



FCC RF Test Report

APPLICANT : Emerson Digital Cold Chain, Inc
EQUIPMENT : GO Tracker 1.7
BRAND NAME : Emerson
MODEL NAME : GO Tracker 1.7
FCC ID : AMH101014
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F), 27(N)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Aug. 10, 2021

We, Sporton International (ShenZhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

This product installed a RF module (Brand Name: Quectel, Model Name: BG95-M5, FCC ID: XMR202005BG95M5) during the test, only ERP/EIRP and RSE test items are tested in this report, all the other test results are referenced from the module RF report.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Derreck Chen / Supervisor

Approved by: Eric Shih / Manager



Sporton International (ShenZhen) Inc.

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	6
1.1 Applicant	6
1.2 Manufacturer	6
1.3 Product Feature of Equipment Under Test	6
1.4 Product Specification of Equipment Under Test	7
1.5 Modification of EUT	8
1.6 Maximum ERP/EIRP Power	9
1.7 Testing Location	13
1.8 Test Software	13
1.9 Applicable Standards	13
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	14
2.1 Test Mode	14
2.2 Connection Diagram of Test System	17
2.3 Support Unit used in test configuration and system	17
2.4 Frequency List of Low/Middle/High Channels	18
3 CONDUCTED TEST ITEMS	25
3.1 Test Result of Conducted Test	25
3.2 Conducted Output Power and ERP/EIRP	25
4 RADIATED TEST ITEMS	26
4.1 Measuring Instruments	26
4.2 Test Setup	26
4.3 Test Result of Radiated Test	27
4.4 Radiated Spurious Emission	28
5 LIST OF MEASURING EQUIPMENT	29
6 UNCERTAINTY OF EVALUATION	30
APPENDIX A. TEST RESULTS OF CONDUCTED TEST	
APPENDIX B. TEST RESULTS OF RADIATED TEST	
APPENDIX C. TEST SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG172307B	Rev. 01	Initial issue of report	Sep. 08, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.2	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 71) (Band 85)	ERP < 3 Watt		-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2) (Band 25)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt		-
-	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	1/2
-	§2.1049	Occupied Bandwidth	-	Report Only	1/2
-	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 71) (Band 85)	< 43+10log10(P[Watts])	PASS	1/2
-	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 71) (Band 85)	< 43+10log10(P[Watts])	PASS	1/2
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	1/2
	§2.1055 §24.235 §27.54		Within Authorized Band		



Report Section	FCC Rule	Description	Limit	Result	Remark
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 25) (Band 26) (Band 66) (Band 71) (Band 85)	$< 43 + 10 \log_{10}(P[\text{Watts}])$	PASS	Under limit 6.48 dB at 1559.500 MHz

Remark :

- For LTE Category M1, the conducted test items were leverage from module RF report which can refer to Report No. "R2005A0283-R1V1" for Band 5 , Band 26, Report No. "R2005A0283-R2V1" for Band 2 , Band 25, and Report No. "R2005A0283-R4V1" for Band 4, Band 12, Band 13, Band 66, Band 85.
- For NB-IOT Category NB2, the conducted test items were leverage from module RF report which can refer to Report No. "R2005A0283-R5" for Band 5 , Report No. "R2005A0283-R6" for Band 2 , Band 25 and Report No. "R2005A0283-R7" for Band 4, Band 12, Band 13, Band 66, Band 71, Band 85.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Emerson Digital Cold Chain, Inc

7121 Fairway Drive Suite 400 Palm Beach Gardens Florida 33418 United States

1.2 Manufacturer

Queclink Wireless Solutions Co., Ltd.

No.30, Lane 500, Xinlong Road, Minhang District, Shanghai, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	GO Tracker 1.7
Brand Name	Emerson
Model Name	GO Tracker 1.7
FCC ID	AMH101014
IMEI Code	Radiation: 866833040168840
HW Version	V1.03
SW Version	R00A02V10
EUT Stage	Production Unit

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Category M1: LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 25 : 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz LTE Band 85: 698 MHz ~ 716 MHz NB-IOT Category NB2: Band 2 : 1850 MHz ~ 1910 MHz Band 4 : 1710 MHz ~ 1755 MHz Band 5 : 824 MHz ~ 849 MHz Band 12 : 699 MHz ~ 716 MHz Band 13 : 777 MHz ~ 787 MHz Band 25 : 1850 MHz ~ 1915 MHz Band 66 : 1710 MHz ~ 1780 MHz Band 71: 663 MHz ~ 698 MHz Band 85: 698 MHz ~ 716 MHz
Rx Frequency	LTE Category M1: LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 25 : 1930 MHz ~ 1995 MHz LTE Band 26 : 859 MHz ~ 894 MHz LTE Band 66 : 2110 MHz~ 2180 MHz LTE Band 85: 728 MHz ~ 746 MHz NB-IOT Category NB2: Band 2 : 1930 MHz ~ 1990 MHz Band 4 : 2110 MHz ~ 2155 MHz Band 5 : 869 MHz ~ 894 MHz Band 12 : 729 MHz ~ 746 MHz Band 13 : 746 MHz ~ 756 MHz Band 25 : 1930 MHz ~ 1995 MHz Band 66 : 2110 MHz~ 2180 MHz Band 71: 617 MHz ~ 652 MHz Band 85: 728 MHz ~ 746 MHz
Bandwidth	LTE Category M1: LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 85 : 5MHz / 10MHz

	NB-IOT Category NB2 : 200KHz
Sub-carrier Speacing	NB-IOT Category NB2 : LTE Band 2 : 3.75KHz / 15KHz LTE Band 4 : 3.75KHz / 15KHz LTE Band 5 : 3.75KHz / 15KHz LTE Band 12 : 3.75KHz / 15KHz LTE Band 13 : 3.75KHz / 15KHz LTE Band 25 : 3.75KHz / 15KHz LTE Band 66 : 3.75KHz / 15KHz LTE Band 71 : 3.75KHz / 15KHz LTE Band 85 : 3.75KHz / 15KHz
Maximum Output Power to Antenna	LTE Category M1: LTE Band 2 : 22.13 dBm LTE Band 4 : 21.86 dBm LTE Band 5 : 21.52 dBm LTE Band 12 : 21.92 dBm LTE Band 13 : 21.67 dBm LTE Band 25 : 22.23 dBm LTE Band 26 : 21.61 dBm LTE Band 66 : 22.05 dBm LTE Band 85 : 22.06 dBm NB-IOT Category NB2: LTE Band 2 : 22.73 dBm LTE Band 4 : 22.48 dBm LTE Band 5 : 22.37 dBm LTE Band 12 : 22.40 dBm LTE Band 13 : 22.57 dBm LTE Band 25 : 22.57 dBm LTE Band 66 : 22.87 dBm LTE Band 71 : 23.12 dBm LTE Band 85 : 22.52 dBm
Antenna Gain	LTE Band 2 : 1.0 dBi LTE Band 4 : 0.5 dBi LTE Band 5 : 0 dBi LTE Band 12 : -1.5 dBi LTE Band 13 : -1.5 dBi LTE Band 25 : 1.0 dBi LTE Band 26 : 0 dBi LTE Band 66 : 0.5 dBi LTE Band 71 : -2.0 dBi LTE Band 85 : -1.5 dBi
Type of Modulation	LTE Category M1: QPSK / 16QAM NB-IOT Category NB2 : BPSK / QPSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Maximum ERP/EIRP Power

LTE Category M1:

LTE Band 2		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1850.7 ~ 1909.3	0.1945	-	0.1968	-
3	1851.5 ~ 1908.5	0.2056	-	0.2094	-
5	1852.5 ~ 1907.5	0.1897	-	0.2028	-
10	1855.0 ~ 1905.0	0.1954	-	0.2099	-
15	1857.5 ~ 1902.5	0.1995	-	0.2032	-
20	1860.0 ~ 1900.0	0.1945	-	0.2104	-
LTE Band 25		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1850.7 ~ 1914.3	0.1945	-	0.1968	-
3	1851.5 ~ 1913.5	0.2056	-	0.2094	-
5	1852.5 ~ 1912.5	0.1897	-	0.2028	-
10	1855.0 ~ 1910.0	0.1954	-	0.2099	-
15	1857.5 ~ 1907.5	0.1995	-	0.2032	-
20	1860.0 ~ 1905.0	0.1945	-	0.2104	-
LTE Band 4		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1754.3	0.1687	-	0.1778	-
3	1711.5 ~ 1753.5	0.1722	-	0.1791	-
5	1712.5 ~ 1752.5	0.1641	-	0.1770	-
10	1715.0 ~ 1750.0	0.1679	-	0.1750	-
15	1717.5 ~ 1747.5	0.1656	-	0.1770	-
20	1720.0 ~ 1745.0	0.1656	-	0.1799	-
LTE Band 5		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	824.7 ~ 848.3	0.0849	-	0.0853	-
3	825.5 ~ 847.5	0.0839	-	0.0843	-
5	826.5 ~ 846.5	0.0809	-	0.0857	-
10	829.0 ~ 844.0	0.0793	-	0.0865	-



LTE Band 12		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.0647	-	0.0640	-
3	700.5 ~ 714.5	0.0670	-	0.0661	-
5	701.5 ~ 713.5	0.0630	-	0.0670	-
10	704.0 ~ 711.0	0.0671	-	0.0653	-
LTE Band 13		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	779.5 ~ 784.5	0.0570	-	0.0631	-
10	782.0	0.0592	-	0.0634	-
LTE Band 26		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	824.7 ~ 848.3	0.0838	-	0.0875	-
3	825.5 ~ 847.5	0.0879	-	0.0875	-
5	826.5 ~ 846.5	0.0791	-	0.0817	-
10	829.0 ~ 844.0	0.0834	-	0.0877	-
15	831.5 ~ 841.5	0.0793	-	0.0883	-
CH26765	821.5	0.0736	-	0.0818	-
LTE Band 66		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1779.3	0.1687	-	0.1778	-
3	1711.5 ~ 1778.5	0.1722	-	0.1791	-
5	1712.5 ~ 1777.5	0.1641	-	0.1770	-
10	1715.0 ~ 1775.0	0.1679	-	0.1750	-
15	1717.5 ~ 1772.5	0.1656	-	0.1770	-
20	1720.0 ~ 1770.0	0.1656	-	0.1799	-
LTE Band 85		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	700.5 ~ 713.5	0.0643	-	0.0690	-
10	703.0 ~ 711.0	0.0682	-	0.0693	-



NB-IOT Category NB2:

LTE Band 2		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1850.1 ~ 1909.9	0.2259	-	0.2239	-
15	1850.1 ~ 1909.9	0.2275	-	0.2265	-
LTE Band 4		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1710.1 ~ 1754.9	0.2153	-	0.2080	-
15	1710.1 ~ 1754.9	0.2163	-	0.2173	-
LTE Band 5		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	824.1 ~ 848.9	0.1038	-	0.1052	-
15	824.1 ~ 848.9	0.1044	-	0.1026	-
LTE Band 12		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	699.1 ~ 715.9	0.0718	-	0.0728	-
15	699.1 ~ 715.9	0.0748	-	0.0750	-
LTE Band 13		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	777.1 ~ 786.9	0.0759	-	0.0748	-
15	777.1 ~ 786.9	0.0780	-	0.0780	-
LTE Band 25		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1850.1 ~ 1914.9	0.2259	-	0.2239	-
15	1850.1 ~ 1914.9	0.2275	-	0.2265	-



LTE Band 66		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1710.1 ~ 1779.9	0.2153	-	0.2080	-
15	1710.1 ~ 1779.9	0.2163	-	0.2173	-
LTE Band 71		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	663.1 ~ 697.9	0.0789	-	0.0787	-
15	663.1 ~ 697.9	0.0771	-	0.0774	-
LTE Band 85		BPSK		QPSK	
Sub-carrier Spacing (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	698.1 ~ 715.9	0.0750	-	0.0771	-
15	698.1 ~ 715.9	0.0771	-	0.0764	-

Note:

1. LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.
2. LTE Band 25 overlaps the entire frequency range of LTE Band 2. Therefore, the test results provided in this report covers Band 25 as well as Band 2.



1.7 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH02-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a

1.9 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H), 27(F), 27(N)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

LTE Category M1:

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v		v	-	v	v	v	v
	4	v	v	v	v	v	v	v	v		v	-	v	v	v	v
	5	v	v	v	v	-	-	v	v		v	-	v	v	v	v
	12	v	v	v	v	-	-	v	v		v	-	v	v	v	v
	13	-	-	v	v	-	-	v	v		v	-	v	v	v	v
	25	v	v	v	v	v	v	v	v		v	-	v	v	v	v
	26	v	v	v	v	v	-	v	v		v	-	v	v	v	v
	66	v	v	v	v	v	v	v	v		v	-	v	v	v	v
	85	-	-	v	v	-	-	v	v		v	-	v	v	v	v



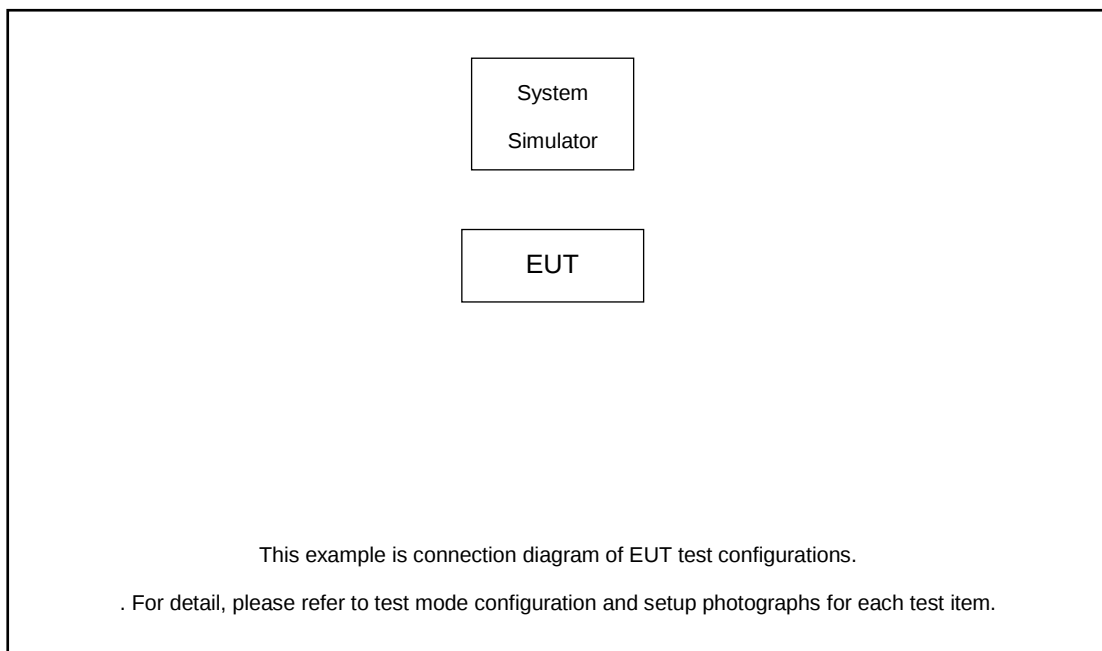
Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v		v			v	v	v
	4	v	v	v	v	v	v	v	v		v			v	v	v
	5	v	v	v	v	-	-	v	v		v			v	v	v
	12	v	v	v	v	-	-	v	v		v			v	v	v
	13	-	-	v	v	-	-	v	v		v			v	v	v
	25	v	v	v	v	v	v	v	v		v			v	v	v
	26	v	v	v	v	v	-	v	v		v			v	v	v
	66	v	v	v	v	v	v	v	v		v			v	v	v
	85	-	-	v	v	-	-	v	v		v			v	v	v
Radiated Spurious Emission	2	Worst Case													v	
	4	Worst Case													v	
	5	Worst Case													v	
	12	Worst Case													v	
	13	Worst Case													v	
	25	Worst Case													v	
	26	Worst Case													v	
	66	Worst Case													v	
	85	Worst Case													v	
Note	1. The mark “v ” means that this configuration is chosen for testing 2. The mark “-” means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															



NB-IOT Category NB2 :

Test Items	Band	Sub-carrier Spacing (KHz)		Modulation				Tones #			Test Channel		
		3.75	15	BPSK	QPSK	16QAM	64QAM	1	-	12	L	M	H
Max. Output Power	2	v	v	v	v	-	-	v	-	v	v	v	v
	4	v	v	v	v	-	-	v	-	v	v	v	v
	5	v	v	v	v	-	-	v	-	v	v	v	v
	12	v	v	v	v	-	-	v	-	v	v	v	v
	13	v	v	v	v	-	-	v	-	v	v	v	v
	25	v	v	v	v	-	-	v	-	v	v	v	v
	66	v	v	v	v	-	-	v	-	v	v	v	v
	71	v	v	v	v	-	-	v	-	v	v	v	v
	85	v	v	v	v	-	-	v	-	v	v	v	v
E.R.P / E.I.R.P	2	v	v	v	v	-	-	v	-		v	v	v
	4	v	v	v	v	-	-	v	-		v	v	v
	12	v	v	v	v	-	-	v	-		v	v	v
	13	v	v	v	v	-	-	v	-		v	v	v
	25	v	v	v	v	-	-	v	-		v	v	v
	66	v	v	v	v	-	-	v	-		v	v	v
	71	v	v	v	v	-	-	v	-		v	v	v
	85	v	v	v	v	-	-	v	-		v	v	v
Radiated Spurious Emission	2	Worst case										v	
	4	Worst case										v	
	12	Worst case										v	
	13	Worst case										v	
	25	Worst case										v	
	66	Worst case										v	
	71	Worst case										v	
	85	Worst case										v	
Note	1. The mark "v " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.												

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m



2.4 Frequency List of Low/Middle/High Channels

LTE Category M1:

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5



LTE Band 25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	26140	26340	26590
	Frequency	1860	1880	1905
15	Channel	26115	26340	26615
	Frequency	1857.5	1880	1907.5
10	Channel	26090	26340	26640
	Frequency	1855	1880	1910
5	Channel	26065	26340	26665
	Frequency	1852.5	1880	1912.5
3	Channel	26055	26340	26675
	Frequency	1851.5	1880	1913.5
1.4	Channel	26047	26340	26683
	Frequency	1850.7	1880	1914.3

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26865	26915	26965
	Frequency	831.5	836.5	841.5
10	Channel	26840	26915	26990
	Frequency	829	836.5	844
5	Channel	26815	26915	27015
	Frequency	826.5	836.5	846.5
3	Channel	26805	26915	27025
	Frequency	825.5	836.5	847.5
1.4	Channel	26797	26915	27033
	Frequency	824.7	836.5	848.3

LTE Band 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

LTE Band 85 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	134052	134092	134132
	Frequency	703	707	711
5	Channel	134027	134092	134157
	Frequency	700.5	707	713.5



NB-IOT Category NB2:

LTE Band 2 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	18601	18900	19199
	Frequency	1850.1	1880	1909.9
15	Channel	18601	18900	19199
	Frequency	1850.1	1880	1909.9

LTE Band 4 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	19951	20175	20399
	Frequency	1710.1	1732.5	1754.9
15	Channel	19951	20175	20399
	Frequency	1710.1	1732.5	1754.9

LTE Band 5 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	20410	20525	20649
	Frequency	824.1	836.5	848.9
15	Channel	20410	20525	20649
	Frequency	824.1	836.5	848.9

LTE Band 12 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	23011	23095	23179
	Frequency	699.1	707.5	715.9
15	Channel	23011	23095	23179
	Frequency	699.1	707.5	715.9



LTE Band 13 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	23181	23230	23279
	Frequency	777.1	782	786.9
15	Channel	23181	23230	23279
	Frequency	777.1	782	786.9

LTE Band 25 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	26041	26365	26689
	Frequency	1850.1	1882.5	1914.9
15	Channel	26041	26365	26689
	Frequency	1850.1	1882.5	1914.9

LTE Band 66 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	131973	132322	132671
	Frequency	1710.1	1745	1779.9
15	Channel	131973	132322	132671
	Frequency	1710.1	1745	1779.9

LTE Band 71 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	133123	133297	133471
	Frequency	663.1	680.5	697.9
15	Channel	133123	133297	133471
	Frequency	663.1	680.5	697.9



LTE Band 85 Channel and Frequency List				
Sub-carrier Speacing (KHz)	Channel / Frequency (MHz)	Lowest	Middle	Highest
3.75	Channel	134003	134082	134181
	Frequency	698.1	706	715.9
15	Channel	134003	134082	134181
	Frequency	698.1	706	715.9

3 Conducted Test Items

3.1 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5 and Band 26.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 71 and Band 85.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4 and Band 66.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

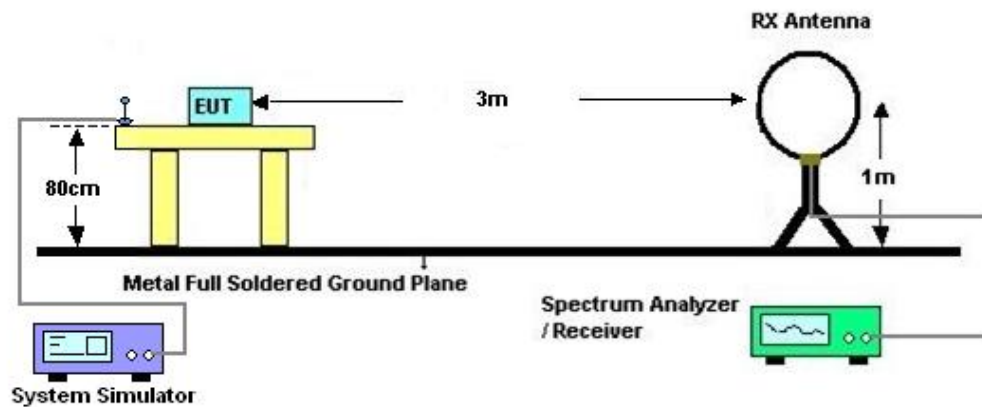
4 Radiated Test Items

4.1 Measuring Instruments

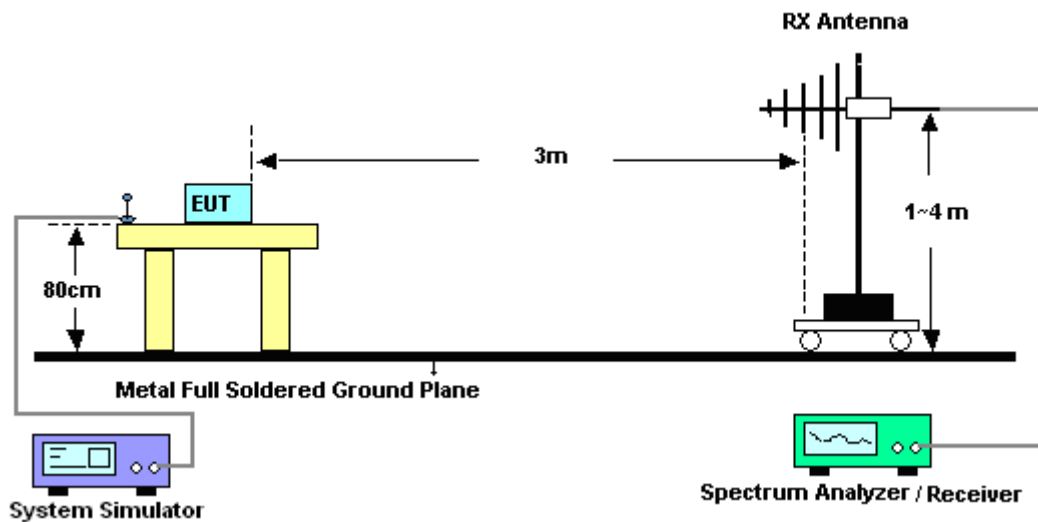
See list of measuring instruments of this test report.

4.2 Test Setup

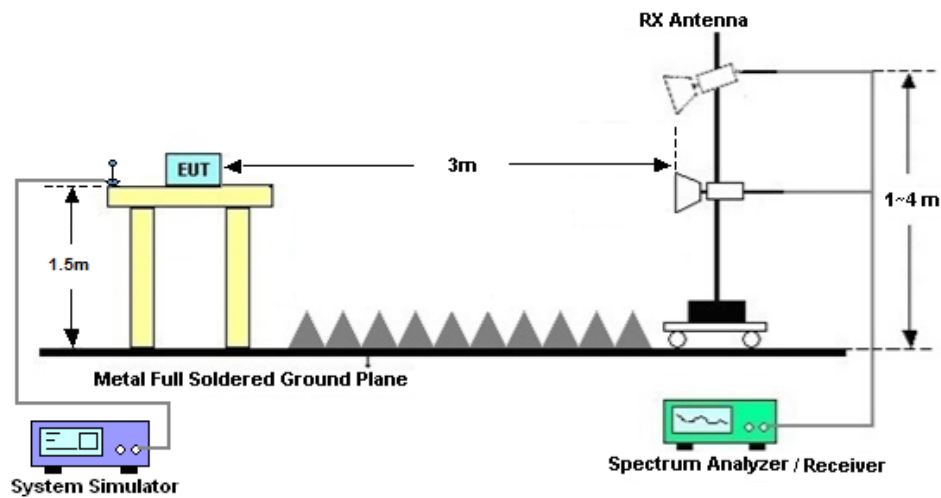
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
11. $\text{ERP (dBm)} = \text{EIRP} - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 14, 2021	Aug. 10, 2021	Jul. 13, 2022	Radiation (03CH02-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 22, 2021	Aug. 10, 2021	Jun. 21, 2022	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Jul. 14, 2021	Aug. 10, 2021	Jul. 13, 2022	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-2206	1GHz~18GHz	Apr. 21, 2021	Aug. 10, 2021	Apr. 20, 2022	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Apr. 11, 2021	Aug. 10, 2021	Apr. 10, 2022	Radiation (03CH02-SZ)
LF Amplifier	Bur35407geon	BPA-530	102211	0.01~3000Mhz	Jul. 13, 2021	Aug. 10, 2021	Jul. 12, 2022	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 16, 2020	Aug. 10, 2021	Oct. 15, 2021	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 13, 2021	Aug. 10, 2021	Jul. 12, 2022	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Aug. 10, 2021	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Aug. 10, 2021	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Aug. 10, 2021	NCR	Radiation (03CH02-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.47dB
---	--------

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.31dB
---	--------

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.72dB
---	--------



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Category M1:

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	18700	18900	19100
Frequency (MHz)							1860	1880	1900
20	QPSK	1	0	0	0	15	21.62	21.83	21.66
20	QPSK	1	5	0	0	15	21.51	21.94	21.49
20	QPSK	6	0	0	0	15	21.61	21.80	21.63
20	16QAM	1	0	0	0	15	21.94	22.13	22.03
20	16QAM	1	5	0	0	15	21.86	21.90	21.89
20	16QAM	6	0	0	0	15	21.67	21.70	21.66
Channel				L	M	H	18675	18900	19125
Frequency (MHz)							1857.5	1880	1902.5
15	QPSK	1	0	0	0	11	21.63	21.41	21.62
15	QPSK	1	5	0	0	11	21.49	21.52	21.50
15	QPSK	6	0	0	0	11	21.57	21.77	21.58
15	16QAM	1	0	0	0	11	21.98	21.88	21.99
15	16QAM	1	5	0	0	11	21.78	21.65	21.84
15	16QAM	6	0	0	0	11	21.67	21.54	21.65
Channel				L	M	H	18650	18900	19150
Frequency (MHz)							1855	1880	1905
10	QPSK	1	0	0	0	7	21.68	21.81	21.70
10	QPSK	1	5	0	0	7	21.55	21.67	21.52
10	QPSK	6	0	0	0	7	21.07	21.22	21.00
10	16QAM	1	0	0	0	7	22.02	22.03	22.07
10	16QAM	1	5	0	0	7	21.86	21.83	21.90
10	16QAM	6	0	0	0	7	21.69	21.78	21.78
Channel				L	M	H	18625	18900	19175
Frequency (MHz)							1852.5	1880	1907.5
5	QPSK	1	0	0	0	3	21.71	21.48	21.60
5	QPSK	1	5	0	0	3	21.55	21.33	21.57
5	QPSK	6	0	0	0	3	21.09	21.17	21.00
5	16QAM	1	0	0	0	3	21.99	21.80	22.07
5	16QAM	1	5	0	0	3	21.91	21.70	21.92
5	16QAM	6	0	0	0	3	21.78	21.55	21.78
Channel				L	M	H	18615	18900	19185
Frequency (MHz)							1851.5	1880	1908.5
3	QPSK	1	0	0	0	1	21.41	21.62	21.62
3	QPSK	1	5	0	0	1	21.52	21.50	21.51
3	QPSK	6	0	0	0	1	21.77	21.58	21.61
3	16QAM	1	0	0	0	1	21.88	21.99	21.94
3	16QAM	1	5	0	0	1	21.65	21.84	21.86



3	16QAM	6	0	0	0	1	21.54	21.65	21.67
Channel				L	M	H	18607	18900	19193
Frequency (MHz)							1850.7	1880	1909.3
1.4	QPSK	1	0	0	0	0	21.00	21.88	21.99
1.4	QPSK	1	5	0	0	0	21.57	21.65	21.84
1.4	QPSK	6	0	0	0	0	21.06	21.81	21.70
1.4	16QAM	1	0	0	0	0	21.78	21.67	21.52
1.4	16QAM	1	5	0	0	0	21.69	21.53	21.68
1.4	16QAM	6	0	0	0	0	21.07	21.15	21.29



LTE Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	20050	20175	20300
Frequency (MHz)							1720	1732.5	1745
20	QPSK	1	0	0	0	15	21.32	21.24	21.34
20	QPSK	1	5	0	0	15	21.11	21.06	21.19
20	QPSK	6	0	0	0	15	21.23	21.11	21.18
20	16QAM	1	0	0	0	15	21.86	21.50	21.39
20	16QAM	1	5	0	0	15	21.45	21.31	21.23
20	16QAM	6	0	0	0	15	21.40	21.25	21.06
Channel				L	M	H	20025	20175	20325
Frequency (MHz)							1717.5	1732.5	1747.5
15	QPSK	1	0	0	0	11	21.27	21.20	21.01
15	QPSK	1	5	0	0	11	21.05	21.03	21.17
15	QPSK	6	0	0	0	11	21.16	21.13	21.07
15	16QAM	1	0	0	0	11	21.58	21.56	21.36
15	16QAM	1	5	0	0	11	21.44	21.38	21.18
15	16QAM	6	0	0	0	11	21.19	21.18	21.22
Channel				L	M	H	20000	20175	20350
Frequency (MHz)							1715	1732.5	1750
10	QPSK	1	0	0	0	7	21.38	21.35	21.13
10	QPSK	1	5	0	0	7	21.25	21.14	21.08
10	QPSK	6	0	0	0	7	21.16	21.19	21.28
10	16QAM	1	0	0	0	7	21.83	21.59	21.41
10	16QAM	1	5	0	0	7	21.48	21.37	21.24
10	16QAM	6	0	0	0	7	21.32	21.29	21.00
Channel				L	M	H	19975	20175	20375
Frequency (MHz)							1712.5	1732.5	1752.5
5	QPSK	1	0	0	0	3	21.29	21.26	21.20
5	QPSK	1	5	0	0	3	21.11	21.16	21.21
5	QPSK	6	0	0	0	3	21.07	21.17	21.27
5	16QAM	1	0	0	0	3	21.63	21.48	21.32
5	16QAM	1	5	0	0	3	21.46	21.35	21.16
5	16QAM	6	0	0	0	3	21.29	21.32	21.04
Channel				L	M	H	19965	20175	20385
Frequency (MHz)							1711.5	1732.5	1753.5
3	QPSK	1	0	0	0	1	21.16	21.13	21.07
3	QPSK	1	5	0	0	1	21.58	21.56	21.36
3	QPSK	6	0	0	0	1	21.56	21.36	21.63
3	16QAM	1	0	0	0	1	21.38	21.18	21.46
3	16QAM	1	5	0	0	1	21.25	21.04	21.05
3	16QAM	6	0	0	0	1	21.28	21.15	21.02
Channel				L	M	H	19957	20175	20393
Frequency (MHz)							1710.7	1732.5	1754.3
1.4	QPSK	1	0	0	0	0	21.63	21.48	21.32
1.4	QPSK	1	5	0	0	0	21.46	21.35	21.16
1.4	QPSK	6	0	0	0	0	21.29	21.32	21.04
1.4	16QAM	1	0	0	0	0	21.12	21.11	21.29



1.4	16QAM	1	5	0	0	0	21.27	21.18	21.11
1.4	16QAM	6	0	0	0	0	21.04	21.02	21.07



LTE Band 5:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	20450	20525	20600
Frequency (MHz)							829	836.5	844
10	QPSK	1	0	0	0	7	21.08	21.11	21.14
10	QPSK	1	5	0	0	7	20.82	20.86	20.61
10	QPSK	6	0	0	0	7	20.59	20.52	20.50
10	16QAM	1	0	0	0	7	21.52	21.33	21.12
10	16QAM	1	5	0	0	7	21.22	21.09	20.96
10	16QAM	6	0	0	0	7	21.07	20.95	20.96
Channel				L	M	H	20425	20525	20625
Frequency (MHz)							826.5	836.5	846.5
5	QPSK	1	0	0	0	3	20.77	21.23	21.02
5	QPSK	1	5	0	0	3	20.95	20.92	20.72
5	QPSK	6	0	0	0	3	20.54	20.51	20.59
5	16QAM	1	0	0	0	3	21.48	21.44	21.17
5	16QAM	1	5	0	0	3	21.31	21.26	21.09
5	16QAM	6	0	0	0	3	21.13	21.12	20.95
Channel				L	M	H	20415	20525	20635
Frequency (MHz)							825.5	836.5	847.5
3	QPSK	1	0	0	0	1	21.39	21.30	21.09
3	QPSK	1	5	0	0	1	21.19	21.06	20.93
3	QPSK	6	0	0	0	1	21.14	20.52	20.56
3	16QAM	1	0	0	0	1	21.06	21.41	21.14
3	16QAM	1	5	0	0	1	21.28	21.23	21.06
3	16QAM	6	0	0	0	1	21.10	21.09	20.92
Channel				L	M	H	20407	20525	20643
Frequency (MHz)							824.7	836.5	848.3
1.4	QPSK	1	0	0	0	0	21.44	21.35	21.14
1.4	QPSK	1	5	0	0	0	21.24	21.11	20.98
1.4	QPSK	6	0	0	0	0	21.19	20.57	20.61
1.4	16QAM	1	0	0	0	0	21.11	21.46	21.19
1.4	16QAM	1	5	0	0	0	21.33	21.28	21.11
1.4	16QAM	6	0	0	0	0	21.15	21.14	20.97


LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	23060	23095	23130
Frequency (MHz)							704	707.5	711
10	QPSK	1	0	0	0	7	21.66	21.92	21.35
10	QPSK	1	5	0	0	7	21.69	21.65	21.01
10	QPSK	6	0	0	0	7	20.75	20.84	20.67
10	16QAM	1	0	0	0	7	21.80	21.69	21.74
10	16QAM	1	5	0	0	7	21.50	21.75	21.44
10	16QAM	6	0	0	0	7	21.48	21.69	21.48
Channel				L	M	H	23035	23095	23155
Frequency (MHz)							701.5	707.5	713.5
5	QPSK	1	0	0	0	3	21.60	21.64	21.47
5	QPSK	1	5	0	0	3	21.34	21.35	21.25
5	QPSK	6	0	0	0	3	20.99	20.99	20.65
5	16QAM	1	0	0	0	3	21.73	21.91	21.73
5	16QAM	1	5	0	0	3	21.81	21.74	21.49
5	16QAM	6	0	0	0	3	21.49	21.59	21.23
Channel				L	M	H	23025	23095	23165
Frequency (MHz)							700.5	707.5	714.5
3	QPSK	1	0	0	0	1	21.58	21.91	21.27
3	QPSK	1	5	0	0	1	21.61	21.57	20.93
3	QPSK	6	0	0	0	1	20.67	20.76	20.59
3	16QAM	1	0	0	0	1	21.72	21.61	21.66
3	16QAM	1	5	0	0	1	21.85	21.78	21.53
3	16QAM	6	0	0	0	1	21.53	21.63	21.27
Channel				L	M	H	23017	23095	23173
Frequency (MHz)							699.7	707.5	715.3
1.4	QPSK	1	0	0	0	0	21.72	21.76	21.59
1.4	QPSK	1	5	0	0	0	21.46	21.47	21.37
1.4	QPSK	6	0	0	0	0	21.11	21.11	20.77
1.4	16QAM	1	0	0	0	0	21.55	21.63	21.45
1.4	16QAM	1	5	0	0	0	21.63	21.56	21.61
1.4	16QAM	6	0	0	0	0	21.61	21.71	21.35


LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H		23230	
Frequency (MHz)								782	
10	QPSK	1	0	0	0	7		21.21	
10	QPSK	1	5	0	0	7		21.22	
10	QPSK	6	0	0	0	7		20.77	
10	16QAM	1	0	0	0	7		21.67	
10	16QAM	1	5	0	0	7		21.30	
10	16QAM	6	0	0	0	7		21.01	
Channel				L	M	H	23205	23230	23255
Frequency (MHz)							779.5	782	784.5
5	QPSK	1	0	0	0	3	21.21	21.07	21.12
5	QPSK	1	5	0	0	3	21.01	21.01	21.00
5	QPSK	6	0	0	0	3	20.63	20.55	20.58
5	16QAM	1	0	0	0	3	21.54	21.54	21.65
5	16QAM	1	5	0	0	3	21.45	21.37	20.68
5	16QAM	6	0	0	0	3	21.10	20.93	21.19



LTE Band 25:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	26140	26365	26590
Frequency (MHz)							1860	1882.5	1905
20	QPSK	1	0	0	0	15	21.77	21.89	21.62
20	QPSK	1	5	0	0	15	21.75	21.44	21.77
20	QPSK	6	0	0	0	15	21.71	21.59	21.67
20	16QAM	1	0	0	0	15	22.23	21.98	21.99
20	16QAM	1	5	0	0	15	22.01	21.81	21.93
20	16QAM	6	0	0	0	15	21.79	21.66	21.78
Channel				L	M	H	26115	26365	26615
Frequency (MHz)							1857.5	1882.5	1907.5
15	QPSK	1	0	0	0	11	21.86	22.00	21.57
15	QPSK	1	5	0	0	11	21.69	21.92	21.44
15	QPSK	6	0	0	0	11	21.75	21.83	21.54
15	16QAM	1	0	0	0	11	22.08	21.75	21.99
15	16QAM	1	5	0	0	11	21.92	21.57	21.84
15	16QAM	6	0	0	0	11	21.79	21.64	21.60
Channel				L	M	H	26090	26365	26640
Frequency (MHz)							1855	1882.5	1910
10	QPSK	1	0	0	0	7	21.83	21.66	21.66
10	QPSK	1	5	0	0	7	21.71	21.77	21.49
10	QPSK	6	0	0	0	7	21.15	21.12	21.04
10	16QAM	1	0	0	0	7	22.20	22.22	22.02
10	16QAM	1	5	0	0	7	22.04	22.13	21.87
10	16QAM	6	0	0	0	7	21.89	21.78	21.63
Channel				L	M	H	26065	26365	26665
Frequency (MHz)							1852.5	1882.5	1912.5
5	QPSK	1	0	0	0	3	21.78	21.78	21.56
5	QPSK	1	5	0	0	3	21.68	21.56	21.34
5	QPSK	6	0	0	0	3	21.18	21.08	21.09
5	16QAM	1	0	0	0	3	21.88	21.82	21.99
5	16QAM	1	5	0	0	3	22.07	22.06	21.82
5	16QAM	6	0	0	0	3	21.89	21.78	21.57
Channel				L	M	H	26055	26365	26675
Frequency (MHz)							1851.5	1882.5	1913.5
3	QPSK	1	0	0	0	1	22.13	21.79	21.99
3	QPSK	1	5	0	0	1	22.05	21.62	21.82
3	QPSK	6	0	0	0	1	21.96	21.07	21.88
3	16QAM	1	0	0	0	1	21.88	22.15	22.21
3	16QAM	1	5	0	0	1	21.70	22.00	22.05
3	16QAM	6	0	0	0	1	21.77	21.76	21.92
Channel				L	M	H	26047	26365	26683
Frequency (MHz)							1850.7	1882.5	1914.3
1.4	QPSK	1	0	0	0	0	21.83	21.88	21.84
1.4	QPSK	1	5	0	0	0	21.61	21.76	21.67
1.4	QPSK	6	0	0	0	0	21.13	21.20	21.12
1.4	16QAM	1	0	0	0	0	21.87	21.85	21.80



1.4	16QAM	1	5	0	0	0	21.81	21.79	21.75
1.4	16QAM	6	0	0	0	0	21.83	21.94	21.81


LTE Band 26:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	26765	26865	26965
Frequency (MHz)							821.5	831.5	841.5
15	QPSK	1	0	0	0	11	20.78	21.11	20.72
15	QPSK	1	5	0	0	11	20.70	20.95	20.82
15	QPSK	6	0	0	0	11	20.75	21.14	20.93
15	16QAM	1	0	0	0	11	20.98	21.28	21.61
15	16QAM	1	5	0	0	11	20.83	21.12	21.13
15	16QAM	6	0	0	0	11	20.75	20.93	20.96
Channel				L	M	H	26740	26865	26990
Frequency (MHz)							819	831.5	844
10	QPSK	1	0	0	0	7	20.79	21.36	20.95
10	QPSK	1	5	0	0	7	20.69	21.18	20.80
10	QPSK	6	0	0	0	7	20.52	20.67	20.52
10	16QAM	1	0	0	0	7	21.24	21.58	21.28
10	16QAM	1	5	0	0	7	21.00	21.34	21.06
10	16QAM	6	0	0	0	7	20.81	21.16	20.82
Channel				L	M	H	26715	26865	27015
Frequency (MHz)							816.5	831.5	846.5
5	QPSK	1	0	0	0	3	20.57	21.07	20.83
5	QPSK	1	5	0	0	3	20.62	20.88	20.75
5	QPSK	6	0	0	0	3	20.53	20.56	20.54
5	16QAM	1	0	0	0	3	20.95	21.27	21.15
5	16QAM	1	5	0	0	3	20.70	21.27	20.99
5	16QAM	6	0	0	0	3	20.67	21.01	20.82
Channel				L	M	H	26705	26865	27025
Frequency (MHz)							815.5	831.5	847.5
3	QPSK	1	0	0	0	1	20.80	21.30	21.59
3	QPSK	1	5	0	0	1	20.65	21.15	21.41
3	QPSK	6	0	0	0	1	20.56	20.76	20.90
3	16QAM	1	0	0	0	1	21.18	21.48	21.51
3	16QAM	1	5	0	0	1	20.93	21.43	21.57
3	16QAM	6	0	0	0	1	20.90	21.40	21.39
Channel				L	M	H	26697	26865	27033
Frequency (MHz)							814.7	831.5	848.3
1.4	QPSK	1	0	0	0	0	21.07	21.27	21.33
1.4	QPSK	1	5	0	0	0	20.92	21.38	21.25
1.4	QPSK	6	0	0	0	0	20.53	20.86	20.74
1.4	16QAM	1	0	0	0	0	21.05	21.26	21.15
1.4	16QAM	1	5	0	0	0	21.20	21.57	21.49
1.4	16QAM	6	0	0	0	0	21.17	21.51	21.32



LTE Band 66:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	132072	132322	132572
Frequency (MHz)							1720	1745	1770
20	QPSK	1	0	0	0	15	21.55	21.40	21.66
20	QPSK	1	5	0	0	15	21.38	21.33	21.48
20	QPSK	6	0	0	0	15	21.69	21.50	21.60
20	16QAM	1	0	0	0	15	22.05	21.82	21.96
20	16QAM	1	5	0	0	15	21.85	21.68	21.87
20	16QAM	6	0	0	0	15	21.60	21.40	21.52
Channel				L	M	H	132047	132322	132597
Frequency (MHz)							1717.5	1745	1772.5
15	QPSK	1	0	0	0	11	21.69	21.45	21.55
15	QPSK	1	5	0	0	11	21.49	21.30	21.54
15	QPSK	6	0	0	0	11	21.57	21.45	21.58
15	16QAM	1	0	0	0	11	21.98	21.90	21.97
15	16QAM	1	5	0	0	11	21.80	21.57	21.86
15	16QAM	6	0	0	0	11	21.64	21.44	21.47
Channel				L	M	H	132022	132322	132622
Frequency (MHz)							1715	1745	1775
10	QPSK	1	0	0	0	7	21.75	21.55	21.62
10	QPSK	1	5	0	0	7	21.56	21.39	21.46
10	QPSK	6	0	0	0	7	21.05	21.09	21.18
10	16QAM	1	0	0	0	7	21.92	21.90	21.93
10	16QAM	1	5	0	0	7	21.89	21.74	21.78
10	16QAM	6	0	0	0	7	21.71	21.56	21.54
Channel				L	M	H	131997	132322	132647
Frequency (MHz)							1712.5	1745	1777.5
5	QPSK	1	0	0	0	3	21.65	21.55	21.61
5	QPSK	1	5	0	0	3	21.49	21.18	21.45
5	QPSK	6	0	0	0	3	21.01	21.18	21.00
5	16QAM	1	0	0	0	3	21.98	21.88	21.96
5	16QAM	1	5	0	0	3	21.82	21.70	21.85
5	16QAM	6	0	0	0	3	21.65	21.52	21.68
Channel				L	M	H	131987	132322	132657
Frequency (MHz)							1711.5	1745	1778.5
3	QPSK	1	0	0	0	1	21.86	21.62	21.72
3	QPSK	1	5	0	0	1	21.66	21.47	21.71
3	QPSK	6	0	0	0	1	21.74	21.62	21.75
3	16QAM	1	0	0	0	1	21.95	21.97	21.94
3	16QAM	1	5	0	0	1	21.97	21.74	22.03
3	16QAM	6	0	0	0	1	21.81	21.61	21.64
Channel				L	M	H	131979	132322	132665
Frequency (MHz)							1710.7	1745	1779.3
1.4	QPSK	1	0	0	0	0	21.77	21.67	21.73
1.4	QPSK	1	5	0	0	0	21.61	21.30	21.57
1.4	QPSK	6	0	0	0	0	21.13	21.30	21.12
1.4	16QAM	1	0	0	0	0	21.90	22.00	21.98



1.4	16QAM	1	5	0	0	0	21.94	21.82	21.97
1.4	16QAM	6	0	0	0	0	21.77	21.64	21.80

**LTE Band 85:**

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				L	M	H	134052	134092	134132
Frequency (MHz)							703	707	711
10	QPSK	1	0	0	0	7	21.70	21.59	21.53
10	QPSK	1	5	0	0	7	21.71	21.42	21.36
10	QPSK	6	0	0	0	7	20.93	20.95	21.11
10	16QAM	1	0	0	0	7	22.06	21.93	21.99
10	16QAM	1	5	0	0	7	21.78	21.59	21.90
10	16QAM	6	0	0	0	7	21.77	21.65	21.40
Channel				L	M	H	134027	134092	134157
Frequency (MHz)							700.5	707	713.5
5	QPSK	1	0	0	0	3	21.44	21.73	21.50
5	QPSK	1	5	0	0	3	21.28	21.55	21.33
5	QPSK	6	0	0	0	3	20.77	21.10	20.85
5	16QAM	1	0	0	0	3	21.66	22.04	21.73
5	16QAM	1	5	0	0	3	21.53	21.75	21.64
5	16QAM	6	0	0	0	3	21.42	21.59	21.48



NB-IOT Category NB2:

LTE Band 2:

Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				18601	18900	19199
Frequency (MHz)				1850.1	1880	1909.9
3.75	BPSK	1	0	22.48	22.43	22.73
3.75	BPSK	1	47	22.45	22.40	22.65
3.75	QPSK	1	0	22.48	22.53	22.70
3.75	QPSK	1	47	22.41	22.42	22.66
15	BPSK	1	0	22.23	22.41	22.63
15	BPSK	1	11	22.17	22.35	22.55
15	QPSK	1	0	22.16	22.30	22.55
15	QPSK	1	11	22.20	22.35	22.56
15	QPSK	12	0	20.25	20.35	20.40

LTE Band 4:

Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				19951	20175	20399
Frequency (MHz)				1710.1	1732.5	1754.9
3.75	BPSK	1	0	22.25	22.13	21.85
3.75	BPSK	1	47	22.34	22.15	21.78
3.75	QPSK	1	0	22.48	22.18	21.84
3.75	QPSK	1	47	22.37	22.09	21.75
15	BPSK	1	0	22.35	22.09	22.03
15	BPSK	1	11	22.28	22.01	21.97
15	QPSK	1	0	22.37	21.99	22.09
15	QPSK	1	11	22.33	22.03	22.03
15	QPSK	12	0	20.29	20.02	19.79

LTE Band 5:

Sub-carrier Spacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20401	20525	20649
Frequency (MHz)				824.1	836.5	848.9
3.75	BPSK	1	0	22.31	22.28	22.01
3.75	BPSK	1	47	22.25	22.26	22.04
3.75	QPSK	1	0	22.32	22.37	22.24
3.75	QPSK	1	47	22.21	22.26	22.13
15	BPSK	1	0	22.04	22.34	22.13
15	BPSK	1	11	21.98	22.27	22.03
15	QPSK	1	0	22.09	22.26	22.01
15	QPSK	1	11	21.86	22.25	22.01
15	QPSK	12	0	19.73	20.02	19.85

**LTE Band 12:**

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23011	23095	23179
Frequency (MHz)				699.1	707.5	715.9
3.75	BPSK	1	0	21.91	22.21	21.76
3.75	BPSK	1	47	21.88	22.16	21.69
3.75	QPSK	1	0	21.89	22.27	21.76
3.75	QPSK	1	47	21.92	22.21	21.66
15	BPSK	1	0	22.23	22.39	21.83
15	BPSK	1	11	22.15	22.29	21.76
15	QPSK	1	0	22.24	22.40	21.87
15	QPSK	1	11	22.11	22.35	21.75
15	QPSK	12	0	20.08	20.28	19.77

LTE Band 13:

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23181	23230	23179
Frequency (MHz)				777.1	782	786.9
3.75	BPSK	1	0	22.40	22.45	22.43
3.75	BPSK	1	47	22.36	22.41	22.40
3.75	QPSK	1	0	22.33	22.38	22.39
3.75	QPSK	1	47	22.28	22.31	22.30
15	BPSK	1	0	22.55	22.56	22.57
15	BPSK	1	11	22.53	22.54	22.54
15	QPSK	1	0	22.55	22.57	22.53
15	QPSK	1	11	22.51	22.51	22.48
15	QPSK	12	0	20.40	20.41	20.38

LTE Band 25:

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				26041	26365	26689
Frequency (MHz)				1850.1	1882.5	1914.9
3.75	BPSK	1	0	22.46	22.36	22.54
3.75	BPSK	1	47	22.43	22.43	22.48
3.75	QPSK	1	0	22.41	22.44	22.50
3.75	QPSK	1	47	22.34	22.37	22.48
15	BPSK	1	0	22.13	22.49	22.57
15	BPSK	1	11	22.23	22.36	22.47
15	QPSK	1	0	22.30	22.44	22.55
15	QPSK	1	11	22.23	22.28	22.53
15	QPSK	12	0	20.18	20.25	20.26

**LTE Band 66:**

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				131973	132322	132671
Frequency (MHz)				1710.1	1745	1779.9
3.75	BPSK	1	0	22.52	22.31	22.83
3.75	BPSK	1	47	22.60	22.26	22.62
3.75	QPSK	1	0	22.55	22.30	22.68
3.75	QPSK	1	47	22.34	22.23	22.49
15	BPSK	1	0	22.50	22.21	22.85
15	BPSK	1	11	22.49	22.17	22.81
15	QPSK	1	0	22.55	22.28	22.87
15	QPSK	1	11	22.44	22.23	22.82
15	QPSK	12	0	20.40	20.13	20.50

LTE Band 71:

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				133123	133297	133471
Frequency (MHz)				663.1	680.5	697.9
3.75	BPSK	1	0	22.37	22.49	23.12
3.75	BPSK	1	47	22.31	22.46	23.07
3.75	QPSK	1	0	22.75	22.43	23.11
3.75	QPSK	1	47	22.67	22.29	23.09
15	BPSK	1	0	22.55	22.56	23.02
15	BPSK	1	11	22.53	22.54	22.98
15	QPSK	1	0	22.59	22.58	23.04
15	QPSK	1	11	22.52	22.55	22.99
15	QPSK	12	0	20.45	20.50	20.84

LTE Band 85:

Sub-carrier Speacing (KHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				134003	134082	134181
Frequency (MHz)				698.1	706	715.9
3.75	BPSK	1	0	22.03	22.40	22.07
3.75	BPSK	1	47	22.08	22.36	22.17
3.75	QPSK	1	0	22.05	22.52	22.21
3.75	QPSK	1	47	21.96	22.36	22.15
15	BPSK	1	0	22.34	22.52	22.12
15	BPSK	1	11	22.27	22.43	22.04
15	QPSK	1	0	22.25	22.48	22.00
15	QPSK	1	11	22.14	22.36	22.05
15	QPSK	12	0	20.06	20.26	19.96

**ERP/EIRP**

LTE Category M1:

LTE Band 5 (GT - LC = 0 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	21.44	21.35	21.14	21.39	21.30	21.09	20.77	21.23	21.02
Conducted Power (Watts)	0.1393	0.1365	0.1300	0.1377	0.1349	0.1285	0.1194	0.1327	0.1265
ERP(dBm)	19.29	19.20	18.99	19.24	19.15	18.94	18.62	19.08	18.87
ERP(Watts)	0.0849	0.0832	0.0793	0.0839	0.0822	0.0783	0.0728	0.0809	0.0771

LTE Band 5 (GT - LC = 0 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	21.08	21.11	21.14
Conducted Power (Watts)	0.1282	0.1291	0.1300
ERP(dBm)	18.93	18.96	18.99
ERP(Watts)	0.0782	0.0787	0.0793

LTE Band 5 (GT - LC = 0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	21.11	21.46	21.19	21.06	21.41	21.14	21.48	21.44	21.17
Conducted Power (Watts)	0.1291	0.1400	0.1315	0.1276	0.1384	0.1300	0.1406	0.1393	0.1309
ERP(dBm)	18.96	19.31	19.04	18.91	19.26	18.99	19.33	19.29	19.02
ERP(Watts)	0.0787	0.0853	0.0802	0.0778	0.0843	0.0793	0.0857	0.0849	0.0798

LTE Band 5 (GT - LC = 0 dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	21.52	21.33	21.12
Conducted Power (Watts)	0.1419	0.1358	0.1294
ERP(dBm)	19.37	19.18	18.97
ERP(Watts)	0.0865	0.0828	0.0789



LTE Band 12 (GT - LC = -1.5 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
(MHz)									
Conducted Power (dBm)	21.72	21.76	21.59	21.58	21.91	21.27	21.60	21.64	21.47
Conducted Power (Watts)	0.1486	0.1500	0.1442	0.1439	0.1552	0.1340	0.1445	0.1459	0.1403
ERP(dBm)	18.07	18.11	17.94	17.93	18.26	17.62	17.95	17.99	17.82
ERP(Watts)	0.0641	0.0647	0.0622	0.0621	0.0670	0.0578	0.0624	0.0630	0.0605

LTE Band 12 (GT - LC = -1.5 dB) QPSK			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency	704	707.5	711
(MHz)			
Conducted Power (dBm)	21.66	21.92	21.35
Conducted Power (Watts)	0.1466	0.1556	0.1365
ERP(dBm)	18.01	18.27	17.70
ERP(Watts)	0.0632	0.0671	0.0589



LTE Band 12 (GT - LC = -1.5 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	23017	23095	23173	23025	23095	23165	23035	23095	23155
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
Conducted Power (dBm)	21.61	21.71	21.35	21.85	21.78	21.53	21.73	21.91	21.73
Conducted Power (Watts)	0.1449	0.1483	0.1365	0.1531	0.1507	0.1422	0.1489	0.1552	0.1489
ERP(dBm)	17.96	18.06	17.70	18.20	18.13	17.88	18.08	18.26	18.08
ERP(Watts)	0.0625	0.0640	0.0589	0.0661	0.0650	0.0614	0.0643	0.0670	0.0643

LTE Band 12 (GT - LC = -1.5 dB) 16QAM			
Bandwidth	10M		
Channel	23060	23095	23130
	(Low)	(Mid)	(High)
Frequency (MHz)	704	707.5	711
Conducted Power (dBm)	21.80	21.69	21.74
Conducted Power (Watts)	0.1514	0.1476	0.1493
ERP(dBm)	18.15	18.04	18.09
ERP(Watts)	0.0653	0.0637	0.0644



LTE Band 13 (GT - LC = -1.5 dB) QPSK						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	21.21	21.07	21.12		21.37	-
Conducted Power (Watts)	0.1321	0.1279	0.1294		0.1371	-
ERP(dBm)	17.56	17.42	17.47		17.72	-
ERP(Watts)	0.0570	0.0552	0.0558		0.0592	-

LTE Band 13 (GT - LC = -1.5 dB) 16QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency	779.5	782	784.5	-	782	-
(MHz)						
Conducted Power (dBm)	21.54	21.54	21.65		21.67	-
Conducted Power (Watts)	0.1426	0.1426	0.1462		0.1469	-
ERP(dBm)	17.89	17.89	18.00		18.02	-
ERP(Watts)	0.0615	0.0615	0.0631		0.0634	-



LTE Band 25 (GT - LC = 1.0 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	21.09	21.89	21.83	22.13	21.79	21.99	21.78	21.78	21.56
Conducted Power (Watts)	0.1285	0.1545	0.1524	0.1633	0.1510	0.1581	0.1507	0.1507	0.1432
EIRP(dBm)	22.09	22.89	22.83	23.13	22.79	22.99	22.78	22.78	22.56
EIRP(Watts)	0.1618	0.1945	0.1919	0.2056	0.1901	0.1991	0.1897	0.1897	0.1803

LTE Band 25 (GT - LC = 1.0 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	21.84	21.91	21.65	21.86	22.00	21.57	21.77	21.89	21.62
Conducted Power (Watts)	0.1528	0.1552	0.1462	0.1535	0.1585	0.1435	0.1503	0.1545	0.1452
EIRP(dBm)	22.84	22.91	22.65	22.86	23.00	22.57	22.77	22.89	22.62
EIRP(Watts)	0.1923	0.1954	0.1841	0.1932	0.1995	0.1807	0.1892	0.1945	0.1828



LTE Band 25 (GT - LC = 1.0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	21.83	21.94	21.81	21.88	22.15	22.21	22.07	22.06	21.82
Conducted Power (Watts)	0.1524	0.1563	0.1517	0.1542	0.1641	0.1663	0.1611	0.1607	0.1521
EIRP(dBm)	22.83	22.94	22.81	22.88	23.15	23.21	23.07	23.06	22.82
EIRP(Watts)	0.1919	0.1968	0.1910	0.1941	0.2065	0.2094	0.2028	0.2023	0.1914

LTE Band 25 (GT - LC = 1.0 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	22.20	22.22	22.02	22.08	21.75	21.99	22.23	21.98	21.99
Conducted Power (Watts)	0.1660	0.1667	0.1592	0.1614	0.1496	0.1581	0.1671	0.1578	0.1581
EIRP(dBm)	23.20	23.22	23.02	23.08	22.75	22.99	23.23	22.98	22.99
EIRP(Watts)	0.2089	0.2099	0.2004	0.2032	0.1884	0.1991	0.2104	0.1986	0.1991



LTE Band 26 (GT - LC = 0 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	20.92	21.38	21.25	20.80	21.30	21.59	21.13	20.51	20.59
Conducted Power (Watts)	0.1236	0.1374	0.1334	0.1202	0.1349	0.1442	0.1297	0.1125	0.1146
ERP(dBm)	18.77	19.23	19.10	18.65	19.15	19.44	18.98	18.36	18.44
ERP(Watts)	0.0753	0.0838	0.0813	0.0733	0.0822	0.0879	0.0791	0.0685	0.0698

LTE Band 26 (GT - LC = 0 dB) QPSK							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency	829	836.5	844	831.5	836.5	841.5	821.5
(MHz)							
Conducted Power (dBm)	20.79	21.36	20.95	20.75	21.14	20.93	20.82
Conducted Power (Watts)	0.1199	0.1368	0.1245	0.1189	0.1300	0.1239	0.1208
ERP(dBm)	18.64	19.21	18.80	18.60	18.99	18.78	18.67
ERP(Watts)	0.0731	0.0834	0.0759	0.0724	0.0793	0.0755	0.0736



LTE Band 26 (GT - LC = 0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	21.20	21.57	21.49	20.93	21.43	21.57	20.95	21.27	21.15
Conducted Power (Watts)	0.1318	0.1435	0.1409	0.1239	0.1390	0.1435	0.1245	0.1340	0.1303
ERP(dBm)	19.05	19.42	19.34	18.78	19.28	19.42	18.80	19.12	19.00
ERP(Watts)	0.0804	0.0875	0.0859	0.0755	0.0847	0.0875	0.0759	0.0817	0.0794

LTE Band 26 (GT - LC = 0 dB) 16QAM							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency	829	836.5	844	831.5	836.5	841.5	821.5
(MHz)							
Conducted Power (dBm)	21.24	21.58	21.28	20.98	21.28	21.61	21.28
Conducted Power (Watts)	0.1330	0.1439	0.1343	0.1253	0.1343	0.1449	0.1343
ERP(dBm)	19.09	19.43	19.13	18.83	19.13	19.46	19.13
ERP(Watts)	0.0811	0.0877	0.0818	0.0764	0.0818	0.0883	0.0818



LTE Band 66 (GT - LC = 0.5 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	21.77	21.67	21.73	21.86	21.62	21.72	21.65	21.55	21.61
Conducted Power (Watts)	0.1503	0.1469	0.1489	0.1535	0.1452	0.1486	0.1462	0.1429	0.1449
EIRP(dBm)	22.27	22.17	22.23	22.36	22.12	22.22	22.15	22.05	22.11
EIRP(Watts)	0.1687	0.1648	0.1671	0.1722	0.1629	0.1667	0.1641	0.1603	0.1626

LTE Band 66 (GT - LC = 0.5 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	21.75	21.55	21.62	21.69	21.45	21.55	21.69	21.50	21.60
Conducted Power (Watts)	0.1496	0.1429	0.1452	0.1476	0.1396	0.1429	0.1476	0.1413	0.1445
EIRP(dBm)	22.25	22.05	22.12	22.19	21.95	22.05	22.19	22.00	22.10
EIRP(Watts)	0.1679	0.1603	0.1629	0.1656	0.1567	0.1603	0.1656	0.1585	0.1622



LTE Band 66 (GT - LC = 0.5 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
(MHz)									
Conducted Power (dBm)	21.90	22.00	21.98	21.97	21.74	22.03	21.98	21.88	21.96
Conducted Power (Watts)	0.1549	0.1585	0.1578	0.1574	0.1493	0.1596	0.1578	0.1542	0.1570
EIRP(dBm)	22.40	22.50	22.48	22.47	22.24	22.53	22.48	22.38	22.46
EIRP(Watts)	0.1738	0.1778	0.1770	0.1766	0.1675	0.1791	0.1770	0.1730	0.1762

LTE Band 66 (GT - LC = 0.5 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
(MHz)									
Conducted Power (dBm)	21.92	21.90	21.93	21.98	21.90	21.97	22.05	21.82	21.96
Conducted Power (Watts)	0.1556	0.1549	0.1560	0.1578	0.1549	0.1574	0.1603	0.1521	0.1570
EIRP(dBm)	22.42	22.40	22.43	22.48	22.40	22.47	22.55	22.32	22.46
EIRP(Watts)	0.1746	0.1738	0.1750	0.1770	0.1738	0.1766	0.1799	0.1706	0.1762



LTE Band 85 (GT - LC = -1.5 dB) QPSK						
Bandwidth	5M			10M		
Channel	134027	134092	134157	134052	134092	134132
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	700.5	707	713.5	703	707	711
(MHz)						
Conducted Power (dBm)	21.44	21.73	21.50	21.99	21.77	21.51
Conducted Power (Watts)	0.1393	0.1489	0.1413	0.1581	0.1503	0.1416
ERP(dBm)	17.79	18.08	17.85	18.34	18.12	17.86
ERP(Watts)	0.0601	0.0643	0.0610	0.0682	0.0649	0.0611

LTE Band 85 (GT - LC = -1.5 dB) 16QAM						
Bandwidth	5M			10M		
Channel	134027	134092	134157	134052	134092	134132
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	700.5	707	713.5	703	707	711
(MHz)						
Conducted Power (dBm)	21.66	22.04	21.73	22.06	21.93	21.99
Conducted Power (Watts)	0.1466	0.1600	0.1489	0.1607	0.1560	0.1581
ERP(dBm)	18.01	18.39	18.08	18.41	18.28	18.34
ERP(Watts)	0.0632	0.0690	0.0643	0.0693	0.0673	0.0682



NB-IOT Category NB2:

LTE Band 5 (GT - LC = 0 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	20410	20525	20649	20410	20525	20649
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.1	836.5	848.9	824.1	836.5	848.9
Conducted Power (dBm)	22.31	22.28	22.01	22.04	22.34	22.13
Conducted Power (Watts)	0.1702	0.1690	0.1589	0.1600	0.1712	0.1633
ERP(dBm)	20.16	20.13	19.86	19.89	20.19	19.98
ERP(Watts)	0.1038	0.1030	0.0968	0.0975	0.1044	0.0995

LTE Band 5 (GT - LC = 0 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	20410	20525	20649	20410	20525	20649
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.1	836.5	848.9	824.1	836.5	848.9
Conducted Power (dBm)	22.32	22.37	22.24	22.09	22.26	22.01
Conducted Power (Watts)	0.1706	0.1726	0.1675	0.1618	0.1683	0.1589
ERP(dBm)	20.17	20.22	20.09	19.94	20.11	19.86
ERP(Watts)	0.1040	0.1052	0.1021	0.0986	0.1026	0.0968



LTE Band 12 (GT - LC = -1.5 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	23011	23095	23179	23011	23095	23179
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	699.1	707.5	715.9	699.1	707.5	715.9
(MHz)						
Conducted Power (dBm)	21.91	22.21	21.76	22.23	22.39	21.83
Conducted Power (Watts)	0.1552	0.1663	0.1500	0.1671	0.1734	0.1524
ERP(dBm)	18.26	18.56	18.11	18.58	18.74	18.18
ERP(Watts)	0.0670	0.0718	0.0647	0.0721	0.0748	0.0658

LTE Band 12 (GT - LC = -1.5 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	23011	23095	23179	23011	23095	23179
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	699.1	707.5	715.9	699.1	707.5	715.9
(MHz)						
Conducted Power (dBm)	21.89	22.27	21.76	22.24	22.40	21.87
Conducted Power (Watts)	0.1545	0.1687	0.1500	0.1675	0.1738	0.1538
ERP(dBm)	18.24	18.62	18.11	18.59	18.75	18.22
ERP(Watts)	0.0667	0.0728	0.0647	0.0723	0.0750	0.0664



LTE Band 13 (GT - LC = -1.5 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	23181	23230	23179	23181	23230	23179
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	777.1	782	786.9	777.1	782	786.9
Conducted Power (dBm)	22.40	22.45	22.43	22.55	22.56	22.57
Conducted Power (Watts)	0.1738	0.1758	0.1750	0.1799	0.1803	0.1807
ERP(dBm)	18.75	18.80	18.78	18.90	18.91	18.92
ERP(Watts)	0.0750	0.0759	0.0755	0.0776	0.0778	0.0780

LTE Band 13 (GT - LC = -1.5 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	23181	23230	23179	23181	23230	23179
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	777.1	782	786.9	777.1	782	786.9
Conducted Power (dBm)	22.33	22.38	22.39	22.55	22.57	22.53
Conducted Power (Watts)	0.1710	0.1730	0.1734	0.1799	0.1807	0.1791
ERP(dBm)	18.68	18.73	18.74	18.90	18.92	18.88
ERP(Watts)	0.0738	0.0746	0.0748	0.0776	0.0780	0.0773



LTE Band 25 (GT - LC = 1.0 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	26041	26365	26689	26041	26365	26689
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.1	1882.5	1914.9	1850.1	1882.5	1914.9
(MHz)						
Conducted Power (dBm)	22.46	22.36	22.54	22.13	22.49	22.57
Conducted Power (Watts)	0.1762	0.1722	0.1795	0.1633	0.1774	0.1807
EIRP(dBm)	23.46	23.36	23.54	23.13	23.49	23.57
EIRP(Watts)	0.2218	0.2168	0.2259	0.2056	0.2234	0.2275

LTE Band 25 (GT - LC = 1.0 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	26041	26365	26689	26041	26365	26689
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.1	1882.5	1914.9	1850.1	1882.5	1914.9
(MHz)						
Conducted Power (dBm)	22.41	22.44	22.50	22.30	22.44	22.55
Conducted Power (Watts)	0.1742	0.1754	0.1778	0.1698	0.1754	0.1799
EIRP(dBm)	23.41	23.44	23.50	23.30	23.44	23.55
EIRP(Watts)	0.2193	0.2208	0.2239	0.2138	0.2208	0.2265



LTE Band 66 (GT - LC = 0.5 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	131973	132322	132671	131973	132322	132671
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.1	1745	1779.9	1710.1	1745	1779.9
(MHz)						
Conducted Power (dBm)	22.52	22.31	22.83	22.50	22.21	22.85
Conducted Power (Watts)	0.1786	0.1702	0.1919	0.1778	0.1663	0.1928
EIRP(dBm)	23.02	22.81	23.33	23.00	22.71	23.35
EIRP(Watts)	0.2004	0.1910	0.2153	0.1995	0.1866	0.2163

LTE Band 66 (GT - LC = 0.5 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	131973	132322	132671	131973	132322	132671
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.1	1745	1779.9	1710.1	1745	1779.9
(MHz)						
Conducted Power (dBm)	22.55	22.30	22.68	22.55	22.28	22.87
Conducted Power (Watts)	0.1799	0.1698	0.1854	0.1799	0.1690	0.1936
EIRP(dBm)	23.05	22.80	23.18	23.05	22.78	23.37
EIRP(Watts)	0.2018	0.1905	0.2080	0.2018	0.1897	0.2173



LTE Band 71 (GT - LC = -2.0 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	133123	133297	133471	133123	133297	133471
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	663.1	680.5	697.9	663.1	680.5	697.9
(MHz)						
Conducted Power (dBm)	22.37	22.49	23.12	22.55	22.56	23.02
Conducted Power (Watts)	0.1726	0.1774	0.2051	0.1799	0.1803	0.2004
ERP(dBm)	18.22	18.34	18.97	18.40	18.41	18.87
ERP(Watts)	0.0664	0.0682	0.0789	0.0692	0.0693	0.0771

LTE Band 71 (GT - LC = -2.0 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	133123	133297	133471	133123	133297	133471
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	663.1	680.5	697.9	663.1	680.5	697.9
(MHz)						
Conducted Power (dBm)	22.75	22.43	23.11	22.59	22.58	23.04
Conducted Power (Watts)	0.1884	0.1750	0.2046	0.1816	0.1811	0.2014
ERP(dBm)	18.60	18.28	18.96	18.44	18.43	18.89
ERP(Watts)	0.0724	0.0673	0.0787	0.0698	0.0697	0.0774



LTE Band 85 (GT - LC = -1.5 dB) BPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	134003	134082	134181	134003	134082	134181
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	698.1	706	715.9	698.1	706	715.9
(MHz)						
Conducted Power (dBm)	22.03	22.40	22.07	22.34	22.52	22.12
Conducted Power (Watts)	0.1596	0.1738	0.1611	0.1714	0.1786	0.1629
ERP(dBm)	18.38	18.75	18.42	18.69	18.87	18.47
ERP(Watts)	0.0689	0.0750	0.0695	0.0740	0.0771	0.0703

LTE Band 85 (GT - LC = -1.5 dB) QPSK						
Sub-carrier Spacing	3.75K			15K		
Channel	134003	134082	134181	134003	134082	134181
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	698.1	706	715.9	698.1	706	715.9
(MHz)						
Conducted Power (dBm)	22.05	22.52	22.21	22.25	22.48	22.00
Conducted Power (Watts)	0.1603	0.1786	0.1663	0.1679	0.1770	0.1585
ERP(dBm)	18.40	18.87	18.56	18.60	18.83	18.35
ERP(Watts)	0.0692	0.0771	0.0718	0.0724	0.0764	0.0684



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Category M1:

LTE Band 5 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664.18	-51.64	-13	-38.64	-60.31	-54.89	4.00	9.40	H
	2496.27	-47.61	-13	-34.61	-60.46	-51.18	4.88	10.60	H
	3328.36	-56.75	-13	-43.75	-71.30	-61.68	5.52	12.60	H
	1664.18	-52.66	-13	-39.66	-60.93	-55.91	4.00	9.40	V
	2496.27	-48.57	-13	-35.57	-61.38	-52.14	4.88	10.60	V
	3328.36	-56.28	-13	-43.28	-70.59	-61.21	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 12 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1406	-52.89	-13	-39.89	-62.09	-56.04	4.00	9.30	H
	2109	-52.91	-13	-39.91	-64.66	-56.18	4.88	10.30	H
	2812	-58.80	-13	-45.80	-73.10	-63.55	5.52	12.42	H
	1406	-52.96	-13	-39.96	-61.81	-56.11	4.00	9.30	V
	2109	-53.20	-13	-40.20	-65.44	-56.47	4.88	10.30	V
	2812	-58.87	-13	-45.87	-72.89	-63.62	5.52	12.42	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 13 / 5MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1559.5	-48.63	-42.15	-6.48	-57.35	-51.88	4.00	9.40	H
	2339.25	-49.42	-13	-36.42	-62.71	-52.99	4.88	10.60	H
	3119	-60.48	-13	-47.48	-75.89	-65.41	5.52	12.60	H
	1559.5	-49.88	-42.15	-7.73	-58.68	-53.13	4.00	9.40	V
	2339.25	-49.09	-13	-36.09	-62.38	-52.66	4.88	10.60	V
	3119	-60.55	-13	-47.55	-76.00	-65.48	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 13 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1555	-50.56	-13	-37.56	-59.28	-53.81	4.00	9.40	H
	2332.5	-49.07	-13	-36.07	-62.40	-52.64	4.88	10.60	H
	3110	-60.71	-13	-47.71	-76.02	-65.64	5.52	12.60	H
	1555	-50.36	-13	-37.36	-59.16	-53.61	4.00	9.40	V
	2332.5	-43.85	-13	-30.85	-57.18	-47.42	4.88	10.60	V
	3110	-60.09	-13	-47.09	-75.46	-65.02	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 25 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3747	-56.52	-13	-43.52	-73.24	-63.27	5.85	12.60	H
	5620.5	-47.21	-13	-34.21	-67.36	-53.01	7.30	13.10	H
	7494	-54.10	-13	-41.10	-78.80	-57.25	8.35	11.50	H
	3747	-55.93	-13	-42.93	-72.58	-62.68	5.85	12.60	V
	5620.5	-44.96	-13	-31.96	-64.83	-50.76	7.30	13.10	V
	7494	-54.37	-13	-41.37	-79.06	-57.52	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 26 / 15MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1659.5	-51.03	-13	-38.03	-59.70	-54.28	4.00	9.40	H
	2489.25	-35.40	-13	-22.40	-48.23	-38.97	4.88	10.60	H
	3319	-59.05	-13	-46.05	-73.77	-63.98	5.52	12.60	H
	1659.5	-51.91	-13	-38.91	-60.18	-55.16	4.00	9.40	V
	2489.25	-36.93	-13	-23.93	-49.72	-40.50	4.88	10.60	V
	3319	-60.02	-13	-47.02	-74.52	-64.95	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



LTE Band 66 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3472	-41.20	-13	-28.20	-56.58	-48.05	5.65	12.50	H
	5208	-57.90	-13	-44.90	-77.23	-63.57	7.13	12.80	H
	6944	-55.06	-13	-42.06	-78.99	-58.46	8.40	11.80	H
	3472	-41.15	-13	-28.15	-56.55	-48.00	5.65	12.50	V
	5208	-58.48	-13	-45.48	-78.06	-64.15	7.13	12.80	V
	6944	-54.69	-13	-41.69	-79.09	-58.09	8.40	11.80	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 85 / 10MHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1405	-54.40	-13	-41.40	-63.60	-57.65	4.00	9.40	H
	2107.5	-55.19	-13	-42.19	-66.94	-58.76	4.88	10.60	H
	2810	-58.75	-13	-45.75	-73.02	-63.68	5.52	12.60	H
	1405	-54.71	-13	-41.71	-63.56	-57.96	4.00	9.40	V
	2107.5	-52.20	-13	-39.20	-64.44	-55.77	4.88	10.60	V
	2810	-62.35	-13	-49.35	-76.32	-67.28	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

NB-IOT Category NB2:

Band 5 / 15KHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1673	-61.22	-13.00	-48.22	-69.90	-64.47	4.00	9.40	H
	2509.5	-59.49	-13.00	-46.49	-72.28	-63.06	4.88	10.60	H
	3346	-55.80	-13.00	-42.8	-70.20	-60.73	5.52	12.60	H
	1673	-59.01	-13.00	-46.01	-67.14	-62.26	4.00	9.40	V
	2509.5	-55.93	-13.00	-42.93	-68.68	-59.50	4.88	10.60	V
	3346	-59.59	-13.00	-46.59	-73.72	-64.52	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



Band 12 / 15KHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1415	-47.67	-13	-34.67	-56.87	-50.92	4.00	9.40	H
	2122	-41.13	-13	-28.13	-53.21	-44.70	4.88	10.60	H
	2830	-61.99	-13	-48.99	-76.32	-66.92	5.52	12.60	H
	1415	-48.84	-13	-35.84	-57.69	-52.09	4.00	9.40	V
	2122	-35.45	-13	-22.45	-47.92	-39.02	4.88	10.60	V
	2830	-62.27	-13	-49.27	-76.35	-67.20	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Band 13 / 15KHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1564	-49.50	-42.15	-7.35	-58.22	-52.75	4.00	9.40	H
	2346	-47.16	-13	-34.16	-60.45	-50.73	4.88	10.60	H
	3128	-58.59	-13	-45.59	-74.00	-63.52	5.52	12.60	H
	1564	-50.16	-42.15	-8.01	-58.96	-53.41	4.00	9.40	V
	2346	-47.04	-13	-34.04	-60.33	-50.61	4.88	10.60	V
	3128	-59.27	-13	-46.27	-74.72	-64.20	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Band 25 / 15KHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-43.55	-13	-30.55	-60.27	-50.30	5.85	12.60	H
	5640	-57.37	-13	-44.37	-77.97	-63.17	7.30	13.10	H
	7520	-53.96	-13	-40.96	-78.59	-57.11	8.35	11.50	H
	3760	-44.24	-13	-31.24	-60.89	-50.99	5.85	12.60	V
	5640	-58.52	-13	-45.52	-78.37	-64.32	7.30	13.10	V
	7520	-54.14	-13	-41.14	-78.75	-57.29	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



Band 66 / 15KHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3490	-41.46	-13	-28.46	-57.00	-48.31	5.65	12.50	H
	5235	-38.59	-13	-25.59	-57.87	-44.26	7.13	12.80	H
	6980	-52.31	-13	-39.31	-76.44	-55.71	8.40	11.80	H
	3490	-39.50	-13	-26.50	-55.03	-46.35	5.65	12.50	V
	5235	-43.20	-13	-30.20	-62.65	-48.87	7.13	12.80	V
	6980	-53.67	-13	-40.67	-78.26	-57.07	8.40	11.80	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Band 71 / 15KHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1361	-43.51	-13	-30.51	-52.09	-50.26	5.85	12.60	H
	2041.5	-45.94	-13	-32.94	-56.42	-51.74	7.30	13.10	H
	2722	-62.00	-13	-49.00	-75.78	-65.15	8.35	11.50	H
	1361	-57.13	-13	-44.13	-65.52	-63.88	5.85	12.60	V
	2041.5	-52.39	-13	-39.39	-63.75	-58.19	7.30	13.10	V
	2722	-62.32	-13	-49.32	-75.78	-65.47	8.35	11.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Band 85 / 15KHz / QPSK									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1564	-52.32	-13	-39.32	-61.04	-55.57	4.00	9.40	H
	2346	-49.79	-13	-36.79	-63.08	-53.36	4.88	10.60	H
	3128	-59.14	-13	-46.14	-74.55	-64.07	5.52	12.60	H
	1564	-52.00	-13	-39.00	-60.54	-55.25	4.00	9.40	V
	2346	-48.61	-13	-35.61	-61.91	-52.18	4.88	10.60	V
	3128	-58.98	-13	-45.98	-74.25	-63.91	5.52	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.