TEST REPORT

Report Number. : 13573771-E10V2

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95104, U.S.A.
Model	:	A2484
FCC ID	:	BCG-E4003A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC CFR 47 Part 2, Part 22, Part 27 and Part 96

Date Of Issue:
August 09, 2021

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	8/4/2021	Initial Review	Thu Chan
V2	8/9/2021	Addressed TCB Questions	Mengistu Mekuria

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95104, U.S.A.
Model	A2484
Brand	APPLE
FCC ID	BCG-E4003A
EUT Description	SMARTPHONE
Serial Number	C07103500480G3H2 (CONDUCTED) AND XKX609QCDP (RADIATED)
Sample Receipt Date	MARCH 18, 2021
Date Tested	MARCH 18, 2021 to JUNE 30, 2021
Applicable Standards	FCC CFR 47 Part 2, Part 22, Part 27 and Part 96
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Prepared By:
	
Dan Coronia Operations Leader UL Verification Services Inc.	Tony Li Project Engineer UL Verification Services Inc.

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Requirement Description	Requirement Clause Number (FCC)	Result	Remarks
RF Conducted Output Power	2.1046	Complies	
Effective Radiated Power	22.913 (a)(5)	Complies	
Equivalent Isotropic Radiated power	27.50 (h) (2) 27.50 (d) (4) 96.41 (b)	Complies	
Occupied Bandwidth	2.1049	Complies	
Band Edge and Emission Mask	2.1051, 22.917 (a), 27.53(h) 27.53 (m)(4) &(m)(6), 96.41(e)	Complies	
Out of Band Emissions	2.1051, 22.917 (a), 27.53(h) 27.53 (m)(4) &(m)(6), 96.41(e)	Complies	
Frequency Stability	2.1055, 22.355, 27.54	Complies	
Peak-to-Average Ratio	27.50 (d) (5), 96.41 (g)	Complies	
Field Strength of Spurious Radiation	2.1053, 22.917 (a), 27.53(h) 27.53 (m)(4) &(m)(6), 96.41(e)	Complies	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 27 and Part 96
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01. Determining ERP and EIRP

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	208313
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA	US0104	22541	208313
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA	US0104	2324B	208313

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB
Occupied Channel Bandwidth	±1.22 %
Temperature	±2.26%
Supply voltages	±0.57 %
Time	±3.39 %

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

he Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, and NFC. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

6.2. MAXIMUM OUTPUT POWER

ERP/EIRP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

OUTPUT POWER FOR LTE BAND 5 (Ant 1)

Part 22H	
ERP Limit (W)	7.00
Antenna Gain (dBi)	-5.20

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
3+5	QPSK	825.5	846.5	25.68	18.33	0.068	7468	7M47G7W
	16QAM			25.70	18.35	0.068	7480	7M48D7W
5+3	QPSK	826.5	847.5	25.57	18.22	0.066	7473	7M47G7W
	16QAM			25.70	18.35	0.068	7480	7M48D7W
5+10	QPSK	826.5	844.0	25.70	18.35	0.068	13860	13M9G7W
	16QAM			25.08	17.73	0.059	13837	13M8D7W
10+5	QPSK	829.0	846.5	25.70	18.35	0.068	13896	13M9G7W
	16QAM			25.12	17.77	0.060	13824	13M8D7W
10+10	QPSK	829.0	844.0	25.70	18.35	0.068	18765	18M8G7W
	16QAM			25.24	17.89	0.062	18759	18M8D7W

OUTPUT POWER FOR LTE BAND 7 (Ant 3)

Part 27 / RSS 199	
EIRP Limit (W)	2.00
Antenna Gain (dBi)	1.40

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10+20	QPSK	2505.5	2560.0	25.20	26.60	0.457	28050	28M1G7W
	16QAM			24.24	25.64	0.366	28070	28M1D7W
20+10	QPSK	2510.0	2564.5	25.20	26.60	0.457	28034	28M0G7W
	16QAM			24.24	25.64	0.366	28061	28M1D7W
15+15	QPSK	2507.5	2562.5	25.20	26.60	0.457	28587	28M6G7W
	16QAM			24.29	25.69	0.371	28540	28M5D7W
15+20	QPSK	2507.8	2560.0	25.20	26.60	0.457	32802	32M8G7W
	16QAM			24.29	25.69	0.371	32820	32M8D7W
20+15	QPSK	2510.0	2562.2	25.20	26.60	0.457	32854	32M9G7W
	16QAM			24.29	25.69	0.371	32806	32M8D7W
20+20	QPSK	2510.0	2560.0	25.20	26.60	0.457	37665	37M7G7W
	16QAM			24.82	26.22	0.419	37641	37M6D7W

OUTPUT POWER FOR LTE BAND 41 (Ant 3)

Part 27	
EIRP Limit (W)	2.00
Antenna Gain (dBi)	1.40

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5+20	QPSK	2499.3	2680.0	26.00	27.40	0.550	22348	22M3G7W
	16QAM			24.94	26.34	0.431	22478	22M5D7W
20+5	QPSK	2506.0	2686.7	26.00	27.40	0.550	22379	22M4G7W
	16QAM			24.90	26.30	0.427	22736	22M7D7W
10+20	QPSK	2501.5	2680.0	26.00	27.40	0.550	27333	27M3G7W
	16QAM			24.59	25.99	0.397	27154	27M2D7W
20+10	QPSK	2506.0	2684.5	26.00	27.40	0.550	27574	27M6G7W
	16QAM			24.83	26.23	0.420	27605	27M6D7W
15+15	QPSK	2503.5	2682.5	26.00	27.40	0.550	27879	27M9G7W
	16QAM			24.41	25.81	0.381	28046	28M0D7W
15+20	QPSK	2503.8	2680.0	26.00	27.40	0.550	31980	32M0G7W
	16QAM			25.62	27.02	0.504	31912	31M9D7W
20+15	QPSK	2506.0	2682.2	26.00	27.40	0.550	32076	32M1G7W
	16QAM			24.63	26.03	0.401	33105	33M1D7W
20+20	QPSK	2506.0	2680.0	26.00	27.40	0.550	37528	37M5G7W
	16QAM			24.89	26.29	0.426	37483	37M5D7W

OUTPUT POWER FOR LTE BAND 48 (Ant 7)

Part 96	
EIRP Limit (W)/ 10MHz	0.20
Antenna Gain (dBi)	-2.30

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5+20	QPSK	3553.3	3690.0	23.37	21.07	0.128	23191	23M2G7W
	16QAM			23.70	21.40	0.138	23226	23M2D7W
20+5	QPSK	3560.0	3696.7	23.58	21.28	0.134	23283	23M3G7W
	16QAM			23.70	21.40	0.138	23229	23M2D7W
10+20	QPSK	3555.5	3690.0	24.16	21.86	0.153	27881	27M9G7W
	16QAM			24.20	21.90	0.155	28053	28M1D7W
20+10	QPSK	3560.0	3694.5	24.17	21.87	0.154	27974	28M0G7W
	16QAM			24.20	21.90	0.155	27890	27M9D7W
15+20	QPSK	3557.8	3690.0	24.40	22.10	0.162	32780	32M8G7W
	16QAM			24.70	22.40	0.174	32715	32M7D7W
20+15	QPSK	3560.0	3692.2	24.66	22.36	0.172	32683	32M7G7W
	16QAM			24.70	22.40	0.174	32816	32M8D7W
20+20	QPSK	3560.0	3690.0	24.64	22.34	0.171	37636	37M6G7W
	16QAM			24.70	22.40	0.174	37775	37M8D7W

OUTPUT POWER FOR LTE BAND 66B (Ant 3)

Part 27 / RSS 139	
EIRP Limit (W)	1.00
Antenna Gain (dBi)	-0.60

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5+5	QPSK	1712.5	1777.5	25.20	24.60	0.288	9277	9M28G7W
	16QAM			24.26	23.66	0.232	9256	9M26D7W
5+10	QPSK	1712.8	1775.0	25.20	24.60	0.288	13825	13M8G7W
	16QAM			24.29	23.69	0.234	13836	13M8D7W
10+5	QPSK	1715.0	1777.2	25.20	24.60	0.288	13798	13M8G7W
	16QAM			24.29	23.69	0.234	13817	13M8D7W
5+15	QPSK	1713.0	1772.5	25.20	24.60	0.288	18246	18M2G7W
	16QAM			24.22	23.62	0.230	17926	17M9D7W
15+5	QPSK	1717.5	1777.0	25.20	24.60	0.288	18060	18M1G7W
	16QAM			24.31	23.71	0.235	18045	18M0D7W
10+10	QPSK	1715.0	1775.0	25.20	24.60	0.288	18593	18M6G7W
	16QAM			24.72	24.12	0.258	18591	18M6D7W

OUTPUT POWER FOR LTE BAND 66C (Ant 3)

Part 27 / RSS 139	
EIRP Limit (W)	1.00
Antenna Gain (dBi)	-0.60

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10+15	QPSK	1715.3	1772.5	25.20	24.60	0.288	22999	23M0G7W
	16QAM			24.34	23.74	0.237	22894	22M9D7W
15+10	QPSK	1717.5	1774.7	25.20	24.60	0.288	23079	23M1G7W
	16QAM			24.29	23.69	0.234	23048	23M0D7W
10+20	QPSK	1715.5	1770.0	25.20	24.60	0.288	27458	27M5G7W
	16QAM			24.72	24.12	0.258	27451	27M5D7W
20+10	QPSK	1720.0	1774.5	25.20	24.60	0.288	27587	27M6G7W
	16QAM			24.61	24.01	0.252	27584	27M6D7W
15+15	QPSK	1717.5	1772.5	25.20	24.60	0.288	28036	28M0G7W
	16QAM			24.34	23.74	0.237	28100	28M1D7W
15+20	QPSK	1717.8	1770.0	25.20	24.60	0.288	32329	32M3G7W
	16QAM			24.29	23.69	0.234	32348	32M3D7W
20+15	QPSK	1720.0	1772.2	25.20	24.60	0.288	32456	32M5G7W
	16QAM			24.29	23.69	0.234	32456	32M5D7W
20+5	QPSK	1720.0	1776.7	25.20	24.60	0.288	22936	22M9G7W
	16QAM			24.20	23.60	0.229	23002	23M0D7W
5+20	QPSK	1713.3	1770.0	25.20	24.60	0.288	22620	22M6G7W
	16QAM			24.28	23.68	0.233	22665	22M7D7W
20+20	QPSK	1720.0	1770.0	25.20	24.60	0.288	37487	37M5G7W
	16QAM			24.70	24.10	0.257	37448	37M4D7W

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.21.02-1.

6.4. MAXIMUM ANTENNA GAIN

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

LTE Bands	Antenna Gain (dBi)						
	ANT 1	ANT 2	ANT 3	ANT 4	ANT 7	ANT 8	ANT 9
LTE Band 5, 824 – 849 MHz	-5.2	-6.5	N/A	N/A	N/A	N/A	N/A
LTE Band 7, 2500 – 2570 MHz	-1.9	-1.1	1.4	-0.2	N/A	N/A	N/A
LTE Band 41, 2496 – 2690 MHz (FCC)	-1.8	-1.1	1.4	-0.2	N/A	N/A	N/A
LTE Band 48, 3550 – 3700 MHz (FCC)	N/A	N/A	N/A	0.8	-2.3	-3.8	-5.5
LTE Band 66B, 66C, 1710 – 1780 MHz	-2.6	-2.6	-0.6	-1.7	N/A	N/A	N/A

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports LTE dual carrier Bands of: Band 5, Band 7, Band 38, Band 41, Band 48 and Band 66.

The worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM and 64QAM modulations. It was found that QPSK and 16QAM results were worst case. All testing was performed using QPSK and 16QAM modulations to represent the worst case. Conducted tests were performed on the worst case antenna port because it has the highest conducted power. ANT1 is the worst case antenna port for all bands except LTE Band 48. For LTE Band 48 ANT7 is the worst case antenna port.

LTE Band 38 (2570-2620MHz) is covered by LTE Band 41 because it is a subset of LTE band 41. Also, it has a lower output power for Ant 1, Ant 2, Ant 3, and Ant 4.

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3, ANT4, ANT7, ANT8 and ANT 9 antennas to determine the worst case orientation. The following table exabit the worst case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

Frequency Bands	ANT1	ANT2	ANT3	ANT4	ANT7	ANT8	ANT9
824 – 849 MHz	X	X	N/A	N/A	N/A	N/A	N/A
1710 – 1910 MHz	Y	Y	X	X	N/A	N/A	N/A
2500 – 2690 MHz	X	X	X	Z	N/A	N/A	N/A
3350 – 3700 MHz	N/A	N/A	N/A	Y	X	X	X

For Band Edge and Emission Mask: The highest BW combo was tested. The RB combinations were selected such that the signal is active closest to the band limit, as this is the worst case.

For Out of Band Emissions: The highest bandwidth combination was tested. The highest power RB combination was selected as worst case.

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For interband transmission of multiple channels in different antenna combination in Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

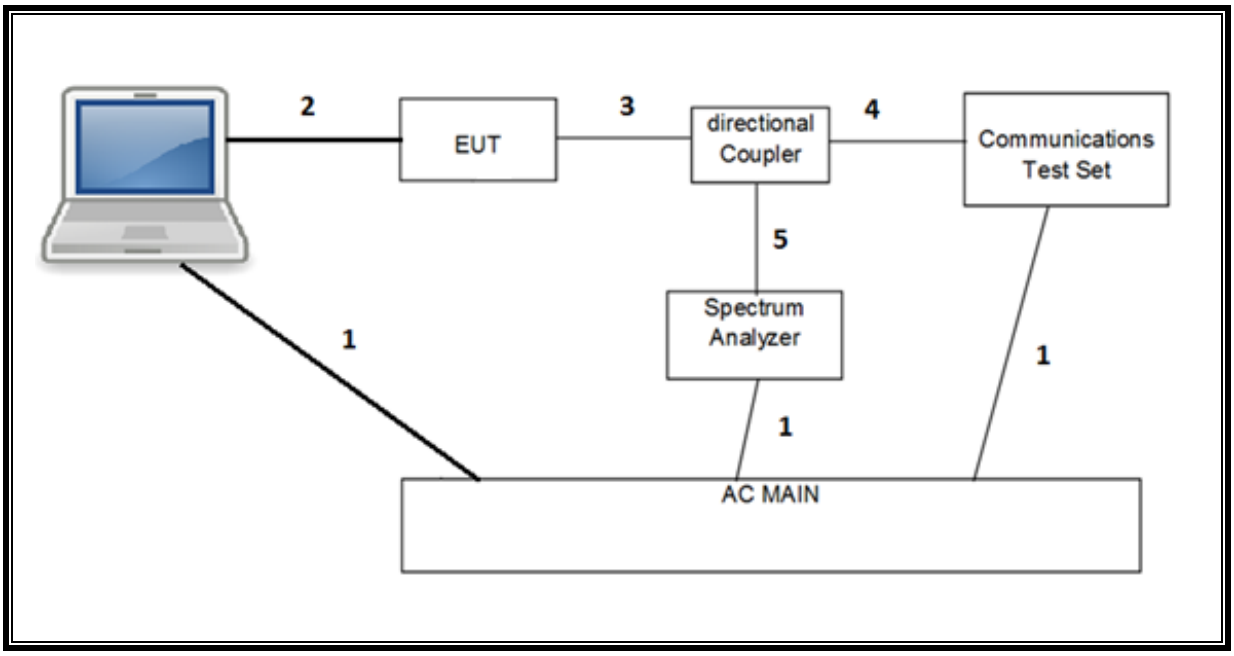
6.6. DESCRIPTION OF TEST SETUP

\SUPPORT TEST EQUIPMENT					
Description	**Manufacturer**	**Model**	**Serial Number**		**FCC ID/ DoC**
Laptop	A1398	C02PM012G3QD	QDS-BRCM1069		A1398
AC/DC adapter	PA-1450-BA1	B123	N/A		PA-1450-BA1

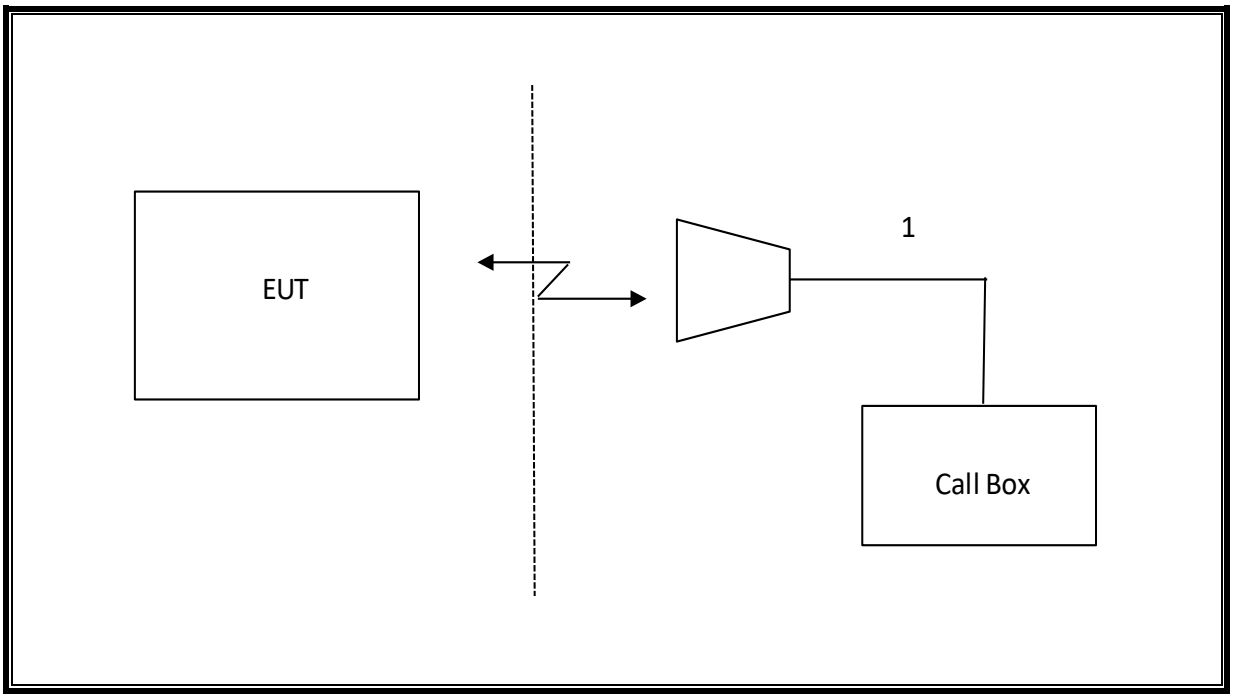
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	3	US 115V	Un-shielded	2.0	N/A
2	USB	1	DC	Un-shielded	1.0	N/A
3	RF In/Out	1	EUT	Un-shielded	0.6	N/A
4	RF In/Out	1	Communication Test Set	Un-shielded	1.2	N/A
5	RF In/Out	1	Barrel	N/A	N/A	N/A

I/O CABLES (RF RADIATED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF In/Out	1	Antenna	Un-shielded	5.0	N/A

CONDUCTED SETUP



RADIATED SETUP



7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T136	7/7/2021
Antenna, Active Loop 9KHz to 30MHz	EMCO	6502	T1616	12/02/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T899	9/14/2021
RF Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	8/10/2021
Amplifier, 100KHz to 1GHz, 32dB	Keysight Technologies Inc	8447D	T15	01/14/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	T1450	1/21/2022
Wideband Communication Test Set, Call Box	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	T260	Connection Purposes Only
Wideband Communication Test Set, Call Box	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	T703	Connection Purposes Only
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	PRE0213831	12/3/2021
RF Amplifier 1-18GHz, 45dB Min	AMPLICAL	AMP0.1G18-47-20	172122	12/31/2021
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201498	2/25/2022
Wideband Radio Communications Tester	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	T964	2/17/2022
Wideband Communication Test Set, Call Box	Rohde & Schwarz (Koeln) GmbH & Co. KG	CMW500	T972	2/20/2022
Directional Coupler	KRYTAR	152610	T1161	9/16/2021
Directional Coupler	KRYTAR	152610	T1536	9/16/2021
Directional Coupler	KRYTAR	152610	T1537	9/16/2021
*Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T754	6/21/2021
*Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T1154	6/21/2021
*Filter, High Pass 1.2GHz	MICRO-TRONICS	HPM50108	T1737	6/23/2021
*Filter, BRF 3400 to 3800MHz	MICRO-TRONICS	BRM50711-02	T1792	6/23/2021
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	T449	4/22/2022
Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum	Keysight Technologies Inc	8449B	T404	4/19/2022
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	PRE0182201	4/22/2022
Amplifier, 26 - 40GHz	MITEQ	TTA2640-35-HG	T1864	4/19/2022
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	T449	4/22/2022
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 3.2.5, 4/13/2021	
Power Measurement Software	UL	UL RF	Ver 3.1.2 5/17/2021	
Radiated test software	UL	UL RF	Ver 9.5, 4/14/2021	

NOTES:

1. * Testing is completed before equipment expiration date.
2. ** Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

8. RF OUTPUT POWER VERIFICATION

RULE PART(S)

FCC: §2.1046, §22.913, §27.50

RESULT

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.1.1. LTE BAND 5

Test Engineer ID: 39004 **Test Date:** 4/17/2021

OUTPUT POWER FOR LTE BAND 5 (3.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)							
							ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
3MHz / 5MHz	825.5	829.4	1	14	1	0	25.50	25.46	**24.83**	**23.57**	24.56	24.59	**24.01**	22.68
			15	0	25	0	**25.68**	25.28	24.31	23.40	**24.70**	24.52	23.70	**22.70**
	834.0	837.9	1	14	1	0	25.44	**25.70**	24.35	23.48	24.59	**24.67**	23.35	22.48
			15	0	25	0	25.64	25.42	24.42	23.49	24.67	24.30	23.36	22.39
	842.5	846.5	1	14	1	0	25.44	25.33	23.97	23.17	24.58	24.39	23.75	22.38
			15	0	25	0	25.60	25.01	24.08	23.04	24.64	24.54	23.65	22.67

OUTPUT POWER FOR LTE BAND 5 (5.0MHz + 3.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)							
							ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 3MHz	826.5	830.4	1	24	1	0	25.33	25.02	24.32	22.98	24.48	**24.26**	**23.96**	**22.97**
			25	0	15	0	25.27	24.93	24.32	23.38	**24.70**	23.59	23.56	22.61
	835.0	838.9	1	24	1	0	25.34	**25.70**	**24.46**	**23.47**	24.57	23.80	23.60	22.66
			25	0	15	0	**25.57**	25.35	24.29	23.37	24.69	23.18	23.24	22.23
	843.6	847.5	1	24	1	0	25.36	25.33	24.04	23.06	24.61	23.55	23.31	22.36
			25	0	15	0	25.54	24.81	23.80	22.81	24.68	23.33	23.34	22.33

OUTPUT POWER FOR LTE BAND 5 (5.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)							
							ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 10MHz	826.5	833.7	1	24	1	0	**25.70**	24.98	**24.00**	21.18	**24.70**	23.81	**23.12**	19.70
			25	0	50	0	23.76	23.11	22.78	21.08	22.83	21.86	21.87	19.57
	831.6	838.8	1	24	1	0	25.51	**25.08**	23.72	21.15	24.62	24.13	23.03	**19.73**
			25	0	50	0	23.74	23.19	22.57	21.10	22.82	21.93	21.85	19.64
	836.8	844.0	1	24	1	0	25.48	24.88	23.75	**21.20**	24.58	**24.15**	23.03	19.64
			25	0	50	0	23.68	23.15	23.06	21.14	22.79	22.00	21.82	19.55

OUTPUT POWER FOR LTE BAND 5 (10.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)							
							ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz/ 5MHz	829.0	836.2	1	49	1	0	25.68	25.11	**24.13**	21.14	**24.70**	24.11	**22.88**	**19.99**
			50	0	25	0	23.58	23.15	23.12	**21.20**	22.83	21.88	21.91	19.94
	834.3	841.5	1	49	1	0	25.65	**25.12**	23.97	21.12	24.68	**24.18**	**22.88**	19.97
			50	0	25	0	23.60	23.09	23.10	21.17	22.83	21.83	21.93	19.88
	839.3	846.5	1	49	1	0	**25.70**	25.05	24.09	**21.20**	24.65	24.10	22.76	19.79
			50	0	25	0	23.64	23.07	23.10	21.14	22.75	21.87	21.89	19.79

OUTPUT POWER FOR LTE BAND 5 (10.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)							
							ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz/ 10MHz	829.0	838.9	1	49	1	0	**25.70**	25.11	**24.21**	21.05	**24.70**	**24.18**	22.78	19.82
			1	0	1	49	15.29	15.73	15.77	15.62	14.14	14.68	14.36	14.35
			50	0	50	0	23.83	22.90	22.56	**21.17**	22.78	21.80	21.93	19.89
	831.5	841.4	1	49	1	0	25.64	**25.24**	23.97	21.06	24.60	24.04	**22.80**	19.82
			1	0	1	49	15.19	15.78	15.64	15.61	14.17	14.67	14.35	14.35
			50	0	50	0	23.79	22.90	22.38	21.15	22.77	21.80	21.94	**19.93**
	834.1	844.0	1	49	1	0	25.63	25.14	23.95	20.97	24.64	**24.18**	**22.80**	19.84
			1	0	1	49	15.17	15.77	15.61	15.57	14.17	14.71	14.37	14.42
			50	0	50	0	23.76	22.85	22.31	21.14	22.79	21.81	21.87	19.92

8.1.2. LTE BAND 7

Test Engineer ID: 39004 **Test Date:** 6/17/2021

OUTPUT POWER FOR LTE BAND 7 (10.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	2505.5	2519.9	1	49	1	0	**25.70**	24.63	23.77	**20.73**	**23.20**	22.13	**21.49**	18.22	**25.20**	**24.24**	23.12	**20.46**	**23.20**	**22.61**	21.06	**18.57**
			50	0	100	0	23.92	22.81	22.74	20.60	21.34	20.38	20.43	18.42	23.35	22.36	21.79	20.39	21.33	20.35	20.04	18.27
	2525.6	2540.0	1	49	1	0	25.29	24.62	23.29	20.37	23.00	22.19	21.25	18.38	24.98	24.23	**23.16**	20.28	22.97	22.50	**21.12**	18.26
			50	0	100	0	23.36	22.83	22.75	20.67	21.37	20.40	20.44	18.42	23.29	22.86	22.33	20.21	21.23	20.30	20.29	18.32
	2545.6	2560.0	1	49	1	0	25.34	**24.68**	**23.78**	20.26	23.10	**22.22**	21.35	**18.47**	24.94	**24.24**	23.13	20.22	22.82	22.48	21.07	18.33
			50	0	100	0	23.25	22.35	22.38	20.70	21.38	20.32	20.33	18.44	23.21	22.27	22.25	20.28	21.18	20.23	20.23	18.26

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	2510.0	2524.4	1	99	1	0	25.62	24.66	23.46	20.61	**23.20**	**22.26**	**21.26**	18.16	**25.20**	**24.24**	**23.30**	**20.39**	**23.20**	22.33	**21.49**	**18.33**
			100	0	50	0	23.83	22.85	22.92	**20.86**	21.32	20.32	20.35	18.37	23.30	22.31	22.01	20.35	21.28	20.27	20.20	18.31
	2530.1	2544.5	1	99	1	0	**25.70**	**24.72**	**23.64**	20.84	23.16	22.25	21.23	18.31	25.10	24.23	22.81	20.23	23.02	22.43	21.14	18.18
			100	0	50	0	23.75	22.77	22.81	20.77	21.27	20.27	20.30	18.30	23.22	22.21	22.21	20.27	21.15	20.14	20.14	18.21
	2550.1	2564.5	1	99	1	0	25.67	24.68	23.47	20.70	23.15	**22.26**	21.16	18.31	25.01	**24.24**	22.71	20.17	23.07	**22.46**	21.13	18.25
			100	0	50	0	23.67	22.68	22.71	20.70	21.28	20.30	20.33	**18.38**	23.15	22.15	22.15	20.22	21.16	20.13	20.14	18.20

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 15MHz	2507.5	2522.5	1	74	1	0	**25.70**	24.73	23.71	20.96	**23.20**	22.23	21.21	18.22	**25.20**	24.24	**23.31**	**20.22**	**23.20**	22.21	**21.31**	18.27
			75	0	75	0	24.04	23.07	23.14	**21.06**	21.35	20.58	20.69	18.29	22.88	22.52	22.60	20.21	21.33	20.34	20.06	18.26
	2527.5	2542.5	1	74	1	0	25.68	**24.74**	23.72	20.95	22.97	**22.29**	21.23	18.31	25.00	24.26	23.21	20.14	23.12	**22.24**	21.25	18.20
			75	0	75	0	23.94	23.01	23.05	20.97	21.33	20.60	20.61	18.29	22.79	22.43	22.73	20.11	21.13	20.39	20.34	18.22
	2547.5	2562.5	1	74	1	0	25.64	24.71	**23.75**	20.82	23.06	22.22	**21.28**	18.21	24.95	**24.29**	23.30	20.13	22.91	**22.24**	21.15	18.23
			75	0	75	0	23.87	22.94	22.97	20.90	21.35	20.58	20.64	**18.34**	22.74	22.38	22.71	20.12	21.20	20.25	20.25	**18.29**

OUTPUT POWER FOR LTE BAND 7 (15.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	2507.8	2524.9	1	74	1	0	**25.70**	**24.70**	**23.69**	20.73	**23.20**	22.12	**21.38**	18.19	**25.20**	24.20	23.12	20.26	**23.20**	22.23	**21.18**	18.18
			75	0	100	0	23.94	22.68	22.69	20.69	21.35	20.48	20.02	18.16	23.40	22.47	22.08	20.25	21.34	20.43	20.20	18.16
	2525.3	2542.4	1	74	1	0	25.67	24.65	23.62	20.76	22.99	22.17	20.81	18.13	24.82	24.12	**23.24**	20.20	22.96	22.20	21.03	**18.19**
			75	0	100	0	23.83	22.63	22.66	**20.99**	21.34	20.44	19.98	18.14	23.83	22.72	22.03	**20.29**	21.29	20.33	20.34	18.17
	2542.9	2560.0	1	74	1	0	25.50	24.67	23.68	20.69	23.15	**22.18**	21.34	**18.24**	24.96	**24.29**	23.01	20.28	22.90	**22.26**	21.11	18.18
			75	0	100	0	23.80	22.65	22.68	20.96	21.35	20.45	19.99	18.21	23.26	22.34	22.32	20.23	21.21	20.34	20.30	18.12

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 15MHz	2510.0	2527.1	1	99	1	0	25.59	24.67	23.64	**20.99**	**23.20**	**22.25**	**21.18**	**18.40**	**25.20**	**24.29**	**23.28**	**20.38**	**23.20**	**22.26**	**21.21**	**18.37**
			100	0	75	0	23.78	23.07	23.08	20.66	21.30	20.32	20.34	18.33	23.32	22.33	22.02	20.36	21.30	20.31	20.20	18.34
	2527.6	2544.7	1	99	1	0	**25.70**	**24.71**	23.67	20.68	23.07	**22.25**	21.16	18.19	25.10	24.26	23.14	20.26	23.03	22.24	21.14	18.21
			100	0	75	0	23.74	23.01	23.05	20.71	21.16	20.19	20.23	18.22	23.25	22.25	22.23	20.28	21.17	20.19	20.18	18.22
	2545.1	2562.2	1	99	1	0	25.59	24.69	**23.72**	20.97	23.08	22.20	21.14	18.21	25.04	24.28	23.23	20.21	23.05	22.25	21.11	18.21
			100	0	75	0	23.69	22.96	22.99	20.97	21.18	20.21	20.21	18.23	23.23	22.19	22.20	20.25	21.19	20.17	20.15	18.21

OUTPUT POWER FOR LTE BAND 7 (20.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz/ 20MHz	2510.0	2529.8	1	99	1	0	25.56	24.67	**23.81**	20.64	**23.20**	22.21	21.54	18.56	**25.20**	24.81	23.10	20.52	**23.20**	**22.93**	21.67	**18.73**
			1	0	1	99	17.17	17.09	17.13	17.21	14.56	14.51	14.29	14.24	16.52	16.61	16.32	16.34	14.31	14.62	14.43	14.41
			100	0	100	0	23.68	22.64	22.64	20.68	21.66	20.68	20.71	18.67	23.90	22.90	22.81	**20.93**	21.47	20.50	20.41	18.49
	2525.1	2544.9	1	99	1	0	25.66	**24.71**	23.73	20.65	23.03	22.46	21.20	18.62	25.06	**24.82**	23.86	20.85	23.01	22.65	21.46	18.35
			1	0	1	99	16.85	17.26	17.26	17.28	14.76	15.05	14.39	14.35	16.54	16.85	16.54	16.44	14.71	14.21	14.60	14.63
			100	0	100	0	23.67	22.63	22.76	20.64	21.70	20.69	20.71	18.68	23.88	22.85	22.84	20.88	21.42	20.42	20.39	18.43
	2540.2	2560.0	1	99	1	0	**25.70**	24.68	23.75	20.94	23.02	**22.67**	**21.78**	**18.73**	25.09	24.79	**23.88**	20.84	23.15	22.58	**21.84**	18.31
			1	0	1	99	17.11	17.39	17.21	17.26	14.67	14.89	14.23	14.21	16.71	16.66	16.32	16.32	14.97	14.36	14.69	14.70
			100	0	100	0	23.61	22.68	22.72	**20.99**	21.66	20.65	20.68	18.66	23.84	22.83	22.82	20.81	21.32	20.31	20.29	18.33

8.1.3. LTE BAND 41

Test Engineer ID: 39004 **Test Date:** 6/17/2021

OUTPUT POWER FOR LTE BAND 41 (5.0MHz + 20.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2499.3	2511.0	1	24	1	0	22.61	22.67	22.54	22.65	19.56	19.57	19.73	**19.51**	21.03	21.24	21.25	21.00	19.37	19.59	19.62	19.29
		25	0	100	0	22.61	22.42	22.67	22.54	19.32	19.33	19.11	19.34	21.24	21.34	21.24	21.04	19.46	19.06	19.34	**19.42**
2583.8	2595.5	1	24	1	0	27.41	26.04	25.75	22.61	**24.50**	**23.33**	22.35	19.17	**26.00**	**24.94**	23.89	**21.09**	**24.50**	**23.31**	22.57	19.33
		25	0	100	0	25.61	24.61	24.63	22.62	22.16	21.37	21.25	19.38	24.06	23.08	22.98	21.07	22.27	21.67	21.19	19.27
2668.3	2680.0	1	24	1	0	**27.50**	**26.08**	**25.84**	22.80	24.40	23.23	**22.93**	19.22	25.94	24.54	**24.14**	**21.09**	24.41	23.27	**22.95**	19.19
		25	0	100	0	25.63	24.59	24.12	**22.96**	22.13	21.26	21.48	19.33	24.04	23.00	22.89	21.08	22.28	21.25	21.94	19.26

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 5.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2506.0	2517.7	1	99	1	0	26.11	26.26	25.95	22.75	23.87	23.09	**23.19**	19.08	25.16	**24.90**	**24.56**	21.02	23.83	**23.59**	**23.70**	19.51
		100	0	25	0	22.25	22.24	22.31	22.47	19.28	19.80	19.17	**19.58**	21.08	20.79	21.18	21.00	19.48	19.51	19.40	19.47
2590.5	2602.2	1	99	1	0	27.41	**26.68**	**25.99**	22.75	24.49	23.39	22.22	19.05	25.96	24.81	24.18	21.11	**24.50**	23.15	22.38	19.45
		100	0	25	0	25.92	24.87	24.92	**22.89**	22.47	21.59	21.25	19.17	24.05	23.24	22.99	21.17	22.15	21.24	21.51	19.18
2675.0	2686.7	1	99	1	0	**27.50**	26.47	25.68	22.86	**24.50**	**23.46**	22.15	19.27	**26.00**	24.46	24.41	21.15	24.48	23.36	22.31	19.17
		100	0	25	0	25.74	24.72	24.69	22.75	22.83	22.02	21.07	19.15	24.09	23.19	23.19	**21.18**	22.21	21.23	21.30	**19.67**

OUTPUT POWER FOR LTE BAND 41 (10.0MHz + 20.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2501.5	2515.9	1	49	1	0	22.46	22.41	22.34	22.42	19.41	19.33	19.54	19.38	21.01	21.13	20.94	20.99	19.42	19.71	19.23	**19.47**
		50	0	100	0	22.35	22.21	22.37	22.43	19.45	19.67	19.87	**19.55**	21.26	21.03	21.23	20.99	19.50	19.18	19.21	19.14
2583.6	2598.0	1	49	1	0	27.42	**26.06**	**25.83**	22.85	**24.50**	**23.30**	**22.33**	19.50	**26.00**	**24.59**	24.03	21.05	**24.50**	**23.11**	22.66	19.23
		50	0	100	0	25.19	24.50	24.13	22.28	22.58	21.25	21.09	19.42	24.04	23.18	23.07	21.05	22.32	21.30	21.34	19.30
2665.6	2680.0	1	49	1	0	**27.50**	26.05	25.73	**22.88**	24.42	23.25	22.16	19.22	25.79	24.48	**24.06**	**21.09**	24.46	23.07	**22.90**	19.25
		50	0	100	0	25.80	24.81	24.80	22.75	22.13	21.31	21.31	19.26	24.03	23.03	23.03	**21.09**	22.54	21.61	21.61	19.26

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	2506.0	2520.4	1	99	1	0	26.26	**26.11**	**26.02**	22.50	23.76	23.01	**23.25**	19.33	25.28	**24.83**	**24.90**	21.16	23.82	23.18	**23.07**	19.51
			100	0	50	0	22.70	22.68	22.47	22.70	19.07	19.17	19.88	19.25	21.08	21.07	21.08	21.13	19.56	19.36	19.36	19.47
	2588.1	2602.5	1	99	1	0	27.46	26.09	25.37	22.47	**24.50**	**23.19**	22.25	19.13	**26.00**	24.56	24.11	21.17	**24.50**	**23.20**	22.33	19.45
			100	0	50	0	25.75	24.88	24.81	**22.80**	22.44	21.51	21.43	**19.60**	24.00	23.09	23.13	21.14	22.26	21.27	21.50	19.18
	2670.1	2684.5	1	99	1	0	**27.50**	26.08	25.75	22.75	24.44	23.07	22.29	19.44	25.89	24.53	24.15	21.15	24.49	23.13	22.16	19.17
			100	0	50	0	25.76	24.82	24.40	22.40	22.61	21.64	21.39	19.55	24.03	23.12	23.09	**21.18**	22.02	21.11	21.17	**19.67**

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 15.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2503.5	2518.5	1	74	1	0	**27.50**	**26.06**	25.58	22.62	24.29	**23.08**	22.28	19.05	**26.00**	**24.41**	**24.14**	21.09	24.44	23.11	**22.89**	19.22
		75	0	75	0	22.53	22.59	22.63	22.46	19.60	19.21	19.34	**19.30**	20.86	20.87	20.89	20.76	19.55	19.39	19.50	**19.51**
2585.5	2600.5	1	74	1	0	27.48	26.00	**25.89**	22.91	**24.50**	23.00	**22.47**	19.03	25.94	24.29	24.02	21.06	**24.50**	**23.45**	22.41	19.00
		75	0	75	0	25.79	24.77	24.83	22.80	22.42	21.46	20.01	19.21	24.07	23.01	23.04	21.07	22.49	21.31	21.57	19.31
2667.5	2682.5	1	74	1	0	27.34	26.01	25.12	22.71	24.33	23.06	**22.47**	19.11	25.87	24.33	24.05	20.14	24.46	23.14	22.34	19.24
		75	0	75	0	25.95	24.94	24.81	**22.95**	22.25	21.45	21.49	19.13	24.06	23.02	23.04	**21.19**	22.84	21.43	21.33	19.14

OUTPUT POWER FOR LTE BAND 41 (15.0MHz + 20.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2503.8	2520.9	1	74	1	0	**27.50**	**26.70**	25.62	22.75	24.43	24.37	23.27	20.20	**26.00**	25.41	24.53	21.72	24.15	24.09	23.21	20.27
		75	0	100	0	22.55	22.62	22.61	22.56	18.26	18.25	18.23	18.32	19.96	20.01	19.82	20.09	18.43	18.46	18.47	18.40
2583.3	2600.4	1	74	1	0	27.36	26.67	**25.70**	22.68	**24.50**	**24.43**	**23.37**	**20.32**	25.95	**25.62**	**24.93**	21.77	**24.50**	**24.35**	**23.37**	20.23
		75	0	100	0	25.91	24.89	24.90	22.61	23.37	22.41	22.01	20.16	24.91	23.90	23.93	**21.96**	23.25	22.32	22.53	**20.31**
2662.9	2680.0	1	74	1	0	27.44	26.64	25.66	22.71	24.42	24.35	23.31	20.28	25.96	25.43	24.64	21.86	24.49	24.28	23.11	20.21
		75	0	100	0	25.78	24.84	24.83	**22.76**	23.36	22.53	21.56	20.26	24.93	23.92	23.98	21.88	23.30	22.43	22.42	20.23

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 15.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
2506.0	2523.1	1	99	1	0	27.38	26.02	25.29	22.69	24.44	23.24	**22.67**	19.19	**26.00**	**24.63**	**24.07**	**21.08**	24.43	23.20	**22.68**	19.30
		100	0	75	0	22.31	22.66	22.70	22.49	19.22	19.52	19.27	19.21	20.84	21.12	21.16	20.97	19.65	19.47	19.50	**19.46**
2585.6	2602.7	1	99	1	0	27.33	26.06	25.57	22.71	**24.50**	23.09	22.58	19.24	25.92	24.33	24.03	21.05	**24.50**	**23.31**	22.30	19.20
		100	0	75	0	25.82	24.84	24.88	22.59	22.18	21.24	21.90	**19.66**	24.83	23.09	23.09	21.02	22.21	21.79	21.37	19.19
2665.1	2682.2	1	99	1	0	**27.50**	**26.07**	**25.65**	22.70	24.49	23.06	22.26	19.52	25.83	24.43	24.05	21.05	24.48	23.21	22.22	19.17
		100	0	75	0	25.65	24.75	24.98	**22.72**	22.13	**121.19**	21.22	19.10	24.96	23.08	23.06	21.07	22.54	21.36	21.14	19.18

OUTPUT POWER FOR LTE BAND 41 (20.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz/ 20MHz	2506.0	2525.8	1	99	1	0	27.38	**26.08**	25.29	**22.83**	24.48	23.05	**22.44**	19.70	**26.00**	**24.89**	24.04	21.05	24.46	**23.07**	**22.85**	**19.20**
			1	0	1	99	14.85	14.90	14.69	14.89	12.15	12.14	12.01	11.79	13.90	13.85	13.72	14.11	11.05	11.23	11.94	11.36
			100	0	100	0	22.26	22.65	22.55	22.63	19.13	19.94	19.88	19.15	21.08	21.08	21.04	21.08	19.39	19.34	19.37	19.15
	2583.1	2602.9	1	99	1	0	27.42	26.07	25.56	22.81	**24.50**	23.06	22.29	19.28	25.86	24.83	24.07	21.04	**24.50**	**23.07**	22.27	19.09
			1	0	1	99	19.09	19.03	19.08	19.09	16.03	16.12	16.07	16.09	17.61	17.66	17.91	17.70	16.04	16.03	16.05	16.22
			100	0	100	0	25.87	24.88	24.89	22.78	22.39	21.41	21.87	19.18	23.94	22.99	23.01	21.08	22.34	21.03	21.78	19.17
	2660.2	2680.0	1	99	1	0	**27.50**	26.06	**25.99**	22.80	24.45	**23.07**	22.06	19.03	25.89	24.74	**24.10**	**21.09**	24.42	23.01	22.16	19.07
			1	0	1	99	19.07	19.00	19.08	19.06	16.04	16.08	16.03	16.07	17.01	17.78	17.92	17.09	16.06	16.02	16.02	16.31
			100	0	100	0	25.85	24.92	24.83	22.75	22.59	21.81	21.83	**19.80**	24.03	23.08	23.06	21.06	22.33	21.25	21.29	19.16

8.1.4. LTE BAND 48

Test Engineer ID: 39004 **Test Date:** 5/6/2021

OUTPUT POWER FOR LTE BAND 48 (5.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 20MHz	3553.3	3565.0	1	24	1	0	20.69	20.73	20.95	20.58	17.54	17.74	17.71	17.60	20.22	19.53	19.64	19.68	16.84	17.16	16.95	17.05
			25	0	100	0	13.72	13.80	13.71	13.74	11.64	11.74	11.51	11.70	12.82	13.11	12.82	13.75	10.67	10.74	10.47	10.84
	3615.8	3627.5	1	24	1	0	**23.37**	**23.70**	**23.61**	**21.13**	**20.86**	**21.00**	**21.32**	18.37	**22.83**	**23.20**	**23.18**	19.83	**20.39**	**20.50**	**20.26**	17.83
			25	0	100	0	22.25	21.63	21.52	**21.13**	19.53	19.57	19.59	**18.52**	20.93	21.99	20.96	**19.99**	18.76	18.83	18.62	**17.86**
	3678.3	3690.0	1	24	1	0	20.36	20.71	20.75	20.48	17.42	17.63	17.80	17.71	19.36	19.71	20.22	19.55	17.17	17.38	16.60	17.17
			25	0	100	0	13.61	13.67	13.51	13.56	11.48	11.61	11.36	11.53	13.07	13.05	13.11	13.08	10.84	10.90	10.89	10.02

OUTPUT POWER FOR LTE BAND 48 (20.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 5MHz	3560.0	3571.7	1	99	1	0	20.49	20.56	20.41	**20.66**	18.06	18.13	17.88	18.21	19.92	20.10	19.77	19.95	16.60	16.72	16.62	16.83
			100	0	25	0	13.61	13.68	13.71	13.67	10.94	10.99	10.98	11.02	13.05	13.09	12.98	12.95	10.61	10.71	10.74	10.84
	3622.5	3634.2	1	99	1	0	**23.58**	**23.70**	**23.68**	20.42	**20.94**	**21.00**	**20.98**	**18.28**	**22.75**	**23.20**	**22.88**	19.94	**20.48**	**20.50**	**20.32**	**17.96**
			100	0	25	0	21.47	21.54	21.52	20.53	19.15	19.18	19.11	18.18	20.99	21.00	20.96	19.95	18.68	18.79	18.77	17.90
	3685.0	3696.7	1	99	1	0	20.28	20.57	20.31	20.24	18.18	18.22	18.15	17.51	19.99	20.14	19.78	**19.97**	16.75	16.91	16.58	17.05
			100	0	25	0	13.55	13.65	13.59	13.29	11.21	11.22	11.23	11.22	13.09	13.18	13.14	13.11	10.88	10.93	10.92	10.32

OUTPUT POWER FOR LTE BAND 48 (10.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	3555.5	3569.9	1	49	1	0	19.71	19.61	19.54	19.61	16.94	16.98	16.94	17.07	18.95	18.98	18.89	18.99	16.55	16.73	16.26	16.88
			50	0	100	0	14.90	14.97	14.99	14.99	12.03	12.12	12.07	12.03	14.01	13.97	13.87	13.98	11.66	11.59	11.52	11.86
	3615.6	3630.0	1	49	1	0	**24.16**	**24.20**	**23.70**	20.67	**21.47**	**21.50**	**21.01**	18.08	**23.31**	**23.70**	**22.83**	19.91	**20.94**	**21.00**	**20.65**	17.75
			50	0	100	0	21.82	21.89	21.82	**20.80**	18.69	19.11	19.06	**18.17**	20.45	20.57	20.47	**19.98**	18.15	18.23	18.71	**17.89**
	3675.6	3690.0	1	49	1	0	19.68	19.87	20.08	19.77	17.08	17.08	17.20	17.25	18.84	19.18	18.93	18.96	16.67	16.81	16.79	16.94
			50	0	100	0	14.78	14.90	14.88	14.84	12.14	12.20	12.09	12.02	14.55	14.12	14.01	13.99	11.77	11.90	11.96	11.55

OUTPUT POWER FOR LTE BAND 48 (20.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	3560.0	3574.4	1	99	1	0	19.82	19.88	19.57	19.99	17.17	17.12	16.94	17.33	18.91	19.16	18.99	19.03	16.70	16.75	16.42	16.85
			100	0	50	0	14.83	14.88	14.89	14.90	12.04	12.08	12.04	12.05	14.11	13.99	13.90	13.99	11.62	11.78	11.75	11.86
	3620.1	3634.5	1	99	1	0	**24.17**	**24.20**	**23.59**	**20.83**	**21.35**	**21.50**	**20.94**	**18.27**	**23.38**	**23.70**	**22.91**	19.99	**20.78**	**21.00**	**20.54**	17.92
			100	0	50	0	21.77	21.83	21.90	20.81	18.58	18.60	18.66	18.21	20.49	20.53	20.46	**20.02**	18.15	18.24	18.29	**17.93**
	3680.1	3694.5	1	99	1	0	19.55	19.83	19.48	19.84	17.14	17.36	17.10	17.47	18.93	19.12	18.71	19.07	16.71	16.88	16.62	17.01
			100	0	50	0	14.83	14.89	14.90	14.91	12.03	12.16	12.21	12.27	14.13	14.11	14.02	14.07	11.79	11.99	11.94	12.05

OUTPUT POWER FOR LTE BAND 48 (15.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	3557.8	3574.9	1	74	1	0	19.87	19.86	19.99	19.73	16.88	17.12	16.67	17.03	18.70	19.05	18.96	18.80	16.38	16.52	16.14	16.66
			75	0	100	0	14.95	14.98	14.88	14.88	11.99	12.04	12.10	12.02	14.04	14.03	13.97	14.03	11.61	11.75	11.76	11.87
	3615.3	3632.4	1	74	1	0	**24.40**	**24.70**	**23.98**	20.70	**21.95**	**22.00**	**21.01**	17.87	**24.20**	**24.15**	**22.74**	19.94	**21.43**	**21.50**	**20.63**	17.75
			75	0	100	0	21.81	21.82	21.91	**20.79**	18.59	18.64	19.05	**18.18**	20.46	20.99	20.51	**20.00**	18.14	18.24	18.57	**17.90**
	3672.9	3690.0	1	74	1	0	19.65	19.95	19.37	19.74	17.55	17.30	17.18	17.23	18.87	18.87	18.91	19.02	16.66	16.94	16.77	16.90
			75	0	100	0	14.80	14.91	14.81	14.79	12.06	12.19	12.20	12.29	14.13	14.10	14.16	14.11	11.79	11.90	11.96	11.88

OUTPUT POWER FOR LTE BAND 48 (20.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 15MHz	3560.0	3577.1	1	99	1	0	19.81	19.88	19.88	19.54	17.01	17.23	16.94	17.20	18.96	19.09	18.95	19.04	16.62	16.68	16.39	16.88
			100	0	75	0	14.90	14.66	14.95	14.99	12.02	12.03	12.04	12.09	14.08	14.09	13.97	14.09	11.66	11.70	11.77	11.89
	3617.6	3634.7	1	99	1	0	**24.66**	**24.70**	**23.62**	20.85	**21.85**	**22.00**	**20.96**	**18.23**	**24.12**	**24.20**	**22.91**	**20.10**	**21.42**	**21.50**	**20.51**	17.91
			100	0	75	0	21.87	21.92	21.96	**20.90**	18.68	18.66	19.08	18.22	20.46	20.57	20.49	20.06	18.19	18.22	18.31	**17.95**
	3675.1	3692.2	1	99	1	0	20.10	19.96	19.58	19.98	17.01	17.31	17.04	17.32	19.01	19.79	18.74	19.29	16.60	16.87	16.59	16.36
			100	0	75	0	14.92	14.97	14.94	15.01	12.11	12.19	12.21	12.25	14.16	14.09	14.02	14.11	11.88	11.89	11.98	11.79

OUTPUT POWER FOR LTE BAND 48 (20.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 7				ANT 8				ANT 9				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz/ 20MHz	3560.0	3579.8	1	99	1	0	21.78	21.85	21.64	20.94	18.39	18.56	18.36	18.14	20.32	20.53	20.41	19.96	18.09	18.19	17.95	17.80
			1	0	1	99	7.64	7.72	7.44	7.71	5.04	5.23	4.93	5.22	7.02	7.17	6.84	7.12	4.88	4.76	4.56	4.94
			100	0	100	0	14.96	15.00	15.03	15.03	11.99	12.02	12.06	12.11	14.02	13.95	13.97	14.05	11.64	11.68	11.76	11.89
	3615.1	3634.9	1	99	1	0	**24.64**	**24.70**	**24.07**	20.85	**21.98**	**22.00**	**20.90**	18.19	**24.06**	**24.20**	**22.96**	20.00	**21.39**	**21.50**	**20.53**	17.87
			1	0	1	99	14.52	14.75	14.08	14.47	11.31	11.58	11.50	11.72	13.48	13.76	13.30	13.59	11.30	11.31	11.10	11.47
			100	0	100	0	21.70	21.75	21.78	20.90	18.68	18.66	18.12	18.29	20.41	20.50	20.49	20.08	18.15	18.30	18.31	**17.94**
	3670.2	3690.0	1	99	1	0	21.08	21.04	21.16	**20.99**	18.54	18.73	18.58	**18.34**	20.39	20.67	20.26	**20.09**	18.23	18.51	18.16	17.36
			1	0	1	99	7.48	7.73	7.81	7.61	5.12	5.23	5.05	5.32	7.22	7.39	7.00	7.30	4.95	5.06	4.75	5.03
			100	0	100	0	14.89	15.00	14.99	14.94	12.08	12.19	12.20	12.23	14.15	14.17	14.17	14.22	11.92	11.95	12.00	12.00

8.1.5. LTE BAND 66B

Test Engineer ID: 39004 **Test Date:** 5/4/2021

OUTPUT POWER FOR LTE BAND 66B (5.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 5MHz	1712.5	1717.3	1	24	1	0	25.66	24.64	23.69	20.69	23.69	**22.78**	21.71	**18.74**	25.11	**24.26**	**23.29**	20.44	23.64	22.77	**21.74**	18.92
			25	0	50	0	23.71	22.71	22.75	20.71	21.89	20.63	20.98	18.67	23.30	22.37	22.32	**20.72**	21.85	20.97	20.91	**18.94**
	1752.6	1757.4	1	24	1	0	25.50	**24.70**	23.82	20.73	23.50	22.77	**21.91**	18.65	**25.20**	24.18	23.26	20.30	23.24	22.75	21.70	**18.94**
			25	0	50	0	23.63	22.76	22.70	20.74	21.70	20.40	20.74	18.68	23.19	22.19	22.21	20.18	21.38	20.49	20.42	18.80
	1772.7	1777.5	1	24	1	0	**25.70**	24.65	**23.93**	**20.80**	**23.70**	22.73	21.82	18.61	25.04	**24.26**	23.24	20.38	**23.70**	**22.78**	**21.74**	18.78
			25	0	50	0	23.78	22.78	22.79	20.71	21.70	20.31	20.70	18.70	23.24	22.29	22.28	20.30	21.81	20.87	20.80	18.64

OUTPUT POWER FOR LTE BAND 66B (5.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	18.84	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 10MHz	1712.8	1720.0	1	24	1	0	25.68	24.64	23.71	20.74	**23.70**	22.68	**21.76**	18.70	25.19	24.14	23.08	**20.62**	**23.70**	22.70	**21.74**	**18.93**
			25	0	50	0	23.72	22.72	22.95	20.69	21.71	20.72	21.12	18.77	23.20	22.70	22.03	20.41	21.67	20.70	20.64	18.69
	1750.3	1757.5	1	24	1	0	25.52	**24.73**	23.70	**20.91**	23.42	22.71	21.73	18.57	25.08	24.23	23.55	20.51	23.48	**22.79**	21.64	18.64
			25	0	50	0	23.66	22.79	22.68	20.62	21.51	20.59	20.52	18.73	23.19	22.32	22.24	20.30	21.58	20.67	20.57	18.71
	1767.8	1775.0	1	24	1	0	**25.70**	24.71	**23.73**	20.70	23.37	**22.73**	21.68	18.49	**25.20**	**24.29**	**23.61**	20.44	23.50	22.73	21.67	18.80
			25	0	50	0	23.74	22.87	22.80	20.79	21.46	20.54	21.28	**18.91**	23.29	22.39	22.33	20.45	21.60	20.70	20.72	18.60

OUTPUT POWER FOR LTE BAND 66B (10.0MHz + 5.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1715.0	1722.2	1	49	1	0	25.63	**24.76**	**23.79**	20.70	**23.70**	**22.73**	**21.83**	18.86	25.16	24.28	**23.50**	20.22	**23.70**	**22.73**	21.90	18.89
		50	0	25	0	23.78	22.83	22.84	20.85	21.90	20.90	20.99	**18.98**	23.52	22.51	22.54	**20.25**	21.86	20.87	20.92	18.92
1752.5	1759.7	1	49	1	0	25.36	24.31	23.69	20.69	23.59	22.72	21.73	18.72	**25.20**	**24.29**	23.48	20.20	23.64	22.66	**21.94**	**18.94**
		50	0	25	0	23.27	22.33	22.38	20.76	21.70	20.73	20.75	18.77	23.40	22.39	22.45	20.14	21.73	20.72	20.75	18.78
1770.0	1777.2	1	49	1	0	**25.70**	24.72	23.64	**20.93**	23.45	22.67	21.80	18.77	25.17	24.24	23.41	20.17	23.30	22.58	21.46	18.90
		50	0	25	0	23.86	22.90	22.94	20.89	21.72	20.70	20.77	18.74	23.41	22.41	22.39	20.22	21.53	20.55	20.57	18.84

OUTPUT POWER FOR LTE BAND 66B (5.0MHz + 15.0MHz)

PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
						ANT 1				ANT 2				ANT 3				ANT 4			
						QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
1713.0	1722.3	1	24	1	0	**25.70**	24.68	23.72	20.82	**23.70**	**22.75**	**21.72**	**18.90**	**25.20**	**24.22**	**23.25**	20.24	**23.70**	22.71	21.71	**18.86**
		25	0	75	0	23.78	22.80	22.85	20.78	21.92	21.02	21.02	18.72	23.45	22.51	22.49	20.03	21.76	20.76	20.80	18.75
1748.1	1757.4	1	24	1	0	25.52	24.73	**23.73**	20.89	23.57	22.72	21.68	18.85	25.12	24.20	23.22	**20.26**	23.40	22.78	21.82	18.80
		25	0	75	0	23.75	22.88	22.80	20.75	21.75	20.83	20.83	18.71	23.34	22.41	22.35	20.05	21.60	20.70	20.68	18.66
1763.2	1772.5	1	24	1	0	25.66	**24.75**	23.70	**20.97**	23.51	22.69	21.61	18.84	25.11	24.15	23.12	20.08	23.42	**22.80**	**21.85**	18.81
		25	0	75	0	23.82	22.92	22.88	20.86	21.71	20.80	20.89	18.75	23.78	22.33	22.00	20.12	21.62	20.72	20.68	18.70

OUTPUT POWER FOR LTE BAND 66B (15.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 5MHz	1717.5	1726.8	1	74	1	0	**25.70**	24.70	**23.75**	**20.96**	**23.70**	22.71	**21.73**	**18.91**	**25.20**	24.21	**23.29**	**20.68**	**23.70**	22.68	21.67	**18.85**
			75	0	25	0	23.76	22.73	22.89	20.80	21.81	20.80	20.89	18.88	23.24	22.20	22.32	20.41	21.78	20.75	20.81	18.78
	1752.6	1761.9	1	74	1	0	25.53	24.71	23.64	20.84	23.53	22.72	21.68	18.72	25.03	24.23	23.27	20.37	23.44	**22.73**	**21.73**	18.79
			75	0	25	0	23.75	22.80	22.83	20.75	21.68	20.69	20.74	18.70	23.16	22.19	22.24	20.29	21.62	20.68	20.68	18.46
	1767.7	1777.0	1	74	1	0	25.67	**24.74**	23.74	20.95	23.40	**22.75**	21.69	18.77	25.01	**24.31**	23.26	20.50	23.43	22.65	21.63	18.84
			75	0	25	0	23.82	22.88	22.92	20.83	21.64	20.71	20.74	18.69	23.24	22.25	22.32	20.38	21.53	20.59	20.63	18.74

OUTPUT POWER FOR LTE BAND 66B (10.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz/ 10MHz	1715.0	1724.9	1	49	1	0	25.27	24.78	23.47	20.78	**23.70**	**22.79**	**21.92**	18.95	25.08	24.64	23.32	20.33	**23.70**	22.71	**21.79**	18.92
			1	0	1	49	15.40	15.39	15.39	15.46	13.24	13.83	13.45	13.51	14.61	15.18	14.85	14.82	13.14	13.69	13.39	13.17
			50	0	50	0	23.49	22.52	22.55	20.84	21.92	20.92	20.99	**18.98**	23.28	22.30	22.74	20.35	21.85	20.85	20.90	**18.95**
	1750.1	1760.0	1	49	1	0	25.54	24.71	23.75	20.79	23.62	22.70	21.80	18.77	25.02	24.63	23.32	**20.40**	23.60	22.74	**21.79**	18.76
			1	0	1	49	15.18	15.73	15.39	15.36	12.98	13.59	13.24	13.24	14.59	14.68	14.92	14.93	13.06	13.63	13.34	13.22
			50	0	50	0	23.76	22.81	22.41	20.84	21.73	20.71	20.86	18.81	23.19	22.32	22.37	20.35	21.76	20.75	20.91	18.73
	1765.1	1775.0	1	49	1	0	**25.70**	**24.79**	**23.88**	20.88	23.58	22.71	21.71	18.91	**25.20**	**24.72**	**23.43**	20.33	23.33	**22.76**	21.44	18.84
			1	0	1	49	15.21	15.81	15.42	15.39	13.04	13.60	13.31	13.37	14.66	15.29	14.91	14.88	13.28	13.28	13.28	13.35
			50	0	50	0	23.83	22.87	22.47	**20.91**	21.73	20.74	20.74	18.75	23.38	22.40	22.31	20.31	22.13	20.53	20.55	18.83

8.1.6. LTE BAND 66C

Test Engineer ID: 39004 **Test Date:** 5/5/2021

OUTPUT POWER FOR LTE BAND 66C (10.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 15MHz	1715.3	1727.3	1	49	1	0	**25.70**	24.68	**23.73**	20.90	**23.70**	22.61	**21.73**	**18.85**	**25.20**	24.28	**23.64**	20.40	**23.70**	22.44	**21.54**	**18.58**
			50	0	75	0	23.99	23.07	23.03	20.87	22.05	21.05	21.07	**18.85**	23.49	22.57	22.53	**20.56**	21.25	20.36	20.23	18.26
	1747.9	1759.9	1	49	1	0	25.60	**24.73**	23.67	20.85	23.66	**22.69**	21.64	18.72	25.10	24.33	23.37	20.35	23.39	22.53	21.24	18.47
			50	0	75	0	23.98	22.97	23.04	20.80	22.01	21.01	21.00	18.77	23.48	22.47	22.54	20.54	21.21	20.22	20.62	18.41
	1760.5	1772.5	1	49	1	0	25.67	24.64	23.70	20.78	23.55	22.67	21.66	18.64	25.17	**24.34**	23.40	20.46	23.63	**22.64**	21.37	18.47
			50	0	75	0	23.94	22.97	22.97	**20.91**	21.94	20.94	20.94	18.69	23.44	22.47	22.47	20.49	21.47	20.23	20.65	18.41

OUTPUT POWER FOR LTE BAND 66C (15.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 10MHz	1717.5	1729.5	1	74	1	0	25.44	24.67	23.69	20.74	**23.70**	22.70	**21.73**	**19.00**	24.97	**24.29**	23.22	20.27	23.28	22.36	**21.81**	**18.64**
			75	0	50	0	23.79	22.87	22.83	20.82	21.91	20.88	20.79	18.98	23.32	22.40	22.36	20.35	21.45	20.49	20.50	18.42
	1750.1	1762.1	1	74	1	0	**25.70**	**24.68**	23.68	20.75	23.63	**22.75**	21.71	18.93	**25.20**	24.21	**23.61**	20.28	23.48	22.83	21.32	18.30
			75	0	50	0	23.71	22.81	22.81	20.75	21.88	20.89	20.90	18.89	23.24	22.34	22.34	20.28	21.34	20.40	20.38	18.33
	1762.7	1774.7	1	74	1	0	25.57	24.64	**23.86**	**20.83**	23.50	22.71	21.70	18.82	25.10	24.27	23.39	**20.36**	**23.70**	**22.85**	21.47	18.34
			75	0	50	0	23.75	22.81	22.82	20.76	21.81	20.83	20.82	18.85	23.28	22.34	22.35	20.29	21.38	20.46	20.41	18.38

OUTPUT POWER FOR LTE BAND 66C (10.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	1715.5	1729.9	1	49	1	0	**25.70**	24.68	23.72	20.90	23.69	**22.90**	**21.74**	18.94	25.17	24.32	23.69	20.44	23.61	22.91	21.47	18.43
			50	0	100	0	23.91	22.98	22.74	**20.99**	21.97	20.98	20.95	18.78	23.45	22.52	22.28	**20.53**	21.71	20.69	20.50	18.55
	1745.6	1760.0	1	49	1	0	25.68	**24.78**	23.72	20.92	23.69	22.73	21.73	18.90	**25.20**	**24.72**	23.36	20.46	**23.70**	22.76	21.41	18.51
			50	0	100	0	23.91	22.93	22.93	20.94	21.96	20.94	20.93	**18.99**	23.45	22.47	22.47	20.48	21.40	20.45	20.46	18.47
	1755.6	1770.0	1	49	1	0	25.66	24.72	**23.75**	20.88	**23.70**	22.76	21.72	18.89	25.15	24.36	**23.71**	20.42	23.27	**22.93**	**21.49**	**18.64**
			50	0	100	0	23.88	22.92	22.89	20.94	21.97	20.73	20.90	18.95	23.42	22.46	22.43	20.48	21.54	20.58	20.47	18.46

OUTPUT POWER FOR LTE BAND 66C (20.0MHz + 10.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	1720.0	1734.4	1	99	1	0	25.58	24.70	23.74	20.52	23.49	22.72	**21.95**	18.66	25.11	24.43	23.17	20.05	23.66	22.73	21.54	18.95
			100	0	50	0	23.72	22.77	22.74	**20.77**	21.89	20.86	20.89	**18.98**	23.25	22.30	22.27	20.30	22.15	20.50	20.47	18.76
	1750.1	1764.5	1	99	1	0	25.56	24.77	**23.78**	20.73	**23.70**	22.74	21.79	18.87	25.09	24.50	23.24	20.26	**23.70**	22.47	21.50	18.98
			100	0	50	0	23.70	22.67	22.67	20.70	21.86	20.82	20.81	18.89	23.23	22.20	22.20	20.23	22.09	20.47	20.22	18.89
	1760.1	1774.5	1	99	1	0	**25.70**	**24.78**	23.75	20.68	23.65	**22.77**	21.76	18.79	**25.20**	**24.61**	**23.28**	**20.35**	23.66	**22.81**	**21.56**	**18.99**
			100	0	50	0	23.71	22.70	22.69	20.73	21.83	20.79	20.76	18.86	23.24	22.23	22.22	20.26	22.14	20.56	20.31	18.95

OUTPUT POWER FOR LTE BAND 66C (15.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 15MHz	1717.5	1732.5	1	74	1	0	25.55	24.70	**23.79**	**20.94**	**23.70**	22.71	21.49	18.63	25.10	24.25	**23.27**	**20.29**	23.21	**22.68**	21.30	18.22
			75	0	75	0	23.82	22.83	22.95	20.88	21.87	20.94	20.73	18.77	23.87	22.68	22.80	20.23	21.38	20.45	20.24	18.20
	1747.5	1762.5	1	74	1	0	25.55	**24.79**	23.70	20.82	23.63	**22.88**	**21.72**	**18.82**	25.10	**24.34**	23.15	20.17	23.44	22.39	**21.53**	18.34
			75	0	75	0	23.81	22.87	22.88	20.85	21.79	20.83	20.63	18.71	23.86	22.72	22.73	20.20	21.30	20.34	20.44	18.40
	1757.5	1772.5	1	74	1	0	**25.70**	24.78	23.71	20.79	23.39	22.72	21.51	18.54	**25.20**	24.33	23.26	20.14	**23.70**	22.65	21.35	**18.56**
			75	0	75	0	23.81	22.85	22.84	20.82	21.61	20.64	20.65	18.66	23.86	22.70	22.69	20.17	21.28	20.32	20.46	18.45

OUTPUT POWER FOR LTE BAND 66C (15.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	1717.8	1734.9	1	74	1	0	25.52	24.67	**23.76**	**20.91**	**23.70**	22.87	**21.95**	18.97	25.15	24.20	**23.79**	**20.34**	**23.70**	**22.73**	**21.69**	18.92
			75	0	100	0	23.79	22.80	22.92	20.85	21.96	20.94	21.07	18.97	23.22	22.33	22.35	20.28	21.92	20.90	20.89	18.92
	1745.3	1762.4	1	74	1	0	25.52	**24.76**	23.67	20.79	23.59	22.91	21.90	**18.99**	25.15	**24.29**	23.70	20.22	23.55	22.65	21.67	18.82
			75	0	100	0	23.78	22.84	22.85	20.82	21.94	20.97	20.96	18.98	23.21	22.37	22.38	20.25	21.90	20.93	20.84	18.82
	1752.9	1770.0	1	74	1	0	**25.70**	24.75	23.68	20.76	23.50	**22.92**	21.82	18.94	**25.20**	24.28	23.51	20.19	23.46	22.68	21.68	**18.93**
			75	0	100	0	23.78	22.82	22.81	20.79	22.01	21.05	20.90	18.97	23.21	22.35	22.34	20.22	21.97	21.01	20.86	18.83

OUTPUT POWER FOR LTE BAND 66C (20.0MHz + 15.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 15MHz	1720.0	1737.1	1	99	1	0	**25.70**	24.71	23.75	20.81	23.60	22.68	21.68	18.81	**25.20**	24.27	23.21	20.47	23.68	22.69	21.66	18.69
			100	0	75	0	23.85	22.89	22.87	**20.88**	21.91	20.85	20.88	**18.96**	23.28	22.25	22.23	**20.54**	21.93	20.91	20.76	**18.84**
	1747.6	1764.7	1	99	1	0	25.65	24.70	23.73	20.83	**23.70**	**22.75**	**21.74**	18.89	25.11	24.26	**23.28**	20.49	23.60	**22.76**	**21.72**	18.77
			100	0	75	0	23.84	22.86	22.87	20.86	21.89	20.87	20.85	18.91	23.20	22.22	22.23	20.52	21.77	20.80	20.73	18.79
	1755.1	1772.2	1	99	1	0	25.69	**24.73**	**23.78**	20.83	23.68	22.71	21.68	18.84	25.15	**24.29**	23.24	20.49	**23.70**	22.75	21.66	18.72
			100	0	75	0	23.82	22.85	22.83	20.86	21.86	20.85	20.82	18.88	23.18	22.21	22.29	20.52	21.80	20.90	20.70	18.76

OUTPUT POWER FOR LTE BAND 66C (20.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 5MHz	1720.0	1731.7	1	99	1	0	25.36	24.85	**23.78**	20.53	**23.70**	**22.86**	21.73	18.57	24.89	24.18	23.21	20.06	23.34	**22.78**	**21.89**	18.43
			100	0	25	0	23.66	22.66	22.66	**20.66**	21.69	20.63	20.65	**18.72**	23.19	22.19	22.19	**20.19**	21.36	20.32	20.21	18.25
	1752.5	1764.2	1	99	1	0	25.57	24.83	23.76	20.57	23.52	22.81	21.70	18.64	25.10	24.16	23.19	20.10	**23.70**	22.75	21.79	18.20
			100	0	25	0	23.63	22.65	22.61	20.63	21.66	20.64	20.61	18.66	23.16	22.18	22.14	20.16	21.28	20.31	20.26	**18.57**
	1765.0	1776.7	1	99	1	0	**25.70**	**24.87**	23.72	20.60	23.35	22.76	**21.75**	18.50	**25.20**	**24.20**	**23.25**	20.13	23.49	22.69	21.81	18.36
			100	0	25	0	23.66	22.65	22.66	**20.66**	21.60	20.58	20.55	18.62	23.19	22.18	22.19	**20.19**	21.39	20.38	20.41	18.49

OUTPUT POWER FOR LTE BAND 66C (5.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 20MHz	1713.3	1725.0	1	24	1	0	**25.70**	24.65	23.70	20.89	**23.70**	**22.76**	21.73	18.61	**25.20**	**24.28**	23.23	20.42	**23.70**	**22.77**	21.95	18.53
			25	0	100	0	23.84	22.85	22.86	20.76	21.82	20.90	20.87	18.93	23.37	22.38	22.39	20.29	21.99	20.77	20.79	18.85
	1745.8	1757.5	1	24	1	0	25.53	24.64	**23.75**	**20.94**	23.52	22.70	21.75	**19.05**	25.06	24.27	23.28	**20.53**	23.66	22.73	**21.97**	**18.97**
			25	0	100	0	23.77	22.89	22.80	20.82	21.80	20.87	20.80	18.84	23.30	22.42	22.33	20.35	21.87	20.79	20.72	18.76
	1758.3	1770.0	1	24	1	0	25.62	**24.75**	23.73	20.90	23.43	22.71	**21.79**	18.96	24.81	24.20	**23.29**	20.49	23.69	22.71	21.81	18.88
			25	0	100	0	23.85	22.97	22.93	20.78	21.70	20.77	20.71	18.77	23.04	22.14	22.06	20.32	21.97	20.76	20.63	18.69

OUTPUT POWER FOR LTE BAND 66C (20.0MHz + 20.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)													
							ANT 1				ANT 2				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz/ 20MHz	1720.0	1739.8	1	99	1	0	25.39	24.51	23.45	20.43	23.61	22.67	21.71	18.76	24.83	24.12	23.26	20.18	**23.70**	22.51	21.17	**18.20**
			1	0	1	99	17.33	17.38	17.35	17.38	14.82	15.14	14.87	15.24	16.77	16.82	16.79	16.82	14.68	15.18	14.85	15.36
			100	0	100	0	23.72	22.78	22.82	20.34	21.67	20.63	20.64	18.78	23.61	22.82	22.26	19.78	21.37	20.32	20.11	18.15
	1745.1	1764.9	1	99	1	0	25.23	24.67	**23.97**	20.31	**23.70**	**22.75**	21.38	**18.97**	24.89	24.38	23.12	19.75	23.05	22.54	**21.55**	18.09
			1	0	1	99	17.31	17.69	17.06	17.43	15.20	15.29	15.21	15.21	16.75	16.43	16.50	16.87	14.83	15.25	14.90	15.22
			100	0	100	0	23.32	22.31	22.30	20.34	21.75	20.73	20.99	18.91	23.21	22.19	22.17	19.78	21.27	20.27	20.06	18.17
	1750.2	1770.0	1	99	1	0	**25.70**	**24.76**	23.92	20.74	23.67	22.71	**21.75**	18.96	**25.20**	**24.70**	**23.36**	20.18	23.05	**22.68**	21.52	18.07
			1	0	1	99	16.89	17.17	16.78	17.15	14.82	14.88	15.00	15.04	16.43	16.61	16.22	16.59	15.03	15.46	15.01	15.21
			100	0	100	0	23.44	22.72	22.70	**21.68**	21.70	20.73	20.98	18.76	23.16	22.46	22.44	**20.45**	21.33	20.34	20.05	18.16

9. CONDUCTED TEST RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested. Only QPSK plots are reported to show setting parameter complies with testing method/procedure.

LTE BAND 5

Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 5	3MHz + 5MHz BAND QPSK	15/0 + 25/0	836.5	7.468	7.871
	3MHz + 5MHz BAND 16QAM			7.480	7.962
	5MHz + 3MHz BAND QPSK	25/0 + 15/0		7.473	7.959
	5MHz + 3MHz BAND 16QAM			7.480	7.927
	5MHz + 10MHz BAND QPSK	25/0 + 50/0		13.860	14.48
	5MHz + 10MHz BAND 16QAM			13.837	14.47
	10MHz + 5MHz BAND QPSK	50/0 + 25/0		13.896	14.54
	10MHz + 5MHz BAND 16QAM			13.824	14.50
	10MHz + 10MHz BAND QPSK	50/0 + 50/0		18.765	19.96
	10MHz + 10MHz BAND 16QAM			18.759	19.89

LTE BAND 7

Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 7	10MHz + 20MHz BAND QPSK	50/0 + 100/0	2535	28.050	30.12
	10MHz + 20MHz BAND 16QAM			28.070	30.16
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		28.034	30.14
	20MHz + 10MHz BAND 16QAM			28.061	30.14
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.587	30.79
	15MHz + 15MHz BAND 16QAM			28.540	30.69
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.802	35.16
	15MHz + 20MHz BAND 16QAM			32.820	35.19
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.854	35.16
	20MHz + 15MHz BAND 16QAM			32.806	35.15
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.665	40.23
	20MHz + 20MHz BAND 16QAM			37.641	40.19

LTE BAND 41

Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 41 (FCC)	5MHz + 20MHz BAND QPSK	25/0 + 100/0	2593	22.348	23.359
	5MHz + 20MHz BAND 16QAM			22.478	23.468
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		22.379	23.673
	20MHz + 5MHz BAND 16QAM			22.736	23.580
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.333	28.385
	10MHz + 20MHz BAND 16QAM			27.154	28.376
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.574	28.454
	20MHz + 10MHz BAND 16QAM			27.605	28.701
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		27.879	29.37
	15MHz + 15MHz BAND 16QAM			28.046	29.112
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		31.980	33.393
	15MHz + 20MHz BAND 16QAM			31.912	33.422
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.076	33.436
	20MHz + 15MHz BAND 16QAM			33.105	33.522
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.528	38.348
	20MHz + 20MHz BAND 16QAM			37.483	38.249

LTE BAND 48

Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE BAND 48 (FCC)	5MHz + 20MHz BAND QPSK	25/0 + 100/0	3625	23.191	25.04
	5MHz + 20MHz BAND 16QAM			23.226	24.93
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		23.283	24.96
	20MHz + 5MHz BAND 16QAM			23.229	25.02
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.881	29.93
	10MHz + 20MHz BAND 16QAM			28.053	29.90
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.974	29.86
	20MHz + 10MHz BAND 16QAM			27.890	29.94
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.780	34.98
	15MHz + 20MHz BAND 16QAM			32.715	34.86
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.683	34.77
	20MHz + 15MHz BAND 16QAM			32.816	34.93
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.636	39.91
	20MHz + 20MHz BAND 16QAM			37.775	40.03

LTE BAND 66B

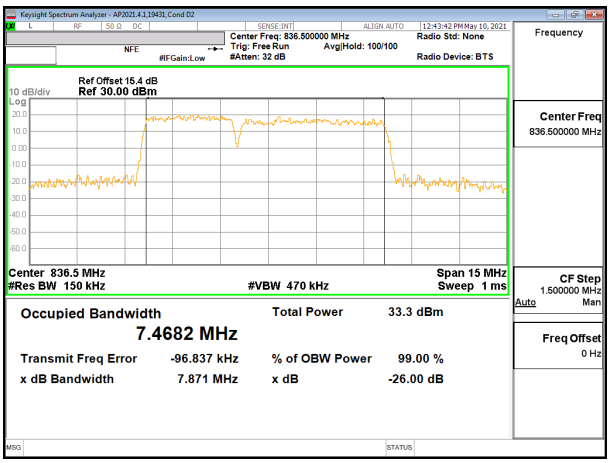
Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)

LTE BAND 66B	5MHz + 5MHz BAND QPSK	25/0 + 25/0	1745.0	9.277	9.864
	5MHz + 5MHz BAND 16QAM			9.256	9.863
	5MHz + 10MHz BAND QPSK	25/0 + 50/0		13.825	14.449
	5MHz + 10MHz BAND 16QAM			13.836	14.502
	10MHz + 5MHz BAND QPSK	50/0 + 25/0		13.798	14.628
	10MHz + 5MHz BAND 16QAM			13.817	14.70
	5MHz + 15MHz BAND QPSK	25/0 + 75/0		18.246	19.067
	5MHz + 15MHz BAND 16QAM			17.926	18.902
	15MHz + 5MHz BAND QPSK	75/0 + 25/0		18.060	19.110
	15MHz + 5MHz BAND 16QAM			18.045	19.148
	10MHz + 10MHz BAND QPSK	50/0 + 50/0		18.593	18.622
	10MHz + 10MHz BAND 16QAM			18.591	19.641

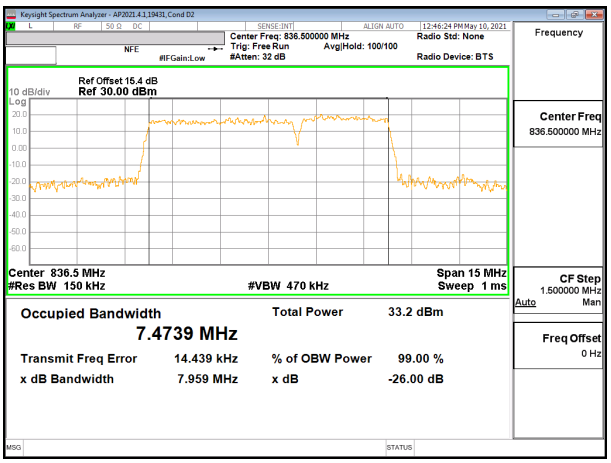
LTE BAND 66C

Band	Mode	RB Allocation/RB Offset	f (MHz)	99% BW (MHz)	- 26dB BW (MHz)
LTE Band 66C	10MHz + 15MHz BAND QPSK	50/0 + 75/10	1745.0	22.999	24.50
	10MHz + 15MHz BAND 16QAM			22.894	24.43
	15MHz + 10MHz BAND QPSK	75/0 + 50/0		23.079	24.59
	15MHz + 10MHz BAND 16QAM			23.048	24.47
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.458	29.09
	10MHz + 20MHz BAND 16QAM			27.451	28.99
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.587	29.28
	20MHz + 10MHz BAND 16QAM			27.584	29.40
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.036	29.76
	15MHz + 15MHz BAND 16QAM			28.100	29.69
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.329	34.00
	15MHz + 20MHz BAND 16QAM			32.348	34.05
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.456	34.18
	20MHz + 15MHz BAND 16QAM			32.456	34.18
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		22.936	24.28
	20MHz + 5MHz BAND 16QAM			23.002	24.25
	5MHz + 20MHz BAND QPSK	25/0 + 100/0		22.620	24.06
	5MHz + 20MHz BAND 16QAM			22.665	24.09
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.487	39.48
	20MHz + 20MHz BAND 16QAM			37.448	39.35

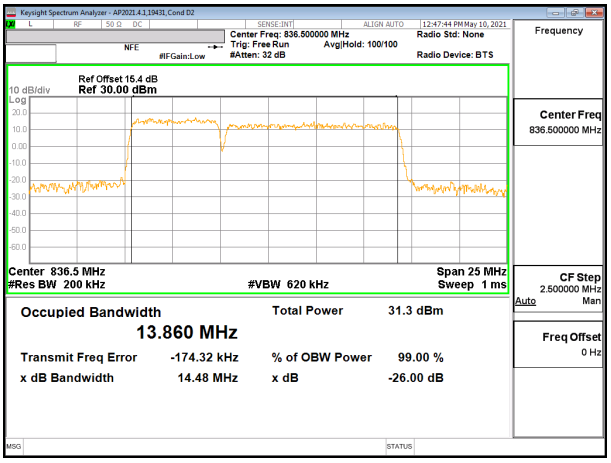
9.1.1. LTE BAND 5



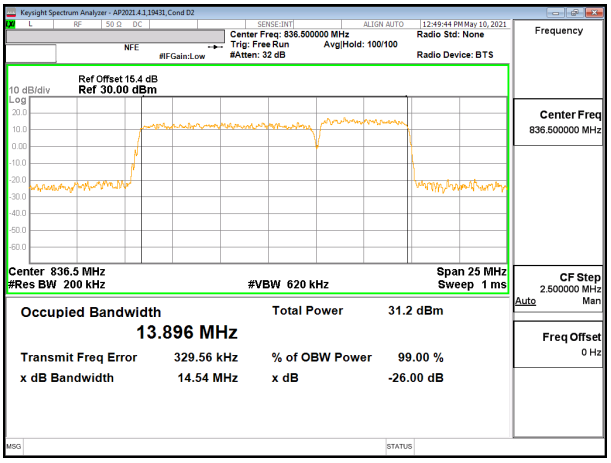
LTE B5 3MHz + 5MHz QPSK RB15-0 + RB25-0



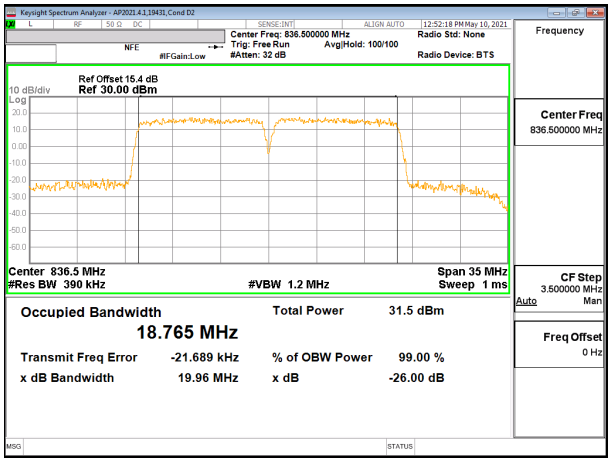
LTE B5 5MHz + 3MHz QPSK RB25-0 + RB15-0



LTE B5 5MHz + 10MHz QPSK RB25-0 + RB50-0

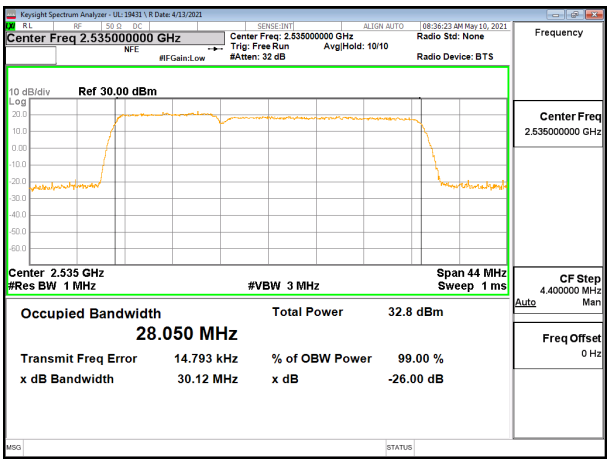


LTE B5 10MHz + 5MHz QPSK RB50-0 + RB25-0

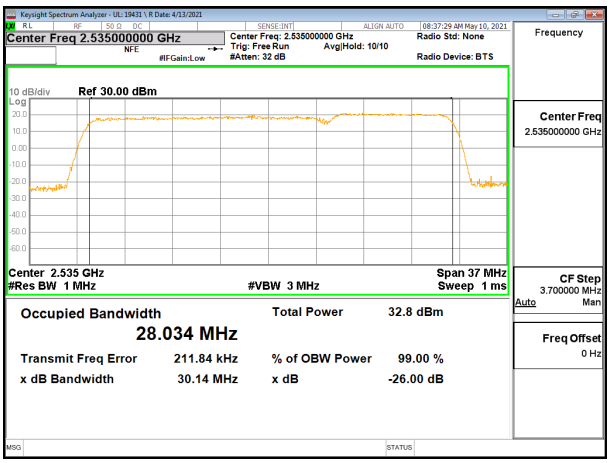


LTE B5 10MHz + 10MHz QPSK RB50-0 + RB50-0

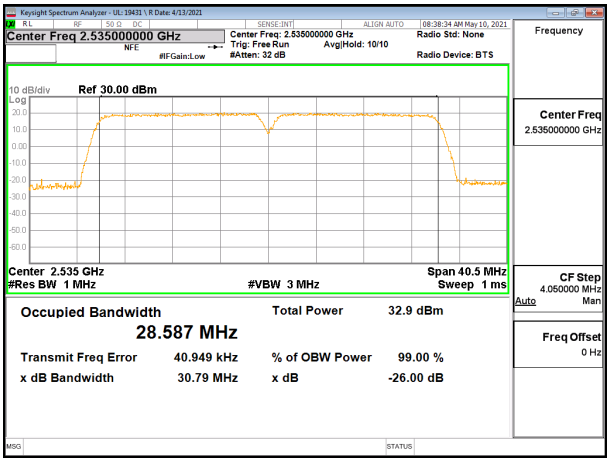
9.1.2. LTE BAND 7



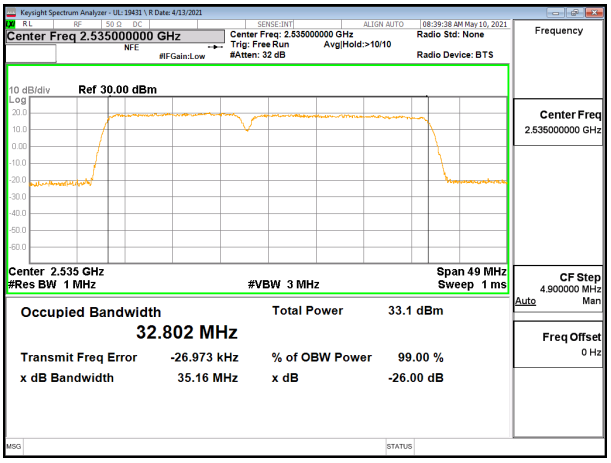
LTE B7 10MHz + 20MHz QPSK RB50-0 + RB100-0



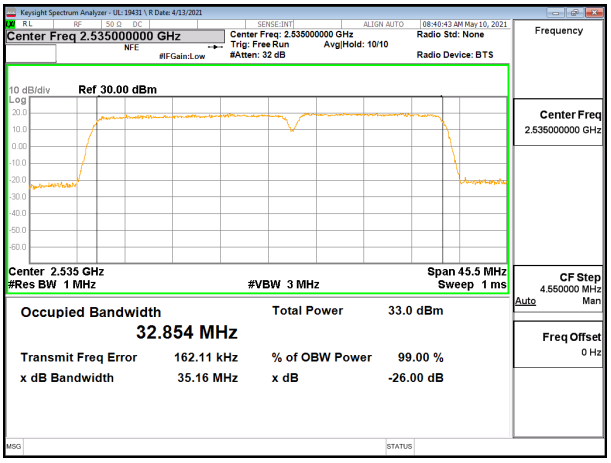
LTE B7 20MHz + 10MHz QPSK RB100-0 + RB50-0



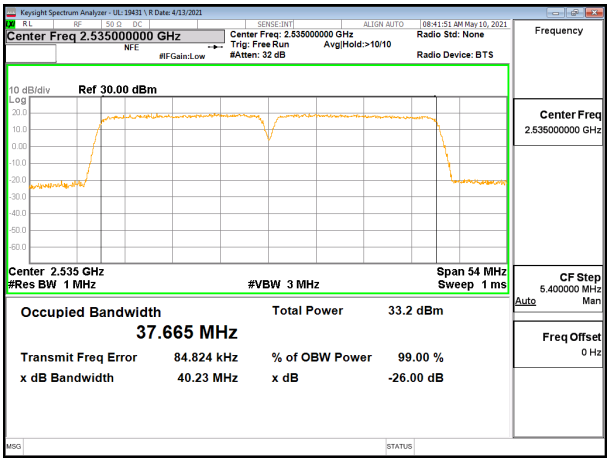
LTE B7 15MHz + 15MHz QPSK RB75-0 + RB75-0



LTE B7 15MHz + 20MHz QPSK RB75-0 + RB100-0

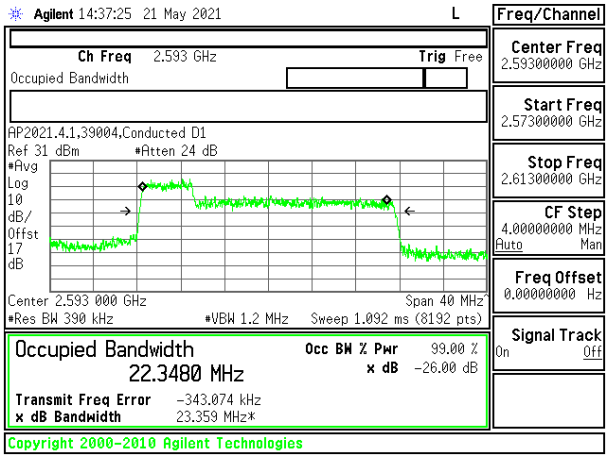


LTE B7 20MHz + 15MHz QPSK RB100-0 + RB75-0

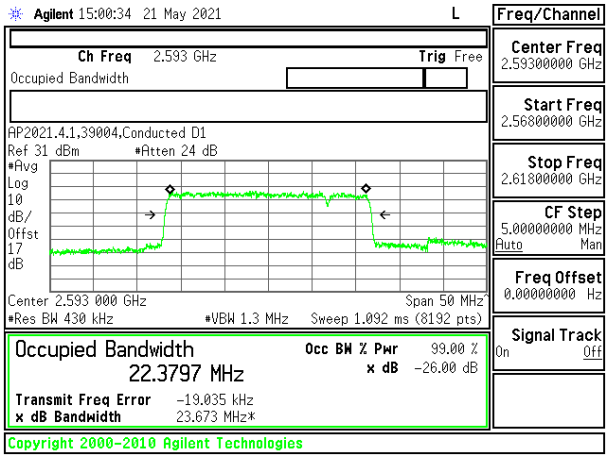


LTE B7 20MHz + 20MHz QPSK RB100-0 + RB100-0

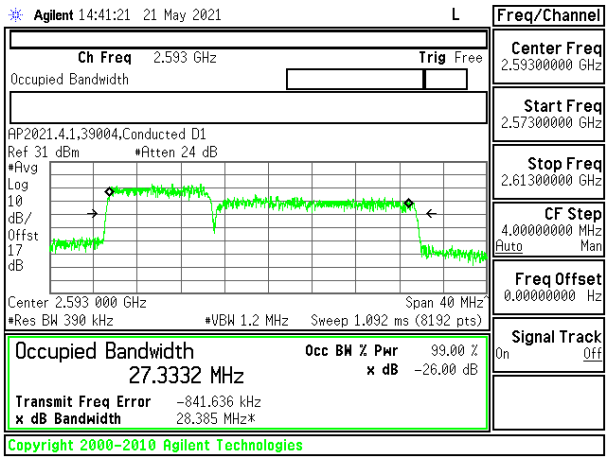
9.1.3. LTE BAND 41



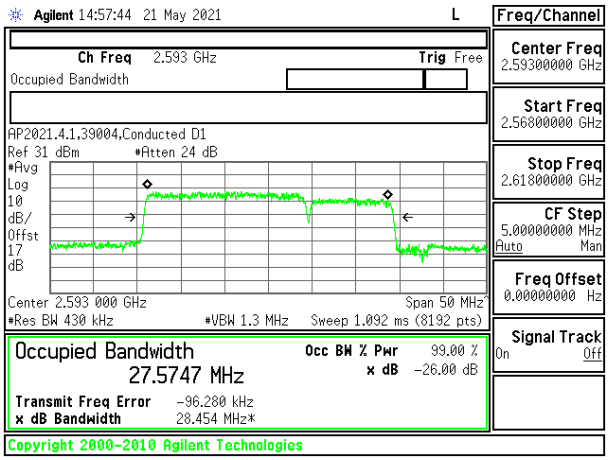
LTE B41 5MHz + 20MHz QPSK RB25-0 + RB100-0



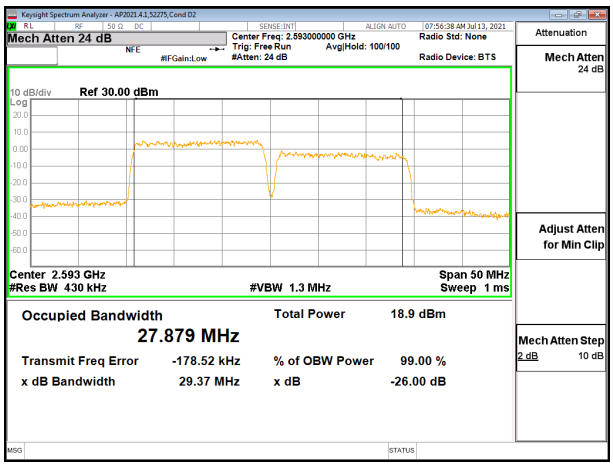
LTE B41 20MHz + 5MHz QPSK RB100-0 + RB25-0



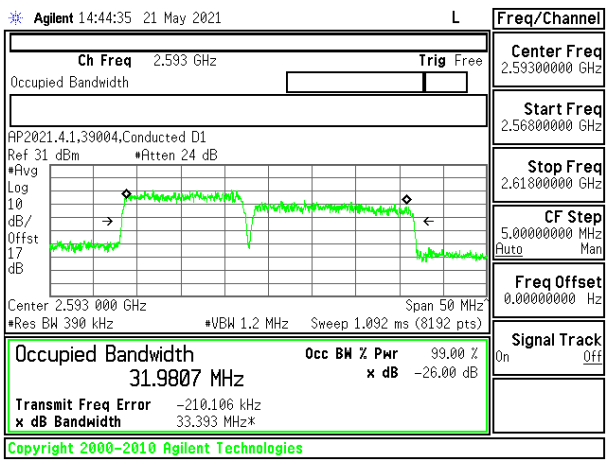
LTE B41 10MHz + 20MHz QPSK RB50-0 + RB100-0



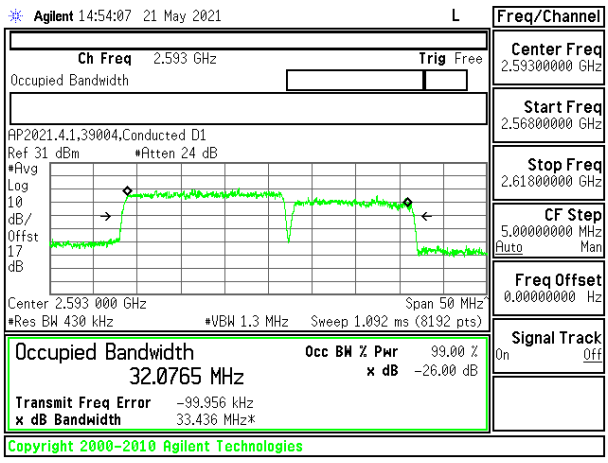
LTE B41 20MHz + 10MHz QPSK RB100-0 + RB50-0



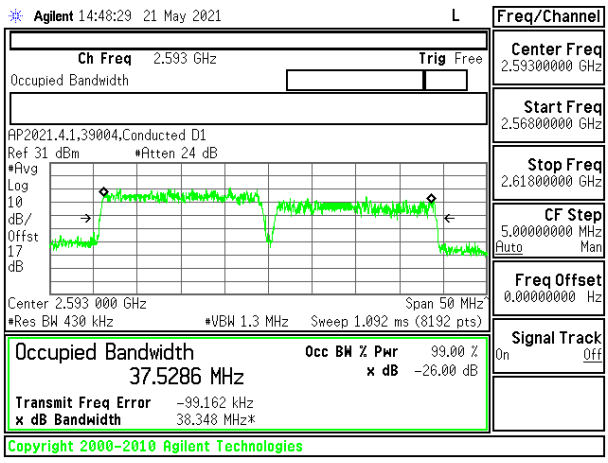
LTE B41 15MHz + 15MHz QPSK RB75-0 + RB75-0



LTE B41 15MHz + 20MHz QPSK RB75-0 + RB100-0

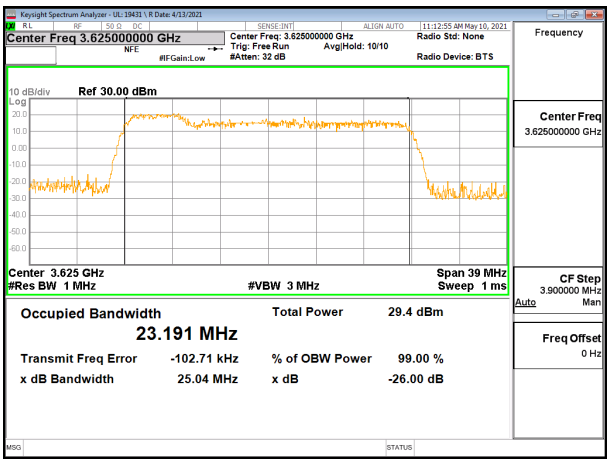


LTE B41 20MHz + 15MHz QPSK RB100-0 + RB75-0

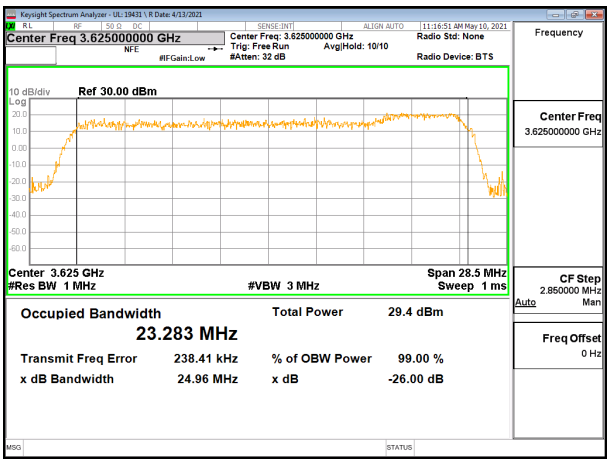


LTE B41 20MHz + 20MHz QPSK RB100-0 + RB100-0

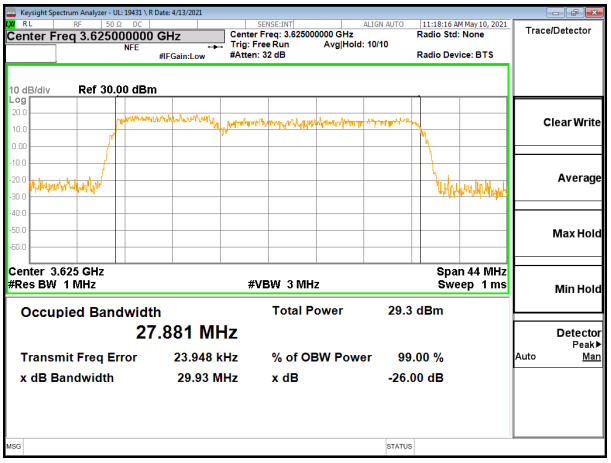
9.1.4. LTE BAND 48



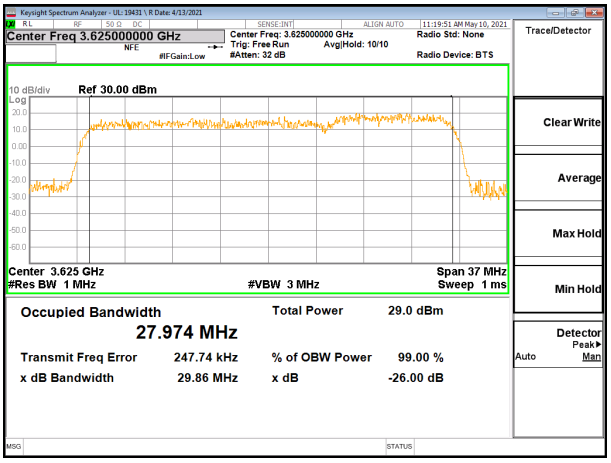
LTE B48 5MHz + 20MHz QPSK RB25-0 + RB100-0



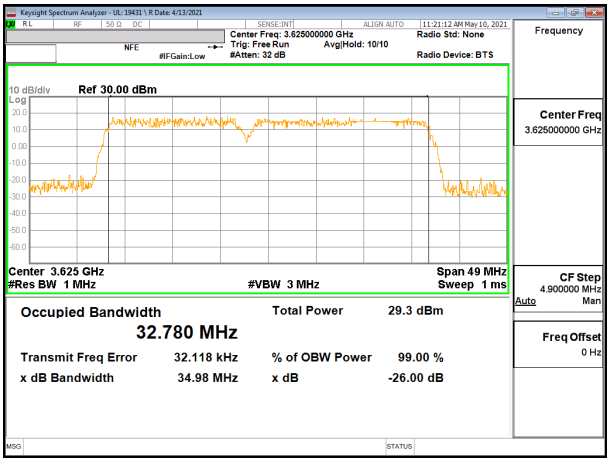
LTE B48 20MHz + 5MHz QPSK RB100-0 + RB25-0



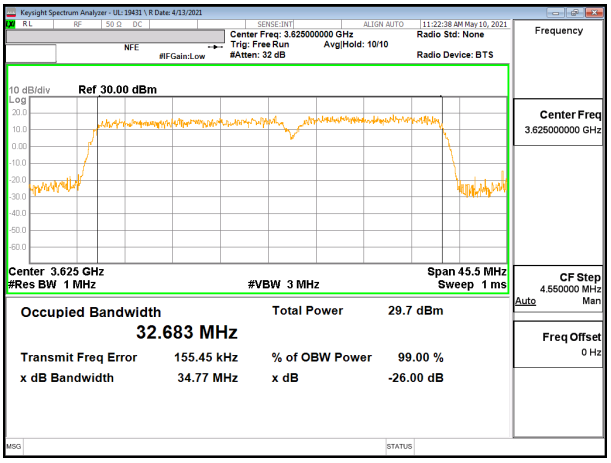
LTE B48 10MHz + 20MHz QPSK RB50-0 + RB100-0



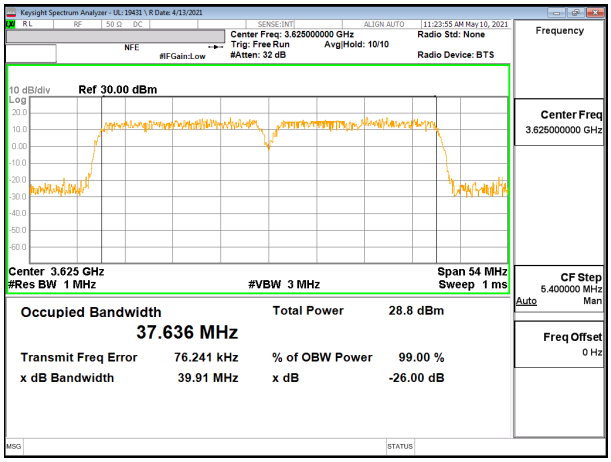
LTE B48 20MHz + 10MHz QPSK RB100-0 + RB50-0



LTE B48 15MHz + 20MHz QPSK RB75-0 + RB100-0

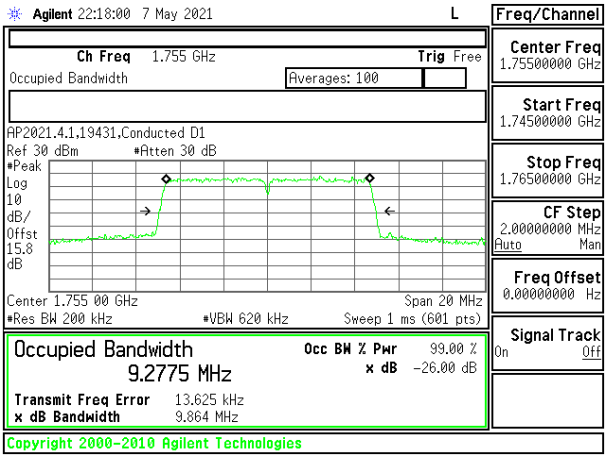


LTE B48 20MHz + 15MHz QPSK RB100-0 + RB75-0

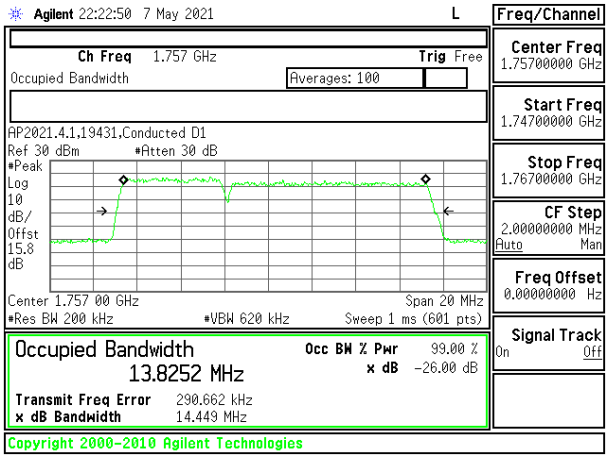


LTE B48 20MHz + 20MHz QPSK RB100-0 + RB100-0

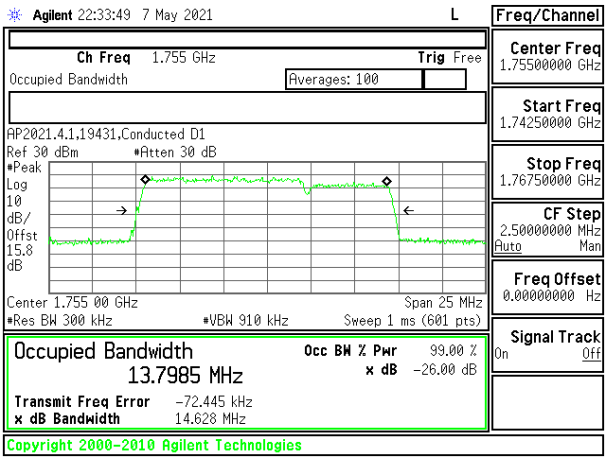
9.1.5. LTE BAND 66B



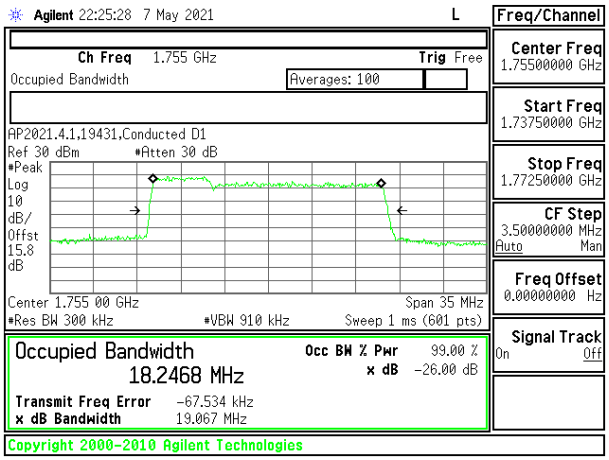
LTE B66B 5MHz + 5MHz QPSK RB25-0 + RB25-0



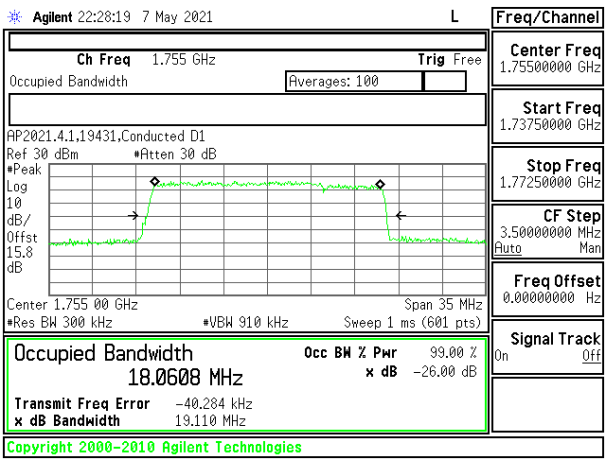
LTE B66B 5MHz + 10MHz QPSK RB25-0 + RB50-0



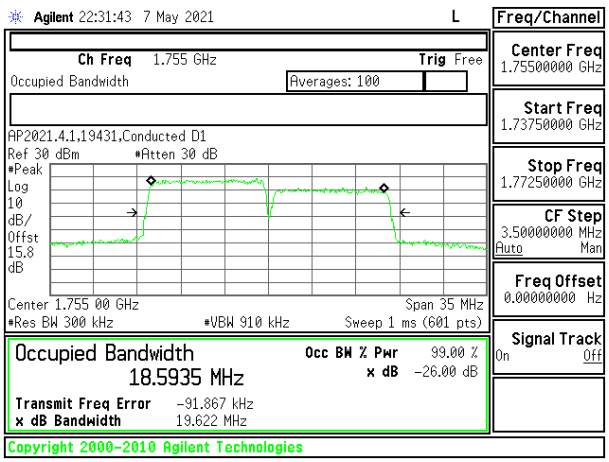
LTE B66B 10MHz + 5MHz QPSK RB50-0 + RB25-0



LTE B66B 5MHz + 15MHz QPSK RB25-0 + RB75-0

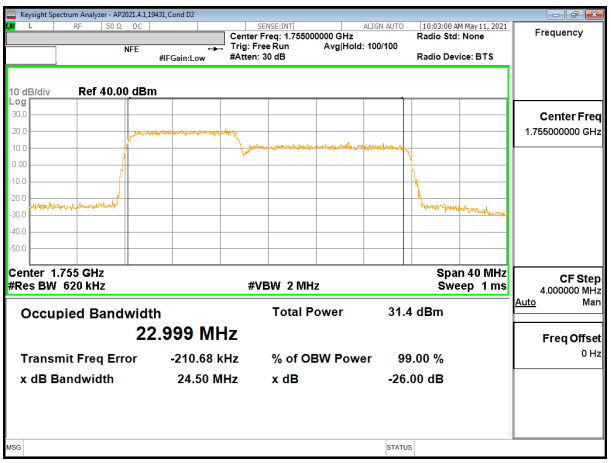


LTE B66B 15MHz + 5MHz QPSK RB75-0 + RB25-0

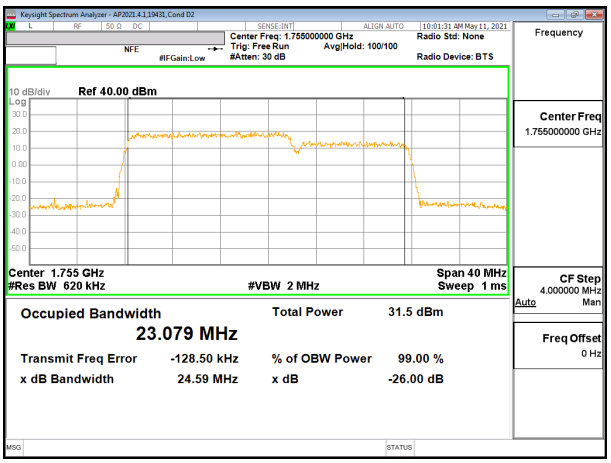


LTE B66B 10MHz + 10MHz QPSK RB50-0 + RB50-0

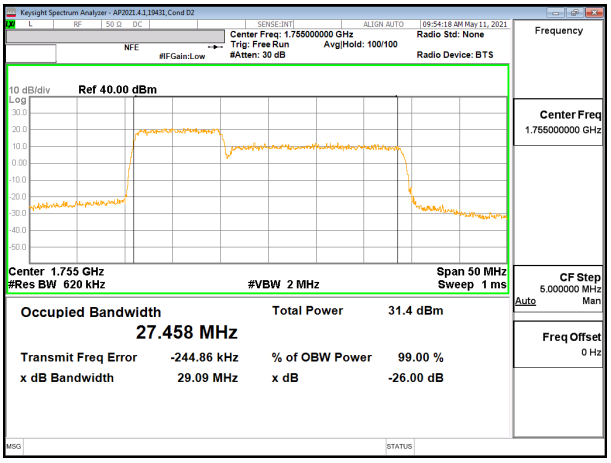
9.1.6. LTE BAND 66C



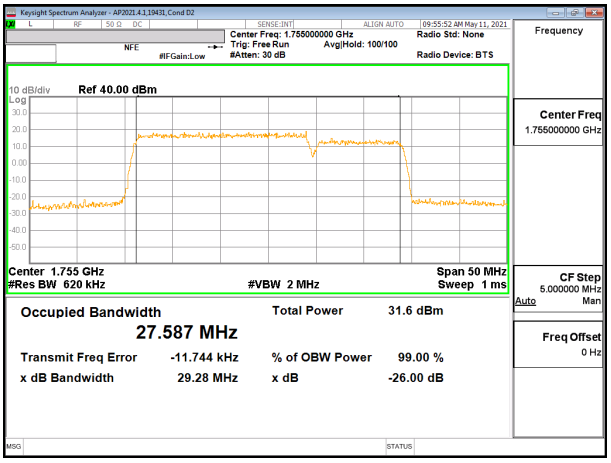
LTE B66C 10MHz + 15MHz QPSK RB50-0 + RB75-0



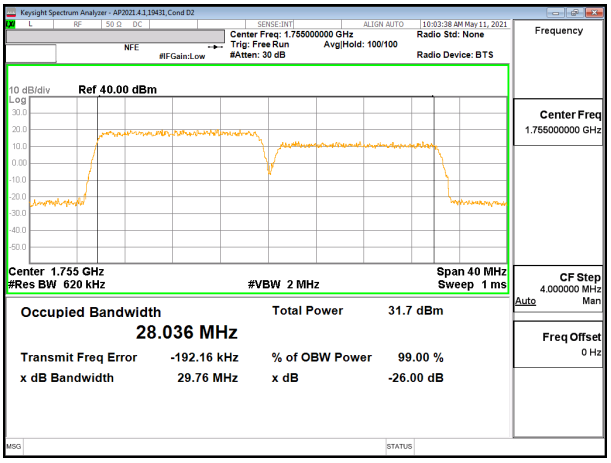
LTE B66C 15MHz + 10MHz QPSK RB75-0 + RB50-0



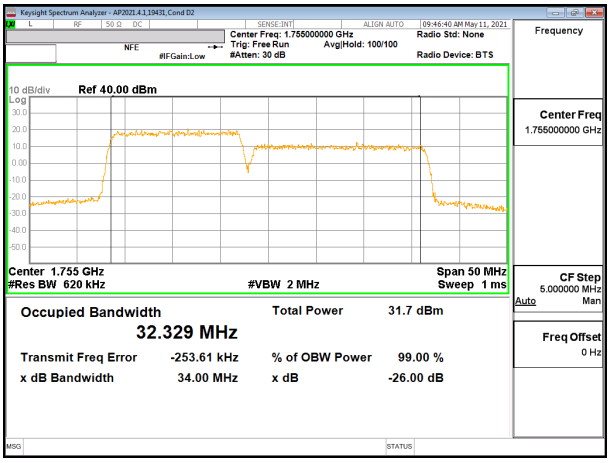
LTE B66C 10MHz + 20MHz QPSK RB50-0 + RB100-0



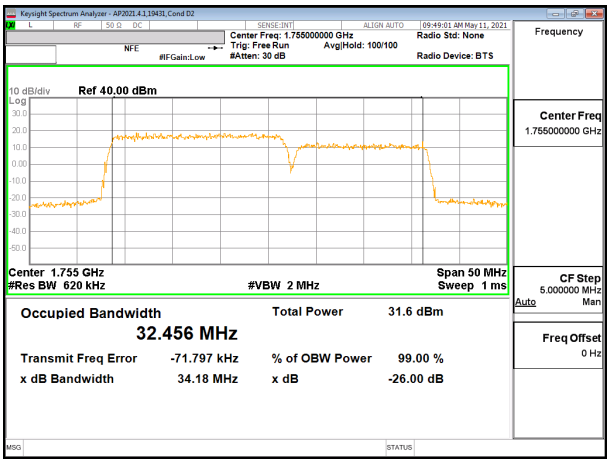
LTE B66C 20MHz + 10MHz QPSK RB100-0 + RB50-0



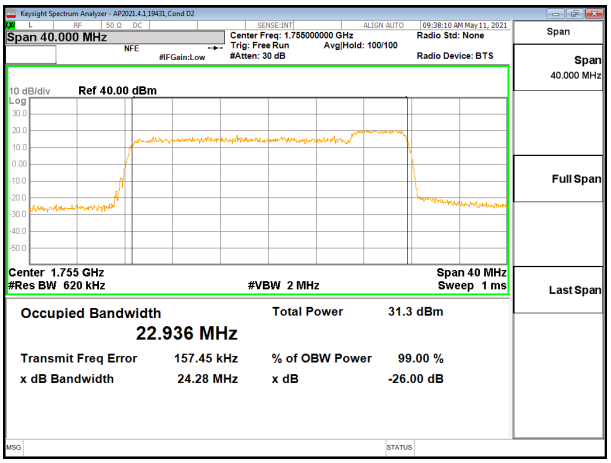
LTE B66C 15MHz + 15MHz QPSK RB75-0 + RB75-0



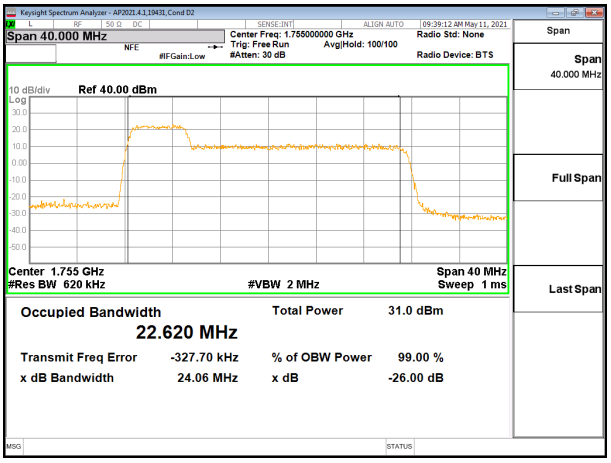
LTE B66C 15MHz + 20MHz QPSK RB75-0 + RB100-0



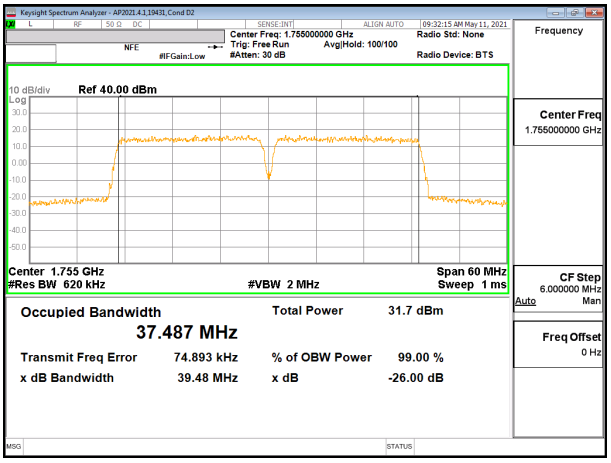
LTE B66C 20MHz + 15MHz QPSK RB100-0 + RB75-0



LTE B66C 20MHz + 5MHz QPSK RB100-0 + RB25-0



LTE B66C 5MHz + 20MHz QPSK RB25-0 + RB100-0



LTE B66C 20MHz + 20MHz QPSK RB100-0 + RB100-0

9.2. BAND EDGE AND EMISSION MASK

TEST PROCEDURE

The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

TEST PROCEDURE FOR FCC PART 27

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

TEST PROCEDURE FOR FCC PART 96

(3)Measurement procedure.
(i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e.,1 MHz or 1 percent of emission bandwidth, as specified). The fundamental emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(ii) When measuring unwanted emissions to demonstrate compliance with the limits, the CBSD and End User Device nominal carrier frequency/channel shall be adjusted as close to the licensee's authorized frequency block edges, both upper and lower, as the design permits.

(iii) Compliance with emission limits shall be demonstrated using either average (RMS)-detected or peak-detected power measurement techniques.

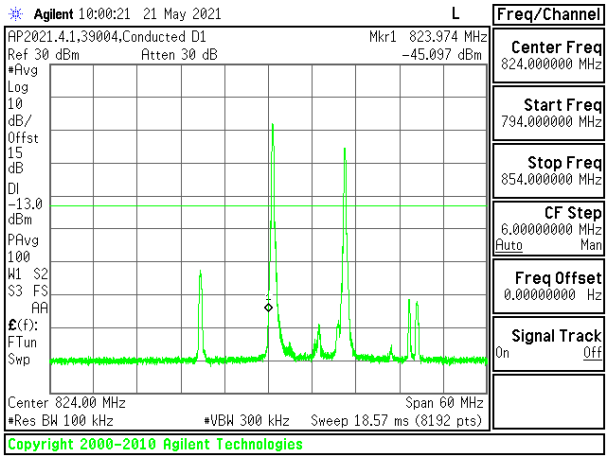
RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

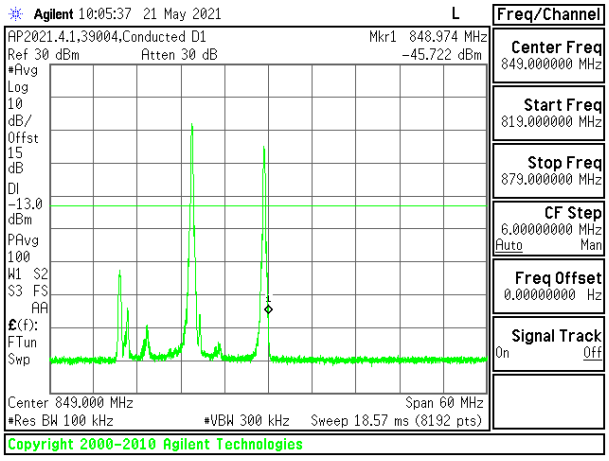
9.2.1. LTE BAND 5

LIMITS

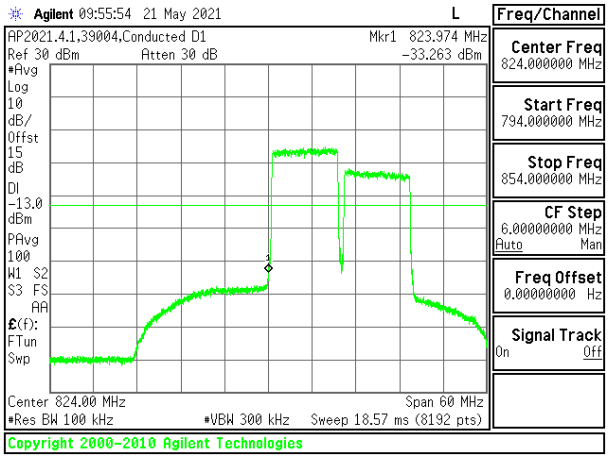
FCC: §22.917
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



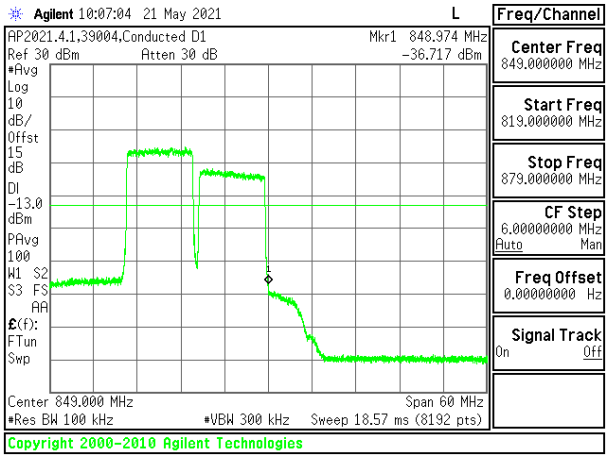
LTE B5 10MHz + 10MHz QPSK Low Ch RB1-0 + RB1-0



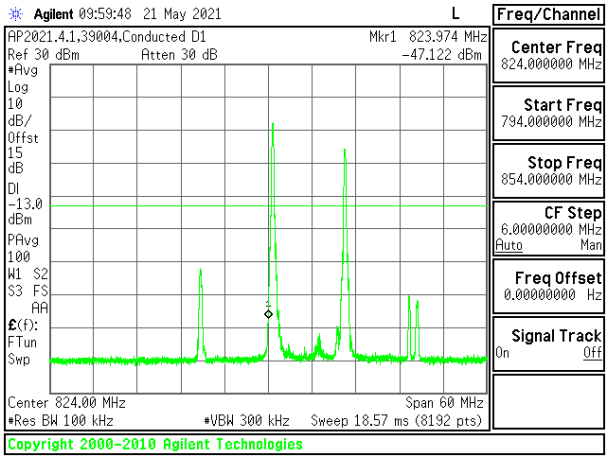
LTE B5 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-49



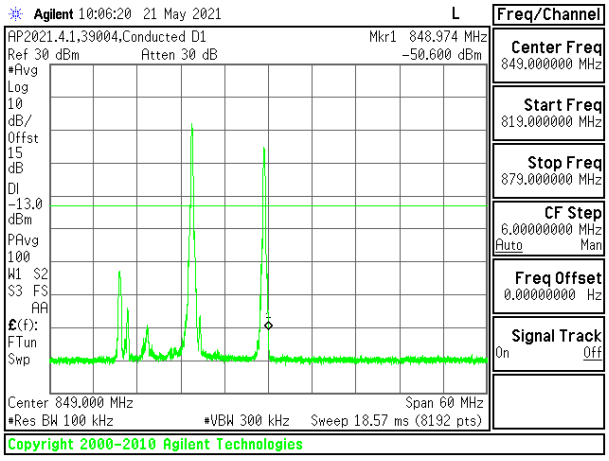
LTE B5 10MHz + 10MHz QPSK Low Ch RB50-0 + RB50-0



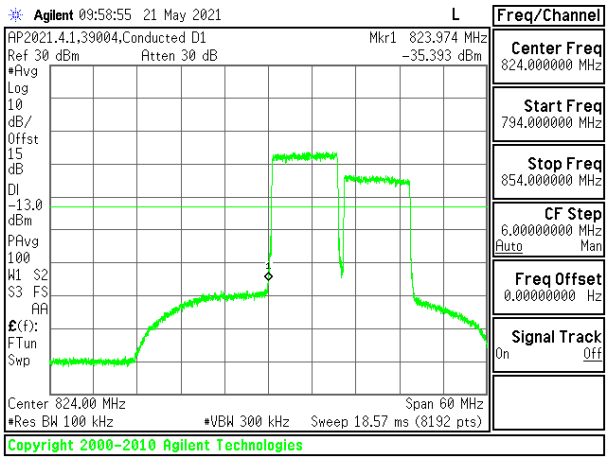
LTE B5 10MHz + 10MHz QPSK High Ch RB50-0 + RB50-0



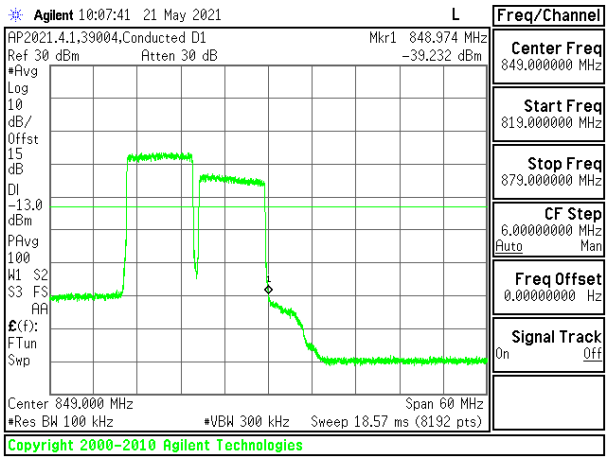
LTE B5 10MHz + 10MHz 16QAM Low Ch RB1-0 + RB1-0



LTE B5 10MHz + 10MHz 16QAM High Ch RB1-49 + RB1-49



LTE B5 10MHz + 10MHz 16QAM Low Ch RB50-0 + RB50-0

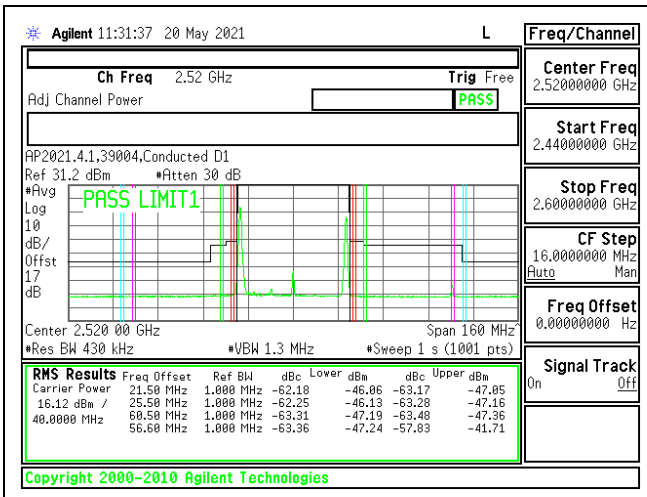


LTE B5 10MHz + 10MHz 16QAM High Ch RB50-0 + RB50-0

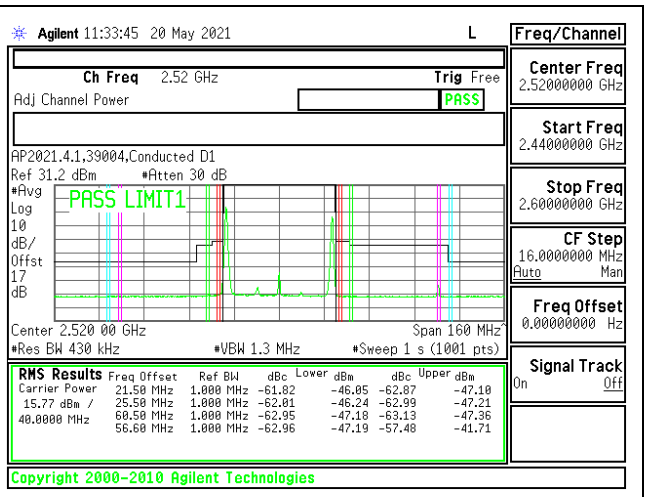
9.2.2. LTE BAND 7

LIMITS

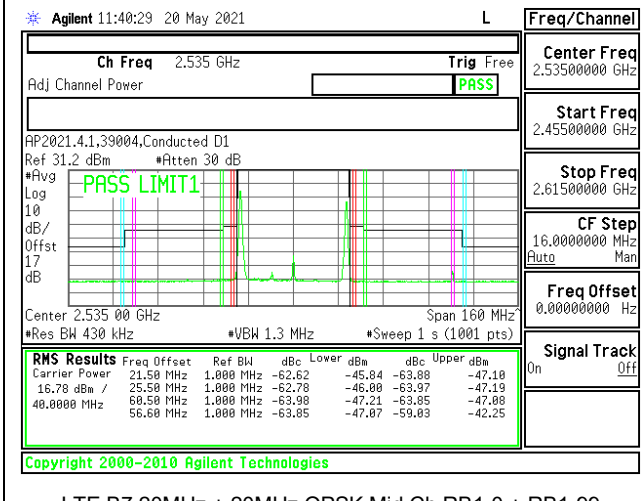
FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 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.



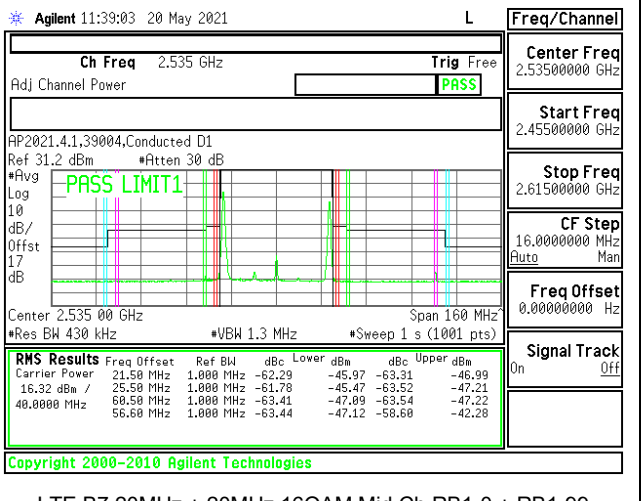
LTE B7 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



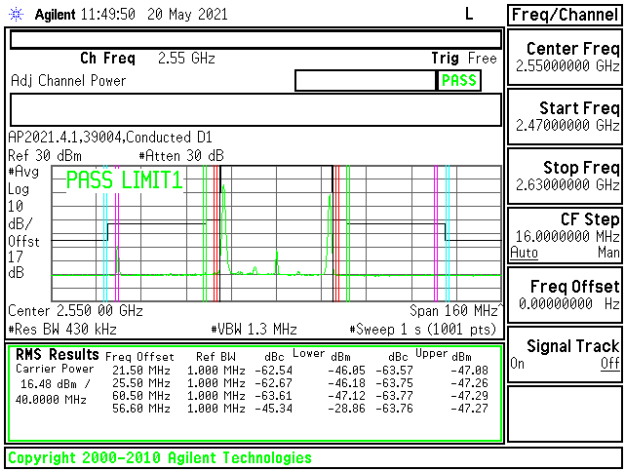
LTE B7 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



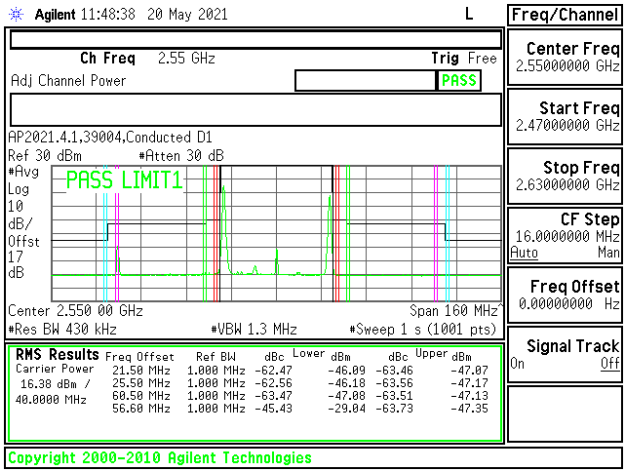
LTE B7 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



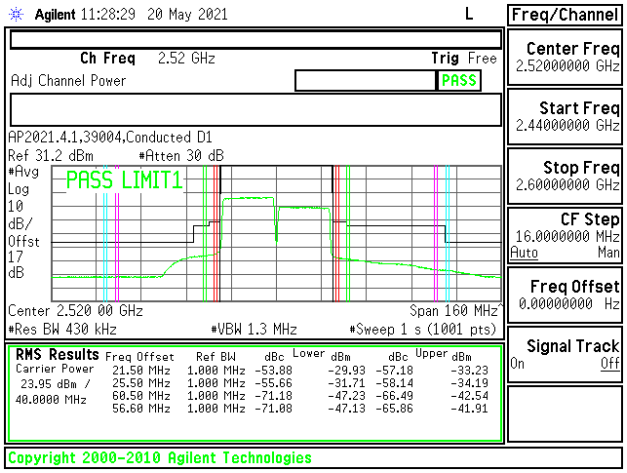
LTE B7 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



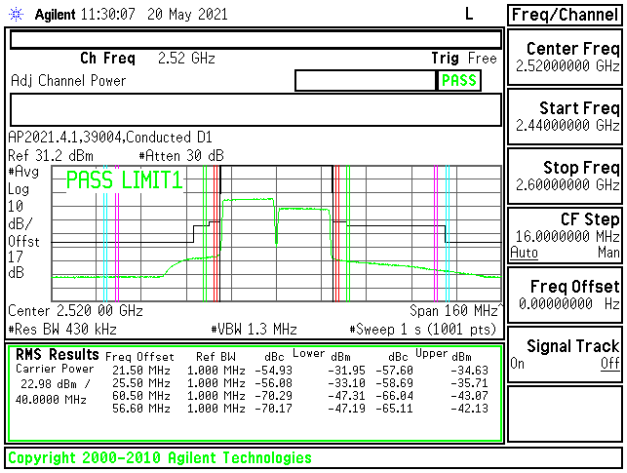
LTE B7 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



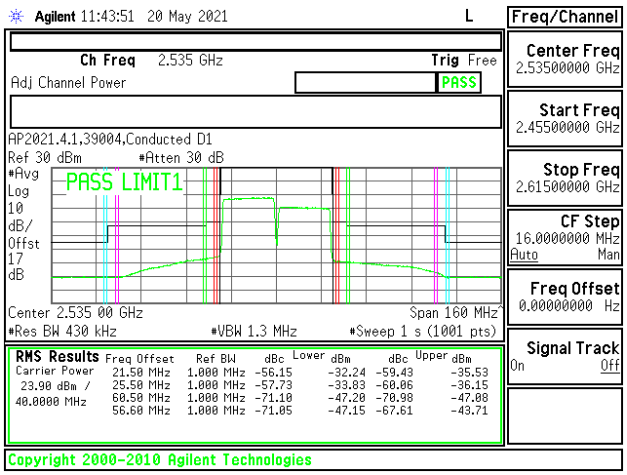
LTE B7 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



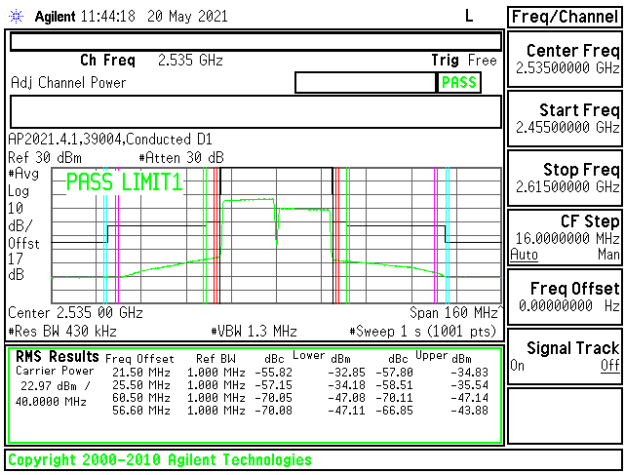
LTE B7 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



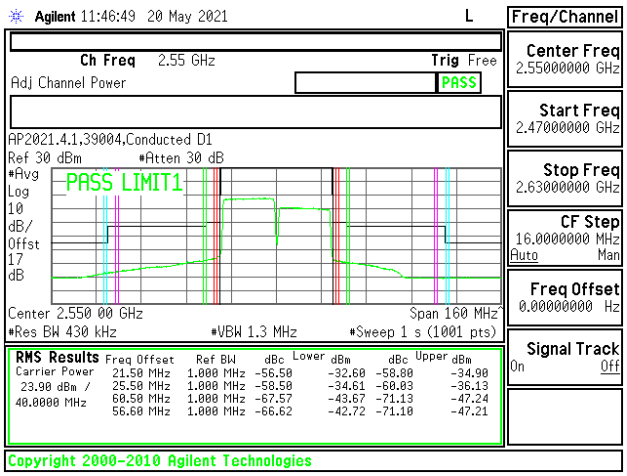
LTE B7 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



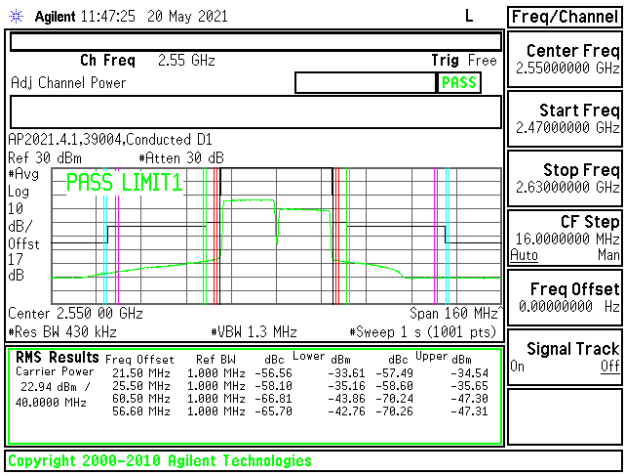
LTE B7 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



LTE B7 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0



LTE B7 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0

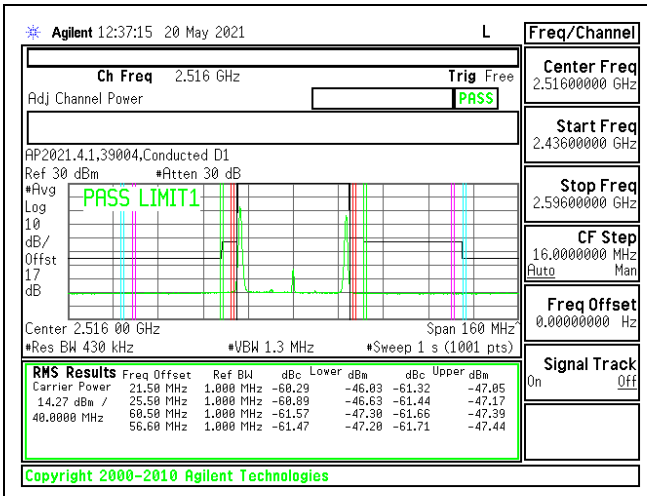


LTE B7 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

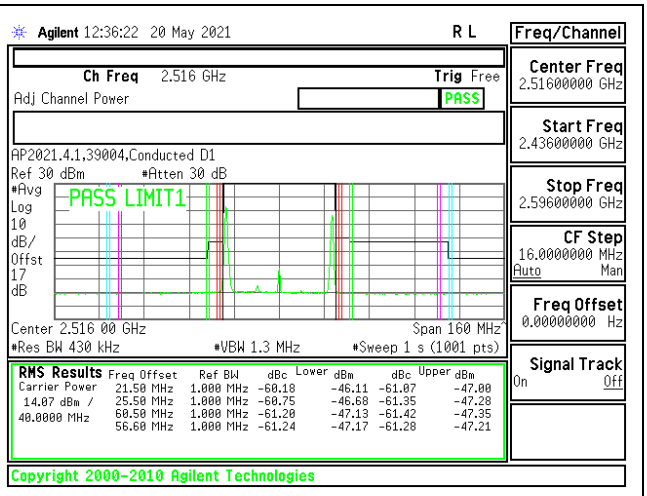
9.2.3. LTE BAND 41

LIMITS

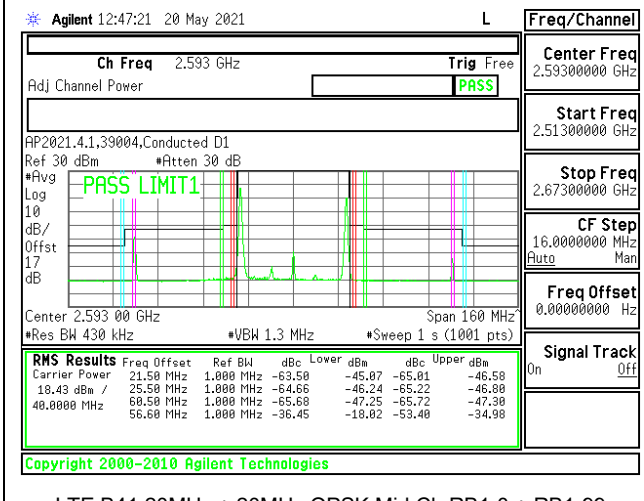
FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 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.



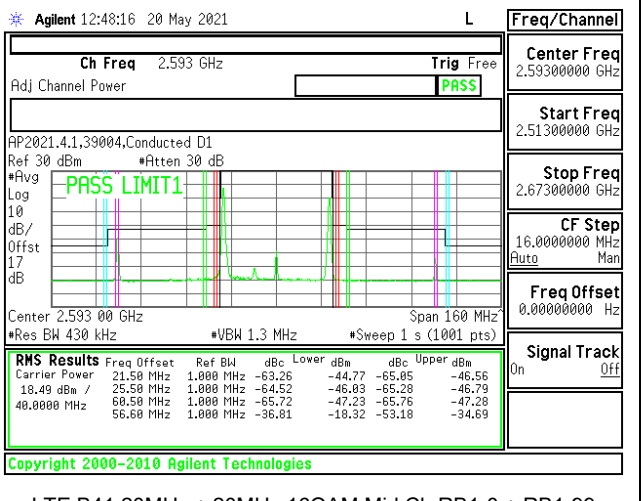
LTE B41 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



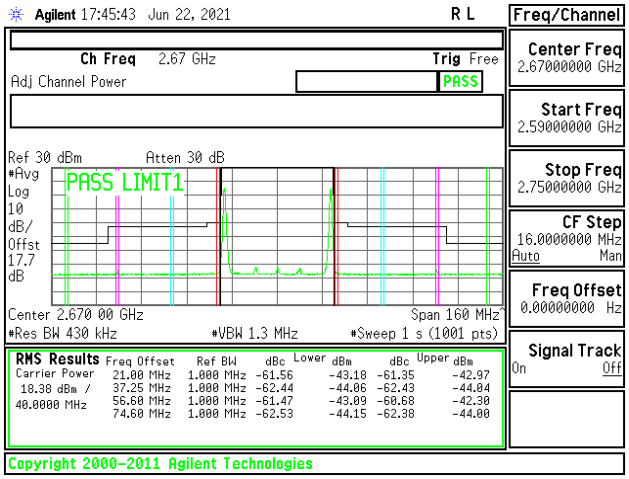
LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



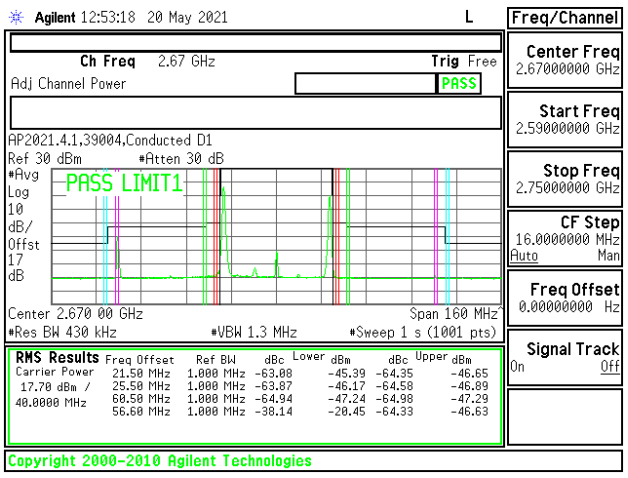
LTE B41 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



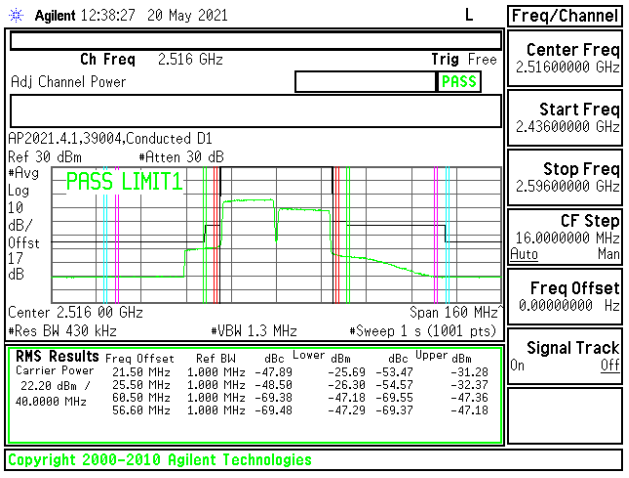
LTE B41 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



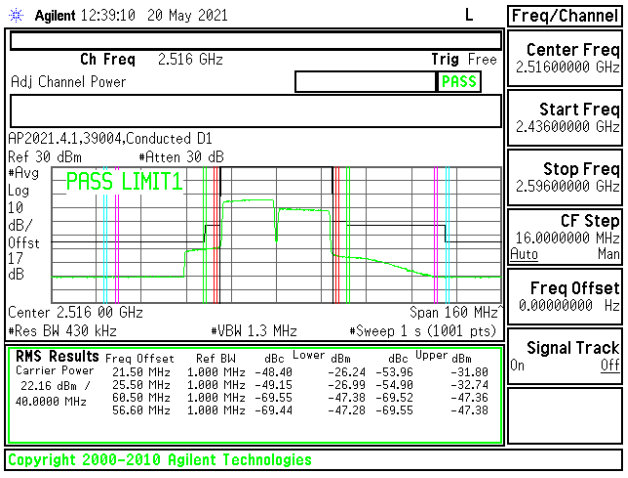
LTE B41 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



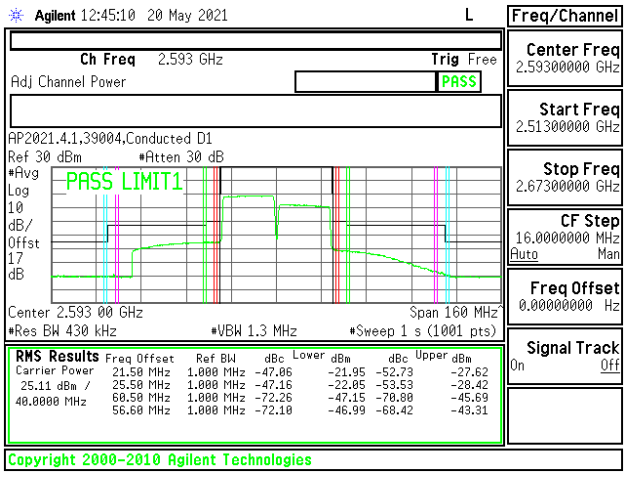
LTE B41 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



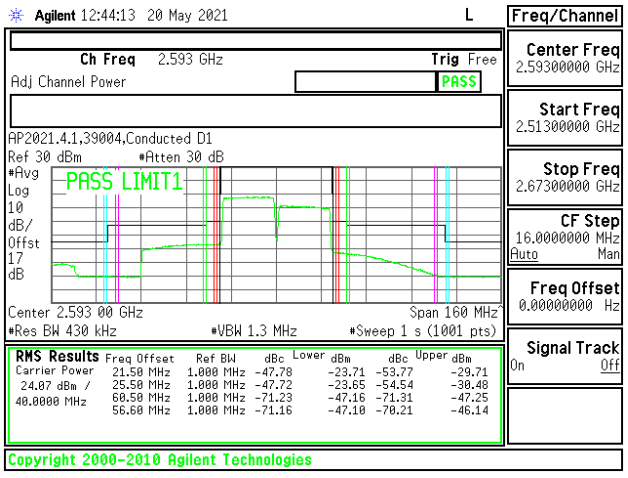
LTE B41 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



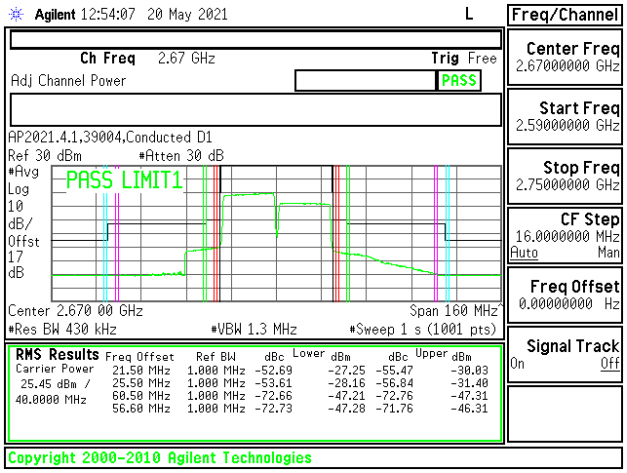
LTE B41 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



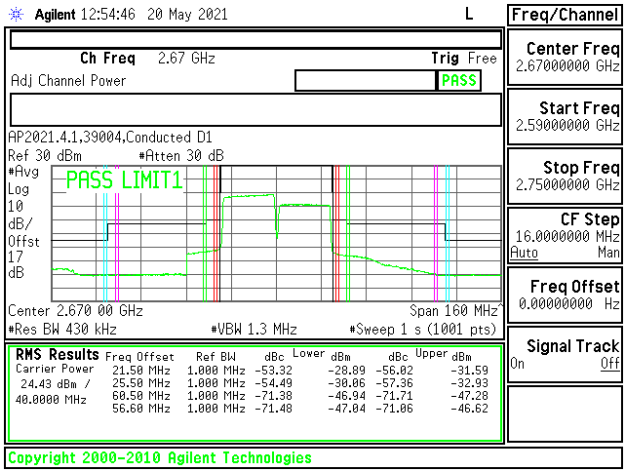
LTE B41 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



LTE B41 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0



LTE B41 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0



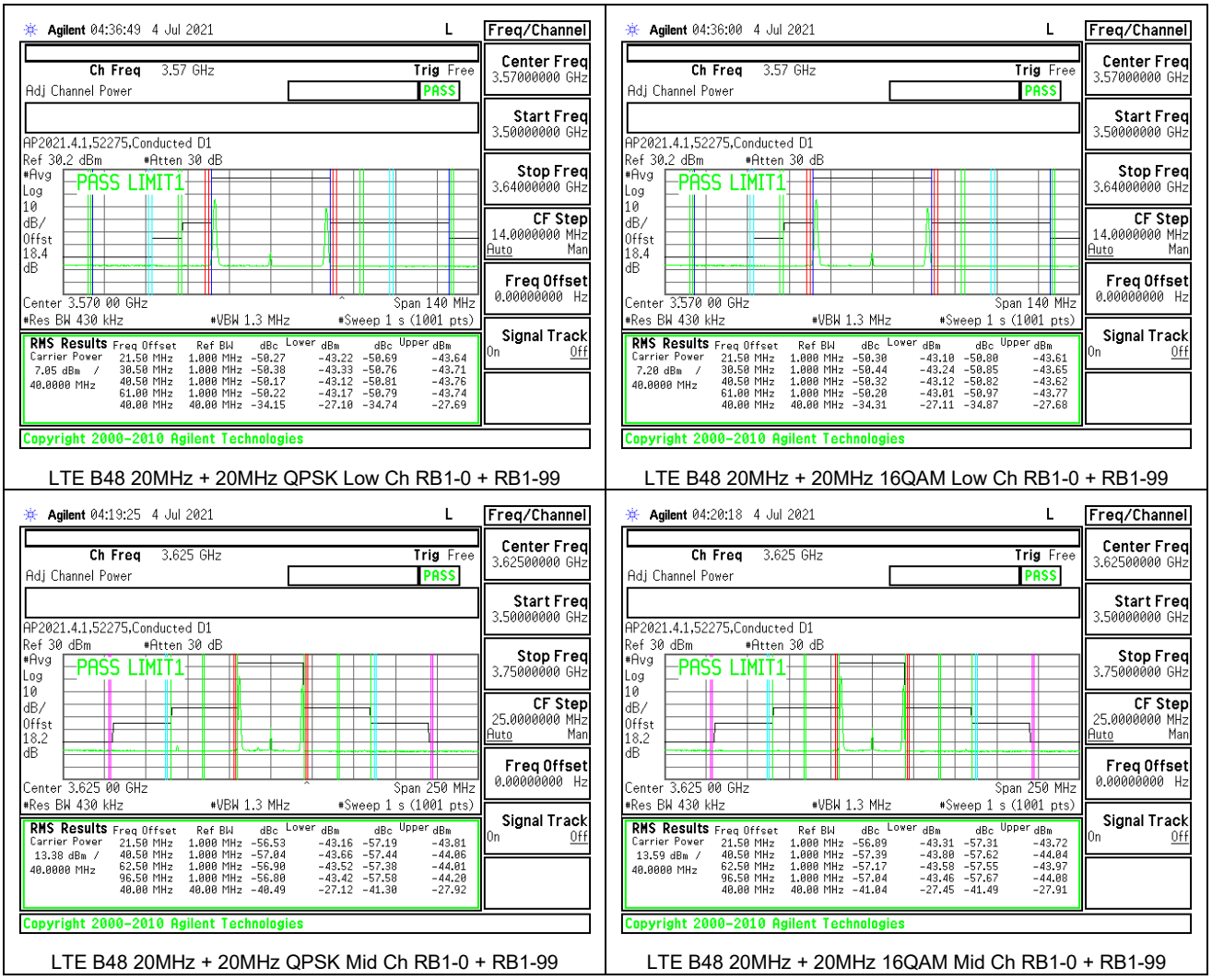
LTE B41 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

9.2.4. LTE BAND 48

LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(1) General protection levels
(ii) Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed −25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

(2) Additional protection levels. Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.
licensees.

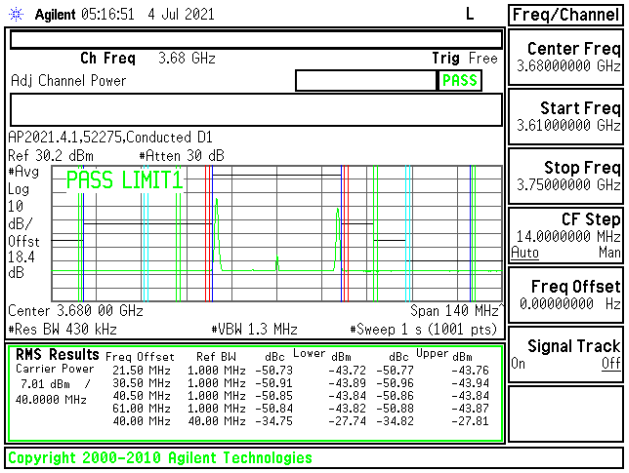


LTE B48 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99

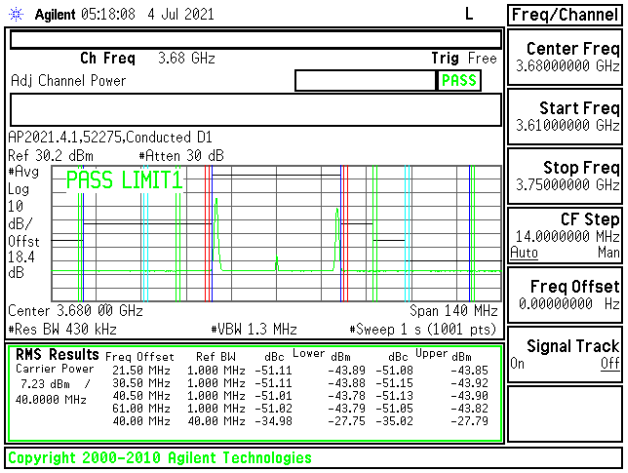
LTE B48 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99

LTE B48 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99

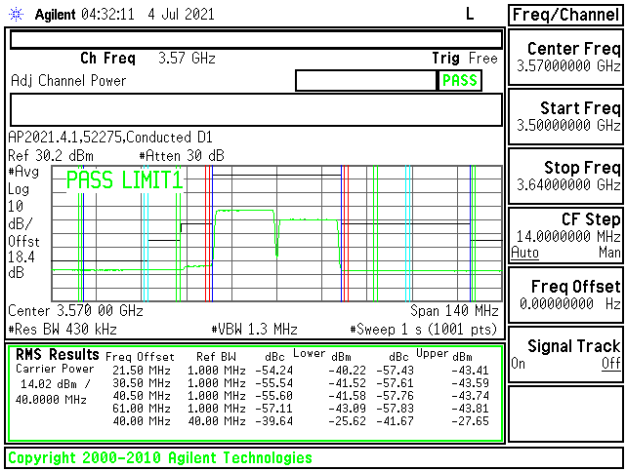
LTE B48 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



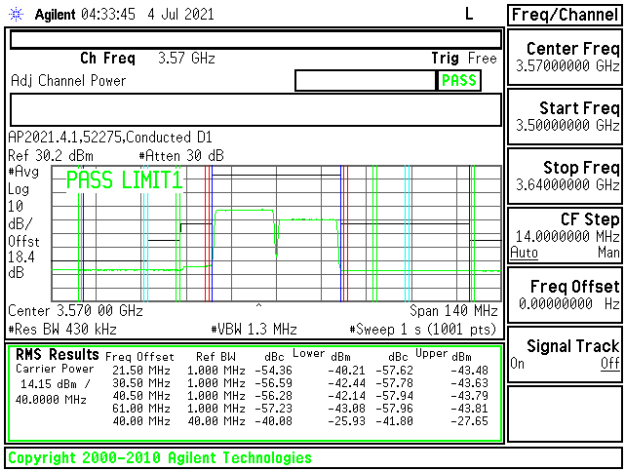
LTE B48 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



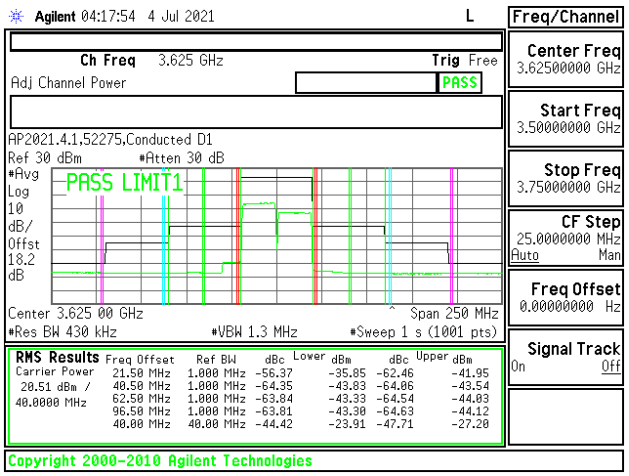
LTE B48 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



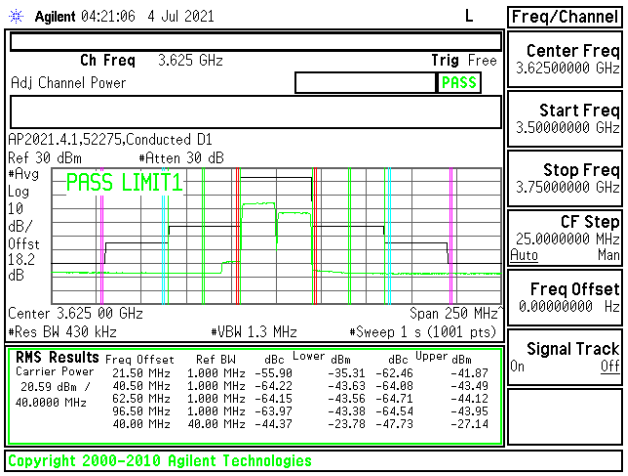
LTE B48 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



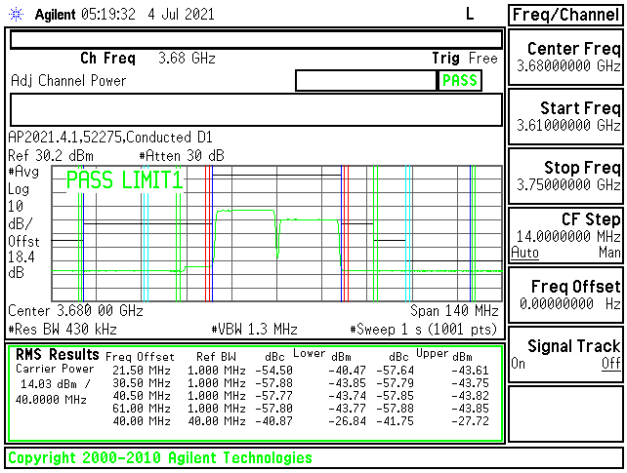
LTE B48 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



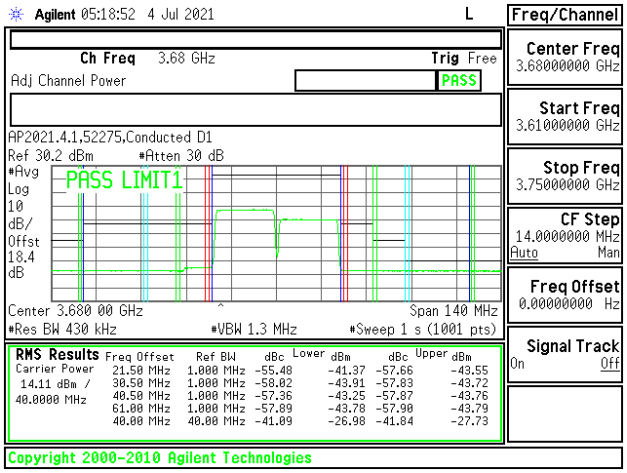
LTE B48 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



LTE B48 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0



LTE B48 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0

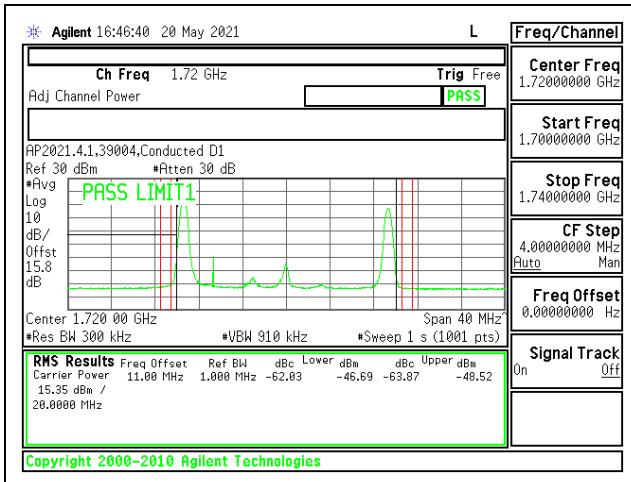


LTE B48 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

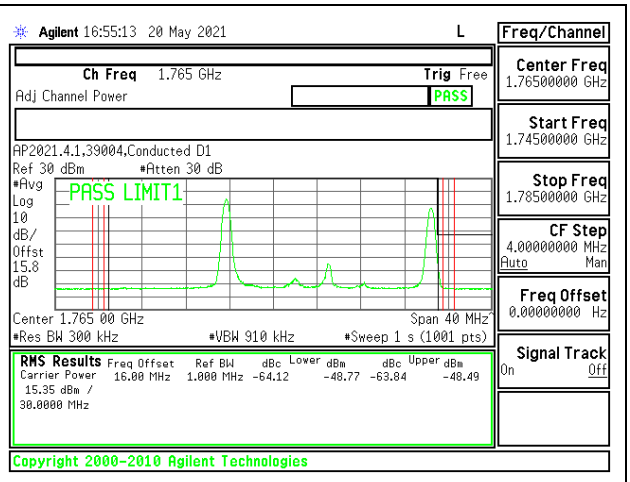
9.2.5. LTE BAND 66B

LIMITS

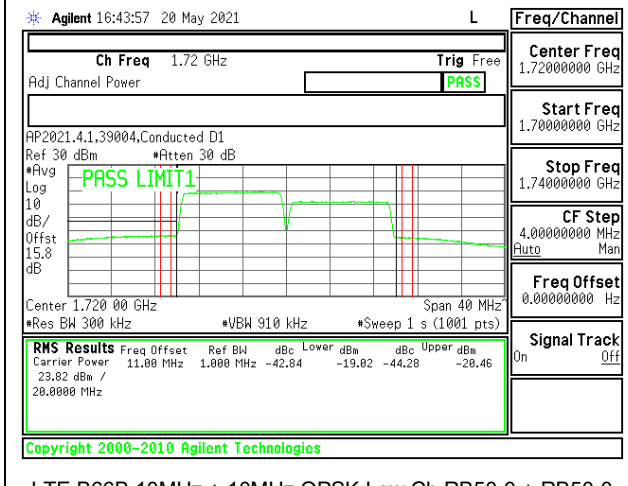
FCC: §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



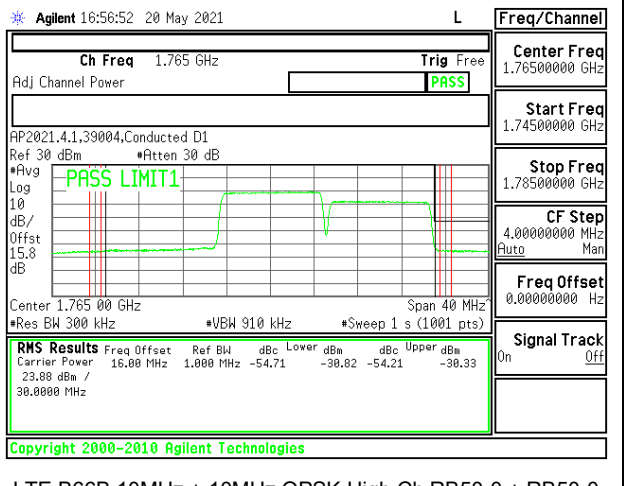
LTE B66B 10MHz + 10MHz QPSK Low Ch RB1-0 + RB1-0



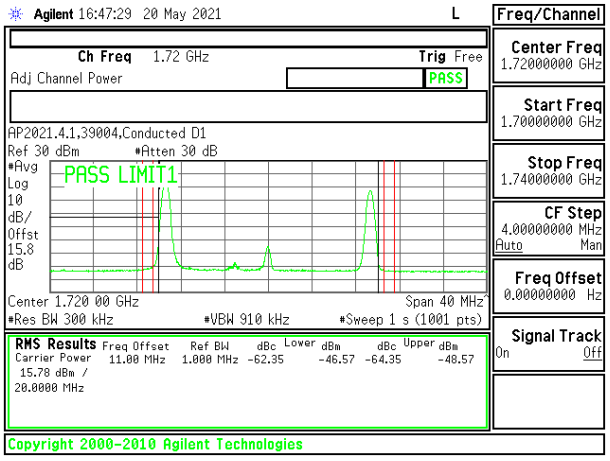
LTE B66B 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-49



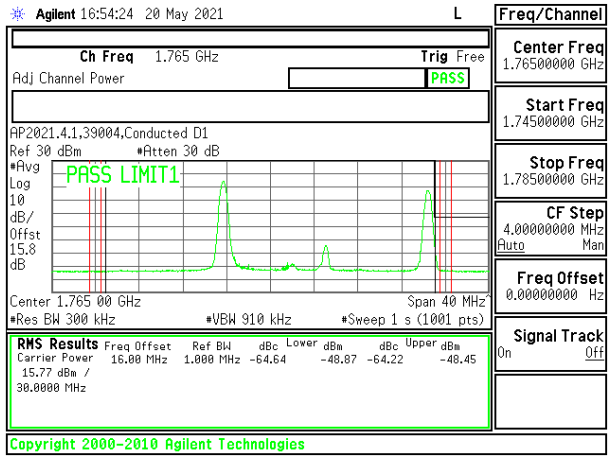
LTE B66B 10MHz + 10MHz QPSK Low Ch RB50-0 + RB50-0



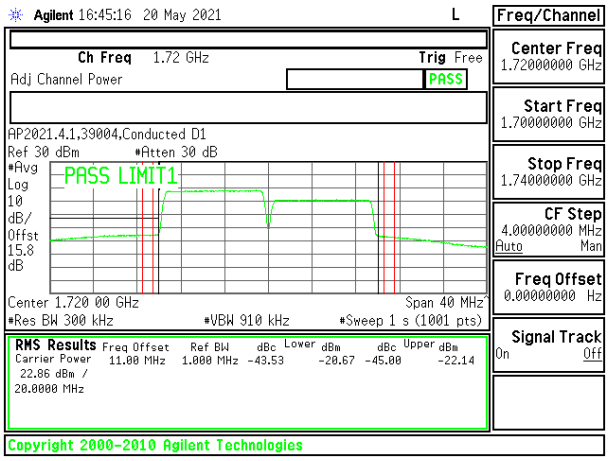
LTE B66B 10MHz + 10MHz QPSK High Ch RB50-0 + RB50-0



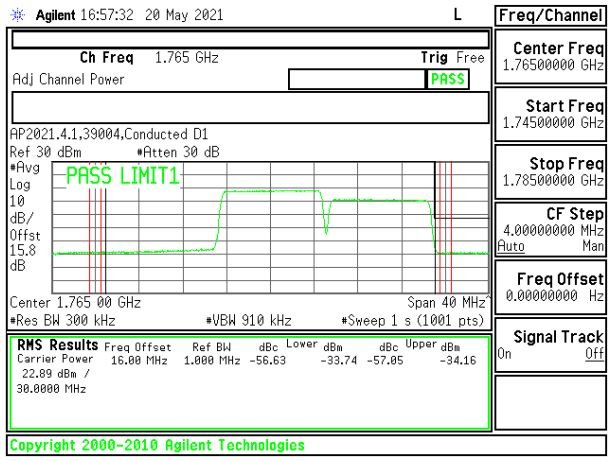
LTE B66B 10MHz + 10MHz 16QAM Low Ch RB1-0 + RB1-49



LTE B66B 10MHz + 10MHz 16QAM High Ch RB1-49 + RB1-49



LTE B66B 10MHz + 10MHz 16QAM Low Ch RB50-0 + RB50-0

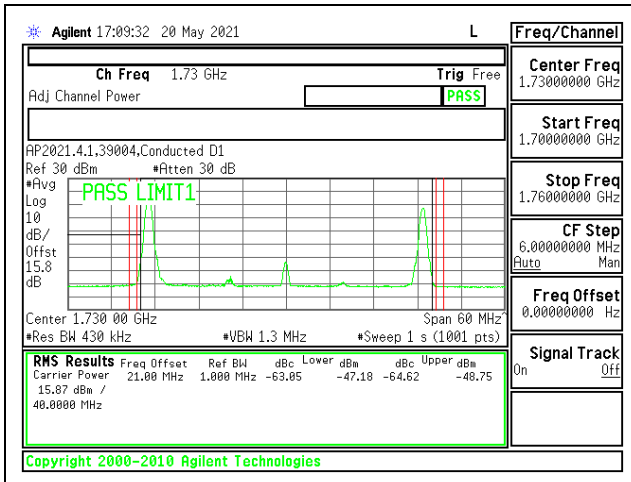


LTE B66B 10MHz + 10MHz 16QAM High Ch RB50-0 + RB50-0

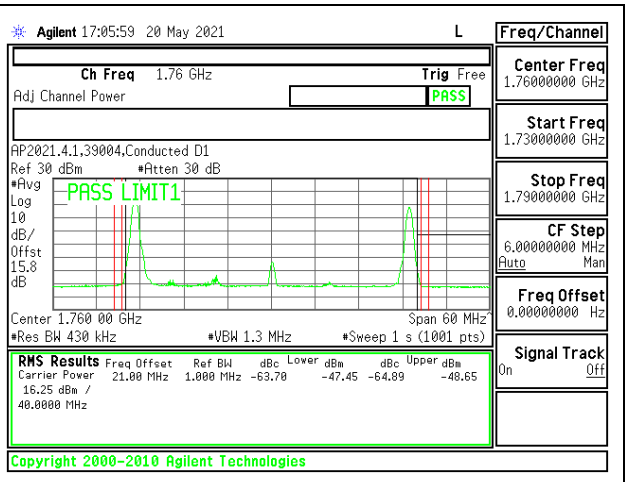
9.2.6. LTE BAND 66C

LIMITS

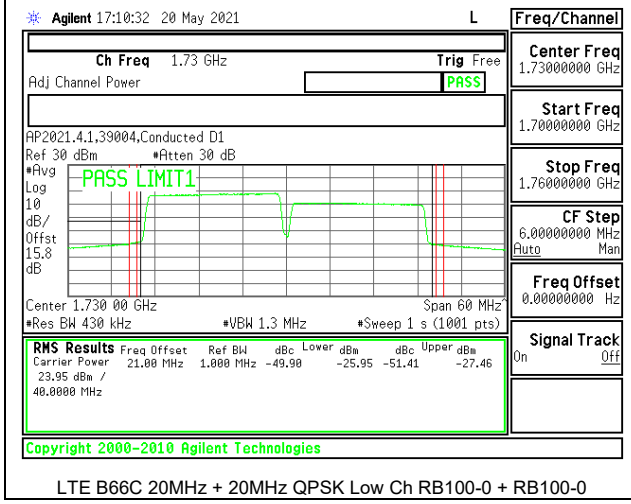
FCC: §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



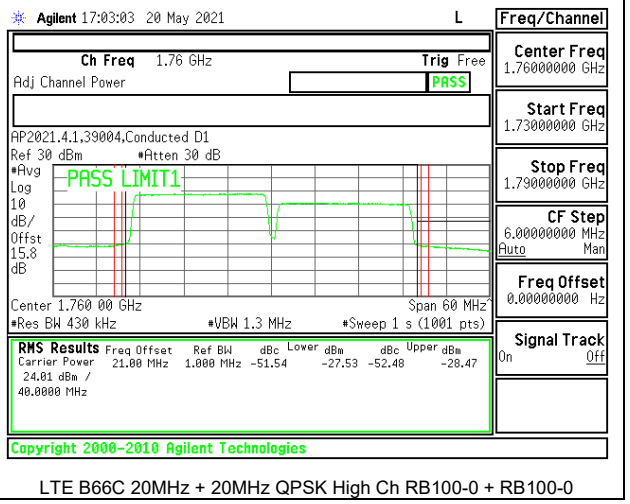
LTE B66C 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



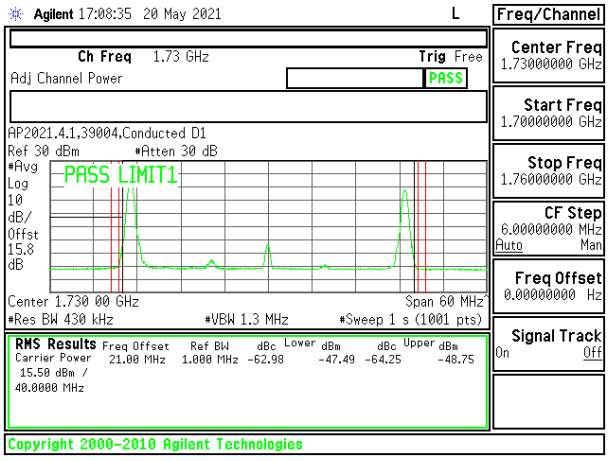
LTE B66C 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



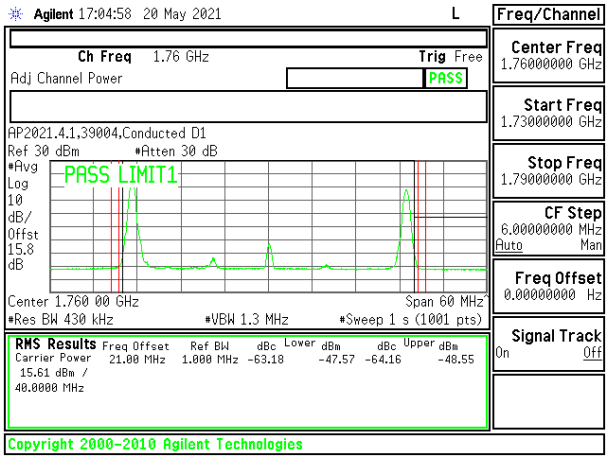
LTE B66C 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



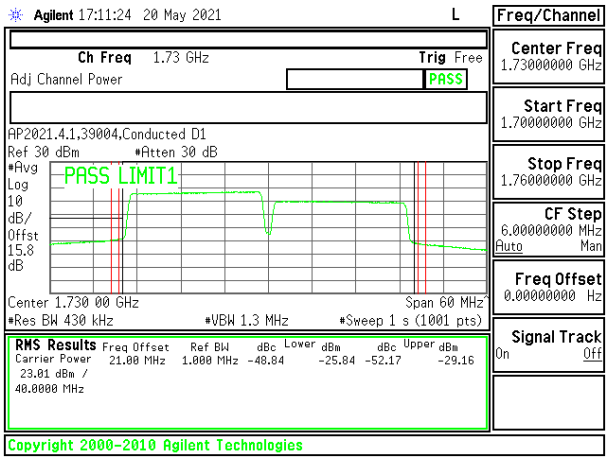
LTE B66C 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0



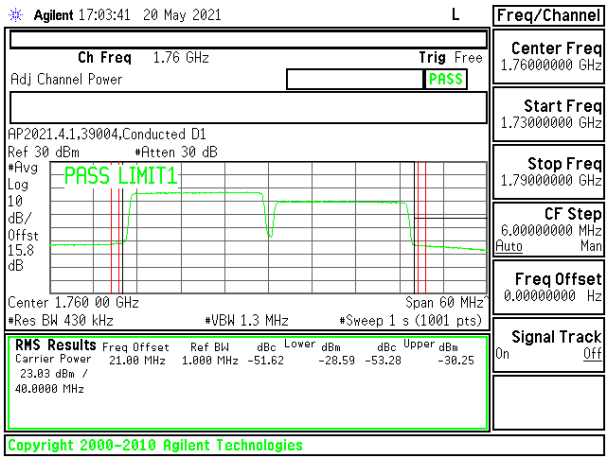
LTE B66C 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



LTE B66C 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



LTE B66C 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



LTE B66C 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

9.3. OUT OF BAND EMISSIONS

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm to band 5 and -25 dBm to band 7 and 41
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

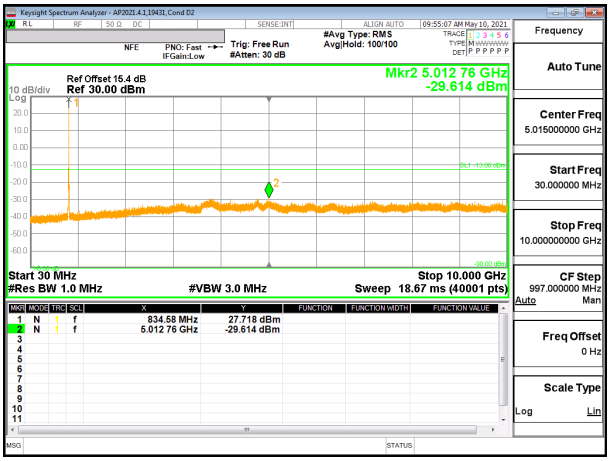
RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

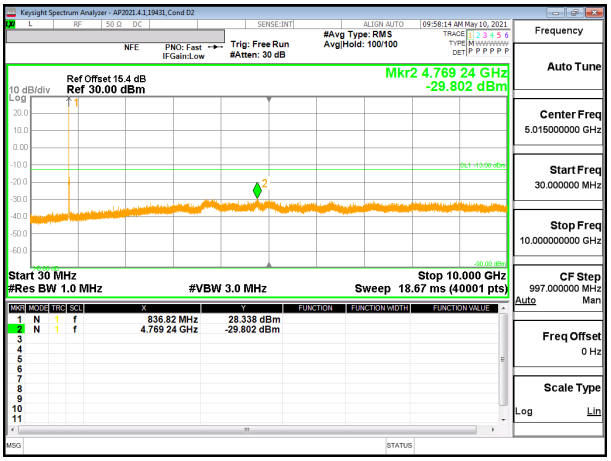
9.3.1. LTE BAND 5

LIMITS

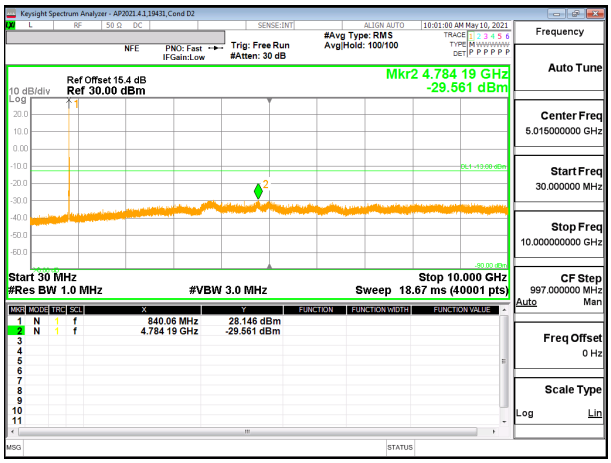
FCC: §22.917
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B5 10MHz + 10MHz QPSK Low Ch RB1-49 + RB1-0



LTE B5 10MHz + 10MHz QPSK Middle Ch RB1-49 + RB1-0



LTE B5 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0

9.3.2. LTE BAND 7

LIMITS

FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.

LTE B7 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0

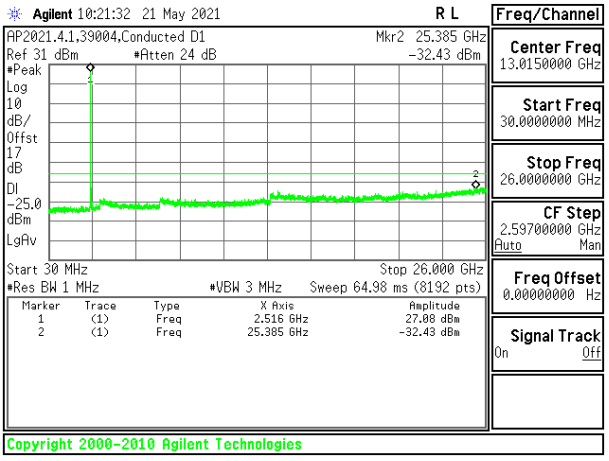
LTE B7 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0

LTE B7 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0

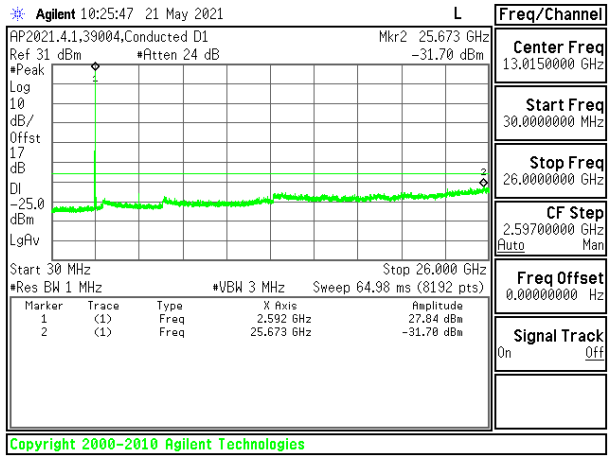
9.3.3. LTE BAND 41

LIMITS

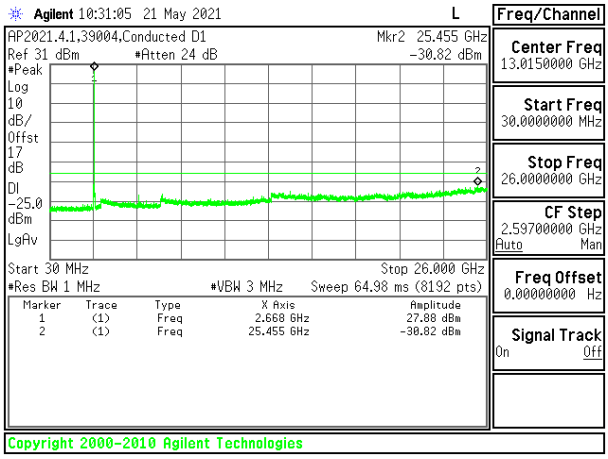
FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B41 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0



LTE B41 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0

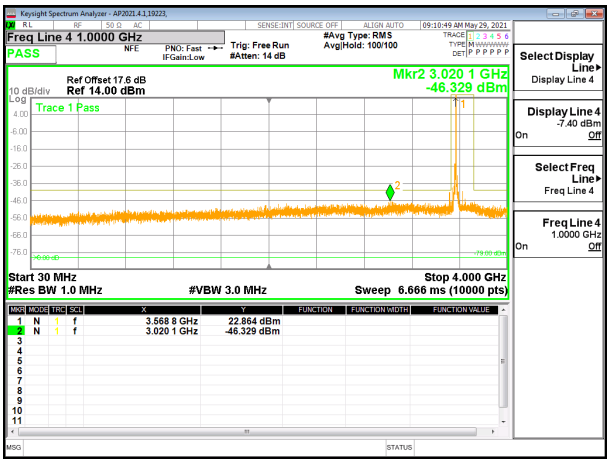


LTE B41 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0

9.3.4. LTE BAND 48

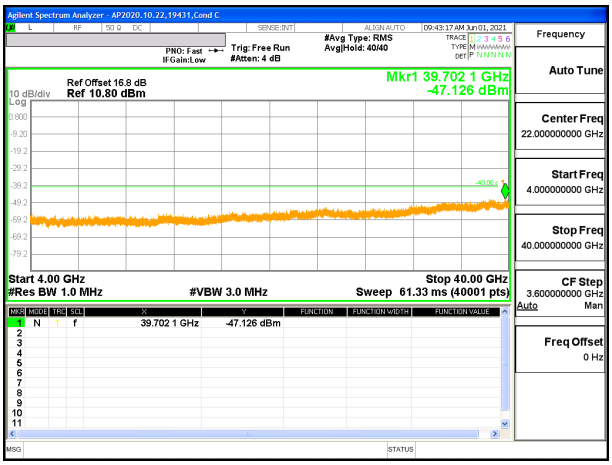
LIMITS

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.



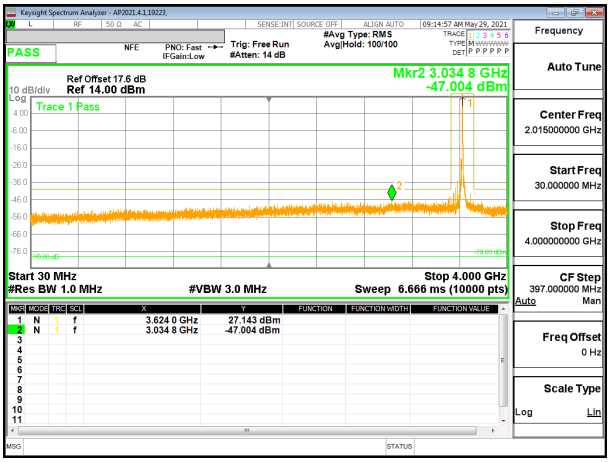
30MHz-4GHz

LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0



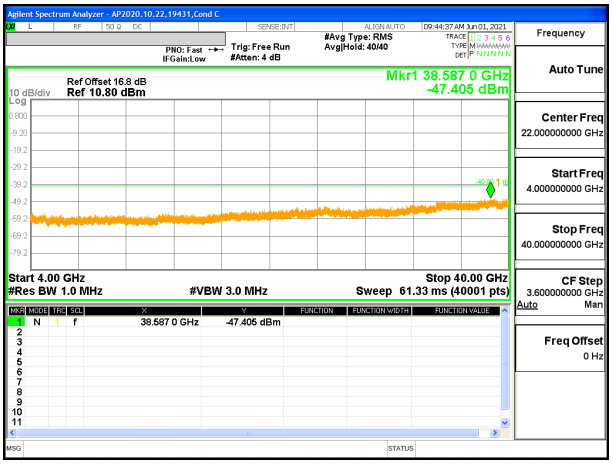
4GHz-40GHz

LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0



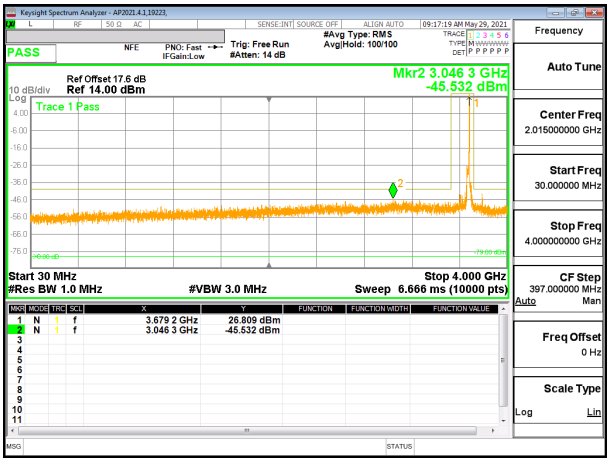
30MHz-4GHz

LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0



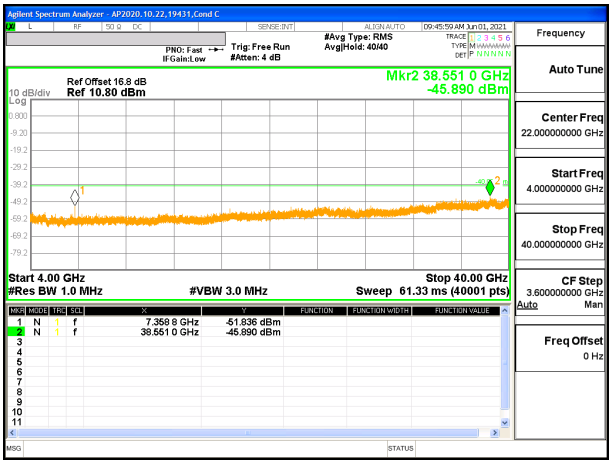
4GHz-40GHz

LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0



30MHz-4GHz

LTE B48 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0



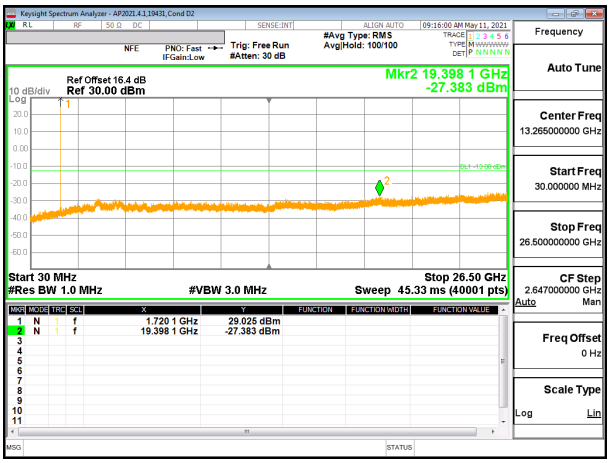
4GHz-40GHz

LTE B48 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0

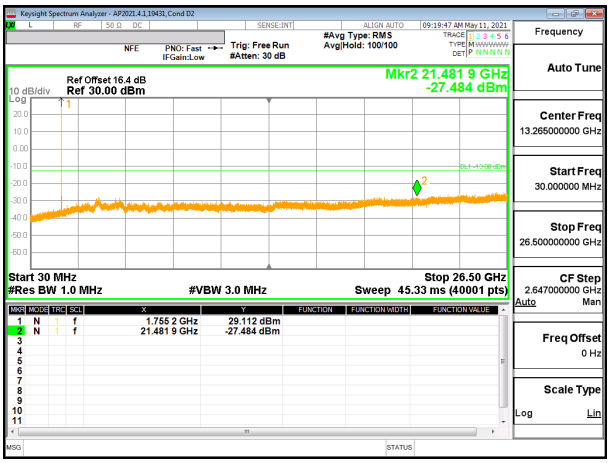
9.3.5. LTE BAND 66B

LIMITS

FCC: §27.53 (h)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B66B 10MHz + 10MHz QPSK Low Ch RB1-49 + RB1-0



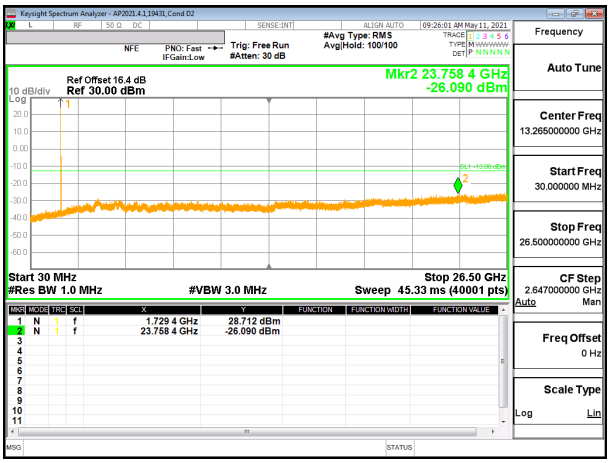
LTE B66B 10MHz + 10MHz QPSK Middle Ch RB1-49 + RB1-0

LTE B66B 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0

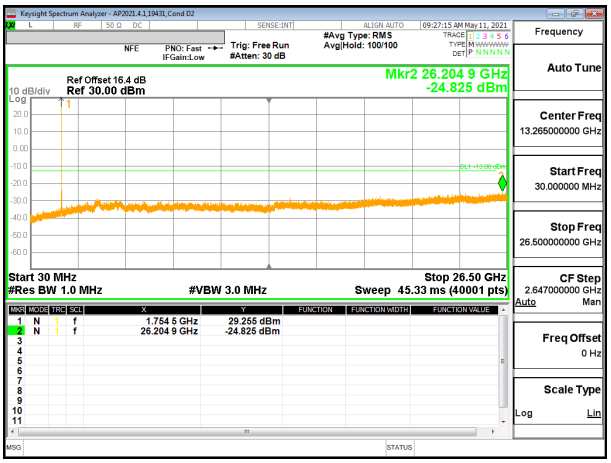
9.3.6. LTE BAND 66C

LIMITS

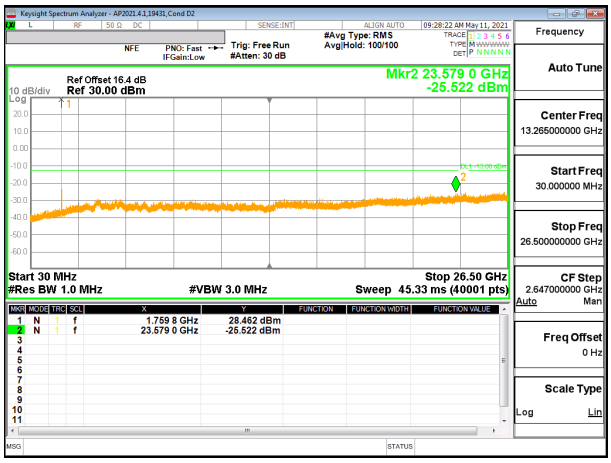
FCC: §27.53 (h)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.



LTE B66C 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0



LTE B66C 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0



LTE B66C 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0

9.4. FREQUENCY STABILITY

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30°C to +50°C
- Voltage = (85% - 115%)

  Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
  End Voltage, 3.2VDC.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

MODES TESTED

- LTE Band 5
- LTE Band 7
- LTE Band 41
- LTE Band 48
- LTE Band 66B
- LTE Band 66C

RESULTS

See the following pages.

9.4.1. LTE BAND 5

LIMITS

FCC §22.355
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

ID:	38602	Date:	5/11/21

QPSK, (10MHz + 10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	824.5771	848.3956		
Extreme (50C)		824.5771	848.3956	15.5	0.019
Extreme (40C)		824.5771	848.3956	12.1	0.014
Extreme (30C)		824.5771	848.3956	8.9	0.011
Extreme (10C)		824.5771	848.3956	-13.8	-0.016
Extreme (0C)		824.5771	848.3956	-25.4	-0.030
Extreme (-10C)		824.5771	848.3956	-31.7	-0.038
Extreme (-20C)		824.5771	848.3956	-32.5	-0.039
Extreme (-30C)		824.5771	848.3956	-30.3	-0.036
20C	15%	824.5771	848.3956	3.2	0.004
	-15%	824.5771	848.3956	-7.5	-0.009
	End Point	824.5771	848.3956	-10.4	-0.012

9.4.2. LTE BAND 7

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

ID:	38602	Date:	5/20/21

QPSK, (20MHz + 20MHz BANDWIDTH)

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2500.1470	2569.8171		
Extreme (50C)		2500.1470	2569.8171	30.6	0.012
Extreme (40C)		2500.1470	2569.8171	37.1	0.015
Extreme (30C)		2500.1470	2569.8171	26.5	0.010
Extreme (10C)		2500.1470	2569.8171	-24.8	-0.010
Extreme (0C)		2500.1470	2569.8171	-40.5	-0.016
Extreme (-10C)		2500.1469	2569.8170	-56.3	-0.022
Extreme (-20C)		2500.1469	2569.8170	-63.9	-0.025
Extreme (-30C)		2500.1469	2569.8170	-61.7	-0.024
20C	15%	2500.1470	2569.8171	13.2	0.005
	-15%	2500.1470	2569.8171	-5.5	-0.002
	End Point	2500.1470	2569.8171	9.6	0.004

9.4.3. LTE BAND 41

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

ID:	38602	Date:	5/20/21

QPSK, (20MHz + 20MHz BANDWIDTH)

Limit		2496	2690	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2496.2892	2689.9991		
Extreme (50C)		2496.2892	2689.9991	29.4	0.011
Extreme (40C)		2496.2892	2689.9991	27.9	0.011
Extreme (30C)		2496.2892	2689.9991	13.5	0.005
Extreme (10C)		2496.2892	2689.9991	-40.6	-0.016
Extreme (0C)		2496.2891	2689.9990	-59.4	-0.023
Extreme (-10C)		2496.2891	2689.9990	-70.2	-0.027
Extreme (-20C)		2496.2891	2689.9990	-73.8	-0.028
Extreme (-30C)		2496.2891	2689.9990	-66.7	-0.026
20C	15%	2496.2892	2689.9991	-7.8	-0.003
	-15%	2496.2892	2689.9991	-6.4	-0.002
	End Point	2496.2892	2689.9991	-9.1	-0.004

9.4.4. LTE BAND 48

ID:	38602	Date:	5/11/21

QPSK, (20MHz + 20MHz BANDWIDTH)

Limit		3550	3700	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm	F high @ -13dBm		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	3551.0207	3699.0872		
Extreme (50C)		3551.0207	3699.0872	29.4	0.008
Extreme (40C)		3551.0207	3699.0872	34.7	0.010
Extreme (30C)		3551.0207	3699.0872	23.5	0.006
Extreme (10C)		3551.0207	3699.0872	-26.3	-0.007
Extreme (0C)		3551.0207	3699.0872	-42.1	-0.012
Extreme (-10C)		3551.0206	3699.0871	-55.8	-0.015
Extreme (-20C)		3551.0206	3699.0871	-52.7	-0.015
Extreme (-30C)		3551.0207	3699.0872	-47.4	-0.013
20C	15%	3551.0207	3699.0872	16.5	0.005
	-15%	3551.0207	3699.0872	-14.3	-0.004
	End Point	3551.0207	3699.0872	-17.8	-0.005

9.4.5. LTE BAND 66B

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

ID:	38602	Date:	5/20/21

QPSK (10MHz + 10MHz BANDWIDTH)

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1710.5955	1779.4112		
Extreme (50C)		1710.5955	1779.4112	21.3	0.012
Extreme (40C)		1710.5955	1779.4112	22.4	0.013
Extreme (30C)		1710.5955	1779.4112	16.5	0.009
Extreme (10C)		1710.5955	1779.4112	-8.6	-0.005
Extreme (0C)		1710.5955	1779.4112	-3.2	-0.002
Extreme (-10C)		1710.5955	1779.4112	-9.1	-0.005
Extreme (-20C)		1710.5955	1779.4112	-15.5	-0.009
Extreme (-30C)		1710.5955	1779.4112	-20.4	-0.012
20C	15%	1710.5955	1779.4112	5.5	0.003
	-15%	1710.5955	1779.4112	3.1	0.002
	End Point	1710.5955	1779.4112	-6.8	-0.004

9.4.6. LTE BAND 66C

LIMITS

FCC: §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

ID:	38602	Date:	5/20/21

QPSK (20MHz + 20MHz BANDWIDTH)

Limit		1710	1780	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	1711.0865	1778.8758		
Extreme (50C)		1711.0865	1778.8758	43.3	0.025
Extreme (40C)		1711.0865	1778.8758	38.6	0.022
Extreme (30C)		1711.0865	1778.8758	37.3	0.021
Extreme (10C)		1711.0865	1778.8758	16.4	0.009
Extreme (0C)		1711.0865	1778.8758	10.9	0.006
Extreme (-10C)		1711.0865	1778.8758	-27.7	-0.016
Extreme (-20C)		1711.0865	1778.8758	-41.6	-0.024
Extreme (-30C)		1711.0865	1778.8758	-42.8	-0.025
20C	15%	1711.0865	1778.8758	21.1	0.012
	-15%	1711.0865	1778.8758	12.2	0.007
	End Point	1711.0865	1778.8758	14.6	0.008

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

Test was performed on Antenna 1; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average ratio criteria.

9.5.1. LTE BAND 5

Test Engineer ID:	39004	Test Date:	5/13/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 5	3MHz / 5MHz	834.0	837.9	QPSK	31.07	24.03	7.04
				16QAM	31.11	24.08	7.03
	5 MHz / 3MHz	835.0	838.9	QPSK	30.94	23.91	7.03
				16QAM	31.01	23.95	7.06
	5MHz / 10MHz	831.6	838.8	QPSK	30.27	24.06	6.21
				16QAM	30.25	23.12	7.13
	10MHz / 5MHz	834.3	841.5	QPSK	30.27	24.06	6.21
				16QAM	30.35	23.13	7.22
	10MHz / 10MHz	831.5	841.4	QPSK	30.50	24.05	6.45
				16QAM	30.45	23.08	7.37
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.2. LTE BAND 7

Test Engineer ID:	39004	Test Date:	5/13/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 7	10MHz / 20MHz	2525.6	2540.0	QPSK	31.88	24.10	7.78
				16QAM	32.05	23.13	8.92
	20MHz / 10MHz	2530.1	2544.5	QPSK	31.80	24.09	7.71
				16QAM	31.99	23.16	8.83
	15 MHz / 15MHz	2527.5	2542.5	QPSK	31.86	24.07	7.79
				16QAM	32.05	23.13	8.92
	15MHz / 20MHz	2525.3	2542.4	QPSK	31.75	24.06	7.69
				16QAM	32.02	23.14	8.88
	20MHz / 15MHz	2527.6	2544.7	QPSK	31.78	24.1	7.68
				16QAM	31.99	23.15	8.84
	20MHz / 20MHz	2525.1	2544.9	QPSK	31.82	24.1	7.72
				16QAM	31.92	23.1	8.82
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.3. LTE BAND 41

Test Engineer ID:	52275	Test Date:	6/30/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 41 (FCC)	5MHz / 20MHz	2583.8	2595.5	QPSK	32.26	19.10	6.17
				16QAM	32.37	18.08	7.30
	20MHz / 5MHz	2590.5	2602.2	QPSK	32.95	18.83	7.13
				16QAM	32.52	17.84	7.69
	10MHz / 20MHz	2583.6	2598.0	QPSK	32.41	18.97	6.45
				16QAM	32.41	17.98	7.44
	20MHz / 10MHz	2588.1	2602.5	QPSK	31.35	18.84	5.52
				16QAM	31.30	17.78	6.53
	15MHz / 15MHz	2585.5	2600.5	QPSK	31.98	18.85	6.14
				16QAM	31.89	17.86	7.04
	15MHz / 20MHz	2583.3	2600.4	QPSK	31.39	18.06	6.34
				16QAM	32.28	18.07	7.22
	20MHz / 15MHz	2585.6	2602.7	QPSK	31.45	18.80	5.66
				16QAM	31.45	17.76	6.70
	20MHz / 20MHz	2583.1	2602.9	QPSK	31.79	18.86	5.94
				16QAM	31.90	17.88	7.03
Duty Cycle Correction Factor (dB) =			6.99				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.4. LTE BAND 48

Test Engineer ID:	52275	Test Date:	6/30/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 48 (FCC)	5MHz / 20MHz	3615.8	3627.5	QPSK	35.44	20.64	7.80
				16QAM	35.90	20.68	8.22
	20MHz / 5MHz	3622.5	3634.2	QPSK	35.72	21.31	7.41
				16QAM	35.66	20.59	8.07
	10MHz / 20MHz	3615.6	3630.0	QPSK	35.78	21.45	7.33
				16QAM	35.68	20.67	8.01
	20MHz / 10MHz	3620.1	3634.5	QPSK	35.54	21.42	7.12
				16QAM	35.50	20.7	7.80
	15MHz / 20MHz	3615.3	3632.4	QPSK	35.66	21.40	7.26
				16QAM	35.72	20.55	8.17
	20MHz / 15MHz	3617.6	3634.7	QPSK	35.12	21.04	7.08
				16QAM	35.15	20.00	8.15
	20MHz / 20MHz	3615.1	3634.9	QPSK	35.55	21.4	7.15
				16QAM	34.60	19.92	7.68
Duty Cycle Correction Factor (dB) =			7.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.5. LTE BAND 66B

Test Engineer ID:	39004	Test Date:	5/13/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 66B	5MHz / 5MHz	1752.6	1757.4	QPSK	31.37	23.22	8.15
				16QAM	31.36	22.23	9.13
	5MHz / 10MHz	1750.3	1757.5	QPSK	31.28	23.27	8.01
				16QAM	31.28	22.25	9.03
	10 MHz / 5MHz	1752.5	1759.7	QPSK	31.35	23.22	8.13
				16QAM	31.33	22.26	9.07
	5MHz / 15MHz	1748.1	1757.4	QPSK	31.28	23.2	8.08
				16QAM	31.27	22.22	9.05
	15MHz / 5MHz	1752.6	1761.9	QPSK	31.45	23.25	8.20
				16QAM	31.35	22.25	9.10
	10MHz / 10MHz	1750.1	1760.0	QPSK	31.40	23.26	8.14
				16QAM	31.37	22.24	9.13
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.6. LTE BAND 66C

Test Engineer ID:	39004	Test Date:	5/13/2021

Band	Bandwidth (MHz)	PCC f (MHz)	SCC1 f (MHz)	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
					Peak	Average	
Band 66C	10MHz / 15MHz	1749.9	1759.9	QPSK	31.37	23.24	8.13
				16QAM	31.45	22.26	9.19
	15MHz / 10MHz	1750.1	1762.1	QPSK	31.45	23.26	8.19
				16QAM	31.51	22.26	9.25
	10MHz / 20MHz	1745.6	1760.0	QPSK	31.39	23.25	8.14
				16QAM	31.39	22.28	9.11
	20MHz / 10MHz	1750.1	1764.5	QPSK	31.56	23.28	8.28
				16QAM	31.53	22.56	8.97
	15MHz / 15MHz	1747.5	1762.5	QPSK	31.60	23.23	8.37
				16QAM	31.58	22.26	9.32
	15MHz / 20MHz	1745.3	1762.4	QPSK	31.52	23.27	8.25
				16QAM	31.50	22.27	9.23
	20MHz / 15MHz	1747.6	1764.7	QPSK	31.53	23.29	8.24
				16QAM	31.60	22.31	9.29
	20MHz / 5MHz	1752.5	1764.2	QPSK	31.55	23.46	8.09
				16QAM	31.39	22.29	9.10
	5MHz / 20MHz	1745.8	1757.5	QPSK	31.35	23.26	8.09
				16QAM	31.28	22.28	9.00
	20MHz / 20MHz	1745.1	1764.9	QPSK	31.67	23.27	8.40
				16QAM	31.62	22.31	9.31
Duty Cycle Correction Factor (dB) =			0.00				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

10. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, We measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

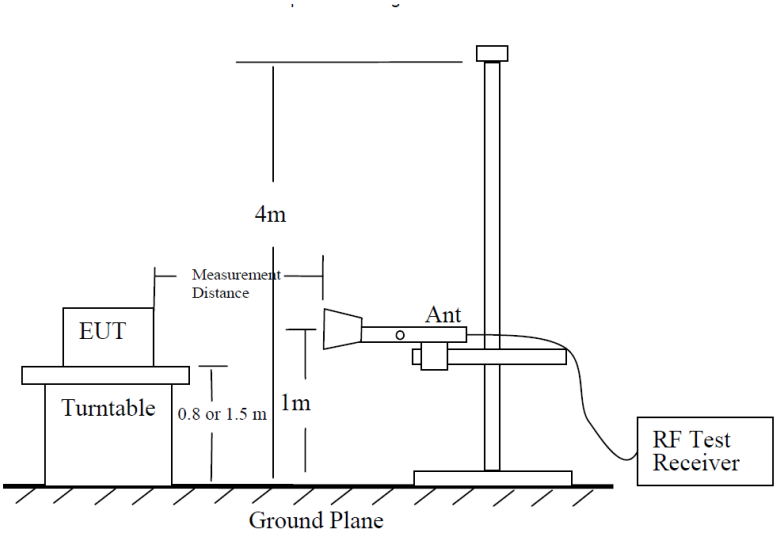


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

a) E (dBμV/m) = Measured amplitude level (dBμV) + Cable Loss (dB) + Antenna Factor (dB/m).

b) E (dBμV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).

c) E (dBμV/m) = EIRP (dBm) − 20log(D) + 104.8; where D is the measurement distance (in the far field region) in m.

d) EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m.

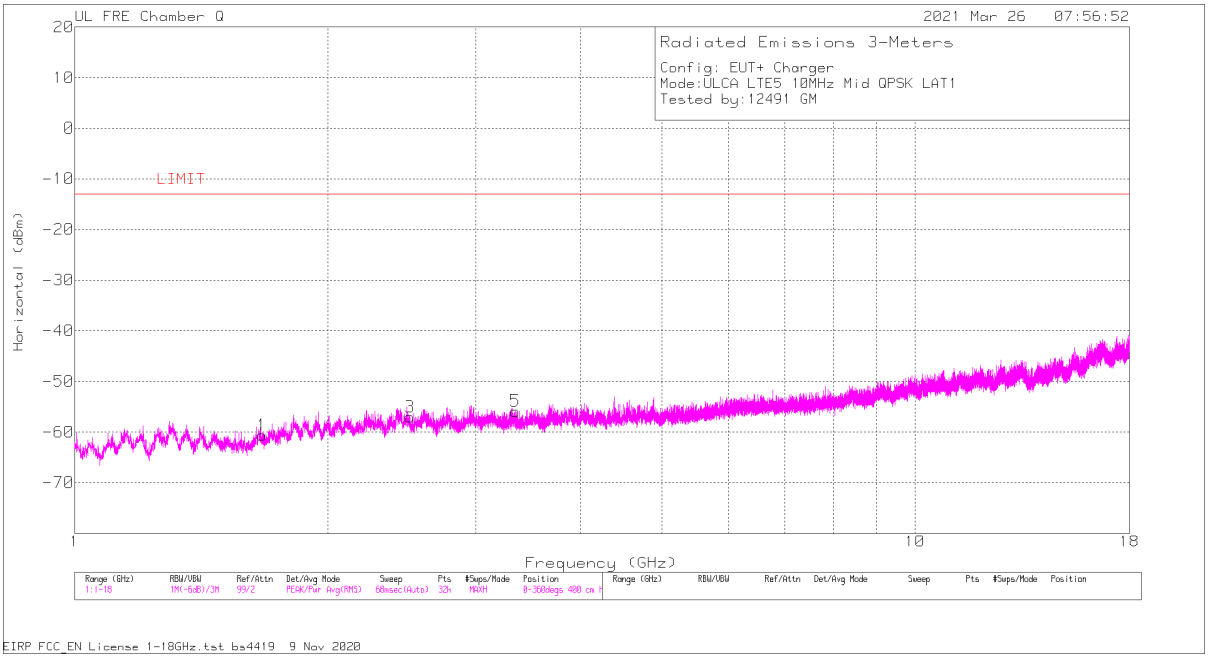
So, from d)

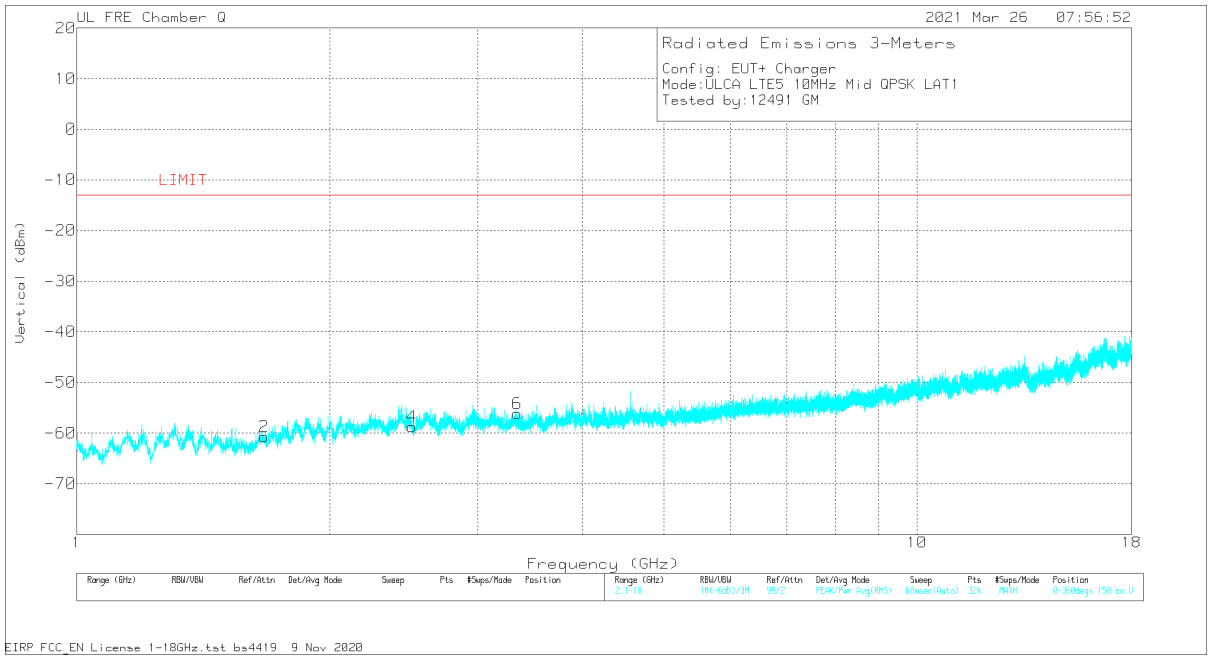
The measuring distance is usually at 3m, then 20*Log(3)=9.5424

Then, EIRP (dBm) = E (dBμV/m) + 9.5424 − 104.8 = E (dBμV/m) – 95.2576

Note that: we do confidence check to our chambers every day to see if any degradation from expected/normal reading reference data. Also we do ambient check to all our chambers every month.

10.1. Plot Example





Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1.67232	44.92	Pk	28.4	-45.1	.8	-95.2	-66.18	-13	-53.18	H
2.50582	42.87	Pk	32.5	-44.3	.8	-95.2	-63.33	-13	-50.33	H
3.34393	41.41	Pk	32.4	-42.2	.6	-95.2	-62.99	-13	-49.99	H
1.67134	44.92	Pk	28.4	-45.1	.6	-95.2	-66.38	-13	-53.38	V
2.50652	43.14	Pk	32.5	-44.4	.5	-95.2	-63.46	-13	-50.46	V
3.34624	41.57	Pk	32.5	-42.2	.5	-95.2	-62.83	-13	-49.83	V

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT1

TEST PROCEDURE

KDB 971168 D01/D02 v02r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

10.2.1. LTE BAND 5

LIMIT

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 5 (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/26/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B5 10MHz QPSK LAT1
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz										
1.67157	45.39	Pk	28.4	-45.1	.7	-95.2	-65.81	-13	-52.81	H
2.50275	42.79	Pk	32.5	-44.3	.8	-95.2	-63.41	-13	-50.41	H
3.33338	41.66	Pk	32.5	-42.3	.5	-95.2	-62.84	-13	-49.84	H
1.66854	45.18	Pk	28.4	-45.1	.5	-95.2	-66.22	-13	-53.22	V
2.50159	42.67	Pk	32.5	-44.3	.7	-95.2	-63.63	-13	-50.63	V
3.33491	42.32	Pk	32.5	-42.3	.7	-95.2	-61.98	-13	-48.98	V
Mid Channel, 831.6MHz + 841.5MHz										
1.67232	44.92	Pk	28.4	-45.1	.8	-95.2	-66.18	-13	-53.18	H
2.50582	42.87	Pk	32.5	-44.3	.8	-95.2	-63.33	-13	-50.33	H
3.34393	41.41	Pk	32.4	-42.2	.6	-95.2	-62.99	-13	-49.99	H
1.67134	44.92	Pk	28.4	-45.1	.6	-95.2	-66.38	-13	-53.38	V
2.50652	43.14	Pk	32.5	-44.4	.5	-95.2	-63.46	-13	-50.46	V
3.34624	41.57	Pk	32.5	-42.2	.5	-95.2	-62.83	-13	-49.83	V
High Channel, 834.1MHz + 844MHz										
1.67734	52.05	Pk	28.4	-45.1	.7	-95.2	-59.15	-13	-46.15	H
2.51459	48.3	Pk	32.5	-44.3	.7	-95.2	-58	-13	-45	H
3.35822	48.95	Pk	32.5	-42.2	.8	-95.2	-55.15	-13	-42.15	H
1.67947	51.24	Pk	28.4	-45.1	.8	-95.2	-59.86	-13	-46.86	V
2.51778	49.83	Pk	32.4	-44.3	.6	-95.2	-56.67	-13	-43.67	V
3.35769	47.2	Pk	32.5	-42.2	.6	-95.2	-57.1	-13	-44.1	V

10.2.2. LTE BAND 7

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/19/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B7 20MHz QPSK LAT1
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2510MHz + 2525.8MHz										
5.02762	40.67	Pk	33.8	-41.7	.7	-95.2	-61.73	-25	-36.73	H
7.55865	45.75	Pk	35.6	-38.3	.7	-95.2	-51.45	-25	-26.45	H
10.08098	38.02	Pk	37.1	-37.2	.3	-95.2	-56.98	-25	-31.98	H
5.04221	40.68	Pk	33.9	-41.7	.3	-95.2	-62.02	-25	-37.02	V
7.55869	49.32	Pk	35.6	-38.3	.7	-95.2	-47.88	-25	-22.88	V
10.08049	37.49	Pk	37.1	-37.2	.7	-95.2	-57.11	-25	-32.11	V
Mid Channel, 2525.1MHz + 2544.9MHz										
5.06459	41.31	Pk	34	-41.6	.7	-95.2	-60.79	-25	-35.79	H
7.60831	37.97	Pk	35.7	-38.2	.7	-95.2	-59.03	-25	-34.03	H
10.14867	36.47	Pk	37.3	-36.6	.5	-95.2	-57.53	-25	-32.53	H
5.06922	41.36	Pk	34	-41.7	.4	-95.2	-61.14	-25	-36.14	V
7.6064	37.94	Pk	35.7	-38.2	.7	-95.2	-59.06	-25	-34.06	V
10.15212	36.67	Pk	37.3	-36.6	.6	-95.2	-57.23	-25	-32.23	V
High Channel, 2540.2MHz + 2560MHz										
5.09486	40.21	Pk	34.1	-41.6	.8	-95.2	-61.69	-25	-36.69	H
7.64922	47.3	Pk	35.7	-38.2	.8	-95.2	-49.6	-25	-24.6	H
10.19291	36.44	Pk	37.2	-36.3	.5	-95.2	-57.36	-25	-32.36	H
5.09481	41.2	Pk	34.1	-41.6	.5	-95.2	-61	-25	-36	V
7.65118	53.87	Pk	35.7	-38.2	.8	-95.2	-43.03	-25	-18.03	V
10.1938	36.61	Pk	37.2	-36.3	.8	-95.2	-56.89	-25	-31.89	V

10.2.3. LTE BAND 41

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/18/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B41 20MHz QPSK LAT1
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.03187	40.52	Pk	33.9	-41.7	.5	-95.2	-61.98	-25	-36.98	H
7.54872	49	Pk	35.7	-38.2	.5	-95.2	-48.2	-25	-23.2	H
10.06292	37.35	Pk	37.1	-37.4	.4	-95.2	-57.75	-25	-32.75	H
5.03401	40.51	Pk	33.9	-41.6	.4	-95.2	-61.99	-25	-36.99	V
7.54668	50.22	Pk	35.7	-38.3	.6	-95.2	-46.98	-25	-21.98	V
10.06275	37.89	Pk	37.1	-37.4	.6	-95.2	-57.01	-25	-32.01	V
Mid Channel, 2583.1MHz + 2602.9MHz										
5.18605	47.29	Pk	34.2	-41.5	.7	-95.2	-54.51	-25	-29.51	H
7.77796	50.14	Pk	35.8	-38.1	.8	-95.2	-46.56	-25	-21.56	H
10.3711	38.08	Pk	37.4	-36.8	.3	-95.2	-56.22	-25	-31.22	H
5.18385	40.16	Pk	34.2	-41.5	.3	-95.2	-62.04	-25	-37.04	V
7.78011	57.2	Pk	35.7	-38.1	.8	-95.2	-39.6	-25	-14.6	V
10.372	37.25	Pk	37.5	-36.9	.8	-95.2	-56.55	-25	-31.55	V
High Channel, 2660.2MHz + 2680MHz										
5.33855	39.2	Pk	34.4	-41	.5	-95.2	-62.1	-25	-37.1	H
8.01133	43.29	Pk	35.7	-37.6	.5	-95.2	-53.31	-25	-28.31	H
10.67979	36.48	Pk	37.8	-35.3	.4	-95.2	-55.82	-25	-30.82	H
5.34206	39.3	Pk	34.3	-40.9	.4	-95.2	-62.1	-25	-37.1	V
8.00931	41.7	Pk	35.8	-37.7	.6	-95.2	-54.8	-25	-29.8	V
10.68142	36.98	Pk	37.8	-35.4	.6	-95.2	-55.22	-25	-30.22	V

10.2.4. LTE BAND 66B

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/29/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66B 10MHz QPSK LAT1
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz										
3.16813	53.15	Pk	32.6	-42.8	.7	-95.2	-51.55	-13	-38.55	H
3.9362	51.42	Pk	33.4	-41.5	.7	-95.2	-51.18	-13	-38.18	H
6.91401	48.42	Pk	35.6	-38.6	.5	-95.2	-49.28	-13	-36.28	H
3.57422	50.81	Pk	32.7	-41.7	.5	-95.2	-52.89	-13	-39.89	V
5.35066	50.51	Pk	34.3	-40.8	.6	-95.2	-50.59	-13	-37.59	V
6.92009	47.97	Pk	35.5	-38.6	.6	-95.2	-49.73	-13	-36.73	V
Mid Channel, 1750.1MHz + 1760MHz										
5.26353	51.3	Pk	34.2	-41.3	.7	-95.2	-50.3	-13	-37.3	H
3.51082	40.67	Pk	32.7	-41.8	.7	-95.2	-62.93	-13	-49.93	H
7.01945	37.57	Pk	35.5	-38.6	.6	-95.2	-60.13	-13	-47.13	H
5.26358	44.06	Pk	34.2	-41.3	.6	-95.2	-57.64	-13	-44.64	V
3.51012	40.91	Pk	32.7	-41.8	.5	-95.2	-62.89	-13	-49.89	V
7.01952	37.97	Pk	35.5	-38.6	.5	-95.2	-59.83	-13	-46.83	V
High Channel, 1765.1MHz + 1775MHz										
3.54013	40.73	Pk	32.9	-41.7	.8	-95.2	-62.47	-13	-49.47	H
5.30857	39.78	Pk	34.3	-41	.7	-95.2	-61.42	-13	-48.42	H
7.08044	37.42	Pk	35.6	-38.5	.4	-95.2	-60.28	-13	-47.28	H
3.54039	40.29	Pk	32.9	-41.8	.4	-95.2	-63.41	-13	-50.41	V
5.30771	40.02	Pk	34.3	-41	.7	-95.2	-61.18	-13	-48.18	V
7.07992	37.28	Pk	35.6	-38.5	.7	-95.2	-60.12	-13	-47.12	V

10.2.5. LTE BAND 66C

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/18/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66C 20MHz QPSK LAT1
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz										
3.36078	40.97	Pk	32.5	-42.1	.7	-95.2	-63.13	-13	-50.13	H
5.19045	41.1	Pk	34.2	-41.4	.7	-95.2	-60.6	-13	-47.6	H
6.91811	38.17	Pk	35.5	-38.7	.5	-95.2	-59.73	-13	-46.73	H
3.35772	38.92	Pk	32.5	-42.2	.5	-95.2	-65.48	-13	-52.48	V
5.19175	40.45	Pk	34.2	-41.5	.6	-95.2	-61.45	-13	-48.45	V
6.91863	36.73	Pk	35.5	-38.7	.6	-95.2	-61.07	-13	-48.07	V
Mid Channel, 1745.1MHz + 1764.9MHz										
3.48964	40.26	Pk	32.7	-41.8	.7	-95.2	-63.34	-13	-50.34	H
5.23177	42.95	Pk	34.2	-41.2	.7	-95.2	-58.55	-13	-45.55	H
6.98104	37.45	Pk	35.5	-38.5	.6	-95.2	-60.15	-13	-47.15	H
3.49025	40.12	Pk	32.7	-41.8	.6	-95.2	-63.58	-13	-50.58	V
5.23478	40.41	Pk	34.2	-41.1	.5	-95.2	-61.19	-13	-48.19	V
6.98006	38.18	Pk	35.6	-38.5	.5	-95.2	-59.42	-13	-46.42	V
High Channel, 1750.2MHz + 1770MHz										
3.52425	40.25	Pk	32.8	-41.7	.8	-95.2	-63.05	-13	-50.05	H
5.2807	40.88	Pk	34.2	-40.9	.7	-95.2	-60.32	-13	-47.32	H
7.04037	37.31	Pk	35.6	-38.5	.4	-95.2	-60.39	-13	-47.39	H
3.522	40.79	Pk	32.8	-41.7	.4	-95.2	-62.91	-13	-49.91	V
5.28016	39.79	Pk	34.2	-41	.7	-95.2	-61.51	-13	-48.51	V
7.04632	38.45	Pk	35.6	-38.5	.7	-95.2	-58.95	-13	-45.95	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT2

TEST PROCEDURE

KDB 971168 D01/D02 v02r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

10.3.1. LTE BAND 5

LIMIT

FCC: §22.917(a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 5 (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/26/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B5 10MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz										
1.65621	45.11	Pk	28.4	-45.1	.7	-95.2	-66.09	-13	-53.09	H
2.5024	58.02	Pk	32.5	-44.3	.8	-95.2	-48.18	-13	-35.18	H
3.32889	41.99	Pk	32.4	-42.3	.5	-95.2	-62.61	-13	-49.61	H
1.65428	45.36	Pk	28.4	-45.1	.5	-95.2	-66.04	-13	-53.04	V
2.50232	57.14	Pk	32.5	-44.3	.7	-95.2	-49.16	-13	-36.16	V
3.32639	41.92	Pk	32.4	-42.4	.7	-95.2	-62.58	-13	-49.58	V
Mid Channel, 831.6MHz + 841.5MHz										
1.66107	44.85	Pk	28.4	-45.1	.8	-95.2	-66.25	-13	-53.25	H
2.50873	60.8	Pk	32.5	-44.4	.8	-95.2	-45.5	-13	-32.5	H
3.34398	40.97	Pk	32.4	-42.2	.6	-95.2	-63.43	-13	-50.43	H
1.65674	45.12	Pk	28.4	-45.2	.6	-95.2	-66.28	-13	-53.28	V
2.50878	60.64	Pk	32.5	-44.4	.5	-95.2	-45.96	-13	-32.96	V
3.34367	41.93	Pk	32.4	-42.2	.5	-95.2	-62.57	-13	-49.57	V
High Channel, 834.1MHz + 844MHz										
1.67658	45.02	Pk	28.4	-45.1	.7	-95.2	-66.18	-13	-53.18	H
2.51654	61.69	Pk	32.4	-44.3	.7	-95.2	-44.71	-13	-31.71	H
3.34113	41.04	Pk	32.4	-42.3	.8	-95.2	-63.26	-13	-50.26	H
1.67571	44.33	Pk	28.4	-45.1	.8	-95.2	-66.77	-13	-53.77	V
2.51673	65.01	Pk	32.4	-44.3	.6	-95.2	-41.49	-13	-28.49	V
3.34674	41.21	Pk	32.5	-42.2	.6	-95.2	-63.09	-13	-50.09	V

10.3.2. LTE BAND 7

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

RSS199§4.5
Equipment shall comply with the following unwanted emission limits:

a. for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$
b. for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
    i. $40 + 10 \log_{10} p$ from the channel edges to 5 MHz away
    ii. $43 + 10 \log_{10} p$ between 5 MHz and X MHz from the channel edges, and
    iii. $55 + 10 \log_{10} p$ at X MHz and beyond from the channel edges

    In addition, the attenuation shall not be less than $43 + 10 \log_{10} p$ on all frequencies between 2490.5 MHz and 2496 MHz, and $55 + 10 \log_{10} p$ at or below 2490.5 MHz.

In (a) and (b), **p** is the transmitter power measured in watts and **X** is 6 MHz or the equipment occupied bandwidth, whichever is greater.

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/22/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B7 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2510MHz + 2525.8MHz										
5.04205	40.7	Pk	33.9	-41.7	.7	-95.2	-61.6	-25	-36.6	H
7.55377	37.95	Pk	35.7	-38.2	.7	-95.2	-59.05	-25	-34.05	H
10.09162	38.28	Pk	37.1	-37.3	.3	-95.2	-56.82	-25	-31.82	H
5.04847	40.53	Pk	34	-41.8	.3	-95.2	-62.17	-25	-37.17	V
7.55873	44.86	Pk	35.6	-38.3	.7	-95.2	-52.34	-25	-27.34	V
10.09836	37.91	Pk	37.2	-37.4	.7	-95.2	-56.79	-25	-31.79	V
Mid Channel, 2525.1MHz + 2544.9MHz										
5.06884	48.65	Pk	34	-41.7	.7	-95.2	-53.55	-25	-28.55	H
7.60609	45.12	Pk	35.7	-38.2	.7	-95.2	-51.88	-25	-26.88	H
10.13803	44.48	Pk	37.3	-36.7	.5	-95.2	-49.62	-25	-24.62	H
5.0545	48.51	Pk	33.9	-41.7	.4	-95.2	-54.09	-25	-29.09	V
7.60397	47.35	Pk	35.7	-38.2	.7	-95.2	-49.65	-25	-24.65	V
10.14759	44.95	Pk	37.2	-36.6	.6	-95.2	-49.05	-25	-24.05	V
High Channel, 2540.2MHz + 2560MHz										
5.10569	40.96	Pk	34.1	-41.6	.8	-95.2	-60.94	-25	-35.94	H
7.64925	42.07	Pk	35.7	-38.2	.8	-95.2	-54.83	-25	-29.83	H
10.21301	37.05	Pk	37.3	-36.1	.5	-95.2	-56.45	-25	-31.45	H
5.10618	40.82	Pk	34.1	-41.6	.5	-95.2	-61.38	-25	-36.38	V
7.64933	45.06	Pk	35.7	-38.2	.8	-95.2	-51.84	-25	-26.84	V
10.21265	37.06	Pk	37.3	-36.1	.8	-95.2	-56.14	-25	-31.14	V

10.3.3. LTE BAND 41

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/19/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B41 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.03432	40.9	Pk	33.9	-41.7	.5	-95.2	-61.6	-25	-36.6	H
7.54644	37.9	Pk	35.7	-38.3	.5	-95.2	-59.4	-25	-34.4	H
10.0615	35.28	Pk	37.2	-37.4	.4	-95.2	-59.72	-25	-34.72	H
5.03715	40.72	Pk	33.9	-41.7	.4	-95.2	-61.88	-25	-36.88	V
7.5407	37.26	Pk	35.6	-38.2	.6	-95.2	-59.94	-25	-34.94	V
10.06456	38.14	Pk	37.1	-37.4	.6	-95.2	-56.76	-25	-31.76	V
Mid Channel, 2583.1MHz + 2602.9MHz										
5.1892	39.66	Pk	34.2	-41.4	.7	-95.2	-62.04	-25	-37.04	H
7.77802	43.25	Pk	35.8	-38.1	.8	-95.2	-53.45	-25	-28.45	H
10.37083	36.85	Pk	37.4	-36.8	.3	-95.2	-57.45	-25	-32.45	H
5.1897	40.26	Pk	34.2	-41.4	.3	-95.2	-61.84	-25	-36.84	V
7.78004	48.52	Pk	35.7	-38.1	.8	-95.2	-48.28	-25	-23.28	V
10.37037	37.1	Pk	37.4	-36.8	.8	-95.2	-56.7	-25	-31.7	V
High Channel, 2660.2MHz + 2680MHz										
5.34191	46.23	Pk	34.3	-40.9	.5	-95.2	-55.07	-25	-30.07	H
8.01303	45.04	Pk	35.7	-37.7	.5	-95.2	-51.66	-25	-26.66	H
10.68203	43.22	Pk	37.8	-35.3	.4	-95.2	-49.08	-25	-24.08	H
5.34456	46.23	Pk	34.3	-40.8	.4	-95.2	-55.07	-25	-30.07	V
8.01144	46.02	Pk	35.7	-37.6	.6	-95.2	-50.48	-25	-25.48	V
10.68256	43.38	Pk	37.8	-35.3	.6	-95.2	-48.72	-25	-23.72	V

10.3.4. LTE BAND 66B

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/31/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66B 10MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz										
3.43971	41.02	Pk	32.6	-42	.7	-95.2	-62.88	-13	-49.88	H
5.1599	39.84	Pk	34.2	-41.5	.7	-95.2	-61.96	-13	-48.96	H
6.88325	37.14	Pk	35.5	-38.6	.5	-95.2	-60.66	-13	-47.66	H
3.4413	41.19	Pk	32.6	-42	.5	-95.2	-62.91	-13	-49.91	V
5.16031	39.94	Pk	34.2	-41.5	.6	-95.2	-61.96	-13	-48.96	V
6.87998	37.78	Pk	35.6	-38.5	.6	-95.2	-59.72	-13	-46.72	V
Mid Channel, 1750.1MHz + 1760MHz										
3.51061	40.44	Pk	32.7	-41.8	.7	-95.2	-63.16	-13	-50.16	H
5.26556	39.82	Pk	34.2	-41.3	.7	-95.2	-61.78	-13	-48.78	H
7.01901	37.69	Pk	35.5	-38.6	.6	-95.2	-60.01	-13	-47.01	H
3.50992	40.52	Pk	32.7	-41.8	.6	-95.2	-63.18	-13	-50.18	V
5.26615	40.13	Pk	34.2	-41.3	.5	-95.2	-61.67	-13	-48.67	V
7.01944	37.99	Pk	35.5	-38.6	.5	-95.2	-59.81	-13	-46.81	V
High Channel, 1765.1MHz + 1775MHz										
3.5377	40.45	Pk	32.9	-41.8	.8	-95.2	-62.85	-13	-49.85	H
5.34079	40.39	Pk	34.3	-40.9	.7	-95.2	-60.71	-13	-47.71	H
7.08039	37.8	Pk	35.6	-38.5	.4	-95.2	-59.9	-13	-46.9	H
3.53788	40.91	Pk	32.9	-41.8	.4	-95.2	-62.79	-13	-49.79	V
5.34069	39.48	Pk	34.3	-40.9	.7	-95.2	-61.62	-13	-48.62	V
7.0805	33.19	Pk	35.6	-38.5	.7	-95.2	-64.21	-13	-51.21	V

10.3.5. LTE BAND 66C

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/30/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66C 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz										
3.46185	40.47	Pk	32.6	-42	.7	-95.2	-63.43	-13	-50.43	H
5.19085	40.5	Pk	34.2	-41.5	.7	-95.2	-61.3	-13	-48.3	H
6.92217	37.85	Pk	35.5	-38.6	.5	-95.2	-59.95	-13	-46.95	H
3.46011	40.17	Pk	32.6	-42	.5	-95.2	-63.93	-13	-50.93	V
5.18982	39.53	Pk	34.2	-41.4	.6	-95.2	-62.27	-13	-49.27	V
6.91952	37.78	Pk	35.5	-38.6	.6	-95.2	-59.92	-13	-46.92	V
Mid Channel, 1745.1MHz + 1764.9MHz										
3.49046	39.8	Pk	32.7	-41.8	.7	-95.2	-63.8	-13	-50.8	H
5.23487	40.03	Pk	34.2	-41.1	.7	-95.2	-61.37	-13	-48.37	H
6.97898	37.53	Pk	35.6	-38.5	.6	-95.2	-59.97	-13	-46.97	H
3.49043	40.3	Pk	32.7	-41.8	.6	-95.2	-63.4	-13	-50.4	V
5.23545	40.26	Pk	34.2	-41.1	.5	-95.2	-61.34	-13	-48.34	V
6.97883	37.99	Pk	35.6	-38.5	.5	-95.2	-59.61	-13	-46.61	V
High Channel, 1750.2MHz + 1770MHz										
3.52056	37.53	Avg	32.8	-41.7	.8	-95.2	-65.77	-13	-52.77	H
5.28034	39.89	Pk	34.2	-40.9	.7	-95.2	-61.31	-13	-48.31	H
7.04166	37.32	Pk	35.6	-38.5	.4	-95.2	-60.38	-13	-47.38	H
3.52085	40.33	Pk	32.8	-41.7	.4	-95.2	-63.37	-13	-50.37	V
5.27988	39.95	Pk	34.2	-41	.7	-95.2	-61.35	-13	-48.35	V
7.04044	38.28	Pk	35.6	-38.5	.7	-95.2	-59.12	-13	-46.12	V

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT3

TEST PROCEDURE

KDB 971168 D01/D02 v02r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

10.4.1. LTE BAND 7

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/23/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B7 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2510MHz + 2525.8MHz										
5.05689	41.25	Pk	33.9	-41.6	.7	-95.2	-60.95	-25	-35.95	H
7.57129	38.04	Pk	35.7	-38.3	.7	-95.2	-59.06	-25	-34.06	H
10.08466	38.73	Pk	37.1	-37.3	.3	-95.2	-56.37	-25	-31.37	H
5.04673	41.77	Pk	34	-41.7	.3	-95.2	-60.83	-25	-35.83	V
7.5491	37.24	Pk	35.7	-38.2	.7	-95.2	-59.76	-25	-34.76	V
10.08438	37.91	Pk	37.1	-37.3	.7	-95.2	-56.79	-25	-31.79	V
Mid Channel, 2525.1MHz + 2544.9MHz										
5.06971	41.14	Pk	34	-41.7	.7	-95.2	-61.06	-25	-36.06	H
7.60689	37.42	Pk	35.7	-38.2	.7	-95.2	-59.58	-25	-34.58	H
10.10603	37.67	Pk	37.2	-37.4	.5	-95.2	-57.23	-25	-32.23	H
5.06994	38.71	Pk	34	-41.7	.4	-95.2	-63.79	-25	-38.79	V
7.6058	38.46	Pk	35.7	-38.2	.7	-95.2	-58.54	-25	-33.54	V
10.11217	37.56	Pk	37.2	-37.3	.6	-95.2	-57.14	-25	-32.14	V
High Channel, 2540.2MHz + 2560MHz										
5.10408	40.11	Pk	34.1	-41.6	.8	-95.2	-61.79	-25	-36.79	H
7.64616	37.77	Pk	35.7	-38.3	.8	-95.2	-59.23	-25	-34.23	H
10.19389	37.57	Pk	37.2	-36.3	.5	-95.2	-56.23	-25	-31.23	H
5.10334	40.6	Pk	34.1	-41.5	.5	-95.2	-61.5	-25	-36.5	V
7.64935	38.07	Pk	35.7	-38.2	.8	-95.2	-58.83	-25	-33.83	V
10.1987	38.21	Pk	37.2	-36.2	.8	-95.2	-55.19	-25	-30.19	V

10.4.2. LTE BAND 41

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/23/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B41 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.04574	41.33	Pk	34	-41.7	.5	-95.2	-61.07	-25	-36.07	H
7.54674	41.28	Pk	35.7	-38.3	.5	-95.2	-56.02	-25	-31.02	H
10.06816	38.78	Pk	37.1	-37.3	.4	-95.2	-56.22	-25	-31.22	H
7.54106	37.16	Pk	35.6	-38.2	.4	-95.2	-60.24	-25	-35.24	V
5.04646	40.88	Pk	34	-41.7	.6	-95.2	-61.42	-25	-36.42	V
10.0726	38.03	Pk	37.1	-37.3	.6	-95.2	-56.77	-25	-31.77	V
Mid Channel, 2583.1MHz + 2602.9MHz										
5.23311	40.74	Pk	34.2	-41.2	.7	-95.2	-60.76	-25	-35.76	H
7.54667	40.28	Pk	35.7	-38.3	.8	-95.2	-56.72	-25	-31.72	H
10.36642	38.18	Pk	37.4	-36.9	.3	-95.2	-56.22	-25	-31.22	H
5.21431	40.52	Pk	34.2	-41.4	.3	-95.2	-61.58	-25	-36.58	V
7.54873	45.97	Pk	35.7	-38.2	.8	-95.2	-50.93	-25	-25.93	V
10.37473	38.18	Pk	37.5	-36.8	.8	-95.2	-55.52	-25	-30.52	V
High Channel, 2660.2MHz + 2680MHz										
5.34014	43.03	Pk	34.3	-40.9	.5	-95.2	-58.27	-25	-33.27	H
8.01129	42.56	Pk	35.7	-37.6	.5	-95.2	-54.04	-25	-29.04	H
10.68057	36.63	Pk	37.8	-35.4	.4	-95.2	-55.77	-25	-30.77	H
5.34097	39.4	Pk	34.3	-40.9	.4	-95.2	-62	-25	-37	V
8.01122	37.63	Pk	35.7	-37.6	.6	-95.2	-58.87	-25	-33.87	V
10.67907	35.96	Pk	37.8	-35.4	.6	-95.2	-56.24	-25	-31.24	V

10.4.3. LTE BAND 66B

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/31/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66B 10MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz										
3.4458	40.44	Pk	32.6	-41.9	.7	-95.2	-63.36	-13	-50.36	-63.36
5.16129	39.58	Pk	34.2	-41.5	.7	-95.2	-62.22	-13	-49.22	-62.22
6.88011	37.38	Pk	35.6	-38.5	.5	-95.2	-60.22	-13	-47.22	-60.22
3.4441	40.99	Pk	32.6	-41.9	.5	-95.2	-63.01	-13	-50.01	-63.01
5.16	39.95	Pk	34.2	-41.5	.6	-95.2	-61.95	-13	-48.95	-61.95
6.88136	37.27	Pk	35.5	-38.6	.6	-95.2	-60.43	-13	-47.43	-60.43
Mid Channel, 1750.1MHz + 1760MHz										
3.50973	39.78	Pk	32.7	-41.8	.7	-95.2	-63.82	-13	-50.82	H
5.26443	40.42	Pk	34.2	-41.3	.7	-95.2	-61.18	-13	-48.18	H
7.02182	37.8	Pk	35.6	-38.6	.6	-95.2	-59.8	-13	-46.8	H
3.50989	40.84	Pk	32.7	-41.8	.6	-95.2	-62.86	-13	-49.86	V
5.26418	40.3	Pk	34.2	-41.3	.5	-95.2	-61.5	-13	-48.5	V
7.02219	37.75	Pk	35.6	-38.6	.5	-95.2	-59.95	-13	-46.95	V
High Channel, 1765.1MHz + 1775MHz										
3.5396	40.78	Pk	32.9	-41.7	.8	-95.2	-62.42	-13	-49.42	H
5.31014	40.05	Pk	34.3	-41	.7	-95.2	-61.15	-13	-48.15	H
7.08003	37.75	Pk	35.6	-38.5	.4	-95.2	-59.95	-13	-46.95	H
3.54192	40.09	Pk	32.9	-41.7	.4	-95.2	-63.51	-13	-50.51	V
5.31229	39.81	Pk	34.3	-41	.7	-95.2	-61.39	-13	-48.39	V
7.08004	37.9	Pk	35.6	-38.5	.7	-95.2	-59.5	-13	-46.5	V

10.4.4. LTE BAND 66C

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/30/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66C 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz										
3.46095	40.67	Pk	32.6	-42	.7	-95.2	-63.23	-13	-50.23	H
5.18887	40	Pk	34.2	-41.4	.7	-95.2	-61.7	-13	-48.7	H
6.92697	37.71	Pk	35.6	-38.7	.5	-95.2	-60.09	-13	-47.09	H
3.46067	40.24	Pk	32.6	-42	.5	-95.2	-63.86	-13	-50.86	V
5.19207	40.15	Pk	34.2	-41.4	.6	-95.2	-61.65	-13	-48.65	V
6.92506	37.38	Pk	35.5	-38.6	.6	-95.2	-60.32	-13	-47.32	V
Mid Channel, 1745.1MHz + 1764.9MHz										
3.48925	40.1	Pk	32.7	-41.8	.7	-95.2	-63.5	-13	-50.5	H
5.23569	40.35	Pk	34.1	-41.1	.7	-95.2	-61.15	-13	-48.15	H
6.98106	37.96	Pk	35.5	-38.5	.6	-95.2	-59.64	-13	-46.64	H
3.49033	39.47	Pk	32.7	-41.8	.6	-95.2	-64.23	-13	-51.23	V
5.23469	40.04	Pk	34.2	-41.1	.5	-95.2	-61.56	-13	-48.56	V
6.98089	38.03	Pk	35.5	-38.5	.5	-95.2	-59.67	-13	-46.67	V
High Channel, 1750.2MHz + 1770MHz										
3.51967	41.2	Pk	32.8	-41.7	.8	-95.2	-62.1	-13	-49.1	H
5.2817	39.78	Pk	34.2	-40.9	.7	-95.2	-61.42	-13	-48.42	H
7.04377	37.68	Pk	35.6	-38.5	.4	-95.2	-60.02	-13	-47.02	H
3.52031	40.54	Pk	32.8	-41.7	.4	-95.2	-63.16	-13	-50.16	V
5.28196	39.39	Pk	34.2	-40.9	.7	-95.2	-61.81	-13	-48.81	V
7.04311	37.56	Pk	35.6	-38.5	.7	-95.2	-59.84	-13	-46.84	V

10.5. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT4

TEST PROCEDURE

KDB 971168 D01/D02 v02r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

RESULTS

Both maximum + maximum bandwidth combinations of QPSK and 16QAM modes are tested, QPSK results are reported as worst case.

10.5.1. LTE BAND 7

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 7 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/23/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B7 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2510MHz + 2525.8MHz										
5.04576	41.23	Pk	34	-41.7	.7	-95.2	-60.97	-25	-35.97	H
7.5607	38.03	Pk	35.6	-38.2	.7	-95.2	-59.07	-25	-34.07	H
10.07574	37.31	Pk	37.1	-37.2	.3	-95.2	-57.69	-25	-32.69	H
5.0456	41.07	Pk	34	-41.7	.3	-95.2	-61.53	-25	-36.53	V
7.56059	38.8	Pk	35.6	-38.2	.7	-95.2	-58.3	-25	-33.3	V
10.07893	37.69	Pk	37.1	-37.2	.7	-95.2	-56.91	-25	-31.91	V
Mid Channel, 2525.1MHz + 2544.9MHz										
5.07192	40.72	Pk	34	-41.7	.7	-95.2	-61.48	-25	-36.48	H
7.60598	45.13	Pk	35.7	-38.2	.7	-95.2	-51.87	-25	-26.87	H
10.14112	36.81	Pk	37.3	-36.7	.5	-95.2	-57.29	-25	-32.29	H
5.07443	41.05	Pk	34	-41.7	.4	-95.2	-61.45	-25	-36.45	V
7.60601	38.3	Pk	35.7	-38.2	.7	-95.2	-58.7	-25	-33.7	V
10.14021	36.67	Pk	37.3	-36.7	.6	-95.2	-57.33	-25	-32.33	V
High Channel, 2540.2MHz + 2560MHz										
5.10368	40.23	Pk	34.1	-41.5	.8	-95.2	-61.57	-25	-36.57	H
7.65016	35.11	Pk	35.7	-38.1	.8	-95.2	-61.69	-25	-36.69	H
10.20518	37.13	Pk	37.3	-36.2	.5	-95.2	-56.47	-25	-31.47	H
5.10423	40.34	Pk	34.1	-41.6	.5	-95.2	-61.86	-25	-36.86	V
7.64942	38.68	Pk	35.7	-38.2	.8	-95.2	-58.22	-25	-33.22	V
10.20701	36.79	Pk	37.2	-36.1	.8	-95.2	-56.51	-25	-31.51	V

10.5.2. LTE BAND 41

LIMIT

FCC: §27.53 (m)
At least 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

QPSK LTE BAND 41 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/23/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B41 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.06968	40.81	Pk	34	-41.7	.5	-95.2	-61.59	-25	-36.59	H
7.51122	37.53	Pk	35.7	-38.3	.5	-95.2	-59.77	-25	-34.77	H
10.07934	37.06	Pk	37.1	-37.2	.4	-95.2	-57.84	-25	-32.84	H
5.06562	40.73	Pk	34	-41.6	.4	-95.2	-61.67	-25	-36.67	V
7.50435	38.12	Pk	35.6	-38.3	.6	-95.2	-59.18	-25	-34.18	V
10.06204	37.71	Pk	37.1	-37.4	.6	-95.2	-57.19	-25	-32.19	V
Mid Channel, 2583.1MHz + 2602.9MHz										
5.18561	39.46	Pk	34.2	-41.5	.7	-95.2	-62.34	-25	-37.34	H
7.78321	37.73	Pk	35.8	-38.2	.8	-95.2	-59.07	-25	-34.07	H
10.36481	37.1	Pk	37.4	-36.9	.3	-95.2	-57.3	-25	-32.3	H
5.18266	40.77	Pk	34.2	-41.4	.3	-95.2	-61.33	-25	-36.33	V
7.76837	37.2	Pk	35.8	-38.1	.8	-95.2	-59.5	-25	-34.5	V
10.36472	37.49	Pk	37.4	-36.9	.8	-95.2	-56.41	-25	-31.41	V
High Channel, 2660.2MHz + 2680MHz										
5.3336	39.34	Pk	34.4	-41	.5	-95.2	-61.96	-25	-36.96	H
8.0113	40.52	Pk	35.7	-37.6	.5	-95.2	-56.08	-25	-31.08	H
10.6774	36.48	Pk	37.8	-35.3	.4	-95.2	-55.82	-25	-30.82	H
5.33851	39.51	Pk	34.4	-41	.4	-95.2	-61.89	-25	-36.89	V
8.0054	37.28	Pk	35.8	-37.6	.6	-95.2	-59.12	-25	-34.12	V
10.68272	35.69	Pk	37.8	-35.3	.6	-95.2	-56.41	-25	-31.41	V

10.5.3. LTE BAND 48

LIMIT

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/24/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B48 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 3400-3800MHz T1792 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.14288	37.6	Pk	35.6	-38.6	.6	-95.2	-60	-40	-20	H
10.71488	35.7	Pk	37.8	-35	.6	-95.2	-56.1	-40	-16.1	H
14.27651	36.47	Pk	38.8	-35.4	.5	-95.2	-54.83	-40	-14.83	H
7.14371	37.54	Pk	35.6	-38.5	.5	-95.2	-60.06	-40	-20.06	V
10.71168	35.82	Pk	37.8	-35.1	.8	-95.2	-55.88	-40	-15.88	V
14.27307	37.67	Pk	38.8	-35.5	.8	-95.2	-53.43	-40	-13.43	V
Mid Channel, 3615.1MHz + 3634.9MHz										
7.21061	37.78	Pk	35.5	-38.6	.6	-95.2	-59.92	-40	-19.92	H
10.86279	35.2	Pk	37.9	-34.1	.6	-95.2	-55.6	-40	-15.6	H
14.49585	37.97	Pk	39.2	-36.3	.5	-95.2	-53.83	-40	-13.83	H
7.20159	37.08	Pk	35.5	-38.6	.5	-95.2	-60.72	-40	-20.72	V
10.85913	34.71	Pk	37.9	-34.1	.8	-95.2	-55.89	-40	-15.89	V
14.48969	37.21	Pk	39.2	-36.2	.8	-95.2	-54.19	-40	-14.19	V
High Channel, 3670.2MHz + 3690MHz										
7.36307	38.14	Pk	35.6	-38.4	.7	-95.2	-59.16	-40	-19.16	H
11.03836	34.59	Pk	37.9	-34.7	.7	-95.2	-56.71	-40	-16.71	H
14.72155	36.85	Pk	39.6	-35.4	.6	-95.2	-53.55	-40	-13.55	H
7.36319	37.85	Pk	35.6	-38.4	.6	-95.2	-59.55	-40	-19.55	V
11.04154	34.53	Pk	37.9	-34.6	.8	-95.2	-56.57	-40	-16.57	V
14.72064	37.27	Pk	39.6	-35.5	.8	-95.2	-53.03	-40	-13.03	V

10.5.4. LTE BAND 66B

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66B (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/31/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66B 10MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz										
3.44066	40.41	Pk	32.6	-42	.7	-95.2	-63.49	-13	-50.49	H
5.16209	40.42	Pk	34.2	-41.5	.7	-95.2	-61.38	-13	-48.38	H
6.88044	37.91	Pk	35.6	-38.6	.5	-95.2	-59.79	-13	-46.79	H
5.15936	39.88	Pk	34.2	-41.5	.5	-95.2	-62.12	-13	-49.12	V
6.8802	37.27	Pk	35.6	-38.5	.6	-95.2	-60.23	-13	-47.23	V
3.43863	40.46	Pk	32.6	-42	.6	-95.2	-63.54	-13	-50.54	V
Mid Channel, 1750.1MHz + 1760MHz										
3.51239	40.74	Pk	32.7	-41.8	.7	-95.2	-62.86	-13	-49.86	H
5.26478	40.12	Pk	34.2	-41.2	.7	-95.2	-61.38	-13	-48.38	H
7.02189	37.5	Pk	35.6	-38.6	.6	-95.2	-60.1	-13	-47.1	H
3.51032	40.72	Pk	32.7	-41.8	.6	-95.2	-62.98	-13	-49.98	V
5.26512	39.68	Pk	34.2	-41.2	.5	-95.2	-62.02	-13	-49.02	V
7.01776	38.31	Pk	35.5	-38.6	.5	-95.2	-59.49	-13	-46.49	V
High Channel, 1765.1MHz + 1775MHz										
3.5389	41.04	Pk	32.9	-41.7	.8	-95.2	-62.16	-13	-49.16	H
5.31174	41	Pk	34.3	-41	.7	-95.2	-60.2	-13	-47.2	H
7.00999	37.75	Pk	35.6	-38.6	.4	-95.2	-60.05	-13	-47.05	H
3.54243	40.55	Pk	32.9	-41.7	.4	-95.2	-63.05	-13	-50.05	V
5.3092	39.54	Pk	34.3	-41	.7	-95.2	-61.66	-13	-48.66	V
7.00935	37.34	Pk	35.6	-38.6	.7	-95.2	-60.16	-13	-47.16	V

10.5.5. LTE BAND 66C

LIMIT

FCC: §27.53 (h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

QPSK LTE BAND 66C (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/31/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B66C 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	HPF 2.7GHz T772 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz										
3.46214	38.54	Pk	32.6	-42	.7	-95.2	-65.36	-13	-52.36	H
5.18939	39.85	Pk	34.2	-41.4	.7	-95.2	-61.85	-13	-48.85	H
6.91877	38.4	Pk	35.5	-38.7	.5	-95.2	-59.5	-13	-46.5	H
3.46198	39.98	Pk	32.6	-42	.5	-95.2	-64.12	-13	-51.12	V
5.19224	40.68	Pk	34.2	-41.4	.6	-95.2	-61.12	-13	-48.12	V
6.91892	37.64	Pk	35.5	-38.7	.6	-95.2	-60.16	-13	-47.16	V
Mid Channel, 1745.1MHz + 1764.9MHz										
3.49061	40.33	Pk	32.7	-41.8	.7	-95.2	-63.27	-13	-50.27	H
5.2347	40.76	Pk	34.2	-41.1	.7	-95.2	-60.64	-13	-47.64	H
6.98014	38.43	Pk	35.6	-38.5	.6	-95.2	-59.07	-13	-46.07	H
3.48867	41.14	Pk	32.7	-41.8	.6	-95.2	-62.56	-13	-49.56	V
5.23553	40.77	Pk	34.2	-41.1	.5	-95.2	-60.83	-13	-47.83	V
6.97956	37.73	Pk	35.6	-38.5	.5	-95.2	-59.87	-13	-46.87	V
High Channel, 1750.2MHz + 1770MHz										
3.51899	40.01	Pk	32.8	-41.8	.8	-95.2	-63.39	-13	-50.39	H
5.27709	40.26	Pk	34.2	-41	.7	-95.2	-61.04	-13	-48.04	H
7.0402	37.49	Pk	35.6	-38.5	.4	-95.2	-60.21	-13	-47.21	H
3.51972	39.92	Pk	32.8	-41.7	.4	-95.2	-63.78	-13	-50.78	V
5.27725	40.2	Pk	34.2	-41	.7	-95.2	-61.1	-13	-48.1	V
7.04063	37.64	Pk	35.6	-38.4	.7	-95.2	-59.66	-13	-46.66	V

10.6. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT7

10.6.1. LTE BAND 48

LIMIT

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/26/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B48 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 3400-3800MHz T1792 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.14095	37.26	Pk	35.7	-38.6	.6	-95.2	-60.24	-40	-20.24	H
10.70973	36.03	Pk	37.8	-35	.6	-95.2	-55.77	-40	-15.77	H
14.27817	37.3	Pk	38.8	-35.4	.5	-95.2	-54	-40	-14	H
7.14442	37.47	Pk	35.6	-38.5	.5	-95.2	-60.13	-40	-20.13	V
10.71115	35.88	Pk	37.8	-35.1	.8	-95.2	-55.82	-40	-15.82	V
14.28074	36.66	Pk	38.9	-35.3	.8	-95.2	-54.14	-40	-14.14	V
Mid Channel, 3615.1MHz + 3634.9MHz										
7.24984	38.77	Pk	35.6	-38.6	.6	-95.2	-58.83	-40	-18.83	H
10.87555	34.92	Pk	37.8	-34.4	.6	-95.2	-56.28	-40	-16.28	H
14.50325	38.13	Pk	39.3	-36.4	.5	-95.2	-53.67	-40	-13.67	H
7.24844	37.18	Pk	35.6	-38.6	.5	-95.2	-60.52	-40	-20.52	V
10.87544	34.55	Pk	37.8	-34.4	.8	-95.2	-56.45	-40	-16.45	V
14.50099	37.68	Pk	39.3	-36.3	.8	-95.2	-53.72	-40	-13.72	V
High Channel, 3670.2MHz + 3690MHz										
7.35952	37.83	Pk	35.6	-38.4	.7	-95.2	-59.47	-40	-19.47	H
11.04056	34.85	Pk	37.9	-34.6	.7	-95.2	-56.35	-40	-16.35	H
14.7175	37.09	Pk	39.6	-35.5	.6	-95.2	-53.41	-40	-13.41	H
7.35762	37.86	Pk	35.6	-38.4	.6	-95.2	-59.54	-40	-19.54	V
11.03946	35	Pk	37.9	-34.7	.8	-95.2	-56.2	-40	-16.2	V
14.72039	36.81	Pk	39.6	-35.5	.8	-95.2	-53.49	-40	-13.49	V

10.7. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT8

10.7.1. LTE BAND 48

LIMIT

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/22/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B48 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 3400-3800MHz T1792 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.1672	37.76	Pk	35.5	-38.6	.6	-95.2	-59.94	-40	-19.94	H
10.20172	36.9	Pk	37.3	-36.2	.6	-95.2	-56.6	-40	-16.6	H
14.27969	37.76	Pk	38.8	-35.4	.5	-95.2	-53.54	-40	-13.54	H
7.15337	38.64	Pk	35.7	-38.6	.5	-95.2	-58.96	-40	-18.96	V
10.21365	37.34	Pk	37.3	-36	.8	-95.2	-55.76	-40	-15.76	V
14.27156	37.77	Pk	38.8	-35.6	.8	-95.2	-53.43	-40	-13.43	V
Mid Channel, 3615.1MHz + 3634.9MHz										
7.25281	37.84	Pk	35.6	-38.6	.6	-95.2	-59.76	-40	-19.76	H
10.87244	34.88	Pk	37.8	-34.3	.6	-95.2	-56.22	-40	-16.22	H
14.50964	38.5	Pk	39.3	-36.4	.5	-95.2	-53.3	-40	-13.3	H
7.25331	37.95	Pk	35.5	-38.6	.5	-95.2	-59.85	-40	-19.85	V
10.87696	35.39	Pk	37.8	-34.4	.8	-95.2	-55.61	-40	-15.61	V
14.50426	38.09	Pk	39.3	-36.4	.8	-95.2	-53.41	-40	-13.41	V
High Channel, 3670.2MHz + 3690MHz										
7.35478	37.64	Pk	35.5	-38.4	.7	-95.2	-59.76	-40	-19.76	H
11.06202	35.06	Pk	37.9	-34.5	.7	-95.2	-56.04	-40	-16.04	H
14.77043	36.89	Pk	39.5	-35.7	.6	-95.2	-53.91	-40	-13.91	H
7.35795	37.6	Pk	35.6	-38.4	.6	-95.2	-59.8	-40	-19.8	V
11.06018	35.05	Pk	37.9	-34.6	.8	-95.2	-56.05	-40	-16.05	V
14.77923	37.42	Pk	39.5	-35.7	.8	-95.2	-53.18	-40	-13.18	V

10.8. FIELD STRENGTH OF SPURIOUS RADIATION, ABOVE 1GHz, ANT9

10.8.1. LTE BAND 48

LIMIT

FCC: §96.41
(e) 3.5 GHz Emissions and Interference Limits—
(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

QPSK LTE BAND 48 (20.0MHZ + 20.0MHZ BANDWIDTH)

Project #:	13573771
Date:	3/24/2021
Test Engineer:	12491 GM
Configuration:	EUT Only
Mode	ULCA B48 20MHz QPSK
Chamber #:	Chamber Q

Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831	Amp/Cbl (dB)	BRF 3400-3800MHz T1792 1-18GHz	EIRP CF	Corrected Reading (dBm)	Limit	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.14314	37.79	Pk	35.6	-38.6	.6	-95.2	-59.81	-40	-19.81	H
10.71267	35.31	Pk	37.8	-35	.6	-95.2	-56.49	-40	-16.49	H
14.28013	36.85	Pk	38.9	-35.3	.5	-95.2	-54.25	-40	-14.25	H
7.13945	37.98	Pk	35.7	-38.6	.5	-95.2	-59.62	-40	-19.62	V
10.71349	35.92	Pk	37.8	-35	.8	-95.2	-55.68	-40	-15.68	V
14.27917	37.89	Pk	38.8	-35.4	.8	-95.2	-53.11	-40	-13.11	V
Mid Channel, 3615.1MHz + 3634.9MHz										
7.2506	37.66	Pk	35.6	-38.6	.6	-95.2	-59.94	-40	-19.94	H
10.86583	34.04	Pk	37.9	-34.2	.6	-95.2	-56.86	-40	-16.86	H
14.50572	37.56	Pk	39.3	-36.4	.5	-95.2	-54.24	-40	-14.24	H
7.25057	37.3	Pk	35.6	-38.6	.5	-95.2	-60.4	-40	-20.4	V
10.86824	34.8	Pk	37.9	-34.3	.8	-95.2	-56	-40	-16	V
14.50477	37.73	Pk	39.4	-36.4	.8	-95.2	-53.67	-40	-13.67	V
High Channel, 3670.2MHz + 3690MHz										
7.35968	38.17	Pk	35.6	-38.4	.7	-95.2	-59.13	-40	-19.13	H
11.03701	35.18	Pk	37.9	-34.7	.7	-95.2	-56.12	-40	-16.12	H
14.71973	38.29	Pk	39.6	-35.5	.6	-95.2	-52.21	-40	-12.21	H
7.36023	38.03	Pk	35.6	-38.4	.6	-95.2	-59.37	-40	-19.37	V
11.03777	34.44	Pk	37.9	-34.7	.8	-95.2	-56.76	-40	-16.76	V
14.72065	37.27	Pk	39.6	-35.5	.8	-95.2	-53.03	-40	-13.03	V

11. SETUP PHOTOS

Please refer to 13573771-EP1V1 FCC IC Setup Photo for Setup photos.

END OF REPORT