



FCC RF Test Report

APPLICANT : OnePlus Technology (shenzhen) Co., Ltd
EQUIPMENT : Smart Phone
BRAND NAME : ONEPLUS
MODEL NAME : ONEPLUS A5010
MARKETING NAME : ONEPLUS 5T
FCC ID : 2ABZ2-A5010
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(H)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was completely tested on Oct. 16, 2017. We, Sporton International (Shenzhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and the testing has shown the tested sample to be in compliance with the applicable technical standards.

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.

Approved by: Eric Shih / Manager



Sporton International (Shenzhen) Inc.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG782510-01B	Rev. 01	Initial issue of report	Oct. 23, 2017

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(2)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(c)(10)	Effective Radiated Power (Band 12) (Band 17)	ERP < 3 Watt	PASS	-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2)(Band 25) (Band 7) (Band 38) (Band 41)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 26) (Band 12) (Band 17) (Band 25) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 17) (Band 25) (Band 26) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38)(Band 41)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22H	PASS	-
	§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(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 17) (Band 25) (Band 26) (Band 66)	$< 43 + 10\log_{10}(P[\text{Watts}])$	PASS	Under limit 23.80 dB at 5000.500 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38)(Band 41)	$< 55 + 10\log_{10}(P[\text{Watts}])$		



1 General Description

1.1 Applicant

OnePlus Technology (shenzhen) Co., Ltd

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.2 Manufacturer

OnePlus Technology (shenzhen) Co., Ltd

18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	ONEPLUS
Model Name	ONEPLUS A5010
Marketing Name	ONEPLUS 5T
FCC ID	2ABZ2-A5010
EUT supports Radios application	CDMA/EVDO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ac VHT20/VHT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0 + EDR/ Bluetooth v 4.0 LE/ Bluetooth v4.1 LE/ Bluetooth v4.2 LE/ Bluetooth v5.0 LE
IMEI Code	Conducted: 866817030000871/866817030000871 (LTE B2/B4/B5/B12/B17/B25/B26/B38) 866817030000863/866817030000863(LTE B7/B41/B66) 001001757789273/001001757789273(LTE B7/B41 CA) Top Antenna Radiation: 866817030000939/866817030000939 (LTE B4/B5/B25/B26/B66) 866817030000962/866817030000962 (LTE B2/B7/B12/B17/B38/B41) 866817030000954/866817030000954(LTE B7/B41 CA) Bottom Antenna Radiation: 866817030000954/866817030000954
HW Version	EC017
SW Version	oxygen version 4.7
EUT Stage	Production Unit

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 699.7 MHz ~ 715.3 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 26 : 824.7MHz ~ 848.3 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 1710.7 MHz ~ 1779.3 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz LTE Band 25 : 1930.7 MHz ~ 1994.3 MHz LTE Band 26 : 869.7 MHz ~ 893.3 MHz LTE Band 38 : 2572.5 MHz ~ 2617.5 MHz LTE Band 41 : 2498.5 MHz ~ 2687.5 MHz LTE Band 66 : 2110.7 MHz~ 2199.3 MHz
Bandwidth	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 7 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.36 dBm LTE Band 4 : 23.37 dBm LTE Band 5 : 23.03 dBm LTE Band 7 : 23.17 dBm LTE Band 12 : 23.25 dBm LTE Band 17 : 23.22 dBm LTE Band 25 : 23.11 dBm LTE Band 26 : 23.25 dBm LTE Band 38 : 23.02 dBm LTE Band 41 : 23.30 dBm LTE Band 66 : 23.23 dBm
Antenna Gain to Top Antenna	LTE Band 2 : -1.0 dBi LTE Band 4 : -1.0 dBi LTE Band 5 : -2.0 dBi LTE Band 7 : 0 dBi LTE Band 12 : -4.0 dBi LTE Band 17 : -4.0 dBi

	LTE Band 25 : -1.0 dBi LTE Band 26 : -2.0 dBi LTE Band 38 : 0 dBi LTE Band 41 : 0 dBi LTE Band 66 : -1.0 dBi
Antenna Gain to Bottom Antenna	LTE Band 2 : -0.5 dBi LTE Band 4 : -0.5 dBi LTE Band 5 : -2.0 dBi LTE Band 7 : 0 dBi LTE Band 12 : -4.0 dBi LTE Band 17 : -4.0 dBi LTE Band 25 : -0.5 dBi LTE Band 26 : -2.0 dBi LTE Band 38 : 0 dBi LTE Band 41 : 0 dBi LTE Band 66 : -0.5 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

1.5 Modification of EUT

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



1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

LTE Band 2		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
1.4	1850.7 ~ 1909.3	1M09G7D	-	0.1524	0.1710	1M10W7D	-	0.1368	0.1535
3	1851.5 ~ 1908.5	2M74G7D	-	0.1549	0.1738	2M72W7D	-	0.1343	0.1507
5	1852.5 ~ 1907.5	4M51G7D	-	0.1578	0.1770	4M51W7D	-	0.1374	0.1542
10	1855.0 ~ 1905.0	9M05G7D	0.0245	0.1718	0.1928	9M03W7D	-	0.1358	0.1524
15	1857.5 ~ 1902.5	13M4G7D	-	0.1618	0.1816	13M5W7D	-	0.1476	0.1656
20	1860.0 ~ 1900.0	18M5G7D	-	0.1722	0.1932	18M5W7D	-	0.1449	0.1626
LTE Band 2		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)					
				Top	Bottom				
1.4	1850.7 ~ 1909.3	1M09W7D	-	0.1091	0.1225				
3	1851.5 ~ 1908.5	2M72W7D	-	0.1047	0.1175				
5	1852.5 ~ 1907.5	4M51W7D	-	0.1014	0.1138				
10	1855.0 ~ 1905.0	9M03W7D	-	0.1099	0.1233				
15	1857.5 ~ 1902.5	13M5W7D	-	0.1114	0.1250				
20	1860.0 ~ 1900.0	18M3W7D	-	0.1114	0.1279				
LTE Band 25		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
1.4	1850.7 ~ 1914.3	1M09G7D	-	0.1489	0.1824	1M09W7D	-	0.1334	0.1637
3	1851.5 ~ 1913.5	2M73G7D	-	0.1535	0.1722	2M74W7D	-	0.1318	0.1479
5	1852.5 ~ 1912.5	4M51G7D	-	0.1560	0.1750	4M51W7D	-	0.1330	0.1493
10	1855.0 ~ 1910.0	9M11G7D	0.0191	0.1592	0.1786	9M05W7D	-	0.1349	0.1514
15	1857.5 ~ 1907.5	13M4G7D	-	0.1585	0.1778	13M5W7D	-	0.1452	0.1629
20	1860.0 ~ 1905.0	18M5G7D	-	0.1626	0.1824	18M4W7D	-	0.1459	0.1637



LTE Band 25		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)					
				Top		Bottom			
1.4	1850.7 ~ 1914.3	1M10W7D	-	0.0973		0.1091			
3	1851.5 ~ 1913.5	2M73W7D	-	0.0995		0.1117			
5	1852.5 ~ 1912.5	4M51W7D	-	0.0984		0.1104			
10	1855.0 ~ 1910.0	9M03W7D	-	0.1052		0.1180			
15	1857.5 ~ 1907.5	13M5W7D	-	0.1084		0.1216			
20	1860.0 ~ 1905.0	18M4W7D	-	0.1094		0.1227			
LTE Band 4		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
1.4	1710.7 ~ 1754.3	1M09G7D	-	0.1611	0.1807	1M09W7D	-	0.1352	0.1517
3	1711.5 ~ 1753.5	2M73G7D	-	0.1629	0.1828	2M73W7D	-	0.1426	0.1600
5	1712.5 ~ 1752.5	4M51G7D	-	0.1683	0.1888	4M49W7D	-	0.1455	0.1633
10	1715.0 ~ 1750.0	9M03G7D	0.0213	0.1663	0.1866	9M03W7D	-	0.1479	0.1660
15	1717.5 ~ 1747.5	13M5G7D	-	0.1679	0.1884	13M5W7D	-	0.1469	0.1648
20	1720.0 ~ 1745.0	18M5G7D	-	0.1726	0.1936	18M3W7D	-	0.1500	0.1683
LTE Band 4		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)					
				Top		Bottom			
1.4	1710.7 ~ 1754.3	1M09W7D	-	0.1086		0.1219			
3	1711.5 ~ 1753.5	2M72W7D	-	0.1114		0.1250			
5	1712.5 ~ 1752.5	4M49W7D	-	0.1107		0.1242			
10	1715.0 ~ 1750.0	8M99W7D	-	0.1112		0.1888			
15	1717.5 ~ 1747.5	13M5W7D	-	0.1117		0.1253			
20	1720.0 ~ 1745.0	18M4W7D	-	0.1114		0.1250			



LTE Band 5		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	
				Top	Bottom			Top	Bottom
1.4	824.7 ~ 848.3	1M09G7D	-	0.0760	0.0760	1M10W7D	-	0.0670	0.0670
3	825.5 ~ 847.5	2M73G7D	-	0.0760	0.0760	2M73W7D	-	0.0662	0.0662
5	826.5 ~ 846.5	4M50G7D	-	0.0769	0.0769	4M51W7D	-	0.0670	0.0670
10	829.0 ~ 844.0	9M05G7D	0.0391	0.0773	0.0773	9M01W7D	-	0.0682	0.0682
LTE Band 5		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)			
						Top		Bottom	
1.4	824.7 ~ 848.3	1M10W7D		-		0.0590		0.0590	
3	825.5 ~ 847.5	2M73W7D		-		0.0586		0.0586	
5	826.5 ~ 846.5	4M50W7D		-		0.0604		0.0604	
10	829.0 ~ 844.0	9M05W7D		-		0.0579		0.0579	
LTE Band 7		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
5	2502.5 ~ 2567.5	4M49G7D	-	0.1986	0.1986	4M51W7D	-	0.1742	0.1742
10	2505.0 ~ 2565.0	9M05G7D	0.0225	0.2046	0.2046	9M03W7D	-	0.1824	0.1824
15	2507.5 ~ 2562.5	13M4G7D	-	0.2065	0.2065	13M5W7D	-	0.1799	0.1799
20	2510.0 ~ 2560.0	18M3G7D	-	0.2075	0.2075	18M5W7D	-	0.1774	0.1774
LTE Band 7		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)			
						Top		Bottom	
5	2502.5 ~ 2567.5	4M50W7D		-		0.1282		0.1282	
10	2505.0 ~ 2565.0	9M03W7D		-		0.1330		0.1330	
15	2507.5 ~ 2562.5	13M5W7D		-		0.1321		0.1321	
20	2510.0 ~ 2560.0	18M5W7D		-		0.1355		0.1355	



LTE Band 7 CA		QPSK				16QAM			
BW (MHz)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
10MHz+20MHz		28M2G7D	-	0.2070	0.2070	28M1W7D	-	0.1722	0.1722
15MHz+15MHz		28M7G7D	-	0.2061	0.2061	28M7W7D	-	0.1762	0.1762
15MHz+20MHz		33M0G7D	-	0.2061	0.2061	32M9W7D	-	0.1762	0.1762
20MHz+10MHz		28M2G7D	-	0.2070	0.2070	28M1W7D	-	0.1770	0.1770
20MHz+15MHz		32M9G7D	-	0.2061	0.2061	32M9W7D	-	0.1770	0.1770
20MHz+20MHz		37M8G7D	0.0300	0.2198	0.2198	37M7W7D	-	0.1928	0.1928
LTE Band 7 CA		64QAM							
BW (MHz)		Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)			
						Top		Bottom	
10MHz+20MHz		27M9W7D		-		0.1112		0.1112	
15MHz+15MHz		28M6W7D		-		0.1109		0.1109	
15MHz+20MHz		32M8W7D		-		0.1104		0.1104	
20MHz+10MHz		27M9W7D		-		0.1109		0.1109	
20MHz+15MHz		32M8W7D		-		0.1109		0.1109	
20MHz+20MHz		37M6W7D		-		0.1581		0.1581	
LTE Band 12		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	
				Top	Bottom			Top	Bottom
1.4	699.7 ~ 715.3	1M09G7D	-	0.0494	0.0494	1M09W7D	-	0.0438	0.0438
3	700.5 ~ 714.5	2M73G7D	-	0.0506	0.0506	2M73W7D	-	0.0441	0.0441
5	701.5 ~ 713.5	4M51G7D	-	0.0507	0.0507	4M50W7D	-	0.0450	0.0450
10	704.0 ~ 711.0	9M05G7D	0.0536	0.0513	0.0513	9M05W7D	-	0.0456	0.0456
LTE Band 12		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)			
						Top		Bottom	
1.4	699.7 ~ 715.3	1M10W7D		-		0.0356		0.0356	
3	700.5 ~ 714.5	2M73W7D		-		0.0361		0.0361	
5	701.5 ~ 713.5	4M49W7D		-		0.0356		0.0356	
10	704.0 ~ 711.0	9M01W7D		-		0.0347		0.0347	



LTE Band 17		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	
				Top	Bottom			Top	Bottom
5	706.5 ~ 713.5	4M50G7D	-	0.0509	0.0509	4M49W7D	-	0.0445	0.0445
10	709.0 ~ 711.0	9M05G7D	0.0444	0.0509	0.0509	9M03W7D	-	0.0433	0.0433
LTE Band 17		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)			
						Top	Bottom		
5	706.5 ~ 713.5	4M49W7D		-		0.0349		0.0349	
10	709.0 ~ 711.0	9M03W7D		-		0.0350		0.0350	
LTE Band 26		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)	
				Top	Bottom			Top	Bottom
1.4	824.7 ~ 848.3	1M09G7D	-	0.0800	0.0080	1M09W7D	-	0.0682	0.0682
3	825.5 ~ 847.5	2M72G7D	-	0.0802	0.0802	2M72W7D	-	0.0711	0.0711
5	826.5 ~ 846.5	4M50G7D	-	0.0796	0.0796	4M49W7D	-	0.0721	0.0721
10	829.0 ~ 844.0	9M09G7D	0.0365	0.0811	0.0811	9M05W7D	-	0.0711	0.0711
15	831.5 ~ 841.5	13M5G7D	-	0.0813	0.0813	13M5W7D	-	0.0714	0.0714
CH26765	821.5	13M5G7D	-	0.0780	0.0780	13M4W7D	-	0.0701	0.0701
LTE Band 26		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum ERP(W)			
						Top	Bottom		
1.4	824.7 ~ 848.3	1M09W7D		-		0.0568		0.0568	
3	825.5 ~ 847.5	2M75W7D		-		0.0560		0.0560	
5	826.5 ~ 846.5	4M50W7D		-		0.0552		0.0552	
10	829.0 ~ 844.0	9M07W7D		-		0.0566		0.0566	
15	831.5 ~ 841.5	13M5W7D		-		0.0564		0.0564	
CH26765	821.5	13M5W7D		-		0.0560		0.0560	



LTE Band 38		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
5	2572.5 ~ 2617.5	4M50G7D	-	0.2000	0.2000	4M51W7D	-	0.1722	0.1722
10	2575.0 ~ 2615.0	9M03G7D	0.0131	0.1995	0.1995	9M01W7D	-	0.1694	0.1694
15	2577.5 ~ 2612.5	13M4G7D	-	0.1991	0.1991	13M4W7D	-	0.1698	0.1698
20	2580.0 ~ 2610.0	18M3G7D	-	0.2004	0.2004	18M3W7D	-	0.1698	0.1698
LTE Band 38		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)			
						Top		Bottom	
5	2572.5 ~ 2617.5	4M50W7D		-		0.1409		0.1409	
10	2575.0 ~ 2615.0	9M07W7D		-		0.1409		0.1409	
15	2577.5 ~ 2612.5	13M5W7D		-		0.1409		0.1409	
20	2580.0 ~ 2610.0	18M5W7D		-		0.1380		0.1380	
LTE Band 41		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
5	2498.5 ~ 2687.5	4M50G7D	-	0.1986	0.1986	4M51W7D	-	0.1641	0.1641
10	2501.0 ~ 2685.0	9M05G7D	0.0222	0.2014	0.2014	9M07W7D	-	0.1786	0.1786
15	2503.5 ~ 2682.5	13M5G7D	-	0.2118	0.2118	13M5W7D	-	0.1766	0.1766
20	2506.0 ~ 2680.0	18M5G7D	-	0.2138	0.2138	18M4W7D	-	0.1618	0.1618
LTE Band 41		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)			
						Top		Bottom	
5	2498.5 ~ 2687.5	4M49W7D		-		0.1300		0.1300	
10	2501.0 ~ 2685.0	9M09W7D		-		0.1297		0.1297	
15	2503.5 ~ 2682.5	13M5W7D		-		0.1288		0.1288	
20	2506.0 ~ 2680.0	18M4W7D		-		0.1324		0.1324	



LTE Band 41 CA		QPSK				16QAM			
BW (MHz)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
5MHz+20MHz		23M4G7D	-	0.2133	0.2133	23M4W7D	-	0.1871	0.1871
10MHz+20MHz		28M1G7D	-	0.2118	0.2118	28M1W7D	-	0.1858	0.1858
15MHz+15MHz		28M7G7D	-	0.2118	0.2118	28M7W7D	-	0.1816	0.1816
15MHz+20MHz		32M9G7D	-	0.2128	0.2128	32M9W7D	-	0.1807	0.1807
20MHz+5MHz		23M4G7D	-	0.2104	0.2104	23M3W7D	-	0.1879	0.1879
20MHz+10MHz		28M1G7D	-	0.2128	0.2128	28M1W7D	-	0.1845	0.1845
20MHz+15MHz		32M9G7D	-	0.2133	0.2133	32M9W7D	-	0.1901	0.1901
20MHz+20MHz		37M6G7D	0.0300	0.2133	0.2133	37M8W7D	-	0.1977	0.1977
LTE Band 41 CA		64QAM							
BW (MHz)		Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)			
						Top		Bottom	
5MHz+20MHz		23M2W7D		-		0.1239		0.1239	
10MHz+20MHz		28M0W7D		-		0.1250		0.1250	
15MHz+15MHz		28M6W7D		-		0.1259		0.1259	
15MHz+20MHz		32M9W7D		-		0.1205		0.1205	
20MHz+5MHz		23M2W7D		-		0.1247		0.1247	
20MHz+10MHz		27M9W7D		-		0.1233		0.1233	
20MHz+15MHz		32M9W7D		-		0.1225		0.1225	
20MHz+20MHz		37M7W7D		-		0.1578		0.1578	
LTE Band 66		QPSK				16QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)		Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom			Top	Bottom
1.4	1710.7 ~ 1779.3	1M09G7D	-	0.1618	0.1816	1M10W7D	-	0.1393	0.1563
3	1711.5 ~ 1778.5	2M72G7D	-	0.1622	0.1820	2M73W7D	-	0.1419	0.1592
5	1712.5 ~ 1777.5	4M50G7D	-	0.1652	0.1854	4M48W7D	-	0.1413	0.1585
10	1715.0 ~ 1775.0	9M09G7D	0.0421	0.1626	0.1824	9M03W7D	-	0.1476	0.1656
15	1717.5 ~ 1772.5	13M5G7D	-	0.1667	0.1871	13M5W7D	-	0.1459	0.1637
20	1720.0 ~ 1770.0	18M5G7D	-	0.1671	0.1875	18M5W7D	-	0.1521	0.1706



LTE Band 66		64QAM			
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	
				Top	Bottom
1.4	1710.7 ~ 1779.3	1M09W7D	-	0.1140	0.1279
3	1711.5 ~ 1778.5	2M73W7D	-	0.1143	0.1282
5	1712.5 ~ 1777.5	4M49W7D	-	0.1143	0.1282
10	1715.0 ~ 1775.0	9M09W7D	-	0.1167	0.1309
15	1717.5 ~ 1772.5	13M5W7D	-	0.1191	0.1337
20	1720.0 ~ 1770.0	18M5W7D	-	0.1159	0.1300

1.7 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0) and the FCC designation No. are CN5018 and CN5019.

Test Site	Sporton International (Shenzhen) Inc.	
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan Shenzhen City Guangdong Province 518055 China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	Sporton Site No.	FCC Test Firm Registration No.
	TH01-SZ	251365

Test Site	SPORTON International (ShenZhen) INC.	
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan District Shenzhen City Guangdong Province 518055 China TEL: +86-755-3320-2398	
Test Site No.	Sporton Site No.	FCC Test Firm Registration No.
	03CH01-SZ 03CH04-SZ	577730

Note: The test site complies with ANSI C63.4 2014 requirement.

1.8 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(M), 27(H)
- ♦ ANSI / TIA / EIA-603-D-2010
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02
- ♦ 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 v02r02 with maximum output power.

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

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	26	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peak-to-Average Ratio	2						✓	✓	✓	✓	✓		✓	✓	✓	✓
	4						✓	✓	✓	✓	✓		✓	✓	✓	✓
	5				✓	-	-	✓	✓	✓	✓		✓	✓	✓	✓
	7	-	-				✓	✓	✓	✓	✓		✓	✓	✓	✓
	38	-	-				✓	✓	✓	✓	✓		✓	✓	✓	✓
	12				✓	-	-	✓	✓	✓	✓		✓	✓	✓	✓
	17	-	-		✓	-	-	✓	✓	✓	✓		✓	✓	✓	✓
	25						✓	✓	✓	✓	✓		✓	✓	✓	✓
	26					✓	-	✓	✓	✓	✓		✓	✓	✓	✓
	41	-	-				✓	✓	✓	✓	✓		✓	✓	✓	✓
	66						✓	✓	✓	✓	✓		✓	✓	✓	✓



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Ha If	Full	L	M	H
26dB and 99% Bandwidth	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
	7	-	-	V	V	V	V	V	V	V			V	V	V	V
	38	-	-	V	V	V	V	V	V	V			V	V	V	V
	12	V	V	V	V	-	-	V	V	V			V	V	V	V
	17	-	-	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
	41	-	-	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
Conducted Band Edge	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
	7	-	-	V	V	V	V	V	V	V	V		V	V		V
	38	-	-	V	V	V	V	V	V	V	V		V	V		V
	12	V	V	V	V	-	-	V	V	V	V		V	V		V
	17	-	-	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
	41	-	-	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



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Fu II	L	M	H
Conducted Spurious Emission	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
	7	-	-	V	V	V	V	V	V	V	V			V	V	V
	38	-	-	V	V	V	V	V	V	V	V			V	V	V
	12	V	V	V	V	-	-	V	V	V	V			V	V	V
	17	-	-	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
	41	-	-	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
Frequency Stability	2				V			V					V		V	
	4				V			V					V		V	
	5				V	-	-	V					V		V	
	7	-	-		V			V					V		V	
	38	-	-		V			V					V		V	
	12				V	-	-	V					V		V	
	17	-	-		V	-	-	V					V		V	
	25				V			V					V		V	
	26				V		-	V					V		V	
	41	-	-		V			V					V		V	
	66				V			V					V		V	

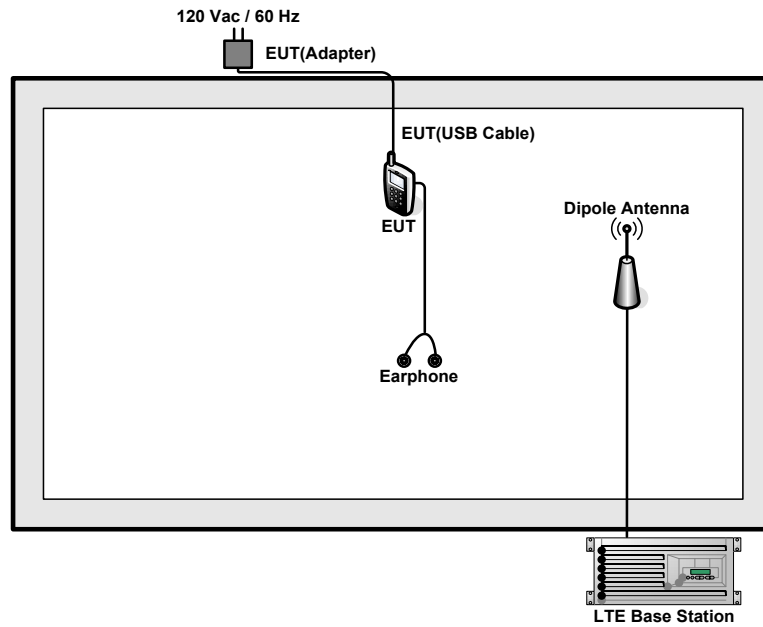


Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.R.P./ E.I.R.P.	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓	✓	✓	✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓	✓	✓	✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓	✓	✓	✓			✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	26	✓	✓	✓	✓	✓	-	✓	✓	✓	✓			✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
	66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
Radiated Spurious Emission	2	✓	✓	✓	✓	✓	✓	✓			✓			✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓			✓			✓	✓	✓
	5	✓	✓	✓	✓	-	-	✓			✓			✓	✓	✓
	7	-	-	✓	✓	✓	✓	✓			✓			✓	✓	✓
	38	-	-	✓	✓	✓	✓	✓			✓			✓	✓	✓
	12	✓	✓	✓	✓	-	-	✓			✓			✓	✓	✓
	17	-	-	✓	✓	-	-	✓			✓			✓	✓	✓
	25	✓	✓	✓	✓	✓	✓	✓			✓			✓	✓	✓
	26	✓	✓	✓	✓	✓	-	✓			✓			✓	✓	✓
	41	-	-	✓	✓	✓	✓	✓			✓			✓	✓	✓
	66	✓	✓	✓	✓	✓	✓	✓			✓			✓	✓	✓
Note	1. The mark “✓” 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.															

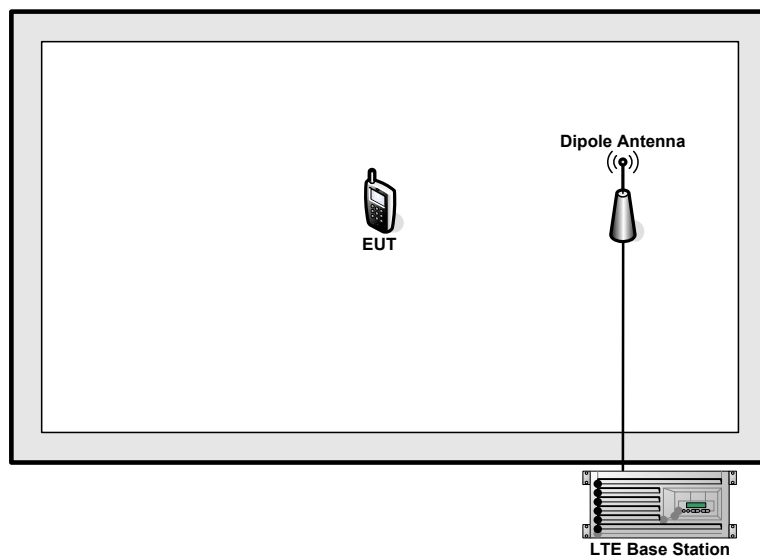
2.2 Connection Diagram of Test System

Top Antenna (LTE Band 2 / 4 / 7 / 12 / 17 / 25 / 26 / 38 / 41 / 66)

Bottom Antenna (all LTE Band)



Top Antenna (LTE Band 5)



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	Apple	MC690ZP/A	N/A	Shielded, 1.0m	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.5 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

$$= 4.5 + 10 = 14.5 \text{ (dB)}$$



2.5 Frequency List of Low/Middle/High Channels

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 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5



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 17 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

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 38 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	37850	38000	38150
	Frequency	2580	2595	2610
15	Channel	37825	38000	38175
	Frequency	2577.5	2595	2612.5
10	Channel	37800	38000	38200
	Frequency	2575	2595	2615
5	Channel	37775	38000	38225
	Frequency	2572.5	2595	2617.5

LTE Band 41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5



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

3 Conducted Test Items

3.1 Measuring Instruments

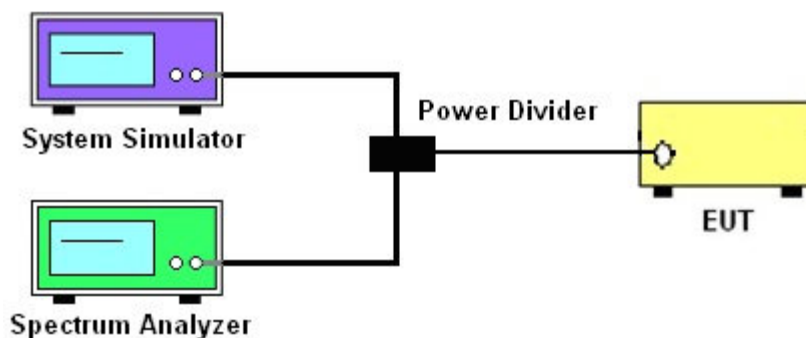
See list of measuring instruments of this test report.

3.2 Test Setup

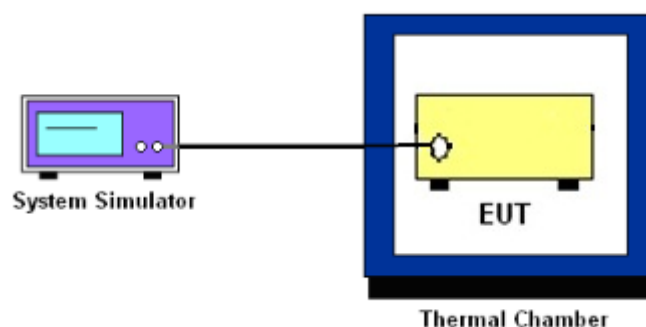
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 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, and Band 17.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25 and Band 7 and Band 38 and Band 41.

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

3.4.2 Test Procedures

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

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.1 and 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g)

For operations in the 698 -746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. 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.

27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Offset has included the duty factor for LTE Band 38/41. Duty factor $= 10 \log (1/x)$, where x is the measured duty cycle
7. Set spectrum analyzer with RMS detector.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from $43 + 10 \log (P)$ dB below the transmitter power P(Watts)

$= P(W) - [43 + 10 \log (P)]$ (dB)

$= [30 + 10 \log (P)]$ (dBm) - $[43 + 10 \log (P)]$ (dB) = -13dBm.

10. For LTE Band 7, 38, 41, the other 40 dB, and 55 dB have additionally applied same calculation above.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7,38,41:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Offset has included the duty factor for LTE Band 38/41. Duty factor = $10 \log (1/x)$, where x is the measured duty cycle
8. Set spectrum analyzer with RMS detector.
9. Taking the record of maximum spurious emission.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. The limit line is derived from $43 + 10 \log (P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10 \log (P)]$ (dB)
= $[30 + 10 \log (P)]$ (dBm) - $[43 + 10 \log (P)]$ (dB)
= -13dBm.
12. For Band 7, 38, 41
The limit line is derived from $55 + 10 \log (P)$ dB below the transmitter power P(Watts)
= $P(W) - [55 + 10 \log (P)]$ (dB)
= $[30 + 10 \log (P)]$ (dBm) - $[55 + 10 \log (P)]$ (dB)
= -25dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

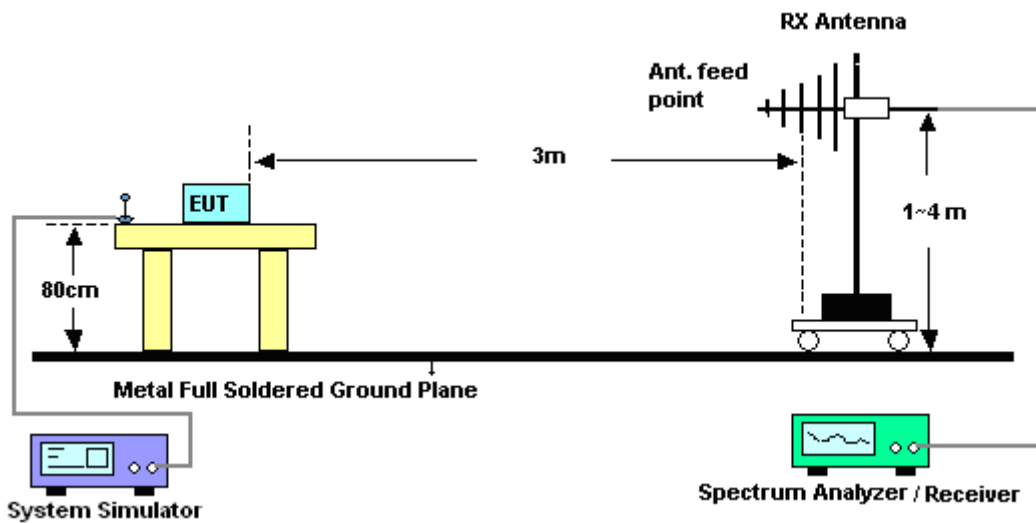
4 Radiated Test Items

4.1 Measuring Instruments

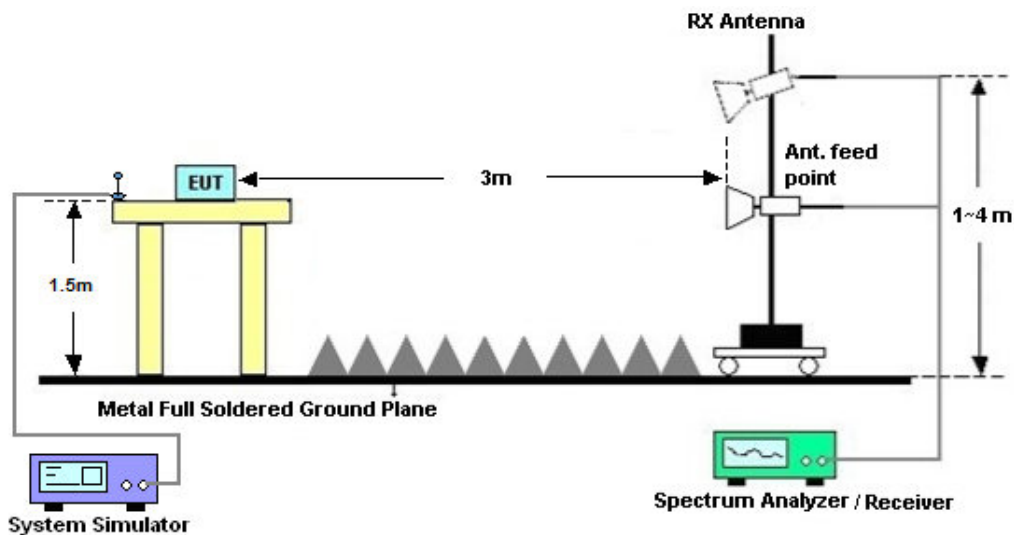
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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 / TIA / EIA-603-D-2010. 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 Band 7, 38, 41

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 $55 + 10 \log (P)$ dB.

For LTE Band 12, 17

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 FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
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. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
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)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



13. For Band 7, 38, 41:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)

$EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$

$ERP \text{ (dBm)} = EIRP - 2.15$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	9kHz~40GHz	Apr. 20, 2017	Jul. 07, 2017~ Oct. 14, 2017	Apr. 19, 2018	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 16, 2016	Jul. 07, 2017	Jul. 15, 2017	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 20, 2017	Sep. 02, 2017~ Oct. 14, 2017	Jul. 19, 2018	Conducted (TH01-SZ)
Radio Communication Analyzer	Anritsu	MT8820C	6201563777	2G/3G/4G (CDMA)	Jan. 03, 2017	Jul. 07, 2017~ Oct. 14, 2017	Jan. 02, 2018	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Apr. 20, 2017	Sep. 19, 2017~ Sep. 25, 2017	Apr. 19, 2018	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270104	0.5GHz~26.5Ghz	Oct. 11, 2016	Sep. 19, 2017~ Sep. 25, 2017	Oct. 10, 2017	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz~2GHz	Apr. 25, 2017	Sep. 19, 2017~ Sep. 25, 2017	Apr. 24, 2018	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Nov. 19, 2016	Sep. 19, 2017~ Sep. 25, 2017	Nov. 18, 2017	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz~40GHz	Jun. 16, 2017	Sep. 19, 2017~ Sep. 25, 2017	Jun. 15, 2018	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 20, 2017	Sep. 19, 2017~ Sep. 25, 2017	Apr. 19, 2018	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30- 10P-R	1707137	1GHz~18GHz	Oct. 11, 2016	Sep. 19, 2017~ Sep. 25, 2017	Oct. 10, 2017	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	61601000198 5	N/A	NCR	Sep. 19, 2017~ Sep. 25, 2017	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 19, 2017~ Sep. 25, 2017	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 19, 2017~ Sep. 25, 2017	NCR	Radiation (03CH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Apr. 20, 2017	Sep. 21, 2017~ Oct. 16, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 20, 2017	Sep. 21, 2017~ Oct. 16, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 16, 2017	Sep. 21, 2017~ Oct. 16, 2017	May 15, 2018	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120 D	9120D-1474	1GHz~18GHz	Jan. 12, 2017	Sep. 21, 2017~ Oct. 16, 2017	Jan. 11, 2018	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	May 17, 2017	Sep. 21, 2017~ Oct. 16, 2017	May 16, 2018	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 11, 2016	Sep. 21, 2017~ Oct. 16, 2017	Oct. 10, 2017	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30- 10P-R	1989346	1GHz~18GHz	Jul. 27, 2017	Sep. 21, 2017~ Oct. 16, 2017	Jul. 26, 2018	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY53270156	500MHz~26.5GHz	Apr. 20, 2017	Sep. 21, 2017~ Oct. 16, 2017	Apr. 19, 2018	Radiation (03CH04-SZ)
AC Power Source	Chroma	61601	N/A	N/A	NCR	Sep. 21, 2017~ Oct. 16, 2017	NCR	Radiation (03CH04-SZ)



Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 21, 2017~ Oct. 16, 2017	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 21, 2017~ Oct. 16, 2017	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz) for 03CH01-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.5 dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz) for 03CH01-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.5 dB
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Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz) for 03CH01-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.0 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz) for 03CH04-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8 dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz) for 03CH04-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz) for 03CH04-SZ

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.9 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.26	23.30	23.36
20	1	49		22.75	22.84	23.10
20	1	99		22.94	22.83	22.90
20	50	0		21.96	21.98	22.20
20	50	24		21.83	21.95	22.18
20	50	50		21.74	21.77	22.01
20	100	0		21.85	21.93	22.09
20	1	0	16-QAM	22.38	22.61	22.38
20	1	49		22.19	21.70	21.97
20	1	99		21.79	22.35	22.09
20	50	0		20.93	20.94	21.25
20	50	24		20.81	20.87	21.08
20	50	50		20.81	20.91	21.07
20	100	0		20.81	20.96	21.14
20	1	0	64QAM	21.10	21.33	21.12
20	1	49		21.47	21.07	21.27
20	1	99		20.57	21.13	21.41
20	50	0		19.95	19.96	20.26
20	50	24		19.78	19.81	20.03
20	50	50		19.72	19.82	19.96
20	100	0		19.85	20.00	20.21
15	1	0	QPSK	22.86	22.93	23.09
15	1	37		22.59	22.71	22.90
15	1	74		22.71	22.66	22.80
15	36	0		21.88	21.90	22.18
15	36	20		21.76	21.88	21.93
15	36	39		21.68	21.90	21.97
15	75	0		21.82	21.87	22.03



15	1	0	16-QAM	22.18	21.88	22.69
15	1	37		21.67	21.95	22.37
15	1	74		21.78	22.01	22.34
15	36	0		20.84	20.95	21.26
15	36	20		20.81	20.93	21.05
15	36	39		20.71	20.84	20.96
15	75	0		20.81	20.92	20.96
15	1	0	64QAM	21.47	21.17	21.06
15	1	37		20.79	21.04	21.44
15	1	74		19.89	19.99	20.29
15	36	0		19.80	19.90	20.20
15	36	20		19.81	19.94	20.04
15	36	39		19.76	19.88	19.98
15	75	0		19.82	19.93	19.96



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.35	22.96	23.21
10	1	25		22.82	22.89	22.97
10	1	49		22.98	23.04	22.82
10	25	0		21.87	21.84	21.99
10	25	12		21.76	21.90	22.02
10	25	25		21.71	21.84	21.84
10	50	0		21.84	21.87	21.93
10	1	0	16-QAM	22.12	22.16	22.33
10	1	25		21.99	21.90	21.80
10	1	49		22.21	22.28	21.87
10	25	0		20.92	20.88	20.95
10	25	12		20.81	20.89	21.03
10	25	25		20.72	20.84	20.98
10	50	0		20.79	20.92	21.06
10	1	0	64QAM	21.19	21.23	21.41
10	1	25		21.08	20.99	21.09
10	1	49		21.09	21.15	20.85
10	25	0		19.92	19.87	19.97
10	25	12		19.81	19.88	20.09
10	25	25		19.88	19.98	20.08
10	50	0		19.77	19.86	20.02
5	1	0	QPSK	22.83	22.98	22.83
5	1	12		22.81	22.77	22.88
5	1	24		22.76	22.72	22.77
5	12	0		21.84	21.83	21.89
5	12	7		21.84	21.80	21.95
5	12	13		21.77	21.87	21.91
5	25	0		21.77	21.76	21.84
5	1	0	16-QAM	21.99	22.38	22.28
5	1	12		21.74	22.30	22.36
5	1	24		21.99	22.33	21.93
5	12	0		20.87	20.85	20.98
5	12	7		20.83	20.79	20.90



5	12	13		20.89	20.88	20.79
5	25	0		20.81	20.89	20.91
5	1	0	64QAM	20.67	21.06	20.94
5	1	12		20.37	20.93	20.97
5	1	24		20.68	21.00	20.57
5	12	0		19.89	19.86	19.98
5	12	7		19.92	19.87	19.96
5	12	13		19.88	19.85	19.79
5	25	0		19.77	19.85	19.87



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.82	22.70	22.78
3	1	8		22.66	22.66	22.90
3	1	14		22.65	22.74	22.73
3	8	0		21.73	21.80	21.85
3	8	4		21.81	21.80	21.83
3	8	7		21.80	21.81	21.81
3	15	0	16-QAM	21.82	21.77	21.85
3	1	0		21.72	21.89	21.86
3	1	8		22.21	22.08	22.28
3	1	14		21.77	21.78	22.03
3	8	0		20.86	20.94	21.04
3	8	4		20.91	20.89	20.94
3	8	7	64QAM	20.84	20.87	20.77
3	15	0		20.80	20.89	20.97
3	1	0		20.76	20.96	20.93
3	1	8		21.09	20.98	21.16
3	1	14		20.92	20.95	21.20
3	8	0		19.67	19.77	19.86
3	8	4	QPSK	19.88	19.84	19.91
3	8	7		19.77	19.80	19.72
3	15	0		19.74	19.85	19.95
1.4	1	0		22.68	22.71	22.61
1.4	1	3		22.72	22.78	22.76
1.4	1	5		22.58	22.70	22.70
1.4	3	0	16-QAM	22.66	22.78	22.75
1.4	3	1		22.71	22.74	22.83
1.4	3	3		22.64	22.82	22.79
1.4	6	0		21.71	21.82	21.74
1.4	1	0		21.69	21.81	21.88
1.4	1	3		21.90	22.36	22.11
1.4	1	5	16-QAM	21.63	21.68	22.22
1.4	3	0		21.62	21.65	21.86
1.4	3	1		21.85	21.79	21.91



1.4	3	3		21.69	21.76	21.81
1.4	6	0		20.77	20.82	20.85
1.4	1	0	64QAM	20.75	20.88	20.98
1.4	1	3		20.46	20.90	20.64
1.4	1	5		20.78	20.85	21.38
1.4	3	0		20.72	20.76	20.95
1.4	3	1		20.89	20.81	20.91
1.4	3	3		20.65	20.74	20.76
1.4	6	0		19.69	19.77	19.82



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.10	23.37	23.28
20	1	49		23.07	23.08	23.02
20	1	99		22.98	23.06	23.04
20	50	0		22.11	22.32	22.31
20	50	24		22.10	22.18	22.14
20	50	50		22.06	22.12	22.11
20	100	0		22.15	22.19	22.17
20	1	0	16-QAM	22.35	22.76	22.47
20	1	49		22.22	22.30	22.11
20	1	99		22.11	21.98	22.52
20	50	0		21.30	21.23	21.35
20	50	24		21.16	21.26	21.16
20	50	50		21.04	21.14	21.06
20	100	0		21.15	21.12	21.20
20	1	0	64QAM	21.03	21.47	21.19
20	1	49		21.30	21.44	21.25
20	1	99		21.39	21.27	21.39
20	50	0		20.43	20.37	20.48
20	50	24		20.22	20.33	20.22
20	50	50		20.14	20.25	20.16
20	100	0		20.29	20.27	20.34
15	1	0	QPSK	23.14	23.25	23.25
15	1	37		23.01	22.99	23.01
15	1	74		22.98	23.11	23.02
15	36	0		22.08	22.23	22.16
15	36	20		22.03	22.22	22.09
15	36	39		22.04	22.15	22.12
15	75	0		22.06	22.10	22.14
15	1	0	16-QAM	22.33	22.67	22.54
15	1	37		22.51	22.39	22.21
15	1	74		22.48	22.63	22.43
15	36	0		21.19	21.29	21.17



15	36	20		21.12	21.17	21.11
15	36	39		21.11	21.11	21.06
15	75	0		21.10	21.25	21.13
15	1	0	64QAM	21.15	21.48	21.35
15	1	37		21.46	21.32	21.13
15	1	74		21.32	21.46	21.25
15	36	0		20.25	20.33	20.20
15	36	20		20.24	20.29	20.23
15	36	39		20.23	20.24	20.19
15	75	0		20.07	20.22	20.11



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.96	23.21	23.10
10	1	25		23.20	23.08	23.02
10	1	49		22.98	23.07	23.02
10	25	0		22.03	22.16	22.16
10	25	12		22.09	22.19	22.10
10	25	25		21.97	22.17	22.08
10	50	0		22.11	22.16	22.11
10	1	0	16-QAM	22.23	22.70	22.52
10	1	25		22.11	22.63	22.39
10	1	49		22.17	22.57	22.16
10	25	0		21.12	21.13	21.14
10	25	12		21.08	21.27	21.06
10	25	25		21.06	21.23	21.08
10	50	0		21.15	21.24	21.12
10	1	0	64QAM	20.99	21.46	21.27
10	1	25		20.83	21.36	21.13
10	1	49		20.94	21.33	20.91
10	25	0		20.24	20.26	20.26
10	25	12		20.05	20.23	20.02
10	25	25		20.06	20.22	20.08
10	50	0		20.12	20.21	20.09
5	1	0	QPSK	23.26	23.11	23.07
5	1	12		22.87	23.09	22.92
5	1	24		22.94	23.13	22.90
5	12	0		22.10	22.16	22.06
5	12	7		22.04	22.11	22.10
5	12	13		22.01	22.13	22.05
5	25	0		22.08	22.17	22.05
5	1	0	16-QAM	22.35	22.03	22.28
5	1	12		22.05	22.63	22.00
5	1	24		22.18	22.56	22.56
5	12	0		21.16	21.10	21.03
5	12	7		21.08	21.06	20.99



5	12	13		20.97	21.14	21.04
5	25	0		21.07	21.12	21.04
5	1	0	64QAM	21.35	21.44	21.38
5	1	12		20.77	21.36	20.74
5	1	24		20.95	21.34	21.33
5	12	0		20.33	20.27	20.20
5	12	7		20.26	20.24	20.17
5	12	13		20.05	20.23	20.13
5	25	0		20.16	20.21	20.15



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.99	22.99	23.02
3	1	8		22.96	23.12	22.97
3	1	14		22.99	23.11	22.93
3	8	0		22.02	22.07	22.04
3	8	4		22.04	22.10	22.00
3	8	7		21.97	22.12	22.07
3	15	0		21.97	22.05	21.99
3	1	0	16-QAM	22.16	22.45	22.25
3	1	8		22.15	22.26	22.33
3	1	14		22.32	22.54	22.03
3	8	0		21.03	21.06	21.18
3	8	4		21.07	21.12	21.07
3	8	7		21.13	21.20	20.95
3	15	0		21.07	21.13	21.13
3	1	0	64QAM	21.09	21.39	21.19
3	1	8		21.30	21.38	21.47
3	1	14		21.12	21.34	20.84
3	8	0		20.14	20.17	20.30
3	8	4		20.10	20.15	20.11
3	8	7		20.14	20.19	19.96
3	15	0		20.15	20.20	20.21
1.4	1	0	QPSK	22.86	22.99	22.85
1.4	1	3		22.94	23.07	23.02
1.4	1	5		22.96	23.00	22.89
1.4	3	0		23.03	23.06	22.93
1.4	3	1		23.05	23.02	23.05
1.4	3	3		22.96	22.99	22.95
1.4	6	0		21.96	21.97	21.93
1.4	1	0	16-QAM	22.17	22.26	22.27
1.4	1	3		22.18	22.25	22.16
1.4	1	5		22.14	22.31	22.01
1.4	3	0		22.00	22.13	21.98
1.4	3	1		21.92	22.06	22.05



1.4	3	3		22.02	22.13	22.00
1.4	6	0		20.97	21.03	21.10
1.4	1	0	64QAM	21.26	21.34	21.36
1.4	1	3		21.24	21.33	21.25
1.4	1	5		21.09	21.26	20.96
1.4	3	0		21.05	21.19	21.05
1.4	3	1		21.03	21.17	21.17
1.4	3	3		21.01	21.12	20.99
1.4	6	0		20.22	20.15	20.24



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.96	22.78	22.86
10	1	25		22.92	22.85	23.01
10	1	49		23.02	22.93	23.03
10	25	0		21.95	22.05	22.06
10	25	12		21.93	22.01	22.01
10	25	25		21.86	21.91	21.91
10	50	0		21.91	21.90	21.97
10	1	0	16-QAM	22.01	22.02	22.31
10	1	25		21.89	22.49	22.35
10	1	49		22.17	22.43	22.22
10	25	0		20.91	21.04	21.03
10	25	12		20.93	21.03	21.06
10	25	25		20.79	20.89	20.83
10	50	0		20.85	20.97	20.98
10	1	0	64QAM	21.48	21.50	21.78
10	1	25		20.87	21.48	21.33
10	1	49		21.20	21.46	21.25
10	25	0		20.38	20.49	20.49
10	25	12		20.35	20.45	20.50
10	25	25		20.34	20.44	20.39
10	50	0		20.33	20.46	20.49
5	1	0	QPSK	23.01	22.98	22.87
5	1	12		22.98	22.93	22.83
5	1	24		22.86	22.86	22.83
5	12	0		22.03	22.00	21.92
5	12	7		21.96	21.97	21.89
5	12	13		21.95	21.91	21.93
5	25	0		21.95	21.89	21.93
5	1	0	16-QAM	22.41	21.94	22.20
5	1	12		22.38	22.41	22.07
5	1	24		22.23	22.06	22.35
5	12	0		21.07	20.94	20.98
5	12	7		21.00	20.86	20.92



5	12	13		20.96	20.99	20.96
5	25	0		20.94	20.99	21.05
5	1	0	64QAM	21.96	21.50	21.75
5	1	12		21.47	21.49	21.14
5	1	24		21.64	21.46	21.75
5	12	0		20.64	20.50	20.53
5	12	7		20.62	20.48	20.55
5	12	13		20.44	20.47	20.44
5	25	0		20.43	20.47	20.54



LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.89	22.96	22.93
3	1	8		22.86	22.82	22.90
3	1	14		22.80	22.80	22.83
3	8	0		21.97	21.92	21.91
3	8	4		21.94	21.89	21.89
3	8	7		21.89	21.95	21.83
3	15	0		21.95	21.87	21.92
3	1	0	16-QAM	22.05	21.87	22.11
3	1	8		22.08	22.02	22.36
3	1	14		22.36	22.03	21.93
3	8	0		20.84	21.01	21.05
3	8	4		21.03	20.91	21.05
3	8	7		21.09	20.99	20.85
3	15	0		20.91	20.88	20.94
3	1	0	64QAM	21.68	21.49	21.74
3	1	8		21.53	21.48	21.83
3	1	14		21.82	21.48	21.38
3	8	0		20.35	20.50	20.54
3	8	4		20.62	20.49	20.64
3	8	7		20.52	20.44	20.31
3	15	0		20.46	20.45	20.52
1.4	1	0	QPSK	22.78	22.86	22.76
1.4	1	3		22.90	22.96	22.91
1.4	1	5		22.76	22.76	22.76
1.4	3	0		22.82	22.91	22.89
1.4	3	1		22.89	22.93	22.91
1.4	3	3		22.76	22.84	22.76
1.4	6	0		21.86	21.90	21.88
1.4	1	0	16-QAM	22.26	21.87	21.97
1.4	1	3		21.95	22.41	22.31
1.4	1	5		22.33	22.23	21.70
1.4	3	0		21.89	21.95	21.83
1.4	3	1		21.91	22.02	21.95



1.4	3	3		21.94	21.87	21.78
1.4	6	0		20.91	20.86	20.92
1.4	1	0	64QAM	21.86	21.48	21.57
1.4	1	3		21.04	21.48	21.39
1.4	1	5		21.58	21.47	20.95
1.4	3	0		21.41	21.46	21.35
1.4	3	1		21.35	21.45	21.39
1.4	3	3		21.52	21.44	21.36
1.4	6	0		20.55	20.49	20.56



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.92	23.13	23.17
20	1	49		22.69	22.89	23.00
20	1	99		22.73	22.85	22.96
20	50	0		21.89	22.09	22.19
20	50	24		21.75	21.94	22.01
20	50	50		21.87	22.01	21.99
20	100	0		21.78	22.00	22.03
20	1	0	16-QAM	22.14	22.19	22.12
20	1	49		22.21	22.32	22.27
20	1	99		22.11	22.49	21.96
20	50	0		20.76	21.01	21.14
20	50	24		20.79	21.11	21.16
20	50	50		20.92	20.99	20.99
20	100	0		20.71	20.98	20.95
20	1	0	64QAM	21.26	21.32	21.24
20	1	49		20.84	20.97	20.93
20	1	99		20.47	20.86	20.34
20	50	0		19.74	20.00	20.14
20	50	24		19.57	19.89	19.95
20	50	50		19.82	19.88	19.89
20	100	0		19.59	19.87	19.85
15	1	0	QPSK	22.76	23.10	23.15
15	1	37		22.65	22.93	22.81
15	1	74		22.74	22.91	22.82
15	36	0		21.81	22.05	22.07
15	36	20		21.80	22.10	21.99
15	36	39		21.88	21.93	21.91
15	75	0		21.77	21.97	21.94
15	1	0	16-QAM	22.32	22.44	22.44
15	1	37		21.89	22.55	21.85
15	1	74		21.91	22.37	21.82
15	36	0		20.77	21.08	21.04



15	36	20		20.83	21.01	21.02
15	36	39		20.85	20.97	20.95
15	75	0		20.77	21.00	21.00
15	1	0	64QAM	21.09	21.21	21.20
15	1	37		20.41	21.05	20.34
15	1	74		20.43	20.88	20.35
15	36	0		19.58	19.90	19.86
15	36	20		19.69	19.86	19.87
15	36	39		19.61	19.74	19.73
15	75	0		19.55	19.79	19.80



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.85	23.11	23.02
10	1	25		22.81	23.01	22.93
10	1	49		22.47	22.95	22.88
10	25	0		21.74	21.98	22.03
10	25	12		21.72	21.96	22.01
10	25	25		21.63	21.96	21.97
10	50	0		21.73	22.03	21.91
10	1	0	16-QAM	21.89	22.50	22.61
10	1	25		21.89	22.40	22.44
10	1	49		21.82	22.37	22.32
10	25	0		20.75	20.99	20.96
10	25	12		20.66	21.13	20.98
10	25	25		20.63	20.95	20.91
10	50	0		20.76	20.98	20.90
10	1	0	64QAM	20.50	21.12	21.24
10	1	25		20.48	20.98	21.03
10	1	49		20.32	20.85	20.81
10	25	0		19.62	19.85	19.83
10	25	12		19.38	19.84	19.70
10	25	25		19.48	19.79	19.76
10	50	0		19.56	19.77	19.69
5	1	0	QPSK	22.70	22.92	22.86
5	1	12		22.74	22.98	22.98
5	1	24		22.69	22.92	22.88
5	12	0		21.72	21.98	21.88
5	12	7		21.68	21.98	21.91
5	12	13		21.69	21.99	22.00
5	25	0		21.69	21.99	21.94
5	1	0	16-QAM	22.24	22.15	22.08
5	1	12		22.14	22.41	21.77
5	1	24		21.87	22.25	22.37
5	12	0		20.77	20.97	21.00
5	12	7		20.69	21.01	20.95



5	12	13		20.78	20.90	20.96
5	25	0		20.61	20.93	20.91
5	1	0	64QAM	21.08	21.00	20.93
5	1	12		20.70	20.96	20.33
5	1	24		20.49	20.86	20.99
5	12	0		19.64	19.85	19.89
5	12	7		19.52	19.83	19.76
5	12	13		19.66	19.77	19.84
5	25	0		19.43	19.74	19.73



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.18	23.25	23.16
10	1	25		23.07	23.16	23.15
10	1	49		23.04	23.11	22.99
10	25	0		22.16	22.13	22.09
10	25	12		22.11	22.12	22.21
10	25	25		22.17	22.25	22.23
10	50	0		22.18	22.19	22.16
10	1	0	16-QAM	22.61	22.62	22.55
10	1	25		22.33	22.22	22.73
10	1	49		22.32	22.74	22.50
10	25	0		21.20	21.13	21.12
10	25	12		21.13	21.27	21.19
10	25	25		21.05	21.26	21.15
10	50	0		21.15	21.20	21.22
10	1	0	64QAM	21.36	21.38	21.32
10	1	25		21.15	21.03	21.55
10	1	49		20.48	20.89	20.66
10	25	0		19.95	19.88	19.88
10	25	12		19.71	19.85	19.78
10	25	25		19.60	19.80	19.71
10	50	0		19.77	19.81	19.84
5	1	0	QPSK	23.18	23.07	23.04
5	1	12		23.13	22.96	23.17
5	1	24		23.20	23.19	23.14
5	12	0		22.22	22.16	22.10
5	12	7		22.17	22.15	22.18
5	12	13		22.19	22.07	22.16
5	25	0		22.23	22.05	22.10
5	1	0	16-QAM	22.18	22.52	22.68
5	1	12		22.33	22.21	22.27
5	1	24		22.61	22.49	22.34
5	12	0		21.18	21.15	21.15



5	12	7		21.17	21.23	21.24
5	12	13		21.22	21.12	21.13
5	25	0		21.19	21.11	21.10
5	1	0	64QAM	21.17	21.50	21.67
5	1	12		21.62	21.48	21.55
5	1	24		21.61	21.49	21.34
5	12	0		20.53	20.49	20.50
5	12	7		20.41	20.48	20.48
5	12	13		20.55	20.46	20.47
5	25	0		20.51	20.44	20.44



LTE Band 12 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	23.10	23.06	23.08
3	1	8		23.19	22.99	23.04
3	1	14		23.12	23.04	23.01
3	8	0		22.12	22.05	22.09
3	8	4		22.09	22.11	22.07
3	8	7		22.19	22.06	22.18
3	15	0		22.10	22.03	22.14
3	1	0	16-QAM	22.31	22.21	21.93
3	1	8		22.25	22.02	22.52
3	1	14		22.40	22.59	22.12
3	8	0		21.33	21.18	21.15
3	8	4		21.35	21.19	21.21
3	8	7		21.23	21.22	21.13
3	15	0		21.06	21.11	21.21
3	1	0	64QAM	21.61	21.50	21.23
3	1	8		21.73	21.49	21.73
3	1	14		21.29	21.47	21.29
3	8	0		20.66	20.50	20.66
3	8	4		20.64	20.47	20.64
3	8	7		20.49	20.48	20.49
3	15	0		20.41	20.45	20.40
1.4	1	0	QPSK	22.95	23.00	22.98
1.4	1	3		23.09	23.05	22.99
1.4	1	5		23.03	22.97	22.94
1.4	3	0		23.05	22.93	22.92
1.4	3	1		23.08	23.04	23.03
1.4	3	3		23.03	22.94	22.95
1.4	6	0		22.08	21.93	21.96
1.4	1	0	16-QAM	22.44	22.41	22.15
1.4	1	3		22.15	22.05	22.14
1.4	1	5		22.56	22.45	22.16
1.4	3	0		22.16	22.10	22.06
1.4	3	1		22.02	22.09	22.05



1.4	3	3		22.17	21.96	22.08
1.4	6	0		21.18	21.13	21.09
1.4	1	0	64QAM	21.53	21.48	21.23
1.4	1	3		21.58	21.47	21.58
1.4	1	5		21.56	21.45	21.56
1.4	3	0		21.54	21.48	21.53
1.4	3	1		21.43	21.49	21.42
1.4	3	3		21.66	21.44	21.66
1.4	6	0		20.53	20.47	20.52



LTE Band 17 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.22	23.15	23.16
10	1	25		23.05	23.14	23.14
10	1	49		23.19	23.00	22.99
10	25	0		22.23	22.16	22.13
10	25	12		22.16	22.15	22.11
10	25	25		22.21	22.13	22.12
10	50	0		22.23	22.20	22.22
10	1	0	16-QAM	22.41	22.41	22.30
10	1	25		22.17	22.48	22.26
10	1	49		22.28	22.39	22.51
10	25	0		21.23	21.19	21.18
10	25	12		21.25	21.25	21.18
10	25	25		21.18	21.16	21.17
10	50	0		21.21	21.21	21.16
10	1	0	64QAM	21.50	21.49	21.38
10	1	25		21.15	21.47	21.26
10	1	49		21.38	21.48	21.59
10	25	0		20.55	20.50	20.49
10	25	12		20.49	20.49	20.41
10	25	25		20.51	20.48	20.48
10	50	0		20.49	20.49	20.44
5	1	0	QPSK	23.04	23.10	23.04
5	1	12		23.22	23.16	23.04
5	1	24		23.17	23.12	23.21
5	12	0		22.24	22.20	22.11
5	12	7		22.20	22.21	22.09
5	12	13		22.16	22.16	22.10
5	25	0		22.20	22.10	22.12
5	1	0	16-QAM	22.57	22.63	22.58
5	1	12		22.34	22.47	22.56
5	1	24		22.10	22.33	22.43
5	12	0		21.30	21.22	21.19
5	12	7		21.27	21.19	21.13



5	12	13		21.14	21.22	21.10
5	25	0		21.24	21.24	21.13
5	1	0	64QAM	21.43	21.48	21.43
5	1	12		21.36	21.48	21.58
5	1	24		21.25	21.47	21.57
5	12	0		20.58	20.49	20.47
5	12	7		20.56	20.47	20.43
5	12	13		20.40	20.48	20.37
5	25	0		20.46	20.45	20.34



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.04	23.08	23.11
20	1	49		22.79	22.71	22.83
20	1	99		22.69	22.78	22.67
20	50	0		21.73	21.76	22.07
20	50	24		21.60	21.73	21.91
20	50	50		21.62	21.72	21.81
20	100	0		21.65	21.74	21.92
20	1	0	16-QAM	22.49	22.01	22.64
20	1	49		21.67	21.88	22.12
20	1	99		21.97	21.86	21.88
20	50	0		20.68	20.74	21.09
20	50	24		20.64	20.71	20.91
20	50	50		20.57	20.73	20.79
20	100	0		20.58	20.71	20.85
20	1	0	64QAM	21.34	21.35	21.39
20	1	49		20.69	20.89	21.13
20	1	99		21.26	21.14	21.17
20	50	0		19.79	19.84	20.21
20	50	24		19.81	19.86	20.05
20	50	50		19.66	19.81	19.88
20	100	0		19.67	19.79	19.94
15	1	0	QPSK	22.90	22.83	23.00
15	1	37		22.64	22.67	22.71
15	1	74		22.62	22.67	22.60
15	36	0		21.85	21.75	21.90
15	36	20		21.68	21.80	21.82
15	36	39		21.68	21.68	21.78
15	75	0		21.79	21.79	21.83
15	1	0	16-QAM	22.09	22.02	22.62
15	1	37		21.57	22.03	22.19
15	1	74		21.73	21.77	22.15



15	36	0		20.75	20.85	20.95
15	36	20		20.78	20.74	20.83
15	36	39		20.66	20.73	20.76
15	75	0		20.75	20.79	20.92
15	1	0	64QAM	21.18	21.12	21.33
15	1	37		20.54	20.99	21.16
15	1	74		20.93	20.96	21.35
15	36	0		19.70	19.79	19.89
15	36	20		19.82	19.77	19.85
15	36	39		19.69	19.75	19.79
15	75	0		19.74	19.77	19.91



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.02	22.94	22.94
10	1	25		22.63	22.77	22.78
10	1	49		22.80	22.95	22.88
10	25	0		21.80	21.68	21.66
10	25	12		21.67	21.76	21.75
10	25	25		21.64	21.70	21.68
10	50	0		21.76	21.74	21.70
10	1	0	16-QAM	22.18	22.12	22.10
10	1	25		21.83	21.75	21.73
10	1	49		22.14	22.30	22.25
10	25	0		20.80	20.75	20.71
10	25	12		20.68	20.70	20.68
10	25	25		20.71	20.65	20.66
10	50	0		20.67	20.78	20.80
10	1	0	64QAM	21.18	21.11	21.18
10	1	25		20.99	20.90	20.95
10	1	49		21.02	21.17	21.22
10	25	0		19.83	19.76	19.75
10	25	12		19.99	19.77	19.80
10	25	25		20.00	19.74	19.76
10	50	0		19.82	19.75	19.73
5	1	0	QPSK	22.71	22.68	22.78
5	1	12		22.67	22.70	22.74
5	1	24		22.65	22.93	22.62
5	12	0		21.68	21.72	21.75
5	12	7		21.71	21.78	21.74
5	12	13		21.68	21.66	21.68
5	25	0		21.71	21.68	21.70
5	1	0	16-QAM	22.05	21.90	22.24
5	1	12		21.85	21.94	22.06
5	1	24		21.79	22.23	21.81
5	12	0		20.73	20.75	20.77
5	12	7		20.81	20.67	20.71



5	12	13		20.65	20.75	20.73
5	25	0		20.81	20.71	20.68
5	1	0	64QAM	20.92	20.93	20.88
5	1	12		20.88	20.90	20.81
5	1	24		20.85	20.89	20.78
5	12	0		19.71	19.73	19.80
5	12	7		19.73	19.76	19.73
5	12	13		19.65	19.72	19.68
5	25	0		19.61	19.68	19.65



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.57	22.60	22.58
3	1	8		22.76	22.72	22.65
3	1	14		22.86	22.63	22.59
3	8	0		21.72	21.71	21.68
3	8	4		21.70	21.76	21.64
3	8	7		21.72	21.66	21.66
3	15	0		21.65	21.64	21.71
3	1	0	16-QAM	22.03	22.20	21.79
3	1	8		21.84	21.75	21.94
3	1	14		21.59	21.75	22.18
3	8	0		20.71	20.78	20.67
3	8	4		20.85	20.66	20.77
3	8	7		20.67	20.72	20.76
3	15	0		20.78	20.72	20.79
3	1	0	64QAM	20.91	20.98	20.96
3	1	8		20.78	20.83	20.93
3	1	14		20.88	20.90	20.92
3	8	0		19.59	19.66	19.75
3	8	4		19.71	19.70	19.73
3	8	7		19.70	19.73	19.80
3	15	0		19.69	19.71	19.77
1.4	1	0	QPSK	22.63	22.54	22.57
1.4	1	3		22.61	22.66	22.58
1.4	1	5		22.64	22.54	22.53
1.4	3	0		22.63	22.73	22.52
1.4	3	1		22.61	22.7	22.64
1.4	3	3		22.58	22.59	22.58
1.4	6	0		21.66	21.54	21.58
1.4	1	0	16-QAM	21.59	21.6	21.79
1.4	1	3		22.23	22.25	22.07
1.4	1	5		22.02	21.95	21.48
1.4	3	0		21.45	21.75	21.54
1.4	3	1		21.66	21.75	21.68



1.4	3	3		21.72	21.58	21.59
1.4	6	0		20.69	20.64	20.70
1.4	1	0	64QAM	20.75	20.81	20.88
1.4	1	3		20.71	20.88	20.85
1.4	1	5		20.88	20.85	20.83
1.4	3	0		20.63	20.64	20.57
1.4	3	1		20.63	20.71	20.68
1.4	3	3		20.55	20.65	20.59
1.4	6	0		19.55	19.62	19.72



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.13	23.10	23.25
15	1	37		23.09	23.06	23.17
15	1	74		23.04	23.01	23.09
15	36	0		22.23	22.20	22.31
15	36	20		22.21	22.18	22.3
15	36	39		22.06	22.03	22.23
15	75	0		22.06	22.03	22.32
15	1	0	16-QAM	22.31	22.28	22.67
15	1	37		22.69	22.66	22.36
15	1	74		22.35	22.32	22.04
15	36	0		21.11	21.08	21.25
15	36	20		21.24	21.21	21.35
15	36	39		21.08	21.05	21.26
15	75	0		21.11	21.08	21.32
15	1	0	64QAM	21.50	21.47	21.66
15	1	37		21.47	21.44	21.53
15	1	74		21.48	21.45	21.43
15	36	0		20.49	20.46	20.55
15	36	20		20.48	20.45	20.59
15	36	39		20.47	20.44	20.52
15	75	0		20.46	20.43	20.62



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.11	23.00	23.16
10	1	25		23.06	23.08	23.24
10	1	49		22.94	23.08	23.06
10	25	0		22.09	22.02	22.28
10	25	12		22.06	22.17	22.31
10	25	25		22.01	22.02	22.27
10	50	0		22.04	22.09	22.23
10	1	0	16-QAM	22.66	22.29	22.36
10	1	25		22.17	22.24	22.39
10	1	49		22.02	22.42	22.67
10	25	0		21.07	20.99	21.25
10	25	12		21.01	21.08	21.34
10	25	25		20.91	21.15	21.29
10	50	0		21.00	21.14	21.37
10	1	0	64QAM	21.53	21.46	21.68
10	1	25		21.40	21.45	21.59
10	1	49		21.30	21.44	21.58
10	25	0		20.78	20.45	20.60
10	25	12		20.35	20.46	20.56
10	25	25		20.38	20.44	20.48
10	50	0		20.36	20.44	20.56
5	1	0	QPSK	22.93	23.00	23.16
5	1	12		22.95	23.15	23.13
5	1	24		22.94	22.97	23.07
5	12	0		22.00	22.06	22.22
5	12	7		21.98	22.13	22.17
5	12	13		21.90	22.11	22.18
5	25	0		22.00	22.11	22.23
5	1	0	16-QAM	22.11	22.21	22.15
5	1	12		22.28	22.55	22.73
5	1	24		22.02	22.56	22.27
5	12	0		21.04	21.01	21.21
5	12	7		21.05	21.07	21.32



5	12	13		20.99	21.00	21.14
5	25	0		21.09	21.16	21.16
5	1	0	64QAM	21.44	21.47	21.41
5	1	12		21.28	21.46	21.53
5	1	24		21.40	21.44	21.57
5	12	0		20.76	20.47	20.46
5	12	7		20.35	20.45	20.57
5	12	13		20.36	20.45	20.44
5	25	0		20.53	20.44	20.42



LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.85	22.94	23.19
3	1	8		23.06	23.08	23.1
3	1	14		22.87	23.04	23.03
3	8	0		21.95	22.05	22.24
3	8	4		22.00	22.09	22.24
3	8	7		21.93	22.02	22.17
3	15	0	16-QAM	21.96	22.06	22.25
3	1	0		22.33	22.21	22.3
3	1	8		22.11	22.23	22.67
3	1	14		22.04	22.35	22.43
3	8	0		20.99	21.12	21.24
3	8	4		21.12	21.18	21.25
3	8	7	64QAM	20.96	21.17	21.25
3	15	0		20.97	21.03	21.11
3	1	0		21.50	21.46	21.35
3	1	8		21.34	21.44	21.63
3	1	14		21.30	21.43	21.57
3	8	0		20.42	20.47	20.48
3	8	4	QPSK	20.33	20.46	20.53
3	8	7		20.30	20.45	20.63
3	15	0		20.26	20.44	20.46
1.4	1	0		23.01	22.86	23.01
1.4	1	3		22.97	23.03	23.18
1.4	1	5		22.93	22.96	22.98
1.4	3	0	16-QAM	22.98	22.92	22.98
1.4	3	1		23.07	22.97	23.11
1.4	3	3		22.97	22.98	23.12
1.4	6	0		21.95	21.95	22.06
1.4	1	0		22.29	22.18	22.46
1.4	1	3		21.98	21.94	22.27
1.4	1	5	16-QAM	22.42	22.46	22.49
1.4	3	0		22.05	21.97	22.19
1.4	3	1		22.09	22.12	22.16



1.4	3	3		21.94	21.89	22.12
1.4	6	0		20.97	21.06	21.29
1.4	1	0	64QAM	21.63	21.44	21.37
1.4	1	3		21.48	21.46	21.49
1.4	1	5		21.41	21.45	21.69
1.4	3	0		21.36	21.44	21.41
1.4	3	1		21.41	21.42	21.43
1.4	3	3		21.50	21.41	21.45
1.4	6	0		20.36	20.44	20.55



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.92	22.75	23.02
20	1	49		22.87	22.58	22.93
20	1	99		22.89	22.70	23.00
20	50	0		22.08	21.86	22.02
20	50	24		22.06	21.72	22.00
20	50	50		21.88	21.75	21.89
20	100	0		21.98	21.71	22.00
20	1	0	16-QAM	22.30	22.28	22.09
20	1	49		22.17	22.03	22.09
20	1	99		22.30	22.03	22.04
20	50	0		21.07	20.94	20.92
20	50	24		21.14	20.83	21.02
20	50	50		20.96	20.87	20.90
20	100	0		20.95	20.80	21.02
20	1	0	64QAM	21.40	21.38	21.18
20	1	49		21.18	21.08	21.18
20	1	99		21.32	21.07	21.14
20	50	0		20.28	20.19	20.17
20	50	24		20.32	20.07	20.24
20	50	50		20.08	19.99	20.02
20	100	0		20.07	20.04	20.34
15	1	0	QPSK	22.99	22.83	22.97
15	1	37		22.92	22.78	22.89
15	1	74		22.93	22.84	22.87
15	36	0		21.98	21.84	21.89
15	36	20		21.95	21.74	21.97
15	36	39		21.98	21.76	21.93
15	75	0		21.97	21.74	21.99
15	1	0	16-QAM	22.30	21.86	22.14
15	1	37		22.07	21.84	22.09
15	1	74		22.09	21.92	22.07
15	36	0		21.00	20.87	20.86



15	36	20		20.98	20.81	20.96
15	36	39		21.01	20.72	20.92
15	75	0		20.94	20.83	21.00
15	1	0	64QAM	21.43	21.30	21.49
15	1	37		21.38	21.12	21.32
15	1	74		21.39	21.08	21.28
15	36	0		20.31	20.08	20.27
15	36	20		20.16	19.99	20.16
15	36	39		20.19	19.90	20.10
15	75	0		20.17	20.04	20.22



LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.89	22.76	23.00
10	1	25		22.81	22.62	22.89
10	1	49		22.79	22.68	22.78
10	25	0		22.04	21.82	22.05
10	25	12		22.00	21.82	21.96
10	25	25		21.93	21.71	21.93
10	50	0		22.01	21.81	22.02
10	1	0	16-QAM	22.29	22.08	22.17
10	1	25		22.12	21.97	22.15
10	1	49		22.09	22.02	22.03
10	25	0		21.03	20.83	20.99
10	25	12		21.10	20.83	21.05
10	25	25		20.93	20.84	20.97
10	50	0		21.00	20.81	21.05
10	1	0	64QAM	21.49	21.30	21.40
10	1	25		21.17	21.05	21.17
10	1	49		21.14	21.08	21.09
10	25	0		20.31	20.11	20.27
10	25	12		20.35	20.04	20.32
10	25	25		20.09	19.99	20.12
10	50	0		20.23	20.07	20.27
5	1	0	QPSK	23.00	22.62	23.00
5	1	12		22.85	22.64	23.00
5	1	24		22.81	22.58	23.01
5	12	0		22.01	21.71	22.01
5	12	7		21.96	21.74	22.00
5	12	13		21.93	21.71	21.93
5	25	0		21.99	21.79	21.95
5	1	0	16-QAM	22.27	21.82	22.12
5	1	12		22.36	21.89	22.17
5	1	24		22.22	21.84	22.07
5	12	0		21.09	20.83	21.04
5	12	7		21.04	20.84	21.03



5	12	13		21.01	20.71	20.96
5	25	0		21.00	20.82	21.04
5	1	0	64QAM	21.49	21.27	21.39
5	1	12		21.47	21.19	21.37
5	1	24		21.41	21.14	21.29
5	12	0		20.32	20.02	20.22
5	12	7		20.21	20.01	20.21
5	12	13		20.23	19.92	20.19
5	25	0		20.33	20.03	20.23



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.03	22.83	22.50
20	1	49		23.04	22.86	23.30
20	1	99		22.78	22.81	22.40
20	50	0		21.88	21.89	22.19
20	50	24		21.75	21.85	22.12
20	50	50		21.72	21.76	22.04
20	100	0		21.83	21.90	22.00
20	1	0	16-QAM	22.09	22.04	21.40
20	1	49		21.91	21.95	22.04
20	1	99		21.80	21.83	21.50
20	50	0		20.83	20.89	21.13
20	50	24		20.83	20.85	21.19
20	50	50		20.70	20.76	21.01
20	100	0		20.79	20.88	21.05
20	1	0	64QAM	21.15	21.19	21.22
20	1	49		20.85	20.89	20.96
20	1	99		20.87	20.91	20.97
20	50	0		19.84	19.81	19.91
20	50	24		19.87	19.85	19.92
20	50	50		19.79	19.76	19.85
20	100	0		19.82	19.84	19.90
15	1	0	QPSK	23.02	22.69	23.26
15	1	37		22.87	22.66	23.10
15	1	74		22.82	22.70	23.06
15	36	0		21.78	21.76	22.17
15	36	20		21.81	21.81	22.01
15	36	39		21.73	21.80	22.16
15	75	0		21.77	21.81	22.16
15	1	0	16-QAM	22.24	22.15	22.47
15	1	37		22.02	22.11	22.23
15	1	74		21.98	21.97	22.31
15	36	0		20.79	20.71	21.18



15	36	20		20.83	20.76	21.04
15	36	39		20.76	20.76	21.09
15	75	0		20.84	20.78	21.10
15	1	0	64QAM	21.07	21.06	21.10
15	1	37		20.94	20.88	20.98
15	1	74		20.77	20.75	20.89
15	36	0		19.83	19.84	19.96
15	36	20		19.85	19.83	19.95
15	36	39		19.74	19.73	19.85
15	75	0		19.85	19.79	19.82



LTE Band 41 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.70	22.71	23.02
10	1	25		22.67	22.70	22.93
10	1	49		22.58	22.62	23.04
10	25	0		21.73	21.84	22.12
10	25	12		21.64	21.86	22.05
10	25	25		21.71	21.75	22.11
10	50	0		21.75	21.77	22.16
10	1	0	16-QAM	22.25	21.92	22.52
10	1	25		22.20	21.93	22.36
10	1	49		22.11	21.85	22.45
10	25	0		20.81	20.84	21.09
10	25	12		20.84	20.86	21.14
10	25	25		20.69	20.76	21.10
10	50	0		20.70	20.87	21.13
10	1	0	64QAM	21.07	21.03	21.13
10	1	25		20.95	20.98	21.00
10	1	49		20.90	20.88	20.98
10	25	0		19.84	19.93	19.95
10	25	12		19.87	19.89	19.99
10	25	25		19.80	19.88	19.89
10	50	0		19.75	19.83	19.94
5	1	0	QPSK	22.66	22.60	22.98
5	1	12		22.68	22.53	22.92
5	1	24		22.58	22.59	22.86
5	12	0		21.69	21.80	22.07
5	12	7		21.70	21.82	22.07
5	12	13		21.69	21.75	21.98
5	25	0		21.72	21.76	22.00
5	1	0	16-QAM	22.05	22.01	22.15
5	1	12		22.11	22.05	22.04
5	1	24		22.02	22.05	21.98
5	12	0		20.77	20.91	21.04



5	12	7		20.88	20.87	21.04
5	12	13		20.75	20.74	21.07
5	25	0		20.70	20.80	21.12
5	1	0	64QAM	21.10	21.14	21.13
5	1	12		21.07	21.11	21.11
5	1	24		21.08	21.07	21.12
5	12	0		19.84	19.79	19.88
5	12	7		19.77	19.82	19.85
5	12	13		19.78	19.78	19.87
5	25	0		19.76	19.77	19.83



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.03	23.23	23.13
20	1	49		22.91	23.03	22.91
20	1	99		22.84	22.99	22.96
20	50	0		22.06	22.19	22.07
20	50	24		22	22.18	22.01
20	50	50		21.96	22.07	22
20	100	0		22.01	22.18	22.07
20	1	0	16-QAM	22.6	22.82	22.09
20	1	49		22	21.99	21.91
20	1	99		22.13	22.42	22.42
20	50	0		21	21.27	21.1
20	50	24		21	21.08	20.96
20	50	50		21.04	21.06	20.95
20	100	0		21.02	21.2	21.01
20	1	0	64QAM	21.64	21.49	21.59
20	1	49		21.42	21.31	21.39
20	1	99		21.48	21.38	21.46
20	50	0		20.49	20.26	20.46
20	50	24		20.34	20.21	20.38
20	50	50		20.37	20.16	20.33
20	100	0		20.36	20.22	20.41
15	1	0	QPSK	23.05	23.22	23.04
15	1	37		22.92	22.98	22.85
15	1	74		22.92	23.02	22.99
15	36	0		22.04	22.2	22.04
15	36	20		22	22.15	22.02
15	36	39		21.89	22.11	21.98
15	75	0		21.99	22.16	22
15	1	0	16-QAM	22.5	22.64	22.56
15	1	37		21.97	22.5	22.08
15	1	74		22.04	22.59	22.37
15	36	0		21.03	21.2	21.06
15	36	20		20.95	21.16	20.92
15	36	39		20.98	21.09	20.95



15	75	0	64QAM	20.99	21.17	21.02
15	1	0		21.76	21.44	21.61
15	1	37		21.39	21.33	21.40
15	1	74		21.42	21.38	21.34
15	36	0		20.38	20.21	20.36
15	36	20		20.40	20.19	20.45
15	36	39		20.37	20.14	20.33
15	75	0		20.39	20.19	20.46



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.97	23.11	23.07
10	1	25		22.85	22.99	22.95
10	1	49		22.87	23.1	22.98
10	25	0		22.03	22.11	22.06
10	25	12		21.96	22.08	21.93
10	25	25		21.9	22.12	21.95
10	50	0		21.94	22.1	21.98
10	1	0	16-QAM	22.37	22.69	22.55
10	1	25		22.28	22.58	22.01
10	1	49		22.37	22.52	22.13
10	25	0		21.01	21.04	20.95
10	25	12		21.06	21.11	21.03
10	25	25		20.98	21.14	20.92
10	50	0		21.06	21.21	21
10	1	0	64QAM	21.11	21.29	21.51
10	1	25		21.38	21.34	21.67
10	1	49		21.37	21.31	21.52
10	25	0		20.38	20.25	20.36
10	25	12		20.37	20.16	20.40
10	25	25		20.31	20.15	20.33
10	50	0		20.38	20.17	20.44
5	1	0	QPSK	23.09	23.12	22.85
5	1	12		22.83	23.1	22.88
5	1	24		22.92	23.18	22.93
5	12	0		21.93	22.09	21.94
5	12	7		22	22.1	21.96
5	12	13		21.87	22.03	21.92
5	25	0		21.93	22.05	21.94
5	1	0	16-QAM	22.36	22.5	22.21
5	1	12		21.97	22.38	22.44
5	1	24		22.11	22.09	22.45
5	12	0		21.08	21.17	20.99
5	12	7		21	21.09	20.95



5	12	13		20.88	21.09	20.92
5	25	0		20.95	21.14	20.96
5	1	0	64QAM	21.58	21.33	21.50
5	1	12		21.49	21.30	21.53
5	1	24		21.48	21.36	21.48
5	12	0		20.38	20.21	20.37
5	12	7		20.35	20.18	20.38
5	12	13		20.33	20.17	20.35
5	25	0		20.35	20.16	20.32



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.95	23.07	22.85
3	1	8		22.84	23.1	22.9
3	1	14		22.76	23.06	22.79
3	8	0		21.93	22.09	21.88
3	8	4		21.89	22.09	21.96
3	8	7		21.88	22.11	21.89
3	15	0		21.87	22.02	21.94
3	1	0	16-QAM	22.13	22.2	21.8
3	1	8		21.94	22.52	22.03
3	1	14		21.99	22.29	22.24
3	8	0		21.03	21.09	20.95
3	8	4		20.95	21.2	21.07
3	8	7		20.99	21.09	21.03
3	15	0		20.98	21.13	20.97
3	1	0	64QAM	21.54	21.26	21.52
3	1	8		21.53	21.25	21.58
3	1	14		21.57	21.33	21.47
3	8	0		20.32	20.16	20.29
3	8	4		20.34	20.17	20.33
3	8	7		20.36	20.10	20.34
3	15	0		20.34	20.12	20.38
1.4	1	0	QPSK	22.92	22.98	22.88
1.4	1	3		22.86	23.09	22.94
1.4	1	5		22.77	22.98	22.8
1.4	3	0		22.88	23.01	22.9
1.4	3	1		22.95	23.09	22.95
1.4	3	3		22.87	23.06	22.86
1.4	6	0		21.87	22.05	21.87
1.4	1	0	16-QAM	21.72	22.21	22.38
1.4	1	3		22.34	22.44	22.14
1.4	1	5		22.01	21.98	22.3
1.4	3	0		21.95	22.15	21.89
1.4	3	1		21.75	22.04	21.96



1.4	3	3		21.7	22.01	21.91
1.4	6	0		21.03	21.11	20.98
1.4	1	0	64QAM	21.51	21.25	21.43
1.4	1	3		21.56	21.27	21.57
1.4	1	5		21.42	21.20	21.43
1.4	3	0		21.32	21.06	21.27
1.4	3	1		21.36	21.18	21.33
1.4	3	3		21.34	21.02	21.28
1.4	6	0		20.28	20.03	20.27