 RB low	24.05	23.05	0.95
5	2312.5	QPSK	1 RB high	23.96	22.96	1.04
5	2312.5	QPSK	100% RB	22.16	21.16	2.84
5	2312.5	16QAM	1 RB low	23.02	22.02	1.98
5	2312.5	16QAM	1 RB high	23.02	22.02	1.98
5	2312.5	16QAM	100% RB	21.17	20.17	3.83
5	2312.5	64QAM	1 RB low	22.10	21.10	2.90
5	2312.5	64QAM	1 RB high	22.06	21.06	2.94
5	2312.5	64QAM	100% RB	20.21	19.21	4.79
10	2310	QPSK	1 RB low	24.03	23.03	0.97
10	2310	QPSK	1 RB high	23.96	22.96	1.04
10	2310	QPSK	100% RB	20.40	19.40	4.60
10	2310	16QAM	1 RB low	23.16	22.16	1.84
10	2310	16QAM	1 RB high	23.21	22.21	1.79
10	2310	16QAM	100% RB	19.37	18.37	5.63
10	2310	64QAM	1 RB low	21.89	20.89	3.11
10	2310	64QAM	1 RB high	22.08	21.08	2.92
10	2310	64QAM	100% RB	18.36	17.36	6.64

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LTE Band30-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-1)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	2312.5	23.43	22.79	21.57	22.43	21.79	20.57
		2310	23.35	22.71	21.75	22.35	21.71	20.75
		2307.5	23.46	22.48	21.75	22.46	21.48	20.75
	1 RB low	2312.5	23.46	22.52	21.64	22.46	21.52	20.64
		2310	23.50	22.51	21.69	22.50	21.51	20.69
		2307.5	23.37	22.59	21.49	22.37	21.59	20.49
	50% RB mid	2312.5	22.44	21.44	20.49	21.44	20.44	19.49
		2310	22.42	21.42	20.47	21.42	20.42	19.47
		2307.5	22.37	21.44	20.46	21.37	20.44	19.46
	100% RB	2312.5	22.44	21.45	20.44	21.44	20.45	19.44
		2310	22.46	21.46	20.44	21.46	20.46	19.44
		2307.5	22.43	21.48	20.42	21.43	20.48	19.42
10MHz	1 RB high	2310	23.41	22.63	21.63	22.41	21.63	20.63
	1 RB low	2310	23.37	22.61	21.59	22.37	21.61	20.59
	50% RB mid	2310	22.44	21.47	20.40	21.44	20.47	19.40
	100% RB	2310	22.48	21.46	20.42	21.48	20.46	19.42

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LTE Band30-ANT4- EIRP

Limits: ≤250 milliwatts/5MHz

BW (MHz)	Freq (MHz)	Modulation	RB Allocation	Conducted Power (dBm/5MHz)	EIRP(Gt-Lc =0) (dBm/5MHz)	Margin (dB)
5	2307.5	QPSK	1 RB low	23.52	23.52	0.48
5	2307.5	QPSK	1 RB high	23.64	23.64	0.36
5	2307.5	QPSK	100% RB	21.66	21.66	2.34
5	2307.5	16QAM	1 RB low	22.67	22.67	1.33
5	2307.5	16QAM	1 RB high	22.74	22.74	1.26
5	2307.5	16QAM	100% RB	20.72	20.72	3.28
5	2307.5	64QAM	1 RB low	21.58	21.58	2.42
5	2307.5	64QAM	1 RB high	21.70	21.70	2.30
5	2307.5	64QAM	100% RB	19.68	19.68	4.32
5	2310	QPSK	1 RB low	23.50	23.50	0.50
5	2310	QPSK	1 RB high	23.78	23.78	0.22
5	2310	QPSK	100% RB	21.79	21.79	2.21
5	2310	16QAM	1 RB low	22.58	22.58	1.42
5	2310	16QAM	1 RB high	22.78	22.78	1.22
5	2310	16QAM	100% RB	20.75	20.75	3.25
5	2310	64QAM	1 RB low	21.63	21.63	2.37
5	2310	64QAM	1 RB high	21.67	21.67	2.33
5	2310	64QAM	100% RB	19.78	19.78	4.22
5	2312.5	QPSK	1 RB low	23.62	23.62	0.38
5	2312.5	QPSK	1 RB high	23.73	23.73	0.27
5	2312.5	QPSK	100% RB	21.83	21.83	2.17
5	2312.5	16QAM	1 RB low	22.71	22.71	1.29
5	2312.5	16QAM	1 RB high	22.77	22.77	1.23
5	2312.5	16QAM	100% RB	20.81	20.81	3.19
5	2312.5	64QAM	1 RB low	21.74	21.74	2.26
5	2312.5	64QAM	1 RB high	21.69	21.69	2.31
5	2312.5	64QAM	100% RB	19.81	19.81	4.19
10	2310	QPSK	1 RB low	23.44	23.44	0.56
10	2310	QPSK	1 RB high	23.54	23.54	0.46
10	2310	QPSK	100% RB	20.09	20.09	3.91
10	2310	16QAM	1 RB low	22.62	22.62	1.38
10	2310	16QAM	1 RB high	22.81	22.81	1.19
10	2310	16QAM	100% RB	19.03	19.03	4.97
10	2310	64QAM	1 RB low	21.26	21.26	2.74
10	2310	64QAM	1 RB high	21.58	21.58	2.42
10	2310	64QAM	100% RB	17.98	17.98	6.02

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LTE Band30-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =0)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5MHz	1 RB high	2312.5	22.61	22.13	21.07	22.61	22.13	21.07
		2310	22.61	22.12	21.14	22.61	22.12	21.14
		2307.5	22.64	22.11	21.16	22.64	22.11	21.16
	1 RB low	2312.5	22.7	22.1	21.12	22.7	22.1	21.12
		2310	22.62	22.1	21.09	22.62	22.1	21.09
		2307.5	22.66	22.1	21.09	22.66	22.1	21.09
	50% RB mid	2312.5	22.16	21.21	20.19	22.16	21.21	20.19
		2310	22.17	21.18	20.18	22.17	21.18	20.18
		2307.5	22.14	21.14	20.2	22.14	21.14	20.2
	100% RB	2312.5	22.21	21.16	20.17	22.21	21.16	20.17
		2310	22.2	21.16	20.19	22.2	21.16	20.19
		2307.5	22.17	21.2	20.17	22.17	21.2	20.17
10MHz	1 RB high	2310	22.65	22.19	21.13	22.65	22.19	21.13
	1 RB low	2310	22.68	22.22	21.14	22.68	22.22	21.14
	50% RB mid	2310	22.14	21.09	20.13	22.14	21.09	20.13
	100% RB	2310	22.13	21.09	20.11	22.13	21.09	20.11

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LTE Band66-ANT0

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-2.2)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	23.24	22.39	21.33	21.04	20.19	19.13
		1745	23.26	22.51	21.53	21.06	20.31	19.33
		1710.7	23.18	22.47	21.37	20.98	20.27	19.17
	1 RB low	1779.3	23.10	22.43	21.40	20.90	20.23	19.20
		1745	23.38	22.51	21.55	21.18	20.31	19.35
		1710.7	23.38	22.53	21.54	21.18	20.33	19.34
	50% RB mid	1779.3	23.16	22.14	21.23	20.96	19.94	19.03
		1745	23.31	22.18	21.33	21.11	19.98	19.13
		1710.7	23.25	22.20	21.36	21.05	20.00	19.16
	100% RB	1779.3	22.12	21.22	20.16	19.92	19.02	17.96
		1745	22.26	21.34	20.26	20.06	19.14	18.06
		1710.7	22.25	21.36	20.25	20.05	19.16	18.05
3MHz	1 RB high	1778.5	23.20	22.35	21.22	21.00	20.15	19.02
		1745	23.28	22.53	21.46	21.08	20.33	19.26
		1711.5	23.28	22.57	21.48	21.08	20.37	19.28
	1 RB low	1778.5	23.25	22.31	21.35	21.05	20.11	19.15
		1745	23.35	22.64	21.45	21.15	20.44	19.25
		1711.5	23.25	22.48	21.39	21.05	20.28	19.19
	50% RB mid	1778.5	22.16	21.20	20.20	19.96	19.00	18.00
		1745	22.25	21.28	20.36	20.05	19.08	18.16
		1711.5	22.26	21.29	20.28	20.06	19.09	18.08
	100% RB	1778.5	22.18	21.16	20.16	19.98	18.96	17.96
		1745	22.25	21.26	20.33	20.05	19.06	18.13
		1711.5	22.28	21.27	20.27	20.08	19.07	18.07
5MHz	1 RB high	1777.5	23.28	22.36	21.39	21.08	20.16	19.19
		1745	23.34	22.48	21.63	21.14	20.28	19.43
		1712.5	23.30	22.46	21.45	21.10	20.26	19.25
	1 RB low	1777.5	23.28	22.39	21.38	21.08	20.19	19.18
		1745	23.42	22.53	21.49	21.22	20.33	19.29
		1712.5	23.21	22.46	21.45	21.01	20.26	19.25
	50% RB mid	1777.5	22.23	21.17	20.22	20.03	18.97	18.02
		1745	22.21	21.32	20.35	20.01	19.12	18.15
		1712.5	22.30	21.31	20.37	20.10	19.11	18.17
	100% RB	1777.5	22.30	21.18	20.15	20.10	18.98	17.95
		1745	22.38	21.29	20.30	20.18	19.09	18.10
		1712.5	22.30	21.33	20.32	20.10	19.13	18.12
10MHz	1 RB high	1775	23.28	22.46	21.44	21.08	20.26	19.24
		1745	23.46	22.68	21.56	21.26	20.48	19.36
		1715	23.44	22.69	21.54	21.24	20.49	19.34
	1 RB low	1775	23.27	22.65	21.38	21.07	20.45	19.18

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		1745	23.57	22.76	21.61	21.37	20.56	19.41
		1715	23.37	22.58	21.54	21.17	20.38	19.34
	50% RB mid	1775	22.27	21.23	20.24	20.07	19.03	18.04
		1745	22.39	21.37	20.36	20.19	19.17	18.16
		1715	22.40	21.38	20.40	20.20	19.18	18.20
	100% RB	1775	22.26	21.29	20.26	20.06	19.09	18.06
		1745	22.37	21.42	20.37	20.17	19.22	18.17
		1715	22.43	21.39	20.39	20.23	19.19	18.19
15MHz	1 RB high	1772.5	23.29	22.43	21.44	21.09	20.23	19.24
		1745	23.39	22.65	21.57	21.19	20.45	19.37
		1717.5	23.48	22.64	21.58	21.28	20.44	19.38
	1 RB low	1772.5	23.38	22.53	21.50	21.18	20.33	19.30
		1745	23.39	22.66	21.63	21.19	20.46	19.43
		1717.5	23.33	22.70	21.57	21.13	20.50	19.37
	50% RB mid	1772.5	22.30	21.28	20.28	20.10	19.08	18.08
		1745	22.37	21.39	20.40	20.17	19.19	18.20
		1717.5	22.38	21.37	20.41	20.18	19.17	18.21
	100% RB	1772.5	22.33	21.32	20.32	20.13	19.12	18.12
		1745	22.44	21.41	20.38	20.24	19.21	18.18
		1717.5	22.42	21.44	20.40	20.22	19.24	18.20
20MHz	1 RB high	1770	23.29	22.53	21.38	21.09	20.33	19.18
		1745	23.32	22.64	21.53	21.12	20.44	19.33
		1720	23.48	22.60	21.49	21.28	20.40	19.29
	1 RB low	1770	23.41	22.63	21.49	21.21	20.43	19.29
		1745	23.51	22.76	21.63	21.31	20.56	19.43
		1720	23.37	22.73	21.55	21.17	20.53	19.35
	50% RB mid	1770	22.31	21.34	20.30	20.11	19.14	18.10
		1745	22.47	21.41	20.44	20.27	19.21	18.24
		1720	22.44	21.40	20.42	20.24	19.20	18.22
	100% RB	1770	22.32	21.28	20.34	20.12	19.08	18.14
		1745	22.45	21.41	20.43	20.25	19.21	18.23
		1720	22.43	21.42	20.41	20.23	19.22	18.21

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LTE Band66-ANT4

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power(dBm)			EIRP(dBm)(Gt-Lc =-4.5)		
			QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	24.25	23.30	22.14	19.75	18.80	17.64
		1745	24.22	23.23	22.12	19.72	18.73	17.62
		1710.7	24.23	23.19	22.16	19.73	18.69	17.66
	1 RB low	1779.3	24.21	23.23	22.28	19.71	18.73	17.78
		1745	24.08	23.10	22.19	19.58	18.60	17.69
		1710.7	24.05	23.14	22.15	19.55	18.64	17.65
	50% RB mid	1779.3	23.12	22.12	22.11	18.62	17.62	17.61
		1745	22.99	21.89	22.10	18.49	17.39	17.60
		1710.7	23.08	22.14	22.04	18.58	17.64	17.54
	100% RB	1779.3	23.13	22.18	21.14	18.63	17.68	16.64
		1745	23.09	22.05	21.04	18.59	17.55	16.54
		1710.7	23.05	21.99	21.15	18.55	17.49	16.65
3MHz	1 RB high	1778.5	24.33	23.37	22.20	19.83	18.87	17.70
		1745	24.22	23.20	22.08	19.72	18.70	17.58
		1711.5	24.30	23.17	22.16	19.80	18.67	17.66
	1 RB low	1778.5	24.29	23.18	22.18	19.79	18.68	17.68
		1745	24.08	23.17	22.10	19.58	18.67	17.60
		1711.5	24.06	23.15	22.19	19.56	18.65	17.69
	50% RB mid	1778.5	23.13	22.17	21.14	18.63	17.67	16.64
		1745	22.95	21.94	21.14	18.45	17.44	16.64
		1711.5	23.06	22.04	21.14	18.56	17.54	16.64
	100% RB	1778.5	23.08	22.21	21.13	18.58	17.71	16.63
		1745	23.00	22.00	21.10	18.50	17.50	16.60
		1711.5	23.06	21.89	21.17	18.56	17.39	16.67
5MHz	1 RB high	1777.5	24.23	23.35	22.04	19.73	18.85	17.54
		1745	24.20	23.18	22.10	19.70	18.68	17.60
		1712.5	24.30	23.10	22.17	19.80	18.60	17.67
	1 RB low	1777.5	24.13	23.17	22.20	19.63	18.67	17.70
		1745	24.11	23.19	22.13	19.61	18.69	17.63
		1712.5	24.01	23.12	22.20	19.51	18.62	17.70
	50% RB mid	1777.5	23.05	22.04	21.16	18.55	17.54	16.66
		1745	22.99	21.91	21.11	18.49	17.41	16.61
		1712.5	23.07	22.05	21.08	18.57	17.55	16.58
	100% RB	1777.5	23.06	22.20	21.16	18.56	17.70	16.66
		1745	22.99	22.08	21.07	18.49	17.58	16.57
		1712.5	22.98	22.03	21.24	18.48	17.53	16.74
10MHz	1 RB high	1775	24.38	23.29	22.29	19.88	18.79	17.79
		1745	24.17	23.30	22.13	19.67	18.80	17.63
		1715	24.24	23.21	22.10	19.74	18.71	17.60
	1 RB low	1775	24.33	23.11	22.23	19.83	18.61	17.73

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		1745	24.11	23.18	22.10	19.61	18.68	17.60
		1715	24.03	23.25	22.23	19.53	18.75	17.73
	50% RB mid	1775	23.17	22.08	21.10	18.67	17.58	16.60
		1745	22.93	22.01	21.06	18.43	17.51	16.56
		1715	23.08	22.02	21.07	18.58	17.52	16.57
	100% RB	1775	22.98	22.19	21.03	18.48	17.69	16.53
		1745	23.08	22.02	21.01	18.58	17.52	16.51
		1715	23.06	21.93	21.07	18.56	17.43	16.57
15MHz	1 RB high	1772.5	24.41	23.34	22.14	19.91	18.84	17.64
		1745	24.17	23.16	22.17	19.67	18.66	17.67
		1717.5	24.32	23.18	22.14	19.82	18.68	17.64
	1 RB low	1772.5	24.19	23.19	22.17	19.69	18.69	17.67
		1745	24.05	23.24	22.06	19.55	18.74	17.56
		1717.5	24.08	23.20	22.16	19.58	18.70	17.66
	50% RB mid	1772.5	23.16	22.23	21.18	18.66	17.73	16.68
		1745	23.02	21.96	21.04	18.52	17.46	16.54
		1717.5	23.14	22.03	21.07	18.64	17.53	16.57
	100% RB	1772.5	23.15	22.31	21.10	18.65	17.81	16.60
		1745	23.08	21.94	21.04	18.58	17.44	16.54
		1717.5	23.04	21.96	21.10	18.54	17.46	16.60
20MHz	1 RB high	1770	24.17	23.26	22.23	19.67	18.76	17.73
		1745	24.15	23.24	22.21	19.65	18.74	17.71
		1720	24.17	23.26	22.23	19.67	18.76	17.73
	1 RB low	1770	24.17	23.26	22.23	19.67	18.76	17.73
		1745	24.03	23.13	22.11	19.53	18.63	17.61
		1720	24.13	23.22	22.19	19.63	18.72	17.69
	50% RB mid	1770	23.07	22.07	21.08	18.57	17.57	16.58
		1745	23.19	21.99	21.00	18.69	17.49	16.50
		1720	23.07	22.07	21.08	18.57	17.57	16.58
	100% RB	1770	23.08	22.08	21.09	18.58	17.58	16.59
		1745	23.03	22.03	21.04	18.53	17.53	16.54
		1720	23.09	22.09	21.10	18.59	17.59	16.60

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A.2 Emission Limit

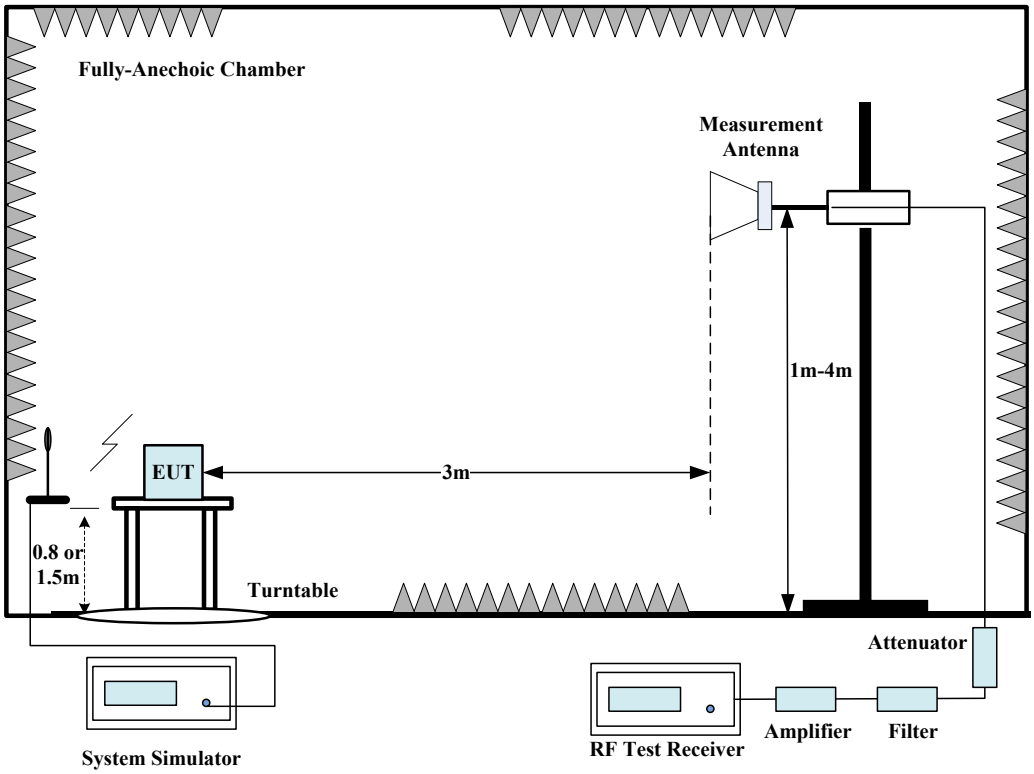
A.2.1 Measurement Method

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

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 each LTE Band.

The procedure of radiated spurious emissions is as follows:

For measurements performed at frequencies less than or equal to 1 GHz, the EUT was placed on a 80cm-high non-conductive support; For measurements performed at frequencies above 1GHz,EUT was placed on a 1.5-meter-high non-conductive support. A measurement antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. In the initial test, the height of the measurement antenna was varied from 1 m to 4 m for the relative positioning that produces the maximum radiated signal level. 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.



1. 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).
2. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.

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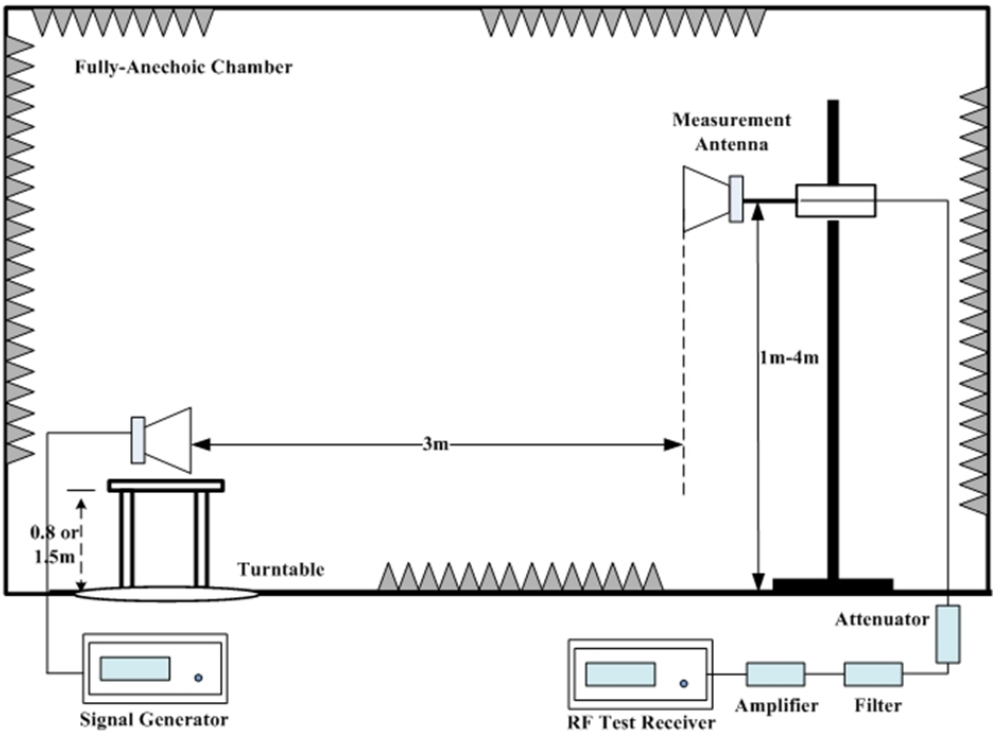

In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. The height of measurement antenna varied between 1 m to 4 m to maximize the received signal amplitude for each emission that was detected and measured in the initial test. A power (P_{Mea}) is applied to the input of the substitution antenna and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test was performed with the measurement antenna in both vertical and horizontal polarization.

3. The Path loss (P_{pl}) between the Signal Source and the Substitution Antenna and the Substitution Antenna Gain (G_a) were recorded after test.A amplifier was connected in for the test. The Path loss (P_{pl}) is the summation of the cable loss and the gain of the amplifier.
4. The measurement results are obtained as described below:

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

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

A.2.2 Measurement Limit

FDD Band 2: Part 24.238 specifies 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.

FDD Band 12: Part 27.53(g) states for operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in

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watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FDD Band 14: Part 90.543 states that for operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following: (1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations. (2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations. (3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB. (4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment. (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

FDD Band 5: Part 22.917 specifies 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.

LTE Band 30: Part 27.53(a) states for mobile and portable stations operating in the 2305–2315 MHz and 2350–2360 MHz bands: By a factor of not less than: 43 +10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337MHz; By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

FDD Band 7: Part 27.53(m) specifies 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

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channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

FDD Band 66: Part 27.53(h) specifies 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.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of each LTE Band. 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 each LTE Band 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 range of evaluated frequency is from 30MHz to 26GHz.

Note 1: All CA UL combination bands have been tested, only the worst cases are reported.
Note 2: Both of Vertical and Horizontal polarizations are evaluated, but only the worst case is recorded in this report.

A.2.4 Measurement Results Table

Frequency	Channel	Frequency Range	Result
LTE Bands	Low	9kHz-26GHz	Pass
	Middle	9kHz-26GHz	Pass
	High	9kHz-26GHz	Pass

A.2.5 Sweep Table

Subrange	RBW	VBW
9~150 kHz	0.2kHz	0.6kHz
150kHz~30MHz	9kHz	27kHz
30MHz~1 GHz	100KHz	300KHz
1~20 GHz	1 MHz	3 MHz

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A.2.6 Measurement Result

LB2,1.4MHz,CH18607,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3701.50	-63.03	3.47	10.39	-56.11	-13.00	43.11	V
5540.00	-61.14	5.78	11.34	-55.58	-13.00	42.58	H
7400.50	-52.32	8.09	10.10	-50.31	-13.00	37.31	V
9251.00	-50.00	8.85	11.70	-47.15	-13.00	34.15	H
11111.00	-48.79	9.80	12.61	-45.98	-13.00	32.98	H
12964.50	-45.54	12.53	12.74	-45.33	-13.00	32.33	V

LB2,1.4MHz,CH18900,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-61.79	3.81	10.16	-55.44	-13.00	42.44	V
5640.00	-57.00	5.61	11.38	-51.23	-13.00	38.23	H
7524.00	-53.08	7.71	10.25	-50.54	-13.00	37.54	H
9400.00	-50.74	9.10	11.50	-48.34	-13.00	35.34	H
11272.50	-48.29	10.64	12.63	-46.30	-13.00	33.30	V
13162.00	-45.52	13.20	12.54	-46.18	-13.00	33.18	V

LB2,1.4MHz,CH19193,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3818.50	-63.94	3.94	9.96	-57.92	-13.00	44.92	H
5728.00	-58.06	5.89	11.34	-52.61	-13.00	39.61	H
7638.00	-53.57	6.77	10.38	-49.96	-13.00	36.96	H
9533.00	-50.97	9.13	11.87	-48.23	-13.00	35.23	H
11450.00	-45.65	12.39	12.55	-45.49	-13.00	32.49	V
13367.0	-44.2	13.1	12.43	-44.9	-13	31.9	V

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LB4, 1.4MHz,CH19957,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8554.00	-62.52	8.52	11.20	-59.84	-13.00	46.84	H
10275.00	-58.92	10.72	11.90	-57.74	-13.00	44.74	V
11981.00	-56.79	12.25	13.06	-55.98	-13.00	42.98	V
13677.50	-54.04	12.97	12.20	-54.81	-13.00	41.81	H
15389.00	-56.98	14.87	15.38	-56.47	-13.00	43.47	H
17116.50	-47.17	18.45	13.48	-52.14	-13.00	39.14	H

LB4, 1.4MHz,CH20175,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8664.00	-62.07	8.56	11.17	-59.46	-13.00	46.46	H
10395.50	-59.22	10.65	12.00	-57.87	-13.00	44.87	H
12117.00	-57.49	12.24	13.32	-56.41	-13.00	43.41	H
13861.50	-52.62	13.10	12.10	-53.62	-13.00	40.62	H
15594.00	-54.84	16.50	15.60	-55.74	-13.00	42.74	H
17331.50	-44.53	19.25	13.14	-50.64	-13.00	37.64	H

LB4, 1.4MHz,CH20393,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8781.50	-61.84	8.00	11.16	-58.68	-13.00	45.68	V
10531.50	-59.51	10.41	11.93	-57.99	-13.00	44.99	V
12292.50	-58.71	11.63	13.40	-56.94	-13.00	43.94	V
14021.50	-51.93	14.24	12.22	-53.95	-13.00	40.95	H
15780.00	-55.12	16.48	15.58	-56.02	-13.00	43.02	V
17540.5	-44.1	19.67	13.14	-50.59	-13	37.6	H

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LB5, 1.4MHz,CH20407,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1647.00	-61.96	2.62	9.48	2.15	-57.25	-13.00	44.25	H
2482.00	-54.26	4.34	10.34	2.15	-50.41	-13.00	37.41	H
5759.50	-59.17	5.82	11.24	2.15	-55.90	-13.00	42.90	V
6608.00	-55.02	7.02	10.32	2.15	-53.87	-13.00	40.87	V
7418.00	-51.87	7.99	10.10	2.15	-51.91	-13.00	38.91	V
8239.00	-52.01	7.59	11.20	2.15	-50.55	-13.00	37.55	V

LB5, 1.4MHz,CH20525,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.00	-49.22	2.78	9.45	2.15	-44.70	-13.00	31.70	H
2517.00	-54.84	4.30	10.30	2.15	-50.99	-13.00	37.99	V
5846.50	-60.01	5.59	11.00	2.15	-56.75	-13.00	43.75	H
6678.00	-56.15	6.36	10.46	2.15	-54.20	-13.00	41.20	V
7527.50	-53.06	7.71	10.26	2.15	-52.66	-13.00	39.66	V
8379.00	-52.98	8.14	11.30	2.15	-51.97	-13.00	38.97	V

LB5, 1.4MHz,CH20643,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1696.50	-40.11	2.92	9.41	2.15	-35.77	-13.00	22.77	H
2547.00	-54.57	4.60	10.30	2.15	-51.02	-13.00	38.02	V
5951.50	-59.35	5.48	10.70	2.15	-56.28	-13.00	43.28	H
6788.50	-55.69	6.39	10.38	2.15	-53.85	-13.00	40.85	V
7627.00	-53.70	6.70	10.35	2.15	-52.20	-13.00	39.20	V
8475.50	-52.42	8.03	11.30	2.15	-51.30	-13.00	38.30	V

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LB12, 1.4MHz,CH23017,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2090.50	-56.55	3.52	7.78	2.15	-54.44	-13.00	41.44	V
2785.50	-52.24	4.90	10.37	2.15	-48.92	-13.00	35.92	H
4202.50	-60.13	4.68	10.11	2.15	-56.85	-13.00	43.85	V
5597.00	-60.42	5.52	11.29	2.15	-56.80	-13.00	43.80	V
6285.50	-58.10	6.09	10.80	2.15	-55.54	-13.00	42.54	V
6986.50	-54.24	7.98	10.40	2.15	-53.97	-13.00	40.97	V

LB12, 1.4MHz,CH23095,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2130.50	-56.08	3.70	8.29	2.15	-53.64	-13.00	40.64	H
2823.00	-51.29	5.12	10.45	2.15	-48.11	-13.00	35.11	H
4953.50	-61.31	4.91	11.21	2.15	-57.16	-13.00	44.16	H
5650.50	-60.66	5.59	11.40	2.15	-57.00	-13.00	44.00	H
6369.00	-58.63	5.76	10.94	2.15	-55.60	-13.00	42.60	V
7080.00	-55.12	6.92	10.38	2.15	-53.81	-13.00	40.81	V

LB12, 1.4MHz,CH23173,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2151.50	-55.83	3.70	8.62	2.15	-53.06	-13.00	40.06	V
2858.50	-51.26	5.55	10.55	2.15	-48.41	-13.00	35.41	H
4994.00	-61.66	5.18	11.29	2.15	-57.70	-13.00	44.70	V
5735.50	-59.21	5.87	11.33	2.15	-55.90	-13.00	42.90	V
6437.50	-57.25	6.88	10.85	2.15	-55.43	-13.00	42.43	H
7152.00	-54.44	6.69	10.19	2.15	-53.09	-13.00	40.09	V

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LB14, 5MHz,CH23305,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak (dBm)	Limit (dBm)	Margin (dB)	Polarization
1581.00	-70.88	6.89	8.95	0.00	-68.82	-40.00	28.82	H
2371.50	-51.48	8.45	10.19	2.15	-51.90	-13.00	38.90	H
3162.00	-61.88	9.14	10.16	2.15	-63.01	-13.00	50.01	H
3952.50	-59.01	10.32	10.27	2.15	-61.22	-13.00	48.22	H
4743.00	-57.21	11.44	11.16	2.15	-59.65	-13.00	46.65	H
5533.50	-56.83	11.63	11.20	2.15	-59.41	-13.00	46.41	H

LB14, 5MHz,CH23330,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak (dBm)	Limit (dBm)	Margin (dB)	Polarization
1586.00	-70.60	6.89	8.99	0.00	-68.50	-40.00	28.50	H
2379.00	-51.48	8.45	10.20	2.15	-51.89	-13.00	38.89	H
3172.00	-61.50	9.14	10.18	2.15	-62.61	-13.00	49.61	V
3965.00	-57.90	10.32	10.28	2.15	-60.09	-13.00	47.09	H
4758.00	-57.41	11.25	11.19	2.15	-59.62	-13.00	46.62	V
5551.00	-57.07	11.63	11.20	2.15	-59.64	-13.00	46.64	V

LB14, 5MHz,CH23355,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak (dBm)	Limit (dBm)	Margin (dB)	Polarization
1591.40	-70.54	6.83	9.03	0.00	-68.33	-40.00	28.33	H
2387.10	-52.63	8.45	10.20	2.15	-53.02	-13.00	40.02	V
3182.80	-61.81	9.14	10.20	2.15	-62.90	-13.00	49.90	H
3978.50	-57.43	10.71	10.30	2.15	-59.99	-13.00	46.99	H
4774.20	-57.62	11.25	11.18	2.15	-59.84	-13.00	46.84	V
5569.90	-55.86	11.63	11.20	2.15	-58.44	-13.00	45.44	H

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LB30, 5MHz,CH27685,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4615.00	-51.47	4.68	10.97	-45.18	-40.00	5.18	V
6923.00	-65.36	6.47	10.35	-61.48	-40.00	21.48	V
9230.50	-59.35	8.85	11.74	-56.46	-40.00	16.46	H
11538.50	-57.55	10.59	12.54	-55.60	-40.00	15.60	H
13846.50	-52.65	13.08	12.10	-53.63	-40.00	13.63	H
16166.50	-51.73	18.55	15.10	-55.18	-40.00	15.18	V

LB30, 5MHz,CH27710,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4620.00	-51.65	4.69	10.96	-45.38	-40.00	5.38	V
6920.00	-65.32	6.47	10.34	-61.45	-40.00	21.45	V
9240.50	-57.31	8.85	11.72	-54.44	-40.00	14.44	V
11545.50	-57.79	10.64	12.55	-55.88	-40.00	15.88	H
13849.00	-52.63	13.09	12.10	-53.62	-40.00	13.62	H
16171.00	-51.49	18.53	15.10	-54.92	-40.00	14.92	V

LB30, 5MHz,CH27735,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4625.00	-49.86	4.71	10.95	-43.62	-40.00	3.62	V
6942.50	-66.01	6.47	10.38	-62.10	-40.00	22.10	V
9250.50	-58.96	8.85	11.70	-56.11	-40.00	16.11	H
11563.50	-57.49	10.77	12.56	-55.70	-40.00	15.70	H
13869.50	-53.11	13.11	12.10	-54.12	-40.00	14.12	H
16188.00	-51.12	18.44	15.10	-54.46	-40.00	14.46	V

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LB66, 1.4MHz,CH131979,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8554.00	-62.34	8.52	11.20	-59.66	-13.00	46.66	H
10262.50	-58.87	10.82	11.90	-57.79	-13.00	44.79	V
11981.50	-56.59	12.25	13.06	-55.78	-13.00	42.78	V
13700.50	-53.51	13.06	12.20	-54.37	-13.00	41.37	H
15406.50	-56.98	14.90	15.41	-56.47	-13.00	43.47	V
17106.50	-47.47	18.45	13.49	-52.43	-13.00	39.43	H

LB66, 1.4MHz,CH132322,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8738.00	-61.44	8.43	11.10	-58.77	-13.00	45.77	V
10483.00	-59.32	10.37	11.92	-57.77	-13.00	44.77	V
12210.00	-58.32	12.17	13.40	-57.09	-13.00	44.09	V
13973.00	-51.78	14.54	12.17	-54.15	-13.00	41.15	H
15716.00	-54.85	16.62	15.52	-55.95	-13.00	42.95	H
17456.50	-43.94	19.26	13.06	-50.14	-13.00	37.14	V

LB66, 1.4MHz,CH132665,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
8882.00	-61.70	8.03	11.53	-58.20	-13.00	45.20	V
10670.00	-59.44	10.05	12.07	-57.42	-13.00	44.42	H
12460.50	-55.77	12.86	13.52	-55.11	-13.00	42.11	V
14227.50	-55.18	13.10	12.63	-55.65	-13.00	42.65	H
16028.50	-53.63	17.41	15.31	-55.73	-13.00	42.73	V
17790.00	-44.84	19.55	13.49	-50.90	-13.00	37.90	H

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CA_2A_5A, CH18607_CH20407,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3701.25	-54.65	10.44	10.56	0.00	-54.52	-13.00	41.52	V
5553.00	-52.17	11.63	11.20	0.00	-52.59	-13.00	39.59	H
7404.00	-50.89	10.11	10.11	0.00	-50.89	-13.00	37.89	V
9255.00	-46.42	14.68	11.80	0.00	-49.30	-13.00	36.30	V
11106.00	-43.08	15.95	12.54	0.00	-46.49	-13.00	33.49	V
12957.00	-41.59	16.73	12.92	0.00	-45.41	-13.00	32.41	V
1649.54	-43.63	7.12	9.16	2.15	-43.74	-13.00	30.74	V
2474.31	-37.92	8.96	10.16	2.15	-38.87	-13.00	25.87	V
3299.08	-60.27	9.71	10.22	2.15	-61.91	-13.00	48.91	V
4123.85	-58.46	10.45	10.35	2.15	-60.71	-13.00	47.71	H
4948.62	-57.34	11.37	11.23	2.15	-59.63	-13.00	46.63	H
5773.39	-55.71	11.65	10.86	2.15	-58.64	-13.00	45.64	V

CA_2A_5A, CH18900_CH20525,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.00	-56.05	10.10	10.45	0.00	-55.71	-13.00	42.71	V
5640.47	-52.63	11.61	11.20	0.00	-53.04	-13.00	40.04	H
7520.00	-51.63	10.31	10.31	0.00	-51.63	-13.00	38.63	V
9400.00	-47.11	14.74	11.67	0.00	-50.18	-13.00	37.18	H
11280.00	-44.68	16.04	12.64	0.00	-48.08	-13.00	35.08	V
13160.00	-44.37	16.78	12.67	0.00	-48.48	-13.00	35.48	V
1673.12	-42.59	7.23	9.10	2.15	-42.87	-13.00	29.87	H
2509.68	-37.87	8.67	10.12	2.15	-38.57	-13.00	25.57	H
3346.24	-62.80	9.47	10.43	2.15	-64.00	-13.00	51.00	V
4182.80	-57.07	10.96	10.40	2.15	-59.78	-13.00	46.78	H
5019.36	-57.30	11.66	11.23	2.15	-59.88	-13.00	46.88	V
5855.92	-55.43	11.43	10.60	2.15	-58.41	-13.00	45.41	H

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CA_2A_5A, CH19193_CH20643,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3818.44	-55.22	10.12	10.24	0.00	-55.10	-13.00	42.10	V
5728.13	-51.76	11.65	10.98	0.00	-52.43	-13.00	39.43	H
7640.00	-51.15	10.40	10.40	0.00	-51.15	-13.00	38.15	V
9550.00	-47.21	14.83	11.97	0.00	-50.07	-13.00	37.07	V
11460.00	-45.52	16.11	12.66	0.00	-48.97	-13.00	35.97	V
13370.00	-41.61	16.77	12.53	0.00	-45.85	-13.00	32.85	V
1696.60	-35.93	7.36	9.10	2.15	-36.34	-13.00	23.34	H
2544.90	-37.02	8.65	10.19	2.15	-37.63	-13.00	24.63	V
3393.20	-60.99	10.00	10.45	2.15	-62.69	-13.00	49.69	V
4241.50	-58.71	10.33	10.70	2.15	-60.49	-13.00	47.49	V
5089.80	-57.69	11.46	11.27	2.15	-60.03	-13.00	47.03	V
5938.10	-54.70	11.71	10.35	2.15	-58.21	-13.00	45.21	V

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CA_12A_30A, CH23017_CH27685,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1399.58	-58.73	6.15	7.91	2.15	-59.11	-13.00	46.11	V
2099.37	-52.08	7.09	7.65	2.15	-53.67	-13.00	40.67	V
2799.16	-46.03	10.22	10.22	2.15	-48.18	-13.00	35.18	H
3498.95	-68.97	9.80	10.37	2.15	-70.55	-13.00	57.55	H
4198.74	-65.82	10.96	10.42	2.15	-68.52	-13.00	55.52	V
4898.53	-65.48	11.26	11.28	2.15	-67.60	-13.00	54.60	V
4614.84	-57.56	11.11	11.15	0.00	-57.52	-40.00	17.52	V
6924.00	-60.23	12.76	10.34	0.00	-62.65	-40.00	22.65	V
9232.00	-55.87	14.36	11.80	0.00	-58.43	-40.00	18.43	V
11538.28	-49.32	16.34	12.74	0.00	-52.92	-40.00	12.92	H
13848.00	-48.90	17.62	12.38	0.00	-54.14	-40.00	14.14	H
16156.00	-51.14	18.94	14.97	0.00	-55.11	-40.00	15.11	V

CA_12A_30A, CH23095_CH27710,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.20	-58.49	6.36	8.01	2.15	-59.00	-13.00	46.00	H
2122.80	-51.76	7.62	8.32	2.15	-53.21	-13.00	40.21	H
2830.40	-45.79	10.48	10.48	2.15	-47.94	-13.00	34.94	H
3538.00	-68.88	10.13	10.62	2.15	-70.54	-13.00	57.54	V
4245.60	-67.79	10.33	10.72	2.15	-69.56	-13.00	56.56	V
4953.20	-66.12	11.34	11.27	2.15	-68.34	-13.00	55.34	V
4620.00	-58.18	11.11	11.15	0.00	-58.14	-40.00	18.14	V
6930.00	-60.12	12.92	10.34	0.00	-62.70	-40.00	22.70	V
9240.00	-55.99	14.57	11.79	0.00	-58.77	-40.00	18.77	V
11550.94	-47.85	16.26	12.75	0.00	-51.36	-40.00	11.36	V
13860.00	-50.50	16.57	12.37	0.00	-54.70	-40.00	14.70	H
16170.00	-51.16	19.55	14.92	0.00	-55.78	-40.00	15.78	V

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CA_12A_30A, CH23173_CH27735,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1431.00	-57.98	6.43	8.12	2.15	-58.44	-13.00	45.44	H
2146.50	-51.69	7.62	8.72	2.15	-52.74	-13.00	39.74	H
2862.00	-45.48	10.49	10.49	2.15	-47.63	-13.00	34.63	H
3577.50	-68.40	10.30	10.56	2.15	-70.29	-13.00	57.29	H
4293.00	-67.48	10.68	10.99	2.15	-69.32	-13.00	56.32	H
5008.50	-65.44	11.66	11.23	2.15	-68.02	-13.00	55.02	H
4625.16	-58.34	11.11	11.14	0.00	-58.31	-40.00	18.31	V
6939.00	-59.96	13.14	10.33	0.00	-62.77	-40.00	22.77	V
9252.00	-56.07	14.59	11.80	0.00	-58.86	-40.00	18.86	V
11563.59	-49.69	16.26	12.76	0.00	-53.18	-40.00	13.18	H
13878.00	-49.81	17.53	12.36	0.00	-54.98	-40.00	14.98	H
16191.00	-51.39	18.86	14.86	0.00	-55.39	-40.00	15.39	V

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CA_5A_66A, CH20407_CH131979,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1649.64	-56.07	7.12	9.17	2.15	-56.18	-13.00	43.18	H
2474.46	-48.62	8.96	10.16	2.15	-49.57	-13.00	36.57	V
3299.28	-70.72	10.22	10.22	2.15	-72.87	-13.00	59.87	V
4124.10	-67.06	10.45	10.35	2.15	-69.31	-13.00	56.31	H
4948.92	-66.19	11.37	11.23	2.15	-68.48	-13.00	55.48	V
5773.74	-64.84	11.65	10.86	2.15	-67.77	-13.00	54.77	H
3421.41	-64.22	9.62	10.36	0.00	-63.49	-13.00	50.49	V
5133.00	-63.38	11.67	11.43	0.00	-63.62	-13.00	50.62	V
6843.28	-57.01	13.05	10.38	0.00	-59.69	-13.00	46.69	H
8553.75	-55.39	14.34	11.40	0.00	-58.33	-13.00	45.33	H
10266.00	-55.31	15.53	12.17	0.00	-58.68	-13.00	45.68	H
11977.00	-53.03	16.39	13.07	0.00	-56.35	-13.00	43.35	H

CA_5A_66A, CH20525_CH132322,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.20	-50.02	7.23	9.10	2.15	-50.30	-13.00	37.30	H
2509.80	-49.47	8.67	10.12	2.15	-50.17	-13.00	37.17	V
3346.40	-70.11	10.43	10.43	2.15	-72.26	-13.00	59.26	H
4183.00	-65.79	10.96	10.40	2.15	-68.50	-13.00	55.50	H
5019.60	-66.08	11.66	11.23	2.15	-68.66	-13.00	55.66	V
5856.20	-65.08	11.43	10.60	2.15	-68.06	-13.00	55.06	V
3490.00	-62.92	9.80	10.37	0.00	-62.35	-13.00	49.35	H
5235.00	-62.99	11.91	11.50	0.00	-63.40	-13.00	50.40	H
6980.00	-57.14	12.65	10.30	0.00	-59.49	-13.00	46.49	H
8725.00	-56.75	14.19	11.35	0.00	-59.60	-13.00	46.60	H
10470.00	-55.18	15.55	12.10	0.00	-58.64	-13.00	45.64	V
12215.00	-54.48	16.69	13.33	0.00	-57.83	-13.00	44.83	V

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CA_5A_66A, CH20643_CH132665,QPSK

Frequency (MHz)	SG (dBm)	CableLoss (dB)	AntennaGain (dBi)	Correction (dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1696.60	-41.38	7.36	9.10	2.15	-41.79	-13.00	28.79	H
2544.90	-48.85	8.65	10.19	2.15	-49.46	-13.00	36.46	V
3393.20	-69.47	10.45	10.45	2.15	-71.62	-13.00	58.62	V
4241.50	-67.95	10.33	10.70	2.15	-69.73	-13.00	56.73	V
5089.80	-66.91	11.46	11.27	2.15	-69.25	-13.00	56.25	V
5938.10	-64.59	11.71	10.35	2.15	-68.10	-13.00	55.10	V
3558.75	-66.87	10.30	10.54	0.00	-66.63	-13.00	53.63	V
5338.13	-64.09	11.89	11.43	0.00	-64.55	-13.00	51.55	V
7120.00	-59.64	12.89	10.33	0.00	-62.20	-13.00	49.20	V
8900.00	-55.69	14.46	11.57	0.00	-58.58	-13.00	45.58	V
10680.00	-54.32	15.87	12.21	0.00	-57.98	-13.00	44.98	H
12460.00	-52.21	16.90	13.40	0.00	-55.72	-13.00	42.72	H

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A.3 Frequency Stability

A.3.1 Method of Measurement

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage. Two reference points are established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and highest channel of operation shall be identified as F_L and F_H respectively.

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 CMW500.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30℃.
3. With the EUT, powered via nominal voltage, connected to the CMW500, and in a simulated call on middle channel for each LTE band, 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℃ increments from -30℃ to +50℃. 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℃.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the center 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 ℃ decrements from +50℃ to -30℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

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 the lower, higher and nominal voltage. 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.

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A.3.2 Measurement results

LTE band 2, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	1850.850	1909.150		
50				0.30	0.0002
40				2.93	0.0016
30				2.22	0.0012
10				1.10	0.0006
0				1.50	0.0008
-10				2.96	0.0016
-20				5.58	0.0030
-30				0.94	0.0005

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.850	1909.150	0.10	0.0001
4.45				0.82	0.0004

LTE band 5, 10MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	824.420	848.580		
50				-0.49	0.0006
40				-0.82	0.0010
30				-0.90	0.0011
10				-0.56	0.0007
0				-1.33	0.0016
-10				-0.70	0.0008
-20				-0.77	0.0009
-30				-0.99	0.0012

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.420	848.580	-1.32	0.0016
4.45				-1.72	0.0021

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LTE band 7, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2500.640	2569.360		
50				1.97	0.0008
40				-0.09	0.0000
30				0.94	0.0004
10				2.45	0.0010
0				2.70	0.0011
-10				2.35	0.0009
-20				-0.70	0.0003
-30				0.80	0.0003

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2500.640	2569.360	0.27	0.0001
4.45				4.19	0.0017

LTE band 12, 10MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	699.480	715.510		
50				-0.69	0.0010
40				-0.93	0.0013
30				-0.59	0.0008
10				-0.99	0.0014
0				-0.56	0.0008
-10				-0.72	0.0010
-20				-0.67	0.0010
-30				-0.97	0.0014

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	699.480	715.510	-1.43	0.0020
4.45				0.40	0.0006

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LTE band 14, 10MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	788.480	797.510		
50				0.09	0.0001
40				-1.22	0.0015
30				-1.42	0.0018
10				1.20	0.0015
0				-0.36	0.0005
-10				-0.09	0.0001
-20				-2.15	0.0027
-30				-4.06	0.0051

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	788.480	797.510	-4.35	0.0055
4.45				-3.53	0.0045

LTE band 30, 10MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	2305.430	2314.570		
50				2.99	0.0013
40				0.90	0.0004
30				6.22	0.0027
10				3.18	0.0014
0				3.12	0.0014
-10				6.45	0.0028
-20				4.58	0.0020
-30				2.90	0.0013

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2305.430	2314.570	6.98	0.0030
4.45				7.68	0.0033

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LTE band 66, 20MHz bandwidth QPSK(worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.87	1710.860	1779.150		
50				-0.97	0.0006
40				-1.27	0.0007
30				-1.50	0.0009
10				-2.29	0.0013
0				-1.85	0.0011
-10				-1.70	0.0010
-20				-0.14	0.0001
-30				-0.64	0.0004

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	FL(MHz)	FH(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.860	1779.150	-0.77	0.0004
4.45				-0.26	0.0001

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A.4 Occupied Bandwidth

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 frequency. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.
The measurement method is from ANSI C63.26:
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.
b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation.
d) Set the detection mode to peak, and the trace mode to max-hold.

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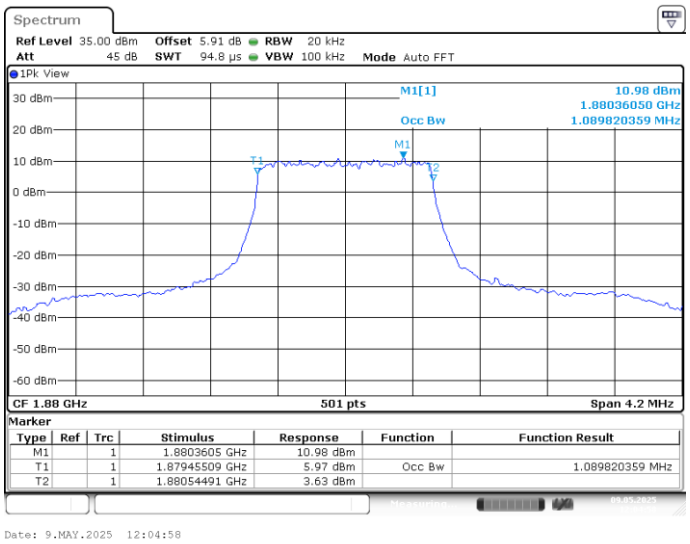
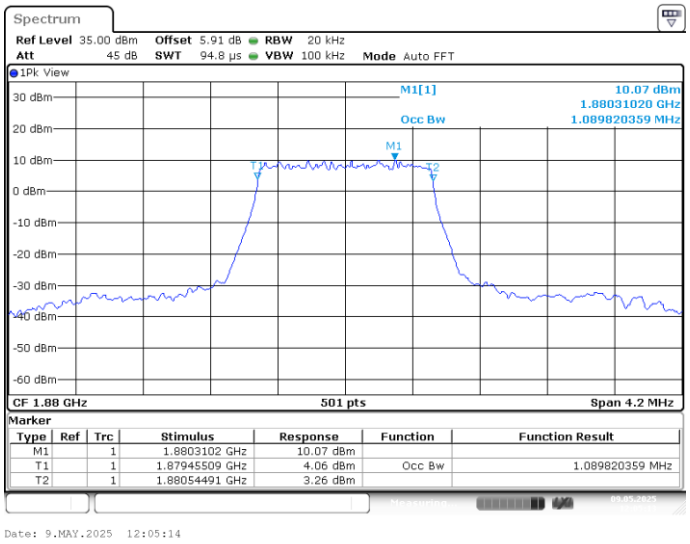
LTE band 2,1.4MHz(99%)

Frequency (MHz)	Occupied Bandwidth (99%)(MHz)	
	QPSK	16QAM
1880	1.090	1.090

LTE band 2 , 1.4MHz Bandwidth,MID,QPSK (99% BW)



LTE band 2 , 1.4MHz Bandwidth,MID,16QAM (99% BW)



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