



TEST REPORT

No. I21Z61640-WMD03

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile phone

Model Name: 5007S

FCC ID: 2ACCJH130

with

Hardware Version: 04

Software Version: v2F21UZ10

Issued Date: 2021-09-27

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z61640-WMD03	Rev.0	1 st edition	2021-09-27

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 NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP 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 (Shouxiang)

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

1.3. Testing Environment

Normal Temperature: 15-35℃
Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2020-09-07
Testing End Date: 2021-09-26

1.5. Signature



Dong Yuan
(Prepared this test report)



Zhou Yu
(Reviewed this test report)



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

2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd.
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Email: zhizhou.gong@tcl.com
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2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
Address /Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Park, Shatin, NT, Hong Kong
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3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM/UMTS/LTE Mobile phone
Model Name	5007S
FCC ID	2ACCJH130
Antenna	Embedded
Output power	22.04dBm maximum EIRP measured for LTE Band 2
Extreme vol. Limits	3.5VDC to 4.4VDC (nominal: 3.85VDC)
Extreme temp. Tolerance	-20°C to +60°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
UT09a	015794000205345	04	v2F21UZ10	2021-08-30
UT02a	015794000205337	04	v2F21UZ10	2021-09-03

*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	TLp034G1
Manufacturer	BYD
Capacitance	3500mAh

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

4. Reference Documents

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

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-20 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-20 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-20 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

5. Laboratory Environment

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

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

6. Summary Of Test 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

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

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

LTE Band 13

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P

LTE Band 66

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	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.

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 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.

The Equipment Under Test (EUT) is a Class 2 Permissive Change to 5007S (FCC ID: 2ACCJH130), Output Power and Emission Limit are tested.

For detail differences between two models please refer the Declaration of Changes document.

7. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Universal Radio Communication Tester	CMU200	108646	R&S	2021-12-17	1 year
Spectrum Analyzer	FSU	200030	R&S	2022-06-02	1 year
Climate chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
Test Receiver	E4440A	MY48250642	Agilent	2022-03-04	1 year
Universal Radio Communication Tester	CMW500	143008	R&S	2021-12-01	1 year
EMI Antenna	VULB9163	9163-235	Schwarzbeck	2022-04-07	1 year
Signal Generator	N5183A	MY49060052	Agilent	2022-07-11	1 year
EMI Antenna	3117	00058889	ETS-Lindgren	2021-09-22	1 year
EMI Antenna	3117	00119021	ETS-Lindgren	2022-01-14	1 year

Note1: The above Test Equipments Utilized were used by I21Z61640.

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.

A.1.2.2 Measurement Result

LTE band 2

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1909.3	22.79	22.07
		1880.0	22.91	22.20
		1850.7	22.97	22.20
	1 RB low	1909.3	22.83	22.03
		1880.0	22.91	22.22
		1850.7	22.98	22.24
	50% RB mid	1909.3	22.98	21.94
		1880.0	23.08	22.09
		1850.7	23.15	22.10
	100% RB	1909.3	21.93	21.05
		1880.0	22.02	21.10
		1850.7	22.07	21.14
3MHz	1 RB high	1908.5	23.09	22.09
		1880.0	23.14	22.19
		1851.5	23.07	22.10
	1 RB low	1908.5	23.13	22.17
		1880.0	23.17	22.21
		1851.5	23.10	22.16
	50% RB mid	1908.5	21.95	21.00
		1880.0	22.00	21.09
		1851.5	22.05	21.13

	100% RB	1908.5	21.91	20.91
		1880.0	21.96	20.96
		1851.5	22.06	21.02
5MHz	1 RB high	1907.5	22.79	21.99
		1880.0	22.85	22.21
		1852.5	22.89	22.20
	1 RB low	1907.5	22.79	21.99
		1880.0	22.86	22.17
		1852.5	22.90	22.16
	50% RB mid	1907.5	21.99	20.99
		1880.0	22.01	21.02
		1852.5	22.07	21.06
	100% RB	1907.5	21.93	20.92
		1880.0	22.01	21.02
		1852.5	22.04	21.06
10MHz	1 RB high	1905.0	22.85	22.04
		1880.0	22.92	22.24
		1855.0	22.95	22.24
	1 RB low	1905.0	23.16	22.20
		1880.0	23.13	22.18
		1855.0	23.10	22.12
	50% RB mid	1905.0	21.99	20.99
		1880.0	22.01	21.05
		1855.0	22.09	21.08
	100% RB	1905.0	21.94	20.95
		1880.0	22.03	21.04
		1855.0	22.11	21.10
15MHz	1 RB high	1902.5	22.80	22.08
		1880.0	22.87	22.13
		1857.5	22.91	22.24
	1 RB low	1902.5	22.90	22.07
		1880.0	22.92	22.21
		1857.5	22.96	22.16
	50% RB mid	1902.5	21.98	20.93
		1880.0	22.02	20.98
		1857.5	22.07	21.05
	100% RB	1902.5	21.94	20.92
		1880.0	22.04	21.02
		1857.5	22.06	21.05

20MHz	1 RB high	1900.0	22.62	21.92
		1880.0	22.68	21.93
		1860.0	22.72	22.07
	1 RB low	1900.0	22.75	22.00
		1880.0	22.76	22.00
		1860.0	22.78	22.06
	50% RB mid	1900.0	21.98	20.99
		1880.0	22.02	21.02
		1860.0	22.06	21.05
	100% RB	1900.0	21.92	20.89
		1880.0	22.03	21.00
		1860.0	22.03	20.98

LTE band 5

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	848.3	22.57	21.73
		836.5	22.77	22.10
		824.7	22.93	22.17
	1 RB low	848.3	22.58	21.78
		836.5	22.75	21.97
		824.7	22.92	22.26
	50% RB mid	848.3	22.74	21.74
		836.5	22.90	21.87
		824.7	23.07	22.04
	100% RB	848.3	21.70	20.80
		836.5	21.83	20.94
		824.7	22.03	21.10
3MHz	1 RB high	847.5	22.61	21.76
		836.5	22.78	22.08
		825.5	22.91	22.10
	1 RB low	847.5	22.63	21.96
		836.5	22.82	22.15
		825.5	22.96	22.15
	50% RB mid	847.5	21.69	20.75
		836.5	21.85	20.91
		825.5	22.02	21.02
	100% RB	847.5	21.64	20.63
		836.5	21.79	20.83
		825.5	21.94	20.94
5MHz	1 RB high	846.5	22.51	21.81
		836.5	22.67	21.90
		826.5	22.80	21.98
	1 RB low	846.5	22.58	21.86
		836.5	22.72	22.04
		826.5	22.84	22.13
	50% RB mid	846.5	21.74	20.74
		836.5	21.88	20.84
		826.5	22.01	20.97
	100% RB	846.5	21.68	20.69
		836.5	21.82	20.81
		826.5	21.95	20.95
10MHz	1 RB high	844.0	22.63	21.92
		836.5	22.74	22.02

	1 RB low	829.0	22.80	22.14
		844.0	22.78	21.98
		836.5	22.87	22.18
		829.0	22.95	22.28
	50% RB mid	844.0	21.79	20.80
		836.5	21.89	20.89
		829.0	21.96	20.94
	100% RB	844.0	21.79	20.77
		836.5	21.88	20.87
		829.0	21.98	20.98

LTE band 12

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	715.3	22.32	21.64
		707.5	22.40	21.74
		699.7	22.50	21.77
	1 RB low	715.3	22.33	21.67
		707.5	22.42	21.74
		699.7	22.51	21.80
	50% RB mid	715.3	22.49	21.44
		707.5	22.58	21.61
		699.7	22.67	21.63
	100% RB	715.3	21.44	20.54
		707.5	21.55	20.63
		699.7	21.65	20.71
3MHz	1 RB high	714.5	22.32	21.71
		707.5	22.44	21.78
		700.5	22.51	21.81
	1 RB low	714.5	22.41	21.75
		707.5	22.46	21.70
		700.5	22.57	21.83
	50% RB mid	714.5	21.46	20.49
		707.5	21.56	20.60
		700.5	21.64	20.69
	100% RB	714.5	21.41	20.42
		707.5	21.53	20.52
		700.5	21.59	20.58
5MHz	1 RB high	713.5	22.26	21.57
		707.5	22.33	21.70
		701.5	22.37	21.69
	1 RB low	713.5	22.31	21.60
		707.5	22.41	21.75
		701.5	22.46	21.74
	50% RB mid	713.5	21.52	20.47
		707.5	21.59	20.56
		701.5	21.65	20.63
	100% RB	713.5	21.41	20.43
		707.5	21.53	20.56
		701.5	21.60	20.58
10MHz	1 RB high	711.0	22.35	21.59
		707.5	22.42	21.70

	1 RB low	704.0	22.46	21.75
		711.0	22.52	21.87
		707.5	22.54	21.84
		704.0	22.61	21.84
	50% RB mid	711.0	21.56	20.55
		707.5	21.63	20.61
		704.0	21.68	20.66
	100% RB	711.0	21.54	20.52
		707.5	21.70	20.64
		704.0	21.74	20.72

LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
5MHz	1 RB high	784.5	22.06	21.34
		782.0	22.06	21.38
		779.5	22.08	21.47
	1 RB low	784.5	22.12	21.48
		782.0	22.15	21.33
		779.5	22.16	21.34
	50% RB mid	784.5	21.26	20.33
		782.0	21.29	20.37
		779.5	21.32	20.38
	100% RB	784.5	21.18	20.26
		782.0	21.22	20.32
		779.5	21.23	20.33
10MHz	1 RB high	782.0	22.10	21.33
	1 RB low	782.0	22.25	21.54
	50% RB mid	782.0	21.25	20.34
	100% RB	782.0	21.25	20.35

LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)	
			QPSK	16QAM
1.4MHz	1 RB high	1779.3	22.33	21.58
		1745.0	22.49	21.66
		1710.7	22.62	21.93
	1 RB low	1779.3	22.35	21.59
		1745.0	23.12	21.75
		1710.7	22.65	21.85
	50% RB mid	1779.3	22.50	21.47
		1745.0	22.56	21.65
		1710.7	22.78	21.75
	100% RB	1779.3	21.47	20.61
		1745.0	21.51	20.73
		1710.7	21.69	20.88
3MHz	1 RB high	1778.5	22.44	21.72
		1745.0	22.52	21.68
		1711.5	22.70	21.90
	1 RB low	1778.5	22.41	21.75
		1745.0	22.49	21.86
		1711.5	22.72	21.91
	50% RB mid	1778.5	21.49	20.60
		1745.0	21.59	20.68
		1711.5	21.75	20.85
	100% RB	1778.5	21.45	20.48
		1745.0	21.53	20.60
		1711.5	21.71	20.78
5MHz	1 RB high	1777.5	22.30	21.58
		1745.0	22.42	21.76
		1712.5	22.58	21.85
	1 RB low	1777.5	22.33	21.66
		1745.0	22.47	21.77
		1712.5	22.61	21.85
	50% RB mid	1777.5	21.52	20.53
		1745.0	21.59	20.64
		1712.5	21.76	20.78
	100% RB	1777.5	21.47	20.49
		1745.0	21.54	20.61
		1712.5	21.72	20.75
10MHz	1 RB high	1775.0	22.41	21.70
		1745.0	22.53	21.86

	1 RB low	1715.0	22.62	21.83
		1775.0	22.47	21.65
		1745.0	22.53	21.87
		1715.0	22.70	21.91
	50% RB mid	1775.0	21.55	20.58
		1745.0	21.60	20.65
		1715.0	21.74	20.80
	100% RB	1775.0	21.52	20.56
		1745.0	21.58	20.65
		1715.0	21.78	20.84
15MHz	1 RB high	1772.5	22.33	21.56
		1745.0	22.41	21.78
		1717.5	22.53	21.89
	1 RB low	1772.5	22.42	21.69
		1745.0	22.48	21.71
		1717.5	22.65	21.84
	50% RB mid	1772.5	21.51	20.50
		1745.0	21.58	20.58
		1717.5	21.70	20.73
	100% RB	1772.5	21.52	20.54
		1745.0	21.56	20.62
		1717.5	21.71	20.76
20MHz	1 RB high	1770.0	22.13	21.34
		1745.0	22.24	21.51
		1720.0	22.31	21.57
	1 RB low	1770.0	22.20	21.51
		1745.0	22.30	21.66
		1720.0	22.46	21.76
	50% RB mid	1770.0	21.47	20.54
		1745.0	21.55	20.58
		1720.0	21.66	20.72
	100% RB	1770.0	21.48	20.49
		1745.0	21.56	20.63
		1720.0	21.67	20.66

A.1.3 Radiated

A.1.3.1 Description

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

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

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

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".

Part 27.50(b) specifies "Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP".

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".

A.1.3.2 Method of Measurement

ANSI C63.26 chapter 5.2.5.5: when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

$$\text{ERP or EIRP} = P_{\text{Mea}} + G_T$$

Where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Mea} , e.g., dBm or dBW)

P_{Mea} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

A.1.3.3 Measurement result

LTE Band 2-EIRP

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm)(Gt-Lc = -0.5)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	1909.3	22.79	22.07	22.29	21.57
		1880.0	22.91	22.20	22.41	21.70
		1850.7	22.97	22.20	22.47	21.70
	1 RB low	1909.3	22.83	22.03	22.33	21.53
		1880.0	22.91	22.22	22.41	21.72
		1850.7	22.98	22.24	22.48	21.74
	50% RB mid	1909.3	22.98	21.94	22.48	21.44
		1880.0	23.08	22.09	22.58	21.59
		1850.7	23.15	22.10	22.65	21.60
	100% RB	1909.3	21.93	21.05	21.43	20.55
		1880.0	22.02	21.10	21.52	20.60
		1850.7	22.07	21.14	21.57	20.64
3MHz	1 RB high	1908.5	23.09	22.09	22.59	21.59
		1880.0	23.14	22.19	22.64	21.69
		1851.5	23.07	22.10	22.57	21.60
	1 RB low	1908.5	23.13	22.17	22.63	21.67
		1880.0	23.17	22.21	22.67	21.71
		1851.5	23.10	22.16	22.60	21.66
	50% RB mid	1908.5	21.95	21.00	21.45	20.50
		1880.0	22.00	21.09	21.50	20.59
		1851.5	22.05	21.13	21.55	20.63
	100% RB	1908.5	21.91	20.91	21.41	20.41
		1880.0	21.96	20.96	21.46	20.46
		1851.5	22.06	21.02	21.56	20.52
5MHz	1 RB high	1907.5	22.79	21.99	22.29	21.49
		1880.0	22.85	22.21	22.35	21.71
		1852.5	22.89	22.20	22.39	21.70
	1 RB low	1907.5	22.79	21.99	22.29	21.49
		1880.0	22.86	22.17	22.36	21.67
		1852.5	22.90	22.16	22.40	21.66
	50% RB mid	1907.5	21.99	20.99	21.49	20.49
		1880.0	22.01	21.02	21.51	20.52
		1852.5	22.07	21.06	21.57	20.56
	100% RB	1907.5	21.93	20.92	21.43	20.42
		1880.0	22.01	21.02	21.51	20.52

		1852.5	22.04	21.06	21.54	20.56
10MHz	1 RB high	1905.0	22.85	22.04	22.35	21.54
		1880.0	22.92	22.24	22.42	21.74
		1855.0	22.95	22.24	22.45	21.74
	1 RB low	1905.0	23.16	22.20	22.66	21.70
		1880.0	23.13	22.18	22.63	21.68
		1855.0	23.10	22.12	22.60	21.62
	50% RB mid	1905.0	21.99	20.99	21.49	20.49
		1880.0	22.01	21.05	21.51	20.55
		1855.0	22.09	21.08	21.59	20.58
	100% RB	1905.0	21.94	20.95	21.44	20.45
		1880.0	22.03	21.04	21.53	20.54
		1855.0	22.11	21.10	21.61	20.60
15MHz	1 RB high	1902.5	22.80	22.08	22.30	21.58
		1880.0	22.87	22.13	22.37	21.63
		1857.5	22.91	22.24	22.41	21.74
	1 RB low	1902.5	22.90	22.07	22.40	21.57
		1880.0	22.92	22.21	22.42	21.71
		1857.5	22.96	22.16	22.46	21.66
	50% RB mid	1902.5	21.98	20.93	21.48	20.43
		1880.0	22.02	20.98	21.52	20.48
		1857.5	22.07	21.05	21.57	20.55
	100% RB	1902.5	21.94	20.92	21.44	20.42
		1880.0	22.04	21.02	21.54	20.52
		1857.5	22.06	21.05	21.56	20.55
20MHz	1 RB high	1900.0	22.62	21.92	22.12	21.42
		1880.0	22.68	21.93	22.18	21.43
		1860.0	22.72	22.07	22.22	21.57
	1 RB low	1900.0	22.75	22.00	22.25	21.50
		1880.0	22.76	22.00	22.26	21.50
		1860.0	22.78	22.06	22.28	21.56
	50% RB mid	1900.0	21.98	20.99	21.48	20.49
		1880.0	22.02	21.02	21.52	20.52
		1860.0	22.06	21.05	21.56	20.55
	100% RB	1900.0	21.92	20.89	21.42	20.39
		1880.0	22.03	21.00	21.53	20.50
		1860.0	22.03	20.98	21.53	20.48

LTE Band 5-ERP

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm)(Gt-Lc = -4.0)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	848.3	22.57	21.73	16.42	15.58
		836.5	22.77	22.10	16.62	15.95
		824.7	22.93	22.17	16.78	16.02
	1 RB low	848.3	22.58	21.78	16.43	15.63
		836.5	22.75	21.97	16.60	15.82
		824.7	22.92	22.26	16.77	16.11
	50% RB mid	848.3	22.74	21.74	16.59	15.59
		836.5	22.90	21.87	16.75	15.72
		824.7	23.07	22.04	16.92	15.89
	100% RB	848.3	21.70	20.80	15.55	14.65
		836.5	21.83	20.94	15.68	14.79
		824.7	22.03	21.10	15.88	14.95
3MHz	1 RB high	847.5	22.61	21.76	16.46	15.61
		836.5	22.78	22.08	16.63	15.93
		825.5	22.91	22.10	16.76	15.95
	1 RB low	847.5	22.63	21.96	16.48	15.81
		836.5	22.82	22.15	16.67	16.00
		825.5	22.96	22.15	16.81	16.00
	50% RB mid	847.5	21.69	20.75	15.54	14.60
		836.5	21.85	20.91	15.70	14.76
		825.5	22.02	21.02	15.87	14.87
	100% RB	847.5	21.64	20.63	15.49	14.48
		836.5	21.79	20.83	15.64	14.68
		825.5	21.94	20.94	15.79	14.79
5MHz	1 RB high	846.5	22.51	21.81	16.36	15.66
		836.5	22.67	21.90	16.52	15.75
		826.5	22.80	21.98	16.65	15.83
	1 RB low	846.5	22.58	21.86	16.43	15.71
		836.5	22.72	22.04	16.57	15.89
		826.5	22.84	22.13	16.69	15.98
	50% RB mid	846.5	21.74	20.74	15.59	14.59
		836.5	21.88	20.84	15.73	14.69
		826.5	22.01	20.97	15.86	14.82
	100% RB	846.5	21.68	20.69	15.53	14.54
		836.5	21.82	20.81	15.67	14.66

		826.5	21.95	20.95	15.80	14.80
10MHz	1 RB high	844.0	22.63	21.92	16.48	15.77
		836.5	22.74	22.02	16.59	15.87
		829.0	22.80	22.14	16.65	15.99
	1 RB low	844.0	22.78	21.98	16.63	15.83
		836.5	22.87	22.18	16.72	16.03
		829.0	22.95	22.28	16.80	16.13
	50% RB mid	844.0	21.79	20.80	15.64	14.65
		836.5	21.89	20.89	15.74	14.74
		829.0	21.96	20.94	15.81	14.79
	100% RB	844.0	21.79	20.77	15.64	14.62
		836.5	21.88	20.87	15.73	14.72
		829.0	21.98	20.98	15.83	14.83

LTE Band 12 -ERP

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm)(Gt-Lc = -3.4)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	715.3	22.32	21.64	16.77	16.09
		707.5	22.40	21.74	16.85	16.19
		699.7	22.50	21.77	16.95	16.22
	1 RB low	715.3	22.33	21.67	16.78	16.12
		707.5	22.42	21.74	16.87	16.19
		699.7	22.51	21.80	16.96	16.25
	50% RB mid	715.3	22.49	21.44	16.94	15.89
		707.5	22.58	21.61	17.03	16.06
		699.7	22.67	21.63	17.12	16.08
	100% RB	715.3	21.44	20.54	15.89	14.99
		707.5	21.55	20.63	16.00	15.08
		699.7	21.65	20.71	16.10	15.16
3MHz	1 RB high	714.5	22.32	21.71	16.77	16.16
		707.5	22.44	21.78	16.89	16.23
		700.5	22.51	21.81	16.96	16.26
	1 RB low	714.5	22.41	21.75	16.86	16.20
		707.5	22.46	21.70	16.91	16.15
		700.5	22.57	21.83	17.02	16.28
	50% RB mid	714.5	21.46	20.49	15.91	14.94
		707.5	21.56	20.60	16.01	15.05
		700.5	21.64	20.69	16.09	15.14
	100% RB	714.5	21.41	20.42	15.86	14.87
		707.5	21.53	20.52	15.98	14.97
		700.5	21.59	20.58	16.04	15.03
5MHz	1 RB high	713.5	22.26	21.57	16.71	16.02
		707.5	22.33	21.70	16.78	16.15
		701.5	22.37	21.69	16.82	16.14
	1 RB low	713.5	22.31	21.60	16.76	16.05
		707.5	22.41	21.75	16.86	16.20
		701.5	22.46	21.74	16.91	16.19
	50% RB mid	713.5	21.52	20.47	15.97	14.92
		707.5	21.59	20.56	16.04	15.01
		701.5	21.65	20.63	16.10	15.08
	100% RB	713.5	21.41	20.43	15.86	14.88
		707.5	21.53	20.56	15.98	15.01

		701.5	21.60	20.58	16.05	15.03
10MHz	1 RB high	711.0	22.35	21.59	16.80	16.04
		707.5	22.42	21.70	16.87	16.15
		704.0	22.46	21.75	16.91	16.20
	1 RB low	711.0	22.52	21.87	16.97	16.32
		707.5	22.54	21.84	16.99	16.29
		704.0	22.61	21.84	17.06	16.29
	50% RB mid	711.0	21.56	20.55	16.01	15.00
		707.5	21.63	20.61	16.08	15.06
		704.0	21.68	20.66	16.13	15.11
	100% RB	711.0	21.54	20.52	15.99	14.97
		707.5	21.70	20.64	16.15	15.09
		704.0	21.74	20.72	16.19	15.17

LTE Band 13-ERP

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm)(Gt-Lc = -4.0)	
			QPSK	16QAM	QPSK	16QAM
5MHz	1 RB high	784.5	22.06	21.34	15.91	15.19
		782.0	22.06	21.38	15.91	15.23
		779.5	22.08	21.47	15.93	15.32
	1 RB low	784.5	22.12	21.48	15.97	15.33
		782.0	22.15	21.33	16.00	15.18
		779.5	22.16	21.34	16.01	15.19
	50% RB mid	784.5	21.26	20.33	15.11	14.18
		782.0	21.29	20.37	15.14	14.22
		779.5	21.32	20.38	15.17	14.23
	100% RB	784.5	21.18	20.26	15.03	14.11
		782.0	21.22	20.32	15.07	14.17
		779.5	21.23	20.33	15.08	14.18
10MHz	1 RB high	782.0	22.10	21.33	15.95	15.18
	1 RB low	782.0	22.25	21.54	16.10	15.39
	50% RB mid	782.0	21.25	20.34	15.10	14.19
	100% RB	782.0	21.25	20.35	15.10	14.20

LTE Band 66-EIRP

Bandwidth	RB size/offset	Frequency (MHz)	Conducted Power (dBm)		Radiated Power (dBm)(Gt-Lc = -1.5)	
			QPSK	16QAM	QPSK	16QAM
1.4MHz	1 RB high	1779.3	22.33	21.58	20.83	20.08
		1745.0	22.49	21.66	20.99	20.16
		1710.7	22.62	21.93	21.12	20.43
	1 RB low	1779.3	22.35	21.59	20.85	20.09
		1745.0	23.12	21.75	21.62	20.25
		1710.7	22.65	21.85	21.15	20.35
	50% RB mid	1779.3	22.50	21.47	21.00	19.97
		1745.0	22.56	21.65	21.06	20.15
		1710.7	22.78	21.75	21.28	20.25
	100% RB	1779.3	21.47	20.61	19.97	19.11
		1745.0	21.51	20.73	20.01	19.23
		1710.7	21.69	20.88	20.19	19.38
3MHz	1 RB high	1778.5	22.44	21.72	20.94	20.22
		1745.0	22.52	21.68	21.02	20.18
		1711.5	22.70	21.90	21.20	20.40
	1 RB low	1778.5	22.41	21.75	20.91	20.25
		1745.0	22.49	21.86	20.99	20.36
		1711.5	22.72	21.91	21.22	20.41
	50% RB mid	1778.5	21.49	20.60	19.99	19.10
		1745.0	21.59	20.68	20.09	19.18
		1711.5	21.75	20.85	20.25	19.35
	100% RB	1778.5	21.45	20.48	19.95	18.98
		1745.0	21.53	20.60	20.03	19.10
		1711.5	21.71	20.78	20.21	19.28
5MHz	1 RB high	1777.5	22.30	21.58	20.80	20.08
		1745.0	22.42	21.76	20.92	20.26
		1712.5	22.58	21.85	21.08	20.35
	1 RB low	1777.5	22.33	21.66	20.83	20.16
		1745.0	22.47	21.77	20.97	20.27
		1712.5	22.61	21.85	21.11	20.35
	50% RB mid	1777.5	21.52	20.53	20.02	19.03
		1745.0	21.59	20.64	20.09	19.14
		1712.5	21.76	20.78	20.26	19.28
	100% RB	1777.5	21.47	20.49	19.97	18.99
		1745.0	21.54	20.61	20.04	19.11

		1712.5	21.72	20.75	20.22	19.25
10MHz	1 RB high	1775.0	22.41	21.70	20.91	20.20
		1745.0	22.53	21.86	21.03	20.36
		1715.0	22.62	21.83	21.12	20.33
	1 RB low	1775.0	22.47	21.65	20.97	20.15
		1745.0	22.53	21.87	21.03	20.37
		1715.0	22.70	21.91	21.20	20.41
	50% RB mid	1775.0	21.55	20.58	20.05	19.08
		1745.0	21.60	20.65	20.10	19.15
		1715.0	21.74	20.80	20.24	19.30
	100% RB	1775.0	21.52	20.56	20.02	19.06
		1745.0	21.58	20.65	20.08	19.15
		1715.0	21.78	20.84	20.28	19.34
15MHz	1 RB high	1772.5	22.33	21.56	20.83	20.06
		1745.0	22.41	21.78	20.91	20.28
		1717.5	22.53	21.89	21.03	20.39
	1 RB low	1772.5	22.42	21.69	20.92	20.19
		1745.0	22.48	21.71	20.98	20.21
		1717.5	22.65	21.84	21.15	20.34
	50% RB mid	1772.5	21.51	20.50	20.01	19.00
		1745.0	21.58	20.58	20.08	19.08
		1717.5	21.70	20.73	20.20	19.23
	100% RB	1772.5	21.52	20.54	20.02	19.04
		1745.0	21.56	20.62	20.06	19.12
		1717.5	21.71	20.76	20.21	19.26
20MHz	1 RB high	1770.0	22.13	21.34	20.63	19.84
		1745.0	22.24	21.51	20.74	20.01
		1720.0	22.31	21.57	20.81	20.07
	1 RB low	1770.0	22.20	21.51	20.70	20.01
		1745.0	22.30	21.66	20.80	20.16
		1720.0	22.46	21.76	20.96	20.26
	50% RB mid	1770.0	21.47	20.54	19.97	19.04
		1745.0	21.55	20.58	20.05	19.08
		1720.0	21.66	20.72	20.16	19.22
	100% RB	1770.0	21.48	20.49	19.98	18.99
		1745.0	21.56	20.63	20.06	19.13
		1720.0	21.67	20.66	20.17	19.16

A.2 Emission Limit

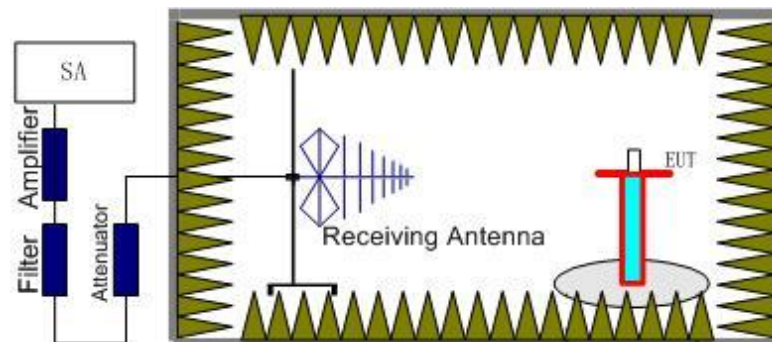
A.2.1 Measurement Method

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

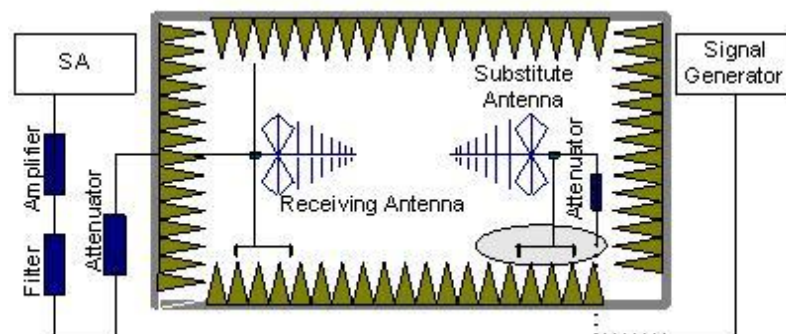
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of each LTE Band.

The procedure of radiated spurious emissions is as follows:

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



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



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

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

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

An amplifier should be connected in for the test.

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

The measurement results are obtained as described below:

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

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

A.2.2 Measurement Limit

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

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

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 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.

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 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.

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

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.

Measurement Results:
LTE Band 2, 1.4MHz, QPSK, Channel 18607

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3702.02	-44.61	6.42	8.48	-42.55	-13.00	29.55	H
5557.02	-32.40	7.19	10.59	-29.00	-13.00	16.00	H
7408.01	-52.09	8.14	12.09	-48.14	-13.00	35.14	H
9260.01	-46.11	9.06	13.26	-41.91	-13.00	28.91	H
11143.01	-50.57	9.65	13.17	-47.05	-13.00	34.05	V
12971.01	-47.04	10.48	13.48	-44.04	-13.00	31.04	H

LTE Band 2, 1.4MHz, QPSK, Channel 18900

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3760.02	-34.87	6.26	8.56	-32.57	-13.00	19.57	H
5645.02	-28.54	7.27	10.57	-25.24	-13.00	12.24	H
7527.01	-46.13	8.28	12.22	-42.19	-13.00	29.19	H
9409.01	-46.74	9.08	13.35	-42.47	-13.00	29.47	H
11257.01	-49.03	9.74	13.15	-45.62	-13.00	32.62	V
13198.01	-47.57	10.51	13.78	-44.30	-13.00	31.30	V

LTE Band 2, 1.4MHz, QPSK, Channel 19193

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3819.02	-36.61	6.08	8.65	-34.04	-13.00	21.04	H
5731.02	-32.32	7.29	10.55	-29.06	-13.00	16.06	H
7641.01	-43.42	8.16	12.31	-39.27	-13.00	26.27	H
9553.01	-48.36	9.35	13.35	-44.36	-13.00	31.36	V
11469.01	-49.01	9.89	13.11	-45.79	-13.00	32.79	V
13409.01	-47.49	10.57	14.07	-43.99	-13.00	30.99	V

LTE Band 5, 1.4MHz, QPSK, Channel 20407

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1650.01	-45.02	3.57	5.23	2.15	-45.51	-13.00	32.51	H
2474.00	-50.38	4.60	6.02	2.15	-51.11	-13.00	38.11	V
3284.02	-54.40	5.28	7.68	2.15	-54.15	-13.00	41.15	V
4128.02	-48.39	6.04	9.03	2.15	-47.55	-13.00	34.55	V
4953.01	-53.19	6.68	9.85	2.15	-52.17	-13.00	39.17	H
5775.01	-52.70	7.23	10.54	2.15	-51.54	-13.00	38.54	H

LTE Band 5, 1.4MHz, QPSK, Channel 20525

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.01	-45.58	3.58	5.19	2.15	-46.12	-13.00	33.12	H
2510.00	-50.95	4.63	6.12	2.15	-51.61	-13.00	38.61	V
3349.02	-54.28	5.32	7.84	2.15	-53.91	-13.00	40.91	H
4183.02	-44.97	6.17	9.08	2.15	-44.21	-13.00	31.21	H
5030.01	-53.85	6.57	9.94	2.15	-52.63	-13.00	39.63	V
5855.01	-52.85	7.25	10.53	2.15	-51.72	-13.00	38.72	V

LTE Band 5, 1.4MHz, QPSK, Channel 20643

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1697.01	-52.69	3.60	5.15	2.15	-53.29	-13.00	40.29	H
2545.00	-52.48	4.66	6.18	2.15	-53.11	-13.00	40.11	V
3403.02	-55.32	5.36	7.97	2.15	-54.86	-13.00	41.86	V
4247.02	-44.59	6.24	9.15	2.15	-43.83	-13.00	30.83	H
5077.01	-53.51	6.71	10.01	2.15	-52.36	-13.00	39.36	V
5935.01	-52.88	7.47	10.51	2.15	-51.99	-13.00	38.99	H

LTE Band 12, 1.4MHz, QPSK, Channel 23017

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1400.01	-48.06	3.24	4.98	2.15	-48.47	-13.00	35.47	H
2099.00	-35.77	4.19	4.90	2.15	-37.21	-13.00	24.21	H
2799.00	-52.77	4.91	6.64	2.15	-53.19	-13.00	40.19	H
3499.02	-49.14	5.52	8.20	2.15	-48.61	-13.00	35.61	H
4204.02	-42.38	6.22	9.10	2.15	-41.65	-13.00	28.65	H
4903.01	-46.16	6.73	9.80	2.15	-45.24	-13.00	32.24	H

LTE Band 12, 1.4MHz, QPSK, Channel 23095

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.01	-42.20	3.25	5.06	2.15	-42.54	-13.00	29.54	H
2123.00	-36.59	4.21	4.97	2.15	-37.98	-13.00	24.98	H
2844.00	-52.73	4.96	6.72	2.15	-53.12	-13.00	40.12	H
3538.02	-46.17	5.70	8.25	2.15	-45.77	-13.00	32.77	H
4251.02	-40.06	6.24	9.15	2.15	-39.30	-13.00	26.30	H
4956.01	-45.24	6.68	9.86	2.15	-44.21	-13.00	31.21	H

LTE Band 12, 1.4MHz, QPSK, Channel 23173

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1431.01	-41.60	3.28	5.14	2.15	-41.89	-13.00	28.89	V
2146.00	-36.36	4.24	5.04	2.15	-37.71	-13.00	24.71	H
2875.00	-52.46	4.97	6.78	2.15	-52.80	-13.00	39.80	V
3577.02	-47.05	6.10	8.31	2.15	-46.99	-13.00	33.99	V
4297.02	-44.70	6.20	9.20	2.15	-43.85	-13.00	30.85	H
5011.01	-52.55	6.58	9.92	2.15	-51.36	-13.00	38.36	H

LTE Band 13, 5MHz, QPSK, Channel 23205

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1549.45	-59.45	3.46	5.41	2.15	-59.65	-13.00	46.65	H
2338.98	-38.72	4.44	5.62	2.15	-39.69	-13.00	26.69	V
3118.52	-52.35	5.38	7.28	2.15	-52.60	-13.00	39.60	V
3898.52	-52.83	6.11	8.76	2.15	-52.33	-13.00	39.33	H
4673.52	-53.73	6.48	9.57	2.15	-52.79	-13.00	39.79	V
5458.01	-51.01	6.90	10.54	2.15	-49.52	-13.00	36.52	V

LTE Band 13, 5MHz, QPSK, Channel 23230

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1550.05	-44.59	3.46	5.41	2.15	-44.79	-13.00	31.79	V
2346.70	-38.75	4.45	5.64	2.15	-39.71	-13.00	26.71	V
3128.52	-50.79	5.40	7.31	2.15	-51.03	-13.00	38.03	V
3911.02	-50.14	6.12	8.78	2.15	-49.63	-13.00	36.63	H
4695.52	-53.80	6.50	9.60	2.15	-52.85	-13.00	39.85	V
5483.51	-52.91	7.00	10.58	2.15	-51.48	-13.00	38.48	H

LTE Band 13, 5MHz, QPSK, Channel 23255

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.40	-64.14	3.48	5.38	0.00	-64.39	-40.00	24.39	V
2354.16	-38.17	4.46	5.66	2.15	-39.12	-13.00	26.12	V
3139.02	-52.65	5.38	7.33	2.15	-52.85	-13.00	39.85	V
3924.02	-54.06	6.12	8.79	2.15	-53.54	-13.00	40.54	H
4705.52	-54.22	6.51	9.61	2.15	-53.27	-13.00	40.27	H
5495.51	-53.45	7.04	10.59	2.15	-52.05	-13.00	39.05	H

LTE Band 66, 1.4MHz QPSK, Channel 131979

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3422.02	-45.86	5.38	8.01	-43.23	-13.00	30.23	H
5138.02	-51.94	6.86	10.09	-48.71	-13.00	35.71	H
6847.01	-62.72	7.83	11.42	-59.13	-13.00	46.13	H
8557.01	-62.09	8.57	13.01	-57.65	-13.00	44.65	H
10318.01	-61.81	9.67	13.03	-58.45	-13.00	45.45	V
12025.01	-59.78	10.13	13.01	-56.90	-13.00	43.90	V

LTE Band 66, 1.4MHz, QPSK, Channel 132322

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.02	-43.16	5.50	8.18	-40.48	-13.00	27.48	H
5236.02	-46.53	7.00	10.23	-43.30	-13.00	30.30	V
6982.01	-63.29	8.16	11.58	-59.87	-13.00	46.87	V
8727.01	-62.96	8.44	13.05	-58.35	-13.00	45.35	V
10496.01	-61.55	9.66	13.10	-58.11	-13.00	45.11	V
12214.01	-59.60	10.05	13.09	-56.56	-13.00	43.56	V

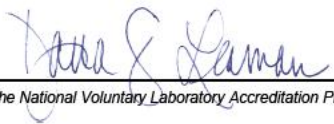
LTE Band 66, 1.4MHz, QPSK, Channel 132665

Frequency (MHz)	P _{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3559.02	-46.38	5.92	8.28	-44.02	-13.00	31.02	H
5342.02	-38.09	6.95	10.38	-34.66	-13.00	21.66	H
7122.01	-61.27	8.16	11.75	-57.68	-13.00	44.68	H
8900.01	-57.42	8.85	13.08	-53.19	-13.00	40.19	H
10688.01	-61.43	9.30	13.14	-57.59	-13.00	44.59	V
12473.01	-59.12	10.25	13.19	-56.18	-13.00	43.18	H

Note1: The measurement results showed here are worst cases

Note2: Expanded measurement uncertainty is U = 5.16 dB, k = 2.

Annex B: Accreditation Certificate

United States Department of Commerce National Institute of Standards and Technology NVLAP[®]  ilac-MRA Certificate of Accreditation to ISO/IEC 17025:2017	
NVLAP LAB CODE: 600118-0	
Telecommunication Technology Labs, CAICT Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
Electromagnetic Compatibility & Telecommunications	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i>	
2020-09-29 through 2021-09-30 <i>Effective Dates</i>	 DEPARTMENT OF COMMERCE UNITED STATES OF AMERICA  For the National Voluntary Laboratory Accreditation Program

END OF REPORT