



TEST REPORT

Report Number : 13573777-E10V4

Applicant : APPLE, INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

Model : A2481

Brand : APPLE

FCC ID : BCG-E3994A

EUT Description : SMARTPHONE

Test Standard(s) : FCC CFR 47 Part 2, Part 22, Part 27 and Part 96

Date Of Issue:
AUGUST 11, 2021

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



Revision History

Rev.	Issue Date	Revisions	Revised By
V1	7/30/2021	Initial Review	Mengistu Mekuria
V2	8/5/2021	Updated table in section 6.2. Updated 6.5 to clarify that conducted tests were selected based on worst case conducted power.	John Thompson
V3	8/9/2021	Addressed feedback on Section 6.5	Tony Li
V4	8/11/2021	Corrected tables in section 8.4 for Ant 9	John Thompson

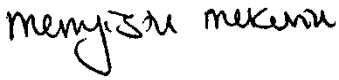
TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	6
2. SUMMARY OF TEST RESULTS	7
3. TEST METHODOLOGY	8
4. FACILITIES AND ACCREDITATION	8
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	9
5.1. METROLOGICAL TRACEABILITY	9
5.2. DECISION RULES	9
5.3. MEASUREMENT UNCERTAINTY	9
5.4. SAMPLE CALCULATION	9
6. EQUIPMENT UNDER TEST	10
6.1. DESCRIPTION OF EUT	10
6.2. MAXIMUM OUTPUT POWER	10
6.3. SOFTWARE AND FIRMWARE	14
6.4. MAXIMUM ANTENNA GAIN	14
6.5. WORST-CASE CONFIGURATION AND MODE	15
6.6. DESCRIPTION OF TEST SETUP	16
7. TEST AND MEASUREMENT EQUIPMENT	18
8. RF OUTPUT POWER VERIFICATION	20
8.1. LTE BAND 5	21
8.2. LTE BAND 7	23
8.3. LTE BAND 41	24
8.4. LTE BAND 48	26
8.5. LTE BAND 66B	28
8.6. LTE BAND 66C	29
9. CONDUCTED TEST RESULTS	31
9.1. OCCUPIED BANDWIDTH	31
9.1.1. LTE BAND 5	36
9.1.2. LTE BAND 7	37
9.1.3. LTE BAND 41	38
9.1.4. LTE BAND 48	40

9.1.5.	LTE BAND 66B	42
9.1.6.	LTE BAND 66C	43
9.2.	EMISSION MASK AND ADJACENT CHANNEL POWER.....	45
9.2.1.	LTE BAND 5 EMISSION MASK	46
9.2.2.	LTE BAND 7 EMISSION MASK	48
9.2.3.	LTE BAND 41 EMISSION MASK.....	51
9.2.4.	LTE BAND 48 EMISSION MASK AND ADJACENT CHANNEL POWER	54
9.2.5.	LTE BAND 66B EMISSION MASK	59
9.2.6.	LTE BAND 66C EMISSION MASK	61
9.3.	OUT OF BAND EMISSIONS	63
9.3.1.	LTE BAND 5.....	64
9.3.2.	LTE BAND 7.....	65
9.3.3.	LTE BAND 41.....	66
9.3.4.	LTE BAND 48.....	67
9.3.5.	LTE BAND 66B	69
9.3.6.	LTE BAND 66C	70
9.4.	FREQUENCY STABILITY	71
9.4.1.	LTE BAND 5.....	72
9.4.2.	LTE BAND 7.....	73
9.4.3.	LTE BAND 41.....	74
9.4.4.	LTE BAND 48.....	75
9.4.5.	LTE BAND 66B	76
9.4.6.	LTE BAND 66C	77
9.5.	PEAK-TO-AVERAGE POWER RATIO	78
9.5.1.	LTE BAND 5.....	79
9.5.2.	LTE BAND 7.....	79
9.5.3.	LTE BAND 41.....	80
9.5.4.	LTE BAND 48.....	80
9.5.5.	LTE BAND 66B	81
9.5.6.	LTE BAND 66C	81
10.	RADIATED TEST RESULTS	82
10.1.	Example Plot.....	83
10.2.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT1	85
10.2.1.	LTE BAND 5	86

10.2.2.	LTE BAND 7	88
10.2.3.	LTE BAND 41	90
10.2.4.	LTE BAND 66B.....	92
10.2.5.	LTE BAND 66C.....	94
10.3.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT2	96
10.3.1.	LTE BAND 5	97
10.3.2.	LTE BAND 7	99
10.3.3.	LTE BAND 41	101
10.3.4.	LTE BAND 66B.....	103
10.3.5.	LTE BAND 66C.....	105
10.4.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT3	107
10.4.1.	LTE BAND 7	108
10.4.2.	LTE BAND 41	110
10.4.3.	LTE BAND 66B.....	112
10.4.4.	LTE BAND 66C.....	114
10.5.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT4	116
10.5.1.	LTE BAND 7	117
10.5.2.	LTE BAND 41	119
10.5.3.	LTE BAND 48	121
10.5.4.	LTE BAND 66B.....	123
10.5.5.	LTE BAND 66C.....	125
10.6.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT7	127
10.6.1.	LTE BAND 48	128
10.7.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT8	130
10.7.1.	LTE BAND 48	131
10.8.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT9	133
10.8.1.	LTE BAND 48	134
11.	SETUP PHOTOS	136

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	A2481
Brand	APPLE
FCC ID	BCG-E3994A
EUT Description	SMARTPHONE
Serial Number	C7H1233003P0MMN5A (CONDUCTED) AND N433JJJ3K0 (RADIATED)
Sample Receipt Date	MAY 14, 2021
Date Tested	MAY 14, 2021 to JULY 02, 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 NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.	
Approved & Released By: 	Prepared By: 
Mengistu Mekuria Lead Test Engineer UL Verification Services Inc.	John Thompson Laboratory 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 NVLAP, Laboratory Code 200065-0, 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, California, USA	US0104	2324A	208313
☒	Building 2: 47266 Benicia Street, Fremont, California, USA	US0104	22541	208313
☐	Building 4: 47658 Kato Rd, Fremont, California, 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	2.84 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

The 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, NFC and WPT. 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.

Testing was performed on the parent model and is used to support the application for the parent and variants identified in this report based on the test plan submitted and approved via KDB inquiry by the FCC.

6.2. MAXIMUM OUTPUT POWER

ERP/EIRP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

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

Part 22H (Ant 1)								
ERP Limit (W)			7.00					
Antenna Gain (dBi)			-4.80					
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	25.70	18.75	0.075	7371	7M37G7W
	16QAM			25.32	18.37	0.069	7363	7M36D7W
5+3	QPSK	826.5	847.5	25.70	18.75	0.075	7396	7M40G7W
	16QAM			25.59	18.64	0.073	7398	7M40D7W
5+10	QPSK	826.5	844.0	25.70	18.75	0.075	13835	13M8G7W
	16QAM			24.76	17.81	0.060	13832	13M8D7W
10+5	QPSK	829.0	846.5	25.70	18.75	0.075	13836	13M8G7W
	16QAM			24.77	17.82	0.061	13844	13M8D7W
10+10	QPSK	829.0	844.0	25.70	18.75	0.075	18742	18M7G7W
	16QAM			24.68	17.73	0.059	18713	18M7D7W

OUTPUT POWER FOR LTE BAND 7

Part 27 / RSS 199 (Ant 3)								
EIRP Limit (W)			2.00					
Antenna Gain (dBi)			1.50					
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	25.70	27.20	0.525	28181	28M2G7W
	16QAM			25.05	26.55	0.452	28040	28M0D7W
20+10	QPSK	2510.0	2564.5	25.70	27.20	0.525	28150	28M2G7W
	16QAM			24.85	26.35	0.432	28145	28M1D7W
15+15	QPSK	2507.5	2562.5	25.70	27.20	0.525	28687	28M7G7W
	16QAM			24.66	26.16	0.413	28599	28M6D7W
15+20	QPSK	2507.8	2560.0	25.70	27.20	0.525	32915	32M9G7W
	16QAM			24.86	26.36	0.433	32868	32M9D7W
20+15	QPSK	2510.0	2562.2	25.70	27.20	0.525	32883	32M9G7W
	16QAM			24.86	26.36	0.433	32911	32M9D7W
20+20	QPSK	2510.0	2560.0	25.70	27.20	0.525	37728	37M7G7W
	16QAM			24.80	26.30	0.427	37639	37M6D7W

OUTPUT POWER FOR LTE BAND 41

Part 27 (Ant 3)								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)		1.50						
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	27.50	29.00	0.794	23285	23M3G7W
	16QAM			26.11	27.61	0.577	23261	23M3D7W
20+5	QPSK	2506.0	2686.7	27.50	29.00	0.794	23249	23M2G7W
	16QAM			26.10	27.60	0.575	23222	23M2D7W
10+20	QPSK	2501.5	2680.0	27.50	29.00	0.794	27942	27M9G7W
	16QAM			25.83	27.33	0.541	27673	27M7D7W
20+10	QPSK	2506.0	2684.5	27.50	29.00	0.794	27966	28M0G7W
	16QAM			26.15	27.65	0.582	28049	28M0D7W
15+15	QPSK	2503.5	2682.5	27.50	29.00	0.794	28530	28M5G7W
	16QAM			25.91	27.41	0.551	28584	28M6D7W
15+20	QPSK	2503.8	2680.0	27.50	29.00	0.794	32766	32M8G7W
	16QAM			25.95	27.45	0.556	32785	32M8D7W
20+15	QPSK	2506.0	2682.2	27.50	29.00	0.794	32870	32M9G7W
	16QAM			25.94	27.44	0.555	32856	32M9D7W
20+20	QPSK	2506.0	2680.0	27.50	29.00	0.794	37679	37M7G7W
	16QAM			25.95	27.45	0.556	37564	37M6D7W

OUTPUT POWER FOR LTE BAND 48

Part 96 (Ant 7)								
EIRP Limit (W)/ 10MHz		0.20						
Antenna Gain (dBi)		-3.50						
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	23.52	20.02	0.100	23174	23M2G7W
	16QAM			23.70	20.20	0.105	22718	22M7D7W
20+5	QPSK	3560.0	3696.7	23.58	20.08	0.102	22538	22M5G7W
	16QAM			23.70	20.20	0.105	23263	23M3D7W
10+20	QPSK	3555.5	3690.0	24.20	20.70	0.117	27390	27M4G7W
	16QAM			24.06	20.56	0.114	27627	27M6D7W
20+10	QPSK	3560.0	3694.5	24.09	20.59	0.115	27603	27M6G7W
	16QAM			24.20	20.70	0.117	27552	27M6D7W
15+20	QPSK	3557.8	3690.0	24.50	21.00	0.126	32445	32M4G7W
	16QAM			24.70	21.20	0.132	32624	32M6D7W
20+15	QPSK	3560.0	3692.2	24.56	21.06	0.128	32344	32M3G7W
	16QAM			24.70	21.20	0.132	32591	32M6D7W
20+20	QPSK	3560.0	3690.0	24.63	21.13	0.130	37100	37M1G7W
	16QAM			24.70	21.20	0.132	36893	36M9D7W

OUTPUT POWER FOR LTE BAND 66B

Part 27 / RSS 139 (Ant 3)								
EIRP Limit (W)		1.00						
Antenna Gain (dBi)		0.40						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5+5	QPSK	1712.5	1777.5	25.70	26.10	0.407	9235	9M24G7W
	16QAM			24.72	25.12	0.325	9234	9M23D7W
5+10	QPSK	1712.8	1775.0	25.70	26.10	0.407	13867	13M9G7W
	16QAM			24.89	25.29	0.338	13849	13M8D7W
10+5	QPSK	1715.0	1777.2	25.70	26.10	0.407	13860	13M9G7W
	16QAM			24.75	25.15	0.327	13842	13M8D7W
5+15	QPSK	1713.0	1772.5	25.70	26.10	0.407	18133	18M1G7W
	16QAM			24.90	25.30	0.339	18132	18M1D7W
15+5	QPSK	1717.5	1777.0	25.70	26.10	0.407	18122	18M1G7W
	16QAM			24.71	25.11	0.324	18144	18M1D7W
10+10	QPSK	1715.0	1775.0	25.70	26.10	0.407	18742	18M7G7W
	16QAM			24.70	25.10	0.324	18752	18M8D7W

OUTPUT POWER FOR LTE BAND 66C

Part 27 / RSS 139 (Ant 3)								
EIRP Limit (W)		1.00						
Antenna Gain (dBi)		0.40						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
10+15	QPSK	1715.3	1772.5	25.70	26.10	0.407	22667	22M7G7W
	16QAM			24.81	25.21	0.332	22803	22M8D7W
15+10	QPSK	1717.5	1774.7	25.70	26.10	0.407	22852	22M9G7W
	16QAM			24.89	25.29	0.338	22924	22M9D7W
10+20	QPSK	1715.5	1770.0	25.70	26.10	0.407	27205	27M2G7W
	16QAM			24.73	25.13	0.326	27400	27M4D7W
20+10	QPSK	1720.0	1774.5	25.70	26.10	0.407	27486	27M5G7W
	16QAM			24.89	25.29	0.338	27541	27M5D7W
15+15	QPSK	1717.5	1772.5	25.70	26.10	0.407	27880	27M9G7W
	16QAM			24.79	25.19	0.330	28065	28M1D7W
15+20	QPSK	1717.8	1770.0	25.70	26.10	0.407	32188	32M2G7W
	16QAM			24.78	25.18	0.330	32440	32M4D7W
20+15	QPSK	1720.0	1772.2	25.70	26.10	0.407	32273	32M3G7W
	16QAM			24.96	25.36	0.344	32288	32M3D7W
20+5	QPSK	1720.0	1776.7	25.70	26.10	0.407	22668	22M7G7W
	16QAM			24.78	25.18	0.330	22684	22M7D7W
5+20	QPSK	1713.3	1770.0	25.70	26.10	0.407	22257	22M3G7W
	16QAM			24.76	25.16	0.328	22445	22M4D7W
20+20	QPSK	1720.0	1770.0	25.70	26.10	0.407	37013	37M0G7W
	16QAM			24.90	25.30	0.339	37249	37M2D7W

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	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenn a Gain (dBi)	ANT 4 Antenn a Gain (dBi)	ANT 7 Antenn a Gain (dBi)	ANT 8 Antenn a Gain (dBi)	ANT 9 Antenn a Gain (dBi)
LTE Band 5, 824 – 849 MHz	-4.8	-5.9					
LTE Band 7, 2500 – 2570 MHz	-1.9	0.1	1.5	-2.1			
LTE Band 41, 2496 – 2690 MHz	-1.9	0.1	1.5	-2.1			
LTE Band 48, 3550 – 3700 MHz				-3.2	-3.5	-2.6	-4.8
LTE Band 66B, 66C, 1710 – 1780 MHz	-2.1	-2.3	0.4	-0.6			

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports LTE dual carrier Bands of: Band 5, Band 7, 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. For testing purposes emissions on sections 8 and 9 were measured while QPSK was set at or above target power for all bands. Conducted tests were performed on the worst case antenna port because it has the highest conducted power. The worst case antenna port is shown in the table below.

LTE Bands	Worst case Antenna Port For Conducted Power
LTE BAND 5, 7, 41, and 66	Ant 1
LTE BAND 48	Ant 9

For Band Edge and Emission Mask: The highest BW combo and sample lower BW combinations were tested. Combination pairs of the same BW are considered generally equivalent. 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 combination and a sample lower combination was tested. The highest power RB combination was selected as worst case.

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 exhibit 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
663 – 849 MHz	X	Y					
1710 – 1915 MHz	X	X	X	X			
2300 – 2700 MHz	Z	Y	Y	X			
3300 – 3980 MHz				X	X	X	Y

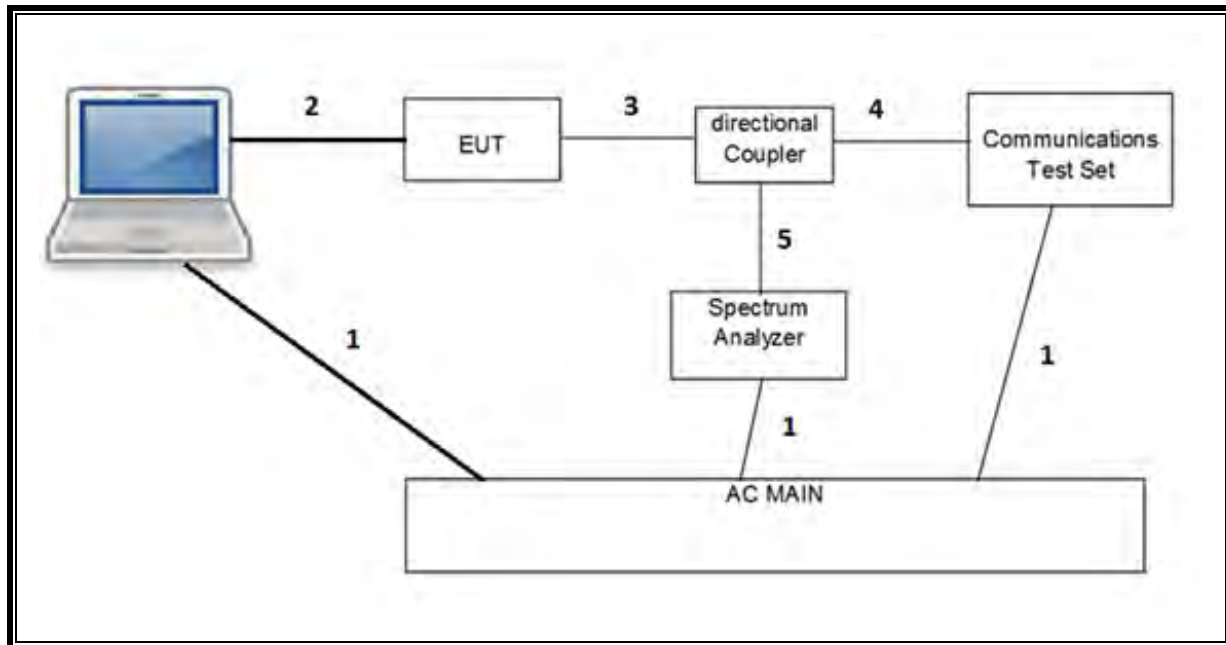
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For interband transmission of multiple channels in Ant 1 and Ant 2 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.

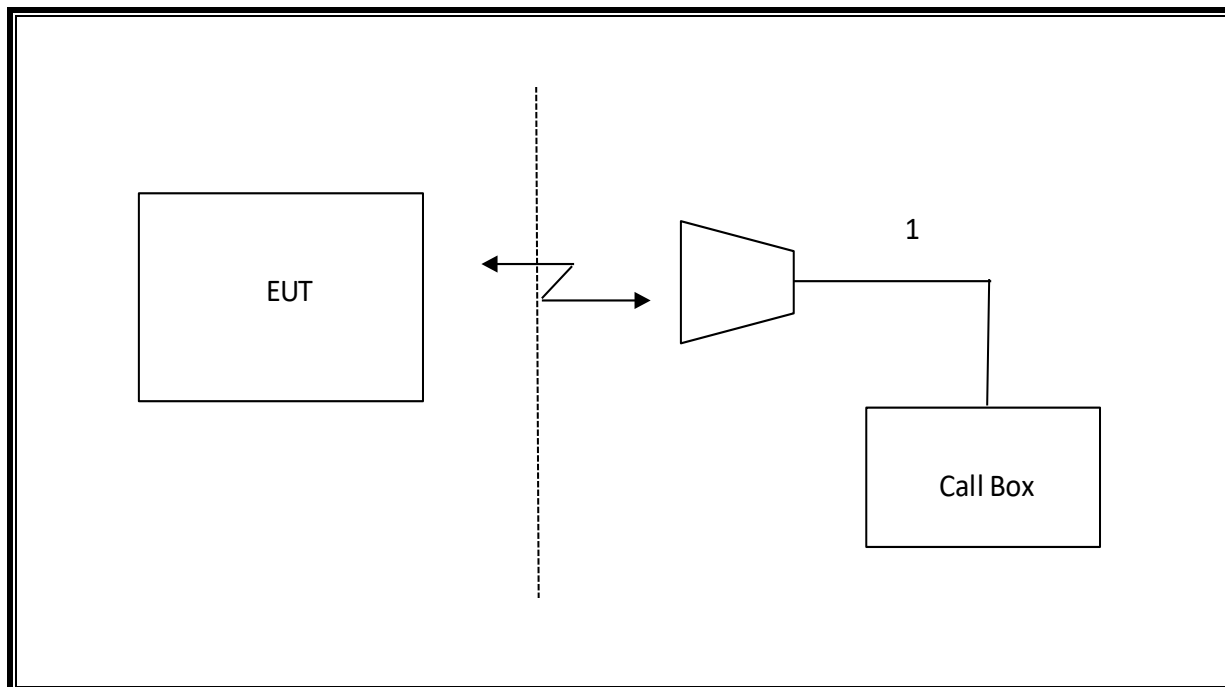
6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number	FCC ID/ DoC	
Laptop		Apple	MacBook Pro	C02VD7SAH22	BCGA1708	
AC/DC adapter		Apple	A1718	C4H714302LCGN8RA5		
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	T345	05/26/2022
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T136	07/07/2022
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T900	02/24/2022
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T1165	06/12/2022
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T907	07/22/2022
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T285	07/22/2021
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight	N9030A	T123	01/19/2022
Spectrum Analyzer, PSA, 3Hz to 44GHz	Keysight	N9030A	T908	01/28/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T200	01/19/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T905	01/21/2022
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T340	01/28/2022
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T199	01/20/2022
Spectrum Analyzer, PXA 3Hz to 50GHz	Keysight	N9030B	207995	05/27/2022
Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer	Keysight	N9030A	T342	01/25/2022
Spectrum Analyzer, PSA 3Hz to 44GHz	Keysight	E4446A	T123	01/22/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	AE0038201512	connection purpose only
Directional Coupler	KRYTAR	152610	T1161	09/16/2021
Directional Coupler	KRYTAR	152610	T1536	09/16/2021
Directional Coupler	KRYTAR	152610	T1537	09/16/2021
Power Meter, P-series single channel	Keysight	N1912A	T1245	01/21/2022
Power Meter, P-series single channel	Keysight	N1912A	T1269	01/25/2022
Power Meter, P-series single channel	Keysight	N1912A	T1272	01/21/2022
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight	N1921A	T1224	01/28/2022
Filter, HPF 3.0GHz	Micro-Tronics	HPM17543	T487	04/27/2022
*Filter, HPF 1.2GHz	Micro-Tronics	WHKX1.2/15G-6ST	T1737	6/23/2021
Filter, BRF 1850 – 1910 MHz	Micro-Tronics	BRM50714-02	T1796	06/10/2022
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	T1210	01/22/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T1526	02/26/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T260	02/20/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T958	02/22/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T964	02/17/2022
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	T979	02/22/2022
*Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T754	06/21/2021
*Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	T1154	06/21/2021
Amplifier, 26.5GHz to 40GHz	Miteq	NSP 4000 SP2	T88	04/22/2022
Amplifier, 1 to 26.5GHz, 23.5dB Gain minimum	Keysight	8449B	T404	04/19/2022
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	T447	04/22/2022
Antenna, Horn 26.5GHz to 40GHz	ARA	MWH-2640	T1864	04/19/2022
Spectrum Analyzer	Keysight	8564E	T106	01/27/2022
Antenna, Active Loop 9KHz to 30MHz	EMCO	6502	T1616	12/02/2021
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 3.4, June 08 2021	
Power Measurement Software	UL	UL RF	Ver 3.1.4, May 20, 2021	

Radiated test software	UL	UL RF	Ver 9.5 July 7, 2020
------------------------	----	-------	----------------------

NOTES:

* 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. LTE BAND 5

Test Engineer ID:	10646	Test Date:	4/15/2021
-------------------	-------	------------	-----------

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)							
			Size	Offset	Size	Offset	ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
3MHz / 5MHz	825.5	829.4	1	14	1	0	25.48	25.32	24.68	23.37	24.14	24.70	23.39	22.55
			15	0	25	0	25.70	25.30	24.34	23.50	24.36	24.11	23.14	22.25
	834.0	837.9	1	14	1	0	25.48	25.31	23.98	23.14	24.07	23.88	22.58	21.75
			15	0	25	0	25.66	24.85	23.91	22.92	24.18	23.33	22.38	21.46
	842.5	846.5	1	14	1	0	25.48	25.21	23.85	22.99	24.05	24.11	22.73	21.87
			15	0	25	0	25.65	25.00	24.03	23.07	24.22	23.79	22.81	21.86

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)							
			Size	Offset	Size	Offset	ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 3MHz	826.5	830.4	1	24	1	0	25.61	25.59	24.53	23.49	24.33	24.70	23.67	22.56
			25	0	15	0	25.70	25.24	24.20	23.37	24.45	24.26	23.25	22.40
	835.0	838.9	1	24	1	0	25.50	25.45	24.23	23.31	24.20	23.95	22.74	21.82
			25	0	15	0	25.58	24.83	23.83	22.89	24.03	23.29	22.26	21.33
	843.6	847.5	1	24	1	0	25.45	25.41	24.20	23.24	24.24	24.66	23.41	22.48
			25	0	15	0	25.62	24.90	23.85	22.91	24.33	23.93	22.88	21.90

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)							
			Size	Offset	Size	Offset	ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 10MHz	826.5	833.7	1	24	1	0	25.60	24.66	23.83	20.77	24.64	23.73	22.85	19.92
			25	0	50	0	23.74	22.77	22.75	20.82	22.77	21.87	21.85	19.82
	831.6	838.8	1	24	1	0	25.70	24.76	23.74	20.79	24.70	23.74	22.88	19.81
			25	0	50	0	23.71	22.79	22.76	20.72	22.81	21.82	21.84	19.83
	836.8	844.0	1	24	1	0	25.50	24.51	23.70	20.67	24.63	23.73	22.69	19.68
			25	0	50	0	23.75	22.75	22.74	20.72	22.80	21.82	21.82	19.85

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)							
			Size	Offset	Size	Offset	ANT 1				ANT 2			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz/ 5MHz	829.0	836.2	1	49	1	0	25.57	24.77	23.57	20.86	24.64	23.79	22.78	19.67
			50	0	25	0	23.71	22.72	22.69	20.72	22.76	21.79	21.77	19.76
	834.3	841.5	1	49	1	0	25.61	24.69	23.79	20.77	24.68	23.61	22.75	19.79
			50	0	25	0	23.64	22.68	22.69	20.66	22.75	21.73	21.72	19.75
	839.3	846.5	1	49	1	0	25.70	24.56	23.79	20.57	24.70	23.70	22.73	19.64
			50	0	25	0	23.66	22.66	22.64	20.63	22.72	21.72	21.77	19.75

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	24.68	23.72	20.59	24.60	23.77	22.79	19.66
			1	0	1	49	15.10	15.33	15.18	15.08	14.23	14.32	14.29	14.20
			50	0	50	0	23.66	22.65	22.71	20.67	22.76	21.75	21.73	19.79
	831.5	841.4	1	49	1	0	25.64	24.43	23.57	20.73	24.64	23.68	22.68	19.83
			1	0	1	49	15.19	15.14	15.16	15.15	14.20	14.20	14.25	14.23
			50	0	50	0	23.66	22.67	22.64	20.68	22.74	21.76	21.75	19.79
	834.1	844.0	1	49	1	0	25.55	24.53	23.72	20.50	24.70	23.70	22.90	19.81
			1	0	1	49	15.08	15.10	15.16	15.30	14.15	14.21	14.41	14.33
			50	0	50	0	23.67	22.65	22.66	20.70	22.76	21.80	21.80	19.78

8.2. LTE BAND 7

Test Engineer ID:	10646	Test Date:	4/15/2021
-------------------	-------	------------	-----------

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	24.74	23.51	20.81	22.69	21.77	20.09	18.14	25.12	24.35	22.35	20.28	22.62	21.50	19.79	17.85
			50	0	100	0	23.80	22.86	22.85	20.86	20.89	19.87	19.94	17.95	23.33	22.34	22.27	20.31	20.80	19.84	19.70	17.88
			1	49	1	0	25.65	25.05	24.01	20.89	22.69	21.84	20.70	17.81	25.05	24.12	23.34	20.23	22.67	21.69	20.24	17.96
	2525.6	2540.0	50	0	100	0	23.93	22.93	22.89	20.89	20.91	19.91	19.94	17.95	23.30	22.35	22.29	20.33	20.86	19.88	19.86	17.88
			1	49	1	0	25.57	24.77	23.78	20.71	22.70	21.73	20.83	17.71	25.20	24.17	23.26	20.39	22.70	21.77	20.75	17.73
			50	0	100	0	23.95	22.95	22.91	20.91	20.98	19.97	20.00	18.00	23.38	22.39	22.34	20.35	20.95	19.92	19.88	17.92

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

Bandwidth	PCC	SCC1	PCC	PCC	SCC1	SCC1	Conducted Average (dBm)															
	Frequency	Frequency	RB	RB	RB	RB	ANT 1				ANT 2				ANT 3				ANT 4			
	(MHz)	(MHz)	Size	Offset	Size	Offset	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	25.58	24.50	22.83	20.69	22.62	21.77	19.62	15.53	25.11	24.23	22.22	20.34	22.68	21.89	19.32	17.74
			100	0	50	0	23.65	22.69	22.69	20.65	20.72	19.78	19.75	17.79	23.20	22.25	22.18	20.22	20.79	19.82	19.81	17.85
	2530.1	2544.5	1	99	1	0	25.69	24.85	23.69	20.81	22.70	21.65	20.34	17.66	24.99	24.00	23.30	20.01	22.70	21.76	20.82	17.60
			100	0	50	0	23.75	22.80	22.75	20.78	20.77	19.76	19.79	17.78	23.19	22.23	22.22	20.21	20.79	19.82	19.81	17.82
	2550.1	2564.5	1	99	1	0	25.70	24.76	23.49	20.78	22.60	21.93	18.78	17.83	25.20	24.07	22.97	20.14	22.66	21.82	18.79	17.55
			100	0	50	0	23.83	22.81	22.80	20.81	20.78	19.78	19.25	17.86	23.31	22.26	22.25	20.28	20.84	19.83	19.18	17.80

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	25.47	24.55	23.12	20.68	22.68	21.89	19.80	17.77	25.04	23.99	22.49	20.33	22.69	21.81	20.02	17.80
			75	0	75	0	23.65	22.69	22.67	20.64	20.78	19.79	19.62	17.84	23.31	22.32	22.32	20.34	20.83	19.86	19.88	17.87
	2527.5	2542.5	1	74	1	0	25.70	24.66	23.71	20.71	22.67	21.60	20.29	17.77	25.20	24.03	23.20	20.49	22.70	21.70	20.52	17.91
			75	0	75	0	23.71	22.73	22.72	20.76	20.82	19.78	19.85	17.81	23.34	22.33	22.31	20.34	20.88	19.92	19.84	17.89
	2547.5	2562.5	1	74	1	0	25.58	24.46	23.72	20.38	22.70	21.75	19.78	17.59	25.16	24.37	23.28	20.38	22.68	21.85	20.57	17.64
			75	0	75	0	23.77	22.74	22.75	20.74	20.86	19.84	19.42	17.92	23.36	22.40	22.39	20.38	20.90	19.90	19.90	17.92

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	25.61	24.58	23.36	20.72	22.58	21.81	20.37	17.63	25.20	24.23	22.76	20.31	22.69	22.07	20.27	18.05
			75	0	100	0	23.83	22.84	22.87	20.84	20.77	19.81	19.84	17.84	23.35	22.39	22.35	20.35	20.87	19.90	19.89	17.87
	2525.3	2542.4	1	74	1	0	25.70	24.86	23.88	20.82	22.70	21.54	20.45	17.64	25.10	24.39	23.27	20.29	22.70	21.82	20.55	18.02
			75	0	100	0	23.92	22.91	22.86	20.91	20.81	19.81	19.86	17.81	23.41	22.40	22.37	20.38	20.91	19.92	19.87	17.91
	2542.9	2560.0	1	74	1	0	25.63	24.50	23.86	20.69	22.60	21.87	20.92	17.76	25.04	24.23	23.34	20.13	22.62	21.71	20.75	17.74
			75	0	100	0	23.95	22.98	22.96	20.93	20.87	19.91	19.94	17.88	23.39	22.42	22.38	20.36	20.90	19.93	19.88	17.91

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	25.38	24.42	23.29	20.40	22.70	21.76	20.14	17.48	25.11	24.04	22.86	20.19	22.70	21.79	20.37	17.82
			100	0	75	0	23.68	22.67	22.68	20.69	20.79	19.84	19.82	17.78	23.26	22.31	22.28	20.36	20.84	19.90	19.88	17.90
			1	99	1	0	25.70	24.86	23.76	20.73	22.65	21.80	20.68	17.78	25.00	24.07	23.03	20.20	22.66	21.84	20.52	17.94
	2527.6	2544.7	100	0	75	0	23.76	22.81	22.76	20.77	20.81	19.82	19.87	17.85	23.33	22.35	22.31	20.36	20.88	19.91	19.88	17.91
			1	99	1	0	25.64	24.75	23.62	20.55	22.64	21.66	20.73	17.39	25.20	24.21	23.37	20.36	22.67	21.78	20.43	17.75
			100	0	75	0	23.83	22.83	22.78	20.82	20.83	19.88	19.91	17.88	23.38	22.38	22.35	20.35	20.94	19.91	19.92	17.93

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB		SCC1 RB		Conducted Average (dBm)															
			Size	Offset	Size	Offset	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	25.45	24.61	23.48	20.64	22.70	21.60	20.26	17.75	25.07	24.13	22.78	20.27	22.69	21.78	20.53	17.75
			1	0	1	99	14.33	14.40	13.61	12.83	10.54	10.63	9.78	9.30	13.65	13.81	13.03	12.28	10.65	10.63	9.90	9.33
			100	0	100	0	23.75	22.73	22.74	20.74	20.85	19.84	19.84	17.89	23.32	22.31	22.29	20.31	20.87	19.88	19.89	17.92
			1	99	0	25.70	24.80	23.95	20.76	22.69	21.79	20.22	17.73	25.15	24.32	23.18	20.36	22.70	21.71	20.48	17.63	
			1	0	1	99	14.68	14.83	13.90	13.39	11.10	11.13	10.16	9.91	14.31	14.48	13.51	13.17	11.26	11.47	10.76	10.35
			100	0	100	0	23.79	22.78	22.80	20.80	20.83	19.84	19.89	17.86	23.31	22.38	22.35	20.31	20.89	19.88	19.87	17.90
	2525.1	2544.9	1	99	1	0	25.55	24.60	23.71	20.48	22.62	21.64	20.68	17.74	25.20	24.18	23.14	20.37	22.69	21.82	20.85	17.73
			1	0	1	99	14.60	14.76	13.93	13.57	11.05	11.26	10.15	9.93	14.55	14.68	13.83	13.35	11.25	11.20	10.49	9.98
			100	0	100	0	23.82	22.88	22.83	20.83	20.91	19.92	19.96	17.95	23.34	22.36	22.38	20.38	20.93	19.92	19.89	17.98
			1	99	1	0	25.45	24.61	23.48	20.64	22.70	21.60	20.26	17.75	25.07	24.13	22.78	20.27	22.69	21.78	20.53	17.75
			1	0	1	99	14.33	14.40	13.61	12.83	10.54	10.63	9.78	9.30	13.65	13.81	13.03	12.28	10.65	10.63	9.90	9.33
			100	0	100	0	23.75	22.73	22.74	20.74	20.85	19.84	19.84	17.89	23.32	22.31	22.29	20.31	20.87	19.88	19.89	17.92
2540.2	2560.0	1	99	1	0	25.70	24.80	23.95	20.76	22.69	21.79	20.22	17.73	25.15	24.32	23.18	20.36	22.70	21.71	20.48	17.63	
		1	0	1	99	14.68	14.83	13.90	13.39	11.10	11.13	10.16	9.91	14.31	14.48	13.51	13.17	11.26	11.47	10.76	10.35	
		100	0	100	0	23.79	22.78	22.80	20.80	20.83	19.84	19.89	17.86	23.31	22.38	22.35	20.31	20.89	19.88	19.87	17.90	
		1	99	1	0	25.55	24.60	23.71	20.48	22.62	21.64	20.68	17.74	25.20	24.18	23.14	20.37	22.69	21.82	20.85	17.73	
		1	0	1	99	14.60	14.76	13.93	13.57	11.05	11.26	10.15	9.93	14.55	14.68	13.83	13.35	11.25	11.20	10.49	9.98	
		100	0	100	0	23.82	22.88	22.83	20.83	20.91	19.92	19.96	17.95	23.34	22.36	22.38	20.38	20.93	19.92	19.89	17.98	

8.3. LTE BAND 41

Test Engineer ID:	10646	Test Date:	4/7/2021
-------------------	-------	------------	----------

OUTPUT POWER FOR LTE BAND 41 (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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 20MHz	2499.3	2511.0	1	24	1	0	22.34	22.40	22.09	22.51	19.48	19.39	19.23	19.65	22.07	22.07	21.84	22.25
			25	0	100	0	22.59	22.55	22.58	22.53	19.71	19.68	19.78	19.68	22.26	22.20	22.26	22.25
	2583.8	2595.5	1	24	1	0	27.50	26.11	25.98	22.51	24.50	23.27	23.09	19.92	27.00	25.63	25.48	22.25
			25	0	100	0	25.59	24.90	24.65	22.57	22.75	22.08	21.71	19.80	25.10	24.37	24.12	22.09
	2668.3	2680.0	1	24	1	0	27.17	26.05	24.23	22.36	24.46	23.36	21.40	19.72	26.79	25.67	24.64	21.92
			25	0	100	0	25.41	24.43	24.29	22.37	22.67	21.69	21.37	19.71	24.98	23.96	23.95	21.92

OUTPUT POWER FOR LTE BAND 41 (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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 5MHz	2506.0	2517.7	1	99	1	0	26.40	25.89	24.41	22.36	23.22	22.84	22.50	19.45	26.20	25.68	23.72	22.63
			100	0	25	0	22.62	22.60	22.56	22.55	19.52	19.53	19.56	19.52	22.38	22.45	22.41	22.41
	2590.5	2602.2	1	99	1	0	27.50	26.10	25.50	22.69	24.50	22.96	22.49	20.00	27.00	25.45	25.10	22.11
			100	0	25	0	25.56	24.53	24.61	22.53	22.52	21.50	21.55	19.59	25.14	24.16	24.19	22.20
	2675.0	2686.7	1	99	1	0	27.28	25.79	25.17	22.73	24.25	22.80	21.80	19.74	26.99	25.58	24.97	22.18
			100	0	25	0	25.42	24.43	24.46	22.40	22.41	21.42	21.49	19.44	25.02	24.05	24.08	22.02

OUTPUT POWER FOR LTE BAND 41 (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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	2501.5	2515.9	1	49	1	0	22.57	22.51	22.69	22.56	19.49	19.48	19.59	19.52	-1.57	22.10	22.02	22.36
			50	0	100	0	22.72	22.71	22.72	22.68	19.71	19.71	19.74	19.75	22.42	22.34	22.35	22.42
	2583.6	2598.0	1	49	1	0	27.50	25.83	25.69	22.85	24.36	23.03	22.80	19.97	27.00	25.43	25.23	22.00
			50	0	100	0	25.72	24.76	24.72	22.70	22.69	21.76	21.75	19.83	25.16	24.18	24.18	22.14
	2665.6	2680.0	1	49	1	0	27.33	25.71	24.07	22.41	24.50	22.89	21.07	19.62	26.77	25.32	24.82	22.15
			50	0	100	0	25.55	24.56	24.35	22.56	22.69	21.69	21.48	19.73	25.01	24.06	24.06	22.03

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	2506.0	2520.4	1	99	1	0	26.35	25.82	24.48	22.39	23.38	23.14	22.70	19.66	26.14	25.65	23.92	22.22
			100	0	50	0	22.58	22.61	22.52	22.56	19.81	19.81	19.82	19.90	22.42	22.44	22.36	22.45
	2588.1	2602.5	1	99	1	0	27.50	26.15	25.55	22.93	24.50	23.20	22.80	20.00	27.00	25.67	25.08	22.28
			100	0	50	0	25.58	24.56	24.60	22.52	22.77	21.77	21.80	19.85	25.10	24.13	24.17	22.12
	2670.1	2684.5	1	99	1	0	27.24	25.77	24.98	22.61	24.47	23.00	21.87	19.85	26.78	25.32	25.21	22.17
			100	0	50	0	25.40	24.45	24.44	22.40	22.72	21.71	21.73	19.65	24.95	23.99	23.96	21.89

OUTPUT POWER FOR LTE BAND 41 (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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 15MHz	2503.5	2518.5	1	74	1	0	27.42	25.89	24.93	22.44	24.43	22.92	22.53	19.43	27.00	25.44	24.08	21.94
			75	0	75	0	22.56	22.60	22.59	22.57	19.67	19.67	19.70	19.65	22.14	22.15	22.16	22.12
	2585.5	2600.5	1	74	1	0	27.50	25.91	25.48	22.79	24.50	23.02	22.50	19.87	26.75	25.18	24.74	22.07
			75	0	75	0	25.58	24.59	24.65	22.60	22.59	21.67	21.68	19.75	24.85	23.88	23.93	21.91
	2667.5	2682.5	1	74	1	0	27.32	25.66	24.29	22.33	24.39	22.76	21.13	19.49	26.59	24.92	24.36	21.62
			75	0	75	0	25.45	24.47	24.50	22.46	22.60	21.60	21.53	19.63	24.71	23.76	23.78	21.69

OUTPUT POWER FOR LTE BAND 41 (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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	2503.8	2520.9	1	74	1	0	27.46	25.95	25.02	22.38	24.48	22.94	22.59	19.43	27.00	25.44	24.13	21.97
			75	0	100	0	22.68	22.63	22.69	22.57	19.73	19.70	19.75	19.68	22.23	22.19	22.21	22.18
	2583.3	2600.4	1	74	1	0	27.50	25.95	25.48	22.78	24.50	23.02	22.54	19.93	26.77	25.22	24.79	22.06
			75	0	100	0	25.62	24.66	24.70	22.63	22.73	21.70	21.76	19.81	24.91	23.94	24.02	21.95
	2662.9	2680.0	1	74	1	0	27.29	25.63	24.05	22.30	24.44	22.81	21.12	19.51	26.59	24.94	24.22	21.61
			75	0	100	0	25.50	24.50	24.22	22.50	22.62	21.65	21.44	19.67	24.77	23.81	23.83	21.79

OUTPUT POWER FOR LTE BAND 41 (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	2506.0	2523.1	1	99	1	0	27.37	25.94	24.83	22.48	24.50	23.01	22.65	19.53	27.00	25.62	24.00	22.15	24.17	22.57	22.08	19.17
			100	0	75	0	22.66	22.61	22.57	22.67	19.74	19.72	19.76	19.72	22.32	22.30	22.28	22.31	19.35	19.38	19.29	19.36
	2585.6	2602.7	1	99	1	0	27.50	25.94	25.57	22.68	24.38	23.09	22.67	19.87	26.86	25.29	24.93	22.11	24.50	23.18	22.72	19.92
			100	0	75	0	25.63	24.61	24.66	22.59	22.67	21.71	21.70	19.76	25.01	24.05	24.05	22.02	22.77	21.84	21.86	19.86
	2665.1	2682.2	1	99	1	0	27.20	25.71	24.85	22.41	24.37	22.95	21.76	19.59	26.64	25.15	24.99	21.86	24.39	22.86	22.46	19.65
			100	0	75	0	25.42	24.44	24.36	22.41	22.63	21.59	21.54	19.57	24.82	23.86	23.88	21.79	22.59	21.62	21.62	19.62

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	27.43	25.92	23.99	22.39	24.50	23.07	22.67	19.51	27.00	25.65	24.10	22.12	24.13	22.58	22.27	19.15
			1	0	1	99	14.61	14.49	14.67	14.54	11.71	11.72	11.86	11.75	14.10	14.08	14.22	14.10	10.99	10.93	11.06	10.90
			100	0	100	0	22.60	22.67	22.60	22.57	19.77	19.81	19.79	19.73	22.36	22.29	22.26	22.34	19.39	19.43	19.35	19.35
	2583.1	2602.9	1	99	1	0	27.50	25.95	25.55	22.73	24.44	23.10	22.67	19.88	26.88	25.34	24.92	22.07	24.50	23.18	22.75	19.89
			1	0	1	99	18.12	18.27	18.27	16.85	16.11	16.38	16.33	15.72	17.96	18.12	18.10	16.66	14.90	15.04	14.99	13.67
			100	0	100	0	25.62	24.59	24.63	22.58	22.73	21.73	21.78	19.82	25.04	24.07	24.10	22.02	22.82	21.85	21.88	19.85
	2660.2	2680.0	1	99	1	0	27.08	25.59	24.58	22.34	24.33	22.90	21.76	19.63	26.54	25.08	24.87	21.82	24.34	22.85	22.28	19.49
			1	0	1	99	16.78	16.88	17.37	15.53	15.03	15.01	15.54	13.75	16.81	16.88	17.38	15.54	13.54	13.63	14.06	12.30
			100	0	100	0	25.40	24.46	24.14	22.39	22.66	21.67	21.48	19.65	24.83	23.83	23.90	21.82	22.64	21.60	21.66	19.58

8.4. LTE BAND 48

Test Engineer ID:	10646	Test Date:	6/22/2021
-------------------	-------	------------	-----------

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 20MHz	3553.3	3565.0	1	24	1	0	20.12	20.14	20.58	20.20	17.01	17.35	17.32	17.39	19.13	19.16	18.94	19.27
			25	0	100	0	13.91	13.88	13.85	13.82	10.68	10.73	10.69	10.68	12.97	12.94	12.98	12.89
	3615.8	3627.5	1	24	1	0	23.52	23.70	23.59	20.75	20.74	20.38	21.00	17.74	22.69	22.67	23.20	19.80
			25	0	100	0	21.77	21.76	21.73	20.75	18.75	18.72	18.64	17.68	20.89	20.90	20.87	19.84
	3678.3	3690.0	1	24	1	0	19.98	19.93	19.75	20.10	17.03	17.29	17.34	17.25	19.16	19.20	19.39	19.30
			25	0	100	0	13.71	13.68	13.70	13.63	10.66	10.72	10.64	10.65	12.84	12.84	12.81	12.83

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 5MHz	3560.0	3571.7	1	99	1	0	20.61	20.61	20.77	20.67	16.01	16.11	16.14	17.17	20.05	20.06	20.17	20.10
			100	0	25	0	13.75	13.78	13.80	13.75	10.37	10.44	10.35	10.47	13.18	13.19	13.23	13.16
	3622.5	3634.2	1	99	1	0	23.58	23.70	23.59	20.81	21.00	20.28	19.20	17.76	22.98	23.20	23.00	20.28
			100	0	25	0	21.62	21.61	21.65	20.62	18.40	18.36	18.07	17.33	21.08	21.09	21.14	20.07
	3685.0	3696.7	1	99	1	0	20.41	20.40	20.82	20.71	17.26	17.30	17.16	17.51	19.95	20.04	20.41	20.26
			100	0	25	0	13.55	13.54	13.49	13.48	10.26	10.25	10.19	10.27	13.06	13.08	13.05	13.00

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	3555.5	3569.9	1	49	1	0	19.70	19.66	19.94	19.76	17.01	17.05	16.65	16.98	19.22	19.16	19.52	19.26
			50	0	100	0	14.94	14.93	14.94	14.94	12.14	12.12	12.16	12.17	14.39	14.43	14.42	14.44
	3615.6	3630.0	1	49	1	0	24.20	24.06	24.01	21.02	21.50	21.50	21.19	17.77	23.70	23.59	23.49	20.57
			50	0	100	0	21.34	21.36	21.40	20.86	18.61	18.65	18.64	18.11	20.87	20.89	20.89	20.39
	3675.6	3690.0	1	49	1	0	19.60	19.62	19.41	19.66	17.00	17.21	16.99	17.37	19.17	19.12	18.96	19.23
			50	0	100	0	14.78	14.74	14.73	14.75	12.10	12.13	12.10	12.10	14.34	14.36	14.33	14.36

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	3560.0	3574.4	1	99	1	0	19.51	19.51	19.68	19.49	16.77	16.71	16.74	16.81	19.00	19.03	19.18	19.03
			100	0	50	0	14.75	14.74	14.74	14.67	11.89	11.85	11.83	11.86	14.18	14.23	14.24	14.19
	3620.1	3634.5	1	99	1	0	24.09	24.20	23.66	20.77	21.37	21.50	20.90	18.25	23.64	23.70	23.07	20.33
			100	0	50	0	21.13	21.13	21.20	20.58	18.31	18.40	18.38	17.82	20.63	20.64	20.72	20.14
	3680.1	3694.5	1	99	1	0	19.31	19.40	19.83	19.61	16.68	16.97	17.12	18.09	18.92	19.01	19.38	19.26
			100	0	50	0	14.48	14.51	14.45	14.44	11.81	11.77	11.79	11.74	14.06	14.08	14.10	14.06

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	3557.8	3574.9	1	74	1	0	19.62	19.55	19.85	19.55	16.87	16.95	16.56	16.72	19.05	19.10	19.30	19.12
			75	0	100	0	14.77	14.81	14.81	14.74	12.02	12.04	12.07	12.03	14.25	14.32	14.33	14.31
	3615.3	3632.4	1	74	1	0	24.50	24.70	23.52	20.87	21.74	22.00	21.00	17.51	24.03	24.20	23.06	20.42
			75	0	100	0	21.14	21.14	21.25	20.65	18.45	18.52	18.52	17.97	20.69	20.71	20.74	20.20
	3672.9	3690.0	1	74	1	0	19.41	19.32	19.25	19.45	16.83	17.03	16.71	17.27	19.07	18.96	18.87	19.10
			75	0	100	0	14.60	14.57	14.56	14.59	11.91	11.97	11.99	11.95	14.19	14.23	14.20	14.19

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 15MHz	3560.0	3577.1	1	99	1	0	19.53	19.62	19.70	19.60	16.77	17.09	16.91	16.58	19.07	19.06	19.24	19.06
			100	0	75	0	14.79	14.80	14.79	14.79	11.80	11.83	11.89	11.89	14.28	14.31	14.30	14.28
	3617.6	3634.7	1	99	1	0	24.56	24.70	23.62	20.78	21.60	22.00	20.90	17.85	24.16	24.20	23.13	20.34
			100	0	75	0	21.13	21.14	21.22	20.65	18.27	18.31	18.32	17.82	20.70	20.69	20.77	20.22
	3675.1	3692.2	1	99	1	0	19.33	19.40	19.87	19.64	16.80	16.66	16.69	17.00	18.97	19.01	19.45	19.30
			100	0	75	0	14.54	14.55	14.53	14.51	11.81	11.78	11.80	11.73	14.14	14.16	14.18	14.10

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	21.04	21.08	21.19	20.64	17.41	17.57	17.50	16.91	20.54	20.58	20.63	20.13	18.03	17.87	18.07	17.42
			1	0	1	99	7.74	7.64	7.82	7.59	4.08	4.12	4.09	4.01	7.19	7.10	7.29	7.09	4.60	4.59	4.69	5.00
			100	0	100	0	14.80	14.82	14.80	14.75	11.06	11.08	11.09	11.11	14.23	14.25	14.27	14.25	11.69	11.68	11.68	11.73
	3615.1	3634.9	1	99	1	0	24.63	24.70	23.70	20.83	22.00	21.27	20.20	17.31	24.08	24.20	23.12	20.33	21.43	21.50	20.51	17.75
			1	0	1	99	14.14	14.27	14.20	14.39	11.48	11.24	11.24	11.11	13.61	13.75	13.72	13.86	11.12	11.27	11.19	11.22
			100	0	100	0	21.15	21.19	21.22	20.66	18.02	18.01	18.09	17.10	20.66	20.67	20.72	20.15	18.02	18.04	18.09	17.62
	3670.2	3690.0	1	99	1	0	20.84	20.93	21.39	20.71	17.35	17.67	17.80	17.25	20.42	20.47	20.92	20.34	17.90	17.97	18.42	17.77
			1	0	1	99	7.47	7.53	7.90	7.65	4.04	4.29	4.35	4.38	7.04	7.00	7.46	7.18	4.43	4.46	4.55	4.42
			100	0	100	0	14.56	14.53	14.52	14.51	11.01	11.06	11.07	11.07	14.09	14.12	14.14	14.12	11.56	11.60	11.60	11.61

8.5. LTE BAND 66B

Test Engineer ID:	10646	Test Date:	4/16/2021
-------------------	-------	------------	-----------

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	25.38	24.52	23.53	20.56	23.20	22.32	21.44	18.28	25.07	24.02	23.21	20.07	23.20	22.12	21.28	18.16
			25	0	50	0	23.52	22.55	22.52	20.51	21.31	20.27	20.32	18.26	23.12	22.20	22.13	20.17	21.23	20.20	20.21	18.22
	1752.6	1757.4	1	24	1	0	25.40	24.47	23.61	20.49	23.08	22.05	21.20	18.08	24.95	24.01	23.11	20.00	22.99	22.14	21.15	17.94
			25	0	50	0	23.49	22.55	22.58	20.55	21.17	20.17	20.19	18.19	23.13	22.11	22.12	20.12	21.14	20.14	20.22	18.15
	1772.7	1777.5	1	24	1	0	25.70	24.72	23.63	20.44	23.09	22.07	21.29	18.09	25.20	24.22	23.18	20.19	23.12	22.06	21.15	18.17
			25	0	50	0	23.67	22.64	22.66	20.66	21.15	20.15	20.17	18.18	23.18	22.21	22.18	20.19	21.17	20.18	20.14	18.15

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	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 10MHz	1712.8	1720.0	1	24	1	0	25.37	24.48	23.70	20.62	23.10	22.25	21.38	18.29	25.06	24.11	23.37	20.28	23.20	22.34	21.47	18.38
			25	0	50	0	23.65	22.61	22.58	20.68	21.27	20.26	20.30	18.32	23.22	22.20	22.19	20.17	21.28	20.30	20.32	18.34
	1750.3	1757.5	1	24	1	0	25.55	24.68	23.73	20.57	23.20	22.21	21.29	18.01	25.05	24.27	23.28	20.08	23.11	22.20	21.42	18.21
			25	0	50	0	23.64	22.57	22.68	20.63	21.24	20.18	20.15	18.20	23.14	22.21	22.19	20.16	21.26	20.26	20.22	18.26
	1767.8	1775.0	1	24	1	0	25.70	24.89	23.74	20.71	23.09	22.18	21.24	18.16	25.20	24.31	23.33	20.23	23.18	22.32	21.31	18.41
			25	0	50	0	23.71	22.70	22.67	20.73	21.13	20.19	20.11	18.24	23.17	22.21	22.21	20.17	21.26	20.31	20.30	18.26

OUTPUT POWER FOR LTE BAND 66B (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				ANT 3				ANT 4			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 5MHz	1715.0	1722.2	1	49	1	0	25.64	24.31	23.69	20.61	23.20	22.08	21.07	18.37	25.13	24.11	23.13	20.29	23.14	22.20	21.24	18.27
			50	0	25	0	23.66	22.66	22.69	20.72	21.25	20.27	20.30	18.35	23.28	22.24	22.29	20.32	21.23	20.30	20.25	18.34
	1752.5	1759.7	1	49	1	0	25.54	24.60	23.67	20.65	23.10	22.12	21.08	18.07	25.08	24.24	23.18	20.21	23.20	22.11	21.26	18.23
			50	0	25	0	23.66	22.71	22.64	20.70	21.17	20.19	20.18	18.24	23.27	22.26	22.25	20.27	21.19	20.19	20.22	18.24
	1770.0	1777.2	1	49	1	0	25.70	24.75	23.89	20.70	23.07	22.01	21.26	18.13	25.20	24.18	23.31	20.20	23.06	22.04	21.16	18.12
			50	0	25	0	23.78	22.82	22.76	20.74	21.14	20.14	20.18	18.18	23.30	22.27	22.31	20.32	21.26	20.23	20.21	18.30

OUTPUT POWER FOR LTE BAND 66B (5.0MHz + 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
5MHz / 15MHz	1713.0	1722.3	1	24	1	0	25.67	24.58	23.84	20.84	23.12	22.24	21.45	18.40	25.12	24.01	23.38	20.40	23.10	22.16	21.29	18.11
			25	0	75	0	23.85	22.86	22.89	20.88	21.47	20.27	20.45	18.46	23.40	22.40	22.37	20.40	21.34	20.34	20.31	18.34
	1748.1	1757.4	1	24	1	0	25.70	24.80	23.97	20.72	23.20	22.06	21.42	18.14	25.11	24.30	23.27	20.19	23.20	22.18	21.30	18.16
			25	0	75	0	23.87	22.90	22.88	20.90	21.37	20.37	20.36	18.36	23.35	22.34	22.32	20.36	21.28	20.31	20.27	18.32
	1763.2	1772.5	1	24	1	0	25.70	24.90	23.89	20.90	23.15	22.29	21.21	18.33	25.20	24.41	23.42	20.35	23.09	22.13	21.24	18.30
			25	0	75	0	23.86	22.93	22.93	20.93	21.31	20.35	20.32	18.36	23.38	22.37	22.37	20.37	21.26	20.33	20.34	18.35

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	25.61	24.55	23.78	20.49	23.02	22.14	21.24	18.37	25.12	24.06	23.13	20.20	23.08	22.16	21.15	18.15
			75	0	25	0	23.64	22.65	22.70	20.69	21.17	20.20	20.21	18.22	23.12	22.12	22.16	20.13	21.18	20.17	20.19	18.19
	1752.6	1761.9	1	74	1	0	25.64	24.61	23.71	20.61	23.13	22.21	21.21	18.12	25.08	23.92	22.98	20.01	23.20	22.01	21.24	18.19
			75	0	25	0	23.64	22.63	22.72	20.69	21.12	20.13	20.14	18.11	23.10	22.16	22.10	20.11	21.10	20.17	20.14	18.18
	1767.7	1777.0	1	74	1	0	25.70	24.71	23.70	20.70	23.20	22.03	21.09	18.17	25.20	24.14	23.16	20.00	23.20	22.13	21.22	18.12
			75	0	25	0	23.68	22.75	22.74	20.71	21.13	20.12	20.12	18.14	23.14	22.13	22.16	20.16	21.16	20.19	20.19	18.17

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	25.58	24.64	23.68	20.58	23.20	22.22	21.33	18.16	25.11	24.13	23.18	20.15	23.12	22.35	21.45	18.47
			1	0	1	49	15.28	15.14	15.25	15.22	12.70	12.72	12.67	12.90	14.87	14.67	14.83	14.64	12.73	12.80	13.04	12.87
			50	0	50	0	23.71	22.68	22.75	20.74	21.28	20.28	20.32	18.34	23.26	22.25	22.23	20.30	21.31	20.33	20.36	18.36
			1	49	1	0	25.69	24.66	23.67	20.77	23.16	22.17	21.17	18.27	25.20	24.02	23.19	20.14	23.19	22.30	21.34	18.15
			1	0	1	49	15.20	15.22	15.17	15.31	12.67	12.52	12.79	12.77	14.83	14.65	14.66	14.81	12.67	12.75	12.94	12.77
			50	0	50	0	23.68	22.73	22.73	20.74	21.19	20.18	20.21	18.25	23.19	22.22	22.20	20.20	21.29	20.32	20.27	18.28
	1750.1	1760.0	1	49	1	0	25.70	24.70	23.82	20.73	23.05	22.01	21.12	18.22	25.13	24.20	23.31	20.29	23.20	22.21	21.29	18.30
			1	0	1	49	15.22	15.35	15.39	15.19	12.60	12.68	12.74	12.67	14.92	14.74	14.74	14.59	12.78	12.83	12.81	12.94
			50	0	50	0	23.76	22.77	22.80	20.77	21.17	20.19	20.21	18.21	23.25	22.22	22.26	20.25	21.30	20.32	20.28	18.34
			1	49	1	0	25.70	24.70	23.82	20.73	23.05	22.01	21.12	18.22	25.13	24.20	23.31	20.29	23.20	22.21	21.29	18.30
			1	0	1	49	15.22	15.35	15.39	15.19	12.60	12.68	12.74	12.67	14.92	14.74	14.74	14.59	12.78	12.83	12.81	12.94
			50	0	50	0	23.76	22.77	22.80	20.77	21.17	20.19	20.21	18.21	23.25	22.22	22.26	20.25	21.30	20.32	20.28	18.34

8.6. LTE BAND 66C

Test Engineer ID:	10646	Test Date:	4/16/2021
-------------------	-------	------------	-----------

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 15MHz	1715.3	1727.3	1	49	1	0	25.70	24.80	23.68	20.85	23.20	22.40	21.28	18.32	25.20	24.30	23.26	20.37
			50	0	75	0	23.85	22.85	22.89	20.89	21.33	20.34	20.35	18.38	23.40	22.39	22.43	20.45
	1747.9	1759.9	1	49	1	0	25.58	24.52	23.85	20.76	23.06	22.20	21.22	18.38	25.18	24.19	23.43	20.38
			50	0	75	0	23.87	22.88	22.89	20.87	21.27	20.29	20.33	18.28	23.36	22.40	22.42	20.39
	1760.5	1772.5	1	49	1	0	25.70	24.81	23.84	20.64	23.04	22.15	21.20	17.97	25.18	24.24	23.47	20.33
			50	0	75	0	23.93	22.89	22.88	20.90	21.25	20.29	20.31	18.31	23.41	22.39	22.43	20.40

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 10MHz	1717.5	1729.5	1	74	1	0	25.63	24.89	23.82	20.86	23.16	22.34	21.27	18.36	25.20	24.30	23.25	20.18
			75	0	50	0	23.84	22.86	22.86	20.84	21.41	20.41	20.44	18.44	23.33	22.30	22.36	20.34
	1750.1	1762.1	1	74	1	0	25.60	24.63	23.68	20.68	23.18	22.39	21.30	18.46	25.09	24.08	23.19	20.36
			75	0	50	0	23.86	22.91	22.84	20.86	21.35	20.36	20.43	18.40	23.27	22.31	22.28	20.29
	1762.7	1774.7	1	74	1	0	25.70	24.81	23.92	21.00	23.20	22.26	21.27	18.35	25.13	24.28	23.05	20.43
			75	0	50	0	23.88	22.89	22.94	20.91	21.34	20.36	20.39	18.34	23.27	22.33	22.35	20.31

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 20MHz	1715.5	1729.9	1	49	1	0	25.70	24.71	23.74	20.72	23.20	22.39	21.06	18.29	25.20	24.17	23.21	20.41
			50	0	100	0	23.78	22.80	22.81	20.78	21.33	20.33	20.40	18.36	23.34	22.36	22.38	20.36
	1745.6	1760.0	1	49	1	0	25.67	24.66	23.94	20.82	23.13	22.29	21.46	18.31	25.10	24.35	23.33	20.27
			50	0	100	0	23.79	22.83	22.79	20.85	21.30	20.29	20.29	18.30	23.30	22.32	22.35	20.31
	1755.6	1770.0	1	49	1	0	25.68	24.73	23.85	20.85	23.07	22.12	21.20	18.15	25.08	24.22	23.21	19.95
			50	0	100	0	23.82	22.86	22.81	20.80	21.28	20.25	20.30	18.30	23.31	22.35	22.36	20.33

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20MHz / 10MHz	1720.0	1734.4	1	99	1	0	25.68	24.89	23.84	20.79	23.20	22.32	21.14	18.11	25.08	24.10	23.19	20.10
			100	0	50	0	23.90	22.85	22.90	20.88	21.28	20.29	20.33	18.37	23.36	22.30	22.34	20.34
	1750.1	1764.5	1	99	1	0	25.67	24.85	23.88	20.77	23.15	22.18	21.27	18.25	25.12	24.28	23.18	20.36
			100	0	50	0	23.91	22.92	22.88	20.91	21.23	20.24	20.28	18.23	23.31	22.30	22.31	20.28
	1760.1	1774.5	1	99	1	0	25.70	24.83	23.86	20.75	22.97	22.02	21.27	18.25	25.20	24.10	23.31	19.92
			100	0	50	0	23.93	22.97	22.95	20.91	21.21	20.25	20.27	18.26	23.33	22.36	22.32	20.33

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 15MHz	1717.5	1732.5	1	74	1	0	25.62	24.65	23.82	20.75	23.14	22.43	21.33	18.39	25.20	24.25	23.51	20.33
			75	0	75	0	23.95	22.96	22.94	20.88	21.41	20.40	20.44	18.49	23.37	22.40	22.41	20.39
	1747.5	1762.5	1	74	1	0	25.70	24.63	23.77	20.77	23.20	22.24	21.26	18.27	25.12	24.17	23.21	20.19
			75	0	75	0	23.93	22.94	22.91	20.94	21.32	20.38	20.38	18.36	23.37	22.36	22.40	20.36
	1757.5	1772.5	1	74	1	0	25.69	24.79	23.79	20.70	23.14	22.12	21.31	18.29	25.18	24.33	23.26	20.28
			75	0	75	0	23.95	22.96	22.93	20.95	21.32	20.36	20.39	18.35	23.36	22.38	22.39	20.39

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			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
15MHz / 20MHz	1717.8	1734.9	1	74	1	0	25.64	24.71	23.81	20.80	23.06	22.22	21.45	18.14	25.17	24.41	23.40	20.49
			75	0	100	0	23.85	22.87	22.91	20.91	21.34	20.43	20.38	18.40	23.49	22.52	22.53	20.49
	1745.3	1762.4	1	74	1	0	25.70	24.69	23.79	20.65	23.15	22.10	21.20	18.27	25.18	24.38	23.38	20.30
			75	0	100	0	23.91	22.90	22.87	20.90	21.33	20.34	20.36	18.34	23.46	22.49	22.51	20.51
	1752.9	1770.0	1	74	1	0	25.63	24.78	23.79	20.93	23.20	22.15	21.34	18.43	25.20	24.22	23.51	20.43
			75	0	100	0	23.90	22.92	22.91	20.89	21.32	20.36	20.36	18.36	23.47	22.51	22.49	20.47

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)															
			Size	Offset	Size	Offset	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	24.84	23.92	20.90	23.08	22.41	21.38	18.39	25.14	24.29	23.49	19.97	23.20	22.01	21.35	18.33
			100	0	75	0	23.99	23.03	23.01	21.00	21.47	20.49	20.50	18.50	23.38	22.39	22.42	20.39	21.38	20.42	20.44	18.38
			1	99	1	0	25.67	24.82	23.89	21.07	23.17	22.40	21.33	18.67	25.20	24.28	23.06	20.07	23.14	22.29	21.23	18.42
	1747.6	1764.7	100	0	75	0	24.01	23.03	22.97	21.02	21.42	20.44	20.47	18.43	23.31	22.34	22.35	20.33	21.35	20.43	20.38	18.39
			1	99	1	0	25.70	24.96	23.79	20.87	23.20	22.07	21.36	18.21	25.09	24.18	23.26	20.24	23.14	22.04	21.42	18.28
			100	0	75	0	24.03	23.01	22.98	21.03	21.41	20.45	20.47	18.44	23.35	22.36	22.36	20.38	21.41	20.40	20.42	18.39

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	Conducted Average (dBm)															
			Size	Offset	Size	Offset	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	25.70	24.78	23.86	20.72	23.20	22.47	21.35	18.36	25.16	24.30	23.34	20.28	23.12	22.36	20.56	18.27
			100	0	25	0	23.70	22.68	22.73	20.73	21.31	20.33	20.40	18.38	23.30	22.29	22.38	20.33	21.27	20.28	20.35	18.31
			1	99	1	0	25.51	24.47	23.67	20.91	23.10	22.37	21.28	18.22	25.14	24.38	23.16	20.36	23.20	22.22	21.37	18.27
	1752.5	1764.2	1	99	1	0	23.70	22.74	22.69	20.73	21.29	20.29	20.35	18.29	23.31	22.32	22.34	20.28	21.27	20.28	20.29	18.32
			100	0	25	0	25.63	24.67	23.71	20.80	22.91	22.24	21.12	18.14	25.20	24.25	23.47	20.16	23.00	22.13	21.33	18.25
			1	99	1	0	23.77	22.77	22.71	20.76	21.29	20.33	20.33	18.30	23.30	22.36	22.37	20.34	21.28	20.28	20.33	18.32

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

Bandwidth	PCC Frequency	SCC1 Frequency	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)															
	Frequency (MHz)	Frequency (MHz)	Size	Offset	Size	Offset	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	24.72	23.69	20.79	23.20	22.18	21.46	18.30	25.20	24.27	23.26	20.27	23.20	22.23	20.96	18.07
			25	0	100	0	23.81	22.77	22.81	20.79	21.27	20.24	20.28	18.24	23.29	22.32	22.34	20.29	21.15	20.20	20.23	18.25
			1	24	1	0	25.58	24.76	23.96	20.81	23.02	22.12	21.17	18.14	25.18	24.21	23.34	20.36	22.94	22.21	21.18	18.19
	1745.8	1757.5	25	0	100	0	23.84	22.81	22.82	20.85	21.17	20.19	20.19	18.21	23.27	22.26	22.23	20.29	21.12	20.13	20.17	18.15
			1	24	1	0	25.56	24.76	23.76	20.70	23.05	22.09	21.15	18.18	25.06	24.19	23.26	20.27	23.12	22.05	21.25	18.05
			25	0	100	0	23.86	22.83	22.77	20.84	21.17	20.16	20.17	18.17	23.27	22.20	22.25	20.23	21.13	20.16	20.17	18.23

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB	PCC RB	SCC1 RB	SCC1 RB	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	25.70	24.66	23.86	20.83	23.19	22.19	21.24	18.18	25.20	24.28	23.34	20.13	23.20	22.17	21.33	18.27
			1	0	1	99	16.25	16.46	16.48	15.04	13.34	13.48	13.36	11.88	16.11	16.20	16.31	14.71	12.39	12.47	12.44	11.18
			100	0	100	0	24.01	22.99	22.97	21.00	21.47	20.50	20.52	18.53	23.47	22.44	22.49	20.52	21.35	20.38	20.44	18.41
			1	99	1	0	25.62	24.90	23.80	20.84	23.20	22.13	21.51	18.43	25.14	24.39	23.27	20.22	23.16	22.09	21.33	18.04
	1745.1	1764.9	1	0	1	99	16.48	16.60	16.54	15.37	13.50	13.43	13.56	12.37	16.18	16.54	16.44	15.09	12.62	12.59	12.80	11.43
			100	0	100	0	23.97	23.02	22.98	21.03	21.40	20.41	20.45	18.45	23.46	22.47	22.46	20.45	21.37	20.40	20.41	18.38
			1	99	1	0	25.57	24.69	23.73	20.87	23.19	22.14	21.35	18.30	25.14	24.26	23.47	20.40	23.12	22.23	21.35	18.14
			1	0	1	99	16.38	16.42	16.42	15.06	13.41	13.46	13.59	12.25	16.19	16.16	16.34	15.04	12.38	12.53	12.77	11.37
	1750.2	1770.0	100	0	100	0	23.96	23.03	22.96	21.03	21.43	20.44	20.45	18.46	23.44	22.47	22.48	20.49	21.35	20.34	20.38	18.39

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	7.371	7.81
	3MHz + 5MHz BAND 16QAM			7.363	7.81
	5MHz + 3MHz BAND QPSK	25/0 + 15/0		7.396	7.84
	5MHz + 3MHz BAND 16QAM			7.398	7.84
	5MHz + 10MHz BAND QPSK	25/0 + 50/0		13.835	14.50
	5MHz + 10MHz BAND 16QAM			13.832	14.50
	10MHz + 5MHz BAND QPSK	50/0 + 25/0		13.836	14.55
	10MHz + 5MHz BAND 16QAM			13.844	14.58
	10MHz + 10MHz BAND QPSK	50/0 + 50/0		18.742	19.77
	10MHz + 10MHz BAND 16QAM			18.713	19.66

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	28.181	30.38
	10MHz + 20MHz BAND 16QAM			28.040	30.12
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		28.150	30.30
	20MHz + 10MHz BAND 16QAM			28.145	30.31
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.687	30.77
	15MHz + 15MHz BAND 16QAM			28.599	30.89
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.915	35.35
	15MHz + 20MHz BAND 16QAM			32.868	35.23
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.883	35.27
	20MHz + 15MHz BAND 16QAM			32.911	35.26
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.728	40.33
	20MHz + 20MHz BAND 16QAM			37.639	40.27

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	23.285	25.08
	5MHz + 20MHz BAND 16QAM			23.261	25.02
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		23.249	25.04
	20MHz + 5MHz BAND 16QAM			23.222	24.93
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.942	29.91
	10MHz + 20MHz BAND 16QAM			27.673	29.68
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.966	29.97
	20MHz + 10MHz BAND 16QAM			28.049	29.93
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.530	30.74
	15MHz + 15MHz BAND 16QAM			28.584	30.90
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.766	35.05
	15MHz + 20MHz BAND 16QAM			32.785	34.96
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.870	35.01
	20MHz + 15MHz BAND 16QAM			32.856	34.96
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.679	39.89
	20MHz + 20MHz BAND 16QAM			37.564	39.87

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	23.174	24.95
	5MHz + 20MHz BAND 16QAM			22.718	24.40
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		22.538	23.59
	20MHz + 5MHz BAND 16QAM			23.263	24.39
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.390	29.79
	10MHz + 20MHz BAND 16QAM			27.627	29.65
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.603	29.01
	20MHz + 10MHz BAND 16QAM			27.552	28.84
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.445	34.82
	15MHz + 20MHz BAND 16QAM			32.624	34.78
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.344	33.78
	20MHz + 15MHz BAND 16QAM			32.591	34.23
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.100	38.77
	20MHz + 20MHz BAND 16QAM			36.893	38.81

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	9.235	9.69
	5MHz + 5MHz BAND 16QAM			9.234	9.70
	5MHz + 10MHz BAND QPSK	25/0 + 50/0		13.867	14.45
	5MHz + 10MHz BAND 16QAM			13.849	14.53
	10MHz + 5MHz BAND QPSK	50/0 + 25/0		13.860	14.43
	10MHz + 5MHz BAND 16QAM			13.842	14.46
	5MHz + 15MHz BAND QPSK	25/0 + 75/0		18.133	18.84
	5MHz + 15MHz BAND 16QAM			18.132	18.89
	15MHz + 5MHz BAND QPSK	75/0 + 25/0		18.122	18.95
	15MHz + 5MHz BAND 16QAM			18.144	18.96
	10MHz + 10MHz BAND QPSK	50/0 + 50/0		18.742	19.65
	10MHz + 10MHz BAND 16QAM			18.752	19.65

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	22.667	23.81
	10MHz + 15MHz BAND 16QAM			22.803	23.88
	15MHz + 10MHz BAND QPSK	75/0 + 50/0		22.852	23.92
	15MHz + 10MHz BAND 16QAM			22.924	23.91
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.205	28.53
	10MHz + 20MHz BAND 16QAM			27.400	28.62
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.486	28.80
	20MHz + 10MHz BAND 16QAM			27.541	28.72
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		27.880	29.27
	15MHz + 15MHz BAND 16QAM			28.065	29.42
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.188	33.60
	15MHz + 20MHz BAND 16QAM			32.440	33.87
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.273	33.60
	20MHz + 15MHz BAND 16QAM			32.288	33.77
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		22.668	23.83
	20MHz + 5MHz BAND 16QAM			22.684	23.71
	5MHz + 20MHz BAND QPSK	25/0 + 100/0		22.257	23.43
	5MHz + 20MHz BAND 16QAM			22.445	23.41
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.013	38.80
	20MHz + 20MHz BAND 16QAM			37.249	38.71

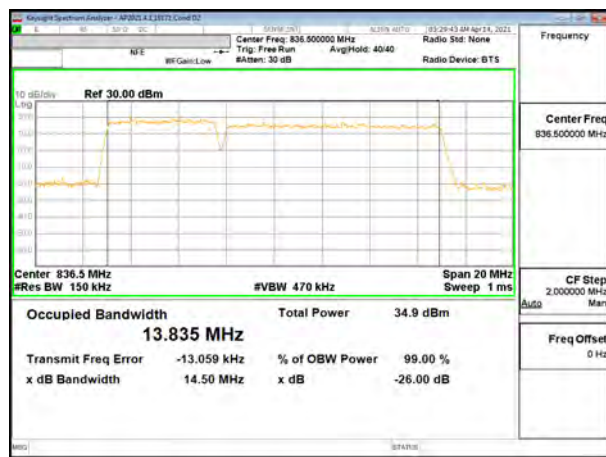
9.1.1. LTE BAND 5



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

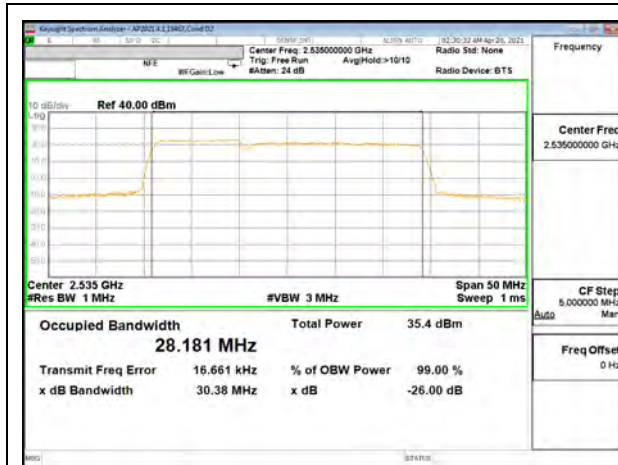


LTE B5 10MHz + 5MHz QPSK RB50-0 + RB25-0



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

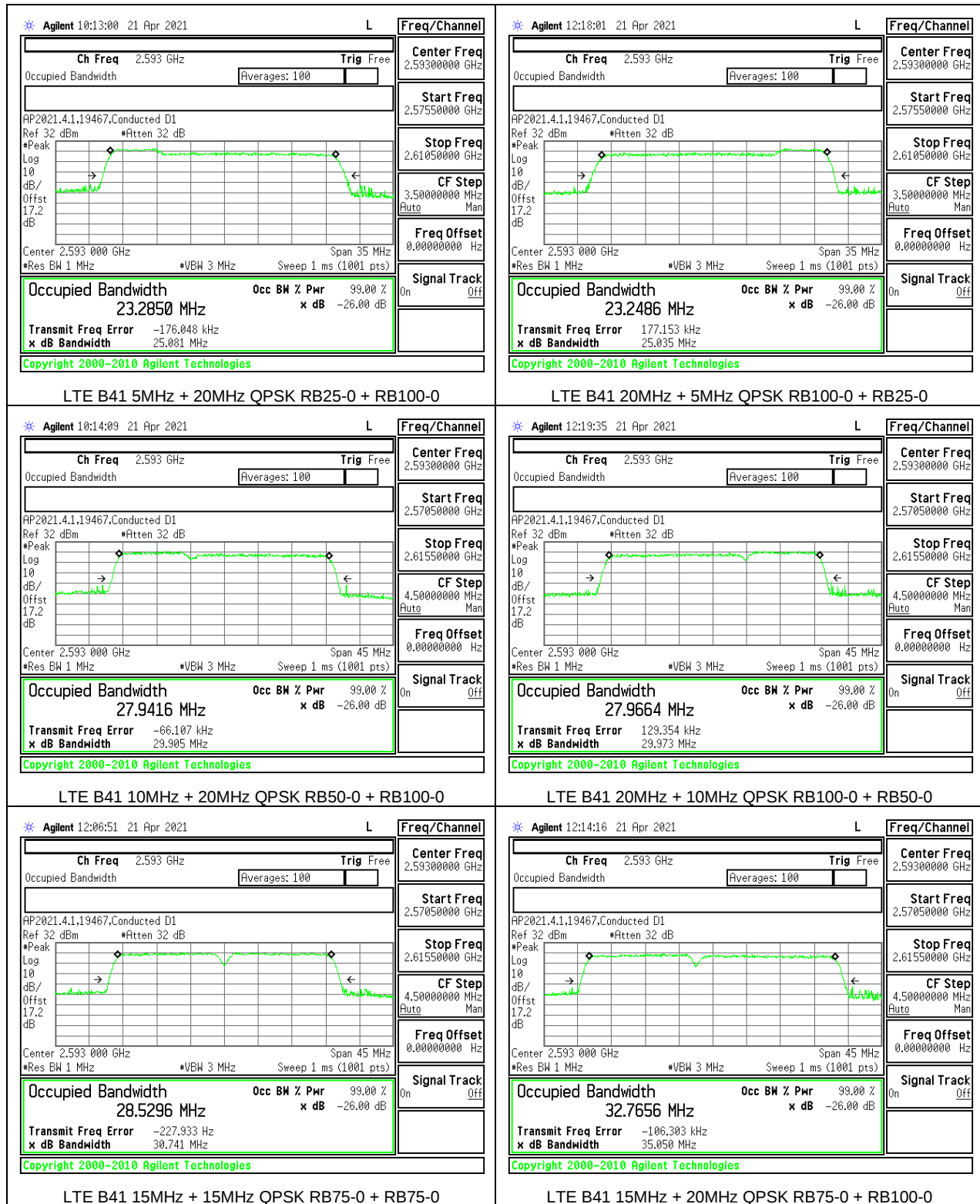


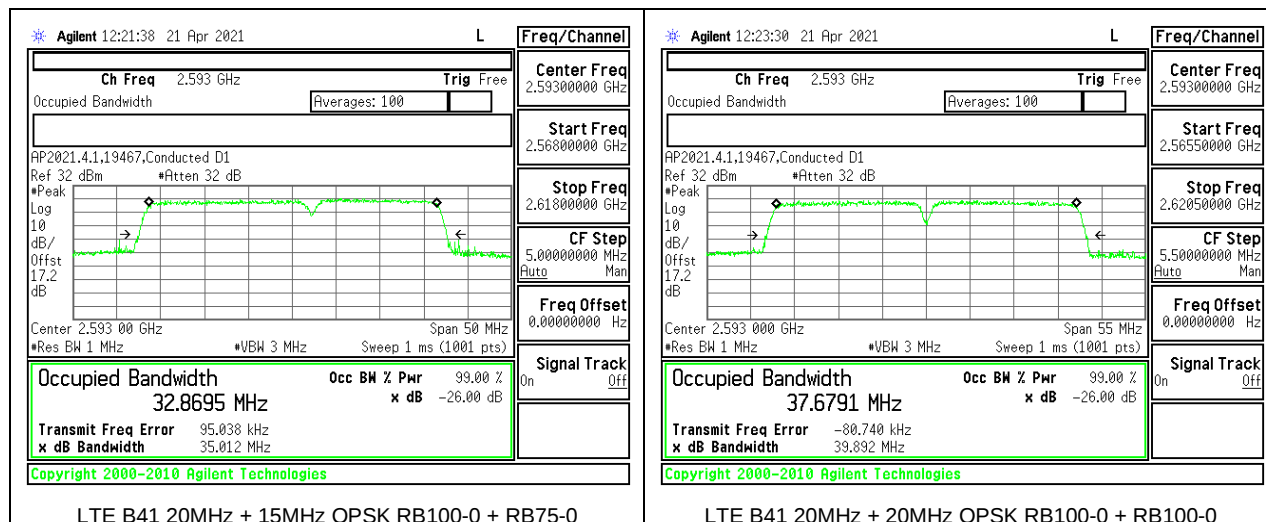
LTE B7 20MHz + 15MHz QPSK RB100-0 + RB75-0



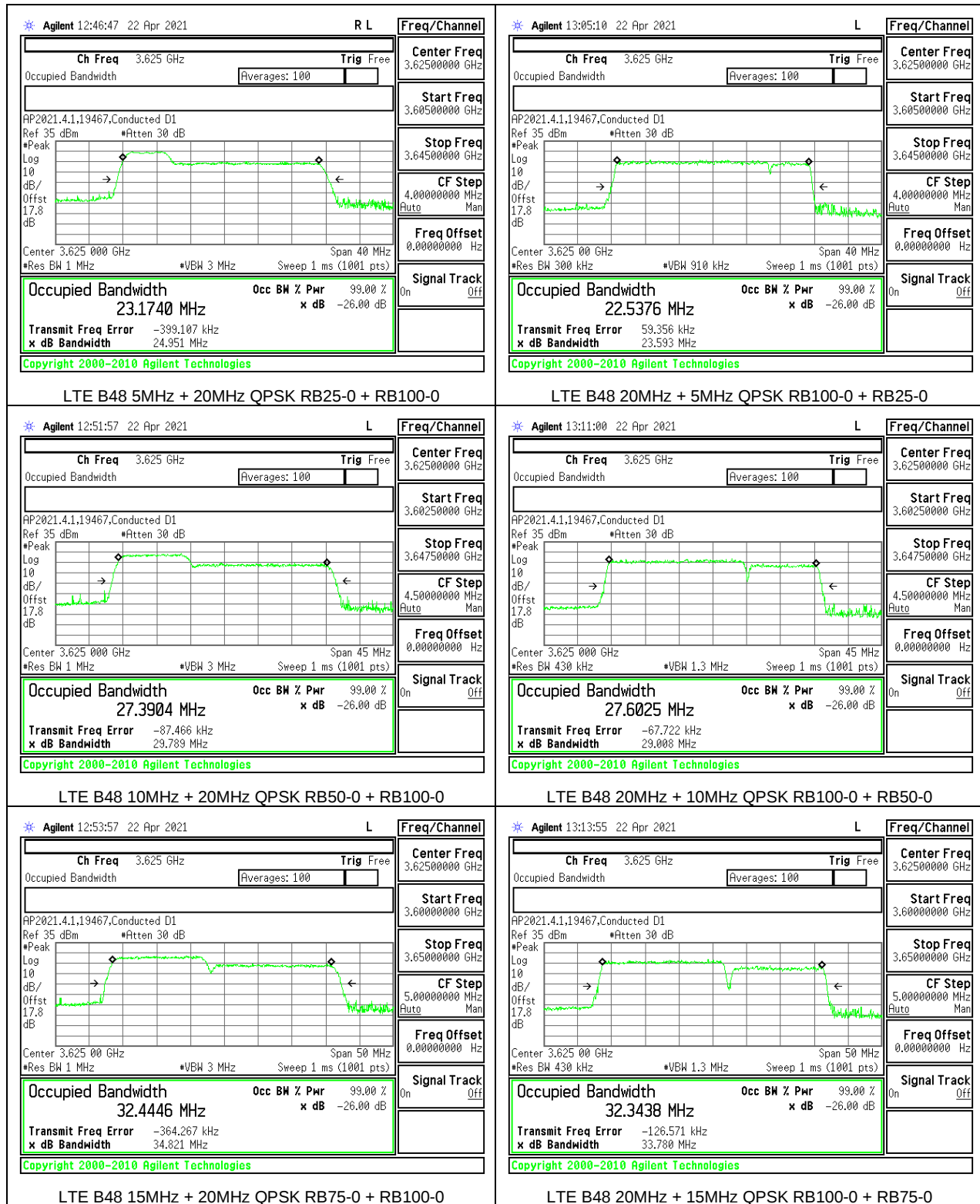
LTE B7 20MHz + 20MHz QPSK RB100-0 + RB100-0

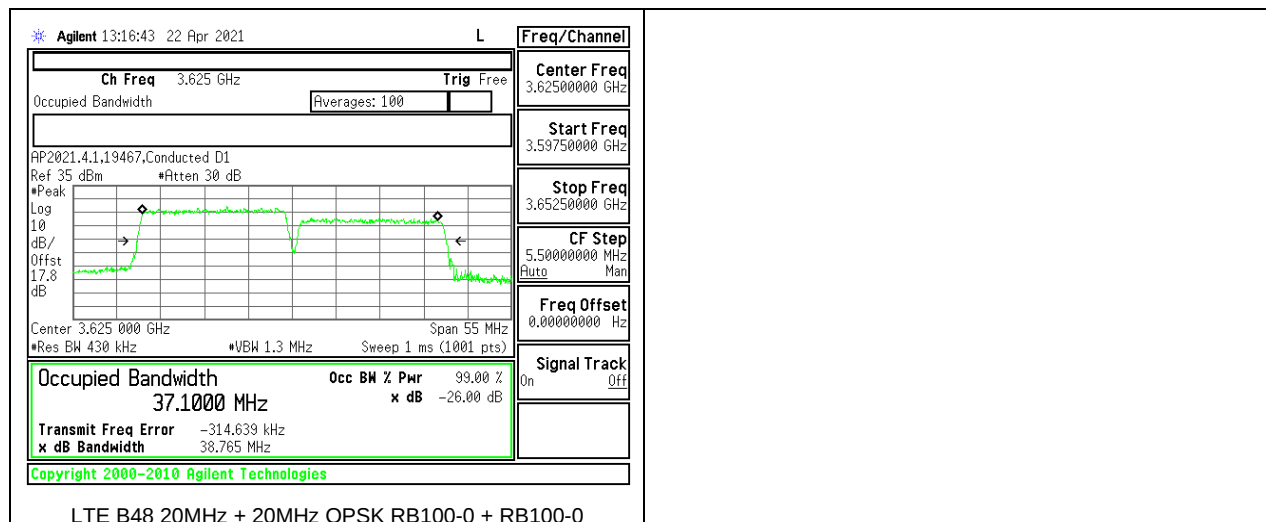
9.1.3. LTE BAND 41





9.1.4. LTE BAND 48

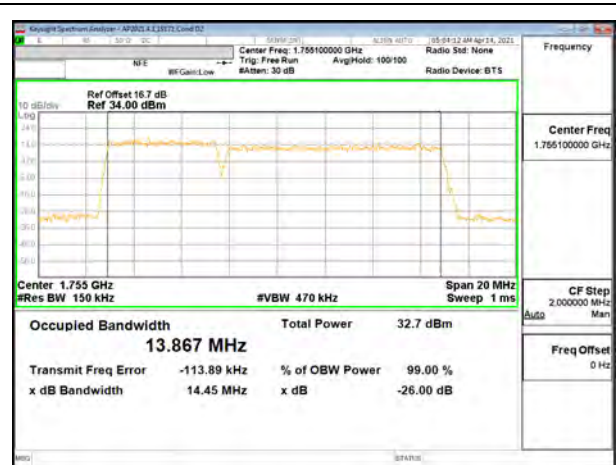




9.1.5. LTE BAND 66B



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



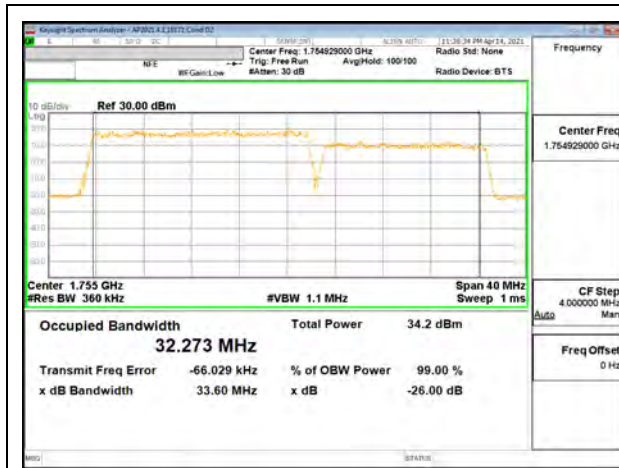
LTE B66B 15MHz + 5MHz QPSK RB75-0 + RB25-0



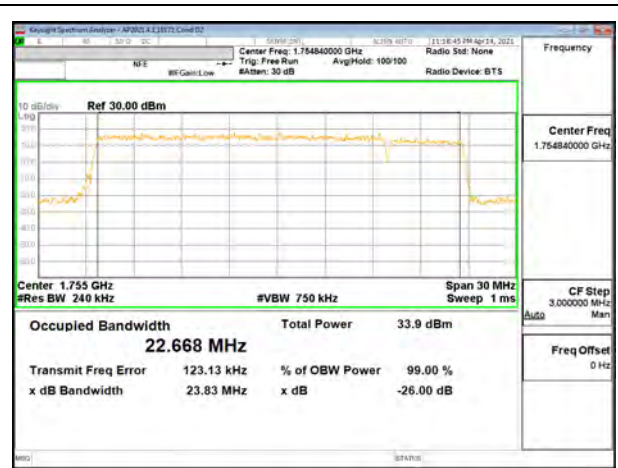
LTE B66B 10MHz + 10MHz QPSK RB50-0 + RB50-0

9.1.6. LTE BAND 66C





LTE B66C 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. EMISSION MASK AND ADJACENT CHANNEL POWER

For Spectrum Emission Mask plots, the Keysight PXA N9030A is configured to sweep with a moving integration window, the width of which can be adjusted to different sizes across the sweep. The window width is configured to be greater than or equal to the required reference bandwidth. The center frequencies of the integration window for the different integration windows was set such that the upper and lower edges of the windows are aligned with the transition points in the reference bandwidths. This is achieved by setting the start / stop frequencies of the window with an offset equal to the reference bandwidth / 2 from the transition point.

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.



9.2.2. LTE BAND 7 EMISSION MASK

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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.





9.2.3. LTE BAND 41 EMISSION MASK

LIMITS

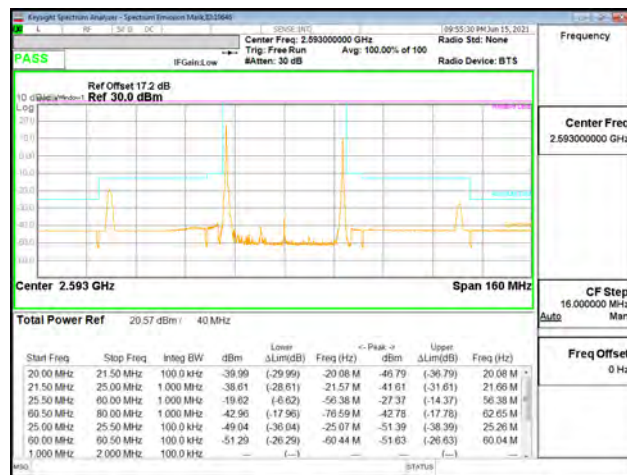
FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ 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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



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



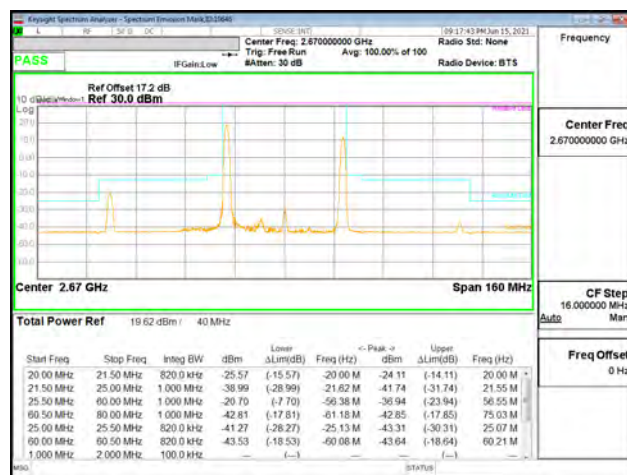
LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



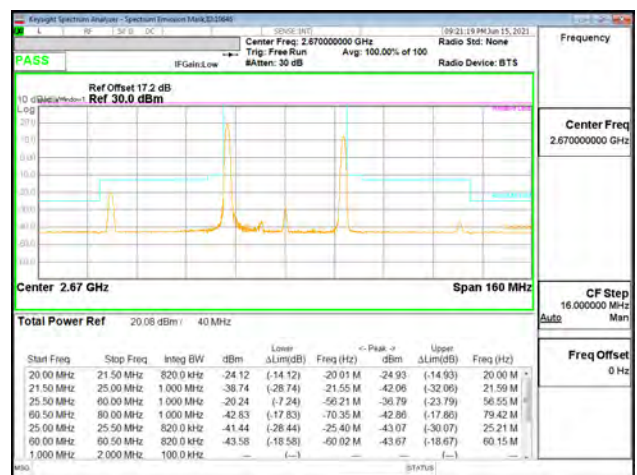
LTE B41 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



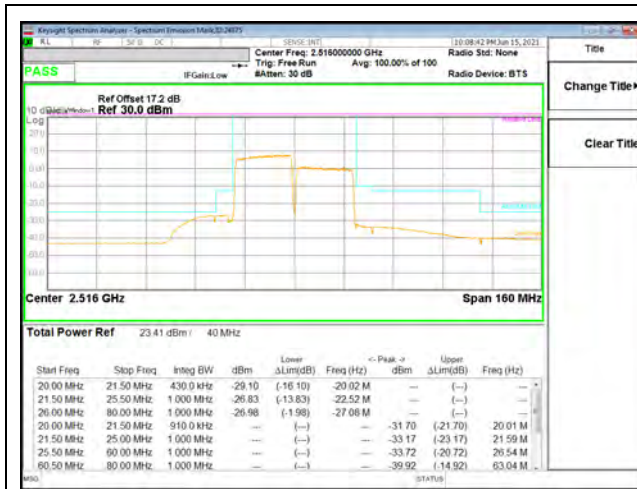
LTE B41 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



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



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



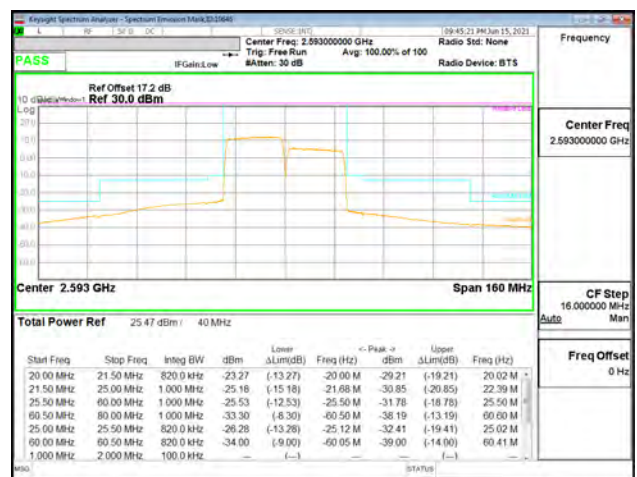
LTE B41 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



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 EMISSION MASK AND ADJACENT CHANNEL POWER

LIMITS

FCC: §96.41

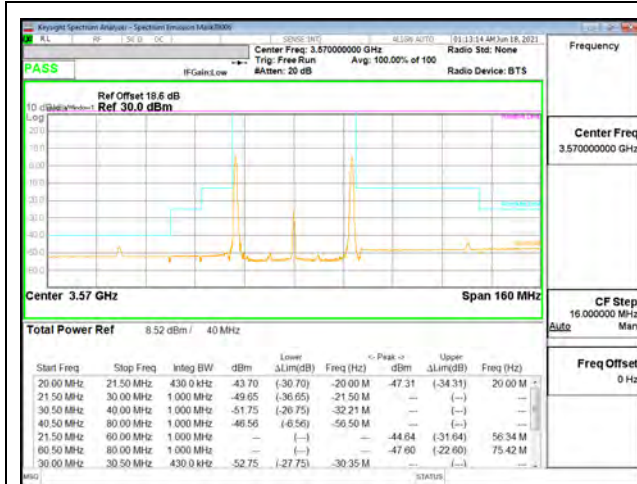
(e) 3.5 GHz Emissions and Interference Limits—

(1) General protection levels

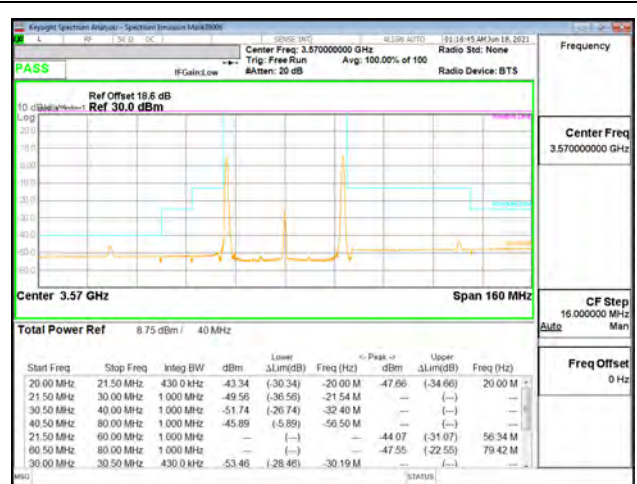
(ii) Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz 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 -40 dBm/MHz.
licensees.

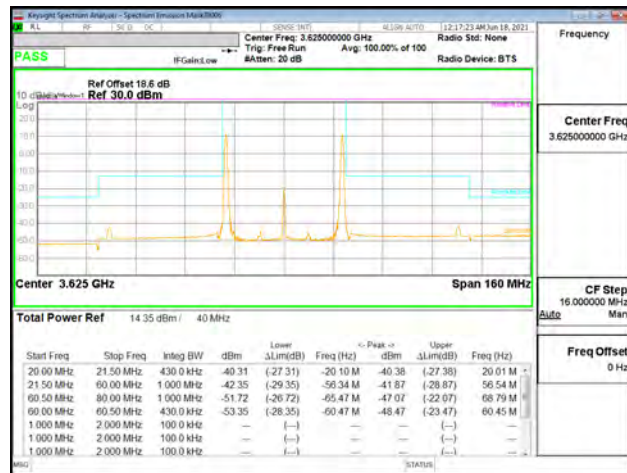
LTE BAND 48 EMISSION MASK



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



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



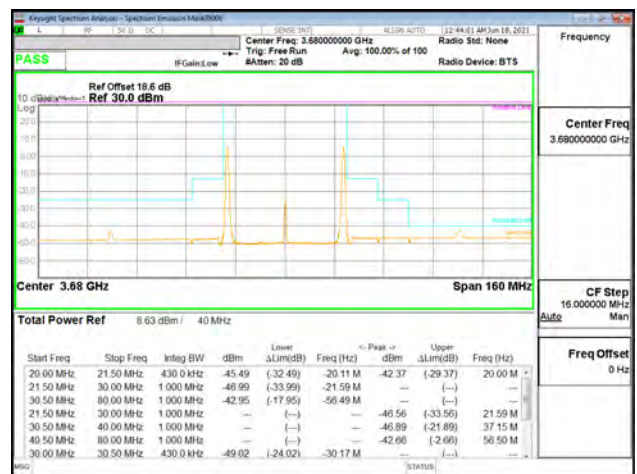
LTE B48 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



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



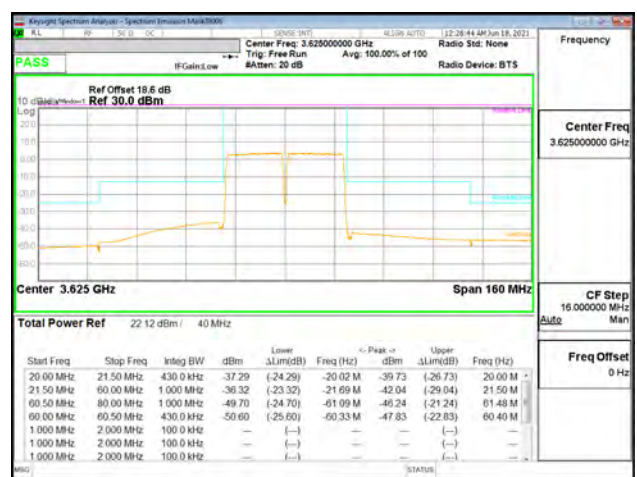
LTE B48 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



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

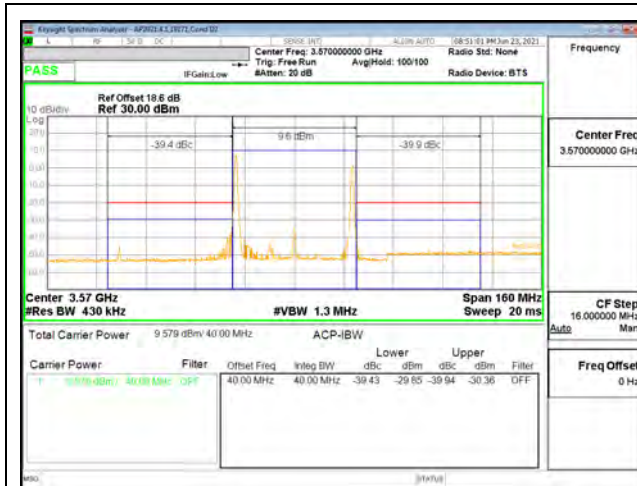


LTE B48 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0



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

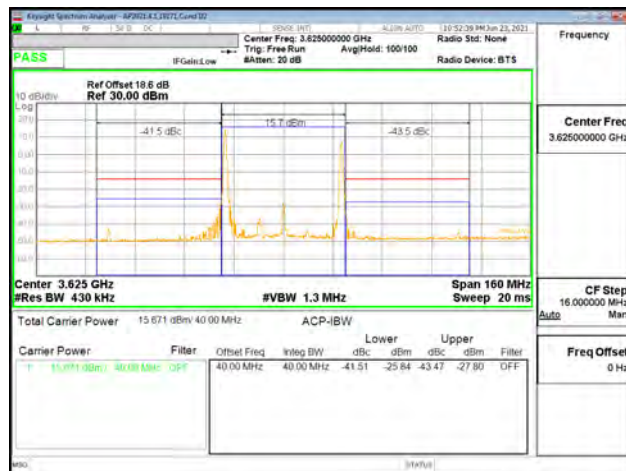
LTE BAND 48 ADJACENT CHANNEL POWER



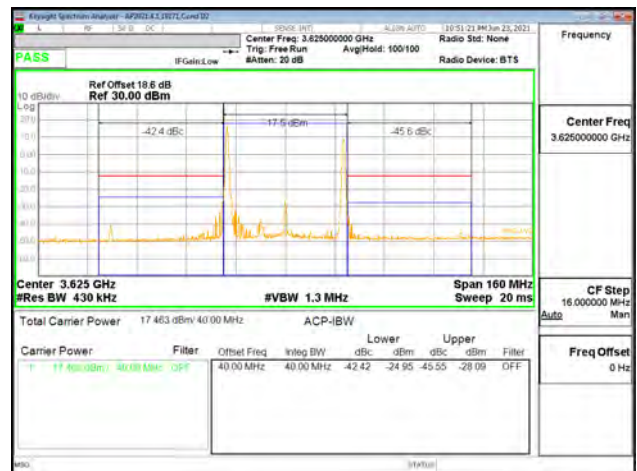
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



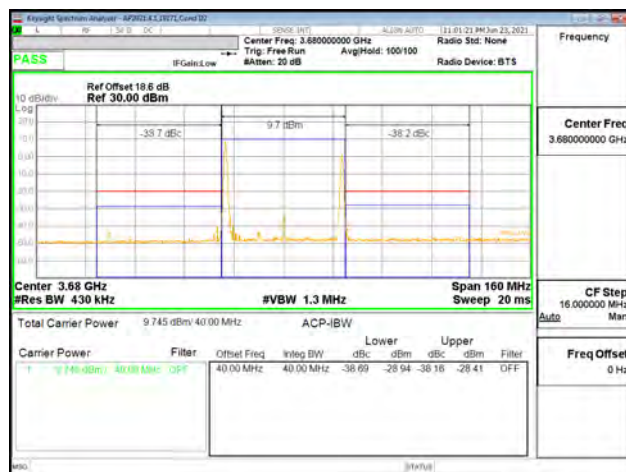
LTE B48 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



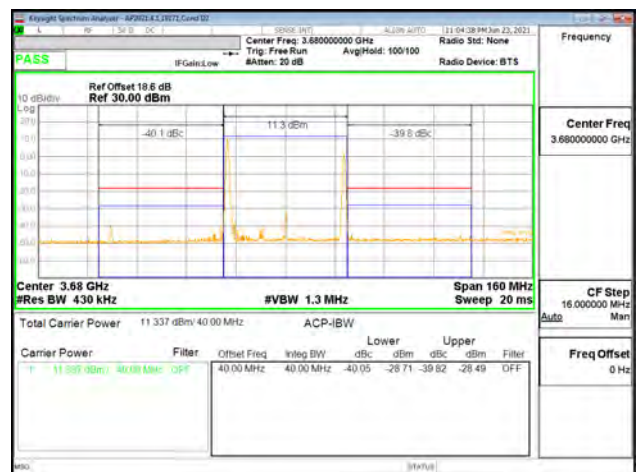
LTE B48 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



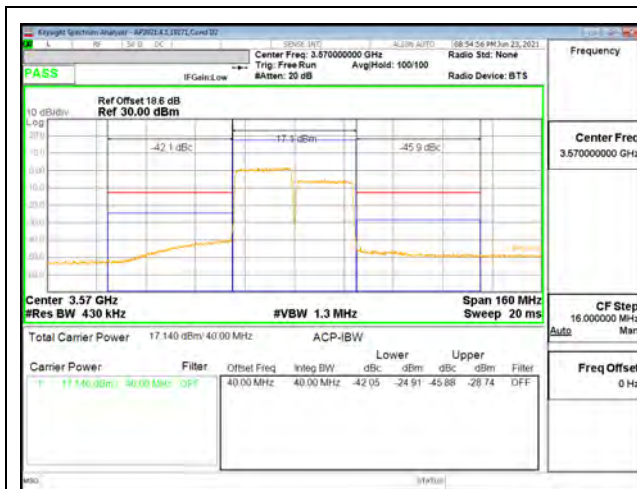
LTE B48 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



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



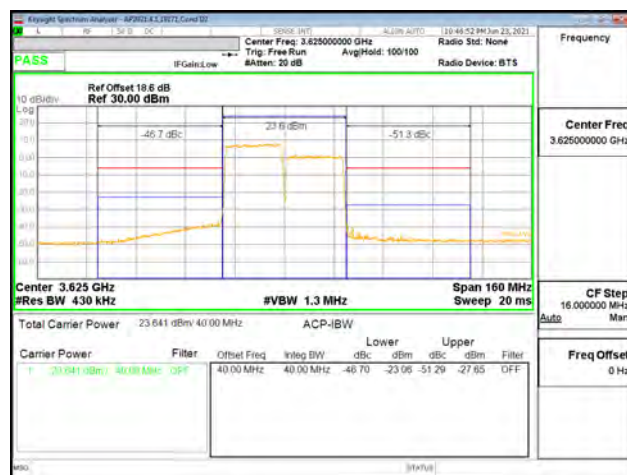
LTE B48 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



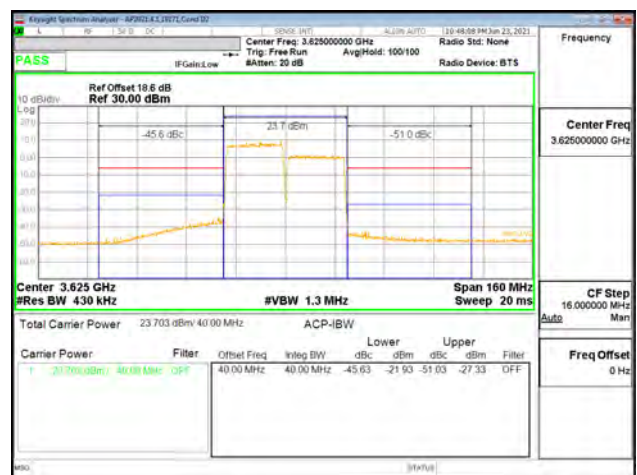
LTE B48 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



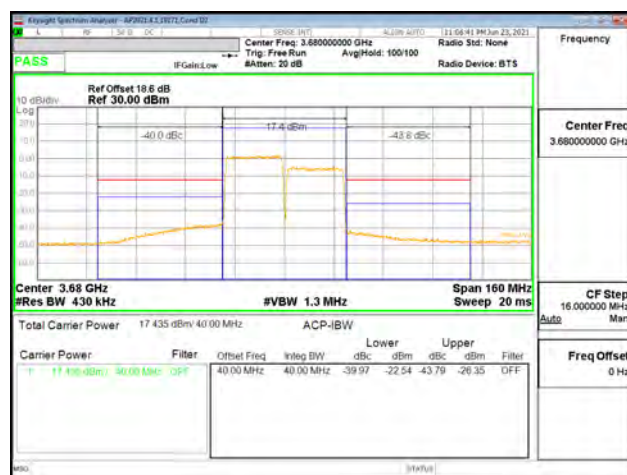
LTE B48 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



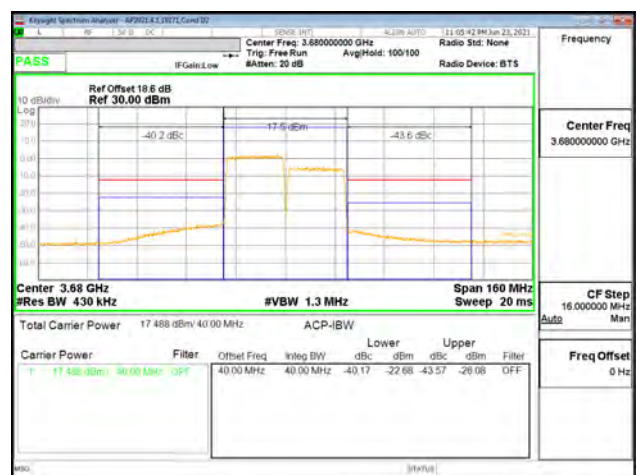
LTE B48 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



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 EMISSION MASK

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.





9.2.6. LTE BAND 66C EMISSION MASK

LIMITS

FCC: §27.53(h)

The power of any emission outside 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 + RB1-0



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



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



LTE B66C 20MHz + 20MHz QPSK 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

9.3.1. LTE BAND 5

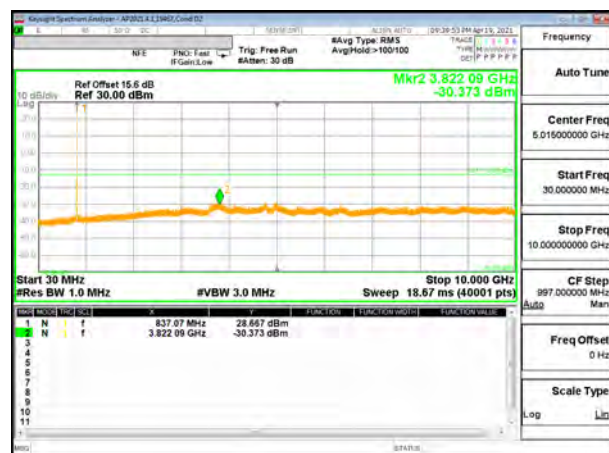
LIMITS

FCC: §22.917

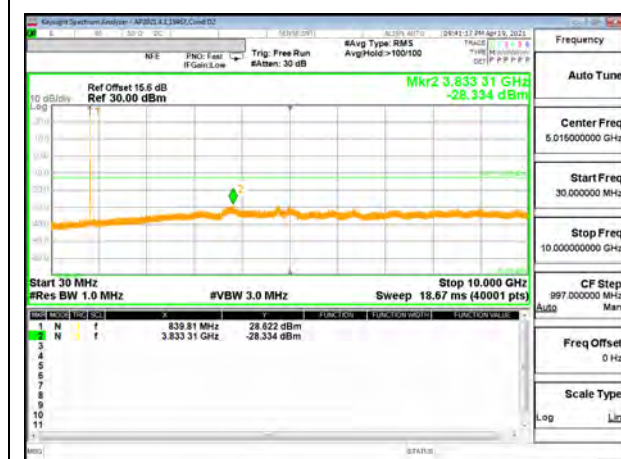
The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log(P)$ dB where transmitting power (P) in Watts.



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



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



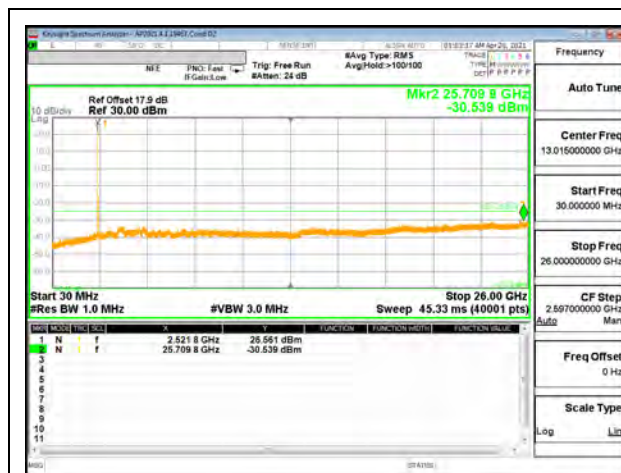
LTE B5 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0

9.3.2. LTE BAND 7

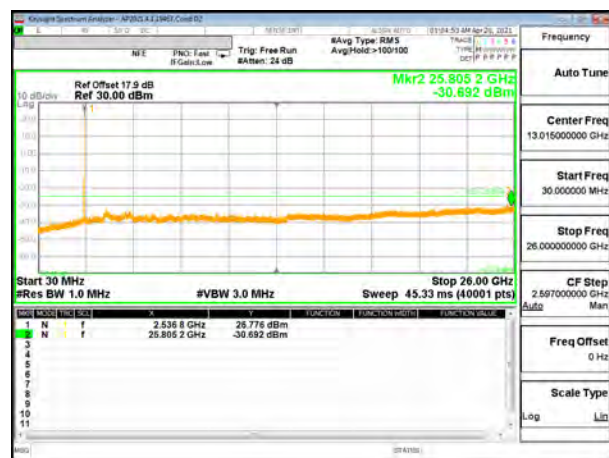
LIMITS

FCC: §27.53 (m)

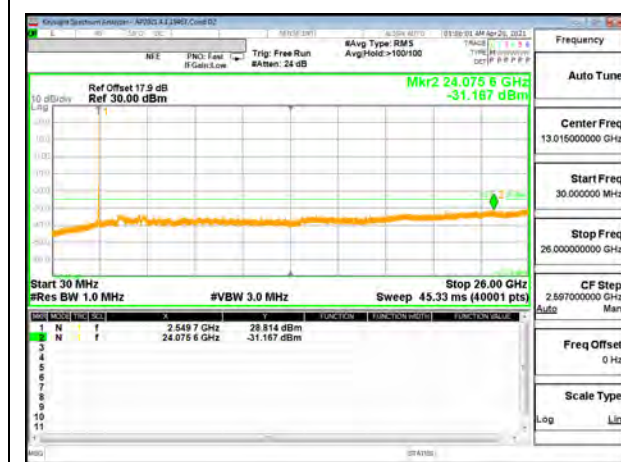
The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.



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



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



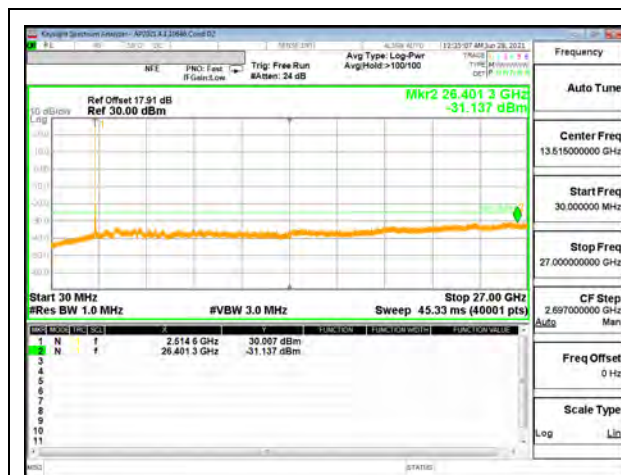
LTE B7 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0

9.3.3. LTE BAND 41

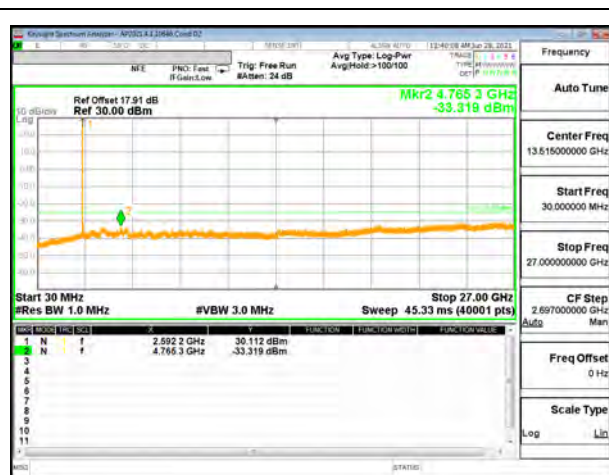
LIMITS

FCC: §27.53 (m)

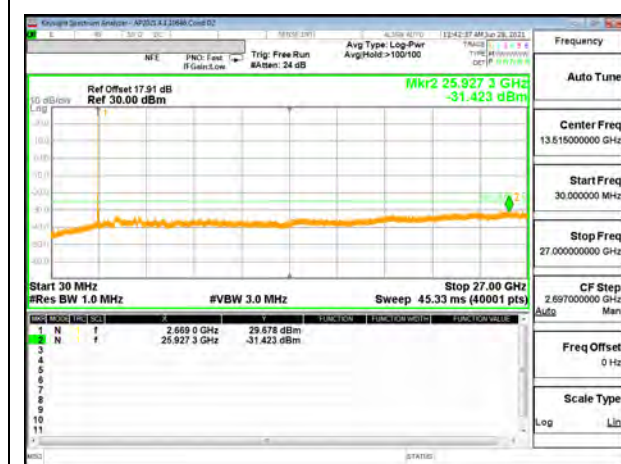
The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.



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

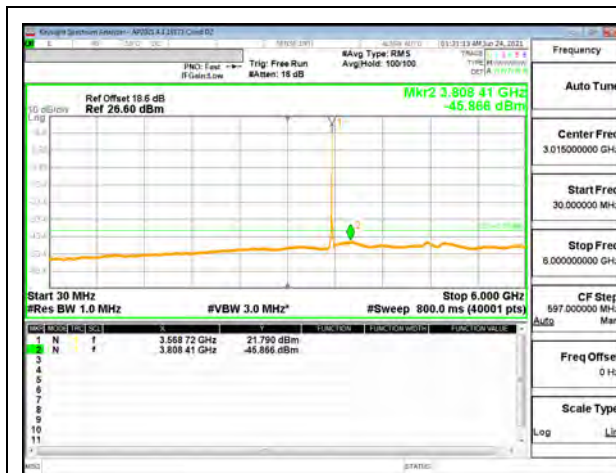
9.3.4. LTE BAND 48

LIMITS

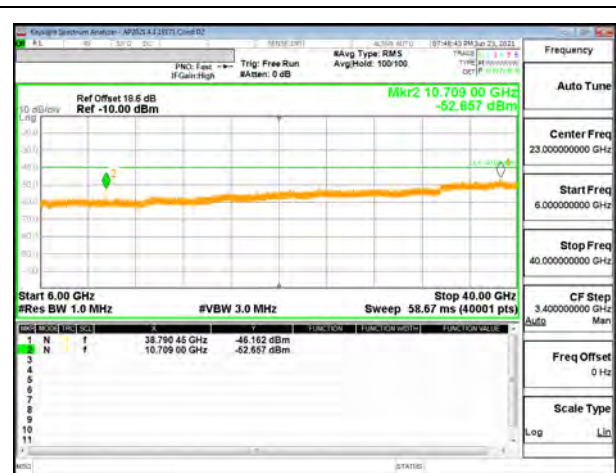
FCC: §96.41

(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.



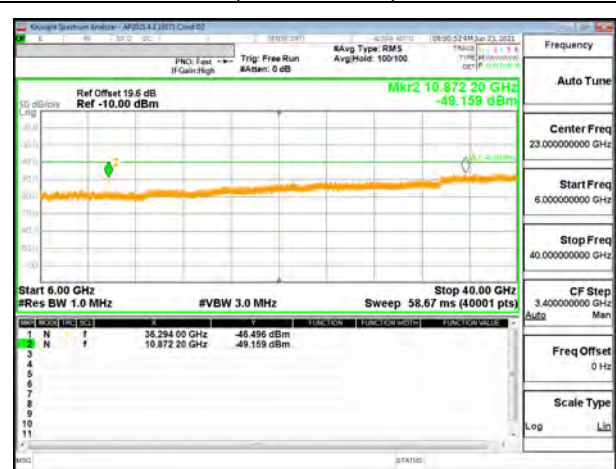
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0
(30MHz to 6GHz)



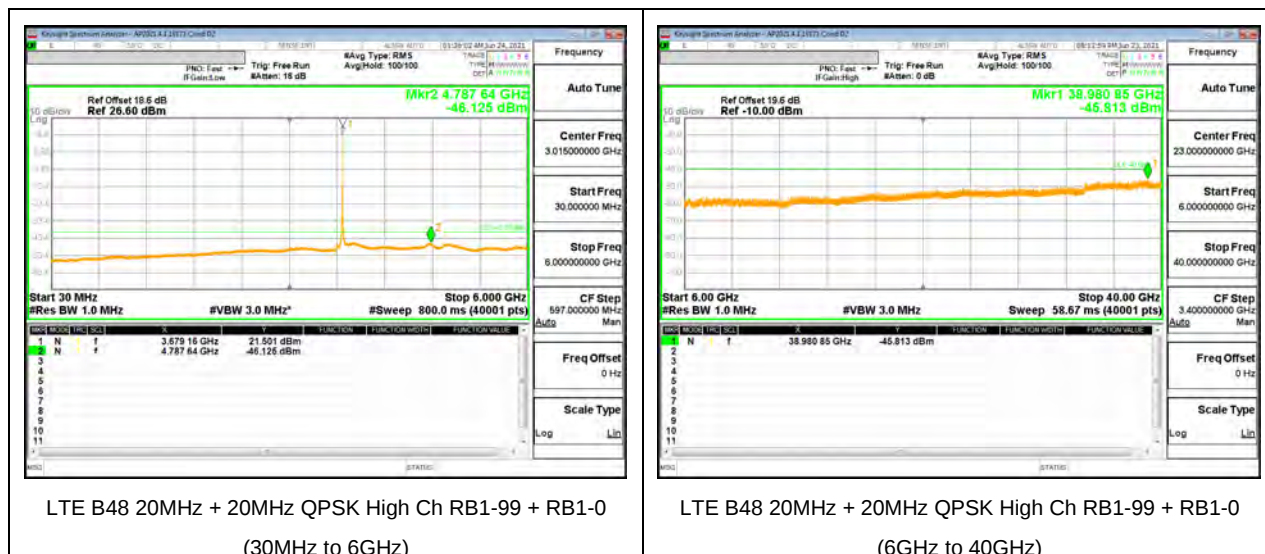
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0
(6GHz to 40GHz)



LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0
(30MHz to 6GHz)



LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0
(6GHz to 40GHz)

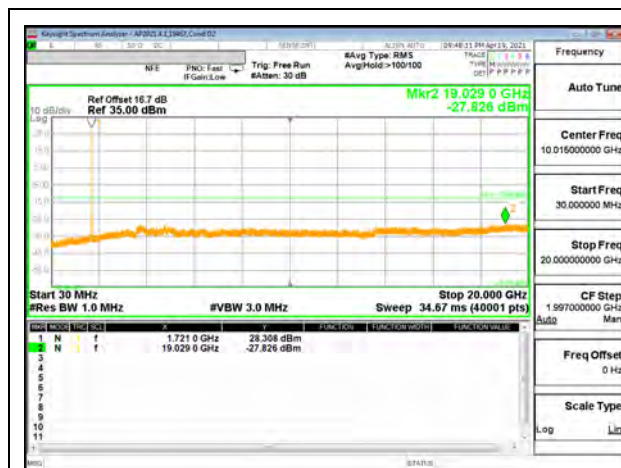


9.3.5. LTE BAND 66B

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



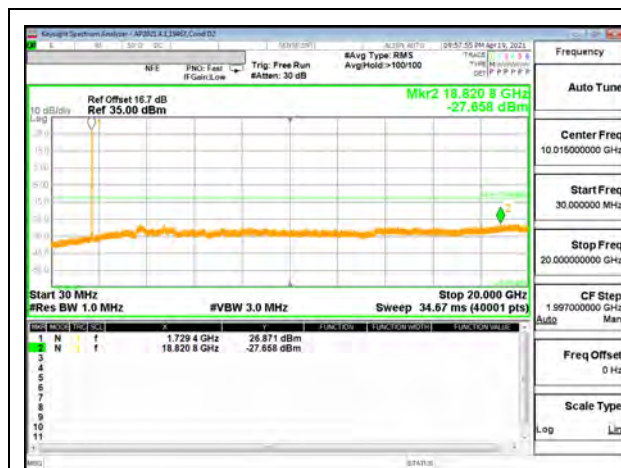
LTE B66B 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-0

9.3.6. LTE BAND 66C

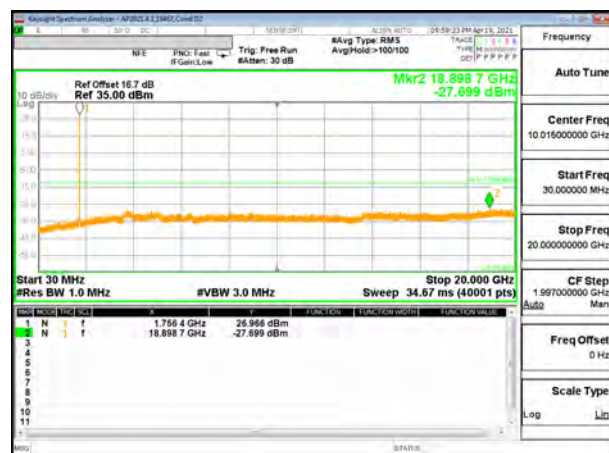
LIMITS

FCC: §27.53 (h)

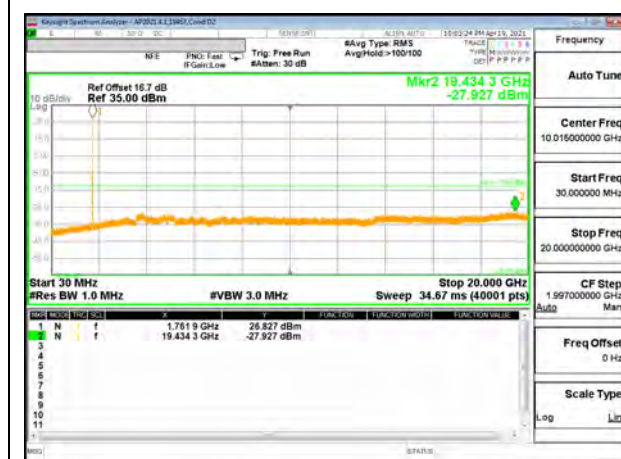
The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.



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, 3.80VDC and High voltage, 4.37VDC.
End Voltage, 3.00VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C 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 +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

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.

Test Engineer ID:	10646	Test Date:	5/23/2021
-------------------	-------	------------	-----------

QPSK (10MHz + 10MHz BANDWIDTH)

Limit		824	849	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ -13dBm (MHz)	F high @ -13dBm (MHz)		
Temperature	Voltage				
Normal (20C)	Normal	824.5626	848.4024		
Extreme (50C)		824.5626	848.4024	27.7	0.033
Extreme (40C)		824.5626	848.4024	27.2	0.033
Extreme (30C)		824.5626	848.4024	27.8	0.033
Extreme (10C)		824.5626	848.4024	-11.3	-0.014
Extreme (0C)		824.5626	848.4023	-25.1	-0.030
Extreme (-10C)		824.5625	848.4023	-32.1	-0.038
Extreme (-20C)		824.5625	848.4023	-38.1	-0.046
Extreme (-30C)		824.5625	848.4023	-32.0	-0.038
20C	15%	824.5626	848.4024	37.7	0.045
	-15%	824.5626	848.4024	36.2	0.043
	End Point	824.5626	848.4024	34.3	0.041

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.

Test Engineer ID:	10646	Test Date:	5/23/2021
-------------------	-------	------------	-----------

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	2501.1319	2568.8160		
Extreme (50C)		2501.1320	2568.8161	51.5	0.020
Extreme (40C)		2501.1320	2568.8161	69.2	0.027
Extreme (30C)		2501.1320	2568.8161	65.6	0.026
Extreme (10C)		2501.1319	2568.8160	-22.8	-0.009
Extreme (0C)		2501.1319	2568.8160	-40.5	-0.016
Extreme (-10C)		2501.1319	2568.8160	-70.2	-0.028
Extreme (-20C)		2501.1318	2568.8160	-79.8	-0.031
Extreme (-30C)		2501.1318	2568.8160	-78.8	-0.031
20C	15%	2501.1320	2568.8161	77.8	0.031
	-15%	2501.1320	2568.8161	82.3	0.032
	End Point	2501.1320	2568.8161	82.6	0.033

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.

Test Engineer ID:	10646	Test Date:	5/23/2021
-------------------	-------	------------	-----------

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	2496.7772	2689.4672		
Extreme (50C)		2496.7773	2689.4672	61.8	0.024
Extreme (40C)		2496.7773	2689.4672	68.4	0.026
Extreme (30C)		2496.7773	2689.4672	60.1	0.023
Extreme (10C)		2496.7772	2689.4671	-39.5	-0.015
Extreme (0C)		2496.7771	2689.4671	-62.7	-0.024
Extreme (-10C)		2496.7771	2689.4671	-74.9	-0.029
Extreme (-20C)		2496.7771	2689.4671	-76.9	-0.030
Extreme (-30C)		2496.7771	2689.4671	-81.2	-0.031
20C	15%	2496.7773	2689.4672	63.8	0.025
	-15%	2496.7773	2689.4672	58.8	0.023
	End Point	2496.7773	2689.4672	63.8	0.025

9.4.4. LTE BAND 48

Test Engineer ID:	10646	Test Date:	5/24/2021
-------------------	-------	------------	-----------

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	3551.0439	3699.2807		
Extreme (50C)		3551.0440	3699.2808	35.9	0.010
Extreme (40C)		3551.0440	3699.2808	48.5	0.013
Extreme (30C)		3551.0440	3699.2808	41.5	0.011
Extreme (10C)		3551.0439	3699.2807	-41.4	-0.011
Extreme (0C)		3551.0438	3699.2806	-70.5	-0.019
Extreme (-10C)		3551.0438	3699.2806	-83.1	-0.023
Extreme (-20C)		3551.0438	3699.2806	-94.8	-0.026
Extreme (-30C)		3551.0438	3699.2806	-89.9	-0.025
20C	15%	3551.0440	3699.2808	39.7	0.011
	-15%	3551.0440	3699.2808	49.2	0.014
	End Point	3551.0440	3699.2808	52.6	0.015

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.

Test Engineer ID:	10646	Test Date:	5/23/2021
-------------------	-------	------------	-----------

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	1710.5674	1779.4175		
Extreme (50C)		1710.5675	1779.4175	28.3	0.016
Extreme (40C)		1710.5675	1779.4175	41.1	0.024
Extreme (30C)		1710.5675	1779.4175	32.8	0.019
Extreme (10C)		1710.5674	1779.4175	11.9	0.007
Extreme (0C)		1710.5674	1779.4175	-32.4	-0.019
Extreme (-10C)		1710.5674	1779.4175	-37.7	-0.022
Extreme (-20C)		1710.5674	1779.4175	-38.2	-0.022
Extreme (-30C)		1710.5674	1779.4175	-36.1	-0.021
20C	15%	1710.5675	1779.4175	34.7	0.020
	-15%	1710.5675	1779.4175	38.2	0.022
	End Point	1710.5675	1779.4175	39.4	0.023

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.

Test Engineer ID:	10646	Test Date:	5/23/2021
-------------------	-------	------------	-----------

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	1711.1135	1779.2427		
Extreme (50C)		1711.1135	1779.2427	47.4	0.027
Extreme (40C)		1711.1135	1779.2427	60.8	0.035
Extreme (30C)		1711.1135	1779.2427	56.7	0.032
Extreme (10C)		1711.1134	1779.2426	-13.4	-0.008
Extreme (0C)		1711.1134	1779.2426	-56.9	-0.033
Extreme (-10C)		1711.1134	1779.2426	-61.5	-0.035
Extreme (-20C)		1711.1134	1779.2426	-67.4	-0.039
Extreme (-30C)		1711.1134	1779.2426	-71.6	-0.041
20C	15%	1711.1135	1779.2427	59.6	0.034
	-15%	1711.1135	1779.2427	72.1	0.041
	End Point	1711.1135	1779.2427	74.0	0.042

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 or 7; 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:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	31.65	26.07	5.58
				16QAM	31.70	25.18	6.52
	5 MHz / 3MHz	835.0	838.9	QPSK	31.57	25.91	5.66
				16QAM	31.67	25.08	6.59
	5MHz / 10MHz	831.8	839.0	QPSK	33.17	26.18	6.99
				16QAM	33.13	25.19	7.94
	10MHz / 5MHz	834.3	841.5	QPSK	33.25	26.22	7.03
				16QAM	33.25	25.20	8.05
10MHz / 10MHz	831.6	841.5	QPSK	33.14	26.12	7.02	
			16QAM	33.19	25.15	8.04	
Duty Cycle Correction Factor (dB) =			0.00				

9.5.2. LTE BAND 7

Test Engineer ID:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	32.75	25.96	6.79
				16QAM	32.75	24.97	7.78
	20MHz / 10MHz	2530.1	2544.5	QPSK	32.79	25.98	6.81
				16QAM	32.84	25.00	7.84
	15 MHz / 15MHz	2527.5	2542.5	QPSK	32.62	25.93	6.69
				16QAM	32.72	24.95	7.77
	15MHz / 20MHz	2525.3	2542.4	QPSK	32.70	25.88	6.82
				16QAM	32.70	24.90	7.80
	20MHz / 15MHz	2527.6	2544.7	QPSK	32.65	25.89	6.76
				16QAM	32.70	24.91	7.79
20MHz / 20MHz	2525.1	2544.9	QPSK	32.00	25.86	6.14	
			16QAM	32.43	24.89	7.54	
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:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	34.90	20.41	7.50
				16QAM	34.47	19.45	8.03
	20MHz / 5MHz	2590.5	2602.2	QPSK	34.49	20.3	7.20
				16QAM	34.09	19.26	7.84
	10MHz / 20MHz	2583.6	2598.0	QPSK	34.61	20.33	7.29
				16QAM	34.67	19.37	8.31
	20MHz / 10MHz	2588.1	2602.5	QPSK	34.14	20.26	6.89
				16QAM	33.98	19.27	7.72
	15MHz / 15MHz	2585.5	2600.5	QPSK	34.73	20.28	7.46
				16QAM	34.07	19.29	7.79
	15MHz / 20MHz	2583.3	2600.4	QPSK	34.53	20.28	7.26
				16QAM	33.76	19.25	7.52
	20MHz / 15MHz	2585.6	2602.7	QPSK	33.99	20.32	6.68
				16QAM	33.69	19.28	7.42
	20MHz / 20MHz	2583.1	2602.9	QPSK	33.87	20.24	6.64
				16QAM	33.67	19.28	7.40
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:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	3615.8	3627.5	QPSK	32.59	18.63	6.97
				16QAM	32.39	17.64	7.76
	20MHz / 5MHz	3622.5	3634.2	QPSK	32.07	18.55	6.53
				16QAM	32.05	17.50	7.56
	10MHz / 20MHz	3615.6	3630.0	QPSK	32.44	18.58	6.87
				16QAM	32.48	17.58	7.91
	20MHz / 10MHz	3620.1	3634.5	QPSK	32.09	18.6	6.50
				16QAM	32.06	17.64	7.43
	15MHz / 20MHz	3615.3	3632.4	QPSK	32.38	18.46	6.93
				16QAM	32.07	17.49	7.59
	20MHz / 15MHz	3617.6	3634.7	QPSK	31.87	18.57	6.31
				16QAM	31.67	17.59	7.09
	20MHz / 20MHz	3615.1	3634.9	QPSK	32.02	18.59	6.44
				16QAM	31.65	17.62	7.04
Duty Cycle Correction Factor (dB) =			6.99				
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

9.5.5. LTE BAND 66B

Test Engineer ID:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	33.60	26.25	7.35
				16QAM	33.64	25.26	8.38
	5MHz / 10MHz	1750.3	1757.5	QPSK	33.38	26.13	7.25
				16QAM	33.46	25.17	8.29
	10 MHz / 5MHz	1752.5	1759.7	QPSK	33.50	26.17	7.33
				16QAM	33.46	25.21	8.25
	5MHz / 15MHz	1748.1	1757.4	QPSK	33.38	26.13	7.25
				16QAM	33.46	25.17	8.29
	15MHz / 5MHz	1752.6	1761.9	QPSK	33.46	26.15	7.31
				16QAM	33.39	25.16	8.23
	10MHz / 10MHz	1750.1	1760.0	QPSK	33.42	26.12	7.30
				16QAM	33.42	25.14	8.28
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:	19467	Test Date:	4/21/2021
-------------------	-------	------------	-----------

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	33.18	25.85	7.33
				16QAM	31.47	24.89	6.58
	15MHz / 10MHz	1750.1	1762.1	QPSK	33.01	25.76	7.25
				16QAM	31.46	24.81	6.65
	10MHz / 20MHz	1745.6	1760.0	QPSK	33.17	25.85	7.32
				16QAM	31.45	24.90	6.55
	20MHz / 10MHz	1750.1	1764.5	QPSK	32.77	25.76	7.01
				16QAM	31.34	24.77	6.57
	15MHz / 15MHz	1747.5	1762.5	QPSK	32.84	25.76	7.08
				16QAM	31.38	24.83	6.55
	15MHz / 20MHz	1745.3	1762.4	QPSK	32.92	25.80	7.12
				16QAM	32.80	24.84	7.96
	20MHz / 15MHz	1747.6	1764.7	QPSK	32.62	25.77	6.85
				16QAM	31.34	24.81	6.53
	20MHz / 5MHz	1752.5	1764.2	QPSK	32.90	25.78	7.12
				16QAM	31.34	24.80	6.54
	5MHz / 20MHz	1745.8	1757.5	QPSK	33.27	25.92	7.35
				16QAM	31.59	24.92	6.67
	20MHz / 20MHz	1745.1	1764.9	QPSK	32.72	25.78	6.94
				16QAM	32.46	24.80	7.66
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.

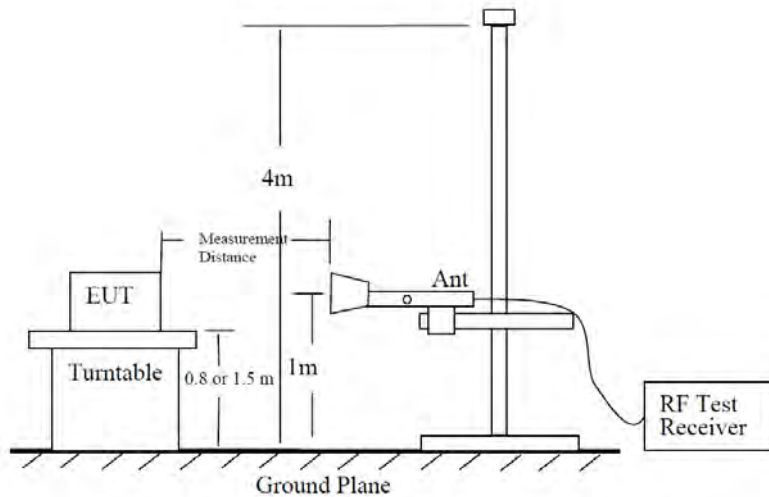


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

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

- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.
- d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.

So, from d)

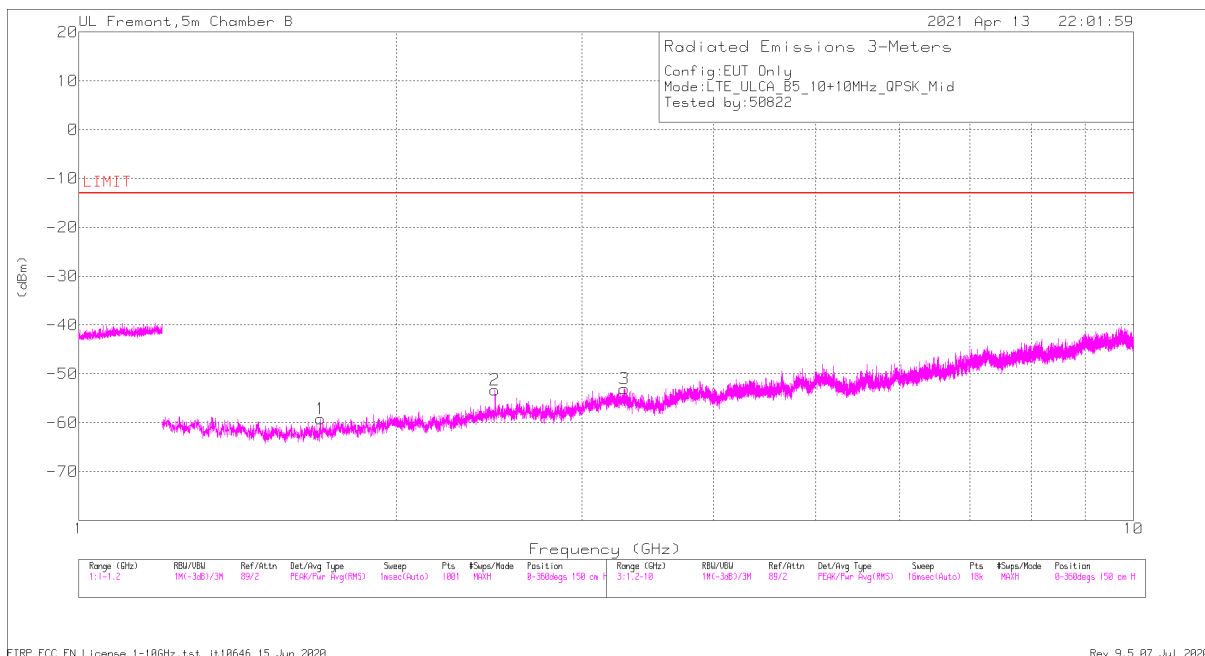
The measuring distance is usually at 3m, then $20 \cdot \log(3) = 9.5424$

Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

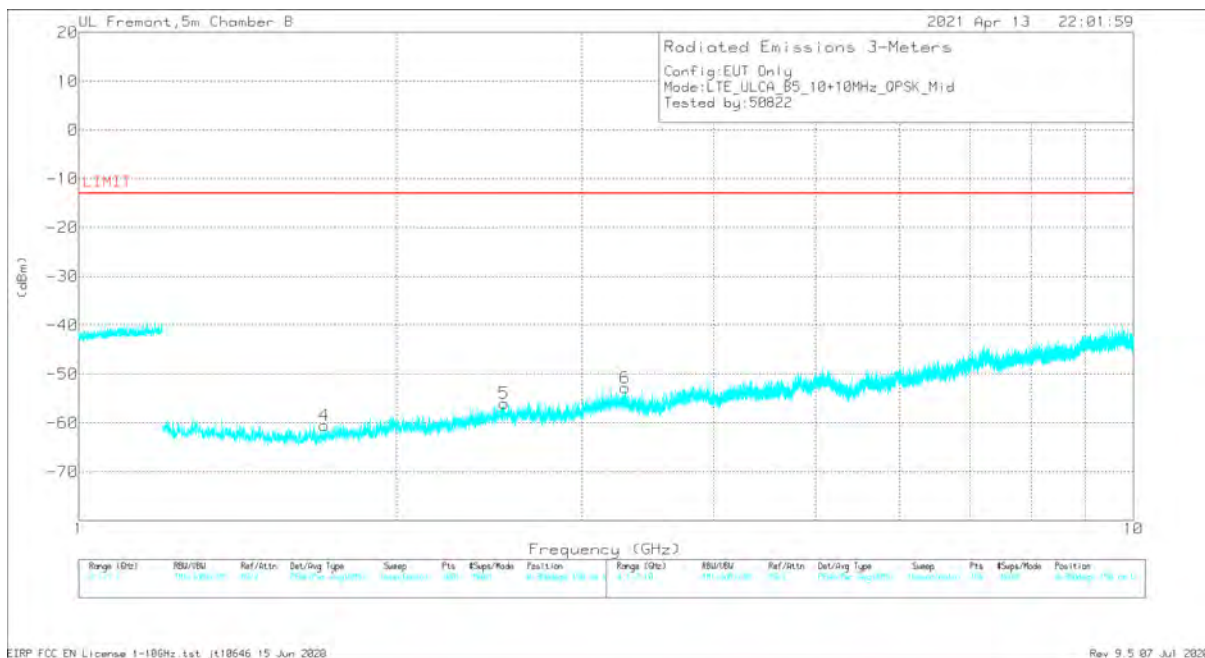
Note that: we do confidence check to our chambers every day to see if any degradation from expected/normal reading reference data. Also we do ambient check to all our chambers every month.

10.1. Example Plot

Horizontal Polarity



Vertical Polarity



Radiated Emissions

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1.69476	37.91	Pk	25	-27.6	.7	-95.2	-59.19	-13	-46.19	H
1.70893	36.59	Pk	25.1	-27.6	.6	-95.2	-60.51	-13	-47.51	V
2.4797	37.21	Pk	29	-26.6	.5	-95.2	-55.09	-13	-42.09	H
2.53076	35.94	Pk	29.2	-26.7	.8	-95.2	-55.96	-13	-42.96	V
3.29	35.61	Pk	31.2	-25.4	.8	-95.2	-52.99	-13	-39.99	H
3.29831	35.97	Pk	31.2	-25.5	.8	-95.2	-52.73	-13	-39.73	V

Pk - Peak detector

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, 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

Maximum + maximum bandwidth combinations of QPSK mode was 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.

LTE BAND 5 (10.0MHZ + 10.0MHZ BANDWIDTH)

Project #:	13573777
Date:	04/13/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 5 QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz										
1.66787	38.19	Pk	25	-27.9	.7	-95.2	-59.21	-13	-46.21	V
1.70649	37.89	Pk	25.1	-27.6	.6	-95.2	-59.21	-13	-46.21	H
2.50025	44.99	Pk	29	-26.6	.6	-95.2	-47.21	-13	-34.21	H
2.50093	38.43	Pk	29	-26.6	.6	-95.2	-53.77	-13	-40.77	V
3.29733	35.96	Pk	31.2	-25.5	.8	-95.2	-52.74	-13	-39.74	V
3.42347	37.41	Pk	30.5	-25.5	.5	-95.2	-52.29	-13	-39.29	H
Mid Channel, 831.6MHz + 841.5MHz										
1.69476	37.91	Pk	25	-27.6	.7	-95.2	-59.19	-13	-46.19	H
1.70893	36.59	Pk	25.1	-27.6	.6	-95.2	-60.51	-13	-47.51	V
2.4797	37.21	Pk	29	-26.6	.5	-95.2	-55.09	-13	-42.09	H
2.53076	35.94	Pk	29.2	-26.7	.8	-95.2	-55.96	-13	-42.96	V
3.29	35.61	Pk	31.2	-25.4	.8	-95.2	-52.99	-13	-39.99	H
3.29831	35.97	Pk	31.2	-25.5	.8	-95.2	-52.73	-13	-39.73	V
High Channel, 834.1MHz + 844MHz										
1.67813	40.25	Pk	24.9	-27.8	.7	-95.2	-57.15	-13	-44.15	H
1.68791	36.55	Pk	25	-27.7	.7	-95.2	-60.65	-13	-47.65	V
2.51511	40.99	Pk	29.2	-26.5	.7	-95.2	-50.81	-13	-37.81	V
2.51484	36.31	Pk	29.2	-26.5	.7	-95.2	-55.49	-13	-42.49	H
3.7916	36.86	Pk	30.8	-25.1	.7	-95.2	-51.94	-13	-38.94	V
3.8356	37.21	Pk	31	-24.9	.3	-95.2	-51.59	-13	-38.59	H

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 #:	13573777
Date:	04/13/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz										
5.12297	34.94	Pk	33.9	-23.6	.8	-95.2	-49.16	-25	-24.16	V
5.19891	34.63	Pk	33.7	-23.6	.9	-95.2	-49.57	-25	-24.57	H
7.84453	34.4	Pk	37.3	-20.4	.3	-95.2	-43.6	-25	-18.6	H
7.97203	33.75	Pk	37.2	-20.4	.3	-95.2	-44.35	-25	-19.35	V
10.48922	32.39	Pk	39.5	-17	.7	-95.2	-39.61	-25	-14.61	V
10.50375	33.07	Pk	39.5	-17	.6	-95.2	-39.03	-25	-14.03	H
Mid Channel, 2525.1MHz + 2544.9MHz										
5.07	35.9	Pk	33.8	-23.6	.7	-95.2	-48.4	-25	-23.4	V
5.11125	35.84	Pk	33.9	-23.7	.8	-95.2	-48.36	-25	-23.36	H
7.55578	34.1	Pk	36.8	-21.7	.3	-95.2	-45.7	-25	-20.7	V
7.63453	34.78	Pk	36.9	-21.1	.4	-95.2	-44.22	-25	-19.22	H
10.98469	32.39	Pk	39.5	-16.9	.7	-95.2	-39.51	-25	-14.51	V
10.99078	33.31	Pk	39.5	-16.8	.7	-95.2	-38.49	-25	-13.49	H
High Channel, 2540.2MHz + 2560MHz										
5.11594	35.42	Pk	33.9	-23.6	.8	-95.2	-48.68	-25	-23.68	V
5.13422	35.42	Pk	33.8	-23.5	.8	-95.2	-48.68	-25	-23.68	H
7.23609	34.97	Pk	37.2	-21.3	.3	-95.2	-44.03	-25	-19.03	H
7.2675	35.02	Pk	37.2	-20.7	.5	-95.2	-43.18	-25	-18.18	V
10.57031	32.9	Pk	39.6	-17.1	.8	-95.2	-39.0	-25	-14.0	V
10.57406	33.77	Pk	39.5	-17.1	.9	-95.2	-38.13	-25	-13.13	H

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 #:	13573777
Date:	04/13/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 41 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.14969	33.99	Pk	33.8	-23.8	.8	-95.2	-50.41	-25	-25.41	V
5.16984	35.77	Pk	33.7	-23.8	.7	-95.2	-48.83	-25	-23.83	H
7.90125	32.5	Pk	37.3	-20.1	.5	-95.2	-45.0	-25	-20.0	V
7.97484	33.99	Pk	37.2	-20.4	.3	-95.2	-44.11	-25	-19.11	H
10.69078	32.79	Pk	39.4	-17.1	.5	-95.2	-39.61	-25	-14.61	V
10.75453	32.77	Pk	39.3	-17.1	.9	-95.2	-39.33	-25	-14.33	H
Mid Channel, 2583.1MHz + 2602.9MHz										
5.04891	35.2	Pk	33.8	-23.4	.6	-95.2	-49.0	-25	-24.0	V
5.05969	36.07	Pk	33.8	-23.4	.6	-95.2	-48.13	-25	-23.13	H
7.26234	33.93	Pk	37.1	-20.9	.5	-95.2	-44.57	-25	-19.57	V
7.28016	34.04	Pk	37.1	-20.3	.4	-95.2	-43.96	-25	-18.96	H
11.08688	33.27	Pk	39.3	-17.4	.8	-95.2	-39.23	-25	-14.23	V
11.60063	33.04	Pk	39.3	-17.2	.9	-95.2	-39.16	-25	-14.16	H
High Channel, 2660.2MHz + 2680MHz										
5.15625	35.06	Pk	33.8	-23.9	.8	-95.2	-49.44	-25	-24.44	V
5.17688	35.82	Pk	33.7	-23.6	.7	-95.2	-48.58	-25	-23.58	H
7.28438	34.08	Pk	37.1	-20.3	.4	-95.2	-43.92	-25	-18.92	H
7.28672	33.5	Pk	37.1	-20.4	.4	-95.2	-44.6	-25	-19.6	V
10.37719	32.06	Pk	39.2	-17	.8	-95.2	-40.14	-25	-15.14	V
10.42922	32.82	Pk	39.4	-16.9	.8	-95.2	-39.08	-25	-14.08	H

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 #:	13573777
Date:	04/20/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3.75281	36.86	Pk	30.6	-24.8	-95.2	-52.54	-13	-39.54	H
3.82125	36.87	Pk	31	-24.7	-95.2	-52.03	-13	-39.03	V
5.10469	34.45	Pk	34	-21.8	-95.2	-48.55	-13	-35.55	V
5.15953	35.47	Pk	33.8	-22.6	-95.2	-48.53	-13	-35.53	H
7.20422	33.7	Pk	37.1	-19.7	-95.2	-44.1	-13	-31.1	V
7.37719	35.19	Pk	36.9	-20.8	-95.2	-43.91	-13	-30.91	H
Mid Channel, 1750.1MHz + 1760MHz									
3.66469	36.88	Pk	30.1	-24.7	-95.2	-52.92	-13	-39.92	V
3.70125	36.56	Pk	30.3	-24.6	-95.2	-52.94	-13	-39.94	H
5.40328	34.64	Pk	32.8	-22.8	-95.2	-50.56	-13	-37.56	V
5.445	36.77	Pk	32.7	-23.3	-95.2	-49.03	-13	-36.03	H
7.09547	34.44	Pk	36.6	-20.5	-95.2	-44.66	-13	-31.66	H
7.09922	34.69	Pk	36.7	-20.5	-95.2	-44.31	-13	-31.31	V
High Channel, 1765.1MHz + 1775MHz									
3.79125	36.66	Pk	30.8	-24.8	-95.2	-52.54	-13	-39.54	H
3.795	37.33	Pk	30.8	-24.7	-95.2	-51.77	-13	-38.77	V
5.10234	34.51	Pk	34	-21.8	-95.2	-48.49	-13	-35.49	V
5.10703	34.06	Pk	34	-21.8	-95.2	-48.94	-13	-35.94	H
7.20375	34.01	Pk	37.1	-19.7	-95.2	-43.79	-13	-30.79	H
7.23656	33.69	Pk	37.2	-20.4	-95.2	-44.71	-13	-31.71	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 #:	13573777
Date:	04/20/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
3.64031	35.96	Pk	30.1	-24.4	-95.2	-53.54	-13	-40.54	H
3.64781	34.68	Pk	30.1	-24.4	-95.2	-54.82	-13	-41.82	V
5.04984	35.59	Pk	33.8	-21.9	-95.2	-47.71	-13	-34.71	V
5.07047	35.42	Pk	33.8	-22.0	-95.2	-47.98	-13	-34.98	H
7.04203	33.14	Pk	36.6	-21.4	-95.2	-46.86	-13	-33.86	V
7.05750	35.03	Pk	36.5	-21.3	-95.2	-44.97	-13	-31.97	H
Mid Channel, 1745.1MHz + 1764.9MHz									
3.68906	37.15	Pk	30.2	-24.5	-95.2	-52.35	-13	-39.35	H
3.69234	36.77	Pk	30.3	-24.5	-95.2	-52.63	-13	-39.63	V
5.63859	34.27	Pk	33.1	-22.3	-95.2	-50.13	-13	-37.13	V
5.66953	34.15	Pk	33	-21.4	-95.2	-49.45	-13	-36.45	H
7.19016	33.62	Pk	37	-20.2	-95.2	-44.78	-13	-31.78	V
7.20188	33.68	Pk	37.1	-19.7	-95.2	-44.12	-13	-31.12	H
High Channel, 1750.2MHz + 1770MHz									
4.35656	36.69	Pk	32	-24.5	-95.2	-51.01	-13	-38.01	H
4.59141	36.58	Pk	32	-23.9	-95.2	-50.52	-13	-37.52	V
6.56297	34.01	Pk	35.5	-20.8	-95.2	-46.49	-13	-33.49	H
6.75234	34.94	Pk	35.9	-22.1	-95.2	-46.46	-13	-33.46	V
9.25313	33.47	Pk	38.7	-17.9	-95.2	-40.93	-13	-27.93	V
9.34172	32.94	Pk	38.7	-17.7	-95.2	-41.26	-13	-28.26	H

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, 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

Maximum + maximum bandwidth combinations of QPSK mode was 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 #:	13573777
Date:	04/14/2021
Test Engineer:	18868
Configuration:	EUT only
Mode	LTE Band 5 QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	HPF 1.2GHz T1737 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 829MHz + 838.9MHz										
1.65173	36.95	Pk	24.9	-27.7	.8	-95.2	-60.25	-13	-47.25	V
1.66812	39.18	Pk	25	-27.8	.7	-95.2	-58.12	-13	-45.12	H
2.48529	36.38	Pk	29	-26.7	.5	-95.2	-56.02	-13	-43.02	V
2.50212	40.45	Pk	29	-26.6	.6	-95.2	-51.75	-13	-38.75	H
3.32569	36.15	Pk	31.1	-25.7	.6	-95.2	-53.05	-13	-40.05	V
4.60241	36.62	Pk	32.1	-24.6	.5	-95.2	-50.58	-13	-37.58	H
Mid Channel, 831.6MHz + 841.5MHz										
1.67324	37.45	Pk	25	-27.8	.7	-95.2	-59.85	-13	-46.85	V
1.67322	40.62	Pk	25	-27.8	.7	-95.2	-56.68	-13	-43.68	H
2.50989	49.24	Pk	29.1	-26.6	.7	-95.2	-42.76	-13	-29.76	H
2.50924	39.49	Pk	29.1	-26.6	.7	-95.2	-52.51	-13	-39.51	V
3.33547	35.96	Pk	31.1	-25.6	.6	-95.2	-53.14	-13	-40.14	V
3.35074	37.08	Pk	31	-25.6	.6	-95.2	-52.12	-13	-39.12	H
High Channel, 834.1MHz + 844MHz										
1.6783	39.94	Pk	24.9	-27.8	.7	-95.2	-57.46	-13	-44.46	H
1.68987	37.01	Pk	25	-27.7	.7	-95.2	-60.19	-13	-47.19	V
2.51698	50.84	Pk	29.2	-26.5	.8	-95.2	-40.86	-13	-27.86	H
2.5173	42.25	Pk	29.2	-26.5	.8	-95.2	-49.45	-13	-36.45	V
3.38093	36.66	Pk	30.9	-25.8	.6	-95.2	-52.84	-13	-39.84	V
3.38265	36.57	Pk	30.9	-25.7	.6	-95.2	-52.83	-13	-39.83	H

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.

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

Project #:	13573777
Date:	04/14/2021
Test Engineer:	18868
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz										
5.02828	33.55	Pk	33.7	-23.5	.7	-95.2	-50.75	-25	-25.75	V
5.03719	33.84	Pk	33.7	-23.6	.6	-95.2	-50.66	-25	-25.66	H
7.53656	31.89	Pk	36.8	-21.2	.3	-95.2	-47.41	-25	-22.41	V
7.53984	33.55	Pk	36.8	-21.3	.3	-95.2	-45.85	-25	-20.85	H
10.01719	30.74	Pk	38.3	-17.5	.6	-95.2	-43.06	-25	-18.06	V
10.05375	31.84	Pk	38.3	-17.4	.7	-95.2	-41.76	-25	-16.76	H
Mid Channel, 2525.1MHz + 2544.9MHz										
5.07469	34.03	Pk	33.8	-23.6	.7	-95.2	-50.27	-25	-25.27	V
5.07844	34.13	Pk	33.8	-23.6	.7	-95.2	-50.17	-25	-25.17	H
7.62516	33.64	Pk	37	-21.3	.4	-95.2	-45.46	-25	-20.46	H
7.62539	33.83	Pk	37	-21.3	.4	-95.2	-45.27	-25	-20.27	V
10.12688	31.59	Pk	38.4	-17.6	.7	-95.2	-42.11	-25	-17.11	H
10.12969	31.12	Pk	38.5	-17.6	.7	-95.2	-42.48	-25	-17.48	V
High Channel, 2540.2MHz + 2560MHz										
5.00063	35.14	Pk	33.6	-23.1	.8	-95.2	-48.76	-25	-23.76	H
5.13234	34.93	Pk	33.8	-23.5	.8	-95.2	-49.17	-25	-24.17	V
8.32641	34.72	Pk	37.5	-20.2	.3	-95.2	-42.88	-25	-17.88	H
8.46563	35.15	Pk	37.4	-20	.3	-95.2	-42.35	-25	-17.35	V
10.51781	34.06	Pk	39.5	-17.3	.5	-95.2	-38.44	-25	-13.44	V
10.80563	33.36	Pk	39.3	-17	.7	-95.2	-38.84	-25	-13.84	H

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 #:	13573777
Date:	04/23/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 41 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.06016	35.43	Pk	33.8	-23.4	.6	-95.2	-48.77	-25	-23.77	H
5.06766	35.15	Pk	33.8	-23.5	.6	-95.2	-49.15	-25	-24.15	V
7.29844	33.53	Pk	37	-20.8	.4	-95.2	-45.07	-25	-20.07	V
7.365	34.65	Pk	36.9	-21.3	.5	-95.2	-44.45	-25	-19.45	H
10.44797	33.45	Pk	39.4	-16.9	.7	-95.2	-38.55	-25	-13.55	V
10.63125	33.6	Pk	39.4	-17	.5	-95.2	-38.7	-25	-13.7	H
Mid Channel, 2583.1MHz + 2602.9MHz										
5.04328	34.8	Pk	33.7	-23.5	.6	-95.2	-49.6	-25	-24.6	V
5.05266	35.28	Pk	33.8	-23.4	.6	-95.2	-48.92	-25	-23.92	H
7.07016	32.8	Pk	36.7	-21.1	.7	-95.2	-46.1	-25	-21.1	H
7.09125	34.45	Pk	36.6	-21	.4	-95.2	-44.75	-25	-19.75	V
7.93313	34.27	Pk	37.2	-20.6	.2	-95.2	-44.13	-25	-19.13	H
8.04797	34.43	Pk	37.1	-20.5	.4	-95.2	-43.77	-25	-18.77	V
High Channel, 2660.2MHz + 2680MHz										
5.00438	34.28	Pk	33.7	-23.2	.8	-95.2	-49.62	-25	-24.62	H
5.05547	35.07	Pk	33.8	-23.5	.6	-95.2	-49.23	-25	-24.23	H
7.78594	33.8	Pk	37.2	-20.9	.4	-95.2	-44.7	-25	-19.7	V
7.88953	33.33	Pk	37.3	-20.2	.6	-95.2	-44.17	-25	-19.17	H
10.87875	33.88	Pk	39.3	-17	.4	-95.2	-38.62	-25	-13.62	H
11.06297	33.33	Pk	39.4	-17	.6	-95.2	-38.87	-25	-13.87	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 #:	13573777
Date:	04/20/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3.84047	36.24	Pk	31.1	-24.6	-95.2	-52.46	-13	-39.46	H
3.85453	36.93	Pk	31.1	-24.2	-95.2	-51.37	-13	-38.37	V
5.10328	34.16	Pk	34	-21.8	-95.2	-48.84	-13	-35.84	V
5.11266	34.34	Pk	33.9	-22	-95.2	-48.96	-13	-35.96	H
7.15828	33.53	Pk	37	-19.9	-95.2	-44.57	-13	-31.57	H
7.31484	36.2	Pk	37	-21.5	-95.2	-43.5	-13	-30.5	V
Mid Channel, 1750.1MHz + 1760MHz									
3.79219	37.11	Pk	30.8	-24.8	-95.2	-52.09	-13	-39.09	H
3.89766	36.51	Pk	31.4	-24.1	-95.2	-51.39	-13	-38.39	V
5.08172	34.4	Pk	33.8	-21.8	-95.2	-48.8	-13	-35.8	V
5.11688	35.35	Pk	33.9	-22.1	-95.2	-48.05	-13	-35.05	H
7.21453	32.9	Pk	37.2	-19.6	-95.2	-44.7	-13	-31.7	V
7.27594	34.01	Pk	37.1	-20.3	-95.2	-44.39	-13	-31.39	H
High Channel, 1765.1MHz + 1775MHz									
3.87188	36.13	Pk	31.2	-24.2	-95.2	-52.07	-13	-39.07	H
3.97313	36.35	Pk	31.6	-24.3	-95.2	-51.55	-13	-38.55	V
5.14313	35.24	Pk	33.8	-22.4	-95.2	-48.56	-13	-35.56	H
5.22469	35.56	Pk	33.5	-23.8	-95.2	-49.94	-13	-36.94	V
7.19203	35.22	Pk	37	-20.1	-95.2	-43.08	-13	-30.08	H
7.39406	35.16	Pk	36.8	-20.8	-95.2	-44.04	-13	-31.04	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 #:	13573777
Date:	04/21/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
3.76641	36.74	Pk	30.8	-24.9	-95.2	-52.56	-13	-39.56	H
3.77063	36.27	Pk	30.8	-24.9	-95.2	-53.03	-13	-40.03	V
5.08922	34.65	Pk	33.8	-21.7	-95.2	-48.45	-13	-35.45	H
5.1075	34.67	Pk	33.9	-21.9	-95.2	-48.53	-13	-35.53	V
7.18172	33.69	Pk	37	-20.4	-95.2	-44.91	-13	-31.91	H
7.27219	34.53	Pk	37.2	-20.4	-95.2	-43.87	-13	-30.87	V
Mid Channel, 1745.1MHz + 1764.9MHz									
3.69	36.12	Pk	30.3	-24.5	-95.2	-53.28	-13	-40.28	V
3.70594	36.66	Pk	30.3	-24.7	-95.2	-52.94	-13	-39.94	H
5.09719	34.74	Pk	33.9	-21.7	-95.2	-48.26	-13	-35.26	V
5.11219	34.29	Pk	33.9	-22	-95.2	-49.01	-13	-36.01	H
7.14188	33.58	Pk	36.9	-20	-95.2	-44.72	-13	-31.72	V
7.22016	33.54	Pk	37.1	-19.7	-95.2	-44.26	-13	-31.26	H
High Channel, 1750.2MHz + 1770MHz									
3.79453	37.1	Pk	30.8	-24.8	-95.2	-52.1	-13	-39.1	V
3.8025	38.31	Pk	30.9	-24.7	-95.2	-50.69	-13	-37.69	H
5.10234	34.82	Pk	34	-21.8	-95.2	-48.18	-13	-35.18	H
5.14969	35.41	Pk	33.8	-22.4	-95.2	-48.39	-13	-35.39	V
6.93891	34.19	Pk	36.3	-21.1	-95.2	-45.81	-13	-32.81	H
7.37438	35.76	Pk	36.8	-20.9	-95.2	-43.54	-13	-30.54	V

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, 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

Maximum + maximum bandwidth combinations of QPSK mode was 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 #:	13573777
Date:	04/15/2021
Test Engineer:	45258
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz										
5.03906	34.86	Pk	33.7	-23.5	.6	-95.2	-49.54	-25	-24.54	H
5.03935	35.31	Pk	33.7	-23.5	.6	-95.2	-49.09	-25	-24.09	V
7.5608	33.93	Pk	36.8	-21.7	.4	-95.2	-45.77	-25	-20.77	V
7.56251	34.89	Pk	36.8	-21.7	.4	-95.2	-44.81	-25	-19.81	H
10.07812	32.61	Pk	38.4	-17.6	.7	-95.2	-41.09	-25	-16.09	H
10.08153	32.94	Pk	38.4	-17.6	.6	-95.2	-40.86	-25	-15.86	V
Mid Channel, 2525.1MHz + 2544.9MHz										
5.07007	36.25	Pk	33.8	-23.6	.7	-95.2	-48.05	-25	-23.05	V
5.07061	36.62	Pk	33.8	-23.6	.7	-95.2	-47.68	-25	-22.68	H
7.60324	34.83	Pk	36.9	-21.3	.4	-95.2	-44.37	-25	-19.37	H
7.60406	35.03	Pk	37	-21.3	.4	-95.2	-44.07	-25	-19.07	V
10.13853	33.32	Pk	38.4	-17.7	.7	-95.2	-40.48	-25	-15.48	H
10.14197	33.5	Pk	38.4	-17.7	.6	-95.2	-40.4	-25	-15.4	V
High Channel, 2540.2MHz + 2560MHz										
5.10109	36.23	Pk	33.9	-23.8	.8	-95.2	-48.07	-25	-23.07	V
5.10267	38.52	Pk	34	-23.8	.8	-95.2	-45.68	-25	-20.68	H
7.64861	34.4	Pk	36.9	-20.9	.3	-95.2	-44.5	-25	-19.5	V
7.65158	34.42	Pk	36.9	-20.8	.3	-95.2	-44.38	-25	-19.38	H
10.19984	33.8	Pk	38.7	-17.3	.8	-95.2	-39.2	-25	-14.2	V
10.20148	33.7	Pk	38.7	-17.4	.8	-95.2	-39.4	-25	-14.4	H

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 #:	13573777
Date:	04/23/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 41 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.05266	37.41	Pk	33.8	-23.4	.6	-95.2	-46.79	-25	-21.79	H
5.05922	35.35	Pk	33.8	-23.4	.6	-95.2	-48.85	-25	-23.85	V
8.09906	34.73	Pk	37.2	-20.1	.3	-95.2	-43.07	-25	-18.07	V
8.145	34.12	Pk	37.3	-20.3	.3	-95.2	-43.78	-25	-18.78	H
11.44828	32.96	Pk	39.2	-17.3	.7	-95.2	-39.64	-25	-14.64	V
11.58609	34.45	Pk	39.3	-17.4	1	-95.2	-37.85	-25	-12.85	H
Mid Channel, 2583.1MHz + 2602.9MHz										
5.08828	37.41	Pk	33.8	-23.8	.8	-95.2	-46.99	-25	-21.99	V
5.18391	35.52	Pk	33.6	-23.6	.7	-95.2	-48.98	-25	-23.98	H
7.91906	33.89	Pk	37.3	-20.3	.2	-95.2	-44.11	-25	-19.11	V
7.94344	34.91	Pk	37.2	-20.6	.2	-95.2	-43.49	-25	-18.49	H
10.54594	32.92	Pk	39.6	-17.2	.6	-95.2	-39.28	-25	-14.28	V
10.58063	32.83	Pk	39.5	-17.2	.9	-95.2	-39.17	-25	-14.17	H
High Channel, 2660.2MHz + 2680MHz										
5.09438	34.86	Pk	33.9	-23.8	.8	-95.2	-49.44	-25	-24.44	V
5.12297	34.96	Pk	33.9	-23.6	.8	-95.2	-49.14	-25	-24.14	H
7.19156	35.02	Pk	37	-21.4	.4	-95.2	-44.18	-25	-19.18	V
7.27266	34.58	Pk	37.2	-20.6	.4	-95.2	-43.62	-25	-18.62	H
10.44141	33.16	Pk	39.4	-16.9	.8	-95.2	-38.74	-25	-13.74	H
10.49859	32.27	Pk	39.5	-17	.6	-95.2	-39.83	-25	-14.83	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 #:	13573777
Date:	04/21/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3.9075	35.56	Pk	31.4	-24	-95.2	-52.24	-13	-39.24	V
3.92391	36.47	Pk	31.4	-23.8	-95.2	-51.13	-13	-38.13	H
5.03297	35.35	Pk	33.7	-22.1	-95.2	-48.25	-13	-35.25	V
5.13984	35.08	Pk	33.8	-22.4	-95.2	-48.72	-13	-35.72	H
7.30266	34.48	Pk	37.1	-21.2	-95.2	-44.82	-13	-31.82	H
7.81453	35.93	Pk	37.3	-19.5	-95.2	-41.47	-13	-28.47	V
Mid Channel, 1750.1MHz + 1760MHz									
3.52022	36.91	Pk	30.2	-24.7	-95.2	-52.79	-13	-39.79	H
3.52077	37.11	Pk	30.2	-24.7	-95.2	-52.59	-13	-39.59	V
5.34628	34.43	Pk	33.1	-22.7	-95.2	-50.37	-13	-37.37	H
5.34842	35.45	Pk	33.1	-22.7	-95.2	-49.35	-13	-36.35	V
7.07216	35.19	Pk	36.6	-21	-95.2	-44.41	-13	-31.41	V
7.07505	35.28	Pk	36.6	-21	-95.2	-44.32	-13	-31.32	H
High Channel, 1765.1MHz + 1775MHz									
3.91922	36	Pk	31.5	-23.9	-95.2	-51.6	-13	-38.6	V
3.92063	36.7	Pk	31.5	-23.9	-95.2	-50.9	-13	-37.9	H
5.08172	34.27	Pk	33.8	-21.8	-95.2	-48.93	-13	-35.93	H
5.15813	35.28	Pk	33.8	-22.5	-95.2	-48.62	-13	-35.62	V
7.22156	33.32	Pk	37.1	-19.7	-95.2	-44.48	-13	-31.48	H
7.275	35.3	Pk	37.1	-20.3	-95.2	-43.1	-13	-30.1	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 #:	13573777
Date:	04/21/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
3.79922	37.07	Pk	30.9	-24.7	-95.2	-51.93	-13	-38.93	H
3.81375	37.41	Pk	31	-24.7	-95.2	-51.49	-13	-38.49	V
5.07984	35.34	Pk	33.8	-21.7	-95.2	-47.76	-13	-34.76	V
5.08781	34.94	Pk	33.8	-21.7	-95.2	-48.16	-13	-35.16	H
7.10672	34.33	Pk	36.7	-20.6	-95.2	-44.77	-13	-31.77	H
7.24969	34.6	Pk	37.2	-20.7	-95.2	-44.1	-13	-31.1	V
Mid Channel, 1745.1MHz + 1764.9MHz									
3.84516	36.38	Pk	31.2	-24.4	-95.2	-52.02	-13	-39.02	V
3.86391	37.04	Pk	31.2	-24.2	-95.2	-51.16	-13	-38.16	H
5.09063	34.98	Pk	33.9	-21.7	-95.2	-48.02	-13	-35.02	H
5.12063	34.97	Pk	33.9	-22.2	-95.2	-48.53	-13	-35.53	V
6.74766	35.28	Pk	35.9	-22.2	-95.2	-46.22	-13	-33.22	V
6.8475	35.5	Pk	36.1	-21.1	-95.2	-44.7	-13	-31.7	H
High Channel, 1750.2MHz + 1770MHz									
3.80766	37.88	Pk	30.9	-24.6	-95.2	-51.02	-13	-38.02	H
3.88313	36.08	Pk	31.3	-24.3	-95.2	-52.12	-13	-39.12	V
5.07563	35.36	Pk	33.8	-21.9	-95.2	-47.94	-13	-34.94	H
5.12578	36.04	Pk	33.8	-22.3	-95.2	-47.66	-13	-34.66	V
7.14328	33.85	Pk	36.9	-19.9	-95.2	-44.35	-13	-31.35	H
7.18313	34.64	Pk	37	-20.3	-95.2	-43.86	-13	-30.86	V

10.5. FIELD STRENGTH OF SPURIOUS RADIATION, 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

Maximum + maximum bandwidth combinations of QPSK mode was 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 #:	13573777
Date:	04/22/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	LTE Band 7 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2510MHz + 2529.8MHz										
5.09156	35.17	Pk	33.9	-23.8	.8	-95.2	-49.13	-25	-24.13	H
5.17266	35.88	Pk	33.7	-23.7	.7	-95.2	-48.62	-25	-23.62	V

7.64813	34.98	Pk	36.9	-20.9	.4	-95.2	-43.82	-25	-18.82	H
7.83281	34.83	Pk	37.2	-20.4	.3	-95.2	-43.27	-25	-18.27	V
10.87078	33.24	Pk	39.3	-17	.3	-95.2	-39.36	-25	-14.36	V
11.08031	33.97	Pk	39.3	-17.3	.7	-95.2	-38.53	-25	-13.53	H
Mid Channel, 2525.1MHz + 2544.9MHz										
5.11219	34.71	Pk	33.9	-23.7	.8	-95.2	-49.49	-25	-24.49	H
5.20781	35.13	Pk	33.6	-23.7	1	-95.2	-49.17	-25	-24.17	V
7.06266	34.31	Pk	36.6	-21.2	.8	-95.2	-44.69	-25	-19.69	H
7.2825	34.69	Pk	37.1	-20.3	.4	-95.2	-43.31	-25	-18.31	V
10.65563	33.79	Pk	39.4	-17.4	.5	-95.2	-38.91	-25	-13.91	H
10.68422	32.62	Pk	39.4	-17.1	.5	-95.2	-39.78	-25	-14.78	V
High Channel, 2540.2MHz + 2560MHz										
5.19047	36.73	Pk	33.7	-23.6	.8	-95.2	-47.57	-25	-22.57	H
5.19609	34.96	Pk	33.7	-23.6	.8	-95.2	-49.34	-25	-24.34	V
8.09344	35	Pk	37.2	-20	.3	-95.2	-42.7	-25	-17.7	H
8.15109	34.04	Pk	37.3	-20.3	.3	-95.2	-43.86	-25	-18.86	V
10.54031	33.09	Pk	39.5	-17.3	.5	-95.2	-39.41	-25	-14.41	V
10.66406	33.58	Pk	39.4	-17.4	.5	-95.2	-39.12	-25	-14.12	H

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 #:	13573777
Date:	04/22/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 41 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2506MHz + 2525.8MHz										
5.24344	35.22	Pk	33.6	-23.9	.6	-95.2	-49.68	-25	-24.68	V
5.3925	35.81	Pk	32.9	-24.3	.7	-95.2	-50.09	-25	-25.09	H
7.78172	34.22	Pk	37.2	-20.8	.3	-95.2	-44.28	-25	-19.28	H
8.14266	35.08	Pk	37.3	-20.3	.3	-95.2	-42.82	-25	-17.82	V
10.61203	33.14	Pk	39.5	-17.1	.7	-95.2	-38.96	-25	-13.96	H
10.88859	34.32	Pk	39.3	-17.2	.6	-95.2	-38.18	-25	-13.18	V
Mid Channel, 2583.1MHz + 2602.9MHz										
5.49656	35.79	Pk	33	-23.6	.7	-95.2	-49.31	-25	-24.31	H
5.55328	34.93	Pk	33.3	-23.2	.4	-95.2	-49.77	-25	-24.77	V
7.24078	35.02	Pk	37.1	-21.3	.4	-95.2	-43.98	-25	-18.98	V
7.28906	34.32	Pk	37.2	-20.5	.4	-95.2	-43.78	-25	-18.78	H
10.61344	33.16	Pk	39.5	-17.1	.7	-95.2	-38.94	-25	-13.94	H
10.71375	34.79	Pk	39.3	-17.5	.5	-95.2	-38.11	-25	-13.11	V
High Channel, 2660.2MHz + 2680MHz										
5.19047	36.73	Pk	33.7	-23.6	.8	-95.2	-47.57	-25	-22.57	H
5.19609	34.96	Pk	33.7	-23.6	.8	-95.2	-49.34	-25	-24.34	V
8.09344	35	Pk	37.2	-20	.3	-95.2	-42.7	-25	-17.7	H
8.15109	34.04	Pk	37.3	-20.3	.3	-95.2	-43.86	-25	-18.86	V
10.54031	33.09	Pk	39.5	-17.3	.5	-95.2	-39.41	-25	-14.41	V
10.66406	33.58	Pk	39.4	-17.4	.5	-95.2	-39.12	-25	-14.12	H

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 #:	13573777
Date:	04/27/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 48 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.29128	28.47	RMS	37.1	-20.6	.6	-95.2	-49.63	-40	-9.63	V
7.29776	28.09	RMS	37	-20.8	.6	-95.2	-50.31	-40	-10.31	H
10.63339	27.32	RMS	39.4	-17	.6	-95.2	-44.88	-40	-4.88	V
10.76139	27.5	RMS	39.2	-17.2	.6	-95.2	-45.1	-40	-5.1	H
13.66138	28	RMS	40.3	-18.4	.8	-95.2	-44.5	-40	-4.5	V
13.91887	27.18	RMS	40.6	-18.6	.7	-95.2	-45.32	-40	-5.32	H
Mid Channel, 3615.1MHz + 3634.9MHz										
7.29128	28.47	RMS	37.1	-20.6	.6	-95.2	-49.63	-40	-9.63	V
7.29776	28.09	RMS	37	-20.8	.6	-95.2	-50.31	-40	-10.31	H
10.63339	27.32	RMS	39.4	-17	.6	-95.2	-44.88	-40	-4.88	V
10.76139	27.5	RMS	39.2	-17.2	.6	-95.2	-45.1	-40	-5.1	H
13.66138	28	RMS	40.3	-18.4	.8	-95.2	-44.5	-40	-4.5	V
13.91887	27.18	RMS	40.6	-18.6	.7	-95.2	-45.32	-40	-5.32	H
High Channel, 3670.2MHz + 3690MHz										
7.23099	28.54	RMS	37.2	-21.2	.5	-95.2	-50.16	-40	-10.16	V
7.29056	27.87	RMS	37.1	-20.6	.6	-95.2	-50.23	-40	-10.23	H
10.54441	25.7	RMS	39.5	-17.2	.6	-95.2	-46.6	-40	-6.6	H
10.63031	27.17	RMS	39.4	-17	.6	-95.2	-45.03	-40	-5.03	V
13.85215	27.03	RMS	40.6	-18.3	.7	-95.2	-45.17	-40	-5.17	H
13.85573	25.75	RMS	40.6	-18.3	.7	-95.2	-46.45	-40	-6.45	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 #:	13573777
Date:	04/21/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1715MHz + 1724.9MHz									
3.86578	35.87	Pk	31.2	-24.3	-95.2	-52.43	-13	-39.43	H
3.90891	35.56	Pk	31.4	-24	-95.2	-52.24	-13	-39.24	V
5.08125	33.74	Pk	33.8	-21.8	-95.2	-49.46	-13	-36.46	V
5.10375	35.14	Pk	34	-21.8	-95.2	-47.86	-13	-34.86	H
7.19813	32.08	Pk	37.1	-19.8	-95.2	-45.82	-13	-32.82	V
7.24453	34.1	Pk	37.1	-20.7	-95.2	-44.7	-13	-31.7	H
Mid Channel, 1750.1MHz + 1760MHz									
3.89766	35.55	Pk	31.4	-24.1	-95.2	-52.35	-13	-39.35	H
4.24922	37.1	Pk	31.8	-23.4	-95.2	-49.7	-13	-36.7	V
5.07656	34.99	Pk	33.8	-21.9	-95.2	-48.31	-13	-35.31	H
5.09578	35.13	Pk	33.9	-21.7	-95.2	-47.87	-13	-34.87	V
7.08844	34.02	Pk	36.7	-20.6	-95.2	-45.08	-13	-32.08	V
7.20656	33.57	Pk	37	-19.6	-95.2	-44.23	-13	-31.23	H
High Channel, 1765.1MHz + 1775MHz									
3.83109	37.38	Pk	31	-24.7	-95.2	-51.52	-13	-38.52	V
3.87891	37.5	Pk	31.4	-24.3	-95.2	-50.6	-13	-37.6	H
5.10797	35.79	Pk	33.9	-21.9	-95.2	-47.41	-13	-34.41	V
5.14734	35.87	Pk	33.8	-22.4	-95.2	-47.93	-13	-34.93	H
6.89063	34.47	Pk	36.1	-21.1	-95.2	-45.73	-13	-32.73	H
7.20422	33.74	Pk	37.1	-19.7	-95.2	-44.06	-13	-31.06	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 #:	13573777
Date:	04/22/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 66B QPSK 10MHz + 10MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1720MHz + 1739.8MHz									
4.14656	36.69	Pk	31.8	-23.4	-95.2	-50.11	-13	-37.11	H
4.15688	34.71	Pk	31.8	-23.3	-95.2	-51.99	-13	-38.99	V
5.10891	35.99	Pk	33.9	-21.9	-95.2	-47.21	-13	-34.21	V
5.97516	35.02	Pk	34.4	-22.1	-95.2	-47.88	-13	-34.88	H
7.38844	34.27	Pk	36.9	-20.8	-95.2	-44.83	-13	-31.83	V
7.55297	35.1	Pk	36.9	-20.7	-95.2	-43.9	-13	-30.9	H
Mid Channel, 1745.1MHz + 1764.9MHz									
3.80484	36.65	Pk	30.9	-24.6	-95.2	-52.25	-13	-39.25	V
3.87656	36.11	Pk	31.4	-24.3	-95.2	-51.99	-13	-38.99	H
5.06953	35.42	Pk	33.8	-22	-95.2	-47.98	-13	-34.98	V
5.1	36.28	Pk	33.9	-21.8	-95.2	-46.82	-13	-33.82	H
7.13391	35.88	Pk	36.7	-20.3	-95.2	-42.92	-13	-29.92	H
7.21359	32.89	Pk	37.2	-19.6	-95.2	-44.71	-13	-31.71	V
High Channel, 1750.2MHz + 1770MHz									
3.80016	36.83	Pk	30.9	-24.7	-95.2	-52.17	-13	-39.17	V
3.81703	37.09	Pk	31	-24.6	-95.2	-51.71	-13	-38.71	H
5.10328	35.34	Pk	34	-21.8	-95.2	-47.66	-13	-34.66	H
5.15766	34.83	Pk	33.8	-22.5	-95.2	-49.07	-13	-36.07	V
7.00922	36.4	Pk	36.6	-21.9	-95.2	-44.1	-13	-31.1	H
7.05328	34.62	Pk	36.5	-21.4	-95.2	-45.48	-13	-32.48	V

10.6. FIELD STRENGTH OF SPURIOUS RADIATION, ANT7

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

Maximum + maximum bandwidth combinations of QPSK mode was tested, QPSK results are reported as worst case.

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 #:	13573777
Date:	04/26/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 48 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.05221	29.17	RMS	36.5	-21.4	.9	-95.2	-50.03	-40	-10.03	V
7.05276	29.14	RMS	36.5	-21.4	.9	-95.2	-50.06	-40	-10.06	H
10.24178	26.77	RMS	38.8	-16.9	.6	-95.2	-45.93	-40	-5.93	H
10.24942	26.97	RMS	38.9	-16.9	.6	-95.2	-45.63	-40	-5.63	V
13.28549	26.37	RMS	40	-18.1	.9	-95.2	-46.03	-40	-6.03	V
13.29516	26.64	RMS	39.9	-18.1	.9	-95.2	-45.86	-40	-5.86	H
Mid Channel, 3615.1MHz + 3634.9MHz										
7.23626	29.27	RMS	37.2	-21.3	.5	-95.2	-49.53	-40	-9.53	V
7.28276	28.87	RMS	37.1	-20.3	.5	-95.2	-49.03	-40	-9.03	H
10.26476	27.11	RMS	38.9	-17.2	.6	-95.2	-45.79	-40	-5.79	V
10.63157	27.06	RMS	39.5	-17	.6	-95.2	-45.04	-40	-5.04	H
13.6553	27.89	RMS	40.4	-18.5	.8	-95.2	-44.61	-40	-4.61	V
13.84962	26.85	RMS	40.6	-18.3	.8	-95.2	-45.25	-40	-5.25	H
High Channel, 3670.2MHz + 3690MHz										
7.31002	28.62	RMS	37.1	-21.2	.6	-95.2	-50.08	-40	-10.08	H
7.35655	29.03	RMS	36.9	-21.1	.7	-95.2	-49.67	-40	-9.67	V
9.71665	27.12	RMS	38.6	-17.9	.5	-95.2	-46.88	-40	-6.88	H
9.76775	26.79	RMS	38.6	-17.8	.7	-95.2	-46.91	-40	-6.91	V
13.29117	26.84	RMS	39.9	-18.1	.9	-95.2	-45.66	-40	-5.66	H
13.29549	26.58	RMS	39.9	-18.1	.9	-95.2	-45.92	-40	-5.92	V

10.7. FIELD STRENGTH OF SPURIOUS RADIATION, ANT8

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

Maximum + maximum bandwidth combinations of QPSK mode was tested, QPSK results are reported as worst case.

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 #:	13573777
Date:	04/26/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 48 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.28499	27.94	RMS	37.1	-20.3	.5	-95.2	-49.96	-40	-9.96	V
7.28737	28.37	RMS	37.2	-20.4	.5	-95.2	-49.53	-40	-9.53	H
10.42713	26.26	RMS	39.4	-16.9	.6	-95.2	-45.84	-40	-5.84	H
10.69307	27.11	RMS	39.4	-17.2	.5	-95.2	-45.39	-40	-5.39	V
12.54459	27.36	RMS	39.9	-17.9	.9	-95.2	-44.94	-40	-4.94	H
13.72727	26.79	RMS	40.6	-18.6	.7	-95.2	-45.71	-40	-5.71	V
Mid Channel, 3615.1MHz + 3634.9MHz										
7.23276	29.14	RMS	37.2	-21.3	.5	-95.2	-49.66	-40	-9.66	H
7.23279	28.5	RMS	37.2	-21.3	.5	-95.2	-50.3	-40	-10.3	V
10.27049	26.72	RMS	38.9	-17.3	.6	-95.2	-46.28	-40	-6.28	V
10.38665	26.21	RMS	39.2	-17.1	.5	-95.2	-46.39	-40	-6.39	H
13.90651	27.13	RMS	40.7	-18.8	.7	-95.2	-45.47	-40	-5.47	V
13.91899	27.37	RMS	40.5	-18.6	.7	-95.2	-45.23	-40	-5.23	H
High Channel, 3670.2MHz + 3690MHz										
7.29147	28.41	RMS	37.1	-20.6	.6	-95.2	-49.69	-40	-9.69	V
7.36029	29.26	RMS	37	-21.2	.7	-95.2	-49.44	-40	-9.44	H
10.20337	26.52	RMS	38.7	-17.4	.6	-95.2	-46.78	-40	-6.78	V
10.24715	26.42	RMS	38.9	-16.9	.6	-95.2	-46.18	-40	-6.18	H
13.6391	28.13	RMS	40.3	-18.8	.8	-95.2	-44.77	-40	-4.77	V
13.65865	27.42	RMS	40.3	-18.5	.8	-95.2	-45.18	-40	-5.18	H

10.8. FIELD STRENGTH OF SPURIOUS RADIATION, ANT9

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

Maximum + maximum bandwidth combinations of QPSK mode was tested, QPSK results are reported as worst case.

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 #:	13573777
Date:	04/27/2021
Test Engineer:	50822
Configuration:	EUT only
Mode	Band 48 QPSK 20MHz + 20MHz
Chamber #:	Chamber B

Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	T1792 3400-3800MHz BRF	EIRP CF	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 3560MHz + 3579.8MHz										
7.04183	29.08	RMS	36.6	-21.3	.8	-95.2	-50.02	-40	-10.02	H
7.06168	28.94	RMS	36.6	-21.2	.8	-95.2	-50.06	-40	-10.06	V
10.06866	26.71	RMS	38.4	-17.4	.6	-95.2	-46.89	-40	-6.89	V
10.11296	26.23	RMS	38.5	-17.7	.6	-95.2	-47.57	-40	-7.57	H
13.65414	27.73	RMS	40.4	-18.5	.8	-95.2	-44.77	-40	-4.77	V
13.72819	26.72	RMS	40.6	-18.6	.7	-95.2	-45.78	-40	-5.78	H
Mid Channel, 3615.1MHz + 3634.9MHz										
7.21079	28.77	RMS	37.1	-20.9	.6	-95.2	-49.63	-40	-9.63	H
7.27524	28.47	RMS	37.1	-20.5	.5	-95.2	-49.63	-40	-9.63	V
10.25343	27.21	RMS	38.8	-17	.6	-95.2	-45.59	-40	-5.59	H
10.32749	27.07	RMS	39	-17.4	.6	-95.2	-45.93	-40	-5.93	V
13.84693	26.93	RMS	40.6	-18.4	.8	-95.2	-45.27	-40	-5.27	H
13.92125	26.25	RMS	40.6	-18.6	.7	-95.2	-46.25	-40	-6.25	V
High Channel, 3670.2MHz + 3690MHz										
7.27941	27.52	RMS	37.1	-20.4	.5	-95.2	-50.48	-40	-10.48	V
7.28684	28.31	RMS	37.1	-20.4	.5	-95.2	-49.69	-40	-9.69	H
10.61309	26.91	RMS	39.5	-17.1	.6	-95.2	-45.29	-40	-5.29	V
10.63939	26.32	RMS	39.5	-17.2	.6	-95.2	-45.98	-40	-5.98	H
15.51928	26.72	RMS	40.8	-18.2	1.1	-95.2	-44.78	-40	-4.78	H
15.7765	26.44	RMS	41.2	-17.9	.9	-95.2	-44.56	-40	-4.56	V

11. SETUP PHOTOS

Please refer to 13573777-EP1V1 for setup photos

END OF REPORT