FCC RF Test Report

APPLICANT	:	OnePlus Technology (Shenzhen) Co., Ltd
EQUIPMENT	:	Smart Phone
BRAND NAME	:	ONEPLUS
MODEL NAME	:	HD1907
FCC ID	:	2ABZ2-EE133
STANDARD	:	47 CFR Part 2, 22(H), 24(E), 27(N)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Jul. 02, 2019 and completely tested on Aug. 07, 2019. 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.

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.

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Cert #5145.01

Sporton International (ShenZhen) Inc.

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People's Republic of China

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG970213B	Rev. 01	Initial issue of report	Aug. 28, 2019

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)(5)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(c)(10)	Effective Radiated Power (Band 71)	ERP < 3 Watt	PASS	-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2) (Band 25)	EIRP < 2Watt	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)	Conducted Band Edge Measurement (Band 2) (Band 5) (Band 25) (Band 26) (Band 71)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Conducted Spurious Emission (Band 2) (Band 5) (Band 25) (Band 26) (Band 71)	< 43+10log10(P[Watts])	PASS	-
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		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(g)	Radiated Spurious Emission (Band 2) (Band 5) (Band 25) (Band 26) (Band 71)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 35.11 dB at 5643.450 MHz

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., Ltdd
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	HD1907
FCC ID	2ABZ2-EE133
EUT supports Radios application	CDMA/EVDO/GSM/GPRS/EGPRS/WCDMA/HSPA/ DC-HSDPA/HSPA+ /LTE 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 BR/EDR/LE GNSS/NFC
IMEI Code	Conducted : 990013830029836 Radiation : 990013830040874
HW Version	13
SW Version	Oxygen OS 10.0.2.HD63CB
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 5 : 824.7 MHz ~ 848.3 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 26 : 824.7MHz ~ 848.3 MHz LTE Band 71: 665.5 MHz ~ 695.5MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 26 : 869.7MHz ~ 893.3MHz LTE Band 71: 619.5 MHz ~ 649.5MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 71 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.75 dBm LTE Band 5 : 22.96 dBm LTE Band 25 : 23.09 dBm LTE Band 26 : 22.99 dBm LTE Band 71 : 23.47 dBm
Antenna Gain	**Top Antenna** LTE Band 2 : -1.00 dBi LTE Band 5 : -2.00 dBi LTE Band 25 : -1.00 dBi LTE Band 26 : -2.00 dBi LTE Band 71 : -2.50 dBi **Bottom Antenna** LTE Band 2 : -0.50 dBi LTE Band 25 : -0.50 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Note:

1. The Maximum ERP/EIRP is calculated from Max Output power and Max antenna gain.
2. The LTE Band 5/26/71 can transmit in Top antenna only.

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)
1.4	1850.7 ~ 1909.3	1M09G7D	-	0.1644	1M09W7D	-	0.1371
3	1851.5 ~ 1908.5	2M72G7D	-	0.1656	2M72W7D	-	0.1390
5	1852.5 ~ 1907.5	4M49G7D	-	0.1629	4M52W7D	-	0.1390
10	1855.0 ~ 1905.0	9M05G7D	0.0017	0.1629	9M01W7D	-	0.1346
15	1857.5 ~ 1902.5	13M4G7D	-	0.1675	13M5W7D	-	0.1452
20	1860.0 ~ 1900.0	18M3G7D	-	0.1679	18M4W7D	-	0.1416

LTE Band 2		64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1909.3	1M09W7D	-	0.1072
3	1851.5 ~ 1908.5	2M73W7D	-	0.1091
5	1852.5 ~ 1907.5	4M50W7D	-	0.1052
10	1855.0 ~ 1905.0	9M05W7D	-	0.1047
15	1857.5 ~ 1902.5	13M5W7D	-	0.1099
20	1860.0 ~ 1900.0	18M5W7D	-	0.1089

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)
1.4	1850.7 ~ 1914.3	1M09G7D	-	0.1778	1M09W7D	-	0.1489
3	1851.5 ~ 1913.5	2M72G7D	-	0.1663	2M73W7D	-	0.1419
5	1852.5 ~ 1912.5	4M50G7D	-	0.1754	4M50W7D	-	0.1486
10	1855.0 ~ 1910.0	9M05G7D	0.0021	0.1742	9M05W7D	-	0.1459
15	1857.5 ~ 1907.5	13M5G7D	-	0.1799	13M4W7D	-	0.1503
20	1860.0 ~ 1905.0	18M4G7D	-	0.1816	18M4W7D	-	0.1545

LTE Band 25		64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1914.3	1M09W7D	-	0.1186
3	1851.5 ~ 1913.5	2M74W7D	-	0.1183
5	1852.5 ~ 1912.5	4M50W7D	-	0.1169
10	1855.0 ~ 1910.0	9M07W7D	-	0.1159

15	1857.5 ~ 1907.5	13M5W7D		-		0.1146	
20	1860.0 ~ 1905.0	18M4W7D		-		0.1161	
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)**
1.4	824.7 ~ 848.3	1M09G7D	-	0.0759	1M09W7D	-	0.0647
3	825.5 ~ 847.5	2M72G7D	-	0.0757	2M72W7D	-	0.0661
5	826.5 ~ 846.5	4M50G7D	-	0.0755	4M51W7D	-	0.0643
10	829.0 ~ 844.0	9M11G7D	0.0037	0.0760	9M05W7D	-	0.0643
LTE Band 5		**64QAM**					
BW (MHz)	**Frequency Range (MHz)**	**Emission Designator (99%OBW)**		**Frequency Tolerance (ppm)**		**Maximum ERP(W)**	
1.4	824.7 ~ 848.3	1M09W7D		-		0.0508	
3	825.5 ~ 847.5	2M73W7D		-		0.0513	
5	826.5 ~ 846.5	4M50W7D		-		0.0511	
10	829.0 ~ 844.0	9M09W7D		-		0.0513	
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)**
1.4	824.7 ~ 848.3	1M10G7D	-	0.0741	1M10W7D	-	0.0628
3	825.5 ~ 847.5	2M73G7D	-	0.0743	2M72W7D	-	0.0632
5	826.5 ~ 846.5	4M50G7D	-	0.0731	4M51W7D	-	0.0622
10	829.0 ~ 844.0	9M13G7D	0.0039	0.0731	9M05W7D	-	0.0624
15	831.5 ~ 841.5	13M4G7D	-	0.0766	13M4W7D	-	0.0640
CH26765	821.5	13M4G7D	-	0.0762	13M5W7D	-	0.0644
LTE Band 26		**64QAM**					
BW (MHz)	**Frequency Range (MHz)**	**Emission Designator (99%OBW)**		**Frequency Tolerance (ppm)**		**Maximum ERP(W)**	
1.4	824.7 ~ 848.3	1M09W7D		-		0.0475	
3	825.5 ~ 847.5	2M73W7D		-		0.0489	
5	826.5 ~ 846.5	4M50W7D		-		0.0482	
10	829.0 ~ 844.0	9M11W7D		-		0.0483	
15	831.5 ~ 841.5	13M5W7D		-		0.0495	
CH26765	821.5	13M4W7D		-		0.0499	

LTE Band 71		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)
5	665.5 ~ 695.5	4M50G7D	-	0.0726	4M53W7D	-	0.0596
10	668.0 ~ 693.0	9M07G7D	0.0049	0.0733	9M07W7D	-	0.0619
15	670.5 ~ 690.5	13M5G7D	-	0.0760	13M5W7D	-	0.0632
20	673.0 ~ 688.0	18M4G7D	-	0.0762	18M3W7D	-	0.0644

LTE Band 71		64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum ERP(W)
5	665.5 ~ 695.5	4M52W7D	-	0.0476
10	668.0 ~ 693.0	9M09W7D	-	0.0490
15	670.5 ~ 690.5	13M4W7D	-	0.0511
20	673.0 ~ 688.0	18M3W7D	-	0.0513

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	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan Shenzhen, 518055 People's Republic of China TEL: +86-755-33202398		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH02-SZ	CN1256	421272

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(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

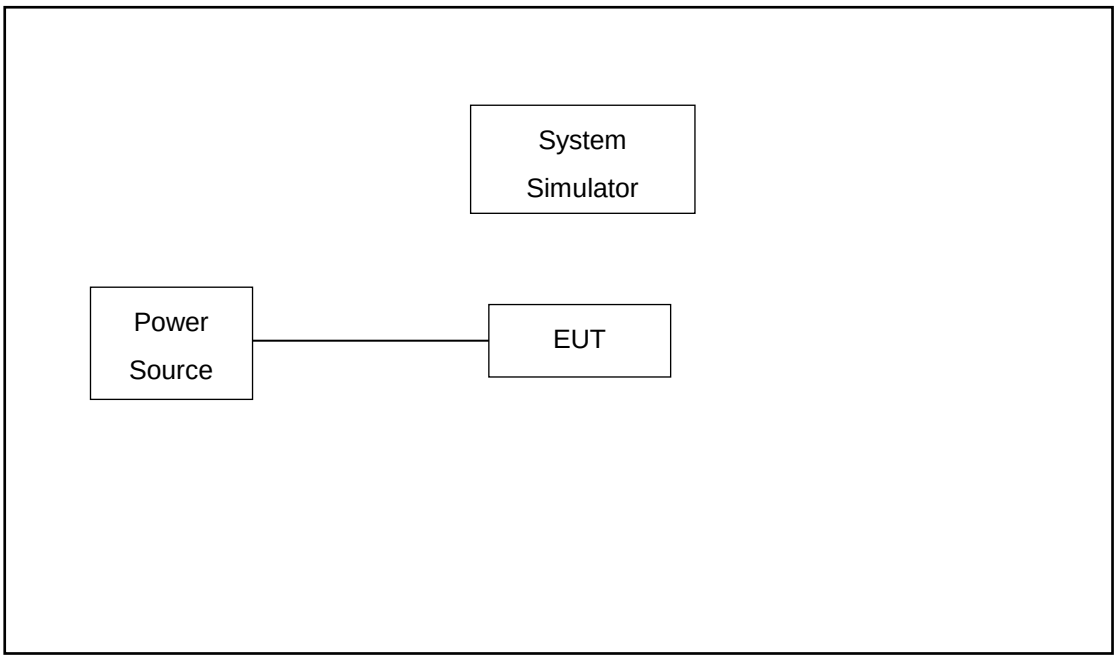
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

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

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	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	25	v	v	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	v	v
	71	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	2						v	v	v	v	v		v	v	v	v
	5				v	-	-	v	v	v	v		v	v	v	v
	25						v	v	v	v	v		v	v	v	v
	26				v		-	v	v	v	v		v	v	v	v
	71	-	-				v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	2	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
	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
	71	-	-	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
	5	v	v	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
	71	-	-	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	2	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
	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
	71	-	-	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	Full	L	M	H
Frequency Stability	2				v			v					v		v	
	5				v	-	-	v					v		v	
	25				v			v					v		v	
	26				v		-	v					v		v	
	71	-	-		v			v					v		v	
E.R.P / E.I.R.P	2	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
	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
	71	-	-	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	2	v	v	v	v	v	v	v					v	v	v	v
	5	v	v	v	v	-	-	v					v	v	v	v
	25	v	v	v	v	v	v	v					v	v	v	v
	26	v	v	v	v	v	-	v					v	v	v	v
	71	-	-	v	v	v	v	v					v	v	v	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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m

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 4.0 dB and 10dB attenuator.

Example :

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

= 4.0 + 10 = 14.0 (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 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 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 71 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	133222	133322	133372
	Frequency	673.0	680.5	688.0
15	Channel	133197	133297	133397
	Frequency	670.5	680.5	690.5
10	Channel	133172	133272	133422
	Frequency	668.0	678.0	693.0
5	Channel	133147	133247	133447
	Frequency	665.5	675.5	695.5

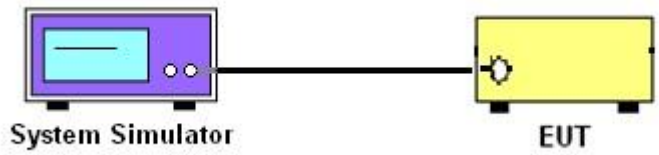
3 Conducted Test Items

3.1 Measuring Instruments

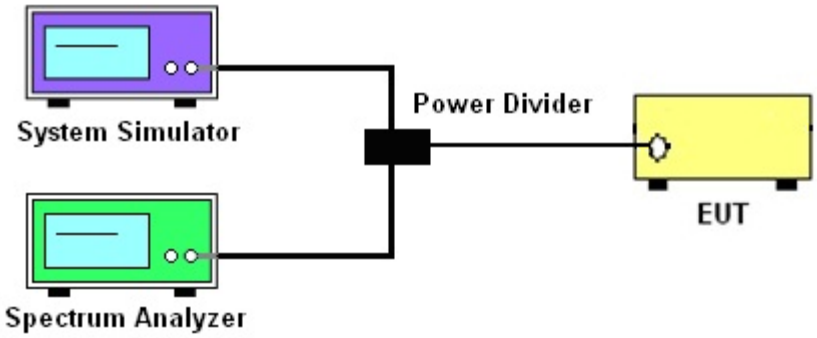
See list of measuring instruments of this test report.

3.2 Test Setup

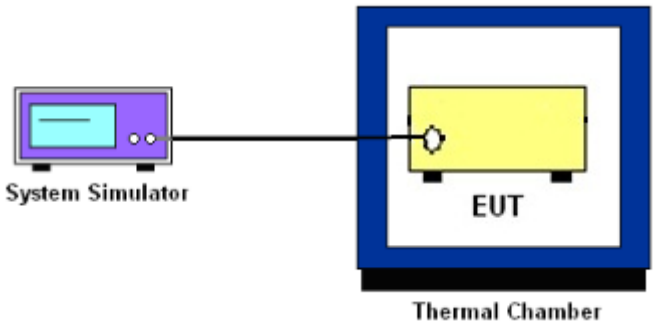
3.2.1 Conducted Output Power



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

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 71.

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 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.

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 ANSI C63.26 Section 5.2.3.4 (CCDF).
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 ANSI C63.26 Section 5.4
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[Watts]) dB below the transmitter power P(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[Watts]) dB below the transmitter power P(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 600MHz band and 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(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.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
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 >= 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. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

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

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

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

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.

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 ANSI C63.26 section 5.7
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. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

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 ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
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 ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°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 for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

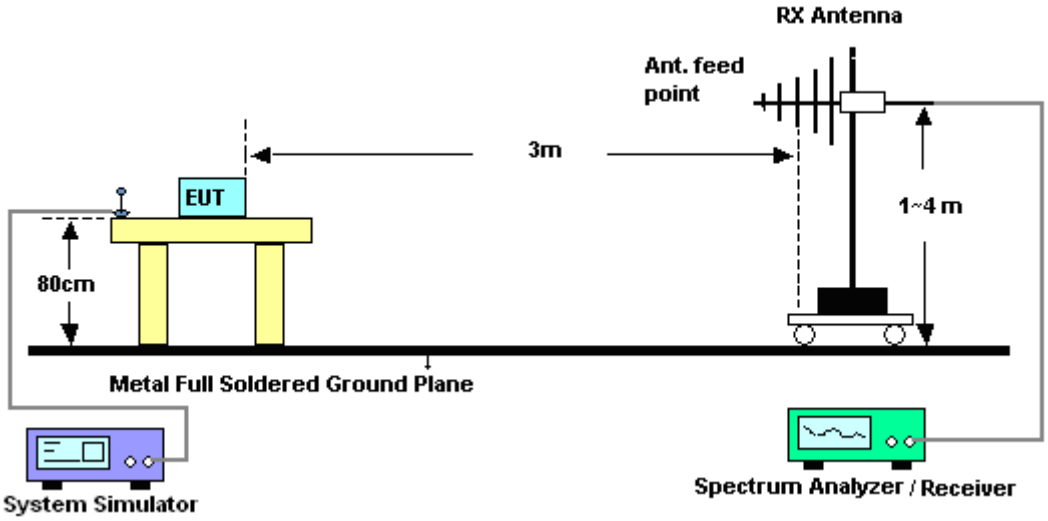
4 Radiated Test Items

4.1 Measuring Instruments

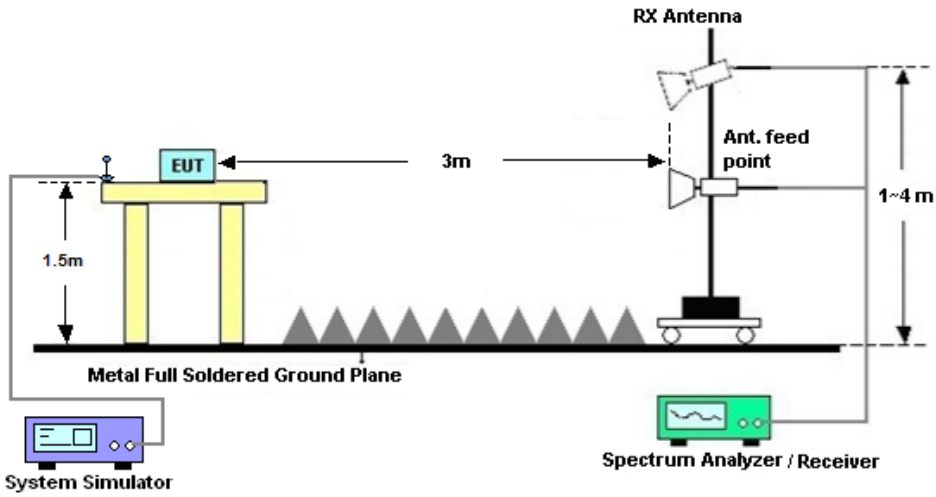
See list of measuring instruments of this test report.

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 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.

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. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (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 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

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	10Hz~40GHz	Apr. 18, 2019	Jul. 14, 2019~ Jul. 24, 2019	Apr. 17, 2020	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Dec. 22, 2018	Jul. 14, 2019~ Jul. 24, 2019	Dec. 21, 2019	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Apr. 19, 2019	Aug. 05, 2019~ Aug. 07, 2019	Apr. 18, 2020	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Jun. 05, 2019	Aug. 05, 2019~ Aug. 07, 2019	Jun. 04, 2020	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1285	1GHz~18GHz	Jan. 07, 2019	Aug. 05, 2019~ Aug. 07, 2019	Jan. 06, 2020	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 18. 2019	Aug. 05, 2019~ Aug. 07, 2019	Jul. 17. 2020	Radiation (03CH02-SZ
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Mar. 30, 2019	Aug. 05, 2019~ Aug. 07, 2019	Mar. 29, 2020	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 18, 2018	Aug. 05, 2019~ Aug. 07, 2019	Oct. 18, 2019	Radiation (03CH02-SZ
HF Amplifier	Agilent	8449B	3008A01023	1GHz~26.5GHz	Oct. 18, 2018	Aug. 05, 2019~ Aug. 07, 2019	Oct. 17, 2019	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Aug. 05, 2019~ Aug. 07, 2019	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Aug. 05, 2019~ Aug. 07, 2019	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Aug. 05, 2019~ Aug. 07, 2019	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))	**2.5dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.3dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.7dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Bottom Antenna

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.75	22.67	22.61
20	1	49		22.64	22.60	22.51
20	1	99		22.56	22.50	22.49
20	50	0		21.83	21.78	21.66
20	50	24		21.81	21.76	21.65
20	50	50		21.81	21.78	21.66
20	100	0		21.81	21.77	21.67
20	1	0	16-QAM	22.01	21.98	21.91
20	1	49		21.88	21.86	21.73
20	1	99		21.76	21.77	21.67
20	50	0		20.81	20.80	20.65
20	50	24		20.81	20.76	20.65
20	50	50		20.79	20.78	20.65
20	100	0		20.77	20.79	20.63
20	1	0	64-QAM	20.87	20.86	20.71
20	1	49		20.78	20.72	20.57
20	1	99		20.73	20.69	20.52
20	50	0		19.69	19.68	19.59
20	50	24		19.68	19.66	19.59
20	50	50		19.68	19.68	19.60
20	100	0		19.68	19.66	19.56
15	1	0	QPSK	22.74	22.72	22.57
15	1	37		22.68	22.60	22.44
15	1	74		22.70	22.64	22.47
15	36	0		21.82	21.77	21.64
15	36	20		21.83	21.78	21.68
15	36	39		21.82	21.75	21.65
15	75	0		21.83	21.78	21.62

15	1	0		22.12	21.98	21.87
15	1	37		21.96	21.83	21.78
15	1	74		22.02	21.79	21.74
15	36	0	**16-QAM**	20.82	20.73	20.60
15	36	20		20.81	20.75	20.62
15	36	39		20.76	20.74	20.62
15	75	0		20.81	20.75	20.63
15	1	0		20.91	20.89	20.72
15	1	37		20.77	20.74	20.65
15	1	74		20.80	20.73	20.58
15	36	0	**64-QAM**	19.75	19.75	19.56
15	36	20		19.75	19.75	19.58
15	36	39		19.77	19.72	19.57
15	75	0		19.72	19.70	19.55

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.56	22.51	22.50
10	1	25		22.62	22.54	22.44
10	1	49		22.59	22.52	22.34
10	25	0		21.73	21.66	21.53
10	25	12		21.74	21.66	21.55
10	25	25		21.64	21.58	21.50
10	50	0		21.69	21.64	21.52
10	1	0	16-QAM	21.78	21.73	21.71
10	1	25		21.79	21.78	21.64
10	1	49		21.76	21.66	21.57
10	25	0		20.71	20.64	20.54
10	25	12		20.73	20.65	20.54
10	25	25		20.66	20.60	20.48
10	50	0		20.69	20.61	20.51
10	1	0	64-QAM	20.65	20.66	20.61
10	1	25		20.63	20.70	20.55
10	1	49		20.62	20.64	20.53
10	25	0		19.60	19.59	19.41
10	25	12		19.61	19.60	19.44
10	25	25		19.51	19.53	19.37
10	50	0		19.55	19.57	19.40
5	1	0	QPSK	22.58	22.47	22.41
5	1	12		22.61	22.62	22.46
5	1	24		22.57	22.57	22.41
5	12	0		21.70	21.59	21.55
5	12	7		21.77	21.72	21.57
5	12	13		21.73	21.70	21.58
5	25	0		21.72	21.68	21.54
5	1	0	16-QAM	21.93	21.71	21.67
5	1	12		21.91	21.81	21.69
5	1	24		21.85	21.80	21.65
5	12	0		20.69	20.58	20.55
5	12	7		20.76	20.70	20.57

5	12	13		20.75	20.71	20.53
5	25	0		20.74	20.69	20.52
5	1	0	64-QAM	20.72	20.64	20.48
5	1	12		20.69	20.69	20.52
5	1	24		20.67	20.66	20.47
5	12	0		19.64	19.55	19.43
5	12	7		19.68	19.65	19.45
5	12	13		19.64	19.62	19.45
5	25	0		19.61	19.59	19.41

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.62	22.48	22.43
3	1	8		22.69	22.63	22.50
3	1	14		22.67	22.59	22.47
3	8	0		21.74	21.59	21.52
3	8	4		21.79	21.73	21.58
3	8	7		21.74	21.70	21.57
3	15	0		21.76	21.67	21.52
3	1	0	16-QAM	21.84	21.80	21.62
3	1	8		21.93	21.91	21.76
3	1	14		21.91	21.85	21.68
3	8	0		20.76	20.60	20.54
3	8	4		20.82	20.75	20.60
3	8	7		20.77	20.73	20.59
3	15	0		20.77	20.68	20.55
3	1	0	64-QAM	20.74	20.67	20.57
3	1	8		20.88	20.82	20.62
3	1	14		20.82	20.82	20.56
3	8	0		19.72	19.63	19.52
3	8	4		19.79	19.73	19.58
3	8	7		19.76	19.72	19.53
3	15	0		19.74	19.70	19.50
1.4	1	0	QPSK	22.54	22.49	22.31
1.4	1	3		22.64	22.58	22.43
1.4	1	5		22.56	22.49	22.38
1.4	3	0		22.59	22.52	22.38
1.4	3	1		22.66	22.57	22.44
1.4	3	3		22.64	22.53	22.42
1.4	6	0		21.66	21.61	21.48
1.4	1	0	16-QAM	21.79	21.73	21.56
1.4	1	3		21.87	21.83	21.67
1.4	1	5		21.82	21.74	21.61
1.4	3	0		21.62	21.53	21.42
1.4	3	1		21.68	21.57	21.49

1.4	3	3		21.64	21.53	21.47
1.4	6	0		20.74	20.68	20.52
1.4	1	0		20.73	20.66	20.45
1.4	1	3		20.80	20.78	20.52
1.4	1	5		20.76	20.71	20.44
1.4	3	0	**64-QAM**	20.74	20.69	20.44
1.4	3	1		20.80	20.75	20.48
1.4	3	3		20.75	20.71	20.46
1.4	6	0		19.64	19.59	19.35

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.09	23.08	22.90
20	1	49		22.99	22.97	22.81
20	1	99		22.89	22.82	22.78
20	50	0		22.12	22.07	21.99
20	50	24		22.13	22.10	22.02
20	50	50		22.11	22.04	21.96
20	100	0		22.10	22.05	21.95
20	1	0	16-QAM	22.39	22.35	22.26
20	1	49		22.22	22.20	22.09
20	1	99		22.16	22.13	22.03
20	50	0		21.12	21.06	20.97
20	50	24		21.13	21.10	20.99
20	50	50		21.09	21.05	21.00
20	100	0		21.11	21.02	20.96
20	1	0	64-QAM	21.15	21.12	20.96
20	1	49		20.99	20.94	20.84
20	1	99		20.96	20.93	20.82
20	50	0		19.93	19.91	19.80
20	50	24		19.98	19.93	19.83
20	50	50		19.92	19.91	19.84
20	100	0		19.90	19.89	19.82
15	1	0	QPSK	23.01	23.05	22.88
15	1	37		23.01	22.91	22.86
15	1	74		22.97	22.83	22.81
15	36	0		22.12	22.03	21.96
15	36	20		22.17	22.07	22.02
15	36	39		22.10	22.05	21.99
15	75	0		22.13	22.04	21.98
15	1	0	16-QAM	22.25	22.27	22.19
15	1	37		22.24	22.18	22.06
15	1	74		22.19	22.08	22.00
15	36	0		21.12	21.03	20.96
15	36	20		21.12	21.04	20.97

15	36	39		21.06	21.04	20.98
15	75	0		21.12	21.02	20.97
15	1	0	64-QAM	21.05	21.09	20.93
15	1	37		20.93	20.91	20.86
15	1	74		21.01	20.94	20.86
15	36	0		19.97	19.89	19.80
15	36	20		19.98	19.94	19.82
15	36	39		19.94	19.90	19.82
15	75	0		19.94	19.90	19.79

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.91	22.74	22.70
10	1	25		22.79	22.75	22.69
10	1	49		22.81	22.68	22.60
10	25	0		22.01	21.92	21.85
10	25	12		22.00	21.91	21.84
10	25	25		21.98	21.89	21.84
10	50	0		21.98	21.91	21.83
10	1	0	16-QAM	22.14	22.07	21.99
10	1	25		22.10	22.02	22.02
10	1	49		22.01	21.98	21.93
10	25	0		21.02	20.87	20.85
10	25	12		21.03	20.91	20.86
10	25	25		20.99	20.89	20.82
10	50	0		21.00	20.90	20.84
10	1	0	64-QAM	21.03	21.14	20.87
10	1	25		21.00	21.01	20.84
10	1	49		20.98	20.95	20.78
10	25	0		20.03	20.01	19.85
10	25	12		20.06	20.03	19.85
10	25	25		20.00	20.01	19.85
10	50	0		20.00	20.03	19.85
5	1	0	QPSK	22.87	22.71	22.63
5	1	12		22.94	22.81	22.71
5	1	24		22.94	22.87	22.72
5	12	0		22.00	21.82	21.77
5	12	7		22.09	21.89	21.91
5	12	13		22.05	21.95	21.90
5	25	0		22.05	21.88	21.86
5	1	0	16-QAM	22.17	21.92	21.86
5	1	12		22.22	22.08	22.00
5	1	24		22.20	22.08	21.99
5	12	0		20.98	20.81	20.75
5	12	7		21.03	20.89	20.88

5	12	13		21.04	20.90	20.87
5	25	0		21.03	20.86	20.88
5	1	0	64-QAM	21.15	21.00	20.86
5	1	12		21.16	21.07	20.93
5	1	24		21.18	21.15	20.93
5	12	0		20.08	19.95	19.77
5	12	7		20.13	20.00	19.92
5	12	13		20.11	20.09	19.93
5	25	0		20.08	19.95	19.85

LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.71	22.64	22.54
3	1	8		22.64	22.44	22.34
3	1	14		22.51	22.37	22.27
3	8	0		21.41	21.38	21.43
3	8	4		21.88	21.47	21.45
3	8	7		21.75	21.46	21.39
3	15	0		21.78	21.39	21.35
3	1	0	16-QAM	22.02	21.54	21.54
3	1	8		21.98	21.62	21.61
3	1	14		21.93	21.60	21.66
3	8	0		21.08	20.69	20.70
3	8	4		21.11	20.72	21.13
3	8	7		21.13	20.70	21.16
3	15	0		21.04	20.69	20.84
3	1	0	64-QAM	21.08	20.94	20.75
3	1	8		21.23	21.16	21.00
3	1	14		21.14	21.10	20.93
3	8	0		20.07	19.94	19.78
3	8	4		20.14	20.02	19.92
3	8	7		20.13	20.02	19.90
3	15	0		20.08	19.93	19.83
1.4	1	0	QPSK	22.85	22.68	22.55
1.4	1	3		22.98	22.82	22.75
1.4	1	5		22.89	22.74	22.66
1.4	3	0		22.93	22.71	22.62
1.4	3	1		23.00	22.76	22.71
1.4	3	3		22.93	22.80	22.72
1.4	6	0		22.00	21.82	21.71
1.4	1	0	16-QAM	22.13	21.90	21.81
1.4	1	3		22.23	22.06	21.98
1.4	1	5		22.11	22.01	21.88
1.4	3	0		21.95	21.74	21.66
1.4	3	1		22.00	21.79	21.71

1.4	3	3		21.96	21.79	21.72
1.4	6	0		21.09	20.92	20.82
1.4	1	0	64-QAM	21.16	20.93	20.87
1.4	1	3		21.24	21.12	20.97
1.4	1	5		21.16	21.03	20.89
1.4	3	0		21.14	20.93	20.86
1.4	3	1		21.19	21.05	20.90
1.4	3	3		21.14	21.03	20.93
1.4	6	0		20.05	19.86	19.89

Note: For Top/Bottom Antenna, the higher Conducted power is showed in this report.

Top Antenna

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	22.96	22.86	22.77
10	1	25		22.84	22.77	22.72
10	1	49		22.75	22.67	22.56
10	25	0		22.03	21.94	21.85
10	25	12		22.02	21.93	21.85
10	25	25		21.96	21.86	21.77
10	50	0		22.02	21.91	21.86
10	1	0	16-QAM	22.23	22.16	22.09
10	1	25		22.14	22.10	22.03
10	1	49		22.13	22.01	21.90
10	25	0		21.05	20.95	20.88
10	25	12		21.05	20.95	20.86
10	25	25		20.98	20.90	20.79
10	50	0		21.03	20.93	20.83
10	1	0	64-QAM	21.21	21.25	21.13
10	1	25		21.13	21.07	21.06
10	1	49		21.05	21.09	20.94
10	25	0		20.06	20.03	19.97
10	25	12		20.09	20.01	19.94
10	25	25		20.03	19.94	19.83
10	50	0		20.03	19.95	19.91
5	1	0	QPSK	22.86	22.73	22.62
5	1	12		22.93	22.79	22.70
5	1	24		22.93	22.76	22.63
5	12	0		22.00	21.89	21.73
5	12	7		22.11	21.95	21.87
5	12	13		22.08	21.93	21.84
5	25	0		22.06	21.91	21.85
5	1	0	16-QAM	22.15	22.00	21.93
5	1	12		22.23	22.07	22.03
5	1	24		22.18	22.10	21.91
5	12	0		21.04	20.90	20.80

5	12	7		21.15	20.97	20.87
5	12	13		21.13	20.98	20.87
5	25	0		21.08	20.92	20.81
5	1	0		21.13	21.04	20.97
5	1	12		21.23	21.13	21.03
5	1	24		21.18	21.09	20.98
5	12	0	**64-QAM**	20.10	19.98	19.85
5	12	7		20.24	20.04	19.96
5	12	13		20.19	20.08	19.94
5	25	0		20.12	20.02	19.86

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	22.80	22.70	22.60
3	1	8		22.92	22.89	22.78
3	1	14		22.94	22.82	22.70
3	8	0		22.05	21.86	21.74
3	8	4		22.09	21.98	21.83
3	8	7		22.09	21.97	21.81
3	15	0		22.06	21.94	21.79
3	1	0	16-QAM	22.15	22.01	21.94
3	1	8		22.35	22.17	22.04
3	1	14		22.26	22.06	21.94
3	8	0		21.12	20.96	20.81
3	8	4		21.20	21.05	20.90
3	8	7		21.15	21.03	20.89
3	15	0		21.12	20.96	20.84
3	1	0	64-QAM	21.00	20.93	20.82
3	1	8		21.25	21.15	21.01
3	1	14		21.16	21.06	20.95
3	8	0		20.13	19.95	19.78
3	8	4		20.19	20.05	19.87
3	8	7		20.22	20.04	19.89
3	15	0		20.12	19.98	19.92
1.4	1	0	QPSK	22.82	22.72	22.57
1.4	1	3		22.95	22.82	22.66
1.4	1	5		22.91	22.78	22.60
1.4	3	0		22.92	22.74	22.63
1.4	3	1		22.94	22.77	22.65
1.4	3	3		22.93	22.81	22.65
1.4	6	0		22.03	21.86	21.71
1.4	1	0	16-QAM	22.10	22.02	21.80
1.4	1	3		22.26	22.13	21.96
1.4	1	5		22.19	22.04	21.88
1.4	3	0		21.97	21.77	21.66
1.4	3	1		22.01	21.89	21.70

1.4	3	3		21.98	21.80	21.66
1.4	6	0		21.13	20.95	20.79
1.4	1	0	64-QAM	21.05	21.00	20.89
1.4	1	3		21.21	21.07	20.94
1.4	1	5		21.10	21.00	20.93
1.4	3	0		21.12	20.97	20.81
1.4	3	1		21.17	21.05	20.92
1.4	3	3		21.16	21.03	20.88
1.4	6	0		20.02	19.85	19.86

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.99	22.94	22.91
15	1	37		22.87	22.85	22.76
15	1	74		22.81	22.85	22.58
15	36	0		22.06	22.00	21.88
15	36	20		21.98	22.00	21.87
15	36	39		21.89	21.92	21.77
15	75	0		21.98	21.93	21.87
15	1	0	16-QAM	22.19	22.21	22.19
15	1	37		22.14	22.11	22.08
15	1	74		22.02	22.17	21.85
15	36	0		21.02	21.04	20.90
15	36	20		21.02	21.04	20.90
15	36	39		20.93	20.94	20.90
15	75	0		20.93	21.00	20.86
15	1	0	64-QAM	21.07	21.03	21.09
15	1	37		21.09	21.00	20.95
15	1	74		20.90	21.10	20.79
15	36	0		19.99	19.97	19.88
15	36	20		19.94	19.98	19.90
15	36	39		19.91	19.91	19.83
15	75	0		19.95	19.91	19.85
10	1	0	QPSK	22.76	22.79	22.69
10	1	25		22.74	22.73	22.64
10	1	49		22.67	22.62	22.46
10	25	0		21.88	21.85	21.74
10	25	12		21.89	21.87	21.78
10	25	25		21.85	21.81	21.72
10	50	0		21.83	21.85	21.74
10	1	0	16-QAM	22.07	22.03	21.97
10	1	25		22.10	21.97	21.88
10	1	49		22.01	21.85	21.73
10	25	0		20.89	20.84	20.75
10	25	12		20.91	20.87	20.79

10	25	25		20.86	20.84	20.73
10	50	0		20.90	20.83	20.78
10	1	0		20.92	20.99	20.91
10	1	25		20.91	20.89	20.82
10	1	49		20.88	20.85	20.75
10	25	0	**64-QAM**	19.79	19.81	19.73
10	25	12		19.82	19.84	19.74
10	25	25		19.80	19.81	19.72
10	50	0		19.78	19.83	19.73

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.74	22.66	22.55
5	1	12		22.79	22.71	22.58
5	1	24		22.75	22.65	22.48
5	12	0		21.81	21.83	21.66
5	12	7		21.90	21.80	21.71
5	12	13		21.87	21.84	21.69
5	25	0		21.89	21.78	21.61
5	1	0	16-QAM	22.04	21.97	21.85
5	1	12		22.08	22.02	21.86
5	1	24		22.09	21.95	21.76
5	12	0		20.84	20.85	20.67
5	12	7		20.92	20.85	20.75
5	12	13		20.91	20.87	20.67
5	25	0		20.87	20.83	20.66
5	1	0	64-QAM	20.86	20.89	20.78
5	1	12		20.98	20.94	20.78
5	1	24		20.98	20.86	20.70
5	12	0		19.81	19.80	19.70
5	12	7		19.88	19.82	19.77
5	12	13		19.89	19.89	19.67
5	25	0		19.86	19.76	19.61
3	1	0	QPSK	22.71	22.67	22.60
3	1	8		22.86	22.81	22.63
3	1	14		22.77	22.69	22.50
3	8	0		21.85	21.79	21.68
3	8	4		21.89	21.85	21.68
3	8	7		21.83	21.86	21.64
3	15	0		21.87	21.81	21.67
3	1	0	16-QAM	21.97	21.99	21.84
3	1	8		22.16	22.07	21.90
3	1	14		22.02	21.94	21.76
3	8	0		20.93	20.86	20.76
3	8	4		21.01	20.92	20.74

3	8	7		20.97	20.91	20.69
3	15	0		20.92	20.84	20.67
3	1	0	64-QAM	20.87	20.79	20.71
3	1	8		21.04	20.99	20.75
3	1	14		20.95	20.82	20.66
3	8	0		19.81	19.78	19.72
3	8	4		19.89	19.82	19.73
3	8	7		19.80	19.82	19.65
3	15	0		19.83	19.74	19.68

LTE Band 26 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.72	22.67	22.51
1.4	1	3		22.83	22.80	22.59
1.4	1	5		22.76	22.64	22.46
1.4	3	0		22.76	22.67	22.53
1.4	3	1		22.85	22.72	22.58
1.4	3	3		22.78	22.74	22.50
1.4	6	0		21.84	21.82	21.63
1.4	1	0	16-QAM	22.01	21.92	21.75
1.4	1	3		22.13	22.05	21.84
1.4	1	5		22.05	21.96	21.73
1.4	3	0		21.78	21.72	21.57
1.4	3	1		21.87	21.76	21.65
1.4	3	3		21.82	21.76	21.55
1.4	6	0		20.95	20.91	20.74
1.4	1	0	64-QAM	20.84	20.81	20.86
1.4	1	3		20.82	20.92	20.84
1.4	1	5		20.86	20.80	20.83
1.4	3	0		20.81	20.80	20.88
1.4	3	1		20.80	20.85	20.87
1.4	3	3		20.83	20.81	20.83
1.4	6	0		19.84	19.80	19.89

LTE Band 71 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.45	23.47	23.32
20	1	49		23.18	23.16	23.20
20	1	99		23.15	23.14	23.26
20	50	0		22.33	22.52	22.34
20	50	24		22.40	22.43	22.43
20	50	50		22.38	22.39	22.48
20	100	0		22.36	22.47	22.43
20	1	0	16-QAM	22.69	22.74	22.62
20	1	49		22.56	22.49	22.43
20	1	99		22.34	22.51	22.57
20	50	0		21.35	21.50	21.36
20	50	24		21.37	21.46	21.42
20	50	50		21.38	21.42	21.43
20	100	0		21.44	21.38	21.39
20	1	0	64-QAM	21.75	21.66	21.62
20	1	49		21.54	21.53	21.45
20	1	99		21.46	21.35	21.55
20	50	0		20.53	20.35	20.39
20	50	24		20.50	20.43	20.49
20	50	50		20.41	20.45	20.47
20	100	0		20.42	20.43	20.42
15	1	0	QPSK	23.46	23.38	23.40
15	1	37		23.29	23.18	23.27
15	1	74		23.20	23.19	23.25
15	36	0		22.50	22.41	22.35
15	36	20		22.49	22.39	22.46
15	36	39		22.37	22.44	22.40
15	75	0		22.44	22.36	22.44
15	1	0	16-QAM	22.66	22.56	22.61
15	1	37		22.54	22.50	22.54
15	1	74		22.39	22.45	22.31
15	36	0		21.52	21.40	21.40
15	36	20		21.47	21.40	21.45

15	36	39		21.38	21.47	21.47
15	75	0		21.46	21.39	21.40
15	1	0	64-QAM	21.73	21.56	21.69
15	1	37		21.60	21.53	21.36
15	1	74		21.44	21.47	21.46
15	36	0		20.52	20.46	20.40
15	36	20		20.50	20.45	20.44
15	36	39		20.42	20.47	20.41
15	75	0		20.48	20.43	20.46

LTE Band 71 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.30	23.21	23.17
10	1	25		23.18	23.09	23.19
10	1	49		23.01	23.12	23.16
10	25	0		22.37	22.27	22.30
10	25	12		22.33	22.30	22.34
10	25	25		22.33	22.27	22.30
10	50	0		22.34	22.30	22.31
10	1	0	16-QAM	22.57	22.48	22.47
10	1	25		22.43	22.44	22.39
10	1	49		22.26	22.42	22.20
10	25	0		21.49	21.28	21.37
10	25	12		21.38	21.36	21.39
10	25	25		21.37	21.40	21.33
10	50	0		21.26	21.32	21.24
10	1	0	64-QAM	21.55	21.40	21.53
10	1	25		21.55	21.49	21.22
10	1	49		21.24	21.32	21.31
10	25	0		20.39	20.32	20.28
10	25	12		20.37	20.44	20.42
10	25	25		20.30	20.34	20.37
10	50	0		20.40	20.39	20.36
5	1	0	QPSK	23.19	23.14	23.20
5	1	12		23.25	23.16	23.21
5	1	24		23.26	23.22	23.24
5	12	0		22.35	22.22	22.26
5	12	7		22.43	22.39	22.38
5	12	13		22.45	22.32	22.40
5	25	0		22.39	22.32	22.36
5	1	0	16-QAM	22.40	22.34	22.36
5	1	12		22.30	22.37	22.28
5	1	24		22.09	22.23	22.08
5	12	0		21.39	21.17	21.24
5	12	7		21.27	21.23	21.23

5	12	13		21.23	21.27	21.15
5	25	0		21.15	21.20	21.08
5	1	0	64-QAM	21.41	21.31	21.36
5	1	12		21.43	21.30	21.05
5	1	24		21.11	21.25	21.13
5	12	0		20.31	20.20	20.10
5	12	7		20.23	20.24	20.24
5	12	13		20.19	20.19	20.21
5	25	0		20.22	20.28	20.25

ERP/EIRP

LTE Band 2 (GT - LC = -0.50 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	22.66	22.57	22.44	22.69	22.63	22.50	22.61	22.62	22.46
Conducted Power (Watts)	0.1845	0.1807	0.1754	0.1858	0.1832	0.1778	0.1824	0.1828	0.1762
EIRP(dBm)	22.16	22.07	21.94	22.19	22.13	22.00	22.11	22.12	21.96
EIRP(Watts)	0.1644	0.1611	0.1563	0.1656	0.1633	0.1585	0.1626	0.1629	0.1570

LTE Band 2 (GT - LC = -0.50 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	22.62	22.54	22.44	22.74	22.72	22.57	22.75	22.67	22.61
Conducted Power (Watts)	0.1828	0.1795	0.1754	0.1879	0.1871	0.1807	0.1884	0.1849	0.1824
EIRP(dBm)	22.12	22.04	21.94	22.24	22.22	22.07	22.25	22.17	22.11
EIRP(Watts)	0.1629	0.1600	0.1563	0.1675	0.1667	0.1611	0.1679	0.1648	0.1626

LTE Band 2 (GT - LC = -0.50 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	21.87	21.83	21.67	21.93	21.91	21.76	21.93	21.71	21.67
Conducted Power (Watts)	0.1538	0.1524	0.1469	0.1560	0.1552	0.1500	0.1560	0.1483	0.1469
EIRP(dBm)	21.37	21.33	21.17	21.43	21.41	21.26	21.43	21.21	21.17
EIRP(Watts)	0.1371	0.1358	0.1309	0.1390	0.1384	0.1337	0.1390	0.1321	0.1309

LTE Band 2 (GT - LC = -0.50 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	21.79	21.78	21.64	22.12	21.98	21.87	22.01	21.98	21.91
Conducted Power (Watts)	0.1510	0.1507	0.1459	0.1629	0.1578	0.1538	0.1589	0.1578	0.1552
EIRP(dBm)	21.29	21.28	21.14	21.62	21.48	21.37	21.51	21.48	21.41
EIRP(Watts)	0.1346	0.1343	0.1300	0.1452	0.1406	0.1371	0.1416	0.1406	0.1384

LTE Band 2 (GT - LC = -0.50 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	20.80	20.78	20.52	20.88	20.82	20.62	20.72	20.64	20.48
Conducted Power (Watts)	0.1202	0.1197	0.1127	0.1225	0.1208	0.1153	0.1180	0.1159	0.1117
EIRP(dBm)	20.30	20.28	20.02	20.38	20.32	20.12	20.22	20.14	19.98
EIRP(Watts)	0.1072	0.1067	0.1005	0.1091	0.1076	0.1028	0.1052	0.1033	0.0995

LTE Band 2 (GT - LC = -0.50 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	20.63	20.70	20.55	20.91	20.89	20.72	20.87	20.86	20.71
Conducted Power (Watts)	0.1156	0.1175	0.1135	0.1233	0.1227	0.1180	0.1222	0.1219	0.1178
EIRP(dBm)	20.13	20.20	20.05	20.41	20.39	20.22	20.37	20.36	20.21
EIRP(Watts)	0.1030	0.1047	0.1012	0.1099	0.1094	0.1052	0.1089	0.1086	0.1050

LTE Band 25 (GT - LC = -0.50 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 (MHz)	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
Conducted Power (dBm)	23.00	22.76	22.71	22.71	22.64	22.54	22.94	22.87	22.72
Conducted Power (Watts)	0.1995	0.1888	0.1866	0.1866	0.1837	0.1795	0.1968	0.1936	0.1871
EIRP(dBm)	22.50	22.26	22.21	22.21	22.14	22.04	22.44	22.37	22.22
EIRP(Watts)	0.1778	0.1683	0.1663	0.1663	0.1637	0.1600	0.1754	0.1726	0.1667

LTE Band 25 (GT - LC = -0.50 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 (MHz)	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
Conducted Power (dBm)	22.91	22.74	22.70	23.01	23.05	22.88	23.09	23.08	22.90
Conducted Power (Watts)	0.1954	0.1879	0.1862	0.2000	0.2018	0.1941	0.2037	0.2032	0.1950
EIRP(dBm)	22.41	22.24	22.20	22.51	22.55	22.38	22.59	22.58	22.40
EIRP(Watts)	0.1742	0.1675	0.1660	0.1782	0.1799	0.1730	0.1816	0.1811	0.1738

LTE Band 25 (GT - LC = -0.50 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 (MHz)	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
Conducted Power (dBm)	22.23	22.06	21.98	22.02	21.54	21.54	22.22	22.08	22.00
Conducted Power (Watts)	0.1671	0.1607	0.1578	0.1592	0.1426	0.1426	0.1667	0.1614	0.1585
EIRP(dBm)	21.73	21.56	21.48	21.52	21.04	21.04	21.72	21.58	21.50
EIRP(Watts)	0.1489	0.1432	0.1406	0.1419	0.1271	0.1271	0.1486	0.1439	0.1413

LTE Band 25 (GT - LC = -0.50 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 (MHz)	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
Conducted Power (dBm)	22.14	22.07	21.99	22.25	22.27	22.19	22.39	22.35	22.26
Conducted Power (Watts)	0.1637	0.1611	0.1581	0.1679	0.1687	0.1656	0.1734	0.1718	0.1683
EIRP(dBm)	21.64	21.57	21.49	21.75	21.77	21.69	21.89	21.85	21.76
EIRP(Watts)	0.1459	0.1435	0.1409	0.1496	0.1503	0.1476	0.1545	0.1531	0.1500

LTE Band 25 (GT - LC = -0.50 dB) 64QAM									
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 (MHz)	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
Conducted Power (dBm)	21.24	21.12	20.97	21.23	21.16	21.00	21.18	21.15	20.93
Conducted Power (Watts)	0.1330	0.1294	0.1250	0.1327	0.1306	0.1259	0.1312	0.1303	0.1239
EIRP(dBm)	20.74	20.62	20.47	20.73	20.66	20.50	20.68	20.65	20.43
EIRP(Watts)	0.1186	0.1153	0.1114	0.1183	0.1164	0.1122	0.1169	0.1161	0.1104

LTE Band 25 (GT - LC = -0.50 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
Conducted Power (dBm)	21.03	21.14	20.87	21.05	21.09	20.93	21.15	21.12	20.96
Conducted Power (Watts)	0.1268	0.1300	0.1222	0.1274	0.1285	0.1239	0.1303	0.1294	0.1247
EIRP(dBm)	20.53	20.64	20.37	20.55	20.59	20.43	20.65	20.62	20.46
EIRP(Watts)	0.1130	0.1159	0.1089	0.1135	0.1146	0.1104	0.1161	0.1153	0.1112

LTE Band 5 (GT - LC = -2.00 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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.95	22.82	22.66	22.94	22.82	22.70	22.93	22.79	22.70
Conducted Power (Watts)	0.1972	0.1914	0.1845	0.1968	0.1914	0.1862	0.1963	0.1901	0.1862
ERP(dBm)	18.80	18.67	18.51	18.79	18.67	18.55	18.78	18.64	18.55
ERP(Watts)	0.0759	0.0736	0.0710	0.0757	0.0736	0.0716	0.0755	0.0731	0.0716

LTE Band 5 (GT - LC = -2.00 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	22.96	22.86	22.77
Conducted Power (Watts)	0.1977	0.1932	0.1892
ERP(dBm)	18.81	18.71	18.62
ERP(Watts)	0.0760	0.0743	0.0728

LTE Band 5 (GT - LC = -2.00 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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.26	22.13	21.96	22.35	22.17	22.04	22.23	22.07	22.03
Conducted Power (Watts)	0.1683	0.1633	0.1570	0.1718	0.1648	0.1600	0.1671	0.1611	0.1596
ERP(dBm)	18.11	17.98	17.81	18.20	18.02	17.89	18.08	17.92	17.88
ERP(Watts)	0.0647	0.0628	0.0604	0.0661	0.0634	0.0615	0.0643	0.0619	0.0614

LTE Band 5 (GT - LC = -2.00 dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	22.23	22.16	22.09
Conducted Power (Watts)	0.1671	0.1644	0.1618
ERP(dBm)	18.08	18.01	17.94
ERP(Watts)	0.0643	0.0632	0.0622

LTE Band 5 (GT - LC = -2.00 dB) 64QAM									
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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	21.21	21.07	20.94	21.25	21.15	21.01	21.23	21.13	21.03
Conducted Power (Watts)	0.1321	0.1279	0.1242	0.1334	0.1303	0.1262	0.1327	0.1297	0.1268
ERP(dBm)	17.06	16.92	16.79	17.10	17.00	16.86	17.08	16.98	16.88
ERP(Watts)	0.0508	0.0492	0.0478	0.0513	0.0501	0.0485	0.0511	0.0499	0.0488

LTE Band 5 (GT - LC = -2.00 dB) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency (MHz)	829	836.5	844
Conducted Power (dBm)	21.21	21.25	21.13
Conducted Power (Watts)	0.1321	0.1334	0.1297
ERP(dBm)	17.06	17.10	16.98
ERP(Watts)	0.0508	0.0513	0.0499

LTE Band 26 (GT - LC = -2.00 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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.85	22.72	22.58	22.86	22.81	22.63	22.79	22.71	22.58
Conducted Power (Watts)	0.1928	0.1871	0.1811	0.1932	0.1910	0.1832	0.1901	0.1866	0.1811
ERP(dBm)	18.70	18.57	18.43	18.71	18.66	18.48	18.64	18.56	18.43
ERP(Watts)	0.0741	0.0719	0.0697	0.0743	0.0735	0.0705	0.0731	0.0718	0.0697

LTE Band 26 (GT - LC = -2.00 dB) QPSK							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency (MHz)	829	836.5	844	831.5	836.5	841.5	821.5
Conducted Power (dBm)	22.76	22.79	22.69	22.99	22.94	22.91	22.97
Conducted Power (Watts)	0.1888	0.1901	0.1858	0.1991	0.1968	0.1954	0.1982
ERP(dBm)	18.61	18.64	18.54	18.84	18.79	18.76	18.82
ERP(Watts)	0.0726	0.0731	0.0714	0.0766	0.0757	0.0752	0.0762

LTE Band 26 (GT - LC = -2.00 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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.13	22.05	21.84	22.16	22.07	21.90	22.09	21.95	21.76
Conducted Power (Watts)	0.1633	0.1603	0.1528	0.1644	0.1611	0.1549	0.1618	0.1567	0.1500
ERP(dBm)	17.98	17.90	17.69	18.01	17.92	17.75	17.94	17.80	17.61
ERP(Watts)	0.0628	0.0617	0.0587	0.0632	0.0619	0.0596	0.0622	0.0603	0.0577

LTE Band 26 (GT - LC = -2.00 dB) 16QAM							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency (MHz)	829	836.5	844	831.5	836.5	841.5	821.5
Conducted Power (dBm)	22.10	21.97	21.88	22.19	22.21	22.19	22.24
Conducted Power (Watts)	0.1622	0.1574	0.1542	0.1656	0.1663	0.1656	0.1675
ERP(dBm)	17.95	17.82	17.73	18.04	18.06	18.04	18.09
ERP(Watts)	0.0624	0.0605	0.0593	0.0637	0.0640	0.0637	0.0644

LTE Band 26 (GT - LC = -2.00 dB) 64QAM									
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 (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	20.82	20.92	20.84	21.04	20.99	20.75	20.98	20.94	20.78
Conducted Power (Watts)	0.1208	0.1236	0.1213	0.1271	0.1256	0.1189	0.1253	0.1242	0.1197
ERP(dBm)	16.67	16.77	16.69	16.89	16.84	16.60	16.83	16.79	16.63
ERP(Watts)	0.0465	0.0475	0.0467	0.0489	0.0483	0.0457	0.0482	0.0478	0.0460

LTE Band 26 (GT - LC = -2.00 dB) 64QAM							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26765
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency (MHz)	829	836.5	844	831.5	836.5	841.5	821.5
Conducted Power (dBm)	20.92	20.99	20.91	20.90	21.10	20.79	21.13
Conducted Power (Watts)	0.1236	0.1256	0.1233	0.1230	0.1288	0.1199	0.1297
ERP(dBm)	16.77	16.84	16.76	16.75	16.95	16.64	16.98
ERP(Watts)	0.0475	0.0483	0.0474	0.0473	0.0495	0.0461	0.0499

LTE Band 71 (GT - LC = -2.50 dB) QPSK									
Bandwidth	5M			10M			15M		
Channel	133147	133297	133447	133172	133297	133422	133197	133297	133397
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	665.5	680.5	695.5	668	680.5	693	670.5	680.5	690.5
Conducted Power (dBm)	23.26	23.22	23.24	23.30	23.21	23.17	23.46	23.38	23.40
Conducted Power (Watts)	0.2118	0.2099	0.2109	0.2138	0.2094	0.2075	0.2218	0.2178	0.2188
ERP(dBm)	18.61	18.57	18.59	18.65	18.56	18.52	18.81	18.73	18.75
ERP(Watts)	0.0726	0.0719	0.0723	0.0733	0.0718	0.0711	0.0760	0.0746	0.0750

LTE Band 71 (GT - LC = -2.50 dB) QPSK			
Bandwidth	20M		
Channel	133222	133297	133372
	(Low)	(Mid)	(High)
Frequency (MHz)	673	680.5	688
Conducted Power (dBm)	23.45	23.47	23.32
Conducted Power (Watts)	0.2213	0.2223	0.2148
ERP(dBm)	18.80	18.82	18.67
ERP(Watts)	0.0759	0.0762	0.0736

LTE Band 71 (GT - LC = -2.50 dB) 16QAM									
Bandwidth	5M			10M			15M		
Channel	133147	133297	133447	133172	133297	133422	133197	133297	133397
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	665.5	680.5	695.5	668	680.5	693	670.5	680.5	690.5
Conducted Power (dBm)	22.40	22.34	22.36	22.57	22.48	22.47	22.66	22.56	22.61
Conducted Power (Watts)	0.1738	0.1714	0.1722	0.1807	0.1770	0.1766	0.1845	0.1803	0.1824
ERP(dBm)	17.75	17.69	17.71	17.92	17.83	17.82	18.01	17.91	17.96
ERP(Watts)	0.0596	0.0587	0.0590	0.0619	0.0607	0.0605	0.0632	0.0618	0.0625

LTE Band 71 (GT - LC = -2.50 dB) 16QAM			
Bandwidth	20M		
Channel	133222	133297	133372
	(Low)	(Mid)	(High)
Frequency (MHz)	673	680.5	688
Conducted Power (dBm)	22.69	22.74	22.62
Conducted Power (Watts)	0.1858	0.1879	0.1828
ERP(dBm)	18.04	18.09	17.97
ERP(Watts)	0.0637	0.0644	0.0627

LTE Band 71 (GT - LC = -2.50 dB) 64QAM									
Bandwidth	5M			10M			15M		
Channel	133147	133297	133447	133172	133297	133422	133197	133297	133397
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	665.5	680.5	695.5	668	680.5	693	670.5	680.5	690.5
Conducted Power (dBm)	21.43	21.30	21.05	21.55	21.40	21.53	21.73	21.56	21.69
Conducted Power (Watts)	0.1390	0.1349	0.1274	0.1429	0.1380	0.1422	0.1489	0.1432	0.1476
ERP(dBm)	16.78	16.65	16.40	16.90	16.75	16.88	17.08	16.91	17.04
ERP(Watts)	0.0476	0.0462	0.0437	0.0490	0.0473	0.0488	0.0511	0.0491	0.0506

LTE Band 71 (GT - LC = -2.50 dB) 64QAM			
Bandwidth	20M		
Channel	133222	133297	133372
	(Low)	(Mid)	(High)
Frequency (MHz)	673	680.5	688
Conducted Power (dBm)	21.75	21.66	21.62
Conducted Power (Watts)	0.1496	0.1466	0.1452
ERP(dBm)	17.10	17.01	16.97
ERP(Watts)	0.0513	0.0502	0.0498

Peak-to-Average Ratio

Mode	LTE Band 2 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.48	4.93	4.20	5.77	PASS
Middle CH	3.59	4.90	4.41	5.77	
Highest CH	3.62	4.90	4.29	5.91	
Mode	LTE Band 2 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB		Full RB		Result
Lowest CH	4.03		5.74		PASS
Middle CH	4.20		5.80		
Highest CH	4.17		5.83		

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.65	5.13	4.52	6.12	PASS
Middle CH	3.68	5.10	4.23	6.00	
Highest CH	3.68	5.01	4.46	5.97	
Mod.	64QAM				Limit: 13dB
RB Size	1RB		Full RB		Result
Lowest CH	4.38		6.00		PASS
Middle CH	4.26		5.97		
Highest CH	4.46		5.91		

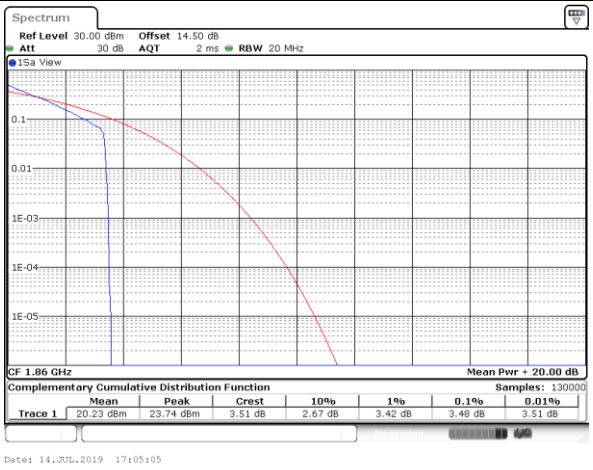
Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.57	4.84	4.03	5.88	PASS
Middle CH	3.42	4.90	3.80	5.88	
Highest CH	3.62	4.99	4.38	5.94	
Mode	LTE Band 25 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.14	5.77			PASS
Middle CH	4.00	5.77			
Highest CH	4.09	5.88			

Mode	LTE Band 26 / 15MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.62	5.22	4.46	6.06	PASS
Middle CH	3.68	5.25	4.32	6.12	
Highest CH	3.71	5.22	4.38	6.09	
Mode	LTE Band 26 / 15MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.32	6.00			PASS
Middle CH	4.29	6.03			
Highest CH	4.20	6.06			

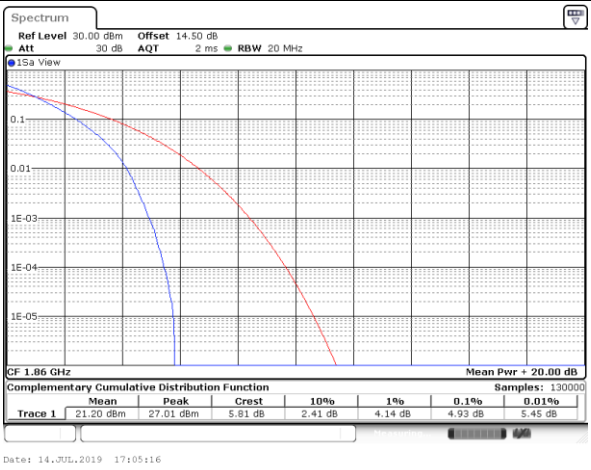
Mode	LTE Band 71 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.68	5.07	4.41	6.06	PASS
Middle CH	3.77	5.13	4.41	6.03	
Highest CH	3.74	5.04	4.43	6.00	
Mode	LTE Band 7 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.26	6.00			PASS
Middle CH	4.46	6.09			
Highest CH	4.29	5.97			

LTE Band 2 / 20MHz / QPSK

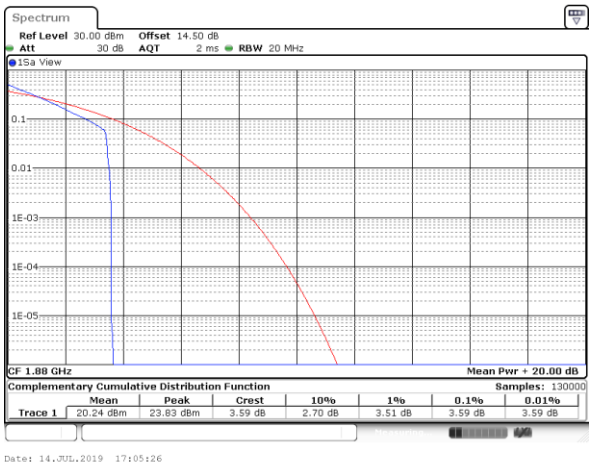
Lowest Channel / 1RB



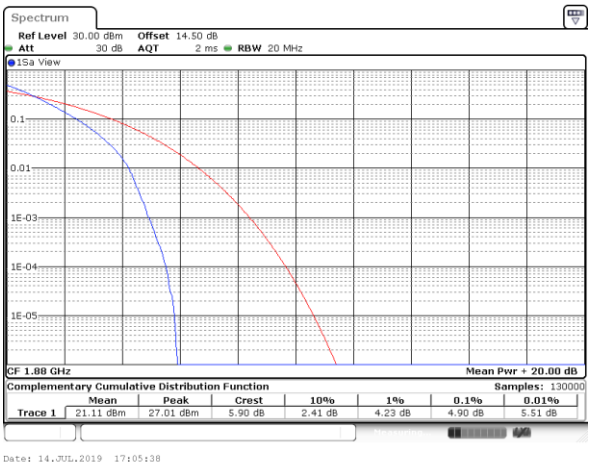
Lowest Channel / Full RB



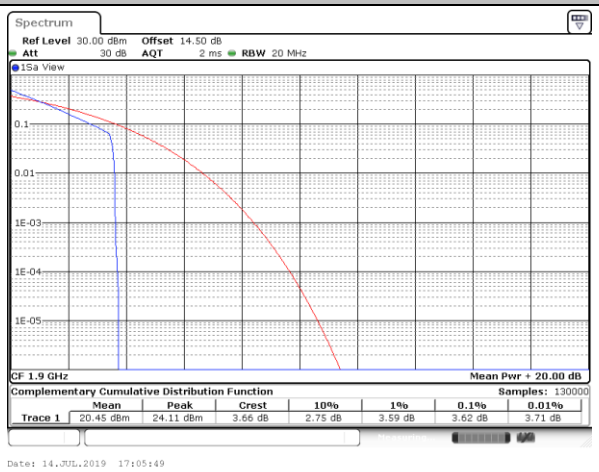
Middle Channel / 1RB



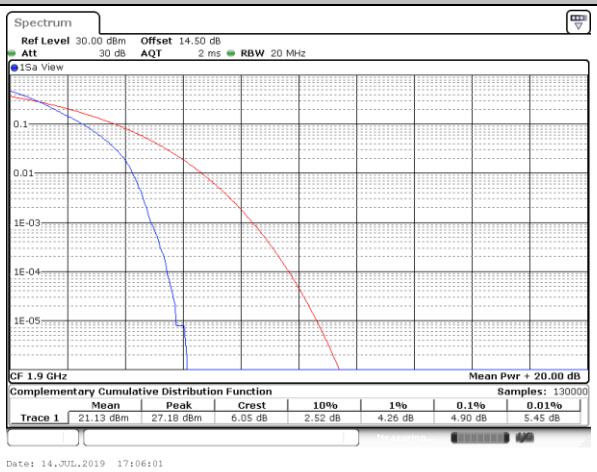
Middle Channel / Full RB



Highest Channel / 1RB

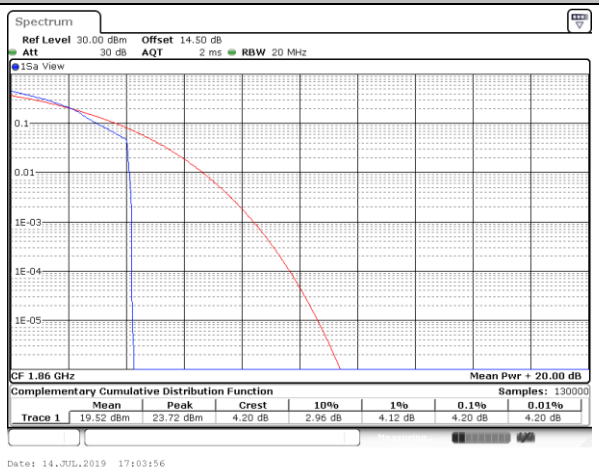


Highest Channel / Full RB

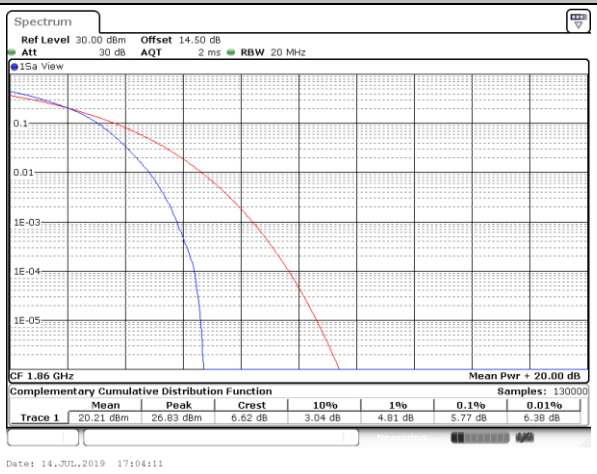


LTE Band 2 / 20MHz / 16QAM

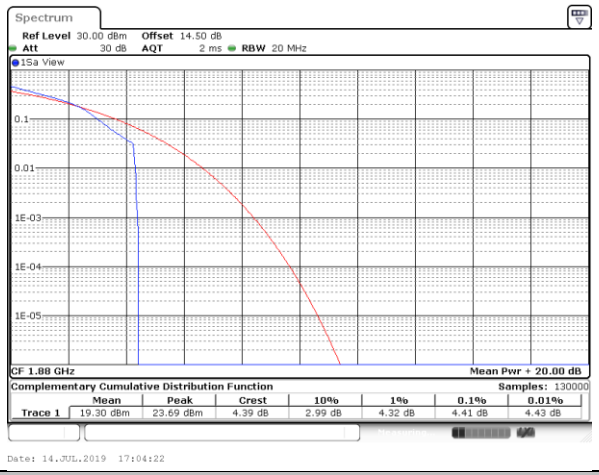
Lowest Channel / 1RB



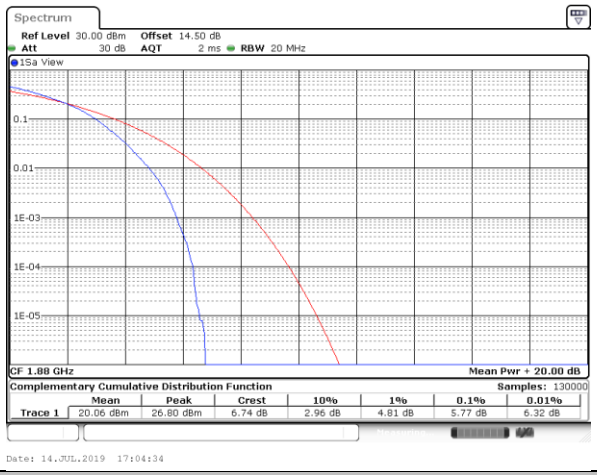
Lowest Channel / Full RB



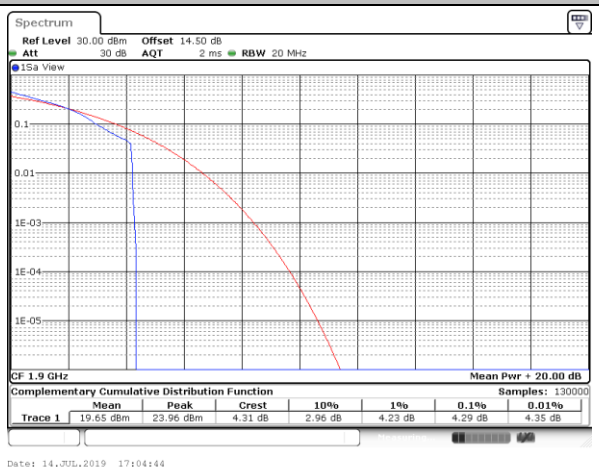
Middle Channel / 1RB



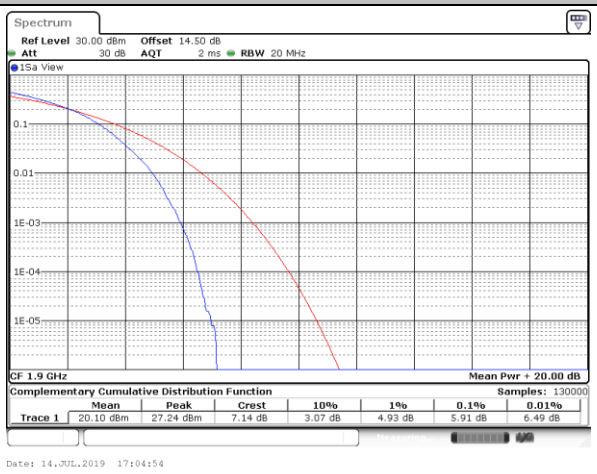
Middle Channel / Full RB



Highest Channel / 1RB

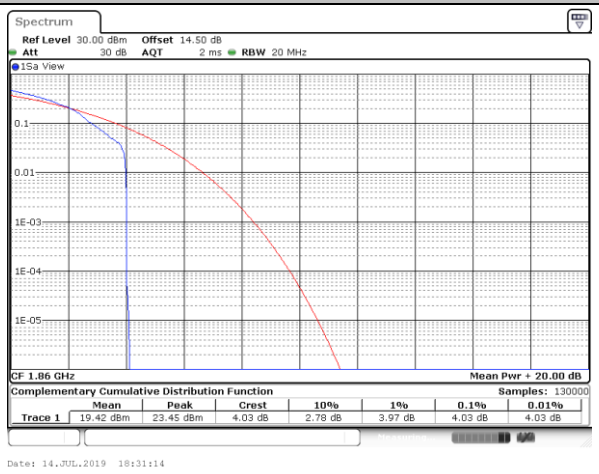


Highest Channel / Full RB

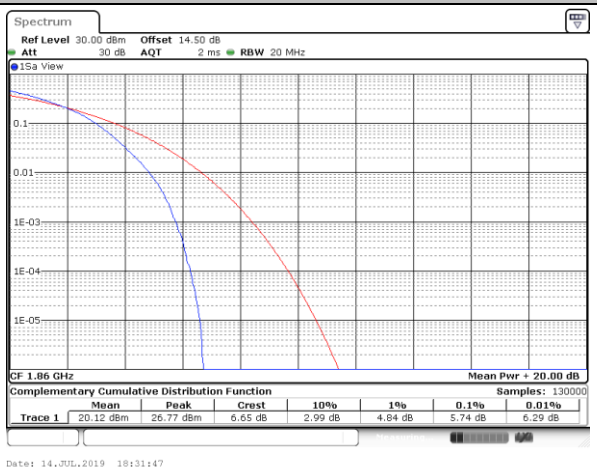


LTE Band 2 / 20MHz / 64QAM

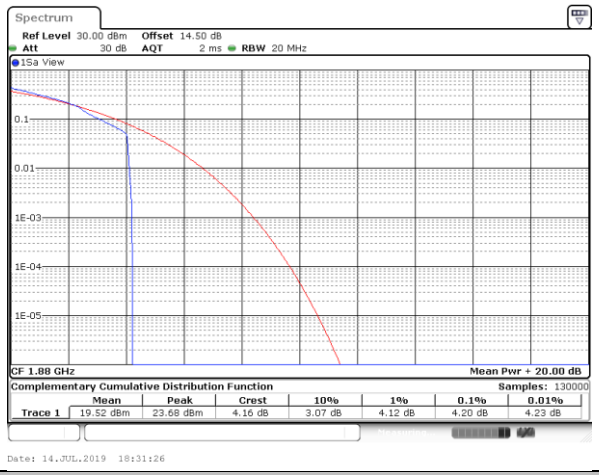
Lowest Channel / 1RB



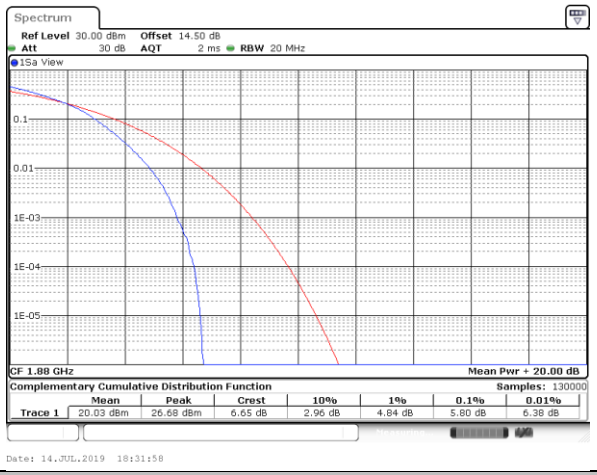
Lowest Channel / Full RB



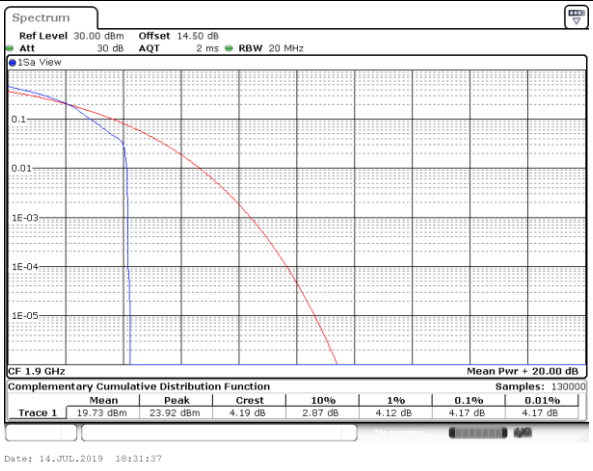
Middle Channel / 1RB



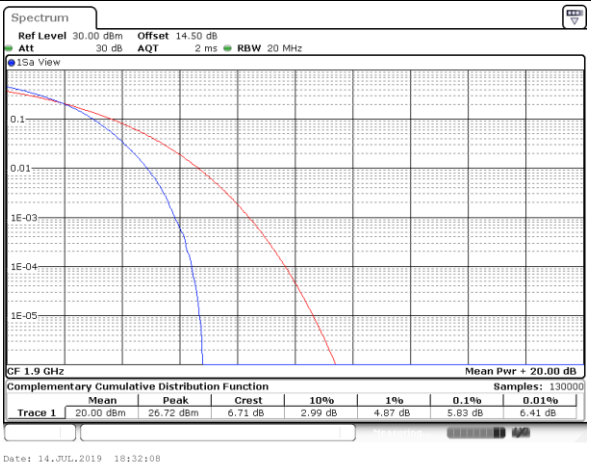
Middle Channel / Full RB



Highest Channel / 1RB

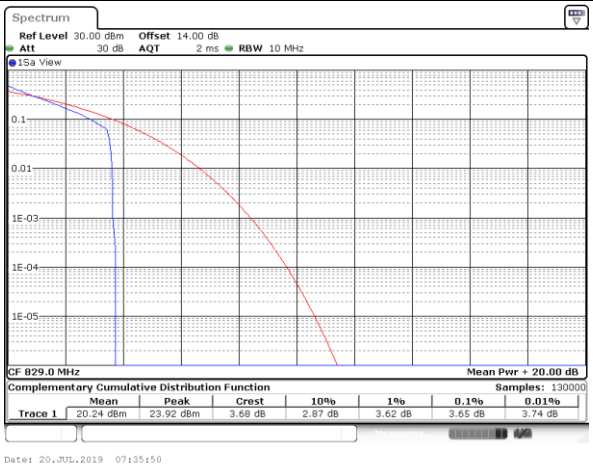


Highest Channel / Full RB

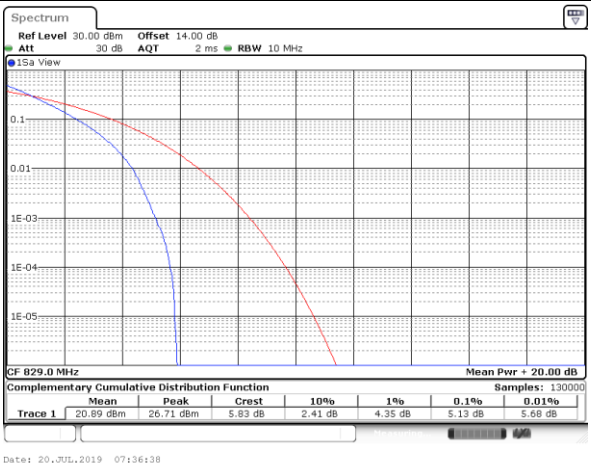


LTE Band 5 / 10MHz / QPSK

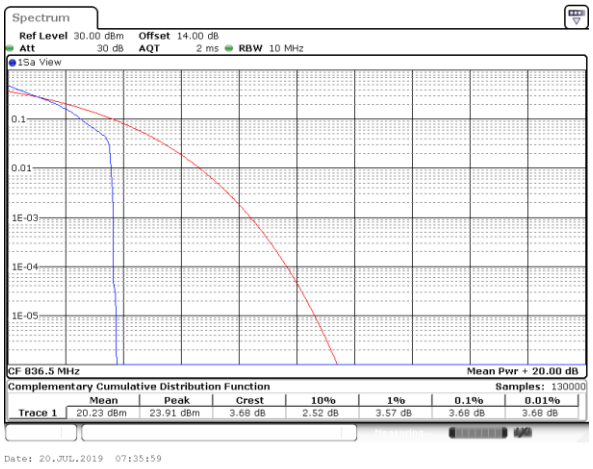
Lowest Channel / 1RB



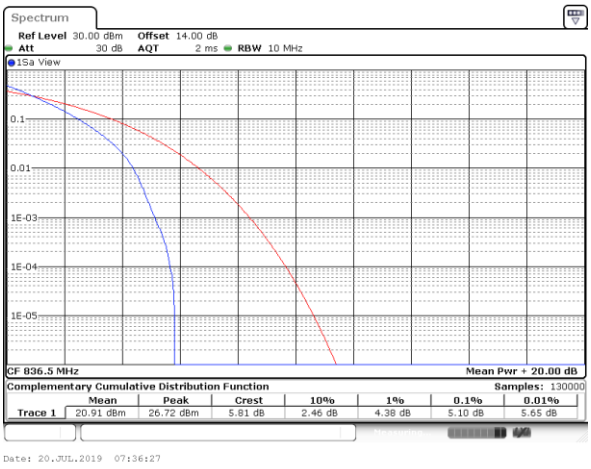
Lowest Channel / Full RB



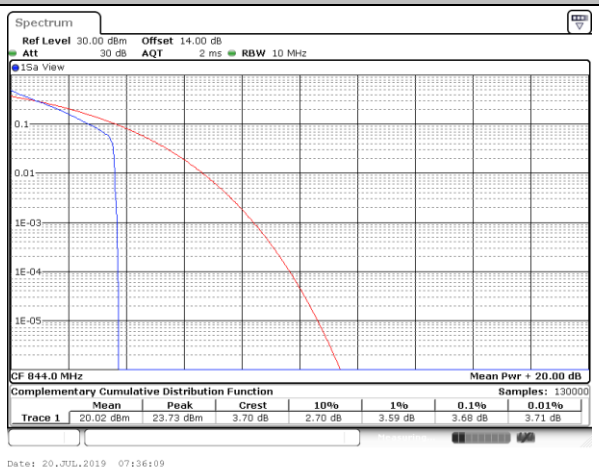
Middle Channel / 1RB



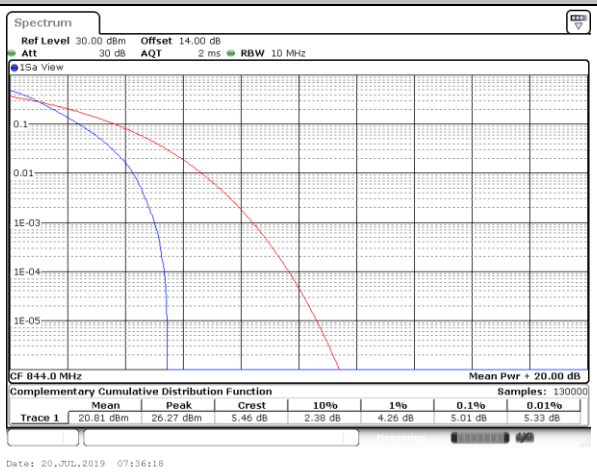
Middle Channel / Full RB



Highest Channel / 1RB

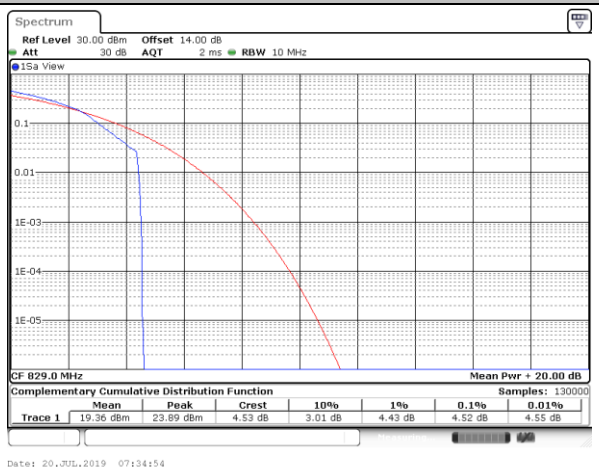


Highest Channel / Full RB

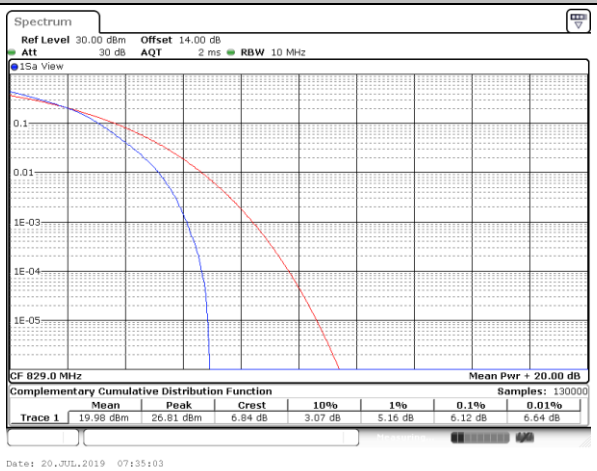


LTE Band 5 / 10MHz / 16QAM

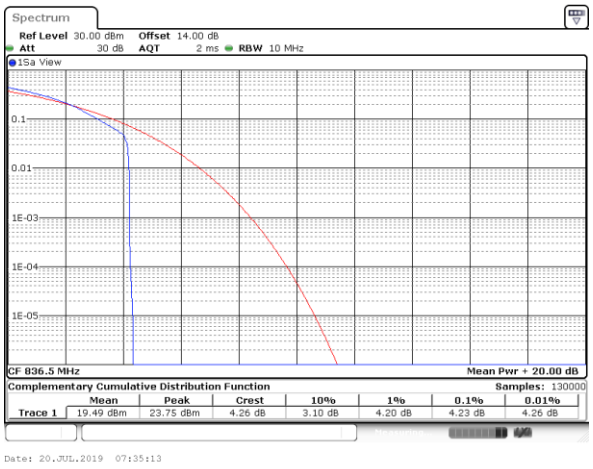
Lowest Channel / 1RB



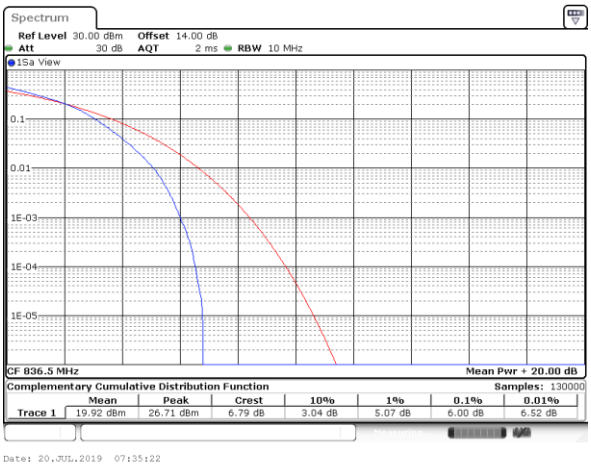
Lowest Channel / Full RB



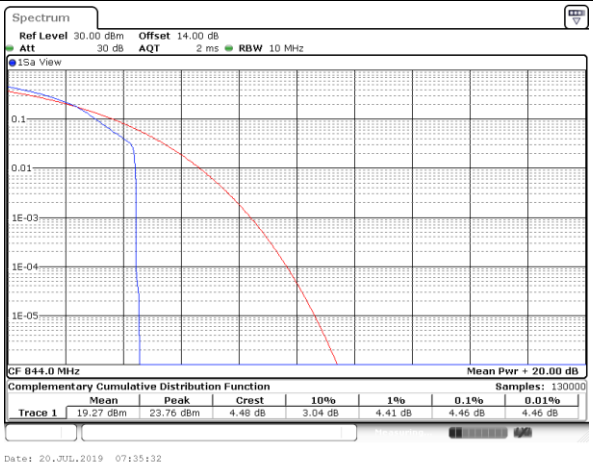
Middle Channel / 1RB



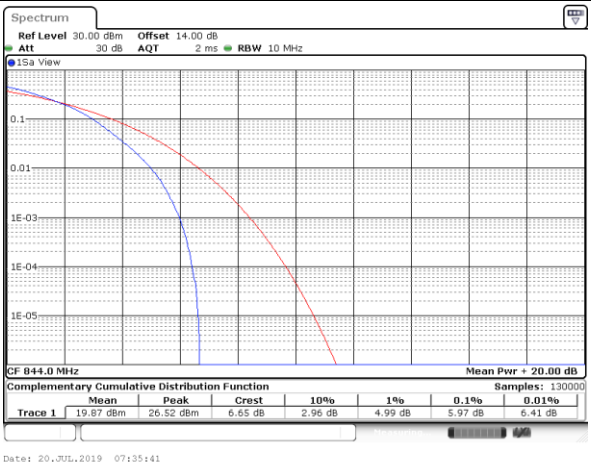
Middle Channel / Full RB



Highest Channel / 1RB

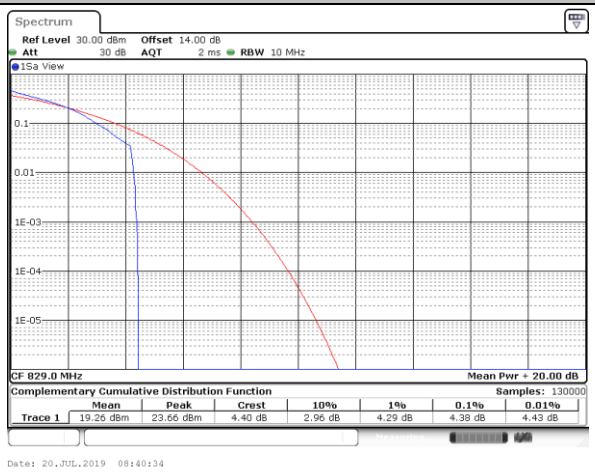


Highest Channel / Full RB

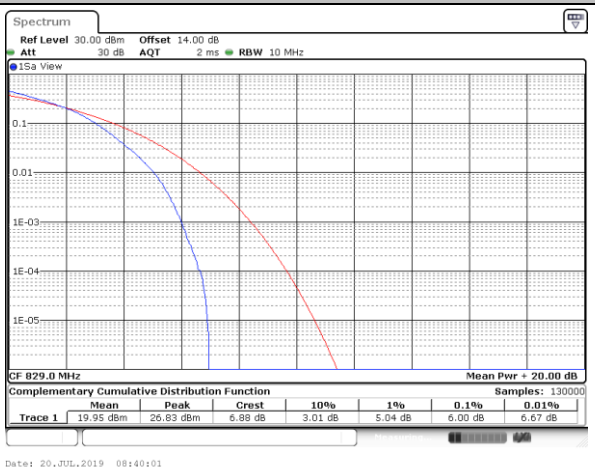


LTE Band 5 / 10MHz / 64QAM

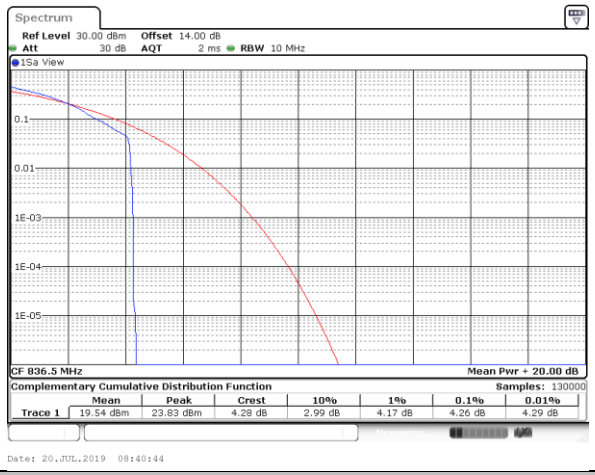
Lowest Channel / 1RB



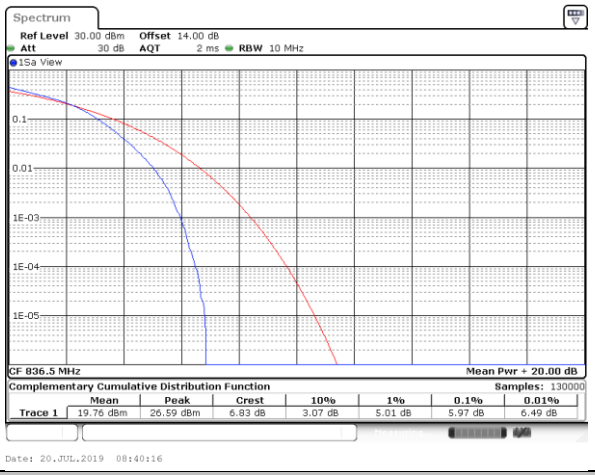
Lowest Channel / Full RB



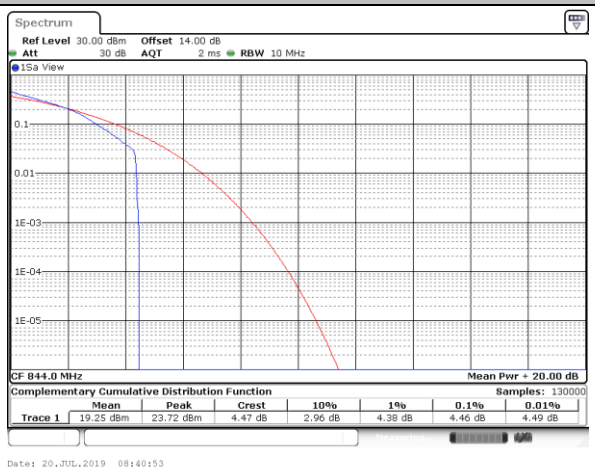
Middle Channel / 1RB



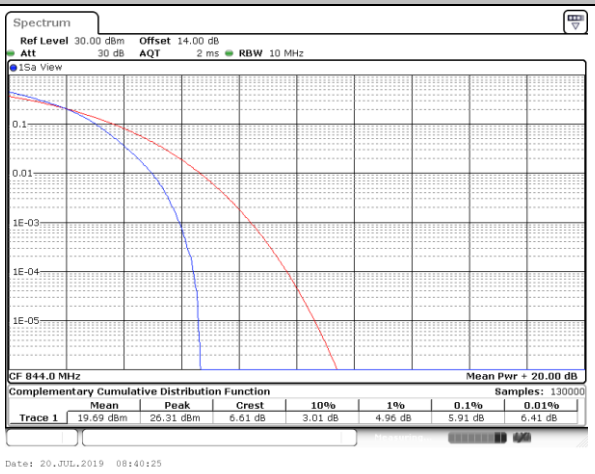
Middle Channel / Full RB



Highest Channel / 1RB

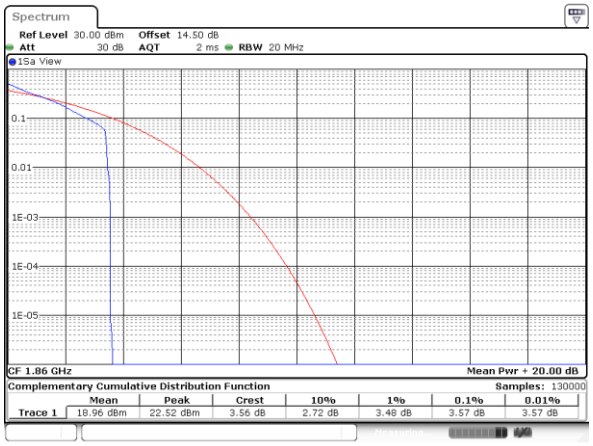


Highest Channel / Full RB

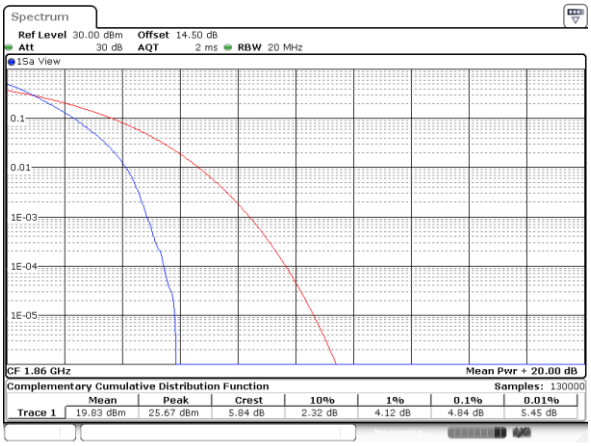


LTE Band 25 / 20MHz / QPSK

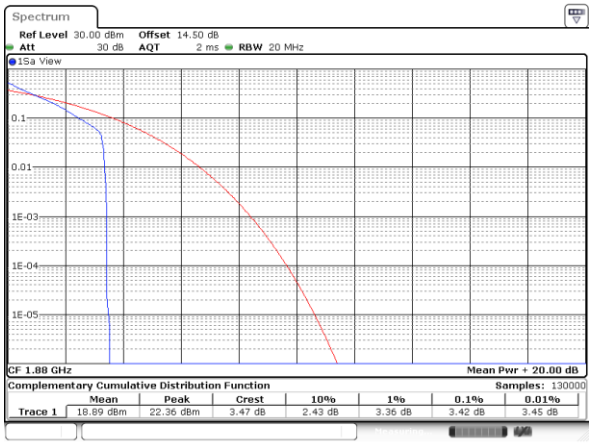
Lowest Channel / 1RB



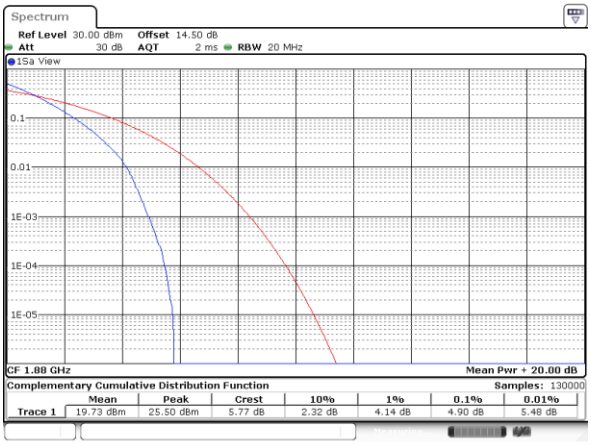
Lowest Channel / Full RB



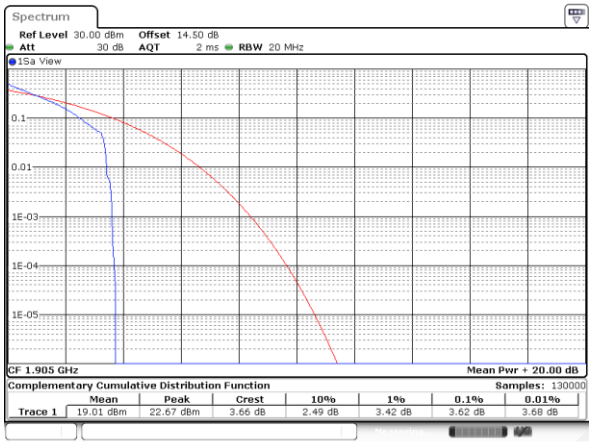
Middle Channel / 1RB



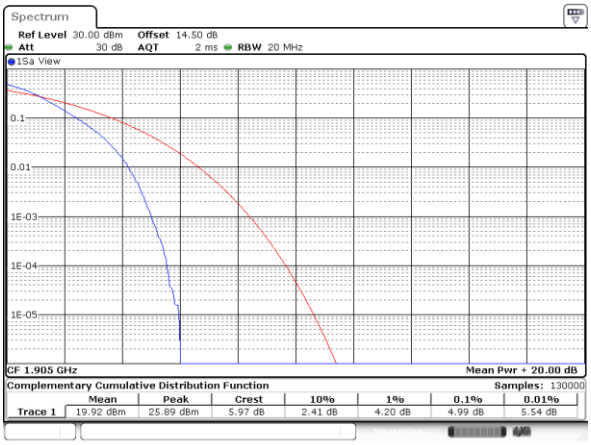
Middle Channel / Full RB



Highest Channel / 1RB

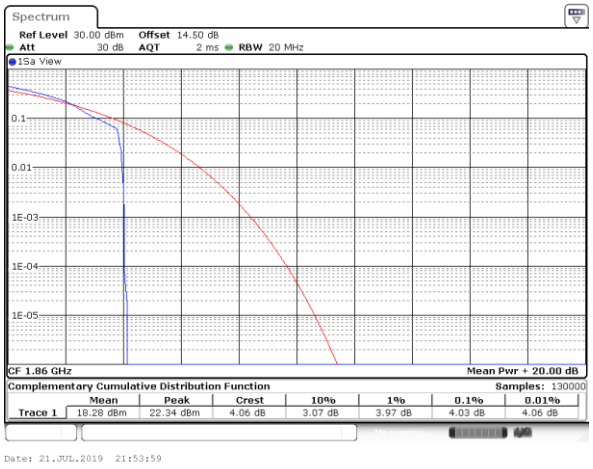


Highest Channel / Full RB

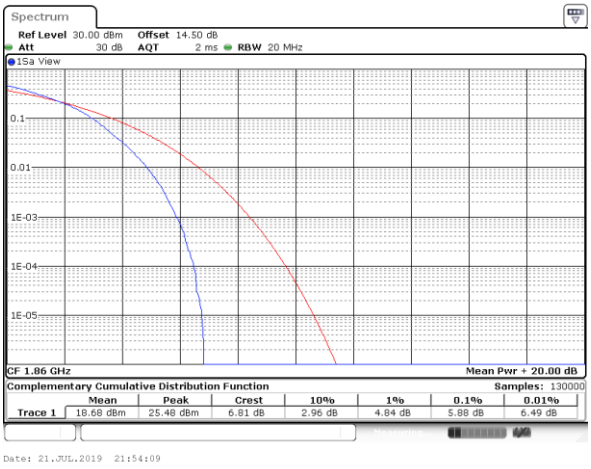


LTE Band 25 / 20MHz / 16QAM

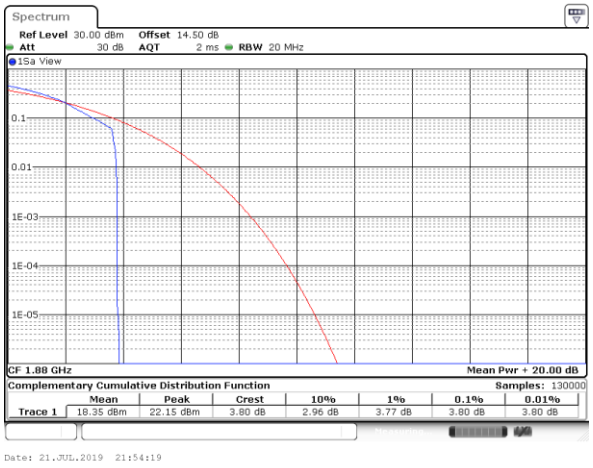
Lowest Channel / 1RB



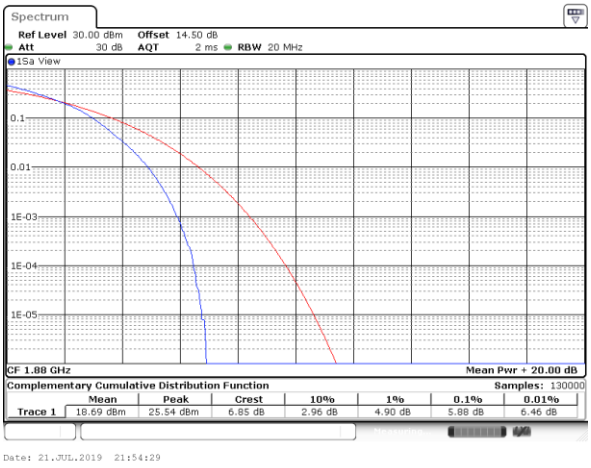
Lowest Channel / Full RB



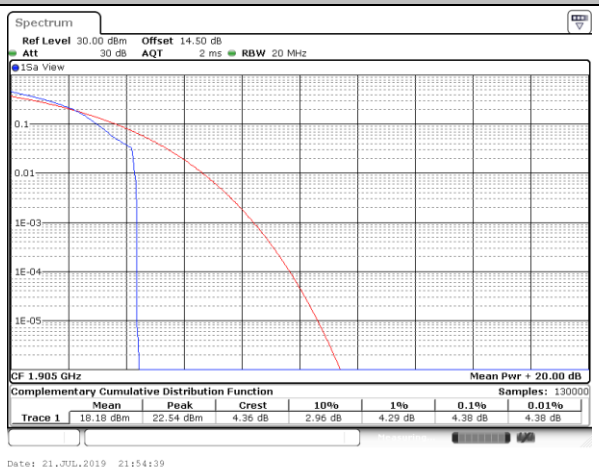
Middle Channel / 1RB



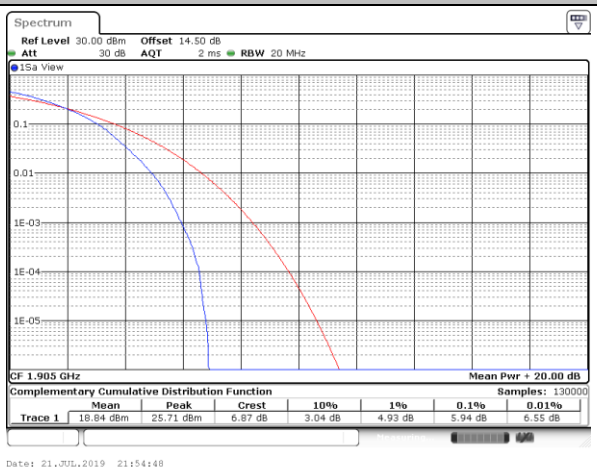
Middle Channel / Full RB



Highest Channel / 1RB

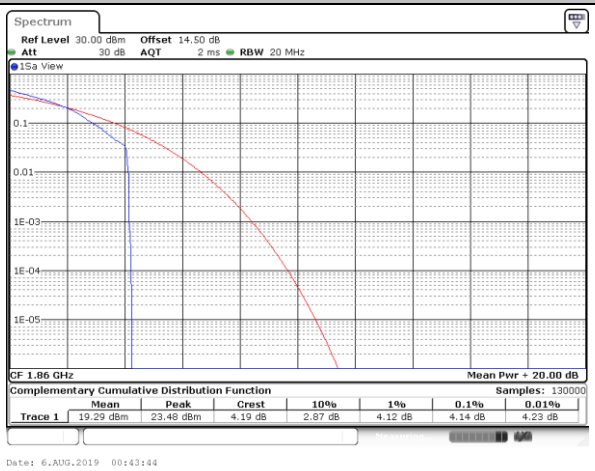


Highest Channel / Full RB

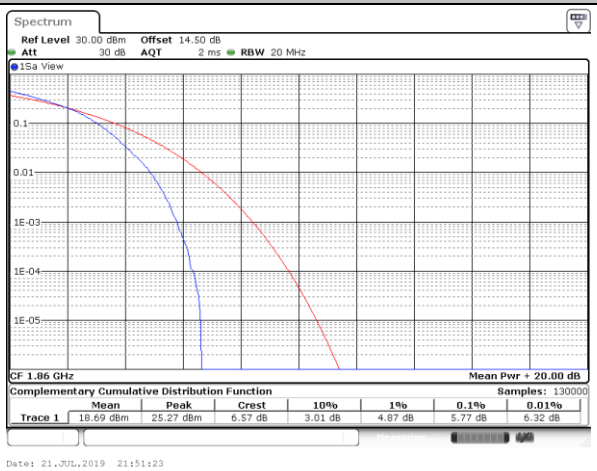


LTE Band 25 / 20MHz / 64QAM

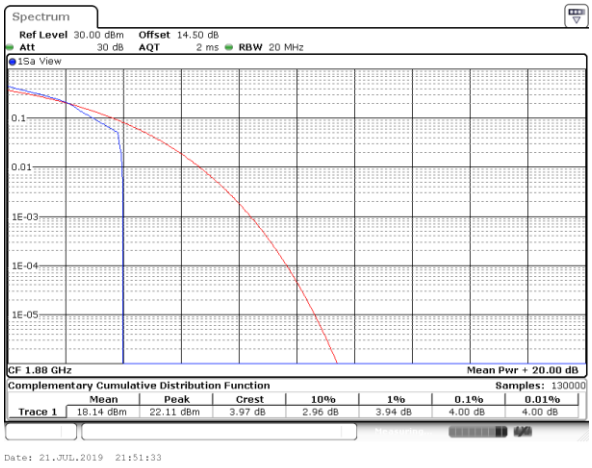
Lowest Channel / 1RB



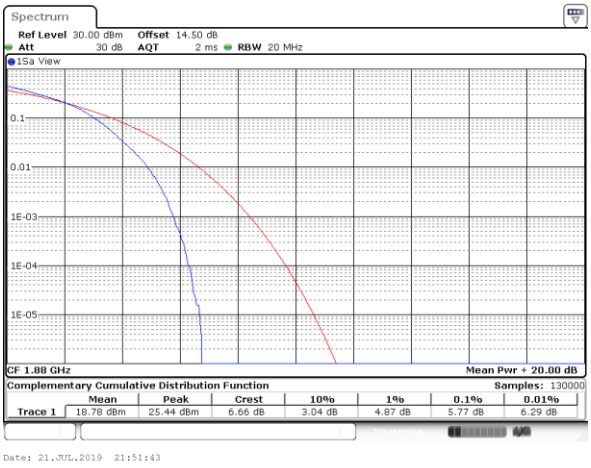
Lowest Channel / Full RB



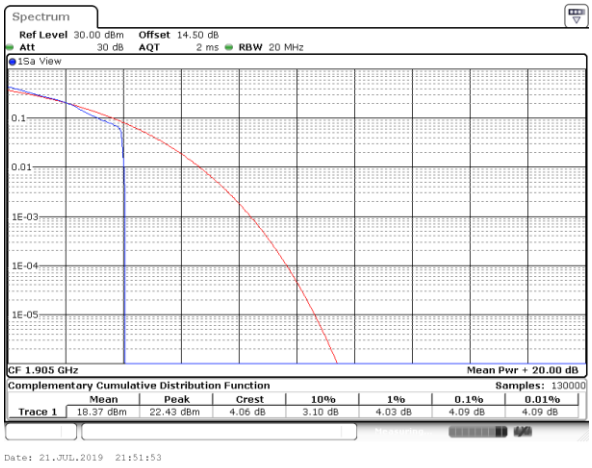
Middle Channel / 1RB



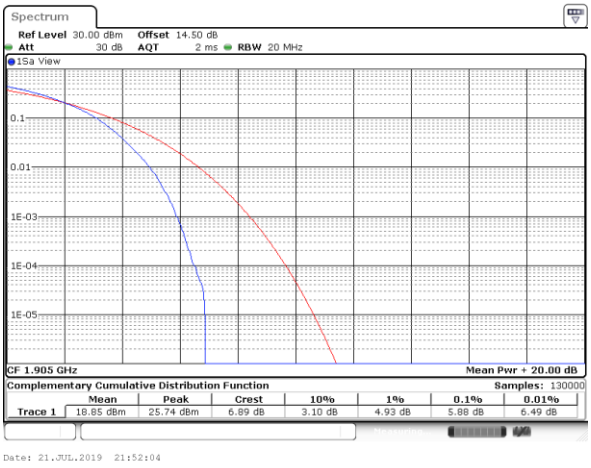
Middle Channel / Full RB



Highest Channel / 1RB

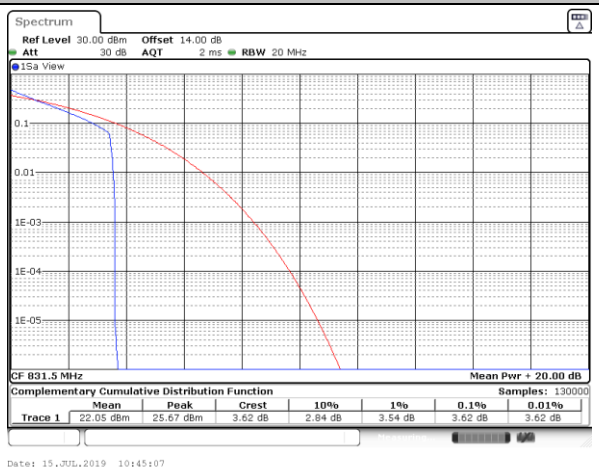


Highest Channel / Full RB

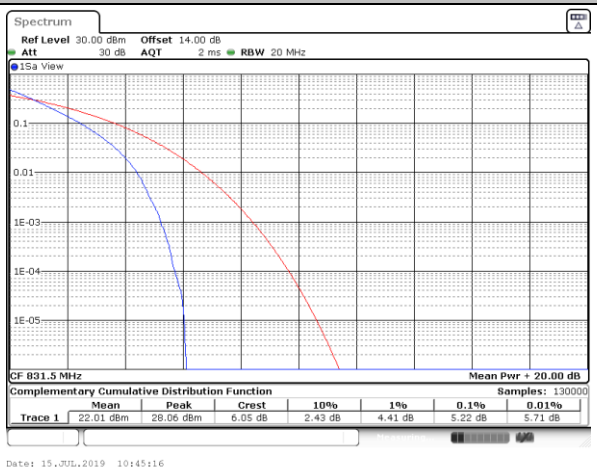


LTE Band 26 / 15MHz / QPSK

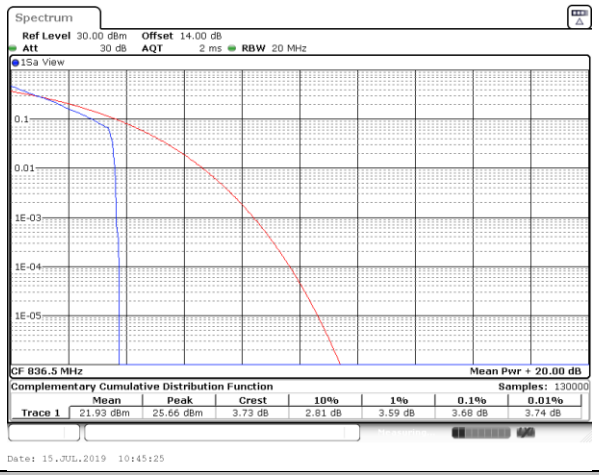
Lowest Channel / 1RB



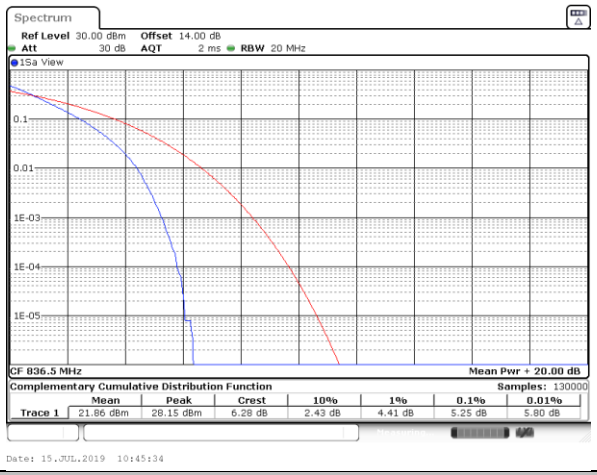
Lowest Channel / Full RB



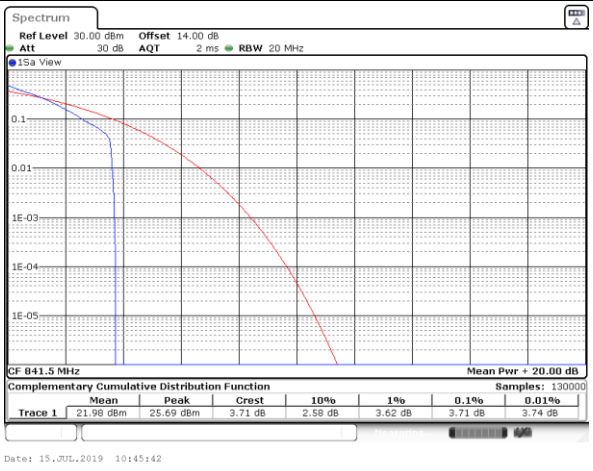
Middle Channel / 1RB



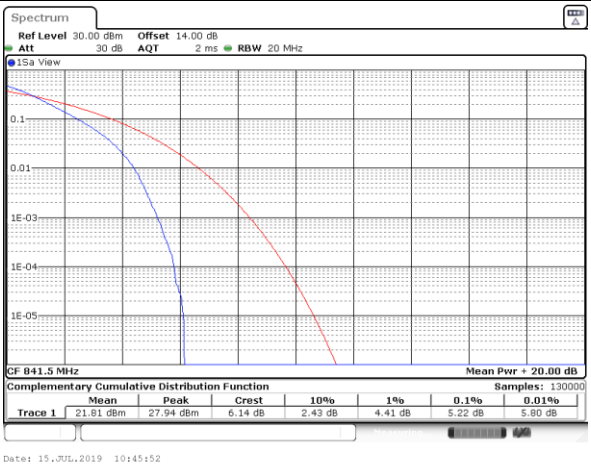
Middle Channel / Full RB



Highest Channel / 1RB

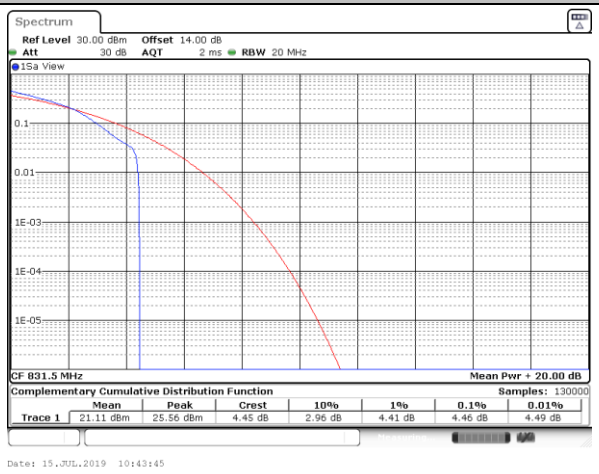


Highest Channel / Full RB

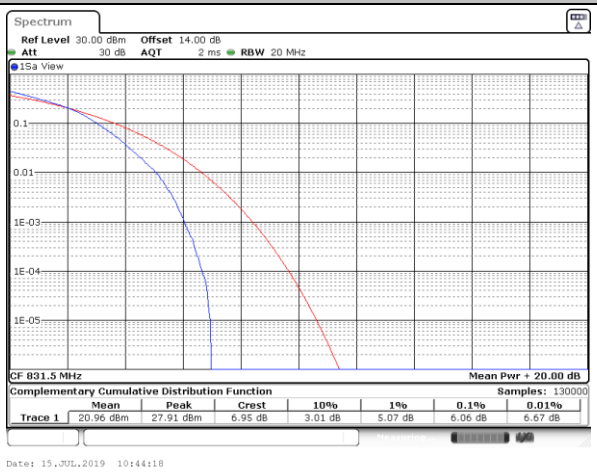


LTE Band 26 / 15MHz / 16QAM

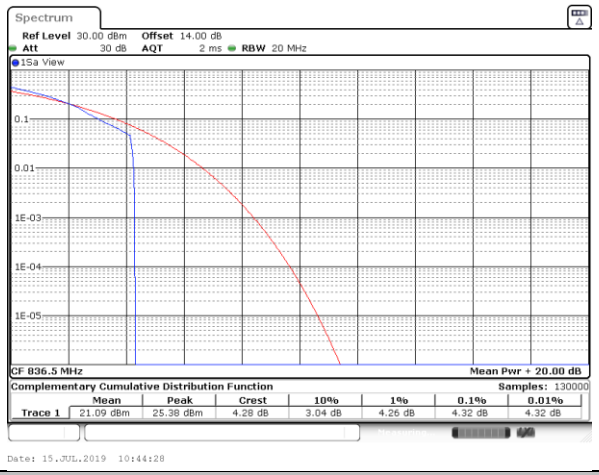
Lowest Channel / 1RB



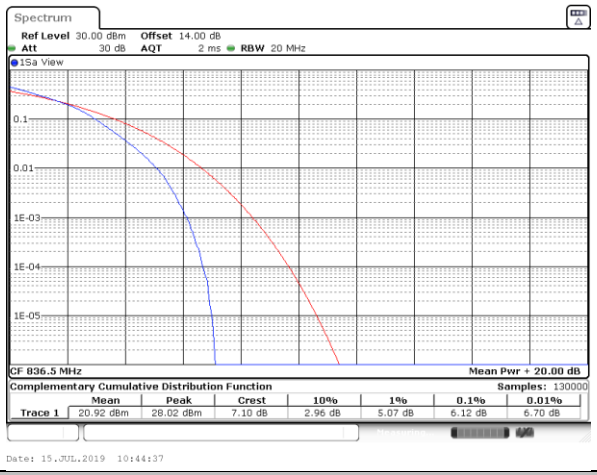
Lowest Channel / Full RB



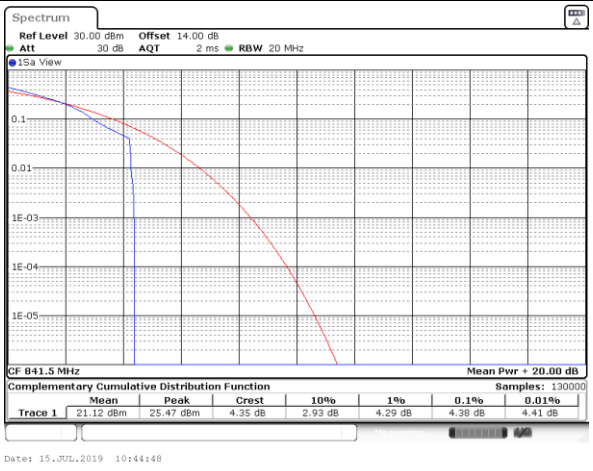
Middle Channel / 1RB



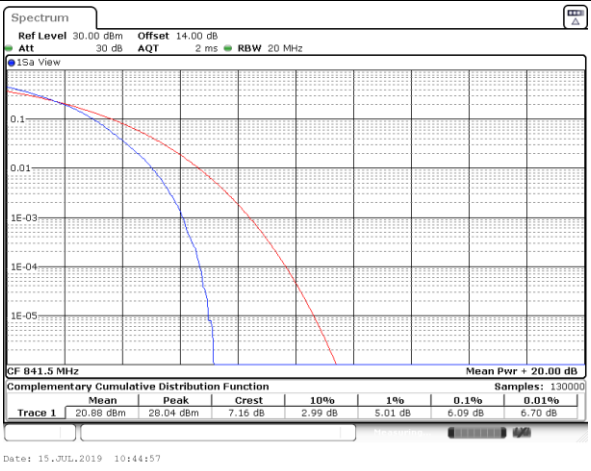
Middle Channel / Full RB



Highest Channel / 1RB

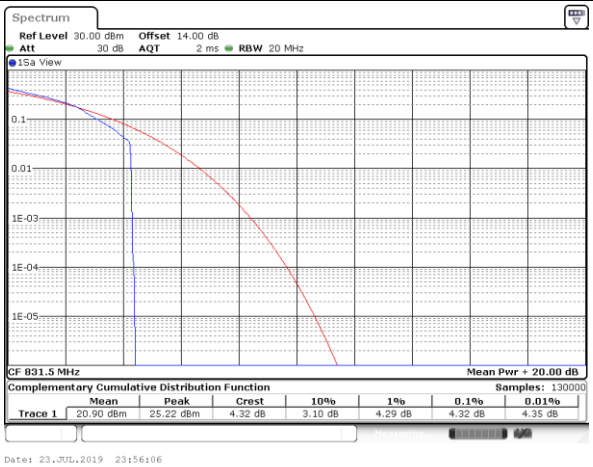


Highest Channel / Full RB

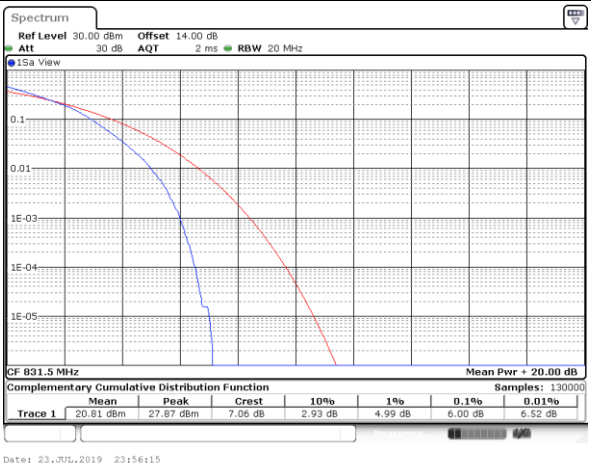


LTE Band 26 / 15MHz / 64QAM

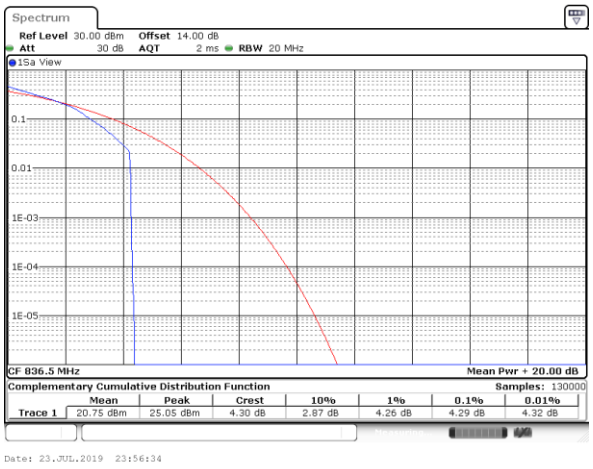
Lowest Channel / 1RB



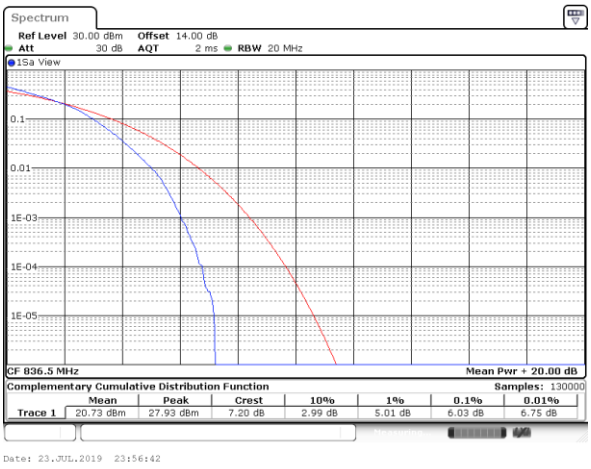
Lowest Channel / Full RB



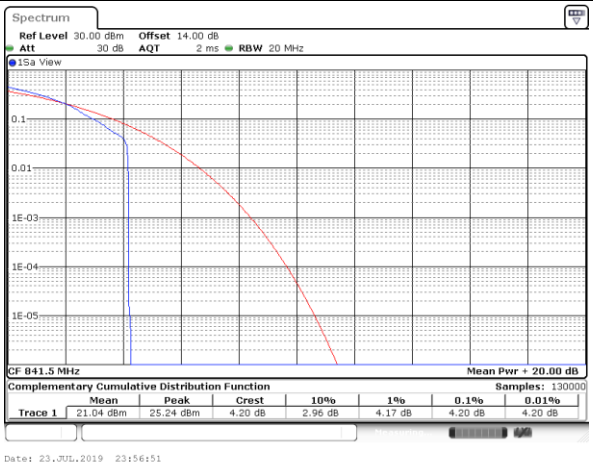
Middle Channel / 1RB



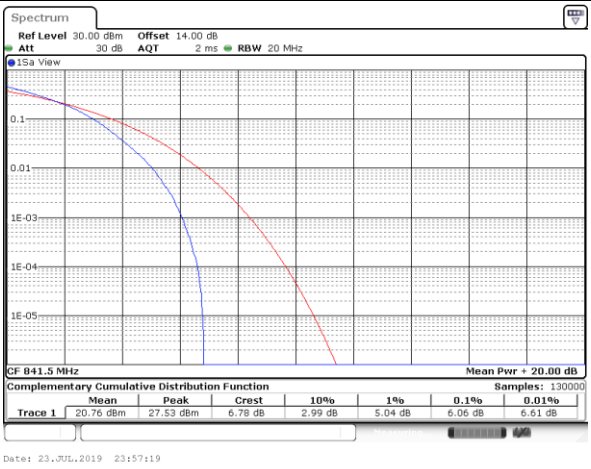
Middle Channel / Full RB



Highest Channel / 1RB

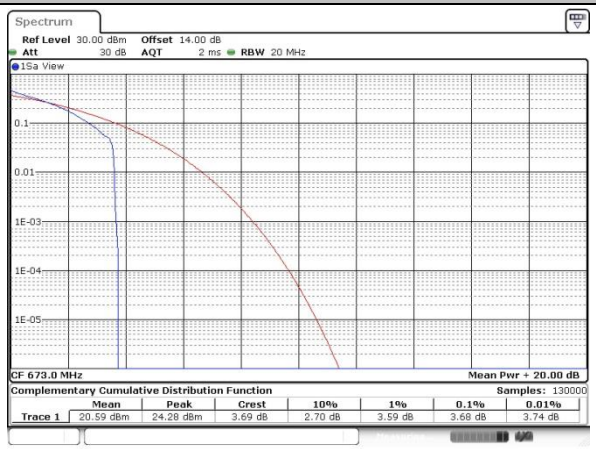


Highest Channel / Full RB

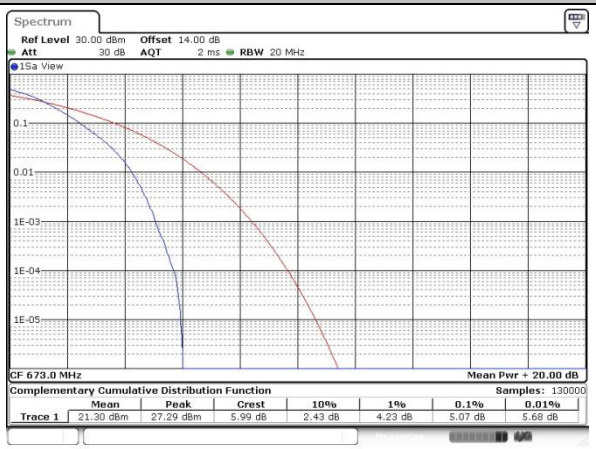


LTE Band 71 / 20MHz / QPSK

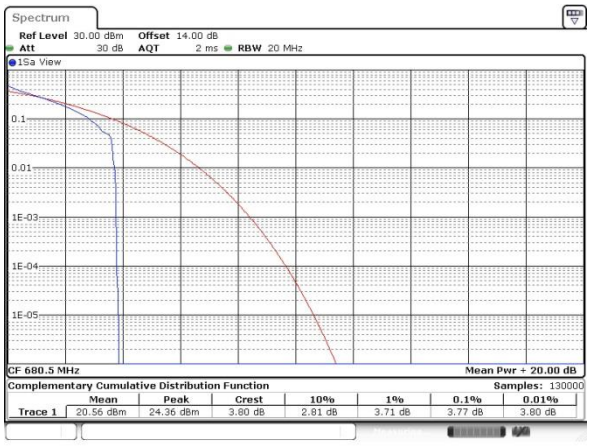
Lowest Channel / 1RB



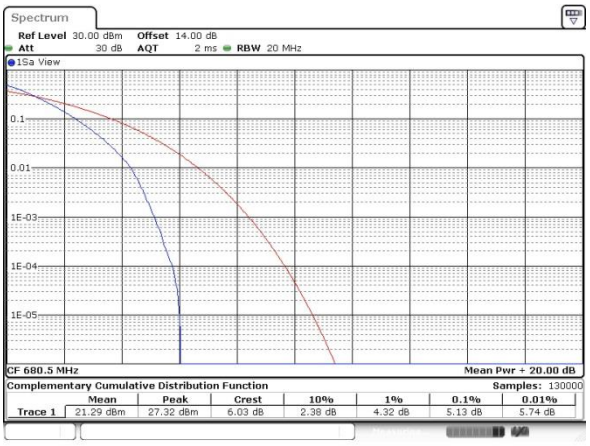
Lowest Channel / Full RB



Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB

Highest Channel / Full RB