



FCC RF Test Report

APPLICANT : Huawei Technologies Co., Ltd.
EQUIPMENT : Smart Phone
BRAND NAME : HUAWEI
MODEL NAME : GLK-LX1U
FCC ID : QISGLK-LX1U
STANDARD : 47 CFR Part 2, 22(H), 27(L), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Mar. 28, 2019 and completely tested on Apr. 26, 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.

Approved by: Eric Shih / Manager



Sporton International (Shenzhen) Inc.

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Guangdong Province 518055, China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG932820B	Rev. 01	Initial issue of report	Apr. 30, 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)	ERP < 7 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt	PASS	-
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §27.53(h)	Conducted Band Edge Measurement (Band 4) (Band 5)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §27.53(h)	Conducted Spurious Emission (Band 4) (Band 5)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §27.53(h)	Radiated Spurious Emission (Band 4) (Band 5)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 26.77 dB at 10104.36 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38)	< 55+10log ₁₀ (P[Watts])		



1 General Description

1.1 Applicant

Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.2 Manufacturer

Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
Brand Name	HUAWEI
Model Name	GLK-LX1U
FCC ID	QISGLK-LX1U
EUT supports Radios application	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/HSPA+(16 QAM Uplink is not supported)/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE FM Receiver/GNSS
IMEI Code	Conducted: 867285040040742/867285040041997 for LTE Band 4/5/7 867285040040346/867285040041591 for LTE Band 38 Radiation: 867285040041104/867285040042359
HW Version	HL7SENEM
SW Version	9.1.0.102(C900E102R1P1)

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	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 38 : 2572.5MHz ~ 2617.5MHz
Rx Frequency	LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 38 : 2572.5MHz ~ 2617.5MHz
Bandwidth	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 38 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	Top Antenna : LTE Band 4 : 22.87 dBm LTE Band 5 : 23.98 dBm LTE Band 7 : 22.99 dBm LTE Band 38 : 23.01 dBm Bottom Antenna : LTE Band 4 : 22.96 dBm LTE Band 5 : 23.99 dBm LTE Band 7 : 23.63 dBm LTE Band 38 : 23.70 dBm
Antenna Gain	Top Antenna : LTE Band 4 : -3.00 dBi LTE Band 5 : -2.90 dBi LTE Band 7 : -1.30 dBi LTE Band 38 : -1.50 dBi Bottom Antenna : LTE Band 4 : -2.00 dBi LTE Band 5 : -6.20 dBi LTE Band 7 : 0.90 dBi LTE Band 38 : 0.50 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Note: The Maximum ERP/EIRP is calculated from Max Output power and Max antenna gain.

1.5 Modification of EUT

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



1.6 Specification of Accessory

AC Adapter 1	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200U02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: Salcomp	SN	
AC Adapter 2	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200U02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: BYD	SN	
AC Adapter 3	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200U02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: HUNTKEY	SN	
AC Adapter 4	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200U02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: PHIHONG	SN	
AC Adapter 5	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200E02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: Salcomp	SN	
AC Adapter 6	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200E02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: BYD	SN	
AC Adapter 7	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200E02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: HUNTKEY	SN	
AC Adapter 8	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200E02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: PHIHONG	SN	
AC Adapter 9	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200B02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: Salcomp	SN	
AC Adapter 10	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200B02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: BYD	SN	
AC Adapter 11	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200B02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: HUNTKEY	SN	
AC Adapter 12	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200B02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: PHIHONG	SN	
AC Adapter 13	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200A02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: Salcomp	SN	
AC Adapter 14	Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050200A02
	Power Rating	I/P: <u>100</u> - <u>240</u> Vac, <u>500</u> mA	O/P: <u>5</u> Vdc, <u>2000</u> mA	
	Manufacturer	Manufacturer: BYD	SN	
USB Cable 1	Brand Name	Ningbo Broad Telecommunication Co., Ltd	Model Name	WA0020
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		



USB Cable 2	Brand Name	Dongguan Mingji Electronics Technology Group Co.,Ltd	Model Name	203-1572-0
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		
USB Cable 3	Brand Name	Freeport Resources Enterprises (Jiangxi) Co.,Ltd	Model Name	18-93C2CHO-001HF
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		
USB Cable 4	Brand Name	HONGFUJIN PRECISION INDUSTRIAL(SHENZHEN).LTD	Model Name	CUDU01B-HC295-EH
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		
USB Cable 5	Brand Name	LUXSHARE Precision Industry Co., Ltd.	Model Name	L99UC131-CS-H
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		
USB Cable 6	Brand Name	HUIZHOU DEHONG TECHNOLOGY CO.,LTD.	Model Name	330-50507
	Signal Line	<u>1</u> meter, non-shielded cable, with w/o ferrite core		
Earphone 1	Brand Name	HONGFUJIN PRECISION INDUSTRIAL(SHENZHEN).LTD	Model Name	EPAB542-2WH06-DH
	Signal Line	<u>1.1</u> meter, non-shielded cable, with w/o ferrite core		
Earphone 2	Brand Name	HONGFUJIN PRECISION INDUSTRIAL(SHENZHEN).LTD	Model Name	EPAB542-2WH05-DH
	Signal Line	<u>1.1</u> meter, non-shielded cable, with w/o ferrite core		
Earphone 3	Brand Name	Boluo County Quancheng Electronic Co., Ltd.	Model Name	1293-3283-3.5MM-322
	Signal Line	<u>1.1</u> meter, non-shielded cable, with w/o ferrite core		
Earphone 4	Brand Name	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	Model Name	MEND1532B528A02
	Signal Line	<u>1.1</u> meter, non-shielded cable, with w/o ferrite core		
Earphone 5	Brand Name	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	Model Name	MEND1532B528B00
	Signal Line	<u>1.1</u> meter, non-shielded cable, with w/o ferrite core		
Battery	Brand Name	HuaweiTechnologies Co., Ltd.	Model Name	HB446486ECW
	Power Rating	<u>3.82</u> Vdc, <u>3900</u> mAh	Type	Li-ion, <u>Yes</u>



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

LTE Band 4		QPSK			16QAM				
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna		
1.4	1710.7 ~ 1754.3	1M10G7D	-	0.1219	1M09W7D	-	0.1040		
3	1711.5 ~ 1753.5	2M73G7D	-	0.1213	2M74W7D	-	0.1038		
5	1712.5 ~ 1752.5	4M50G7D	-	0.1180	4M50W7D	-	0.1033		
10	1715.0 ~ 1750.0	9M15G7D	0.0089	0.1199	9M07W7D	-	0.1019		
15	1717.5 ~ 1747.5	13M5G7D	-	0.1205	13M6W7D	-	0.0993		
20	1720.0 ~ 1745.0	18M6G7D	-	0.1247	18M5W7D	-	0.1023		
LTE Band 4		64QAM							
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W) for Bottom Antenna			
1.4	1710.7 ~ 1754.3	1M09W7D		-		0.0794			
3	1711.5 ~ 1753.5	2M73W7D		-		0.0782			
5	1712.5 ~ 1752.5	4M48W7D		-		0.0774			
10	1715.0 ~ 1750.0	9M11W7D		-		0.0766			
15	1717.5 ~ 1747.5	13M5W7D		-		0.0769			
20	1720.0 ~ 1745.0	18M5W7D		-		0.0800			
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	1M10G7D	-	0.0776	0.0364	1M11W7D	-	0.0667	0.0306
3	825.5 ~ 847.5	2M73G7D	-	0.0778	0.0364	2M73W7D	-	0.0667	0.0313
5	826.5 ~ 846.5	4M53G7D	-	0.0776	0.0361	4M49W7D	-	0.0655	0.0307
10	829.0 ~ 844.0	9M11G7D	0.0085	0.0782	0.0366	9M11W7D	-	0.0621	0.0299
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	1M11W7D		-		0.0507		0.0249	
3	825.5 ~ 847.5	2M76W7D		-		0.0512		0.0238	
5	826.5 ~ 846.5	4M52W7D		-		0.0506		0.0233	
10	829.0 ~ 844.0	9M03W7D		-		0.0463		0.0233	



LTE Band 7		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna
5	2502.5 ~ 2567.5	4M51G7D	-	0.2831	4M50W7D	-	0.2388
10	2505.0 ~ 2565.0	9M05G7D	0.0076	0.2742	9M09W7D	-	0.2286
15	2507.5 ~ 2562.5	13M5G7D	-	0.2692	13M4W7D	-	0.2323
20	2510.0 ~ 2560.0	18M4G7D	-	0.2838	18M5W7D	-	0.2291
LTE Band 7		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W) for Bottom Antenna	
5	2502.5 ~ 2567.5	4M53W7D		-		0.1897	
10	2505.0 ~ 2565.0	9M13W7D		-		0.1820	
15	2507.5 ~ 2562.5	13M5W7D		-		0.1738	
20	2510.0 ~ 2560.0	18M5W7D		-		0.1841	
LTE Band 38		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W) for Bottom Antenna
5	2572.5 ~ 2617.5	4M52G7D	-	0.2582	4M48W7D	-	0.2118
10	2575.0 ~ 2615.0	9M03G7D	0.0093	0.2612	9M09W7D	-	0.2089
15	2577.5 ~ 2612.5	13M5G7D	-	0.2547	13M5W7D	-	0.2037
20	2580.0 ~ 2610.0	18M5G7D	-	0.2630	18M5W7D	-	0.2133
LTE Band 38		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W) for Bottom Antenna	
5	2572.5 ~ 2617.5	4M51W7D		-		0.1694	
10	2575.0 ~ 2615.0	9M11W7D		-		0.1607	
15	2577.5 ~ 2612.5	13M4W7D		-		0.1633	
20	2580.0 ~ 2610.0	18M5W7D		-		0.1675	



1.8 Testing Location

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600155-0).

Test Site	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu Province 215335, China TEL : 86-512-57900158 FAX : 86-512-57900958		
Test Site No.	Sporton Site No.	FCC designation No.	FCC Test Firm Registration No.
	TH01-KS	CN5013	630927

Sporton Lab is accredited to ISO 17025 by National Voluntary Laboratory Accreditation Program (NVLAP code: 600156-0).

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 designation No.	FCC Test Firm Registration No.
	03CH02-SZ	CN5019	577730

1.9 Applicable Standards

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

- 47 CFR Part 2, 22(H), 27(L), 27(M)
- 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.

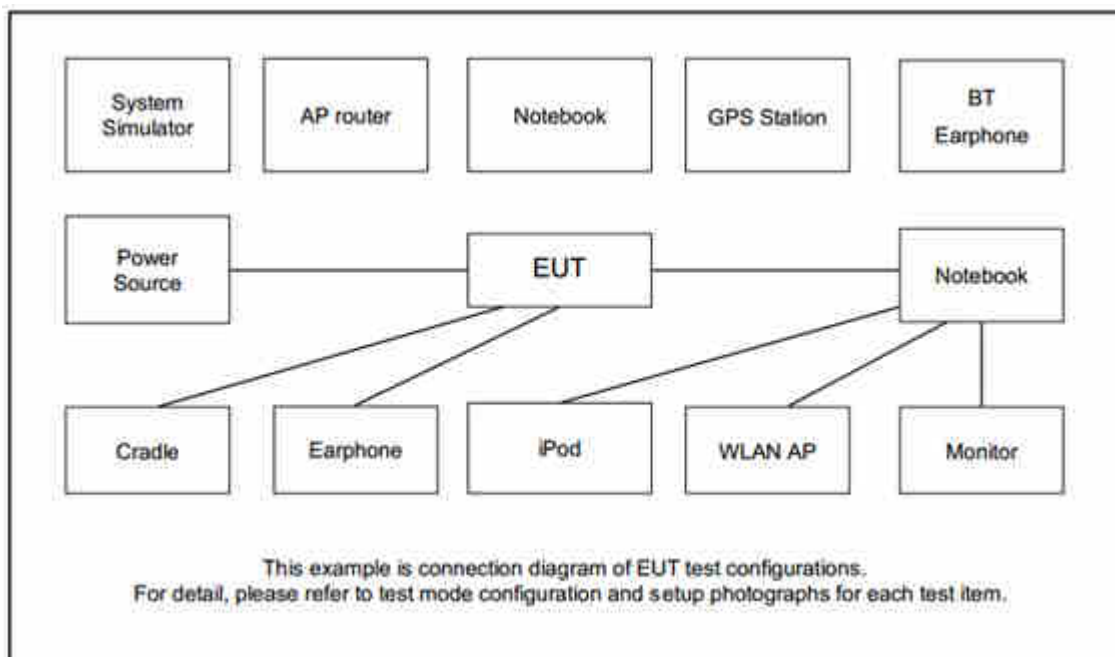
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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	4	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
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	4						v	v	v	v	v		v	v	v	v
	5				v	-	-	v	v	v	v		v	v	v	v
	7	-	-				v	v	v	v	v		v	v	v	v
	38	-	-				v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	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
Conducted Band Edge	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



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
Conducted Spurious Emission	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
Frequency Stability	4				v			v					v		v	
	5				v	-	-	v					v		v	
	7	-	-		v			v					v		v	
	38	-	-		v			v					v		v	
E.R.P / E.I.R.P	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
Radiated Spurious Emission	4	v	v	v	v	v	v	v			v				v	
	5	v	v	v	v	-	-	v			v				v	
	7	-	-	v	v	v	v	v			v				v	
	38	-	-	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 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.2 dB.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\
 &= 5.2 \text{ (dB)}
 \end{aligned}$$



2.5 Frequency List of Low/Middle/High Channels

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 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

3 Conducted Test Items

3.1 Measuring Instruments

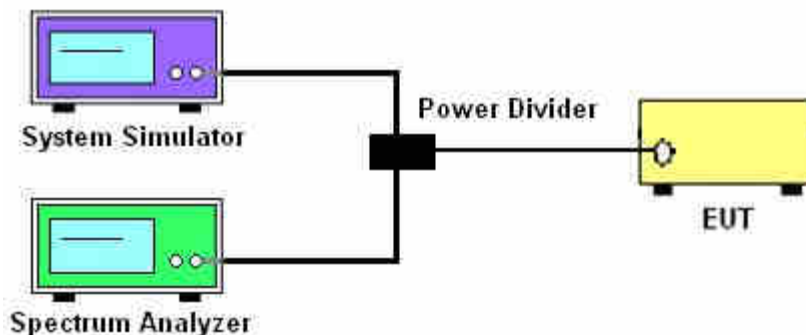
See list of measuring instruments of this test report.

3.2 Test Setup

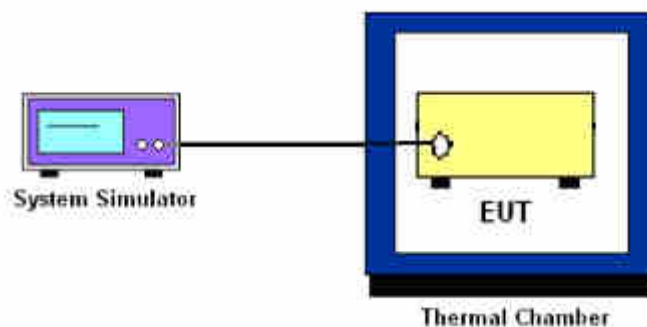
3.2.1 Conducted Output Power



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.

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

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

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 $43 + 10\log_{10}(P[\text{Watts}])$ 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.

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 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 $\geq$ 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. 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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)

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

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

9. For LTE Band 7, 38, 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:

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 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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.
11. For Band 7, 38
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)
 $= -25$ dBm.

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 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 $20\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value 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.

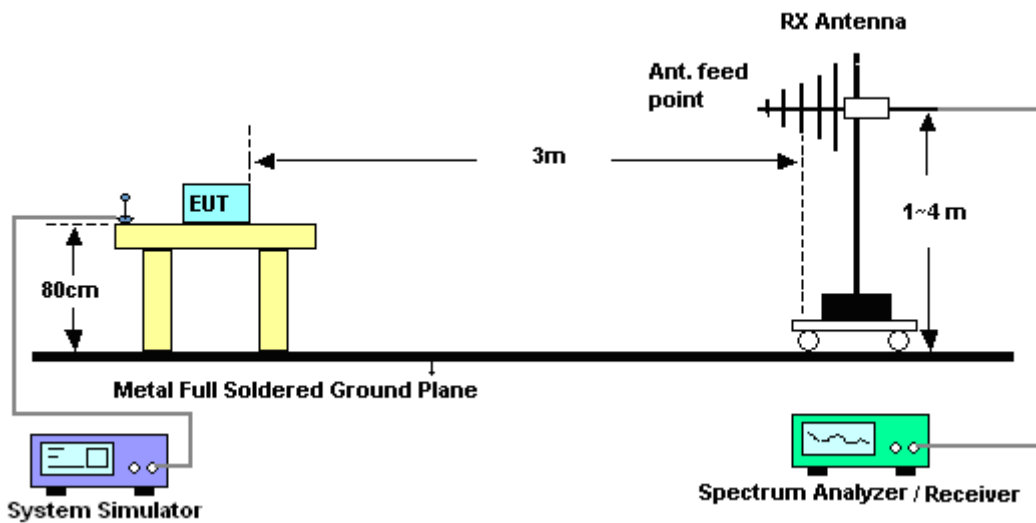
4 Radiated Test Items

4.1 Measuring Instruments

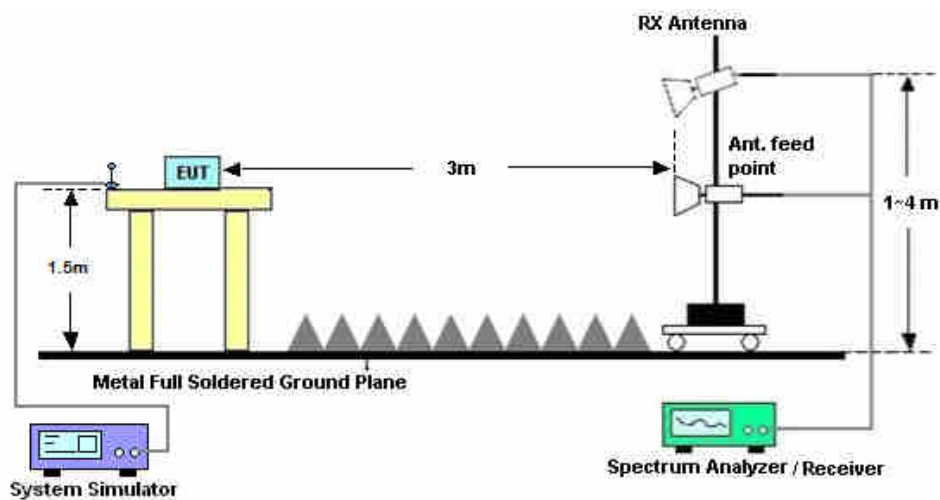
See list of measuring instruments of this test report.

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.

For Band 7, 38

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.

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

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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 07, 2018	Apr. 22, 2019~ Apr. 26, 2019	Aug. 06, 2019	Conducted (TH01-KS)
Thermal Chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jun. 27, 2018	Apr. 22, 2019~ Apr. 26, 2019	Jun. 26, 2019	Conducted (TH01-KS)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz	Apr. 18, 2019	Apr. 23, 2019	Apr. 17, 2020	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Jun. 05, 2018	Apr. 23, 2019	Jun. 04, 2019	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1285	1GHz~18GHz	Jan. 07, 2019	Apr. 23, 2019	Jan. 06, 2020	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 16, 2018	Apr. 23, 2019	Jul. 25, 2019	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz~40GHz	Mar. 30, 2019	Apr. 23, 2019	Mar. 29, 2020	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 18, 2018	Apr. 23, 2019	Oct. 18, 2019	Radiation (03CH02-SZ)
HF Amplifier	Agilent	8449B	3008A01023	1GHz~26.5GHz	Oct. 18, 2018	Apr. 23, 2019	Oct. 17, 2019	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Apr. 23, 2019	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Apr. 23, 2019	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Apr. 23, 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
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.3dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.7dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Top Antenna:

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.98	23.90	23.81
10	1	25		23.80	23.84	23.81
10	1	49		23.67	23.85	23.74
10	25	0		22.97	23.03	23.06
10	25	12		22.91	23.01	23.08
10	25	25		22.93	23.02	23.02
10	50	0		22.90	23.05	23.07
10	1	0	16-QAM	22.84	22.63	22.82
10	1	25		22.98	22.87	22.82
10	1	49		22.66	22.77	22.61
10	25	0		21.98	22.04	21.98
10	25	12		21.98	21.94	22.04
10	25	25		21.95	21.93	21.93
10	50	0		21.97	21.98	22.00
10	1	0	64-QAM	21.64	21.49	21.47
10	1	25		21.67	21.71	21.67
10	1	49		21.40	21.53	21.49
10	25	0		20.98	21.02	20.96
10	25	12		20.96	20.91	20.98
10	25	25		20.96	20.92	20.93
10	50	0		20.97	20.98	20.99
5	1	0	QPSK	23.95	23.95	23.88
5	1	12		23.58	23.60	23.71
5	1	24		23.90	23.92	23.92
5	12	0		22.96	22.94	23.08
5	12	7		22.92	22.96	23.00
5	12	13		22.97	22.99	22.95
5	25	0		22.89	23.04	22.99



5	1	0	16-QAM	23.12	23.21	23.19
5	1	12		22.75	22.71	22.74
5	1	24		23.07	23.19	23.14
5	12	0		22.02	22.08	22.04
5	12	7		21.91	21.90	21.96
5	12	13		21.93	21.95	21.98
5	25	0		21.98	21.98	21.94
5	1	0	64-QAM	22.02	21.97	22.04
5	1	12		21.59	21.61	21.59
5	1	24		21.93	21.97	22.09
5	12	0		21.01	21.04	21.01
5	12	7		20.90	20.93	20.89
5	12	13		20.92	21.01	20.92
5	25	0		20.98	20.98	20.96
3	1	0	QPSK	23.95	23.96	23.91
3	1	8		23.96	23.96	23.96
3	1	14		23.91	23.92	23.93
3	8	0		22.89	22.91	22.92
3	8	4		22.88	22.98	22.90
3	8	7		22.88	22.97	22.86
3	15	0		22.94	23.04	22.91
3	1	0	16-QAM	23.22	23.19	23.29
3	1	8		23.16	23.18	23.15
3	1	14		23.14	23.28	23.25
3	8	0		21.93	21.95	21.89
3	8	4		21.88	21.88	21.89
3	8	7		21.90	21.87	21.83
3	15	0		21.93	21.97	21.99
3	1	0	64-QAM	21.97	22.01	22.09
3	1	8		22.06	22.03	22.04
3	1	14		22.00	21.97	22.14
3	8	0		20.96	20.94	20.82
3	8	4		20.88	20.87	20.83
3	8	7		20.98	20.91	20.97
3	15	0		20.88	20.89	20.88
1.4	1	0	QPSK	23.93	23.80	23.89



1.4	1	3		23.76	23.70	23.74
1.4	1	5		23.93	23.94	23.95
1.4	3	0		23.91	23.87	23.83
1.4	3	1		23.80	23.78	23.85
1.4	3	3		23.85	23.82	23.87
1.4	6	0		22.95	22.95	22.93
1.4	1	0	16-QAM	23.22	23.18	23.18
1.4	1	3		22.96	22.85	22.87
1.4	1	5		23.18	23.28	23.29
1.4	3	0		22.92	22.97	22.90
1.4	3	1		22.91	22.84	22.82
1.4	3	3		22.85	22.98	22.84
1.4	6	0	64-QAM	21.94	21.96	21.95
1.4	1	0		22.04	22.01	22.09
1.4	1	3		21.60	21.61	21.68
1.4	1	5		22.00	22.07	22.10
1.4	3	0		21.95	21.93	21.85
1.4	3	1		21.94	21.92	21.85
1.4	3	3		21.97	21.91	21.84
1.4	6	0		20.89	20.89	20.89

Remark:

The conducted power (LTE B4/7/38) of top antenna is less than the bottom antenna, so for top antenna only show the power of LTE B5 on the report.

Although top antenna conducted power (LTE B5) is less than the power of bottom antenna, but top antenna gain is higher than the bottom antenna gain, it will affect the maximum ERP calculation, so LTE B5 power and ERP will show on the report.



Bottom Antenna:

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	22.96	22.96	22.88
20	1	49		22.75	22.67	22.73
20	1	99		22.79	22.70	22.87
20	50	0		21.84	21.87	21.76
20	50	24		21.77	21.75	21.73
20	50	50		21.65	21.70	21.75
20	100	0		21.76	21.71	21.75
20	1	0	16-QAM	22.09	22.10	22.03
20	1	49		21.92	21.82	21.92
20	1	99		21.99	21.90	21.99
20	50	0		20.71	20.72	20.68
20	50	24		20.70	20.73	20.66
20	50	50		20.61	20.66	20.60
20	100	0		20.67	20.71	20.65
20	1	0	64-QAM	20.91	21.03	20.86
20	1	49		20.79	20.71	20.66
20	1	99		20.80	20.71	20.76
20	50	0		19.71	19.73	19.64
20	50	24		19.69	19.68	19.64
20	50	50		19.61	19.60	19.58
20	100	0		19.68	19.66	19.65
15	1	0	QPSK	22.81	22.69	22.63
15	1	37		22.35	22.38	22.33
15	1	74		22.61	22.52	22.70
15	36	0		21.82	21.83	21.74
15	36	20		21.84	21.79	21.77
15	36	39		21.77	21.71	21.73
15	75	0		21.76	21.74	21.72
15	1	0	16-QAM	21.97	21.96	21.87
15	1	37		21.54	21.61	21.61
15	1	74		21.89	21.85	21.92
15	36	0		20.80	20.76	20.70
15	36	20		20.72	20.66	20.70



15	36	39		20.70	20.62	20.68
15	75	0		20.74	20.76	20.64
15	1	0		20.86	20.72	20.75
15	1	37	64-QAM	20.47	20.50	20.42
15	1	74		20.59	20.65	20.67
15	36	0		19.82	19.79	19.70
15	36	20		19.75	19.68	19.69
15	36	39		19.69	19.63	19.65
15	75	0		19.76	19.76	19.65
10	1	0	QPSK	22.79	22.71	22.71
10	1	25		22.54	22.50	22.47
10	1	49		22.70	22.64	22.79
10	25	0		21.90	21.80	21.83
10	25	12		21.88	21.81	21.81
10	25	25		21.75	21.69	21.74
10	50	0		21.76	21.69	21.71
10	1	0	16-QAM	22.08	21.95	22.00
10	1	25		21.90	21.69	21.74
10	1	49		21.98	21.86	21.96
10	25	0		20.77	20.80	20.66
10	25	12		20.75	20.64	20.66
10	25	25		20.75	20.62	20.60
10	50	0		20.76	20.70	20.60
10	1	0	64-QAM	20.84	20.81	20.81
10	1	25		20.65	20.49	20.60
10	1	49		20.81	20.71	20.76
10	25	0		19.78	19.79	19.66
10	25	12		19.76	19.65	19.66
10	25	25		19.75	19.64	19.73
10	50	0		19.76	19.64	19.68
5	1	0	QPSK	22.65	22.71	22.72
5	1	12		22.28	22.31	22.33
5	1	24		22.69	22.70	22.71
5	12	0		21.92	21.79	21.90
5	12	7		21.89	21.81	21.76
5	12	13		21.88	21.73	21.78



5	25	0		21.81	21.81	21.73
5	1	0	16-QAM	22.12	22.09	22.05
5	1	12		21.71	21.76	21.78
5	1	24		22.14	21.92	22.09
5	12	0		20.88	20.82	20.75
5	12	7		20.80	20.73	20.81
5	12	13		20.80	20.76	20.74
5	25	0		20.75	20.68	20.68
5	1	0	64-QAM	20.80	20.81	20.86
5	1	12		20.41	20.40	20.58
5	1	24		20.89	20.78	20.82
5	12	0		19.86	19.75	19.72
5	12	7		19.69	19.72	19.70
5	12	13		19.79	19.70	19.70
5	25	0		19.73	19.63	19.67
3	1	0	QPSK	22.81	22.76	22.82
3	1	8		22.83	22.75	22.80
3	1	14		22.83	22.72	22.84
3	8	0		21.79	21.64	21.78
3	8	4		21.89	21.72	21.75
3	8	7		21.78	21.73	21.81
3	15	0		21.81	21.75	21.76
3	1	0	16-QAM	22.12	22.04	22.16
3	1	8		22.06	22.03	22.03
3	1	14		22.12	21.98	22.04
3	8	0		20.72	20.66	20.71
3	8	4		20.77	20.70	20.70
3	8	7		20.78	20.69	20.74
3	15	0		20.79	20.70	20.72
3	1	0	64-QAM	20.88	20.81	20.84
3	1	8		20.93	20.89	20.89
3	1	14		20.86	20.79	20.86
3	8	0		19.74	19.65	19.71
3	8	4		19.86	19.65	19.70
3	8	7		19.75	19.64	19.76
3	15	0		19.73	19.67	19.68



1.4	1	0	QPSK	22.86	22.73	22.82
1.4	1	3		22.58	22.49	22.58
1.4	1	5		22.86	22.70	22.74
1.4	3	0		22.73	22.69	22.76
1.4	3	1		22.70	22.67	22.66
1.4	3	3		22.81	22.66	22.63
1.4	6	0		21.77	21.68	21.63
1.4	1	0	16-QAM	22.13	21.94	22.09
1.4	1	3		21.63	21.57	21.75
1.4	1	5		22.14	21.98	22.17
1.4	3	0		21.77	21.68	21.77
1.4	3	1		21.58	21.52	21.60
1.4	3	3		21.77	21.64	21.66
1.4	6	0		20.81	20.72	20.77
1.4	1	0	64-QAM	21.00	20.81	20.88
1.4	1	3		20.38	20.53	20.53
1.4	1	5		20.75	20.90	20.97
1.4	3	0		20.82	20.73	20.76
1.4	3	1		20.72	20.63	20.69
1.4	3	3		20.79	20.69	20.72
1.4	6	0		19.65	19.64	19.61



Botoom Antenna:

LTE Band 5 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	23.68	23.74	23.64
10	1	25		23.85	23.99	23.89
10	1	49		23.63	23.61	23.62
10	25	0		23.19	23.11	23.19
10	25	12		23.13	23.12	23.27
10	25	25		23.14	23.13	23.27
10	50	0		23.08	23.22	23.27
10	1	0	16-QAM	22.96	22.91	22.89
10	1	25		22.99	23.05	23.11
10	1	49		22.70	22.74	22.84
10	25	0		22.20	22.12	22.19
10	25	12		22.15	22.14	22.21
10	25	25		22.15	22.10	22.19
10	50	0		22.15	22.13	22.16
10	1	0	64-QAM	21.78	21.75	21.81
10	1	25		22.00	22.03	22.03
10	1	49		21.69	21.59	21.66
10	25	0		21.10	21.12	21.16
10	25	12		21.14	21.13	21.24
10	25	25		21.17	21.11	21.15
10	50	0		21.07	21.12	21.15
5	1	0	QPSK	23.91	23.92	23.87
5	1	12		23.43	23.46	23.49
5	1	24		23.91	23.86	23.91
5	12	0		22.96	22.97	23.09
5	12	7		22.87	22.95	22.91
5	12	13		22.99	22.96	22.97
5	25	0		22.87	22.90	22.97
5	1	0	16-QAM	23.13	23.13	23.22
5	1	12		22.74	22.77	22.73
5	1	24		23.05	23.10	23.17
5	12	0		22.02	22.04	21.99
5	12	7		21.94	21.96	21.89



5	12	13	64-QAM	21.97	22.00	22.03
5	25	0		21.91	21.98	21.89
5	1	0		22.00	21.96	21.96
5	1	12		21.60	21.57	21.56
5	1	24		21.93	21.99	22.02
5	12	0		21.03	21.03	20.99
5	12	7		20.94	20.86	20.81
5	12	13		20.96	20.85	20.91
5	25	0		20.92	20.98	20.90
3	1	0	QPSK	23.92	23.93	23.96
3	1	8		23.76	23.72	23.76
3	1	14		23.88	23.92	23.92
3	8	0		23.83	23.84	23.86
3	8	4		23.85	23.80	23.77
3	8	7		23.82	23.85	23.85
3	15	0		22.86	22.84	22.86
3	1	0	16-QAM	23.18	23.23	23.18
3	1	8		22.82	22.88	22.92
3	1	14		23.17	23.30	23.21
3	8	0		22.79	22.80	22.82
3	8	4		22.76	22.85	22.91
3	8	7		22.87	22.89	22.86
3	15	0		21.86	21.95	21.96
3	1	0	64-QAM	22.03	22.04	22.11
3	1	8		21.71	21.78	21.76
3	1	14		22.04	22.06	22.02
3	8	0		21.99	21.92	21.99
3	8	4		21.73	21.68	21.84
3	8	7		21.87	21.93	21.87
3	15	0		20.77	20.88	20.78
1.4	1	0	QPSK	23.91	23.92	23.87
1.4	1	3		23.76	23.72	23.76
1.4	1	5		23.91	23.86	23.91
1.4	3	0		23.83	23.84	23.86
1.4	3	1		23.87	23.95	23.91
1.4	3	3		23.91	23.96	23.87



1.4	6	0		22.87	22.90	22.97
1.4	1	0	16-QAM	23.13	23.13	23.14
1.4	1	3		22.84	22.77	22.73
1.4	1	5		23.17	23.20	23.21
1.4	3	0		22.79	22.80	22.82
1.4	3	1		22.76	22.85	22.91
1.4	3	3		22.87	22.89	22.86
1.4	6	0		21.86	21.95	21.96
1.4	1	0	64-QAM	22.03	22.04	22.11
1.4	1	3		22.05	22.17	22.32
1.4	1	5		21.93	21.99	22.02
1.4	3	0		22.03	22.20	21.99
1.4	3	1		21.94	21.98	21.91
1.4	3	3		21.96	21.85	21.81
1.4	6	0		20.92	20.98	20.90



Bottom Antenna:

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.63	23.41	23.40
20	1	49		23.53	23.43	23.20
20	1	99		23.59	23.54	23.18
20	50	0		22.65	22.57	22.24
20	50	24		22.72	22.58	22.26
20	50	50		22.71	22.62	22.27
20	100	0		22.67	22.66	22.40
20	1	0	16-QAM	22.65	22.60	22.35
20	1	49		22.45	22.39	22.22
20	1	99		22.64	22.70	22.25
20	50	0		21.63	21.57	21.34
20	50	24		21.61	21.59	21.29
20	50	50		21.68	21.57	21.25
20	100	0		21.73	21.65	21.25
20	1	0	64-QAM	21.74	21.61	21.49
20	1	49		21.75	21.69	21.51
20	1	99		21.73	21.74	21.42
20	50	0		20.88	20.80	20.61
20	50	24		20.88	20.83	20.54
20	50	50		20.86	20.83	20.49
20	100	0		20.89	20.86	20.58
15	1	0	QPSK	23.40	23.34	23.11
15	1	37		23.02	22.93	22.94
15	1	74		23.38	23.34	23.04
15	36	0		22.60	22.35	22.31
15	36	20		22.67	22.52	22.35
15	36	39		22.56	22.54	22.36
15	75	0		22.72	22.61	22.35
15	1	0	16-QAM	22.70	22.61	22.32
15	1	37		22.58	22.45	22.28
15	1	74		22.76	22.59	22.27
15	36	0		21.66	21.49	21.31
15	36	20		21.64	21.53	21.36



15	36	39		21.65	21.49	21.32
15	75	0		21.72	21.59	21.30
15	1	0		21.50	21.48	21.38
15	1	37	64-QAM	21.33	21.06	21.03
15	1	74		21.40	21.47	21.30
15	36	0		20.84	20.74	20.46
15	36	20		20.87	20.77	20.46
15	36	39		20.82	20.73	20.38
15	75	0		20.87	20.88	20.50
10	1	0	QPSK	23.41	23.47	23.21
10	1	25		23.38	23.30	23.03
10	1	49		23.48	23.41	23.23
10	25	0		22.44	22.48	22.05
10	25	12		22.42	22.50	22.03
10	25	25		22.45	22.48	22.01
10	50	0		22.59	22.60	22.11
10	1	0	16-QAM	22.62	22.47	22.26
10	1	25		22.48	22.48	22.34
10	1	49		22.60	22.69	22.28
10	25	0		21.66	21.49	21.23
10	25	12		21.59	21.52	21.27
10	25	25		21.58	21.45	21.20
10	50	0		21.67	21.56	21.24
10	1	0	64-QAM	21.70	21.55	21.47
10	1	25		21.61	21.58	21.27
10	1	49		21.63	21.64	21.32
10	25	0		20.77	20.72	20.52
10	25	12		20.81	20.77	20.36
10	25	25		20.81	20.72	20.34
10	50	0		20.88	20.79	20.48
5	1	0	QPSK	23.45	23.46	23.25
5	1	12		23.33	23.19	23.18
5	1	24		23.44	23.62	23.31
5	12	0		22.65	22.55	22.38
5	12	7		22.57	22.49	22.23
5	12	13		22.61	22.56	22.25



5	25	0		22.70	22.54	22.35
5	1	0	16-QAM	22.67	22.72	22.39
5	1	12		22.64	22.46	22.45
5	1	24		22.88	22.58	22.41
5	12	0		21.78	21.48	21.29
5	12	7		21.56	21.44	21.35
5	12	13		21.72	21.46	21.32
5	25	0		21.72	21.43	21.31
5	1	0	64-QAM	21.83	21.83	21.39
5	1	12		21.46	21.40	21.38
5	1	24		21.88	21.81	21.40
5	12	0		20.92	20.84	20.48
5	12	7		20.90	20.82	20.46
5	12	13		20.93	20.83	20.45
5	25	0		20.80	20.73	20.37



Bottom Antenna:

LTE Band 38 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	23.41	23.57	23.61
20	1	49		23.25	23.35	23.31
20	1	99		23.53	23.66	23.70
20	50	0		22.41	22.65	22.55
20	50	24		22.50	22.63	22.54
20	50	50		22.52	22.67	22.69
20	100	0		22.50	22.64	22.58
20	1	0	16-QAM	22.49	22.70	22.62
20	1	49		22.40	22.60	22.43
20	1	99		22.60	22.79	22.77
20	50	0		21.39	21.47	21.46
20	50	24		21.42	21.52	21.50
20	50	50		21.50	21.57	21.63
20	100	0		21.50	21.43	21.52
20	1	0	64-QAM	21.63	21.60	21.58
20	1	49		21.69	21.71	21.74
20	1	99		21.55	21.64	21.70
20	50	0		20.48	20.50	20.45
20	50	24		20.44	20.55	20.52
20	50	50		20.46	20.60	20.51
20	100	0		20.53	20.46	20.55
15	1	0	QPSK	23.46	23.36	23.40
15	1	37		23.26	23.28	23.25
15	1	74		23.55	23.56	23.52
15	36	0		22.53	22.49	22.67
15	36	20		22.50	22.66	22.57
15	36	39		22.60	22.64	22.57
15	75	0		22.54	22.63	22.48
15	1	0	16-QAM	22.48	22.41	22.39
15	1	37		22.22	22.12	22.10
15	1	74		22.58	22.59	22.50
15	36	0		21.47	21.48	21.46
15	36	20		21.50	21.54	21.50



15	36	39	64-QAM	21.54	21.53	21.58
15	75	0		21.41	21.55	21.51
15	1	0		21.33	21.39	21.41
15	1	37		21.23	21.17	21.18
15	1	74		21.45	21.57	21.63
15	36	0		20.46	20.49	20.43
15	36	20		20.49	20.53	20.49
15	36	39		20.53	20.54	20.58
15	75	0	QPSK	20.55	20.53	20.52
10	1	0		23.47	23.52	23.49
10	1	25		23.29	23.18	23.19
10	1	49		23.59	23.58	23.67
10	25	0		22.57	22.50	22.53
10	25	12		22.44	22.64	22.69
10	25	25		22.56	22.65	22.71
10	50	0		22.58	22.64	22.70
10	1	0	16-QAM	22.51	22.55	22.53
10	1	25		22.35	22.26	22.34
10	1	49		22.59	22.67	22.70
10	25	0		21.50	21.53	21.53
10	25	12		21.40	21.58	21.49
10	25	25		21.43	21.52	21.54
10	50	0		21.42	21.42	21.49
10	1	0	64-QAM	21.40	21.45	21.44
10	1	25		21.15	21.09	21.10
10	1	49		21.50	21.56	21.56
10	25	0		20.51	20.52	20.54
10	25	12		20.39	20.59	20.49
10	25	25		20.43	20.51	20.55
10	50	0		20.40	20.42	20.49
5	1	0	QPSK	23.42	23.62	23.54
5	1	12		23.15	23.17	23.15
5	1	24		23.56	23.61	23.61
5	12	0		22.54	22.63	22.64
5	12	7		22.54	22.69	22.60
5	12	13		22.53	22.67	22.66



5	25	0		22.51	22.65	22.60
5	1	0	16-QAM	22.59	22.54	22.65
5	1	12		22.30	22.56	22.39
5	1	24		22.63	22.68	22.76
5	12	0		21.52	21.61	21.54
5	12	7		21.43	21.54	21.50
5	12	13		21.50	21.51	21.66
5	25	0		21.42	21.58	21.64
5	1	0	64-QAM	21.54	21.56	21.74
5	1	12		21.56	21.44	21.75
5	1	24		21.53	21.68	21.79
5	12	0		20.51	20.63	20.56
5	12	7		20.46	20.51	20.52
5	12	13		20.51	20.52	20.65
5	25	0		20.44	20.59	20.66

**ERP/EIRP****Top Antenna:**

LTE Band 5 (GT - LC = -2.90 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.93	23.94	23.95	23.96	23.96	23.96	23.95	23.95	23.88
Conducted Power (Watts)	0.2472	0.2477	0.2483	0.2489	0.2489	0.2489	0.2483	0.2483	0.2443
ERP(dBm)	18.88	18.89	18.90	18.91	18.91	18.91	18.90	18.90	18.83
ERP(Watts)	0.0773	0.0774	0.0776	0.0778	0.0778	0.0778	0.0776	0.0776	0.0764

LTE Band 5 (GT - LC = -2.90 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	23.98	23.90	23.81
Conducted Power (Watts)	0.2500	0.2455	0.2404
ERP(dBm)	18.93	18.85	18.76
ERP(Watts)	0.0782	0.0767	0.0752

LTE Band 5 (GT - LC = -2.90 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.18	23.28	23.29	23.22	23.19	23.29	23.12	23.21	23.19
Conducted Power (Watts)	0.2080	0.2128	0.2133	0.2099	0.2084	0.2133	0.2051	0.2094	0.2084
ERP(dBm)	18.13	18.23	18.24	18.17	18.14	18.24	18.07	18.16	18.14
ERP(Watts)	0.0650	0.0665	0.0667	0.0656	0.0652	0.0667	0.0641	0.0655	0.0652

LTE Band 5 (GT - LC = -2.90 dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	22.98	22.87	22.82
Conducted Power (Watts)	0.1986	0.1936	0.1914
ERP(dBm)	17.93	17.82	17.77
ERP(Watts)	0.0621	0.0605	0.0598



LTE Band 5 (GT - LC = -2.90 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	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	22.00	22.07	22.10	22.00	21.97	22.14	21.93	21.97	22.09
Conducted Power (Watts)	0.1585	0.1611	0.1622	0.1585	0.1574	0.1637	0.1560	0.1574	0.1618
ERP(dBm)	16.95	17.02	17.05	16.95	16.92	17.09	16.88	16.92	17.04
ERP(Watts)	0.0495	0.0504	0.0507	0.0495	0.0492	0.0512	0.0488	0.0492	0.0506

LTE Band 5 (GT - LC = -2.90 dB) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	21.67	21.71	21.67
Conducted Power (Watts)	0.1469	0.1483	0.1469
ERP(dBm)	16.62	16.66	16.62
ERP(Watts)	0.0459	0.0463	0.0459



Bottom Antenna:

LTE Band 4 (GT - LC = -2.00 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	22.86	22.73	22.82	22.83	22.72	22.84	22.65	22.71	22.72
Conducted Power (Watts)	0.1932	0.1875	0.1914	0.1919	0.1871	0.1923	0.1841	0.1866	0.1871
EIRP(dBm)	20.86	20.73	20.82	20.83	20.72	20.84	20.65	20.71	20.72
EIRP(Watts)	0.1219	0.1183	0.1208	0.1211	0.1180	0.1213	0.1161	0.1178	0.1180

LTE Band 4 (GT - LC = -2.00 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	22.70	22.64	22.79	22.81	22.69	22.63	22.96	22.96	22.88
Conducted Power (Watts)	0.1862	0.1837	0.1901	0.1910	0.1858	0.1832	0.1977	0.1977	0.1941
EIRP(dBm)	20.70	20.64	20.79	20.81	20.69	20.63	20.96	20.96	20.88
EIRP(Watts)	0.1175	0.1159	0.1199	0.1205	0.1172	0.1156	0.1247	0.1247	0.1225



LTE Band 4 (GT - LC = -2.00 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	22.14	21.98	22.17	22.12	22.04	22.16	22.14	21.92	22.09
Conducted Power (Watts)	0.1637	0.1578	0.1648	0.1629	0.1600	0.1644	0.1637	0.1556	0.1618
EIRP(dBm)	20.14	19.98	20.17	20.12	20.04	20.16	20.14	19.92	20.09
EIRP(Watts)	0.1033	0.0995	0.1040	0.1028	0.1009	0.1038	0.1033	0.0982	0.1021

LTE Band 4 (GT - LC = -2.00 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	22.08	21.95	22.00	21.97	21.96	21.87	22.09	22.10	22.03
Conducted Power (Watts)	0.1614	0.1567	0.1585	0.1574	0.1570	0.1538	0.1618	0.1622	0.1596
EIRP(dBm)	20.08	19.95	20.00	19.97	19.96	19.87	20.09	20.10	20.03
EIRP(Watts)	0.1019	0.0989	0.1000	0.0993	0.0991	0.0971	0.1021	0.1023	0.1007



LTE Band 4 (GT - LC = -2.00 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	21.00	20.81	20.88	20.93	20.89	20.89	20.89	20.78	20.82
Conducted Power (Watts)	0.1259	0.1205	0.1225	0.1239	0.1227	0.1227	0.1227	0.1197	0.1208
EIRP(dBm)	19.00	18.81	18.88	18.93	18.89	18.89	18.89	18.78	18.82
EIRP(Watts)	0.0794	0.0760	0.0773	0.0782	0.0774	0.0774	0.0774	0.0755	0.0762

LTE Band 4 (GT - LC = -2.00 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	20.84	20.81	20.81	20.86	20.72	20.75	20.91	21.03	20.86
Conducted Power (Watts)	0.1213	0.1205	0.1205	0.1219	0.1180	0.1189	0.1233	0.1268	0.1219
EIRP(dBm)	18.84	18.81	18.81	18.86	18.72	18.75	18.91	19.03	18.86
EIRP(Watts)	0.0766	0.0760	0.0760	0.0769	0.0745	0.0750	0.0778	0.0800	0.0769



Bottom Antenna:

LTE Band 5 (GT - LC = -6.20 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.91	23.96	23.87	23.92	23.93	23.96	23.91	23.92	23.87
Conducted Power (Watts)	0.2460	0.2489	0.2438	0.2466	0.2472	0.2489	0.2460	0.2466	0.2438
ERP(dBm)	15.56	15.61	15.52	15.57	15.58	15.61	15.56	15.57	15.52
ERP(Watts)	0.0360	0.0364	0.0356	0.0361	0.0361	0.0364	0.0360	0.0361	0.0356

LTE Band 5 (GT - LC = -6.20 dB) QPSK			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	23.85	23.99	23.89
Conducted Power (Watts)	0.2427	0.2506	0.2449
ERP(dBm)	15.50	15.64	15.54
ERP(Watts)	0.0355	0.0366	0.0358



LTE Band 5 (GT - LC = -6.20 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	20407	20525	20643	20415	20525	20635	20425	20525	20625
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	23.17	23.20	23.21	23.17	23.30	23.21	23.13	23.13	23.22
Conducted Power (Watts)	0.2075	0.2089	0.2094	0.2075	0.2138	0.2094	0.2056	0.2056	0.2099
ERP(dBm)	14.82	14.85	14.86	14.82	14.95	14.86	14.78	14.78	14.87
ERP(Watts)	0.0303	0.0305	0.0306	0.0303	0.0313	0.0306	0.0301	0.0301	0.0307

LTE Band 5 (GT - LC = -6.20 dB) 16QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	22.99	23.05	23.11
Conducted Power (Watts)	0.1991	0.2018	0.2046
ERP(dBm)	14.64	14.70	14.76
ERP(Watts)	0.0291	0.0295	0.0299



LTE Band 5 (GT - LC = -6.20 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	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
(MHz)									
Conducted Power (dBm)	22.05	22.17	22.32	22.03	22.04	22.11	21.93	21.99	22.02
Conducted Power (Watts)	0.1603	0.1648	0.1706	0.1596	0.1600	0.1626	0.1560	0.1581	0.1592
ERP(dBm)	13.70	13.82	13.97	13.68	13.69	13.76	13.58	13.64	13.67
ERP(Watts)	0.0234	0.0241	0.0249	0.0233	0.0234	0.0238	0.0228	0.0231	0.0233

LTE Band 5 (GT - LC = -6.20 dB) 64QAM			
Bandwidth	10M		
Channel	20450	20525	20600
	(Low)	(Mid)	(High)
Frequency	829	836.5	844
(MHz)			
Conducted Power (dBm)	22.00	22.03	22.03
Conducted Power (Watts)	0.1585	0.1596	0.1596
ERP(dBm)	13.65	13.68	13.68
ERP(Watts)	0.0232	0.0233	0.0233



Bottom Antenna:

LTE Band 7 (GT - LC = 0.90 dB) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	23.44	23.62	23.31
Conducted Power (Watts)	0.2208	0.2301	0.2143
EIRP(dBm)	24.34	24.52	24.21
EIRP(Watts)	0.2716	0.2831	0.2636

LTE Band 7 (GT - LC = 0.90 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	23.48	23.41	23.23	23.40	23.34	23.11	23.63	23.41	23.40
Conducted Power (Watts)	0.2228	0.2193	0.2104	0.2188	0.2158	0.2046	0.2307	0.2193	0.2188
EIRP(dBm)	24.38	24.31	24.13	24.30	24.24	24.01	24.53	24.31	24.30
EIRP(Watts)	0.2742	0.2698	0.2588	0.2692	0.2655	0.2518	0.2838	0.2698	0.2692



LTE Band 7 (GT - LC = 0.90 dB) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	22.88	22.58	22.41
Conducted Power (Watts)	0.1941	0.1811	0.1742
EIRP(dBm)	23.78	23.48	23.31
EIRP(Watts)	0.2388	0.2228	0.2143

LTE Band 7 (GT - LC = 0.90 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	22.60	22.69	22.28	22.76	22.59	22.27	22.64	22.70	22.25
Conducted Power (Watts)	0.1820	0.1858	0.1690	0.1888	0.1816	0.1687	0.1837	0.1862	0.1679
EIRP(dBm)	23.50	23.59	23.18	23.66	23.49	23.17	23.54	23.60	23.15
EIRP(Watts)	0.2239	0.2286	0.2080	0.2323	0.2234	0.2075	0.2259	0.2291	0.2065



LTE Band 7 (GT - LC = 0.90 dB) 64QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency	2502.5	2535	2567.5
(MHz)			
Conducted Power (dBm)	21.88	21.81	21.40
Conducted Power (Watts)	0.1542	0.1517	0.1380
EIRP(dBm)	22.78	22.71	22.30
EIRP(Watts)	0.1897	0.1866	0.1698

LTE Band 7 (GT - LC = 0.90 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
(MHz)									
Conducted Power (dBm)	21.70	21.55	21.47	21.50	21.48	21.38	21.75	21.69	21.51
Conducted Power (Watts)	0.1479	0.1429	0.1403	0.1413	0.1406	0.1374	0.1496	0.1476	0.1416
EIRP(dBm)	22.60	22.45	22.37	22.40	22.38	22.28	22.65	22.59	22.41
EIRP(Watts)	0.1820	0.1758	0.1726	0.1738	0.1730	0.1690	0.1841	0.1816	0.1742



Bottom Antenna:

LTE Band 38 (GT - LC = 0.50 dB) QPSK			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	23.42	23.62	23.54
Conducted Power (Watts)	0.2198	0.2301	0.2259
EIRP(dBm)	23.92	24.12	24.04
EIRP(Watts)	0.2466	0.2582	0.2535

LTE Band 38 (GT - LC = 0.50 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	23.59	23.58	23.67	23.55	23.56	23.52	23.53	23.66	23.70
Conducted Power (Watts)	0.2286	0.2280	0.2328	0.2265	0.2270	0.2249	0.2254	0.2323	0.2344
EIRP(dBm)	24.09	24.08	24.17	24.05	24.06	24.02	24.03	24.16	24.20
EIRP(Watts)	0.2564	0.2559	0.2612	0.2541	0.2547	0.2523	0.2529	0.2606	0.2630



LTE Band 38 (GT - LC = 0.50 dB) 16QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	22.63	22.68	22.76
Conducted Power (Watts)	0.1832	0.1854	0.1888
EIRP(dBm)	23.13	23.18	23.26
EIRP(Watts)	0.2056	0.2080	0.2118

LTE Band 38 (GT - LC = 0.50 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	22.59	22.67	22.70	22.58	22.59	22.50	22.60	22.79	22.77
Conducted Power (Watts)	0.1816	0.1849	0.1862	0.1811	0.1816	0.1778	0.1820	0.1901	0.1892
EIRP(dBm)	23.09	23.17	23.20	23.08	23.09	23.00	23.10	23.29	23.27
EIRP(Watts)	0.2037	0.2075	0.2089	0.2032	0.2037	0.1995	0.2042	0.2133	0.2123



LTE Band 38 (GT - LC = 0.50 dB) 64QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency	2572.5	2595	2617.5
(MHz)			
Conducted Power (dBm)	21.53	21.68	21.79
Conducted Power (Watts)	0.1422	0.1472	0.1510
EIRP(dBm)	22.03	22.18	22.29
EIRP(Watts)	0.1596	0.1652	0.1694

LTE Band 38 (GT - LC = 0.50 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
(MHz)									
Conducted Power (dBm)	21.50	21.56	21.56	21.45	21.57	21.63	21.69	21.71	21.74
Conducted Power (Watts)	0.1413	0.1432	0.1432	0.1396	0.1435	0.1455	0.1476	0.1483	0.1493
EIRP(dBm)	22.00	22.06	22.06	21.95	22.07	22.13	22.19	22.21	22.24
EIRP(Watts)	0.1585	0.1607	0.1607	0.1567	0.1611	0.1633	0.1656	0.1663	0.1675

**Peak-to-Average Ratio**

Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.26	5.16	4.9	6	PASS
Middle CH	4.49	5.07	5.1	6.03	
Highest CH	4.14	5.19	5.28	6.14	
Mode	LTE Band 4 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	5.68	6.41			PASS
Middle CH	5.45	6.03			
Highest CH	5.77	6.55			

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.96	5.13	5.91	6	PASS
Middle CH	4.46	5.28	5.48	6.09	
Highest CH	4.93	5.19	5.8	6.06	
Mode	LTE Band 5 / 10MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.06	6.46			PASS
Middle CH	5.91	6.61			
Highest CH	6.26	6.61			

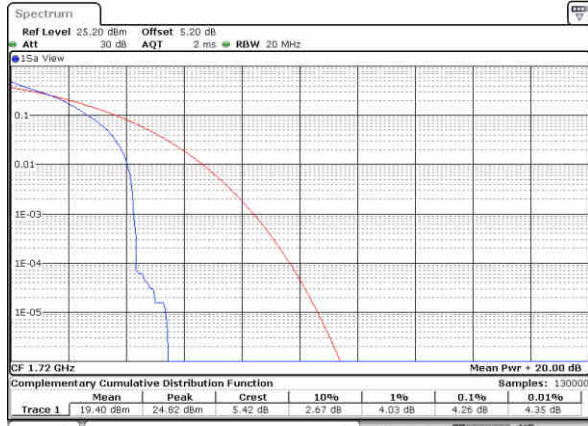
Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	3.94	4.81	3.94	5.13	PASS
Middle CH	3.86	4.9	3.83	5.3	
Highest CH	3.94	4.78	3.88	5.16	
Mode	LTE Band 7 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	4.75	5.65			PASS
Middle CH	5.16	5.86			
Highest CH	4.93	5.86			

Mode	LTE Band 38 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.69	5.86	6.81	5.96	PASS
Middle CH	5.74	5.25	6.09	6.64	
Highest CH	4.99	5.33	5.65	6.00	
Mode	LTE Band 38 / 20MHz				
Mod.	64QAM				Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	6.35	6.81			PASS
Middle CH	6.52	6.41			
Highest CH	6.43	6.32			



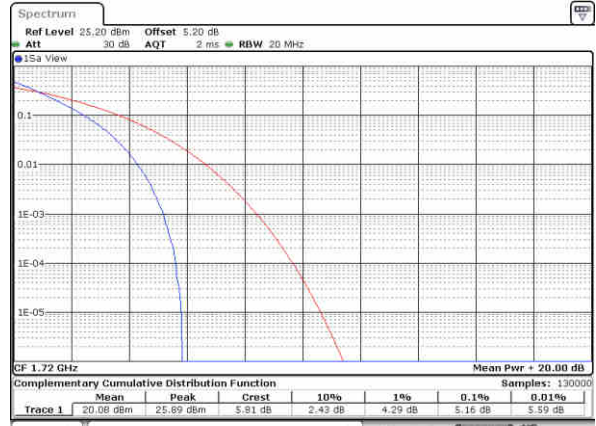
LTE Band 4 / 20MHz / QPSK

Lowest Channel / 1RB



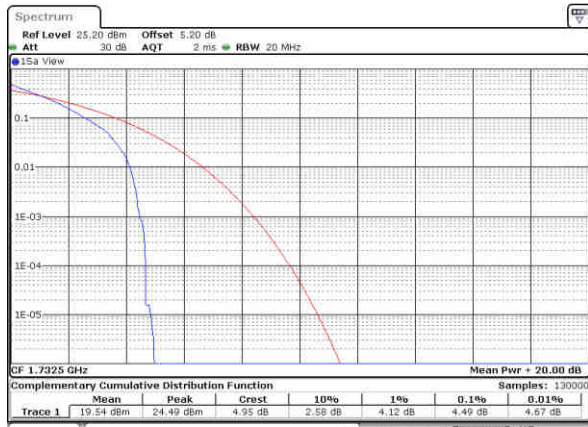
Date: 23 APR 2019 23:07:37

Lowest Channel / Full RB



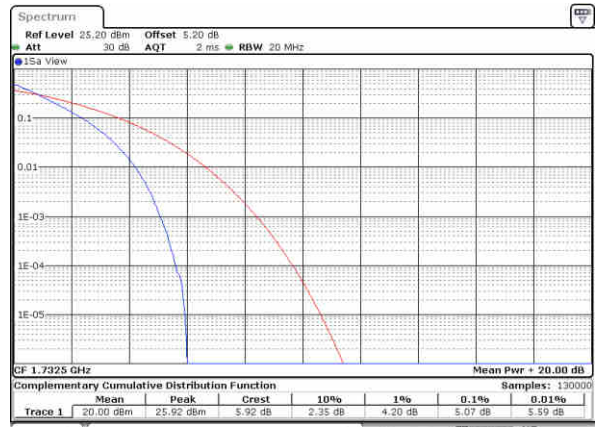
Date: 23 APR 2019 23:07:25

Middle Channel / 1RB



Date: 23 APR 2019 23:07:50

Middle Channel / Full RB



Date: 23 APR 2019 23:08:54

Highest Channel / 1RB



Date: 23 APR 2019 23:08:16

Highest Channel / Full RB

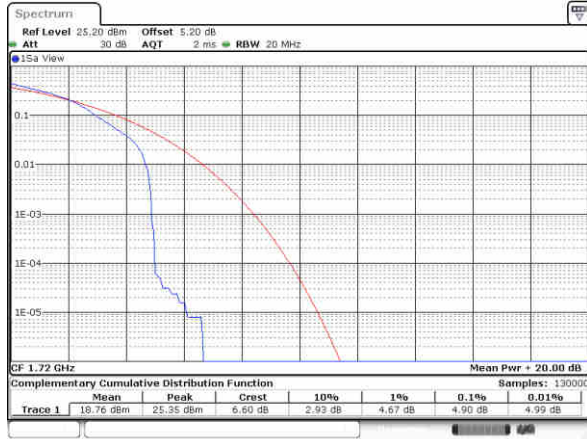


Date: 23 APR 2019 23:08:05

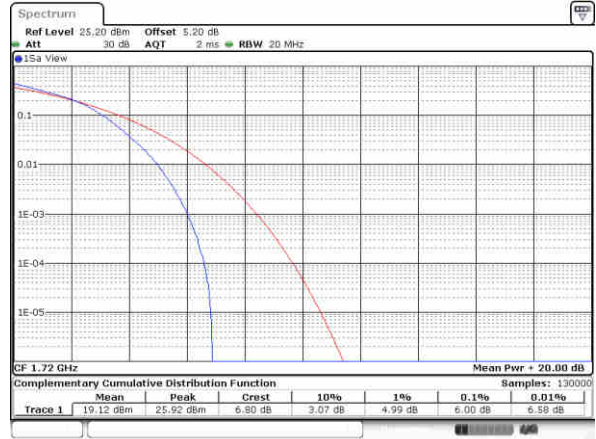


LTE Band 4 / 20MHz / 16QAM

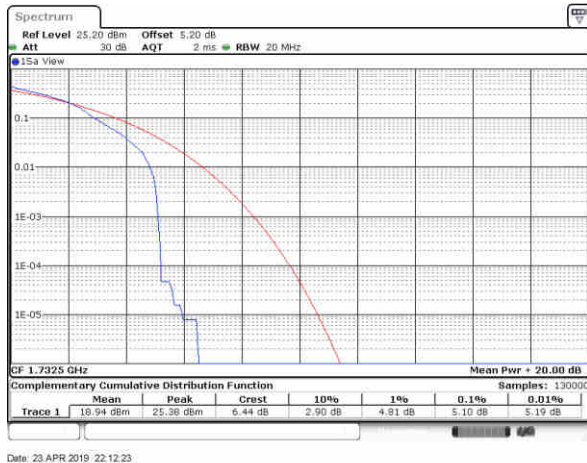
Lowest Channel / 1RB



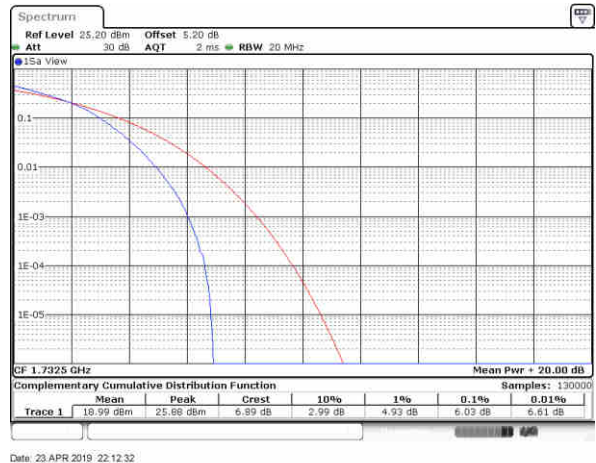
Lowest Channel / Full RB



Middle Channel / 1RB



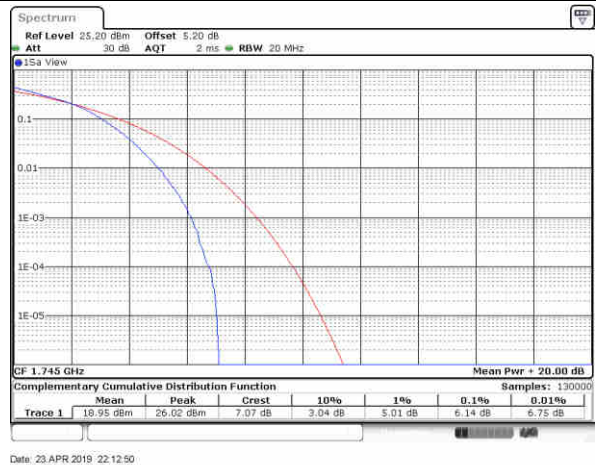
Middle Channel / Full RB



Highest Channel / 1RB



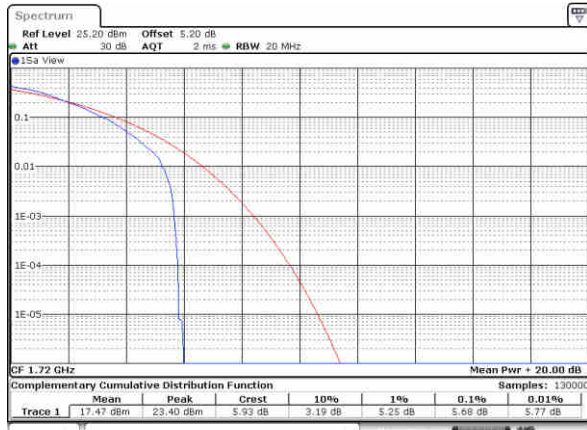
Highest Channel / Full RB



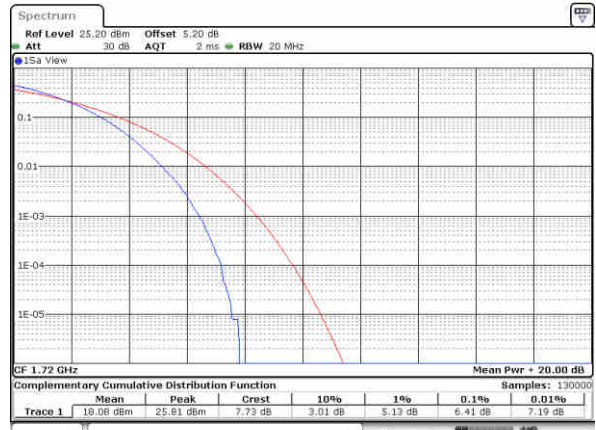


LTE Band 4 / 20MHz / 64QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



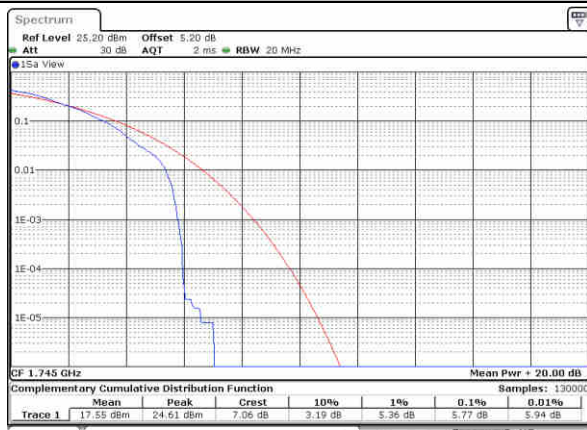
Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB





LTE Band 5 / 10MHz / QPSK

Lowest Channel / 1RB



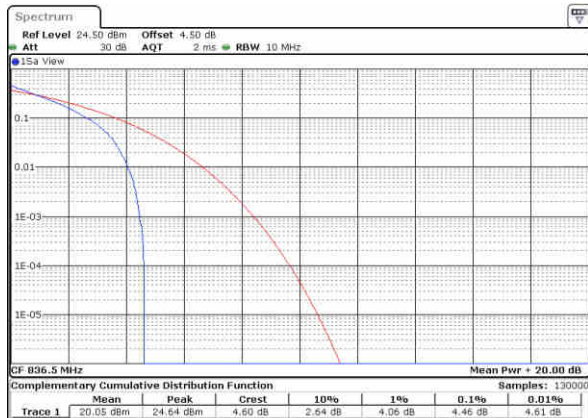
Date: 24 APR 2019 00:12:53

Lowest Channel / Full RB



Date: 24 APR 2019 00:12:40

Middle Channel / 1RB



Date: 24 APR 2019 00:13:05

Middle Channel / Full RB



Date: 24 APR 2019 00:13:15

Highest Channel / 1RB

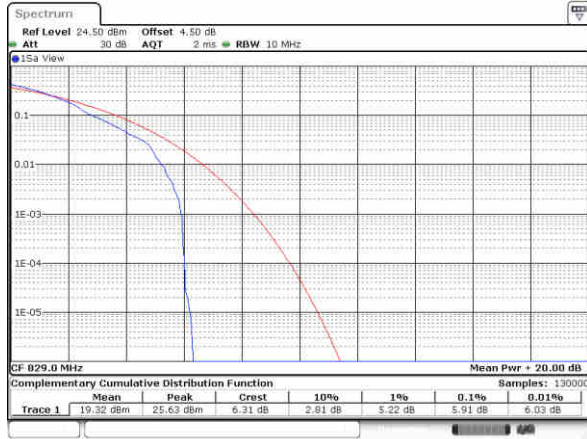
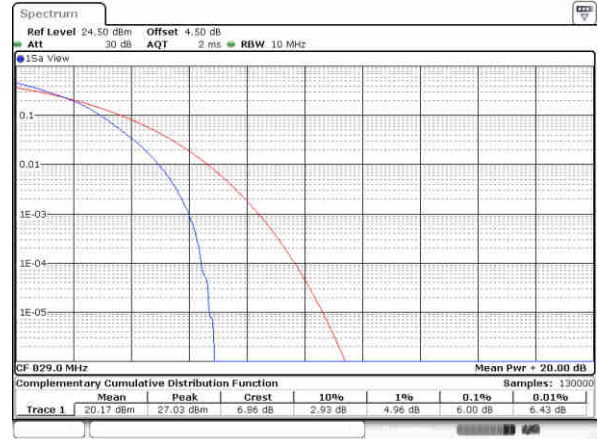
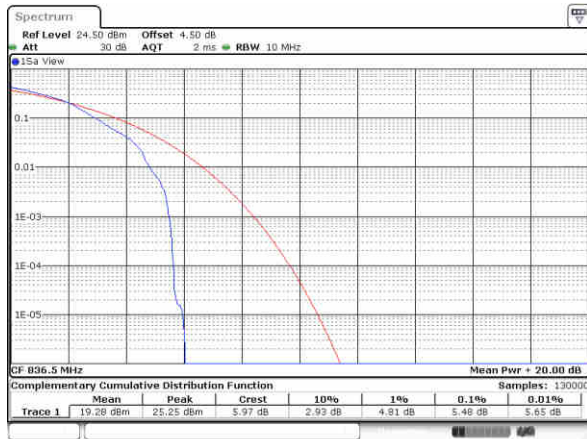
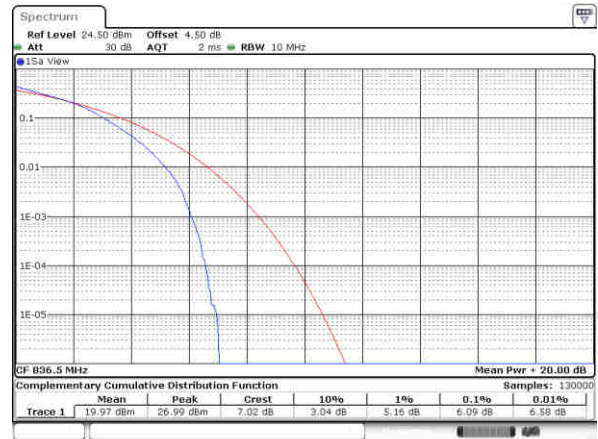


Date: 24 APR 2019 00:13:40

Highest Channel / Full RB



Date: 24 APR 2019 00:13:30

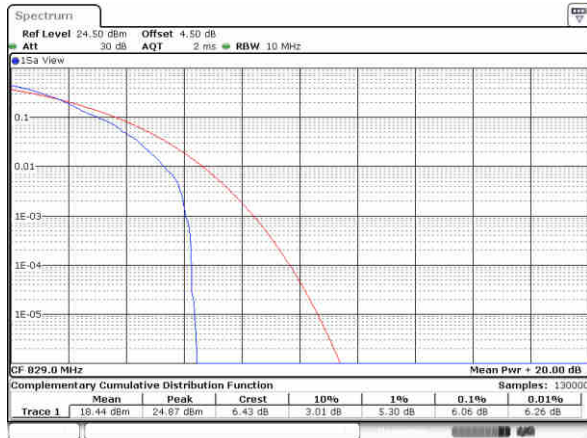
LTE Band 5 / 10MHz / 16QAM
Lowest Channel / 1RB

Lowest Channel / Full RB

Middle Channel / 1RB

Middle Channel / Full RB

Highest Channel / 1RB

Highest Channel / Full RB

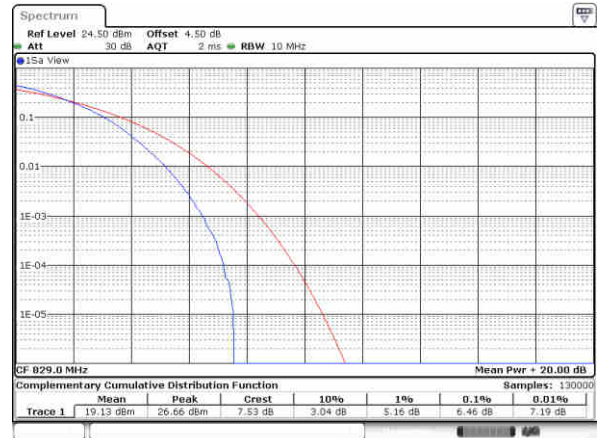



LTE Band 5 / 10MHz / 64QAM

Lowest Channel / 1RB



Lowest Channel / Full RB



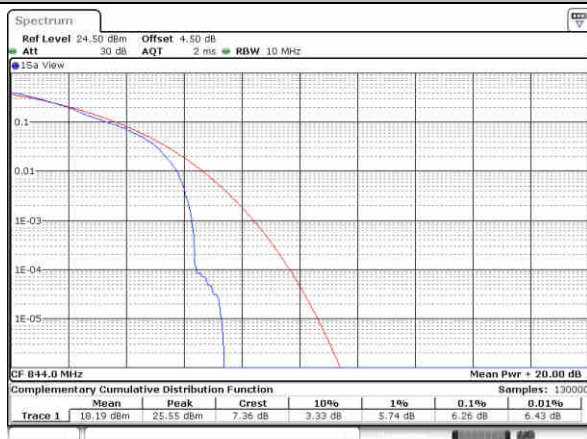
Middle Channel / 1RB



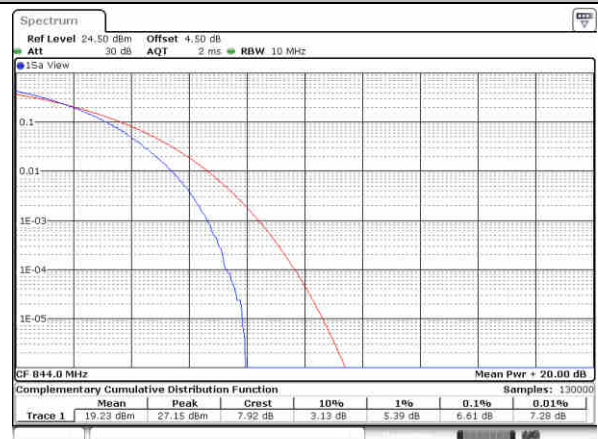
Middle Channel / Full RB



Highest Channel / 1RB



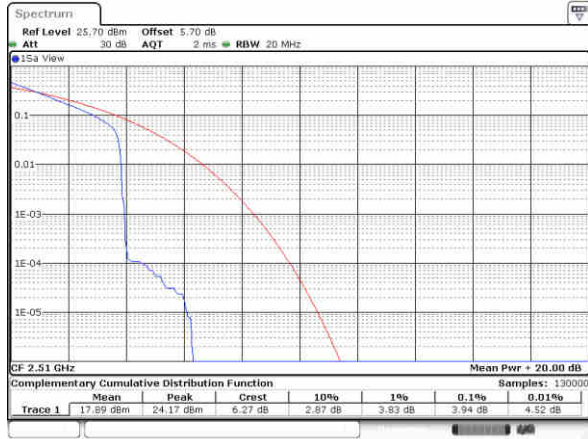
Highest Channel / Full RB



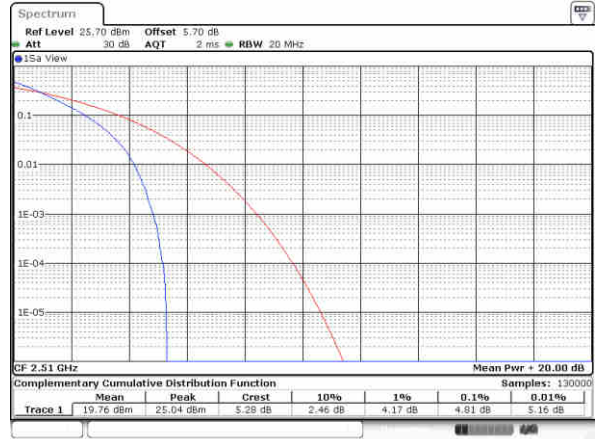


LTE Band 7 / 20MHz / QPSK

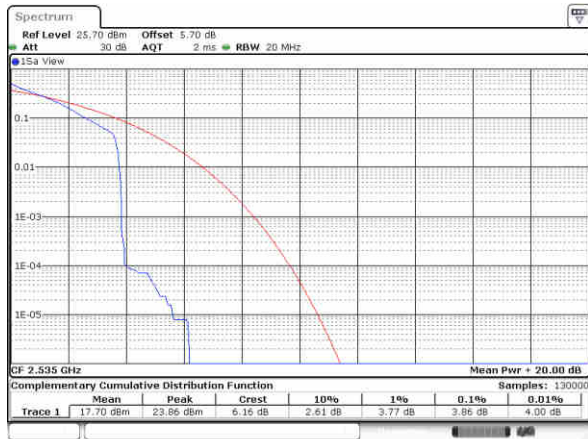
Lowest Channel / 1RB



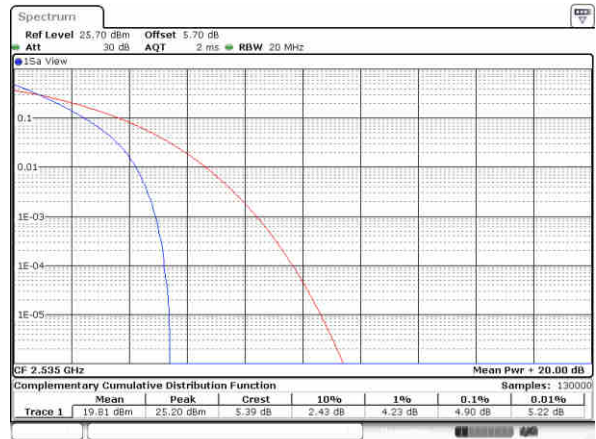
Lowest Channel / Full RB



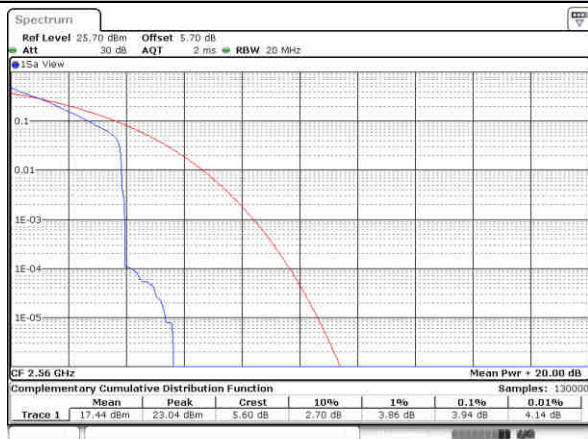
Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



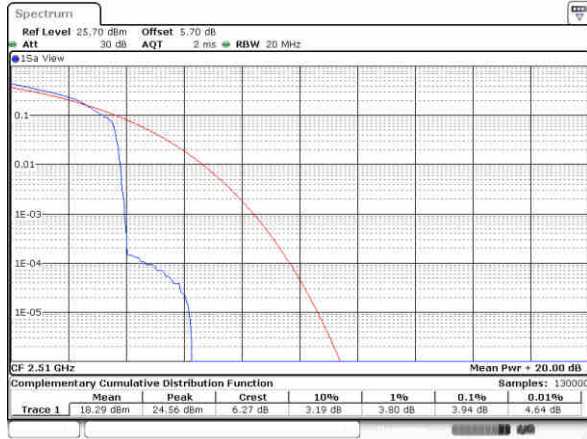
Highest Channel / Full RB



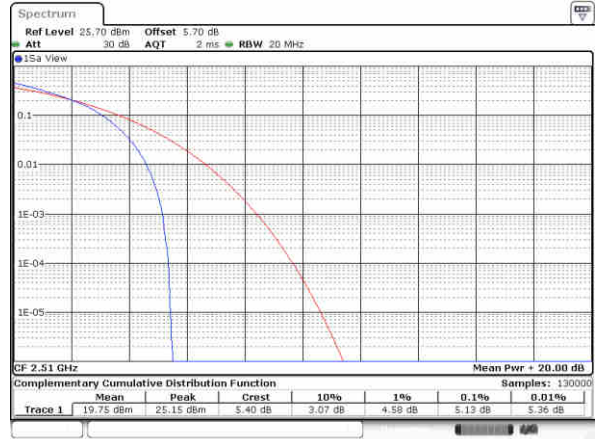


LTE Band 7 / 20MHz / 16QAM

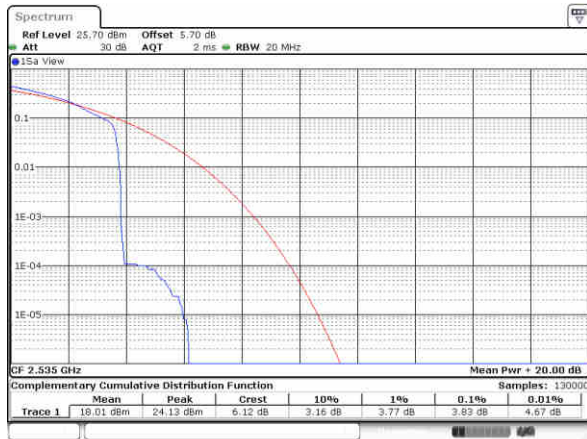
Lowest Channel / 1RB



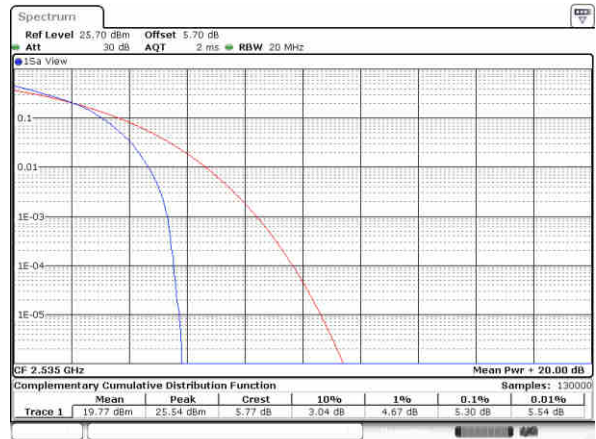
Lowest Channel / Full RB



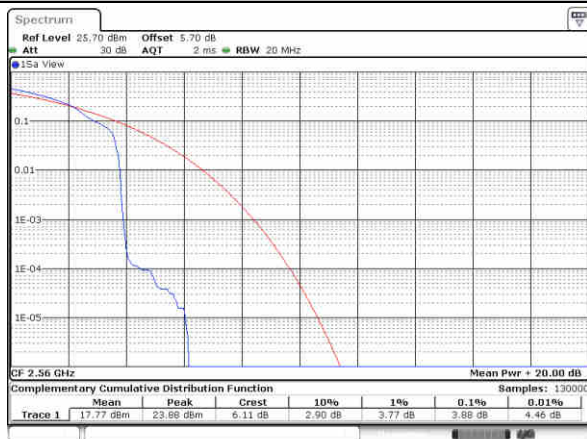
Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



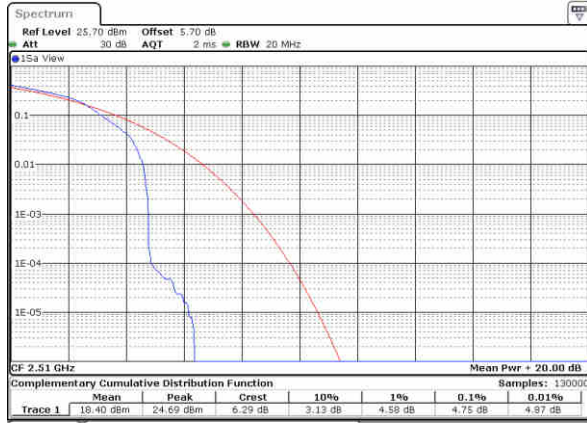
Highest Channel / Full RB



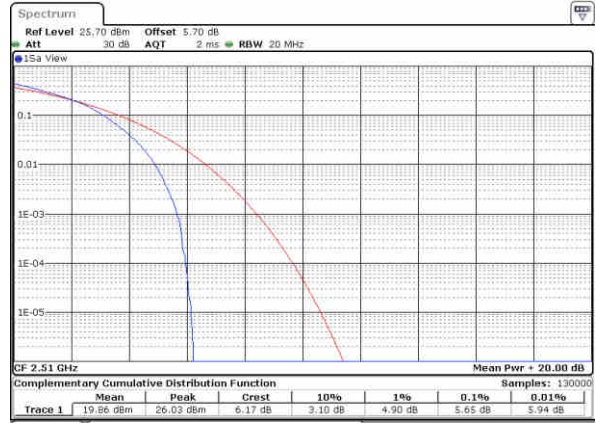


LTE Band 7 / 20MHz / 64QAM

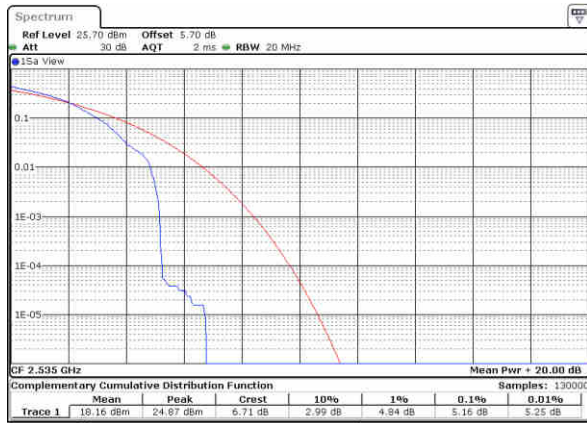
Lowest Channel / 1RB



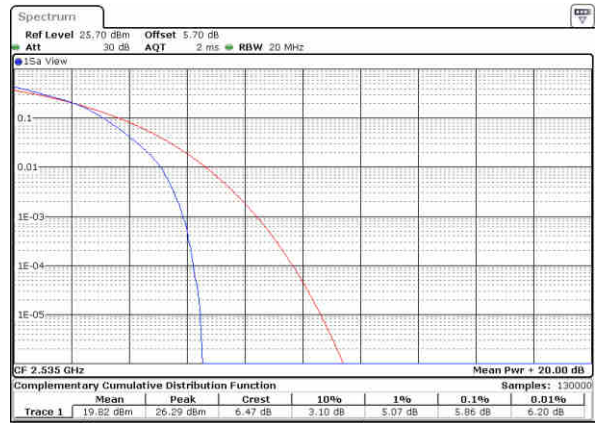
Lowest Channel / Full RB



Middle Channel / 1RB



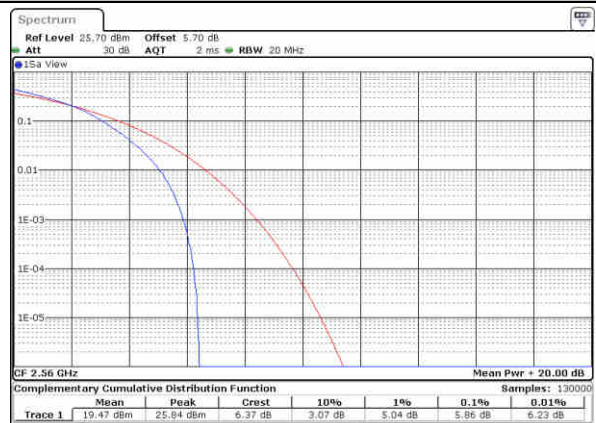
Middle Channel / Full RB



Highest Channel / 1RB



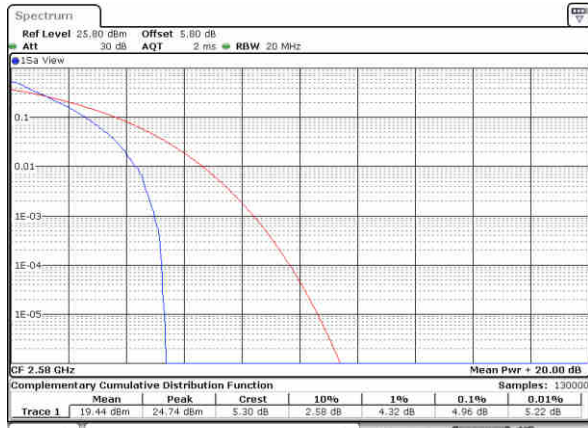
Highest Channel / Full RB



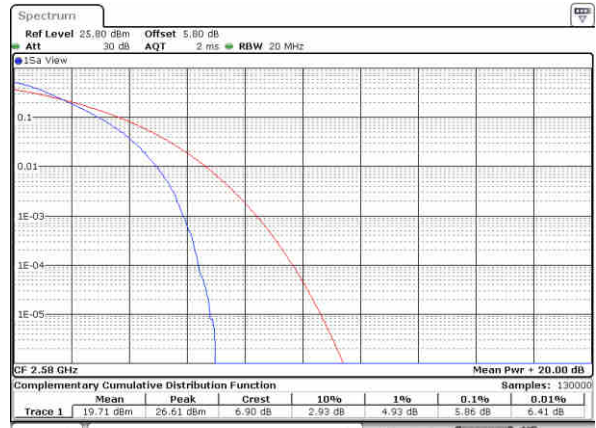


LTE Band 38 / 20MHz / QPSK

Lowest Channel / 1RB



Lowest Channel / Full RB



Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



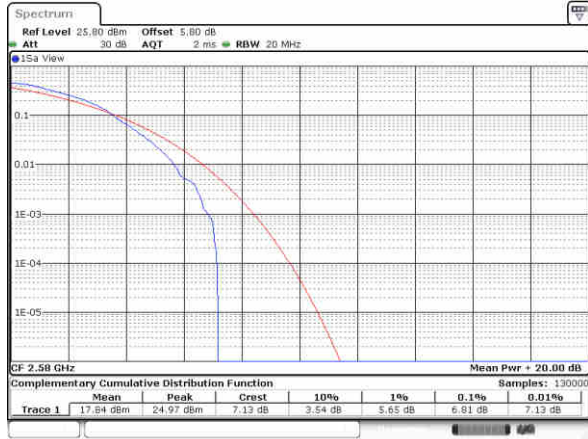
Highest Channel / Full RB



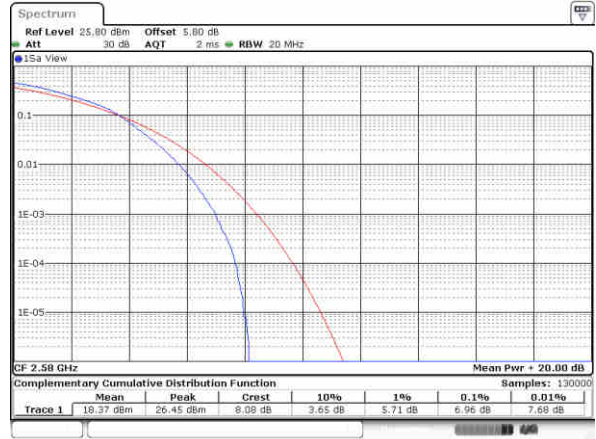


LTE Band 38 / 20MHz / 16QAM

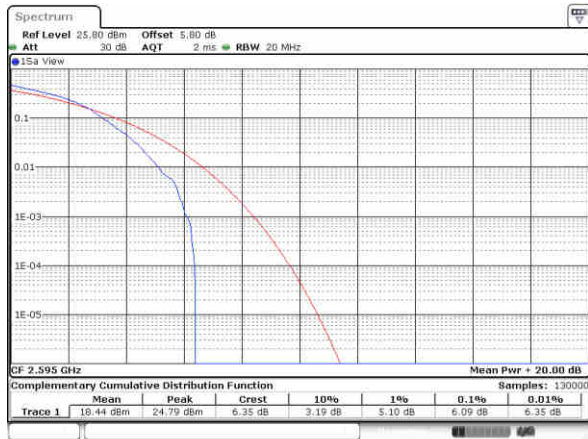
Lowest Channel / 1RB



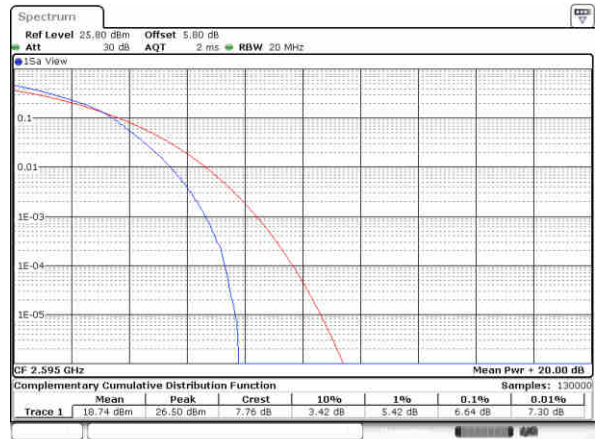
Lowest Channel / Full RB



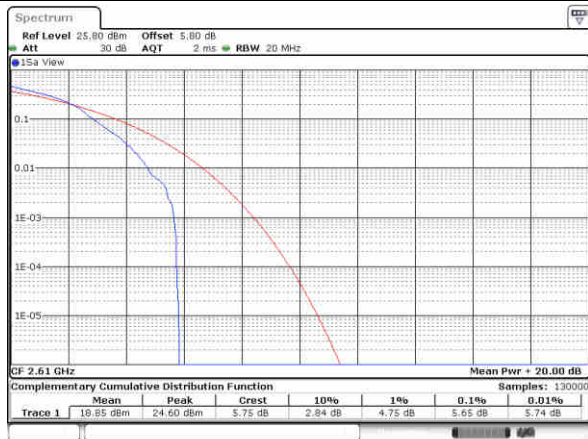
Middle Channel / 1RB



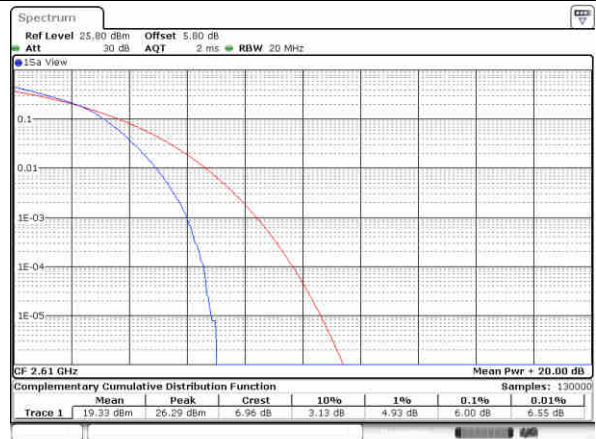
Middle Channel / Full RB



Highest Channel / 1RB



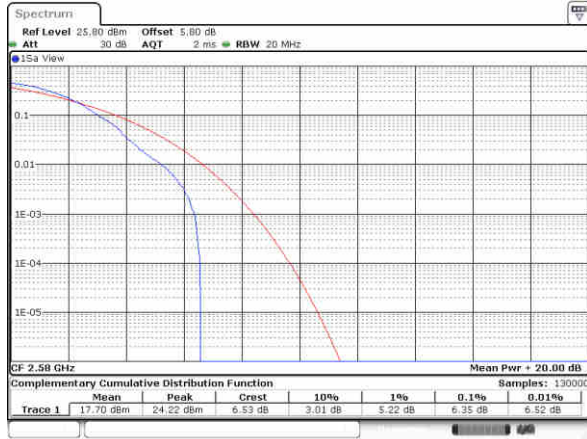
Highest Channel / Full RB



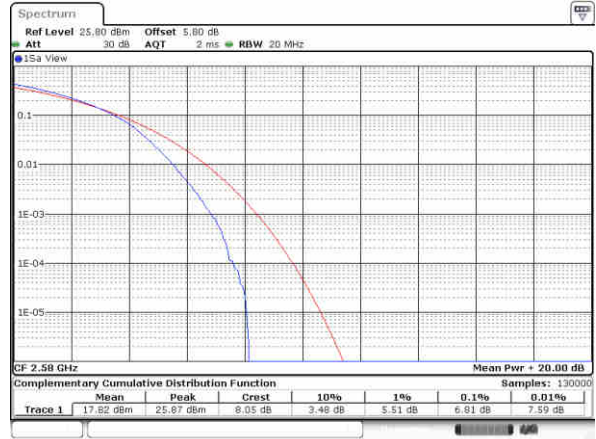


LTE Band 38 / 20MHz / 64QAM

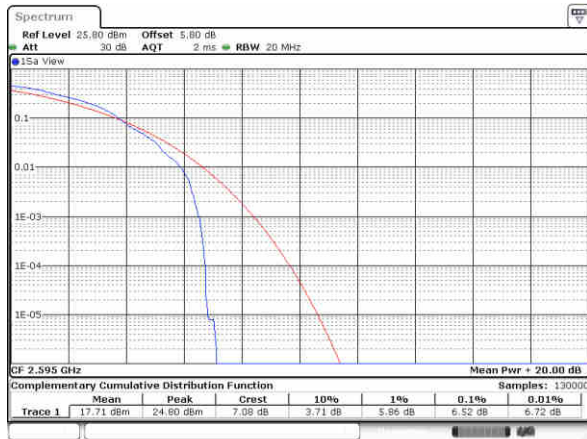
Lowest Channel / 1RB



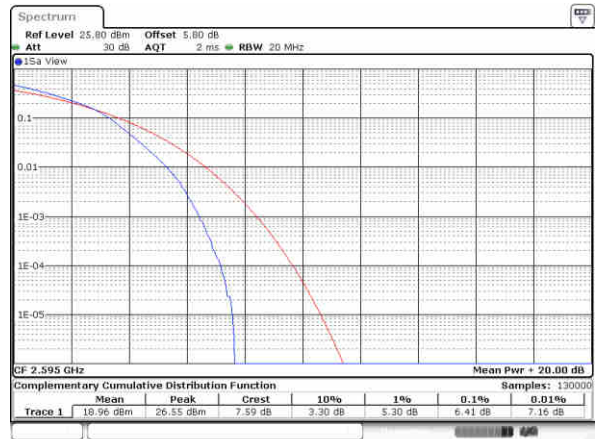
Lowest Channel / Full RB



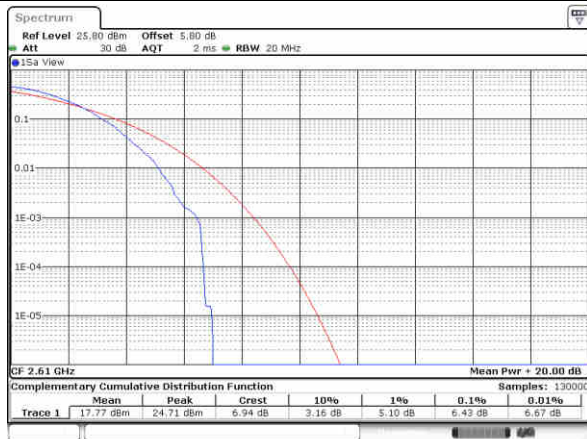
Middle Channel / 1RB



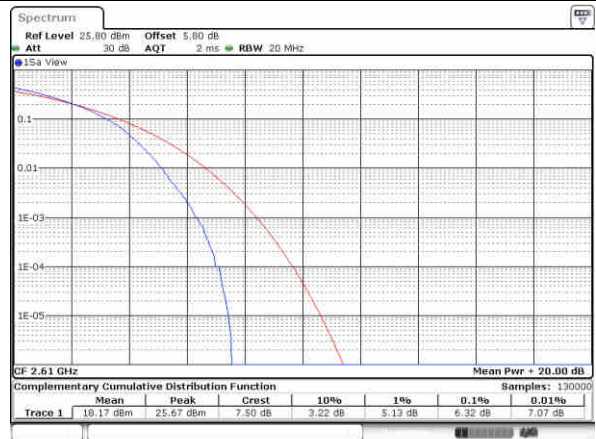
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB



**26dB Bandwidth**

Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.242	1.242	3.021	3.033	4.875	4.935	9.91	9.85	14.805	17.745	20.5	20.38
Middle CH	1.234	1.234	3.009	3.009	4.905	4.905	9.81	9.97	14.326	14.775	20.38	20.34
Highest CH	1.231	1.237	2.961	2.973	4.935	4.885	9.79	10.01	14.625	14.685	20.46	20.14
Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	1.234		3.015		4.865		9.81		14.565		20.18	
Middle CH	1.236		3.015		4.905		9.89		14.535		20.38	
Highest CH	1.231		2.961		4.935		9.93		14.446		20.34	

Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz					
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM				
Lowest CH	1.242	1.236	3.033	3.027	4.975	4.965	9.75	10.01				
Middle CH	1.236	1.234	3.015	3.009	4.905	4.895	9.97	9.83				
Highest CH	1.239	1.225	3.021	3.027	4.855	4.885	9.85	9.65				
Mode	LTE Band 5 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz					
Mod.	64QAM		64QAM		64QAM		64QAM					
Lowest CH	1.245		3.009		4.955		9.91					
Middle CH	1.234		3.003		4.895		9.91					
Highest CH	1.245		2.997		4.915		9.77					



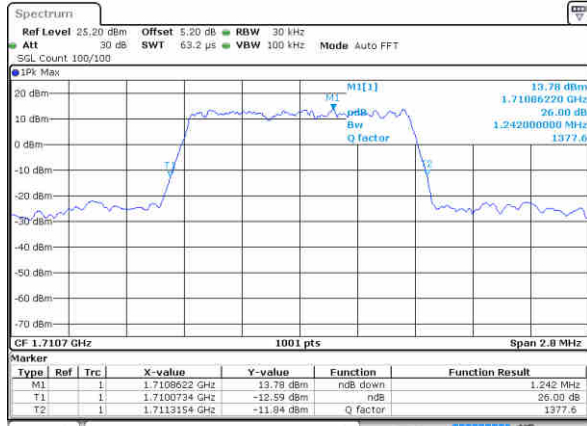
Mode	LTE Band 7 : 26dB BW(MHz)											
BW					5MHz		10MHz		15MHz		20MHz	
Mod.					QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.935	4.955	9.77	9.89	14.625	14.655	20.14	20.22
Middle CH					4.845	4.775	9.87	9.77	14.595	14.865	20.3	20.18
Highest CH					4.905	4.855	9.81	9.85	14.715	14.296	20.26	20.18
Mode	LTE Band 7 : 26dB BW(MHz)											
BW					5MHz		10MHz		15MHz		20MHz	
Mod.					64QAM		64QAM		64QAM		64QAM	
Lowest CH					4.875		9.91		14.565		20.539	
Middle CH					4.865		9.87		14.655		20.18	
Highest CH					4.865		9.93		14.386		20.38	

Mode	LTE Band 38 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH					4.845	4.925	9.85	9.81	14.326	14.326	20.1	20.18
Middle CH					4.855	4.835	9.77	9.81	14.505	14.356	20.1	20.06
Highest CH					4.855	4.715	9.63	9.85	14.565	14.326	20.14	20.1
Mode	LTE Band 38 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH					4.705		9.73		14.625		20.06	
Middle CH					4.865		9.63		14.595		20.3	
Highest CH					4.795		9.73		14.116		20.06	

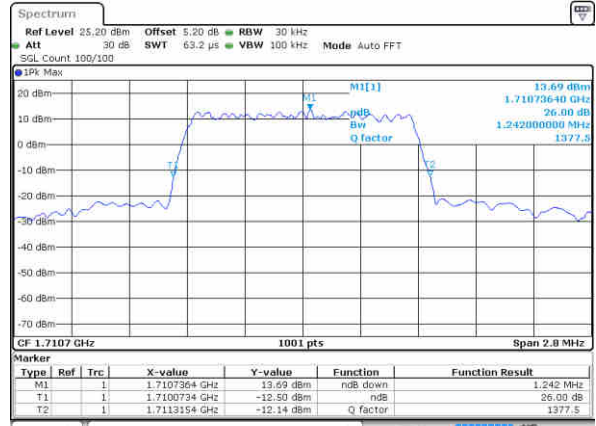


LTE Band 4

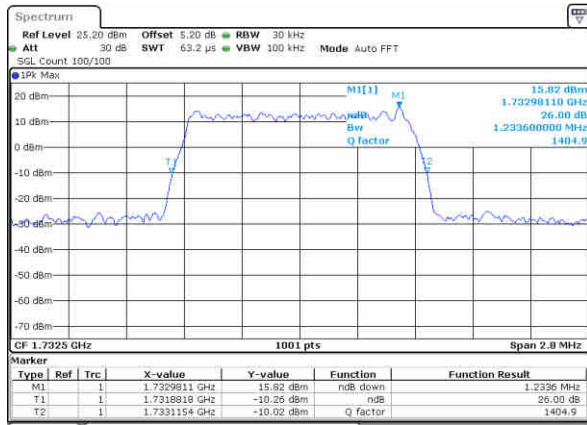
Lowest Channel / 1.4MHz / QPSK



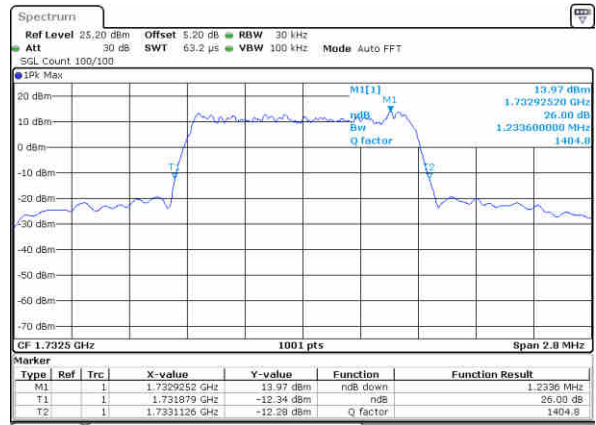
Lowest Channel / 1.4MHz / 16QAM



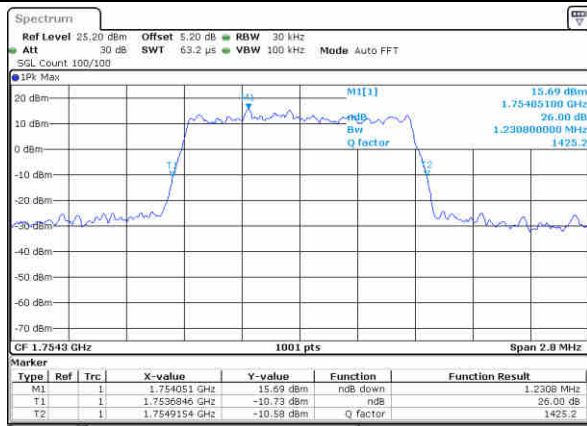
Middle Channel / 1.4MHz / QPSK



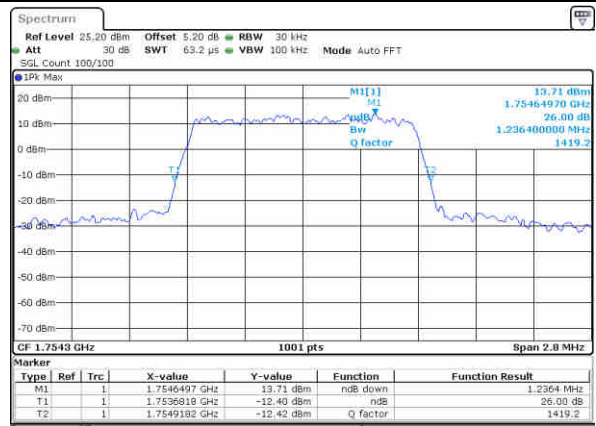
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



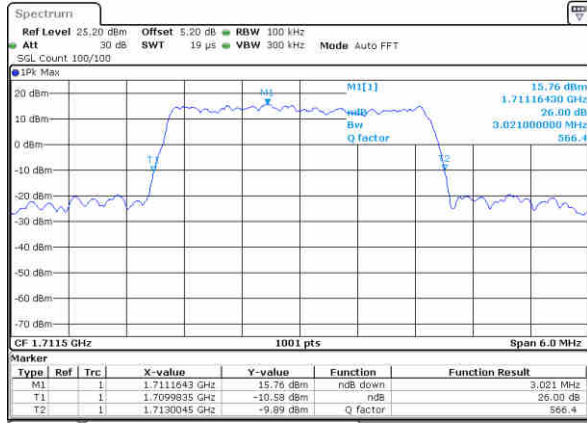
Highest Channel / 1.4MHz / 16QAM



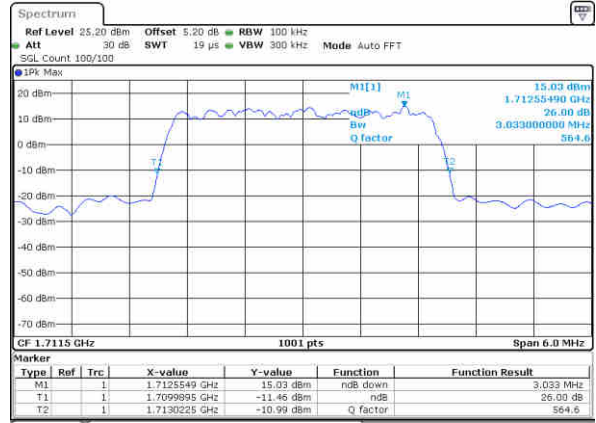


LTE Band 4

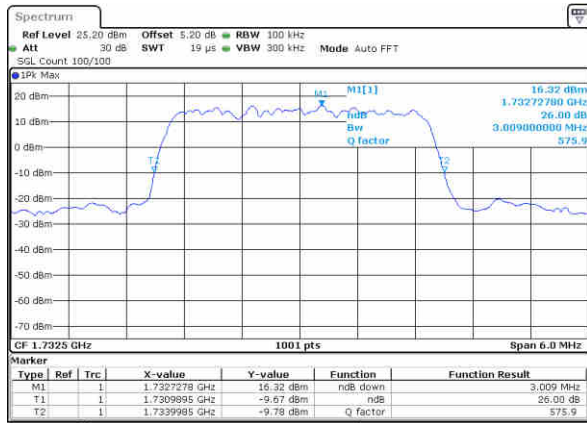
Lowest Channel / 3MHz / QPSK



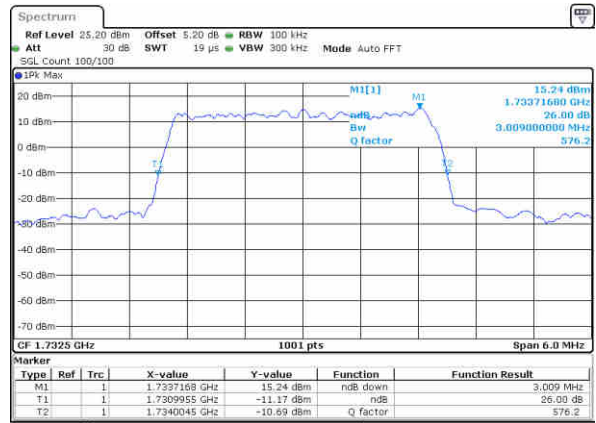
Lowest Channel / 3MHz / 16QAM



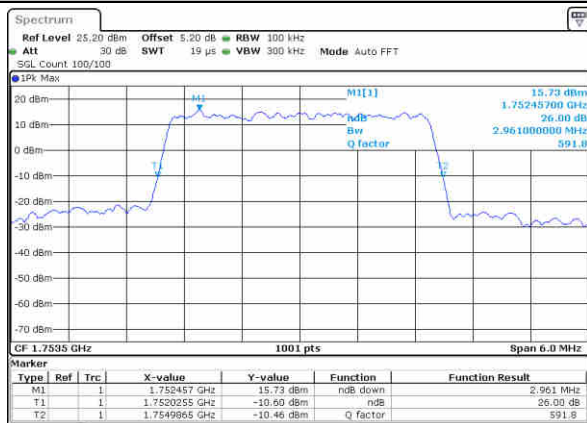
Middle Channel / 3MHz / QPSK



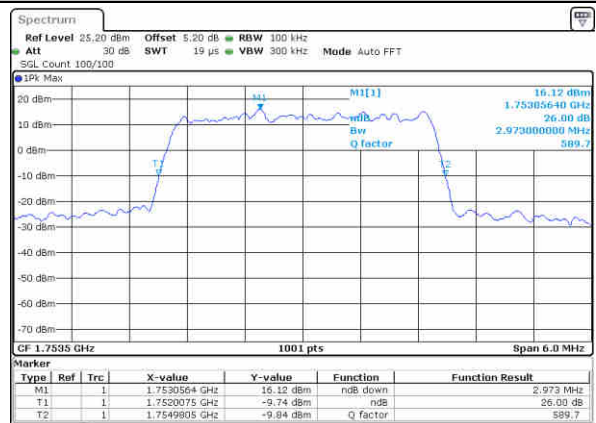
Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK



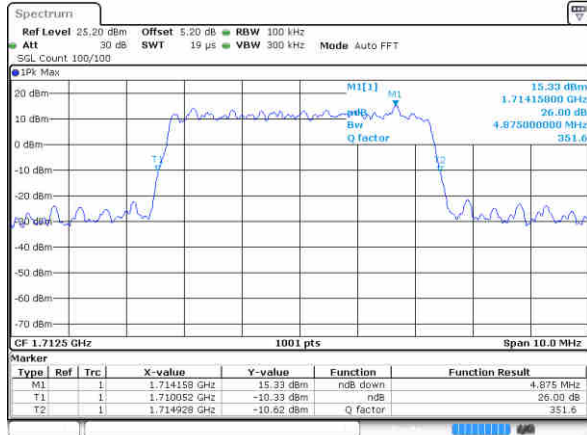
Highest Channel / 3MHz / 16QAM



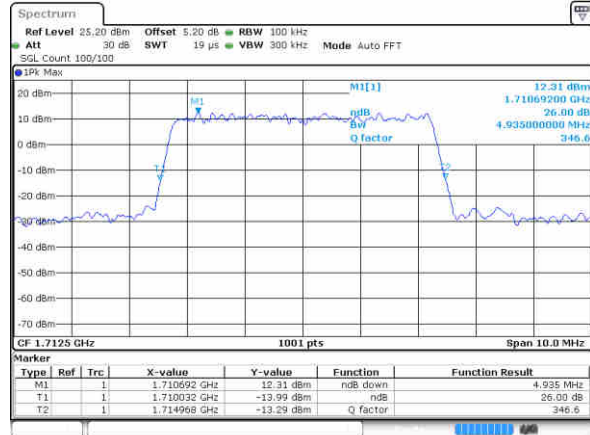


LTE Band 4

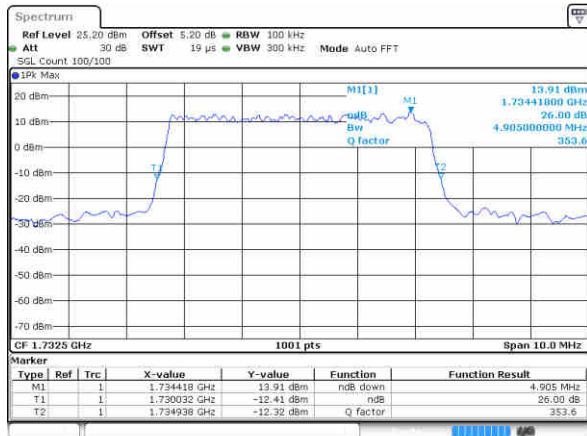
Lowest Channel / 5MHz / QPSK



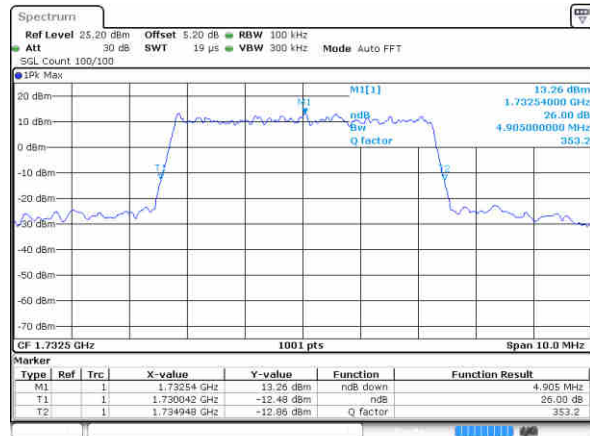
Lowest Channel / 5MHz / 16QAM



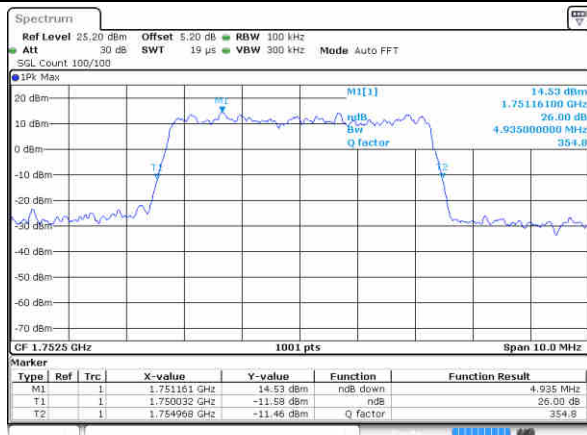
Middle Channel / 5MHz / QPSK



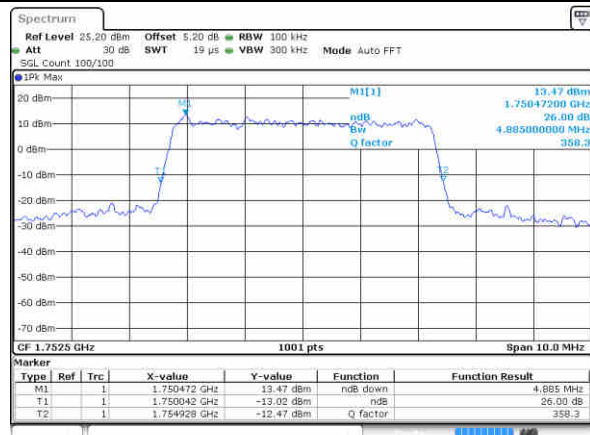
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



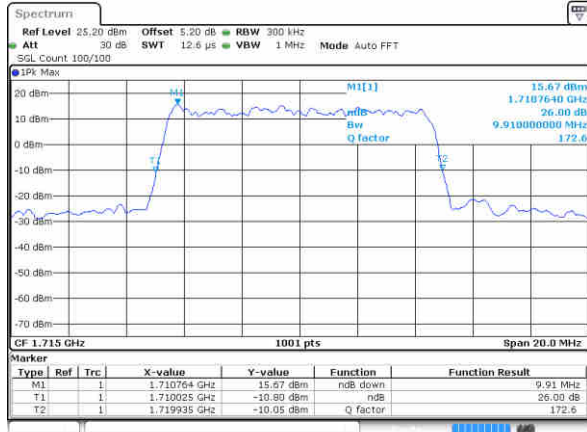
Highest Channel / 5MHz / 16QAM



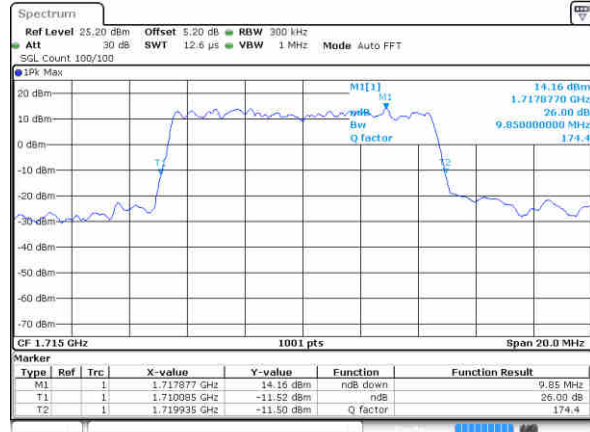


LTE Band 4

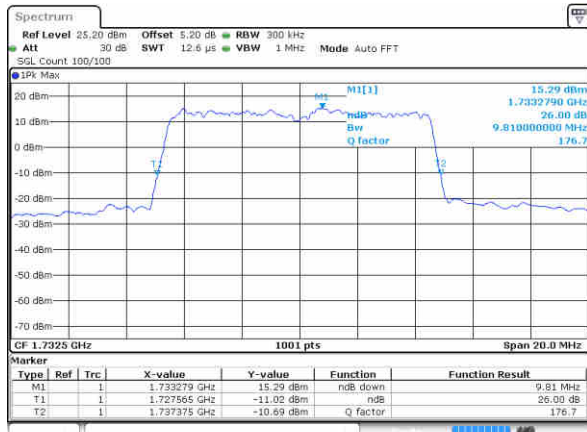
Lowest Channel / 10MHz / QPSK



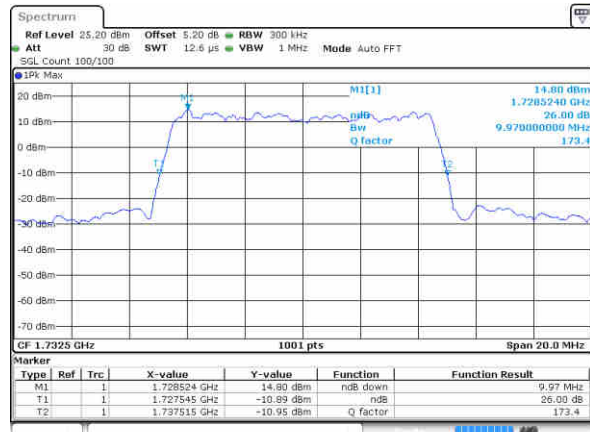
Lowest Channel / 10MHz / 16QAM



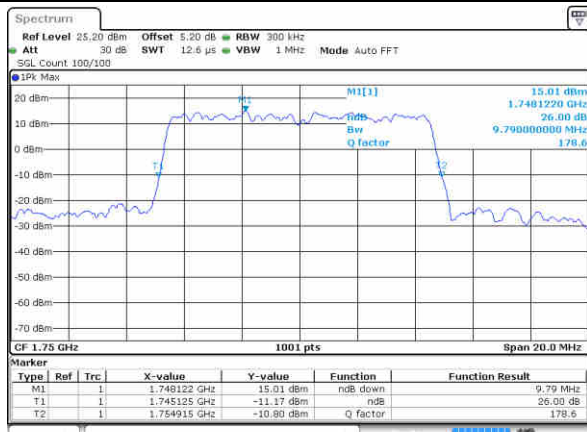
Middle Channel / 10MHz / QPSK



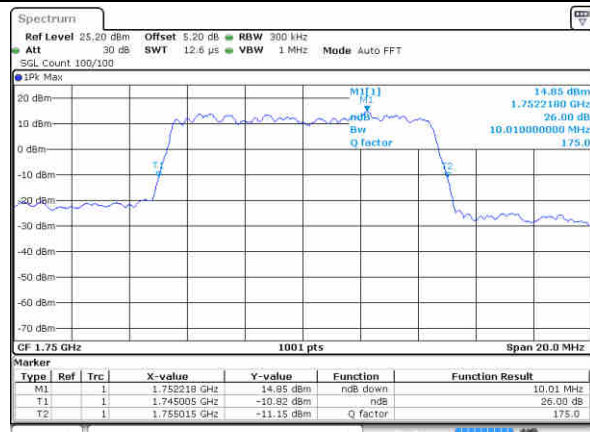
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



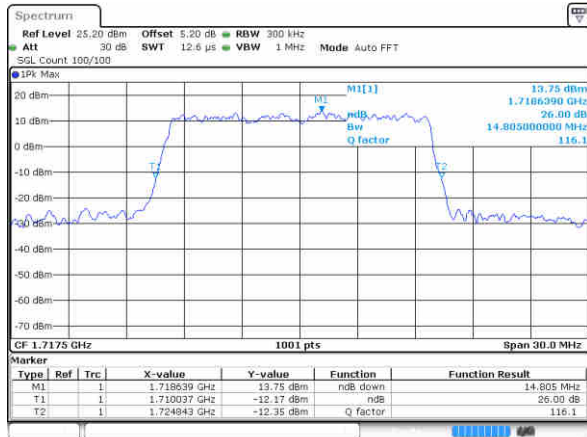
Highest Channel / 10MHz / 16QAM





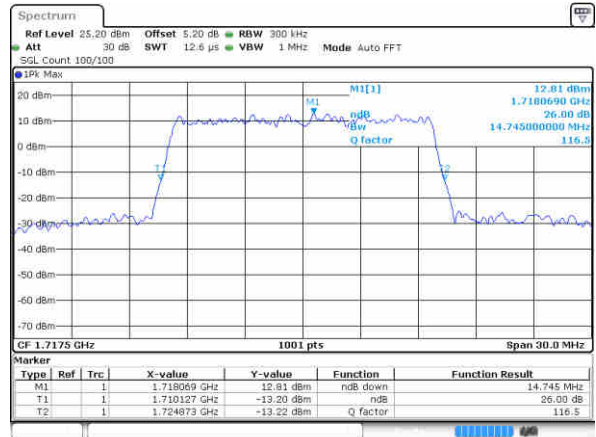
LTE Band 4

Lowest Channel / 15MHz / QPSK



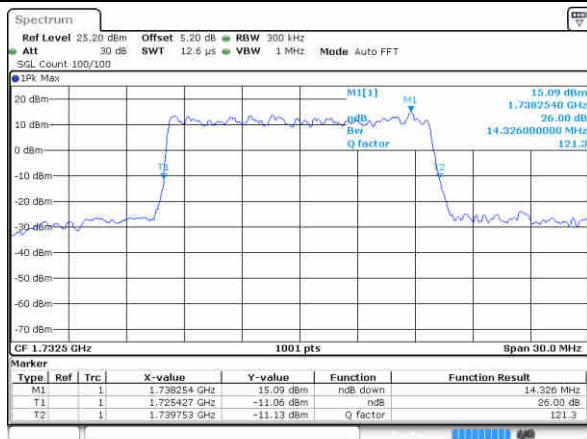
Date: 23 APR 2019 21:39:29

Lowest Channel / 15MHz / 16QAM



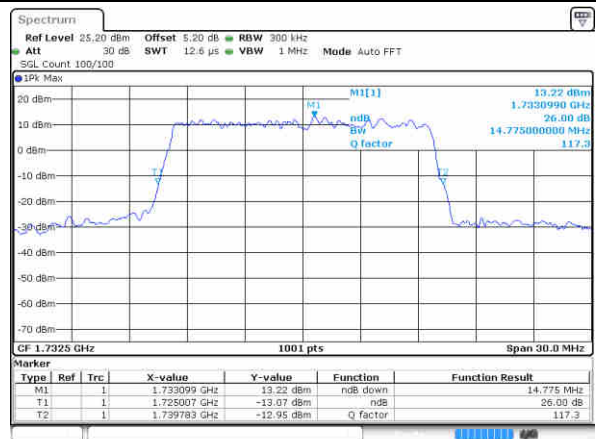
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Middle Channel / 15MHz / QPSK



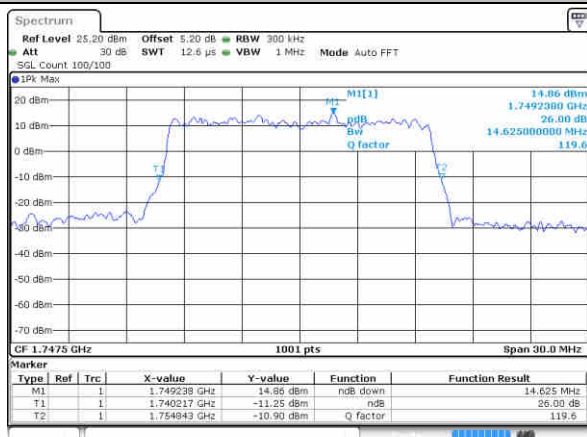
Date: 23 APR 2019 21:46:29

Middle Channel / 15MHz / 16QAM



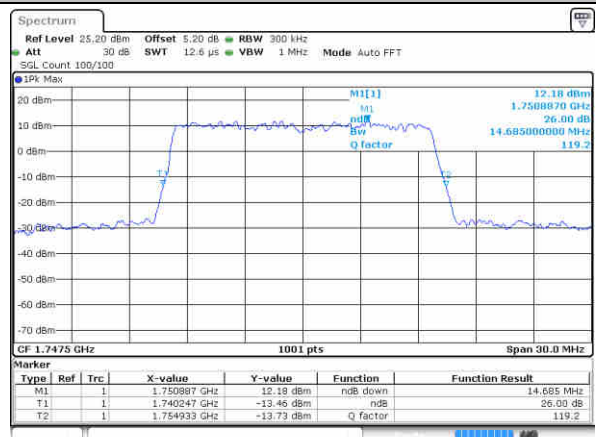
Date: 23 APR 2019 21:46:39

Highest Channel / 15MHz / QPSK



Date: 23 APR 2019 21:48:58

Highest Channel / 15MHz / 16QAM

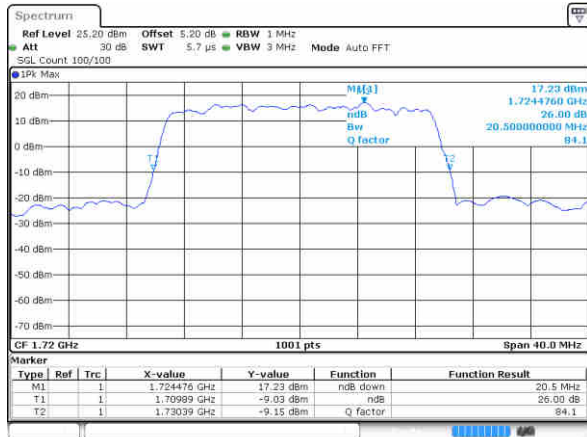


Date: 23 APR 2019 21:48:08

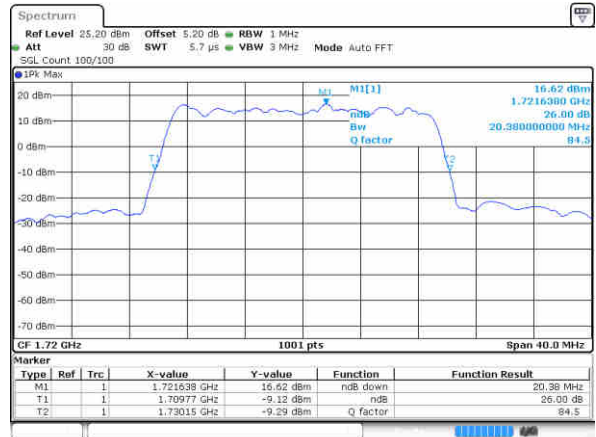


LTE Band 4

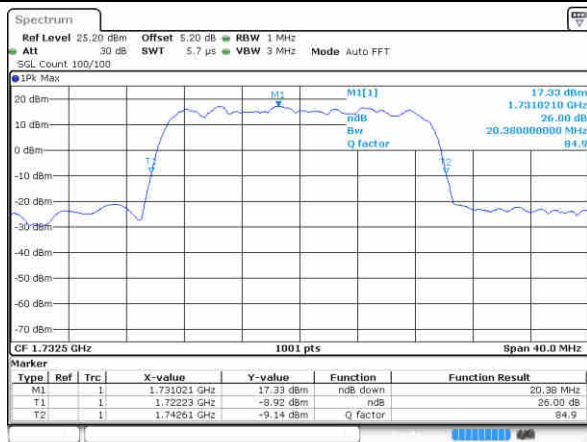
Lowest Channel / 20MHz / QPSK



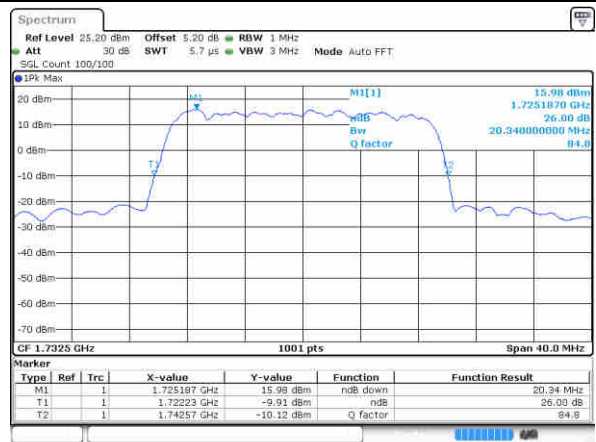
Lowest Channel / 20MHz / 16QAM



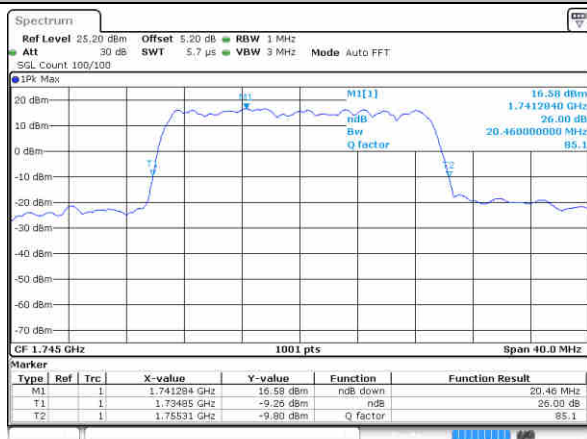
Middle Channel / 20MHz / QPSK



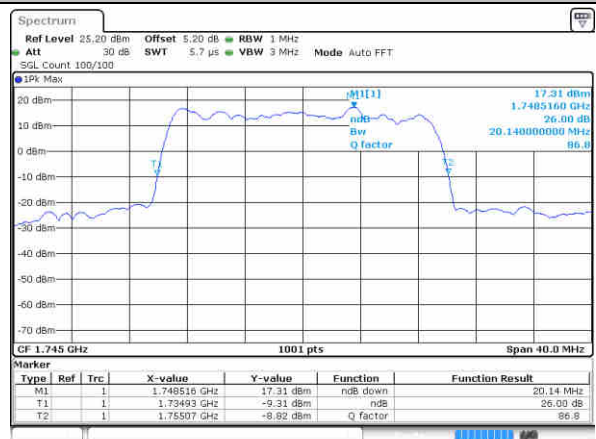
Middle Channel / 20MHz / 16QAM



Highest Channel / 20MHz / QPSK



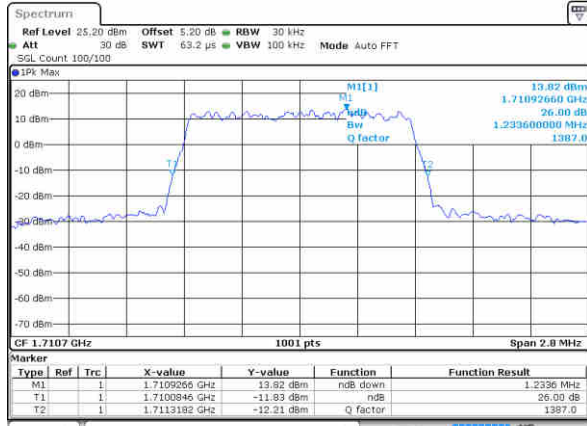
Highest Channel / 20MHz / 16QAM



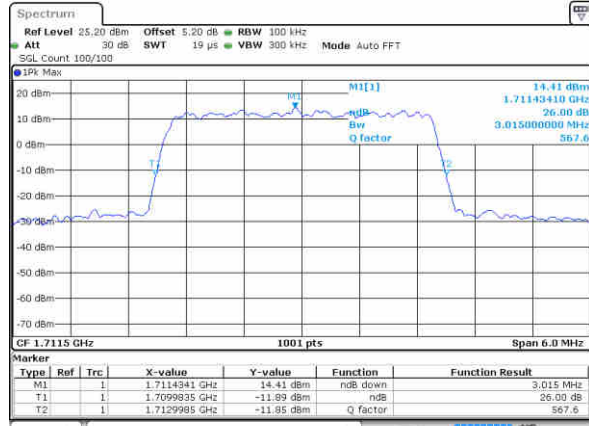


LTE Band 4

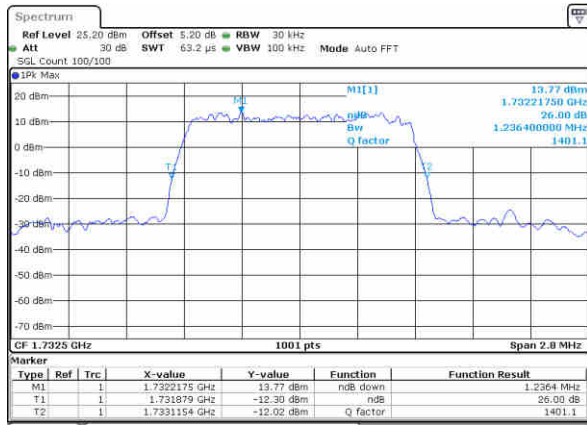
Lowest Channel / 1.4MHz / 64QAM



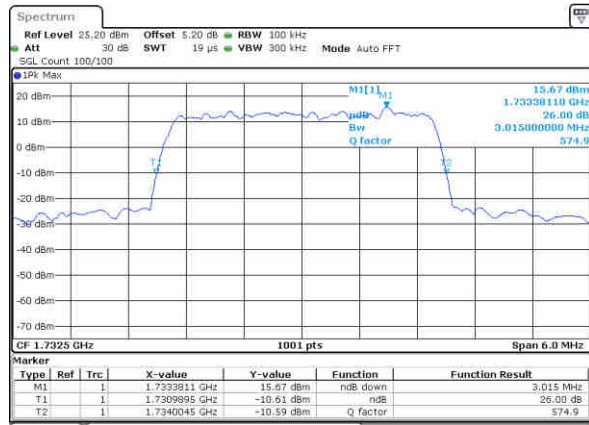
Lowest Channel / 3MHz / 64QAM



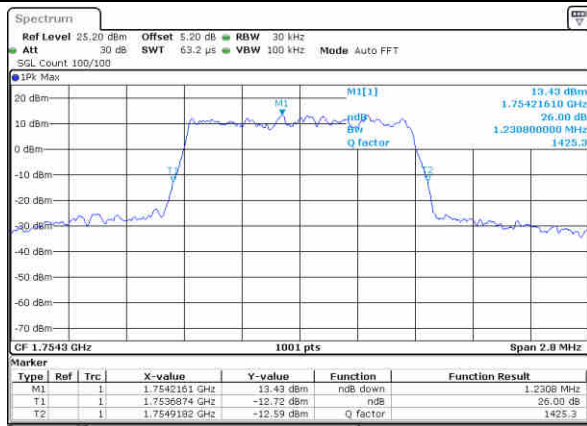
Middle Channel / 1.4MHz / 64QAM



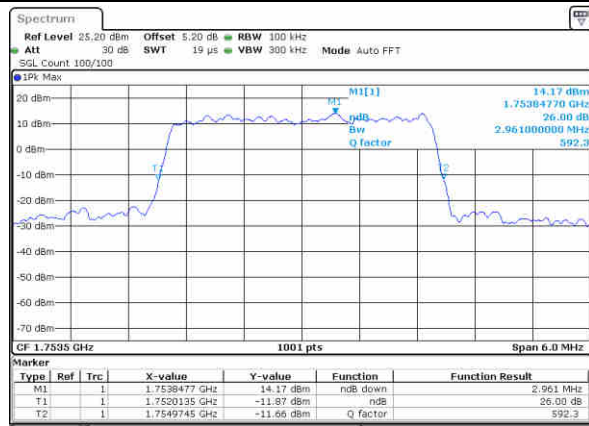
Middle Channel / 3MHz / 64QAM



Highest Channel / 1.4MHz / 64QAM



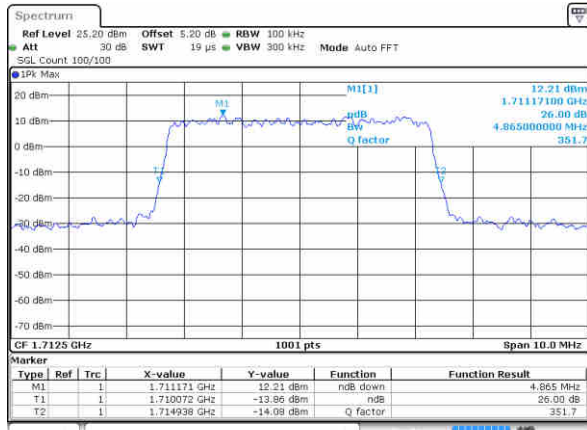
Highest Channel / 3MHz / 64QAM



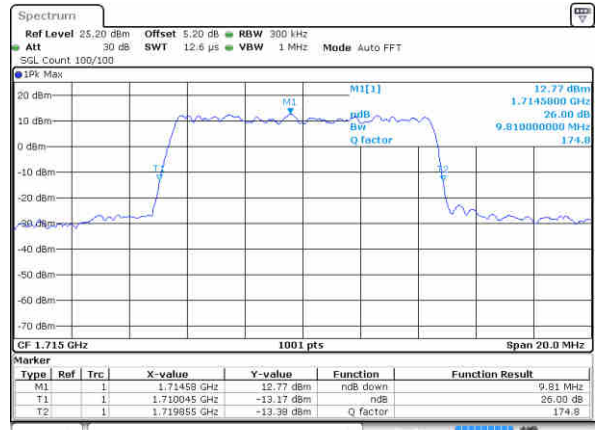


LTE Band 4

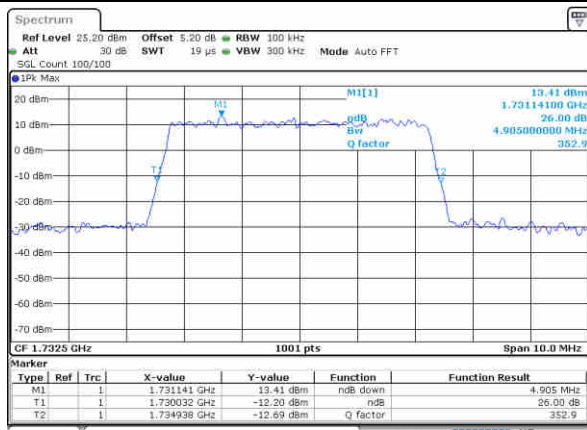
Lowest Channel / 5MHz / 64QAM



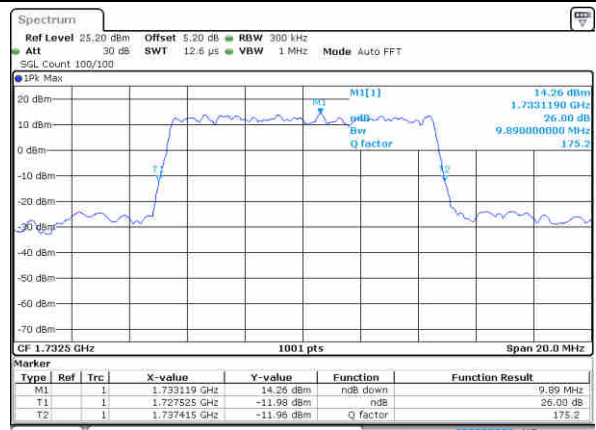
Lowest Channel / 10MHz / 64QAM



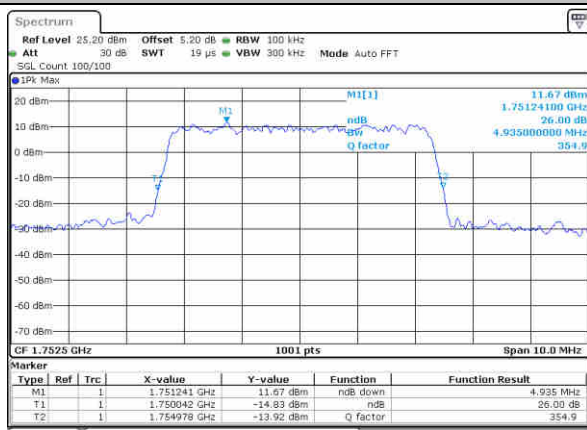
Middle Channel / 5MHz / 64QAM



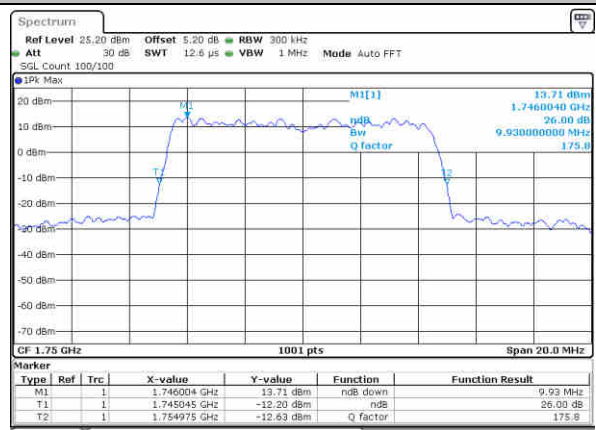
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



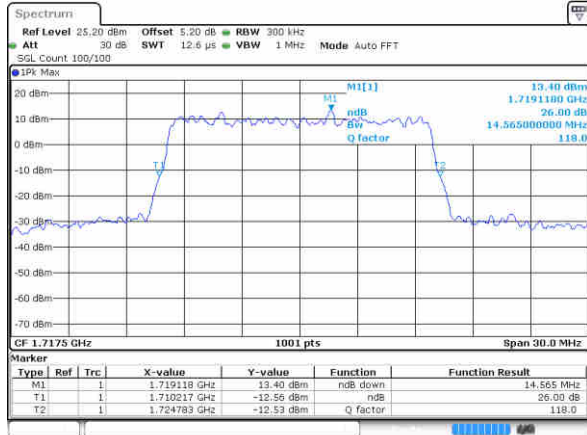
Highest Channel / 10MHz / 64QAM



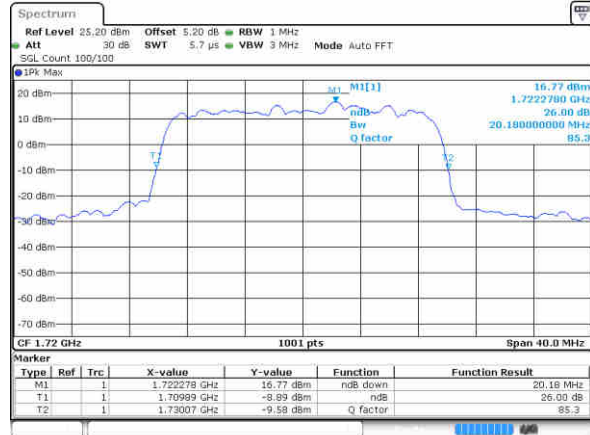


LTE Band 4

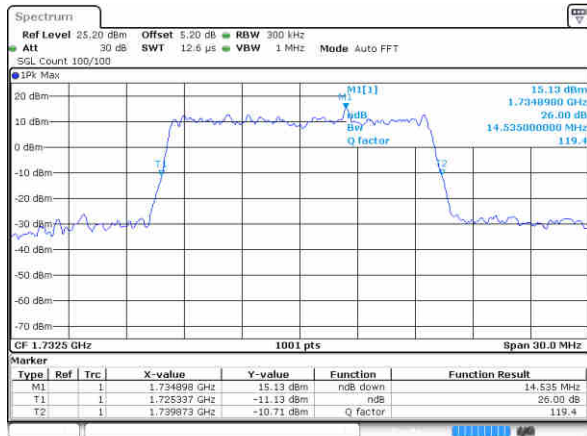
Lowest Channel / 15MHz / 64QAM



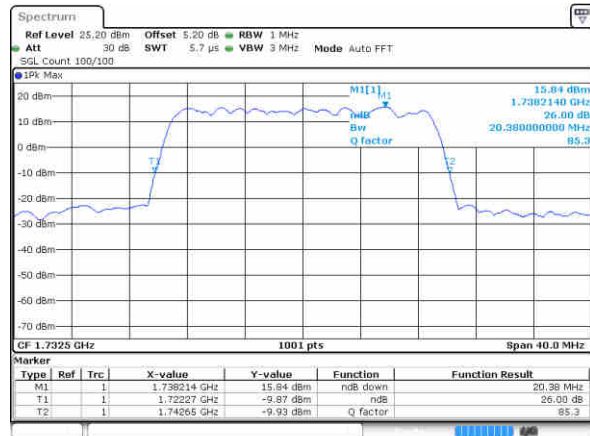
Lowest Channel / 20MHz / 64QAM



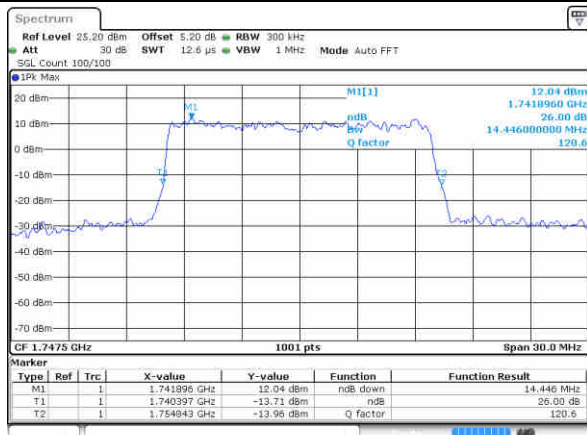
Middle Channel / 15MHz / 64QAM



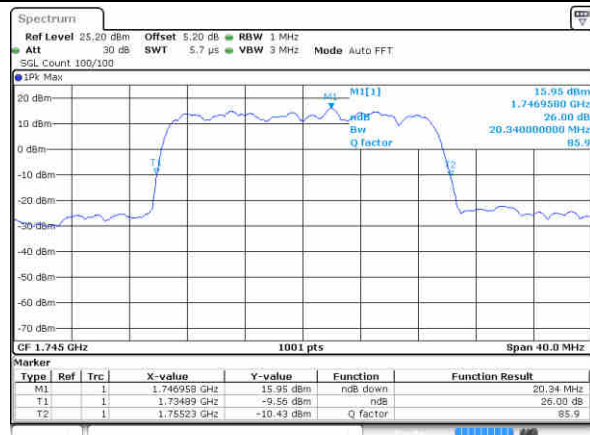
Middle Channel / 20MHz / 64QAM



Highest Channel / 15MHz / 64QAM



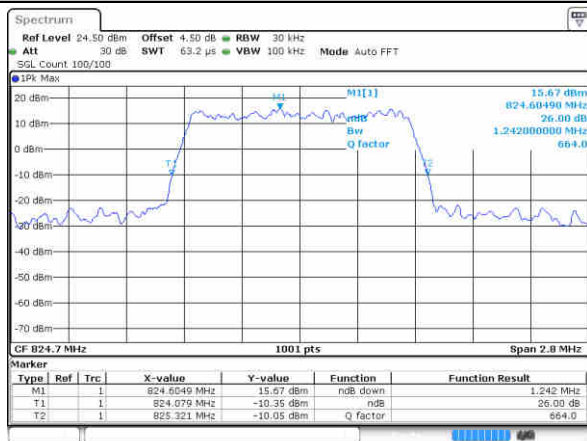
Highest Channel / 20MHz / 64QAM



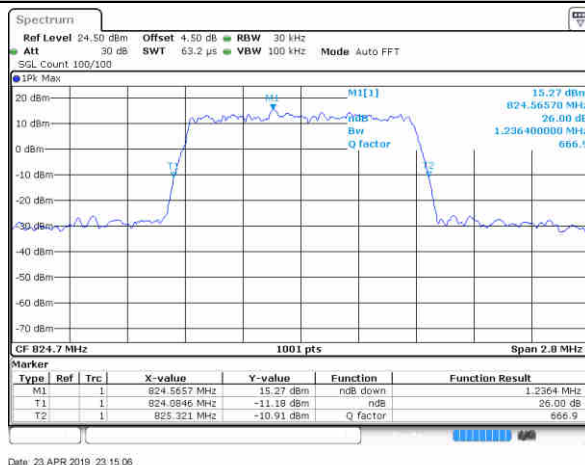


LTE Band 5

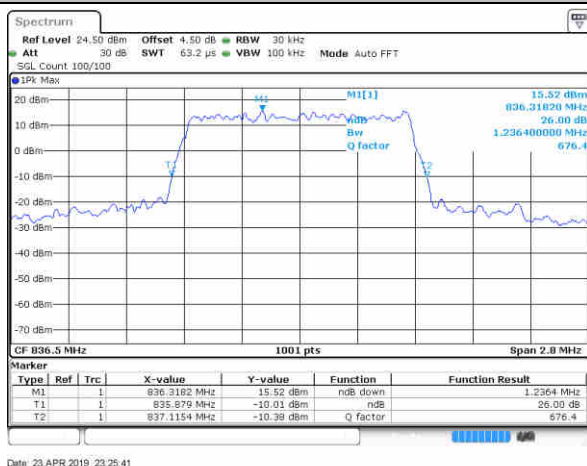
Lowest Channel / 1.4MHz / QPSK



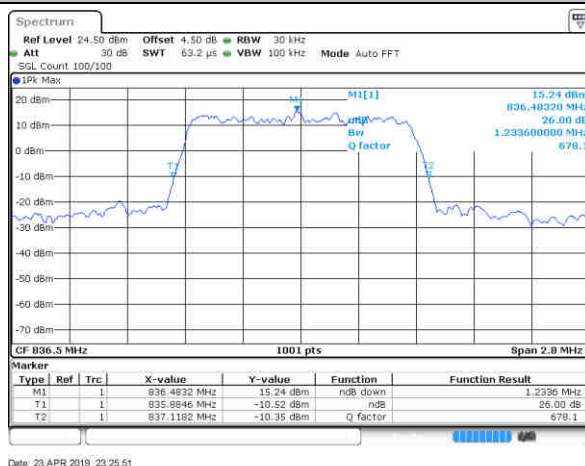
Lowest Channel / 1.4MHz / 16QAM



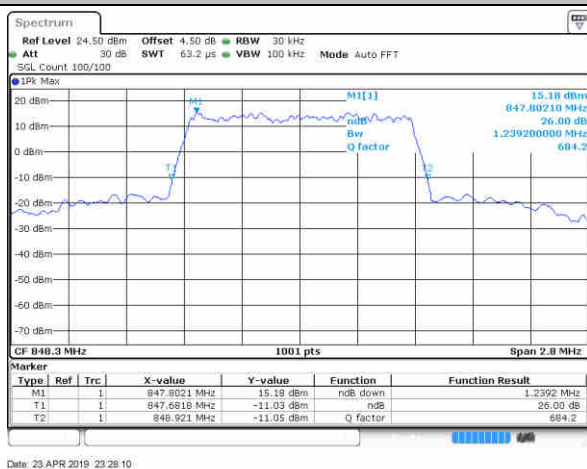
Middle Channel / 1.4MHz / QPSK



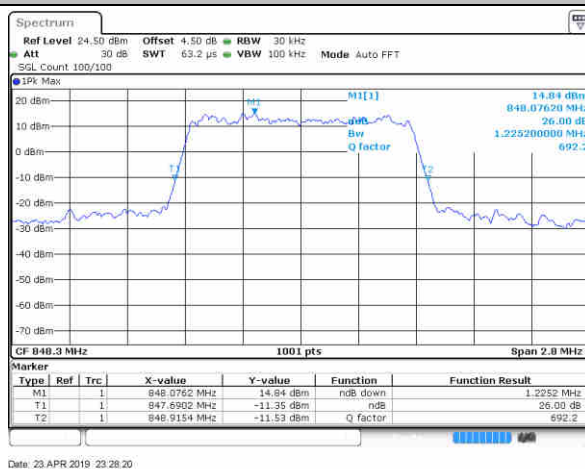
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



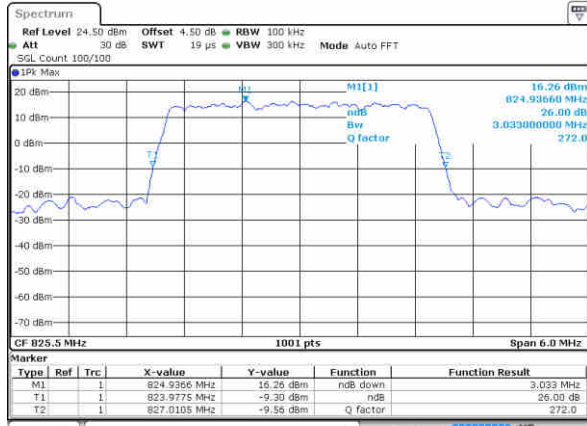
Highest Channel / 1.4MHz / 16QAM



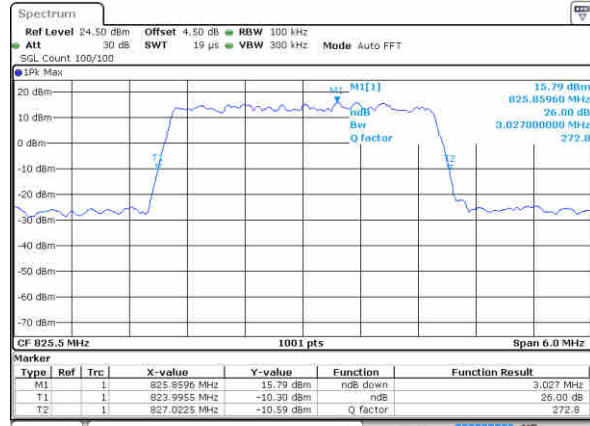


LTE Band 5

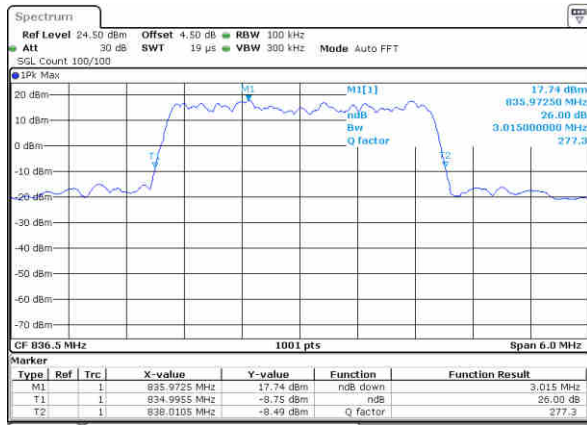
Lowest Channel / 3MHz / QPSK



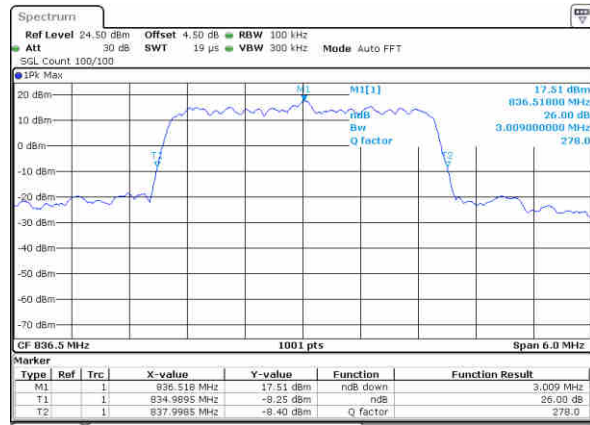
Lowest Channel / 3MHz / 16QAM



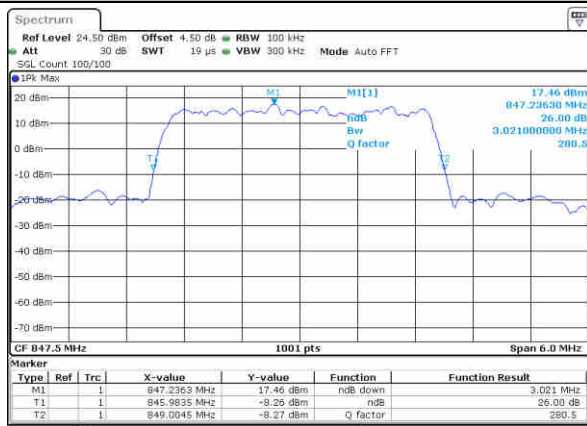
Middle Channel / 3MHz / QPSK



Middle Channel / 3MHz / 16QAM



Highest Channel / 3MHz / QPSK



Highest Channel / 3MHz / 16QAM

