



RF TEST REPORT

Applicant Huawei Technologies Co., Ltd.
FCC ID QISB612-533
Product LTE CPE
Model B612-533
Report No. R1910H0207-R3
Issue Date November 7, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2018)/ FCC CFR47 Part 27C (2018)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output and Effective Radiated Power	2.1046/ 27.50(d)(4)/ 27.50(h)(2)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	27.53(h) /27.53(m)	PASS
4	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 / 27.54	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 /27.53(h)/ 27.53(m)	PASS
7	Radiates Spurious Emission	2.1053 /27.53(h) /27.53(m)	PASS
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard.			
Date of Testing: October 17, 2019~ October 30, 2019			



1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
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2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

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

2.2 General information

EUT Description			
Model	B612-533		
SN	CSD7S19919000100		
Hardware Version	WL2B612M01		
Software Version	10.0.2.1 (H200SP5C00)		
Power Supply	AC/DC adapter		
Antenna Type	Internal Antenna / External Antenna		
Antenna Gain	Internal Antenna: WCDMA Band IV/ LTE Band 4: 2 dBi LTE Band 7/ 38/ 41: 1.5 dBi External Antenna 1: 3 dBi External Antenna 2: 1 dBi		
Test Mode(s)	WCDMA Band IV; LTE Band 4, LTE Band 7, LTE Band 38, LTE Band 41;		
Test Modulation	(WCDMA) QPSK, 16QAM; (LTE) QPSK 16QAM;		
HSDPA UE Category	24		
HSUPA UE Category	6		
DC-HSDPA	24		
LTE Category	6		
Maximum E.I.R.P./ E.R.P.	WCDMA Band IV:	24.44dBm	
	LTE Band 4:	25.88dBm	
	LTE Band 7:	24.91dBm	
	LTE Band 38:	25.73dBm	
	LTE Band 41:	25.73dBm	
Rated Power Supply Voltage:	12V		
Extreme Voltage	Minimum: 10.8V Maximum: 13.2V		
Extreme Temperature	Lowest: 0°C Highest: +40°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)



	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 38	2570 ~ 2620	2570 ~ 2620
	LTE Band 41	2545 ~ 2655	2545 ~ 2655
EUT Accessory			
Adapter 1	Manufacturer: HuaweiTechnologies Co., Ltd. Model:HW-120100E01		
Adapter 2	Manufacturer: HuaweiTechnologies Co., Ltd. Model: HW-120100B01		
Adapter 3	Manufacturer: HuaweiTechnologies Co., Ltd. Model: HW-120100U01		
Adapter 4	Manufacturer: HuaweiTechnologies Co., Ltd. Model: HW-120100A01		
Note: 1. The information of the EUT is declared by the manufacturer.			



3 Applied Standards

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

Test standards:

FCC CFR47 Part 27C (2018)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2018)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

There is more than one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 1) will be recorded in this report

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in WCDMA/LTE is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detail in the following table:

Test modes are chosen to be reported as the worst case configuration below for WCDMA Band IV:

Test items	Modes/Modulation
	WCDMA Band IV
RF power output and Effective Isotropic Radiated power	RMC HSDPA/HSUPA DC-HSDPA
Occupied Bandwidth	RMC
Band Edge Compliance	RMC
Peak-to-Average Power Ratio	RMC
Frequency Stability	RMC
Spurious Emissions at Antenna Terminals	RMC
Radiates Spurious Emission	RMC



Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7/38/41:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output and Effective Isotropic Radiated power	LTE 4	O	O	O	O	O	O	O	O	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	-	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	O	-	-	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	O	-	-	O	O	O
Occupied Bandwidth	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 38	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 41	-	-	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	O	-	-	O	O	O	O
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	-	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	-	-	O	O	O	O
	LTE 38	-	-	O	O	O	O	O	-	-	-	O	O	O	O
	LTE 41	-	-	O	O	O	O	O	-	-	-	O	O	O	O
Radiates Spurious Emission	LTE 4	O	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE 7	-	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE 38	-	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE 41	-	-	O	-	-	O	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.														

5 Test Case Results

5.1 RF Power Output and Effective Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
 - a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.
 - b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).
 - c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.
 - d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading. $LOSS = \text{Generator Output Power (dBm)} - \text{Analyzer reading (dBm)}$
 - e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation: $ERP \text{ (dBm)} = \text{LVL (dBm)} + \text{LOSS (dB)}$
 - f) The maximum ERP is the maximum value determined in the preceding step.
 - g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g. transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:

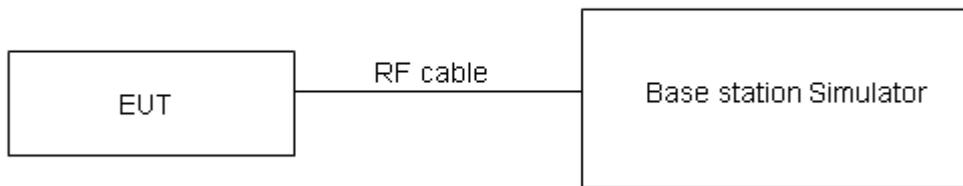
$$EIRP \text{ (dBm)} = \text{Output Power (dBm)} - \text{Losses (dB)} + \text{Antenna Gain (dBi)}$$

where: dBd refers to gain relative to an ideal dipole.

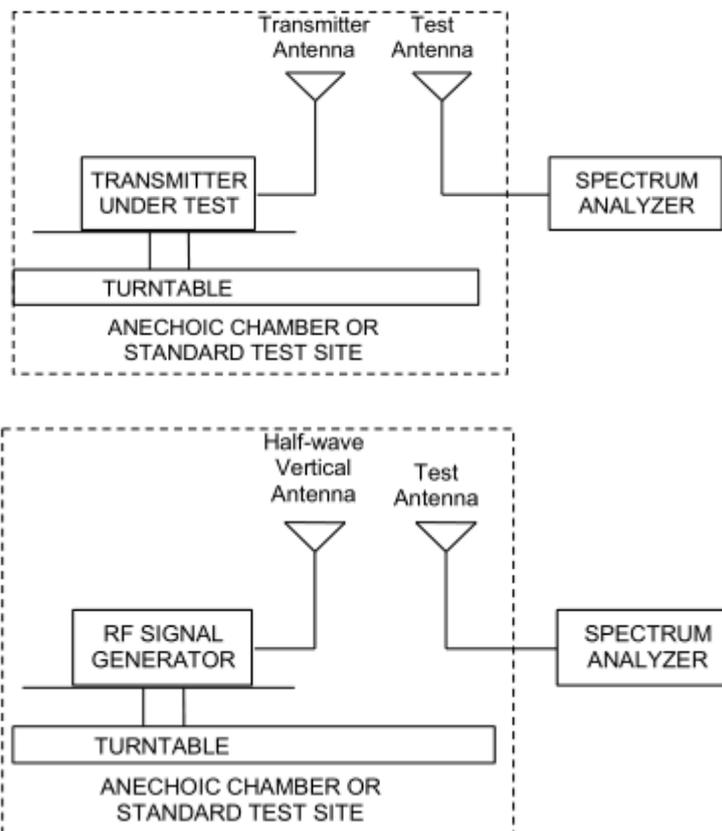
$$EIRP \text{ (dBm)} = ERP \text{ (dBm)} + 2.15 \text{ (dB.)}$$

The RB allocation refers to section 5.1, using the maximum output power configuration.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

Limits

No specific RF power output requirements in part 2.1046.

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”

Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”



Part 27.50(d)(4)Limit	$\leq 1 \text{ W}$ (30 dBm)
Part 27.50(h)(2) Limit	$\leq 2 \text{ W}$ (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=0.4 \text{ dB}$ for RF power output, $k = 2$, $U= 1.19 \text{ dB}$ for EIRP.



Test Results

WCDMA Band IV		Conducted Power (dBm)			Internal Antenna EIRP (dBm)			External Antenna 1 EIRP (dBm)			External Antenna 2 EIRP (dBm)		
		Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel	
		1312	1413	1513	1312	1413	1513	1312	1413	1513	1312	1413	1513
		1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)	1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)	1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)	1712.4 (MHz)	1732.6 (MHz)	1752.6 (MHz)
RMC		21.44	21.81	21.38	23.44	23.81	23.38	24.44	24.44	24.38	22.44	22.81	22.38
HSDPA	Sub-Test 1	20.90	21.23	20.82	22.90	23.23	22.82	23.90	23.90	23.82	21.90	22.23	21.82
	Sub-Test 2	20.89	21.25	20.79	22.89	23.25	22.79	23.89	23.89	23.79	21.89	22.25	21.79
	Sub-Test 3	20.36	20.75	20.31	22.36	22.75	22.31	23.36	23.36	23.31	21.36	21.75	21.31
	Sub-Test 4	20.37	20.76	20.29	22.37	22.76	22.29	23.37	23.37	23.29	21.37	21.76	21.29
HSUPA	Sub-Test 1	20.86	21.22	20.77	22.86	23.22	22.77	23.86	23.86	23.77	21.86	22.22	21.77
	Sub-Test 2	19.85	20.20	19.76	21.85	22.20	21.76	22.85	22.85	22.76	20.85	21.20	20.76
	Sub-Test 3	20.32	20.68	20.25	22.32	22.68	22.25	23.32	23.32	23.25	21.32	21.68	21.25
	Sub-Test 4	19.78	20.17	19.73	21.78	22.17	21.73	22.78	22.78	22.73	20.78	21.17	20.73
	Sub-Test 5	20.79	21.15	20.71	22.79	23.15	22.71	23.79	23.79	23.71	21.79	22.15	21.71
DC-HSDPA	Sub-Test 1	20.78	21.17	20.72	22.78	23.17	22.72	23.78	23.78	23.72	21.78	22.17	21.72
	Sub-Test 2	20.77	21.16	20.71	22.77	23.16	22.71	23.77	23.77	23.71	21.77	22.16	21.71
	Sub-Test 3	20.35	20.65	20.22	22.35	22.65	22.22	23.35	23.35	23.22	21.35	21.65	21.22
	Sub-Test 4	20.34	20.64	20.21	22.34	22.64	22.21	23.34	23.34	23.21	21.34	21.64	21.21

LTE Band 4

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	Internal Antenna EIRP	External Antenna 1 EIRP	External Antenna 2 EIRP
Band4	1.4M	QPSK	19957	1RB#0	22.46	24.46	25.46	23.46
Band4	1.4M	QPSK	19957	1RB#2	22.78	24.78	25.78	23.78
Band4	1.4M	QPSK	19957	1RB#5	22.50	24.50	25.50	23.50
Band4	1.4M	QPSK	19957	3RB#0	21.61	23.61	24.61	22.61
Band4	1.4M	QPSK	19957	3RB#2	21.53	23.53	24.53	22.53
Band4	1.4M	QPSK	19957	3RB#3	21.47	23.47	24.47	22.47
Band4	1.4M	QPSK	19957	6RB#0	21.53	23.53	24.53	22.53
Band4	1.4M	QPSK	20175	1RB#0	22.53	24.53	25.53	23.53
Band4	1.4M	QPSK	20175	1RB#2	22.75	24.75	25.75	23.75
Band4	1.4M	QPSK	20175	1RB#5	22.33	24.33	25.33	23.33
Band4	1.4M	QPSK	20175	3RB#0	21.67	23.67	24.67	22.67
Band4	1.4M	QPSK	20175	3RB#2	21.65	23.65	24.65	22.65
Band4	1.4M	QPSK	20175	3RB#3	21.58	23.58	24.58	22.58
Band4	1.4M	QPSK	20175	6RB#0	21.66	23.66	24.66	22.66



Band4	1.4M	QPSK	20393	1RB#0	22.49	24.49	25.49	23.49
Band4	1.4M	QPSK	20393	1RB#2	22.40	24.40	25.40	23.40
Band4	1.4M	QPSK	20393	1RB#5	21.93	23.93	24.93	22.93
Band4	1.4M	QPSK	20393	3RB#0	21.49	23.49	24.49	22.49
Band4	1.4M	QPSK	20393	3RB#2	21.46	23.46	24.46	22.46
Band4	1.4M	QPSK	20393	3RB#3	21.20	23.20	24.20	22.20
Band4	1.4M	QPSK	20393	6RB#0	21.38	23.38	24.38	22.38
Band4	1.4M	16QAM	19957	1RB#0	21.45	23.45	24.45	22.45
Band4	1.4M	16QAM	19957	1RB#2	21.90	23.90	24.90	22.90
Band4	1.4M	16QAM	19957	1RB#5	21.63	23.63	24.63	22.63
Band4	1.4M	16QAM	19957	3RB#0	21.46	23.46	24.46	22.46
Band4	1.4M	16QAM	19957	3RB#2	21.44	23.44	24.44	22.44
Band4	1.4M	16QAM	19957	3RB#3	21.32	23.32	24.32	22.32
Band4	1.4M	16QAM	19957	6RB#0	21.45	23.45	24.45	22.45
Band4	1.4M	16QAM	20175	1RB#0	21.65	23.65	24.65	22.65
Band4	1.4M	16QAM	20175	1RB#2	21.96	23.96	24.96	22.96
Band4	1.4M	16QAM	20175	1RB#5	21.51	23.51	24.51	22.51
Band4	1.4M	16QAM	20175	3RB#0	21.54	23.54	24.54	22.54
Band4	1.4M	16QAM	20175	3RB#2	21.53	23.53	24.53	22.53
Band4	1.4M	16QAM	20175	3RB#3	21.52	23.52	24.52	22.52
Band4	1.4M	16QAM	20175	6RB#0	21.58	23.58	24.58	22.58
Band4	1.4M	16QAM	20393	1RB#0	21.57	23.57	24.57	22.57
Band4	1.4M	16QAM	20393	1RB#2	21.50	23.50	24.50	22.50
Band4	1.4M	16QAM	20393	1RB#5	21.04	23.04	24.04	22.04
Band4	1.4M	16QAM	20393	3RB#0	21.42	23.42	24.42	22.42
Band4	1.4M	16QAM	20393	3RB#2	21.35	23.35	24.35	22.35
Band4	1.4M	16QAM	20393	3RB#3	21.14	23.14	24.14	22.14
Band4	1.4M	16QAM	20393	6RB#0	21.33	23.33	24.33	22.33
Band4	3M	QPSK	19965	1RB#0	22.48	24.48	25.48	23.48
Band4	3M	QPSK	19965	1RB#7	22.81	24.81	25.81	23.81
Band4	3M	QPSK	19965	1RB#14	22.53	24.53	25.53	23.53
Band4	3M	QPSK	19965	8RB#0	21.69	23.69	24.69	22.69
Band4	3M	QPSK	19965	8RB#4	21.63	23.63	24.63	22.63
Band4	3M	QPSK	19965	8RB#7	21.55	23.55	24.55	22.55
Band4	3M	QPSK	19965	15RB#0	21.56	23.56	24.56	22.56
Band4	3M	QPSK	20175	1RB#0	22.57	24.57	25.57	23.57
Band4	3M	QPSK	20175	1RB#7	22.80	24.80	25.80	23.80
Band4	3M	QPSK	20175	1RB#14	22.38	24.38	25.38	23.38
Band4	3M	QPSK	20175	8RB#0	21.77	23.77	24.77	22.77
Band4	3M	QPSK	20175	8RB#4	21.73	23.73	24.73	22.73
Band4	3M	QPSK	20175	8RB#7	21.67	23.67	24.67	22.67
Band4	3M	QPSK	20175	15RB#0	21.70	23.70	24.70	22.70
Band4	3M	QPSK	20385	1RB#0	22.52	24.52	25.52	23.52



Band4	3M	QPSK	20385	1RB#7	22.44	24.44	25.44	23.44
Band4	3M	QPSK	20385	1RB#14	21.97	23.97	24.97	22.97
Band4	3M	QPSK	20385	8RB#0	21.60	23.60	24.60	22.60
Band4	3M	QPSK	20385	8RB#4	21.56	23.56	24.56	22.56
Band4	3M	QPSK	20385	8RB#7	21.28	23.28	24.28	22.28
Band4	3M	QPSK	20385	15RB#0	21.41	23.41	24.41	22.41
Band4	3M	16QAM	19965	1RB#0	21.48	23.48	24.48	22.48
Band4	3M	16QAM	19965	1RB#7	21.93	23.93	24.93	22.93
Band4	3M	16QAM	19965	1RB#14	21.65	23.65	24.65	22.65
Band4	3M	16QAM	19965	8RB#0	21.55	23.55	24.55	22.55
Band4	3M	16QAM	19965	8RB#4	21.53	23.53	24.53	22.53
Band4	3M	16QAM	19965	8RB#7	21.40	23.40	24.40	22.40
Band4	3M	16QAM	19965	15RB#0	21.48	23.48	24.48	22.48
Band4	3M	16QAM	20175	1RB#0	21.67	23.67	24.67	22.67
Band4	3M	16QAM	20175	1RB#7	22.01	24.01	25.01	23.01
Band4	3M	16QAM	20175	1RB#14	21.55	23.55	24.55	22.55
Band4	3M	16QAM	20175	8RB#0	21.65	23.65	24.65	22.65
Band4	3M	16QAM	20175	8RB#4	21.64	23.64	24.64	22.64
Band4	3M	16QAM	20175	8RB#7	21.62	23.62	24.62	22.62
Band4	3M	16QAM	20175	15RB#0	21.62	23.62	24.62	22.62
Band4	3M	16QAM	20385	1RB#0	21.60	23.60	24.60	22.60
Band4	3M	16QAM	20385	1RB#7	21.54	23.54	24.54	22.54
Band4	3M	16QAM	20385	1RB#14	21.07	23.07	24.07	22.07
Band4	3M	16QAM	20385	8RB#0	21.52	23.52	24.52	22.52
Band4	3M	16QAM	20385	8RB#4	21.45	23.45	24.45	22.45
Band4	3M	16QAM	20385	8RB#7	21.25	23.25	24.25	22.25
Band4	3M	16QAM	20385	15RB#0	21.36	23.36	24.36	22.36
Band4	5M	QPSK	19975	1RB#0	22.52	24.52	25.52	23.52
Band4	5M	QPSK	19975	1RB#13	22.88	24.88	25.88	23.88
Band4	5M	QPSK	19975	1RB#24	22.59	24.59	25.59	23.59
Band4	5M	QPSK	19975	12RB#0	21.76	23.76	24.76	22.76
Band4	5M	QPSK	19975	12RB#6	21.68	23.68	24.68	22.68
Band4	5M	QPSK	19975	12RB#13	21.62	23.62	24.62	22.62
Band4	5M	QPSK	19975	25RB#0	21.64	23.64	24.64	22.64
Band4	5M	QPSK	20175	1RB#0	22.69	24.69	25.69	23.69
Band4	5M	QPSK	20175	1RB#13	22.85	24.85	25.85	23.85
Band4	5M	QPSK	20175	1RB#24	22.45	24.45	25.45	23.45
Band4	5M	QPSK	20175	12RB#0	21.81	23.81	24.81	22.81
Band4	5M	QPSK	20175	12RB#6	21.78	23.78	24.78	22.78
Band4	5M	QPSK	20175	12RB#13	21.77	23.77	24.77	22.77
Band4	5M	QPSK	20175	25RB#0	21.79	23.79	24.79	22.79
Band4	5M	QPSK	20375	1RB#0	22.57	24.57	25.57	23.57
Band4	5M	QPSK	20375	1RB#13	22.51	24.51	25.51	23.51



Band4	5M	QPSK	20375	1RB#24	22.06	24.06	25.06	23.06
Band4	5M	QPSK	20375	12RB#0	21.66	23.66	24.66	22.66
Band4	5M	QPSK	20375	12RB#6	21.60	23.60	24.60	22.60
Band4	5M	QPSK	20375	12RB#13	21.28	23.28	24.28	22.28
Band4	5M	QPSK	20375	25RB#0	21.42	23.42	24.42	22.42
Band4	5M	16QAM	19975	1RB#0	21.50	23.50	24.50	22.50
Band4	5M	16QAM	19975	1RB#13	21.95	23.95	24.95	22.95
Band4	5M	16QAM	19975	1RB#24	21.67	23.67	24.67	22.67
Band4	5M	16QAM	19975	12RB#0	21.59	23.59	24.59	22.59
Band4	5M	16QAM	19975	12RB#6	21.55	23.55	24.55	22.55
Band4	5M	16QAM	19975	12RB#13	21.45	23.45	24.45	22.45
Band4	5M	16QAM	19975	25RB#0	21.51	23.51	24.51	22.51
Band4	5M	16QAM	20175	1RB#0	21.69	23.69	24.69	22.69
Band4	5M	16QAM	20175	1RB#13	22.08	24.08	25.08	23.08
Band4	5M	16QAM	20175	1RB#24	21.62	23.62	24.62	22.62
Band4	5M	16QAM	20175	12RB#0	21.69	23.69	24.69	22.69
Band4	5M	16QAM	20175	12RB#6	21.68	23.68	24.68	22.68
Band4	5M	16QAM	20175	12RB#13	21.62	23.62	24.62	22.62
Band4	5M	16QAM	20175	25RB#0	21.63	23.63	24.63	22.63
Band4	5M	16QAM	20375	1RB#0	21.64	23.64	24.64	22.64
Band4	5M	16QAM	20375	1RB#13	21.58	23.58	24.58	22.58
Band4	5M	16QAM	20375	1RB#24	21.10	23.10	24.10	22.10
Band4	5M	16QAM	20375	12RB#0	21.57	23.57	24.57	22.57
Band4	5M	16QAM	20375	12RB#6	21.50	23.50	24.50	22.50
Band4	5M	16QAM	20375	12RB#13	21.28	23.28	24.28	22.28
Band4	5M	16QAM	20375	25RB#0	21.37	23.37	24.37	22.37
Band4	10M	QPSK	20000	1RB#0	22.47	24.47	25.47	23.47
Band4	10M	QPSK	20000	1RB#25	22.82	24.82	25.82	23.82
Band4	10M	QPSK	20000	1RB#49	22.52	24.52	25.52	23.52
Band4	10M	QPSK	20000	25RB#0	21.69	23.69	24.69	22.69
Band4	10M	QPSK	20000	25RB#13	21.64	23.64	24.64	22.64
Band4	10M	QPSK	20000	25RB#25	21.55	23.55	24.55	22.55
Band4	10M	QPSK	20000	50RB#0	21.62	23.62	24.62	22.62
Band4	10M	QPSK	20175	1RB#0	22.56	24.56	25.56	23.56
Band4	10M	QPSK	20175	1RB#25	22.81	24.81	25.81	23.81
Band4	10M	QPSK	20175	1RB#49	22.37	24.37	25.37	23.37
Band4	10M	QPSK	20175	25RB#0	21.77	23.77	24.77	22.77
Band4	10M	QPSK	20175	25RB#13	21.74	23.74	24.74	22.74
Band4	10M	QPSK	20175	25RB#25	21.69	23.69	24.69	22.69
Band4	10M	QPSK	20175	50RB#0	21.71	23.71	24.71	22.71
Band4	10M	QPSK	20350	1RB#0	22.51	24.51	25.51	23.51
Band4	10M	QPSK	20350	1RB#25	22.45	24.45	25.45	23.45
Band4	10M	QPSK	20350	1RB#49	21.96	23.96	24.96	22.96



Band4	10M	QPSK	20350	25RB#0	21.60	23.60	24.60	22.60
Band4	10M	QPSK	20350	25RB#13	21.55	23.55	24.55	22.55
Band4	10M	QPSK	20350	25RB#25	21.29	23.29	24.29	22.29
Band4	10M	QPSK	20350	50RB#0	21.43	23.43	24.43	22.43
Band4	10M	16QAM	20000	1RB#0	21.47	23.47	24.47	22.47
Band4	10M	16QAM	20000	1RB#25	21.93	23.93	24.93	22.93
Band4	10M	16QAM	20000	1RB#49	21.65	23.65	24.65	22.65
Band4	10M	16QAM	20000	25RB#0	21.56	23.56	24.56	22.56
Band4	10M	16QAM	20000	25RB#13	21.52	23.52	24.52	22.52
Band4	10M	16QAM	20000	25RB#25	21.40	23.40	24.40	22.40
Band4	10M	16QAM	20000	50RB#0	21.49	23.49	24.49	22.49
Band4	10M	16QAM	20175	1RB#0	21.66	23.66	24.66	22.66
Band4	10M	16QAM	20175	1RB#25	22.03	24.03	25.03	23.03
Band4	10M	16QAM	20175	1RB#49	21.55	23.55	24.55	22.55
Band4	10M	16QAM	20175	25RB#0	21.66	23.66	24.66	22.66
Band4	10M	16QAM	20175	25RB#13	21.63	23.63	24.63	22.63
Band4	10M	16QAM	20175	25RB#25	21.62	23.62	24.62	22.62
Band4	10M	16QAM	20175	50RB#0	21.63	23.63	24.63	22.63
Band4	10M	16QAM	20350	1RB#0	21.59	23.59	24.59	22.59
Band4	10M	16QAM	20350	1RB#25	21.54	23.54	24.54	22.54
Band4	10M	16QAM	20350	1RB#49	21.06	23.06	24.06	22.06
Band4	10M	16QAM	20350	25RB#0	21.53	23.53	24.53	22.53
Band4	10M	16QAM	20350	25RB#13	21.44	23.44	24.44	22.44
Band4	10M	16QAM	20350	25RB#25	21.25	23.25	24.25	22.25
Band4	10M	16QAM	20350	50RB#0	21.35	23.35	24.35	22.35
Band4	15M	QPSK	20025	1RB#0	22.46	24.46	25.46	23.46
Band4	15M	QPSK	20025	1RB#38	22.80	24.80	25.80	23.80
Band4	15M	QPSK	20025	1RB#74	22.49	24.49	25.49	23.49
Band4	15M	QPSK	20025	36RB#0	21.67	23.67	24.67	22.67
Band4	15M	QPSK	20025	36RB#18	21.61	23.61	24.61	22.61
Band4	15M	QPSK	20025	36RB#39	21.52	23.52	24.52	22.52
Band4	15M	QPSK	20025	75RB#0	21.60	23.60	24.60	22.60
Band4	15M	QPSK	20175	1RB#0	22.52	24.52	25.52	23.52
Band4	15M	QPSK	20175	1RB#38	22.80	24.80	25.80	23.80
Band4	15M	QPSK	20175	1RB#74	22.32	24.32	25.32	23.32
Band4	15M	QPSK	20175	36RB#0	21.73	23.73	24.73	22.73
Band4	15M	QPSK	20175	36RB#18	21.69	23.69	24.69	22.69
Band4	15M	QPSK	20175	36RB#39	21.66	23.66	24.66	22.66
Band4	15M	QPSK	20175	75RB#0	21.67	23.67	24.67	22.67
Band4	15M	QPSK	20325	1RB#0	22.49	24.49	25.49	23.49
Band4	15M	QPSK	20325	1RB#38	22.42	24.42	25.42	23.42
Band4	15M	QPSK	20325	1RB#74	21.92	23.92	24.92	22.92
Band4	15M	QPSK	20325	36RB#0	21.57	23.57	24.57	22.57



Band4	15M	QPSK	20325	36RB#18	21.51	23.51	24.51	22.51
Band4	15M	QPSK	20325	36RB#39	21.25	23.25	24.25	22.25
Band4	15M	QPSK	20325	75RB#0	21.38	23.38	24.38	22.38
Band4	15M	16QAM	20025	1RB#0	21.42	23.42	24.42	22.42
Band4	15M	16QAM	20025	1RB#38	21.91	23.91	24.91	22.91
Band4	15M	16QAM	20025	1RB#74	21.62	23.62	24.62	22.62
Band4	15M	16QAM	20025	36RB#0	21.53	23.53	24.53	22.53
Band4	15M	16QAM	20025	36RB#18	21.49	23.49	24.49	22.49
Band4	15M	16QAM	20025	36RB#39	21.38	23.38	24.38	22.38
Band4	15M	16QAM	20025	75RB#0	21.46	23.46	24.46	22.46
Band4	15M	16QAM	20175	1RB#0	21.64	23.64	24.64	22.64
Band4	15M	16QAM	20175	1RB#38	22.00	24.00	25.00	23.00
Band4	15M	16QAM	20175	1RB#74	21.51	23.51	24.51	22.51
Band4	15M	16QAM	20175	36RB#0	21.64	23.64	24.64	22.64
Band4	15M	16QAM	20175	36RB#18	21.58	23.58	24.58	22.58
Band4	15M	16QAM	20175	36RB#39	21.58	23.58	24.58	22.58
Band4	15M	16QAM	20175	75RB#0	21.58	23.58	24.58	22.58
Band4	15M	16QAM	20325	1RB#0	21.57	23.57	24.57	22.57
Band4	15M	16QAM	20325	1RB#38	21.52	23.52	24.52	22.52
Band4	15M	16QAM	20325	1RB#74	21.03	23.03	24.03	22.03
Band4	15M	16QAM	20325	36RB#0	21.50	23.50	24.50	22.50
Band4	15M	16QAM	20325	36RB#18	21.40	23.40	24.40	22.40
Band4	15M	16QAM	20325	36RB#39	21.22	23.22	24.22	22.22
Band4	15M	16QAM	20325	75RB#0	21.31	23.31	24.31	22.31
Band4	20M	QPSK	20050	1RB#0	22.43	24.43	25.43	23.43
Band4	20M	QPSK	20050	1RB#50	22.79	24.79	25.79	23.79
Band4	20M	QPSK	20050	1RB#99	22.47	24.47	25.47	23.47
Band4	20M	QPSK	20050	50RB#0	21.64	23.64	24.64	22.64
Band4	20M	QPSK	20050	50RB#25	21.59	23.59	24.59	22.59
Band4	20M	QPSK	20050	50RB#50	21.49	23.49	24.49	22.49
Band4	20M	QPSK	20050	100RB#0	21.57	23.57	24.57	22.57
Band4	20M	QPSK	20175	1RB#0	22.48	24.48	25.48	23.48
Band4	20M	QPSK	20175	1RB#50	22.76	24.76	25.76	23.76
Band4	20M	QPSK	20175	1RB#99	22.31	24.31	25.31	23.31
Band4	20M	QPSK	20175	50RB#0	21.68	23.68	24.68	22.68
Band4	20M	QPSK	20175	50RB#25	21.65	23.65	24.65	22.65
Band4	20M	QPSK	20175	50RB#50	21.61	23.61	24.61	22.61
Band4	20M	QPSK	20175	100RB#0	21.62	23.62	24.62	22.62
Band4	20M	QPSK	20300	1RB#0	22.46	24.46	25.46	23.46
Band4	20M	QPSK	20300	1RB#50	22.40	24.40	25.40	23.40
Band4	20M	QPSK	20300	1RB#99	21.89	23.89	24.89	22.89
Band4	20M	QPSK	20300	50RB#0	21.53	23.53	24.53	22.53
Band4	20M	QPSK	20300	50RB#25	21.48	23.48	24.48	22.48



Band4	20M	QPSK	20300	50RB#50	21.21	23.21	24.21	22.21
Band4	20M	QPSK	20300	100RB#0	21.34	23.34	24.34	22.34
Band4	20M	16QAM	20050	1RB#0	21.40	23.40	24.40	22.40
Band4	20M	16QAM	20050	1RB#50	21.87	23.87	24.87	22.87
Band4	20M	16QAM	20050	1RB#99	21.60	23.60	24.60	22.60
Band4	20M	16QAM	20050	50RB#0	21.50	23.50	24.50	22.50
Band4	20M	16QAM	20050	50RB#25	21.46	23.46	24.46	22.46
Band4	20M	16QAM	20050	50RB#50	21.35	23.35	24.35	22.35
Band4	20M	16QAM	20050	100RB#0	21.44	23.44	24.44	22.44
Band4	20M	16QAM	20175	1RB#0	21.60	23.60	24.60	22.60
Band4	20M	16QAM	20175	1RB#50	21.98	23.98	24.98	22.98
Band4	20M	16QAM	20175	1RB#99	21.48	23.48	24.48	22.48
Band4	20M	16QAM	20175	50RB#0	21.60	23.60	24.60	22.60
Band4	20M	16QAM	20175	50RB#25	21.56	23.56	24.56	22.56
Band4	20M	16QAM	20175	50RB#50	21.53	23.53	24.53	22.53
Band4	20M	16QAM	20175	100RB#0	21.54	23.54	24.54	22.54
Band4	20M	16QAM	20300	1RB#0	21.52	23.52	24.52	22.52
Band4	20M	16QAM	20300	1RB#50	21.48	23.48	24.48	22.48
Band4	20M	16QAM	20300	1RB#99	21.01	23.01	24.01	22.01
Band4	20M	16QAM	20300	50RB#0	21.47	23.47	24.47	22.47
Band4	20M	16QAM	20300	50RB#25	21.37	23.37	24.37	22.37
Band4	20M	16QAM	20300	50RB#50	21.18	23.18	24.18	22.18
Band4	20M	16QAM	20300	100RB#0	21.28	23.28	24.28	22.28



LTE Band 7

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power (dBm)	Internal Antenna EIRP	External Antenna 1 EIRP	External Antenna 2 EIRP
Band7	5M	QPSK	20775	1RB#0	21.91	23.41	24.91	22.91
Band7	5M	QPSK	20775	1RB#13	21.53	23.03	24.53	22.53
Band7	5M	QPSK	20775	1RB#24	21.34	22.84	24.34	22.34
Band7	5M	QPSK	20775	12RB#0	20.88	22.38	23.88	21.88
Band7	5M	QPSK	20775	12RB#6	20.80	22.30	23.80	21.80
Band7	5M	QPSK	20775	12RB#13	20.42	21.92	23.42	21.42
Band7	5M	QPSK	20775	25RB#0	20.61	22.11	23.61	21.61
Band7	5M	QPSK	21100	1RB#0	21.25	22.75	24.25	22.25
Band7	5M	QPSK	21100	1RB#13	21.66	23.16	24.66	22.66
Band7	5M	QPSK	21100	1RB#24	21.65	23.15	24.65	22.65
Band7	5M	QPSK	21100	12RB#0	20.60	22.10	23.60	21.60
Band7	5M	QPSK	21100	12RB#6	20.67	22.17	23.67	21.67
Band7	5M	QPSK	21100	12RB#13	20.82	22.32	23.82	21.82
Band7	5M	QPSK	21100	25RB#0	20.73	22.23	23.73	21.73
Band7	5M	QPSK	21425	1RB#0	21.38	22.88	24.38	22.38
Band7	5M	QPSK	21425	1RB#13	21.34	22.84	24.34	22.34
Band7	5M	QPSK	21425	1RB#24	21.88	23.38	24.88	22.88
Band7	5M	QPSK	21425	12RB#0	20.47	21.97	23.47	21.47
Band7	5M	QPSK	21425	12RB#6	20.43	21.93	23.43	21.43
Band7	5M	QPSK	21425	12RB#13	20.19	21.69	23.19	21.19
Band7	5M	QPSK	21425	25RB#0	20.42	21.92	23.42	21.42
Band7	5M	16QAM	20775	1RB#0	21.21	22.71	24.21	22.21
Band7	5M	16QAM	20775	1RB#13	20.85	22.35	23.85	21.85
Band7	5M	16QAM	20775	1RB#24	20.67	22.17	23.67	21.67
Band7	5M	16QAM	20775	12RB#0	20.71	22.21	23.71	21.71
Band7	5M	16QAM	20775	12RB#6	20.65	22.15	23.65	21.65
Band7	5M	16QAM	20775	12RB#13	20.28	21.78	23.28	21.28
Band7	5M	16QAM	20775	25RB#0	20.51	22.01	23.51	21.51
Band7	5M	16QAM	21100	1RB#0	20.30	21.80	23.30	21.30
Band7	5M	16QAM	21100	1RB#13	20.88	22.38	23.88	21.88
Band7	5M	16QAM	21100	1RB#24	20.84	22.34	23.84	21.84
Band7	5M	16QAM	21100	12RB#0	20.40	21.90	23.40	21.40
Band7	5M	16QAM	21100	12RB#6	20.59	22.09	23.59	21.59
Band7	5M	16QAM	21100	12RB#13	20.61	22.11	23.61	21.61
Band7	5M	16QAM	21100	25RB#0	20.53	22.03	23.53	21.53
Band7	5M	16QAM	21425	1RB#0	20.49	21.99	23.49	21.49
Band7	5M	16QAM	21425	1RB#13	20.51	22.01	23.51	21.51
Band7	5M	16QAM	21425	1RB#24	20.83	22.33	23.83	21.83



Band7	5M	16QAM	21425	12RB#0	20.33	21.83	23.33	21.33
Band7	5M	16QAM	21425	12RB#6	20.31	21.81	23.31	21.31
Band7	5M	16QAM	21425	12RB#13	20.19	21.69	23.19	21.19
Band7	5M	16QAM	21425	25RB#0	20.35	21.85	23.35	21.35
Band7	10M	QPSK	20800	1RB#0	21.86	23.36	24.86	22.86
Band7	10M	QPSK	20800	1RB#25	21.47	22.97	24.47	22.47
Band7	10M	QPSK	20800	1RB#49	21.27	22.77	24.27	22.27
Band7	10M	QPSK	20800	25RB#0	20.81	22.31	23.81	21.81
Band7	10M	QPSK	20800	25RB#13	20.76	22.26	23.76	21.76
Band7	10M	QPSK	20800	25RB#25	20.35	21.85	23.35	21.35
Band7	10M	QPSK	20800	50RB#0	20.59	22.09	23.59	21.59
Band7	10M	QPSK	21100	1RB#0	21.12	22.62	24.12	22.12
Band7	10M	QPSK	21100	1RB#25	21.62	23.12	24.62	22.62
Band7	10M	QPSK	21100	1RB#49	21.57	23.07	24.57	22.57
Band7	10M	QPSK	21100	25RB#0	20.56	22.06	23.56	21.56
Band7	10M	QPSK	21100	25RB#13	20.63	22.13	23.63	21.63
Band7	10M	QPSK	21100	25RB#25	20.74	22.24	23.74	21.74
Band7	10M	QPSK	21100	50RB#0	20.65	22.15	23.65	21.65
Band7	10M	QPSK	21400	1RB#0	21.32	22.82	24.32	22.32
Band7	10M	QPSK	21400	1RB#25	21.28	22.78	24.28	22.28
Band7	10M	QPSK	21400	1RB#49	21.78	23.28	24.78	22.78
Band7	10M	QPSK	21400	25RB#0	20.41	21.91	23.41	21.41
Band7	10M	QPSK	21400	25RB#13	20.38	21.88	23.38	21.38
Band7	10M	QPSK	21400	25RB#25	20.20	21.70	23.20	21.20
Band7	10M	QPSK	21400	50RB#0	20.43	21.93	23.43	21.43
Band7	10M	16QAM	20800	1RB#0	21.18	22.68	24.18	22.18
Band7	10M	16QAM	20800	1RB#25	20.83	22.33	23.83	21.83
Band7	10M	16QAM	20800	1RB#49	20.65	22.15	23.65	21.65
Band7	10M	16QAM	20800	25RB#0	20.68	22.18	23.68	21.68
Band7	10M	16QAM	20800	25RB#13	20.62	22.12	23.62	21.62
Band7	10M	16QAM	20800	25RB#25	20.23	21.73	23.23	21.23
Band7	10M	16QAM	20800	50RB#0	20.49	21.99	23.49	21.49
Band7	10M	16QAM	21100	1RB#0	20.27	21.77	23.27	21.27
Band7	10M	16QAM	21100	1RB#25	20.83	22.33	23.83	21.83
Band7	10M	16QAM	21100	1RB#49	20.77	22.27	23.77	21.77
Band7	10M	16QAM	21100	25RB#0	20.37	21.87	23.37	21.37
Band7	10M	16QAM	21100	25RB#13	20.54	22.04	23.54	21.54
Band7	10M	16QAM	21100	25RB#25	20.61	22.11	23.61	21.61
Band7	10M	16QAM	21100	50RB#0	20.53	22.03	23.53	21.53
Band7	10M	16QAM	21400	1RB#0	20.44	21.94	23.44	21.44
Band7	10M	16QAM	21400	1RB#25	20.47	21.97	23.47	21.47
Band7	10M	16QAM	21400	1RB#49	20.79	22.29	23.79	21.79
Band7	10M	16QAM	21400	25RB#0	20.29	21.79	23.29	21.29



Band7	10M	16QAM	21400	25RB#13	20.25	21.75	23.25	21.25
Band7	10M	16QAM	21400	25RB#25	20.16	21.66	23.16	21.16
Band7	10M	16QAM	21400	50RB#0	20.33	21.83	23.33	21.33
Band7	15M	QPSK	20825	1RB#0	21.85	23.35	24.85	22.85
Band7	15M	QPSK	20825	1RB#38	21.45	22.95	24.45	22.45
Band7	15M	QPSK	20825	1RB#74	21.24	22.74	24.24	22.24
Band7	15M	QPSK	20825	36RB#0	20.79	22.29	23.79	21.79
Band7	15M	QPSK	20825	36RB#18	20.73	22.23	23.73	21.73
Band7	15M	QPSK	20825	36RB#39	20.32	21.82	23.32	21.32
Band7	15M	QPSK	20825	75RB#0	20.57	22.07	23.57	21.57
Band7	15M	QPSK	21100	1RB#0	21.08	22.58	24.08	22.08
Band7	15M	QPSK	21100	1RB#38	21.61	23.11	24.61	22.61
Band7	15M	QPSK	21100	1RB#74	21.52	23.02	24.52	22.52
Band7	15M	QPSK	21100	36RB#0	20.52	22.02	23.52	21.52
Band7	15M	QPSK	21100	36RB#18	20.58	22.08	23.58	21.58
Band7	15M	QPSK	21100	36RB#39	20.71	22.21	23.71	21.71
Band7	15M	QPSK	21100	75RB#0	20.61	22.11	23.61	21.61
Band7	15M	QPSK	21375	1RB#0	21.30	22.80	24.30	22.30
Band7	15M	QPSK	21375	1RB#38	21.25	22.75	24.25	22.25
Band7	15M	QPSK	21375	1RB#74	21.74	23.24	24.74	22.74
Band7	15M	QPSK	21375	36RB#0	20.38	21.88	23.38	21.38
Band7	15M	QPSK	21375	36RB#18	20.34	21.84	23.34	21.34
Band7	15M	QPSK	21375	36RB#39	20.16	21.66	23.16	21.16
Band7	15M	QPSK	21375	75RB#0	20.38	21.88	23.38	21.38
Band7	15M	16QAM	20825	1RB#0	21.13	22.63	24.13	22.13
Band7	15M	16QAM	20825	1RB#38	20.81	22.31	23.81	21.81
Band7	15M	16QAM	20825	1RB#74	20.62	22.12	23.62	21.62
Band7	15M	16QAM	20825	36RB#0	20.65	22.15	23.65	21.65
Band7	15M	16QAM	20825	36RB#18	20.59	22.09	23.59	21.59
Band7	15M	16QAM	20825	36RB#39	20.21	21.71	23.21	21.21
Band7	15M	16QAM	20825	75RB#0	20.46	21.96	23.46	21.46
Band7	15M	16QAM	21100	1RB#0	20.25	21.75	23.25	21.25
Band7	15M	16QAM	21100	1RB#38	20.80	22.30	23.80	21.80
Band7	15M	16QAM	21100	1RB#74	20.73	22.23	23.73	21.73
Band7	15M	16QAM	21100	36RB#0	20.35	21.85	23.35	21.35
Band7	15M	16QAM	21100	36RB#18	20.49	21.99	23.49	21.49
Band7	15M	16QAM	21100	36RB#39	20.57	22.07	23.57	21.57
Band7	15M	16QAM	21100	75RB#0	20.48	21.98	23.48	21.48
Band7	15M	16QAM	21375	1RB#0	20.42	21.92	23.42	21.42
Band7	15M	16QAM	21375	1RB#38	20.45	21.95	23.45	21.45
Band7	15M	16QAM	21375	1RB#74	20.76	22.26	23.76	21.76
Band7	15M	16QAM	21375	36RB#0	20.26	21.76	23.26	21.26
Band7	15M	16QAM	21375	36RB#18	20.21	21.71	23.21	21.21



Band7	15M	16QAM	21375	36RB#39	20.13	21.63	23.13	21.13
Band7	15M	16QAM	21375	75RB#0	20.29	21.79	23.29	21.29
Band7	20M	QPSK	20850	1RB#0	21.82	23.32	24.82	22.82
Band7	20M	QPSK	20850	1RB#50	21.44	22.94	24.44	22.44
Band7	20M	QPSK	20850	1RB#99	21.22	22.72	24.22	22.22
Band7	20M	QPSK	20850	50RB#0	20.76	22.26	23.76	21.76
Band7	20M	QPSK	20850	50RB#25	20.71	22.21	23.71	21.71
Band7	20M	QPSK	20850	50RB#50	20.29	21.79	23.29	21.29
Band7	20M	QPSK	20850	100RB#0	20.54	22.04	23.54	21.54
Band7	20M	QPSK	21100	1RB#0	21.04	22.54	24.04	22.04
Band7	20M	QPSK	21100	1RB#50	21.57	23.07	24.57	22.57
Band7	20M	QPSK	21100	1RB#99	21.51	23.01	24.51	22.51
Band7	20M	QPSK	21100	50RB#0	20.47	21.97	23.47	21.47
Band7	20M	QPSK	21100	50RB#25	20.54	22.04	23.54	21.54
Band7	20M	QPSK	21100	50RB#50	20.66	22.16	23.66	21.66
Band7	20M	QPSK	21100	100RB#0	20.56	22.06	23.56	21.56
Band7	20M	QPSK	21350	1RB#0	21.27	22.77	24.27	22.27
Band7	20M	QPSK	21350	1RB#50	21.23	22.73	24.23	22.23
Band7	20M	QPSK	21350	1RB#99	21.71	23.21	24.71	22.71
Band7	20M	QPSK	21350	50RB#0	20.34	21.84	23.34	21.34
Band7	20M	QPSK	21350	50RB#25	20.31	21.81	23.31	21.31
Band7	20M	QPSK	21350	50RB#50	20.12	21.62	23.12	21.12
Band7	20M	QPSK	21350	100RB#0	20.34	21.84	23.34	21.34
Band7	20M	16QAM	20850	1RB#0	21.11	22.61	24.11	22.11
Band7	20M	16QAM	20850	1RB#50	20.77	22.27	23.77	21.77
Band7	20M	16QAM	20850	1RB#99	20.60	22.10	23.60	21.60
Band7	20M	16QAM	20850	50RB#0	20.62	22.12	23.62	21.62
Band7	20M	16QAM	20850	50RB#25	20.56	22.06	23.56	21.56
Band7	20M	16QAM	20850	50RB#50	20.18	21.68	23.18	21.18
Band7	20M	16QAM	20850	100RB#0	20.44	21.94	23.44	21.44
Band7	20M	16QAM	21100	1RB#0	20.21	21.71	23.21	21.21
Band7	20M	16QAM	21100	1RB#50	20.78	22.28	23.78	21.78
Band7	20M	16QAM	21100	1RB#99	20.70	22.20	23.70	21.70
Band7	20M	16QAM	21100	50RB#0	20.31	21.81	23.31	21.31
Band7	20M	16QAM	21100	50RB#25	20.47	21.97	23.47	21.47
Band7	20M	16QAM	21100	50RB#50	20.52	22.02	23.52	21.52
Band7	20M	16QAM	21100	100RB#0	20.44	21.94	23.44	21.44
Band7	20M	16QAM	21350	1RB#0	20.37	21.87	23.37	21.37
Band7	20M	16QAM	21350	1RB#50	20.41	21.91	23.41	21.41
Band7	20M	16QAM	21350	1RB#99	20.74	22.24	23.74	21.74
Band7	20M	16QAM	21350	50RB#0	20.23	21.73	23.23	21.23
Band7	20M	16QAM	21350	50RB#25	20.18	21.68	23.18	21.18
Band7	20M	16QAM	21350	50RB#50	20.09	21.59	23.09	21.09



Band7	20M	16QAM	21350	100RB#0	20.26	21.76	23.26	21.26
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LTE Band 38

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power (dBm)	Internal Antenna EIRP	External Antenna 1 EIRP	External Antenna 2 EIRP
Band38	5M	QPSK	37775	1RB#0	21.63	23.13	24.63	22.63
Band38	5M	QPSK	37775	1RB#13	22.32	23.82	25.32	23.32
Band38	5M	QPSK	37775	1RB#24	22.73	24.23	25.73	23.73
Band38	5M	QPSK	37775	12RB#0	21.15	22.65	24.15	22.15
Band38	5M	QPSK	37775	12RB#6	21.21	22.71	24.21	22.21
Band38	5M	QPSK	37775	12RB#13	21.47	22.97	24.47	22.47
Band38	5M	QPSK	37775	25RB#0	21.21	22.71	24.21	22.21
Band38	5M	QPSK	38000	1RB#0	22.49	23.99	25.49	23.49
Band38	5M	QPSK	38000	1RB#13	22.64	24.14	25.64	23.64
Band38	5M	QPSK	38000	1RB#24	22.40	23.90	25.40	23.40
Band38	5M	QPSK	38000	12RB#0	21.57	23.07	24.57	22.57
Band38	5M	QPSK	38000	12RB#6	21.51	23.01	24.51	22.51
Band38	5M	QPSK	38000	12RB#13	21.36	22.86	24.36	22.36
Band38	5M	QPSK	38000	25RB#0	21.55	23.05	24.55	22.55
Band38	5M	QPSK	38225	1RB#0	22.25	23.75	25.25	23.25
Band38	5M	QPSK	38225	1RB#13	22.43	23.93	25.43	23.43
Band38	5M	QPSK	38225	1RB#24	22.11	23.61	25.11	23.11
Band38	5M	QPSK	38225	12RB#0	21.32	22.82	24.32	22.32
Band38	5M	QPSK	38225	12RB#6	21.27	22.77	24.27	22.27
Band38	5M	QPSK	38225	12RB#13	21.09	22.59	24.09	22.09
Band38	5M	QPSK	38225	25RB#0	21.19	22.69	24.19	22.19
Band38	5M	16QAM	37775	1RB#0	20.98	22.48	23.98	21.98
Band38	5M	16QAM	37775	1RB#13	21.58	23.08	24.58	22.58
Band38	5M	16QAM	37775	1RB#24	21.88	23.38	24.88	22.88
Band38	5M	16QAM	37775	12RB#0	20.98	22.48	23.98	21.98
Band38	5M	16QAM	37775	12RB#6	21.01	22.51	24.01	22.01
Band38	5M	16QAM	37775	12RB#13	21.28	22.78	24.28	22.28
Band38	5M	16QAM	37775	25RB#0	21.12	22.62	24.12	22.12
Band38	5M	16QAM	38000	1RB#0	21.38	22.88	24.38	22.38
Band38	5M	16QAM	38000	1RB#13	21.68	23.18	24.68	22.68
Band38	5M	16QAM	38000	1RB#24	21.42	22.92	24.42	22.42
Band38	5M	16QAM	38000	12RB#0	21.43	22.93	24.43	22.43
Band38	5M	16QAM	38000	12RB#6	21.48	22.98	24.48	22.48
Band38	5M	16QAM	38000	12RB#13	21.20	22.70	24.20	22.20
Band38	5M	16QAM	38000	25RB#0	21.39	22.89	24.39	22.39
Band38	5M	16QAM	38225	1RB#0	20.93	22.43	23.93	21.93
Band38	5M	16QAM	38225	1RB#13	21.12	22.62	24.12	22.12
Band38	5M	16QAM	38225	1RB#24	20.69	22.19	23.69	21.69



Band38	5M	16QAM	38225	12RB#0	21.20	22.70	24.20	22.20
Band38	5M	16QAM	38225	12RB#6	21.18	22.68	24.18	22.18
Band38	5M	16QAM	38225	12RB#13	21.04	22.54	24.04	22.04
Band38	5M	16QAM	38225	25RB#0	21.13	22.63	24.13	22.13
Band38	10M	QPSK	37800	1RB#0	21.58	23.08	24.58	22.58
Band38	10M	QPSK	37800	1RB#25	22.26	23.76	25.26	23.26
Band38	10M	QPSK	37800	1RB#49	22.66	24.16	25.66	23.66
Band38	10M	QPSK	37800	25RB#0	21.08	22.58	24.08	22.08
Band38	10M	QPSK	37800	25RB#13	21.17	22.67	24.17	22.17
Band38	10M	QPSK	37800	25RB#25	21.40	22.90	24.40	22.40
Band38	10M	QPSK	37800	50RB#0	21.19	22.69	24.19	22.19
Band38	10M	QPSK	38000	1RB#0	22.36	23.86	25.36	23.36
Band38	10M	QPSK	38000	1RB#25	22.60	24.10	25.60	23.60
Band38	10M	QPSK	38000	1RB#49	22.32	23.82	25.32	23.32
Band38	10M	QPSK	38000	25RB#0	21.53	23.03	24.53	22.53
Band38	10M	QPSK	38000	25RB#13	21.47	22.97	24.47	22.47
Band38	10M	QPSK	38000	25RB#25	21.28	22.78	24.28	22.28
Band38	10M	QPSK	38000	50RB#0	21.47	22.97	24.47	22.47
Band38	10M	QPSK	38200	1RB#0	22.19	23.69	25.19	23.19
Band38	10M	QPSK	38200	1RB#25	22.37	23.87	25.37	23.37
Band38	10M	QPSK	38200	1RB#49	22.01	23.51	25.01	23.01
Band38	10M	QPSK	38200	25RB#0	21.26	22.76	24.26	22.26
Band38	10M	QPSK	38200	25RB#13	21.22	22.72	24.22	22.22
Band38	10M	QPSK	38200	25RB#25	21.10	22.60	24.10	22.10
Band38	10M	QPSK	38200	50RB#0	21.20	22.70	24.20	22.20
Band38	10M	16QAM	37800	1RB#0	20.95	22.45	23.95	21.95
Band38	10M	16QAM	37800	1RB#25	21.56	23.06	24.56	22.56
Band38	10M	16QAM	37800	1RB#49	21.86	23.36	24.86	22.86
Band38	10M	16QAM	37800	25RB#0	20.95	22.45	23.95	21.95
Band38	10M	16QAM	37800	25RB#13	20.98	22.48	23.98	21.98
Band38	10M	16QAM	37800	25RB#25	21.23	22.73	24.23	22.23
Band38	10M	16QAM	37800	50RB#0	21.10	22.60	24.10	22.10
Band38	10M	16QAM	38000	1RB#0	21.35	22.85	24.35	22.35
Band38	10M	16QAM	38000	1RB#25	21.63	23.13	24.63	22.63
Band38	10M	16QAM	38000	1RB#49	21.35	22.85	24.35	22.35
Band38	10M	16QAM	38000	25RB#0	21.40	22.90	24.40	22.40
Band38	10M	16QAM	38000	25RB#13	21.43	22.93	24.43	22.43
Band38	10M	16QAM	38000	25RB#25	21.20	22.70	24.20	22.20
Band38	10M	16QAM	38000	50RB#0	21.39	22.89	24.39	22.39
Band38	10M	16QAM	38200	1RB#0	20.88	22.38	23.88	21.88
Band38	10M	16QAM	38200	1RB#25	21.08	22.58	24.08	22.08
Band38	10M	16QAM	38200	1RB#49	20.65	22.15	23.65	21.65
Band38	10M	16QAM	38200	25RB#0	21.16	22.66	24.16	22.16



Band38	10M	16QAM	38200	25RB#13	21.12	22.62	24.12	22.12
Band38	10M	16QAM	38200	25RB#25	21.01	22.51	24.01	22.01
Band38	10M	16QAM	38200	50RB#0	21.11	22.61	24.11	22.11
Band38	15M	QPSK	37825	1RB#0	21.57	23.07	24.57	22.57
Band38	15M	QPSK	37825	1RB#38	22.24	23.74	25.24	23.24
Band38	15M	QPSK	37825	1RB#74	22.63	24.13	25.63	23.63
Band38	15M	QPSK	37825	36RB#0	21.06	22.56	24.06	22.06
Band38	15M	QPSK	37825	36RB#18	21.14	22.64	24.14	22.14
Band38	15M	QPSK	37825	36RB#39	21.37	22.87	24.37	22.37
Band38	15M	QPSK	37825	75RB#0	21.17	22.67	24.17	22.17
Band38	15M	QPSK	38000	1RB#0	22.32	23.82	25.32	23.32
Band38	15M	QPSK	38000	1RB#38	22.59	24.09	25.59	23.59
Band38	15M	QPSK	38000	1RB#74	22.27	23.77	25.27	23.27
Band38	15M	QPSK	38000	36RB#0	21.49	22.99	24.49	22.49
Band38	15M	QPSK	38000	36RB#18	21.42	22.92	24.42	22.42
Band38	15M	QPSK	38000	36RB#39	21.25	22.75	24.25	22.25
Band38	15M	QPSK	38000	75RB#0	21.43	22.93	24.43	22.43
Band38	15M	QPSK	38175	1RB#0	22.17	23.67	25.17	23.17
Band38	15M	QPSK	38175	1RB#38	22.34	23.84	25.34	23.34
Band38	15M	QPSK	38175	1RB#74	21.97	23.47	24.97	22.97
Band38	15M	QPSK	38175	36RB#0	21.23	22.73	24.23	22.23
Band38	15M	QPSK	38175	36RB#18	21.18	22.68	24.18	22.18
Band38	15M	QPSK	38175	36RB#39	21.06	22.56	24.06	22.06
Band38	15M	QPSK	38175	75RB#0	21.15	22.65	24.15	22.15
Band38	15M	16QAM	37825	1RB#0	20.90	22.40	23.90	21.90
Band38	15M	16QAM	37825	1RB#38	21.54	23.04	24.54	22.54
Band38	15M	16QAM	37825	1RB#74	21.83	23.33	24.83	22.83
Band38	15M	16QAM	37825	36RB#0	20.92	22.42	23.92	21.92
Band38	15M	16QAM	37825	36RB#18	20.95	22.45	23.95	21.95
Band38	15M	16QAM	37825	36RB#39	21.21	22.71	24.21	22.21
Band38	15M	16QAM	37825	75RB#0	21.07	22.57	24.07	22.07
Band38	15M	16QAM	38000	1RB#0	21.33	22.83	24.33	22.33
Band38	15M	16QAM	38000	1RB#38	21.60	23.10	24.60	22.60
Band38	15M	16QAM	38000	1RB#74	21.31	22.81	24.31	22.31
Band38	15M	16QAM	38000	36RB#0	21.38	22.88	24.38	22.38
Band38	15M	16QAM	38000	36RB#18	21.38	22.88	24.38	22.38
Band38	15M	16QAM	38000	36RB#39	21.16	22.66	24.16	22.16
Band38	15M	16QAM	38000	75RB#0	21.34	22.84	24.34	22.34
Band38	15M	16QAM	38175	1RB#0	20.86	22.36	23.86	21.86
Band38	15M	16QAM	38175	1RB#38	21.06	22.56	24.06	22.06
Band38	15M	16QAM	38175	1RB#74	20.62	22.12	23.62	21.62
Band38	15M	16QAM	38175	36RB#0	21.13	22.63	24.13	22.13
Band38	15M	16QAM	38175	36RB#18	21.08	22.58	24.08	22.08



Band38	15M	16QAM	38175	36RB#39	20.98	22.48	23.98	21.98
Band38	15M	16QAM	38175	75RB#0	21.07	22.57	24.07	22.07
Band38	20M	QPSK	37850	1RB#0	21.54	23.04	24.54	22.54
Band38	20M	QPSK	37850	1RB#50	22.23	23.73	25.23	23.23
Band38	20M	QPSK	37850	1RB#99	22.61	24.11	25.61	23.61
Band38	20M	QPSK	37850	50RB#0	21.03	22.53	24.03	22.03
Band38	20M	QPSK	37850	50RB#25	21.12	22.62	24.12	22.12
Band38	20M	QPSK	37850	50RB#50	21.34	22.84	24.34	22.34
Band38	20M	QPSK	37850	100RB#0	21.14	22.64	24.14	22.14
Band38	20M	QPSK	38000	1RB#0	22.28	23.78	25.28	23.28
Band38	20M	QPSK	38000	1RB#50	22.55	24.05	25.55	23.55
Band38	20M	QPSK	38000	1RB#99	22.26	23.76	25.26	23.26
Band38	20M	QPSK	38000	50RB#0	21.44	22.94	24.44	22.44
Band38	20M	QPSK	38000	50RB#25	21.38	22.88	24.38	22.38
Band38	20M	QPSK	38000	50RB#50	21.20	22.70	24.20	22.20
Band38	20M	QPSK	38000	100RB#0	21.38	22.88	24.38	22.38
Band38	20M	QPSK	38150	1RB#0	22.14	23.64	25.14	23.14
Band38	20M	QPSK	38150	1RB#50	22.32	23.82	25.32	23.32
Band38	20M	QPSK	38150	1RB#99	21.94	23.44	24.94	22.94
Band38	20M	QPSK	38150	50RB#0	21.19	22.69	24.19	22.19
Band38	20M	QPSK	38150	50RB#25	21.15	22.65	24.15	22.15
Band38	20M	QPSK	38150	50RB#50	21.02	22.52	24.02	22.02
Band38	20M	QPSK	38150	100RB#0	21.11	22.61	24.11	22.11
Band38	20M	16QAM	37850	1RB#0	20.88	22.38	23.88	21.88
Band38	20M	16QAM	37850	1RB#50	21.50	23.00	24.50	22.50
Band38	20M	16QAM	37850	1RB#99	21.81	23.31	24.81	22.81
Band38	20M	16QAM	37850	50RB#0	20.89	22.39	23.89	21.89
Band38	20M	16QAM	37850	50RB#25	20.92	22.42	23.92	21.92
Band38	20M	16QAM	37850	50RB#50	21.18	22.68	24.18	22.18
Band38	20M	16QAM	37850	100RB#0	21.05	22.55	24.05	22.05
Band38	20M	16QAM	38000	1RB#0	21.29	22.79	24.29	22.29
Band38	20M	16QAM	38000	1RB#50	21.58	23.08	24.58	22.58
Band38	20M	16QAM	38000	1RB#99	21.28	22.78	24.28	22.28
Band38	20M	16QAM	38000	50RB#0	21.34	22.84	24.34	22.34
Band38	20M	16QAM	38000	50RB#25	21.36	22.86	24.36	22.36
Band38	20M	16QAM	38000	50RB#50	21.11	22.61	24.11	22.11
Band38	20M	16QAM	38000	100RB#0	21.30	22.80	24.30	22.30
Band38	20M	16QAM	38150	1RB#0	20.81	22.31	23.81	21.81
Band38	20M	16QAM	38150	1RB#50	21.02	22.52	24.02	22.02
Band38	20M	16QAM	38150	1RB#99	20.60	22.10	23.60	21.60
Band38	20M	16QAM	38150	50RB#0	21.10	22.60	24.10	22.10
Band38	20M	16QAM	38150	50RB#25	21.05	22.55	24.05	22.05
Band38	20M	16QAM	38150	50RB#50	20.94	22.44	23.94	21.94



Band38	20M	16QAM	38150	100RB#0	21.04	22.54	24.04	22.04
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LTE Band 41

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	Internal Antenna EIRP	External Antenna 1 EIRP	External Antenna 2 EIRP
Band41	5M	QPSK	39675	1RB#0	22.71	24.21	25.71	23.71
Band41	5M	QPSK	39675	1RB#13	22.60	24.10	25.60	23.60
Band41	5M	QPSK	39675	1RB#24	21.97	23.47	24.97	22.97
Band41	5M	QPSK	39675	12RB#0	21.69	23.19	24.69	22.69
Band41	5M	QPSK	39675	12RB#6	21.62	23.12	24.62	22.62
Band41	5M	QPSK	39675	12RB#13	21.19	22.69	24.19	22.19
Band41	5M	QPSK	39675	25RB#0	21.29	22.79	24.29	22.29
Band41	5M	QPSK	40620	1RB#0	22.20	23.70	25.20	23.20
Band41	5M	QPSK	40620	1RB#13	22.52	24.02	25.52	23.52
Band41	5M	QPSK	40620	1RB#24	22.16	23.66	25.16	23.16
Band41	5M	QPSK	40620	12RB#0	21.64	23.14	24.64	22.64
Band41	5M	QPSK	40620	12RB#6	21.59	23.09	24.59	22.59
Band41	5M	QPSK	40620	12RB#13	21.43	22.93	24.43	22.43
Band41	5M	QPSK	40620	25RB#0	21.58	23.08	24.58	22.58
Band41	5M	QPSK	41565	1RB#0	21.81	23.31	24.81	22.81
Band41	5M	QPSK	41565	1RB#13	22.73	24.23	25.73	23.73
Band41	5M	QPSK	41565	1RB#24	22.24	23.74	25.24	23.24
Band41	5M	QPSK	41565	12RB#0	21.48	22.98	24.48	22.48
Band41	5M	QPSK	41565	12RB#6	21.45	22.95	24.45	22.45
Band41	5M	QPSK	41565	12RB#13	21.31	22.81	24.31	22.31
Band41	5M	QPSK	41565	25RB#0	21.31	22.81	24.31	22.31
Band41	5M	16QAM	39675	1RB#0	21.67	23.17	24.67	22.67
Band41	5M	16QAM	39675	1RB#13	21.64	23.14	24.64	22.64
Band41	5M	16QAM	39675	1RB#24	20.87	22.37	23.87	21.87
Band41	5M	16QAM	39675	12RB#0	21.56	23.06	24.56	22.56
Band41	5M	16QAM	39675	12RB#6	21.47	22.97	24.47	22.47
Band41	5M	16QAM	39675	12RB#13	20.98	22.48	23.98	21.98
Band41	5M	16QAM	39675	25RB#0	21.11	22.61	24.11	22.11
Band41	5M	16QAM	40620	1RB#0	21.12	22.62	24.12	22.12
Band41	5M	16QAM	40620	1RB#13	21.45	22.95	24.45	22.45
Band41	5M	16QAM	40620	1RB#24	21.10	22.60	24.10	22.10
Band41	5M	16QAM	40620	12RB#0	21.43	22.93	24.43	22.43
Band41	5M	16QAM	40620	12RB#6	21.38	22.88	24.38	22.38
Band41	5M	16QAM	40620	12RB#13	21.22	22.72	24.22	22.22
Band41	5M	16QAM	40620	25RB#0	21.38	22.88	24.38	22.38
Band41	5M	16QAM	41565	1RB#0	20.88	22.38	23.88	21.88
Band41	5M	16QAM	41565	1RB#13	21.75	23.25	24.75	22.75
Band41	5M	16QAM	41565	1RB#24	21.19	22.69	24.19	22.19



Band41	5M	16QAM	41565	12RB#0	21.20	22.70	24.20	22.20
Band41	5M	16QAM	41565	12RB#6	21.15	22.65	24.15	22.15
Band41	5M	16QAM	41565	12RB#13	21.11	22.61	24.11	22.11
Band41	5M	16QAM	41565	25RB#0	21.16	22.66	24.16	22.16
Band41	10M	QPSK	39700	1RB#0	22.66	24.16	25.66	23.66
Band41	10M	QPSK	39700	1RB#25	22.54	24.04	25.54	23.54
Band41	10M	QPSK	39700	1RB#49	21.90	23.40	24.90	22.90
Band41	10M	QPSK	39700	25RB#0	21.62	23.12	24.62	22.62
Band41	10M	QPSK	39700	25RB#13	21.58	23.08	24.58	22.58
Band41	10M	QPSK	39700	25RB#25	21.12	22.62	24.12	22.12
Band41	10M	QPSK	39700	50RB#0	21.27	22.77	24.27	22.27
Band41	10M	QPSK	40620	1RB#0	22.07	23.57	25.07	23.07
Band41	10M	QPSK	40620	1RB#25	22.48	23.98	25.48	23.48
Band41	10M	QPSK	40620	1RB#49	22.08	23.58	25.08	23.08
Band41	10M	QPSK	40620	25RB#0	21.60	23.10	24.60	22.60
Band41	10M	QPSK	40620	25RB#13	21.55	23.05	24.55	22.55
Band41	10M	QPSK	40620	25RB#25	21.35	22.85	24.35	22.35
Band41	10M	QPSK	40620	50RB#0	21.50	23.00	24.50	22.50
Band41	10M	QPSK	41540	1RB#0	21.75	23.25	24.75	22.75
Band41	10M	QPSK	41540	1RB#25	22.67	24.17	25.67	23.67
Band41	10M	QPSK	41540	1RB#49	22.14	23.64	25.14	23.14
Band41	10M	QPSK	41540	25RB#0	21.42	22.92	24.42	22.42
Band41	10M	QPSK	41540	25RB#13	21.40	22.90	24.40	22.40
Band41	10M	QPSK	41540	25RB#25	21.32	22.82	24.32	22.32
Band41	10M	QPSK	41540	50RB#0	21.32	22.82	24.32	22.32
Band41	10M	16QAM	39700	1RB#0	21.64	23.14	24.64	22.64
Band41	10M	16QAM	39700	1RB#25	21.62	23.12	24.62	22.62
Band41	10M	16QAM	39700	1RB#49	20.85	22.35	23.85	21.85
Band41	10M	16QAM	39700	25RB#0	21.53	23.03	24.53	22.53
Band41	10M	16QAM	39700	25RB#13	21.44	22.94	24.44	22.44
Band41	10M	16QAM	39700	25RB#25	20.93	22.43	23.93	21.93
Band41	10M	16QAM	39700	50RB#0	21.09	22.59	24.09	22.09
Band41	10M	16QAM	40620	1RB#0	21.09	22.59	24.09	22.09
Band41	10M	16QAM	40620	1RB#25	21.40	22.90	24.40	22.40
Band41	10M	16QAM	40620	1RB#49	21.03	22.53	24.03	22.03
Band41	10M	16QAM	40620	25RB#0	21.40	22.90	24.40	22.40
Band41	10M	16QAM	40620	25RB#13	21.33	22.83	24.33	22.33
Band41	10M	16QAM	40620	25RB#25	21.22	22.72	24.22	22.22
Band41	10M	16QAM	40620	50RB#0	21.38	22.88	24.38	22.38
Band41	10M	16QAM	41540	1RB#0	20.83	22.33	23.83	21.83
Band41	10M	16QAM	41540	1RB#25	21.71	23.21	24.71	22.71
Band41	10M	16QAM	41540	1RB#49	21.15	22.65	24.15	22.15
Band41	10M	16QAM	41540	25RB#0	21.16	22.66	24.16	22.16



Band41	10M	16QAM	41540	25RB#13	21.09	22.59	24.09	22.09
Band41	10M	16QAM	41540	25RB#25	21.08	22.58	24.08	22.08
Band41	10M	16QAM	41540	50RB#0	21.14	22.64	24.14	22.14
Band41	15M	QPSK	39725	1RB#0	22.65	24.15	25.65	23.65
Band41	15M	QPSK	39725	1RB#38	22.52	24.02	25.52	23.52
Band41	15M	QPSK	39725	1RB#74	21.87	23.37	24.87	22.87
Band41	15M	QPSK	39725	36RB#0	21.60	23.10	24.60	22.60
Band41	15M	QPSK	39725	36RB#18	21.55	23.05	24.55	22.55
Band41	15M	QPSK	39725	36RB#39	21.09	22.59	24.09	22.09
Band41	15M	QPSK	39725	75RB#0	21.25	22.75	24.25	22.25
Band41	15M	QPSK	40620	1RB#0	22.03	23.53	25.03	23.03
Band41	15M	QPSK	40620	1RB#38	22.47	23.97	25.47	23.47
Band41	15M	QPSK	40620	1RB#74	22.03	23.53	25.03	23.03
Band41	15M	QPSK	40620	36RB#0	21.56	23.06	24.56	22.56
Band41	15M	QPSK	40620	36RB#18	21.50	23.00	24.50	22.50
Band41	15M	QPSK	40620	36RB#39	21.32	22.82	24.32	22.32
Band41	15M	QPSK	40620	75RB#0	21.46	22.96	24.46	22.46
Band41	15M	QPSK	41515	1RB#0	21.73	23.23	24.73	22.73
Band41	15M	QPSK	41515	1RB#38	22.64	24.14	25.64	23.64
Band41	15M	QPSK	41515	1RB#74	22.10	23.60	25.10	23.10
Band41	15M	QPSK	41515	36RB#0	21.39	22.89	24.39	22.39
Band41	15M	QPSK	41515	36RB#18	21.36	22.86	24.36	22.36
Band41	15M	QPSK	41515	36RB#39	21.28	22.78	24.28	22.28
Band41	15M	QPSK	41515	75RB#0	21.27	22.77	24.27	22.27
Band41	15M	16QAM	39725	1RB#0	21.59	23.09	24.59	22.59
Band41	15M	16QAM	39725	1RB#38	21.60	23.10	24.60	22.60
Band41	15M	16QAM	39725	1RB#74	20.82	22.32	23.82	21.82
Band41	15M	16QAM	39725	36RB#0	21.50	23.00	24.50	22.50
Band41	15M	16QAM	39725	36RB#18	21.41	22.91	24.41	22.41
Band41	15M	16QAM	39725	36RB#39	20.91	22.41	23.91	21.91
Band41	15M	16QAM	39725	75RB#0	21.06	22.56	24.06	22.06
Band41	15M	16QAM	40620	1RB#0	21.07	22.57	24.07	22.07
Band41	15M	16QAM	40620	1RB#38	21.37	22.87	24.37	22.37
Band41	15M	16QAM	40620	1RB#74	20.99	22.49	23.99	21.99
Band41	15M	16QAM	40620	36RB#0	21.38	22.88	24.38	22.38
Band41	15M	16QAM	40620	36RB#18	21.28	22.78	24.28	22.28
Band41	15M	16QAM	40620	36RB#39	21.18	22.68	24.18	22.18
Band41	15M	16QAM	40620	75RB#0	21.33	22.83	24.33	22.33
Band41	15M	16QAM	41515	1RB#0	20.81	22.31	23.81	21.81
Band41	15M	16QAM	41515	1RB#38	21.69	23.19	24.69	22.69
Band41	15M	16QAM	41515	1RB#74	21.12	22.62	24.12	22.12
Band41	15M	16QAM	41515	36RB#0	21.13	22.63	24.13	22.13
Band41	15M	16QAM	41515	36RB#18	21.05	22.55	24.05	22.05



Band41	15M	16QAM	41515	36RB#39	21.05	22.55	24.05	22.05
Band41	15M	16QAM	41515	75RB#0	21.10	22.60	24.10	22.10
Band41	20M	QPSK	39750	1RB#0	22.62	24.12	25.62	23.62
Band41	20M	QPSK	39750	1RB#50	22.51	24.01	25.51	23.51
Band41	20M	QPSK	39750	1RB#99	21.85	23.35	24.85	22.85
Band41	20M	QPSK	39750	50RB#0	21.57	23.07	24.57	22.57
Band41	20M	QPSK	39750	50RB#25	21.53	23.03	24.53	22.53
Band41	20M	QPSK	39750	50RB#50	21.06	22.56	24.06	22.06
Band41	20M	QPSK	39750	100RB#0	21.22	22.72	24.22	22.22
Band41	20M	QPSK	40620	1RB#0	21.99	23.49	24.99	22.99
Band41	20M	QPSK	40620	1RB#50	22.43	23.93	25.43	23.43
Band41	20M	QPSK	40620	1RB#99	22.02	23.52	25.02	23.02
Band41	20M	QPSK	40620	50RB#0	21.51	23.01	24.51	22.51
Band41	20M	QPSK	40620	50RB#25	21.46	22.96	24.46	22.46
Band41	20M	QPSK	40620	50RB#50	21.27	22.77	24.27	22.27
Band41	20M	QPSK	40620	100RB#0	21.41	22.91	24.41	22.41
Band41	20M	QPSK	41490	1RB#0	21.70	23.20	24.70	22.70
Band41	20M	QPSK	41490	1RB#50	22.62	24.12	25.62	23.62
Band41	20M	QPSK	41490	1RB#99	22.07	23.57	25.07	23.07
Band41	20M	QPSK	41490	50RB#0	21.35	22.85	24.35	22.35
Band41	20M	QPSK	41490	50RB#25	21.33	22.83	24.33	22.33
Band41	20M	QPSK	41490	50RB#50	21.24	22.74	24.24	22.24
Band41	20M	QPSK	41490	100RB#0	21.23	22.73	24.23	22.23
Band41	20M	16QAM	39750	1RB#0	21.57	23.07	24.57	22.57
Band41	20M	16QAM	39750	1RB#50	21.56	23.06	24.56	22.56
Band41	20M	16QAM	39750	1RB#99	20.80	22.30	23.80	21.80
Band41	20M	16QAM	39750	50RB#0	21.47	22.97	24.47	22.47
Band41	20M	16QAM	39750	50RB#25	21.38	22.88	24.38	22.38
Band41	20M	16QAM	39750	50RB#50	20.88	22.38	23.88	21.88
Band41	20M	16QAM	39750	100RB#0	21.04	22.54	24.04	22.04
Band41	20M	16QAM	40620	1RB#0	21.03	22.53	24.03	22.03
Band41	20M	16QAM	40620	1RB#50	21.35	22.85	24.35	22.35
Band41	20M	16QAM	40620	1RB#99	20.96	22.46	23.96	21.96
Band41	20M	16QAM	40620	50RB#0	21.34	22.84	24.34	22.34
Band41	20M	16QAM	40620	50RB#25	21.26	22.76	24.26	22.26
Band41	20M	16QAM	40620	50RB#50	21.13	22.63	24.13	22.13
Band41	20M	16QAM	40620	100RB#0	21.29	22.79	24.29	22.29
Band41	20M	16QAM	41490	1RB#0	20.76	22.26	23.76	21.76
Band41	20M	16QAM	41490	1RB#50	21.65	23.15	24.65	22.65
Band41	20M	16QAM	41490	1RB#99	21.10	22.60	24.10	22.10
Band41	20M	16QAM	41490	50RB#0	21.10	22.60	24.10	22.10
Band41	20M	16QAM	41490	50RB#25	21.02	22.52	24.02	22.02
Band41	20M	16QAM	41490	50RB#50	21.01	22.51	24.01	22.01



Band41	20M	16QAM	41490	100RB#0	21.07	22.57	24.07	22.07
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5.2 Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 51 kHz, VBW is set to 160 kHz for WCDMA Band IV.

RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4 (1.4MHz).

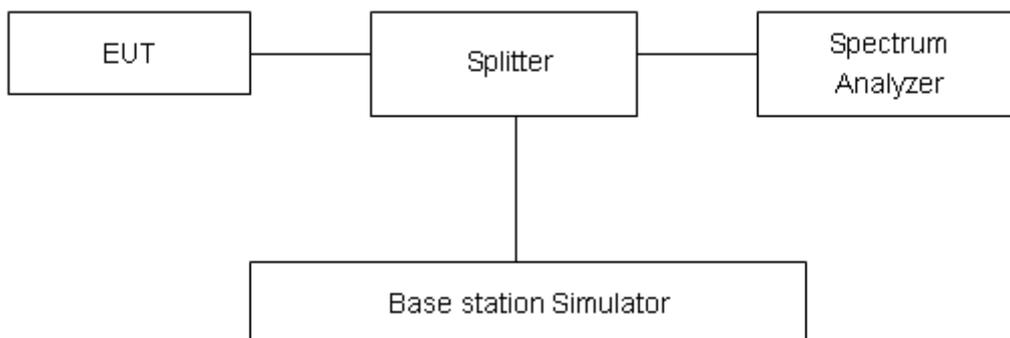
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4 (3MHz).

RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/7/38/41 (5MHz).

RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/7/38/41 (10MHz/15MHz/20MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=624\text{Hz}$.



Test Result

Mode	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
WCDMA Band IV (RMC)	1312	1712.4	4.1416	4.683
	1413	1732.6	4.1388	4.651
	1513	1752.6	4.1361	4.650

LTE Band 4						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	19957	1710.7	1.1239	1.282
			20175	1732.5	1.1205	1.290
			20393	1754.3	1.1179	1.284
		3	19965	1711.5	2.7471	3.044
			20175	1732.5	2.7413	3.048
			20385	1753.5	2.7440	3.018
		5	19975	1712.5	4.5236	4.968
			20175	1732.5	4.5175	5.004
			20375	1752.5	4.5333	4.975
		10	20000	1715	9.0795	10.020
			20175	1732.5	9.0511	10.040
			20350	1750	9.0641	10.040
		15	20025	1717.5	13.538	14.980
			20175	1732.5	13.501	14.860
			20325	1747.5	13.514	14.900
		20	20050	1720	17.952	19.670
			20175	1732.5	17.901	19.550
			20300	1745	17.970	19.590
	16QAM	1.4	19957	1710.7	1.1230	1.283
			20175	1732.5	1.1252	1.280
			20393	1754.3	1.1298	1.288
		3	19965	1711.5	2.7361	3.047
			20175	1732.5	2.7398	3.045
			20385	1753.5	2.7574	3.025
		5	19975	1712.5	4.5176	4.994
			20175	1732.5	4.5145	4.943
			20375	1752.5	4.5161	4.972
10		20000	1715	9.0809	10.040	
		20175	1732.5	9.0440	10.070	



		15	20350	1750	9.0385	10.000
			20025	1717.5	13.5430	15.010
			20175	1732.5	13.5090	14.890
			20325	1747.5	13.4990	14.980
		20	20050	1720	17.9280	19.590
			20175	1732.5	17.8610	19.650
			20300	1745	17.9530	19.640

LTE Band 7						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	20775	2502.5	4.5067	4.982
			21100	2535	4.5137	4.978
			21425	2567.5	4.5200	4.958
		10	20800	2505	9.0475	9.970
			21100	2535	9.0860	10.030
			21400	2565	9.0776	10.010
		15	20825	2507.5	13.4740	14.920
			21100	2535	13.4740	14.920
			21375	2562.5	13.5490	14.980
		20	20850	2510	17.9230	19.510
			21100	2535	17.9290	19.680
			21350	2560	17.9770	19.710
	16QAM	5	20775	2502.5	4.5131	4.973
			21100	2535	4.5165	4.990
			21425	2567.5	4.5253	4.977
		10	20800	2505	9.0505	10.020
			21100	2535	9.0550	10.060
			21400	2565	9.0895	10.140
		15	20825	2507.5	13.4810	14.960
			21100	2535	13.5000	14.930
			21375	2562.5	13.5090	14.970
		20	20850	2510	17.9600	19.620
			21100	2535	17.8800	19.540
			21350	2560	17.9310	19.700

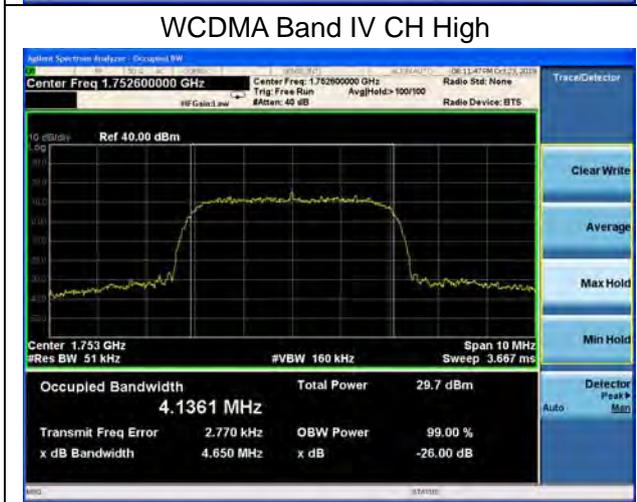
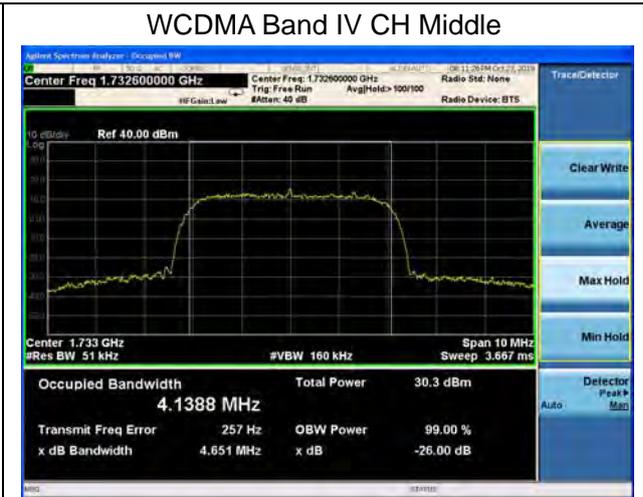
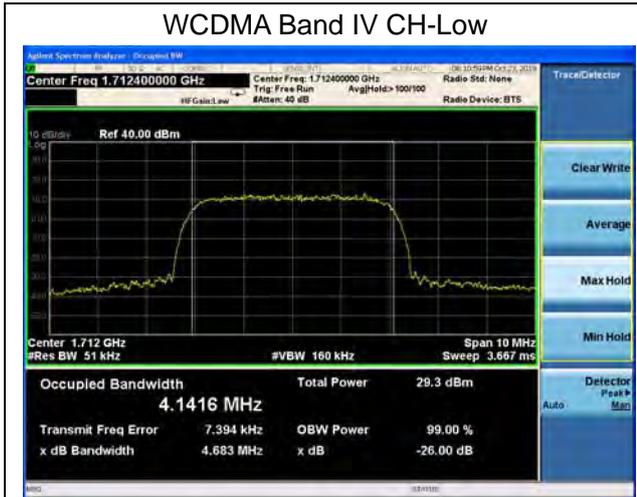


LTE Band 38						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	37775	2572.5	4.5092	4.963
			38000	2595	4.5192	4.941
			38225	2617.5	4.4964	4.965
		10	37800	2575	9.0505	10.040
			38000	2595	9.0682	9.973
			38200	2615	9.0323	10.010
		15	37825	2577.5	13.5820	15.050
			38000	2595	13.4880	14.960
			38175	2612.5	13.5080	14.790
		20	37850	2580	17.9080	19.570
			38000	2595	17.8860	19.460
			38150	2610	17.9080	19.530
	16QAM	5	37775	2572.5	4.5228	5.057
			38000	2595	4.5115	4.984
			38225	2617.5	4.5137	4.956
		10	37800	2575	9.0352	10.010
			38000	2595	9.0591	10.000
			38200	2615	9.0237	10.020
		15	37825	2577.5	13.5500	14.910
			38000	2595	13.5040	15.080
			38175	2612.5	13.4920	15.350
		20	37850	2580	17.8880	19.550
			38000	2595	17.9340	19.430
			38150	2610	18.0140	19.610

LTE Band 41						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	39675	2498.5	4.5069	5.010
			40620	2593	4.4011	4.945
			41565	2687.5	4.5171	4.978
		10	39700	2501	9.0346	10.030
			40620	2593	9.0099	9.936
			41540	2685	9.0352	9.995
		15	39725	2503.5	13.4980	14.890
			40620	2593	13.4720	14.930

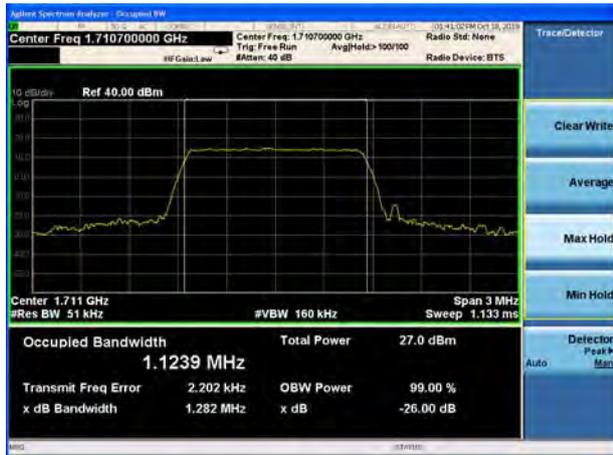


		20	41515	2682.5	13.4570	14.860	
			39750	2506	17.9050	19.430	
			40620	2593	17.8920	19.330	
			41490	2680	17.9160	19.500	
	16QAM	5	5	39675	2498.5	4.4998	4.936
				40620	2593	4.4952	4.966
				41565	2687.5	4.5088	5.019
		10	10	39700	2501	9.0202	10.000
				40620	2593	9.0734	9.947
				41540	2685	9.0102	10.040
		15	15	39725	2503.5	13.4810	15.090
				40620	2593	13.4790	15.350
				41515	2682.5	13.4390	14.680
		20	20	39750	2506	17.8850	19.540
				40620	2593	17.8640	19.430
				41490	2680	17.9420	19.460

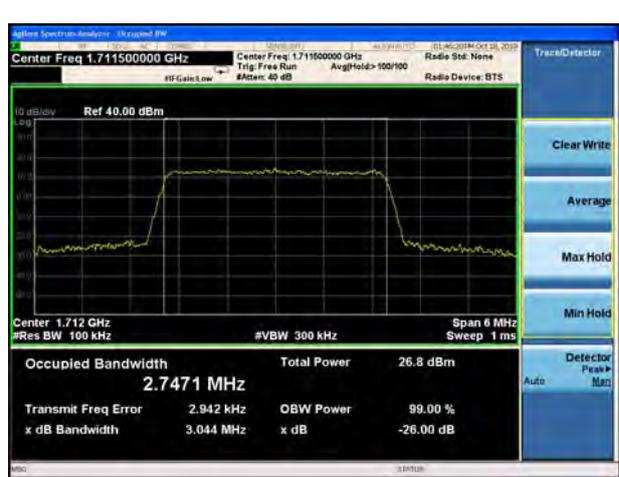




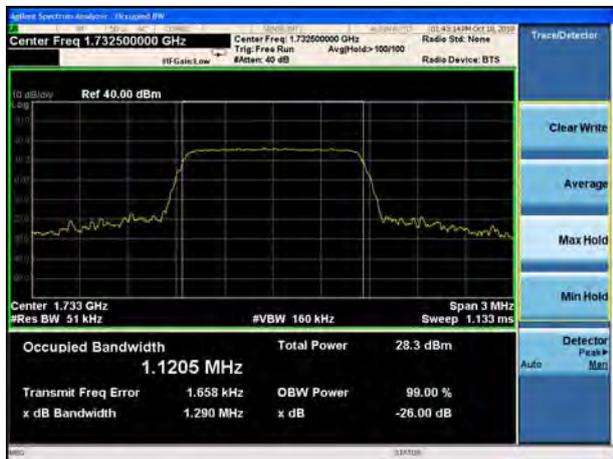
LTE Band 4 QPSK 1.4MHz CH-Low



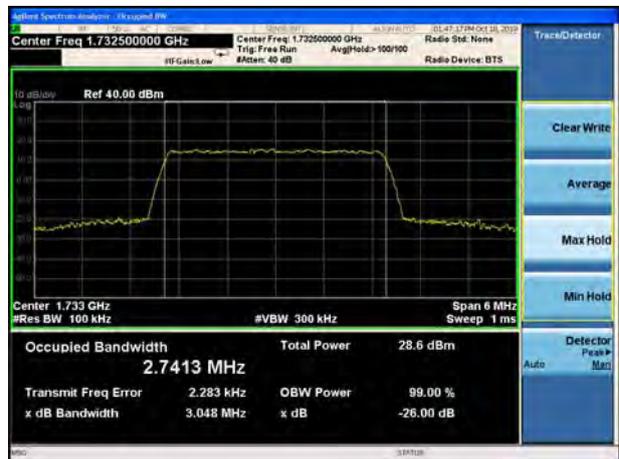
LTE Band 4 QPSK 3MHz CH-Low



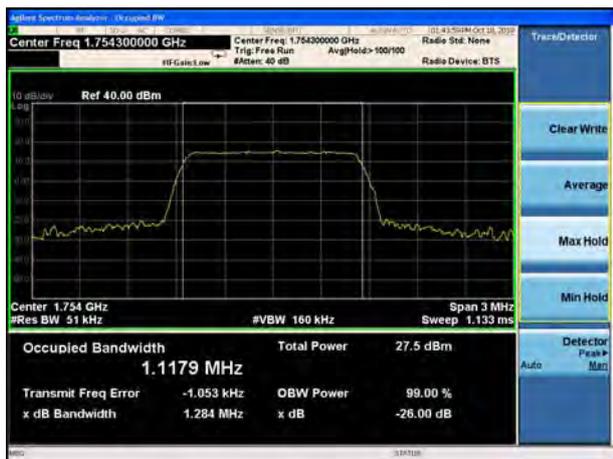
LTE Band 4 QPSK 1.4MHz CH-Middle



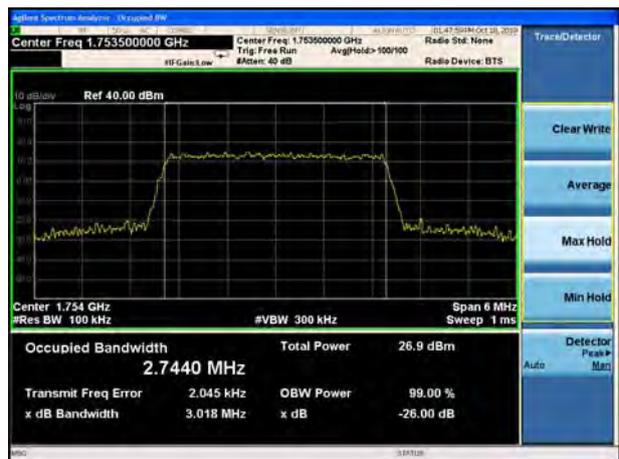
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LTE Band 4 QPSK 1.4MHz CH-High

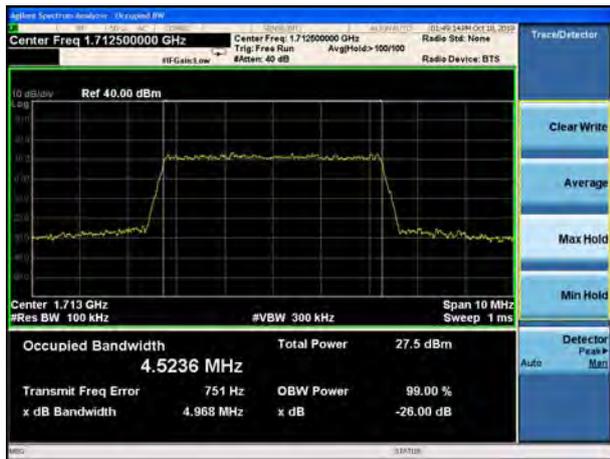


LTE Band 4 QPSK 3MHz CH-High





LTE Band 4 QPSK 5MHz CH-Low



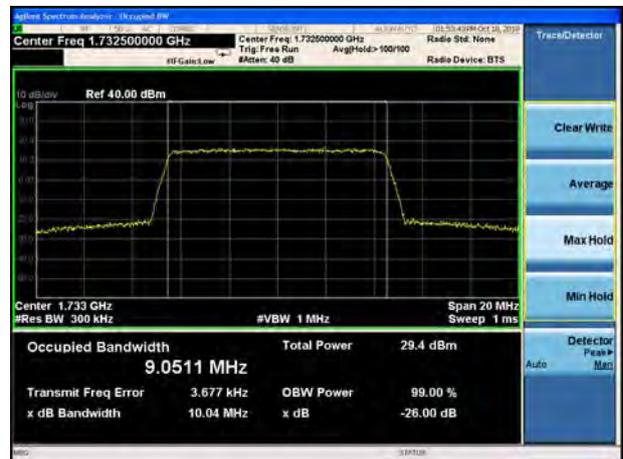
LTE Band 4 QPSK 10MHz CH-Low



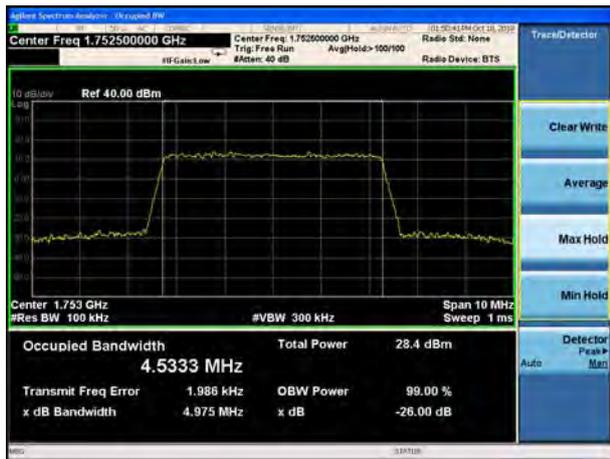
LTE Band 4 QPSK 5MHz CH-Middle



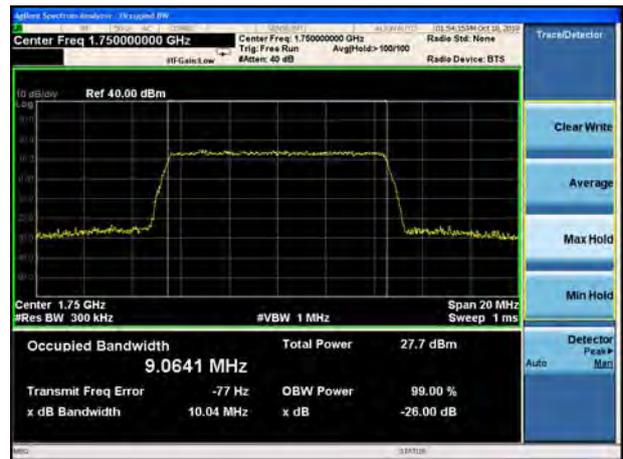
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LTE Band 4 QPSK 5MHz CH-High

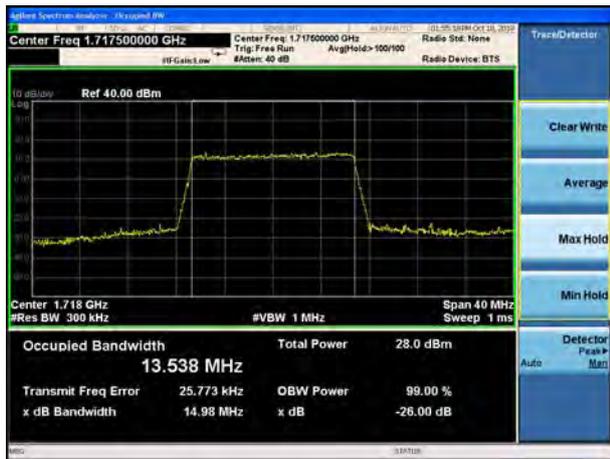


LTE Band 4 QPSK 10MHz CH-High

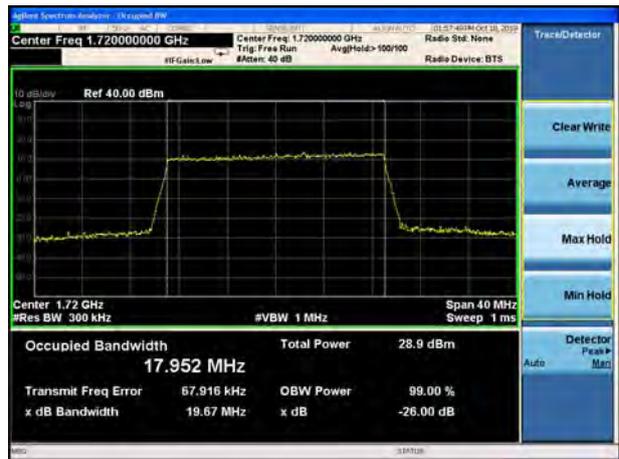




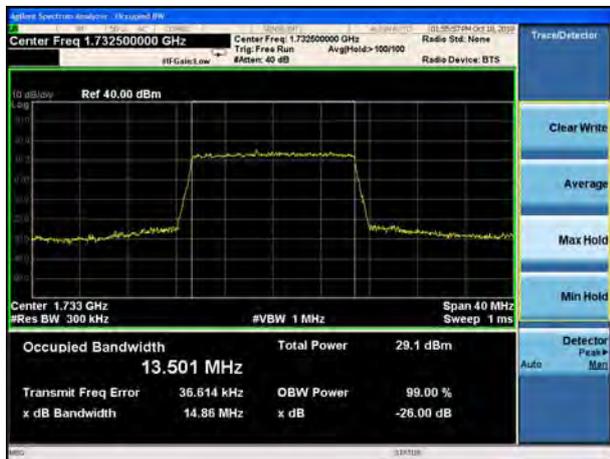
LTE Band 4 QPSK 15MHz CH-Low



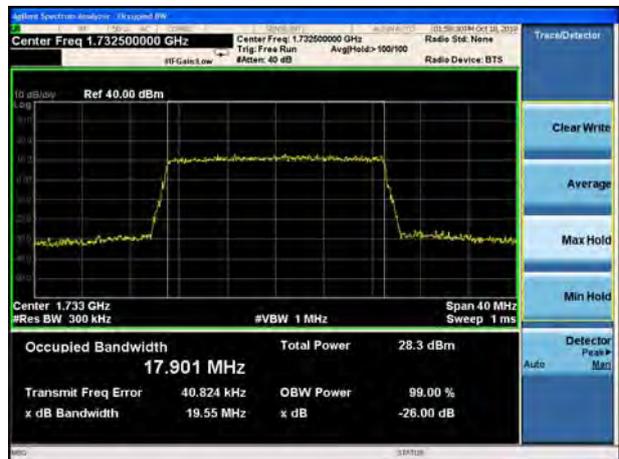
LTE Band 4 QPSK 20MHz CH-Low



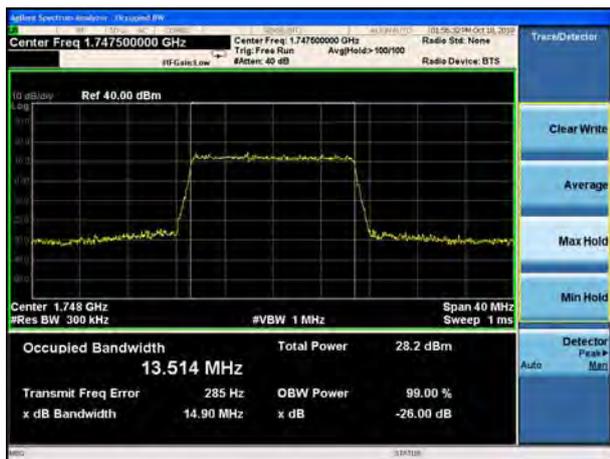
LTE Band 4 QPSK 15MHz CH-Middle



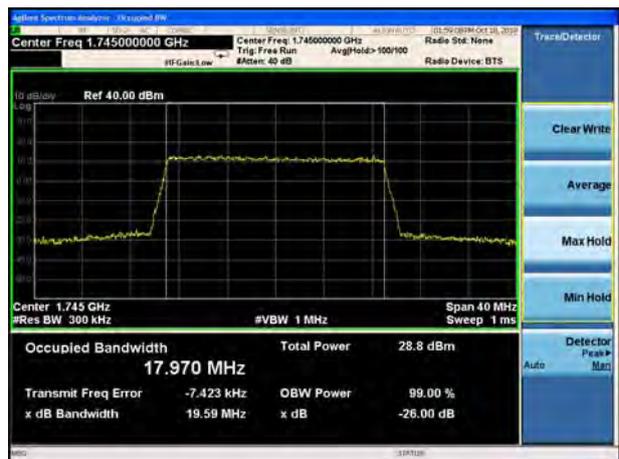
LTE Band 4 QPSK 20MHz CH-Middle



LTE Band 4 QPSK 15MHz CH-High

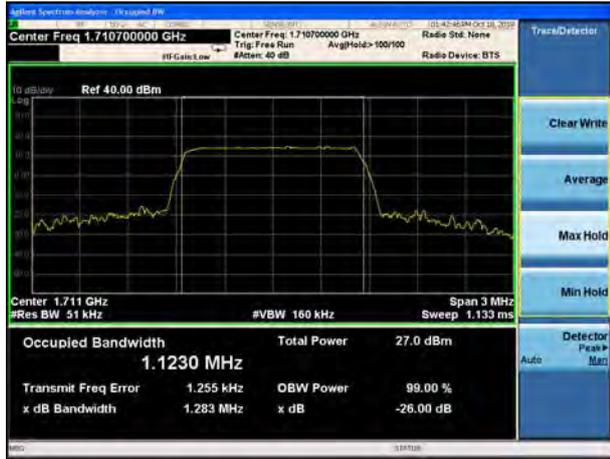


LTE Band 4 QPSK 20MHz CH-High

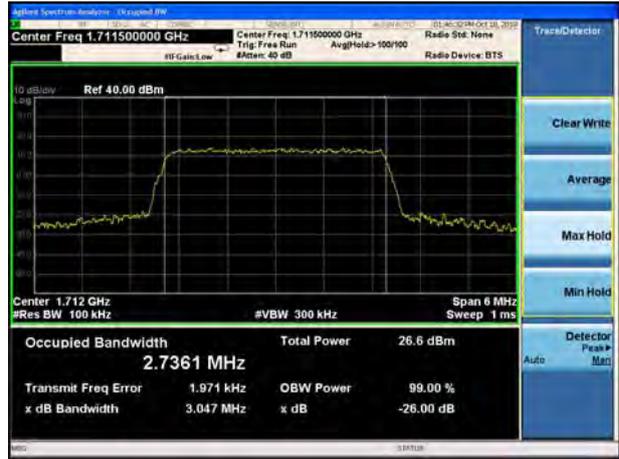




LTE Band 4 16QAM 1.4MHz CH-Low



LTE Band 4 16QAM 3MHz CH-Low



LTE Band 4 16QAM 1.4MHz CH-Middle



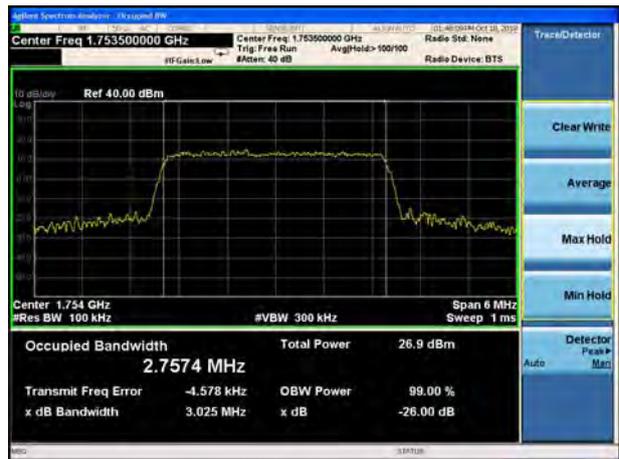
LTE Band 4 16QAM 3MHz CH-Middle



LTE Band 4 16QAM 1.4MHz CH-High

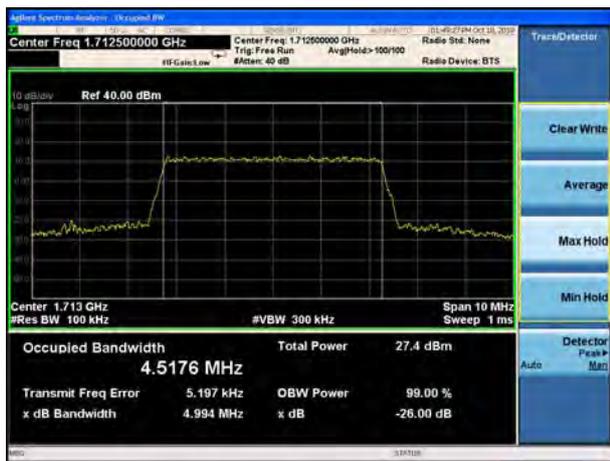


LTE Band 4 16QAM 3MHz CH-High

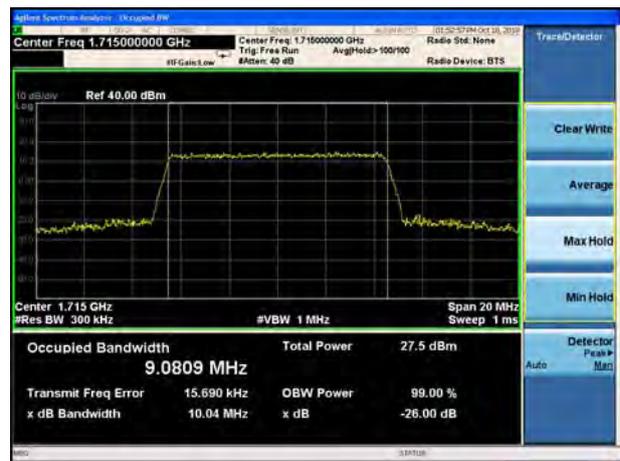




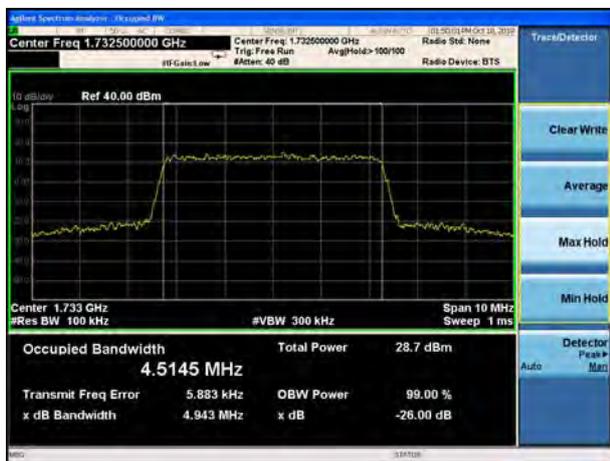
LTE Band 4 16QAM 5MHz CH-Low



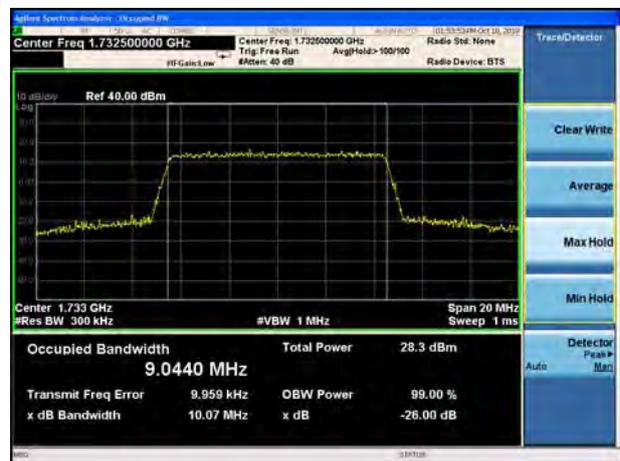
LTE Band 4 16QAM 10MHz CH-Low



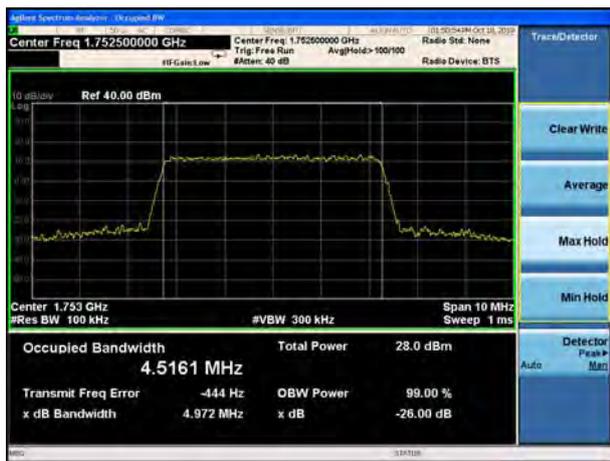
LTE Band 4 16QAM 5MHz CH-Middle



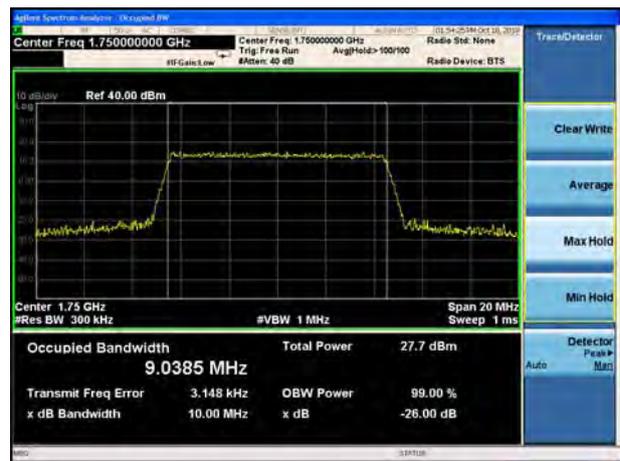
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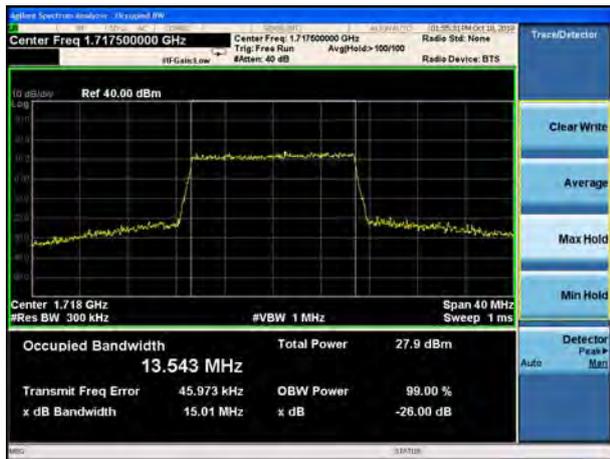


LTE Band 4 16QAM 10MHz CH-High

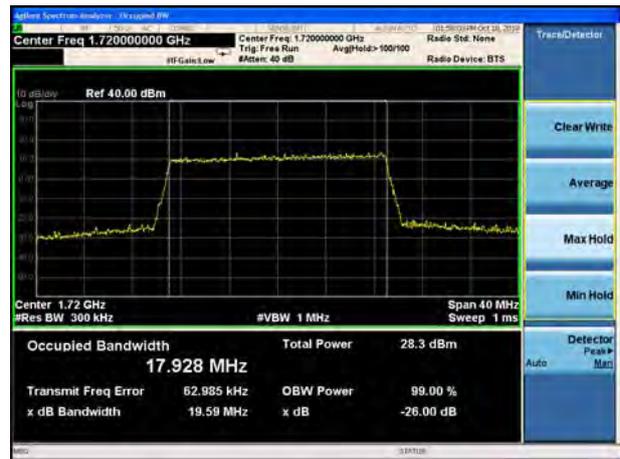




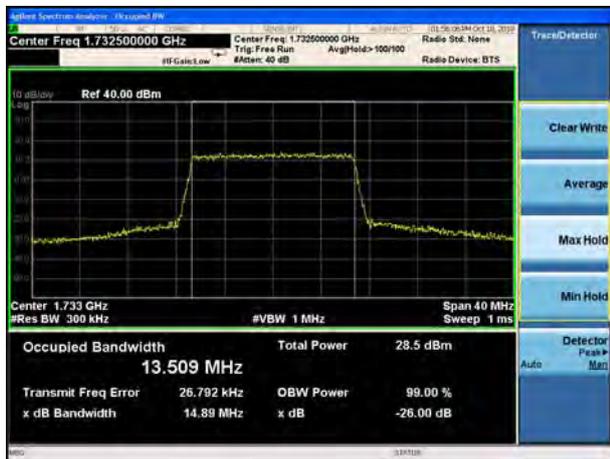
LTE Band 4 16QAM 15MHz CH-Low



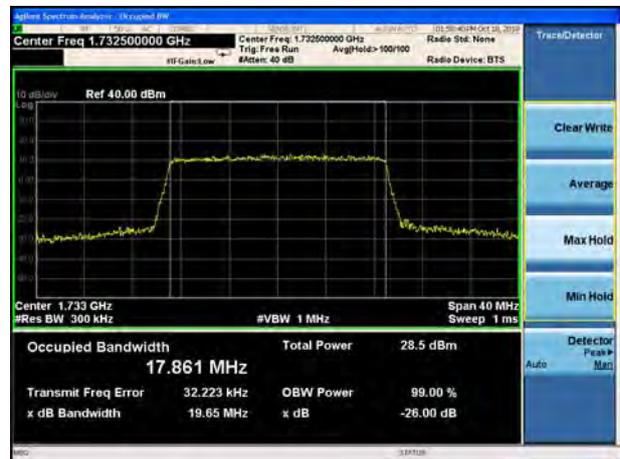
LTE Band 4 16QAM 20MHz CH-Low



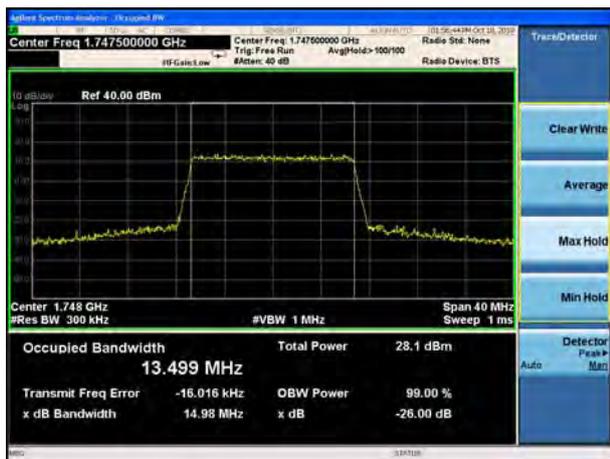
LTE Band 4 16QAM 15MHz CH-Middle



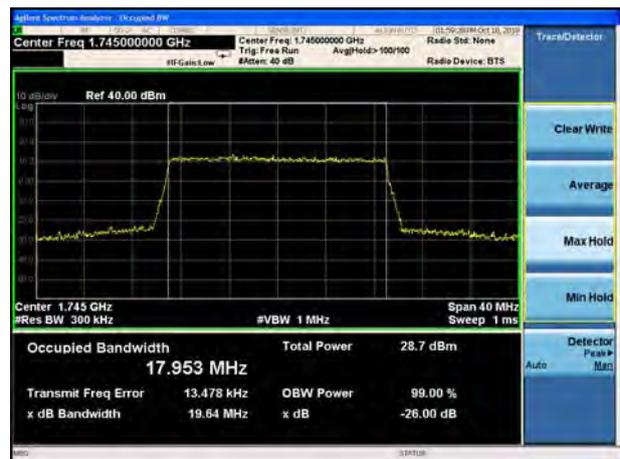
LTE Band 4 16QAM 20MHz CH-Middle

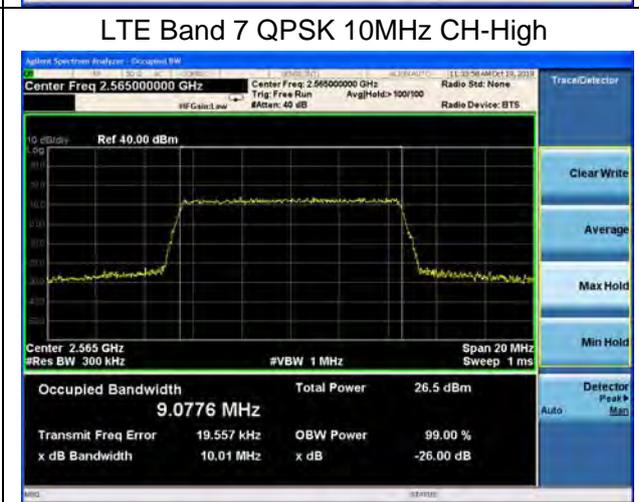
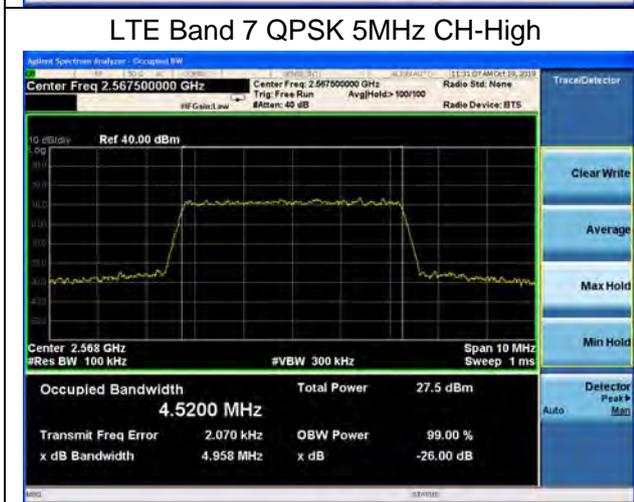
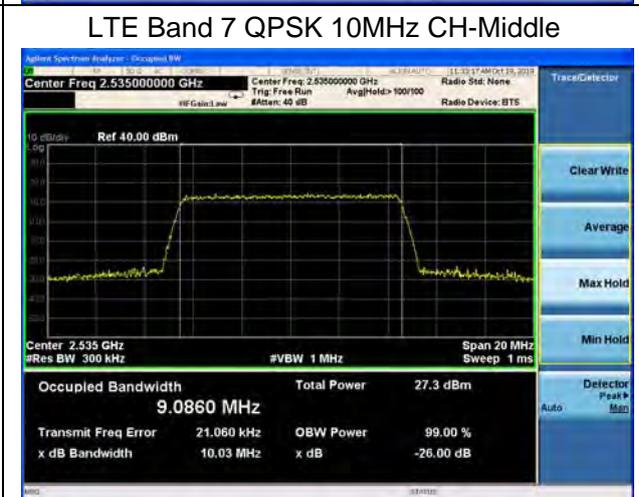
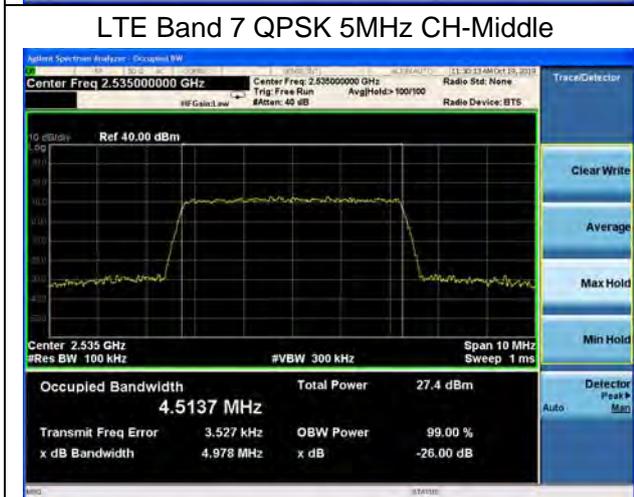
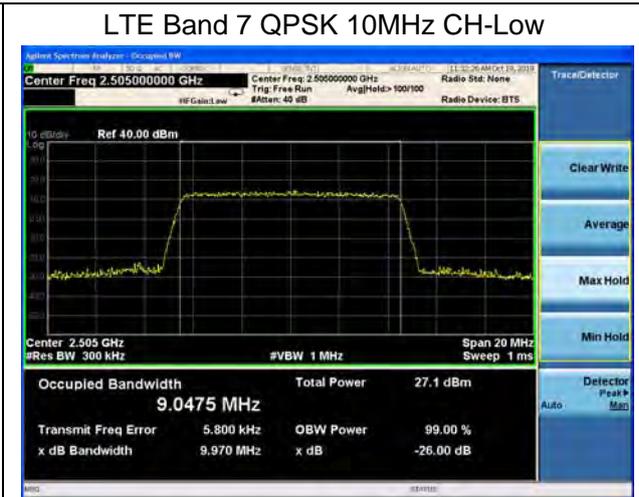
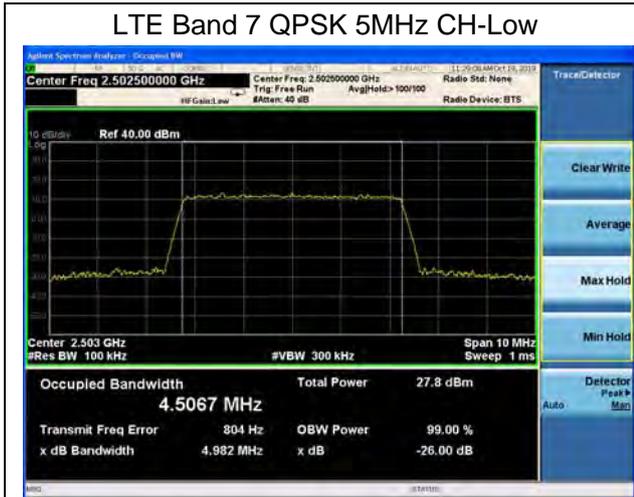


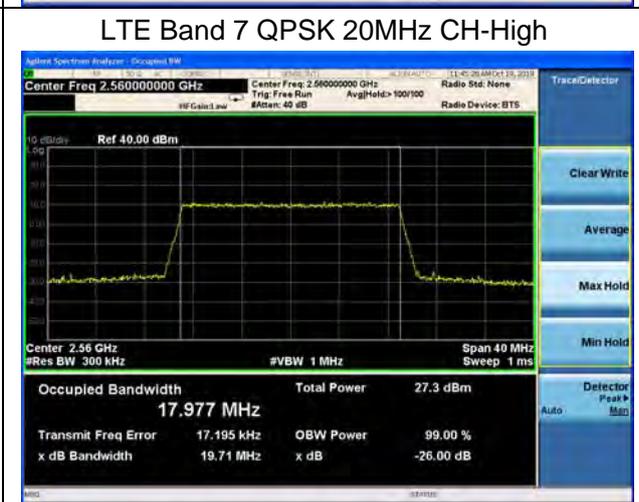
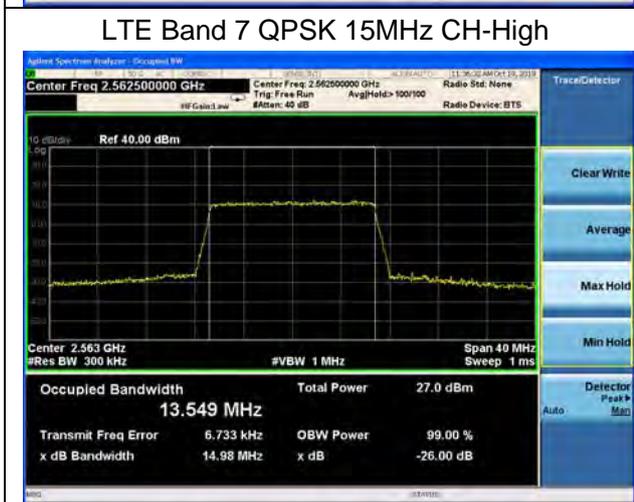
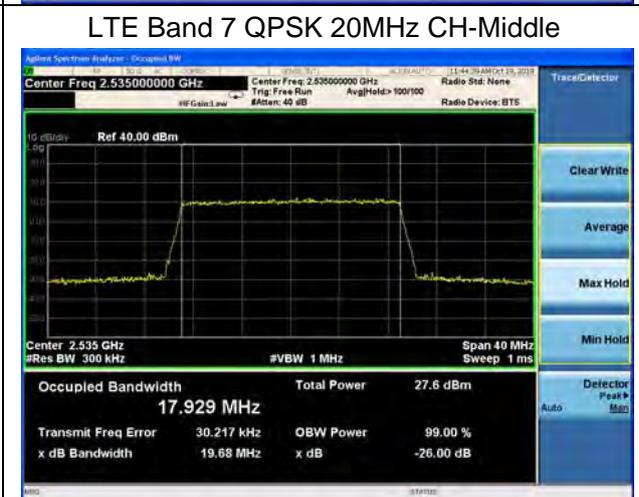
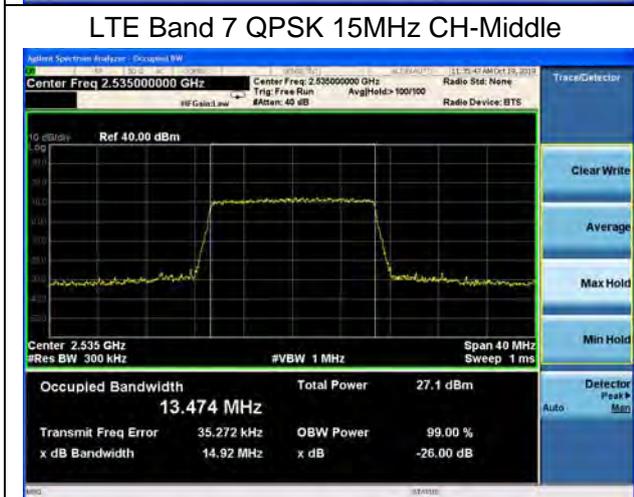
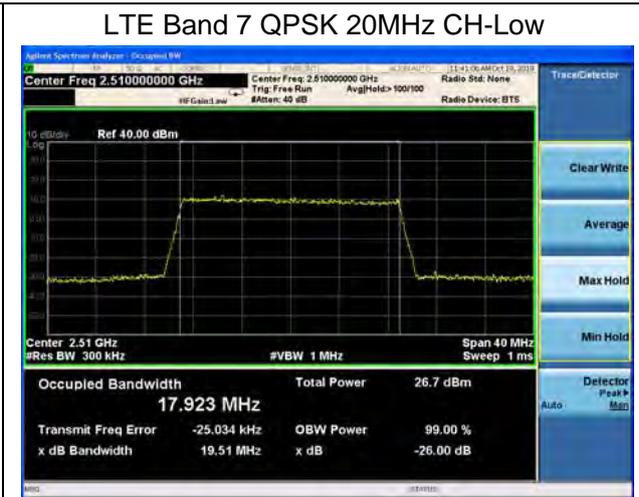
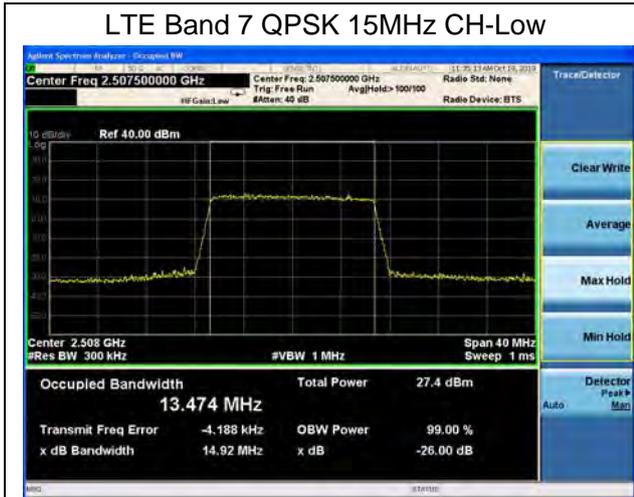
LTE Band 4 16QAM 15MHz CH-High

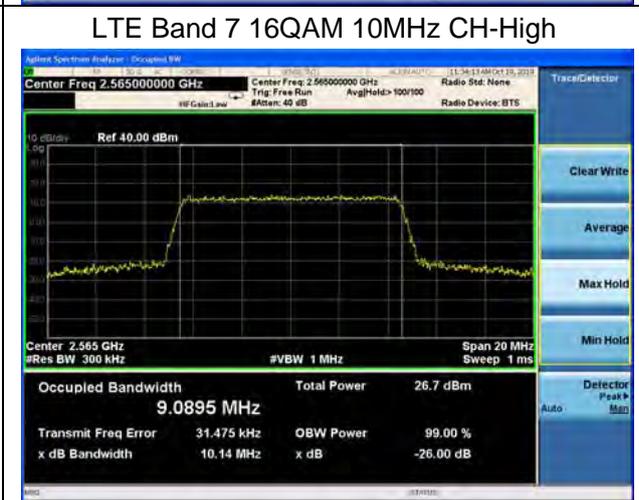
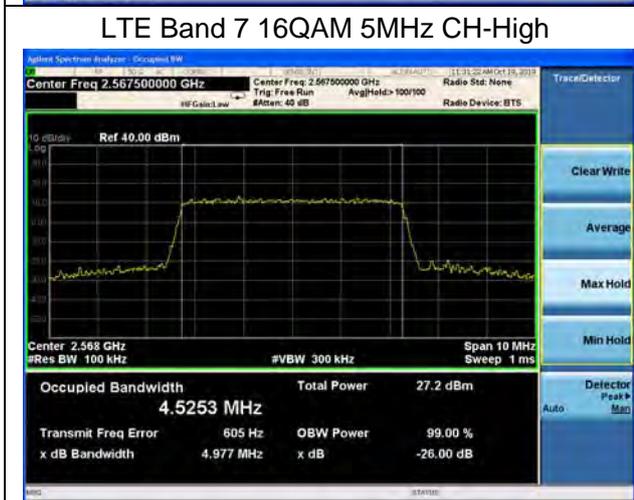
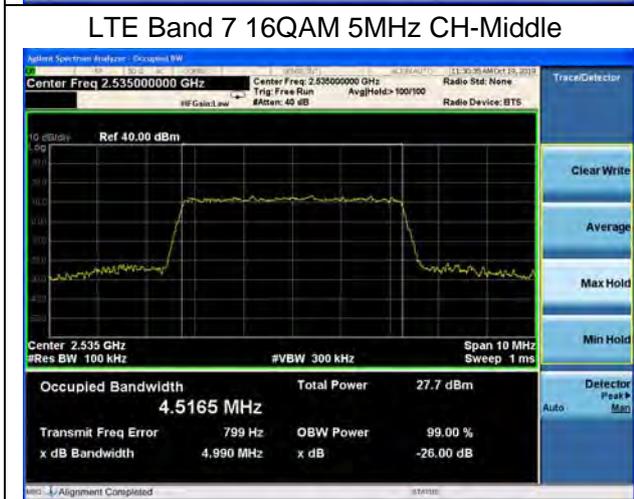
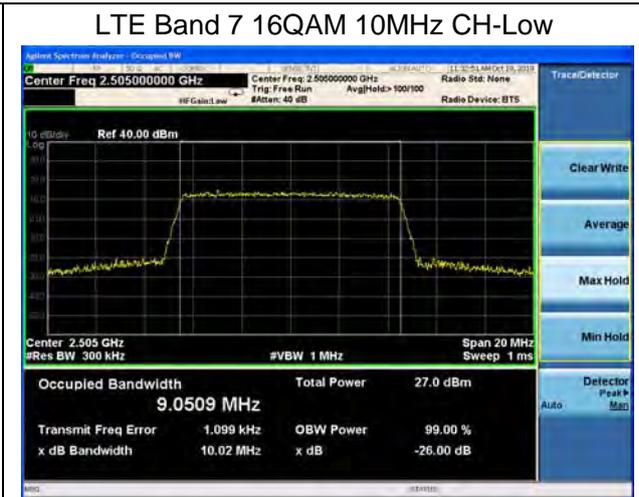
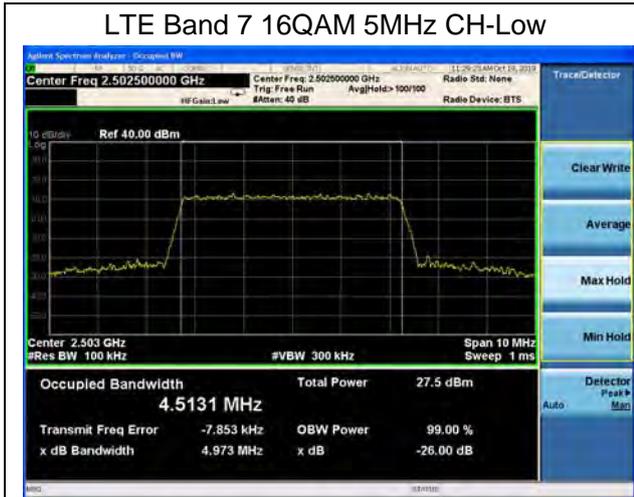


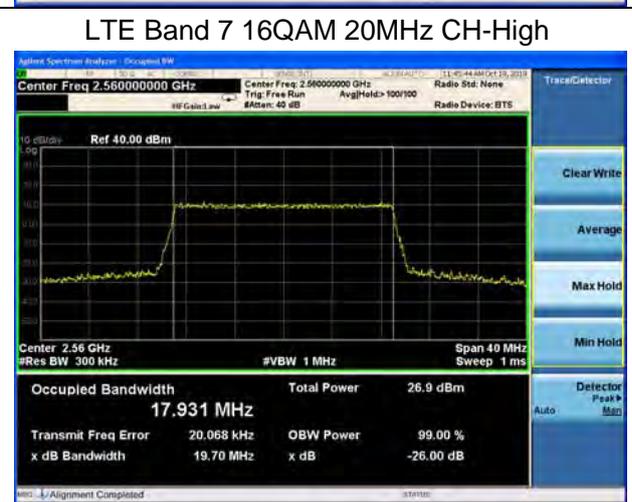
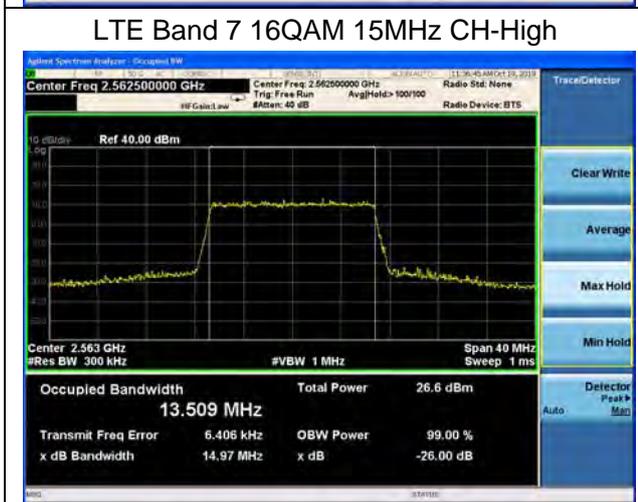
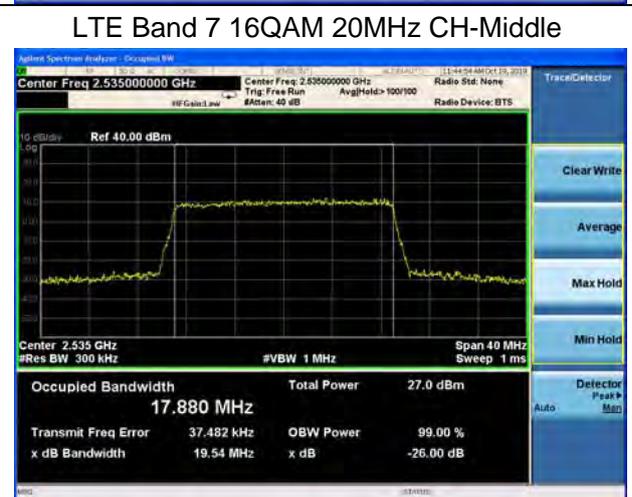
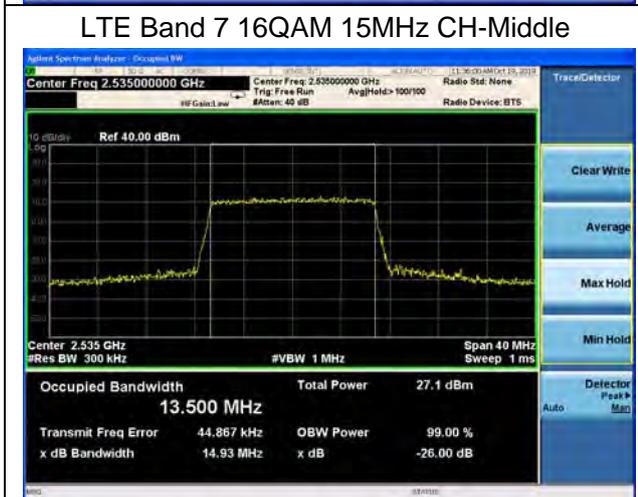
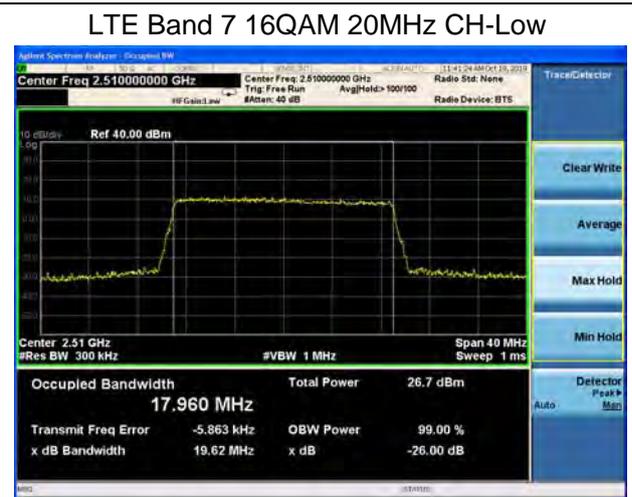
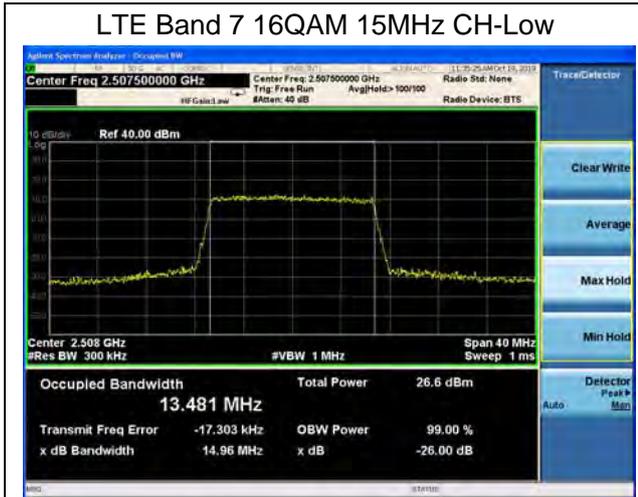
LTE Band 4 16QAM 20MHz CH-High

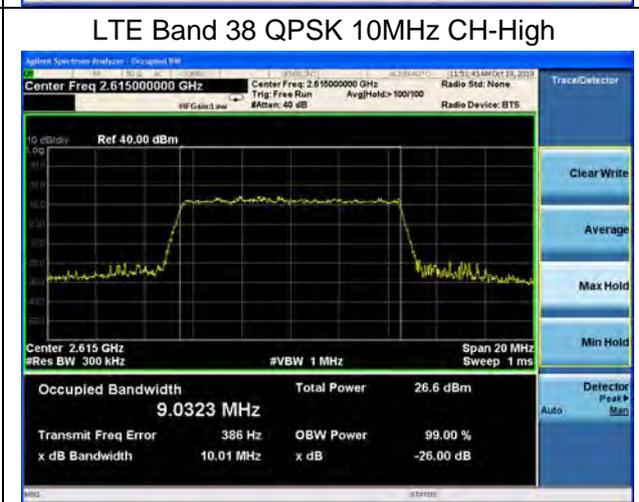
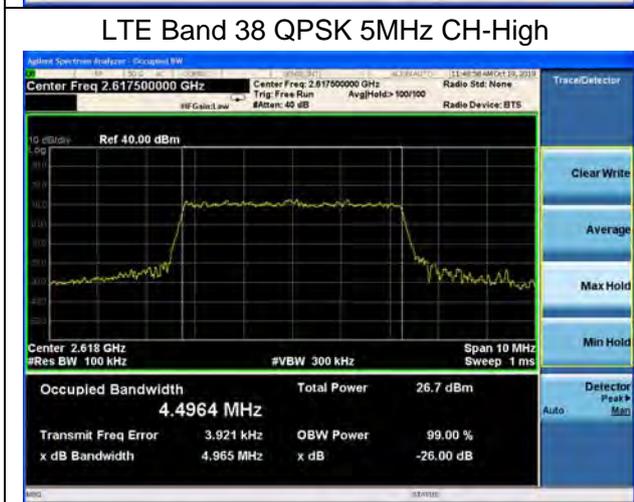
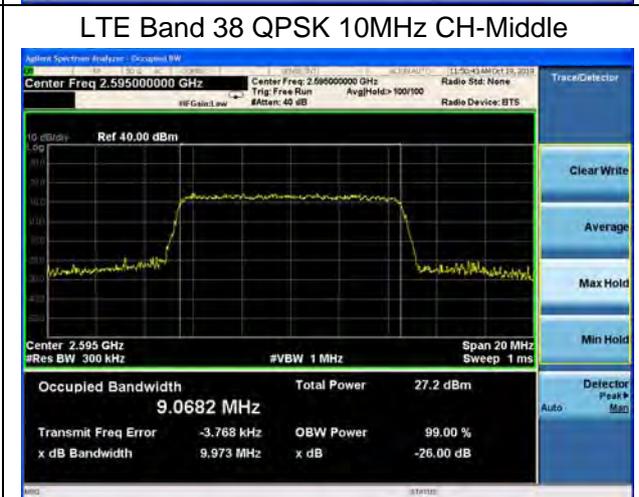
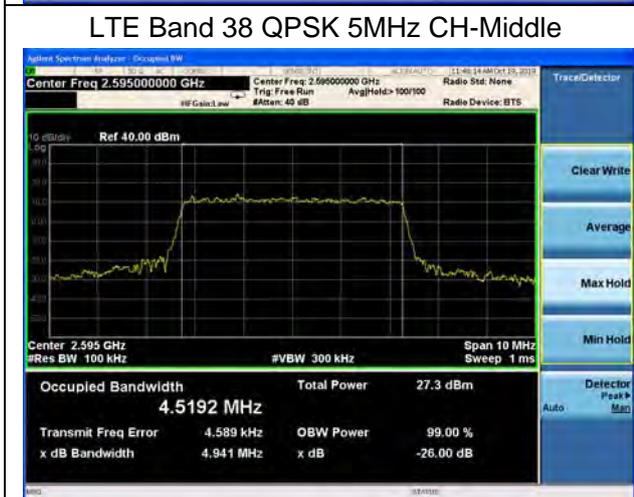
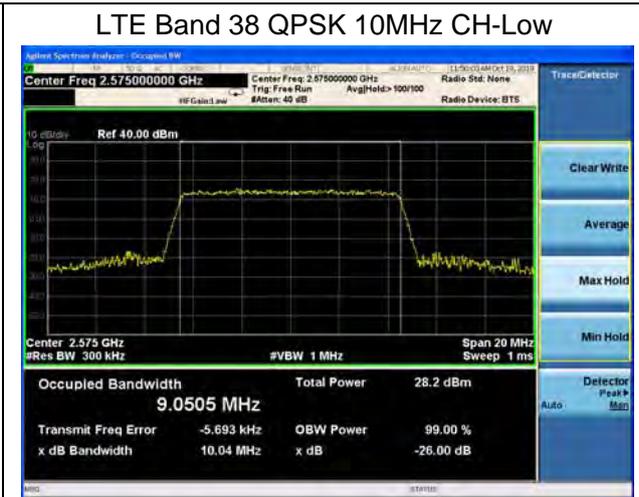
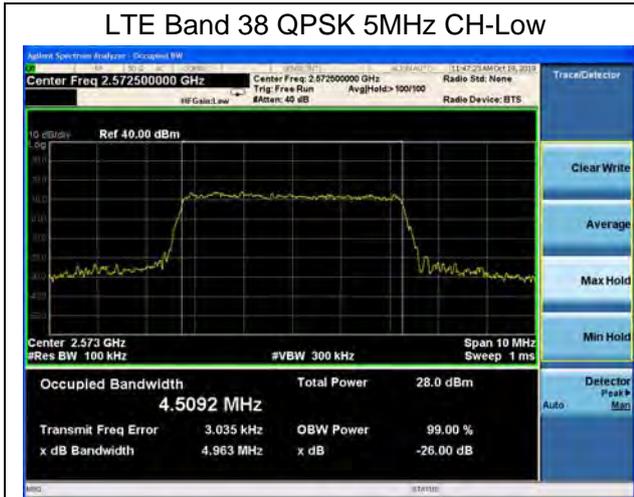


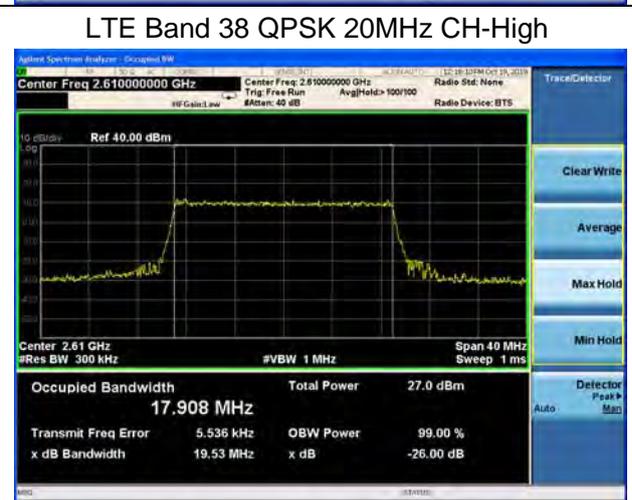
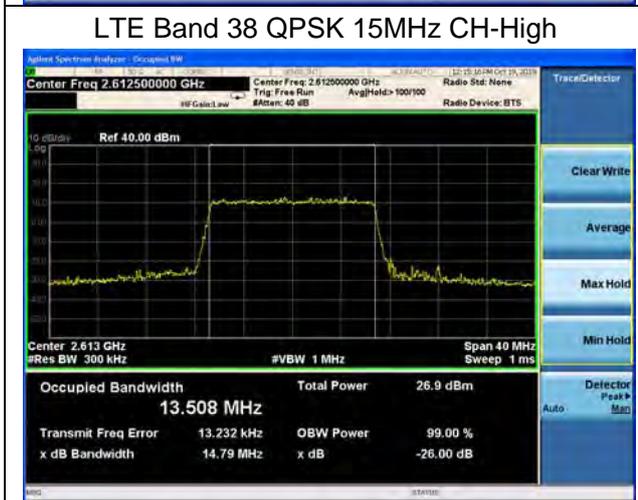
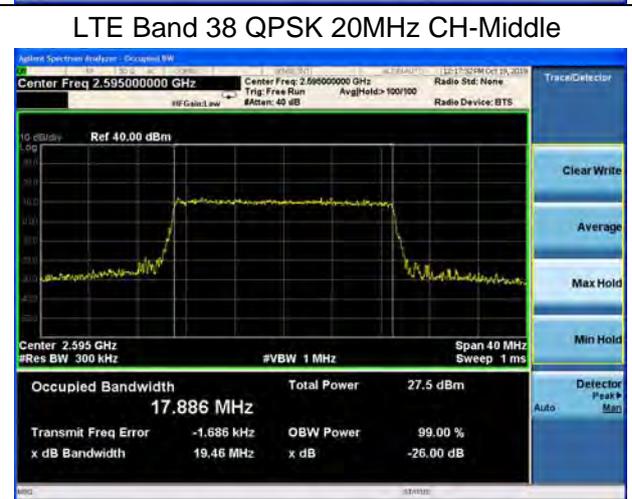
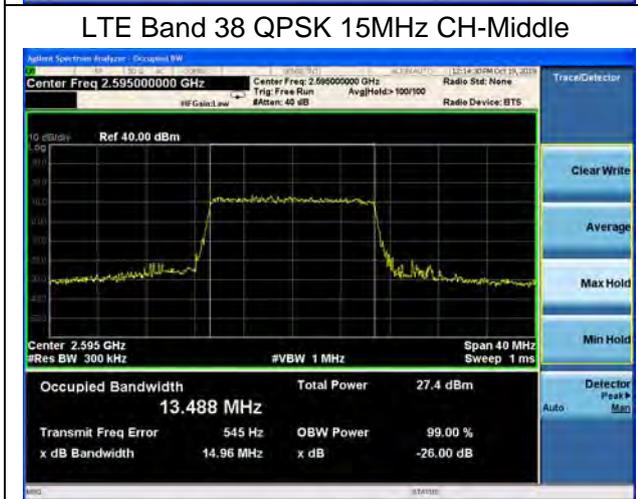
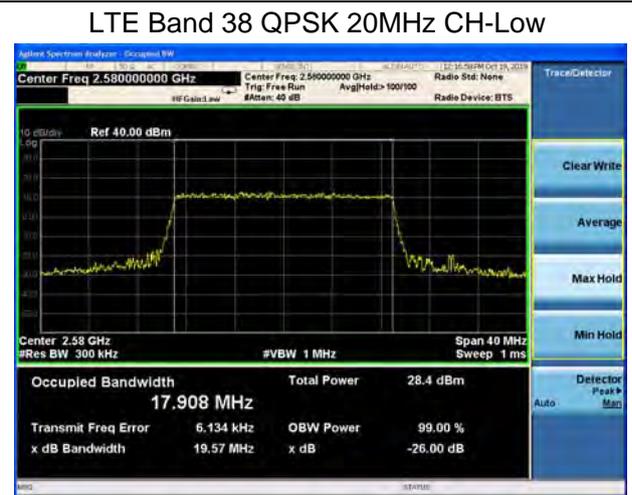
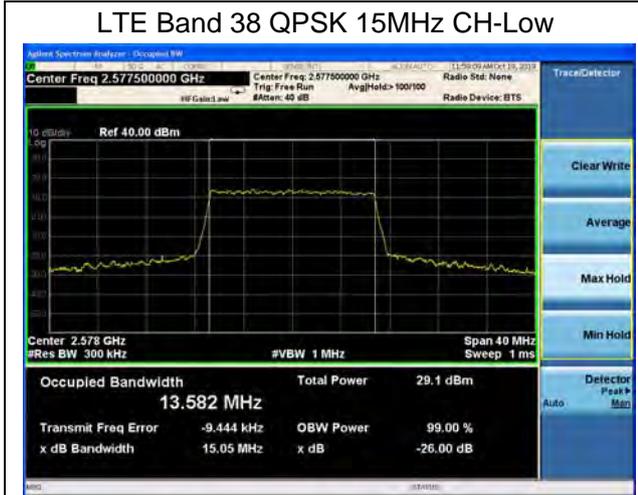










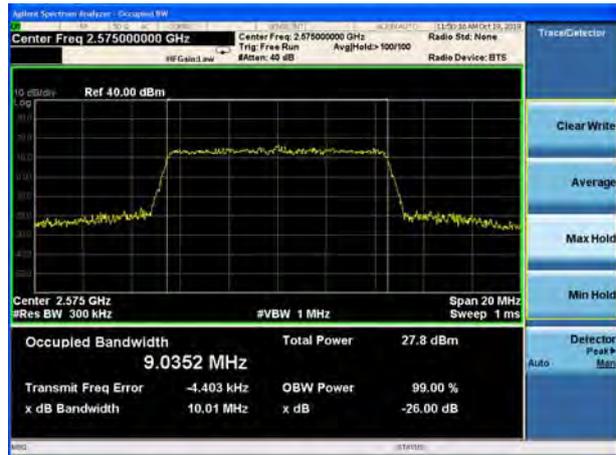




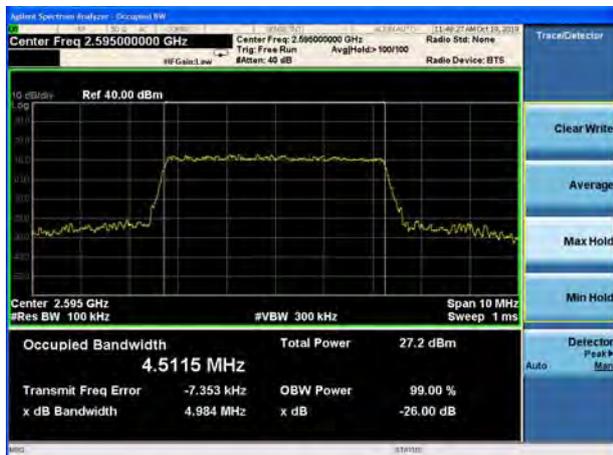
LTE Band 38 16QAM 5MHz CH-Low



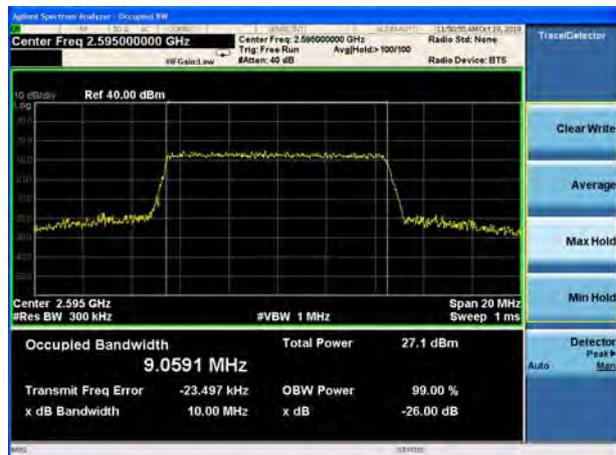
LTE Band 38 16QAM 10MHz CH-Low



LTE Band 38 16QAM 5MHz CH-Middle



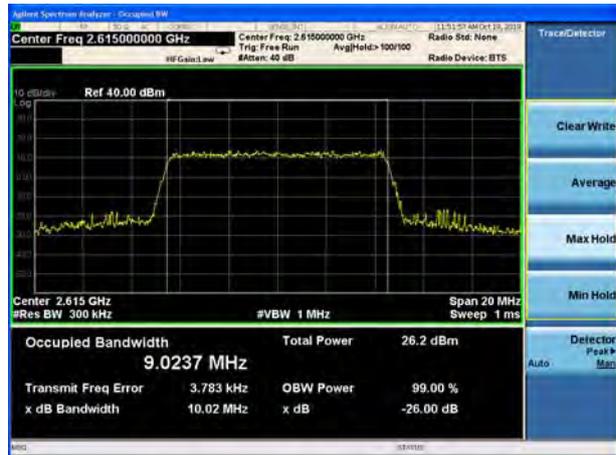
LTE Band 38 16QAM 10MHz CH-Middle

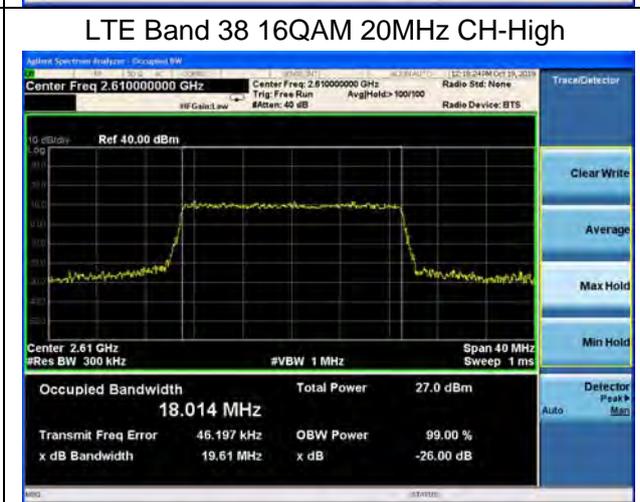
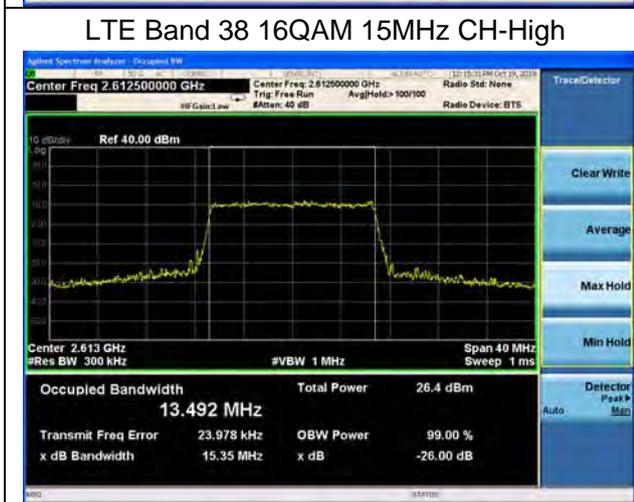
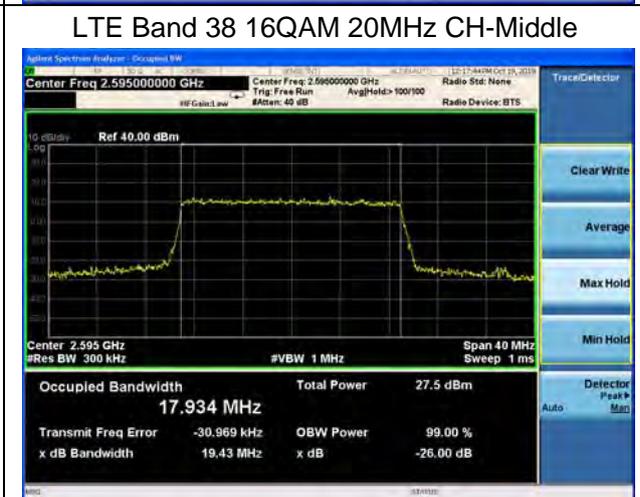
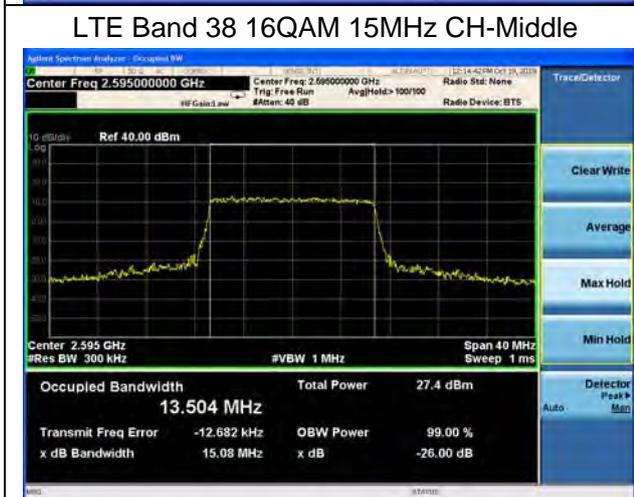
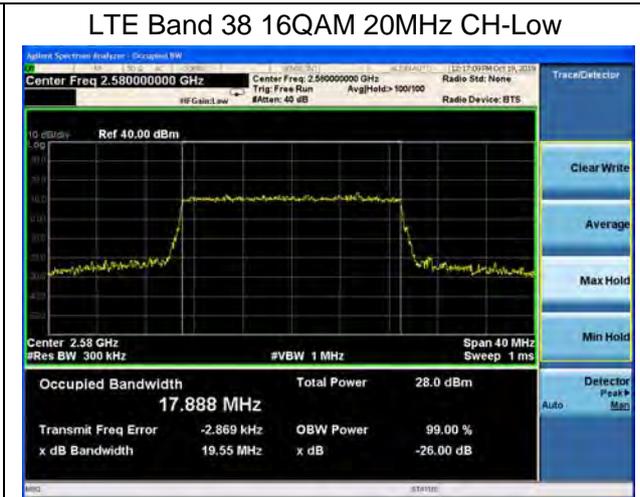
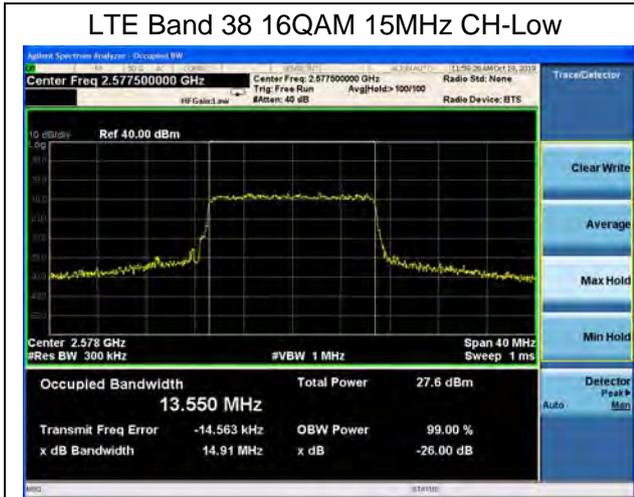


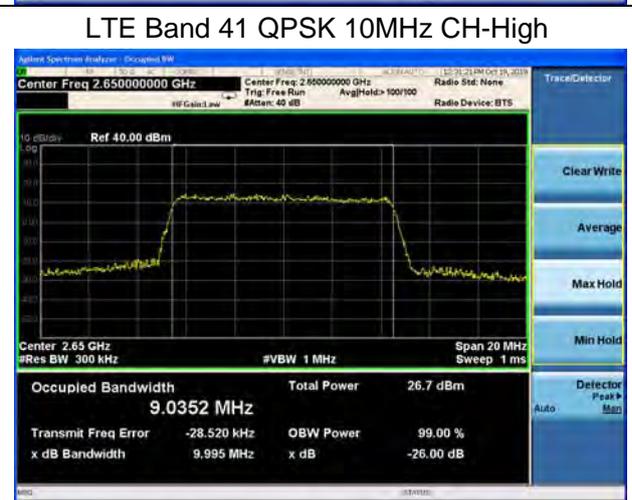
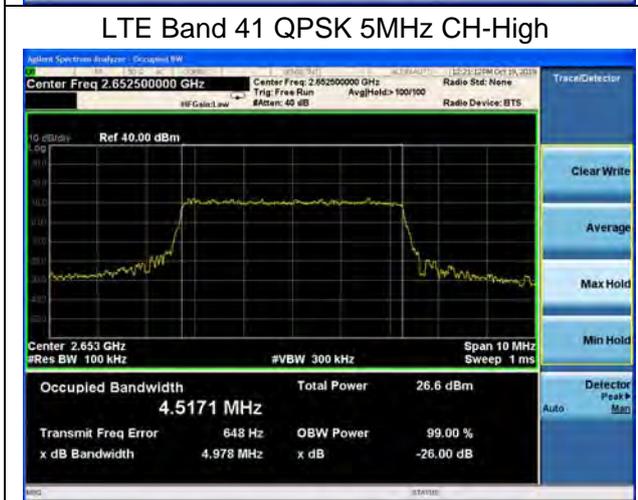
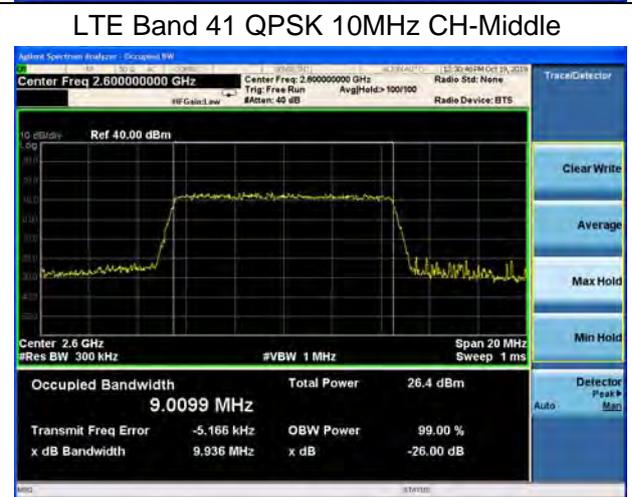
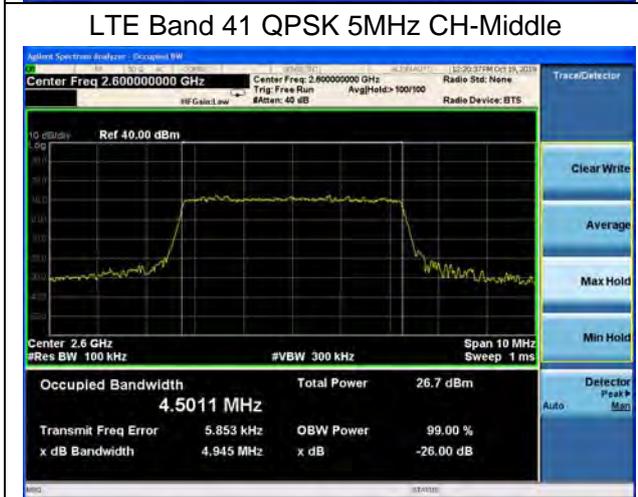
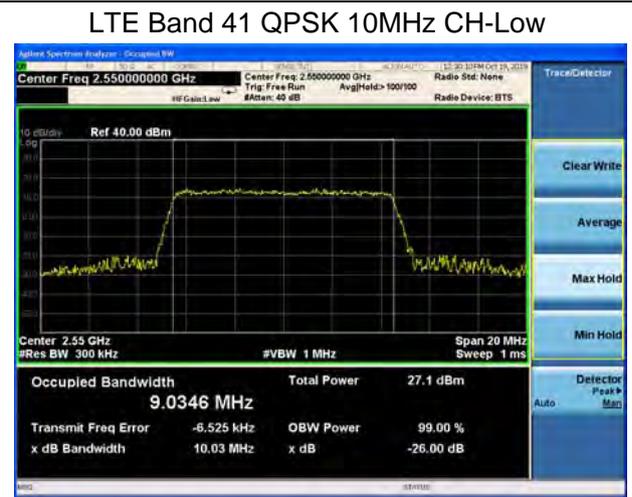
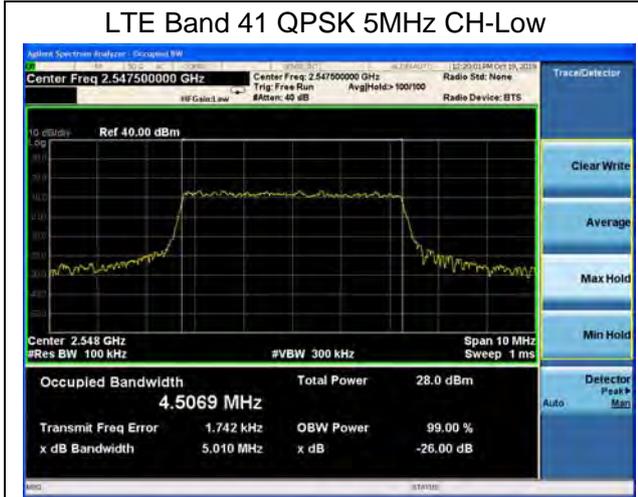
LTE Band 38 16QAM 5MHz CH-High



LTE Band 38 16QAM 10MHz CH-High

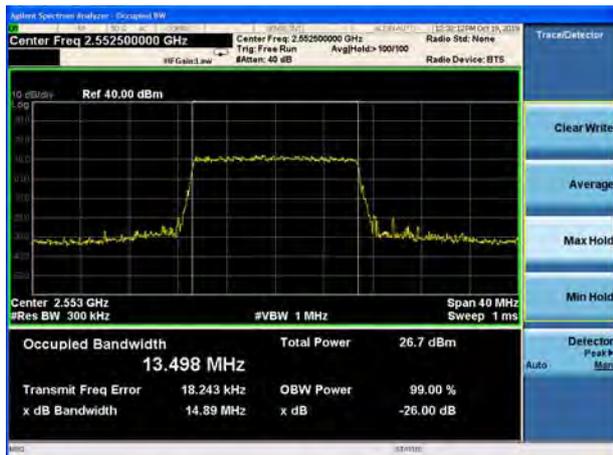




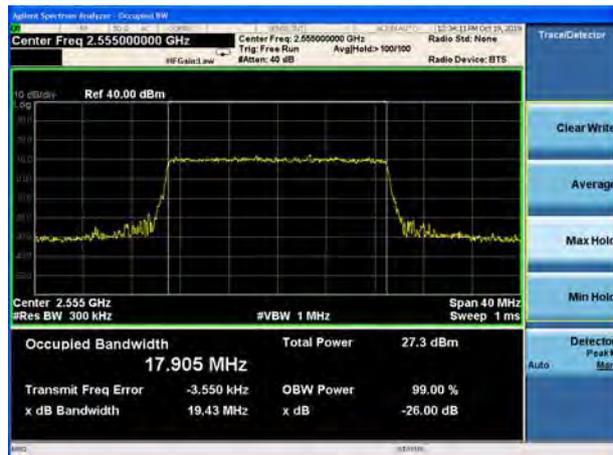




LTE Band 41 QPSK 15MHz CH-Low



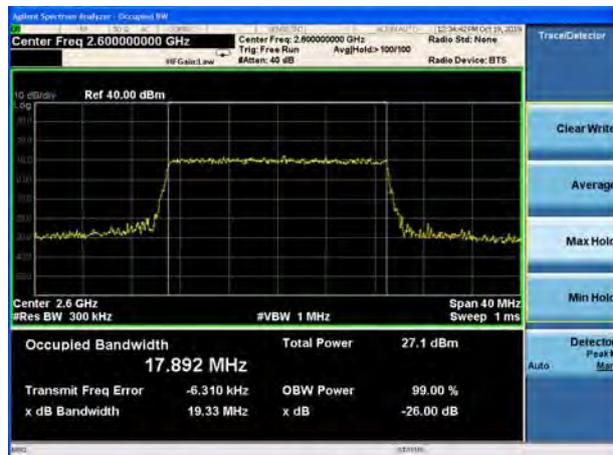
LTE Band 41 QPSK 20MHz CH-Low



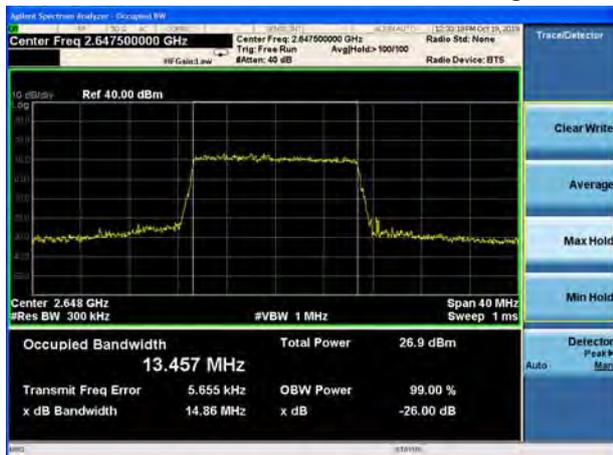
LTE Band 41 QPSK 15MHz CH-Middle



LTE Band 41 QPSK 20MHz CH-Middle

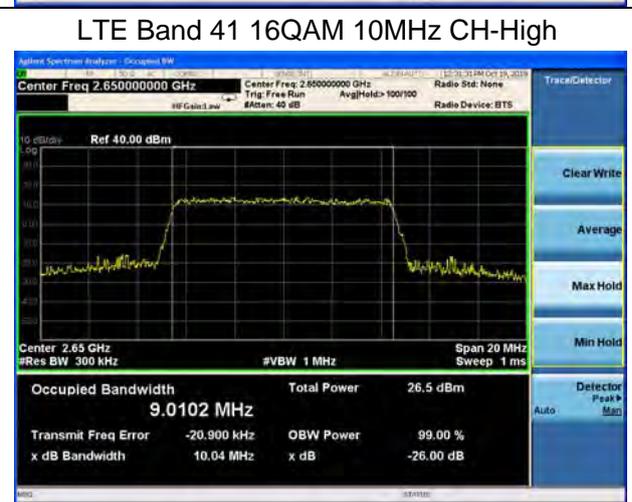
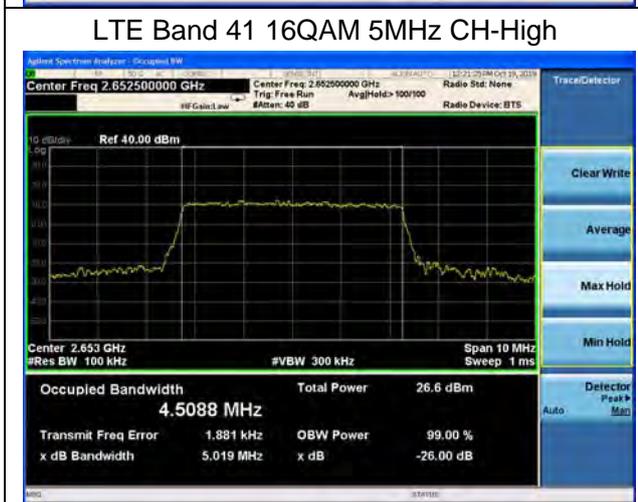
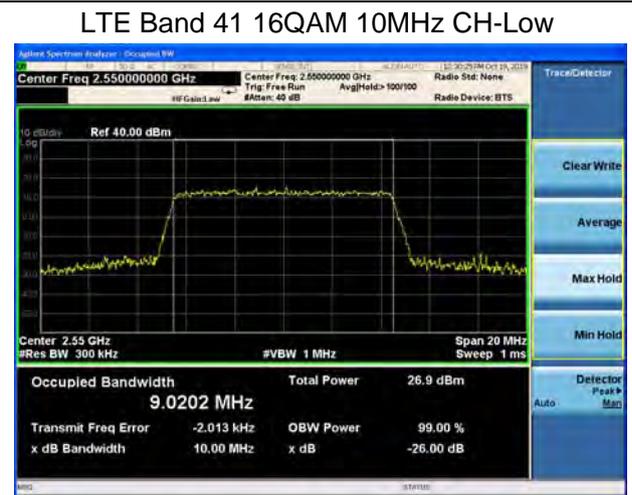
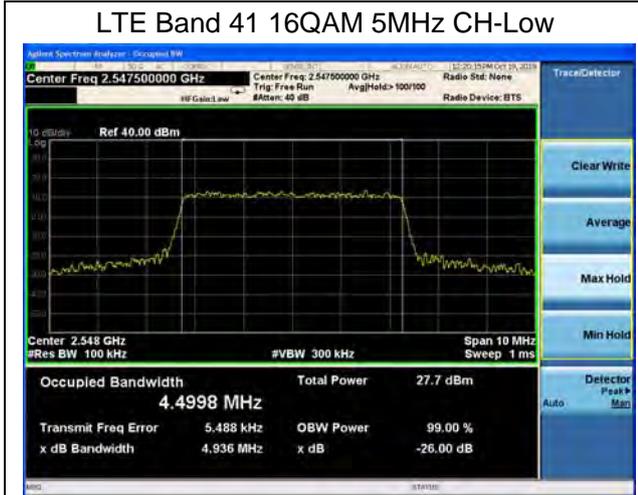


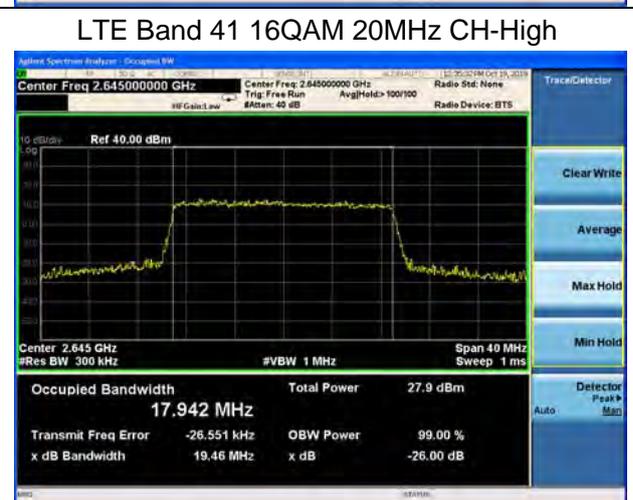
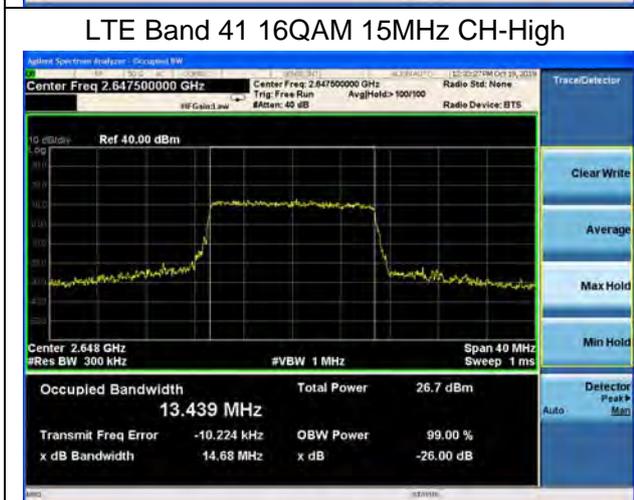
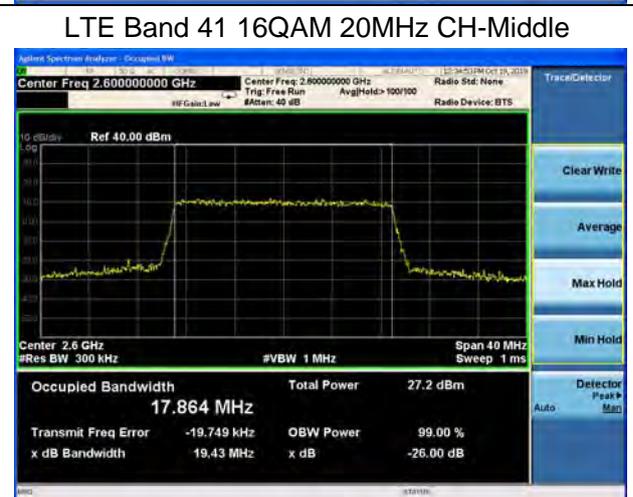
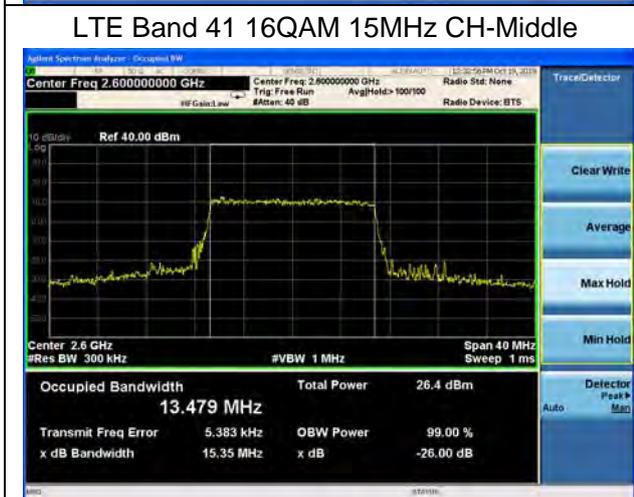
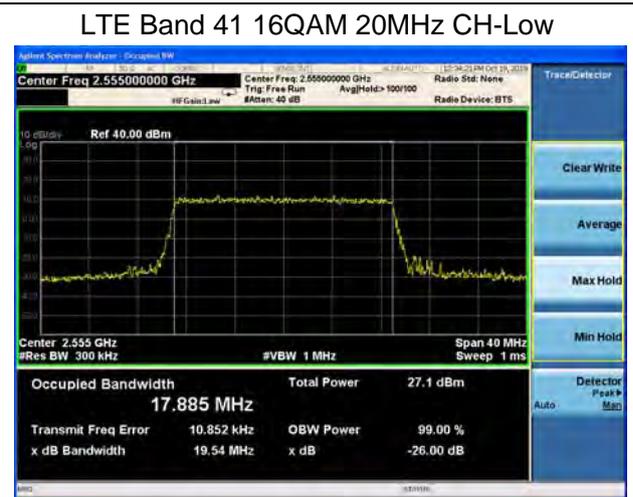
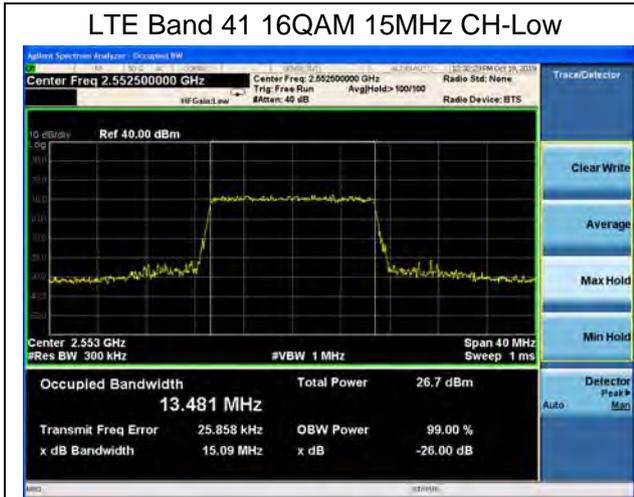
LTE Band 41 QPSK 15MHz CH-High



LTE Band 41 QPSK 20MHz CH-High







5.3 Band Edge Compliance

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 D01 v03r01 Section 6.0

The EUT was connected to spectrum analyzer and system simulator via a power divider.

The band edges of low and high channels for the highest RF powers were measured.

For LTE Band 41 Set RBW \geq 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.

RBW is set to 51 kHz, VBW is set to 160 kHz for WCDMA Band IV.

RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4 (1.4MHz).

RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4 (3MHz).

RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4 (5MHz).

RBW is set to 50 kHz, VBW is set to 200 kHz for LTE Band 7/38/41 (5MHz).

RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 4/7/38/41 (10MHz).

RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4 (15MHz).

RBW is set to 200 kHz, VBW is set to 1 MHz for LTE Band 7/38/41 (15MHz).

RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4 (20MHz)

RBW is set to 200 kHz, VBW is set to 1 MHz for LTE Band 7/38/41 (20MHz).

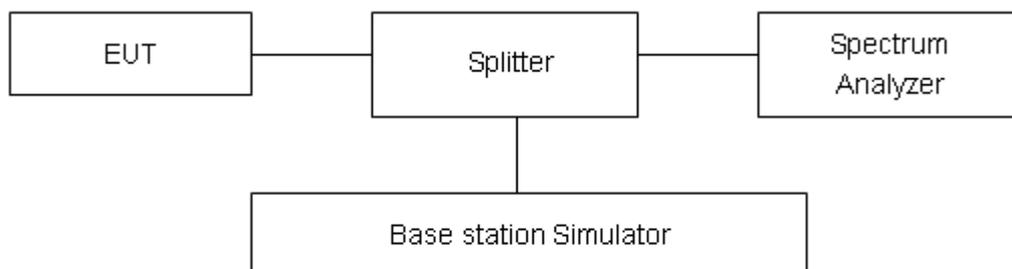
on spectrum analyzer.

Set spectrum analyzer with RMS detector.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB”

Rule Part 27.53(m) (4) specifies that “for BRS and EBS stations. 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)(4) 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.

Example:

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

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

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

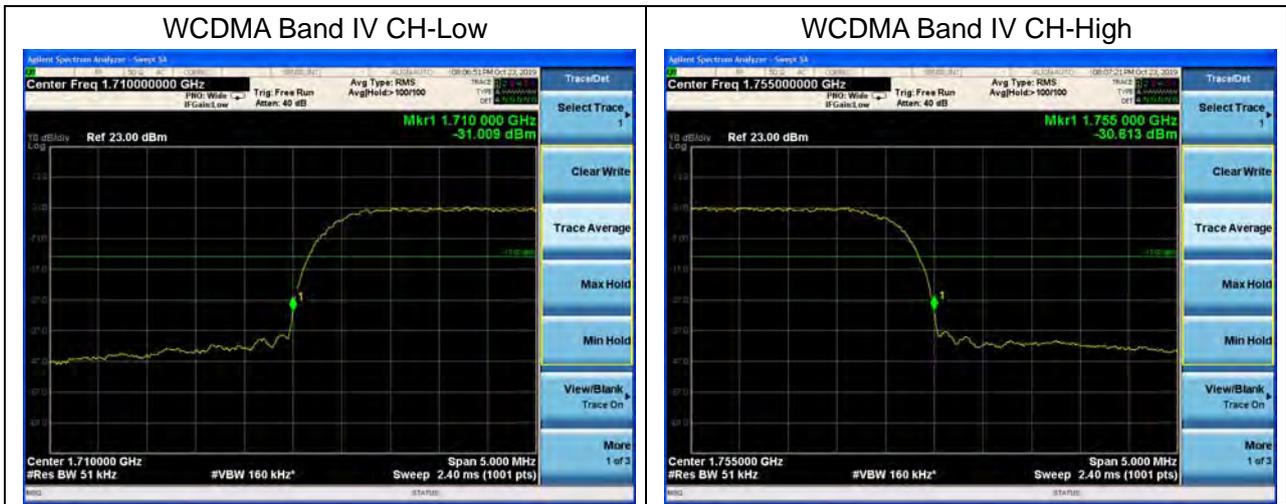
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.



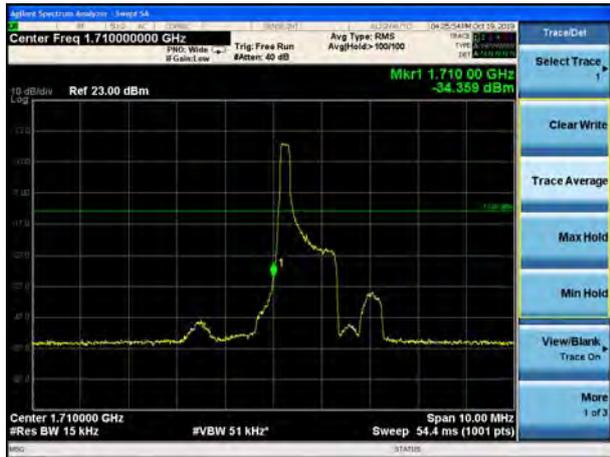
Test Result

All the test traces in the plots shows the test results clearly.

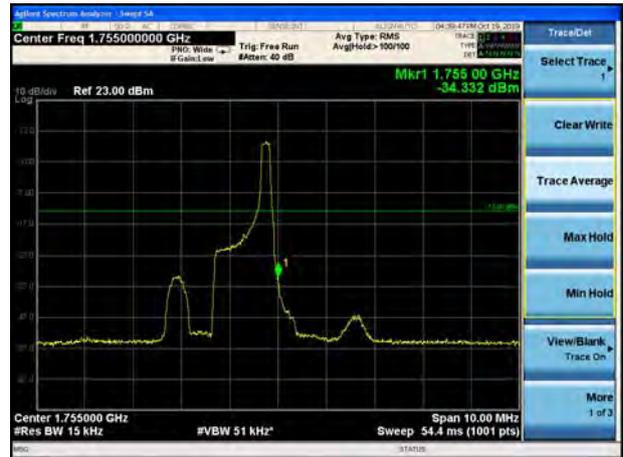




LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB



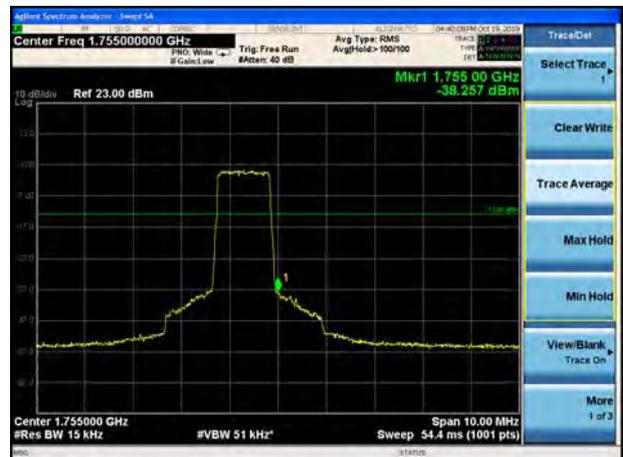
LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB



LTE Band 4 QPSK 1.4MHz CH-High, 100%RB



LTE Band 4 QPSK 3MHz CH-Low, 1 RB



LTE Band 4 QPSK 3MHz CH-High, 1 RB





LTE Band 4 QPSK 3MHz CH-Low, 100%RB



LTE Band 4 QPSK 3MHz CH-High, 100%RB



LTE Band 4 QPSK 5MHz CH-Low, 1 RB



LTE Band 4 QPSK 5MHz CH-High, 1 RB



LTE Band 4 QPSK 5MHz CH-Low, 100%RB

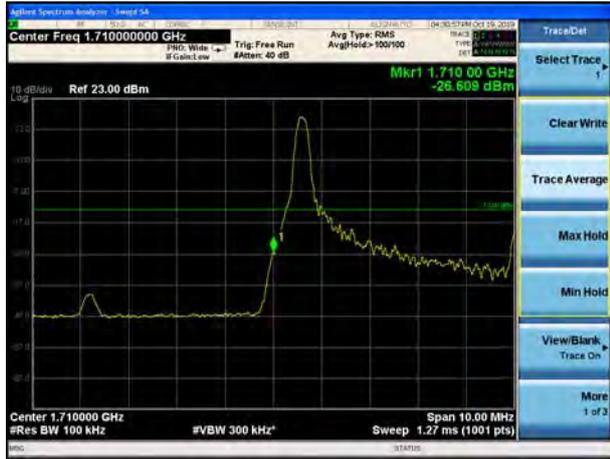


LTE Band 4 QPSK 5MHz CH-High, 100%RB

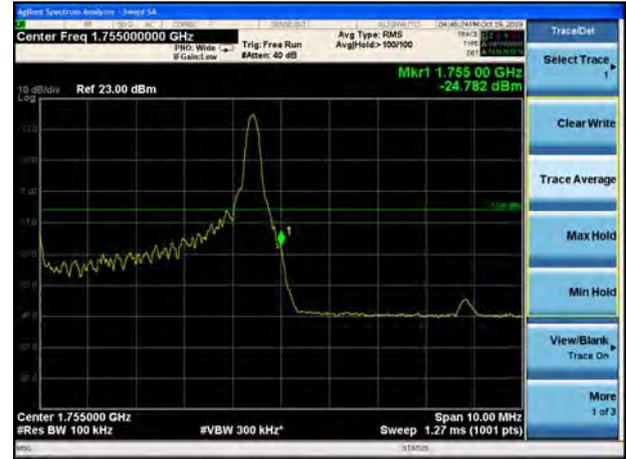




LTE Band 4 QPSK 10MHz CH-Low, 1 RB



LTE Band 4 QPSK 10MHz CH-High, 1 RB



LTE Band 4 QPSK 10MHz CH-Low, 100%RB



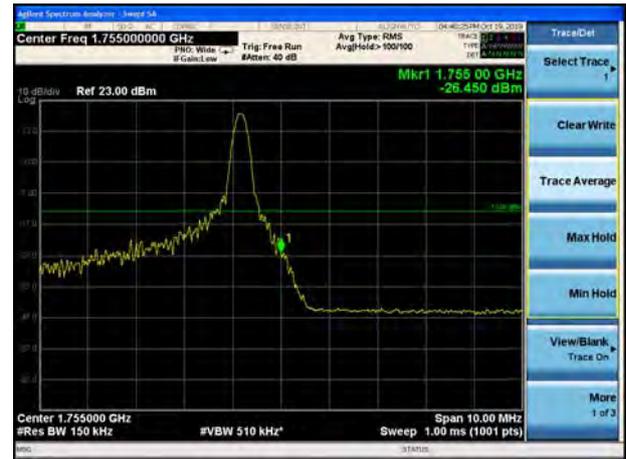
LTE Band 4 QPSK 10MHz CH-High, 100%RB



LTE Band 4 QPSK 15MHz CH-Low, 1 RB



LTE Band 4 QPSK 15MHz CH-High, 1 RB





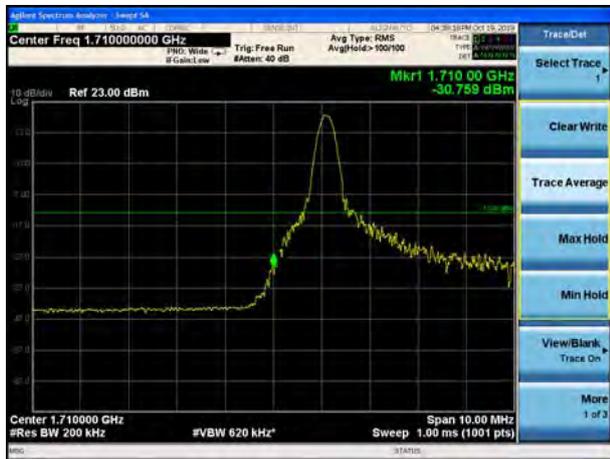
LTE Band 4 QPSK 15MHz CH-Low, 100%RB



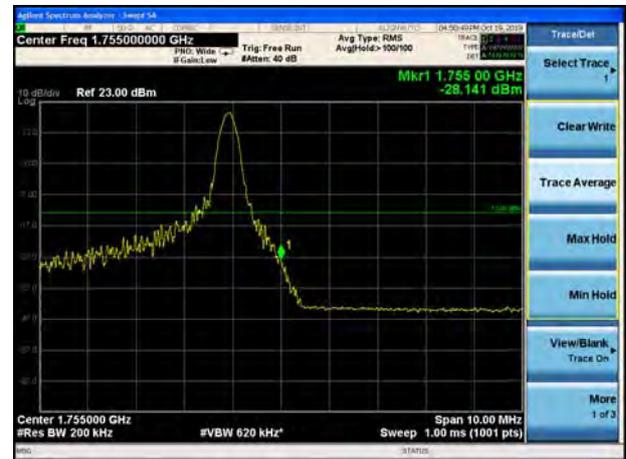
LTE Band 4 QPSK 15MHz CH-High, 100%RB



LTE Band 4 QPSK 20MHz CH-Low, 1 RB



LTE Band 4 QPSK 20MHz CH-High, 1 RB



LTE Band 4 QPSK 20MHz CH-Low, 100%RB

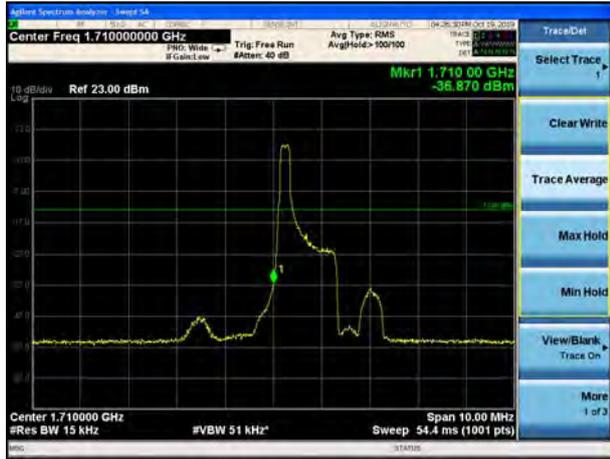


LTE Band 4 QPSK 20MHz CH-High, 100%RB

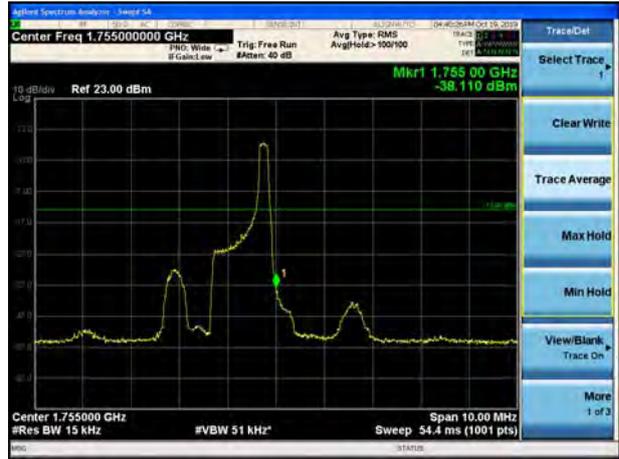




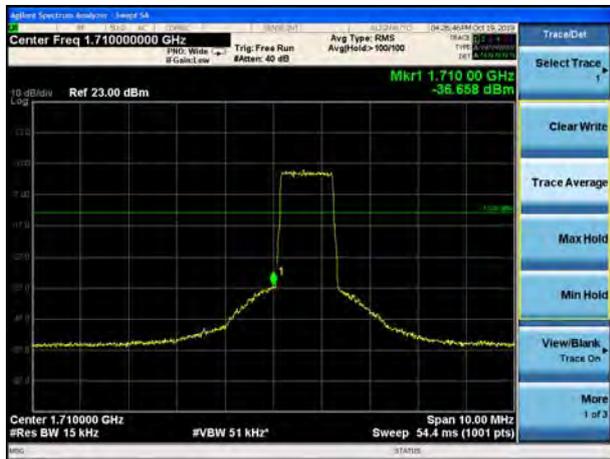
LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB



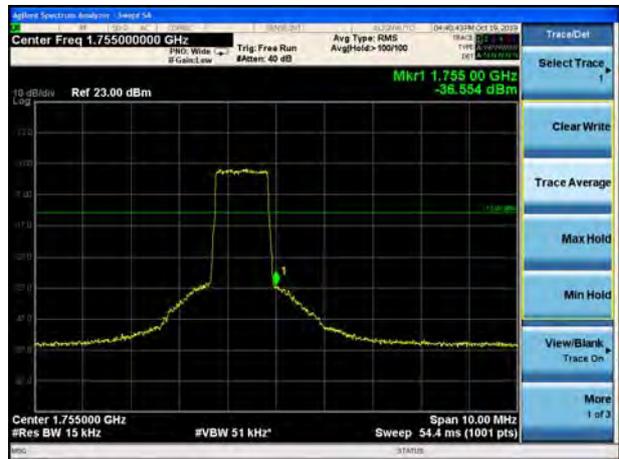
LTE Band 4 16QAM 1.4MHz CH-High, 1 RB



LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 4 16QAM 1.4MHz CH-High, 100%RB



LTE Band 4 16QAM 3MHz CH-Low, 1 RB



LTE Band 4 16QAM 3MHz CH-High, 1 RB

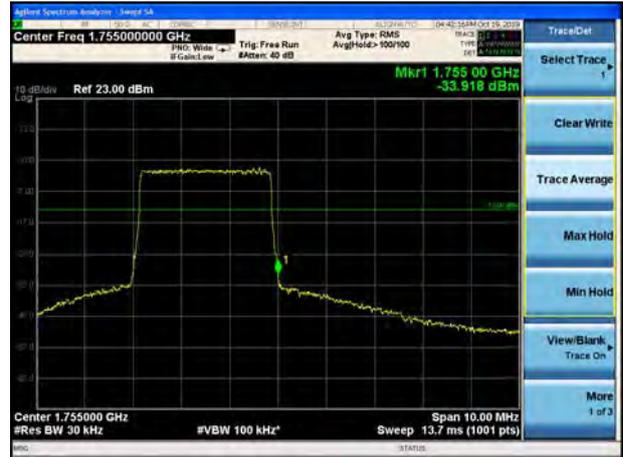




LTE Band 4 16QAM 3MHz CH-Low, 100%RB



LTE Band 4 16QAM 3MHz CH-High, 100%RB



LTE Band 4 16QAM 5MHz CH-Low, 1 RB



LTE Band 4 16QAM 5MHz CH-High, 1 RB



LTE Band 4 16QAM 5MHz CH-Low, 100%RB

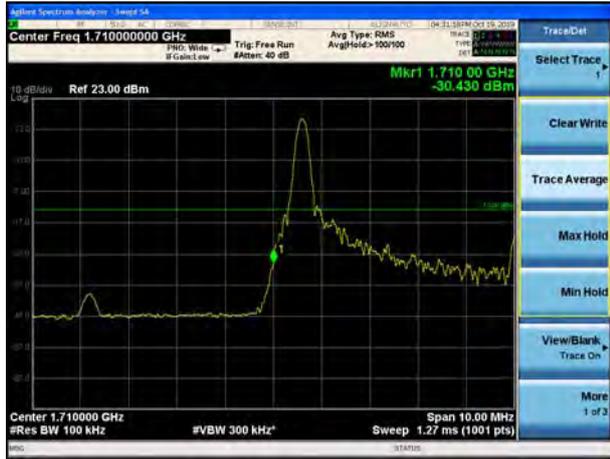


LTE Band 4 16QAM 5MHz CH-High, 100%RB

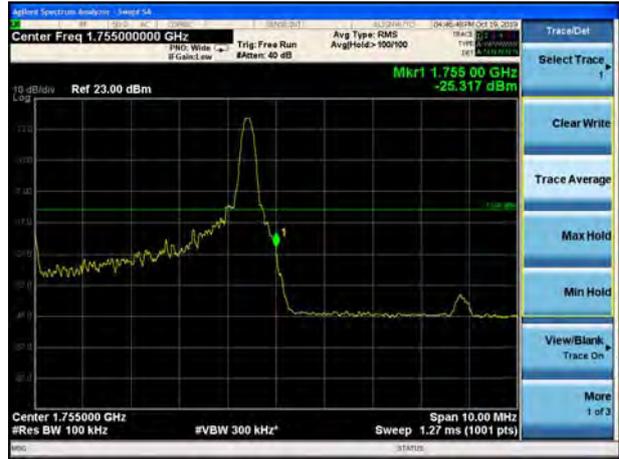




LTE Band 4 16QAM 10MHz CH-Low, 1 RB



LTE Band 4 16QAM 10MHz CH-High, 1 RB



LTE Band 4 16QAM 10MHz CH-Low, 100%RB



LTE Band 4 16QAM 10MHz CH-High, 100%RB



LTE Band 4 16QAM 15MHz CH-Low, 1 RB



LTE Band 4 16QAM 15MHz CH-High, 1 RB





LTE Band 4 16QAM 15MHz CH-Low, 100%RB



LTE Band 4 16QAM 15MHz CH-High, 100%RB



LTE Band 4 16QAM 20MHz CH-Low, 1 RB



LTE Band 4 16QAM 20MHz CH-High, 1 RB



LTE Band 4 16QAM 20MHz CH-Low, 100%RB

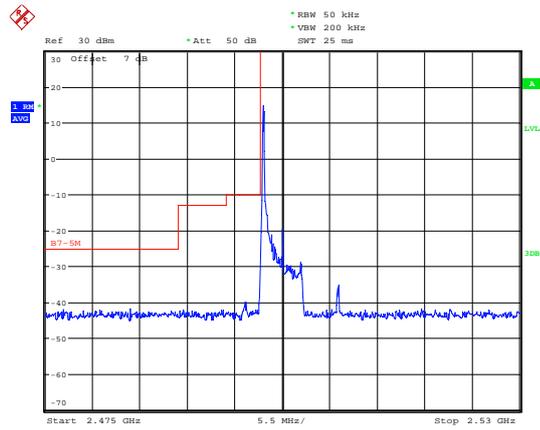


LTE Band 4 16QAM 20MHz CH-High, 100%RB

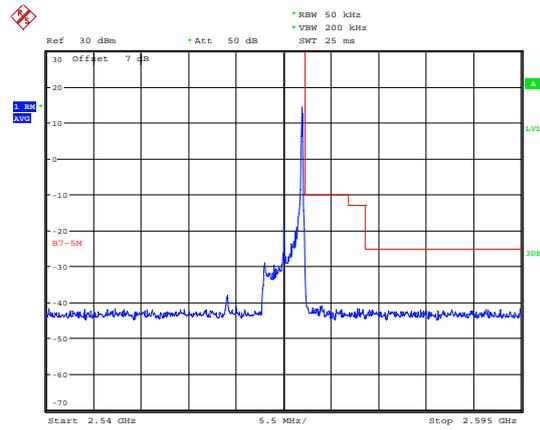




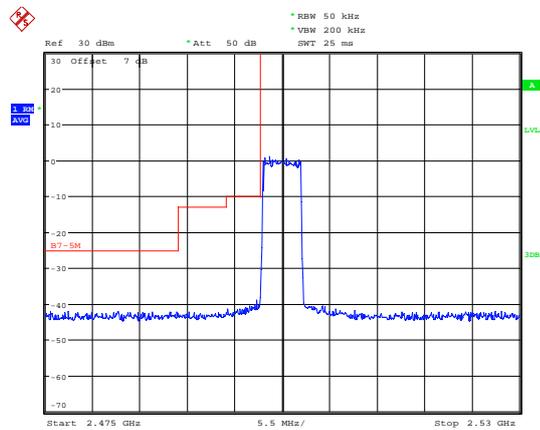
LTE Band 7 QPSK 5MHz CH-Low, 1 RB



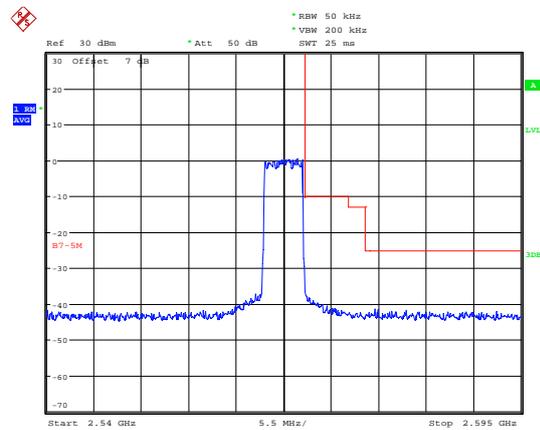
LTE Band 7 QPSK 5MHz CH-High, 1 RB



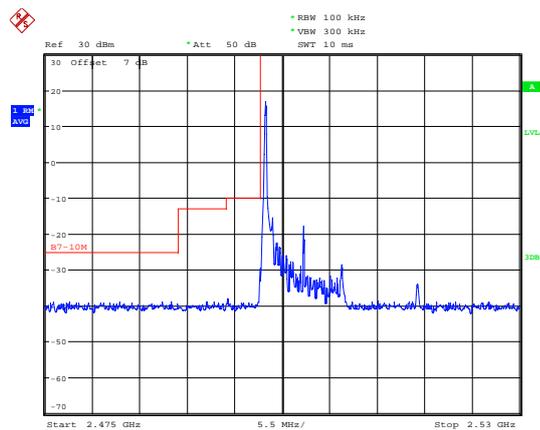
LTE Band 7 QPSK 5MHz CH-Low, 100%RB



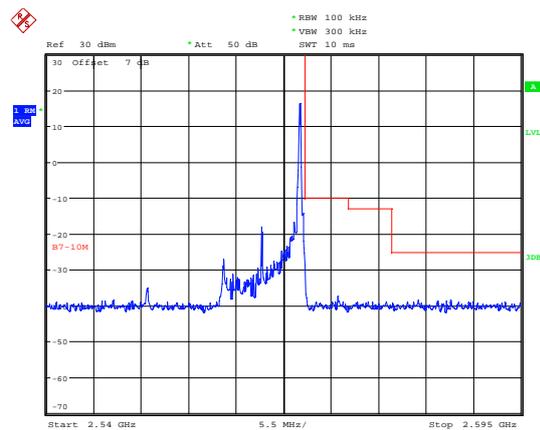
LTE Band 7 QPSK 5MHz CH-High, 100%RB



LTE Band 7 QPSK 10MHz CH-Low, 1 RB

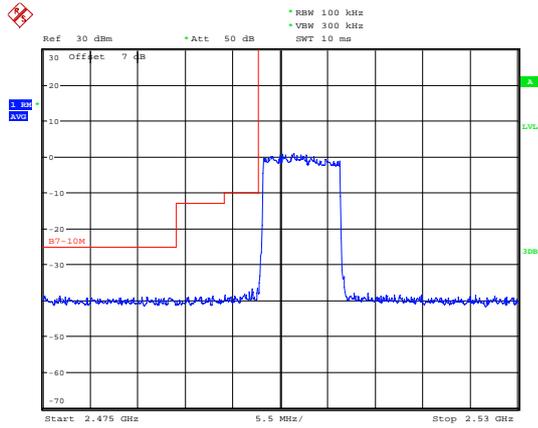


LTE Band 7 QPSK 10MHz CH-High, 1 RB



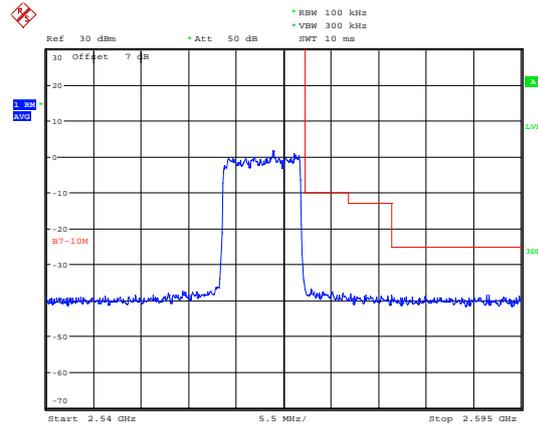


LTE Band 7 QPSK 10MHz CH-Low, 100%RB



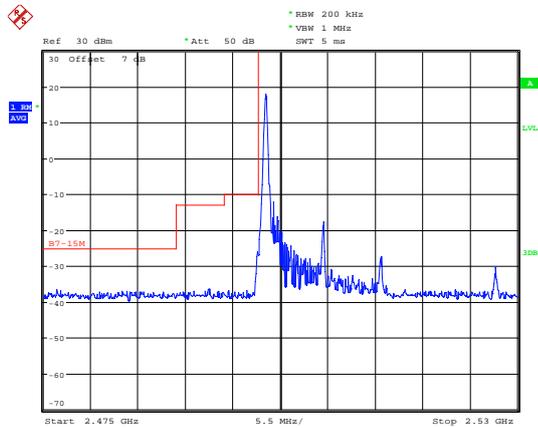
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LTE Band 7 QPSK 10MHz CH-High, 100%RB



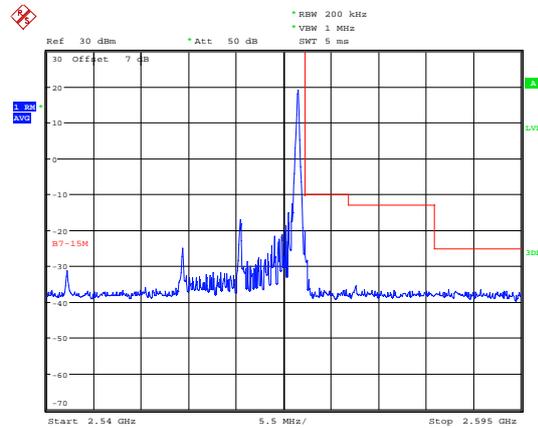
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LTE Band 7 QPSK 15MHz CH-Low, 1 RB



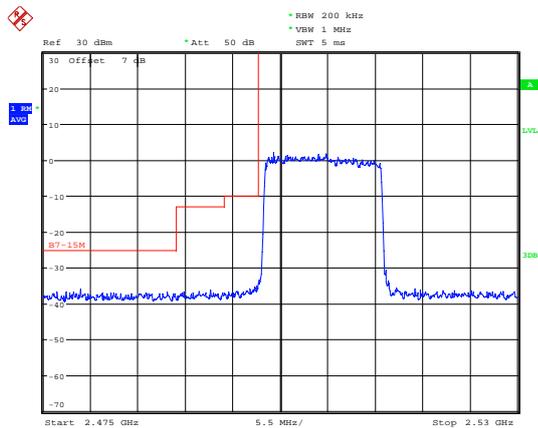
Date: 21.OCT.2019 12:33:06

LTE Band 7 QPSK 15MHz CH-High, 1 RB



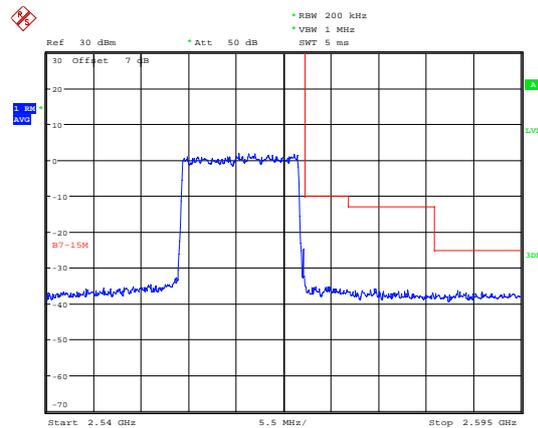
Date: 21.OCT.2019 12:44:52

LTE Band 7 QPSK 15MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:33:17

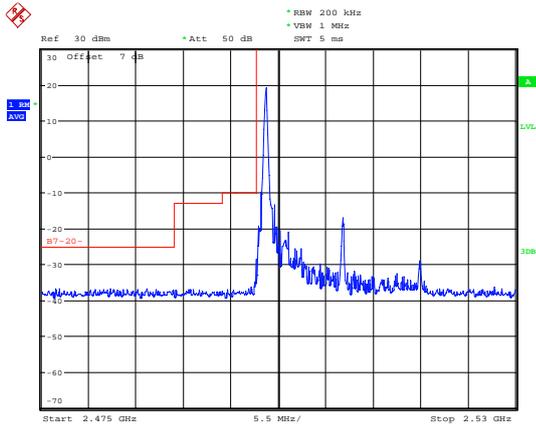
LTE Band 7 QPSK 15MHz CH-High, 100%RB



Date: 21.OCT.2019 12:45:03

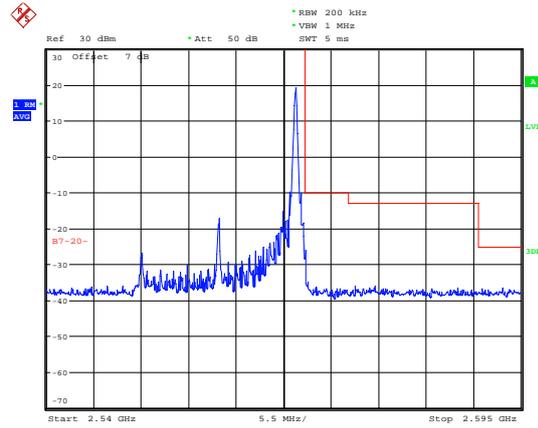


LTE Band 7 QPSK 20MHz CH-Low, 1 RB



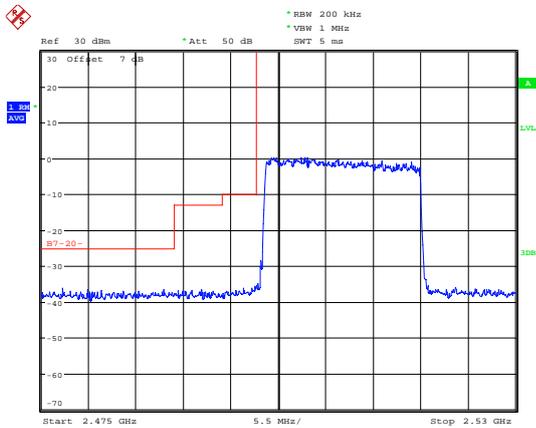
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LTE Band 7 QPSK 20MHz CH-High, 1 RB



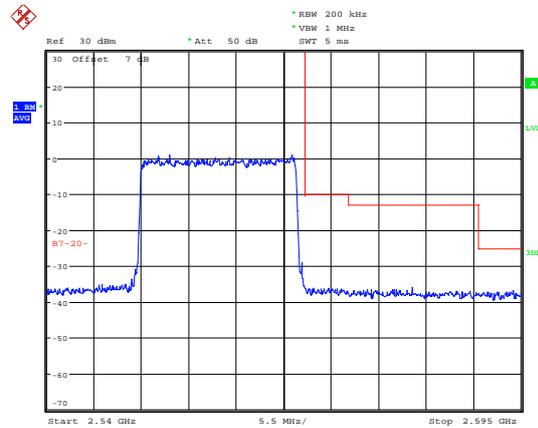
Date: 21.OCT.2019 12:46:19

LTE Band 7 QPSK 20MHz CH-Low, 100%RB



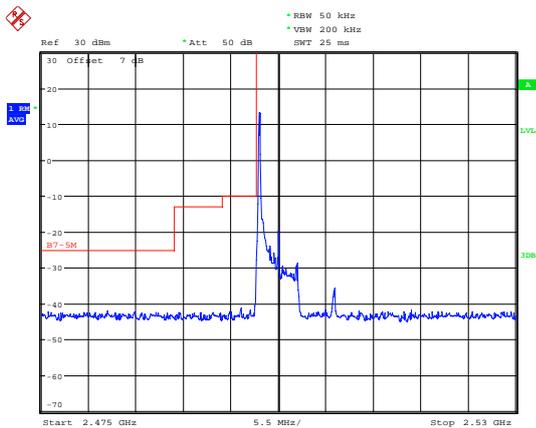
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LTE Band 7 QPSK 20MHz CH-High, 100%RB



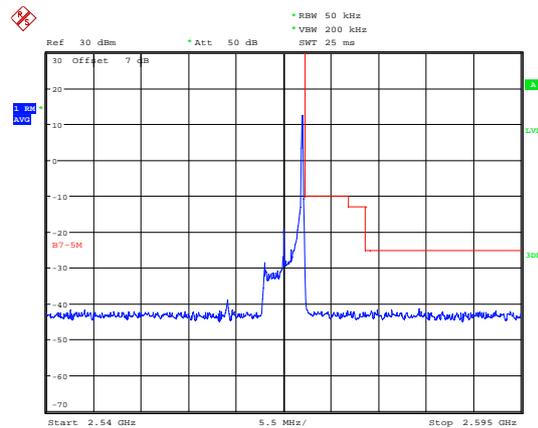
Date: 21.OCT.2019 12:46:31

LTE Band 7 16QAM 5MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:29:20

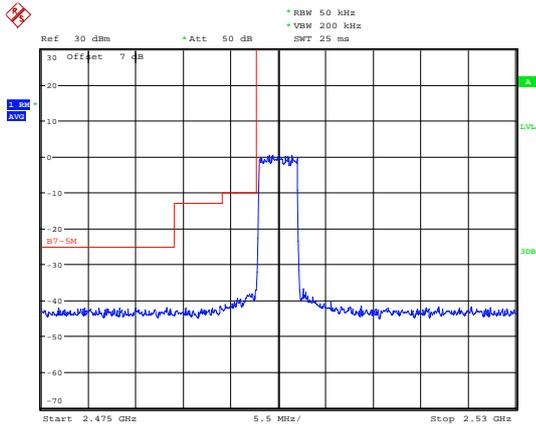
LTE Band 7 16QAM 5MHz CH-High, 1 RB



Date: 21.OCT.2019 12:42:04

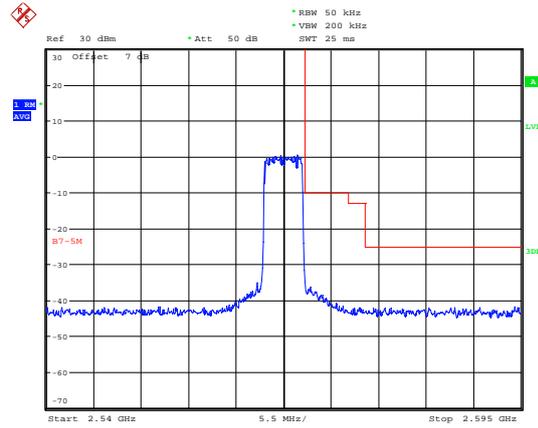


LTE Band 7 16QAM 5MHz CH-Low, 100%RB



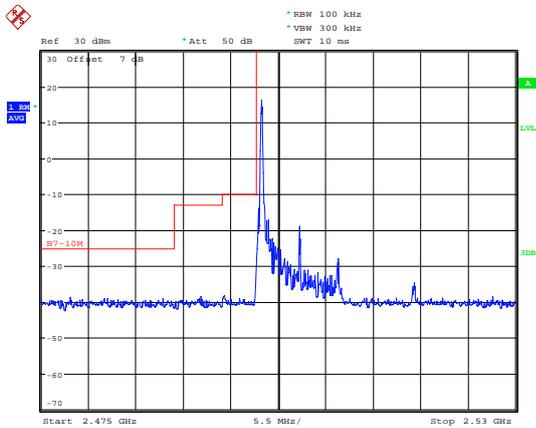
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LTE Band 7 16QAM 5MHz CH-High, 100%RB



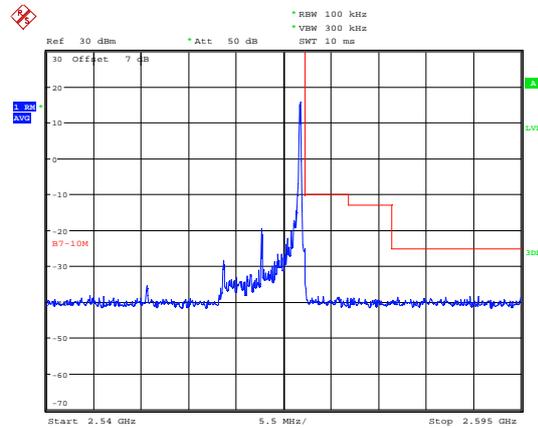
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LTE Band 7 16QAM 10MHz CH-Low, 1 RB



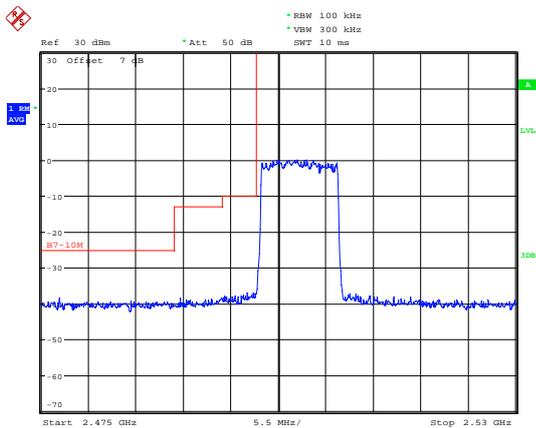
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LTE Band 7 16QAM 10MHz CH-High, 1 RB



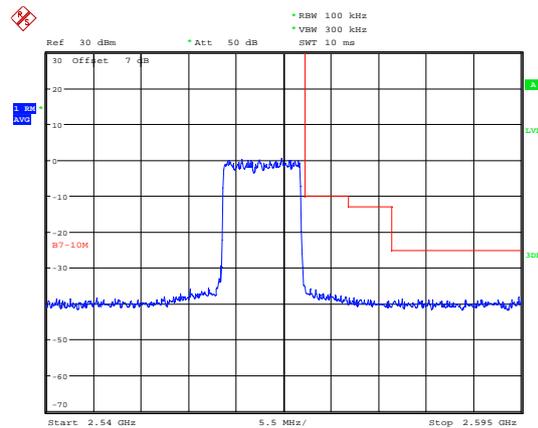
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LTE Band 7 16QAM 10MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:31:18

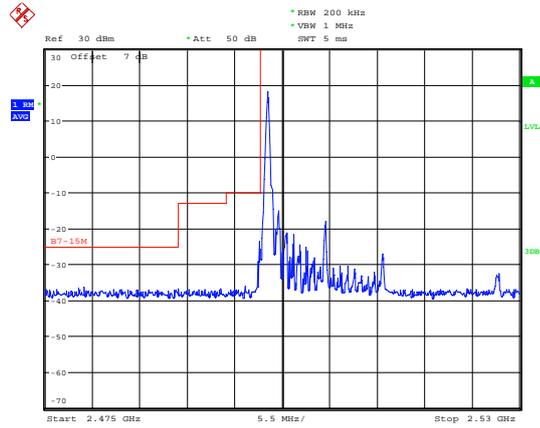
LTE Band 7 16QAM 10MHz CH-High, 100%RB



Date: 21.OCT.2019 12:43:59

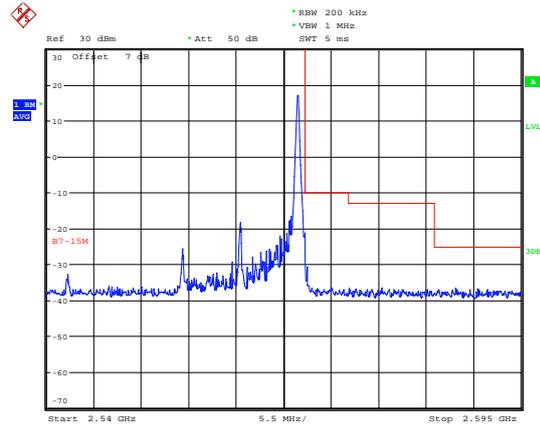


LTE Band 7 16QAM 15MHz CH-Low, 1 RB



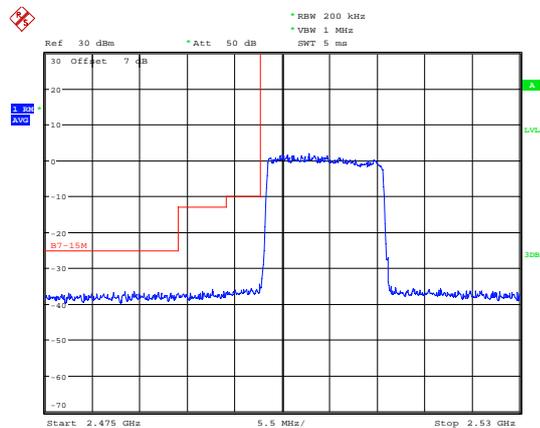
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LTE Band 7 16QAM 15MHz CH-High, 1 RB



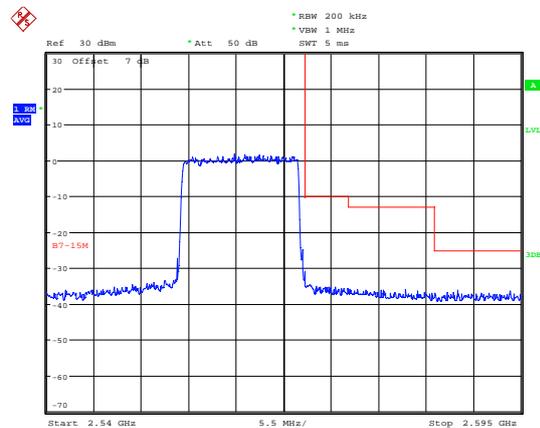
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LTE Band 7 16QAM 15MHz CH-Low, 100%RB



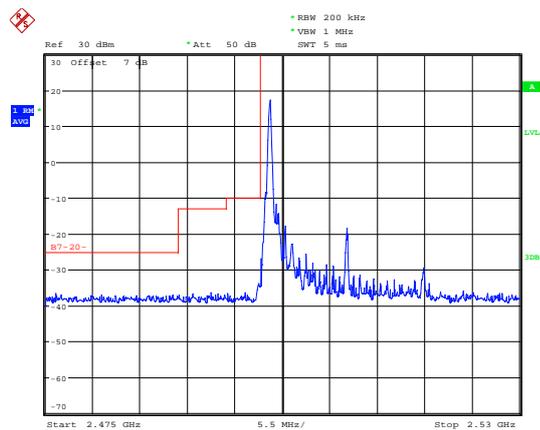
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LTE Band 7 16QAM 15MHz CH-High, 100%RB



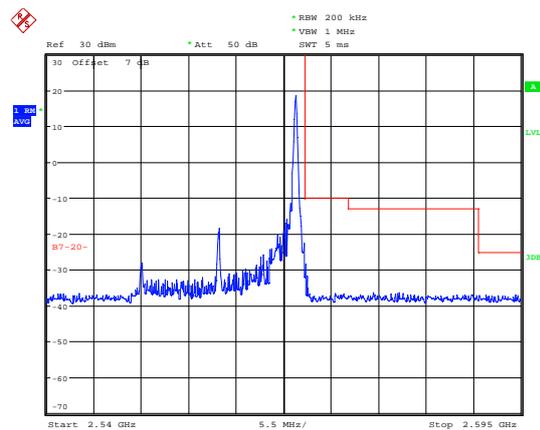
Date: 21.OCT.2019 12:45:34

LTE Band 7 16QAM 20MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:39:57

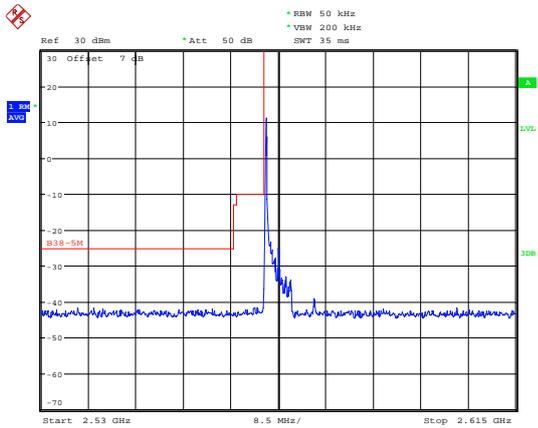
LTE Band 7 16QAM 20MHz CH-High, 1 RB



Date: 21.OCT.2019 12:46:43

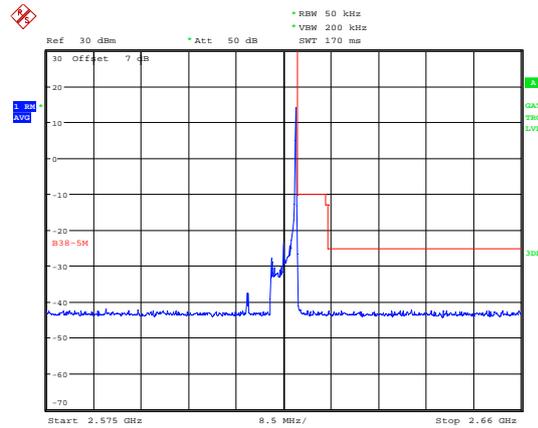


LTE Band 38 QPSK 5MHz CH-Low, 1 RB



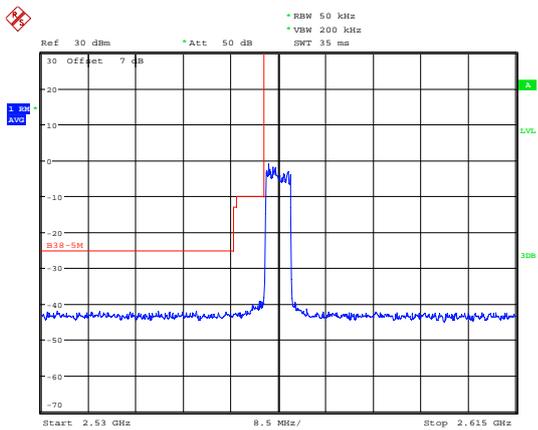
Date: 21.OCT.2019 12:49:03

LTE Band 38 QPSK 5MHz CH-High, 1 RB



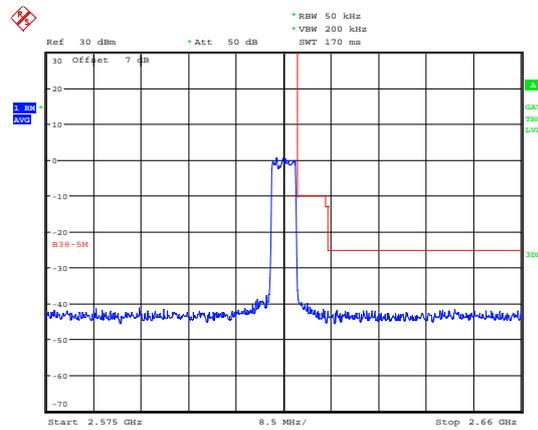
Date: 21.OCT.2019 13:04:13

LTE Band 38 QPSK 5MHz CH-Low, 100%RB



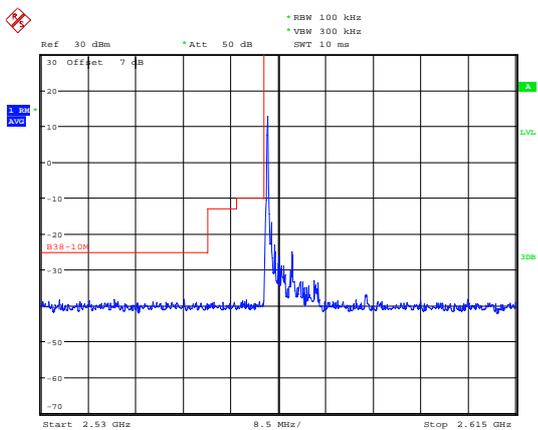
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LTE Band 38 QPSK 5MHz CH-High, 100%RB



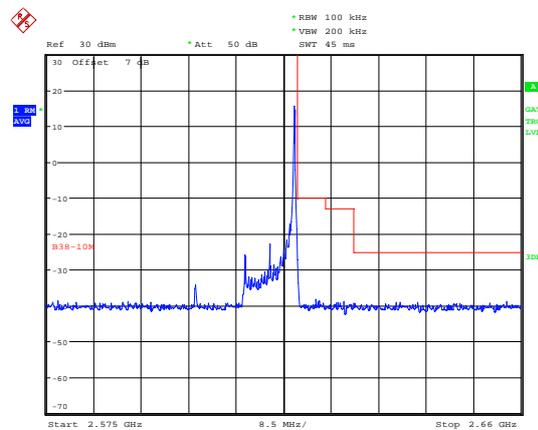
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LTE Band 38 QPSK 10MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:52:52

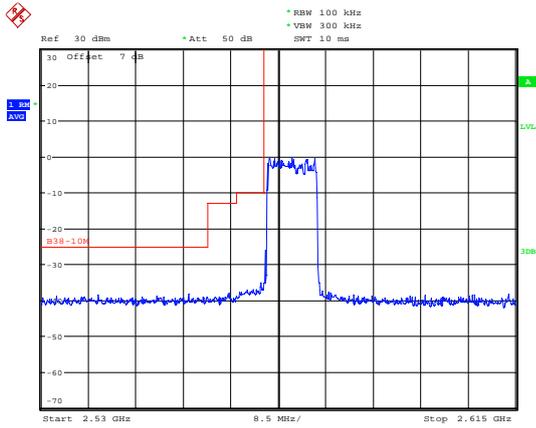
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Date: 21.OCT.2019 13:06:10

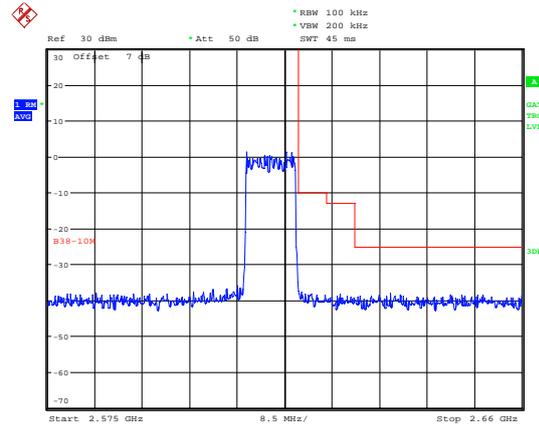


LTE Band 38 QPSK 10MHz CH-Low, 100%RB



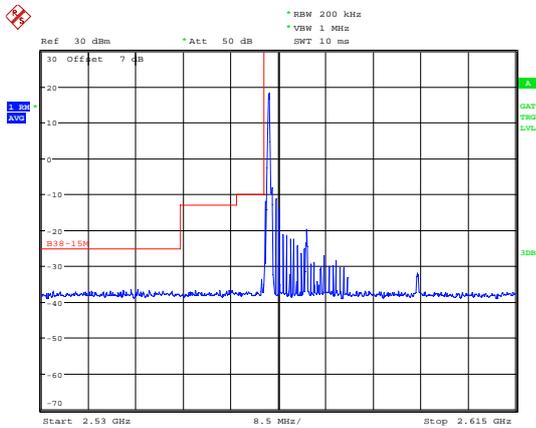
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LTE Band 38 QPSK 10MHz CH-High, 100%RB



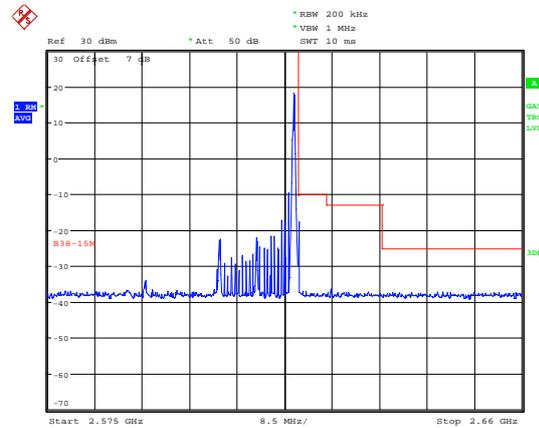
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LTE Band 38 QPSK 15MHz CH-Low, 1 RB



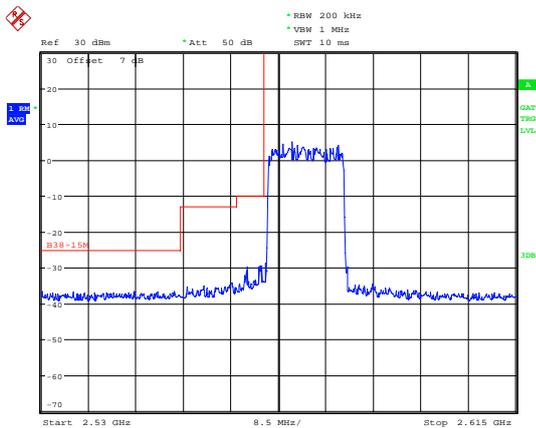
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LTE Band 38 QPSK 15MHz CH-High, 1 RB



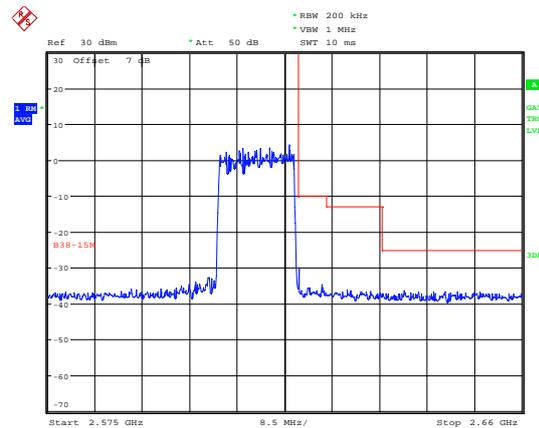
Date: 21.OCT.2019 13:08:00

LTE Band 38 QPSK 15MHz CH-Low, 100%RB



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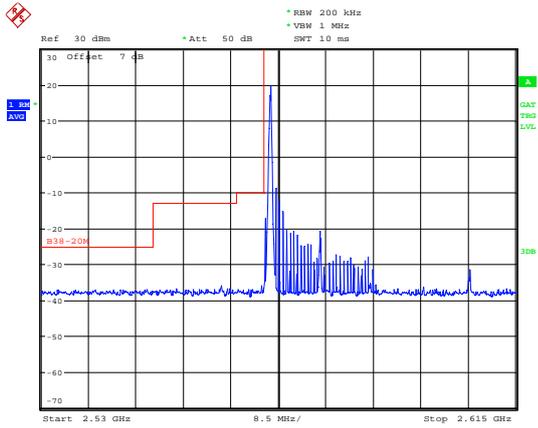
LTE Band 38 QPSK 15MHz CH-High, 100%RB



Date: 21.OCT.2019 13:08:10

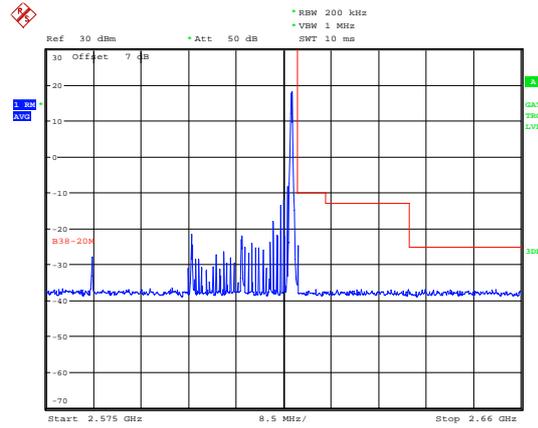


LTE Band 38 QPSK 20MHz CH-Low, 1 RB



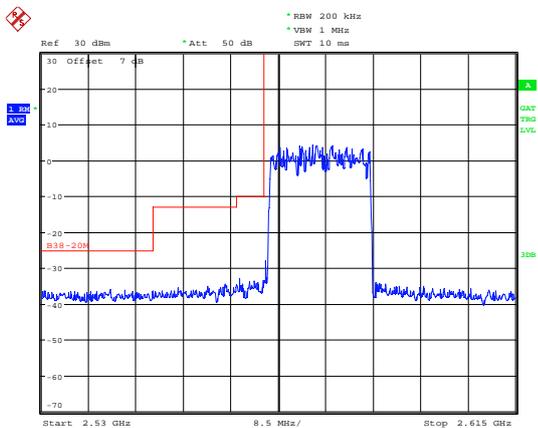
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LTE Band 38 QPSK 20MHz CH-High, 1 RB



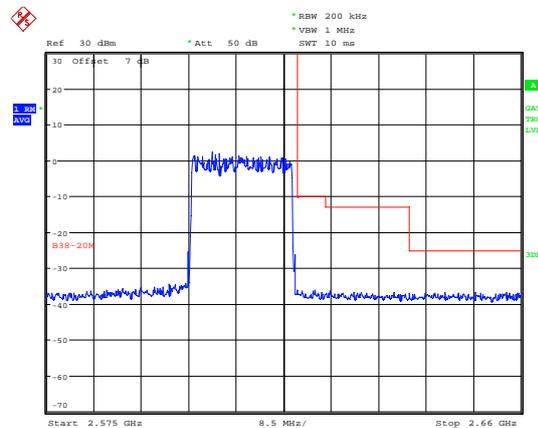
Date: 21.OCT.2019 13:09:18

LTE Band 38 QPSK 20MHz CH-Low, 100%RB



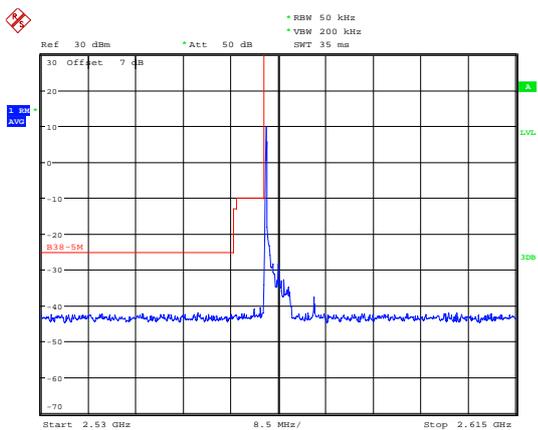
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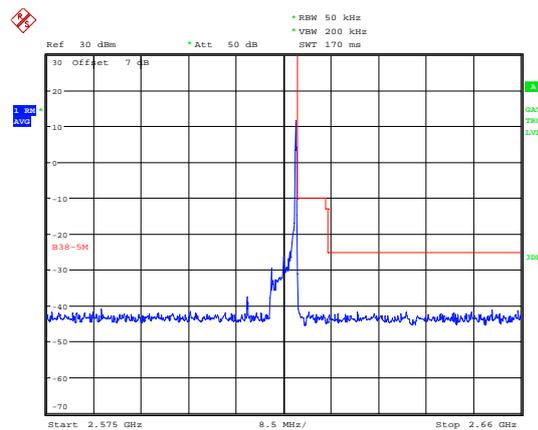
Date: 21.OCT.2019 13:09:33

LTE Band 38 16QAM 5MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:49:54

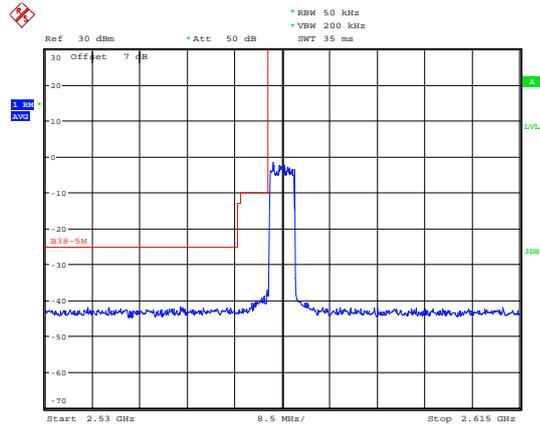
LTE Band 38 16QAM 5MHz CH-High, 1 RB



Date: 21.OCT.2019 13:04:49

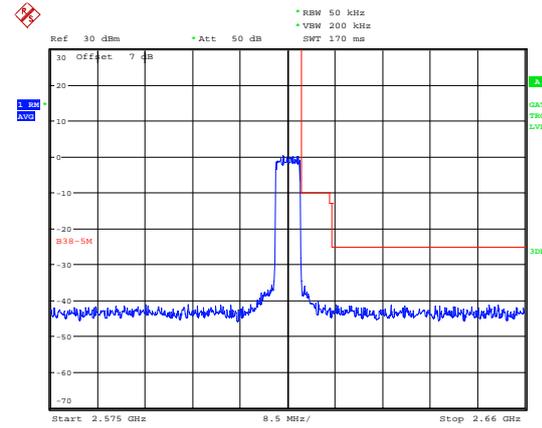


LTE Band 38 16QAM 5MHz CH-Low, 100%RB



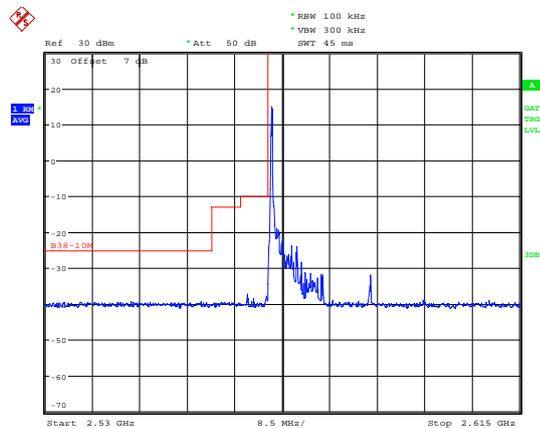
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LTE Band 38 16QAM 5MHz CH-High, 100%RB



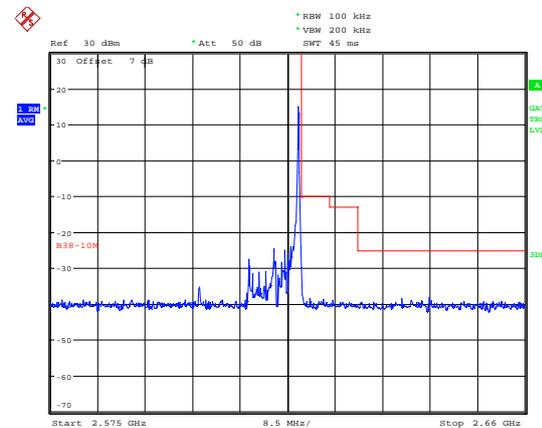
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LTE Band 38 16QAM 10MHz CH-Low, 1 RB



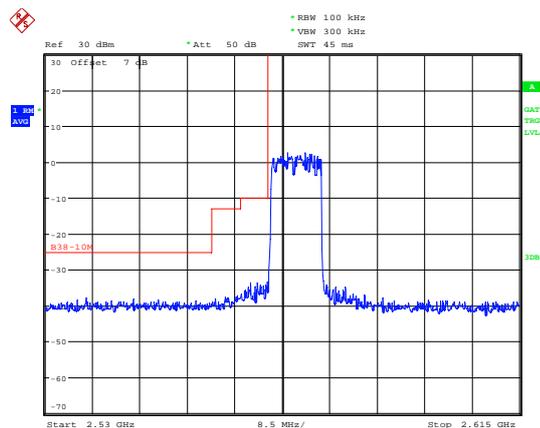
Date: 21.OCT.2019 12:55:13

LTE Band 38 16QAM 10MHz CH-High, 1 RB



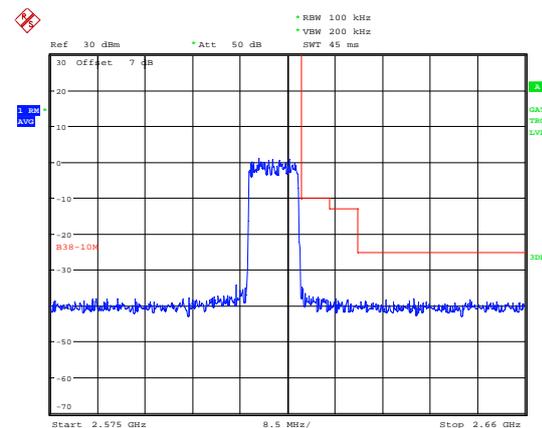
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LTE Band 38 16QAM 10MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:55:26

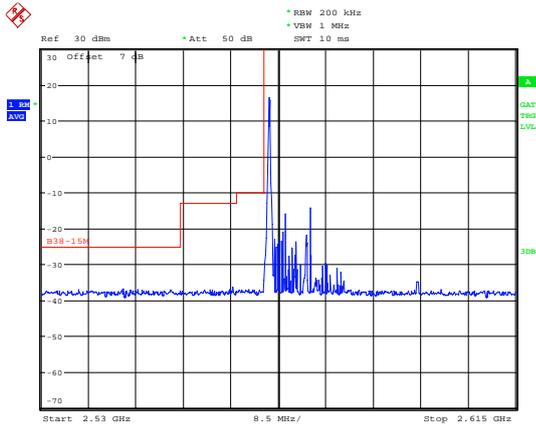
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Date: 21.OCT.2019 13:06:50

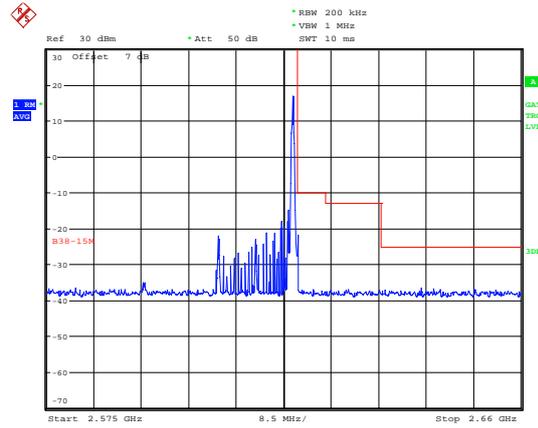


LTE Band 38 16QAM 15MHz CH-Low, 1 RB



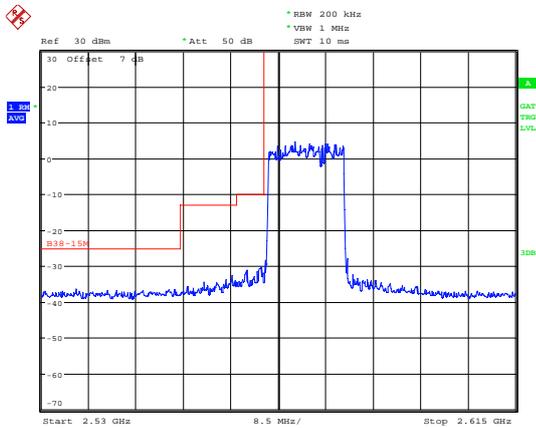
Date: 21.OCT.2019 12:57:59

LTE Band 38 16QAM 15MHz CH-High, 1 RB



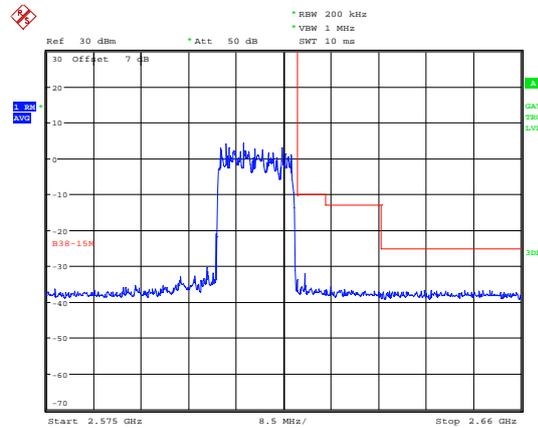
Date: 21.OCT.2019 13:08:21

LTE Band 38 16QAM 15MHz CH-Low, 100%RB



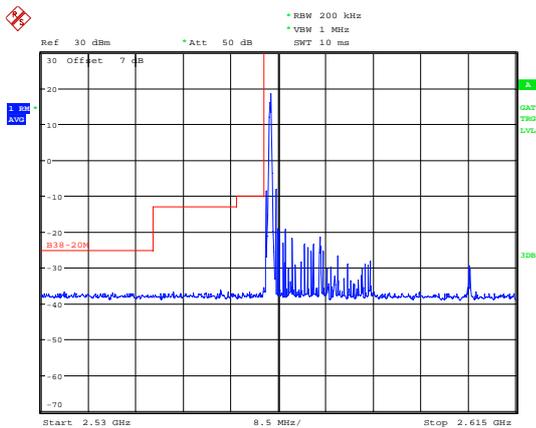
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LTE Band 38 16QAM 15MHz CH-High, 100%RB



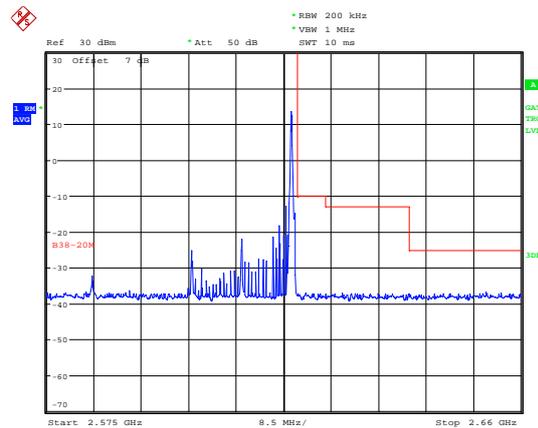
Date: 21.OCT.2019 13:08:31

LTE Band 38 16QAM 20MHz CH-Low, 1 RB



Date: 21.OCT.2019 13:02:38

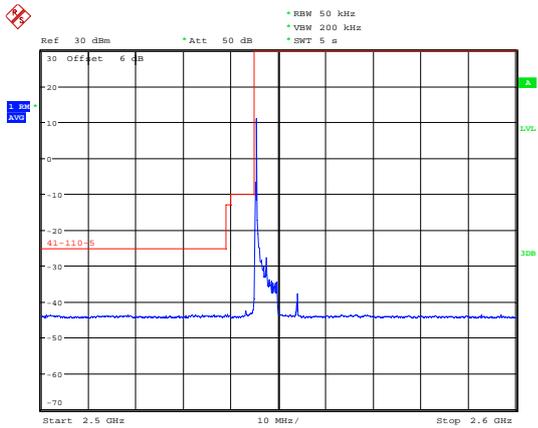
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Date: 21.OCT.2019 13:09:51

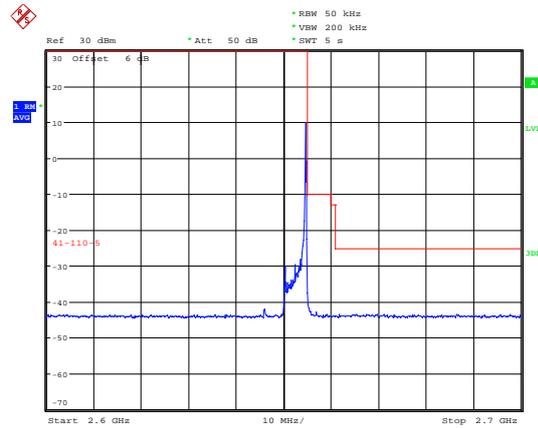


LTE Band 41 QPSK 5MHz CH-Low, 1 RB



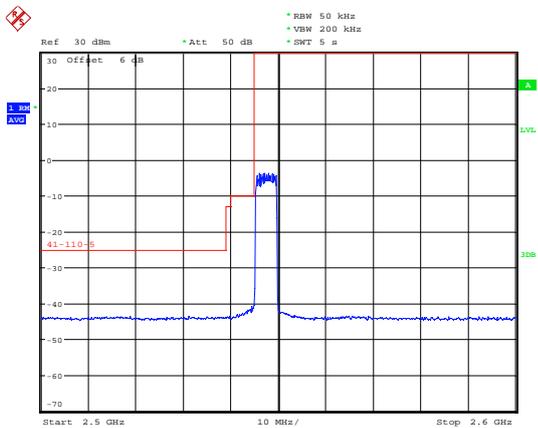
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LTE Band 41 QPSK 5MHz CH-High, 1 RB



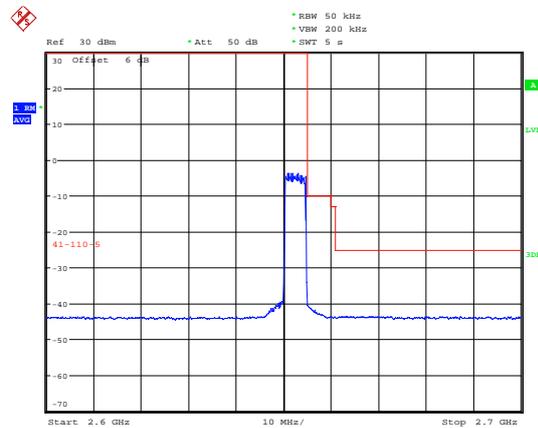
Date: 23.OCT.2019 15:05:32

LTE Band 41 QPSK 5MHz CH-Low, 100%RB



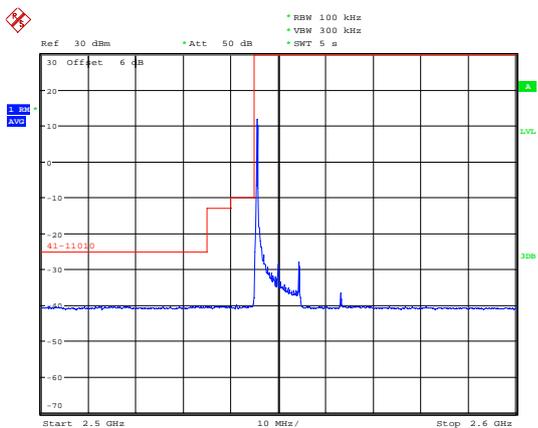
Date: 21.OCT.2019 14:48:29

LTE Band 41 QPSK 5MHz CH-High, 100%RB



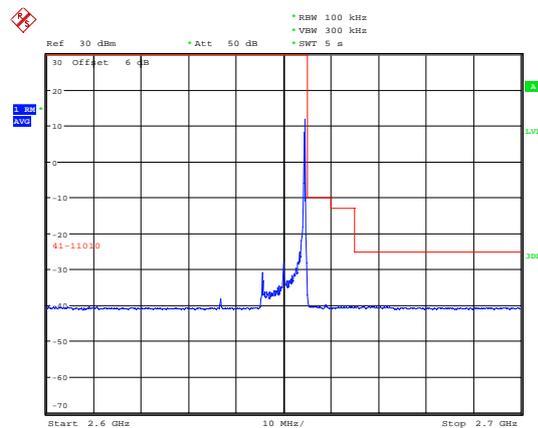
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LTE Band 41 QPSK 10MHz CH-Low, 1 RB



Date: 23.OCT.2019 15:16:17

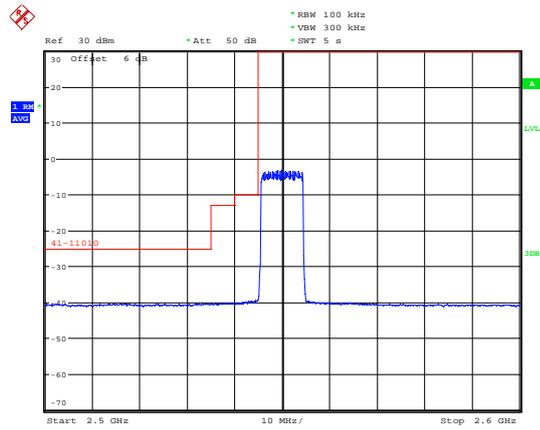
LTE Band 41 QPSK 10MHz CH-High, 1 RB



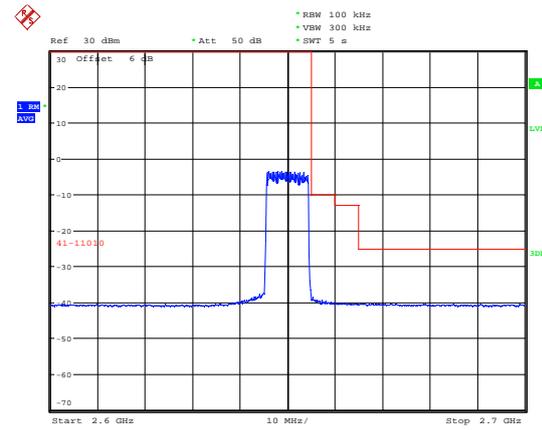
Date: 23.OCT.2019 15:18:20



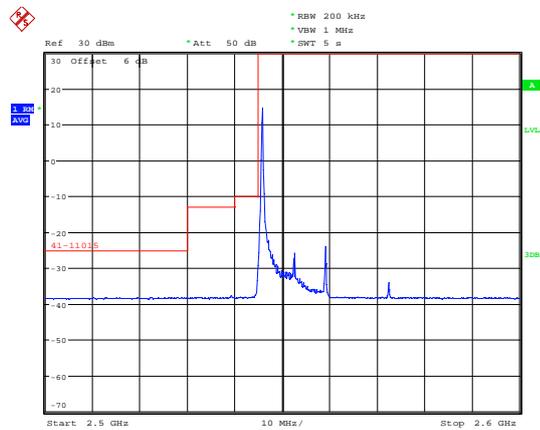
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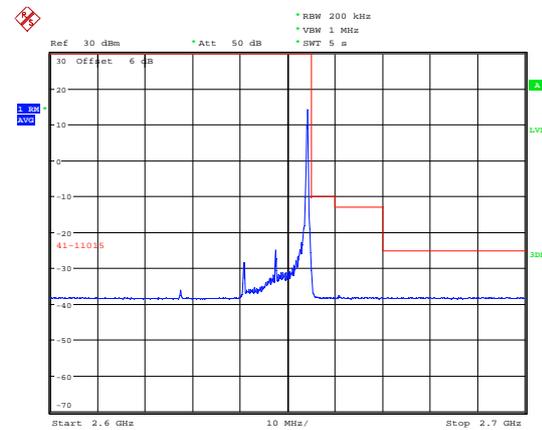
LTE Band 41 QPSK 10MHz CH-High, 100%RB



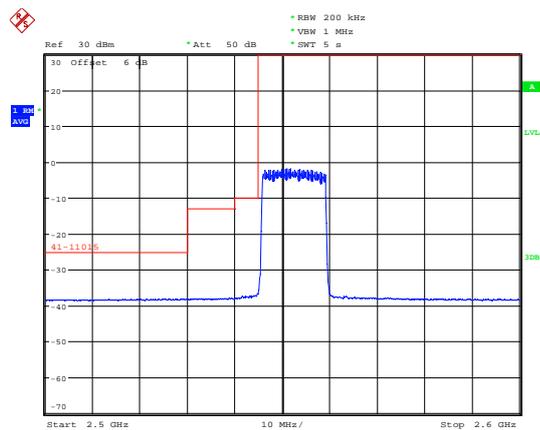
LTE Band 41 QPSK 15MHz CH-Low, 1 RB



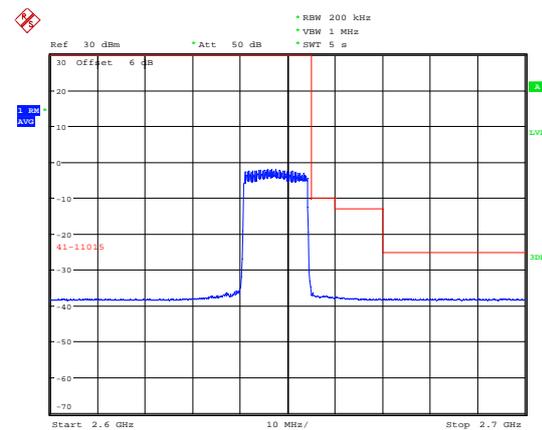
LTE Band 41 QPSK 15MHz CH-High, 1 RB



LTE Band 41 QPSK 15MHz CH-Low, 100%RB

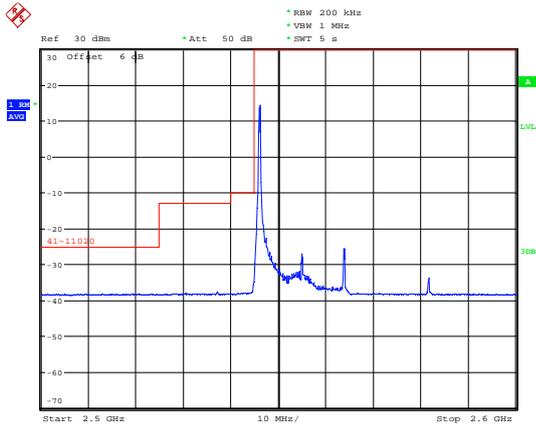


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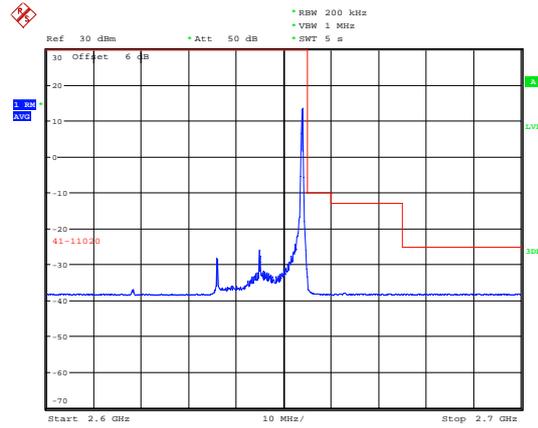


LTE Band 41 QPSK 20MHz CH-Low, 1 RB



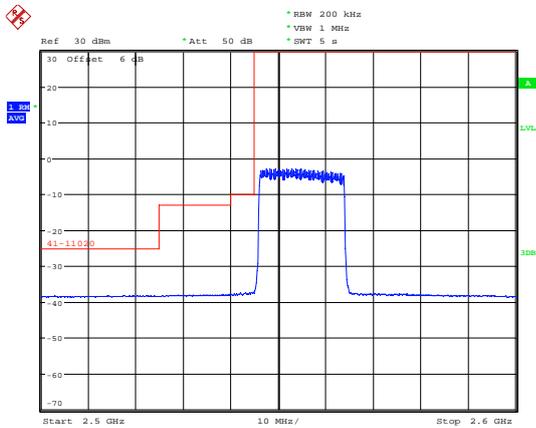
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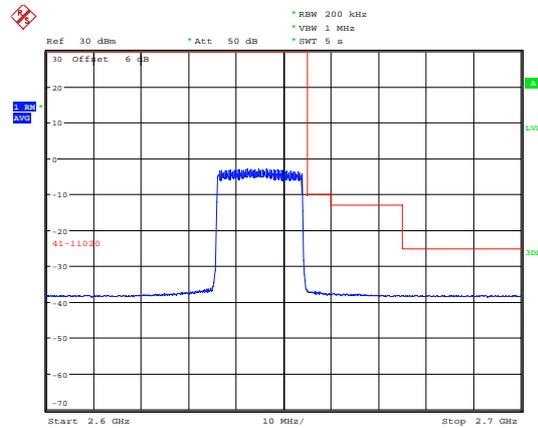
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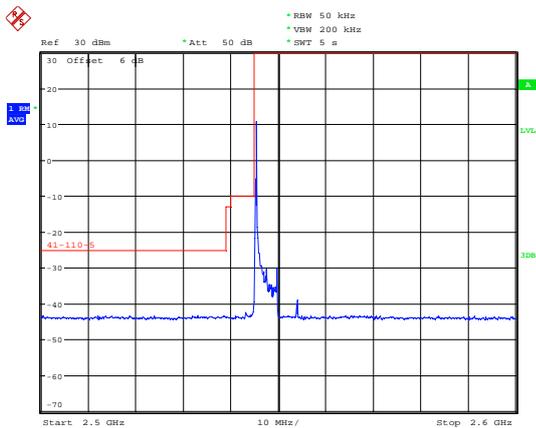
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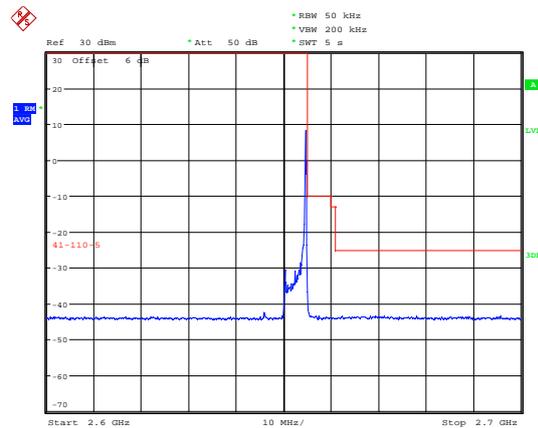
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LTE Band 41 16QAM 5MHz CH-Low, 1 RB



Date: 23.OCT.2019 15:03:53

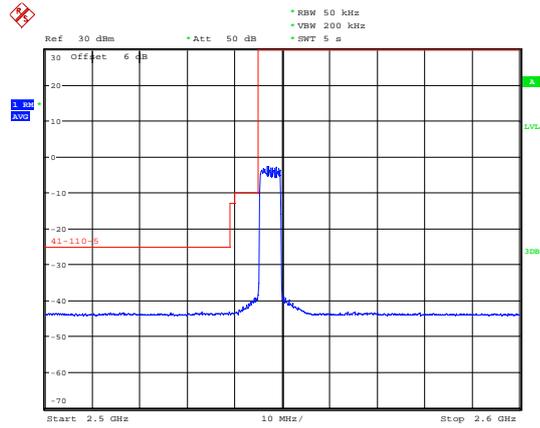
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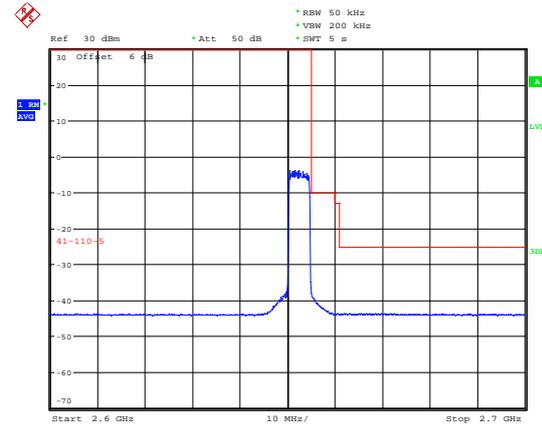
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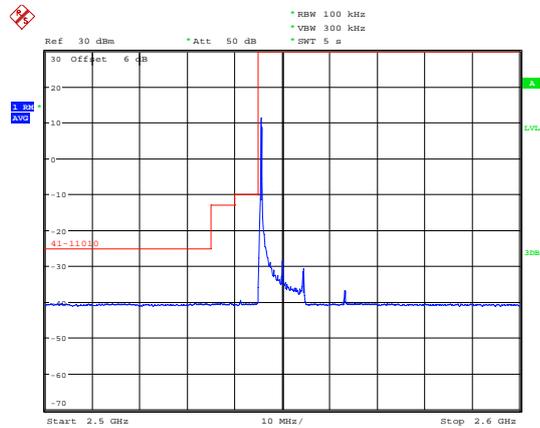
LTE Band 41 16QAM 5MHz CH-Low, 100%RB



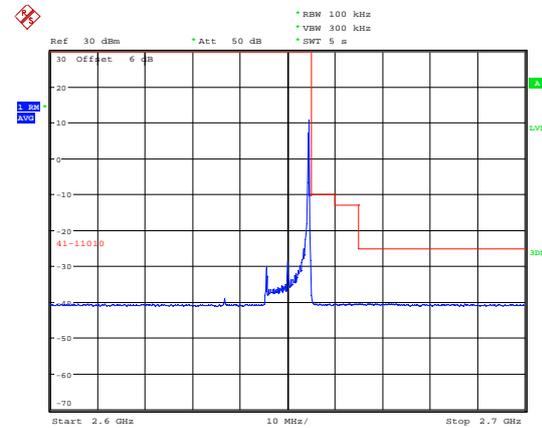
LTE Band 41 16QAM 5MHz CH-High, 100%RB



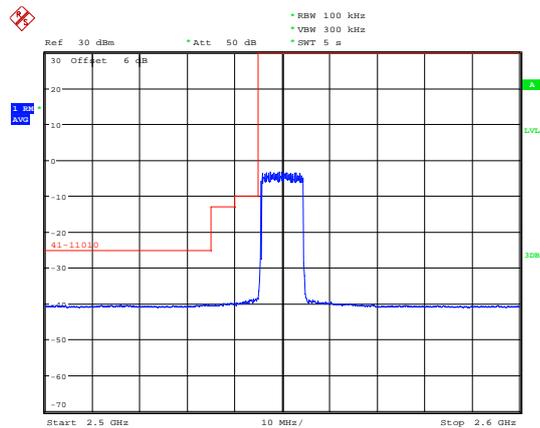
LTE Band 41 16QAM 10MHz CH-Low, 1 RB



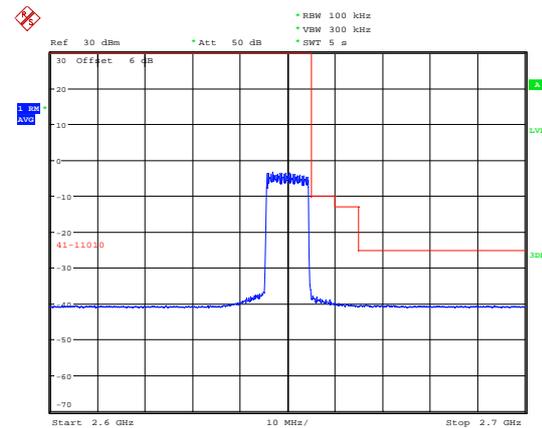
LTE Band 41 16QAM 10MHz CH-High, 1 RB



LTE Band 41 16QAM 10MHz CH-Low, 100%RB

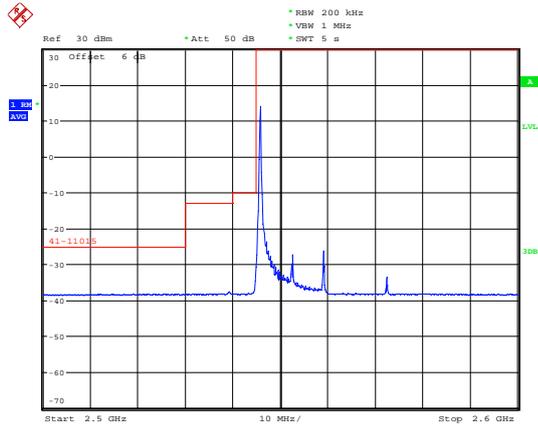


LTE Band 41 16QAM 10MHz CH-High, 100%RB



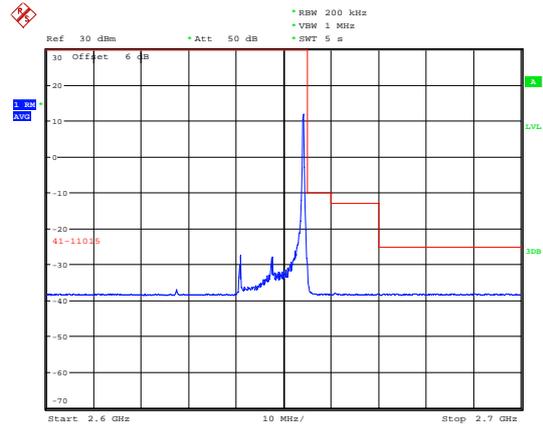


LTE Band 41 16QAM 15MHz CH-Low, 1 RB



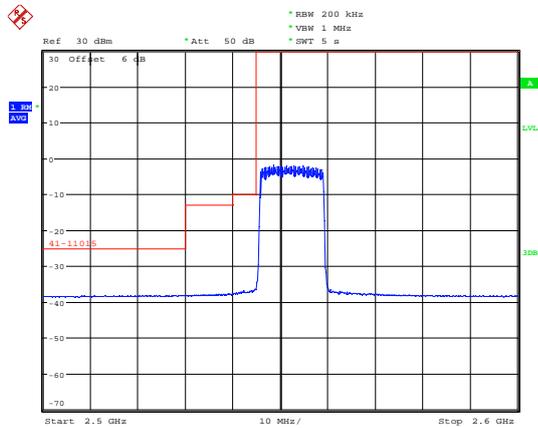
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LTE Band 41 16QAM 15MHz CH-High, 1 RB



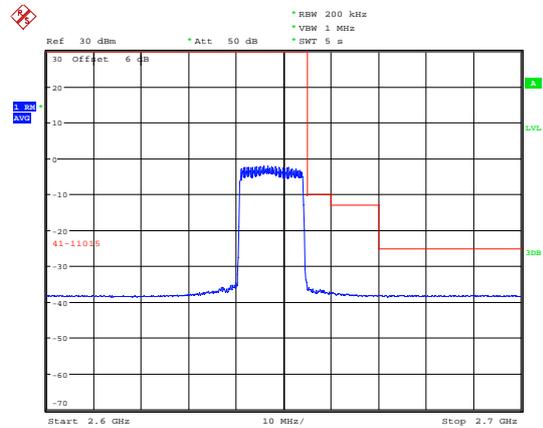
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LTE Band 41 16QAM 15MHz CH-Low, 100%RB



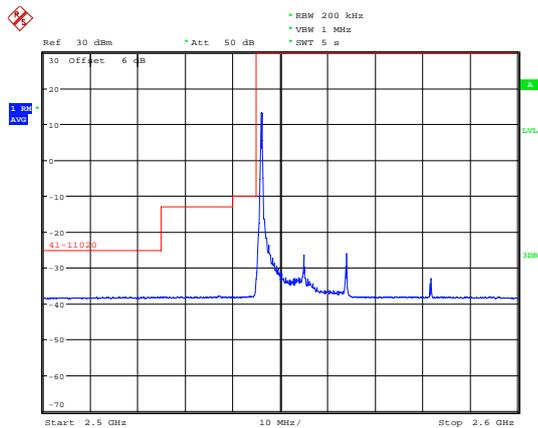
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LTE Band 41 16QAM 15MHz CH-High, 100%RB



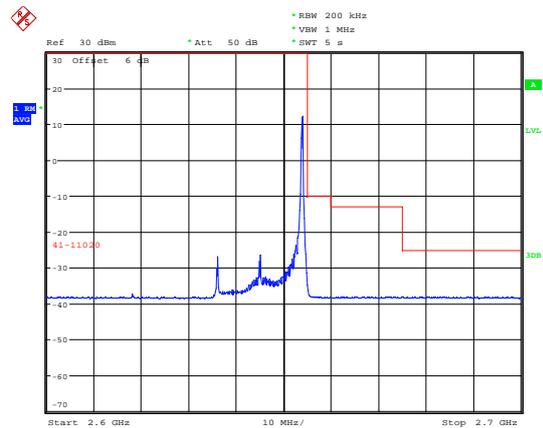
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LTE Band 41 16QAM 20MHz CH-Low, RB 1



Date: 23.OCT.2019 15:34:46

LTE Band 41 16QAM 20MHz CH-High, RB 1

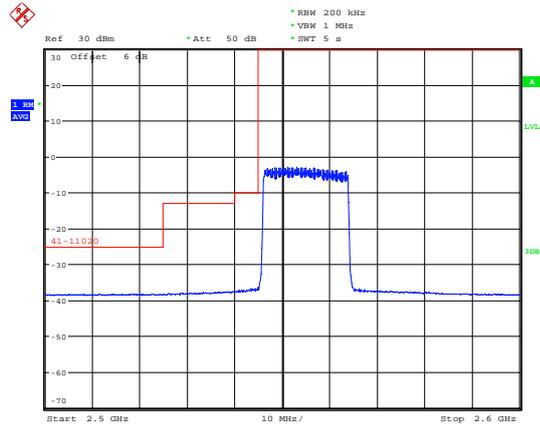


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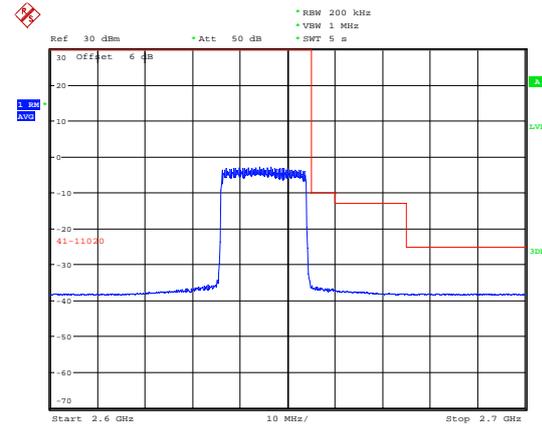


LTE Band 41 16QAM 20MHz CH-Low, 100%RB

LTE Band 41 16QAM 20MHz CH-High, 100%RB



Date: 23.OCT.2019 15:35:00



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5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

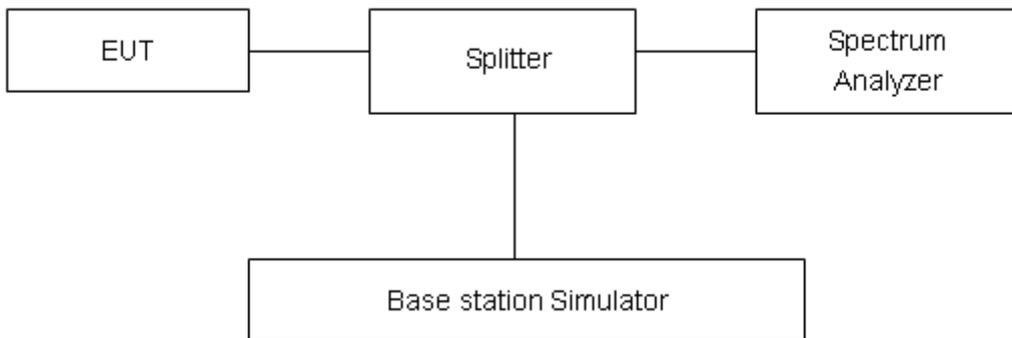
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = PPk (dBm) - PAvg (dBm).$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. 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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.



Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	23.93	20.79	3.14	≤13	PASS
	1413	1732.6	24.21	21.20	3.01	≤13	PASS
	1513	1752.6	23.99	20.96	3.03	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	23.58	18.25	5.33	≤13	PASS
		20175	1732.5	24.23	18.99	5.24	≤13	PASS
		20393	1754.3	23.31	18.02	5.29	≤13	PASS
	3	19965	1711.5	23.54	18.22	5.32	≤13	PASS
		20175	1732.5	24.28	18.95	5.33	≤13	PASS
		20385	1753.5	23.47	18.08	5.39	≤13	PASS
	5	19975	1712.5	23.88	18.59	5.29	≤13	PASS
		20175	1732.5	24.65	19.34	5.31	≤13	PASS
		20375	1752.5	23.80	18.38	5.42	≤13	PASS
	10	20000	1715	24.05	18.66	5.39	≤13	PASS
		20175	1732.5	24.61	19.28	5.33	≤13	PASS
		20350	1750	23.99	18.50	5.49	≤13	PASS
	15	20025	1717.5	24.42	18.77	5.65	≤13	PASS
		20175	1732.5	24.89	18.88	6.01	≤13	PASS
		20325	1747.5	24.52	18.52	6.00	≤13	PASS
	20	20050	1720	24.32	18.84	5.48	≤13	PASS
		20175	1732.5	24.90	19.16	5.74	≤13	PASS
		20300	1745	24.49	18.66	5.83	≤13	PASS
16QAM	1.4	19957	1710.7	23.97	18.21	5.76	≤13	PASS
		20175	1732.5	24.57	18.89	5.68	≤13	PASS
		20393	1754.3	23.73	18.03	5.70	≤13	PASS
	3	19965	1711.5	23.89	17.97	5.92	≤13	PASS
		20175	1732.5	24.55	18.74	5.81	≤13	PASS
		20385	1753.5	23.90	17.98	5.92	≤13	PASS
	5	19975	1712.5	24.38	18.53	5.85	≤13	PASS
		20175	1732.5	25.02	19.24	5.78	≤13	PASS
		20375	1752.5	24.33	18.31	6.02	≤13	PASS
	10	20000	1715	24.41	18.48	5.93	≤13	PASS
		20175	1732.5	25.11	19.27	5.84	≤13	PASS
		20350	1750	24.44	18.39	6.05	≤13	PASS



	15	20025	1717.5	24.71	18.77	5.94	≤13	PASS
		20175	1732.5	25.01	19.17	5.84	≤13	PASS
		20325	1747.5	24.62	18.57	6.05	≤13	PASS
	20	20050	1720	24.82	18.72	6.10	≤13	PASS
		20175	1732.5	25.06	19.20	5.86	≤13	PASS
		20300	1745	24.73	18.67	6.06	≤13	PASS

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	23.49	18.16	5.33	≤13	PASS
		21100	2535	24.07	18.62	5.45	≤13	PASS
		21425	2567.5	24.13	18.84	5.29	≤13	PASS
	10	20800	2505	23.40	17.99	5.41	≤13	PASS
		21100	2535	24.00	18.55	5.45	≤13	PASS
		21400	2565	23.54	18.13	5.41	≤13	PASS
	15	20825	2507.5	23.24	17.58	5.66	≤13	PASS
		21100	2535	24.09	18.48	5.61	≤13	PASS
		21375	2562.5	23.63	17.92	5.71	≤13	PASS
	20	20850	2510	22.92	17.41	5.51	≤13	PASS
		21100	2535	23.88	18.43	5.45	≤13	PASS
		21350	2560	23.41	17.89	5.52	≤13	PASS
16QAM	5	20775	2502.5	23.89	18.06	5.83	≤13	PASS
		21100	2535	24.55	18.56	5.99	≤13	PASS
		21425	2567.5	24.18	18.38	5.80	≤13	PASS
	10	20800	2505	23.79	17.86	5.93	≤13	PASS
		21100	2535	24.46	18.48	5.98	≤13	PASS
		21400	2565	23.99	18.06	5.93	≤13	PASS
	15	20825	2507.5	23.49	17.48	6.01	≤13	PASS
		21100	2535	24.34	18.40	5.94	≤13	PASS
		21375	2562.5	23.80	17.84	5.96	≤13	PASS
	20	20850	2510	23.44	17.35	6.09	≤13	PASS
		21100	2535	24.25	18.30	5.95	≤13	PASS
		21350	2560	23.83	17.82	6.01	≤13	PASS



LTE Band 38								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	37775	2572.5	24.12	15.19	8.93	≤13	PASS
		38000	2595	24.39	15.92	8.47	≤13	PASS
		38225	2617.5	23.50	14.55	8.95	≤13	PASS
	10	37800	2575	24.60	15.49	9.11	≤13	PASS
		38000	2595	24.20	15.31	8.89	≤13	PASS
		38200	2615	23.43	15.24	8.19	≤13	PASS
	15	37825	2577.5	25.00	15.91	9.09	≤13	PASS
		38000	2595	24.34	15.27	9.07	≤13	PASS
		38175	2612.5	23.42	14.21	9.21	≤13	PASS
	20	37850	2580	24.80	15.89	8.91	≤13	PASS
		38000	2595	24.35	15.03	9.32	≤13	PASS
		38150	2610	23.42	14.34	9.08	≤13	PASS
16QAM	5	37775	2572.5	24.66	15.60	9.06	≤13	PASS
		38000	2595	24.79	15.46	9.33	≤13	PASS
		38225	2617.5	24.01	14.78	9.23	≤13	PASS
	10	37800	2575	25.08	16.75	8.33	≤13	PASS
		38000	2595	24.74	15.18	9.56	≤13	PASS
		38200	2615	23.67	13.95	9.72	≤13	PASS
	15	37825	2577.5	25.09	15.52	9.57	≤13	PASS
		38000	2595	24.51	14.64	9.87	≤13	PASS
		38175	2612.5	23.68	13.83	9.85	≤13	PASS
	20	37850	2580	25.15	15.40	9.75	≤13	PASS
		38000	2595	24.69	15.52	9.17	≤13	PASS
		38150	2610	24.06	14.71	9.35	≤13	PASS

LTE Band 41								
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	24.79	16.12	8.67	≤13	PASS
		40620	2593	23.62	14.50	9.12	≤13	PASS
		41565	2687.5	23.40	14.93	8.47	≤13	PASS
	10	39700	2501	24.63	16.29	8.34	≤13	PASS



		40620	2593	23.85	14.92	8.93	≤13	PASS
		41540	2685	24.08	15.36	8.72	≤13	PASS
	15	39725	2503.5	24.15	14.65	9.50	≤13	PASS
		40620	2593	23.81	14.49	9.32	≤13	PASS
		41515	2682.5	24.35	14.96	9.39	≤13	PASS
	20	39750	2506	24.25	15.62	8.63	≤13	PASS
		40620	2593	24.18	15.14	9.04	≤13	PASS
		41490	2680	24.69	15.32	9.37	≤13	PASS
	16QAM	5	39675	2498.5	25.02	15.66	9.36	≤13
40620			2593	24.10	14.74	9.36	≤13	PASS
41565			2687.5	23.84	14.70	9.14	≤13	PASS
10		39700	2501	25.03	15.55	9.48	≤13	PASS
		40620	2593	24.31	14.94	9.37	≤13	PASS
		41540	2685	24.34	14.76	9.58	≤13	PASS
15		39725	2503.5	24.77	14.88	9.89	≤13	PASS
		40620	2593	24.35	14.20	10.15	≤13	PASS
		41515	2682.5	24.64	14.85	9.79	≤13	PASS
20		39750	2506	24.59	14.94	9.65	≤13	PASS
		40620	2593	24.71	15.44	9.27	≤13	PASS
		41490	2680	25.12	15.86	9.26	≤13	PASS

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +55°C in 10°C or 5°C step size.

- (1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.
- (2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.
- (3) Repeat the above measurements at 10°C increments from -30°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

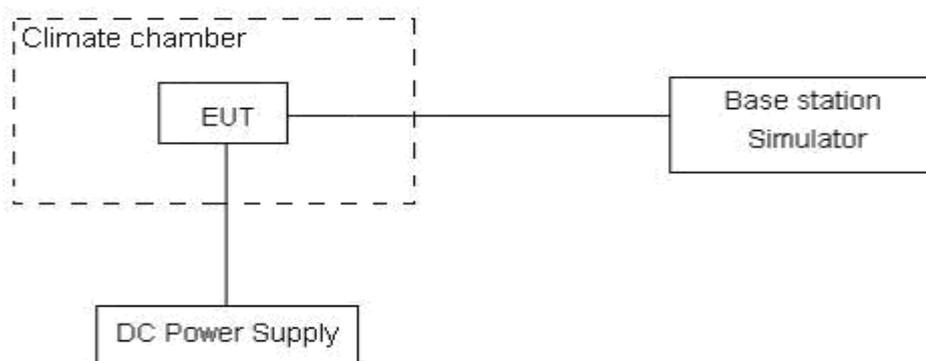
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

- (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
- (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 10.8 V and 13.2 V, with a nominal voltage of 12V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3, U = 0.01\text{ppm}$.



Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	5.88	3.91	0.00313	0.00208	PASS
Extreme (55°C)		10.19	13.38	0.00542	0.00712	PASS
Extreme (50°C)		12.54	2.41	0.00667	0.00128	PASS
Extreme (40°C)		12.49	15.34	0.00664	0.00816	PASS
Extreme (30°C)		2.80	15.32	0.00149	0.00815	PASS
Extreme (20°C)		15.82	14.21	0.00842	0.00756	PASS
Extreme (10°C)		12.16	8.39	0.00647	0.00447	PASS
Extreme (0°C)		16.54	12.10	0.00880	0.00644	PASS
Extreme (-10°C)		12.81	9.52	0.00682	0.00506	PASS
Extreme (-20°C)		14.26	8.26	0.00758	0.00439	PASS
Extreme (-30°C)		6.32	10.00	0.00336	0.00532	PASS
25°C		LV	15.21	10.51	0.00809	0.00559
	HV	12.85	8.51	0.00684	0.00452	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz	16QAM	QPSK	16QAM	QPSK	
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	7.55	2.68	0.00401	0.00142	PASS
Extreme (55°C)		15.05	8.08	0.00801	0.00430	PASS
Extreme (50°C)		16.62	11.25	0.00884	0.00598	PASS
Extreme (40°C)		12.15	13.57	0.00646	0.00722	PASS
Extreme (30°C)		10.57	13.96	0.00562	0.00742	PASS
Extreme (20°C)		15.06	8.02	0.00801	0.00427	PASS
Extreme (10°C)		1.78	11.50	0.00095	0.00612	PASS
Extreme (0°C)		9.05	1.82	0.00481	0.00097	PASS
Extreme (-10°C)		16.78	3.99	0.00892	0.00212	PASS
Extreme (-20°C)		17.43	10.29	0.00927	0.00547	PASS
Extreme (-30°C)		12.20	5.84	0.00649	0.00311	PASS
25°C		LV	14.89	9.40	0.00792	0.00500
	HV	7.86	9.29	0.00418	0.00494	PASS



LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	9.95	1.07	0.00529	0.00057	PASS
Extreme (55°C)		11.40	3.02	0.00607	0.00161	PASS
Extreme (50°C)		11.46	7.08	0.00610	0.00377	PASS
Extreme (40°C)		4.15	10.84	0.00221	0.00577	PASS
Extreme (30°C)		1.90	15.78	0.00101	0.00839	PASS
Extreme (20°C)		6.64	6.44	0.00353	0.00342	PASS
Extreme (10°C)		16.66	9.81	0.00886	0.00522	PASS
Extreme (0°C)		8.16	13.26	0.00434	0.00705	PASS
Extreme (-10°C)		13.31	14.69	0.00708	0.00781	PASS
Extreme (-20°C)		3.04	14.05	0.00162	0.00747	PASS
Extreme (-30°C)		9.11	2.09	0.00485	0.00111	PASS
25°C		LV	6.63	15.02	0.00353	0.00799
	HV	14.80	15.73	0.00787	0.00837	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	15.95	4.88	0.00849	0.00260	PASS
Extreme (55°C)		3.09	6.86	0.00164	0.00365	PASS
Extreme (50°C)		8.21	7.21	0.00437	0.00384	PASS
Extreme (40°C)		12.66	9.84	0.00673	0.00523	PASS
Extreme (30°C)		4.11	11.21	0.00219	0.00596	PASS
Extreme (20°C)		8.88	5.64	0.00472	0.00300	PASS
Extreme (10°C)		3.68	7.72	0.00196	0.00411	PASS
Extreme (0°C)		15.87	10.29	0.00844	0.00547	PASS
Extreme (-10°C)		16.13	11.96	0.00858	0.00636	PASS
Extreme (-20°C)		7.91	7.30	0.00421	0.00388	PASS
Extreme (-30°C)		11.35	15.01	0.00604	0.00798	PASS
25°C		LV	8.32	7.86	0.00442	0.00418
	HV	10.61	14.41	0.00565	0.00767	PASS



LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	1.36	2.15	0.00072	0.00114	PASS
Extreme (55°C)		14.13	16.65	0.00751	0.00885	PASS
Extreme (50°C)		14.95	6.62	0.00795	0.00352	PASS
Extreme (40°C)		14.72	8.74	0.00783	0.00465	PASS
Extreme (30°C)		7.60	1.60	0.00404	0.00085	PASS
Extreme (20°C)		3.89	15.26	0.00207	0.00812	PASS
Extreme (10°C)		3.68	3.09	0.00196	0.00165	PASS
Extreme (0°C)		7.49	13.21	0.00398	0.00703	PASS
Extreme (-10°C)		14.96	8.69	0.00796	0.00462	PASS
Extreme (-20°C)		6.46	3.07	0.00344	0.00163	PASS
Extreme (-30°C)		9.92	1.22	0.00528	0.00065	PASS
25°C	LV	13.17	17.23	0.00701	0.00917	PASS
	HV	12.56	13.72	0.00668	0.00730	PASS

LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	13.20	11.78	0.00702	0.00626	PASS
Extreme (55°C)		3.49	5.50	0.00186	0.00293	PASS
Extreme (50°C)		7.55	10.56	0.00401	0.00561	PASS
Extreme (40°C)		9.40	7.59	0.00500	0.00404	PASS
Extreme (30°C)		7.51	15.83	0.00399	0.00842	PASS
Extreme (20°C)		13.47	8.66	0.00716	0.00461	PASS
Extreme (10°C)		11.58	10.60	0.00616	0.00564	PASS
Extreme (0°C)		11.08	4.64	0.00589	0.00247	PASS
Extreme (-10°C)		6.83	9.28	0.00363	0.00494	PASS
Extreme (-20°C)		13.92	8.67	0.00741	0.00461	PASS
Extreme (-30°C)		14.21	11.80	0.00756	0.00628	PASS
25°C	LV	13.98	13.48	0.00743	0.00717	PASS
	HV	17.45	14.07	0.00928	0.00748	PASS



LTE Band 4						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	9.08	7.90	0.00483	0.00420	PASS
Extreme (55°C)		7.17	10.14	0.00382	0.00539	PASS
Extreme (50°C)		5.81	11.60	0.00309	0.00617	PASS
Extreme (40°C)		1.52	13.66	0.00081	0.00726	PASS
Extreme (30°C)		4.25	17.24	0.00226	0.00917	PASS
Extreme (20°C)		9.37	17.66	0.00498	0.00939	PASS
Extreme (10°C)		4.41	17.56	0.00234	0.00934	PASS
Extreme (0°C)		1.22	5.08	0.00065	0.00270	PASS
Extreme (-10°C)		13.67	6.35	0.00727	0.00338	PASS
Extreme (-20°C)		8.24	2.16	0.00438	0.00115	PASS
Extreme (-30°C)		2.95	7.03	0.00157	0.00374	PASS
25°C		LV	17.76	15.50	0.00945	0.00824
	HV	17.28	6.99	0.00919	0.00372	PASS



LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	13.41	2.08	0.00713	0.00111	PASS
Extreme (55°C)		6.66	7.47	0.00354	0.00397	PASS
Extreme (50°C)		5.25	4.10	0.00279	0.00218	PASS
Extreme (40°C)		5.04	14.39	0.00268	0.00766	PASS
Extreme (30°C)		7.74	11.81	0.00411	0.00628	PASS
Extreme (20°C)		7.82	1.76	0.00416	0.00094	PASS
Extreme (10°C)		12.04	17.07	0.00641	0.00908	PASS
Extreme (0°C)		4.66	17.21	0.00248	0.00915	PASS
Extreme (-10°C)		12.05	8.80	0.00641	0.00468	PASS
Extreme (-20°C)		14.80	15.33	0.00787	0.00815	PASS
Extreme (-30°C)		12.60	12.51	0.00670	0.00665	PASS
25°C	LV	16.27	6.53	0.00865	0.00347	PASS
	HV	1.05	7.73	0.00056	0.00411	PASS

LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	3.96	11.80	0.00211	0.00628	PASS
Extreme (55°C)		16.27	2.66	0.00866	0.00142	PASS
Extreme (50°C)		13.14	15.62	0.00699	0.00831	PASS
Extreme (40°C)		17.14	6.03	0.00912	0.00321	PASS
Extreme (30°C)		5.13	2.12	0.00273	0.00113	PASS
Extreme (20°C)		15.84	8.55	0.00843	0.00455	PASS
Extreme (10°C)		7.14	12.79	0.00380	0.00680	PASS
Extreme (0°C)		7.18	3.76	0.00382	0.00200	PASS
Extreme (-10°C)		2.84	12.70	0.00151	0.00676	PASS
Extreme (-20°C)		4.16	13.59	0.00221	0.00723	PASS
Extreme (-30°C)		15.76	8.69	0.00838	0.00462	PASS
25°C	LV	4.40	7.89	0.00234	0.00420	PASS
	HV	4.94	6.99	0.00263	0.00372	PASS



LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	5.13	3.85	0.00273	0.00205	PASS
Extreme (55°C)		5.05	15.24	0.00269	0.00811	PASS
Extreme (50°C)		2.07	5.42	0.00110	0.00288	PASS
Extreme (40°C)		16.73	7.70	0.00890	0.00410	PASS
Extreme (30°C)		15.18	12.05	0.00807	0.00641	PASS
Extreme (20°C)		5.48	10.14	0.00291	0.00540	PASS
Extreme (10°C)		13.33	15.02	0.00709	0.00799	PASS
Extreme (0°C)		1.31	6.98	0.00070	0.00371	PASS
Extreme (-10°C)		7.12	1.36	0.00379	0.00073	PASS
Extreme (-20°C)		2.35	8.71	0.00125	0.00463	PASS
Extreme (-30°C)		8.80	2.04	0.00468	0.00109	PASS
25°C	LV	8.59	9.55	0.00457	0.00508	PASS
	HV	12.30	10.35	0.00654	0.00551	PASS

LTE Band 7						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	15.36	10.35	0.00817	0.00551	PASS
Extreme (55°C)		5.80	17.79	0.00308	0.00946	PASS
Extreme (50°C)		1.02	9.41	0.00054	0.00500	PASS
Extreme (40°C)		10.12	5.33	0.00538	0.00283	PASS
Extreme (30°C)		4.21	13.90	0.00224	0.00740	PASS
Extreme (20°C)		15.06	9.79	0.00801	0.00521	PASS
Extreme (10°C)		15.32	8.65	0.00815	0.00460	PASS
Extreme (0°C)		11.09	1.56	0.00590	0.00083	PASS
Extreme (-10°C)		6.16	12.40	0.00327	0.00660	PASS
Extreme (-20°C)		3.87	8.84	0.00206	0.00470	PASS
Extreme (-30°C)		12.03	11.73	0.00640	0.00624	PASS
25°C	LV	1.80	6.50	0.00096	0.00346	PASS
	HV	9.14	8.62	0.00486	0.00459	PASS



LTE Band 38						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	2.30	4.58	0.00122	0.00243	PASS
Extreme (55°C)		12.45	13.20	0.00662	0.00702	PASS
Extreme (50°C)		12.90	15.93	0.00686	0.00847	PASS
Extreme (40°C)		4.98	5.42	0.00265	0.00288	PASS
Extreme (30°C)		11.40	17.39	0.00606	0.00925	PASS
Extreme (20°C)		4.63	15.60	0.00246	0.00830	PASS
Extreme (10°C)		7.79	5.82	0.00414	0.00310	PASS
Extreme (0°C)		2.85	17.84	0.00151	0.00949	PASS
Extreme (-10°C)		3.51	3.94	0.00187	0.00209	PASS
Extreme (-20°C)		9.20	3.64	0.00490	0.00194	PASS
Extreme (-30°C)		13.28	10.86	0.00707	0.00578	PASS
25°C	LV	1.00	9.33	0.00053	0.00496	PASS
	HV	15.53	5.35	0.00826	0.00284	PASS

LTE Band 38						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	16.07	11.20	0.00855	0.00596	PASS
Extreme (55°C)		10.28	1.93	0.00547	0.00103	PASS
Extreme (50°C)		5.06	4.94	0.00269	0.00263	PASS
Extreme (40°C)		16.83	9.58	0.00895	0.00510	PASS
Extreme (30°C)		13.08	12.20	0.00696	0.00649	PASS
Extreme (20°C)		6.42	15.85	0.00341	0.00843	PASS
Extreme (10°C)		15.96	17.17	0.00849	0.00913	PASS
Extreme (0°C)		14.37	15.87	0.00764	0.00844	PASS
Extreme (-10°C)		17.35	7.88	0.00923	0.00419	PASS
Extreme (-20°C)		8.98	3.56	0.00478	0.00189	PASS
Extreme (-30°C)		11.63	7.48	0.00619	0.00398	PASS
25°C	LV	10.85	17.67	0.00577	0.00940	PASS
	HV	10.05	3.67	0.00534	0.00195	PASS



LTE Band 38						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	15.59	13.29	0.00829	0.00707	PASS
Extreme (55°C)		14.78	12.32	0.00786	0.00656	PASS
Extreme (50°C)		17.58	12.12	0.00935	0.00644	PASS
Extreme (40°C)		1.21	5.88	0.00064	0.00313	PASS
Extreme (30°C)		12.96	6.13	0.00689	0.00326	PASS
Extreme (20°C)		13.58	3.16	0.00722	0.00168	PASS
Extreme (10°C)		5.25	2.04	0.00279	0.00108	PASS
Extreme (0°C)		13.10	5.26	0.00697	0.00280	PASS
Extreme (-10°C)		15.06	6.96	0.00801	0.00370	PASS
Extreme (-20°C)		8.78	17.26	0.00467	0.00918	PASS
Extreme (-30°C)		16.55	3.28	0.00880	0.00175	PASS
25°C	LV	2.42	12.86	0.00129	0.00684	PASS
	HV	4.35	1.06	0.00232	0.00056	PASS

LTE Band 38						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	1.72	17.91	0.00091	0.00953	PASS
Extreme (55°C)		17.66	2.23	0.00939	0.00119	PASS
Extreme (50°C)		5.71	9.97	0.00304	0.00531	PASS
Extreme (40°C)		7.99	1.97	0.00425	0.00105	PASS
Extreme (30°C)		7.92	11.85	0.00421	0.00630	PASS
Extreme (20°C)		1.00	11.02	0.00053	0.00586	PASS
Extreme (10°C)		4.45	8.28	0.00237	0.00440	PASS
Extreme (0°C)		2.05	11.41	0.00109	0.00607	PASS
Extreme (-10°C)		14.30	11.43	0.00761	0.00608	PASS
Extreme (-20°C)		8.68	14.16	0.00462	0.00753	PASS
Extreme (-30°C)		2.16	17.24	0.00115	0.00917	PASS
25°C	LV	7.23	2.72	0.00384	0.00144	PASS
	HV	12.28	11.95	0.00653	0.00636	PASS



LTE Band 41						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	11.85	5.79	0.00630	0.00308	PASS
Extreme (55°C)		12.45	8.16	0.00662	0.00434	PASS
Extreme (50°C)		17.84	3.66	0.00949	0.00195	PASS
Extreme (40°C)		15.38	7.33	0.00818	0.00390	PASS
Extreme (30°C)		7.34	11.94	0.00390	0.00635	PASS
Extreme (20°C)		9.59	5.88	0.00510	0.00313	PASS
Extreme (10°C)		6.65	10.59	0.00354	0.00563	PASS
Extreme (0°C)		11.93	5.11	0.00635	0.00272	PASS
Extreme (-10°C)		5.17	8.71	0.00275	0.00463	PASS
Extreme (-20°C)		15.22	7.89	0.00810	0.00420	PASS
Extreme (-30°C)		13.57	12.11	0.00722	0.00644	PASS
25°C		LV	6.04	8.86	0.00321	0.00471
	HV	2.32	9.73	0.00124	0.00518	PASS

LTE Band 41						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	17.26	10.97	0.00918	0.00583	PASS
Extreme (55°C)		1.35	8.13	0.00072	0.00432	PASS
Extreme (50°C)		10.18	11.42	0.00541	0.00608	PASS
Extreme (40°C)		3.17	2.73	0.00169	0.00145	PASS
Extreme (30°C)		7.94	5.41	0.00423	0.00288	PASS
Extreme (20°C)		15.71	12.94	0.00836	0.00688	PASS
Extreme (10°C)		11.43	17.17	0.00608	0.00913	PASS
Extreme (0°C)		10.00	9.56	0.00532	0.00508	PASS
Extreme (-10°C)		16.87	14.48	0.00897	0.00770	PASS
Extreme (-20°C)		14.85	2.79	0.00790	0.00149	PASS
Extreme (-30°C)		6.10	15.55	0.00325	0.00827	PASS
25°C		LV	11.09	9.63	0.00590	0.00512
	HV	6.11	16.61	0.00325	0.00883	PASS



LTE Band 41						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	17.15	13.50	0.00912	0.00718	PASS
Extreme (55°C)		3.80	7.71	0.00202	0.00410	PASS
Extreme (50°C)		1.11	13.95	0.00059	0.00742	PASS
Extreme (40°C)		2.22	4.57	0.00118	0.00243	PASS
Extreme (30°C)		5.78	14.55	0.00308	0.00774	PASS
Extreme (20°C)		11.74	3.36	0.00624	0.00179	PASS
Extreme (10°C)		8.23	17.91	0.00438	0.00952	PASS
Extreme (0°C)		4.70	5.18	0.00250	0.00275	PASS
Extreme (-10°C)		9.07	15.65	0.00483	0.00833	PASS
Extreme (-20°C)		2.41	2.54	0.00128	0.00135	PASS
Extreme (-30°C)		12.31	6.85	0.00655	0.00364	PASS
25°C	LV	6.39	16.93	0.00340	0.00901	PASS
	HV	2.78	6.46	0.00148	0.00344	PASS

LTE Band 41						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz					
Temperature	Voltage	16QAM	QPSK	16QAM	QPSK	
Normal (25°C)	Normal	13.74	11.27	0.00731	0.00599	PASS
Extreme (55°C)		7.76	12.63	0.00413	0.00672	PASS
Extreme (50°C)		13.71	15.55	0.00729	0.00827	PASS
Extreme (40°C)		11.66	12.76	0.00620	0.00679	PASS
Extreme (30°C)		1.51	9.42	0.00080	0.00501	PASS
Extreme (20°C)		3.18	10.51	0.00169	0.00559	PASS
Extreme (10°C)		15.14	4.39	0.00805	0.00233	PASS
Extreme (0°C)		6.79	12.28	0.00361	0.00653	PASS
Extreme (-10°C)		16.27	17.23	0.00865	0.00917	PASS
Extreme (-20°C)		5.58	14.69	0.00297	0.00781	PASS
Extreme (-30°C)		3.20	10.54	0.00170	0.00561	PASS
25°C	LV	13.30	15.57	0.00708	0.00828	PASS
	HV	17.71	14.88	0.00942	0.00791	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

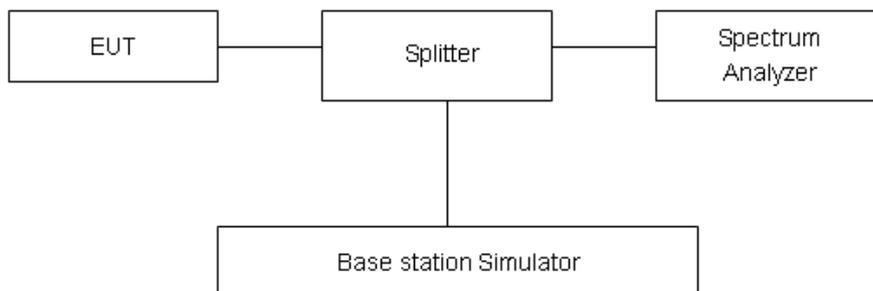
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB..”

Rule Part 27.53(m) $55 + 10 \log(P)$ 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)(4) of this section.

Part 27.53(h) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

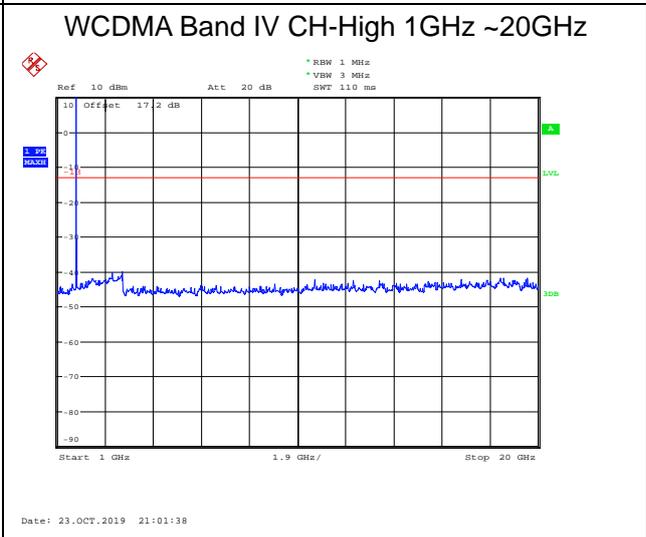
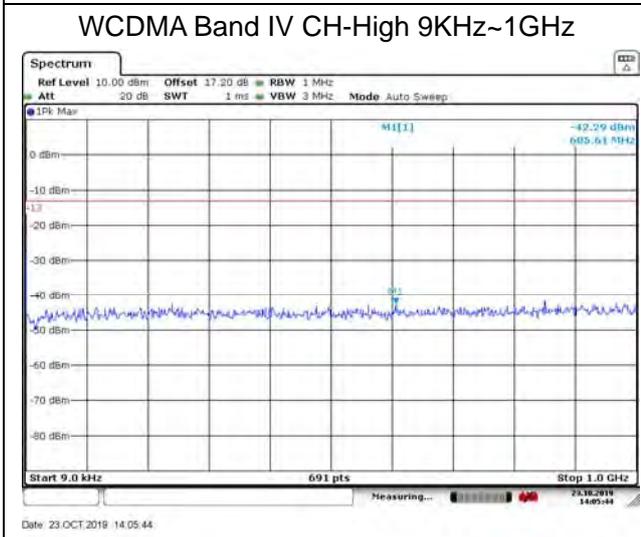
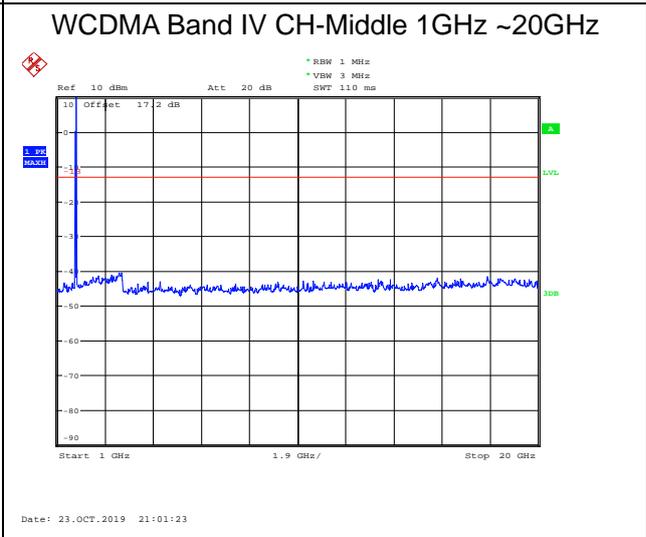
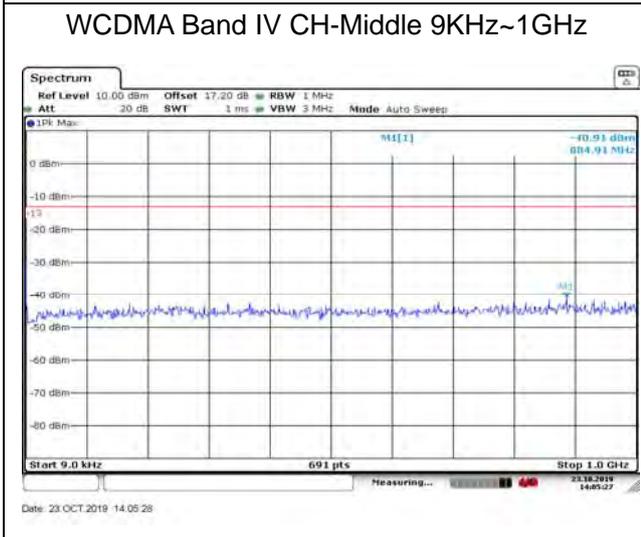
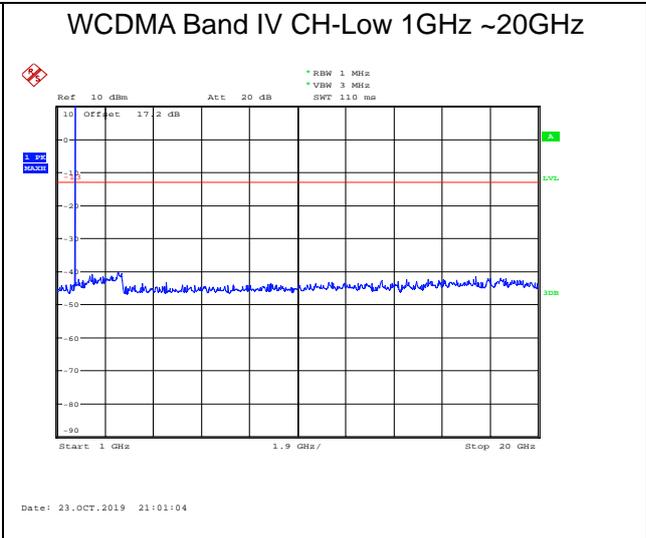
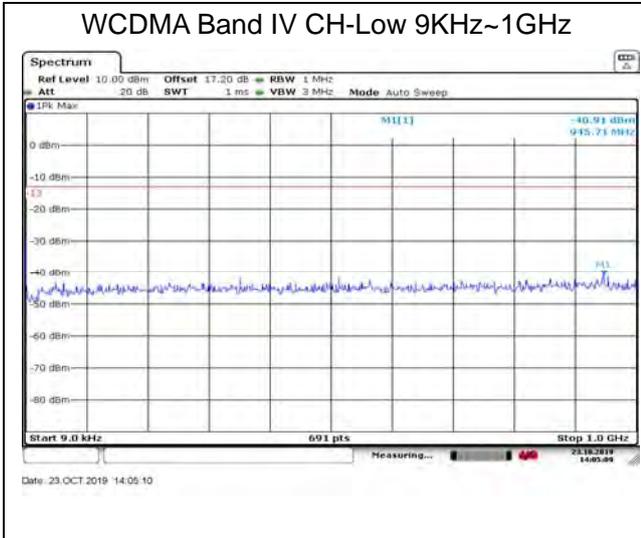
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB



Test Result

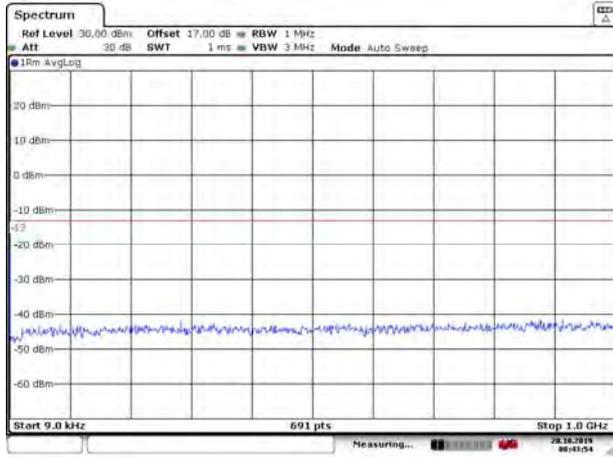
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.



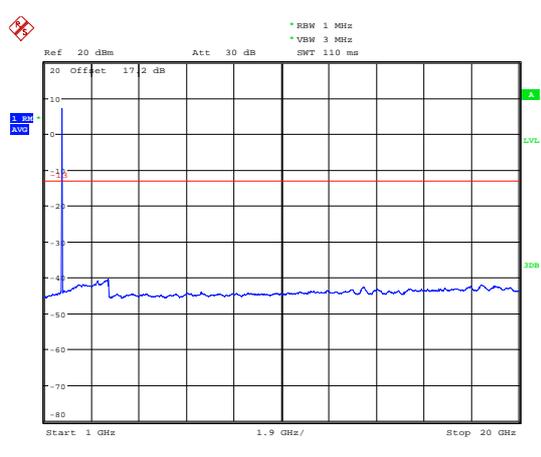


LTE Band 4 1.4MHz CH-Low 9KHz~1GHz



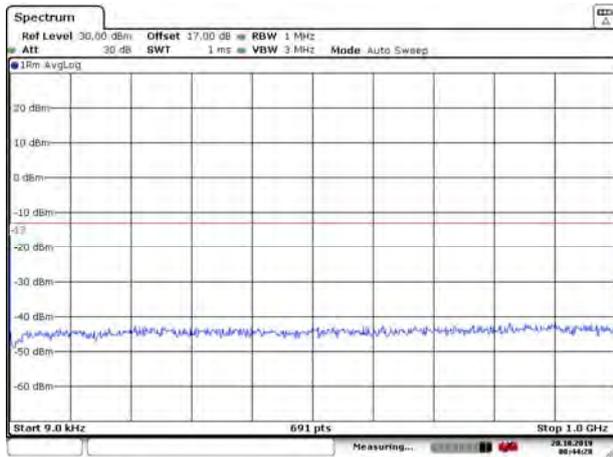
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LTE Band 4 1.4MHz CH-Low 1GHz~20GHz



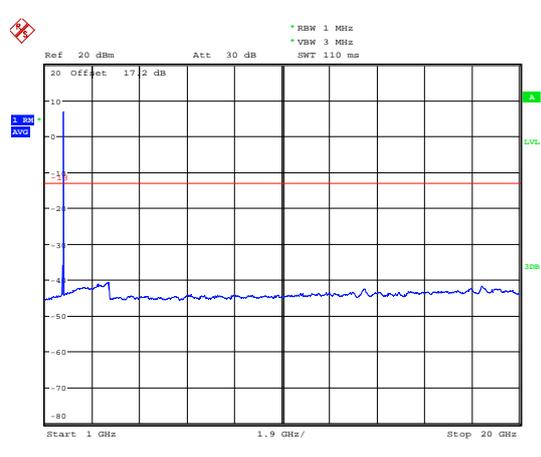
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LTE Band 4 1.4MHz CH- Middle 9KHz~1GHz



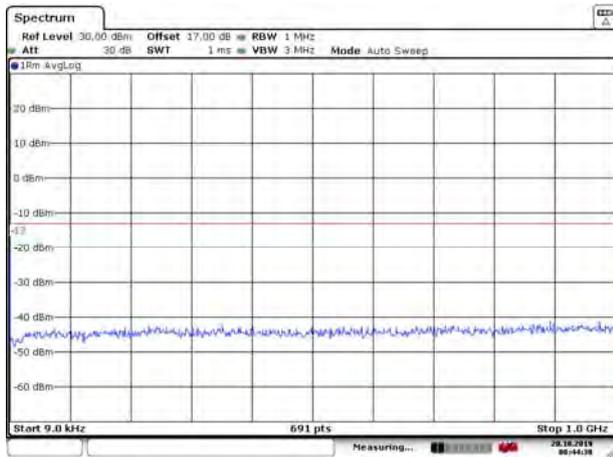
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LTE Band 4 1.4MHz CH- Middle 1GHz~20GHz



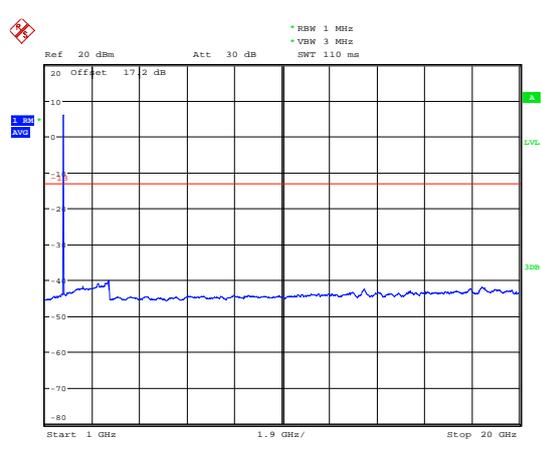
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LTE Band 4 1.4MHz CH- High 9KHz~1GHz



Date: 20 OCT.2019 08:44:38

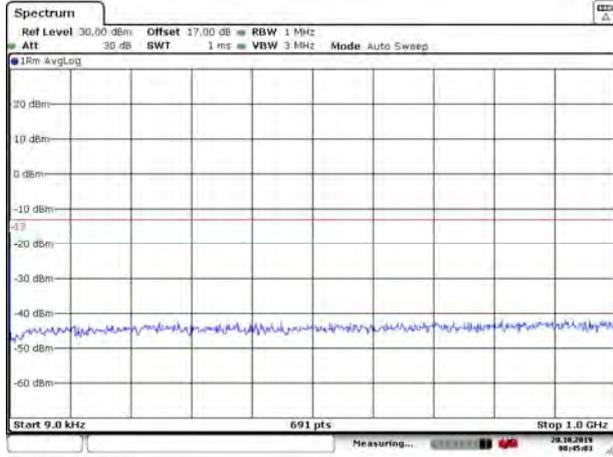
LTE Band 4 1.4MHz CH- High 1GHz~20GHz



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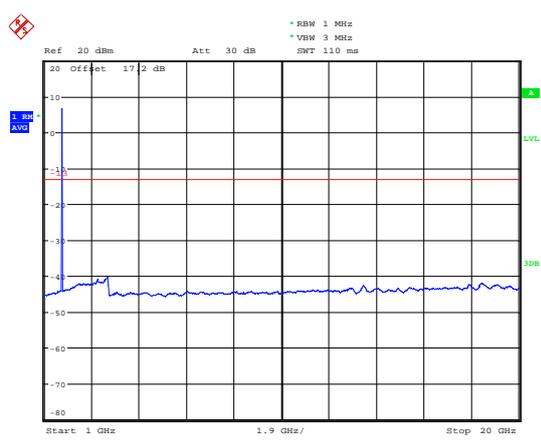


LTE Band 4 3MHz CH-Low 9KHz~1GHz



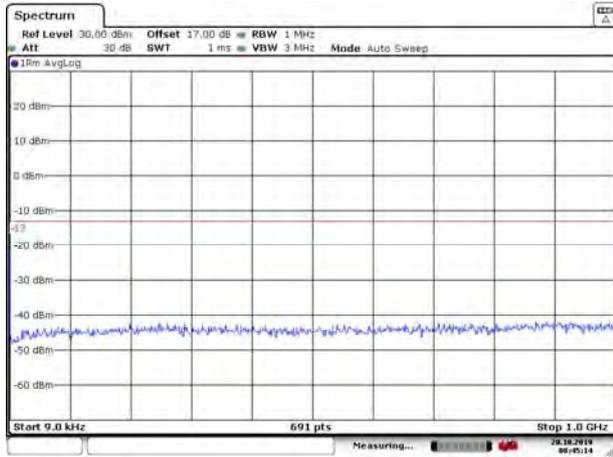
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LTE Band 4 3MHz CH-Low 1GHz~20GHz



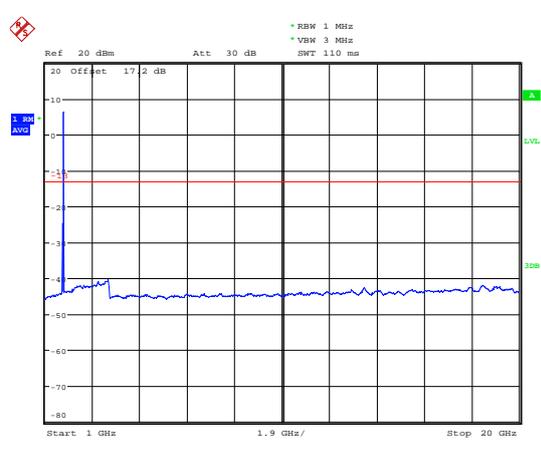
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LTE Band 4 3MHz CH- Middle 9KHz~1GHz



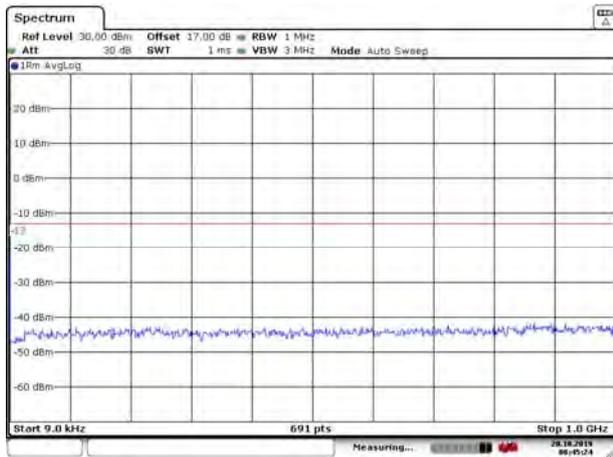
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LTE Band 4 3MHz CH- Middle 1GHz~20GHz



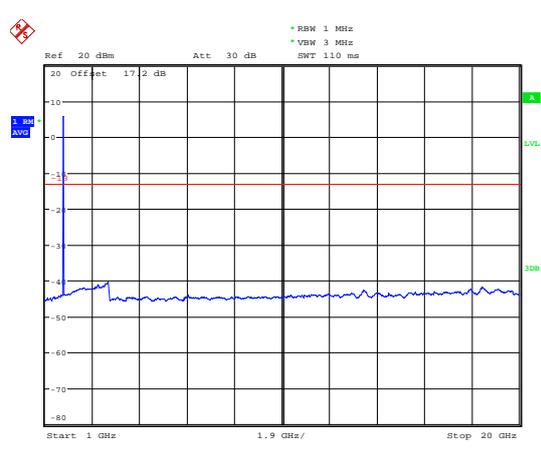
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LTE Band 4 3MHz CH- High 9KHz~1GHz



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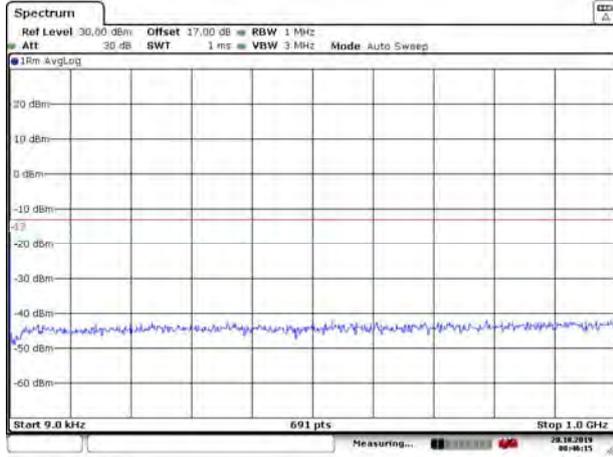
LTE Band 4 3MHz CH- High 1GHz~20GHz



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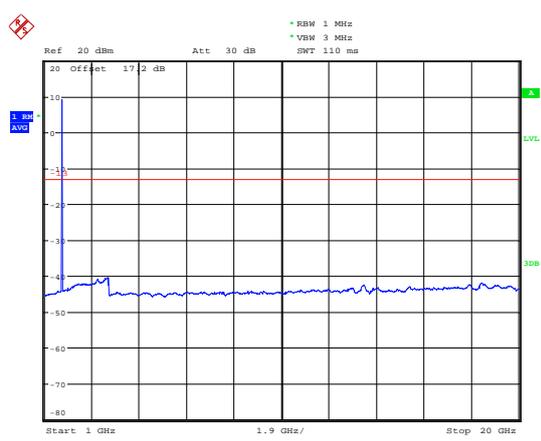


LTE Band 4 5MHz CH-Low 9KHz~1GHz



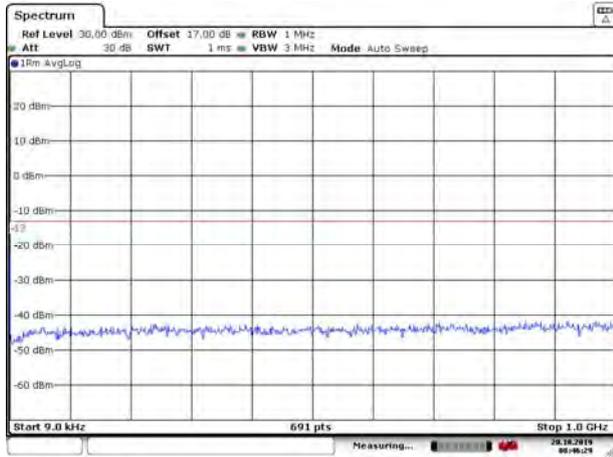
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LTE Band 4 5MHz CH-Low 1GHz~20GHz



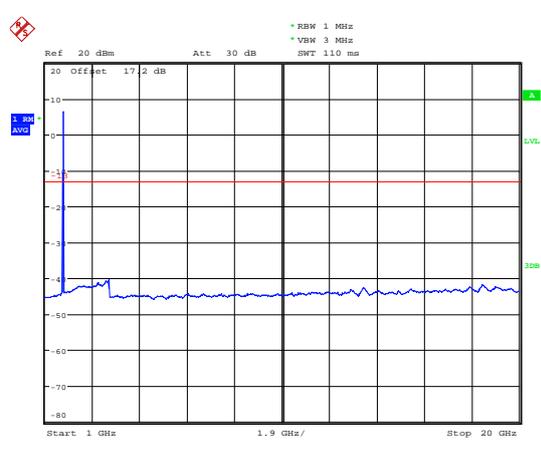
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LTE Band 4 5MHz CH- Middle 9KHz~1GHz



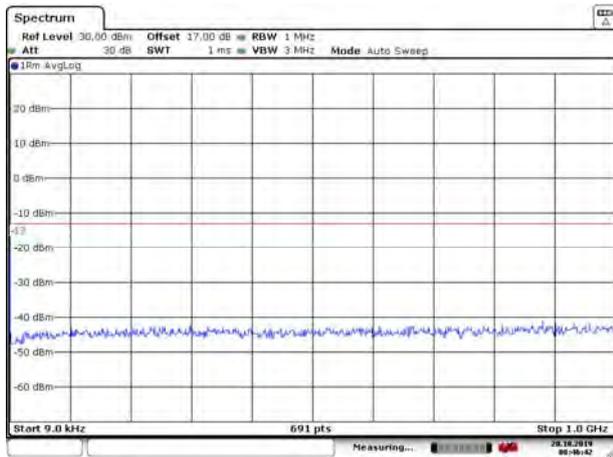
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LTE Band 4 5MHz CH- Middle 1GHz~20GHz



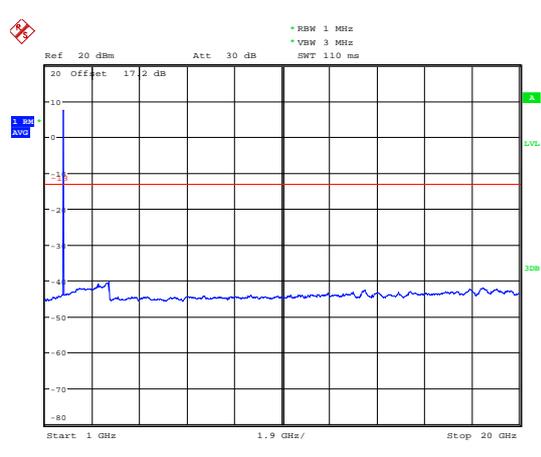
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LTE Band 4 5MHz CH- High 9KHz~1GHz



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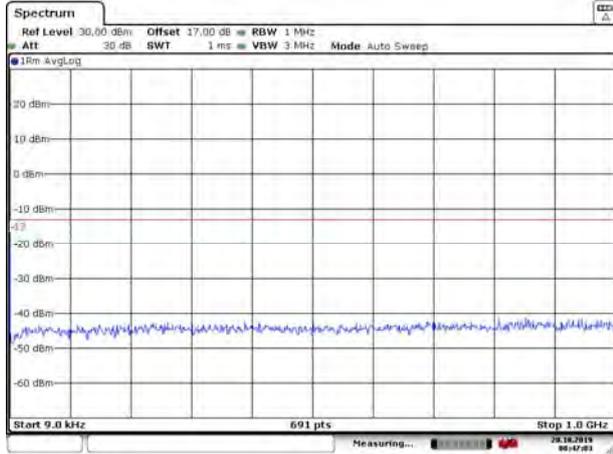
LTE Band 4 5MHz CH- High 1GHz~20GHz



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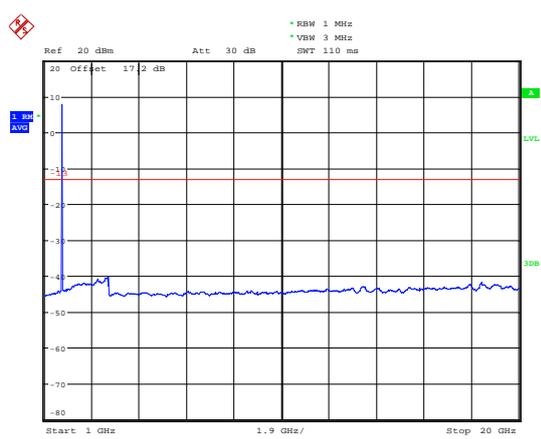


LTE Band 4 10MHz CH-Low 9KHz~1GHz



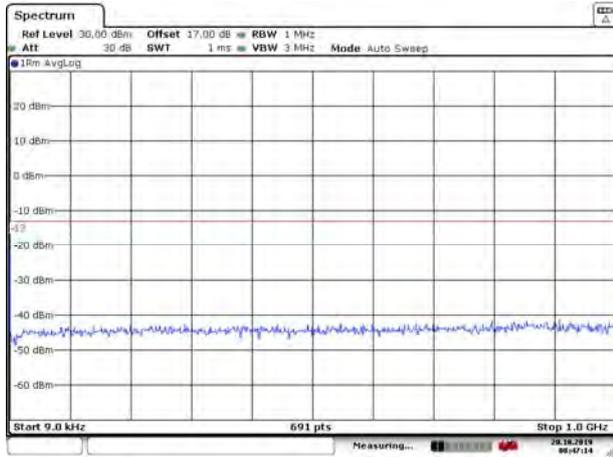
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LTE Band 4 10MHz CH-Low 1GHz~20GHz



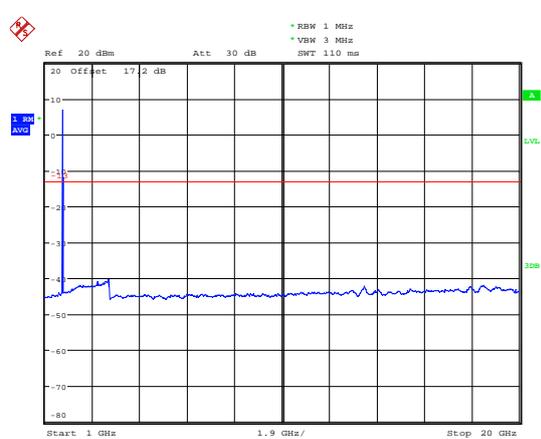
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LTE Band 4 10MHz CH- Middle 9KHz~1GHz



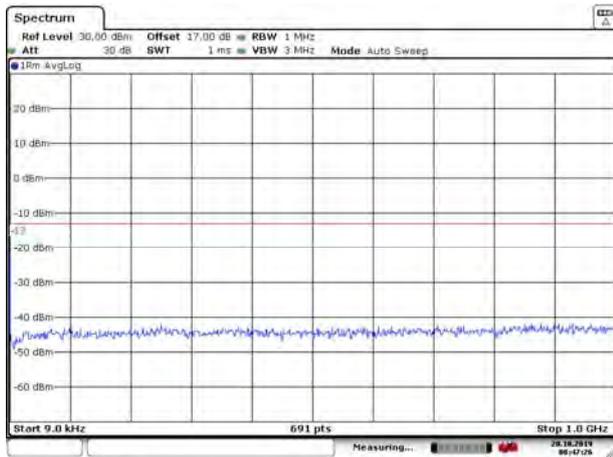
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LTE Band 4 10MHz CH- Middle 1GHz~20GHz



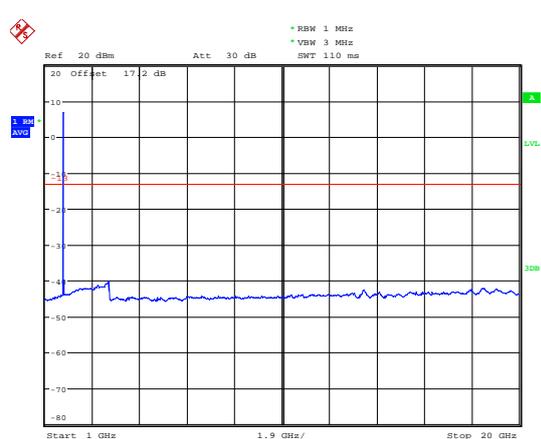
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LTE Band 4 10MHz CH- High 9KHz~1GHz



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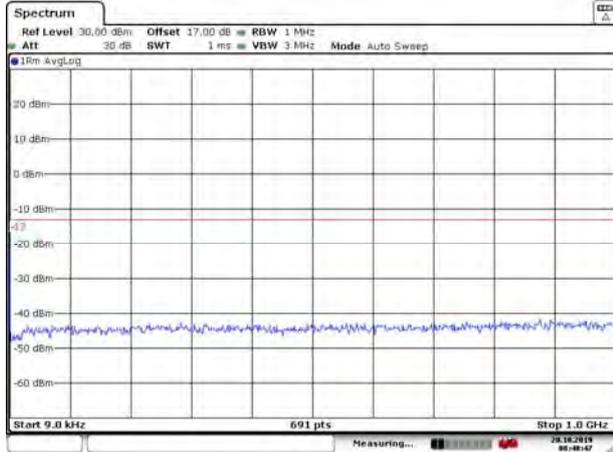
LTE Band 4 10MHz CH- High 1GHz~20GHz



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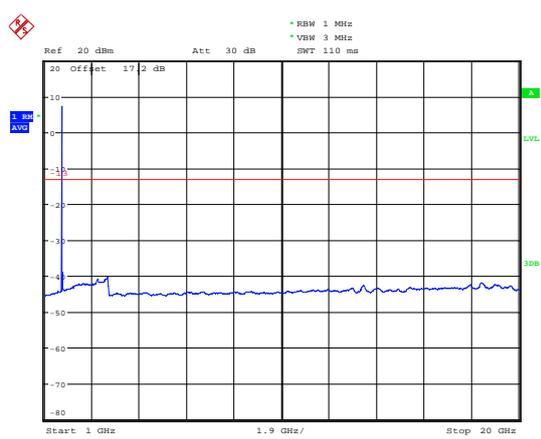


LTE Band 4 15MHz CH-Low 9KHz~1GHz



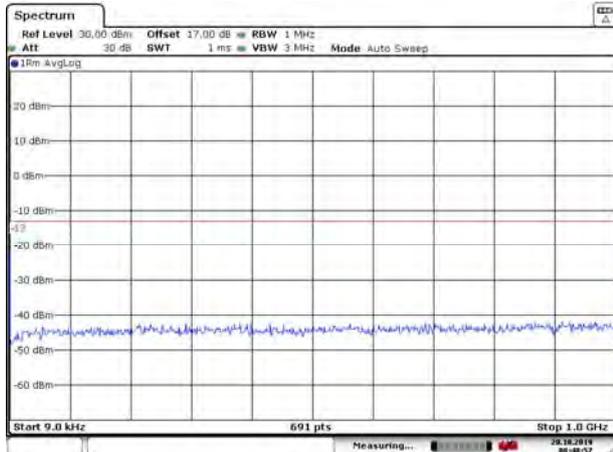
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LTE Band 4 15MHz CH-Low 1GHz~20GHz



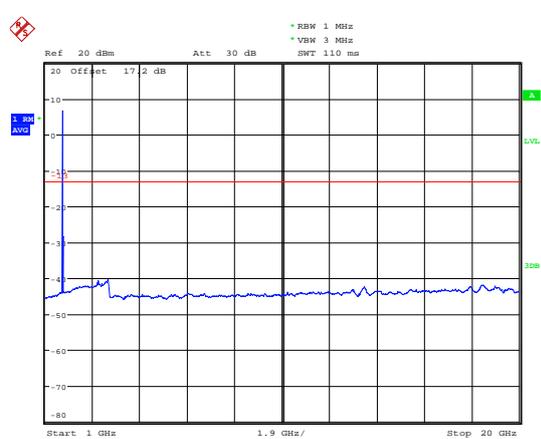
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LTE Band 4 15MHz CH- Middle 9KHz~1GHz



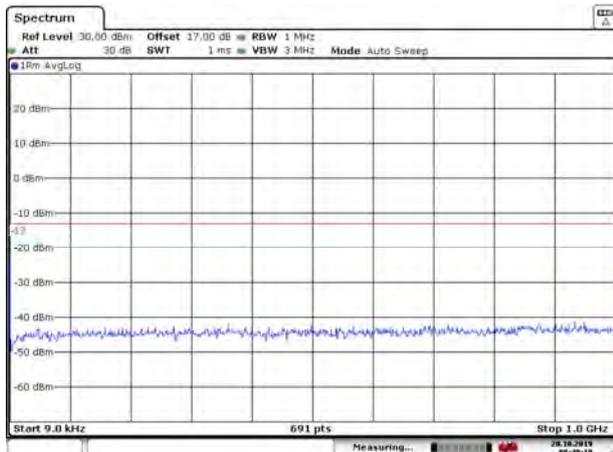
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LTE Band 4 15MHz CH- Middle 1GHz~20GHz



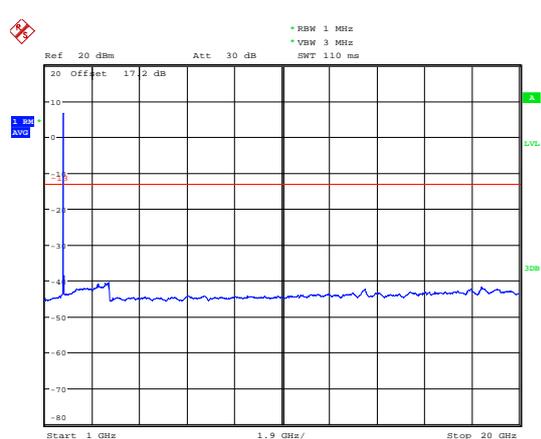
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LTE Band 4 15MHz CH- High 9KHz~1GHz



Date: 20.OCT.2019 08:49:11

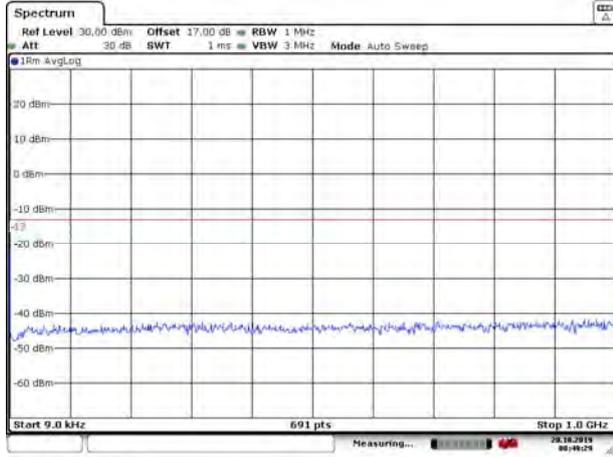
LTE Band 4 15MHz CH- High 1GHz~20GHz



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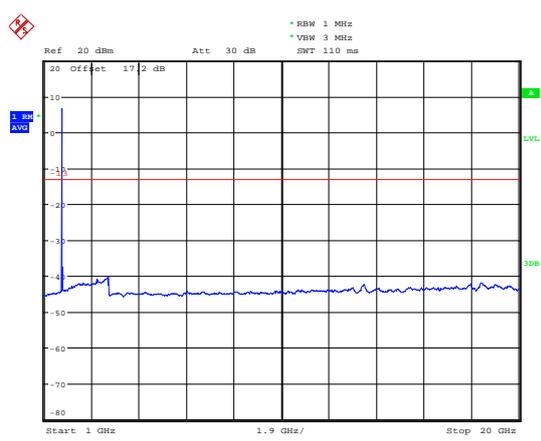


LTE Band 4 20MHz CH-Low 9KHz~1GHz



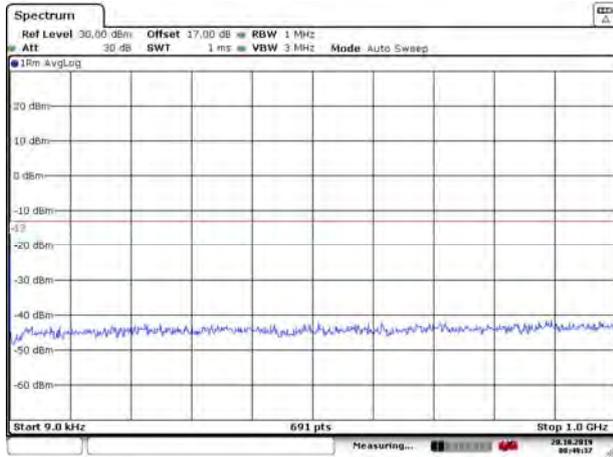
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LTE Band 4 20MHz CH-Low 1GHz~20GHz



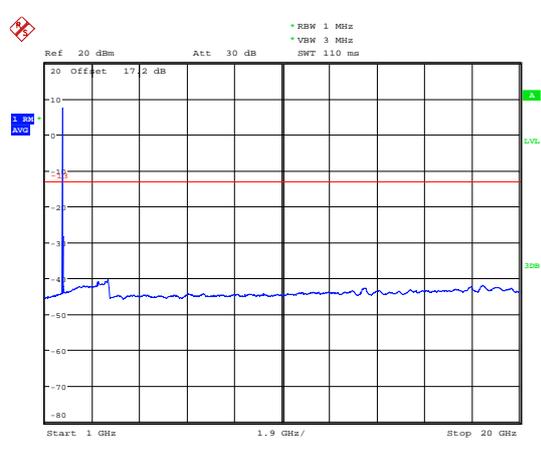
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LTE Band 4 20MHz CH- Middle 9KHz~1GHz



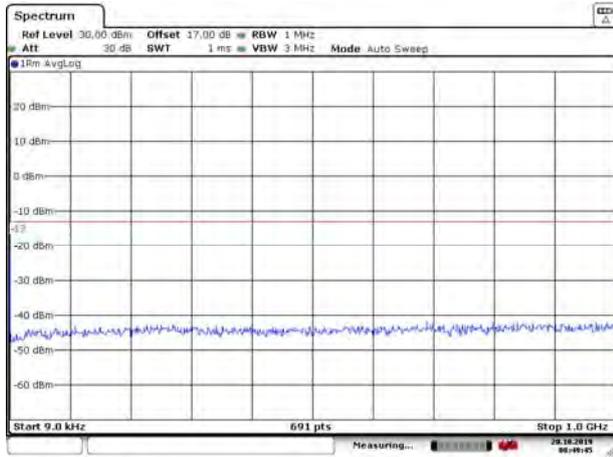
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LTE Band 4 20MHz CH- Middle 1GHz~20GHz



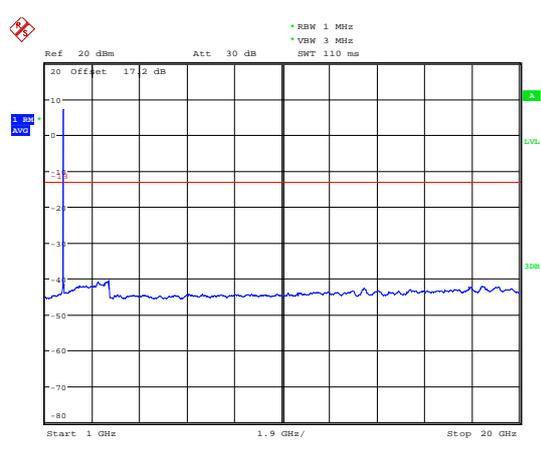
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LTE Band 4 20MHz CH- High 9KHz~1GHz

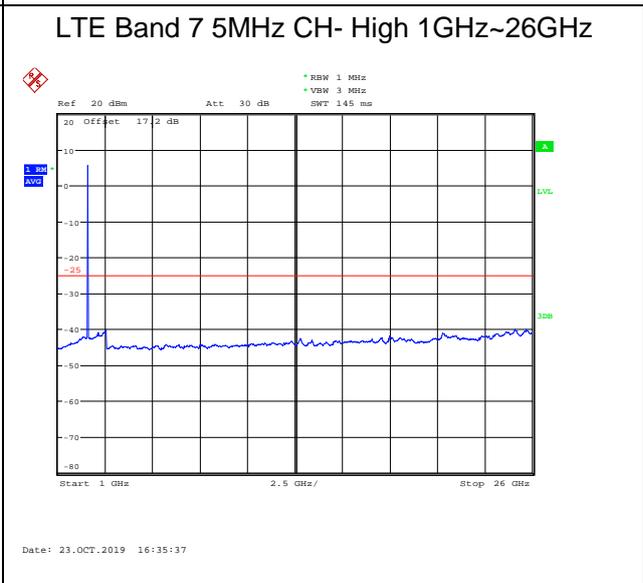
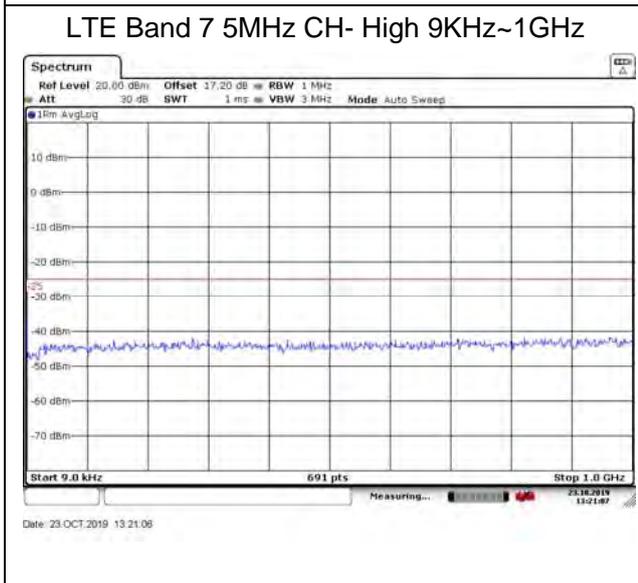
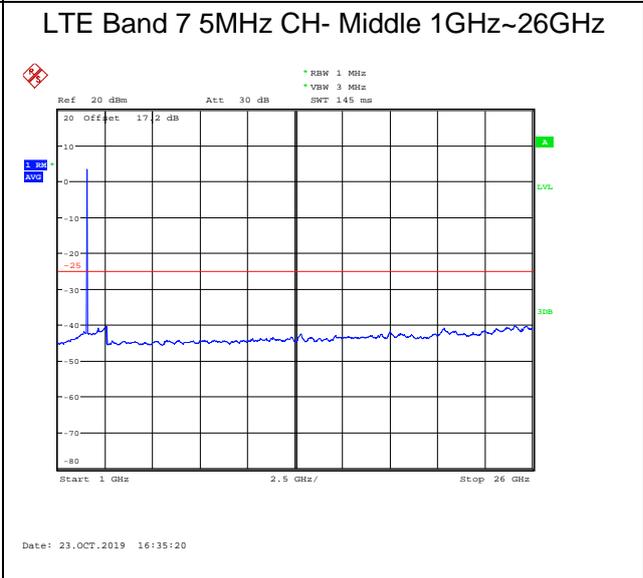
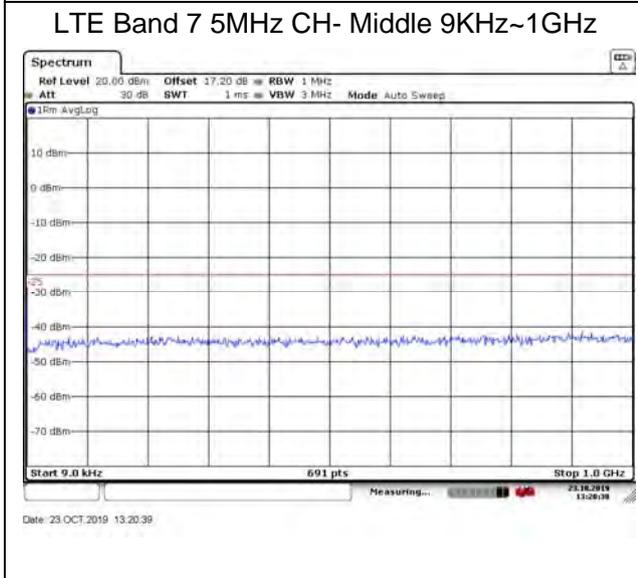
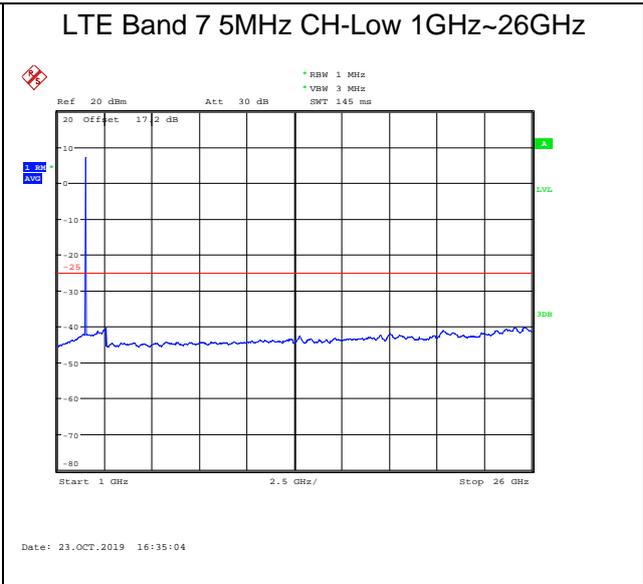
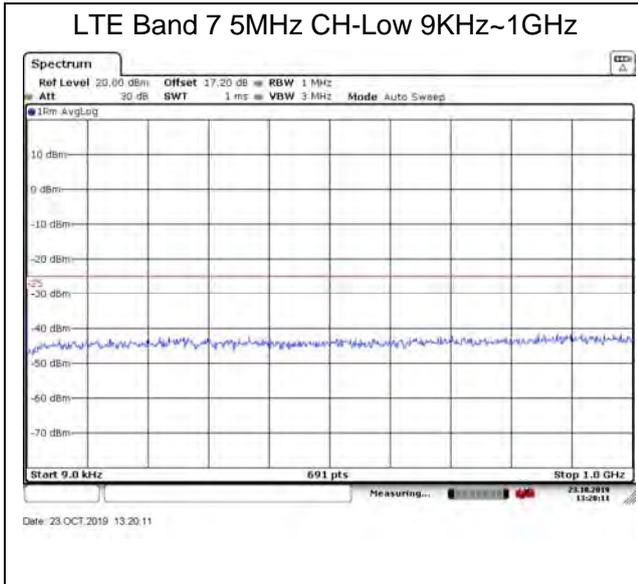


Date: 20.OCT.2019 08:49:45

LTE Band 4 20MHz CH- High 1GHz~20GHz

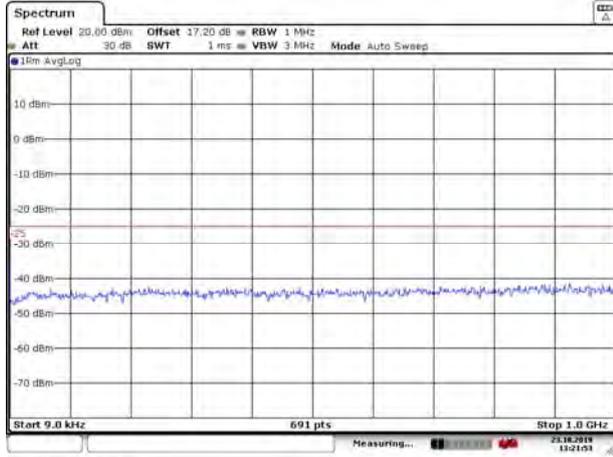


Date: 23.OCT.2019 16:25:42



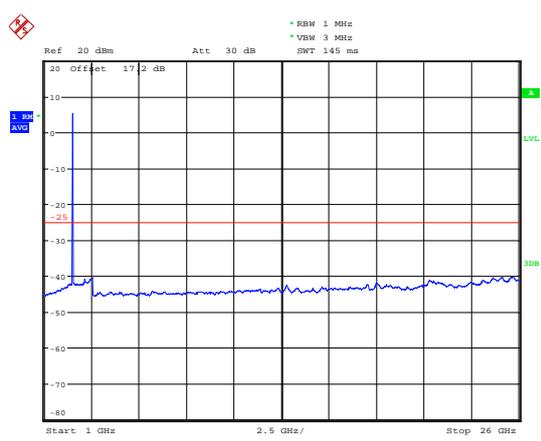


LTE Band 7 10MHz CH-Low 9KHz~1GHz



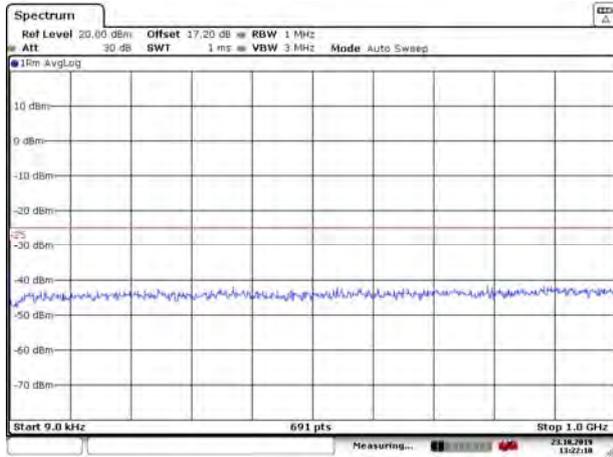
Date: 23.OCT.2019 13:21:53

LTE Band 7 10MHz CH-Low 1GHz~26GHz



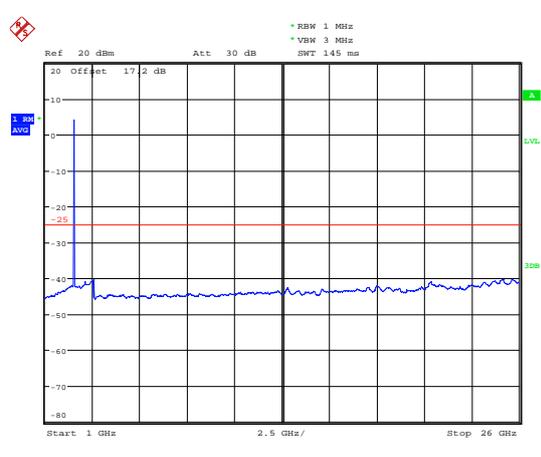
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LTE Band 7 10MHz CH- Middle 9KHz~1GHz



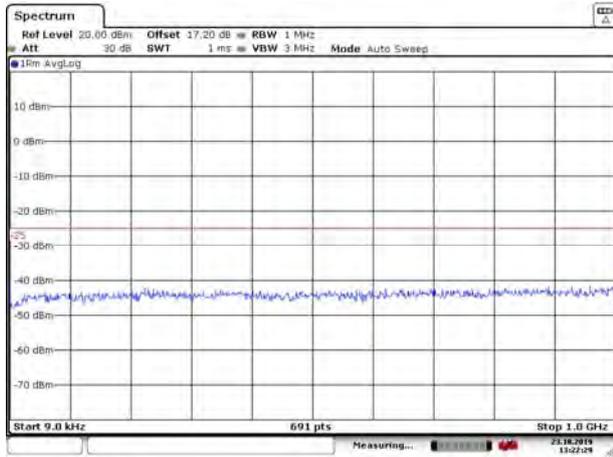
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LTE Band 7 10MHz CH- Middle 1GHz~26GHz



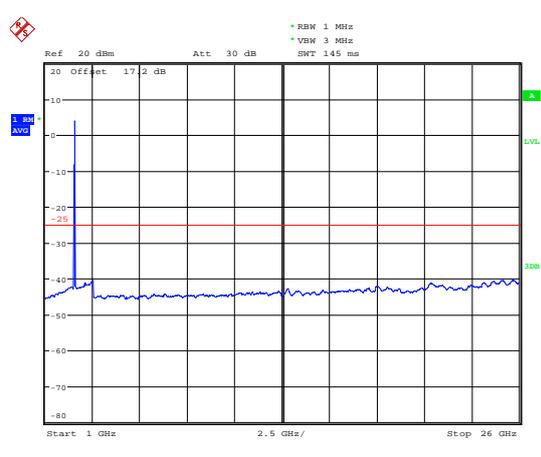
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LTE Band 7 10MHz CH- High 9KHz~1GHz



Date: 23.OCT.2019 13:22:29

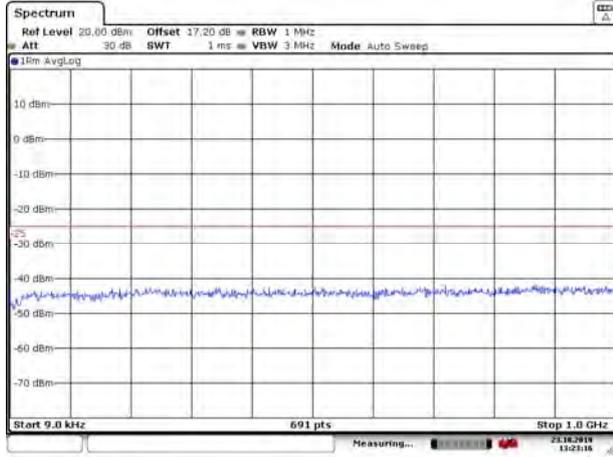
LTE Band 7 10MHz CH- High 1GHz~26GHz



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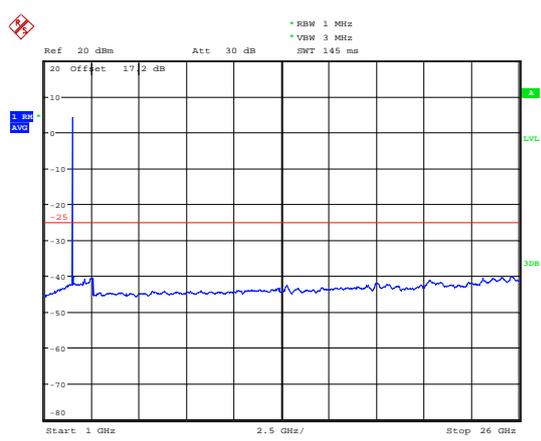


LTE Band 7 15MHz CH-Low 9KHz~1GHz



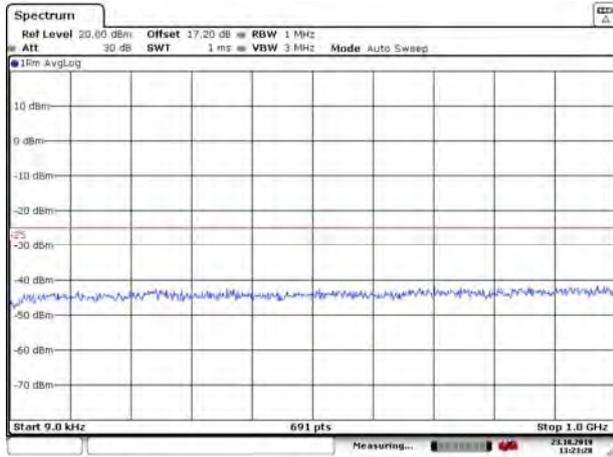
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LTE Band 7 15MHz CH-Low 1GHz~26GHz



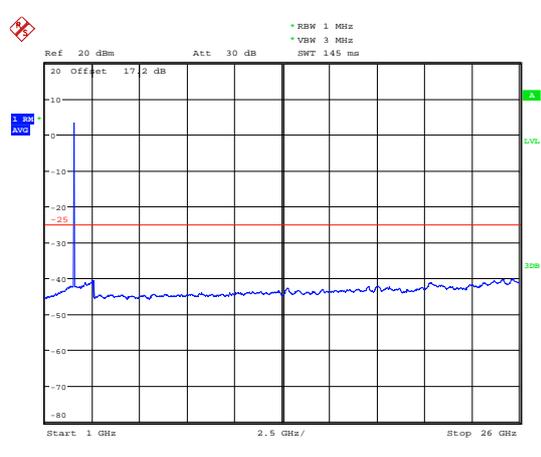
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LTE Band 7 15MHz CH- Middle 9KHz~1GHz



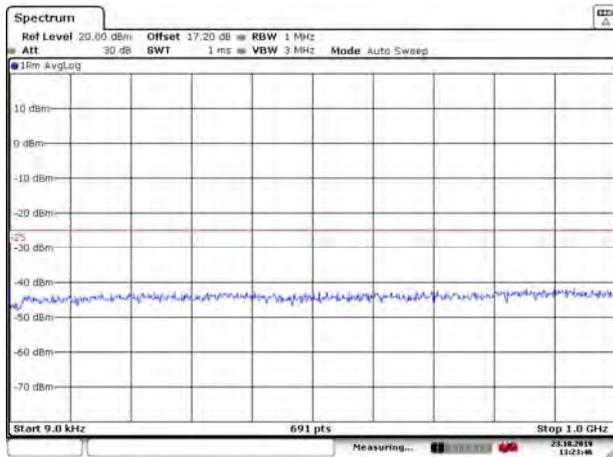
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LTE Band 7 15MHz CH- Middle 1GHz~26GHz



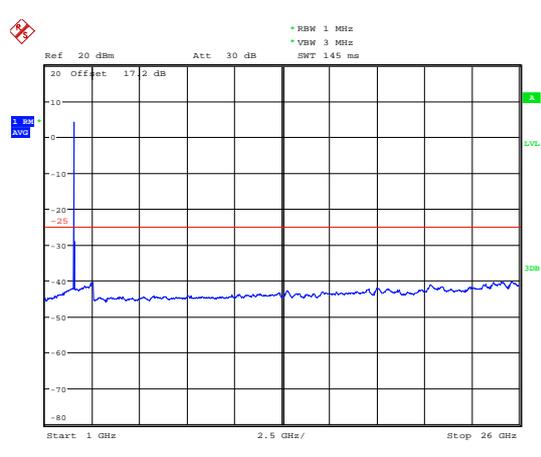
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LTE Band 7 15MHz CH- High 9KHz~1GHz



Date: 23.OCT.2019 13:23:46

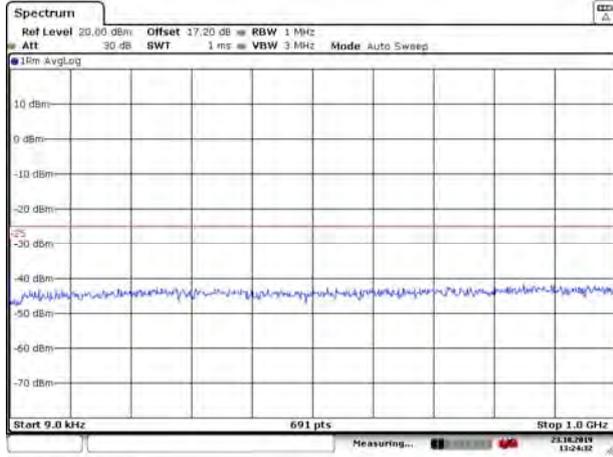
LTE Band 7 15MHz CH- High 1GHz~26GHz



Date: 23.OCT.2019 16:40:59

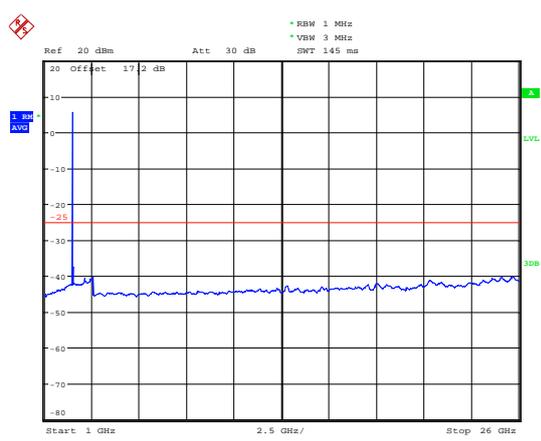


LTE Band 7 20MHz CH-Low 9KHz~1GHz



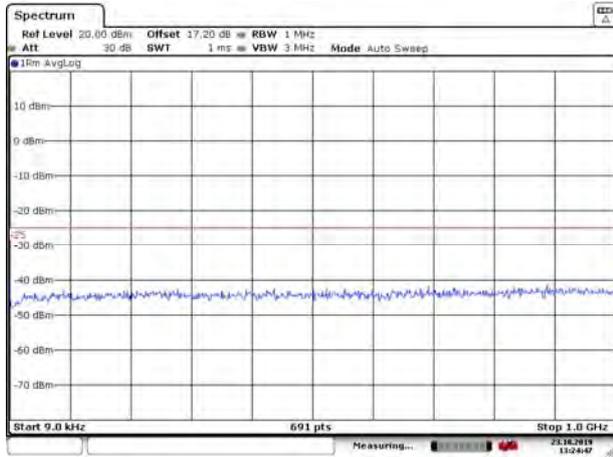
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LTE Band 7 20MHz CH-Low 1GHz~26GHz



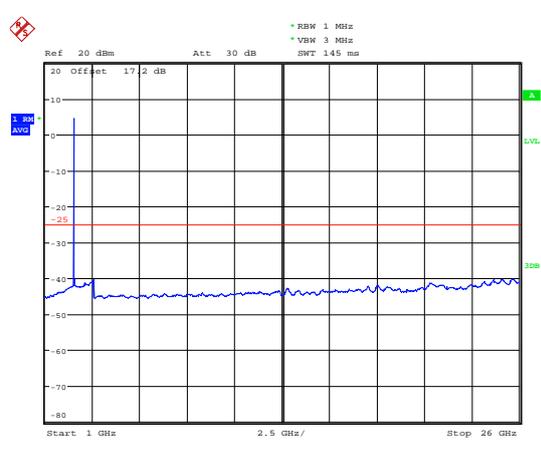
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LTE Band 7 20MHz CH- Middle 9KHz~1GHz



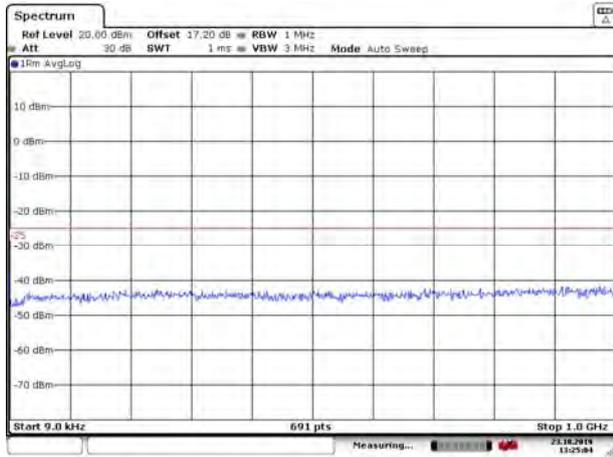
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LTE Band 7 20MHz CH- Middle 1GHz~26GHz



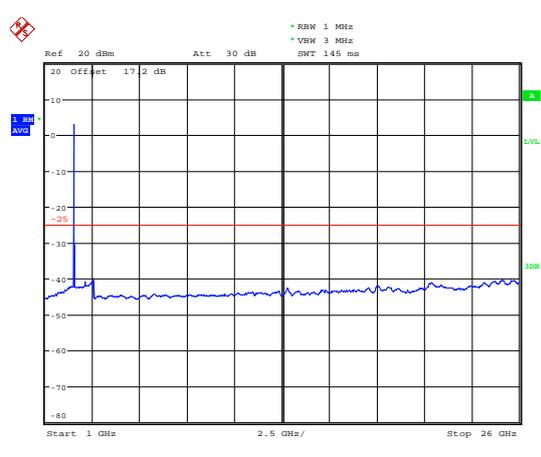
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LTE Band 7 20MHz CH- High 9KHz~1GHz



Date: 23.OCT.2019 13:25:04

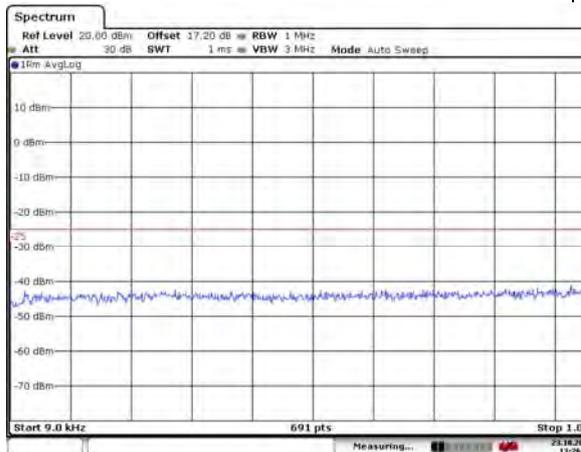
LTE Band 7 20MHz CH- High 1GHz~26GHz



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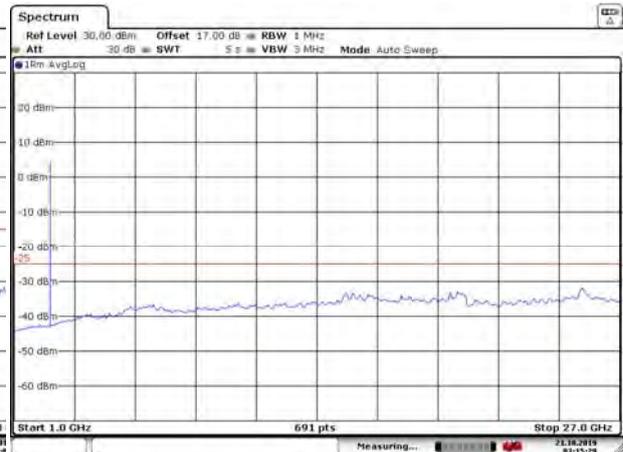


LTE Band 38 5MHz CH-L



Date: 23.OCT.2019 13:26:06

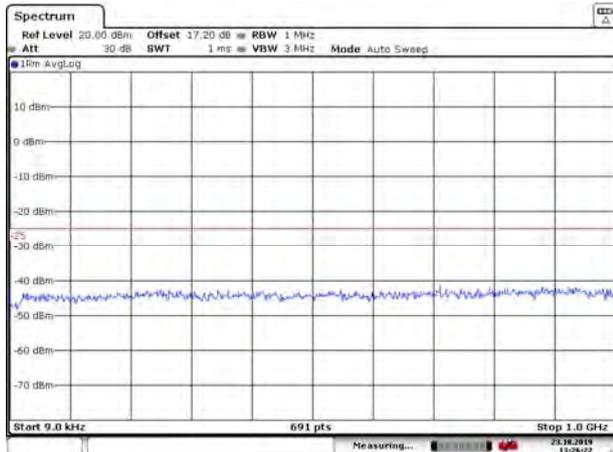
LTE Band 38 5MHz CH-Low 1GHz~27GHz



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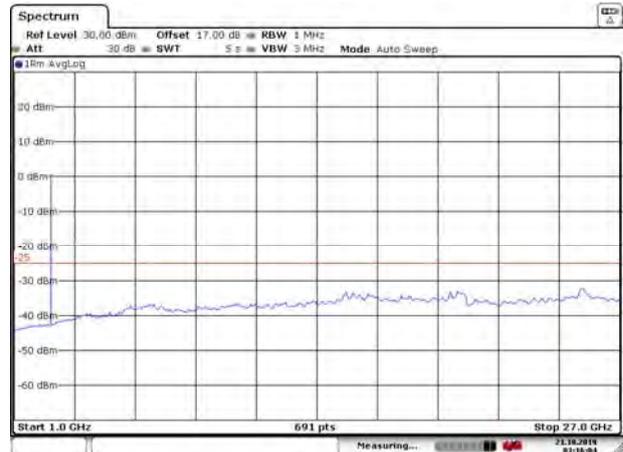
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LTE Band 38 5MHz CH- Middle 9KHz~1GHz



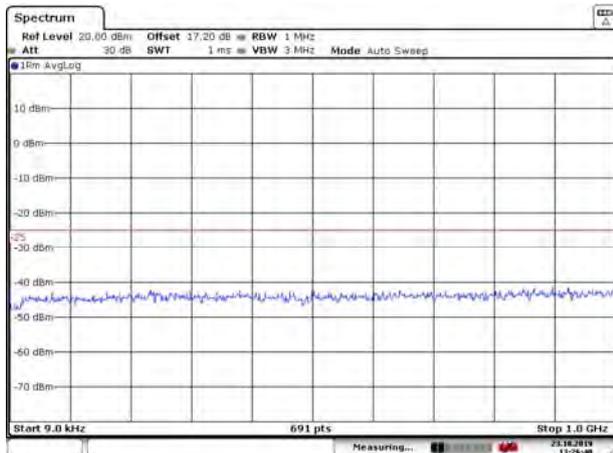
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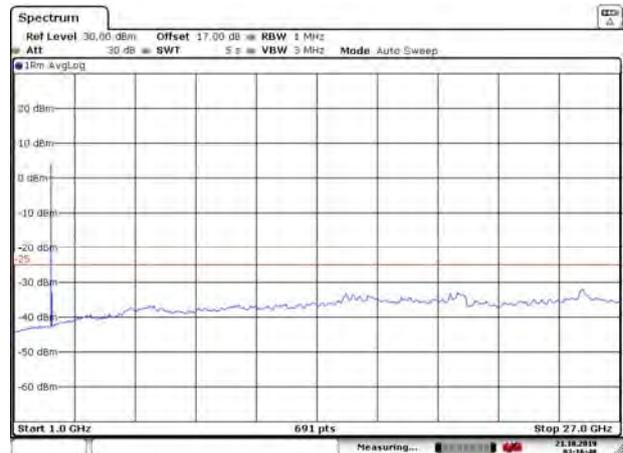
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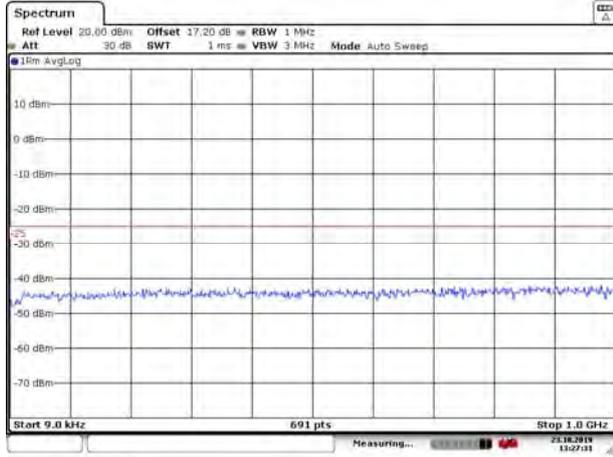
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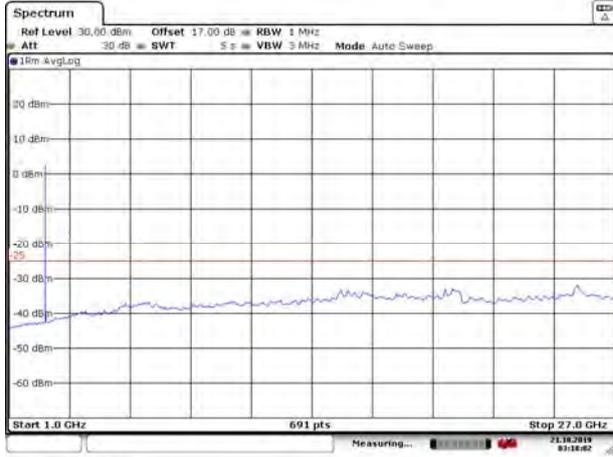


LTE Band 38 10MHz CH-Low 9KHz~1GHz



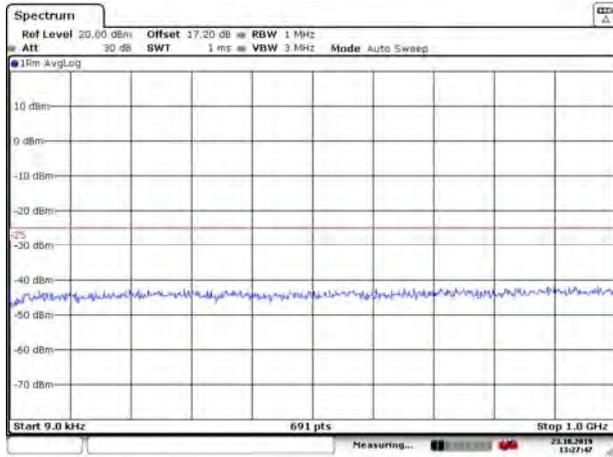
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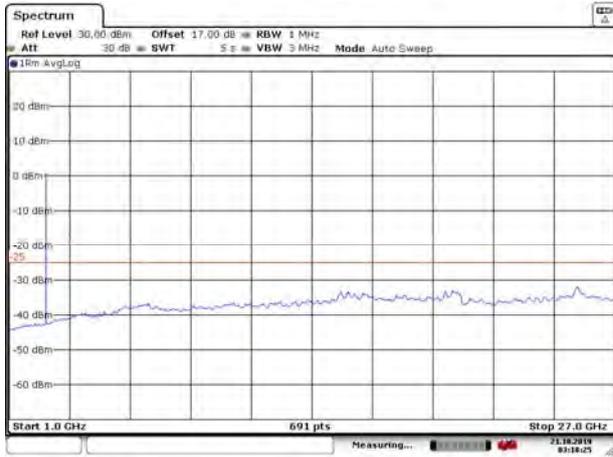
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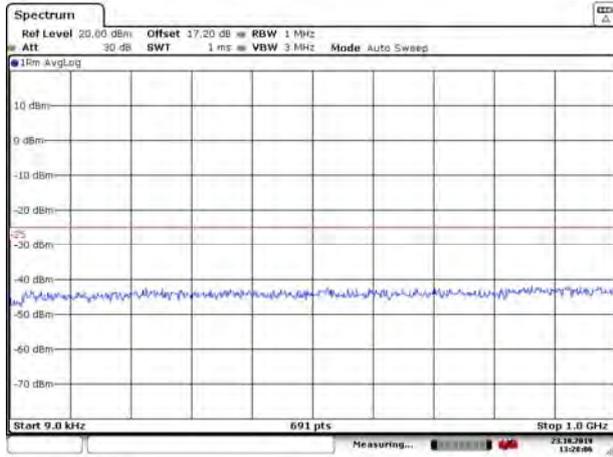
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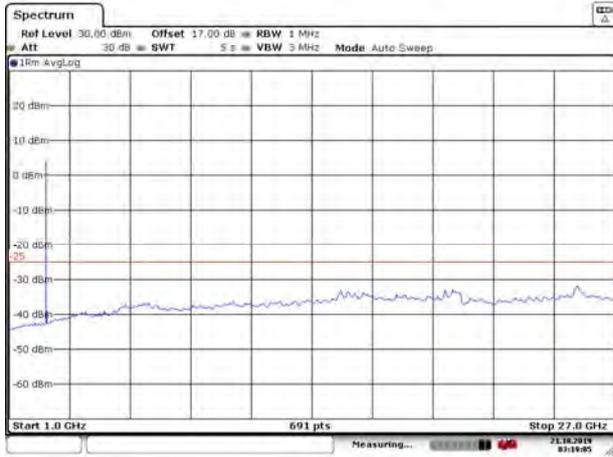
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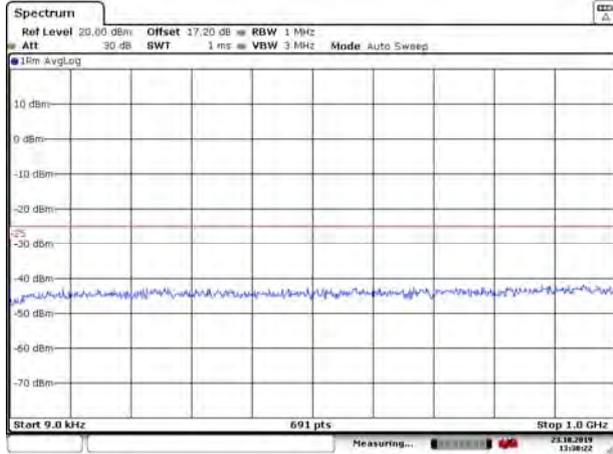
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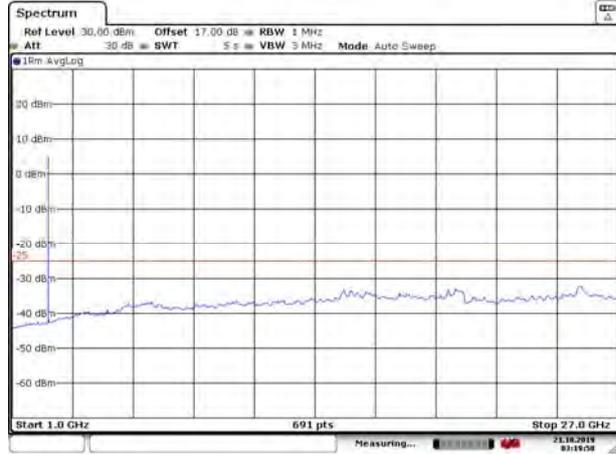
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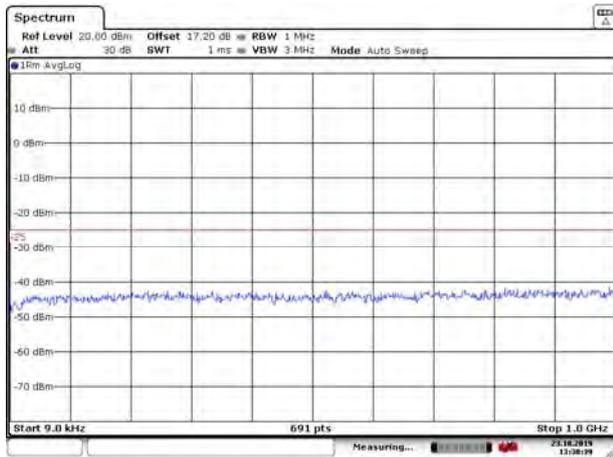
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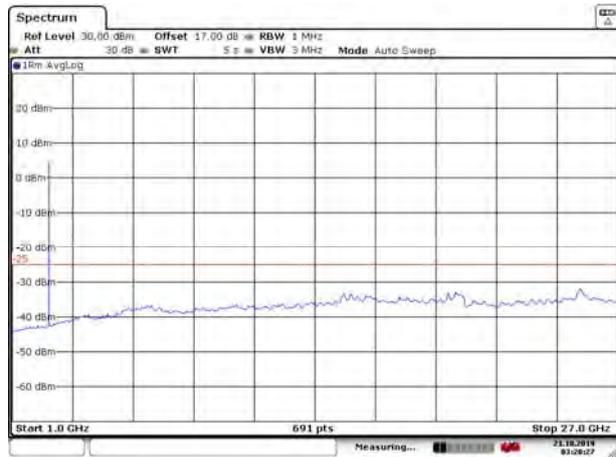
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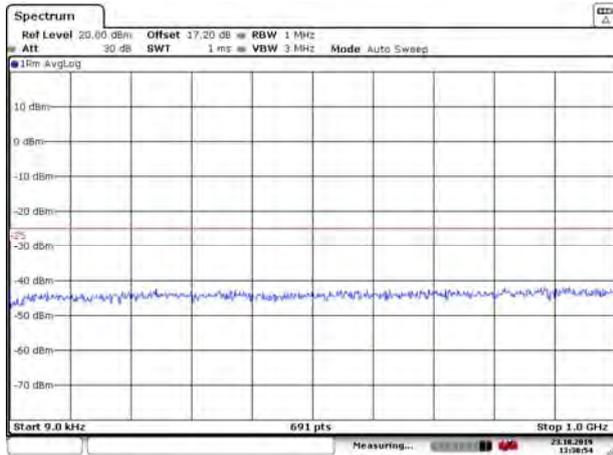
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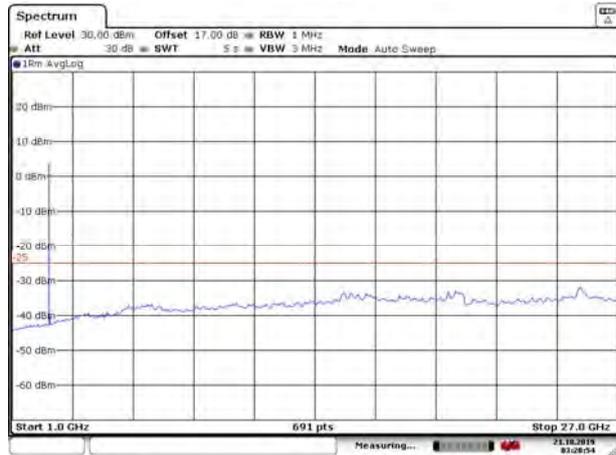
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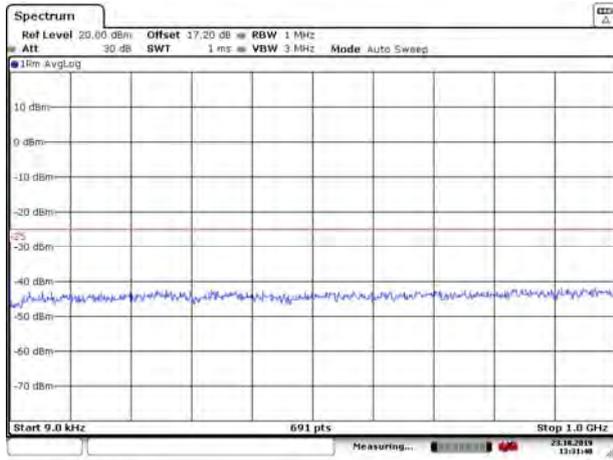


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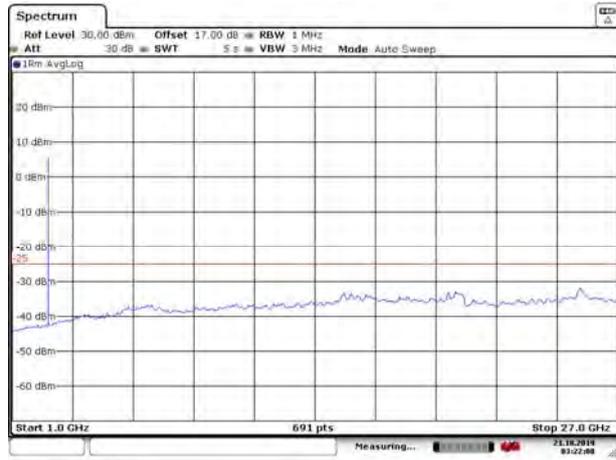




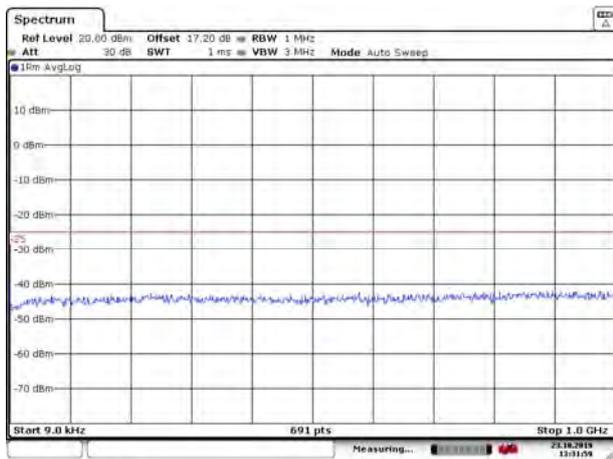
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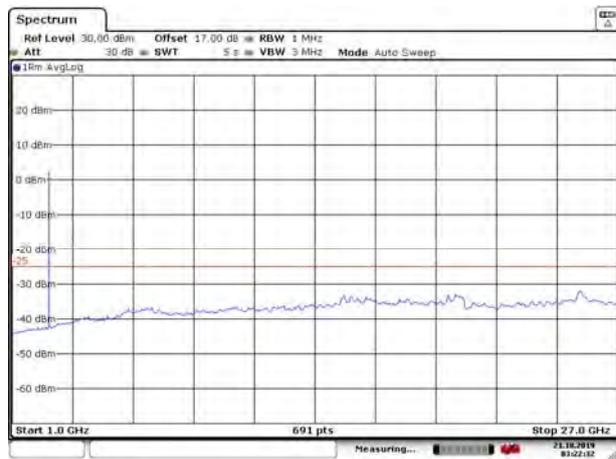
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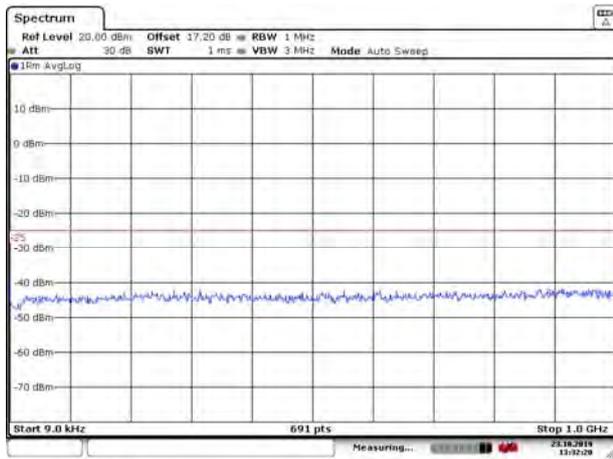
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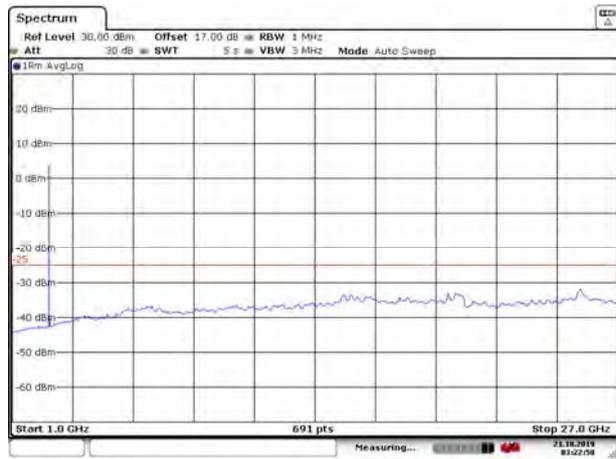
LTE Band 38 20MHz CH- Middle 1GHz~27GHz

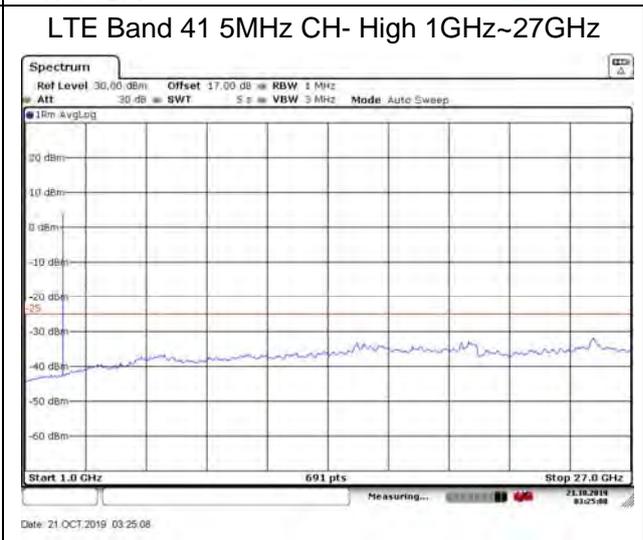
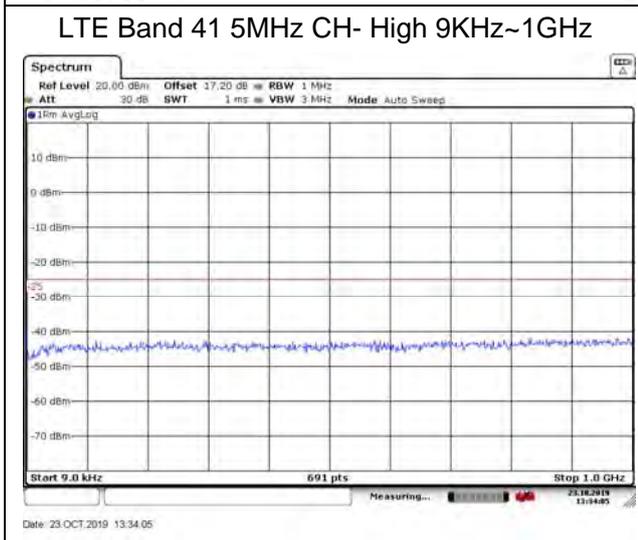
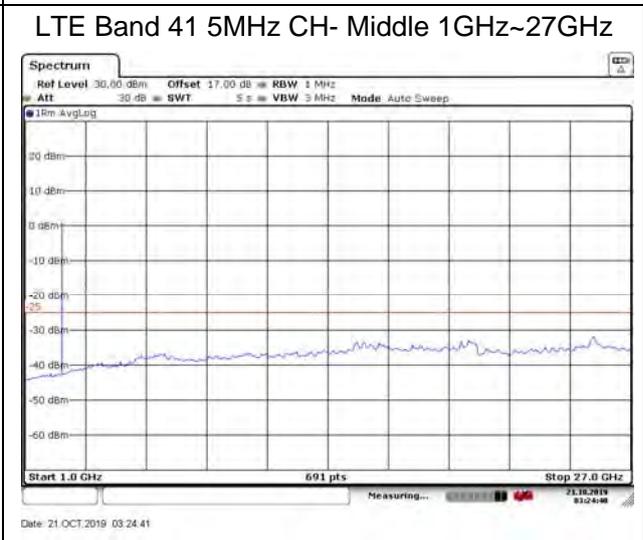
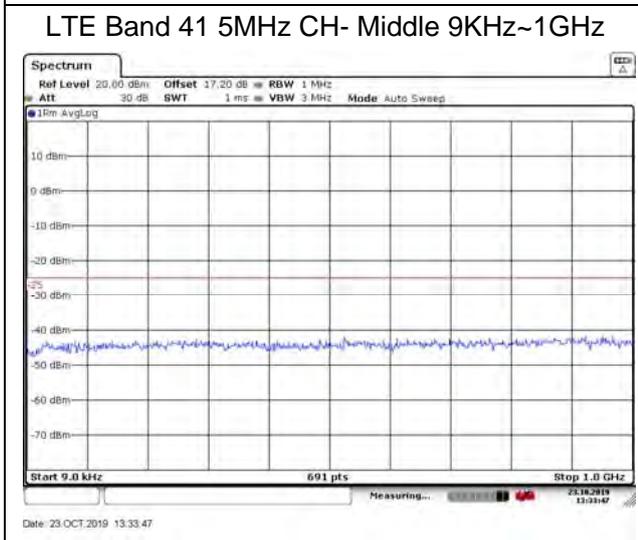
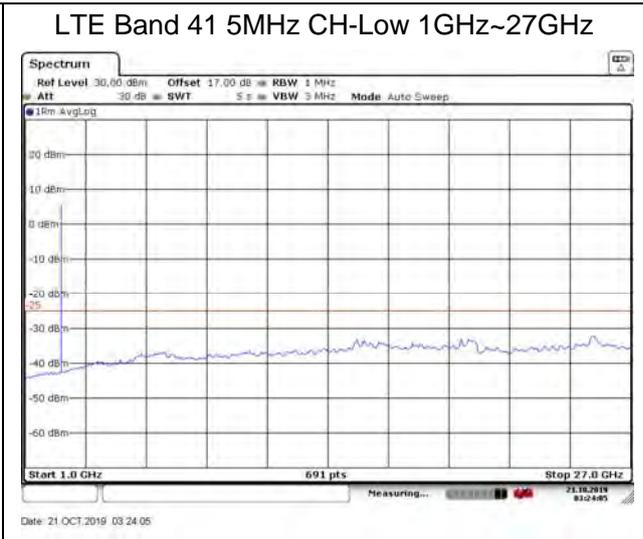
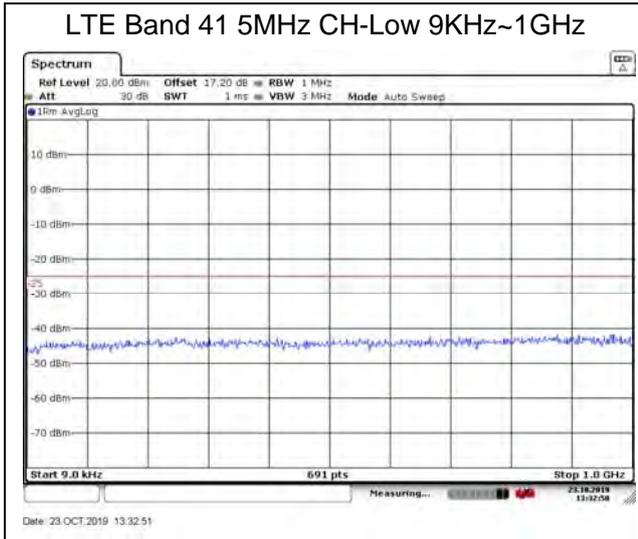


LTE Band 38 20MHz CH- High 9KHz~1GHz



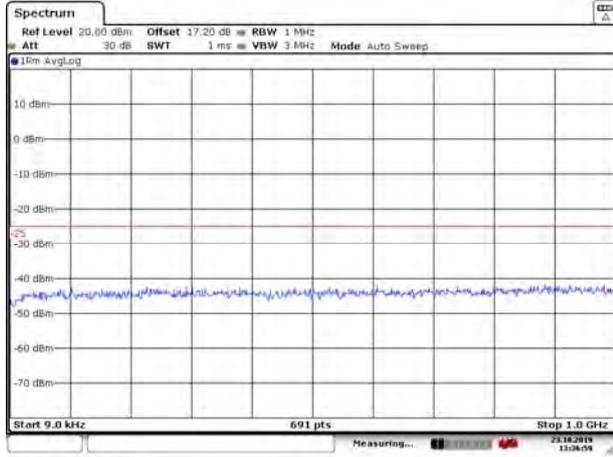
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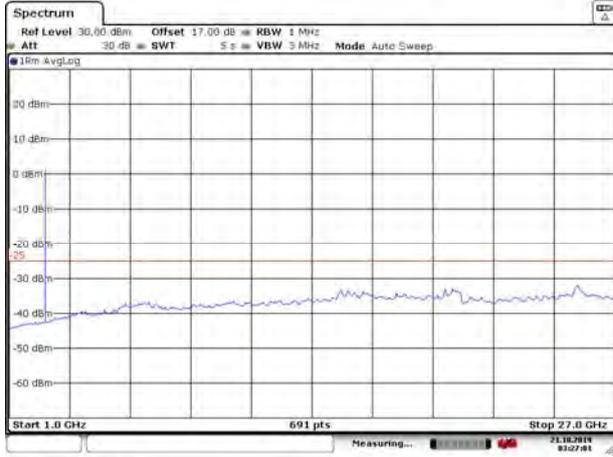


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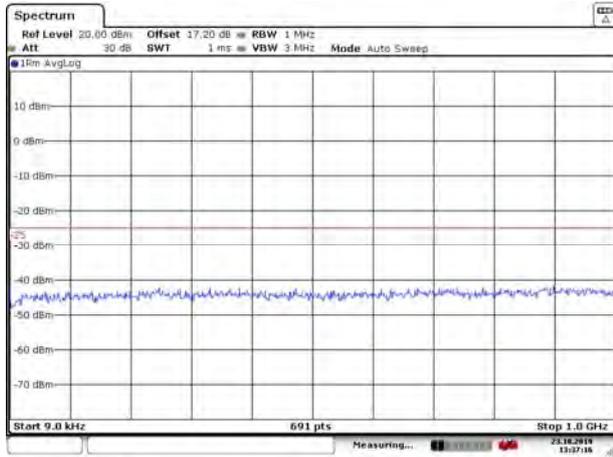
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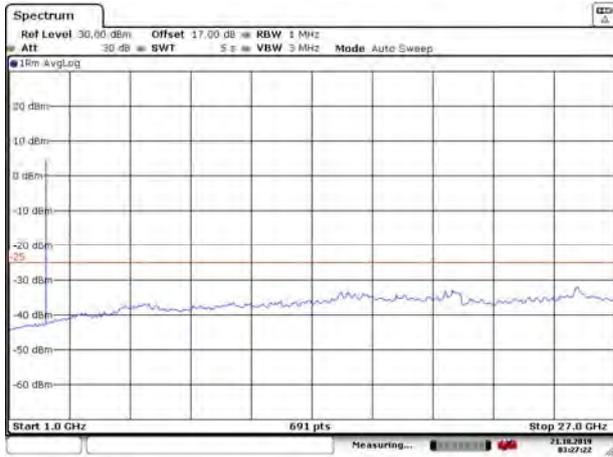
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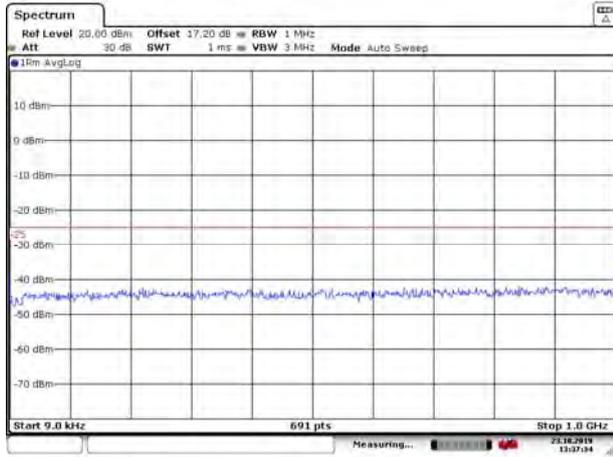
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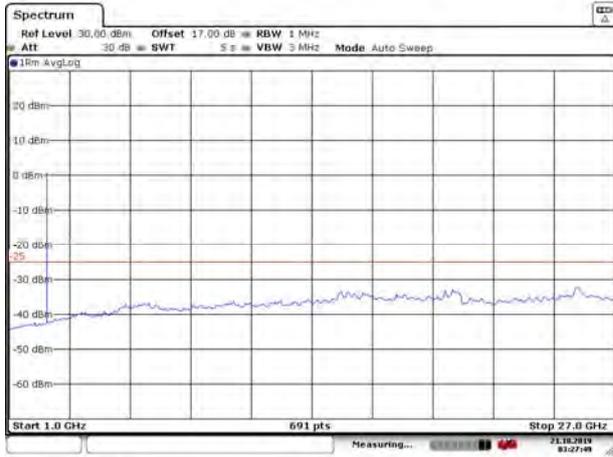
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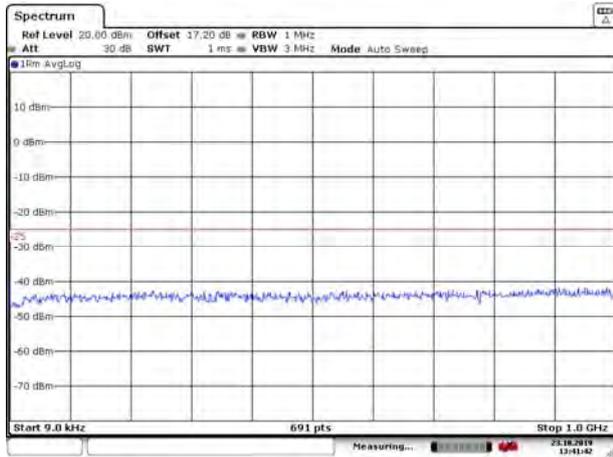
LTE Band 41 10MHz CH- High 1GHz~27GHz



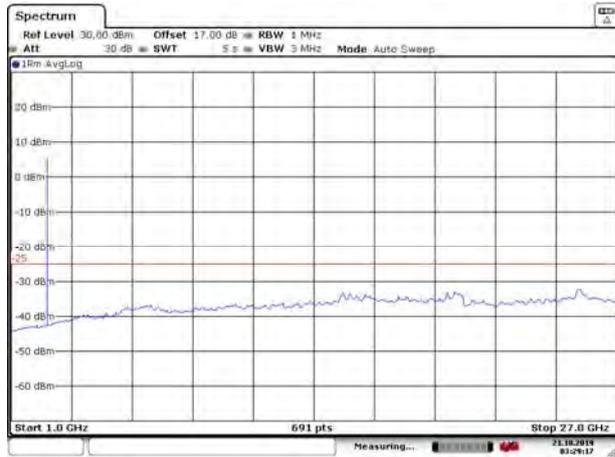
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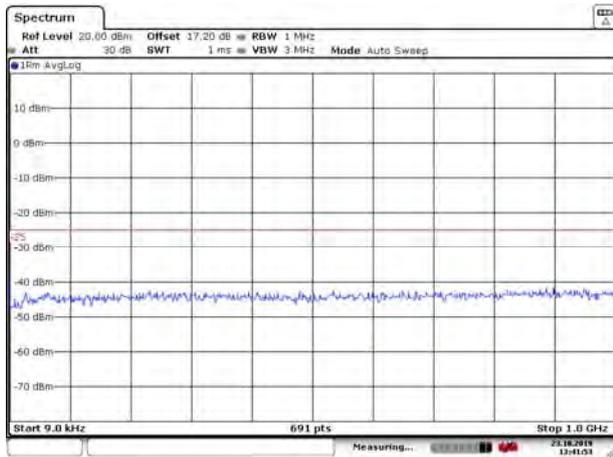
LTE Band 41 15MHz CH-Low 9KHz~1GHz



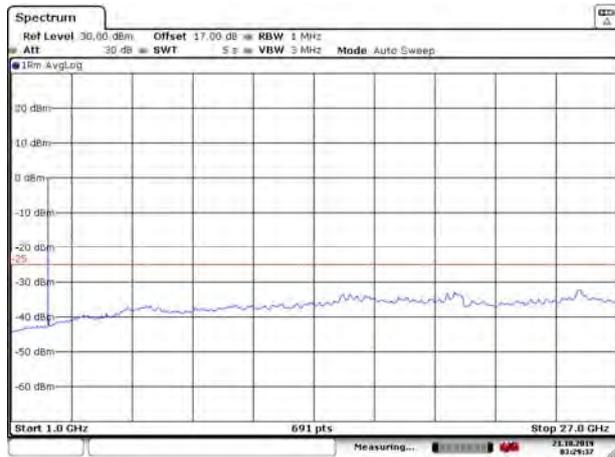
LTE Band 41 15MHz CH-Low 1GHz~27GHz



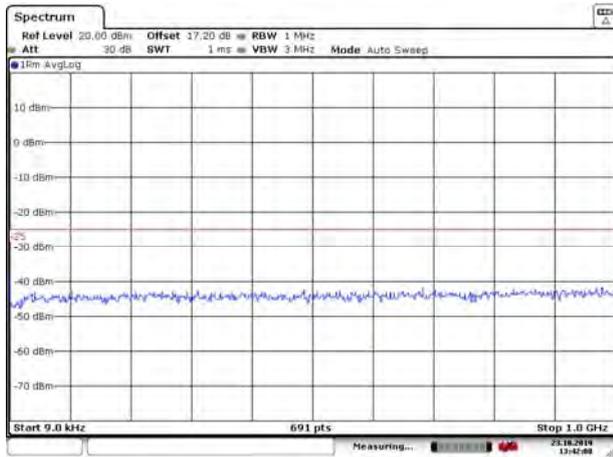
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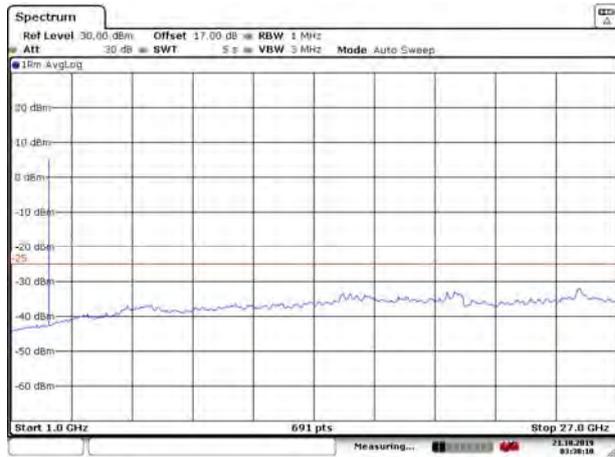
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LTE Band 41 15MHz CH- High 9KHz~1GHz

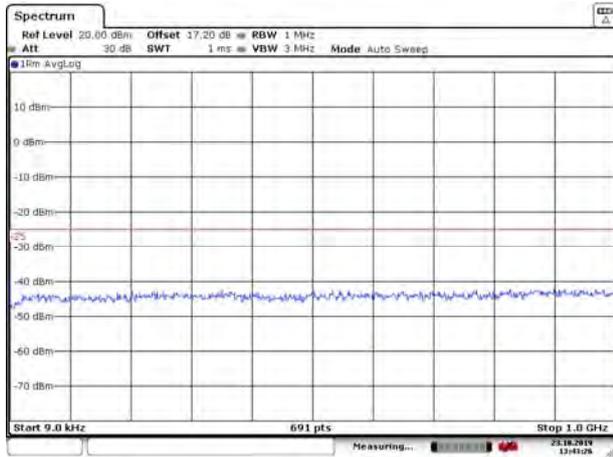


LTE Band 41 15MHz CH- High 1GHz~27GHz



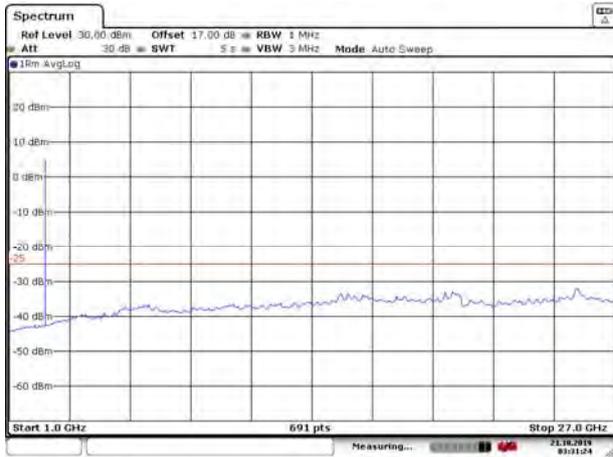


LTE Band 41 20MHz CH-Low 9KHz~1GHz



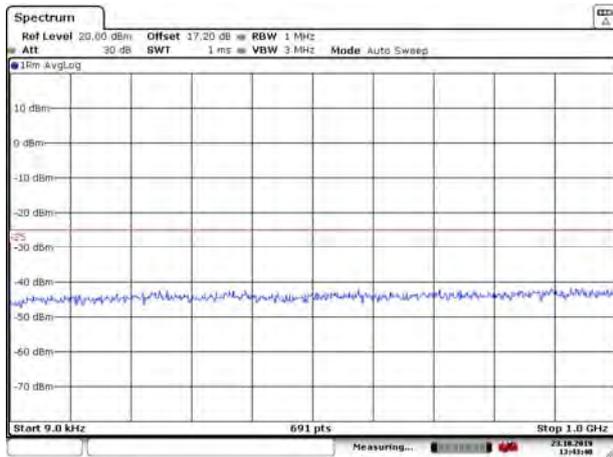
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LTE Band 41 20MHz CH-Low 1GHz~27GHz



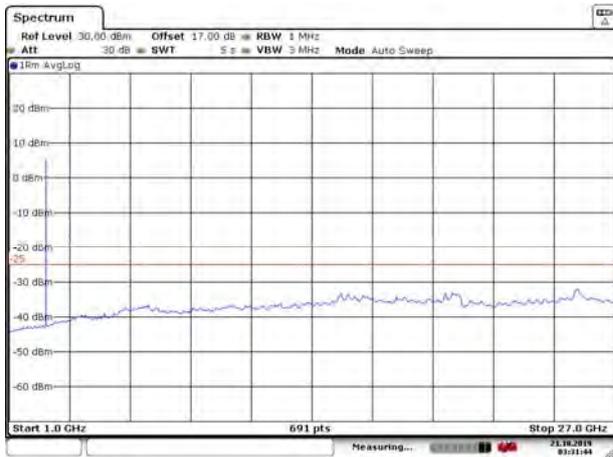
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LTE Band 41 20MHz CH- Middle 9KHz~1GHz



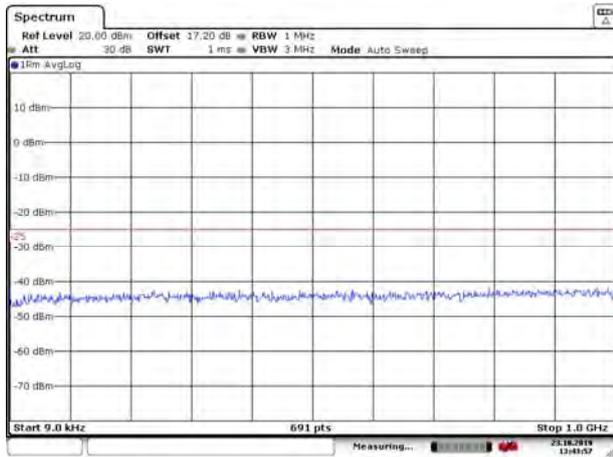
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LTE Band 41 20MHz CH- Middle 1GHz~27GHz



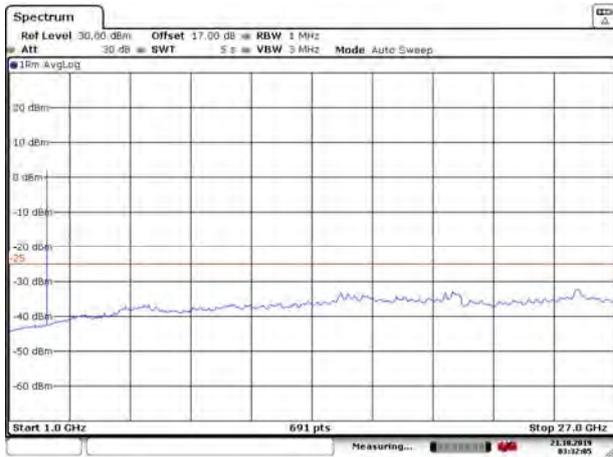
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LTE Band 41 20MHz CH- High 9KHz~1GHz



Date: 23.OCT.2019 13:43:58

LTE Band 41 20MHz CH- High 1GHz~27GHz



Date: 21.OCT.2019 03:32:05

5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

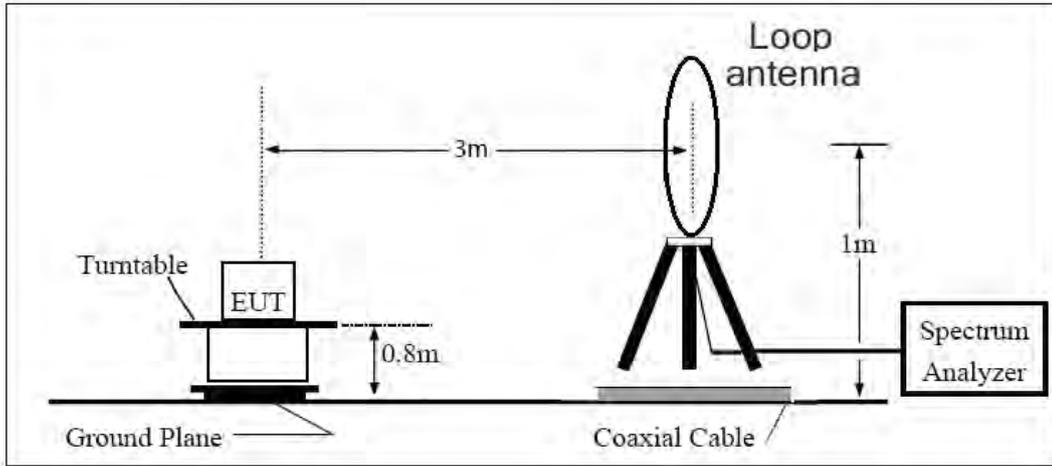
- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
- Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
- A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz ,RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz And the maximum value of the receiver should be recorded as (Pr).
- The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
- The measurement results are obtained as described below:
 $Power(EIRP)=PMea- PAg - Pcl + Ga$
 The measurement results are amend as described below:
 $Power(EIRP)=PMea- Pcl + Ga$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

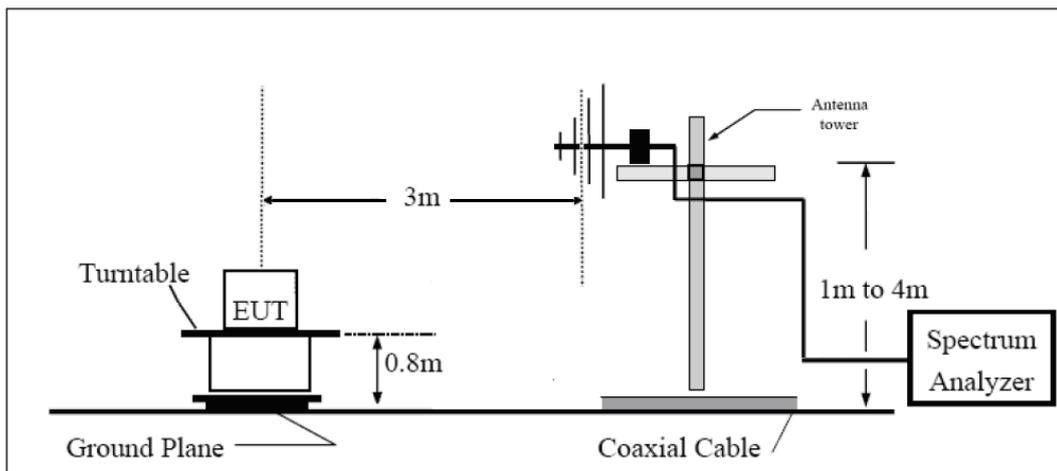
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

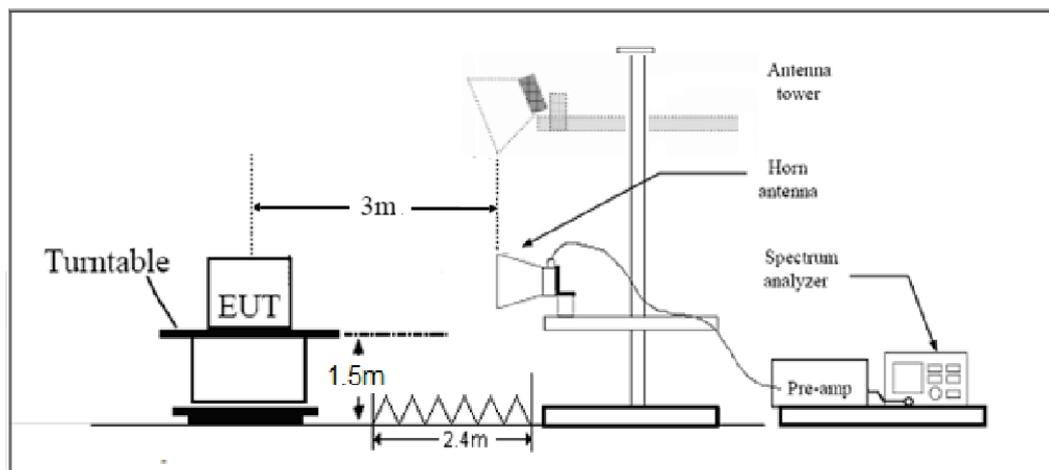
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.”

Rule Part 27.53(m) $55 + 10 \log (P)$ 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)(4) of this section.

Part 27.53 (h) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.2	-74.78	2.6	10.75	Horizontal	-66.63	-13.00	53.63	135
3	5197.8	-73.78	2.4	11.05	Horizontal	-65.13	-13.00	52.13	225
4	6930.4	-67.94	4.5	11.15	Horizontal	-61.29	-13.00	48.29	90
5	8663.0	-65.72	5.1	11.35	Horizontal	-59.47	-13.00	46.47	180
6	10395.6	-64.90	5.3	11.95	Horizontal	-58.25	-13.00	45.25	0
7	12128.2	-64.09	5.5	13.55	Horizontal	-56.04	-13.00	43.04	315
8	13860.8	-61.86	6.3	13.75	Horizontal	-54.41	-13.00	41.41	45
9	15593.4	-64.33	6.7	13.85	Horizontal	-57.18	-13.00	44.18	180
10	17326.0	-61.46	6.8	14.25	Horizontal	-54.01	-13.00	41.01	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.3	-62.72	2.6	10.75	Horizontal	-54.57	-13.00	41.57	225
3	5197.5	-64.91	2.4	11.05	Horizontal	-56.26	-13.00	43.26	270
4	6930.0	-59.33	4.5	11.15	Horizontal	-52.68	-13.00	39.68	315
5	8662.5	-56.53	5.1	11.35	Horizontal	-50.28	-13.00	37.28	180
6	10395.0	-55.98	5.3	11.95	Horizontal	-49.33	-13.00	36.33	135
7	12127.5	-54.60	5.5	13.55	Horizontal	-46.55	-13.00	33.55	0
8	13860.0	-52.94	6.3	13.75	Horizontal	-45.49	-13.00	32.49	90
9	15592.5	-55.31	6.7	13.85	Horizontal	-48.16	-13.00	35.16	180
10	17325.0	-50.94	6.8	14.25	Horizontal	-43.49	-13.00	30.49	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.5	-59.74	2.6	10.75	Horizontal	-51.59	-13.00	38.59	90
3	5191.5	-65.45	2.4	11.05	Horizontal	-56.80	-13.00	43.80	135
4	6930.0	-59.55	4.5	11.15	Horizontal	-52.90	-13.00	39.90	180
5	8662.5	-56.12	5.1	11.35	Horizontal	-49.87	-13.00	36.87	225
6	10395.0	-54.95	5.3	11.95	Horizontal	-48.30	-13.00	35.30	315
7	12127.5	-55.06	5.5	13.55	Horizontal	-47.01	-13.00	34.01	270
8	13860.0	-52.90	6.3	13.75	Horizontal	-45.45	-13.00	32.45	0
9	15592.5	-55.95	6.7	13.85	Horizontal	-48.80	-13.00	35.80	180
10	17325.0	-51.55	6.8	14.25	Horizontal	-44.10	-13.00	31.10	225

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-67.81	2.6	10.75	Horizontal	-59.66	-13.00	46.66	315
3	5170.9	-64.65	2.4	11.05	Horizontal	-56.00	-13.00	43.00	45
4	6930.0	-59.05	4.5	11.15	Horizontal	-52.40	-13.00	39.40	180
5	8662.5	-57.01	5.1	11.35	Horizontal	-50.76	-13.00	37.76	90
6	10395.0	-56.10	5.3	11.95	Horizontal	-49.45	-13.00	36.45	270
7	12127.5	-56.71	5.5	13.55	Horizontal	-48.66	-13.00	35.66	225
8	13860.0	-52.40	6.3	13.75	Horizontal	-44.95	-13.00	31.95	315
9	15592.5	-54.91	6.7	13.85	Horizontal	-47.76	-13.00	34.76	0
10	17325.0	-50.97	6.8	14.25	Horizontal	-43.52	-13.00	30.52	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.8	-63.91	2.00	9.15	Horizontal	-56.76	-25.00	31.76	135
3	7598.6	-60.45	2.50	11.35	Horizontal	-51.60	-25.00	26.60	225
4	10130.6	-56.07	4.20	12.05	Horizontal	-48.22	-25.00	23.22	315
5	12675.0	-54.67	5.20	12.85	Horizontal	-47.02	-25.00	22.02	270
6	15210.0	-54.74	5.50	14.23	Horizontal	-46.01	-25.00	21.01	90
7	17745.0	-52.93	5.70	14.15	Horizontal	-44.48	-25.00	19.48	180
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.4	-63.18	2.00	10.15	Horizontal	-55.03	-25.00	30.03	0
3	7605.0	-60.40	2.50	11.35	Horizontal	-51.55	-25.00	26.55	90
4	10140.0	-54.73	4.20	12.05	Horizontal	-46.88	-25.00	21.88	135
5	12675.0	-57.07	5.20	14.85	Horizontal	-47.42	-25.00	22.42	225
6	15210.0	-53.12	5.50	13.23	Horizontal	-45.39	-25.00	20.39	180
7	17745.0	-51.29	5.70	12.15	Horizontal	-44.84	-25.00	19.84	270
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.0	-63.56	2.00	9.15	Horizontal	-56.41	-13.00	43.41	45
3	7785.0	-59.44	2.50	11.35	Horizontal	-50.59	-13.00	37.59	135
4	10380.0	-55.57	4.20	12.05	Horizontal	-47.72	-13.00	34.72	225
5	12975.0	-52.69	5.20	12.85	Horizontal	-45.04	-13.00	32.04	180
6	15570.0	-56.71	5.50	14.23	Horizontal	-47.98	-13.00	34.98	315
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5190.0	-63.85	2.00	10.15	Horizontal	-55.70	-13.00	42.70	45
3	7785.0	-59.17	2.50	11.35	Horizontal	-50.32	-13.00	37.32	135
4	10380.0	-55.99	4.20	12.05	Horizontal	-48.14	-13.00	35.14	225
5	12975.0	-55.46	5.20	14.85	Horizontal	-45.81	-13.00	32.81	0
6	15570.0	-55.66	5.50	13.23	Horizontal	-47.93	-13.00	34.93	45
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.0	-62.26	2.00	9.15	Horizontal	-55.11	-25.00	30.11	180
3	7495.5	-60.56	2.50	11.35	Horizontal	-51.71	-25.00	26.71	135
4	9994.0	-56.95	4.20	12.05	Horizontal	-49.10	-25.00	24.10	225
5	12492.5	-55.35	5.20	12.85	Horizontal	-47.70	-25.00	22.70	270
6	14991.0	-54.70	5.50	14.23	Horizontal	-45.97	-25.00	20.97	315
7	17489.5	-52.99	5.70	14.15	Horizontal	-44.54	-25.00	19.54	90
8	19988.0	--	--	--	--	--	--	--	--
9	22486.5	--	--	--	--	--	--	--	--
10	24985.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-64.45	2.00	10.15	Horizontal	-56.30	-25.00	31.30	135
3	7779.0	-59.05	2.50	11.35	Horizontal	-50.24	-25.00	25.24	225
4	10372.0	-55.35	4.20	12.05	Horizontal	-47.48	-25.00	22.48	180
5	12965.0	-56.85	5.20	14.85	Horizontal	-47.20	-25.00	22.20	270
6	15558.0	-55.23	5.50	13.23	Horizontal	-47.54	-25.00	22.54	315
7	18151.0	--	--	--	--	--	--	--	--
8	20744.0	--	--	--	--	--	--	--	--
9	23337.0	--	--	--	--	--	--	--	--
10	25930.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2018-12-16	2019-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2019-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preamplifier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-19	2020-05-18
RF Cable	Agilent	SMA 15cm	0001	2019-06-14	2019-12-13
Software	R&S	EMC32	9.26.0	/	/

*****END OF REPORT *****