CERTIFICATION TEST REPORT

Report Number. : 11785248-E1V2

Applicant	:	SONY MOBILE COMMUNICATIONS INC. 4-12-3 HIGASHI-SHINAGAWA, SHINAGAWA -KU,TOKYO, 140-0002, JAPAN
FCC ID	:	PY7-68552B
EUT Description	:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, NFC & GPS
Test Standard(s)	:	FCC CFR47 PART 27 SUBPART M

Date Of Issue:

July 21, 2017

Prepared by:

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	06/30/17	Initial Issue	D. Coronia
V2	07/21/17	Updated Section 5.1, 6.1, 7 & 11 (EUT description and Antenna Gain)	D. Coronia

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SONY MOBILE COMMUNICATIONS, INC. 4-12-3 HIGASHI-SHINAGAWA, SHINAGAWA –KU, TOKYO, 140-0002, JAPAN
EUT DESCRIPTION:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, NFC & GPS
SERIAL NUMBER:	QV7000K70Q(Conducted) QV7000900Q, QV70008E0Q(Radiated)
DATE TESTED:	June 21- 27, 2017

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 27M	PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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Prepared By:

KIYA KEDIDA
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WiSE ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-D, FCC CFR 47 Part 27.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 22541-1)
☐ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 22541-2)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 22541-3)
	☐ Chamber G(IC: 22541-4)
	☐ Chamber H(IC: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.
UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.
Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)

(Path loss = Signal generator output – PSA reading with substitution antenna)

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Occupied Channel Bandwidth	±1.1 %
RF output power, conducted	±0.35 dB
Power Spectral Density, conducted	±0.39 dB
Unwanted Emissions, conducted	±2.9 dB
All emissions, radiated	±5.36 dB
Temperature	±0.9 °C
Humidity	±2.26% RH
Supply Voltages	±0.45 %
Time	±0.2 %

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

This EUT is a GSM/WCDMA/LTE PHONE with BT, DTS/UNII a/b/g/n/ac, GPS & NFC.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The purpose of this C2PC: Changed the LTE band 7, LTE Band 38 and LTE Band 41 antenna matching circuit.

6. MAXIMUM OUTPUT POWER

6.1. MAXIMUM OUTPUT POWER (LTE)

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

LTE Band 7

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
				AVG(dBm)	AVG(mW)	dBm	mW
LTE7	2500~2570	5MHz	QPSK	22.1	162.18	17.9	61.66
			16QAM	21.7	147.91	17.5	56.23
		10MHz	QPSK	22.1	162.18	17.9	61.66
			16QAM	22.1	162.18	17.9	61.66
		15MHz	QPSK	22.1	162.18	17.9	61.66
			16QAM	21.9	154.88	17.7	58.88
		20MHz	QPSK	22.1	162.18	17.9	61.66
			16QAM	22.0	158.49	17.8	60.26

LTE Band 41

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
				AVG(dBm)	AVG(mW)	dBm	mW
LTE41	2496~2690	5MHz	QPSK	23.5	223.87	19.7	93.33
			16QAM	23.1	204.17	19.3	85.11
		10MHz	QPSK	23.7	234.42	19.9	97.72
			16QAM	23.1	204.17	19.3	85.11
		15MHz	QPSK	23.6	229.09	19.8	95.50
			16QAM	23.0	199.53	19.2	83.18
		20MHz	QPSK	23.8	239.88	20.0	100.00
			16QAM	23.2	208.93	19.4	87.10

7. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
LTE Band 7, 2500~2570MHz	-4.2
LTE Band 38, 2570-2620	-4.1
LTE Band 41, 2496~2690MHz	-3.8

8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	SONY	1300-7137.1	4016W40310044	NA
Earphone	SONY	N/A	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	**Port**	**# of Identical ports**	**Connector Type**	**Serial Type**	**Cable Length (m)**	**Remarks**
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

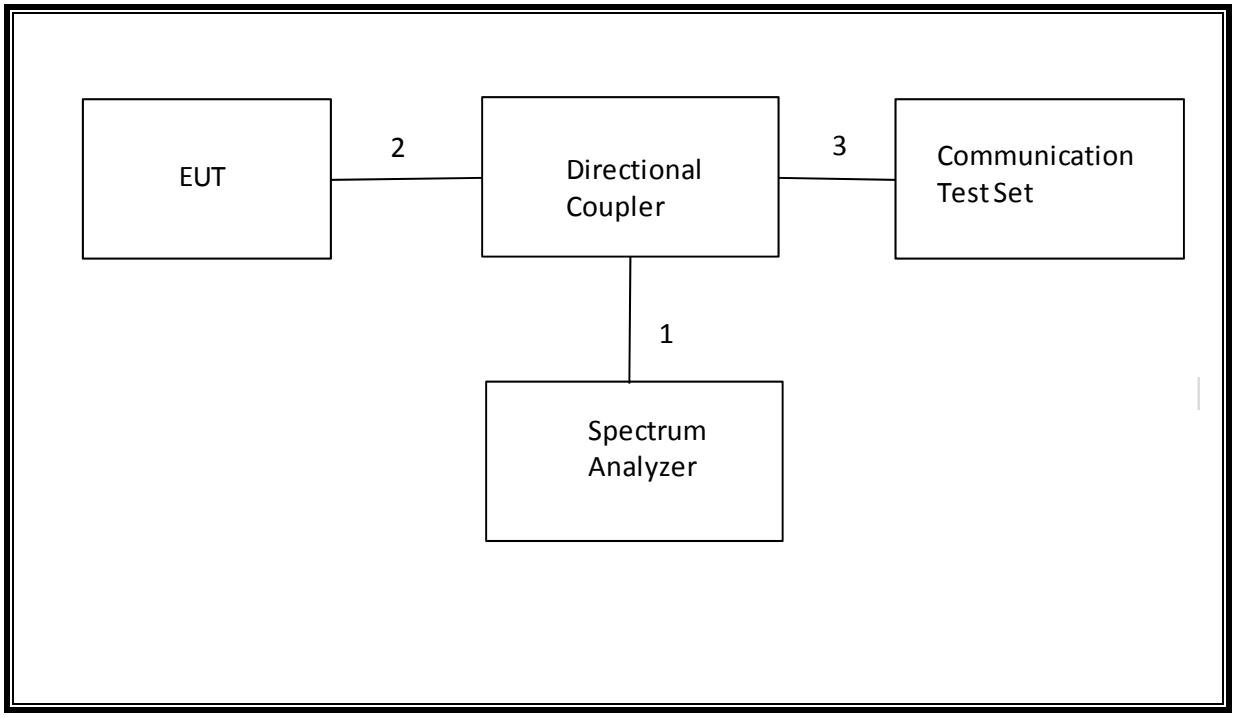
I/O CABLES (RADIATED SETUP)

I/O Cable List						
Cable No	**Port**	**# of Identical ports**	**Connector Type**	**Serial Type**	**Cable Length (m)**	**Remarks**
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	Jack	1	Headset	Shielded	1m	No
3	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

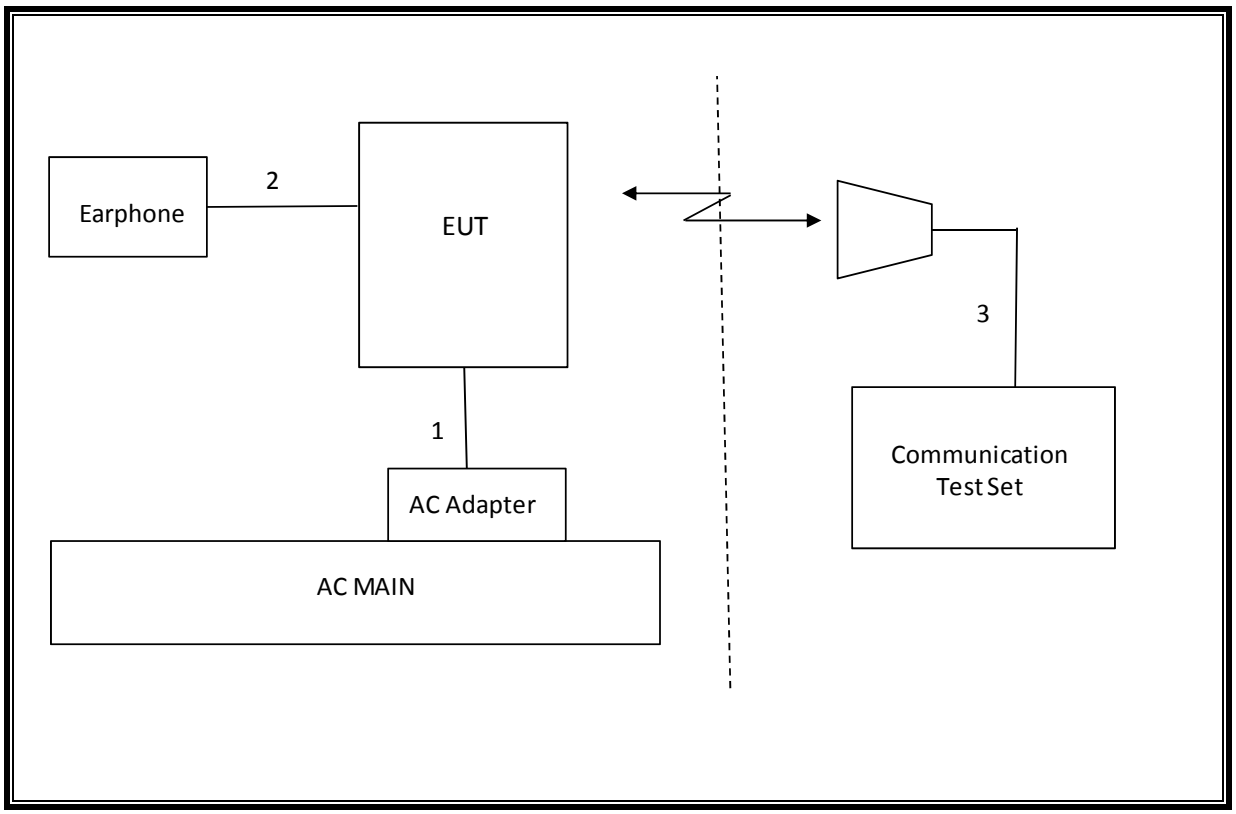
TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



9. 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**	**T Number**	**Cal Date**	**Cal Due**
Amplifier, 1 to 18 GHz	Miteq	AFS43-00101800-25-S-42	493	02/15/17	02/15/18
Amplifier, 1 to 8 GHz	Miteq	AMF-4D-01000800-30-29P	1156	02/15/17	02/15/18
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	10	02/15/17	02/15/18
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	408	11/10/16	11/10/17
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	907	01/23/17	01/23/18
Highpass Filter, 2.7 GHz	Micro-Circuits	H2G518G6	T772	7/5/16	07/5/18
Highpass Filter, 1 GHz	Micro-Tronics	HPM18129	T889	2/21/17	02/21/18
Highpass Filter, 4GHz	Micro-Tronics	HPM13351	T1241	7/19/16	07/19/17
Amplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	931	08/26/16	08/26/17
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	15	08/26/16	08/26/17
Antenna, Broadband Hybrid 30MHz to 2000MHz	Sunol Sciences	JB3	408	11/10/16	11/10/17
Antenna, Horn 1-18GHz	ETS Lindgren	3117	712	01/30/17	01/30/18
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	905	01/11/17	01/11/18
DC power supply, 8 V @ 3 A or 15 V @ 2 A	Agilent / HP	E3610A	None	CNR	None
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	T273	6/08/17	6/08/18
Directional Coupler	Mini-Circuits	ZUDC10-183+	T1136	6/18/17	6/18/18

Test Equipment List			
Description	**Manufacturer**	**Model**	**T Number**
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

10. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Bandwidth (99%)	N/A	Conducted	Pass
27.53(m)	Band Edge / Conducted Spurious Emission	-25dBm		
2.1046	Conducted output power	N/A		Pass
27.53(m) 90.691	Emission Mask	Please refer to limit under section 14		Pass
22.355 90.213	Frequency Stability	2.5PPM		Pass
24.235 27.54		Please refer to limit under section 16		Pass
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power	33dBm	Radiated	Pass
27.53(m)	Radiated Spurious Emission	-25dBm		Pass

11. RF POWER OUTPUT VERIFICATION

TEST PROCEDURE

ANSI C63.26:2015/ TIA / EIA 603-D Clause 2.2.17
KDB 971168 Section 5.6

ERP/EIRP = PMeas + GT – LC

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.2

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.

MODES TESTED

- **LTE Band 7**
- **LTE Band 41**

11.1. LTE OUTPUT POWER RESULT

Note(s):

LTE Band 38 Measured Results

LTE Band 38 (Frequency range: 2570-2620 MHz) is covered by LTE Band 41 (Frequency range: 2496-2690 MHz) and no testing is necessary due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth and same modulations.

64QAM Measured Results

Measured QPSK,16QAM & 64QAM Mode Output power and found that QPSK and 16QAM results was the worst case. All testing were performed using QPSK and 16QAM mode to represent the worst case mode.

Tested By	AJ Newcomer & Vanessa Moestopo
Date	6/15/2017

LTE Band 7

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	20775	2502.5	QPSK	1	0	22.0	17.8	33.0	-15.3
				1	12	22.0	17.8	33.0	-15.2
				1	24	22.0	17.8	33.0	-15.2
				12	0	22.0	17.8	33.0	-15.2
				12	7	22.0	17.8	33.0	-15.2
				12	13	22.0	17.8	33.0	-15.2
				25	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.6	17.4	33.0	-15.6
				1	12	21.6	17.4	33.0	-15.7
				1	24	21.6	17.4	33.0	-15.6
				12	0	21.6	17.4	33.0	-15.7
				12	7	21.6	17.4	33.0	-15.6
				12	13	21.5	17.3	33.0	-15.7
				25	0	21.4	17.2	33.0	-15.8
			64QAM	1	0	21.2	17.0	33.0	-16.0
				1	12	21.2	17.0	33.0	-16.0
				1	24	21.1	16.9	33.0	-16.1
				12	0	20.5	16.3	33.0	-16.7
				12	7	20.5	16.3	33.0	-16.7
				12	13	20.5	16.3	33.0	-16.7
				25	0	20.4	16.2	33.0	-16.8
5.0	21100	2535.0	QPSK	1	0	21.9	17.7	33.0	-15.3
				1	12	22.0	17.8	33.0	-15.2
				1	24	21.9	17.7	33.0	-15.3
				12	0	22.0	17.8	33.0	-15.2
				12	7	22.0	17.8	33.0	-15.2
				12	13	21.9	17.7	33.0	-15.3
				25	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.9	17.7	33.0	-15.3
				1	2	22.0	17.8	33.0	-15.2
				1	5	21.9	17.7	33.0	-15.3
				3	0	21.7	17.5	33.0	-15.5
				3	1	21.7	17.5	33.0	-15.5
				3	2	21.6	17.4	33.0	-15.6
				6	0	21.6	17.4	33.0	-15.6
			64QAM	1	0	21.3	17.1	33.0	-15.9
				1	12	21.3	17.1	33.0	-15.9
				1	24	21.2	17.0	33.0	-16.0
				12	0	20.7	16.5	33.0	-16.5
				12	7	20.7	16.5	33.0	-16.5
				12	13	20.6	16.4	33.0	-16.6
				25	0	20.7	16.5	33.0	-16.5

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	21425	2567.5	QPSK	1	0	22.1	17.9	33.0	-15.1
				1	12	22.1	17.9	33.0	-15.1
				1	24	22.1	17.9	33.0	-15.1
				12	0	22.1	17.9	33.0	-15.2
				12	7	22.1	17.9	33.0	-15.1
				12	13	22.1	17.9	33.0	-15.1
				25	0	22.1	17.9	33.0	-15.1
			16QAM	1	0	21.7	17.5	33.0	-15.5
				1	12	21.7	17.5	33.0	-15.5
				1	24	21.7	17.5	33.0	-15.5
				12	0	21.7	17.5	33.0	-15.5
				12	7	21.7	17.5	33.0	-15.5
				12	13	21.7	17.5	33.0	-15.5
				25	0	21.6	17.4	33.0	-15.6
			64QAM	1	0	21.4	17.2	33.0	-15.8
				1	12	21.4	17.2	33.0	-15.8
				1	24	21.4	17.2	33.0	-15.8
				12	0	20.7	16.5	33.0	-16.5
				12	7	20.6	16.4	33.0	-16.6
				12	13	20.7	16.5	33.0	-16.5
				25	0	20.6	16.4	33.0	-16.6

Antenna gain (dBi)		-4.20							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	20880	2505.0	QPSK	1	0	21.8	17.6	33.0	-15.4
				1	25	21.8	17.6	33.0	-15.4
				1	49	21.7	17.5	33.0	-15.5
				25	0	21.9	17.7	33.0	-15.3
				25	12	21.9	17.7	33.0	-15.3
				25	25	21.8	17.6	33.0	-15.4
				50	0	21.9	17.7	33.0	-15.4
			16QAM	1	0	21.4	17.2	33.0	-15.8
				1	25	21.4	17.2	33.0	-15.9
				1	49	21.3	17.1	33.0	-15.9
				25	0	21.5	17.3	33.0	-15.7
				25	12	21.5	17.3	33.0	-15.7
				25	25	21.5	17.3	33.0	-15.8
				50	0	21.4	17.2	33.0	-15.8
			64QAM	1	0	21.2	17.0	33.0	-16.0
				1	25	21.2	17.0	33.0	-16.0
				1	49	21.2	17.0	33.0	-16.0
				25	0	20.4	16.2	33.0	-16.8
				25	12	20.4	16.2	33.0	-16.8
				25	25	20.4	16.2	33.0	-16.8
				50	0	20.4	16.2	33.0	-16.8
10.0	21100	2535.0	QPSK	1	0	22.1	17.9	33.0	-15.2
				1	25	22.0	17.8	33.0	-15.2
				1	49	22.0	17.8	33.0	-15.2
				25	0	22.0	17.8	33.0	-15.2
				25	12	22.0	17.8	33.0	-15.2
				25	25	21.9	17.7	33.0	-15.3
				50	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.9	17.7	33.0	-15.3
				1	25	21.8	17.6	33.0	-15.4
				1	49	21.7	17.5	33.0	-15.6
				25	0	21.5	17.3	33.0	-15.7
				25	12	21.5	17.3	33.0	-15.7
				25	25	21.5	17.3	33.0	-15.8
				50	0	21.5	17.3	33.0	-15.7
			64QAM	1	0	21.3	17.1	33.0	-15.9
				1	25	21.2	17.0	33.0	-16.0
				1	49	21.3	17.1	33.0	-15.9
				25	0	20.6	16.4	33.0	-16.6
				25	12	20.7	16.5	33.0	-16.5
				25	25	20.6	16.4	33.0	-16.6
				50	0	20.6	16.4	33.0	-16.6

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	21400	2565.0	QPSK	1	0	22.0	17.8	33.0	-15.2
				1	25	22.0	17.8	33.0	-15.2
				1	49	22.0	17.8	33.0	-15.2
				25	0	22.1	17.9	33.0	-15.1
				25	12	22.1	17.9	33.0	-15.2
				25	25	22.1	17.9	33.0	-15.2
				50	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.5	17.3	33.0	-15.7
				1	25	21.4	17.2	33.0	-15.8
				1	49	21.5	17.3	33.0	-15.8
				25	0	21.7	17.5	33.0	-15.6
				25	12	21.5	17.3	33.0	-15.7
				25	25	21.6	17.4	33.0	-15.6
				50	0	21.5	17.3	33.0	-15.7
			64QAM	1	0	21.1	16.9	33.0	-16.1
				1	25	21.0	16.8	33.0	-16.2
				1	49	21.1	16.9	33.0	-16.1
				25	0	20.7	16.5	33.0	-16.5
				25	12	20.6	16.4	33.0	-16.6
				25	25	20.5	16.3	33.0	-16.7
				50	0	20.4	16.2	33.0	-16.8

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	20825	2507.5	QPSK	1	0	21.9	17.7	33.0	-15.3
				1	37	21.8	17.6	33.0	-15.4
				1	74	21.7	17.5	33.0	-15.6
				36	0	21.9	17.7	33.0	-15.3
				36	20	21.9	17.7	33.0	-15.3
				36	39	21.8	17.6	33.0	-15.4
				75	0	21.8	17.6	33.0	-15.4
			16QAM	1	0	21.9	17.7	33.0	-15.4
				1	37	21.6	17.4	33.0	-15.6
				1	74	21.5	17.3	33.0	-15.7
				36	0	21.4	17.2	33.0	-15.8
				36	20	21.4	17.2	33.0	-15.8
				36	39	21.3	17.1	33.0	-15.9
				75	0	21.4	17.2	33.0	-15.9
			64QAM	1	0	21.1	16.9	33.0	-16.1
				1	37	21.0	16.8	33.0	-16.2
				1	74	20.9	16.7	33.0	-16.3
				36	0	20.3	16.1	33.0	-16.9
				36	20	20.2	16.0	33.0	-17.0
				36	39	20.2	16.0	33.0	-17.0
				75	0	20.3	16.1	33.0	-16.9
15.0	21100	2535.0	QPSK	1	0	22.1	17.9	33.0	-15.1
				1	37	22.0	17.8	33.0	-15.3
				1	74	21.9	17.7	33.0	-15.3
				36	0	22.0	17.8	33.0	-15.2
				36	20	22.0	17.8	33.0	-15.2
				36	39	22.0	17.8	33.0	-15.2
				75	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.9	17.7	33.0	-15.3
				1	37	21.8	17.6	33.0	-15.4
				1	74	21.6	17.4	33.0	-15.6
				36	0	21.6	17.4	33.0	-15.6
				36	20	21.6	17.4	33.0	-15.6
				36	39	21.5	17.3	33.0	-15.7
				75	0	21.5	17.3	33.0	-15.7
			64QAM	1	0	21.2	17.0	33.0	-16.0
				1	37	21.0	16.8	33.0	-16.2
				1	74	21.0	16.8	33.0	-16.2
				36	0	20.4	16.2	33.0	-16.8
				36	20	20.5	16.3	33.0	-16.7
				36	39	20.4	16.2	33.0	-16.8
				75	0	20.5	16.3	33.0	-16.7

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	21375	2562.5	QPSK	1	0	22.1	17.9	33.0	-15.1
				1	37	22.0	17.8	33.0	-15.2
				1	74	22.0	17.8	33.0	-15.3
				36	0	22.2	18.0	33.0	-15.0
				36	20	22.1	17.9	33.0	-15.1
				36	39	22.0	17.8	33.0	-15.2
				75	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	21.6	17.4	33.0	-15.6
				1	37	21.4	17.2	33.0	-15.8
				1	74	21.4	17.2	33.0	-15.8
				36	0	21.7	17.5	33.0	-15.6
				36	20	21.6	17.4	33.0	-15.6
				36	39	21.4	17.2	33.0	-15.8
				75	0	21.6	17.4	33.0	-15.6
			64QAM	1	0	21.3	17.1	33.0	-15.9
				1	37	21.2	17.0	33.0	-16.0
				1	74	21.1	16.9	33.0	-16.1
				36	0	20.6	16.4	33.0	-16.6
				36	20	20.4	16.2	33.0	-16.8
				36	39	20.4	16.2	33.0	-16.8
				75	0	20.6	16.4	33.0	-16.6

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	20850	2010.0	QPSK	1	0	21.9	17.7	33.0	-15.3
				1	49	21.7	17.5	33.0	-15.5
				1	99	21.7	17.5	33.0	-15.6
				50	0	21.9	17.7	33.0	-15.3
				50	24	21.8	17.6	33.0	-15.4
				50	50	21.7	17.5	33.0	-15.5
				100	0	21.8	17.6	33.0	-15.4
			16QAM	1	0	21.8	17.6	33.0	-15.4
				1	49	21.6	17.4	33.0	-15.6
				1	99	21.6	17.4	33.0	-15.6
				50	0	21.4	17.2	33.0	-15.8
				50	24	21.3	17.1	33.0	-15.9
				50	50	21.2	17.0	33.0	-16.0
				100	0	21.3	17.1	33.0	-15.9
			64QAM	1	0	21.4	17.2	33.0	-15.8
				1	49	21.1	16.9	33.0	-16.1
				1	99	21.2	17.0	33.0	-16.0
				50	0	20.6	16.4	33.0	-16.6
				50	24	20.6	16.4	33.0	-16.6
				50	50	20.4	16.2	33.0	-16.8
				100	0	20.5	16.3	33.0	-16.7
20.0	21100	2535.0	QPSK	1	0	22.1	17.9	33.0	-15.1
				1	49	21.9	17.7	33.0	-15.4
				1	99	21.8	17.6	33.0	-15.4
				50	0	22.0	17.8	33.0	-15.2
				50	24	22.0	17.8	33.0	-15.3
				50	50	21.8	17.6	33.0	-15.4
				100	0	21.9	17.7	33.0	-15.3
			16QAM	1	0	22.0	17.8	33.0	-15.2
				1	49	21.8	17.6	33.0	-15.4
				1	99	21.7	17.5	33.0	-15.5
				50	0	21.5	17.3	33.0	-15.7
				50	24	21.5	17.3	33.0	-15.7
				50	50	21.4	17.2	33.0	-15.8
				100	0	21.4	17.2	33.0	-15.8
			64QAM	1	0	21.5	17.3	33.0	-15.7
				1	49	21.3	17.1	33.0	-15.9
				1	99	21.3	17.1	33.0	-15.9
				50	0	20.7	16.5	33.0	-16.5
				50	24	20.7	16.5	33.0	-16.5
				50	50	20.7	16.5	33.0	-16.5
				100	0	20.7	16.5	33.0	-16.5

Antenna gain (dBi)	-4.20

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	21350	2560.0	QPSK	1	0	22.2	18.0	33.0	-15.0
				1	49	21.9	17.7	33.0	-15.3
				1	99	21.9	17.7	33.0	-15.3
				50	0	22.1	17.9	33.0	-15.1
				50	24	22.0	17.8	33.0	-15.2
				50	50	21.9	17.7	33.0	-15.3
				100	0	22.0	17.8	33.0	-15.2
			16QAM	1	0	22.2	18.0	33.0	-15.0
				1	49	21.9	17.7	33.0	-15.3
				1	99	21.9	17.7	33.0	-15.3
				50	0	21.6	17.4	33.0	-15.6
				50	24	21.5	17.3	33.0	-15.7
				50	50	21.4	17.2	33.0	-15.8
				100	0	21.5	17.3	33.0	-15.7
			64QAM	1	0	21.5	17.3	33.0	-15.7
				1	49	21.2	17.0	33.0	-16.0
				1	99	21.2	17.0	33.0	-16.0
				50	0	20.7	16.5	33.0	-16.5
				50	24	20.5	16.3	33.0	-16.7
				50	50	20.5	16.3	33.0	-16.7
				100	0	20.6	16.4	33.0	-16.6

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Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	39750	2498.5	QPSK	1	0	23.3	19.5	33.0	-13.5
				1	12	23.2	19.4	33.0	-13.6
				1	24	23.3	19.5	33.0	-13.5
				12	0	23.2	19.4	33.0	-13.6
				12	7	23.2	19.4	33.0	-13.6
				12	13	23.3	19.5	33.0	-13.5
				25	0	23.2	19.4	33.0	-13.6
			16QAM	1	0	22.7	18.9	33.0	-14.1
				1	12	22.6	18.8	33.0	-14.2
				1	24	22.7	18.9	33.0	-14.1
				12	0	21.7	17.9	33.0	-15.1
				12	7	21.7	17.9	33.0	-15.1
				12	13	21.7	17.9	33.0	-15.1
				25	0	21.7	17.9	33.0	-15.1
			64QAM	1	0	21.5	17.7	33.0	-15.3
				1	12	21.5	17.7	33.0	-15.3
				1	24	21.5	17.7	33.0	-15.3
				12	0	20.5	16.7	33.0	-16.3
				12	7	20.5	16.7	33.0	-16.3
				12	13	20.5	16.7	33.0	-16.3
				25	0	20.5	16.7	33.0	-16.3
5.0	40620	2593.0	QPSK	1	0	23.4	19.6	33.0	-13.4
				1	12	23.3	19.5	33.0	-13.5
				1	24	23.3	19.5	33.0	-13.5
				12	0	23.3	19.5	33.0	-13.5
				12	7	23.4	19.6	33.0	-13.5
				12	13	23.3	19.5	33.0	-13.5
				25	0	23.3	19.5	33.0	-13.5
			16QAM	1	0	22.8	19.0	33.0	-14.0
				1	2	22.7	18.9	33.0	-14.1
				1	5	22.7	18.9	33.0	-14.1
				3	0	21.8	18.0	33.0	-15.0
				3	1	21.8	18.0	33.0	-15.0
				3	2	21.8	18.0	33.0	-15.0
				6	0	21.9	18.1	33.0	-14.9
			64QAM	1	0	21.4	17.6	33.0	-15.4
				1	12	21.5	17.7	33.0	-15.3
				1	24	21.4	17.6	33.0	-15.4
				12	0	20.3	16.5	33.0	-16.5
				12	7	20.3	16.5	33.0	-16.5
				12	13	20.3	16.5	33.0	-16.5
				25	0	20.3	16.5	33.0	-16.5

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	51565	2687.5	QPSK	1	0	23.5	19.7	33.0	-13.3
				1	12	23.5	19.7	33.0	-13.3
				1	24	23.5	19.7	33.0	-13.3
				12	0	23.5	19.7	33.0	-13.3
				12	7	23.5	19.7	33.0	-13.3
				12	13	23.5	19.7	33.0	-13.3
				25	0	23.4	19.6	33.0	-13.4
			16QAM	1	0	23.1	19.3	33.0	-13.7
				1	12	23.1	19.3	33.0	-13.7
				1	24	23.1	19.3	33.0	-13.7
				12	0	22.1	18.3	33.0	-14.7
				12	7	22.1	18.3	33.0	-14.7
				12	13	22.1	18.3	33.0	-14.7
				25	0	22.0	18.2	33.0	-14.8
			64QAM	1	0	21.2	17.4	33.0	-15.6
				1	12	21.1	17.3	33.0	-15.7
				1	24	21.2	17.4	33.0	-15.6
				12	0	20.2	16.4	33.0	-16.6
				12	7	20.2	16.4	33.0	-16.6
				12	13	20.2	16.4	33.0	-16.6
				25	0	20.2	16.4	33.0	-16.6

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	39700	2501.0	QPSK	1	0	23.3	19.5	33.0	-13.5
				1	25	23.2	19.4	33.0	-13.6
				1	49	23.3	19.5	33.0	-13.5
				25	0	23.3	19.5	33.0	-13.5
				25	12	23.3	19.5	33.0	-13.5
				25	25	23.3	19.5	33.0	-13.5
				50	0	23.4	19.6	33.0	-13.4
			16QAM	1	0	22.8	19.0	33.0	-14.0
				1	25	22.7	18.9	33.0	-14.1
				1	49	22.7	18.9	33.0	-14.1
				25	0	21.8	18.0	33.0	-15.1
				25	12	21.7	17.9	33.0	-15.1
				25	25	21.8	18.0	33.0	-15.0
				50	0	21.8	18.0	33.0	-15.0
			64QAM	1	0	21.3	17.5	33.0	-15.5
				1	25	21.3	17.5	33.0	-15.5
				1	49	21.2	17.4	33.0	-15.6
				25	0	20.5	16.7	33.0	-16.3
				25	12	20.5	16.7	33.0	-16.3
				25	25	20.4	16.6	33.0	-16.4
				50	0	20.5	16.7	33.0	-16.3
10.0	40620	2593.0	QPSK	1	0	23.3	19.5	33.0	-13.5
				1	25	23.3	19.5	33.0	-13.5
				1	49	23.2	19.4	33.0	-13.6
				25	0	23.4	19.6	33.0	-13.4
				25	12	23.4	19.6	33.0	-13.4
				25	25	23.4	19.6	33.0	-13.4
				50	0	23.5	19.7	33.0	-13.4
			16QAM	1	0	23.0	19.2	33.0	-13.8
				1	25	22.9	19.1	33.0	-13.9
				1	49	22.8	19.0	33.0	-14.0
				25	0	22.0	18.2	33.0	-14.9
				25	12	21.9	18.1	33.0	-14.9
				25	25	21.8	18.0	33.0	-15.0
				50	0	21.9	18.1	33.0	-14.9
			64QAM	1	0	21.4	17.6	33.0	-15.4
				1	25	21.3	17.5	33.0	-15.5
				1	49	21.3	17.5	33.0	-15.5
				25	0	20.3	16.5	33.0	-16.5
				25	12	20.3	16.5	33.0	-16.5
				25	25	20.3	16.5	33.0	-16.5
				50	0	20.3	16.5	33.0	-16.5

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	41540	2685.0	QPSK	1	0	23.7	19.9	33.0	-13.1
				1	25	23.6	19.8	33.0	-13.3
				1	49	23.6	19.8	33.0	-13.2
				25	0	23.6	19.8	33.0	-13.3
				25	12	23.5	19.7	33.0	-13.3
				25	25	23.5	19.7	33.0	-13.3
				50	0	23.5	19.7	33.0	-13.3
			16QAM	1	0	23.3	19.5	33.0	-13.6
				1	25	23.1	19.3	33.0	-13.7
				1	49	23.2	19.4	33.0	-13.6
				25	0	22.1	18.3	33.0	-14.7
				25	12	22.1	18.3	33.0	-14.7
				25	25	22.0	18.2	33.0	-14.8
				50	0	22.1	18.3	33.0	-14.7
			64QAM	1	0	21.1	17.3	33.0	-15.7
				1	25	21.0	17.2	33.0	-15.8
				1	49	21.0	17.2	33.0	-15.8
				25	0	20.3	16.5	33.0	-16.5
				25	12	20.2	16.4	33.0	-16.6
				25	25	20.2	16.4	33.0	-16.6
				50	0	20.2	16.4	33.0	-16.6

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	39725	2503.5	QPSK	1	0	23.1	19.3	33.0	-13.7
				1	37	23.1	19.3	33.0	-13.7
				1	74	23.2	19.4	33.0	-13.6
				36	0	23.2	19.4	33.0	-13.6
				36	20	23.2	19.4	33.0	-13.6
				36	39	23.2	19.4	33.0	-13.6
				75	0	23.2	19.4	33.0	-13.6
			16QAM	1	0	22.7	18.9	33.0	-14.2
				1	37	22.6	18.8	33.0	-14.2
				1	74	22.6	18.8	33.0	-14.2
				36	0	21.7	17.9	33.0	-15.1
				36	20	21.6	17.8	33.0	-15.2
				36	39	21.7	17.9	33.0	-15.1
				75	0	21.7	17.9	33.0	-15.1
			64QAM	1	0	21.6	17.8	33.0	-15.2
				1	12	21.6	17.8	33.0	-15.2
				1	24	21.4	17.6	33.0	-15.4
				12	0	20.5	16.7	33.0	-16.3
				12	7	20.5	16.7	33.0	-16.3
				12	13	20.5	16.7	33.0	-16.3
				25	0	20.4	16.6	33.0	-16.4
15.0	40620	2593.0	QPSK	1	0	23.6	19.8	33.0	-13.2
				1	12	23.4	19.6	33.0	-13.4
				1	24	23.3	19.5	33.0	-13.5
				12	0	23.4	19.6	33.0	-13.4
				12	7	23.5	19.7	33.0	-13.4
				12	13	23.4	19.6	33.0	-13.4
				25	0	23.4	19.6	33.0	-13.4
			16QAM	1	0	23.0	19.2	33.0	-13.8
				1	2	22.9	19.1	33.0	-13.9
				1	5	22.8	19.0	33.0	-14.0
				3	0	21.9	18.1	33.0	-14.9
				3	1	22.0	18.2	33.0	-14.9
				3	2	21.9	18.1	33.0	-14.9
				6	0	22.0	18.2	33.0	-14.8
			64QAM	1	0	21.5	17.7	33.0	-15.3
				1	12	21.4	17.6	33.0	-15.4
				1	24	21.2	17.4	33.0	-15.6
				12	0	20.4	16.6	33.0	-16.4
				12	7	20.3	16.5	33.0	-16.5
				12	13	20.3	16.5	33.0	-16.5
				25	0	20.3	16.5	33.0	-16.5

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	41515	2682.5	QPSK	1	0	23.6	19.8	33.0	-13.2
				1	37	23.4	19.6	33.0	-13.4
				1	74	23.4	19.6	33.0	-13.4
				36	0	23.4	19.6	33.0	-13.4
				36	20	23.5	19.7	33.0	-13.3
				36	39	23.5	19.7	33.0	-13.3
				75	0	23.2	19.4	33.0	-13.6
			16QAM	1	0	23.2	19.4	33.0	-13.6
				1	37	23.0	19.2	33.0	-13.8
				1	74	23.0	19.2	33.0	-13.8
				36	0	22.1	18.3	33.0	-14.7
				36	20	22.1	18.3	33.0	-14.7
				36	39	22.1	18.3	33.0	-14.7
				75	0	22.0	18.2	33.0	-14.8
			64QAM	1	0	21.5	17.7	33.0	-15.3
				1	37	21.4	17.6	33.0	-15.4
				1	74	21.0	17.2	33.0	-15.8
				36	0	20.3	16.5	33.0	-16.5
				36	20	20.2	16.4	33.0	-16.6
				36	39	20.1	16.3	33.0	-16.7
				75	0	20.1	16.3	33.0	-16.7

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	39750	2506.0	QPSK	1	0	23.5	19.7	33.0	-13.3
				1	49	23.4	19.6	33.0	-13.4
				1	99	23.4	19.6	33.0	-13.4
				50	0	23.5	19.7	33.0	-13.3
				50	24	23.6	19.8	33.0	-13.3
				50	50	23.4	19.6	33.0	-13.4
				100	0	23.6	19.8	33.0	-13.2
			16QAM	1	0	23.0	19.2	33.0	-13.8
				1	49	22.8	19.0	33.0	-14.0
				1	99	22.8	19.0	33.0	-14.0
				50	0	22.0	18.2	33.0	-14.8
				50	24	22.0	18.2	33.0	-14.8
				50	50	21.9	18.1	33.0	-14.9
				100	0	22.0	18.2	33.0	-14.8
			64QAM	1	0	21.5	17.7	33.0	-15.3
				1	49	21.5	17.7	33.0	-15.3
				1	99	21.4	17.6	33.0	-15.4
				50	0	20.5	16.7	33.0	-16.3
				50	24	20.4	16.6	33.0	-16.4
				50	50	20.4	16.6	33.0	-16.4
				100	0	20.4	16.6	33.0	-16.4
20.0	40620	2593.0	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	49	23.6	19.8	33.0	-13.2
				1	99	23.5	19.7	33.0	-13.3
				50	0	23.7	19.9	33.0	-13.1
				50	24	23.7	19.9	33.0	-13.1
				50	50	23.6	19.8	33.0	-13.3
				100	0	23.7	19.9	33.0	-13.1
			16QAM	1	0	23.2	19.4	33.0	-13.6
				1	49	23.0	19.2	33.0	-13.8
				1	99	22.8	19.0	33.0	-14.0
				50	0	22.2	18.4	33.0	-14.6
				50	24	22.2	18.4	33.0	-14.6
				50	50	22.1	18.3	33.0	-14.7
				100	0	22.2	18.4	33.0	-14.6
			64QAM	1	0	21.6	17.8	33.0	-15.2
				1	49	21.3	17.5	33.0	-15.5
				1	99	21.2	17.4	33.0	-15.6
				50	0	20.5	16.7	33.0	-16.3
				50	24	20.3	16.5	33.0	-16.5
				50	50	20.3	16.5	33.0	-16.5
				100	0	20.3	16.5	33.0	-16.5

Antenna gain (dBi)	-3.80

Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	41490	2680.0	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	49	23.5	19.7	33.0	-13.3
				1	99	23.5	19.7	33.0	-13.3
				50	0	23.4	19.6	33.0	-13.4
				50	24	23.4	19.6	33.0	-13.4
				50	50	23.5	19.7	33.0	-13.3
				100	0	23.2	19.4	33.0	-13.6
			16QAM	1	0	23.4	19.6	33.0	-13.4
				1	49	23.1	19.3	33.0	-13.7
				1	99	23.1	19.3	33.0	-13.7
				50	0	22.2	18.4	33.0	-14.6
				50	24	22.1	18.3	33.0	-14.7
				50	50	22.1	18.3	33.0	-14.7
				100	0	22.1	18.3	33.0	-14.7
			64QAM	1	0	21.4	17.6	33.0	-15.4
				1	49	21.3	17.5	33.0	-15.5
				1	99	21.1	17.3	33.0	-15.7
				50	0	20.3	16.5	33.0	-16.5
				50	24	20.3	16.5	33.0	-16.5
				50	50	20.2	16.4	33.0	-16.6
				100	0	20.2	16.4	33.0	-16.6

12. PEAK TO AVERAGE RATIO

TEST PROCEDURE

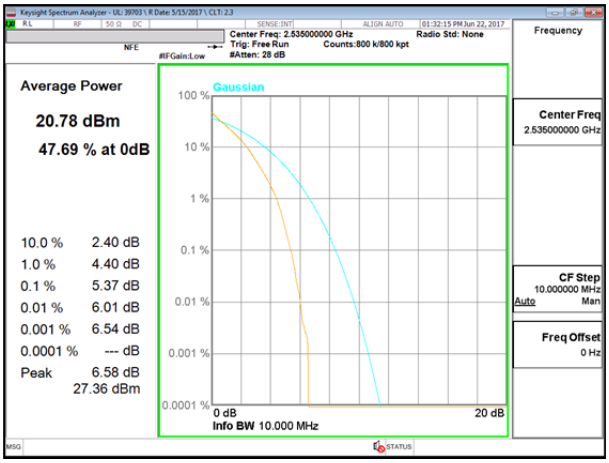
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

TEST SPEC

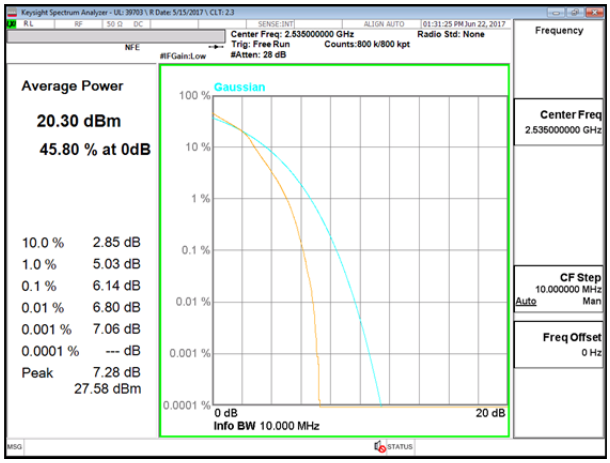
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

12.1. CONDUCTED PEAK TO AVERAGE RESULT

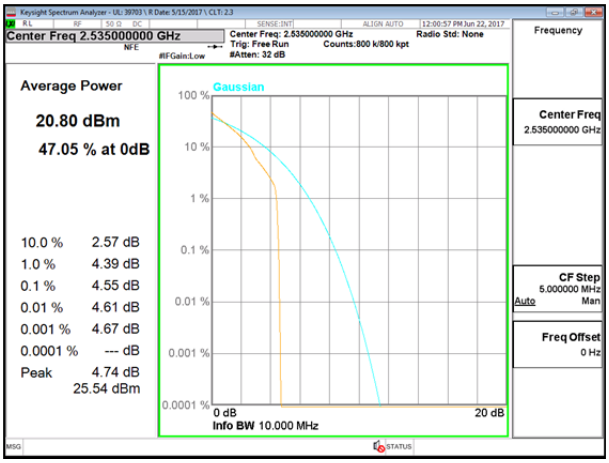
LTE Band 7



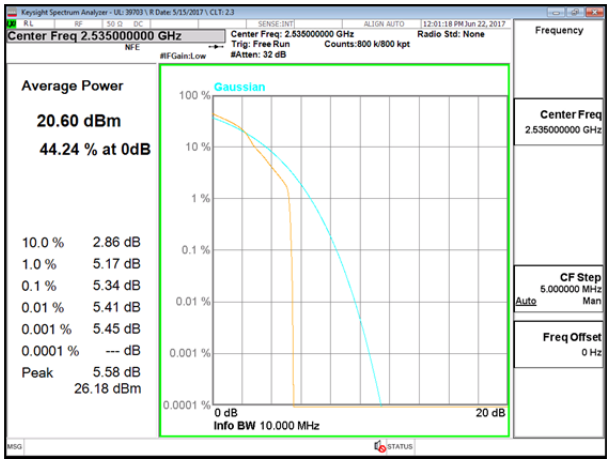
LTE B7 5MHz QPSK Middle Channel



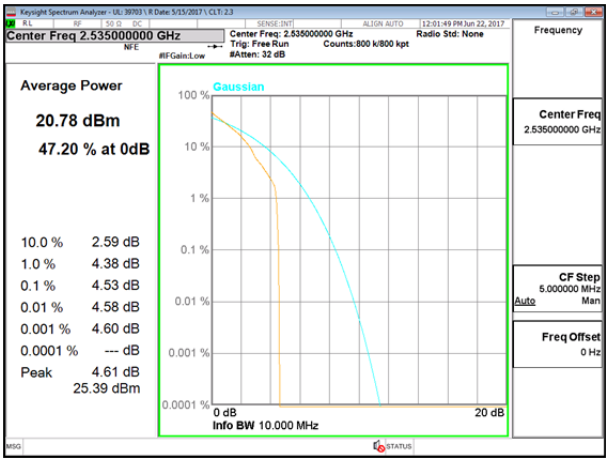
LTE B7 5MHz 16QAM Middle Channel



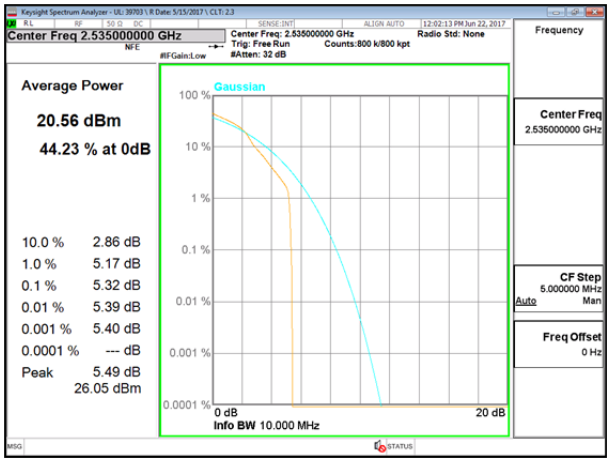
LTE B7 10MHz QPSK Middle Channel



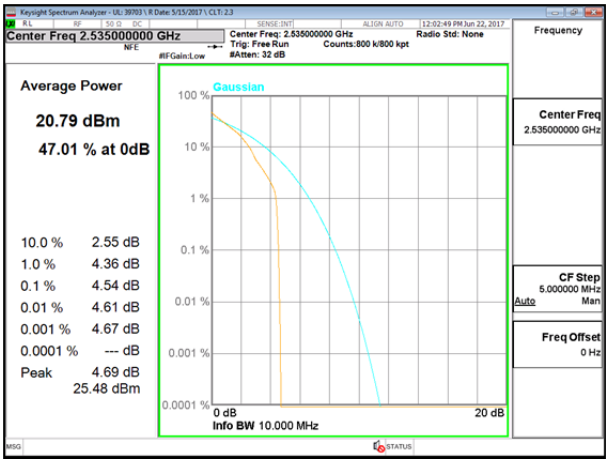
LTE B7 10MHz 16QAM Middle Channel



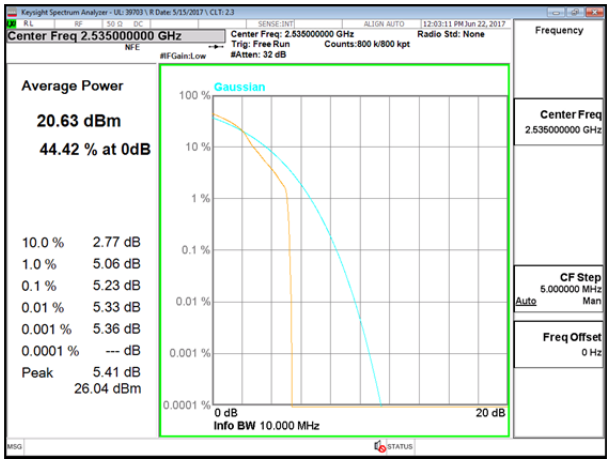
LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel

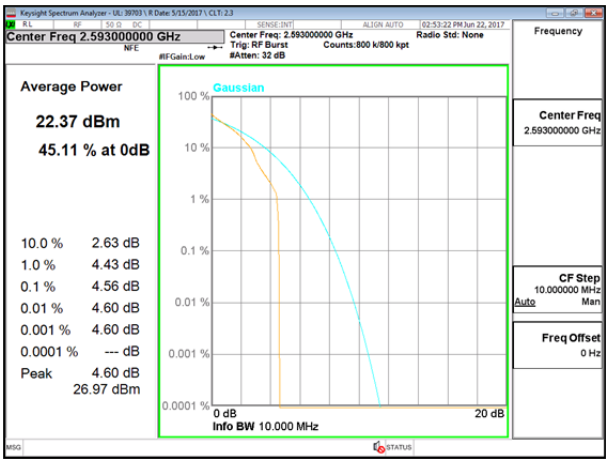


LTE B7 20MHz QPSK Middle Channel

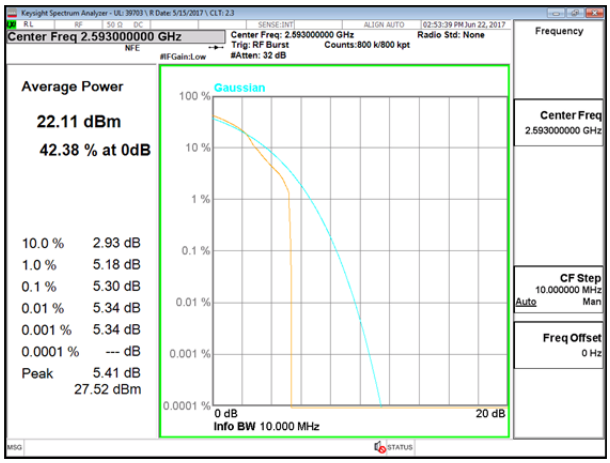


LTE B7 20MHz 16QAM Middle Channel

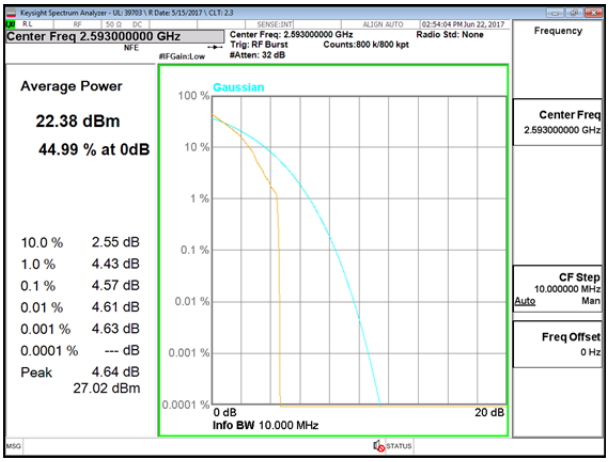
LTE Band 41



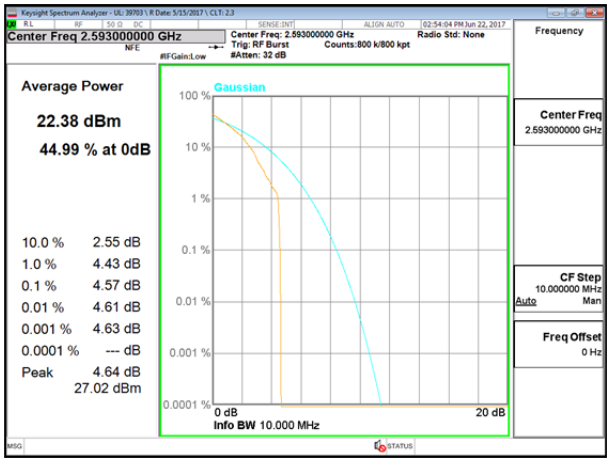
LTE B41 5MHz QPSK Middle Channel



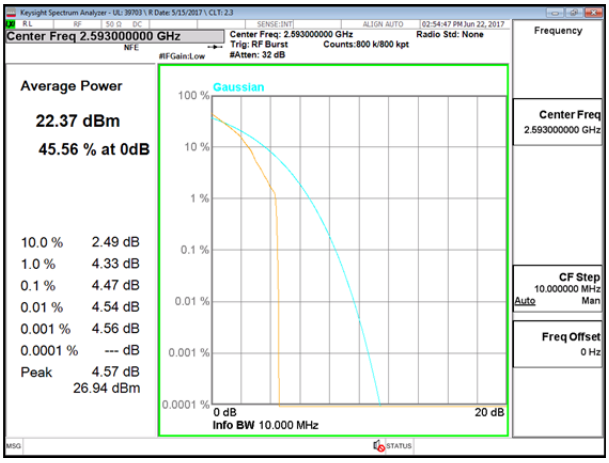
LTE B41 5MHz 16QAM Middle Channel



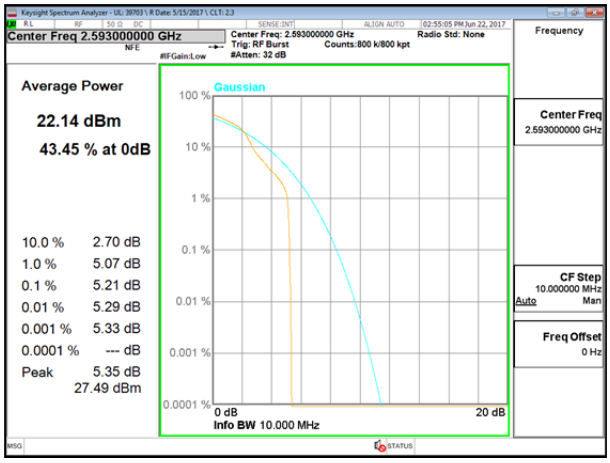
LTE B41 10MHz QPSK Middle Channel



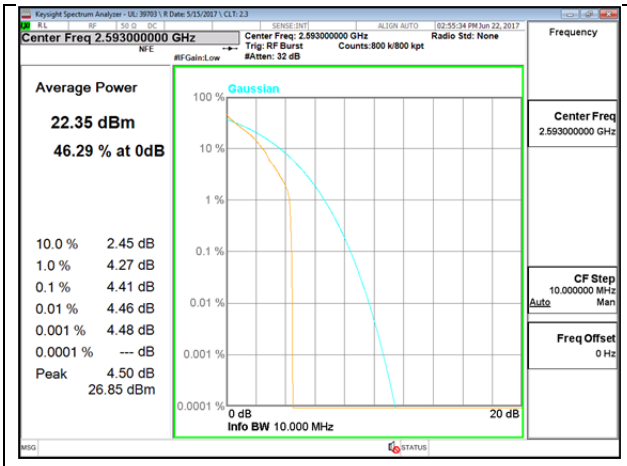
LTE B41 10MHz 16QAM Middle Channel



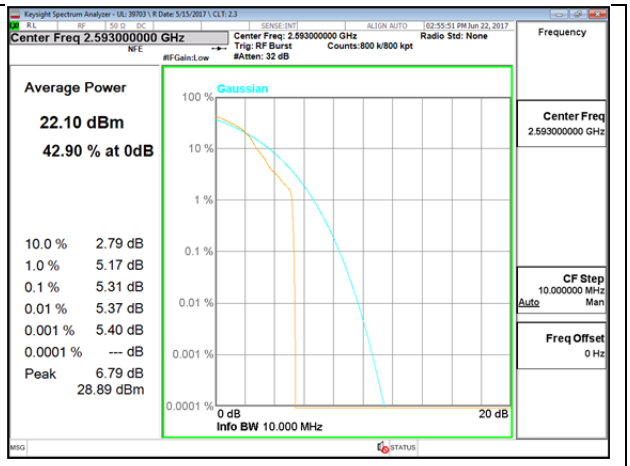
LTE B41 15MHz QPSK Middle Channel



LTE B41 15MHz 16QAM Middle Channel



LTE B41 20MHz QPSK Middle Channel



LTE B41 20MHz 16QAM Middle Channel

13. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

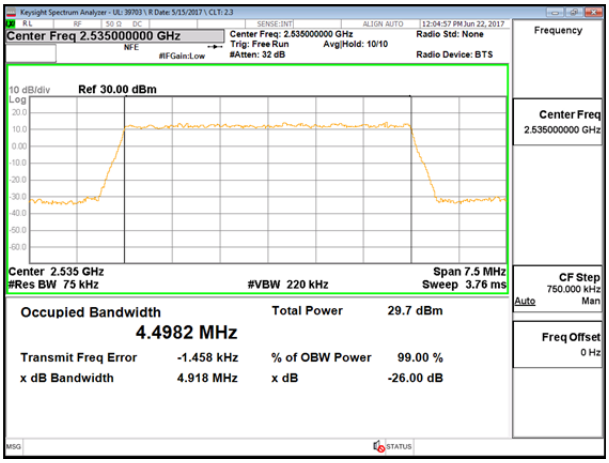
The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

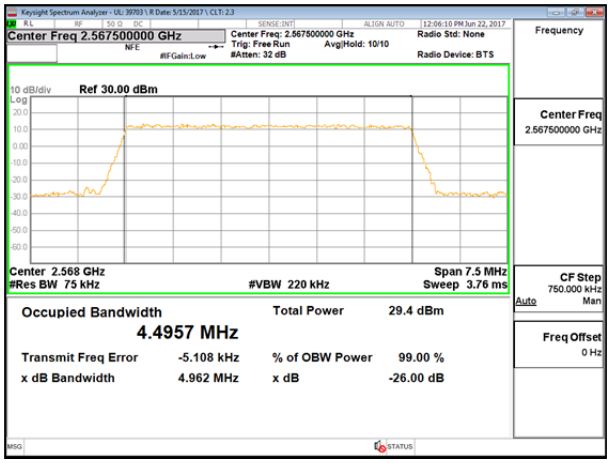
13.1. OCCUPIED BANDWIDTH RESULTS AND PLOTS

LTE Band 7

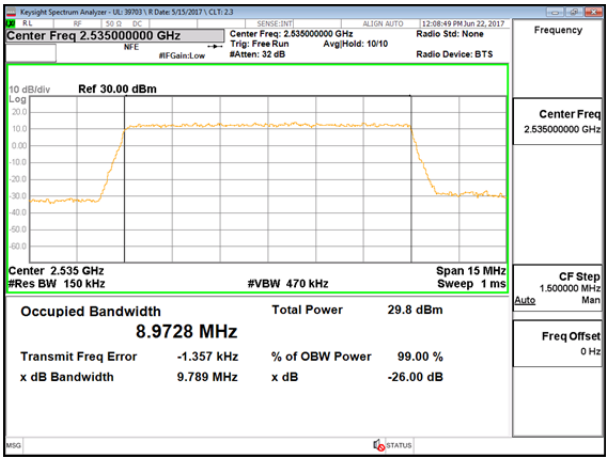
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW
LTE7	5	QPSK	25/0	2502.5	4.49	4.94
			25/0	2535	4.5	4.92
			25/0	2567.5	4.52	4.94
		16QAM	25/0	2502.5	4.49	4.94
			25/0	2535	4.48	4.91
			25/0	2567.5	4.5	4.96
	10	16QAM	50/0	2505	8.96	9.78
			50/0	2535	8.94	9.73
			50/0	2565	8.98	9.72
		QPSK	50/0	2505	8.95	9.88
			50/0	2535	8.97	9.79
			50/0	2565	8.98	9.8
	15	QPSK	75/0	2507.5	13.42	14.58
			75/0	2535	13.43	14.57
			75/0	2562.5	13.42	14.56
		16QAM	75/0	2507.5	13.43	14.54
			75/0	2535	13.44	14.63
			75/0	2562.5	13.42	14.52
	20	QPSK	100/0	2510	17.84	19.28
			100/0	2535	17.88	19.32
			100/0	2560	17.91	19.32
		16QAM	100/0	2510	17.85	19.29
			100/0	2535	17.92	19.35
			100/0	2560	17.88	19.32



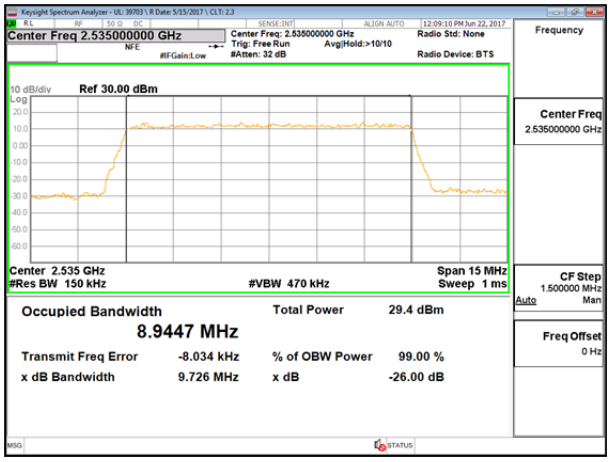
LTE B7 5MHz QPSK Middle Channel



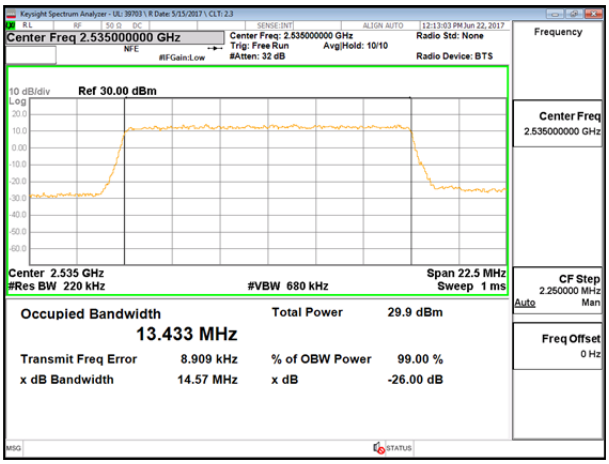
LTE B7 5MHz 16QAM Middle Channel



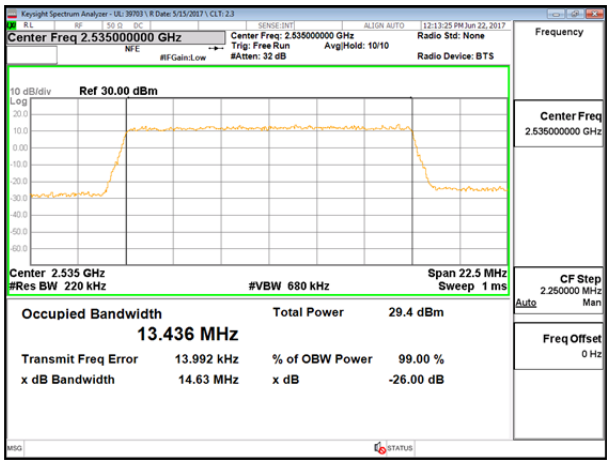
LTE B7 10MHz QPSK Middle Channel



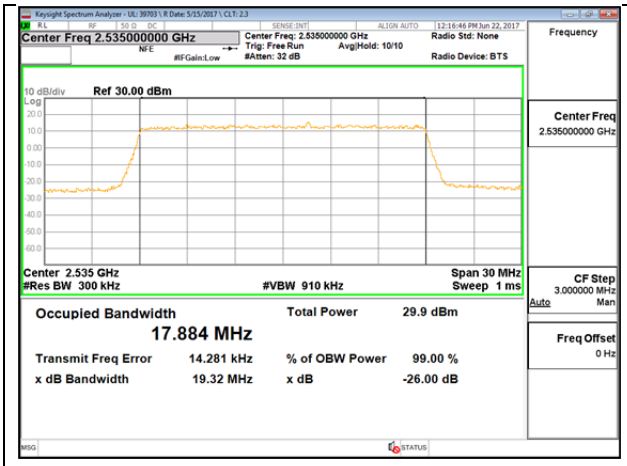
LTE B7 10MHz 16QAM Middle Channel



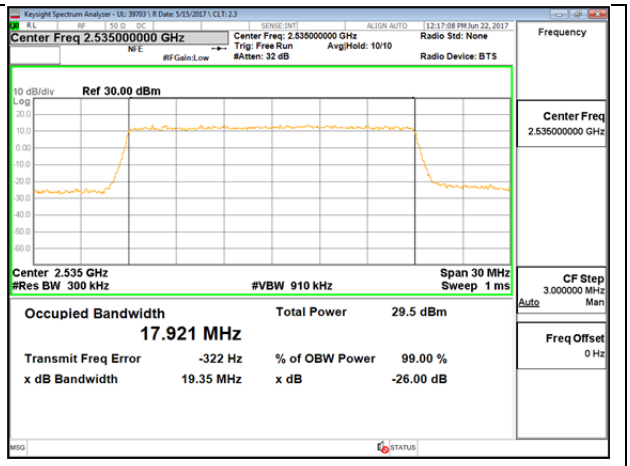
LTE B7 15MHz QPSK Middle Channel



LTE B7 15MHz 16QAM Middle Channel



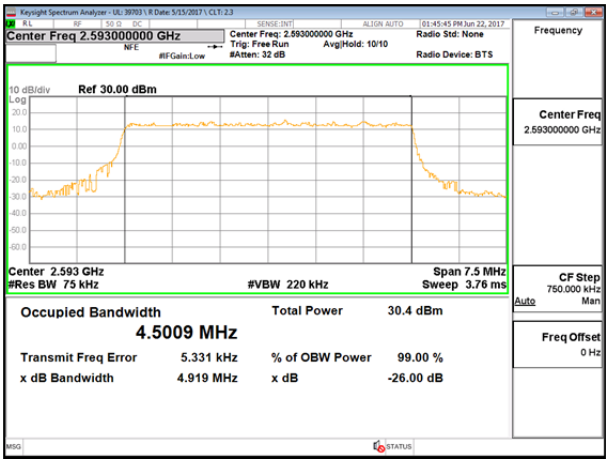
LTE B7 20MHz QPSK Middle Channel



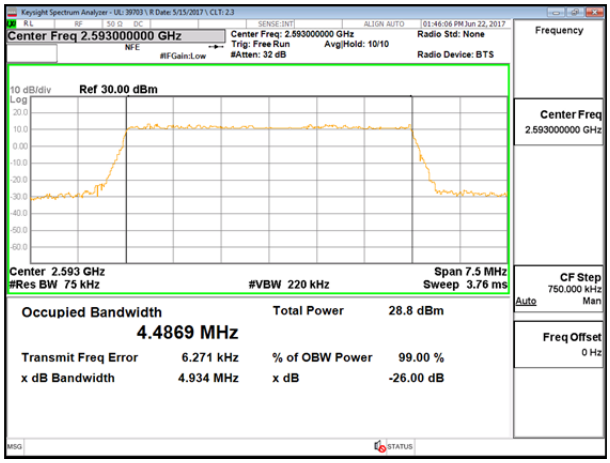
LTE B7 20MHz 16QAM Middle Channel

LTE Band 41

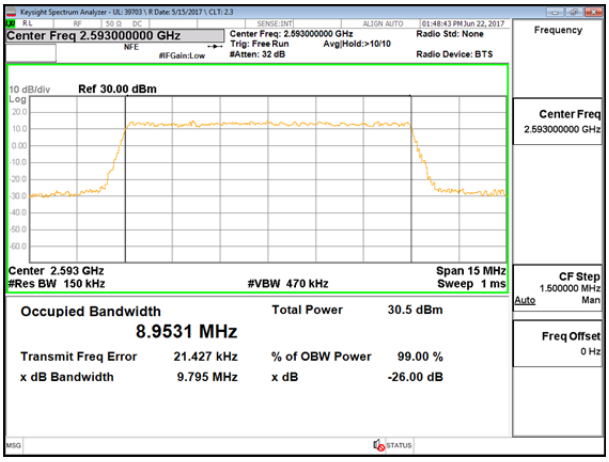
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE41	5	QPSK	25/0	2498.5	4.47	4.91
			25/0	2593	4.50	4.92
			25/0	2687.5	4.51	5.04
		16QAM	25/0	2498.5	4.48	4.88
			25/0	2593	4.49	4.93
			25/0	2687.5	4.47	4.84
	10	QPSK	50/0	2501	8.96	9.63
			50/0	2593	8.95	9.8
			50/0	2685	8.95	9.77
		16QAM	50/0	2501	8.95	9.75
			50/0	2593	8.94	9.69
			50/0	2685	8.93	9.62
	15	QPSK	75/0	2503.5	13.41	14.47
			75/0	2593	13.43	14.48
			75/0	2682.5	13.43	14.49
		16QAM	75/0	2503.5	13.43	14.57
			75/0	2593	13.42	14.44
			75/0	2682.5	13.41	14.58
	20	QPSK	100/0	2506	17.9	19.13
			100/0	2593	17.89	19.25
			100/0	2680	17.85	19.14
		16QAM	100/0	2506	17.83	19.16
			100/0	2593	17.89	19.23
			100/0	2680	17.85	19.02



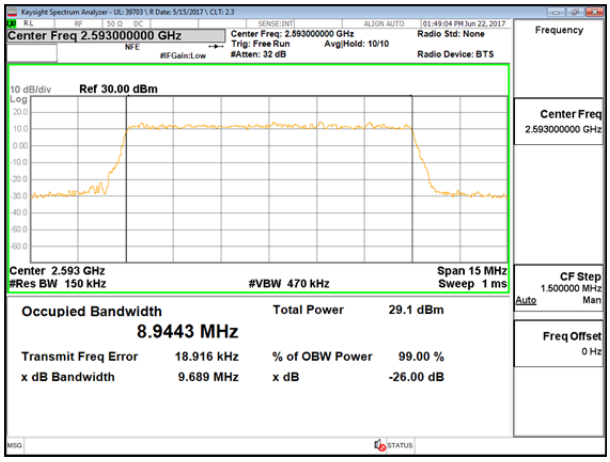
LTE B41 5MHz QPSK Middle Channel



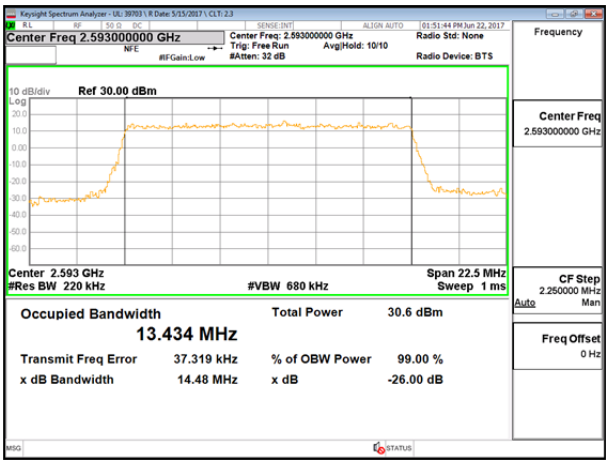
LTE B41 5MHz 16QAM Middle Channel



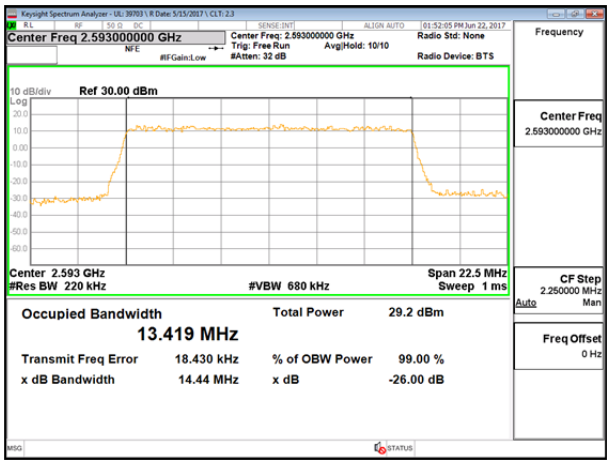
LTE B41 10MHz QPSK Middle Channel



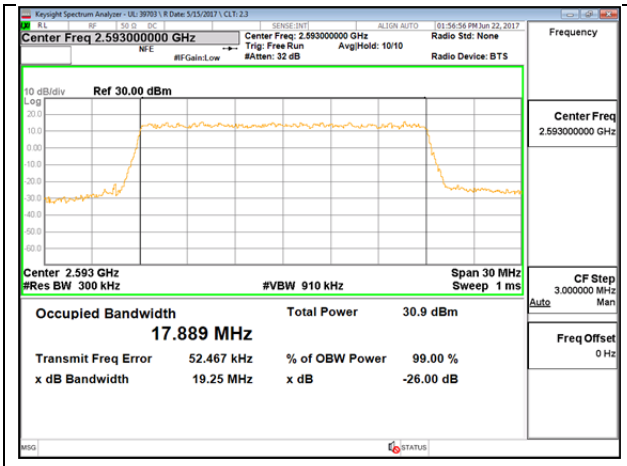
LTE B41 10MHz 16QAM Middle Channel



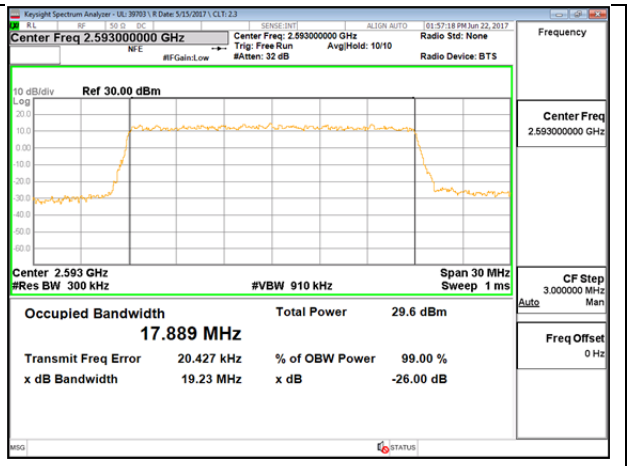
LTE B41 15MHz QPSK Middle Channel



LTE B41 15MHz 16QAM Middle Channel



LTE B41 20MHz QPSK Middle Channel



LTE B41 20MHz 16QAM Middle Channel

14. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §27. 53

FCC LIMITS

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.

Part 27: (m)(4) (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.

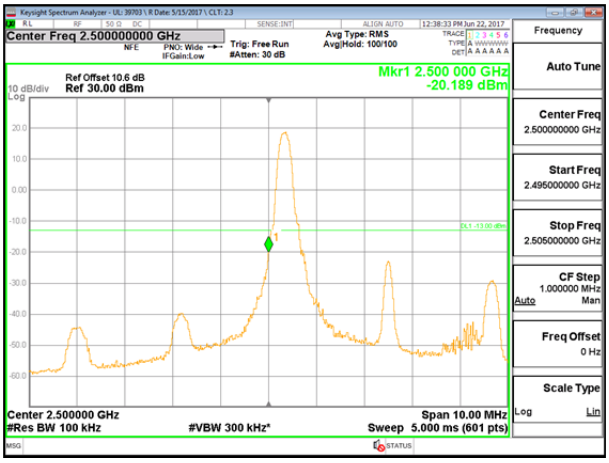
TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The transmitter output was connected to an Agilent 8960 or 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:

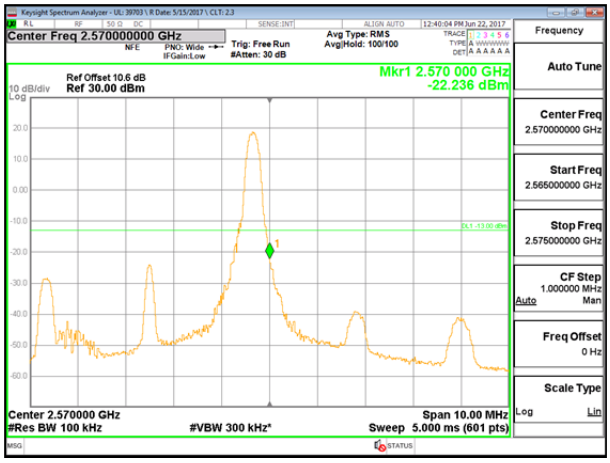
- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

14.1. BAND EDGE PLOTS

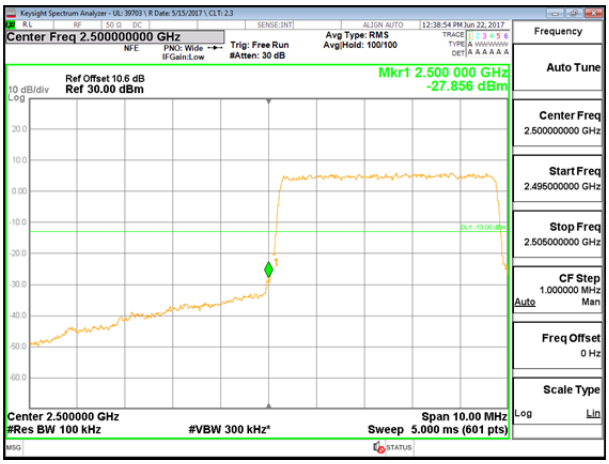
LTE Band 7



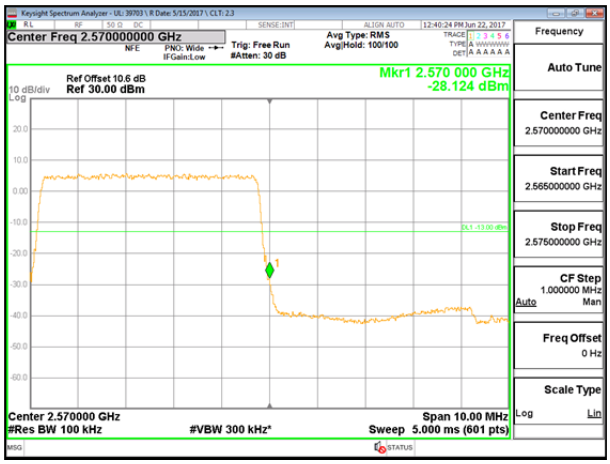
LTE B7 5MHz QPSK Low Channel 1RB



LTE B7 5MHz QPSK High Channel 1RB



LTE B7 5MHz QPSK Low Channel FRB



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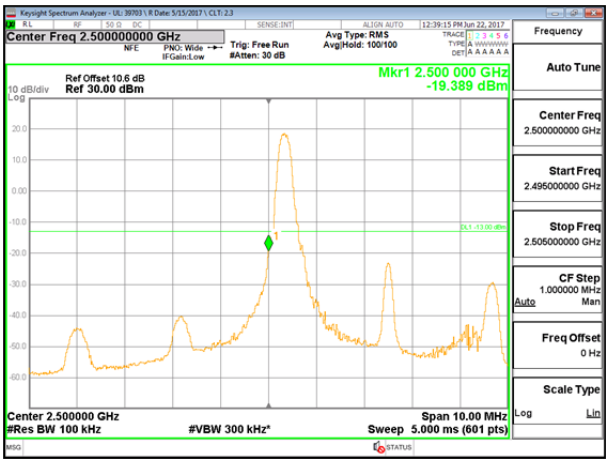
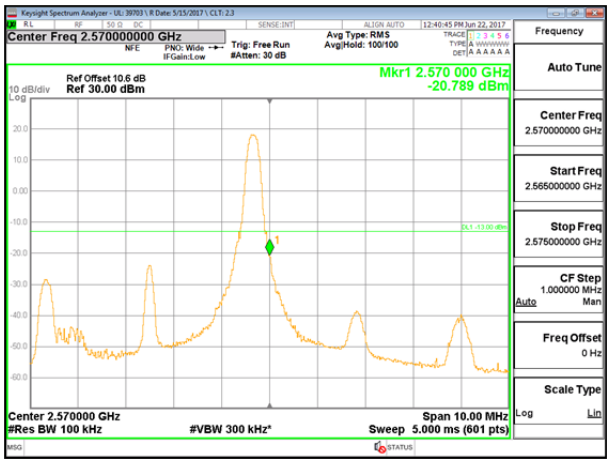
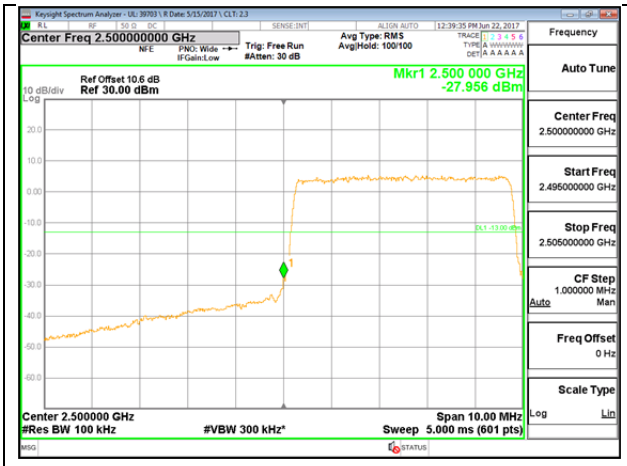


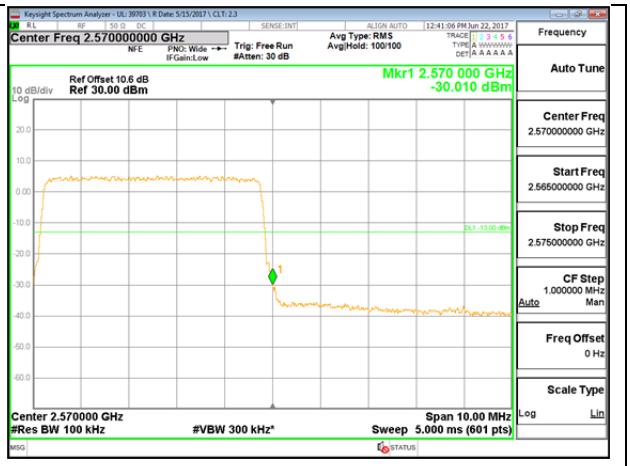
LTE B7 5MHz 16QAM Low Channel 1RB



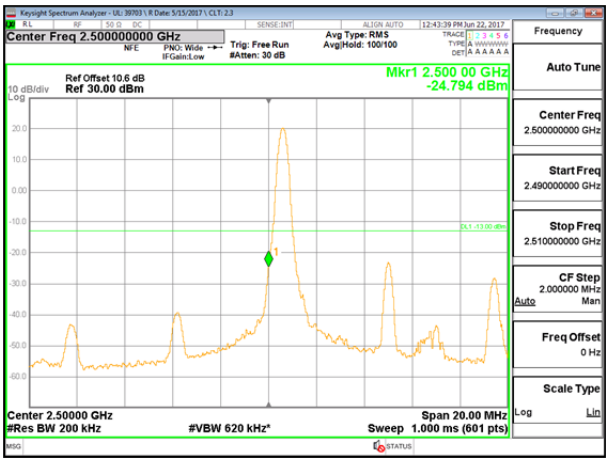
LTE B7 5MHz 16QAM High Channel 1RB



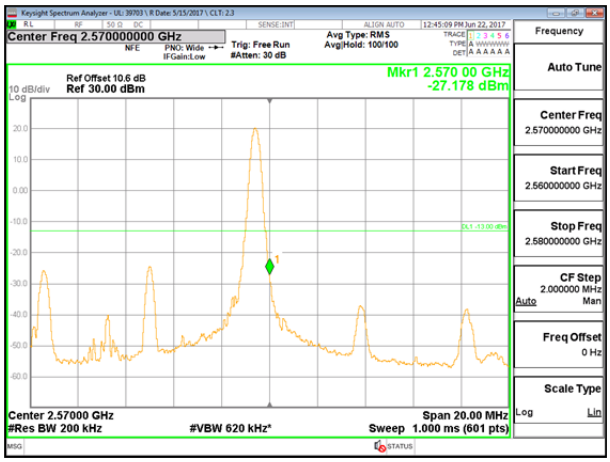
LTE B7 5MHz 16QAM Low Channel FRB



LTE B7 5MHz 16QAM High Channel FRB



LTE B7 10MHz QPSK Low Channel 1RB



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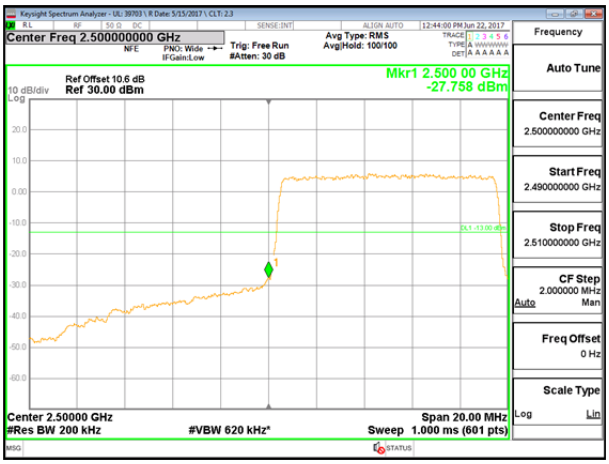
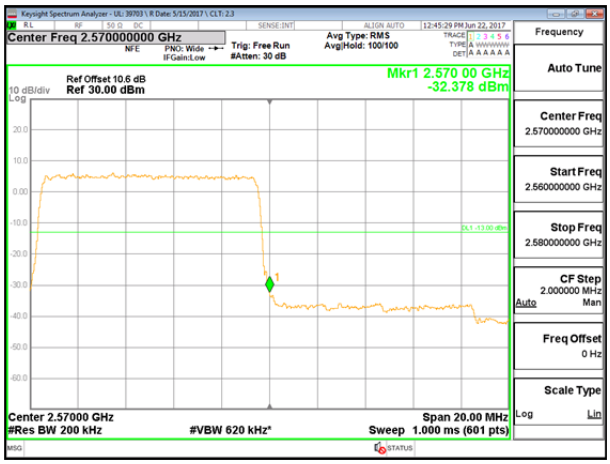
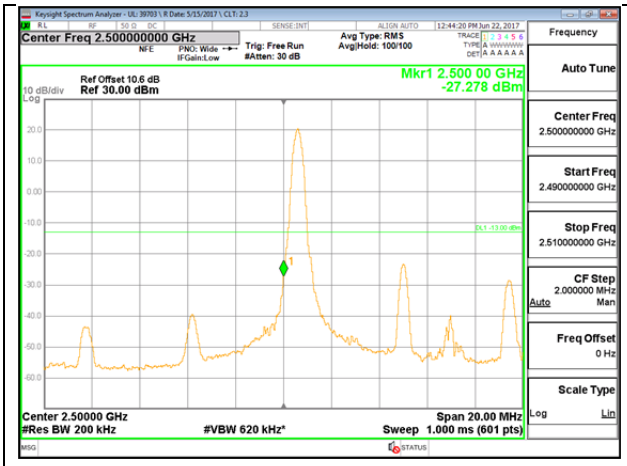


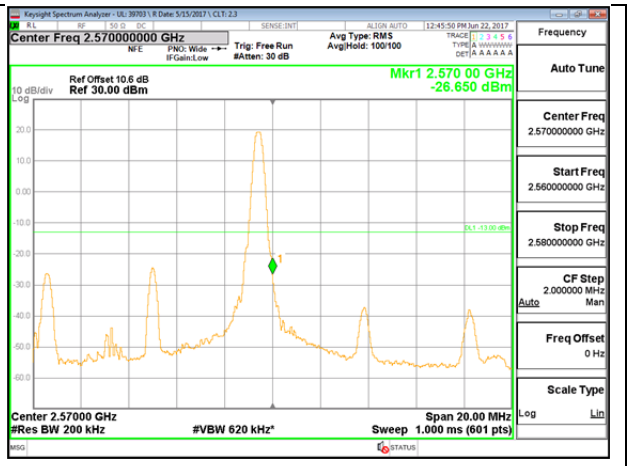
LTE B7 10MHz QPSK Low Channel FRB



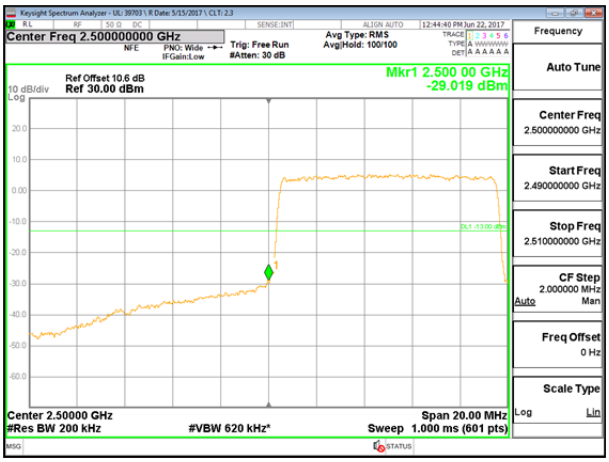
LTE B7 10MHz QPSK High Channel FRB



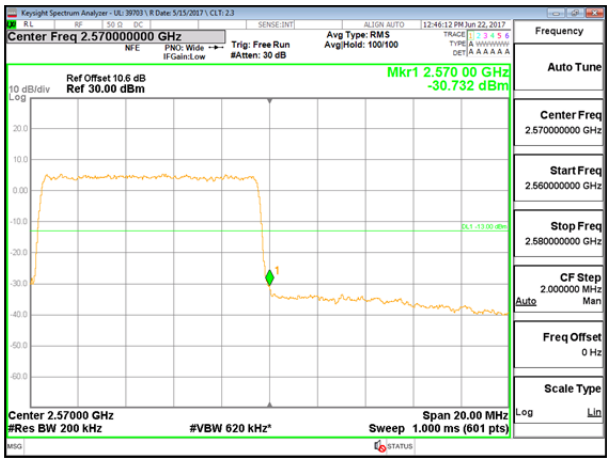
LTE B7 10MHz 16QAM Low Channel 1RB



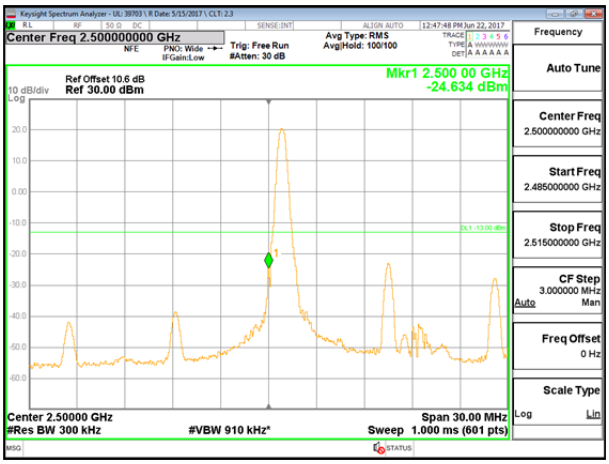
LTE B7 10MHz 16QAM High Channel 1RB



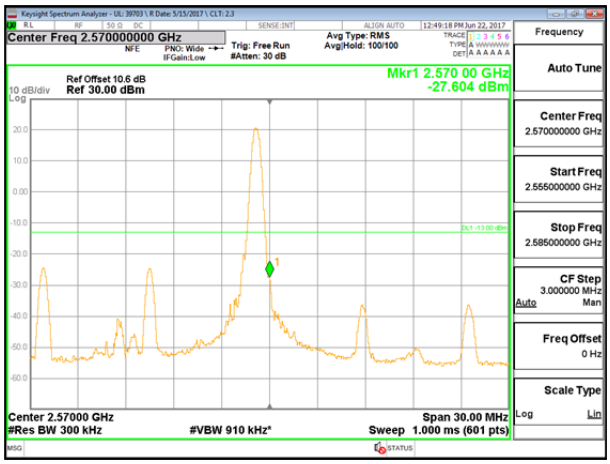
LTE B7 10MHz 16QAM Low Channel FRB



LTE B7 10MHz 16QAM High Channel FRB



LTE B7 15MHz QPSK Low Channel 1RB



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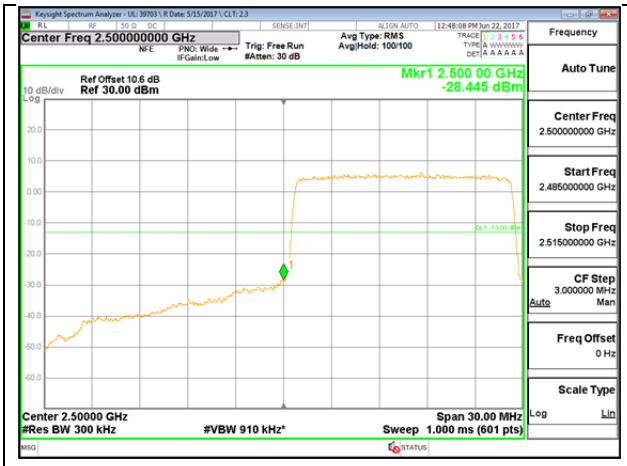
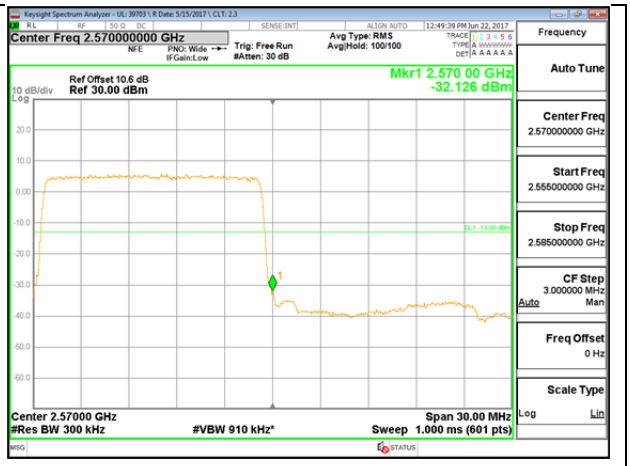
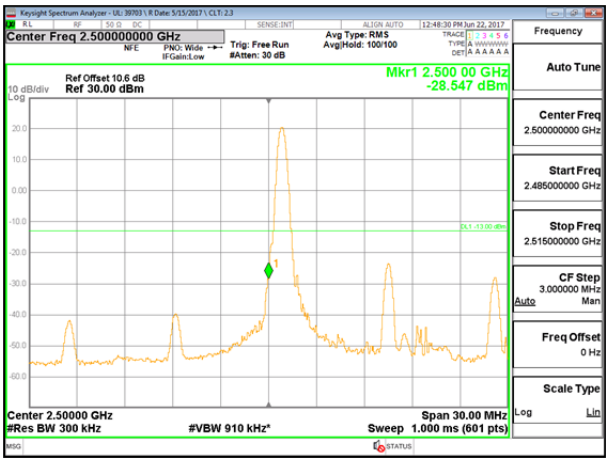


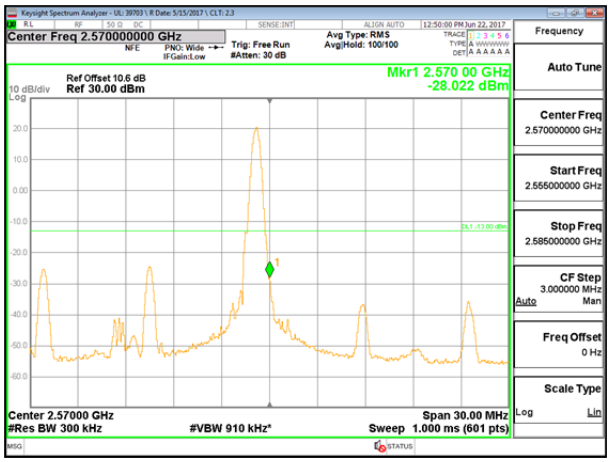
LTE B7 15MHz QPSK Low Channel FRB



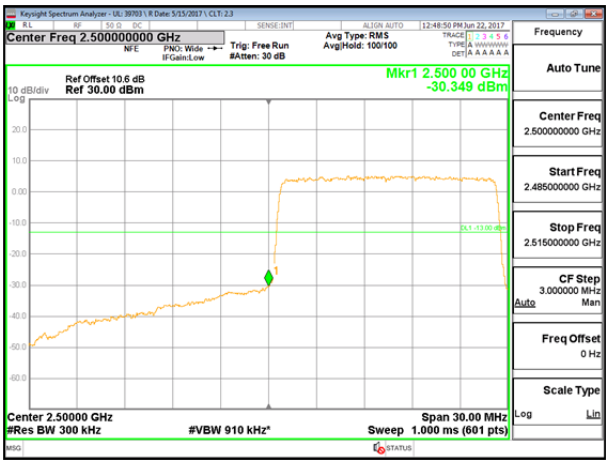
LTE B7 15MHz QPSK High Channel FRB



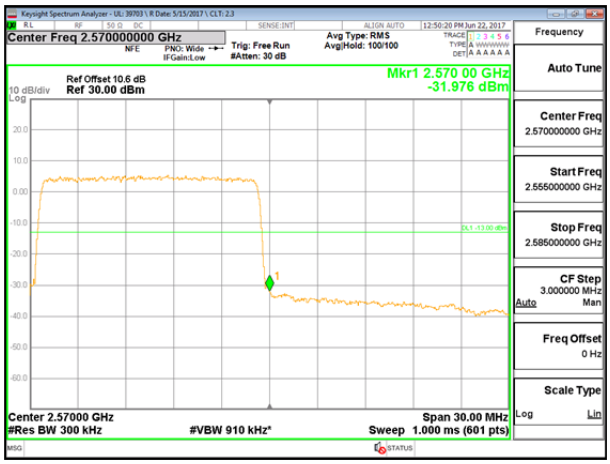
LTE B7 15MHz 16QAM Low Channel 1RB



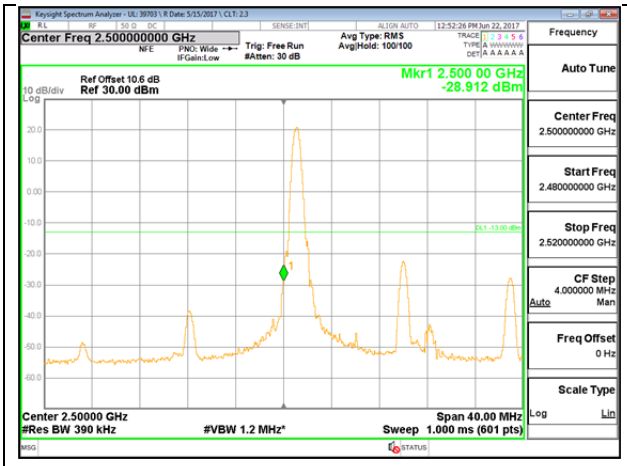
LTE B7 1MHz 16QAM High Channel 1RB



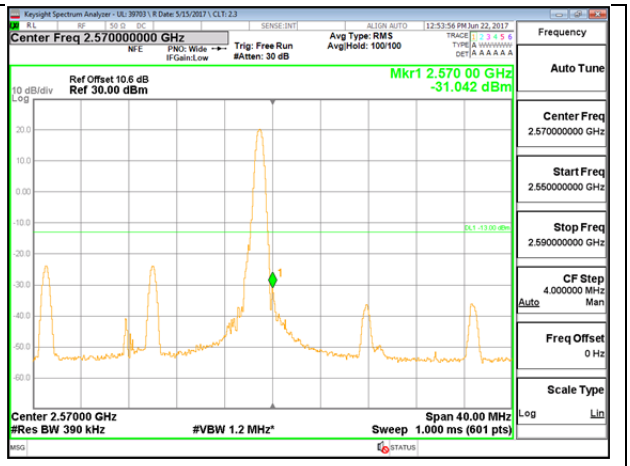
LTE B7 15MHz 16QAM Low Channel FRB



LTE B7 15MHz 16QAM High Channel FRB



LTE B7 20MHz QPSK Low Channel 1RB



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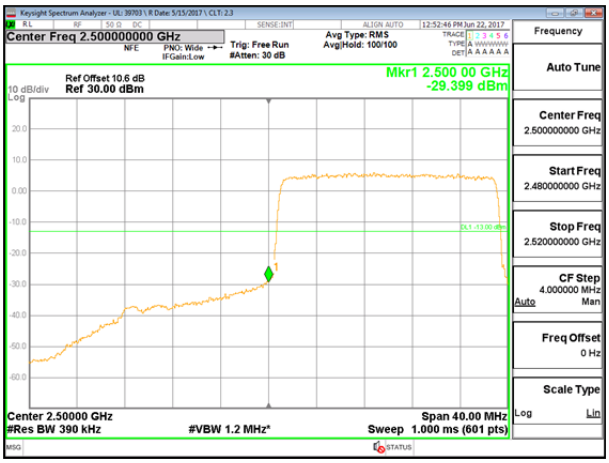

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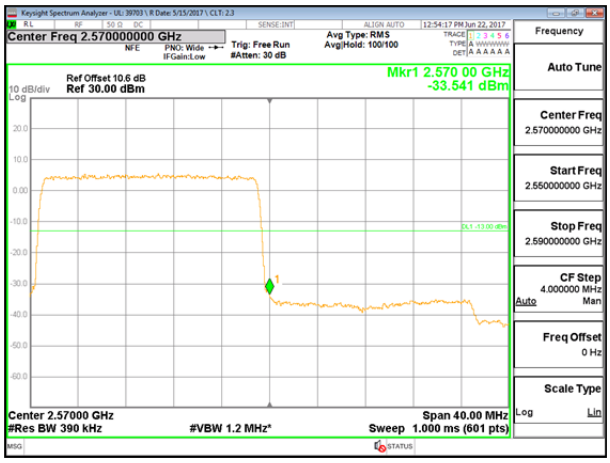
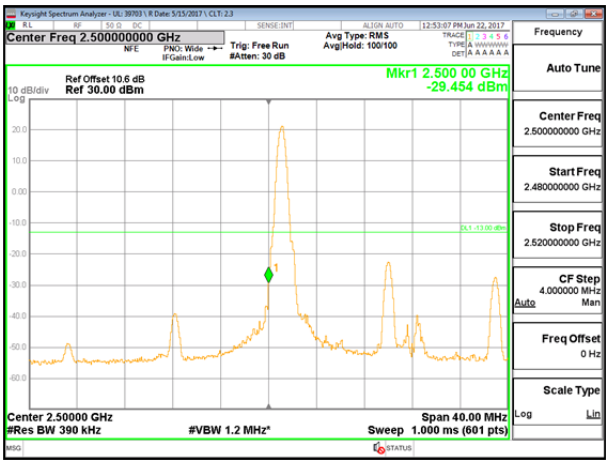


LTE B7 20MHz QPSK High Channel FRB



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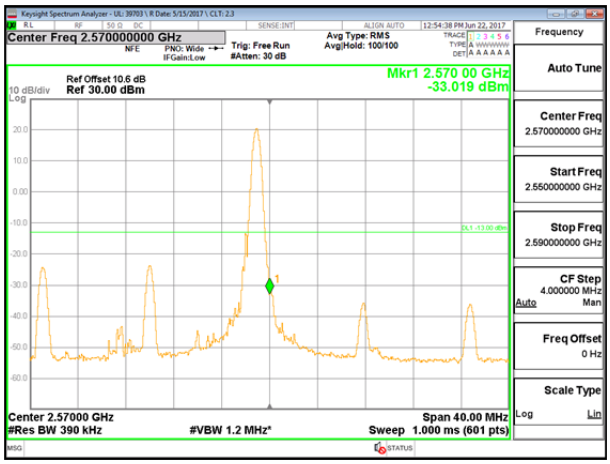

LTE B7 20MHz 16QAM High Channel 1RB