



TEST REPORT

Report Number: R14176151-E1V2

Applicant : SONY CORPORATION
1-7-1 KONAN MINATO-KU
TOKYO, 108-0076, JAPAN

FCC ID : PY7-34424G

EUT Description : GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax,
GPS, WPT & NFC

Test Standard(s) : FCC CFR47 Part 2, Part 22, Part 24, and Part 27

Date Of Issue:

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Revision History




<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	2022-04-25	Initial Review	Noah Bennett
V2	2022-04-29	Addressed TCB Feedback. -Updated Section 6.2 -Updated Section 6.4 -Updated Section 7.2 and 7.3	Noah Bennett

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. SUMMARY OF TEST RESULTS	6
3. TEST METHODOLOGY	6
4. FACILITIES AND ACCREDITATION	7
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	8
5.1. METROLOGICAL TRACEABILITY	8
5.2. DECISION RULES	8
5.3. MEASUREMENT UNCERTAINTY	8
5.4. SAMPLE CALCULATION	8
6. EQUIPMENT UNDER TEST	9
6.1. DESCRIPTION OF EUT	9
6.2. MAXIMUM OUTPUT POWER	9
6.3. SOFTWARE AND FIRMWARE	14
6.4. MAXIMUM ANTENNA GAIN	14
6.5. WORST-CASE CONFIGURATION AND MODE	14
6.6. DESCRIPTION OF TEST SETUP	16
7. REUSE OF TEST DATA	17
7.1. INTRODUCTION	17
7.2. DEVICES DIFFERENCES	17
7.3. REFERENCE DETAIL	17
7.4. SPOT CHECK VERIFICATION RESULTS SUMMARY	18
8. TEST AND MEASUREMENT EQUIPMENT	19
9. RF OUTPUT POWER VERIFICATION	21
9.1.1. OUTPUT POWER FOR LTE25	22
9.1.2. OUTPUT POWER FOR LTE66	28
10. CONDUCTED TEST RESULTS	34
10.1. OCCUPIED BANDWIDTH	34
10.1.1. LTE25	36
10.1.2. LTE66	38
10.2. BAND EDGE AND EMISSION MASK	40

10.2.1.	LTE25.....	41
10.2.2.	LTE66.....	50
10.3.	OUT OF BAND EMISSIONS	59
10.3.1.	LTE25.....	60
10.3.2.	LTE66.....	65
10.4.	FREQUENCY STABILITY	72
10.4.1.	LTE25.....	73
10.4.2.	LTE66.....	74
10.5.	PEAK TO AVERAGE RATIO.....	75
10.5.1.	LTE25.....	76
10.5.2.	LTE66.....	78
11.	RADIATED TEST RESULTS.....	80
11.1.	FIELD STRENGTH OF SPURIOUS RADIATION ABOVE 1GHz	80
11.1.1.	LTE5.....	80
11.1.2.	LTE12.....	87
11.1.3.	LTE13.....	94
11.1.4.	LTE25.....	97
11.1.5.	LTE41.....	104
11.1.6.	LTE66.....	111
11.2.	Worst Case Radiated Emissions	118
11.2.1.	GSM/2G.....	118
11.2.2.	WCDMA/3G.....	121
11.2.3.	LTE/4G	124
11.3.	SIMULTANEOUS TRANSMISSION	128
11.3.1.	LTE Band 12, 2.4WLAN HE20 106T RU54 – 3Tx.....	128
11.3.2.	LTE Band 66, 2.4 WLAN HE20 26T RU8, 5.2 WLAN HE20 26T RU0 – 5Tx.....	130
11.3.3.	LTE Band 66, 2.4WLAN HE20 106T RU54 – 3Tx.....	132
11.3.4.	LTE Band 66, 5.2 WLAN HE20 26T RU0 – 3Tx.....	134
12.	SETUP PHOTOS.....	136

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	SONY CORPORATION 1-7-1 KONAN MINATO-KU TOKYO, 108-0076, JAPAN	
FCC ID	PY7-34424G	
EUT Description	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC	
Serial Number	QV77001EC2, QV770024C2, QV770049C2, QV77001WC2	
Sample Receipt Date	2022-03-16	
Date Tested	2022-03-29 to 2022-04-20	
Applicable Standards	FCC CFR47 Part 2, Part 22, Part 24, and Part 27.	
Test Results	COMPLIES	
<p>UL LLC 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 LLC Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.</p>		
Approved & Released By:	Reviewed By:	Prepared By:
		
Dan Corona Operations Leader UL Verification Services Inc.	Kiya Kedida Project Engineer UL Verification Services Inc.	Noah Bennett Engineer UL LLC Inc.

2. SUMMARY OF TEST RESULTS

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

Requirement Description	Requirement Clause Number (FCC)	Result	Remarks
Effective Radiated Power	27.50 (b) (10)	Pass	Note: Full testing was only done on Bands LTE 25 and LTE66. Please see Section 7 for Data-Reuse justification.
Equivalent Isotropic Radiated Power	24.232 (c)		
	27.50 (h)		
Occupied Bandwidth	2.1049	Pass	
Band Edge and Emission Mask	2.1051, 24.238 (a) (c) 27.53 (g), (c) (f),	Pass	
Out of Band Emissions	2.1051, 24.238 (a) (c) 27.53 (g), (c) (f),	Pass	
Frequency Stability	2.1055, 24.135, 27.54	Pass	
Peak-to-Average Ratio	22.913 (d), 24.232 (d)	Pass	
Field Strength of Spurious Radiation	2.1053, 22.917 (a), 24.236, 27.53 (g), (c), (f), 27.58 (h)	Pass	Note: Full testing was only done on GSM850/1900, WCDMA Bands 2/4/5, and LTE Bands 5/12/13/25/41 and 66. Please see Section 7 for Data-Reuse justification.

3. TEST METHODOLOGY

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

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27
- [FCC KDB 971168 D01 v03r01](#): Power Meas License Digital Systems
- [FCC KDB 971168 D02 v02r01](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01 v01r01](#). Determining ERP and EIRP
- FCC KDB 484596 D01: Referencing Test Data v01

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below. All testing with the exception of RF Conducted Output Power was performed at the below site.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input checked="" type="checkbox"/>	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
<input checked="" type="checkbox"/>	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

UL Verification Services Inc. is accredited by A2LA, Certificate Number #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below. RF Conducted Output Power was the only test performed at the below site.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input checked="" type="checkbox"/>	Building 1: 47173 Benicia Street Fremont, CA 94538, U.S.A	US0104	2324A	550739
<input checked="" type="checkbox"/>	Building 2: 47266 Benicia Street Fremont, CA 94538, U.S.A	US0104	22541	550739
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd Fremont, CA 94538, U.S.A	US0104	2324B	550739

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U _{Lab}
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Final Voltage (dBuV)} = \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \text{LISN Insertion Loss.}$$

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC. This report covers GSM/WCDMA/LTE.

6.2. MAXIMUM OUTPUT POWER

EIRP/ERP 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.

The transmitter has a maximum average conducted and ERP / EIRP output powers as follows:

GSM MODES

<u>Part 22 850MHz</u>								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.2-848.8	GPRS	32.8	-2.80	7.0	27.85	0.610	240.2	240KGXW
	EGPRS	27.1			22.15	0.164	247.1	247KG7W
<u>Part 24 1900MHz</u>								
Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1850.2-1909.8	GPRS	27.4	-2.70	2.0	24.70	0.295	239.8	240KGXW
	EGPRS	26.6			23.90	0.245	244.1	244KG7W

WCDMA MODE

Part 22 Band 5

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
826.4-846.6	REL 99	21.7	-2.80	7.0	16.75	0.047	4133	4M13F9W
	HSDPA	20.9			15.95	0.039	4161	4M16F9W

Part 24 Band 2

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1852.4-1907.6	REL 99	19.7	-2.70	2.0	17.00	0.050	4159.9	4M16F9W
	HSDPA	18.7			16.00	0.040	4145.11	4M15F9W

Part 27 Band 4

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1712.4-1752.6	REL 99	19.7	-4.40	1.0	15.30	0.034	4412.4	4M41F9W
	HSDPA	18.7			14.30	0.027	4164.4	4M16F9W

LTE BAND 2

Part 24								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)		-2.70						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	1850.7	1909.3	19.70	17.00	0.050	1080	1M08G7W
	16QAM			20.00	17.30	0.054	1090	1M09D7W
3.0	QPSK	1851.5	1908.5	19.70	17.00	0.050	2700	2M70G7W
	16QAM			20.00	17.30	0.054	2700	2M70D7W
5.0	QPSK	1852.5	1907.5	19.80	17.10	0.051	4490	4M49G7W
	16QAM			20.00	17.30	0.054	4490	4M49D7W
10.0	QPSK	1855.0	1905.0	19.70	17.00	0.050	8980	8M98G7W
	16QAM			20.00	17.30	0.054	8980	8M98D7W
15.0	QPSK	1857.5	1902.5	19.60	16.90	0.049	13470	13M5G7W
	16QAM			19.90	17.20	0.052	13470	13M5D7W
20.0	QPSK	1860.0	1900.0	19.60	16.90	0.049	17960	18M0G7W
	16QAM			20.00	17.30	0.054	17970	18M0D7W

LTE BAND 4

Part 27								
EIRP Limit (W)		1.00						
Antenna Gain (dBi)		-4.40						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	1710.7	1754.3	19.7	15.30	0.034	1090	1M09G7W
	16QAM			20.0	15.60	0.036	1090	1M09D7W
3.0	QPSK	1711.5	1753.5	19.7	15.30	0.034	2690	2M69G7W
	16QAM			20.0	15.60	0.036	2690	2M69D7W
5.0	QPSK	1712.5	1752.5	19.8	15.40	0.035	4500	4M50G7W
	16QAM			20.0	15.60	0.036	4510	4M51D7W
10.0	QPSK	1715.0	1750.0	19.7	15.30	0.034	8950	8M95G7W
	16QAM			20.0	15.60	0.036	8970	8M97D7W
15.0	QPSK	1717.5	1747.5	19.6	15.20	0.033	13420	13M4G7W
	16QAM			19.9	15.50	0.035	13460	13M5D7W
20.0	QPSK	1720.0	1745.0	19.6	15.20	0.033	17920	17M9G7W
	16QAM			20.0	15.60	0.036	17880	17M9D7W

LTE BAND 5

Part 22H								
ERP Limit (W)		7.00						
Antenna Gain (dBi)		-2.80						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	824.7	848.3	21.6	16.65	0.046	1090	1M09G7W
	16QAM			21.9	16.95	0.050	1090	1M09D7W
3.0	QPSK	825.5	847.5	21.6	16.65	0.046	2690	2M69G7W
	16QAM			21.9	16.95	0.050	2690	2M69D7W
5.0	QPSK	826.5	846.5	21.7	16.75	0.047	4500	4M50G7W
	16QAM			22.0	17.05	0.051	4500	4M50D7W
10.0	QPSK	829.0	844.0	21.6	16.65	0.046	8960	8M96G7W
	16QAM			22.0	17.05	0.051	8940	8M94D7W

LTE BAND 12

Part 27								
ERP Limit (W)		3.00						
Antenna Gain (dBi)		-9.50						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	699.7	715.3	21.4	9.75	0.009	1090	1M09G7W
	16QAM			21.8	10.15	0.010	1090	1M09D7W
3.0	QPSK	700.5	714.5	21.4	9.75	0.009	2690	2M69G7W
	16QAM			21.7	10.05	0.010	2690	2M69D7W
5.0	QPSK	701.5	713.5	21.4	9.75	0.009	4490	4M49G7W
	16QAM			21.9	10.25	0.011	4500	4M50D7W
10.0	QPSK	704.0	711.0	21.7	10.05	0.010	8940	8M94G7W
	16QAM			21.4	9.75	0.009	8950	8M95D7W

LTE BAND 13

Part 27								
ERP Limit (W)		3.00						
Antenna Gain (dBi)		-3.30						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	779.5	784.5	21.6	16.15	0.041	4500	4M50G7W
	16QAM			22.0	16.55	0.045	4500	4M50D7W
10.0	QPSK	782.0	782.0	21.5	16.05	0.040	8930	8M93G7W
	16QAM			21.9	16.45	0.044	8960	8M96D7W

LTE BAND 17

Part 27								
ERP Limit (W)		3.00						
Antenna Gain (dBi)		-9.50						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	706.5	713.5	21.7	10.05	0.010	4488.8	4M49G7W
	16QAM			22.0	10.35	0.011	4489.1	4M49D7W
10.0	QPSK	709.0	711.0	21.6	9.95	0.010	8969	8M97G7W
	16QAM			22.0	10.35	0.011	8961	8M96D7W

LTE BAND 25

Part 24								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)		-2.70						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	1850.7	1914.3	19.8	17.10	0.051	1090	1M09G7W
	16QAM			20.0	17.30	0.054	1090	1M09D7W
3.0	QPSK	1851.5	1913.5	19.8	17.10	0.051	2700	2M70G7W
	16QAM			20.0	17.30	0.054	2700	2M70D7W
5.0	QPSK	1852.5	1912.5	19.8	17.10	0.051	4490	4M49G7W
	16QAM			20.0	17.30	0.054	4490	4M49D7W
10.0	QPSK	1855.0	1910.0	19.7	17.00	0.050	8980	8M98G7W
	16QAM			20.0	17.30	0.054	8980	8M98D7W
15.0	QPSK	1857.5	1907.5	19.6	16.90	0.049	13470	13M5G7W
	16QAM			20.0	17.30	0.054	13470	13M5D7W
20.0	QPSK	1860.0	1905.0	19.6	16.90	0.049	17950	18M0G7W
	16QAM			20.0	17.30	0.054	17960	18M0D7W

LTE BAND 41

Part 27								
EIRP Limit (W)		2.00						
Antenna Gain (dBi)		-4.40						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
5.0	QPSK	2498.5	2687.5	19.7	15.30	0.034	4500	4M50G7W
	16QAM			19.8	15.40	0.035	4510	4M51D7W
10.0	QPSK	2501.0	2685.0	19.7	15.30	0.034	8940	8M94G7W
	16QAM			19.7	15.30	0.034	8960	8M96D7W
15.0	QPSK	2503.5	2682.5	19.6	15.20	0.033	13400	13M4G7W
	16QAM			19.6	15.20	0.033	13440	13M4D7W
20.0	QPSK	2506.0	2680.0	19.6	15.20	0.033	17830	17M8G7W
	16QAM			19.9	15.50	0.035	17900	17M9D7W

LTE BAND 66

Part 27								
EIRP Limit (W)		1.00						
Antenna Gain (dBi)		-4.40						
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (kHz)	Emission Designator
1.4	QPSK	1710.7	1779.3	19.6	15.20	0.033	1090	1M09G7W
	16QAM			19.9	15.50	0.035	1090	1M09D7W
3.0	QPSK	1711.5	1778.5	19.9	15.50	0.035	2690	2M69G7W
	16QAM			19.9	15.50	0.035	2690	2M69D7W
5.0	QPSK	1712.5	1777.5	19.5	15.10	0.032	4490	4M49G7W
	16QAM			20.0	15.60	0.036	4490	4M49D7W
10.0	QPSK	1715.0	1775.0	19.5	15.10	0.032	8980	8M98G7W
	16QAM			19.8	15.40	0.035	8970	8M97D7W
15.0	QPSK	1717.5	1772.5	19.4	15.00	0.032	13470	13M5G7W
	16QAM			19.7	15.30	0.034	13470	13M5D7W
20.0	QPSK	1720.0	1770.0	19.5	15.10	0.032	17970	18M0G7W
	16QAM			20.0	15.60	0.036	17970	18M0D7W

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version .1144 for conducted units and .1122 for radiated units.

6.4. MAXIMUM ANTENNA GAIN

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

Antenna	Support bands	Frequency range (MHz)	Peak gain (dBi)
Main Antenna 1	GSM850/WCDMA5/LTE B5	824 -849	-2.8
Main Antenna 1	LTE B12/B17	699-716	-9.5
Main Antenna 1	LTE B13	777-787	-3.3
Main Antenna 2	GSM1900/WCDMA2/LTE B2/B25	1850-1910	-2.7
Main Antenna 2	WCDMA4/LTE B4/LTE B66	1710-1780	-4.4
Main Antenna 2	LTE B41	2496-2690	-4.4

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT supports 2G and 3G Bands of:
 GSM 850/1900, WCDMA 2/4/5.

The EUT supports LTE Bands of:
 Band 2, Band 4, Band 5, Band 12, Band 13, Band 17, Band 25, Band 41, and Band 66.

LTE Band 2 (1850-1910MHz) is covered by LTE Band 25 because it is a subset of LTE band 25 and they have same output power and supported bandwidths.

LTE Band 4 (1710-1755MHz, 5/10/15/20MHz bandwidth) is covered by LTE Band 66 because it is a subset of LTE band 66 and they have same output power.

LTE Band 17 (704-716MHz, 5/10MHz bandwidth) is covered by LTE Band 12 because it is a subset of LTE band 12 and they have the same output power.

The EUT was investigated in three orthogonal orientations X/Y/Z for both Low Band, (Fundamental <1GHz), and Mid Band, (Fundamental 1-3GHz). Worst Case orientations are as follows:

Antenna	Band	Orientation
Main	Low Band	Y
	Mid Band	Y

For Radiated measurements the EUT was tested with the AC/DC adaptor and headphones connected as this represents a worst-case mode of operation.

The worst-case scenario for below 1GHz and above 18GHz measurements are as followed:

- GSM GPRS
- WCDMA REL 99
- LTE QPSK

Simultaneous transmission worst case modes selected are as follows:

- LTE Band 66, 1745MHz, 20MHz, 1RB and 2442MHz 11ax HE20 26T/8 C0/C1 and 5240MHz C0/C1 HE20 26T/0
- LTE Band 66, 1745MHz, 20MHz, 1RB and 2442MHz 11ax HE20 106T/R54 C0/C1
- LTE Band 66, 1745MHz, 20MHz, 1RB and 5240MHz 11ax HE20 26T/0 C0/C1
- LTE Band 12, 23060, 704MHz, 10MHz, 1RB and 2462MHz 106T/R54 C0/C1

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	HP	14-dk1003dx	5CG016B4XM	TX2-RTL8821CE
Headphones	Sony	MDR-EX15AP	NA	NA
AC Adapter	Sony	XQZ-UC11-010-236-21	1821W34209742	NA
AC Adapter	Sony	XQZ-UC11-010-236-21	1821W34209856	NA
USB Cable Type C	Sony	XQZ-UB1	NA	NA

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB-C	Non-Shielded	<3m	Connected to Power Supply
2	3.5mm	1	3.5mm Audio	Non-Shielded	<1m	Connected to headphones

TEST SETUP

The EUT was powered on and configured to be connected to a communications device before the test. The EUT was connected and communicating with the device during the entire test suite. The EUT was connected to AC Mains via power supply and had headphones connected.

SETUP DIAGRAMS

Please refer to UL Report R14176151-EP1 for Setup Diagrams.

7. REUSE OF TEST DATA

7.1. INTRODUCTION

According to the manufacturer, FCC ID: PY7-83262V (Lead Model), FCC ID: PY7-24116L (Sibling Model) and FCC ID: PY7-34424G (This Model)'s PCB layout and the components except for antenna for licensed band (GSM, WCDMA and LTE) is identical. The FCC ID: PY7-83262V and FCC ID: PY7-24116L conducted test data shall remain representative of FCC ID: PY7-34424G so, FCC ID: PY7-34424G leverages conducted test data from FCC ID: PY7-83262V and FCC ID: PY7-24116L.

The applicant takes full responsibility that the test data as referenced in this section represents compliance for this FCC ID.

7.2. DEVICES DIFFERENCES

Difference between PY7-83262V, FCC ID: PY7-24116L, and PY7-34424G:

Sony Corporation hereby declares that the PCB layout and the components except for antenna for licensed band (GSM, WCDMA and LTE) is identical between PY7-83262V (lead model), FCC ID: PY7-24116L (Sibling Model) and PY7-34424G (this model). Therefore, the conducted test data of licensed band for PY7-83262V and FCC ID: PY7-24116L can be re-used to PY7-34424G except for LTE25 and LTE66.

7.3. REFERENCE DETAIL

Equipment Class	Reference FCC ID	Report Title	Referenced Testing
Licensed (WWAN)	PY7-83262V	R14176139-E1V3 FCC Report WWAN_Final	Conducted antenna port data for all supported bands excluding LTE B25, B66 and WCDMA B2 and B4
	PY7-24116L	R14176161-E1V5 FCC Report WWAN Full Test & Spot Check	Conducted antenna port data for WCDMA B2 and B4 only.

*Notes:

1. Full radiated testing was done on all LTE5, LTE12, LTE13, LTE25, LTE41 and LTE66.
2. ERP/EIRP is updated in this report due to changes in antenna gain. ERP/EIRP is based on conducted power plus antenna gain.

7.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device PY7-34424G for conducted output power. The data from the application has been verified through appropriate spot checks to demonstrate compliance for this device in accordance with FCC public KDB 484596 D01 as shown in the summary below.

PY7-24116L SPOT CHECK RESULTS								
Technology	Test Item	Cellular Band	Channel	Measured Frequency (MHz)	PY7-83262V	PY7-24116L	PY7-34424G	Delta (dB) <+3dB
					AV Reading (dBm)	AV Reading (dBm)	AV Reading (dBm)	
GSM	Power	850	190	836.6	32.8	-	32.6	-0.2
	Power	1900	661	1880.0	27.4	-	27.4	0.0
WCDMA	Power	II	9400	1880.0	-	19.7	19.7	0.0
	Power	IV	1413	1732.6	-	19.6	19.6	0.0
	Power	V	4183	836.6	21.7	-	21.4	-0.3
4G LTE	Power	LTE5	20525	836.5	22.0	-	21.6	-0.4
	Power	LTE12	23095	707.5	21.3	-	21.3	0.0
	Power	LTE13	23230	782	21.9	-	21.5	-0.4
	Power	LTE41	40620	2593	19.9	-	19.5	-0.4

8. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Common Equipment					
Conducted Room 2					
SA0025	Spectrum Analyzer	Keysight Technologies	N9030A	2021-04-01	2022-04-01
72822	Spectrum Analyzer	Agilent	E4446A	2022-03-03	2023-03-03
12001	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2021-10-01	2022-10-01
12002	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2021-10-01	2022-10-01
PWM005	RF Power Meter	Keysight Technologies	N1912A	2021-07-27	2022-07-27
PWS001	Peak and Avg Power Sensor, 50MHz to 6GHz	Keysight Technologies	E9323A	2021-06-25	2022-06-25
PWS006	Peak and Avg Power Sensor, 50MHz to 6GHz	Keysight Technologies	N1921A	2021-12-17	2022-12-17
76023 (EC0225)	Temp/Humid Chamber	Cincinnati Sub-Zero	ZPH-8-3.5-SCT/AC	2021-05-27	2022-05-27
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2021-07-12	2022-07-12
76021	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2022.2.17	NA	NA
Boonton Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
Additional Equipment used					
MM0167 (PRE0126458)	True RMS Multimeter	Agilent	U1232A	2021-08-17	2023-08-17

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
0.009-30MHz					
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2021-08-19	2022-08-19
30-1000 MHz					
AT0081	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2021-12-08	2022-12-08
Gain-Loss Chains					
C4-SAC03	Gain-loss string: 1-18GHz	Various	Various	2021-05-07	2022-05-07
C4-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2021-05-07	2022-05-07
C4-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2021-05-07	2022-05-07
Receiver & Software					
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2021-03-09	2022-03-09
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
s/n 210701941	Environmental Meter	Fisher Scientific	15-077-963	2021-8-16	2023-08-16
213025	Wideband Radio Communications Tester	Rohde and Schwartz	CMW500	2021-11-18	2022-11-18
BRF010	1.85-1.97GHz notch filter, 2W, F _{high} = 9GHz	Micro-Tronics	BRM50714-01	2022-02-17	2023-02-17
HPF012	1GHz high-pass filter, 2W, F _{high} = 18GHz	Micro-Tronics	HPM18129	2022-02-17	2023-02-17
BRF008	1710-1785MHz notch filter, 2W, F _{high} = 9GHz	Micro-Tronics	BRM50713-01	2022-02-17	2023-02-17
HPF019	7GHz high-pass filter, 2W, F _{high} = 18GHz	Micro-Tronics	HPM50107	2021-07-31	2022-07-31
BRF001	900MHz notch filter, 2W, F _{high} = 6GHz	Micro-Tronics	BRM50706	2021-07-22	2022-07-22

NOTES:

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

9. RF OUTPUT POWER VERIFICATION

CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All LTE bands conducted average power is obtained from the CMW500 telecommunication test set.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS136.101 specification.

UE Power Class: 3 (23 +/- 2dBm). Band 41 UE Power Class: 2 (26 +/-2 dBm).The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS136.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS136.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36, 66, 70	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2, 6.6.3.3.19	41	5, 10, 15, 20	Table 6.2.4-4, Table 6.2.4-4a	

RESULTS

***if this is a cellphone device, pls add this statement:

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:

9.1.1. OUTPUT POWER FOR LTE25

Test Date	3/18/2022
Tested By	43576
Sample no.	QV7700EMAW
Call Box S/N	85763
Cable loss	0.8
Antenna Port	Main 2

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26140	26365	26590	MPR	Tune-up Limit
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	19.6	19.6	19.5	0	20
		1	49	19.5	19.6	19.6	0	20
		1	99	19.5	19.5	19.5	0	20
		50	0	19.5	19.6	19.6	0	20
		50	24	19.6	19.6	19.6	0	20
		50	50	19.6	19.6	19.6	0	20
		100	0	19.6	19.6	19.6	0	20
	16QAM	1	0	19.8	20.0	19.9	0	20
		1	49	19.9	20.0	20.0	0	20
		1	99	19.7	19.9	19.8	0	20
		50	0	19.6	19.6	19.6	0	20
		50	24	19.7	19.6	19.7	0	20
		50	50	19.6	19.7	19.6	0	20
		100	0	19.6	19.6	19.6	0	20
	64QAM	1	0	19.9	19.9	19.8	0	20
		1	49	20.0	20.0	19.9	0	20
		1	99	19.8	19.9	19.7	0	20
		50	0	19.6	19.6	19.6	0	20
		50	24	19.7	19.7	19.7	0	20
		50	50	19.7	19.7	19.6	0	20
		100	0	19.7	19.6	19.7	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26115	26365	26615	MPR	Tune-up Limit
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	19.6	19.5	19.6	0	20
		1	37	19.6	19.6	19.5	0	20
		1	74	19.5	19.5	19.5	0	20
		36	0	19.5	19.6	19.5	0	20
		36	20	19.6	19.6	19.6	0	20
		36	39	19.6	19.6	19.5	0	20
		75	0	19.6	19.6	19.5	0	20
	16QAM	1	0	19.9	19.9	19.8	0	20
		1	37	19.8	20.0	19.9	0	20
		1	74	19.7	19.8	19.8	0	20
		36	0	19.6	19.6	19.6	0	20
		36	20	19.7	19.6	19.6	0	20
		36	39	19.6	19.7	19.6	0	20
		75	0	19.6	19.6	19.5	0	20
	64QAM	1	0	20.0	19.9	19.8	0	20
		1	37	20.0	19.9	19.7	0	20
		1	74	19.9	19.8	19.7	0	20
		36	0	19.6	19.6	19.6	0	20
		36	20	19.7	19.6	19.6	0	20
		36	39	19.7	19.7	19.6	0	20
		75	0	19.7	19.6	19.6	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26090	26365	26640	MPR	Tune-up Limit
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	19.7	19.7	19.7	0	20
		1	25	19.6	19.7	19.7	0	20
		1	49	19.6	19.7	19.6	0	20
		25	0	19.8	19.7	19.7	0	20
		25	12	19.8	19.7	19.7	0	20
		25	25	19.7	19.8	19.7	0	20
		50	0	19.7	19.7	19.6	0	20
	16QAM	1	0	20.0	20.0	20.0	0	20
		1	25	19.9	20.0	20.0	0	20
		1	49	20.0	20.0	20.0	0	20
		25	0	19.8	19.8	19.6	0	20
		25	12	19.8	19.8	19.7	0	20
		25	25	19.7	19.8	19.7	0	20
		50	0	19.8	19.7	19.7	0	20
	64QAM	1	0	20.0	20.0	19.8	0	20
		1	25	20.0	20.0	19.8	0	20
		1	49	20.0	20.0	19.9	0	20
		25	0	19.8	19.8	19.7	0	20
		25	12	19.8	19.8	19.8	0	20
		25	25	19.8	19.8	19.8	0	20
		50	0	19.8	19.7	19.7	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26065	26365	26665	MPR	Tune-up Limit
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	19.7	19.8	19.6	0	20
		1	12	19.7	19.8	19.7	0	20
		1	24	19.7	19.8	19.6	0	20
		12	0	19.7	19.7	19.7	0	20
		12	7	19.7	19.7	19.7	0	20
		12	13	19.7	19.7	19.7	0	20
		25	0	19.7	19.7	19.7	0	20
	16QAM	1	0	20.0	20.0	20.0	0	20
		1	12	20.0	20.0	20.0	0	20
		1	24	20.0	20.0	20.0	0	20
		12	0	19.8	19.8	19.8	0	20
		12	7	19.8	19.8	19.8	0	20
		12	13	19.8	19.9	19.7	0	20
		25	0	19.7	19.7	19.7	0	20
	64QAM	1	0	20.0	20.0	20.0	0	20
		1	12	20.0	20.0	20.0	0	20
		1	24	20.0	20.0	20.0	0	20
		12	0	19.8	19.6	19.8	0	20
		12	7	19.8	19.6	19.8	0	20
		12	13	19.8	19.7	19.8	0	20
		25	0	19.8	19.8	19.7	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26055	26365	26675	MPR	Tune-up Limit
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	19.7	19.7	19.7	0	20
		1	8	19.7	19.8	19.7	0	20
		1	14	19.6	19.7	19.6	0	20
		8	0	19.7	19.7	19.7	0	20
		8	4	19.7	19.8	19.7	0	20
		8	7	19.7	19.8	19.7	0	20
		15	0	19.7	19.7	19.7	0	20
	16QAM	1	0	19.9	20.0	20.0	0	20
		1	8	20.0	20.0	20.0	0	20
		1	14	19.9	20.0	20.0	0	20
		8	0	19.7	19.8	19.8	0	20
		8	4	19.8	19.8	19.8	0	20
		8	7	19.7	19.9	19.8	0	20
		15	0	19.7	19.7	19.7	0	20
	64QAM	1	0	20.0	20.0	19.9	0	20
		1	8	20.0	20.0	19.9	0	20
		1	14	20.0	20.0	19.9	0	20
		8	0	19.8	19.8	19.7	0	20
		8	4	19.8	19.9	19.8	0	20
		8	7	19.8	19.9	19.7	0	20
		15	0	19.7	19.7	19.7	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				26047	26365	26683	MPR	Tune-up Limit
				1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	19.7	19.7	19.6	0	20
		1	3	19.7	19.8	19.6	0	20
		1	5	19.7	19.7	19.6	0	20
		3	0	19.7	19.7	19.6	0	20
		3	1	19.7	19.7	19.6	0	20
		3	3	19.7	19.7	19.6	0	20
		6	0	19.7	19.7	19.6	0	20
	16QAM	1	0	20.0	20.0	20.0	0	20
		1	3	20.0	20.0	20.0	0	20
		1	5	20.0	20.0	20.0	0	20
		3	0	19.9	19.9	19.8	0	20
		3	1	19.9	19.9	19.8	0	20
		3	3	19.9	20.0	19.8	0	20
		6	0	19.7	19.8	19.7	0	20
	64QAM	1	0	19.6	19.8	20.0	0	20
		1	3	19.9	19.9	20.0	0	20
		1	5	19.9	19.9	20.0	0	20
		3	0	19.8	19.8	19.8	0	20
		3	1	19.8	19.8	19.8	0	20
		3	3	19.8	19.8	19.8	0	20
		6	0	19.8	19.7	19.8	0	20

9.1.2. OUTPUT POWER FOR LTE66

Test Date	3/18/2022
Tested By	43576
Sample no.	QV7700EMAW
Call Box S/N	85763
Cable loss	0.6
Antenna Port	Main 2

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				132072	132322	132572	MPR	Tune-up Limit
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	19.5	19.4	19.4	0	20
		1	49	19.4	19.4	19.3	0	20
		1	99	19.4	19.3	19.3	0	20
		50	0	19.4	19.4	19.3	0	20
		50	24	19.5	19.4	19.3	0	20
		50	50	19.4	19.4	19.3	0	20
		100	0	19.4	19.4	19.3	0	20
	16QAM	1	0	19.7	19.8	19.7	0	20
		1	49	19.9	20.0	19.9	0	20
		1	99	19.6	19.8	19.6	0	20
		50	0	19.4	19.4	19.3	0	20
		50	24	19.5	19.4	19.3	0	20
		50	50	19.4	19.4	19.3	0	20
		100	0	19.5	19.4	19.3	0	20
	64QAM	1	0	19.7	19.7	19.7	0	20
		1	49	19.9	19.7	19.9	0	20
		1	99	19.6	19.6	19.6	0	20
		50	0	19.4	19.4	19.3	0	20
		50	24	19.5	19.4	19.3	0	20
		50	50	19.5	19.4	19.3	0	20
		100	0	19.5	19.4	19.3	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				132047	132322	132597	MPR	Tune-up Limit
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	19.4	19.3	19.4	0	20
		1	37	19.4	19.4	19.4	0	20
		1	74	19.4	19.3	19.3	0	20
		36	0	19.5	19.3	19.3	0	20
		36	20	19.5	19.3	19.3	0	20
		36	39	19.4	19.4	19.3	0	20
		75	0	19.4	19.4	19.2	0	20
	16QAM	1	0	19.7	19.7	19.7	0	20
		1	37	19.8	19.7	19.7	0	20
		1	74	19.6	19.6	19.6	0	20
		36	0	19.5	19.4	19.4	0	20
		36	20	19.5	19.4	19.3	0	20
		36	39	19.5	19.4	19.4	0	20
		75	0	19.5	19.4	19.3	0	20
	64QAM	1	0	19.6	19.7	19.7	0	20
		1	37	19.7	19.8	19.6	0	20
		1	74	19.6	19.6	19.5	0	20
		36	0	19.5	19.4	19.3	0	20
		36	20	19.5	19.4	19.3	0	20
		36	39	19.5	19.4	19.4	0	20
		75	0	19.5	19.4	19.3	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				132022	132322	132622	MPR	Tune-up Limit
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	19.6	19.5	19.5	0	20
		1	25	19.5	19.5	19.5	0	20
		1	49	19.5	19.4	19.4	0	20
		25	0	19.6	19.5	19.4	0	20
		25	12	19.6	19.5	19.4	0	20
		25	25	19.5	19.5	19.5	0	20
		50	0	19.6	19.5	19.4	0	20
	16QAM	1	0	19.9	19.9	19.8	0	20
		1	25	19.8	19.8	19.8	0	20
		1	49	19.8	19.9	19.7	0	20
		25	0	19.6	19.5	19.4	0	20
		25	12	19.6	19.5	19.5	0	20
		25	25	19.6	19.6	19.5	0	20
		50	0	19.6	19.5	19.4	0	20
	64QAM	1	0	19.9	19.8	19.7	0	20
		1	25	19.9	19.8	19.6	0	20
		1	49	19.8	19.7	19.6	0	20
		25	0	19.6	19.5	19.4	0	20
		25	12	19.6	19.5	19.4	0	20
		25	25	19.6	19.5	19.5	0	20
		50	0	19.6	19.5	19.4	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				131997	132322	132647	MPR	Tune-up Limit
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	19.6	19.4	19.4	0	20
		1	12	19.6	19.5	19.5	0	20
		1	24	19.5	19.5	19.4	0	20
		12	0	19.5	19.4	19.5	0	20
		12	7	19.5	19.5	19.5	0	20
		12	13	19.5	19.5	19.4	0	20
		25	0	19.5	19.5	19.4	0	20
	16QAM	1	0	19.9	19.9	19.9	0	20
		1	12	20.0	20.0	19.9	0	20
		1	24	19.8	19.9	19.8	0	20
		12	0	19.7	19.5	19.5	0	20
		12	7	19.7	19.5	19.5	0	20
		12	13	19.7	19.6	19.4	0	20
		25	0	19.6	19.5	19.5	0	20
	64QAM	1	0	20.0	19.8	19.7	0	20
		1	12	20.0	19.8	19.7	0	20
		1	24	19.9	19.8	19.7	0	20
		12	0	19.7	19.5	19.6	0	20
		12	7	19.7	19.5	19.6	0	20
		12	13	19.6	19.6	19.6	0	20
		25	0	19.6	19.5	19.5	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				131987	132322	132657	MPR	Tune-up Limit
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	19.5	19.4	19.8	0	20
		1	8	19.6	19.5	19.9	0	20
		1	14	19.4	19.4	19.8	0	20
		8	0	19.5	19.4	19.5	0	20
		8	4	19.6	19.5	19.6	0	20
		8	7	19.6	19.5	19.6	0	20
		15	0	19.5	19.5	19.5	0	20
	16QAM	1	0	19.8	19.4	19.7	0	20
		1	8	19.9	19.4	19.8	0	20
		1	14	19.8	19.3	19.7	0	20
		8	0	19.6	19.4	19.5	0	20
		8	4	19.6	19.5	19.6	0	20
		8	7	19.6	19.5	19.5	0	20
		15	0	19.6	19.4	19.5	0	20
	64QAM	1	0	19.7	19.8	19.7	0	20
		1	8	19.8	19.9	19.7	0	20
		1	14	19.7	19.8	19.6	0	20
		8	0	19.6	19.5	19.5	0	20
		8	4	19.7	19.6	19.5	0	20
		8	7	19.6	19.6	19.5	0	20
		15	0	19.6	19.5	19.5	0	20

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				131979	132322	132665	MPR	Tune-up Limit
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	19.6	19.4	19.4	0	20
		1	3	19.6	19.5	19.5	0	20
		1	5	19.6	19.4	19.4	0	20
		3	0	19.5	19.5	19.4	0	20
		3	1	19.6	19.5	19.4	0	20
		3	3	19.5	19.5	19.4	0	20
		6	0	19.5	19.4	19.4	0	20
	16QAM	1	0	19.9	19.7	19.8	0	20
		1	3	19.9	19.7	19.7	0	20
		1	5	19.9	19.6	19.8	0	20
		3	0	19.8	19.7	19.6	0	20
		3	1	19.8	19.7	19.6	0	20
		3	3	19.8	19.7	19.6	0	20
		6	0	19.7	19.5	19.4	0	20
	64QAM	1	0	19.9	19.7	19.6	0	20
		1	3	20.0	19.7	19.7	0	20
		1	5	19.9	19.7	19.7	0	20
		3	0	19.7	19.6	19.5	0	20
		3	1	19.7	19.6	19.6	0	20
		3	3	19.7	19.6	19.5	0	20
		6	0	19.5	19.6	19.6	0	20

10. CONDUCTED TEST RESULTS

10.1. 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. Worst-case plots (highest bandwidth) are reported only.

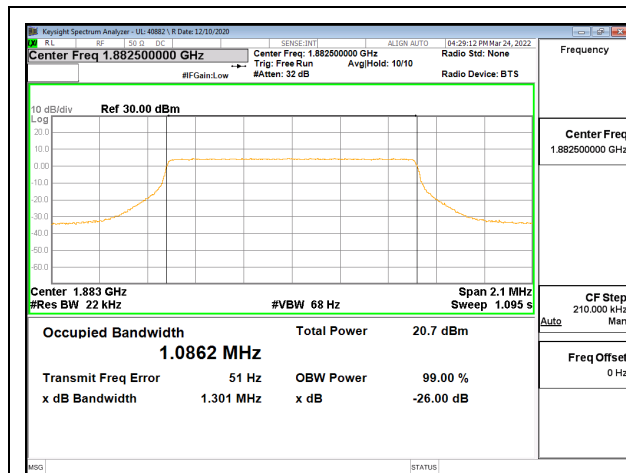
LTE25

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)
LTE BAND 25	1.4MHz, QPSK	6/0	1882.5	1.09
	1.4MHz, 16QAM			1.09
	3MHz, QPSK	15/0		2.7
	3MHz, 16QAM			2.7
	5MHz, QPSK	25/0		4.49
	5MHz, 16QAM			4.49
	10MHz, QPSK	50/0		8.98
	10MHz, 16QAM			8.98
	15MHz, QPSK	75/0		13.47
	15MHz, 16QAM			13.47
	20MHz, QPSK	100/0		17.95
	20MHz, 16QAM			17.96

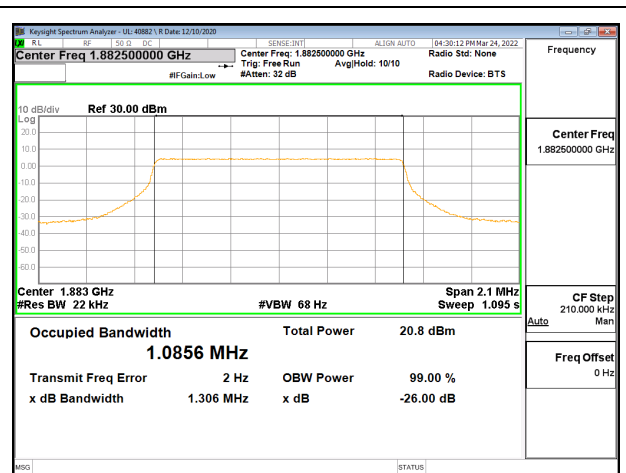
LTE66

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)
LTE BAND 66	1.4MHz, QPSK	6/0	1745.0	1.09
	1.4MHz, 16QAM			1.09
	3MHz, QPSK	15/0		2.69
	3MHz, 16QAM			2.69
	5MHz, QPSK	25/0		4.49
	5MHz, 16QAM			4.49
	10MHz, QPSK	50/0		8.98
	10MHz, 16QAM			8.97
	15MHz, QPSK	75/0		13.47
	15MHz, 16QAM			13.47
	20MHz, QPSK	100/0		17.97
	20MHz, 16QAM			17.97

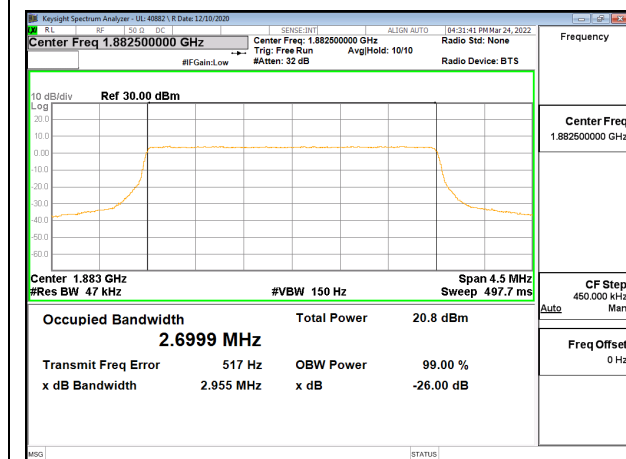
10.1.1. LTE25



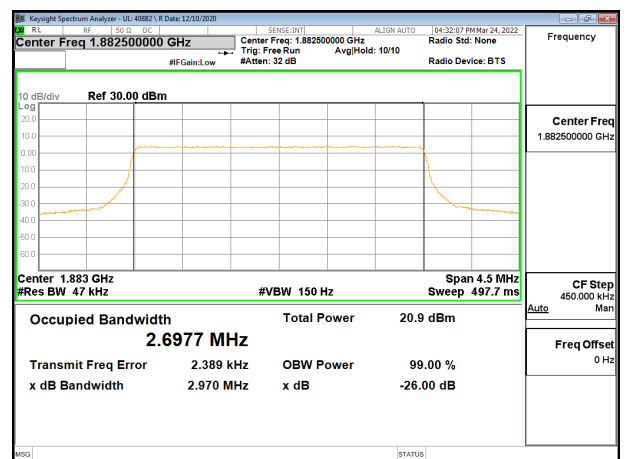
LTE25 1.4MHz QPSK MID Ch RB6-0



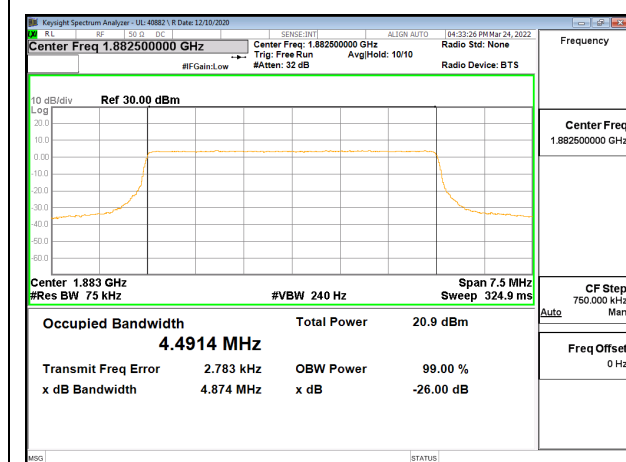
LTE25 1.4MHz 16QAM MID Ch RB6-0



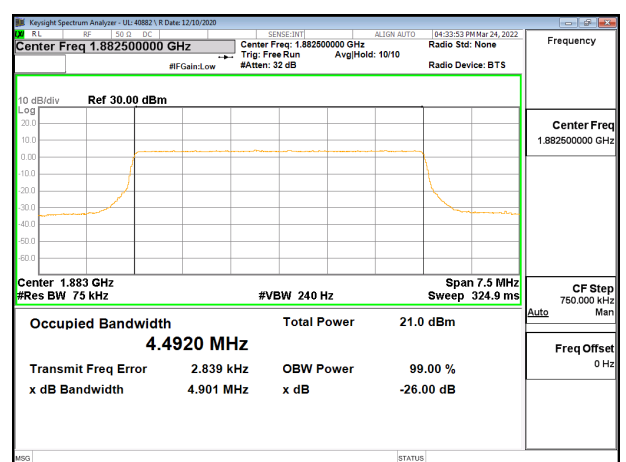
LTE25 3MHz QPSK MID Ch RB15-0



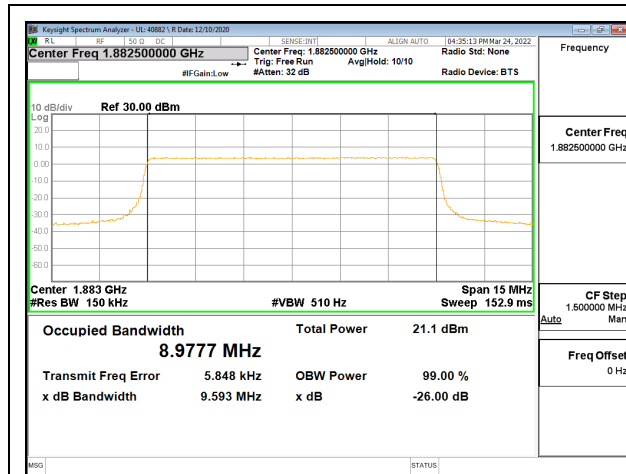
LTE25 3MHz 16QAM MID Ch RB15-0



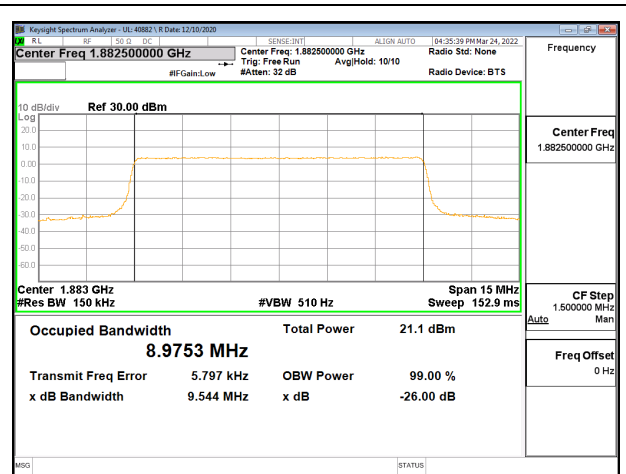
LTE25 5MHz QPSK MID Ch RB25-0



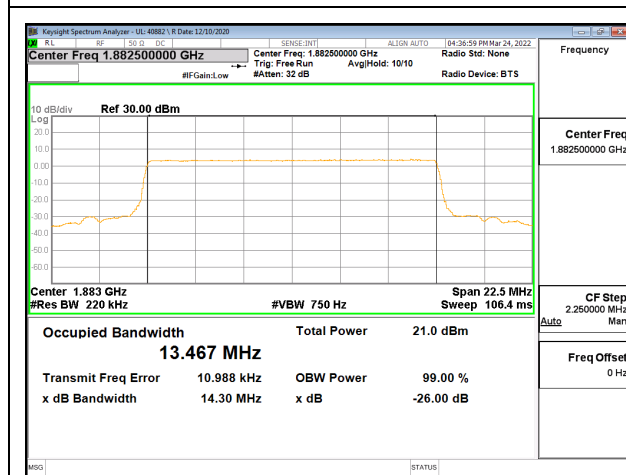
LTE25 5MHz 16QAM MID Ch RB25-0



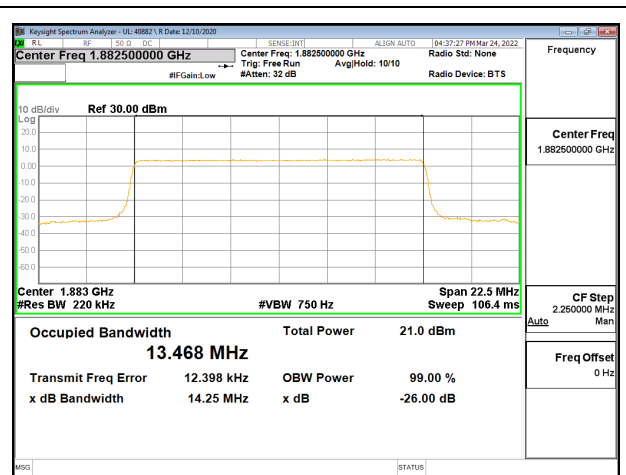
LTE25 10MHz QPSK MID Ch RB50-0



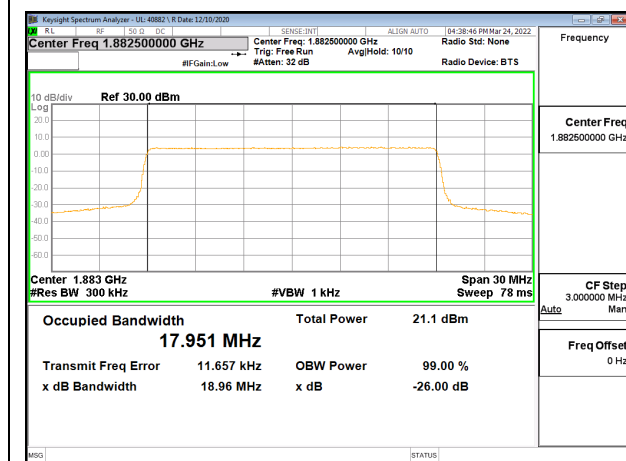
LTE25 10MHz 16QAM MID Ch RB50-0



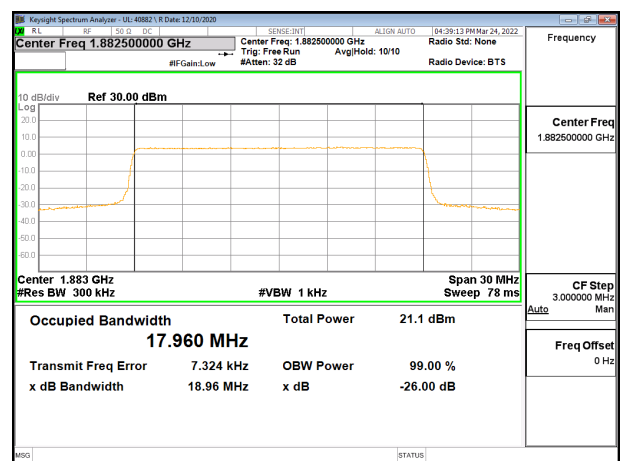
LTE25 15MHz QPSK MID Ch RB75-0



LTE25 15MHz 16QAM MID Ch RB75-0

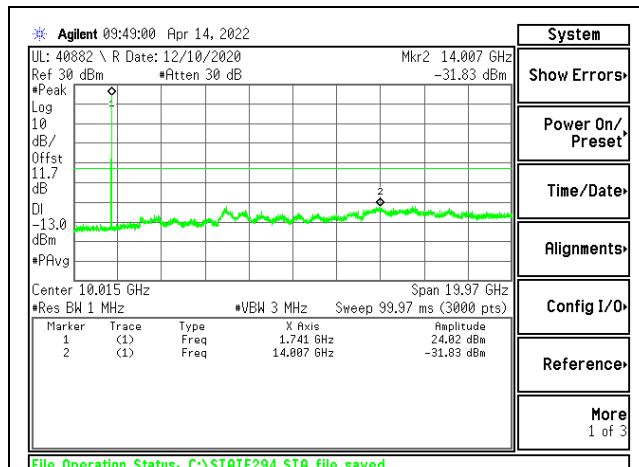


LTE25 20MHz QPSK MID Ch RB100-0

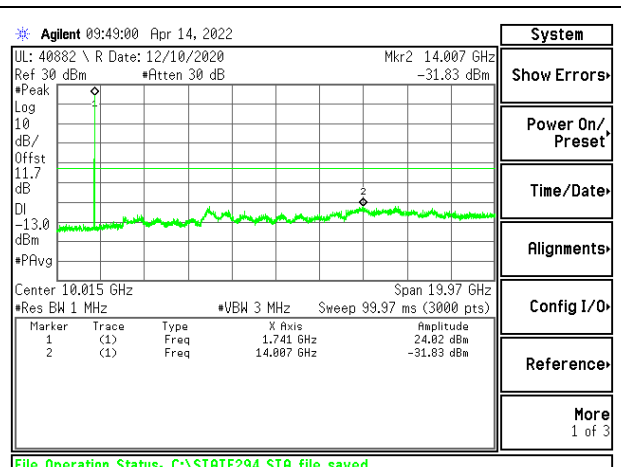


LTE25 20MHz 16QAM MID Ch RB100-0

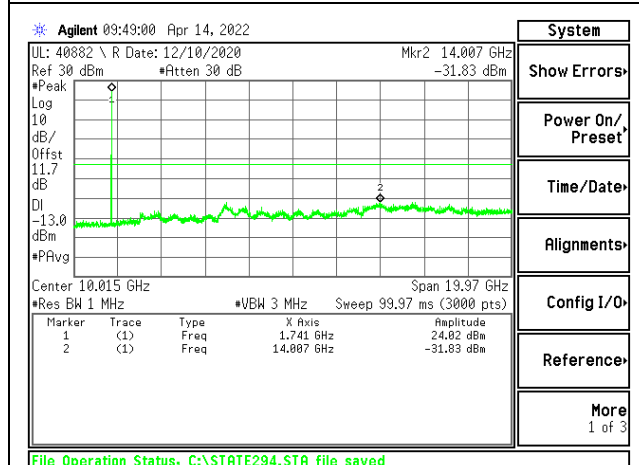
10.1.2. LTE66



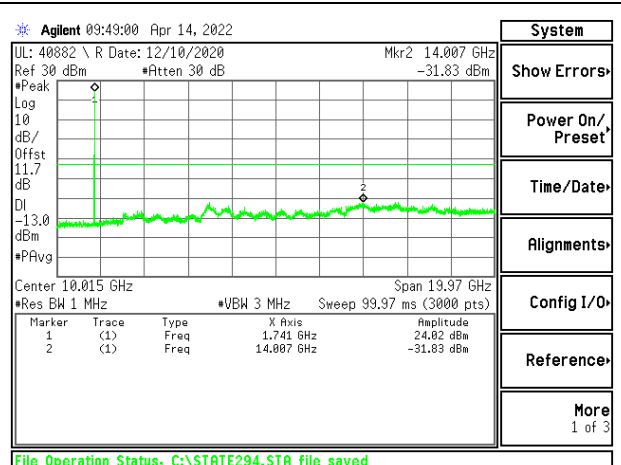
LTE66 1.4MHz QPSK MID Ch RB6-0



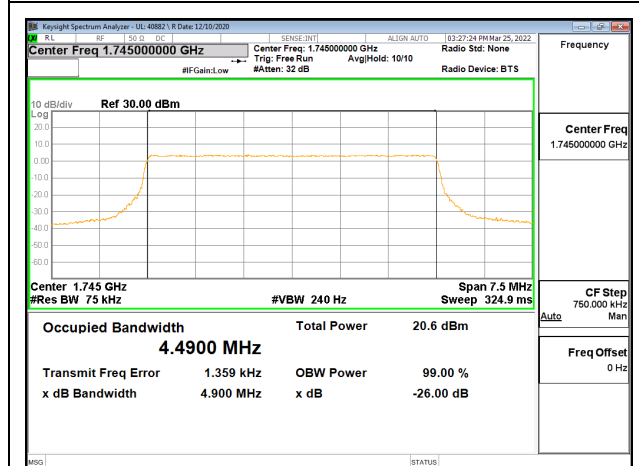
LTE66 1.4MHz 16QAM MID Ch RB6-0



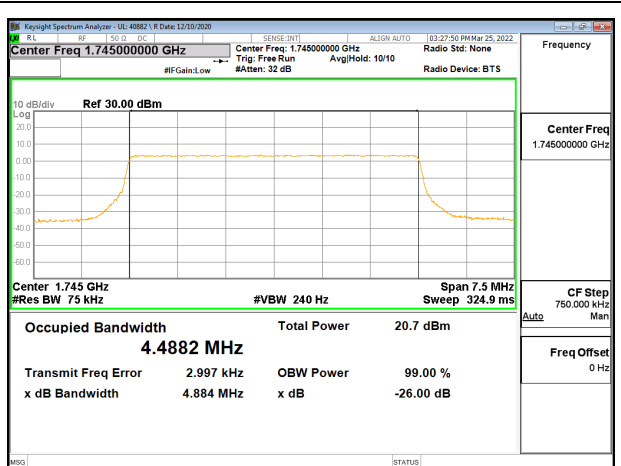
LTE66 3MHz QPSK MID Ch RB15-0



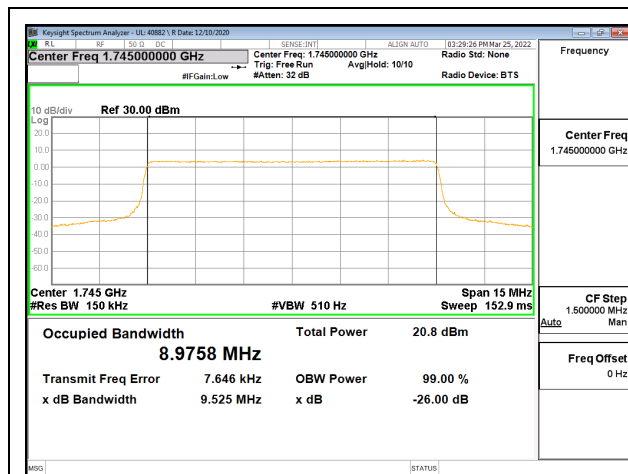
LTE66 3MHz 16QAM MID Ch RB15-0



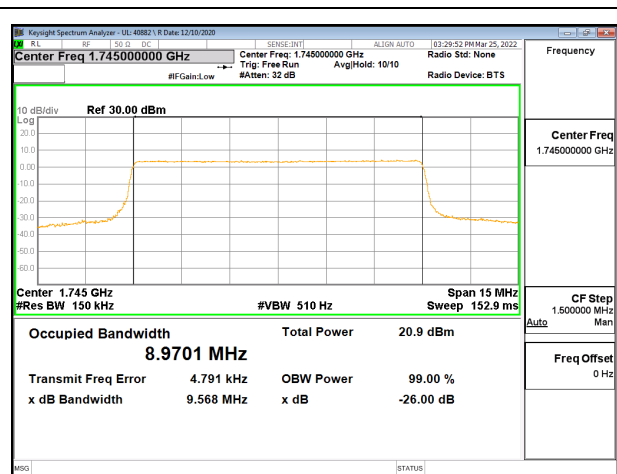
LTE66 5MHz QPSK MID Ch RB25-0



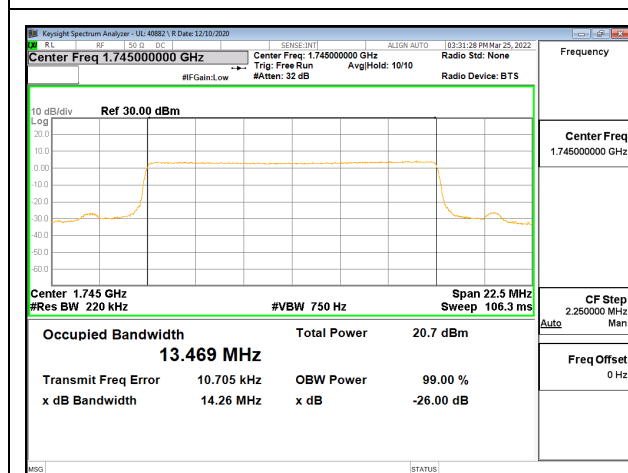
LTE66 5MHz 16QAM MID Ch RB25-0



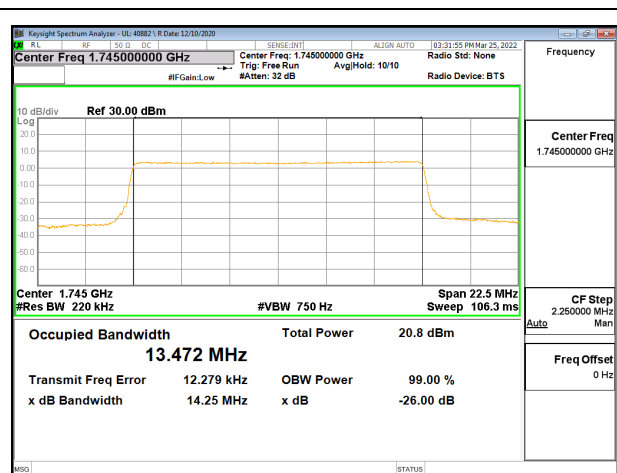
LTE66 10MHz QPSK MID Ch RB50-0



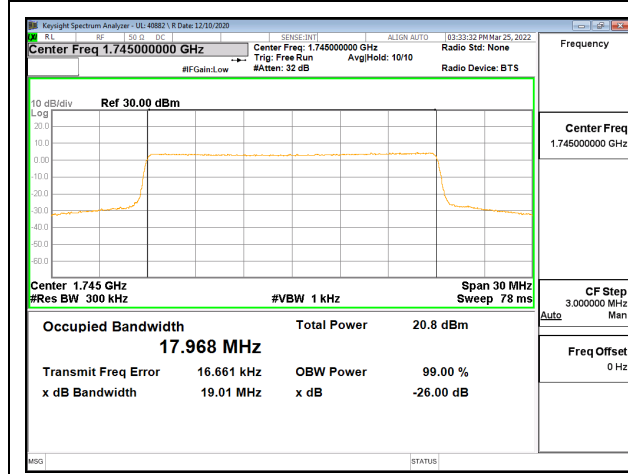
LTE66 10MHz 16QAM MID Ch RB50-0



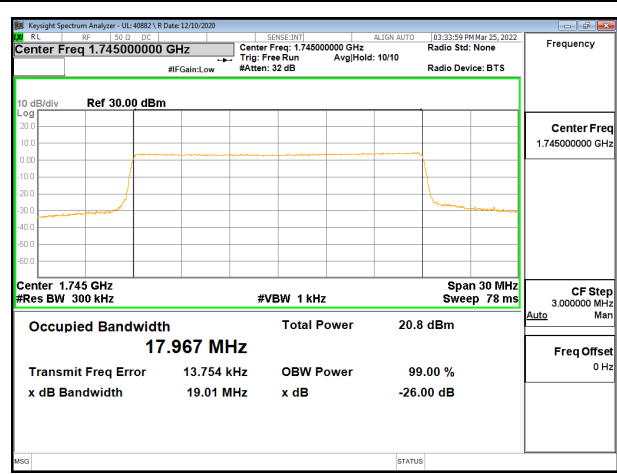
LTE66 15MHz QPSK MID Ch RB75-0



LTE66 15MHz 16QAM MID Ch RB75-0



LTE66 20MHz QPSK MID Ch RB100-0



LTE66 20MHz 16QAM MID Ch RB100-0

10.2. BAND EDGE AND EMISSION MASK

TEST PROCEDURE

The transmitter output was connected to a 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:

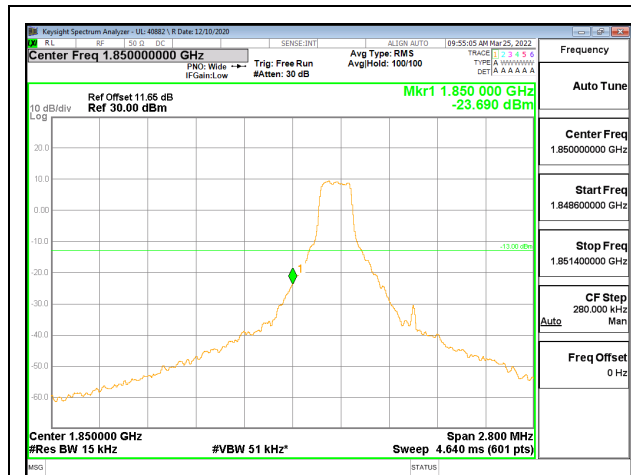
- (i) Set the spectrum analyzer span to include the block edge frequency.
- (ii) Set a marker to point the corresponding band edge frequency in each test case.
- (iii) Set display line at -13 dBm
- (iv) Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

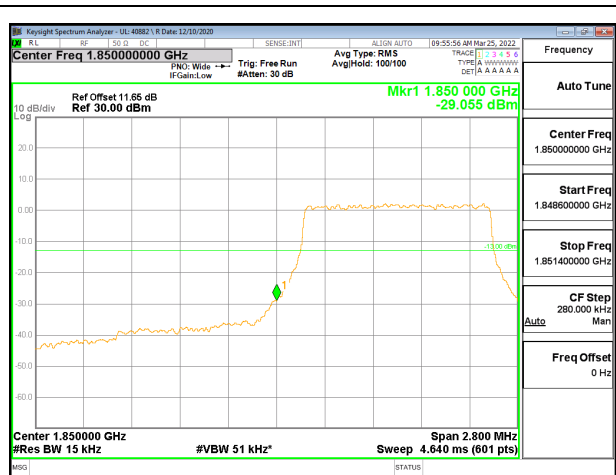
10.2.1. LTE25 LIMITS

FCC: §24.238

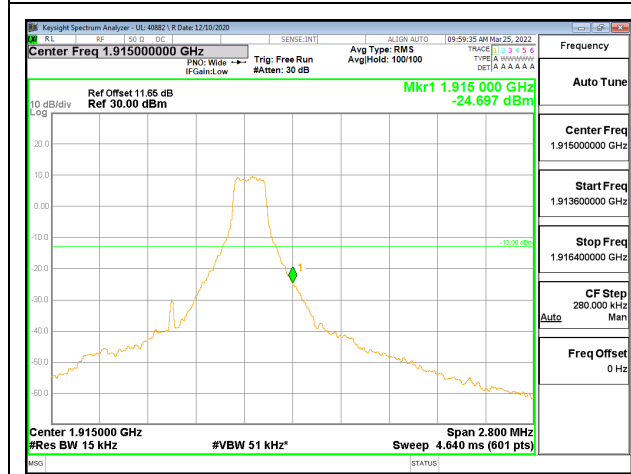
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.



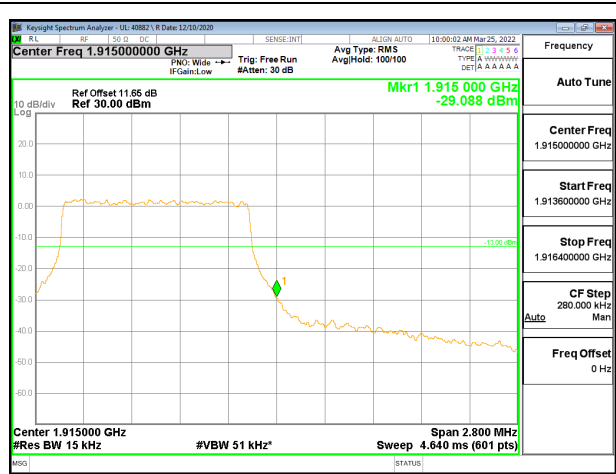
LTE25 1.4MHz QPSK LOW Ch RB1-0



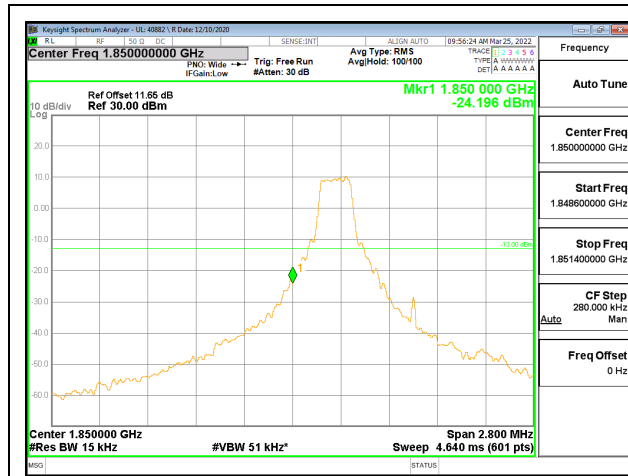
LTE25 1.4MHz QPSK LOW Ch RB6-0



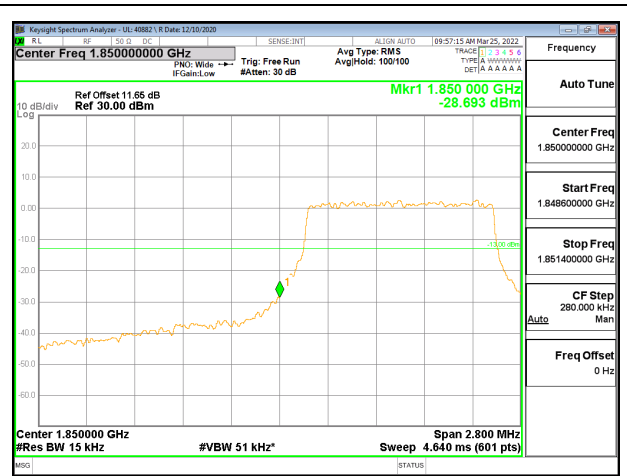
LTE25 1.4MHz QPSK HIGH Ch RB1-5



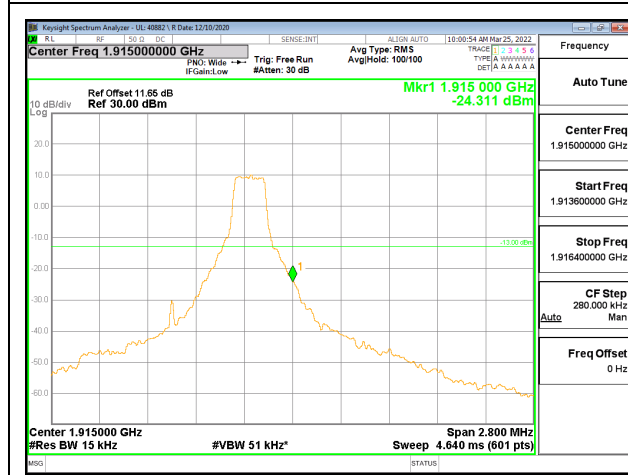
LTE25 1.4MHz QPSK HIGH Ch RB6-0



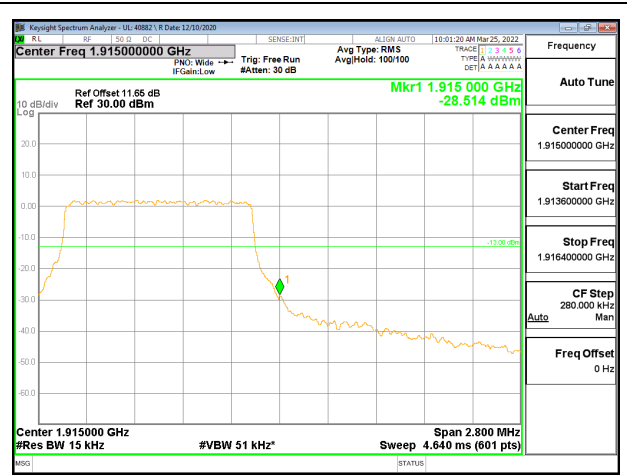
LTE25 1.4MHz 16QAM LOW Ch RB1-0



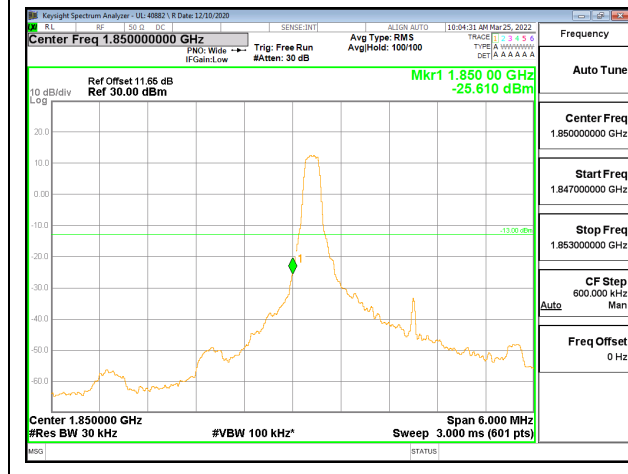
LTE25 1.4MHz 16QAM LOW Ch RB6-0



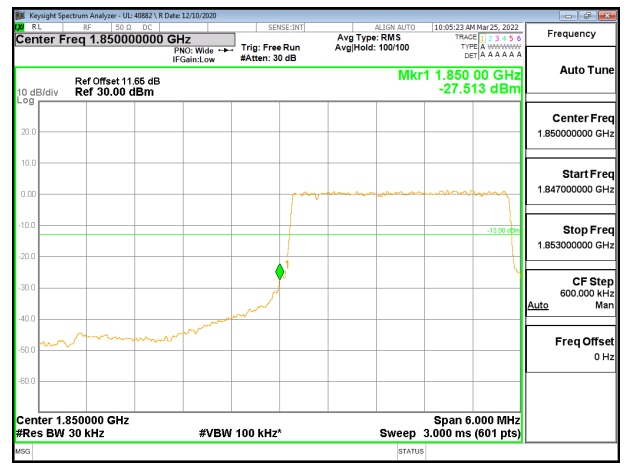
LTE25 1.4MHz 16QAM HIGH Ch RB1-5



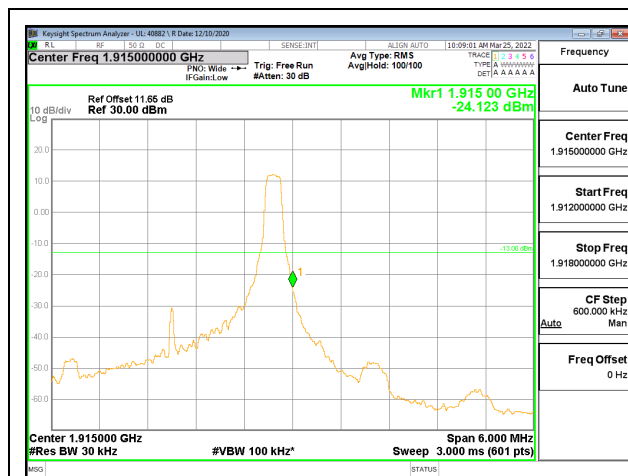
LTE25 1.4MHz 16QAM HIGH Ch RB6-0



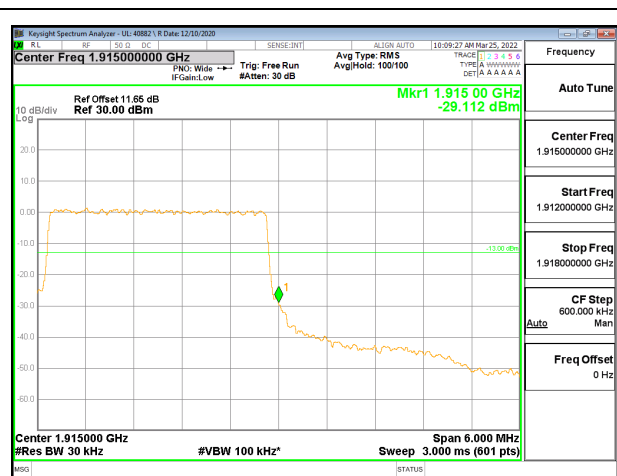
LTE25 3MHz QPSK LOW Ch RB1-0



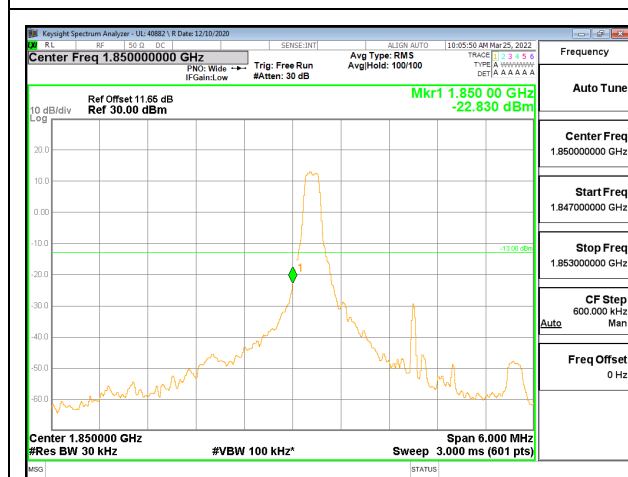
LTE25 3MHz QPSK LOW Ch RB15-0



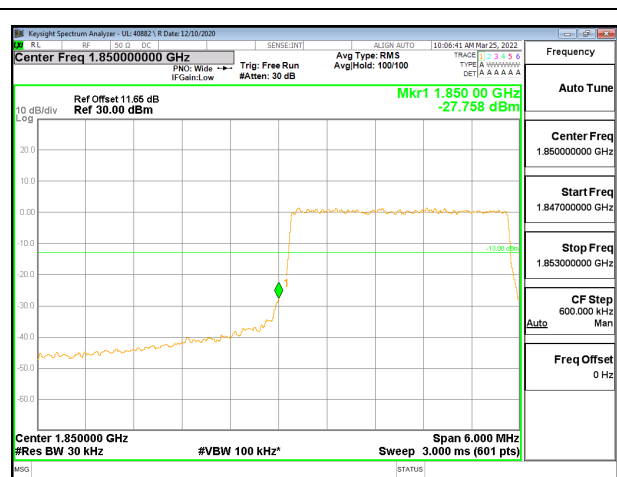
LTE25 3MHz QPSK HIGH Ch RB1-14



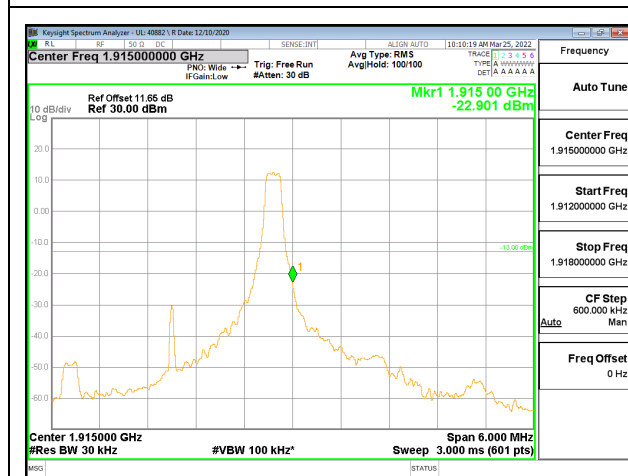
LTE25 3MHz QPSK HIGH Ch RB15-0



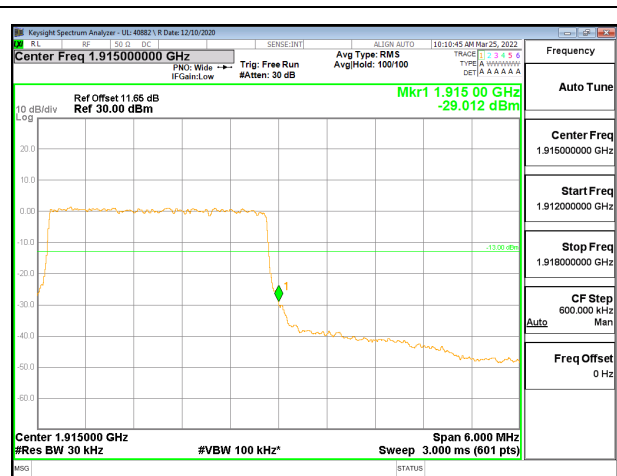
LTE25 3MHz 16QAM LOW Ch RB1-0



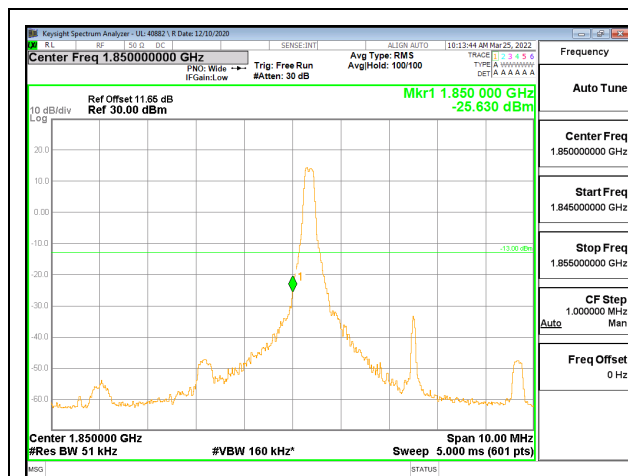
LTE25 3MHz 16QAM LOW Ch RB15-0



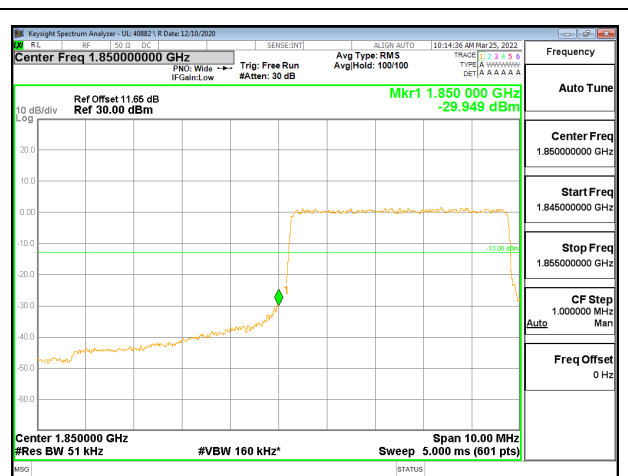
LTE25 3MHz 16QAM HIGH Ch RB1-14



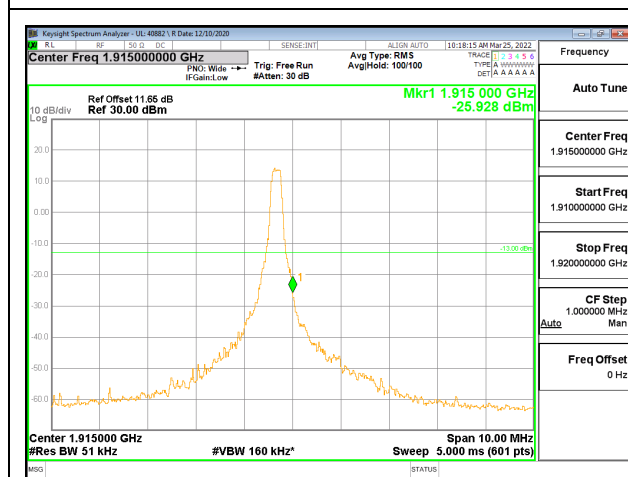
LTE25 3MHz 16QAM HIGH Ch RB15-0



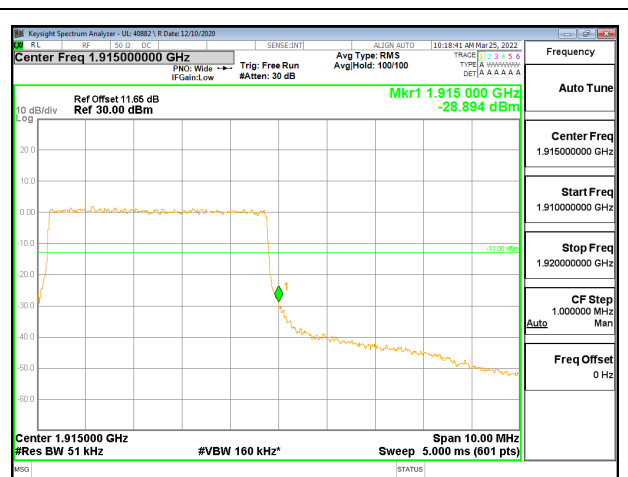
LTE25 5MHz QPSK LOW Ch RB1-0



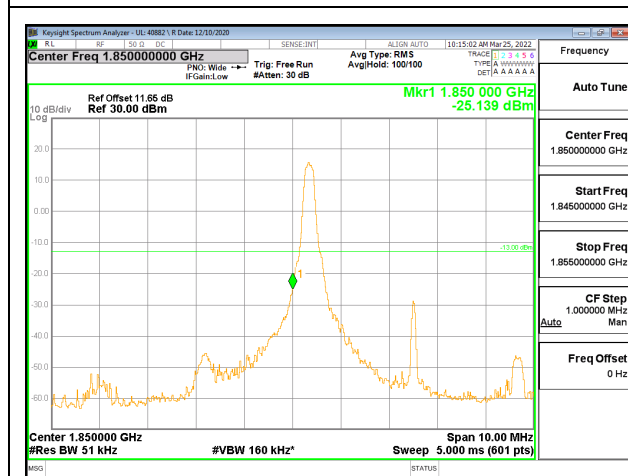
LTE25 5MHz QPSK LOW Ch RB25-0



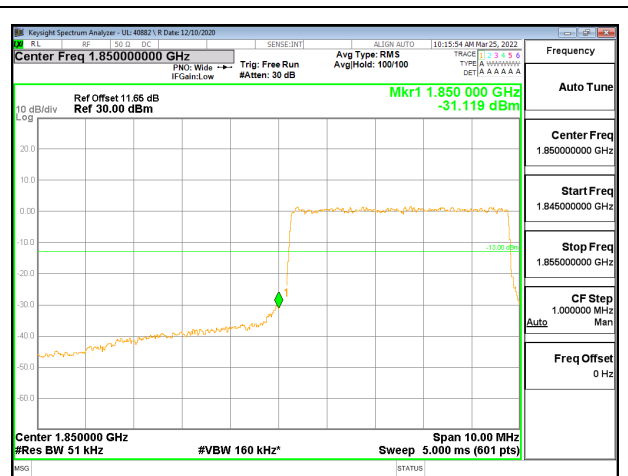
LTE25 5MHz QPSK HIGH Ch RB1-24



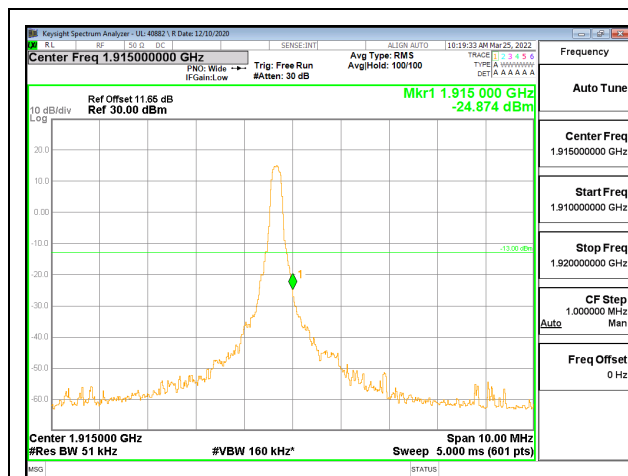
LTE25 5MHz QPSK HIGH Ch RB25-0



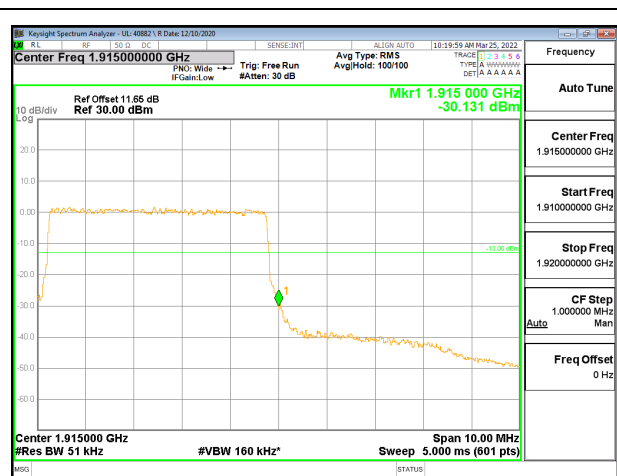
LTE25 5MHz 16QAM LOW Ch RB1-0



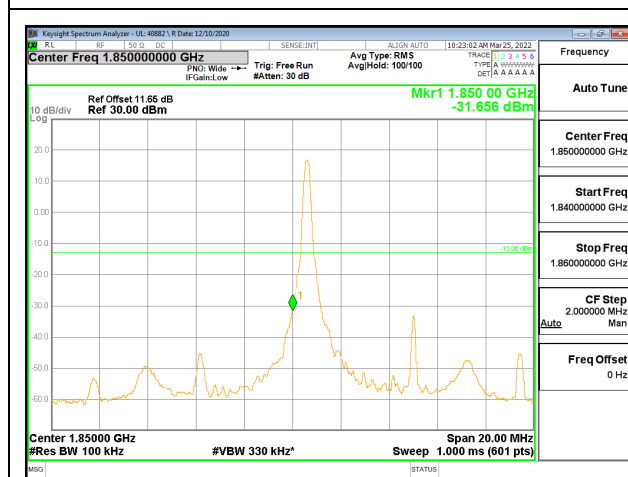
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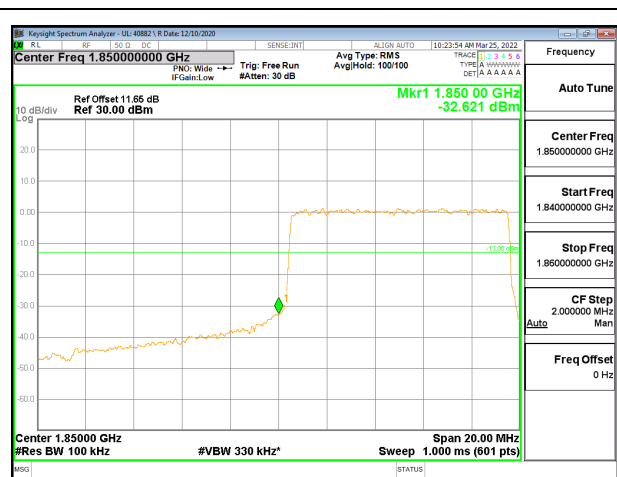
LTE25 5MHz 16QAM HIGH Ch RB1-24



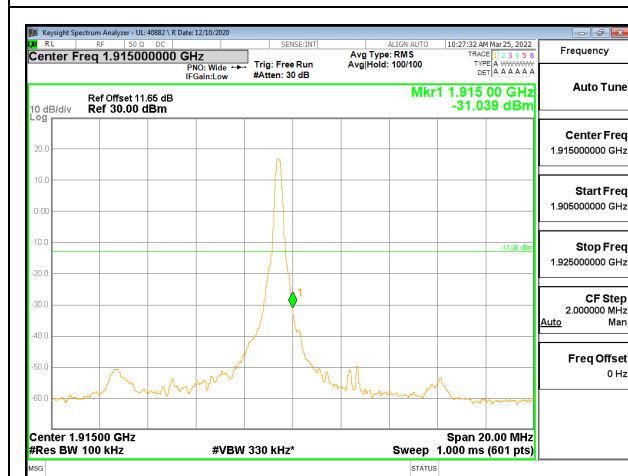
LTE25 5MHz 16QAM HIGH Ch RB25-0



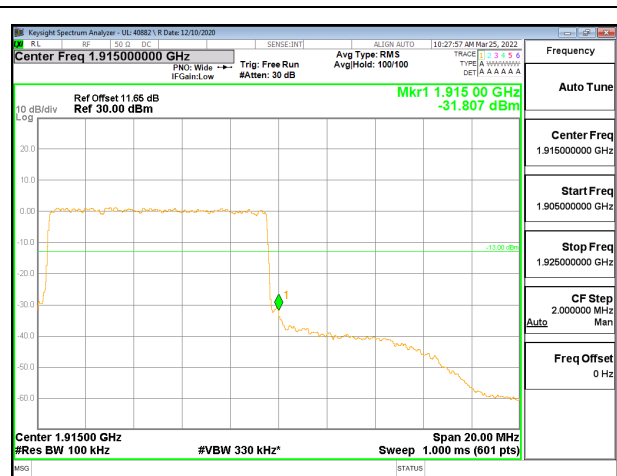
LTE25 10MHz QPSK LOW Ch RB1-0



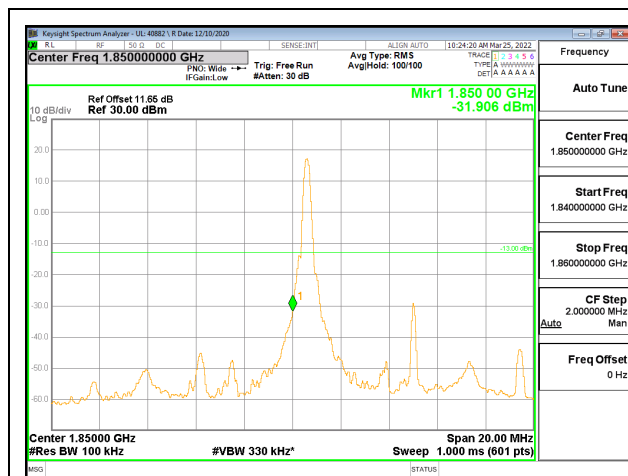
LTE25 10MHz QPSK LOW Ch RB50-0



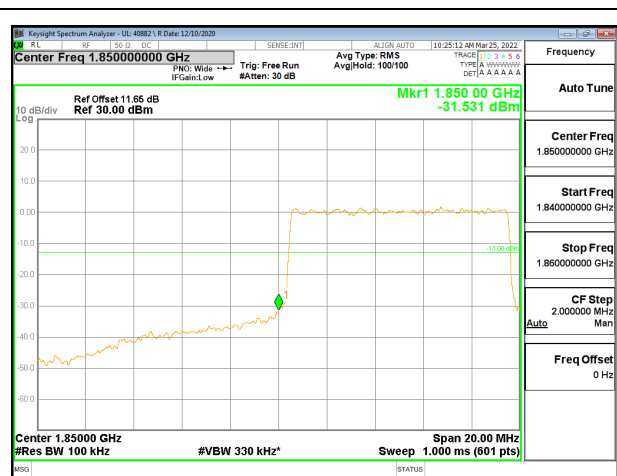
LTE25 10MHz QPSK HIGH Ch RB1-49



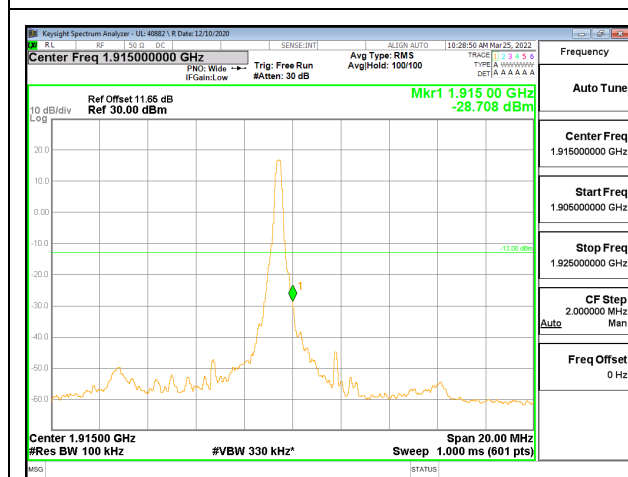
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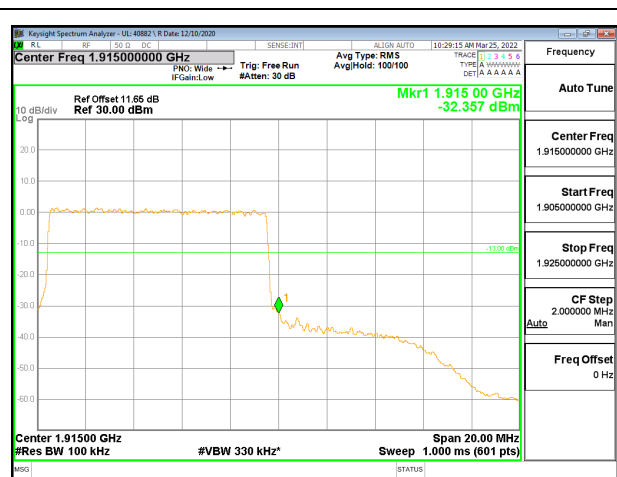
LTE25 10MHz 16QAM LOW Ch RB1-0



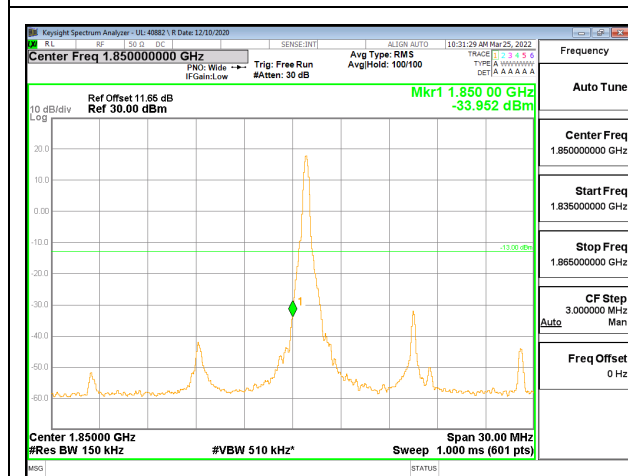
LTE25 10MHz 16QAM LOW Ch RB50-0



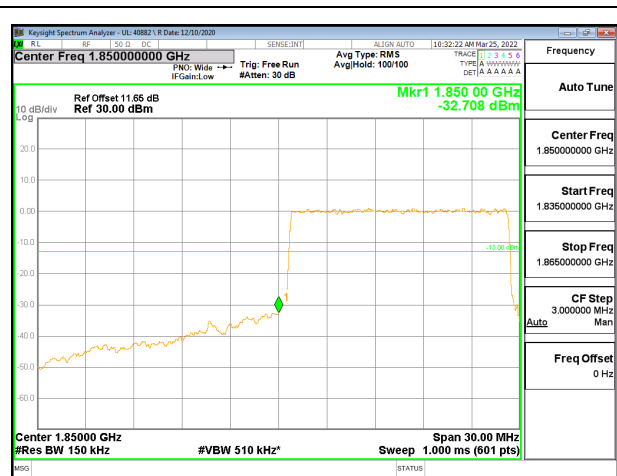
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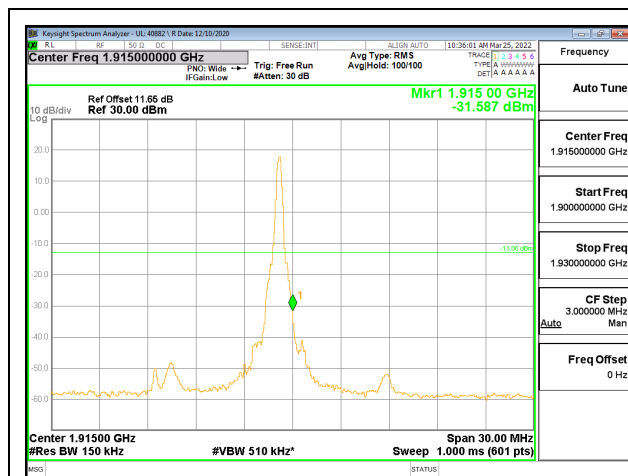
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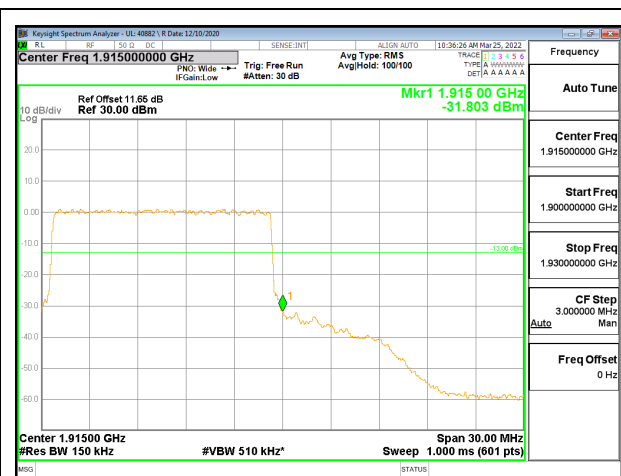
LTE25 15MHz QPSK LOW Ch RB1-0



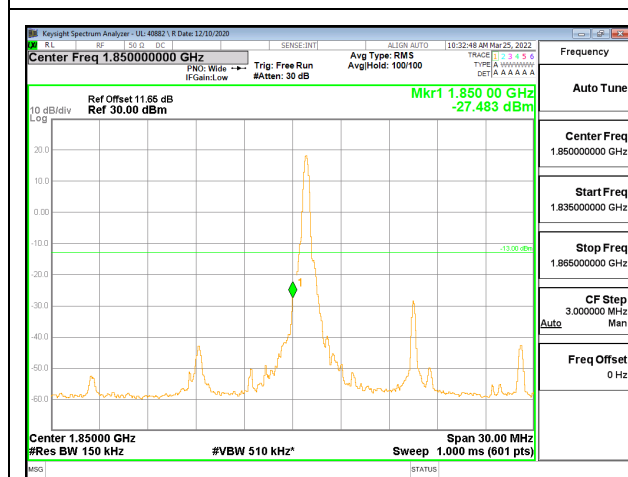
LTE25 15MHz QPSK LOW Ch RB75-0



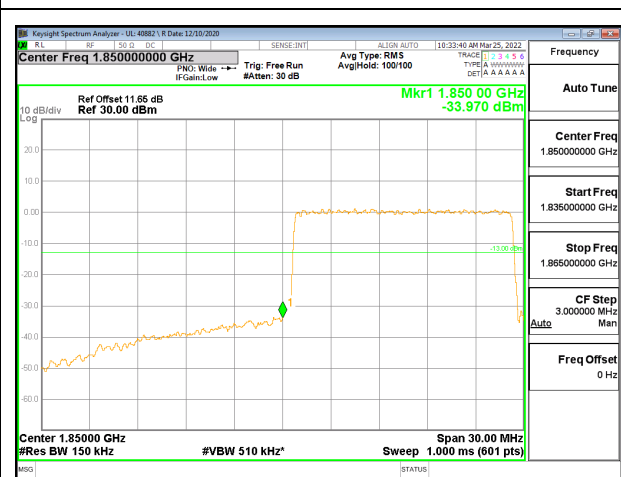
LTE25 15MHz QPSK HIGH Ch RB1-74



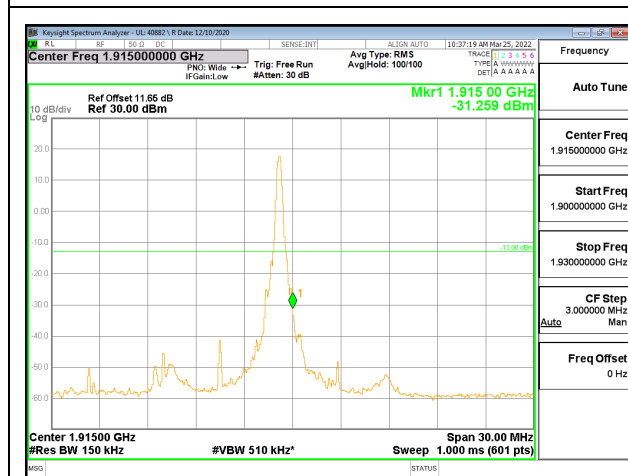
LTE25 15MHz QPSK HIGH Ch RB75-0



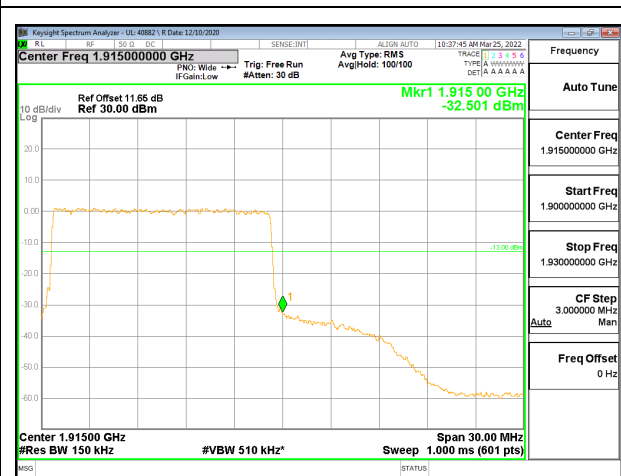
LTE25 15MHz 16QAM LOW Ch RB1-0



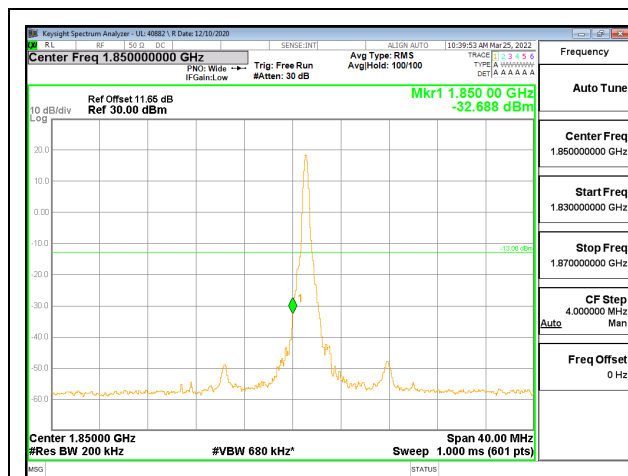
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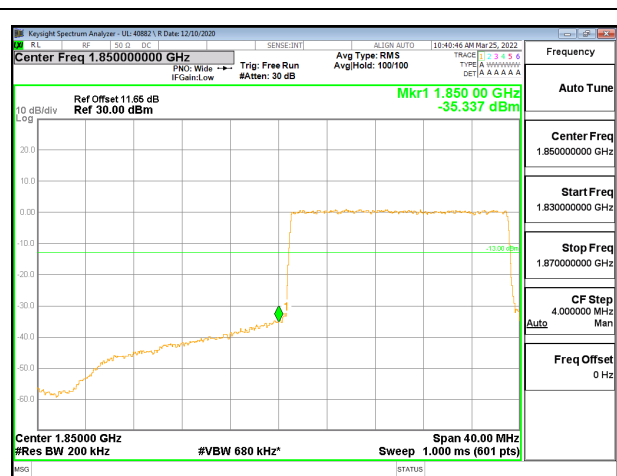
LTE25 15MHz 16QAM HIGH Ch RB1-74



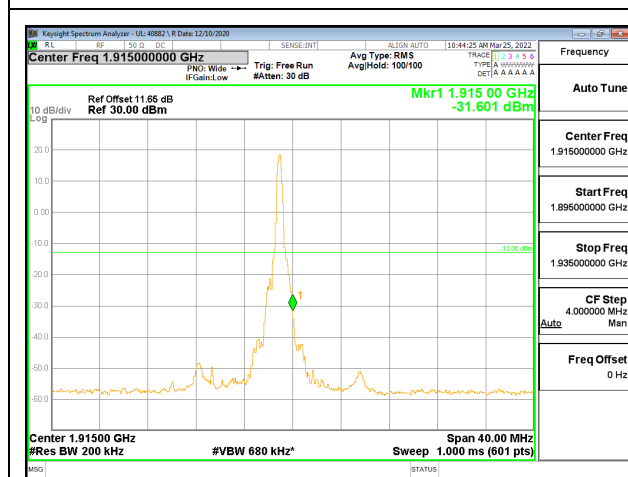
LTE25 15MHz 16QAM HIGH Ch RB75-0



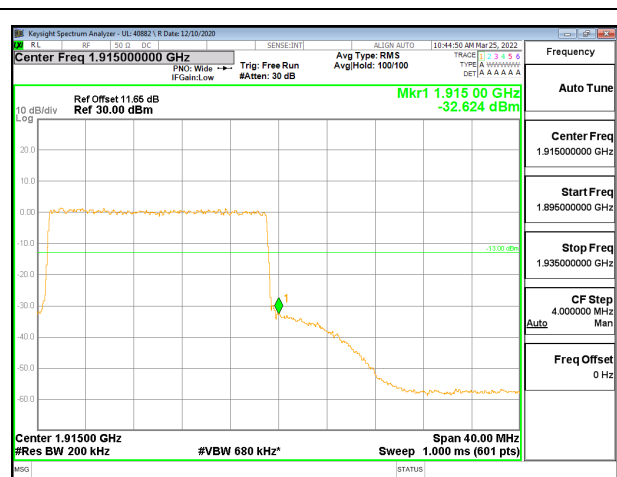
LTE25 20MHz QPSK LOW Ch RB1-0



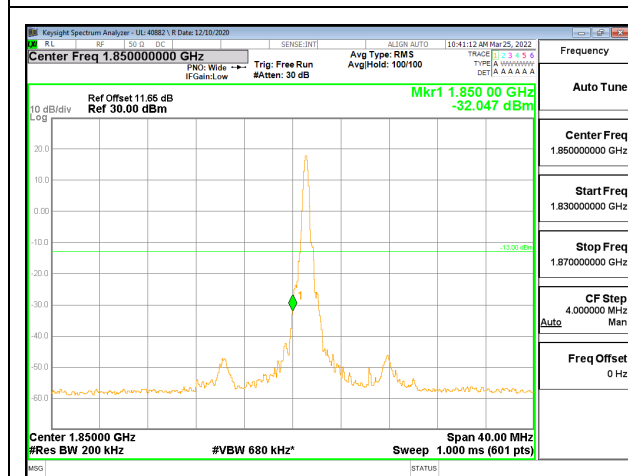
LTE25 20MHz QPSK LOW Ch RB100-0



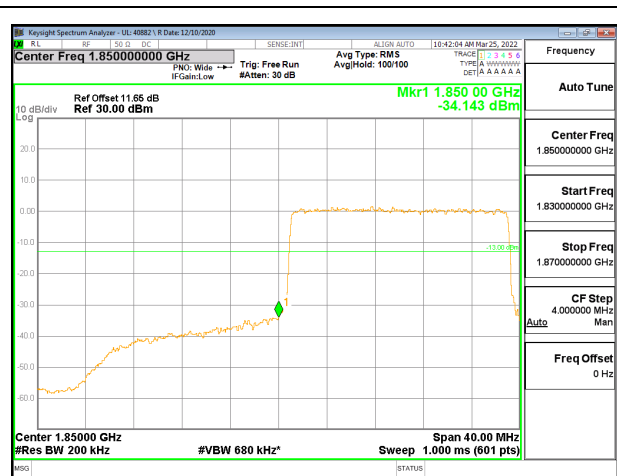
LTE25 20MHz QPSK HIGH Ch RB1-99



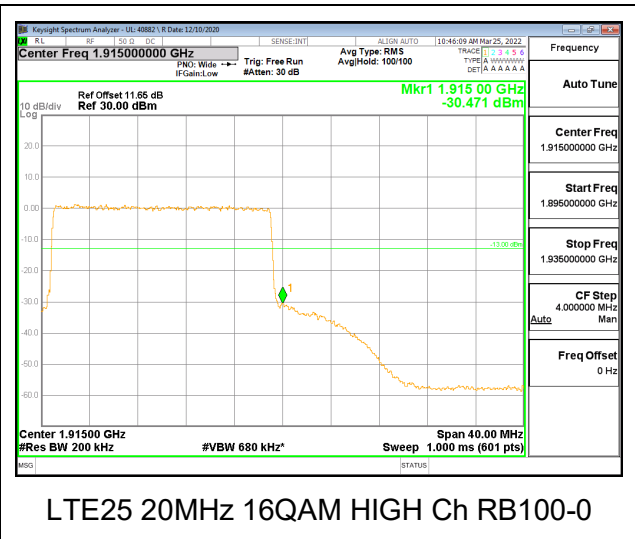
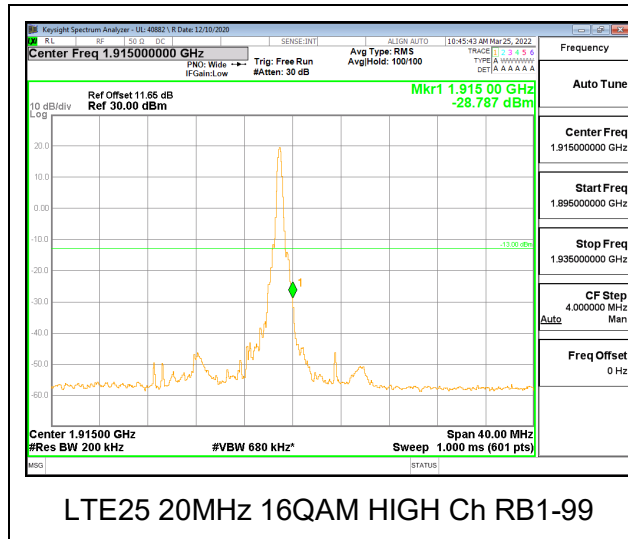
LTE25 20MHz QPSK HIGH Ch RB100-0



LTE25 20MHz 16QAM LOW Ch RB1-0



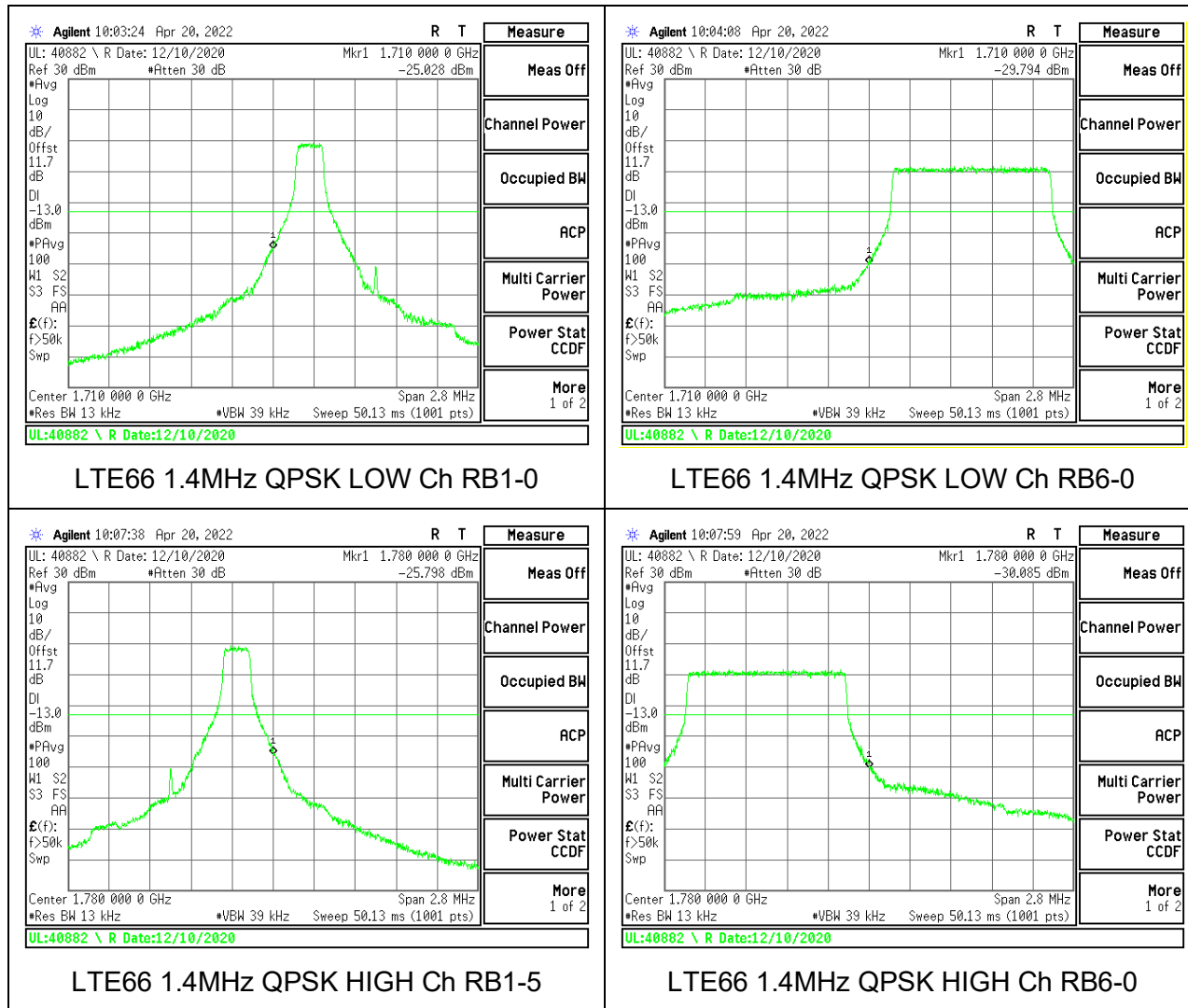
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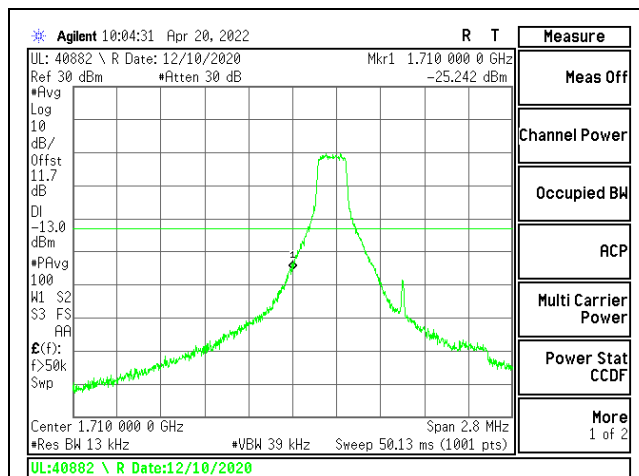


10.2.2. LTE66 LIMITS

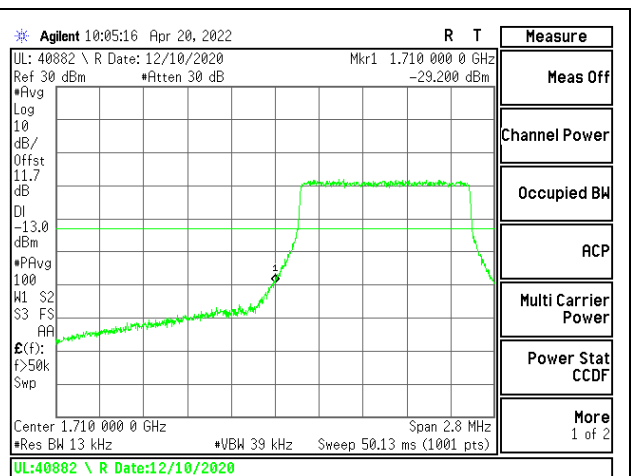
FCC: §27.53(h)

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

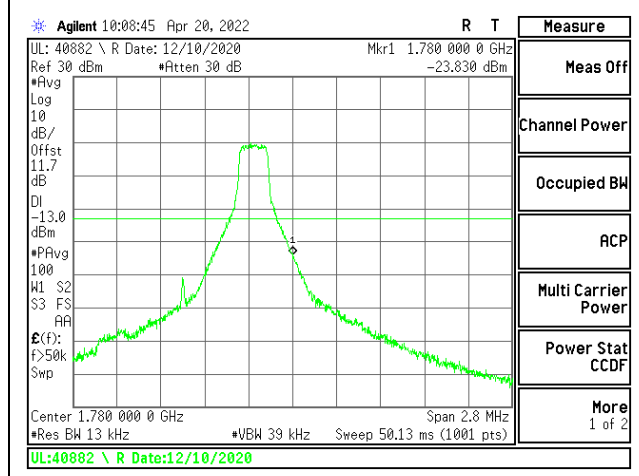




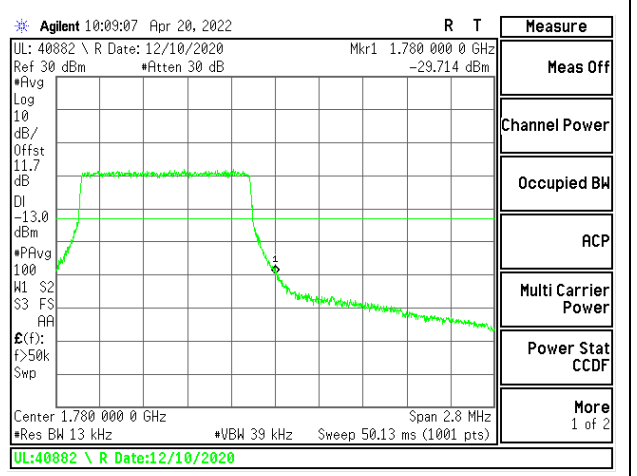
LTE66 1.4MHz 16QAM LOW Ch RB1-0



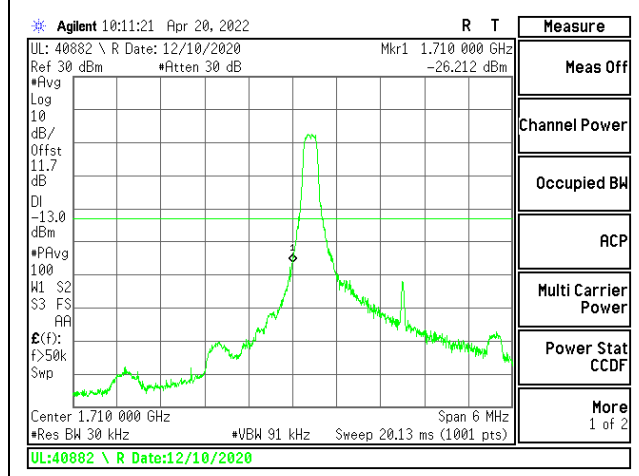
LTE66 1.4MHz 16QAM LOW Ch RB6-0



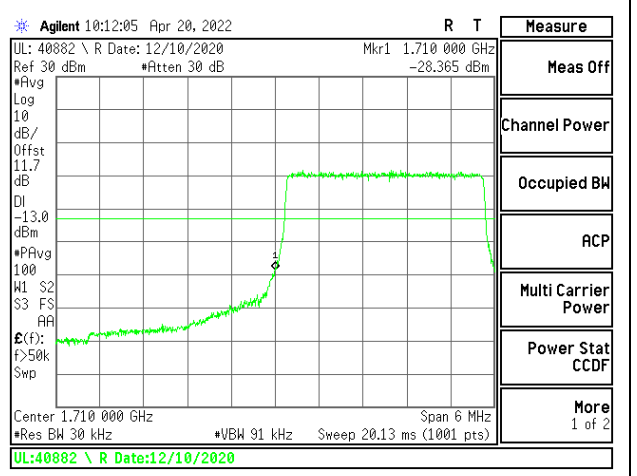
LTE66 1.4MHz 16QAM HIGH Ch RB1-5



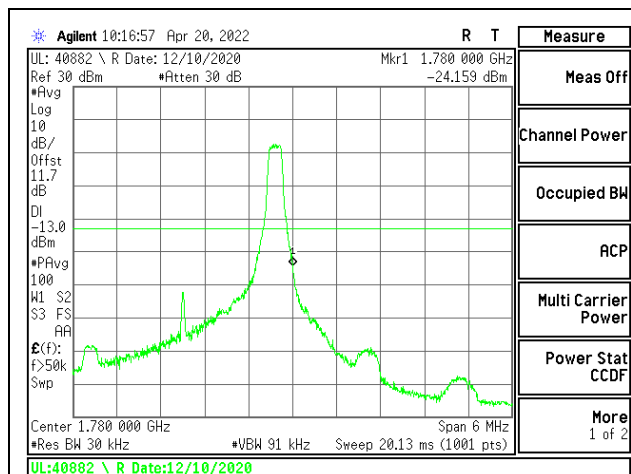
LTE66 1.4MHz 16QAM HIGH Ch RB6-0



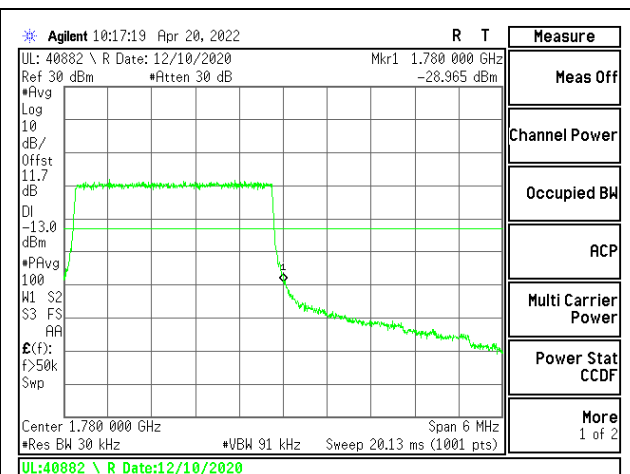
LTE66 3MHz QPSK LOW Ch RB1-0



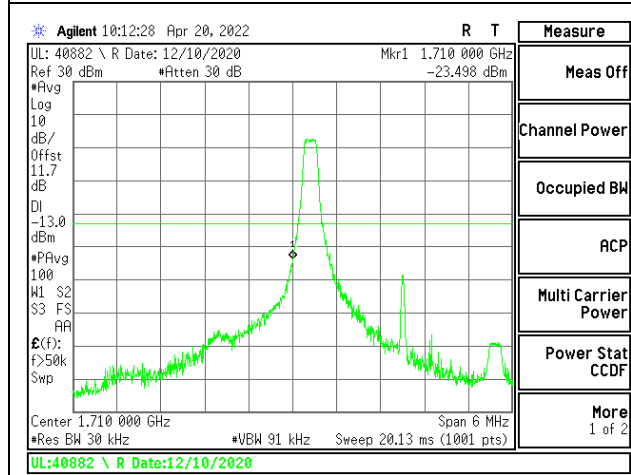
LTE66 3MHz QPSK LOW Ch RB15-0



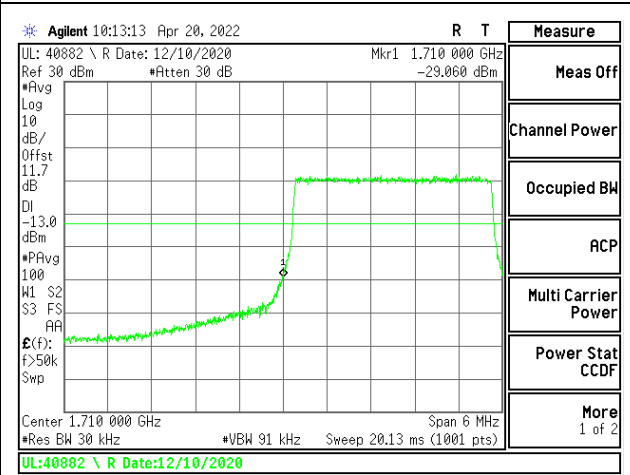
LTE66 3MHz QPSK HIGH Ch RB1-14



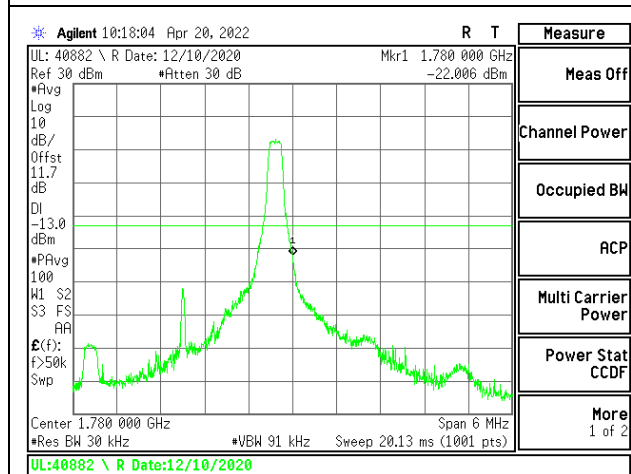
LTE66 3MHz QPSK HIGH Ch RB15-0



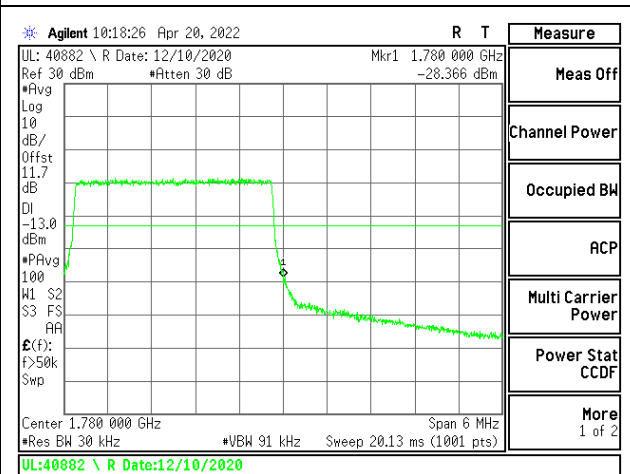
LTE66 3MHz 16QAM LOW Ch RB1-0



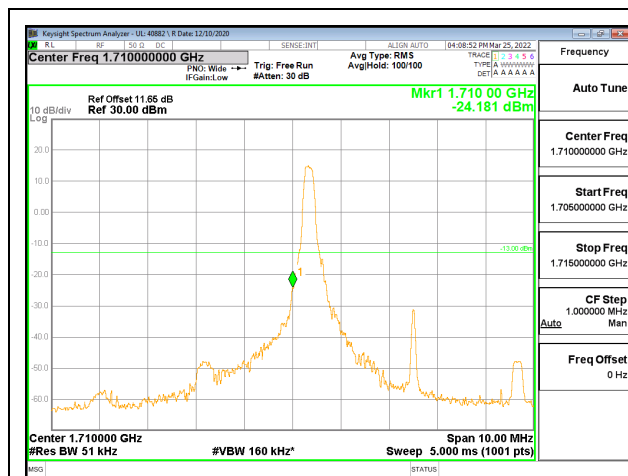
LTE66 3MHz 16QAM LOW Ch RB15-0



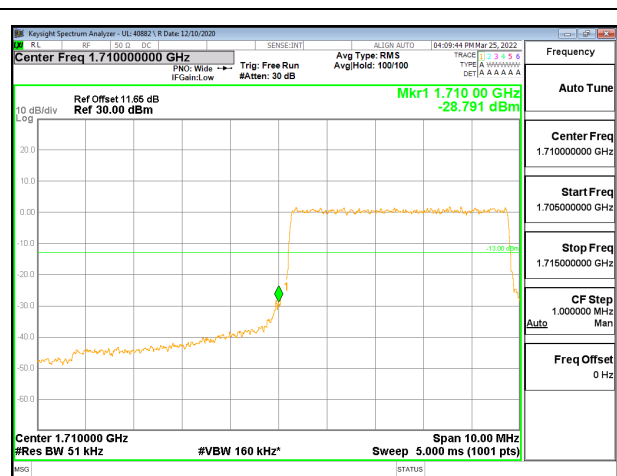
LTE66 3MHz 16QAM HIGH Ch RB1-14



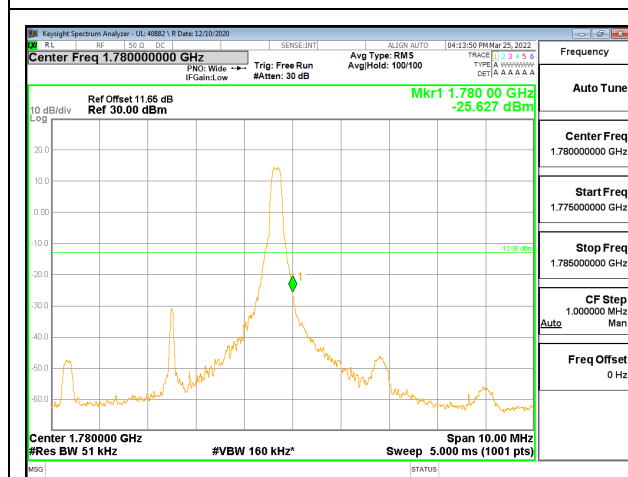
LTE66 3MHz 16QAM HIGH Ch RB15-0



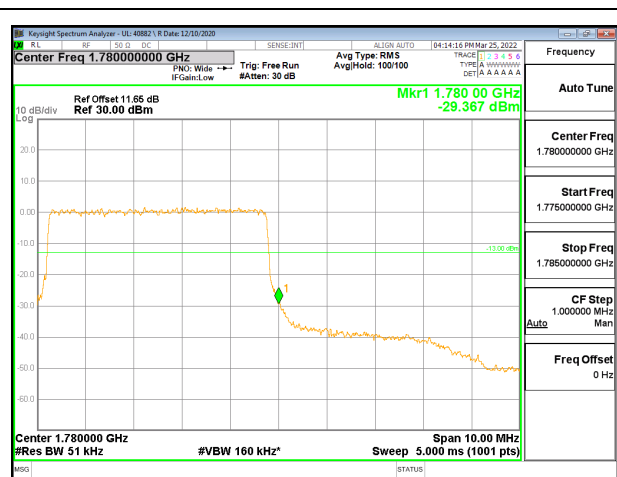
LTE66 5MHz QPSK LOW Ch RB1-0



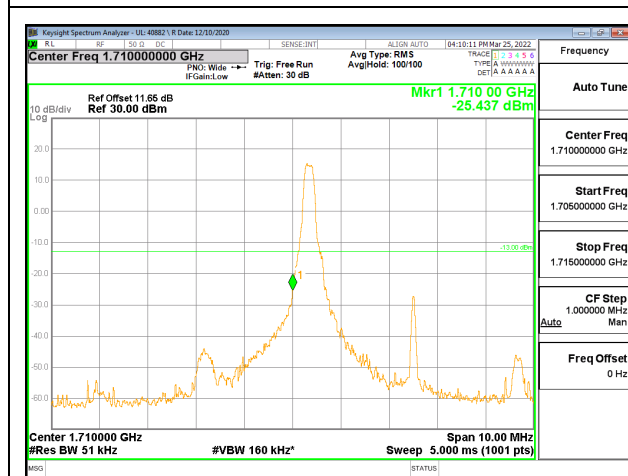
LTE66 5MHz QPSK LOW Ch RB25-0



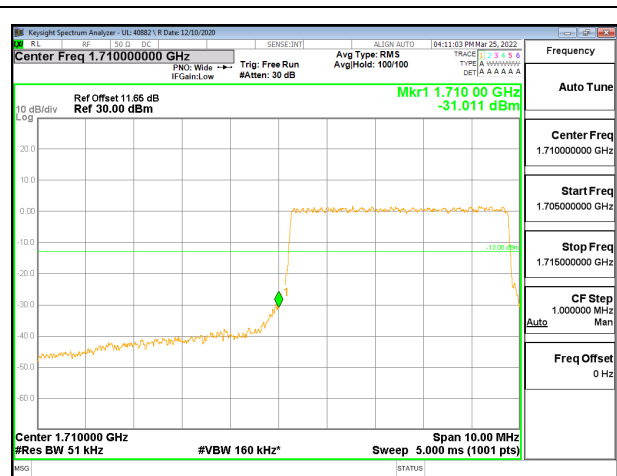
LTE66 5MHz QPSK HIGH Ch RB1-24



LTE66 5MHz QPSK HIGH Ch RB25-0



LTE66 5MHz 16QAM LOW Ch RB1-0



LTE66 5MHz 16QAM LOW Ch RB25-0