

# TEST REPORT

**Report Number :** 14523758-E16V3

**Applicant :** Apple, Inc  
1 APPLE PARK WAY  
CUPERTINO, CA 95014, U.S.A.

**Model :** A2846

**Brand :** APPLE

**FCC ID :** BCG-E8427A

**EUT Description :** SMARTPHONE

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

**Date Of Issue:**  
2023-07-18

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	2023-07-10	Initial Review	Eric Ting
V2	2023-07-13	Fix TCB Question sections 2, 3, 6, 10	Andrew Le
V3	2023-07-18	Addressed TCB Feedback Section 2, 6, 10	Andrew Le

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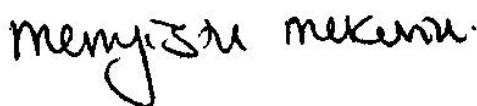

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# 1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	A2846
Brand	APPLE
FCC ID	BCG-E8427A
EUT Description	SMARTPHONE
Serial Number	CWV1Q3XF6C, K7XQ993QJQ, HFPVFHTGH4 (CONDUCTED) HWG09GFXL2, VHP604XC17 (RADIATED)
Sample Receipt Date	2023-01-26
Date Tested	2023-01-27 TO 2023-06-27
Applicable Standards	FCC 47 CFR Part 2, Part 22, Part 27, and Part 96
Test Results	COMPLIES
<p>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.</p> <p>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.</p> <p>This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.</p>	
Approved & Released By:	Prepared By:
	
Mengistu Mekuria Operations Leader UL Verification Services Inc.	Eric Ting Test 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.”

Below is a list of the data provided by the customer:

1. Antenna gain (see section 6.4)

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) 96.41 (b)	Complies	
Occupied Bandwidth	2.1049	Complies	
Band Edge and Emission Mask	2.1051, 22.917 (a), 27.53 (m)(4) &(m)(6), 96.41(e)	Complies	
Out of Band Emissions	2.1051, 22.917 (a), 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 (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 47 CFR Part 2, Part 22, Part 27, and Part 96
- [FCC KDB 971168 D01 v03r01](#): Power Meas License Digital Systems
- [FCC KDB 971168 D02 v02r02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01 v01r01](#): Determining ERP and EIRP

### 4. FACILITIES AND ACCREDITATION

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

	Address	ISED CABID	ISED Company Number	FCC Registration
<input checked="" type="checkbox"/>	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
<input checked="" type="checkbox"/>	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
<input type="checkbox"/>	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
<input checked="" type="checkbox"/>	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			



## 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 <sub>Lab</sub>
Conducted Antenna Port Emission Measurement	1.940 db
Power Spectral Density	2.466 db
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.450 db Peak, 1.300 db Ave.
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 db
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 db
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 db
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 db
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 db
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 db
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 db

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

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

## 6. EQUIPMENT UNDER TEST

### 6.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G NR1, 5G NR2, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Ultra-Wideband (UWB), GPS, NFC, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

### 6.2. MAXIMUM OUTPUT POWER

#### ERP/EIRP TEST PROCEDURE

ANSI C63.26:2015  
KDB 971168 D01 Section 5.6

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

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 22								
ERP Limit (W)		3.00						
Antenna Gain (dBi)_(Ant 1)		-4.60						
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	18.95	0.079	7507	7M51G7W
	16QAM			25.65	18.90	0.078	7518	7M52D7W
5+3	QPSK	826.5	847.5	25.70	18.95	0.079	7512	7M51G7W
	16QAM			25.65	18.90	0.078	7507	7M51D7W
5+10	QPSK	826.5	844.0	25.70	18.95	0.079	13865	13M9G7W
	16QAM			25.04	18.29	0.067	13876	13M9D7W
10+5	QPSK	829.0	846.5	25.70	18.95	0.079	13876	13M9G7W
	16QAM			25.06	18.31	0.068	13855	13M9D7W
10+10	QPSK	829.0	844.0	25.70	18.95	0.079	18756	18M8G7W
	16QAM			25.39	18.64	0.073	18752	18M8D7W

**OUTPUT POWER FOR LTE BAND 7**

Part 27								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)_(Ant 1)		-1.80						
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	23.90	0.245	28266	28M3G7W
	16QAM			25.03	23.23	0.210	28155	28M2D7W
20+10	QPSK	2510.0	2564.5	25.70	23.90	0.245	28210	28M2G7W
	16QAM			24.70	22.90	0.195	28167	28M2D7W
15+15	QPSK	2507.5	2562.5	25.70	23.90	0.245	28756	28M8G7W
	16QAM			25.00	23.20	0.209	28706	28M7D7W
15+20	QPSK	2507.8	2560.0	25.70	23.90	0.245	33056	33M1G7W
	16QAM			24.97	23.17	0.207	33017	33M0D7W
20+15	QPSK	2510.0	2562.2	25.70	23.90	0.245	32976	33M0G7W
	16QAM			25.06	23.26	0.212	32954	33M0D7W
20+20	QPSK	2510.0	2560.0	25.70	23.90	0.245	37851	37M9G7W
	16QAM			24.94	23.14	0.206	37830	37M8D7W

**OUTPUT POWER FOR LTE BAND 41**

Part 27								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)_(Ant 1)		-1.20						
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	28.70	27.50	0.562	23393	23M4G7W
	16QAM			28.29	27.09	0.512	23322	23M3D7W
20+5	QPSK	2506.0	2686.7	28.70	27.50	0.562	23403	23M4G7W
	16QAM			28.15	26.95	0.495	23346	23M3D7W
10+20	QPSK	2501.5	2680.0	28.70	27.50	0.562	28135	28M1G7W
	16QAM			26.96	25.76	0.377	28102	28M1D7W
20+10	QPSK	2506.0	2684.5	28.70	27.50	0.562	28095	28M1G7W
	16QAM			27.20	26.00	0.398	28160	28M2D7W
15+15	QPSK	2503.5	2682.5	28.70	27.50	0.562	28695	28M7G7W
	16QAM			28.08	26.88	0.488	28682	28M7D7W
15+20	QPSK	2503.8	2680.0	28.70	27.50	0.562	32893	32M9G7W
	16QAM			27.00	25.80	0.380	32961	33M0D7W
20+15	QPSK	2506.0	2682.2	28.70	27.50	0.562	32934	32M9G7W
	16QAM			28.12	26.92	0.492	32945	32M9D7W
20+20	QPSK	2506.0	2680.0	28.70	27.50	0.562	37833	37M8G7W
	16QAM			28.19	26.99	0.500	37772	37M8D7W

**OUTPUT POWER FOR LTE BAND 48**

Part 96								
EIRP Limit (W)/ 10MHz		0.20						
Antenna Gain (dBi)_(Ant 4)		-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+20	QPSK	3553.3	3690.0	22.80	22.40	0.174	23255	23M3G7W
	16QAM			22.19	21.79	0.151	23235	23M2D7W
20+5	QPSK	3560.0	3696.7	22.80	22.40	0.174	23284	23M3G7W
	16QAM			22.07	21.67	0.147	23167	23M2D7W
10+20	QPSK	3555.5	3690.0	22.80	22.40	0.174	27921	27M9G7W
	16QAM			22.10	21.70	0.148	27942	27M9D7W
20+10	QPSK	3560.0	3694.5	22.80	22.40	0.174	27991	28M0G7W
	16QAM			22.30	21.90	0.155	28021	28M0D7W
15+20	QPSK	3557.8	3690.0	22.80	22.40	0.174	32872	32M9G7W
	16QAM			22.35	21.95	0.157	32709	32M7D7W
20+15	QPSK	3560.0	3692.2	22.80	22.40	0.174	32777	32M8G7W
	16QAM			22.50	22.10	0.162	32864	32M9D7W
20+20	QPSK	3560.0	3690.0	22.80	22.40	0.174	37542	37M5G7W
	16QAM			22.37	21.97	0.157	37522	37M5D7W

### 6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.13.02.

### 6.4. MAXIMUM ANTENNA GAIN

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

LTE and 5G NR Bands	Frequency Range (MHz)	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	ANT 4 Antenna Gain (dBi)	ANT 7 Antenna Gain (dBi)	ANT 8 Antenna Gain (dBi)	ANT 9 Antenna Gain (dBi)
LTE Band 5	824 – 849	-4.6	-4.9					
LTE Band 7	2500 – 2570	-1.8	-0.8	-1.2	-1.4			
LTE Band 41	2496 – 2690	-1.2	-1.4	-2.7	-1.6			
LTE Band 48	3600 – 3650				-0.4	-2.9	-3.4	-2.2

## 6.5. WORST-CASE CONFIGURATION AND MODE

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

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. Tests were performed on the conducted test at Ant 1 antenna as worst case since it has higher output powers.

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

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.

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz. There were no emissions found with less than 20dB of margin from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz.

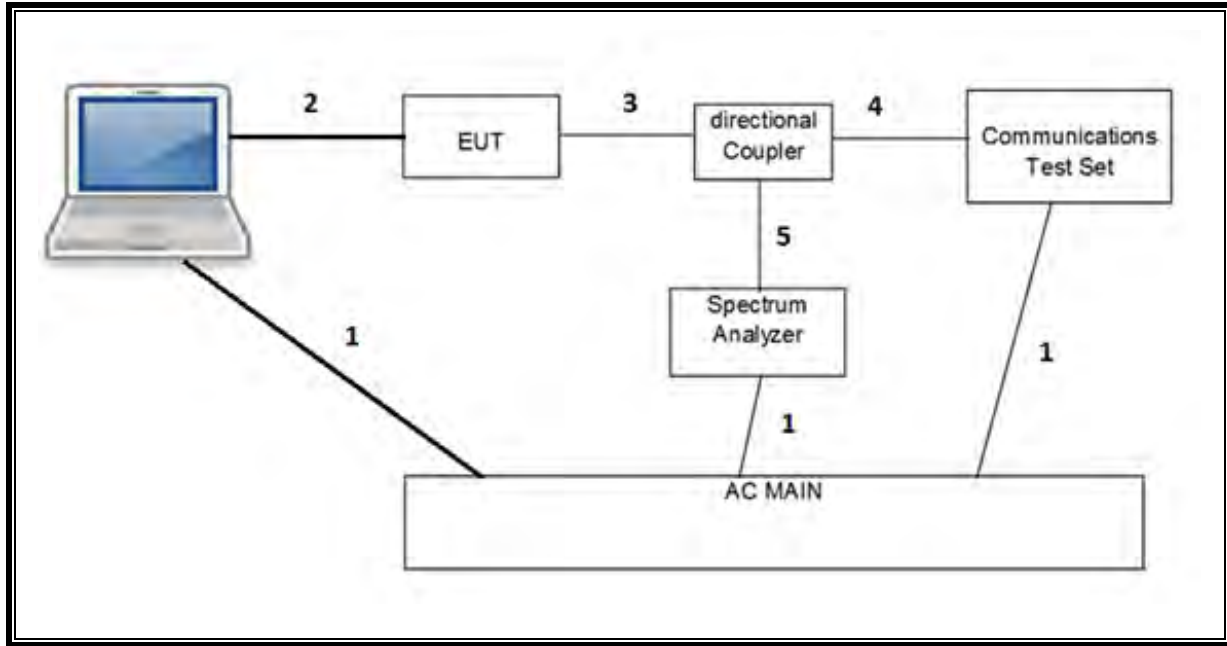
Frequency Bands	ANT1	ANT2	ANT3	ANT4	ANT7	ANT8	ANT9
663 – 849 MHz	X	X	N/A	N/A	N/A	N/A	N/A
2300 – 2700 MHz	Y	Y	Y	X	N/A	N/A	N/A
3300 – 3980 MHz	N/A	N/A	N/A	Y	X	Y	Y

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.

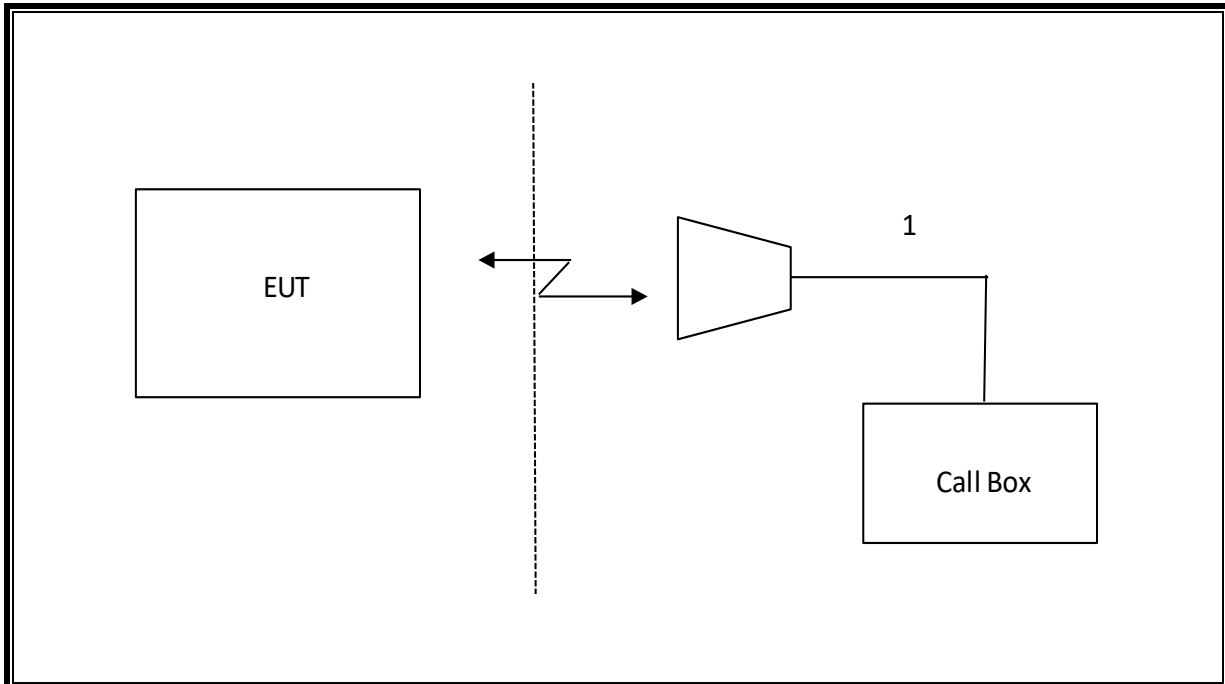
## 6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number	FCC ID/ DoC		
Laptop	Apple	MacBook Pro	HRP082673	BCGA1708		
AC/DC adapter	Apple	A1718	C4H64450HH3GN8RA6	--		
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	79834	06/082203
*Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	85151	04/30/2024
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	85313	02/29/2024
Spectrum Analyzer, PXA	Keysight	N9030B	222074	07/16/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	85201	02/29/2024
Spectrum Analyzer, PXA	Keysight	N9030B	85214	07/18/2023
Spectrum Analyzer, PXA	Keysight	N9030B	222073	07/22/2023
PXA Signal Analyzer	Keysight	N9030B	222073	07/22/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	02/29/2024
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201498	02/29/2024
Directional Coupler	KRYTAR	152610	198816	09/23/2023
Directional Coupler	KRYTAR	152610	198817	09/23/2023
Directional Coupler	KRYTAR	152610	135712	09/23/2023
Power Meter, P-series single channel	Keysight	N1912A	90630	01/24/2024
Power Meter, P-series single channel	Keysight	N1912A	90719	01/31/2024
Power Meter, P-series single channel	Agilent	N1911A	82174	01/31/2024
Power Sensor, P – series, 50MHz to 18GHz, Wideband	Keysight	N1921A	90389	01/31/2024
Filter, BRF 2495 – 2690 MHz	Micro-Tronics	155050	155055	12/28/2023
Filter, BRF 3.4 – 3.8GHz	Micro-Tronics	208398	208398	08/19/2023
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	222792	02/29/2024
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	230298	02/29/2024
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	230295	02/29/2024
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	22796	02/29/2024
Wideband Communication Test Set, Call Box	Rohde & Schwarz	CMW500	230297	02/29/2024
*Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	82472	11/16/2023
*Amplifier, 218GHz to 26.5GHz	Ampical	AMP18G26.5-60	215705	02/26/2023
*Amplifier, 26.5GHz to 40GHz	Ampical	AMP26G40-65	172346	02/29/2024
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	172362	03/31/2024
Antenna, Horn 26.5GHz to 40GHz	ARA	MWH-2640/B	172365	03/31/2024
*Antenna, Active Loop 100KHz to 30MHz	ELECTRO-METRICS	EM-6872	219911	05/10/2023
*Antenna, Active Loop 30Hz to 1MHz	ELECTRO-METRICS	EM-6871	219909	05/10/2023
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	236360	Verified/Characterized before use
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	236285	Verified/Characterized before use
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	236355	Verified/Characterized before use
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	Ver 3.4, May 20, 2022	
Power Measurement Software	UL	UL RF	Ver 3.1.4, April 29, 2022	
Radiated test software	UL	UL RF	Ver 9.5, Jan 21, 2022	

**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:	28498	Test Date:	3/22/2023
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#### OUTPUT POWER FOR LTE BAND 5 (3.0MHz + 5.0MHz)

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)											
							ANT 1				ANT 2				ANT 3			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
3MHz / 5MHz	825.5	829.4	1	14	1	0	25.65	<b>25.65</b>	<b>24.80</b>	23.71	24.66	24.61	24.21	23.06	25.33	25.35	25.22	24.10
			15	0	25	0	<b>25.70</b>	23.95	22.96	<b>23.89</b>	<b>24.70</b>	<b>24.70</b>	<b>24.35</b>	<b>23.36</b>	<b>25.38</b>	<b>25.40</b>	<b>25.35</b>	<b>24.36</b>
	834.0	837.9	1	14	1	0	25.61	25.55	24.55	23.58	24.66	24.62	23.63	22.79	25.31	24.28	24.78	23.82
			15	0	25	0	<b>25.70</b>	23.97	22.98	23.47	<b>24.70</b>	24.49	23.52	22.53	25.37	<b>25.40</b>	24.71	23.72
	842.5	846.5	1	14	1	0	25.62	24.90	23.90	22.93	24.61	24.22	23.23	22.17	25.29	25.27	24.25	23.23
			15	0	25	0	<b>25.70</b>	23.91	23.99	23.06	<b>24.70</b>	24.31	23.37	22.36	25.37	<b>25.40</b>	24.45	23.46

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)											
							ANT 1				ANT 2				ANT 3			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 3MHz	826.5	830.4	1	24	1	0	25.58	25.60	24.58	23.69	24.62	24.45	23.95	22.99	25.28	25.36	<b>25.09</b>	<b>24.05</b>
			25	0	15	0	<b>25.70</b>	<b>25.65</b>	<b>24.80</b>	<b>23.84</b>	24.68	<b>24.55</b>	<b>24.32</b>	<b>23.37</b>	<b>25.30</b>	25.25	24.30	23.99
	835.0	838.9	1	24	1	0	25.64	25.33	24.34	23.35	24.69	24.41	23.45	22.43	25.29	<b>25.39</b>	24.52	23.49
			25	0	15	0	<b>25.70</b>	25.36	24.41	23.42	24.68	24.41	23.47	22.45	<b>25.30</b>	25.38	24.61	23.65
	843.6	847.5	1	24	1	0	25.57	24.81	23.85	22.92	<b>24.70</b>	24.12	23.17	22.07	<b>25.30</b>	25.14	24.18	23.22
			25	0	15	0	<b>25.70</b>	24.74	23.78	22.79	24.67	24.16	23.23	22.24	25.23	25.21	24.27	23.31

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)											
							ANT 1				ANT 2				ANT 3			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
5MHz / 10MHz	826.5	833.7	1	24	1	0	25.70	25.00	24.01	21.01	<b>24.70</b>	23.66	<b>22.78</b>	19.61	<b>25.40</b>	24.41	<b>23.43</b>	20.29
			25	0	50	0	24.00	23.03	23.10	<b>21.11</b>	22.68	21.69	21.68	19.69	23.43	22.44	22.53	<b>20.53</b>
	831.6	838.8	1	24	1	0	<b>25.70</b>	<b>25.04</b>	<b>24.05</b>	21.00	<b>24.70</b>	<b>23.73</b>	22.72	<b>19.71</b>	<b>25.40</b>	24.44	23.42	20.37
			25	0	50	0	24.04	23.04	23.14	21.01	22.71	21.71	21.71	<b>19.71</b>	23.41	22.42	22.39	20.40
	836.8	844.0	1	24	1	0	<b>25.70</b>	<b>25.04</b>	24.00	20.97	<b>24.70</b>	23.72	22.72	19.69	<b>25.40</b>	<b>24.46</b>	23.42	20.40
			25	0	50	0	24.01	23.02	23.12	21.00	22.68	21.70	21.71	<b>19.71</b>	23.44	22.44	22.58	20.44

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

Bandwidth	PCC Frequency (MHz)	SCC1 Frequency (MHz)	PCC RB Size	PCC RB Offset	SCC1 RB Size	SCC1 RB Offset	Conducted Average (dBm)											
							ANT 1				ANT 2				ANT 3			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 5MHz	829.0	836.2	1	49	1	0	<b>25.70</b>	25.05	23.97	21.04	<b>24.70</b>	<b>23.73</b>	<b>22.70</b>	19.77	<b>25.40</b>	24.30	<b>24.02</b>	21.42
			50	0	25	0	23.50	23.13	23.10	21.09	22.40	21.83	21.81	<b>19.84</b>	24.46	23.49	23.46	<b>21.48</b>
	834.3	841.5	1	49	1	0	<b>25.70</b>	<b>25.06</b>	23.97	21.04	<b>24.70</b>	23.66	22.67	19.73	<b>25.40</b>	24.39	23.37	20.42
			50	0	25	0	23.33	23.14	23.14	<b>21.13</b>	22.77	21.78	21.76	19.78	23.54	22.55	22.52	20.53
	839.3	846.5	1	49	1	0	<b>25.70</b>	24.98	<b>24.04</b>	20.92	<b>24.70</b>	<b>23.73</b>	22.68	19.76	<b>25.40</b>	<b>24.44</b>	23.39	20.45
			50	0	25	0	23.25	23.10	23.11	21.07	22.77	21.77	21.75	19.76	23.52	22.51	22.51	20.51

#### 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				ANT 3			
							QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
10MHz / 10MHz	829.0	838.9	1	49	1	0	<b>25.70</b>	25.25	<b>24.29</b>	21.15	<b>24.70</b>	24.18	<b>23.18</b>	20.15	<b>25.40</b>	24.14	23.11	20.01
			50	0	50	0	24.32	23.31	23.34	21.32	23.24	22.24	22.25	20.27	23.20	22.21	22.20	20.20
	831.5	841.4	1	49	1	0	<b>25.70</b>	<b>25.39</b>	24.28	21.28	<b>24.70</b>	24.18	23.16	20.19	<b>25.40</b>	<b>24.23</b>	<b>23.14</b>	20.12
			50	0	50	0	15.11	15.91	15.79	15.88	14.78	14.84	14.79	14.77	14.90	14.85	14.56	14.42
	834.1	844.0	1	49	1	0	24.37	23.37	23.38	<b>21.36</b>	23.28	22.27	22.26	20.27	23.23	22.24	22.22	<b>20.22</b>
			50	0	50	0	25.45	25.36	24.25	21.30	24.33	<b>24.22</b>	23.16	20.17	25.33	24.17	23.09	20.14





**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	27.70	26.12	25.12	22.15	27.85	26.39	25.85	23.78	26.12	24.69	24.20	20.98	26.16	24.68	24.11	21.20
			1	0	1	99	14.70	14.79	14.69	14.72	15.00	14.80	14.56	13.11	13.10	12.85	12.80	12.75	13.05	12.98	13.00	13.13
			100	0	100	0	22.65	22.52	22.41	21.95	22.62	22.64	22.35	22.12	21.75	21.71	21.52	21.12	21.14	21.15	21.13	21.15
	2583.1	2602.9	1	99	1	0	<b>28.70</b>	<b>28.19</b>	<b>27.56</b>	<b>24.66</b>	<b>28.57</b>	<b>28.40</b>	<b>27.85</b>	<b>24.89</b>	<b>28.00</b>	<b>26.45</b>	<b>265.50</b>	<b>22.90</b>	<b>27.70</b>	<b>26.14</b>	25.38	22.44
			1	0	1	99	20.13	20.21	20.08	20.25	19.86	20.29	20.14	20.20	19.50	19.61	19.43	19.56	19.12	18.66	18.87	18.91
			100	0	100	0	26.70	25.68	25.68	23.67	26.63	25.77	25.72	23.77	26.00	25.00	24.98	21.85	25.70	24.39	24.42	22.45
	2660.2	2680.0	1	99	1	0	28.57	27.15	26.49	23.56	28.00	27.85	27.72	22.85	26.86	25.97	25.46	22.56	26.12	25.89	<b>25.44</b>	<b>22.53</b>
			1	0	1	99	19.07	19.14	19.10	19.19	20.12	19.45	18.95	18.85	18.44	18.58	18.54	18.76	17.68	17.23	17.02	16.98
			100	0	100	0	25.62	24.63	24.65	22.60	25.85	24.85	24.12	22.85	24.95	24.16	24.18	22.13	24.21	23.29	23.36	21.39



**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	21.50	20.67	19.84	19.45	21.43	21.37	21.44	20.99	21.43	20.62	19.68	19.25	19.87	18.86	17.89	17.58
			1	0	1	99	7.90	7.22	7.12	7.05	8.00	7.85	7.45	7.12	7.99	7.80	7.45	7.25	6.70	6.25	6.22	6.10
			100	0	100	0	15.00	14.95	14.99	14.85	14.95	14.85	14.55	14.20	15.00	14.87	14.82	14.25	13.69	13.55	13.10	12.95
	3615.1	3634.9	1	99	1	0	<b>25.00</b>	<b>24.85</b>	<b>23.98</b>	<b>20.98</b>	<b>25.00</b>	<b>24.95</b>	<b>23.85</b>	<b>21.00</b>	<b>24.70</b>	<b>24.56</b>	<b>23.56</b>	20.56	<b>22.80</b>	<b>22.37</b>	<b>21.04</b>	18.70
			1	0	1	99	14.34	14.32	14.26	14.43	14.23	14.19	14.15	13.90	14.18	14.14	14.10	13.85	13.20	13.15	12.90	12.85
			100	0	100	0	21.40	21.12	21.10	20.89	21.24	21.12	21.00	20.80	21.45	21.12	20.98	<b>20.85</b>	20.20	20.10	19.98	<b>19.44</b>
	3670.2	3690.0	1	99	1	0	21.50	21.45	21.12	20.82	21.45	21.21	20.89	20.52	21.48	21.12	20.85	20.25	20.12	19.90	19.55	18.89
			1	0	1	99	7.90	7.56	7.45	7.20	8.00	7.89	7.78	7.25	8.00	7.85	7.15	7.02	6.70	6.12	5.98	5.88
			100	0	100	0	15.00	14.89	14.45	14.10	14.95	14.50	14.12	14.00	15.00	14.85	14.55	14.10	13.69	13.55	13.14	13.01

## 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	7.5067	8.094
	3MHz + 5MHz BAND 16QAM			7.5176	8.126
	5MHz + 3MHz BAND QPSK	25/0 + 15/0		7.5119	8.132
	5MHz + 3MHz BAND 16QAM			7.5070	8.131
	5MHz + 10MHz BAND QPSK	25/0 + 50/0		13.865	14.75
	5MHz + 10MHz BAND 16QAM			13.876	14.77
	10MHz + 5MHz BAND QPSK	50/0 + 25/0		13.876	14.78
	10MHz + 5MHz BAND 16QAM			13.855	14.80
	10MHz + 10MHz BAND QPSK	50/0 + 50/0		18.756	19.69
	10MHz + 10MHz BAND 16QAM			18.752	19.87

**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	28.266	30.27
	10MHz + 20MHz BAND 16QAM			28.155	30.62
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		28.210	30.55
	20MHz + 10MHz BAND 16QAM			28.167	32.21
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.756	31.16
	15MHz + 15MHz BAND 16QAM			28.706	33.15
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		33.056	35.60
	15MHz + 20MHz BAND 16QAM			33.017	35.37
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.976	35.50
	20MHz + 15MHz BAND 16QAM			32.954	35.46
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.851	40.54
	20MHz + 20MHz BAND 16QAM			37.830	40.47

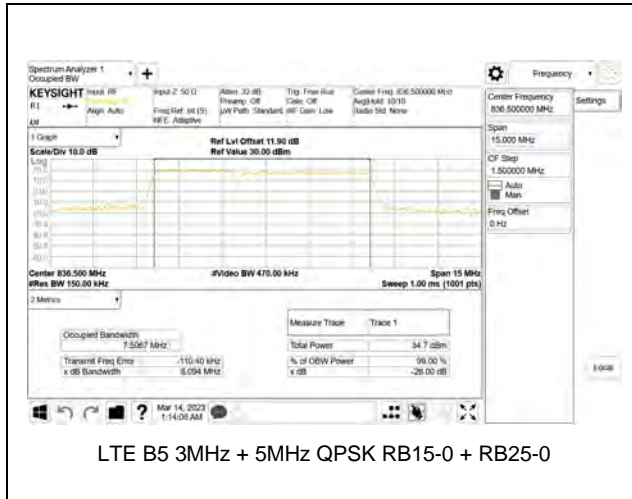
**LTE BAND 41**

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	23.393	25.15
	5MHz + 20MHz BAND 16QAM			23.322	25.28
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		23.403	25.29
	20MHz + 5MHz BAND 16QAM			23.346	25.07
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		28.135	30.51
	10MHz + 20MHz BAND 16QAM			28.102	30.27
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		28.095	30.29
	20MHz + 10MHz BAND 16QAM			28.160	30.31
	15MHz + 15MHz BAND QPSK	75/0 + 75/0		28.695	31.07
	15MHz + 15MHz BAND 16QAM			28.682	30.90
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.893	35.43
	15MHz + 20MHz BAND 16QAM			32.961	35.37
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.934	35.38
	20MHz + 15MHz BAND 16QAM			32.945	35.42
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.833	40.44
	20MHz + 20MHz BAND 16QAM			37.772	40.54

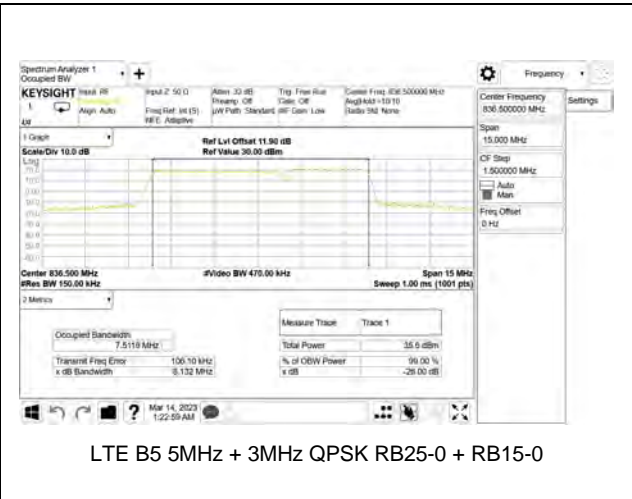
**LTE BAND 48**

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	23.255	25.05
	5MHz + 20MHz BAND 16QAM			23.235	24.83
	20MHz + 5MHz BAND QPSK	100/0 + 25/0		23.284	25.24
	20MHz + 5MHz BAND 16QAM			23.167	25.00
	10MHz + 20MHz BAND QPSK	50/0 + 100/0		27.921	29.89
	10MHz + 20MHz BAND 16QAM			27.942	29.90
	20MHz + 10MHz BAND QPSK	100/0 + 50/0		27.991	29.85
	20MHz + 10MHz BAND 16QAM			28.021	29.88
	15MHz + 20MHz BAND QPSK	75/0 + 100/0		32.872	35.19
	15MHz + 20MHz BAND 16QAM			32.709	34.89
	20MHz + 15MHz BAND QPSK	100/0 + 75/0		32.777	34.95
	20MHz + 15MHz BAND 16QAM			32.864	34.93
	20MHz + 20MHz BAND QPSK	100/0 + 100/0		37.542	39.80
	20MHz + 20MHz BAND 16QAM			37.522	39.78

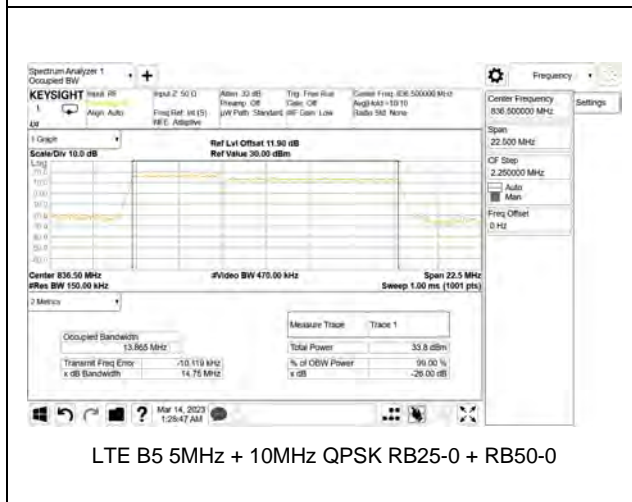
9.1.1. LTE BAND 5



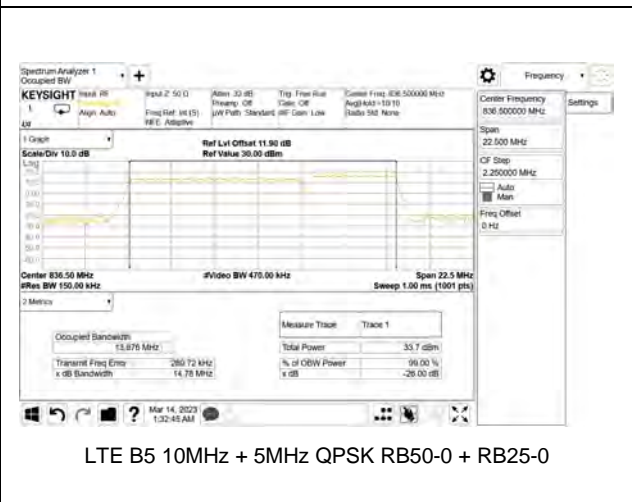
LTE B5 3MHz + 5MHz QPSK RB15-0 + RB25-0



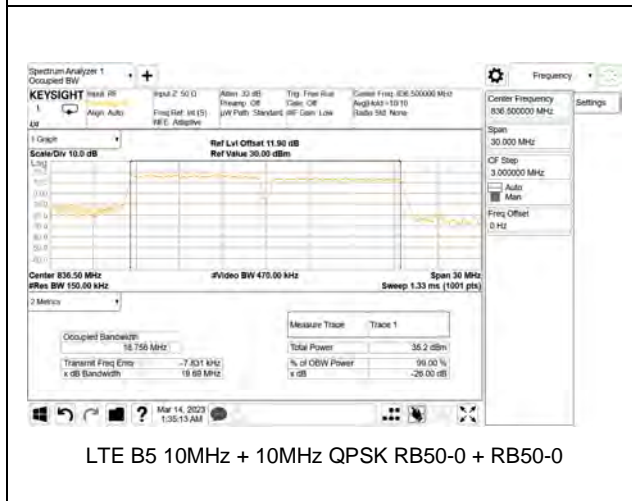
LTE B5 5MHz + 3MHz QPSK RB25-0 + RB15-0



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



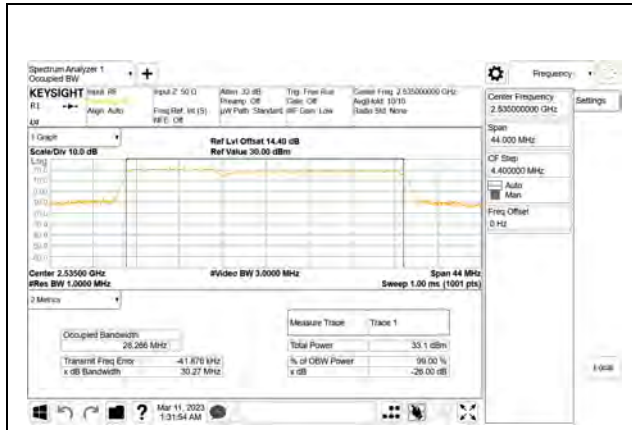
LTE B5 10MHz + 5MHz QPSK RB50-0 + RB25-0



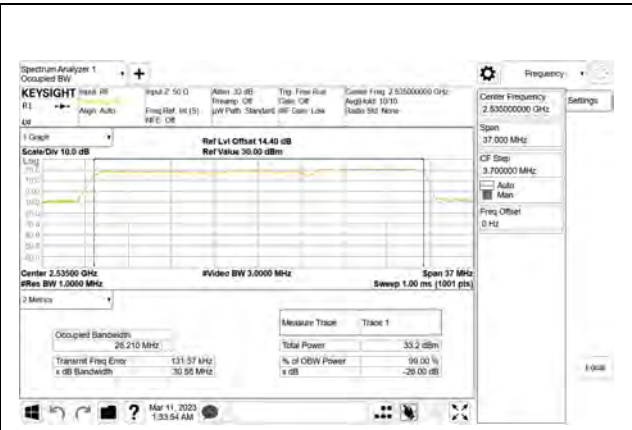
LTE B5 10MHz + 10MHz QPSK RB50-0 + RB50-0

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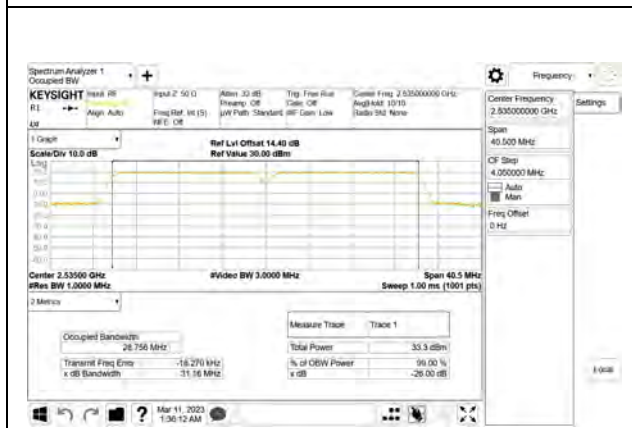
9.1.2. LTE BAND 7



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



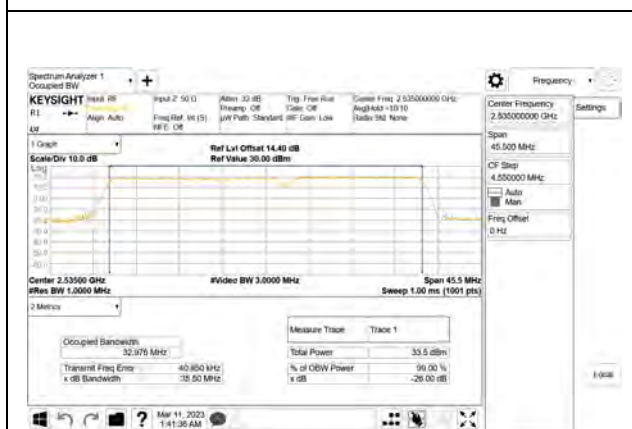
LTE B7 20MHz + 10MHz QPSK RB100-0 + RB50-0



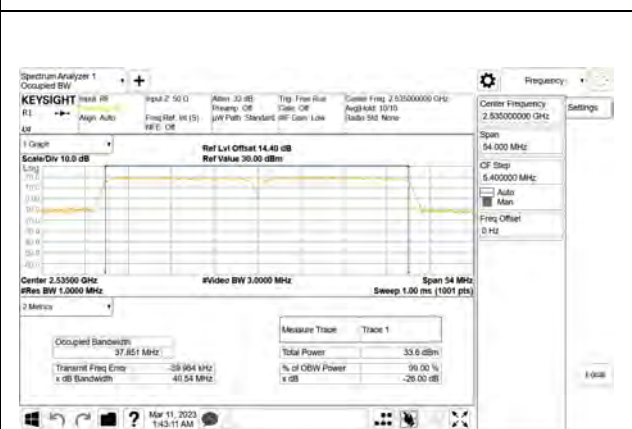
LTE B7 15MHz + 15MHz QPSK RB75-0 + RB75-0



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

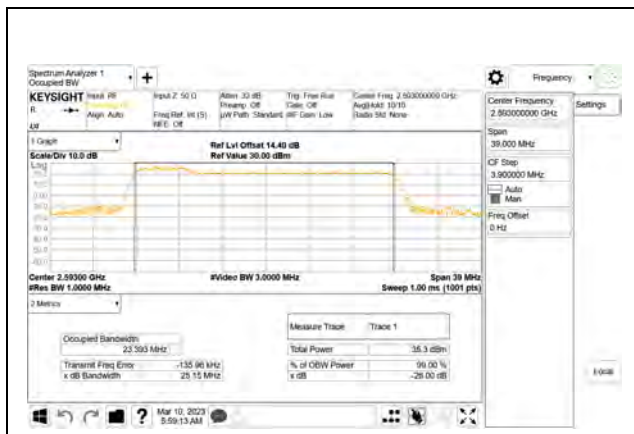


LTE B7 20MHz + 15MHz QPSK RB100-0 + RB75-0

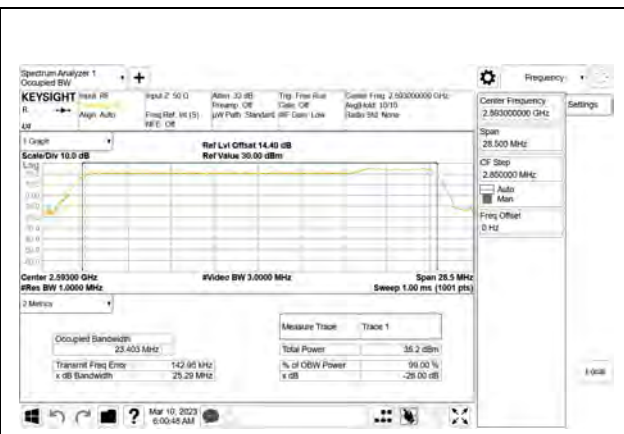


LTE B7 20MHz + 20MHz QPSK RB100-0 + RB100-0

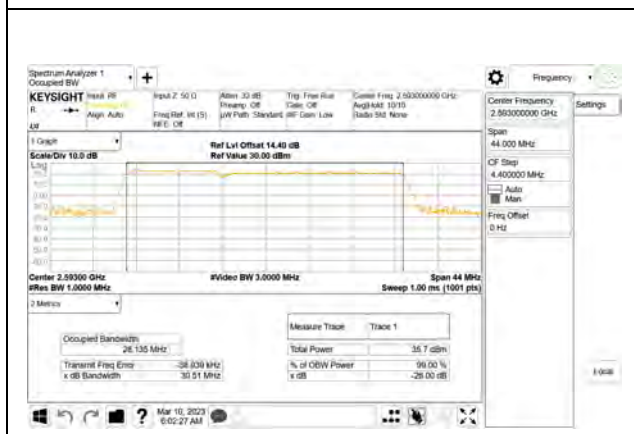
### 9.1.3. LTE BAND 41



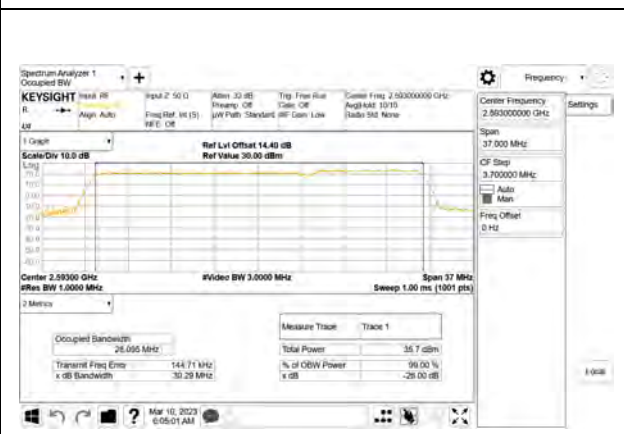
LTE B41 5MHz + 20MHz QPSK RB25-0 + RB100-0



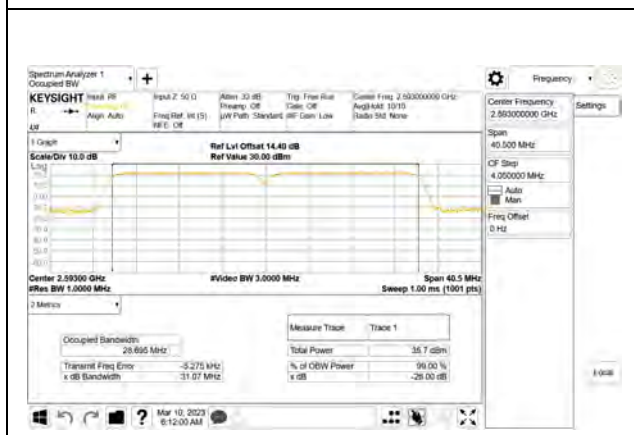
LTE B41 20MHz + 5MHz QPSK RB100-0 + RB25-0



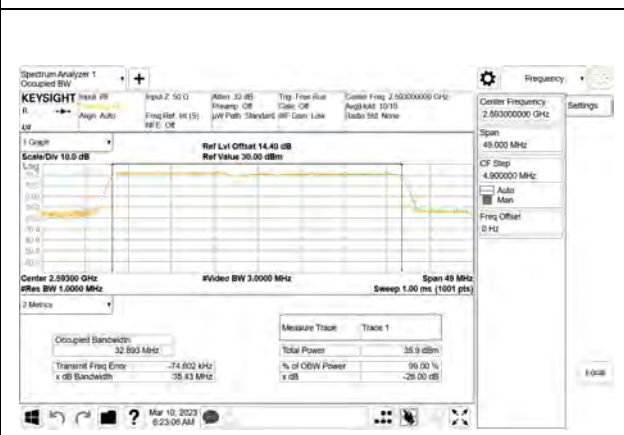
LTE B41 10MHz + 20MHz QPSK RB50-0 + RB100-0



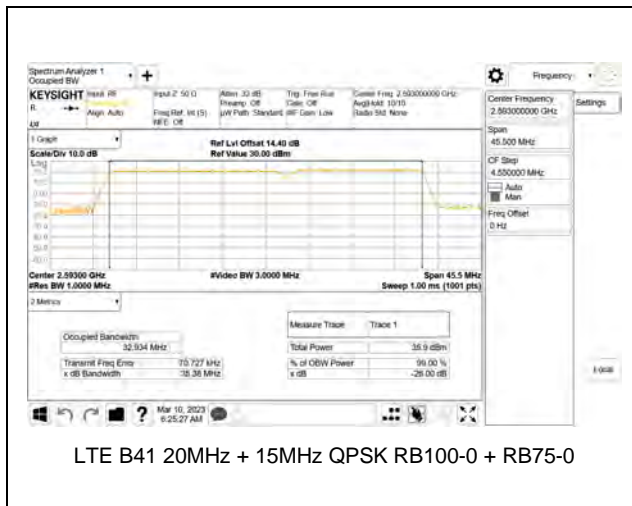
LTE B41 20MHz + 10MHz QPSK RB100-0 + RB50-0



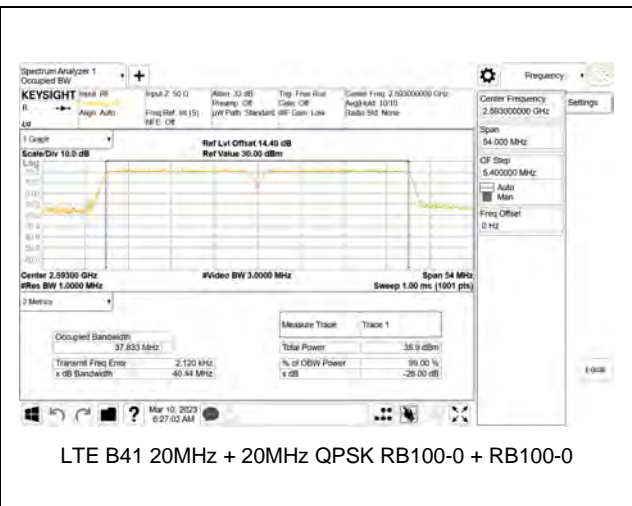
LTE B41 15MHz + 15MHz QPSK RB75-0 + RB75-0



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

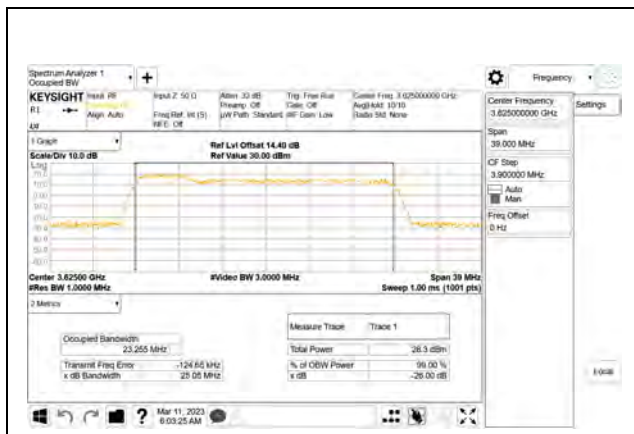


LTE B41 20MHz + 15MHz QPSK RB100-0 + RB75-0

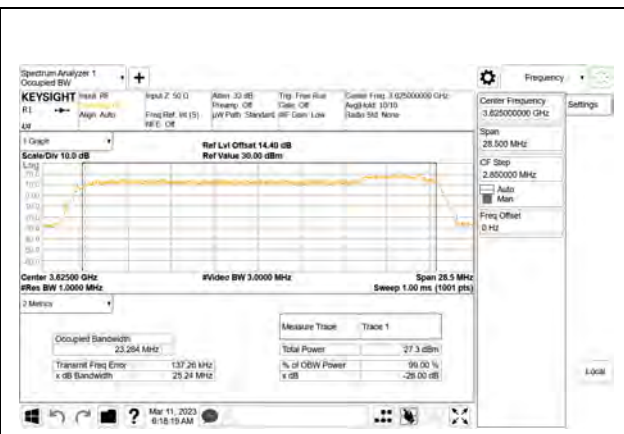


LTE B41 20MHz + 20MHz QPSK RB100-0 + RB100-0

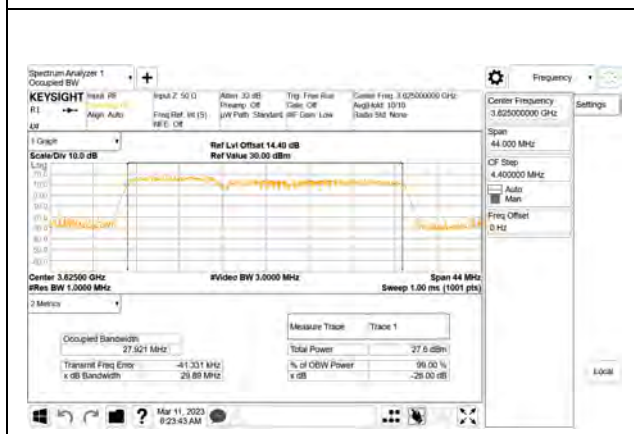
9.1.4. LTE BAND 48



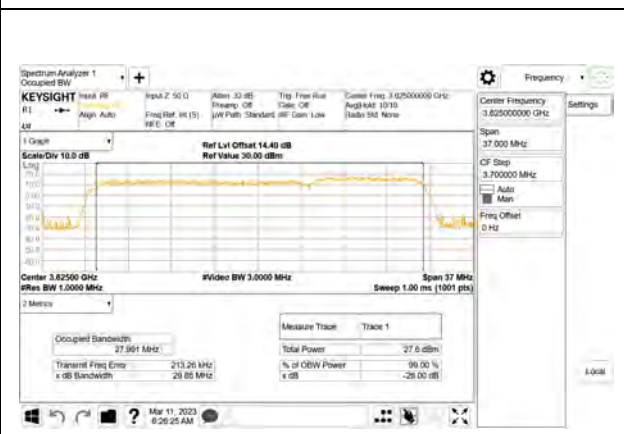
LTE B48 5MHz + 20MHz QPSK RB25-0 + RB100-0



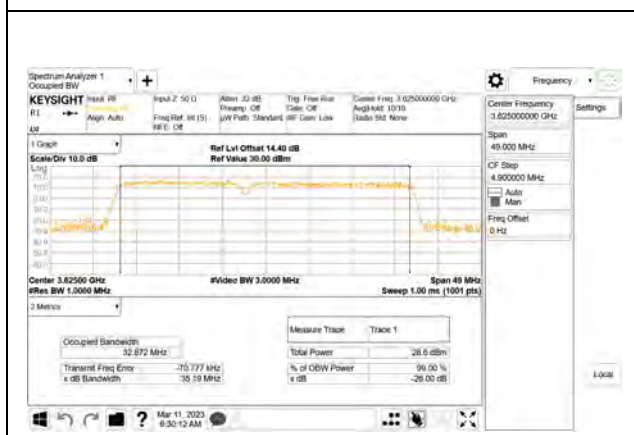
LTE B48 20MHz + 5MHz QPSK RB100-0 + RB25-0



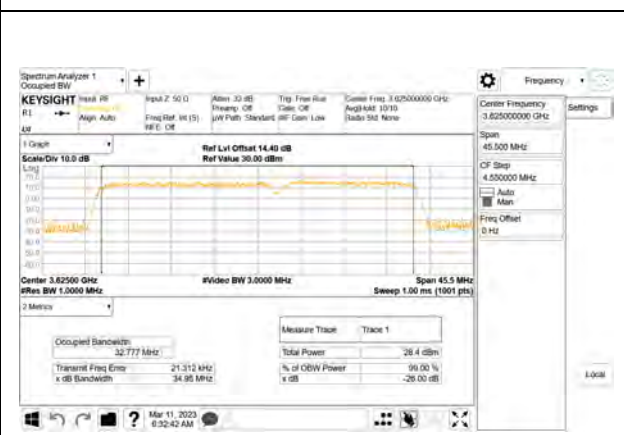
LTE B48 10MHz + 20MHz QPSK RB50-0 + RB100-0



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

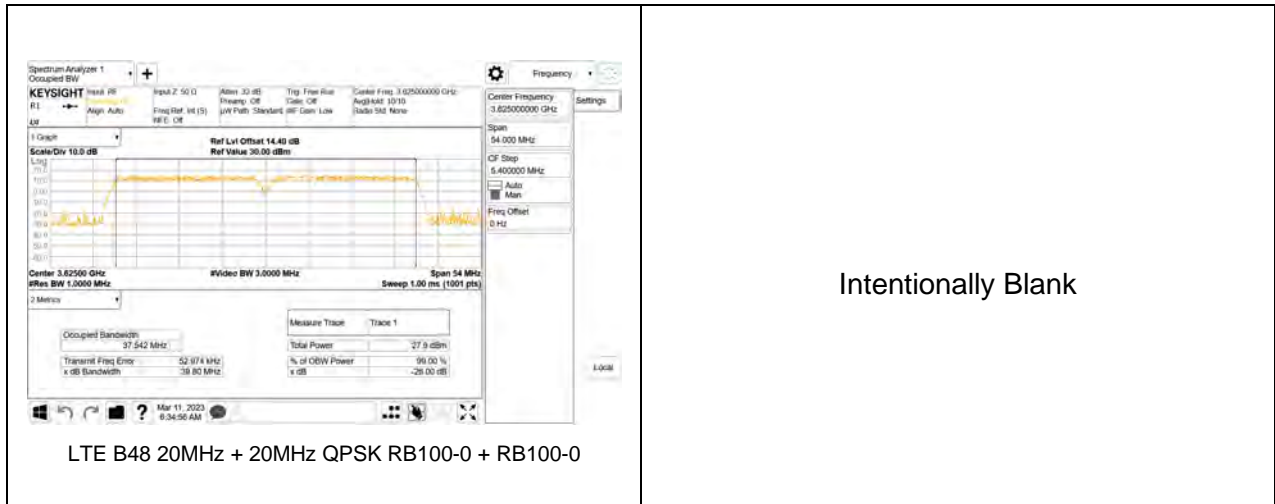


LTE B48 15MHz + 20MHz QPSK RB75-0 + RB100-0



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





## 9.2. BAND EDGE AND EMISSION MASK

### TEST PROCEDURE

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

For each band edge measurement:

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

### TEST PROCEDURE FOR FCC PART 27

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

### TEST PROCEDURE FOR FCC PART 96

(3) Measurement procedure.

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

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

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

### RESULTS

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

### 9.2.1. LTE BAND 5

#### LIMITS

FCC: §22.917

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

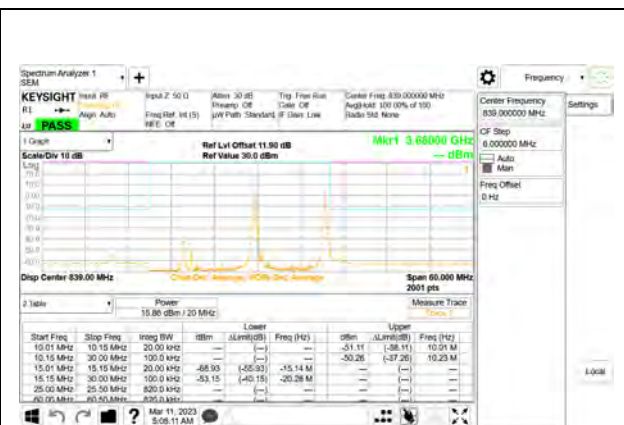
Equipment shall meet the unwanted emission limits specified below:

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB.
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB. If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.



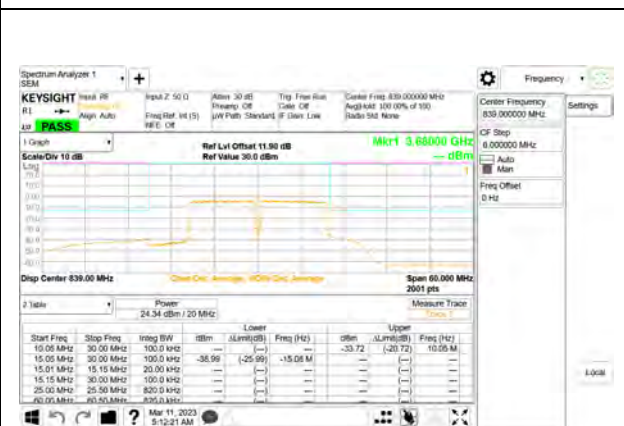
LTE B5 10MHz + 10MHz QPSK Low Ch RB1-0 + RB1-0



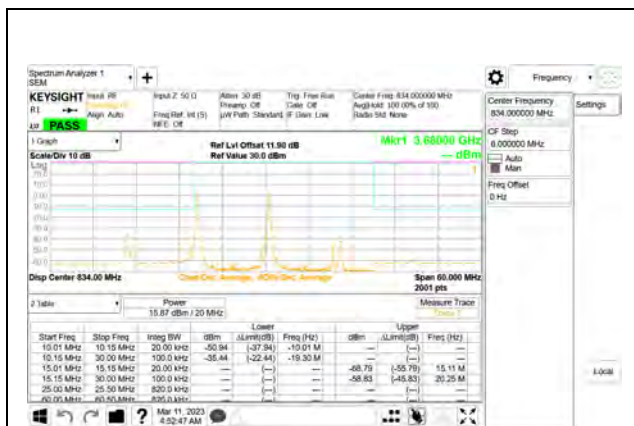
LTE B5 10MHz + 10MHz QPSK High Ch RB1-49 + RB1-49



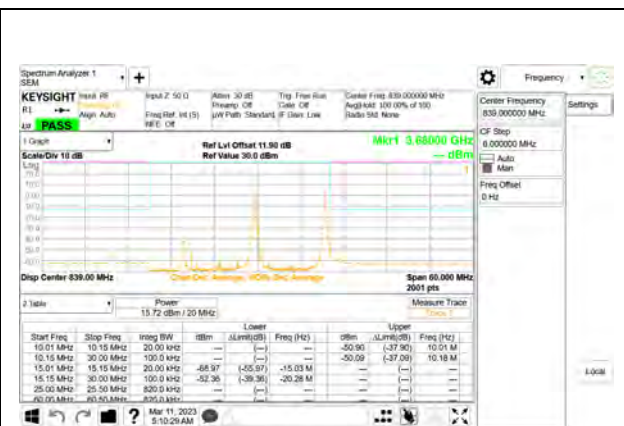
LTE B5 10MHz + 10MHz QPSK Low Ch RB50-0 + RB50-0



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



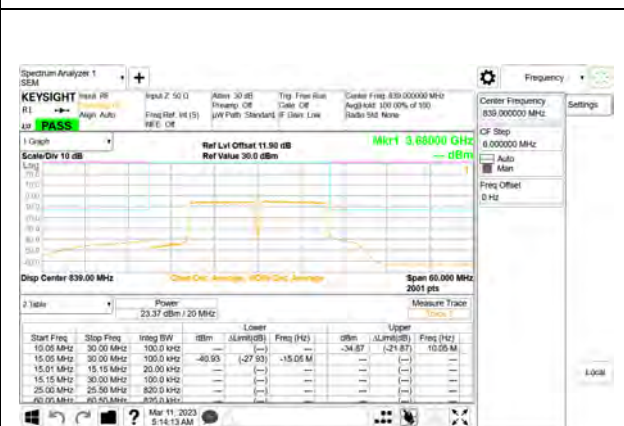
LTE B5 10MHz + 10MHz 16QAM Low Ch RB1-0 + RB1-0



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



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



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

### 9.2.2. LTE BAND 7

#### LIMITS

FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



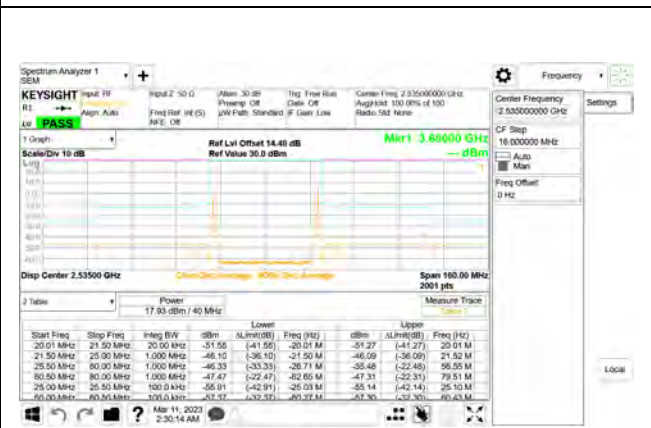
LTE B7 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



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



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



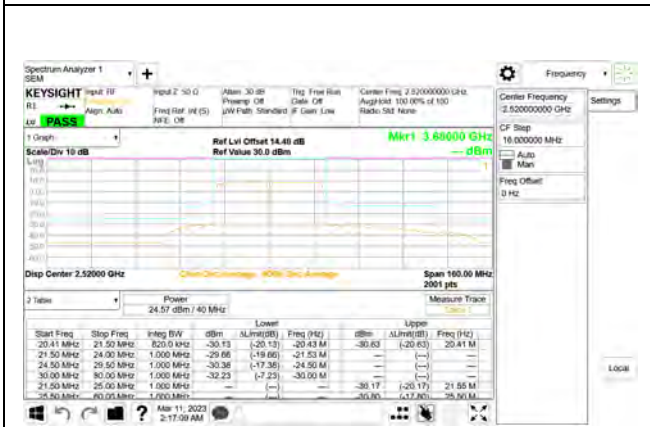
LTE B7 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



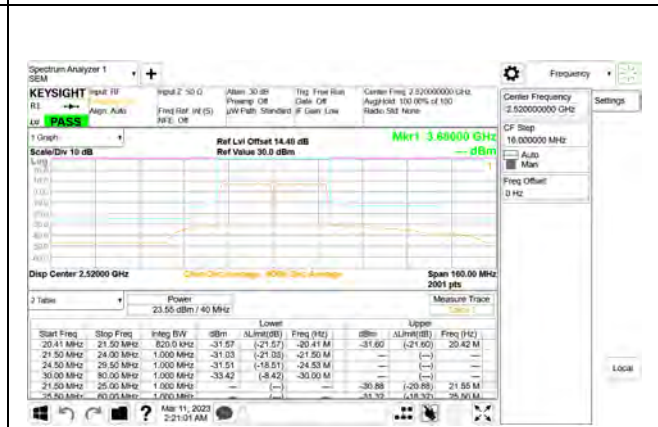
LTE B7 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



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



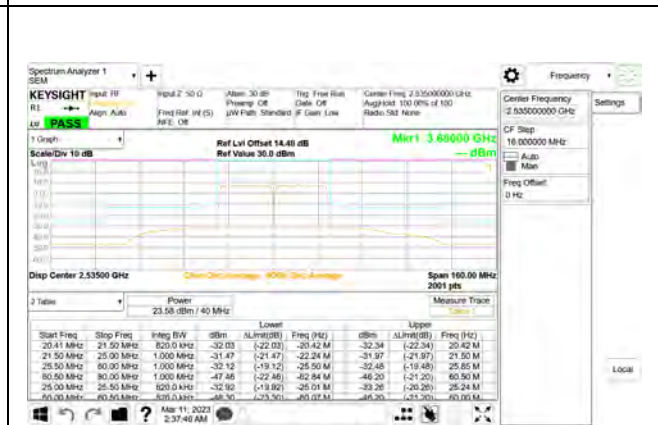
LTE B7 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



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



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



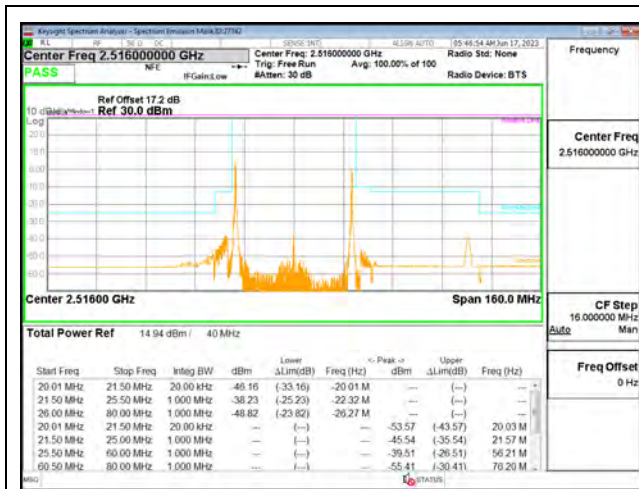
LTE B7 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0



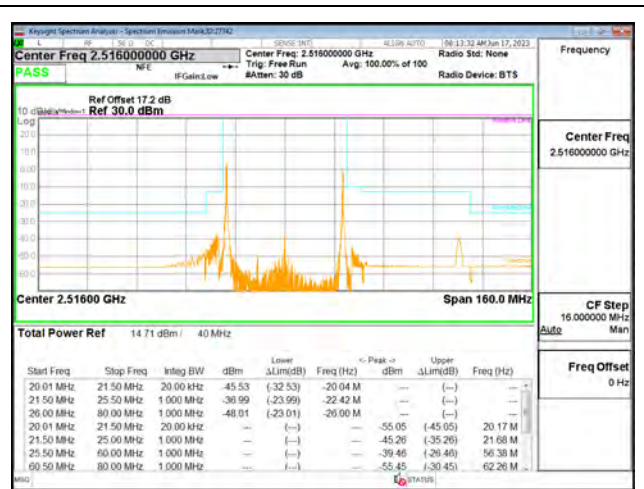
### 9.2.3. LTE BAND 41

#### LIMITS

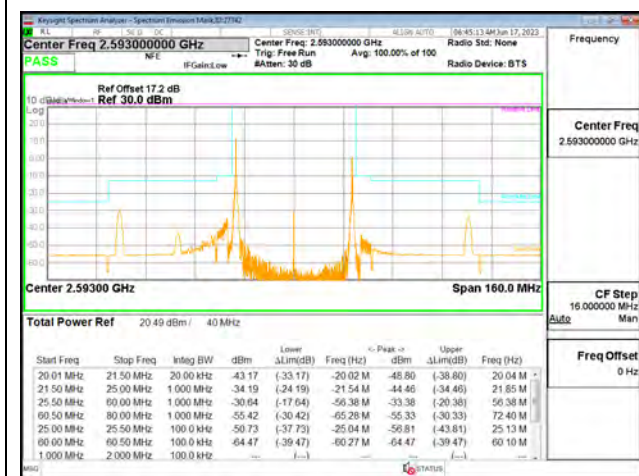
FCC: §27.53(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



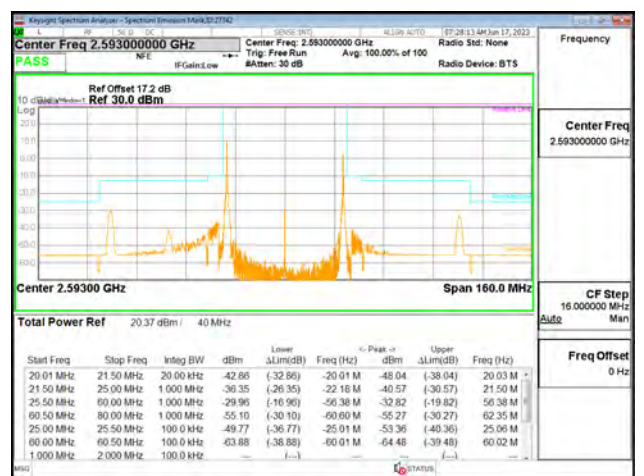
LTE B41 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99:  
 ID 27342



LTE B41 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99:  
 ID 27342

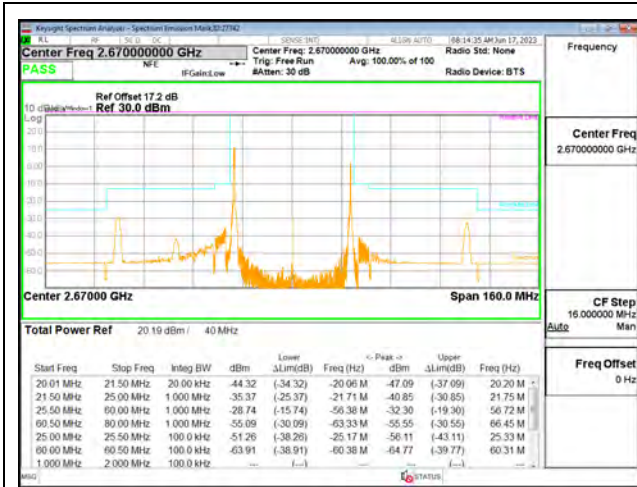


LTE B41 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99:  
 ID 27342

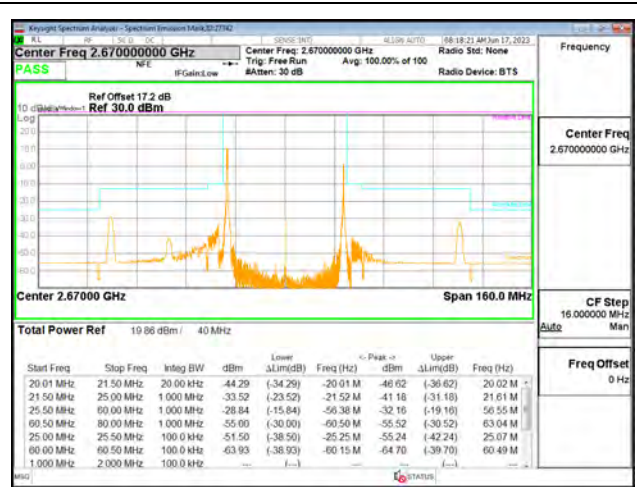


LTE B41 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99:  
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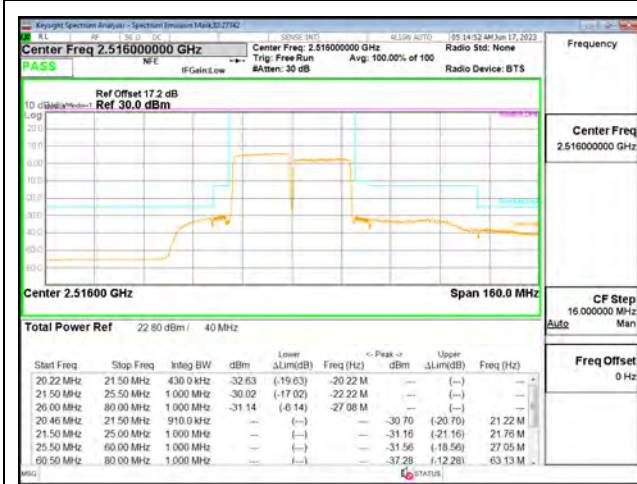




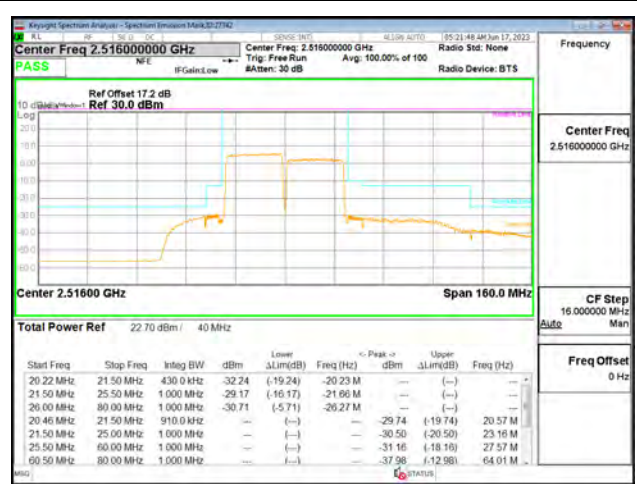
LTE B41 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99:  
 ID 27342



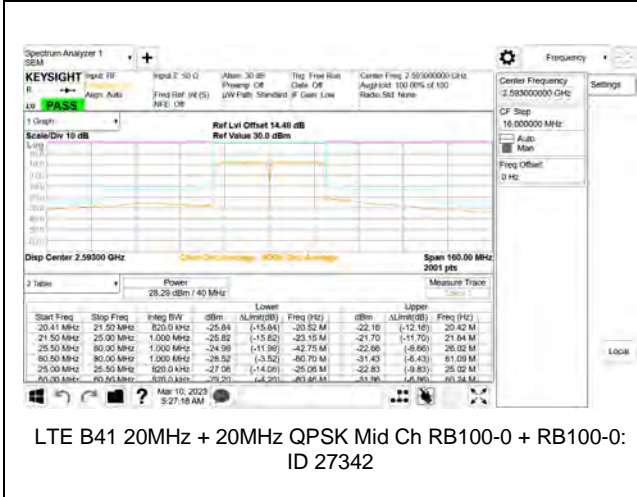
LTE B41 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99:  
 ID 27342



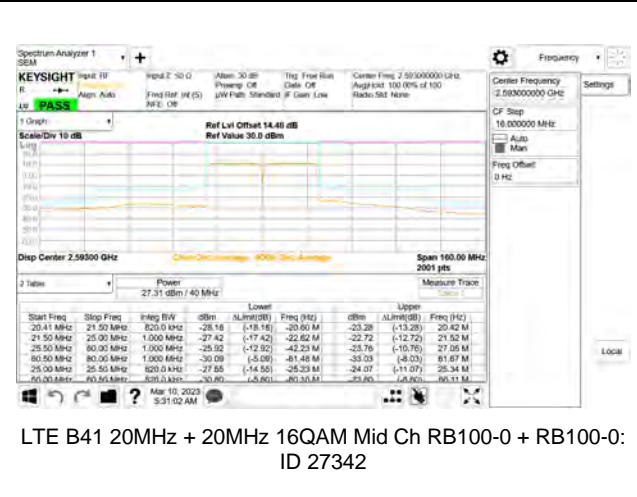
LTE B41 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0:  
 ID 27342



LTE B41 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0:  
 ID 27342



LTE B41 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0:  
 ID 27342



LTE B41 20MHz + 20MHz 16QAM Mid Ch RB100-0 + RB100-0:  
 ID 27342



LTE B41 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0:  
 ID 27342

LTE B41 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0:  
 ID 27342

## 9.2.4. LTE BAND 48

### LIMITS

FCC: §96.41

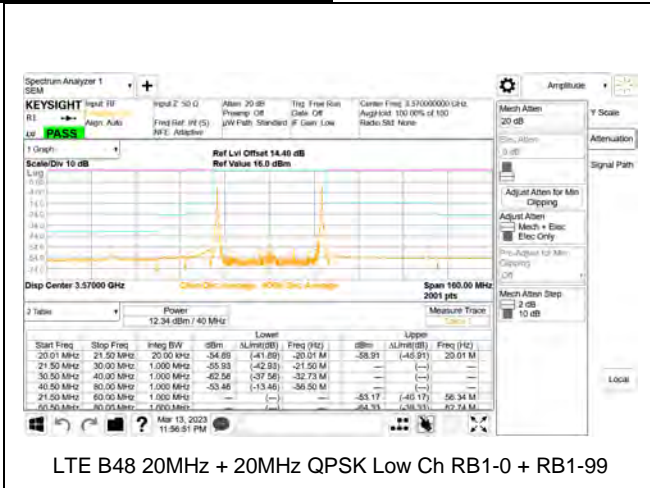
(e) 3.5 GHz Emissions and Interference Limits—

(1) General protection levels

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

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

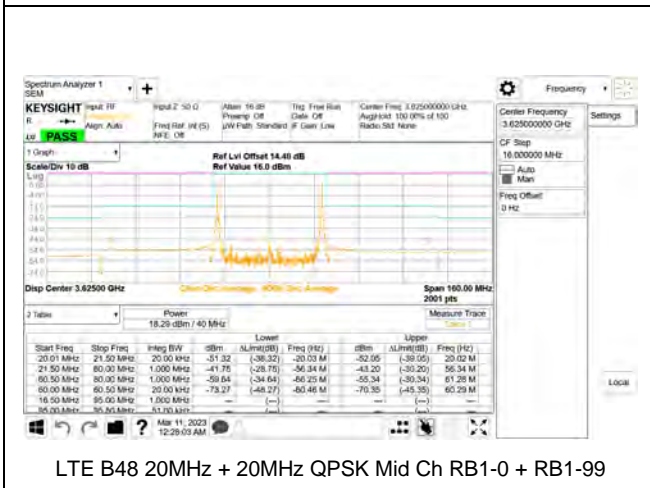
**LTE BAND 48 EMISSION MASK**



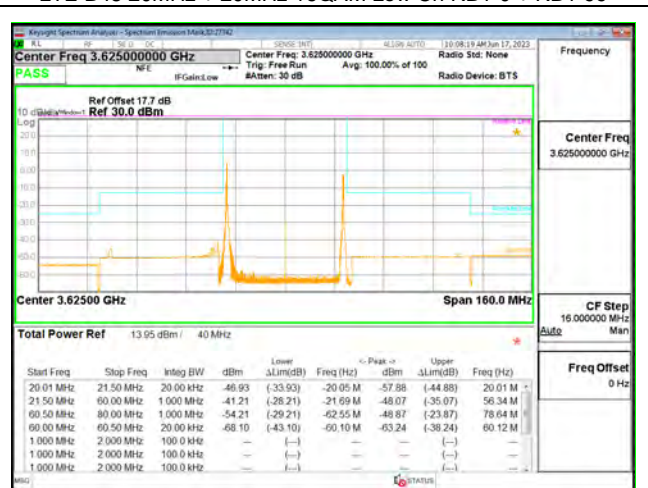
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-0 + RB1-99



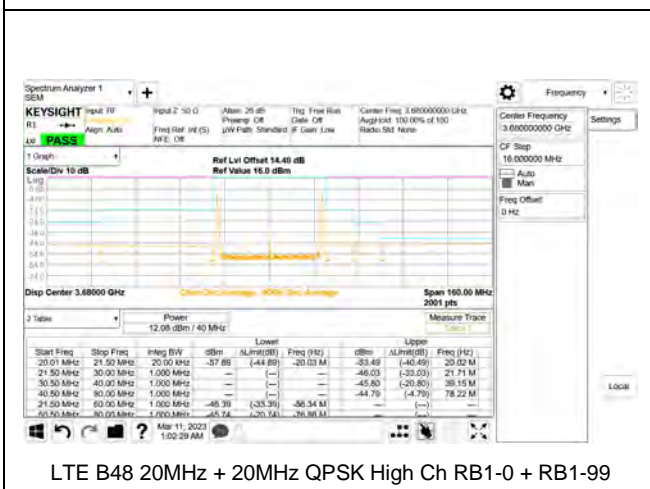
LTE B48 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



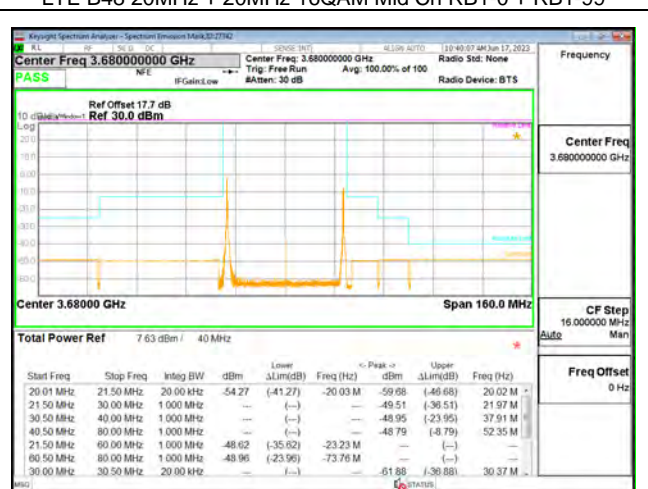
LTE B48 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



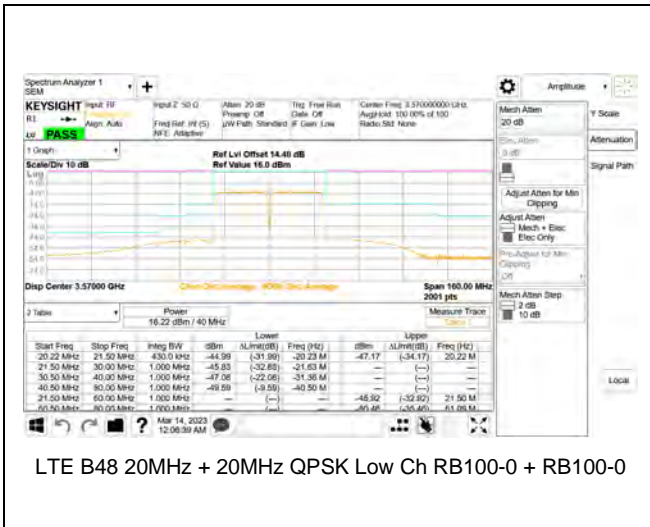
LTE B48 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



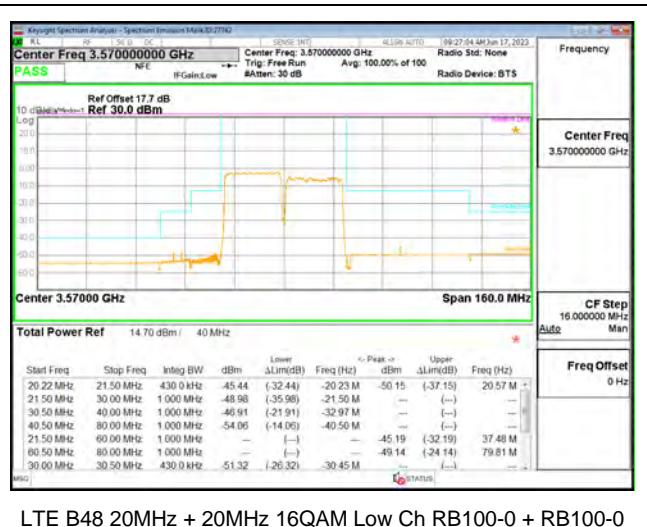
LTE B48 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



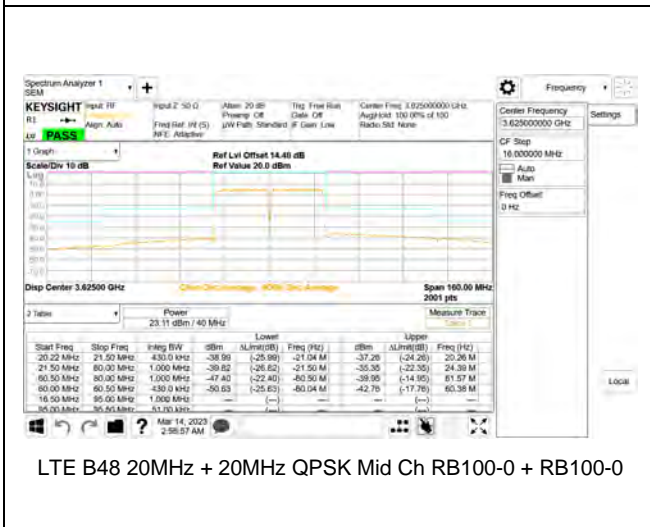
LTE B48 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



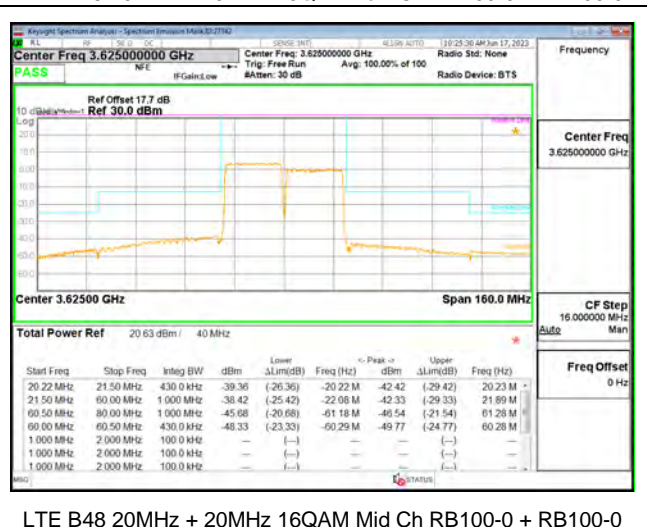
LTE B48 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



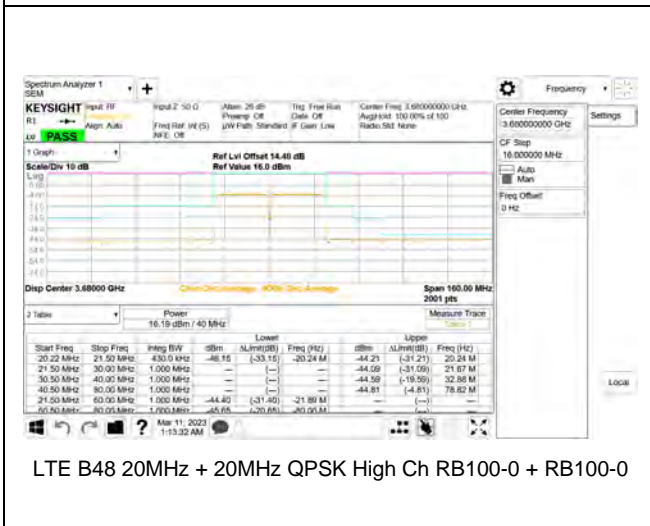
LTE B48 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



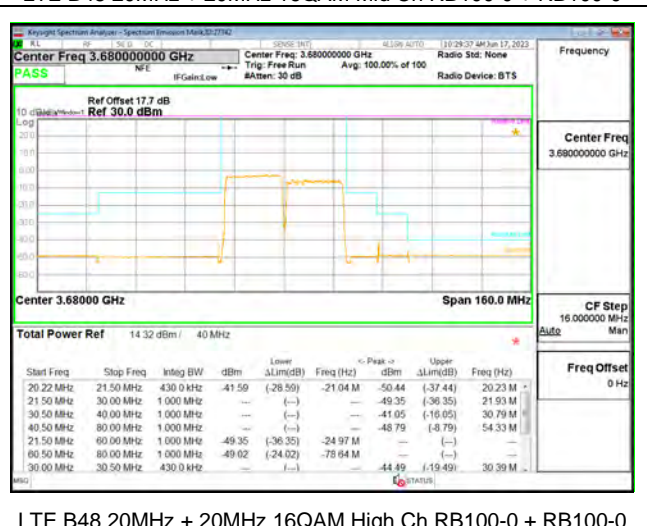
LTE B48 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



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

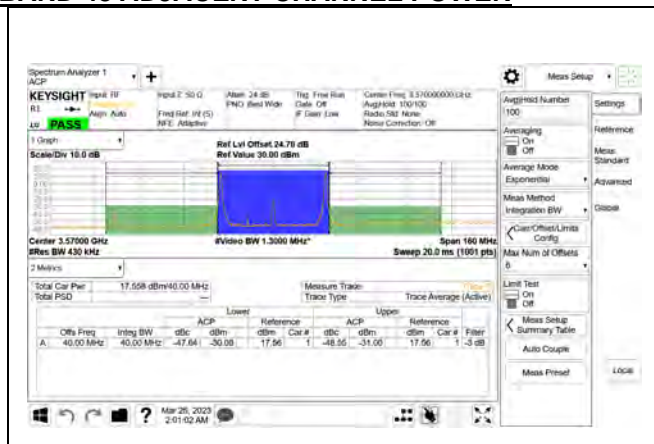


LTE B48 20MHz + 20MHz QPSK High Ch RB100-0 + RB100-0

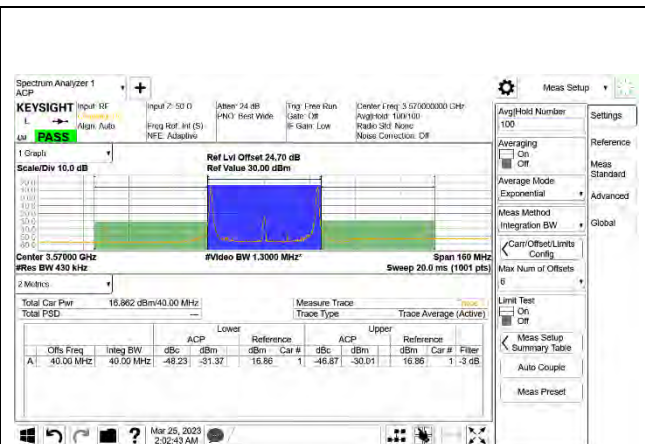


LTE B48 20MHz + 20MHz 16QAM High Ch RB100-0 + RB100-0

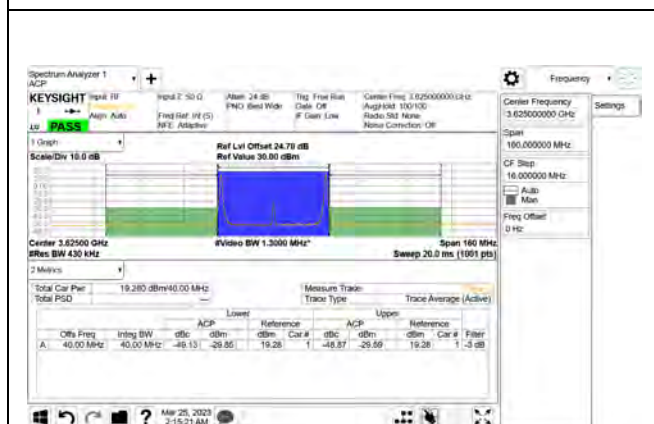
**LTE BAND 48 ADJACENT CHANNEL POWER**



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



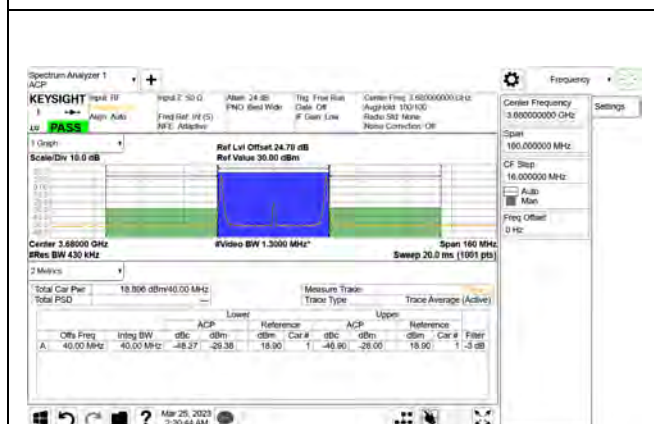
LTE B48 20MHz + 20MHz 16QAM Low Ch RB1-0 + RB1-99



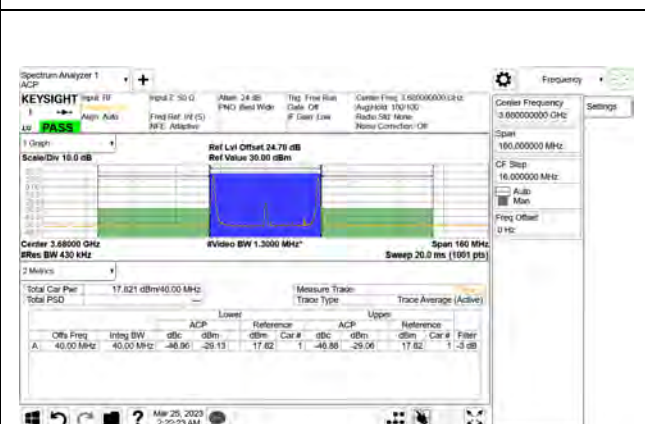
LTE B48 20MHz + 20MHz QPSK Mid Ch RB1-0 + RB1-99



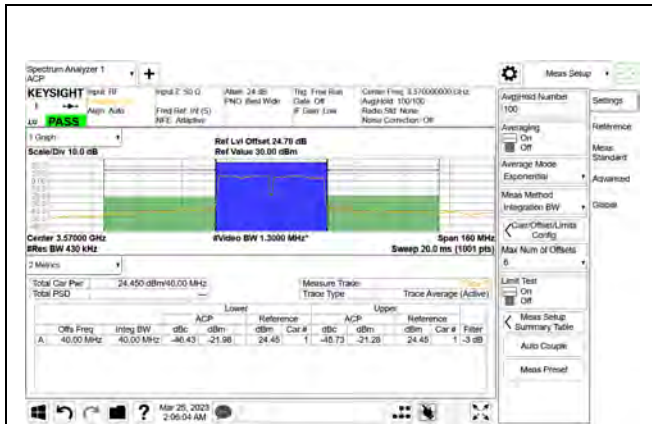
LTE B48 20MHz + 20MHz 16QAM Mid Ch RB1-0 + RB1-99



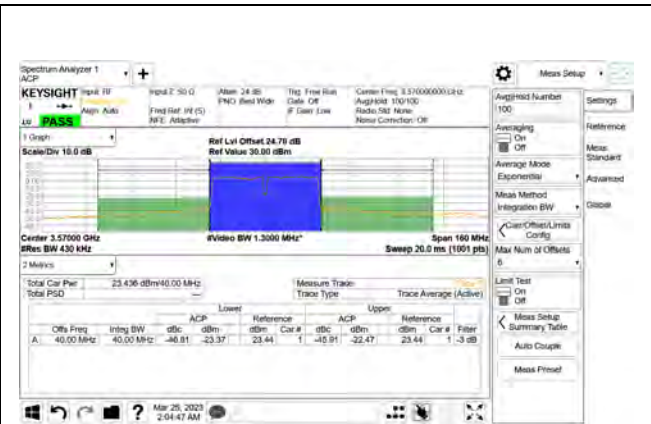
LTE B48 20MHz + 20MHz QPSK High Ch RB1-0 + RB1-99



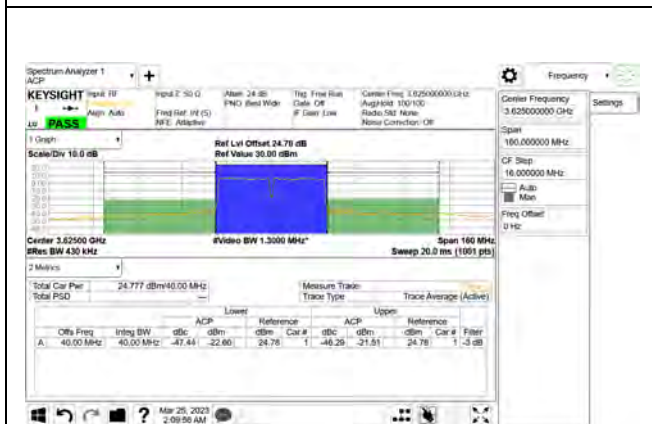
LTE B48 20MHz + 20MHz 16QAM High Ch RB1-0 + RB1-99



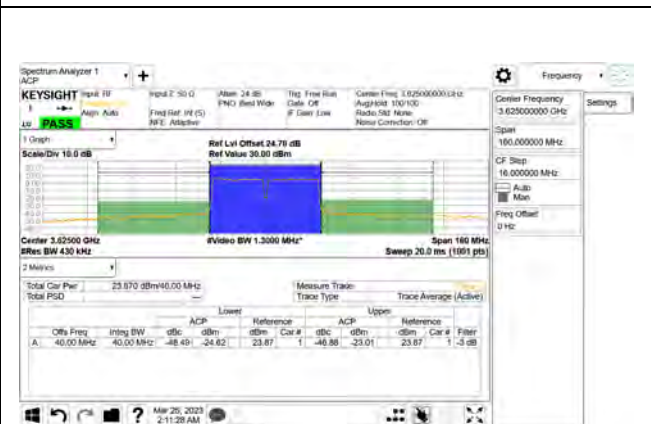
LTE B48 20MHz + 20MHz QPSK Low Ch RB100-0 + RB100-0



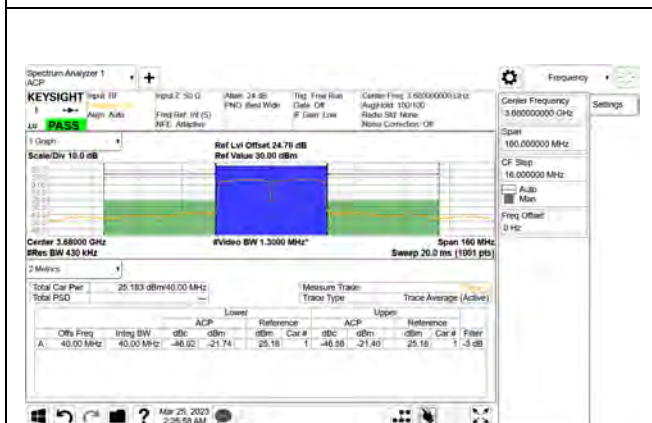
LTE B48 20MHz + 20MHz 16QAM Low Ch RB100-0 + RB100-0



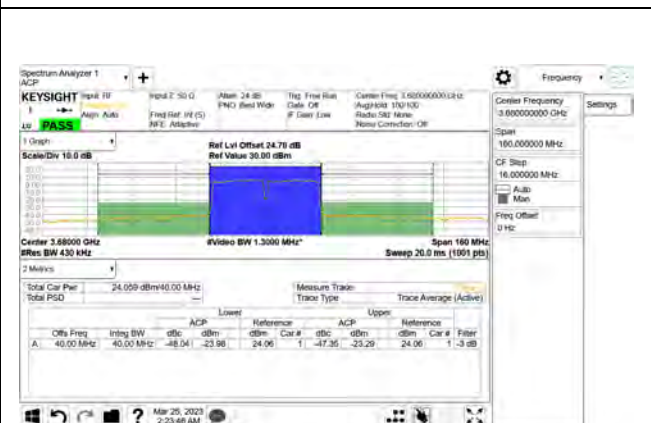
LTE B48 20MHz + 20MHz QPSK Mid Ch RB100-0 + RB100-0



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

### 9.3. OUT OF BAND EMISSIONS

#### **TEST PROCEDURE**

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

For each out of band emissions measurement:

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

#### **RESULTS**

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

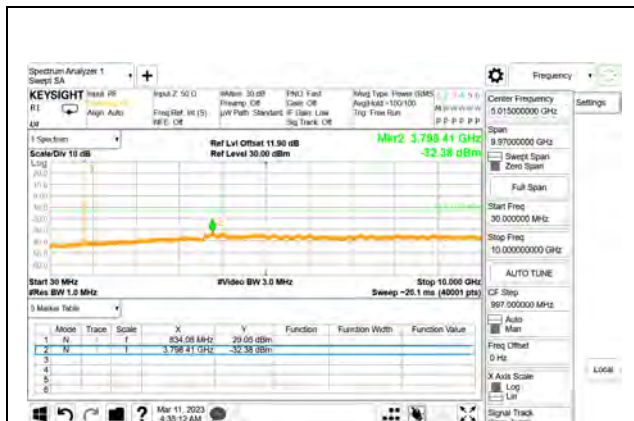


### 9.3.1. LTE BAND 5

#### LIMITS

FCC: §22.917

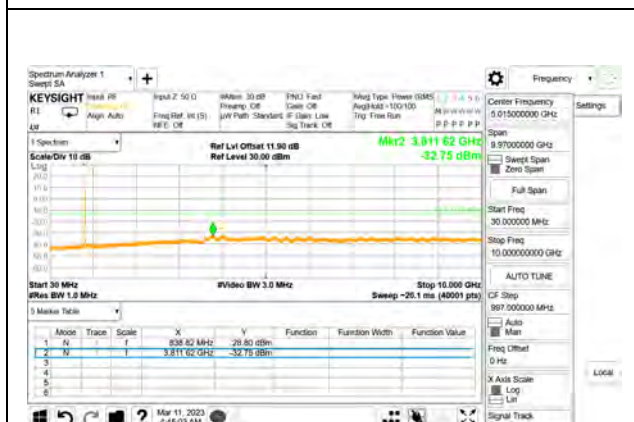
The minimum permissible attenuation level of any spurious emissions is  $43 + 10 \log(P)$  dB where transmitting power (P) in Watts.



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



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



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

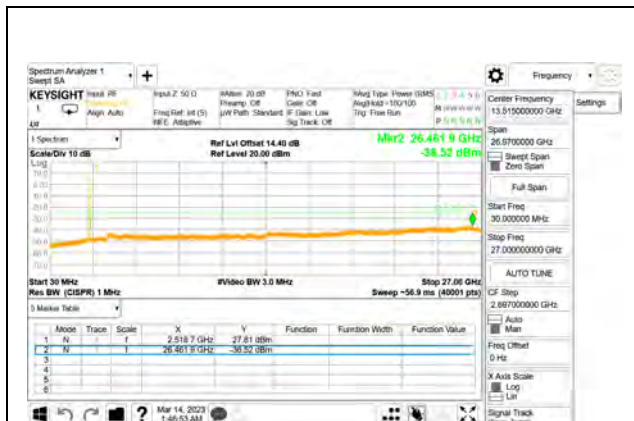
Intentionally Blank

### 9.3.2. LTE BAND 7

#### LIMITS

FCC: §27.53 (m)

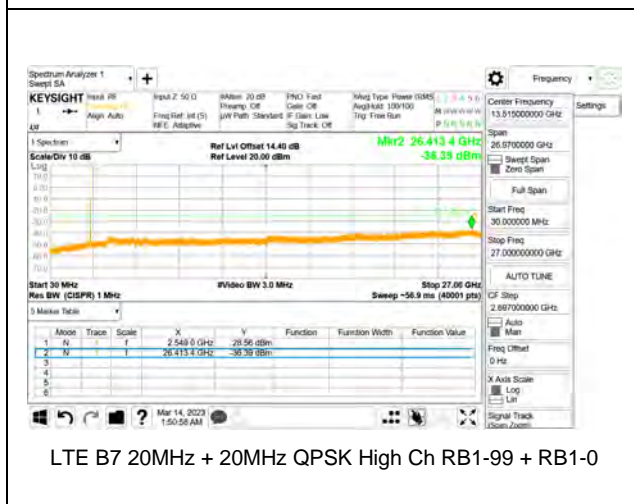
The minimum permissible attenuation level of any spurious emissions is  $55 + 10 \log(P)$  dB where transmitting power (P) in Watts.



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

Intentionally Blank

### 9.3.3. LTE BAND 41

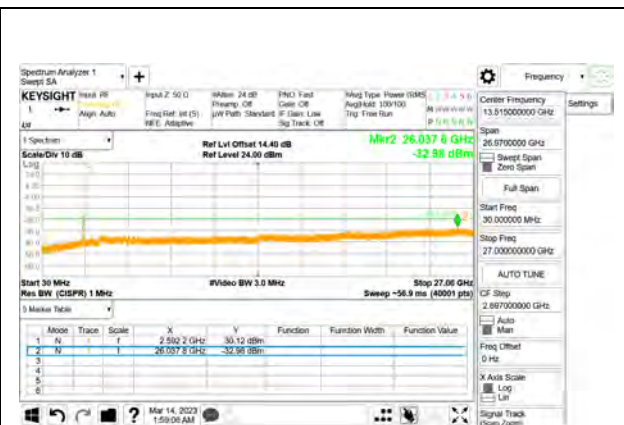
#### LIMITS

FCC: §27.53 (m)

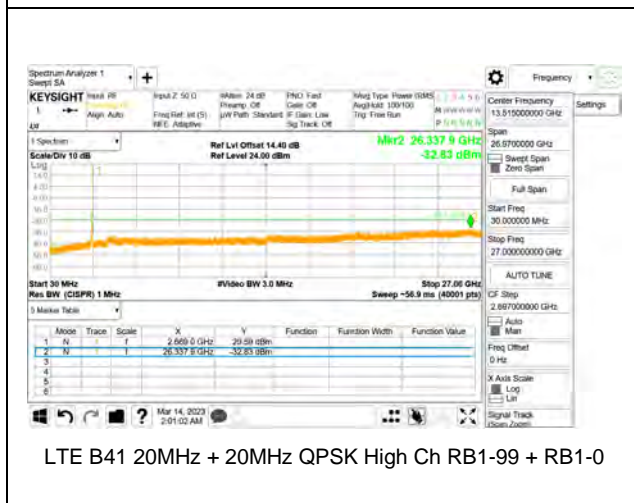
The minimum permissible attenuation level of any spurious emissions is  $55 + 10 \log(P)$  dB where transmitting power (P) in Watts.



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

Intentionally Blank

### 9.3.4. LTE BAND 48

#### LIMITS

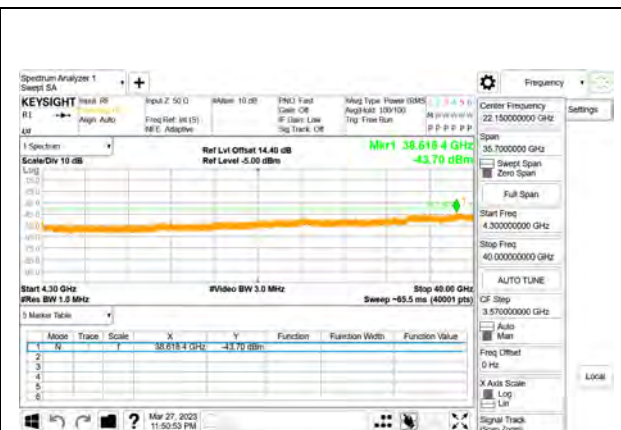
FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

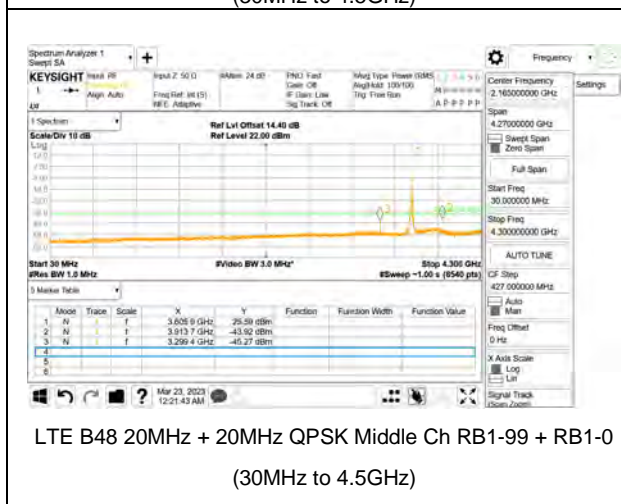
(2) Additional protection levels. Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.



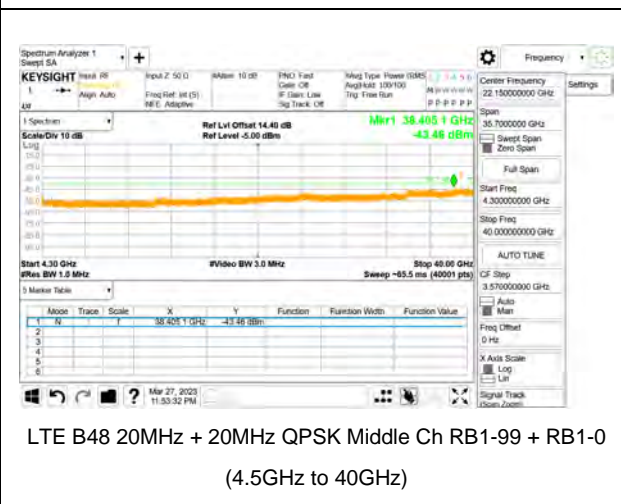
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0  
 (30MHz to 4.5GHz)



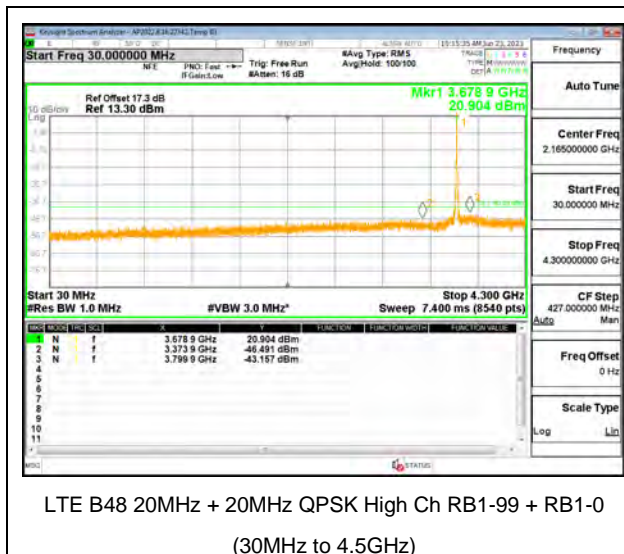
LTE B48 20MHz + 20MHz QPSK Low Ch RB1-99 + RB1-0  
 (4.5GHz to 40GHz)



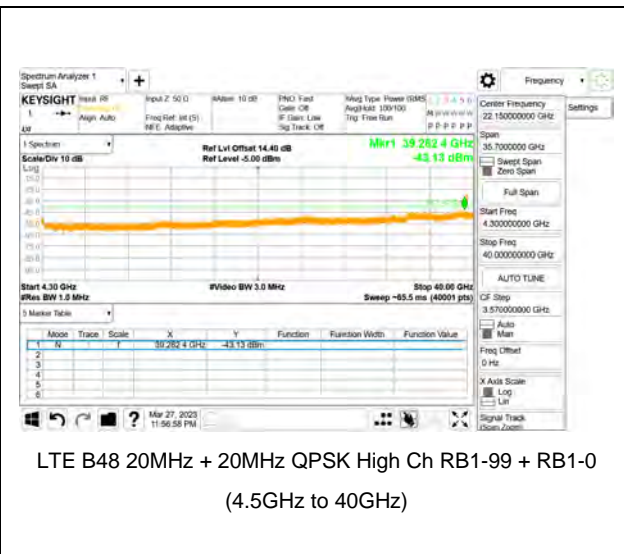
LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0  
 (30MHz to 4.5GHz)



LTE B48 20MHz + 20MHz QPSK Middle Ch RB1-99 + RB1-0  
 (4.5GHz to 40GHz)



LTE B48 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0  
 (30MHz to 4.5GHz)



LTE B48 20MHz + 20MHz QPSK High Ch RB1-99 + RB1-0  
 (4.5GHz to 40GHz)

## 9.4. FREQUENCY STABILITY

### **TEST PROCEDURE**

Use CMW 500 with Frequency Error measurement capability.

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

Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.  
End Voltage, 2.95VDC.

### **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.

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/16/2023
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**QPSK (10MHz + 10MHz BANDWIDTH)**

Band		5		Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849	2.5	Within Authorized Frequency Block (Hz)			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)					
Normal (20°C)	Normal	824.7315	848.2845					
Extreme (50°C)		824.7315	848.2845	24.2	0.029	Yes		
Extreme (40°C)		824.7315	848.2845	25.1	0.030	Yes		
Extreme (30°C)		824.7315	848.2845	25.5	0.031	Yes		
Extreme (10°C)		824.7315	848.2845	24.0	0.029	Yes		
Extreme (0°C)		824.7315	848.2845	-1.4	-0.002	Yes		
Extreme (-10°C)		824.7315	848.2845	-5.0	-0.006	Yes		
Extreme (-20°C)		824.7315	848.2845	-10.6	-0.013	Yes		
Extreme (-30°C)		824.7315	848.2845	-17.9	-0.021	Yes		
20°C		15%	824.7315	848.2845	28.2	0.034	Yes	
	-15%	824.7315	848.2845	24.7	0.030	Yes		
	End Point Voltage	824.7315	848.2845	28.4	0.034	Yes		

**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.

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/16/2023
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**QPSK (20MHz + 20MHz BANDWIDTH)**

Band	7	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2500	2570		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)			
Normal (20°C)	Normal	2500.4700	2569.4300			
Extreme (50°C)		2500.4700	2569.4300	37.8	0.015	Yes
Extreme (40°C)		2500.4700	2569.4300	46.8	0.018	Yes
Extreme (30°C)		2500.4701	2569.4301	52.4	0.021	Yes
Extreme (10°C)		2500.4700	2569.4300	45.8	0.018	Yes
Extreme (0°C)		2500.4700	2569.4300	17.6	0.007	Yes
Extreme (-10°C)		2500.4700	2569.4300	4.6	0.002	Yes
Extreme (-20°C)		2500.4700	2569.4300	-30.7	-0.012	Yes
Extreme (-30°C)		2500.4700	2569.4300	-44.2	-0.017	Yes
20°C	15%	2500.4700	2569.4300	33.8	0.013	Yes
	-15%	2500.4700	2569.4300	43.0	0.017	Yes
	End Point Voltage	2500.4700	2569.4300	40.5	0.016	Yes



**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.

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/16/2023
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**QPSK (20MHz + 20MHz BANDWIDTH)**

Band		41		Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2496	2690	0	Within Authorized Frequency Block (Hz)			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)					
Normal (20°C)	Normal	2496.5200	2689.4600					
Extreme (50°C)		2496.5200	2689.4600	-10.0	-0.004	Yes		
Extreme (40°C)		2496.5200	2689.4600	-22.0	-0.008	Yes		
Extreme (30°C)		2496.5200	2689.4600	-32.0	-0.012	Yes		
Extreme (10°C)		2496.5200	2689.4600	-43.0	-0.017	Yes		
Extreme (0°C)		2496.5200	2689.4600	-13.0	-0.005	Yes		
Extreme (-10°C)		2496.5200	2689.4600	-10.4	-0.004	Yes		
Extreme (-20°C)		2496.5200	2689.4600	-38.4	-0.015	Yes		
Extreme (-30°C)		2496.5200	2689.4600	-37.1	-0.014	Yes		
20°C		15%	2496.5200	2689.4600	-33.0	-0.013	Yes	
	-15%	2496.5200	2689.4600	-32.0	-0.012	Yes		
	End Point Voltage	2496.5200	2689.4600	-13.0	-0.005	Yes		

**9.4.4. LTE BAND 48**

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/16/2023
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**QPSK (20MHz + 20MHz BANDWIDTH)**

Band		48		Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		3550	3700	Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)					
Normal (20°C)	Normal	3550.5100	3699.5000					
Extreme (50°C)		3550.5100	3699.5000	42.0	0.012	Yes		
Extreme (40°C)		3550.5100	3699.5000	42.7	0.012	Yes		
Extreme (30°C)		3550.5101	3699.5001	50.1	0.014	Yes		
Extreme (10°C)		3550.5100	3699.5000	32.4	0.009	Yes		
Extreme (0°C)		3550.5100	3699.5000	28.0	0.008	Yes		
Extreme (-10°C)		3550.5100	3699.5000	-20.2	-0.006	Yes		
Extreme (-20°C)		3550.5100	3699.5000	-22.0	-0.006	Yes		
Extreme (-30°C)		3550.5100	3699.5000	-35.3	-0.010	Yes		
20°C		15%	3550.5100	3699.5000	34.1	0.009	Yes	
	-15%	3550.5100	3699.5000	43.3	0.012	Yes		
	End Point Voltage	3550.5100	3699.5000	44.3	0.012	Yes		

## 9.5. PEAK-TO-AVERAGE POWER RATIO

### LIMIT

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

### RESULT

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

#### 9.5.1. LTE BAND 5

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/21/2023
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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	32.52	25.38	7.14	
				16QAM	32.52	25.46	7.06	
	5 MHz / 3MHz	835.0	838.9	QPSK	32.35	25.37	6.98	
				16QAM	32.39	25.41	6.98	
	5MHz / 10MHz	831.6	838.8	QPSK	32.52	25.46	7.06	
				16QAM	30.02	22.33	7.69	
	10MHz / 5MHz	834.3	841.5	QPSK	29.98	23.21	6.77	
				16QAM	29.96	22.24	7.72	
	10MHz / 10MHz	831.5	841.4	QPSK	30.28	23.23	7.05	
				16QAM	30.40	22.25	8.15	
	Duty Cycle Correction Factor (dB) =			0.00				
	Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

**9.5.2. LTE BAND 7**

Test Engineer ID:		27342	Test Date:		3/21/2023		
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	29.20	23.10	6.10
				16QAM	29.34	22.12	7.22
	20MHz / 10MHz	2530.1	2544.5	QPSK	29.81	23.09	6.72
				16QAM	29.81	22.11	7.70
	15 MHz / 15MHz	2527.5	2542.5	QPSK	29.42	23.07	6.35
				16QAM	29.44	22.1	7.34
	15MHz / 20MHz	2525.3	2542.4	QPSK	29.53	23.12	6.41
				16QAM	29.48	22.11	7.37
	20MHz / 15MHz	2527.6	2544.7	QPSK	29.71	23.06	6.65
				16QAM	29.66	22.09	7.57
	20MHz / 20MHz	2525.1	2544.9	QPSK	29.66	23.08	6.58
				16QAM	29.66	22.09	7.57
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:		27342	Test Date:		3/21/2023			
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	31.81	22.18	2.63	
				16QAM	31.86	21.23	3.63	
	20MHz / 5MHz	2590.5	2602.2	QPSK	34.57	23.16	4.41	
				16QAM	34.49	22.17	5.32	
	10MHz / 20MHz	2583.6	2598.0	QPSK	31.87	22.21	2.66	
				16QAM	31.87	21.23	3.64	
	20MHz / 10MHz	2588.1	2602.5	QPSK	34.53	23.17	4.36	
				16QAM	34.44	22.16	5.28	
	15MHz / 15MHz	2585.5	2600.5	QPSK	31.93	22.18	2.75	
				16QAM	31.01	21.22	2.79	
	15MHz / 20MHz	2583.3	2600.4	QPSK	34.19	23.18	4.01	
				16QAM	34.22	22.15	5.07	
	20MHz / 15MHz	2585.6	2602.7	QPSK	34.41	23.14	4.27	
				16QAM	34.37	22.15	5.22	
	20MHz / 20MHz	2583.1	2602.9	QPSK	34.39	23.11	4.28	
				16QAM	34.28	22.13	5.15	
	Duty Cycle Correction Factor (dB) =			7.00				
	Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor							

**9.5.4. LTE BAND 48**

<b>Test Engineer ID:</b>	27342	<b>Test Date:</b>	3/21/2023
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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	29.85	19.55	3.30
				16QAM	29.85	18.58	4.27
	20MHz / 5MHz	3622.5	3634.2	QPSK	29.90	19.54	3.36
				16QAM	29.85	18.56	4.29
	10MHz / 20MHz	3615.6	3630.0	QPSK	29.92	19.54	3.38
				16QAM	29.88	18.56	4.32
	20MHz / 10MHz	3620.1	3634.5	QPSK	29.91	19.54	3.37
				16QAM	29.89	18.59	4.30
	15MHz / 20MHz	3615.3	3632.4	QPSK	29.92	19.54	3.38
				16QAM	29.89	18.56	4.33
	20MHz / 15MHz	3617.6	3634.7	QPSK	29.91	19.54	3.37
				16QAM	29.89	18.55	4.34
	20MHz / 20MHz	3615.1	3634.9	QPSK	29.91	19.52	3.39
				16QAM	29.87	18.53	4.34
Duty Cycle Correction Factor (dB) =		7.00					
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.

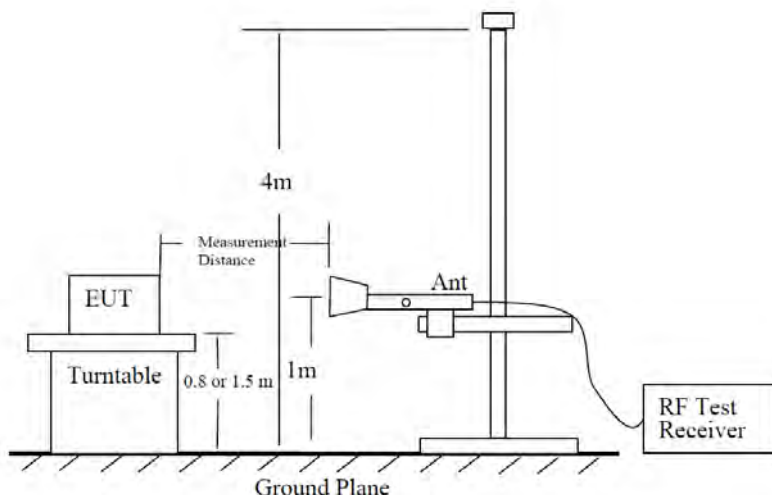


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

### 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.

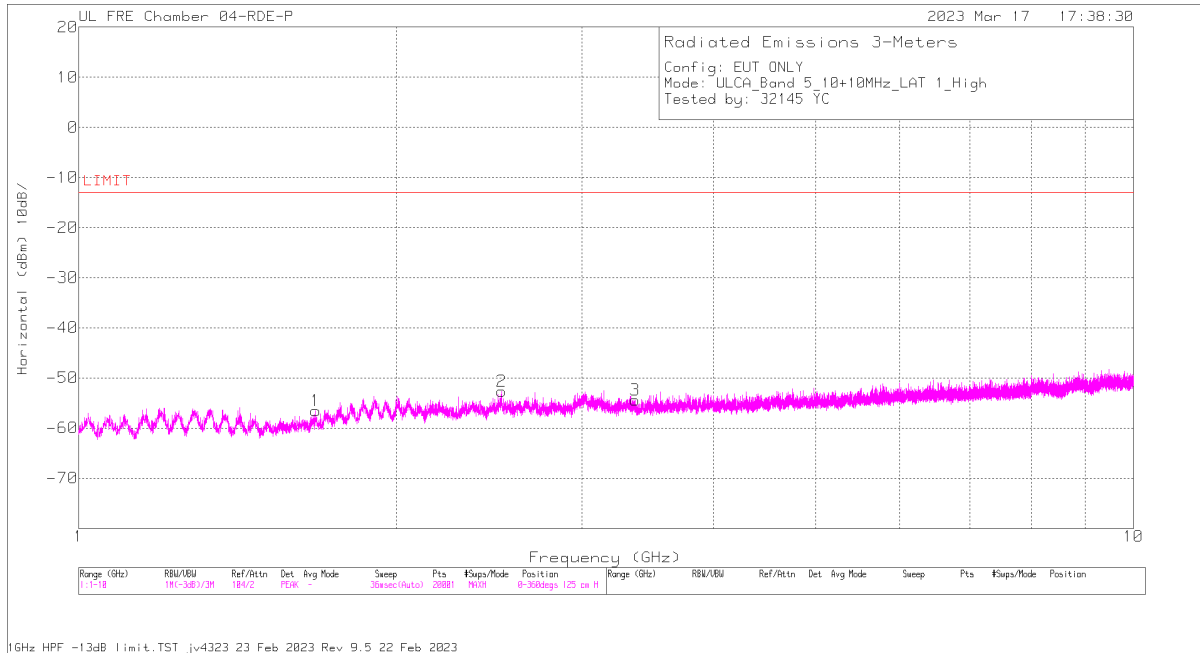
So, from d)

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

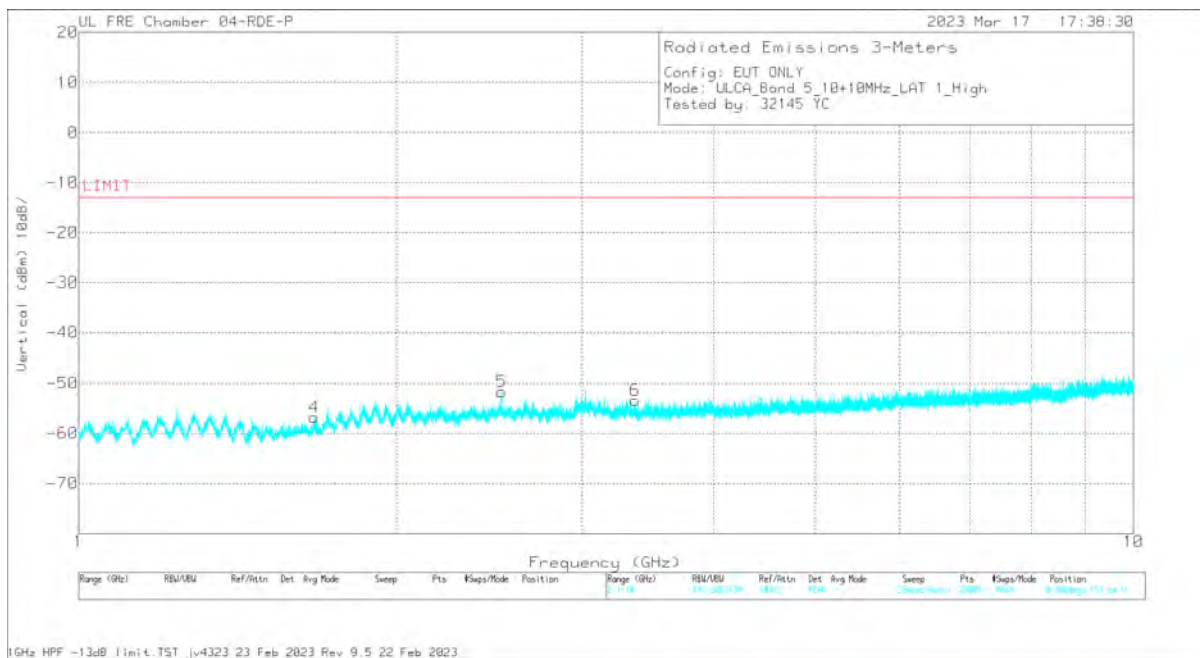
Then,  $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

**Example Plot**



Horizontal Polarity



Vertical Polarity

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222740 ACF(dB/m) -3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
4	1.6714	58.21	Pk	28.9	-95.2	-48.67	-56.76	-13	-43.76	V
1	1.67815	58.55	Pk	28.9	-95.2	-48.77	-56.52	-13	-43.52	H
5	2.5165	60.44	Pk	32.1	-95.2	-49.01	-51.67	-13	-38.67	V
2	2.51695	59.46	Pk	32.1	-95.2	-49	-52.64	-13	-39.64	H
3	3.36745	54.08	Pk	32.8	-95.2	-46.03	-54.35	-13	-41.35	H
6	3.36925	54.99	Pk	32.8	-95.2	-45.94	-53.35	-13	-40.35	V

Pk - Peak detector



## **10.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1**

### **TEST PROCEDURE**

KDB 971168 D01 v03r01 / D02 v02r02

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

### **RESULTS**

### 10.1.1. 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 #:	14523758
Date:	3/17/2023
Test Engineer:	32145
Configuration:	EUT Only
Mode	ULCA Band 5 10+10MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBm)	Det	222740 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 829MHz + 838.9MHz</b>									
1.679950	57.29	Pk	29	-95.2	-48.78	-57.69	-13	-44.69	H
1.677250	58.23	Pk	28.9	-95.2	-48.77	-56.84	-13	-43.84	V
2.502550	59.68	Pk	32.1	-95.2	-49.17	-52.59	-13	-39.59	H
2.501650	58.71	Pk	32.1	-95.2	-49.16	-53.55	-13	-40.55	V
3.338200	54.62	Pk	32.8	-95.2	-46.25	-54.03	-13	-41.03	H
3.346300	54.21	Pk	32.8	-95.2	-46.20	-54.39	-13	-41.39	V
<b>Mid Channel, 831.6MHz + 841.5MHz</b>									
1.677700	57.82	Pk	28.9	-95.2	-48.77	-57.25	-13	-44.25	H
1.677700	57.44	Pk	28.9	-95.2	-48.77	-57.63	-13	-44.63	V
2.510002	62.96	Pk	32.1	-95.2	-49.07	-49.21	-13	-36.21	H
2.510222	61.55	Pk	32.1	-95.2	-49.09	-50.64	-13	-37.64	V
3.348550	55.32	Pk	32.8	-95.2	-46.33	-53.41	-13	-40.41	H
3.353050	54.05	Pk	32.8	-95.2	-46.11	-54.46	-13	-41.46	V
<b>High Channel, 834.1MHz + 844MHz</b>									
1.678150	58.55	Pk	28.9	-95.2	-48.77	-56.52	-13	-43.52	H
1.671400	58.21	Pk	28.9	-95.2	-48.67	-56.76	-13	-43.76	V
2.516950	59.46	Pk	32.1	-95.2	-49.00	-52.64	-13	-39.64	H
2.516500	60.44	Pk	32.1	-95.2	-49.01	-51.67	-13	-38.67	V
3.367450	54.08	Pk	32.8	-95.2	-46.03	-54.35	-13	-41.35	H
3.369250	54.99	Pk	32.8	-95.2	-45.94	-53.35	-13	-40.35	V

## 10.1.2. 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 #:	14523758
Date:	5/2/2023
Test Engineer:	45258
Configuration:	EUT ONLY
Mode	LTE_CA B7 20+20MHz
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBm)	Det	Horn Antenna ACE(dB)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2510MHz + 2529.8MHz</b>										
5.040000	33.63	Pk	34.3	.6	-95.2	-23.3	-49.97	-25	-24.97	H
5.040000	32.96	Pk	34.3	.6	-95.2	-23.3	-50.64	-25	-25.64	V
7.560469	30.12	Pk	35.6	.3	-95.2	-19.49	-48.67	-25	-23.67	H
7.560469	31.78	Pk	35.6	.3	-95.2	-19.49	-47.01	-25	-22.01	V
10.080938	30.39	Pk	37	.6	-95.2	-17.19	-44.40	-25	-19.40	H
10.080938	29.67	Pk	37	.6	-95.2	-17.19	-45.12	-25	-20.12	V
<b>Mid Channel, 2525.1MHz + 2544.9MHz</b>										
5.070469	32.57	Pk	34.3	.7	-95.2	-23.2	-50.83	-25	-25.83	H
5.070000	33.91	Pk	34.3	.7	-95.2	-23.2	-49.49	-25	-24.49	V
7.605469	31.54	Pk	35.5	.4	-95.2	-19.16	-46.92	-25	-21.92	H
7.606406	32.01	Pk	35.5	.4	-95.2	-19.17	-46.46	-25	-21.46	V
10.140469	32.23	Pk	37	.6	-95.2	-16.95	-42.32	-25	-17.32	H
10.140469	31.58	Pk	37	.6	-95.2	-16.95	-42.97	-25	-17.97	V
<b>High Channel, 2540.2MHz + 2560MHz</b>										
5.103281	32.02	Pk	34.4	.8	-95.2	-23.31	-51.29	-25	-26.29	H
5.103750	34.67	Pk	34.4	.8	-95.2	-23.30	-48.63	-25	-23.63	V
7.650938	31.22	Pk	35.6	.3	-95.2	-18.88	-46.96	-25	-21.96	H
7.650938	32.85	Pk	35.6	.3	-95.2	-18.88	-45.33	-25	-20.33	V
10.202344	31.13	Pk	37.1	.8	-95.2	-16.89	-43.06	-25	-18.06	H
10.202813	32.08	Pk	37.1	.8	-95.2	-16.89	-42.11	-25	-17.11	V

### 10.1.3. 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 #:	14523758
Date:	3/15/2023
Test Engineer:	25019
Configuration:	EUT ONLY
Mode	ULCA B41FCC 20+20MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBm)	Det	222740 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2506MHz + 2525.8MHz</b>									
5.033124	57.15	Pk	33.9	-95.2	-48.1	-52.25	-25	-27.25	H
5.033807	57.63	Pk	33.9	-95.2	-48.01	-51.68	-25	-26.68	V
7.546655	56.85	Pk	35.6	-95.2	-46.22	-48.97	-25	-23.97	H
7.548588	56.9	Pk	35.6	-95.2	-46.3	-49.00	-25	-24.00	V
10.065013	57.41	Pk	37.1	-95.2	-46.64	-47.33	-25	-22.33	H
10.066376	57.86	Pk	37.1	-95.2	-46.67	-46.91	-25	-21.91	V
<b>Mid Channel, 2583.1MHz + 2602.9MHz</b>									
5.186892	56.9	Pk	34.1	-95.2	-47.7	-51.90	-25	-26.90	H
5.186301	56.72	Pk	34.1	-95.2	-47.72	-52.10	-25	-27.10	V
7.777470	55.44	Pk	35.7	-95.2	-46.11	-50.17	-25	-25.17	H
7.779932	55.41	Pk	35.7	-95.2	-46.06	-50.15	-25	-25.15	V
10.372040	55.72	Pk	37.3	-95.2	-45.63	-47.81	-25	-22.81	H
10.373715	55.97	Pk	37.3	-95.2	-45.71	-47.64	-25	-22.64	V
<b>High Channel, 2660.2MHz + 2680MHz</b>									
5.340500	55.61	Pk	34.4	-95.2	-47.74	-52.93	-25	-27.93	H
5.340500	55.2	Pk	34.4	-95.2	-47.74	-53.34	-25	-28.34	V
8.010500	51.96	Pk	35.7	-95.2	-45.1	-52.64	-25	-27.64	H
8.010500	51.73	Pk	35.7	-95.2	-45.1	-52.87	-25	-27.87	V
10.680450	54.12	Pk	37.4	-95.2	-44.12	-47.80	-25	-22.80	H
10.680000	52.22	Pk	37.4	-95.2	-44.12	-49.70	-25	-24.70	V

## 10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

### TEST PROCEDURE

KDB 971168 D01 v03r01 / D02 v02r02

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

### RESULTS

### 10.2.1. LTE BAND 5

#### LIMIT

FCC: §22.917(a)

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



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

Project #:	14523758
Date:	3/17/2023
Test Engineer:	19226
Configuration:	EUT ONLY
Mode	ULCA B5 10+10MHz
Chamber #:	05-RDE-D

Frequency (GHz)	Meter Reading (dBm)	Det	80402 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 829MHz + 838.9MHz</b>									
1.669975	60.47	Pk	28.4	-95.2	-49.68	-56.01	-13	-43.01	H
1.669445	59.86	Pk	28.3	-95.2	-49.67	-56.71	-13	-43.71	V
2.501138	59.97	Pk	32.6	-95.2	-49.08	-51.71	-13	-38.71	H
2.504287	60.04	Pk	32.6	-95.2	-49.04	-51.6	-13	-38.6	V
3.338358	57.32	Pk	32.9	-95.2	-46.81	-51.79	-13	-38.79	H
3.335973	57.62	Pk	32.9	-95.2	-46.87	-51.55	-13	-38.55	V
<b>Mid Channel, 831.6MHz + 841.5MHz</b>									
1.674653	60.08	Pk	28.4	-95.2	-49.74	-56.46	-13	-43.46	H
1.676681	59.97	Pk	28.5	-95.2	-49.75	-56.48	-13	-43.48	V
2.512953	59.57	Pk	32.6	-95.2	-48.98	-52.01	-13	-39.01	H
2.511858	59.34	Pk	32.6	-95.2	-49.02	-52.28	-13	-39.28	V
3.349910	56.78	Pk	32.9	-95.2	-46.83	-52.35	-13	-39.35	H
3.350266	57.15	Pk	32.9	-95.2	-46.85	-52.00	-13	-39.00	V
<b>High Channel, 834.1MHz + 844MHz</b>									
1.679358	60.39	Pk	28.5	-95.2	-49.7	-56.01	-13	-43.01	H
1.679387	60.51	Pk	28.5	-95.2	-49.69	-55.88	-13	-42.88	V
2.515506	58.91	Pk	32.6	-95.2	-48.96	-52.65	-13	-39.65	H
2.515976	59.97	Pk	32.6	-95.2	-48.97	-51.6	-13	-38.6	V
3.356669	56.65	Pk	32.9	-95.2	-46.91	-52.56	-13	-39.56	H
3.356126	56.43	Pk	32.9	-95.2	-46.91	-52.78	-13	-39.78	V

## 10.2.2. LTE BAND 7

### LIMIT

FCC: §27.53 (m)

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

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

Project #:	14523758
Date:	06/16/2023
Test Engineer:	26120
Configuration:	EUT ONLY
Mode	ULCA B7 20+20MHz
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2510MHz + 2529.8MHz</b>										
5.019375	41	Pk	34.5	.8	-95.2	-30.94	-49.84	-25	-24.84	H
5.019844	39.75	Pk	34.5	.8	-95.2	-30.97	-51.12	-25	-26.12	V
7.530000	34.66	Pk	35.9	.3	-95.2	-27.09	-51.43	-25	-26.43	H
7.530000	34.94	Pk	35.9	.3	-95.2	-27.09	-51.15	-25	-26.15	V
10.040156	32.69	Pk	37.4	.7	-95.2	-25.07	-49.48	-25	-24.48	H
10.038750	34.8	Pk	37.4	.7	-95.2	-25.09	-47.39	-25	-22.39	V
<b>Mid Channel, 2525.1MHz + 2544.9MHz</b>										
5.050313	37.47	Pk	34.6	.6	-95.2	-31.04	-53.57	-25	-28.57	H
5.049844	38.18	Pk	34.6	.6	-95.2	-31.03	-52.85	-25	-27.85	V
7.575469	34.42	Pk	35.9	.4	-95.2	-27.17	-51.65	-25	-26.65	H
7.575469	35.12	Pk	35.9	.4	-95.2	-27.17	-50.95	-25	-25.95	V
10.100156	30.71	Pk	37.5	.7	-95.2	-25.22	-51.51	-25	-26.51	H
10.099688	32.79	Pk	37.5	.7	-95.2	-25.21	-49.42	-25	-24.42	V
<b>High Channel, 2540.2MHz + 2560MHz</b>										
5.320313	36.32	Pk	34.7	.8	-95.2	-30.37	-53.75	-25	-28.75	H
5.320313	37.63	Pk	34.7	.8	-95.2	-30.37	-52.44	-25	-27.44	V
7.980938	33.63	Pk	36	.3	-95.2	-26.68	-51.95	-25	-26.95	H
7.980469	34.83	Pk	36	.3	-95.2	-26.62	-50.69	-25	-25.69	V
10.640625	33.32	Pk	37.8	.5	-95.2	-24.63	-48.21	-25	-23.21	H
10.640625	31.24	Pk	37.8	.5	-95.2	-24.63	-50.29	-25	-25.29	V

### 10.2.3. LTE BAND 41

**LIMIT**

FCC: §27.53 (m)

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

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

Project #:	14523758
Date:	3/15/2023
Test Engineer:	25019
Configuration:	EUT ONLY
Mode	ULCA B41FCC 20+20MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBm)	Det	222740 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2506MHz + 2525.8MHz</b>									
5.033174	57.46	Pk	33.9	-95.2	-48.09	-51.93	-25	-26.93	H
5.032166	57.68	Pk	33.9	-95.2	-48.16	-51.78	-25	-26.78	V
7.537247	55.41	Pk	35.6	-95.2	-46.28	-50.47	-25	-25.47	H
7.539216	58.19	Pk	35.6	-95.2	-46.32	-47.73	-25	-22.73	V
10.066008	58.28	Pk	37.1	-95.2	-46.63	-46.45	-25	-21.45	H
10.063681	57.29	Pk	37.1	-95.2	-46.64	-47.45	-25	-22.45	V
<b>Mid Channel, 2583.1MHz + 2602.9MHz</b>									
5.187394	57.25	Pk	34.1	-95.2	-47.74	-51.59	-25	-26.59	H
5.185825	57.36	Pk	34.1	-95.2	-47.74	-51.48	-25	-26.48	V
7.777571	55.47	Pk	35.7	-95.2	-46.12	-50.15	-25	-25.15	H
7.780246	55.14	Pk	35.7	-95.2	-46.07	-50.43	-25	-25.43	V
10.372197	56.06	Pk	37.3	-95.2	-45.65	-47.49	-25	-22.49	H
10.373211	55.39	Pk	37.3	-95.2	-45.74	-48.25	-25	-23.25	V
<b>High Channel, 2660.2MHz + 2680MHz</b>									
5.342125	57.27	Pk	34.4	-95.2	-47.76	-51.29	-25	-26.29	H
5.340817	57.9	Pk	34.4	-95.2	-47.76	-50.66	-25	-25.66	V
8.009403	55.44	Pk	35.7	-95.2	-45.11	-49.17	-25	-24.17	H
8.008619	56.02	Pk	35.7	-95.2	-45.13	-48.61	-25	-23.61	V
10.680116	55.49	Pk	37.4	-95.2	-44.12	-46.43	-25	-21.43	H
10.681922	54.61	Pk	37.4	-95.2	-44.24	-47.43	-25	-22.43	V

### **10.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3**

#### **TEST PROCEDURE**

KDB 971168 D01 v03r01 / D02 v02r02

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

#### **RESULTS**

### 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 #:	14523758
Date:	3/16/2023
Test Engineer:	32145
Configuration:	EUT ONLY
Mode	ULCA B5 10+10MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBm)	Det	222740 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 829MHz + 838.9MHz</b>									
1.679500	57.62	Pk	29	-95.2	-48.77	-57.35	-13	-44.35	H
1.680400	57.55	Pk	29	-95.2	-48.78	-57.43	-13	-44.43	V
2.516050	58.4	Pk	32.1	-95.2	-49.01	-53.71	-13	-40.71	H
2.525500	58.23	Pk	32.1	-95.2	-48.91	-53.78	-13	-40.78	V
3.351700	55.16	Pk	32.8	-95.2	-46.22	-53.46	-13	-40.46	H
3.349450	54.05	Pk	32.8	-95.2	-46.34	-54.69	-13	-41.69	V
<b>Mid Channel, 831.6MHz + 841.5MHz</b>									
1.677700	57.98	Pk	28.9	-95.2	-48.77	-57.09	-13	-44.09	H
1.668700	58.34	Pk	28.8	-95.2	-48.72	-56.78	-13	-43.78	V
2.516950	58.89	Pk	32.1	-95.2	-49.00	-53.21	-13	-40.21	H
2.516050	58.72	Pk	32.1	-95.2	-49.01	-53.39	-13	-40.39	V
3.360250	53.57	Pk	32.8	-95.2	-46.00	-54.83	-13	-41.83	H
3.376450	53.75	Pk	32.8	-95.2	-46.08	-54.73	-13	-41.73	V
<b>High Channel, 834.1MHz + 844MHz</b>									
1.678600	57.65	Pk	28.9	-95.2	-48.76	-57.41	-13	-44.41	H
1.686250	58.22	Pk	29	-95.2	-48.84	-56.82	-13	-43.82	V
2.546650	57.17	Pk	32.2	-95.2	-48.79	-54.62	-13	-41.62	H
2.540800	56.76	Pk	32.2	-95.2	-48.75	-54.99	-13	-41.99	V
3.365650	54.92	Pk	32.8	-95.2	-46.21	-53.69	-13	-40.69	H
3.353950	54.81	Pk	32.8	-95.2	-46.11	-53.70	-13	-40.70	V

### 10.3.2. LTE BAND 7

#### LIMIT

FCC: §27.53 (m)

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



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

Project #:	14523758
Date:	3/16/2023
Test Engineer:	32145
Configuration:	EUT ONLY
Mode	ULCA B7 20+20MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2495-2690MHz T1790 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2510MHz + 2529.8MHz</b>										
5.020313	37.86	Pk	34.5	.8	-95.2	-30.94	-52.98	-25	-27.98	H
5.020313	38.05	Pk	34.5	.8	-95.2	-30.94	-52.79	-25	-27.79	V
7.530000	33.89	Pk	35.9	.3	-95.2	-27.09	-52.20	-25	-27.20	H
7.530000	34.13	Pk	35.9	.3	-95.2	-27.09	-51.96	-25	-26.96	V
10.040156	31.63	Pk	37.4	.7	-95.2	-25.07	-50.54	-25	-25.54	H
10.039219	30.47	Pk	37.4	.7	-95.2	-25.07	-51.70	-25	-26.70	V
<b>Mid Channel, 2525.1MHz + 2544.9MHz</b>										
5.050313	36.99	Pk	34.6	.6	-95.2	-31.04	-54.05	-25	-29.05	H
5.050313	37.1	Pk	34.6	.6	-95.2	-31.04	-53.94	-25	-28.94	V
7.575000	33.83	Pk	35.9	.4	-95.2	-27.18	-52.25	-25	-27.25	H
7.575000	34.81	Pk	35.9	.4	-95.2	-27.18	-51.27	-25	-26.27	V
10.100156	30.73	Pk	37.5	.7	-95.2	-25.22	-51.49	-25	-26.49	H
10.100156	32.8	Pk	37.5	.7	-95.2	-25.22	-49.42	-25	-24.42	V
<b>High Channel, 2540.2MHz + 2560MHz</b>										
5.320313	37.13	Pk	34.7	.8	-95.2	-30.37	-52.94	-25	-27.94	H
5.320313	36.7	Pk	34.7	.8	-95.2	-30.37	-53.37	-25	-28.37	V
7.980000	32.84	Pk	36	.3	-95.2	-26.55	-52.61	-25	-27.61	H
7.980000	33.01	Pk	36	.3	-95.2	-26.55	-52.44	-25	-27.44	V
10.640625	31.07	Pk	37.8	.5	-95.2	-24.63	-50.46	-25	-25.46	H
10.640625	31.71	Pk	37.8	.5	-95.2	-24.63	-49.82	-25	-24.82	V

**10.3.3. LTE BAND 41**

**LIMIT**

FCC: §27.53 (m)

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

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

Project #:	14523758
Date:	06/15/2023
Test Engineer:	18860
Configuration:	EUT ONLY
Mode	ULCA B41FCC 20+20MHz
Chamber #:	04-RDE-O

Frequency (GHz)	Meter Reading (dBuV)	Det	80404_ACF(dB) - 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2506MHz + 2525.8MHz</b>									
5.015500	52.45	Pk	34.2	-95.2	-45.57	-54.12	-25	-29.12	H
5.007000	51.87	Pk	34.2	-95.2	-45.58	-54.71	-25	-29.71	V
7.548000	48.69	Pk	35.9	-95.2	-42.70	-53.31	-25	-28.31	H
7.535000	49.21	Pk	35.9	-95.2	-42.73	-52.82	-25	-27.82	V
10.072500	50.26	Pk	37.5	-95.2	-41.39	-48.83	-25	-23.83	H
10.038000	50.53	Pk	37.3	-95.2	-41.19	-48.56	-25	-23.56	V
<b>Mid Channel, 2583.1MHz + 2602.9MHz</b>									
5.173000	52.47	Pk	34.4	-95.2	-45.12	-53.45	-25	-28.45	H
5.164000	49.8	Pk	34.4	-95.2	-45.05	-56.05	-25	-31.05	V
7.785000	49.42	Pk	35.9	-95.2	-42.27	-52.15	-25	-27.15	H
7.785000	49.29	Pk	35.9	-95.2	-42.27	-52.28	-25	-27.28	V
10.371000	48.9	Pk	37.5	-95.2	-40.17	-48.97	-25	-23.97	H
10.335500	48.61	Pk	37.6	-95.2	-40.79	-49.78	-25	-24.78	V
<b>High Channel, 2660.2MHz + 2680MHz</b>									
5.326000	52.37	Pk	34.5	-95.2	-44.74	-53.07	-25	-28.07	H
5.299000	52.38	Pk	34.6	-95.2	-44.88	-53.10	-25	-28.10	V
8.015500	50.1	Pk	35.9	-95.2	-41.70	-50.9	-25	-25.90	H
8.043000	49.58	Pk	35.9	-95.2	-41.86	-51.58	-25	-26.58	V
10.678000	50.17	Pk	37.6	-95.2	-40.16	-47.59	-25	-22.59	H
10.678000	50.76	Pk	37.6	-95.2	-40.16	-47.00	-25	-22.00	V

## 10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

### TEST PROCEDURE

KDB 971168 D01 v03r01 / D02 v02r02

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

### RESULTS

### 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 #:	14523758
Date:	3/17/2023
Test Engineer:	19226
Configuration:	EUT ONLY
Mode	ULCA B7 20+20MHz
Chamber #:	05-RDE-D

Frequency (GHz)	Meter Reading (dBm)	Det	80402 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2510MHz + 2529.8MHz</b>									
5.039474	58.79	Pk	34.4	-95.2	-48.79	-50.80	-25	-25.80	H
5.039931	58.67	Pk	34.4	-95.2	-48.81	-50.94	-25	-25.94	V
7.560104	56.58	Pk	35.8	-95.2	-46.99	-49.81	-25	-24.81	H
7.559686	57.04	Pk	35.8	-95.2	-46.97	-49.33	-25	-24.33	V
10.080634	57.99	Pk	37.5	-95.2	-47.04	-46.75	-25	-21.75	H
10.079875	57.79	Pk	37.5	-95.2	-47.01	-46.92	-25	-21.92	V
<b>Mid Channel, 2525.1MHz + 2544.9MHz</b>									
5.07053	58.7	Pk	34.5	-95.2	-48.81	-50.81	-25	-25.81	H
5.069027	58.43	Pk	34.5	-95.2	-48.8	-51.07	-25	-26.07	V
7.607318	58.03	Pk	35.7	-95.2	-47.14	-48.61	-25	-23.61	H
7.605394	56.76	Pk	35.7	-95.2	-47.14	-49.88	-25	-24.88	V
10.140852	57.12	Pk	37.5	-95.2	-46.72	-47.30	-25	-22.30	H
10.138677	56.69	Pk	37.5	-95.2	-46.75	-47.76	-25	-22.76	V
<b>High Channel, 2540.2MHz + 2560MHz</b>									
5.101345	58.22	Pk	34.5	-95.2	-48.91	-51.39	-25	-26.39	H
5.100232	59.22	Pk	34.5	-95.2	-48.88	-50.36	-25	-25.36	V
7.650579	57.04	Pk	35.7	-95.2	-46.8	-49.26	-25	-24.26	H
7.648542	56.9	Pk	35.7	-95.2	-46.84	-49.44	-25	-24.44	V
10.202072	57.06	Pk	37.5	-95.2	-46.55	-47.19	-25	-22.19	H
10.202151	56.83	Pk	37.5	-95.2	-46.55	-47.42	-25	-22.42	V

**10.4.2. LTE BAND 41**

**LIMIT**

FCC: §27.53 (m)

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

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

Project #:	14523758
Date:	3/16/2023
Test Engineer:	25019
Configuration:	EUT Only
Mode	ULCA B41FCC 20+20MHz
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBm)	Det	222740 ACF(dB) – 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 2506MHz + 2525.8MHz</b>									
5.033038	57.26	Pk	33.9	-95.2	-48.11	-52.15	-25	-27.15	H
5.032309	57.12	Pk	33.9	-95.2	-48.15	-52.33	-25	-27.33	V
7.548837	55.51	Pk	35.6	-95.2	-46.31	-50.40	-25	-25.40	H
7.547574	55.95	Pk	35.6	-95.2	-46.26	-49.91	-25	-24.91	V
10.063748	57.23	Pk	37.1	-95.2	-46.64	-47.51	-25	-22.51	H
10.066300	57.08	Pk	37.1	-95.2	-46.66	-47.68	-25	-22.68	V
<b>Mid Channel, 2583.1MHz + 2602.9MHz</b>									
5.184769	56.72	Pk	34.1	-95.2	-47.78	-52.16	-25	-27.16	H
5.187827	57.29	Pk	34.1	-95.2	-47.77	-51.58	-25	-26.58	V
7.779787	55.24	Pk	35.7	-95.2	-46.05	-50.31	-25	-25.31	H
7.778461	55.63	Pk	35.7	-95.2	-46.07	-49.94	-25	-24.94	V
10.373423	55.77	Pk	37.3	-95.2	-45.73	-47.86	-25	-22.86	H
10.371798	54.59	Pk	37.3	-95.2	-45.63	-48.94	-25	-23.94	V
<b>High Channel, 2660.2MHz + 2680MHz</b>									
5.033191	57.65	Pk	33.9	-95.2	-48.09	-51.74	-25	-26.74	H
5.034488	57.3	Pk	33.9	-95.2	-47.97	-51.97	-25	-26.97	V
7.547317	55.92	Pk	35.6	-95.2	-46.24	-49.92	-25	-24.92	H
7.548790	56.02	Pk	35.6	-95.2	-46.31	-49.89	-25	-24.89	V
10.064890	57.4	Pk	37.1	-95.2	-46.64	-47.34	-25	-22.34	H
10.066195	56.98	Pk	37.1	-95.2	-46.65	-47.77	-25	-22.77	V

### 10.4.3. 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 #:	14523758
Date:	06/8/2023
Test Engineer:	26120
Configuration:	EUT ONLY
Mode	ULCA B48 20+20MHz
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	T1792 3400-3800MHz BRF	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 3560MHz + 3579.8MHz</b>										
7.120088	25.15	RMS	35.7	.5	-95.2	-27.23	-61.08	-40	-21.08	H
7.120088	23.91	RMS	35.7	.5	-95.2	-27.23	-62.32	-40	-22.32	V
10.680778	20.71	RMS	37.8	.6	-95.2	-24.49	-60.58	-40	-20.58	H
10.680778	21.40	RMS	37.8	.6	-95.2	-24.49	-59.89	-40	-19.89	V
14.240147	19.89	RMS	39.3	.8	-95.2	-20.30	-55.51	-40	-15.51	V
14.240588	19.38	RMS	39.3	.8	-95.2	-20.27	-55.99	-40	-15.99	H
<b>Mid Channel, 3615.1MHz + 3634.9MHz</b>										
7.250513	24.42	RMS	35.8	.6	-95.2	-26.83	-61.21	-40	-21.21	H
7.250513	24.14	RMS	35.8	.6	-95.2	-26.83	-61.49	-40	-21.49	V
10.875094	21.29	RMS	37.7	.5	-95.2	-24.08	-59.79	-40	-19.79	H
10.875094	21.06	RMS	37.7	.5	-95.2	-24.08	-60.02	-40	-20.02	V
14.500116	18.61	RMS	39.7	.8	-95.2	-19.99	-56.08	-40	-16.08	H
14.500116	18.48	RMS	39.7	.8	-95.2	-19.99	-56.21	-40	-16.21	V
<b>High Channel, 3670.2MHz + 3690MHz</b>										
7.380056	23.39	RMS	35.8	.7	-95.2	-26.97	-62.28	-40	-22.28	H
7.380056	23.64	RMS	35.8	.7	-95.2	-26.97	-62.03	-40	-22.03	V
11.06985	21.68	RMS	37.8	.6	-95.2	-23.50	-58.62	-40	-18.62	H
11.06985	21.49	RMS	37.8	.6	-95.2	-23.50	-58.81	-40	-18.81	V
14.760084	18.36	RMS	40.1	.8	-95.2	-19.95	-55.89	-40	-15.89	H
14.760084	18.96	RMS	40.1	.8	-95.2	-19.95	-55.29	-40	-15.29	V

## 10.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 7

### TEST PROCEDURE

KDB 971168 D01 v03r01 / D02 v02r02

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

### RESULTS



### 10.5.1. 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 #:	14523758
Date:	06/9/2023
Test Engineer:	26120
Configuration:	EUT ONLY
Mode	ULCA B48 20+20MHz
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	T1792 3400-3800MHz BRF	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 3560MHz + 3579.8MHz</b>										
7.120088	23.71	RMS	35.7	.5	-95.2	-27.23	-62.52	-40	-22.52	V
7.120528	23.83	RMS	35.7	.5	-95.2	-27.18	-62.35	-40	-22.35	H
10.680338	21.83	RMS	37.8	.6	-95.2	-24.48	-59.45	-40	-19.45	H
10.680778	21.56	RMS	37.8	.6	-95.2	-24.49	-59.73	-40	-19.73	V
14.240147	19.39	RMS	39.3	.8	-95.2	-20.30	-56.01	-40	-16.01	H
14.240147	19.60	RMS	39.3	.8	-95.2	-20.30	-55.80	-40	-15.80	V
<b>Mid Channel, 3615.1MHz + 3634.9MHz</b>										
7.250513	24.07	RMS	35.8	.6	-95.2	-26.83	-61.56	-40	-21.56	H
7.250513	23.96	RMS	35.8	.6	-95.2	-26.83	-61.67	-40	-21.67	V
10.875534	21.23	RMS	37.7	.5	-95.2	-24.05	-59.82	-40	-19.82	H
10.875534	21.06	RMS	37.7	.5	-95.2	-24.05	-59.99	-40	-19.99	V
14.500556	18.07	RMS	39.7	.8	-95.2	-19.94	-56.57	-40	-16.57	H
14.500556	18.33	RMS	39.7	.8	-95.2	-19.94	-56.31	-40	-16.31	V
<b>High Channel, 3670.2MHz + 3690MHz</b>										
7.380938	23.85	RMS	35.8	.7	-95.2	-26.99	-61.84	-40	-21.84	H
7.380938	24.07	RMS	35.8	.7	-95.2	-26.99	-61.62	-40	-21.62	V
11.070291	21.21	RMS	37.8	.6	-95.2	-23.50	-59.09	-40	-19.09	H
11.070291	21.34	RMS	37.8	.6	-95.2	-23.50	-58.96	-40	-18.96	V
14.760525	19.09	RMS	40.1	.8	-95.2	-19.91	-55.12	-40	-15.12	H
14.760966	18.80	RMS	40.1	.8	-95.2	-19.86	-55.36	-40	-15.36	V

## 10.6. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 8

### TEST PROCEDURE

KDB 971168 D01 v03r01 / D02 v02r02

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

### RESULTS

### 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 #:	14523758
Date:	06/28/2023
Test Engineer:	32186
Configuration:	EUT ONLY
Mode	ULCA B48 20+20MHz
Chamber #:	04-RDE-Q

Frequency (MHz)	Meter Reading (dBuV)	Det	84796 ACF (dB) - 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 3560MHz + 3579.8MHz</b>									
7.140202	42.14	RMS	35.5	-95.2	-44.7	-62.26	-40	-22.26	H
7.140202	42.15	RMS	35.5	-95.2	-44.7	-62.25	-40	-22.25	V
10.710671	43.87	RMS	37.7	-95.2	-44.9	-58.53	-40	-18.53	H
10.710671	43.83	RMS	37.7	-95.2	-44.9	-58.57	-40	-18.57	V
14.280207	44.64	RMS	39.4	-95.2	-43.82	-54.98	-40	-14.98	H
14.279741	44.68	RMS	39.4	-95.2	-43.82	-54.94	-40	-14.94	V
<b>Mid Channel, 3615.1MHz + 3634.9MHz</b>									
7.251269	41.93	RMS	35.5	-95.2	-44.59	-62.36	-40	-22.36	H
7.251269	41.9	RMS	35.5	-95.2	-44.59	-62.39	-40	-22.39	V
10.875405	43.83	RMS	37.7	-95.2	-44.71	-58.38	-40	-18.38	H
10.874938	43.85	RMS	37.7	-95.2	-44.69	-58.34	-40	-18.34	V
14.500008	44.61	RMS	39.3	-95.2	-43.78	-55.07	-40	-15.07	H
14.499541	44.65	RMS	39.3	-95.2	-43.8	-55.05	-40	-15.05	V
<b>High Channel, 3670.2MHz + 3690MHz</b>									
7.360936	42.28	RMS	35.5	-95.2	-44.85	-62.27	-40	-22.27	H
7.360936	42.28	RMS	35.5	-95.2	-44.85	-62.27	-40	-22.27	V
11.040605	43.69	RMS	37.9	-95.2	-44.77	-58.38	-40	-18.38	H
11.040605	43.75	RMS	37.9	-95.2	-44.77	-58.32	-40	-18.32	V
14.720741	43.59	RMS	39	-95.2	-42.95	-55.56	-40	-15.56	H
14.720741	43.61	RMS	39	-95.2	-42.95	-55.54	-40	-15.54	V

## 10.7. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 9

### TEST PROCEDURE

KDB 971168 D01 v03r01 / D02 v02r02

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

### RESULTS

**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 #:	14523758
Date:	6/28/2023
Test Engineer:	32186
Configuration:	EUT ONLY
Mode	ULCA B48 20+20MHz
Chamber #:	04-RDE-Q

Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB) - 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
<b>Low Channel, 3560MHz + 3579.8MHz</b>									
7.140202	42.12	RMS	35.5	-95.2	-44.7	-62.28	-40	-22.28	H
7.139736	42.13	RMS	35.5	-95.2	-44.7	-62.27	-40	-22.27	V
10.710671	43.83	RMS	37.7	-95.2	-44.9	-58.57	-40	-18.57	H
10.711138	43.84	RMS	37.7	-95.2	-44.89	-58.55	-40	-18.55	V
14.280674	44.67	RMS	39.4	-95.2	-43.83	-54.96	-40	-14.96	H
14.281141	44.7	RMS	39.4	-95.2	-43.83	-54.93	-40	-14.93	V
<b>Mid Channel, 3615.1MHz + 3634.9MHz</b>									
7.250336	41.91	RMS	35.5	-95.2	-44.56	-62.35	-40	-22.35	H
7.250336	41.94	RMS	35.5	-95.2	-44.56	-62.32	-40	-22.32	V
10.875872	43.98	RMS	37.7	-95.2	-44.73	-58.25	-40	-18.25	H
10.875405	43.98	RMS	37.7	-95.2	-44.71	-58.23	-40	-18.23	V
14.500474	44.67	RMS	39.3	-95.2	-43.79	-55.02	-40	-15.02	H
14.500474	44.68	RMS	39.3	-95.2	-43.79	-55.01	-40	-15.01	V
<b>High Channel, 3670.2MHz + 3690MHz</b>									
7.360936	42.33	RMS	35.5	-95.2	-44.85	-62.22	-40	-22.22	H
7.360469	42.32	RMS	35.5	-95.2	-44.84	-62.22	-40	-22.22	V
11.040605	43.66	RMS	37.9	-95.2	-44.77	-58.41	-40	-18.41	H
11.040605	43.63	RMS	37.9	-95.2	-44.77	-58.44	-40	-18.44	V
14.720741	43.57	RMS	39.0	-95.2	-42.95	-55.58	-40	-15.58	H
14.720741	43.59	RMS	39.0	-95.2	-42.95	-55.56	-40	-15.56	V

## 11. SETUP PHOTOS

Please refer to 14523758-EP1V1 Setup Photo Report for setup photos

**END OF REPORT**