FCC & IC TEST REPORT

FCC ID: 2ABNA-P9IIHH, IC: 11648A-P9IIHH

On Behalf of

Guangzhou Geoelectron Science & Technology Company Limited

P9II Handheld

Model No.: P9II PRO, P9II STD

Prepared for	:	Guangzhou Geoelectron Science & Technology Company Limited
Address	:	No.704, 7/F, Building C, No.7, Cai Pin Road, Science City, Luogang District, Guangzhou, China

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number	:	T1881637 24
Date of Receipt	:	October 23, 2018
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Date of Report	:	February 20, 2019
Version Number	:	REV0

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TEST REPORT DECLARATION

Applicant	:	Guangzhou Geoelectron Science & Technology Company Limited
Address	:	No.704, 7/F, Building C, No.7, Cai Pin Road, Science City, Luogang District, Guangzhou, China
Manufacturer	:	Guangzhou Geoelectron Science & Technology Company Limited
Address	:	No.704, 7/F, Building C, No.7, Cai Pin Road, Science City, Luogang District, Guangzhou, China
EUT Description	:	P9II Handheld
		(A) Model No. : P9II PRO, P9II STD
		(B) Trademark : N/A

Measurement Standard Used:

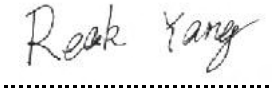
FCC CFR Title 47 Part 2
FCC CFR Title 47 Part22 Subpart H
FCC CFR Title 47 Part24 Subpart E
FCC CFR Title 47 Part27
FCC CFR Title 47 Part90
ANSI C63.26:2015

RSS-130 issue 1 October 2013
RSS-132 issue 3 January 2013
RSS-133 issue 6 January 2018
RSS-139 Issue 3, July 2015
RSS-199 issue 3 December 2016
RSS-Gen Issue5, April 2018
TIA/EIA-603-D:2010

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:	Reak Yang Project Engineer	
Approved by (name + signature).....:	Simple Guan Project Manager	
Date of issue…… ……..:	February 20, 2019	

Revision History

Revision	Issue Date	Revisions	Revised By
00	February 20, 2019	Initial released Issue	Simple Guan

1 Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093 RSS-102 Issue 5	Pass* (Please refer to SAR Report)
RF Output Power	Part 2.1046 part22.913(a) Part 24.232 (c) Part 27.50 (d)(4) Part 90.635 RSS-130 (4.4) RSS-132 (5.4) RSS-133 (6.4) RSS-139(6.5) RSS-199(4.4)	Pass
Peak-To-Average Ratio	Part 2.1046 ANSI/TIA-603-D	Pass
Modulation Characteristics	Part 2.1047 ANSI/TIA-603-D RSS-130 (4.1) RSS-132 (5.2) RSS-133 (6.2) RSS-139(6.2) RSS-199(4.1)	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 part22.913(a) Part 24.238 Part 27.53(a) RSS-130 (3.1) RSS-132 (3.1) RSS-133 (3.1) RSS-139(3.1) RSS-199(4.2)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 part22.913(a) Part 24.238 (a) Part 27.53 (h) Part 90.691 RSS-130 (4.6) RSS-132 (5.5) RSS-133 (6.5.1) RSS-139(6.6) RSS-199(4.5)	Pass

Field Strength of Spurious Radiation	Part 2.1053 part22.913(a) Part 24.238 (a) Part 27.53 (h) Part 90.691 RSS-130 (4.6) RSS-132 (5.5) RSS-133 (6.5.1) RSS-139(6.6) RSS-199(4.5)	Pass
Out of band emission, Band Edge	part22.913(a) Part 24.238 (a) Part 27.53(h) Part 90.691 RSS-130 (4.6) RSS-132 (5.5) RSS-133 (6.5.1) RSS-139(6.6) RSS-1994.5()	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b) RSS-130 (4.3) RSS-132 (5.3) RSS-133 (6.3) RSS-139(6.4) RSS-199(4.3)	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2) RSS-130 (4.3) RSS-132 (5.3) RSS-133 (6.3) RSS-139(6.4) RSS-199(4.3)	Pass

Pass: The EUT complies with the essential requirements in the standard.

2 General Information

2.1 General Description of EUT

Description/PMN:	P9II Handheld
Model Number /HVIN(s):	P9II PRO, P9II STD
DIFF.:	They are all the same, except that P9II PRO with M8T GPS receiver, P9II STD without M8T GPS receiver, the result of this report belongs to P9II PRO.
Support Networks:	LTE
Support Bands:	LTE Band 2, LTE Band 4, LTE Band 5, LTE Band 7, LTE Band 12, LTE Band 13, LTE Band 25, LTE Band 26
Channel Bandwidth:	LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 12: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 25: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz
TX Frequency:	LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5MHz-2567.5MHz LTE Band 12: 699.7MHz ~ 715.3MHz LTE Band 13: 779.5MHz ~ 784.5MHz. LTE Band 25: 1850.7MHz ~ 1914.3MHz. LTE Band 26: 814.7MHz ~ 848.3MHz.
Modulation type:	QPSK, 16QAM
Antenna type:	Internal antenna
Antenna gain:	-0.72dBi(max.) For LTE Band 2; -4.70dBi(max.) For LTE Band 4; -3.20dBi(max.) For LTE Band 5; -1.12dBi(max.) For LTE Band 7; -10.86dBi(max.) For LTE Band 12; -10.86dBi(max.) For LTE Band 13; -0.72dBi(max.) For LTE Band 25; -10.86dBi(max.) For LTE Band 26.
Power supply:	DC 7.2V from battery, DC 15V For Charging
Software version:	V1.0
Hardware version/FVIN:	V1.3
Remark 1:The worst-case simultaneous transmission configuration was evaluated with no non-compliance found. Results in this report are only for 4G function, and there is no other transmitter involved. Remark 2: Band 26 is not applicable to ISED portion. Remark 3: For Band 26, the channel frequency of 814MHz-824MHz compliance with FCC Part 90S, 824MHz-849MHz compliance with FCC Part 22 H.	

2.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 subpart H, Part 24 subpart E, Part 27 and Part 90 of the FCC CFR 47 Rules and RSS-130, RSS-132, RSS-133, RSS-139 and RSS-199 Rules.

2.3 Test Facility

Shenzhen Alpha Product Testing Co., Ltd

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961
Designation Number: CN1236

July 25, 2017 Certificated by IC
Registration Number: 12135A

2.4 Measurement Uncertainty

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB(Polarize: V)
	2.57dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.16dB(Polarize: H)
	4.13dB(Polarize: V)
Uncertainty for radio frequency	5.4×10-8
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2℃
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3 Test Instruments list

Equipment	Manufacturer	Model No.	Serial No.	Last cal.	Cal Interval
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2018.04.13	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2018.04.13	2Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2018.09.26	2Year
Filter	KANGMAI	ZLPF-LDC-1000-1959	1209002075	2018.09.21	1Year
Filter	WAINWRIGHT	WHKX2.80 /18G-12SS	SN1	2018.09.21	1Year
Filter	WAINWRIGHT	WHKX1.0G/15G -10SS	SN40	2018.09.21	1Year
RF Cable	Resenberger	Cable 4	N/A	2018.09.21	1Year
CMU200	ROHDE&SCHWARZ	CMU200	116785	2018.09.11	1Year
CMW500	ROHDE&SCHWARZ	CMW500	1201.0002K50-117239-sM	2018.09.21	1Year
Signal Analyzer	Agilent	N9020A	MY499100060	2018.09.11	1Year
vector Signal Generator	Agilent	N5182A	MY49060042	2018.09.11	1Year
vector Signal Generator	Agilent	E4438C	US44271917	2018.09.11	1Year
Amplifier	Agilent	8449B	3008A02664	2018.09.21	1Year
Test Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-102082-Wa	2018.09.21	1Year
9*6*6 anechoic	CHENYU	9*6*6	N/A	/	/
RF Cable	Resenberger	Cable 1	N/A	2018.09.21	1Year
RF Cable	Resenberger	Cable 2	N/A	2018.09.21	1Year
RF Cable	Resenberger	Cable 3	N/A	2018.09.21	1Year
Power Sensor	Power Radio	RPR3006W	15100041SNO91	2018.09.21	1Year
20dB Attenuator	ICPROBING	IATS1	82347	2018.09.21	1Year
POWER DIVIDER	Mini-circuits	PD-2SF-0010	N/A	2018.09.21	1Year
POWER DIVIDER	Mini-circuits	PD-2SF-0010	N/A	2018.09.21	1Year
Temperature& Humidity test chamber	GZGONGWEN	GDS-250	080821	2018.10.21	1Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1207)	2018.04.13	2Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-627	2018.09.24	2Year

4 System test configuration

4.1 Test mode

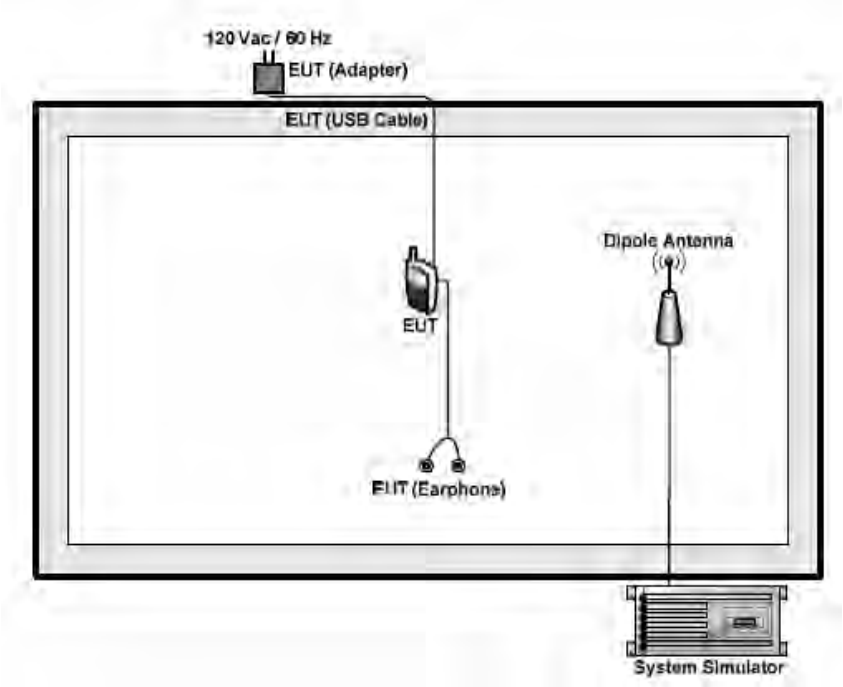
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
LTE Band 2	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 4	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 5	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 7	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 12	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 13	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 25	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link
LTE Band 26	■ QPSK link, 16QAM link	■ QPSK link, 16QAM link

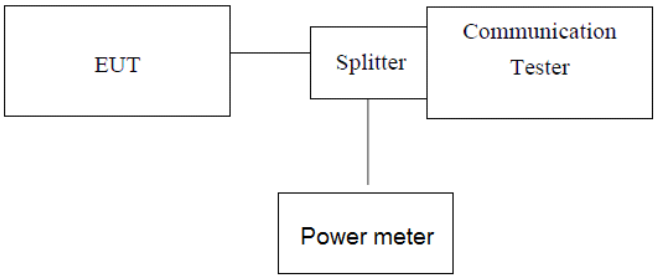
Note: Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas License Digital Systems v03r1 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

4.2 Configuration of Tested System



4.3 Conducted Peak Output Power

Test Requirement:	FCC part22.913(a), FCC part24.232(b), FCC part 27.50 and FCC part 90.635, RSS-130 (4.4), RSS-132 (5.4), RSS-133 (6.4), RSS-139(6.5) and RSS-199(4.4)
Test Method:	KDB 971168 D01 v03r1 clause 5.1, FCC part2.1046, ANSI/TIA-603-D, ANSI C63.26 clause 5.2.3
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data

LTE Band2

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	1850.7	1	0	22.78	22.74
		1	3	22.85	22.57
		1	5	22.67	22.61
		3	0	22.81	22.49
		3	2	22.85	22.40
		3	3	22.75	22.54
		6	0	22.73	22.62
	1880.0	1	0	22.89	22.79
		1	3	23.13	22.39
		1	5	22.86	22.65
		3	0	22.93	22.09
		3	2	22.92	22.24
		3	3	22.81	22.18
		6	0	22.89	22.92
	1909.3	1	0	22.93	22.55
		1	3	22.97	22.76
		1	5	22.86	22.20
		3	0	22.98	22.66
		3	2	22.94	22.56
		3	3	22.94	22.86
		6	0	22.87	22.77
3	1851.5	1	0	22.75	22.30
		1	7	22.88	22.91
		1	14	22.88	22.63
		8	0	21.80	21.51
		8	4	21.83	21.00
		8	7	21.81	21.09
		15	0	21.71	21.61
	1880.0	1	0	22.90	22.04
		1	7	22.92	22.72
		1	14	22.72	21.94
		8	0	21.95	21.70
		8	4	21.90	21.12
		8	7	21.73	21.47
		15	0	21.87	21.18
	1908.5	1	0	22.86	22.27
		1	7	23.03	22.73
		1	14	22.86	22.09
		8	0	22.90	22.08
		8	4	22.92	22.85
		8	7	22.87	22.59
		15	0	22.81	22.56
5	1852.5	1	0	22.75	22.55
		1	12	22.94	22.39
		1	24	22.73	22.73

		12	0	21.72	21.77
		12	6	21.84	21.76
		12	13	21.77	21.45
		25	0	21.84	21.69
	1880.0	1	0	22.96	22.69
		1	12	22.84	22.43
		1	24	22.64	21.81
		12	0	22.01	21.92
		12	6	21.98	21.58
		12	13	21.84	21.62
		25	0	21.96	21.70
	1907.5	1	0	22.82	22.10
		1	12	22.90	22.86
		1	24	22.85	22.29
		12	0	22.88	22.62
		12	6	22.78	22.53
		12	13	22.74	21.95
		25	0	22.87	22.51
10	1855.0	1	0	22.96	22.25
		1	24	22.97	22.62
		1	49	22.96	22.26
		25	0	21.90	21.45
		25	12	21.95	21.29
		25	25	22.05	22.00
		50	0	22.09	21.65
	1880.0	1	0	22.82	22.66
		1	24	22.87	22.57
		1	49	22.62	22.44
		25	0	22.39	22.03
		25	12	22.09	22.07
		25	25	21.88	21.48
		50	0	22.03	21.40
	1905.0	1	0	22.83	22.54
		1	24	22.89	22.57
		1	49	22.94	22.68
		25	0	22.88	22.51
		25	12	23.03	22.57
		25	25	22.95	22.57
		50	0	22.95	22.78
15	1857.5	1	0	22.67	22.64
		1	37	22.85	22.76
		1	74	22.47	22.22
		37	0	22.33	21.86
		37	18	22.09	21.46
		37	38	21.62	20.95
		75	0	22.01	21.48
	1880.0	1	0	22.91	22.92
		1	37	22.93	22.78
		1	74	23.00	22.75
		37	0	22.35	21.55

		37	18	22.74	22.56
		37	38	22.90	22.66
		75	0	22.61	22.56
	1902.5	1	0	22.99	22.27
		1	37	22.82	22.01
		1	74	22.74	22.54
		37	0	21.62	20.98
		37	18	22.02	21.86
		37	38	22.49	22.23
		75	0	22.27	22.09
20	1860.0	1	0	22.89	22.33
		1	49	22.81	22.24
		1	99	22.36	22.39
		50	0	22.40	21.68
		50	25	22.19	21.90
		50	50	21.56	20.77
		100	0	21.97	21.89
	1880.0	1	0	22.61	22.59
		1	49	22.73	22.17
		1	99	23.04	23.01
		50	0	22.00	21.73
		50	25	22.38	22.32
		50	50	22.62	21.94
		100	0	22.34	21.95
	1900.0	1	0	22.67	22.64
		1	49	22.85	22.76
		1	99	22.47	22.22
		50	0	22.33	21.86
		50	25	22.09	21.46
		50	50	21.62	20.95
		100	0	22.01	21.48

LTE Band4

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	1710.7	1	0	23.43	23.00
		1	3	23.54	22.77
		1	5	23.49	23.33
		3	0	23.28	22.77
		3	2	23.19	22.63
		3	3	22.99	22.63
		6	0	22.19	21.51
	1732.5	1	0	23.21	22.64
		1	3	23.30	22.72
		1	5	23.01	22.45
		3	0	23.16	22.80
		3	2	23.06	22.96
		3	3	23.20	22.74
		6	0	22.06	22.03
	1754.3	1	0	23.19	22.89
		1	3	23.31	23.04
		1	5	23.12	23.10
		3	0	23.19	23.08
		3	2	23.24	23.15
		3	3	23.20	23.11
		6	0	22.15	22.17
3	1711.5	1	0	23.46	23.15
		1	7	23.74	23.19
		1	14	23.41	22.92
		8	0	22.12	21.69
		8	4	21.99	21.59
		8	7	22.44	22.42
		15	0	22.27	21.73
	1732.5	1	0	23.18	22.35
		1	7	23.39	23.03
		1	14	23.07	22.54
		8	0	22.22	21.72
		8	4	22.23	21.87
		8	7	21.97	21.19
		15	0	22.20	21.54
	1753.5	1	0	23.34	22.54
		1	7	23.48	23.26
		1	14	23.31	22.80
		8	0	22.37	22.08
		8	4	22.33	21.94
		8	7	22.41	21.63
		15	0	22.39	22.39
5	1712.5	1	0	23.32	23.30
		1	12	23.39	22.90

		1	24	23.10	22.34
		12	0	22.90	22.87
		12	6	22.89	22.12
		12	13	22.95	22.99
		25	0	22.93	22.77
	1732.5	1	0	22.98	22.19
		1	12	23.01	22.61
		1	24	22.61	22.20
		12	0	22.11	21.34
		12	6	22.04	21.63
		12	13	22.47	22.28
		25	0	22.08	22.05
	1752.5	1	0	22.86	22.19
		1	12	23.37	23.35
		1	24	23.13	22.42
		12	0	22.07	21.32
		12	6	22.34	21.96
		12	13	22.48	22.23
		25	0	22.51	21.98
10	1715.0	1	0	23.35	22.74
		1	24	23.72	22.99
		1	49	23.76	23.09
		25	0	22.30	21.44
		25	12	22.41	21.79
		25	25	22.37	22.35
		50	0	22.33	21.68
	1732.5	1	0	23.43	23.25
		1	24	23.34	23.19
		1	49	22.63	22.30
		25	0	22.55	21.75
		25	12	22.48	22.40
		25	25	22.22	21.81
		50	0	22.43	21.84
	1750.0	1	0	22.99	22.35
		1	24	23.49	22.74
		1	49	23.44	22.98
		25	0	22.20	21.87
		25	12	22.29	22.03
		25	25	22.41	21.97
		50	0	22.29	21.52
15	1717.5	1	0	23.35	23.31
		1	37	23.32	22.94
		1	74	23.22	23.19
		37	0	22.55	22.48
		37	18	22.54	22.48
		37	38	22.61	21.82
		75	0	22.38	21.57
	1732.5	1	0	23.57	22.72
		1	37	23.69	23.11
		1	74	22.73	22.30

		37	0	22.59	22.17
		37	18	22.46	22.43
		37	38	22.29	21.85
		75	0	22.50	21.83
	1747.5	1	0	22.98	22.91
		1	37	23.28	22.43
		1	74	23.46	23.45
		37	0	22.01	21.69
		37	18	22.18	22.00
		37	38	22.33	21.55
		75	0	22.16	21.50
20	1720.0	1	0	23.46	23.04
		1	49	23.66	22.84
		1	99	23.79	23.21
		50	0	22.59	22.64
		50	25	22.78	22.11
		50	50	22.84	22.20
		100	0	22.72	22.41
	1732.5	1	0	23.62	23.43
		1	49	23.72	23.20
		1	99	22.81	22.22
		50	0	22.57	22.10
		50	25	22.35	21.75
		50	50	22.29	21.87
		100	0	22.40	22.02
	1745.0	1	0	23.05	22.82
		1	49	23.28	22.81
		1	99	23.37	23.36
		50	0	22.43	22.34
		50	25	22.07	21.48
		50	50	22.10	21.89
		100	0	22.47	22.34

LTE Band5

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	824.7	1	0	22.34	21.99
		1	3	22.45	21.91
		1	5	22.02	21.66
		3	0	22.81	22.39
		3	2	22.26	21.47
		3	3	22.34	22.14
		6	0	22.17	21.88
	836.5	1	0	22.61	22.42
		1	3	22.65	21.82
		1	5	22.66	22.54
		3	0	22.70	22.51
		3	2	22.30	21.89
		3	3	22.66	22.30
		6	0	22.77	22.59
	848.3	1	0	22.52	22.41
		1	3	22.05	22.08
		1	5	22.52	22.54
		3	0	22.55	22.29
		3	2	22.63	22.33
		3	3	22.56	22.15
		6	0	22.25	21.66
3	825.5	1	0	22.14	21.65
		1	7	22.62	22.07
		1	14	22.08	21.98
		8	0	22.22	21.50
		8	4	22.87	22.15
		8	7	22.53	22.03
		15	0	22.45	22.34
	836.5	1	0	22.18	21.49
		1	7	22.51	22.04
		1	14	22.38	21.78
		8	0	22.75	22.80
		8	4	22.41	21.61
		8	7	22.19	21.72
		15	0	22.42	22.06
	847.5	1	0	22.37	21.92
		1	7	22.57	22.06
		1	14	22.19	21.30
		8	0	22.72	22.24
		8	4	22.64	22.54
		8	7	22.19	21.85
		15	0	22.37	21.94
5	826.5	1	0	22.59	22.43
		1	12	22.37	21.66
		1	24	22.38	21.92

		12	0	22.38	21.89
		12	6	22.06	22.01
		12	13	22.35	22.06
		25	0	22.87	22.62
	836.5	1	0	22.40	21.87
		1	12	22.57	22.54
		1	24	22.75	22.25
		12	0	22.61	21.95
		12	6	22.87	22.68
		12	13	22.50	21.85
		25	0	22.01	22.09
	846.5	1	0	22.28	21.50
		1	12	22.14	21.94
		1	24	22.65	22.56
		12	0	22.39	22.65
		12	6	22.46	22.15
		12	13	22.14	21.56
		25	0	22.61	21.95
10	829.0	1	0	22.48	22.25
		1	24	22.99	22.81
		1	49	23.04	22.64
		25	0	22.70	22.35
		25	12	22.71	22.03
		25	25	23.02	22.45
		50	0	22.82	22.01
	836.5	1	0	23.03	22.51
		1	24	22.77	22.11
		1	49	23.10	22.91
		25	0	23.00	23.23
		25	12	22.84	21.99
		25	25	22.88	22.83
		50	0	22.53	21.98
	844.0	1	0	23.03	22.89
		1	24	23.53	22.58
		1	49	23.12	22.89
		25	0	22.58	22.18
		25	12	22.89	22.24
		25	25	23.01	22.67
		50	0	22.89	22.17

LTE Band7

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
5	2502.5	1	0	22.87	22.83
		1	12	22.81	22.00
		1	24	22.25	21.40
		12	0	22.67	22.63
		12	6	22.68	22.32
		12	13	22.33	21.21
		25	0	22.76	21.40
	2535.0	1	0	22.83	22.41
		1	12	22.73	21.90
		1	24	22.31	21.45
		12	0	22.76	22.05
		12	6	22.80	22.50
		12	13	22.47	21.39
		25	0	22.53	21.35
	2567.5	1	0	22.53	22.06
		1	12	22.59	22.17
		1	24	21.97	21.10
		12	0	22.59	22.54
		12	6	22.70	22.61
		12	13	22.06	21.14
		25	0	22.51	21.21
10	2505.0	1	0	23.25	22.95
		1	24	22.64	22.18
		1	49	23.13	22.41
		25	0	22.95	22.47
		25	12	23.18	22.00
		25	25	22.54	22.16
		50	0	23.06	22.77
	2535.0	1	0	23.07	22.64
		1	24	23.00	22.44
		1	49	23.21	23.22
		25	0	22.88	22.15
		25	12	23.08	22.47
		25	25	22.73	21.93
		50	0	23.08	22.77
	2565.0	1	0	23.09	23.11
		1	24	22.91	22.95
		1	49	23.09	22.81
		25	0	22.88	22.48
		25	12	22.93	22.49
		25	25	23.17	22.03
		50	0	22.56	21.93
15	2507.5	1	0	22.18	21.96
		1	37	22.71	22.67
		1	74	22.69	22.64

		37	0	22.27	21.89
		37	18	22.43	21.96
		37	38	22.59	21.89
		75	0	22.67	22.45
	2535.0	1	0	22.81	22.44
		1	37	22.44	22.14
		1	74	22.01	21.64
		37	0	22.59	22.03
		37	18	22.33	21.96
		37	38	22.24	22.24
		75	0	22.31	22.12
	2562.5	1	0	22.65	21.98
		1	37	22.40	21.55
		1	74	22.07	21.96
		37	0	22.14	21.03
		37	18	22.87	21.13
		37	38	22.21	21.96
		75	0	22.07	21.28
20	2510.0	1	0	22.70	22.49
		1	49	22.58	21.77
		1	99	22.35	21.15
		50	0	22.64	21.58
		50	25	22.62	21.00
		50	50	21.93	21.09
		100	0	22.07	21.16
	2535.0	1	0	22.52	21.86
		1	49	22.46	22.06
		1	99	22.60	21.48
		50	0	22.54	21.74
		50	25	22.47	21.22
		50	50	22.64	21.20
		100	0	22.50	21.58
	2560	1	0	22.42	21.66
		1	49	22.39	22.38
		1	99	22.49	21.23
		50	0	22.47	21.84
		50	25	22.52	21.48
		50	50	21.97	21.15
		100	0	22.12	21.20

LTE Band 12

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	699.7	1	0	24.35	23.54
		1	3	24.46	24.08
		1	5	24.35	23.79
		3	0	24.43	24.16
		3	2	24.37	24.36
		3	3	24.45	24.09
		6	0	23.42	23.02
	707.5	1	0	24.17	23.59
		1	3	24.25	23.91
		1	5	24.17	24.13
		3	0	24.28	24.10
		3	2	24.24	23.61
		3	3	24.28	23.84
		6	0	23.26	22.84
	715.3	1	0	24.18	23.54
		1	3	24.34	23.53
		1	5	24.17	23.81
		3	0	23.87	23.52
		3	2	23.85	23.14
		3	3	23.83	23.40
		6	0	23.82	23.77
3	700.5	1	0	24.27	23.61
		1	7	24.31	23.79
		1	14	24.30	24.29
		8	0	23.09	22.96
		8	4	23.31	22.60
		8	7	23.29	22.74
		15	0	23.14	22.74
	707.5	1	0	24.11	23.71
		1	7	24.40	23.63
		1	14	24.07	23.92
		8	0	23.18	22.53
		8	4	23.23	22.79
		8	7	23.23	22.84
		15	0	23.21	22.40
	714.5	1	0	24.20	24.11
		1	7	24.31	24.28
		1	14	24.17	23.83
		8	0	23.32	22.68
		8	4	23.09	22.72
		8	7	23.51	23.41
		15	0	23.32	22.84
5	701.5	1	0	24.26	23.72
		1	12	24.50	23.85
		1	24	24.03	23.41

		12	0	23.02	22.80
		12	6	23.22	22.33
		12	13	23.01	22.43
		25	0	23.13	23.06
	707.5	1	0	24.03	23.77
		1	12	24.13	24.10
		1	24	23.85	23.11
		12	0	23.06	22.22
		12	6	23.15	22.86
		12	13	23.03	22.62
		25	0	23.11	22.35
	713.5	1	0	24.06	23.33
		1	12	24.52	24.51
		1	24	23.89	23.19
		12	0	23.14	22.74
		12	6	23.25	23.07
		12	13	23.28	23.02
		25	0	23.27	22.43
10	704	1	0	23.73	23.35
		1	24	24.07	23.72
		1	49	23.67	22.87
		25	0	23.05	22.72
		25	12	23.05	22.75
		25	25	23.08	22.87
		50	0	23.20	22.54
	707.5	1	0	24.12	23.90
		1	24	24.06	23.65
		1	49	23.96	23.67
		25	0	23.33	23.26
		25	12	23.35	22.65
		25	25	23.15	22.83
		50	0	23.06	22.60
	711.0	1	0	24.05	23.58
		1	24	24.24	23.36
		1	49	23.79	23.50
		25	0	23.17	23.16
		25	12	23.49	23.09
		25	25	23.48	23.45
		50	0	23.40	23.19

LTE Band13

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
5	779.5	1	0	24.17	23.69
		1	12	24.26	23.97
		1	24	24.38	24.36
		12	0	23.62	23.50
		12	6	23.43	22.62
		12	13	23.37	22.89
		25	0	23.50	22.94
	782	1	0	24.54	24.31
		1	12	24.53	23.88
		1	24	24.77	24.46
		12	0	23.56	23.48
		12	6	23.27	23.30
		12	13	23.46	22.64
		25	0	23.43	23.28
	784.5	1	0	24.38	23.96
		1	12	24.50	24.24
		1	24	24.74	24.15
		12	0	23.53	23.05
		12	6	23.57	23.50
		12	13	23.57	23.31
		25	0	23.55	22.93
10	782	1	0	24.36	23.97
		1	24	24.31	23.72
		1	49	24.34	23.92
		25	0	23.61	23.68
		25	12	23.44	23.24
		25	25	23.53	23.36
		50	0	23.45	22.64
	782	1	0	24.50	24.27
		1	24	24.37	23.82
		1	49	24.46	24.47
		25	0	23.69	22.79
		25	12	23.50	22.71
		25	25	23.44	22.97
		50	0	23.57	23.39
	782	1	0	24.31	24.17
		1	24	24.37	23.63
		1	49	24.42	23.67
		25	0	23.60	23.49
		25	12	23.42	23.11
		25	25	23.49	23.16
		50	0	23.39	23.45

LTE Band 25

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	1850.7	1	0	24.16	24.10
		1	3	24.26	23.84
		1	5	24.13	23.49
		3	0	24.14	23.52
		3	2	24.26	23.80
		3	3	24.07	24.02
		6	0	23.28	22.63
	1882.5	1	0	24.21	24.24
		1	3	24.42	24.15
		1	5	24.32	23.81
		3	0	24.01	23.56
		3	2	24.11	24.14
		3	3	24.06	23.41
		6	0	22.99	22.45
	1914.3	1	0	24.45	24.38
		1	3	24.37	24.22
		1	5	24.20	23.37
		3	0	24.67	23.92
		3	2	24.44	24.46
		3	3	24.32	24.15
		6	0	23.49	23.26
3	1851.5	1	0	24.18	23.91
		1	7	24.37	24.20
		1	14	24.38	23.63
		8	0	23.33	22.48
		8	4	23.23	22.71
		8	7	23.31	23.22
		15	0	23.29	23.08
	1882.5	1	0	24.15	23.36
		1	7	24.07	23.55
		1	14	24.41	23.62
		8	0	23.29	22.95
		8	4	23.20	22.69
		8	7	23.24	22.49
		15	0	23.62	23.51
	1913.5	1	0	24.43	23.89
		1	7	24.44	23.91
		1	14	24.15	23.90
		8	0	23.58	23.46
		8	4	23.55	23.54
		8	7	23.51	22.77
		15	0	23.52	22.90
5	1852.5	1	0	24.03	23.31
		1	12	24.09	23.66

		1	24	23.92	23.07
		12	0	23.35	23.27
		12	6	23.38	22.84
		12	13	23.33	23.08
		25	0	23.30	22.85
	1882.5	1	0	23.92	23.86
		1	12	24.51	23.86
		1	24	24.37	23.66
		12	0	23.14	22.98
		12	6	23.23	23.09
		12	13	23.25	22.87
		25	0	23.68	22.97
	1912.5	1	0	24.65	24.63
		1	12	24.71	23.93
		1	24	24.33	24.04
		12	0	23.59	23.36
		12	6	23.57	22.92
		12	13	23.49	23.16
		25	0	23.54	22.73
10	1855	1	0	24.33	23.54
		1	24	24.35	24.20
		1	49	24.00	23.54
		25	0	23.32	23.35
		25	12	23.34	22.72
		25	25	23.39	23.40
		50	0	23.37	23.09
	1882.5	1	0	24.52	23.81
		1	24	24.43	23.70
		1	49	24.12	23.52
		25	0	23.83	23.74
		25	12	23.29	23.23
		25	25	23.31	22.76
		50	0	23.18	22.60
	1910.0	1	0	24.78	24.50
		1	24	24.82	24.87
		1	49	23.90	23.64
		25	0	23.71	22.89
		25	12	23.81	23.83
		25	25	23.67	22.80
		50	0	23.72	23.34
15	1857.5	1	0	24.35	24.25
		1	37	24.30	23.56
		1	74	24.39	23.72
		37	0	23.46	23.01
		37	18	23.41	22.91
		37	38	23.36	22.97
		75	0	23.36	23.03
	1882.5	1	0	24.61	24.11
		1	37	24.39	23.79
		1	74	24.24	23.98

		37	0	23.24	22.81
		37	18	23.35	22.83
		37	38	23.31	23.25
		75	0	23.21	23.11
	1907.5	1	0	24.70	24.46
		1	37	24.85	24.38
		1	74	24.31	23.84
		37	0	23.85	23.49
		37	18	23.79	23.02
		37	38	23.67	23.09
		75	0	23.77	23.31
20	1860.0	1	0	24.51	24.09
		1	49	24.66	24.02
		1	99	24.91	24.17
		50	0	23.53	22.86
		50	25	23.49	23.46
		50	50	23.56	23.54
		100	0	23.50	23.21
	1882.5	1	0	24.93	24.53
		1	49	24.63	23.94
		1	99	24.41	23.74
		50	0	23.37	22.63
		50	25	23.30	22.74
		50	50	23.27	22.42
		100	0	23.39	23.05
	1905.0	1	0	23.73	23.80
		1	49	24.22	23.64
		1	99	24.30	23.72
		50	0	23.88	23.81
		50	25	23.98	23.90
		50	50	23.85	23.78
		100	0	23.75	23.77

LTE Band 26 Lower Band(814MHz-824MHz)

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	814.7	1	0	23.12	23.11
		1	3	23.04	22.93
		1	5	22.84	22.80
		3	0	23.38	22.99
		3	2	23.43	23.42
		3	3	23.12	23.37
		6	0	22.94	22.55
	819.0	1	0	22.64	22.78
		1	3	22.85	22.42
		1	5	22.44	22.37
		3	0	23.47	23.09
		3	2	22.68	22.86
		3	3	22.60	23.11
		6	0	22.69	22.84
	823.3	1	0	22.57	22.16
		1	3	22.91	22.64
		1	5	22.61	22.90
		3	0	22.80	22.58
		3	2	22.47	22.46
		3	3	22.90	22.93
		6	0	23.12	23.11
3	815.5	1	0	23.31	23.51
		1	7	23.16	23.27
		1	14	23.48	22.92
		8	0	22.66	22.55
		8	4	22.86	22.84
		8	7	22.26	22.34
		15	0	22.95	22.89
	819.0	1	0	23.48	23.02
		1	7	22.54	23.01
		1	14	23.00	22.35
		8	0	22.74	23.12
		8	4	23.07	23.36
		8	7	22.72	22.98
		15	0	23.33	22.57
	822.5	1	0	23.10	23.22
		1	7	21.87	22.81
		1	14	22.25	22.53
		8	0	22.77	22.65
		8	4	22.77	22.94
		8	7	22.46	22.87
		15	0	23.35	23.01
5	816.5	1	0	22.77	22.73
		1	12	22.67	22.89
		1	24	23.25	23.20

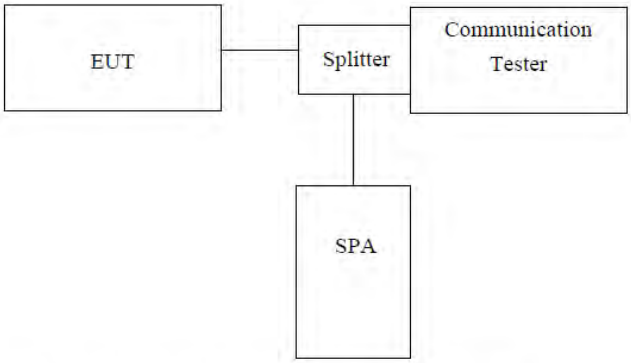
		12	0	22.74	23.03
		12	6	23.12	22.83
		12	13	23.38	23.57
		25	0	23.31	22.68
	819.0	1	0	22.96	23.05
		1	12	22.37	22.98
		1	24	23.10	23.05
		12	0	23.39	22.86
		12	6	23.27	22.76
		12	13	22.54	22.97
		25	0	22.80	22.31
	821.5	1	0	22.49	22.42
		1	12	22.18	22.06
		1	24	22.69	22.74
		12	0	22.46	22.42
		12	6	23.09	22.54
		12	13	22.22	22.48
		25	0	22.55	22.81
10	819.0	1	0	22.16	22.16
		1	24	22.07	22.07
		1	49	22.29	22.29
		25	0	22.05	22.05
		25	12	22.31	22.31
		25	25	22.4	22.4
		50	0	22.16	22.16

LTE Band 26 Upper Band(824MHz-849MHz)

BW (MHz)	Frequency (MHz)	RB Configuration		Average Power [dBm]	
		Size	Offset	QPSK	16QAM
1.4	824.7	1	0	23.08	23.04
		1	3	23.20	22.47
		1	5	23.13	23.22
		3	0	23.35	22.64
		3	2	23.13	23.16
		3	3	23.09	23.43
		6	0	22.77	22.41
	836.5	1	0	22.75	22.63
		1	3	23.33	23.25
		1	5	22.63	23.12
		3	0	23.51	23.36
		3	2	22.92	22.97
		3	3	22.76	23.02
		6	0	22.55	22.33
	848.3	1	0	22.37	22.93
		1	3	22.16	22.54
		1	5	22.22	22.35
		3	0	22.38	22.93
		3	2	22.77	22.11
		3	3	22.47	22.45
		6	0	22.59	22.86
3	825.5	1	0	22.89	23.29
		1	7	23.27	23.06
		1	14	22.69	23.31
		8	0	23.14	22.75
		8	4	22.79	23.18
		8	7	22.68	22.73
		15	0	22.42	22.34
	836.5	1	0	23.33	22.70
		1	7	23.27	22.66
		1	14	23.23	22.92
		8	0	22.77	22.47
		8	4	23.11	22.87
		8	7	22.66	22.64
		15	0	23.40	22.97
	847.5	1	0	22.63	22.72
		1	7	22.59	22.54
		1	14	22.68	22.70
		8	0	22.98	22.76
		8	4	22.69	22.32
		8	7	22.83	23.04
		15	0	23.40	23.29
5	826.5	1	0	23.20	23.29
		1	12	22.66	22.81
		1	24	22.99	23.04

		12	0	23.63	22.69
		12	6	23.36	23.34
		12	13	23.26	23.47
		25	0	22.66	22.58
	836.5	1	0	23.35	22.99
		1	12	22.86	23.13
		1	24	23.52	22.58
		12	0	23.07	22.79
		12	6	23.29	23.16
		12	13	22.35	22.41
		25	0	22.19	23.00
	846.5	1	0	22.05	22.15
		1	12	22.38	22.70
		1	24	23.05	22.20
		12	0	22.12	22.31
		12	6	22.99	22.27
		12	13	22.47	23.04
		25	0	22.43	23.05
10	829.0	1	0	22.04	21.92
		1	24	21.65	21.51
		1	49	21.79	21.88
		25	0	21.22	21.78
		25	12	21.86	22.27
		25	25	21.92	21.75
		50	0	21.55	21.25
	836.5	1	0	21.47	21.61
		1	24	22.26	21.96
		1	49	22.02	21.76
		25	0	22.29	22.16
		25	12	22.08	21.53
		25	25	22.04	21.67
		50	0	21.63	22.06
	844	1	0	23.37	23.73
		1	24	22.73	23.06
		1	49	23.39	23.03
		25	0	22.79	23.68
		25	12	23.13	23.28
		25	25	22.75	23.15
		50	0	23.32	23.25

4.4 Peak-to-Average Ratio

Test Requirement:	Part 22.913(d), FCC part24.232(d), FCC part27.50(d)(5), RSS-130(4.4), RSS-132 (5.4), RSS-133 (6.4), RSS-139(6.5), RSS-199(4.4)
Test Method:	FCC part2.1046, ANSI/TIA-603-D, ANSI C63.26 Clause 5.2.3.4 FCC KDB971168 D01 v03r01 Section 5.7
Test Limit:	Used complementary cumulative distribution function (CCDF) of analyzer to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.7.. 2. The EUT was connected to spectrum and system simulator via a power divider 3. Using the CCDF measurement of spectrum analyzer; 4. Set RBW≥OBW or specified reference bandwidth; 5. Set the number of counts to a value that stabilizes the measured CCDF curve; 6. Set the measurement interval as 1ms 7. Record the maximum PAPR level associated with a probability of 0.1%.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

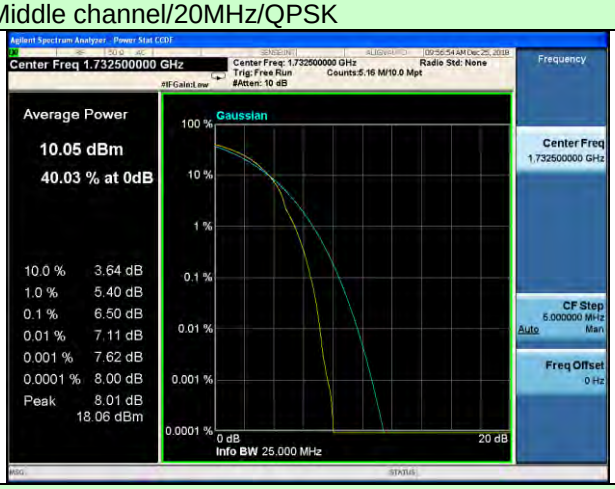
Test plots are listed as below:

Test mode	Peak to Average Ratio （dB）	Limit （dB）	Result
LTE Band 2 Middle channel/20MHz/QPSK	5.13	13	PASS
LTE Band 2 Middle channel/20MHz/16-QAM	5.14	13	PASS
LTE Band 4 Middle channel/20MHz/QPSK	6.50	13	PASS
LTE Band 4 Middle channel/20MHz/16-QAM	6.49	13	PASS
LTE Band 5 Middle channel/10MHz/QPSK	4.60	13	PASS
LTE Band 5 Middle channel/10MHz/16-QAM	4.60	13	PASS
LTE Band 7 Middle channel/20MHz/QPSK	5.47	13	PASS
LTE Band 7 Middle channel/20MHz/16-QAM	5.48	13	PASS
LTE Band 12 Middle channel/10MHz/QPSK	5.21	13	PASS
LTE Band 12 Middle channel/10MHz/16-QAM	5.21	13	PASS
LTE Band 13 Middle channel/10MHz/QPSK	4.91	13	PASS
LTE Band 13 Middle channel/10MHz/16-QAM	4.96	13	PASS
LTE Band 25 Middle channel/20MHz/QPSK	4.54	13	PASS
LTE Band 25 Middle channel/20MHz/16-QAM	4.55	13	PASS
LTE Band 26 Middle channel/10MHz/QPSK	4.58	13	PASS
LTE Band 26 Middle channel/10MHz/16-QAM	5.05	13	PASS
LTE Band 26 Middle channel/15MHz/QPSK	5.52	13	PASS
LTE Band 26 Middle channel/15MHz/16-QAM	5.53	13	PASS

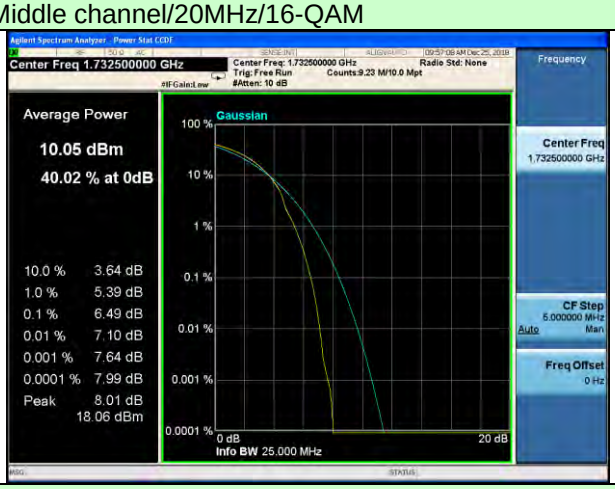
Test Mode: LTE Band 2
Middle channel/20MHz/QPSK

Test Mode: LTE Band 2
Middle channel/20MHz/16-QAM

Test Mode: LTE Band 4
Middle channel/20MHz/QPSK



Test Mode: LTE Band 4
Middle channel/20MHz/16-QAM



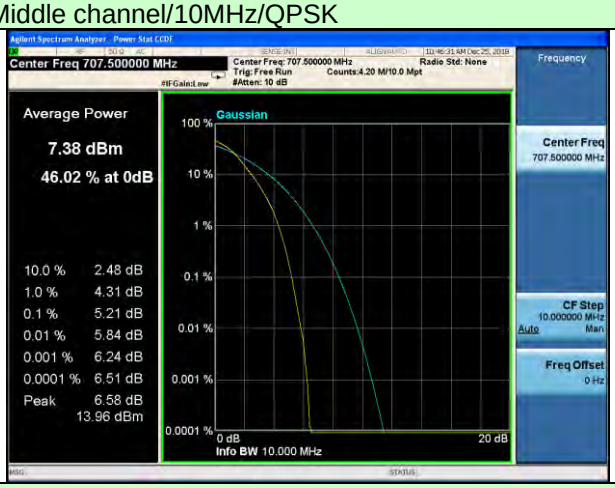
Test Mode: LTE Band 5
Middle channel/10MHz/QPSK

Test Mode: LTE Band 5
Middle channel/10MHz/16-QAM

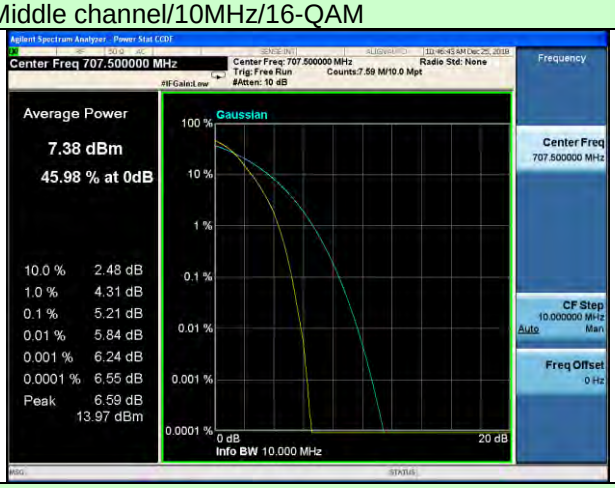
Test Mode: LTE Band 7
Middle channel/20MHz/QPSK

Test Mode: LTE Band 7
Middle channel/20MHz/16-QAM

Test Mode: LTE Band 12
Middle channel/10MHz/QPSK



Test Mode: LTE Band 12
Middle channel/10MHz/16-QAM



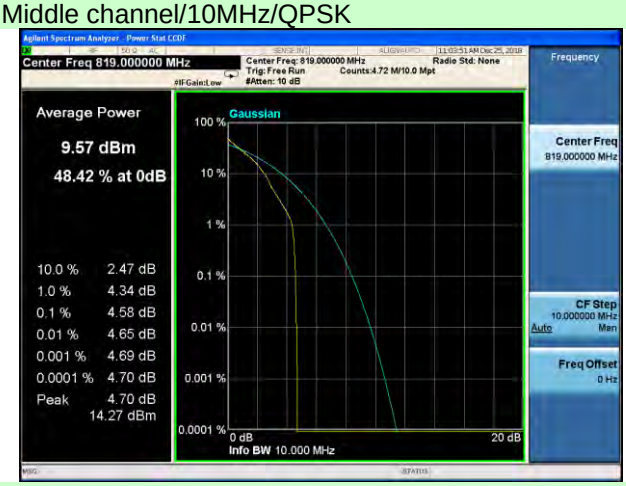
Test Mode: LTE Band 13
Middle channel/10MHz/QPSK

Test Mode: LTE Band 13
Middle channel/10MHz/16-QAM

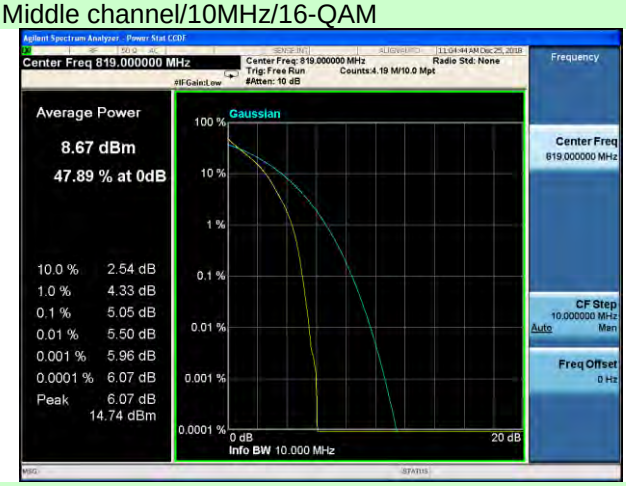
Test Mode: LTE Band 25
Middle channel/20MHz/QPSK

Test Mode: LTE Band 25
Middle channel/20MHz/16-QAM

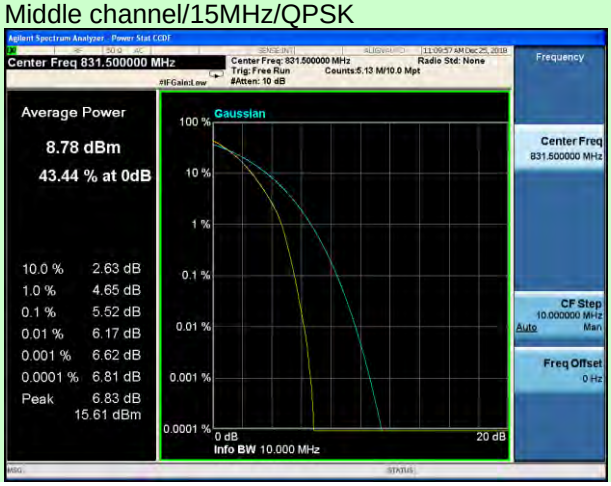
Test Mode: LTE Band 26(Lower Band)
Middle channel/10MHz/QPSK



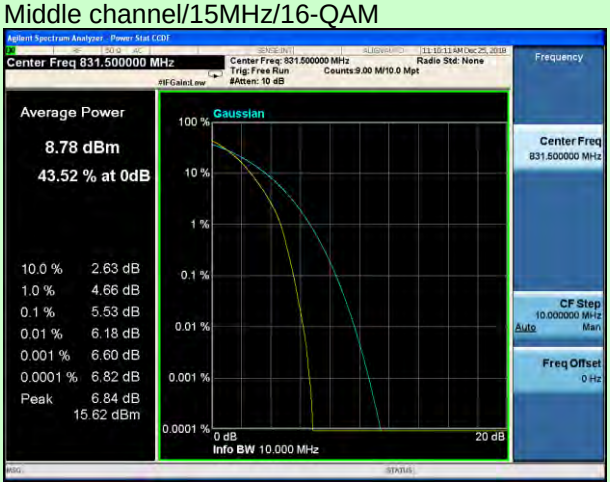
Test Mode: LTE Band 26(Lower Band)
Middle channel/10MHz/16-QAM



Test Mode: LTE Band 26(Upper Band)
Middle channel/15MHz/QPSK

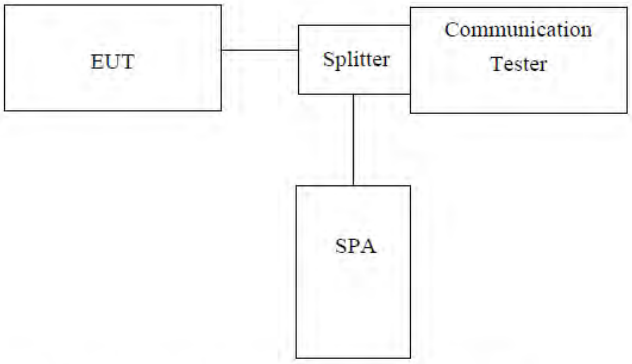


Test Mode: LTE Band 26(Upper Band)
Middle channel/15MHz/16-QAM



Note: All bandwidth and modulation are tested, only the worst results are reported.

4.5 Occupy Bandwidth

Test Requirement:	FCC Part 2.1049, FCC part22.913(a), FCC part24.232(b) and FCC part27.53(a), RSS-130 (3.1), RSS-132 (3.1), RSS-133 (3.1), RSS-139(3.1) and RSS-199(4.2)
Test Method:	KDB 971168 D01 v03r1 clause 4, FCC part2.1049, ANSI/TIA-603-D, ANSI C63.26 clause 5.4, RSS-Gen Section 6.7.
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1.The EUT's output RF connector was connected with a short cable to the spectrum analyzer, set center frequency to channel center frequency. 2.RBW was set to about 1%-5% of emission OBW, VBW≥ 3 X RBW. 3.Set spectrum analyzer detection mode to peak, and the trace mode to max hold. 4. Use the 99% OBW function, The 99% power OBW can be found on the plot, determine the "-26dB amplitude" as equal to reference value -26dB.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data

EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 2	1.4MHz	QPSK	6	0	1091.20	1311.00
		16-QAM	6	0	1087.20	1304.00
	3MHz	QPSK	15	0	2695.00	2976.00
		16-QAM	15	0	2696.00	2969.00
	5MHz	QPSK	25	0	4496.50	4998.00
		16-QAM	25	0	4499.00	5020.00
	10MHz	QPSK	50	0	8940.80	9737.00
		16-QAM	50	0	8930.10	9764.00
	15MHz	QPSK	75	0	13394.00	14650.00
		16-QAM	75	0	13379.00	14540.00
	20MHz	QPSK	100	0	17797.0	19040.00
		16-QAM	100	0	17817.0	19050.00

EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 4	1.4MHz	QPSK	6	0	1081.10	1261.00
		16-QAM	6	0	1082.20	1271.00
	3MHz	QPSK	15	0	2694.60	2978.00
		16-QAM	15	0	2694.30	2972.00
	5MHz	QPSK	25	0	4515.90	5015.00
		16-QAM	25	0	4510.90	5019.00
	10MHz	QPSK	50	0	8990.10	9965.00
		16-QAM	50	0	8976.60	9957.00
	15MHz	QPSK	75	0	13500.00	14730.00
		16-QAM	75	0	13497.00	14640.00
	20MHz	QPSK	100	0	18028.0	19420.00
		16-QAM	100	0	17988.0	19360.00

EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 5/ LTE Band 26 (upper Band)	1.4MHz	QPSK	6	0	1081.60	1277.00
		16-QAM	6	0	1080.10	1263.00
	3MHz	QPSK	15	0	2687.50	2932.00
		16-QAM	15	0	2686.50	2935.00
	5MHz	QPSK	25	0	4495.20	4970.00
		16-QAM	25	0	4480.10	4937.00
	10MHz	QPSK	50	0	8843.70	9548.00
		16-QAM	50	0	8831.80	9593.00

EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 7	5MHz	QPSK	25	0	4510.60	5035.00
		16-QAM	25	0	4515.10	5001.00
	10MHz	QPSK	50	0	8978.60	9782.00
		16-QAM	50	0	8979.40	9893.00
	15MHz	QPSK	75	0	13462.00	14690.00
		16-QAM	75	0	13464.00	14540.00
	20MHz	QPSK	100	0	17952.0	19240.00
		16-QAM	100	0	17930.0	19170.00

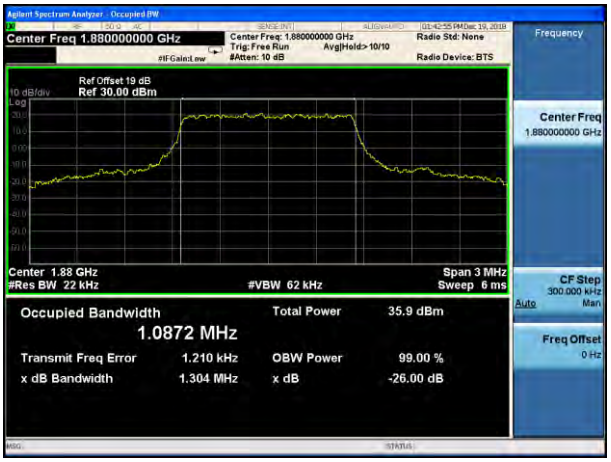
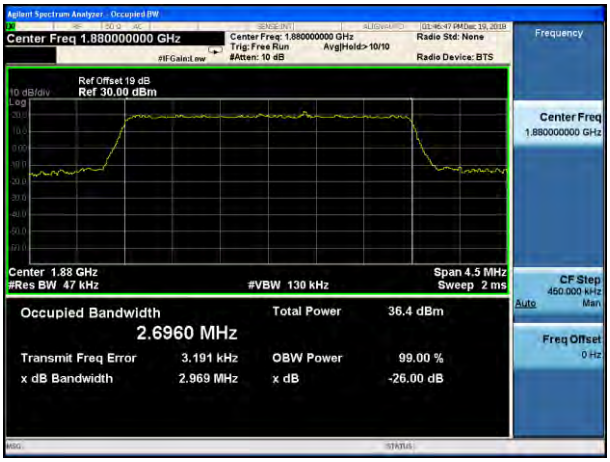
EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 12	1.4MHz	QPSK	6	0	1079.20	1251.00
		16-QAM	6	0	1078.00	1252.00
	3MHz	QPSK	15	0	2680.40	2921.00
		16-QAM	15	0	2684.00	2913.00
	5MHz	QPSK	25	0	4468.80	4905.00
		16-QAM	25	0	4479.30	4875.00
	10MHz	QPSK	50	0	8897.40	9772.00
		16-QAM	50	0	8917.20	9667.00

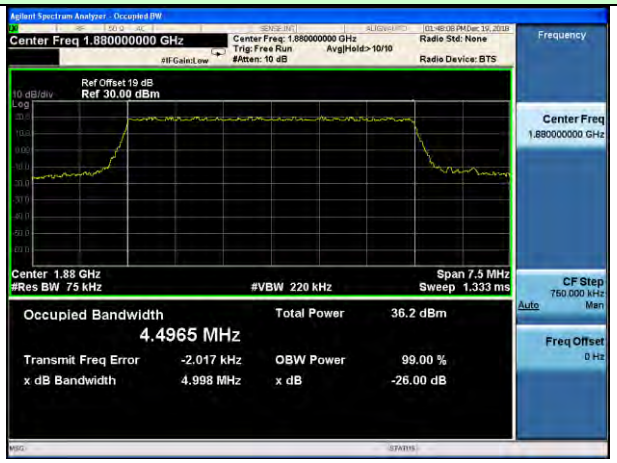
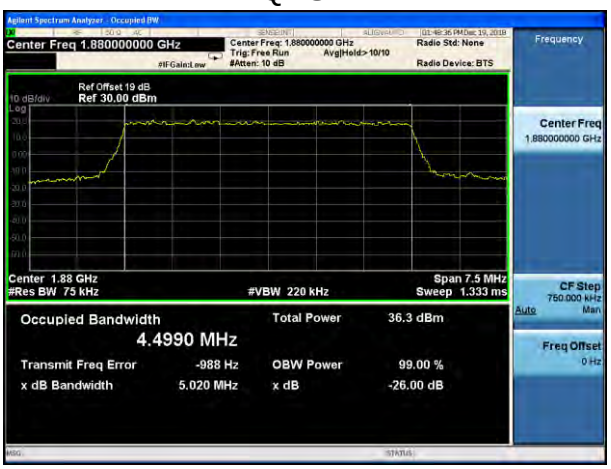
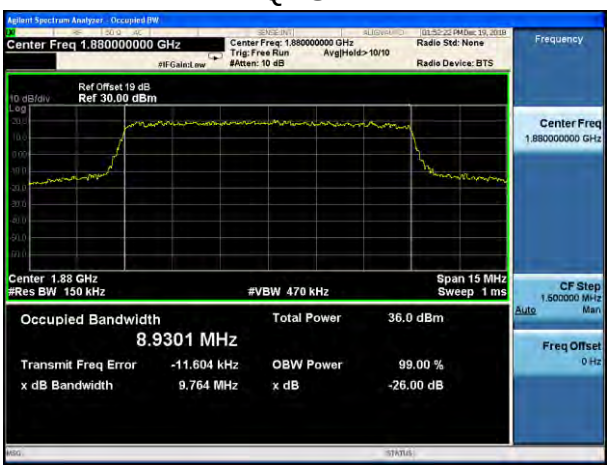
EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 13	5MHz	QPSK	25	0	4468.20	4920.00
		16-QAM	25	0	4465.90	4916.00
	10MHz	QPSK	50	0	8912.70	9749.00
		16-QAM	50	0	8921.50	9793.00

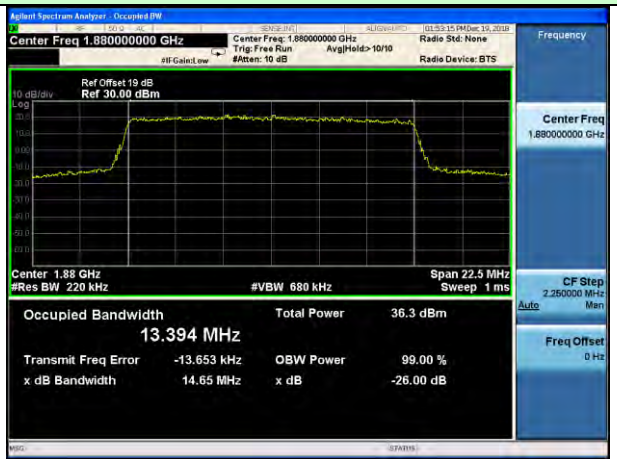
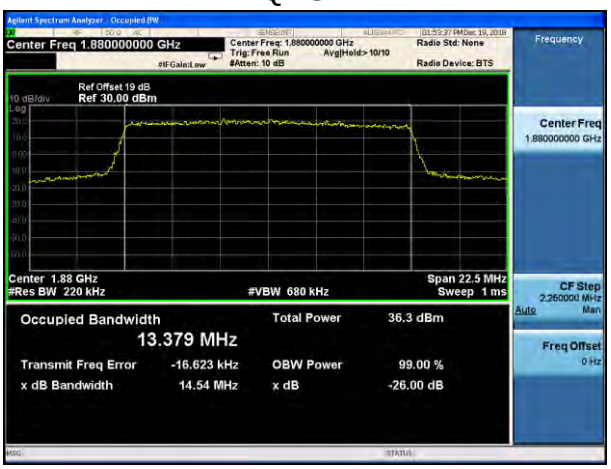
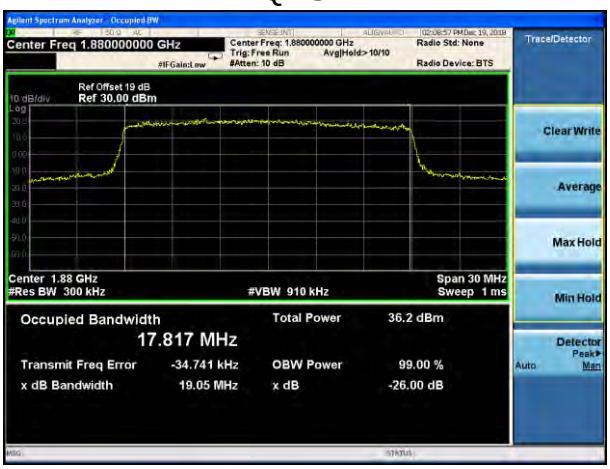
EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 25	1.4MHz	QPSK	6	0	1094.50	1687.00
		16-QAM	6	0	1093.00	1687.00
	3MHz	QPSK	15	0	2705.20	3202.00
		16-QAM	15	0	2701.30	3201.00
	5MHz	QPSK	25	0	4497.10	5017.00
		16-QAM	25	0	4521.10	5216.00
	10MHz	QPSK	50	0	8972.40	10500.00
		16-QAM	50	0	8965.90	10100.00
	15MHz	QPSK	75	0	13422.00	15060.00
		16-QAM	75	0	13439.00	14660.00
	20MHz	QPSK	100	0	17825.0	19090.00
		16-QAM	100	0	17811.0	19070.00

EUT Mode	Channel Bandwidth	Mode	RB Configure		99% Occupy bandwidth (KHz)	-26dB bandwidth (KHz)
			RB Size	RB Offset		
LTE Band 26 (Lower Band)	1.4MHz	QPSK	6	0	1090.90	1368.00
		16-QAM	6	0	1089.90	1369.00
	3MHz	QPSK	15	0	2697.60	2987.00
		16-QAM	15	0	2697.80	2978.00
	5MHz	QPSK	25	0	4494.00	5014.00
		16-QAM	25	0	4476.60	4936.00
	10MHz	QPSK	50	0	8835.90	9553.00
		16-QAM	50	0	8832.70	9553.00

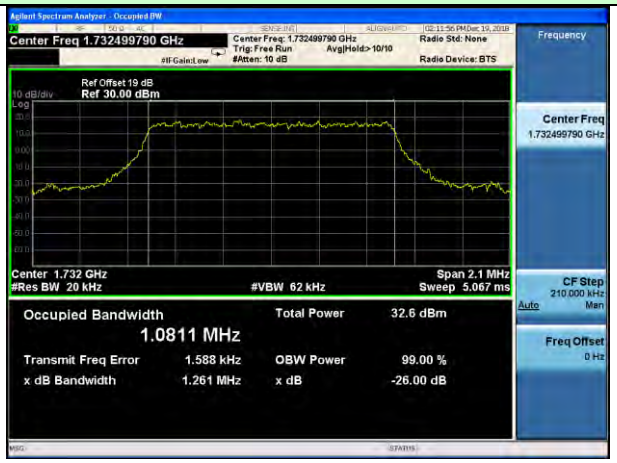
Test plot as follows:

Test Mode: LTE Band 2 Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 2 Channel Bandwidth: 3MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

Test Mode: LTE Band 2 Channel Bandwidth: 5MHz	Test Mode: LTE Band 2 Channel Bandwidth: 10MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

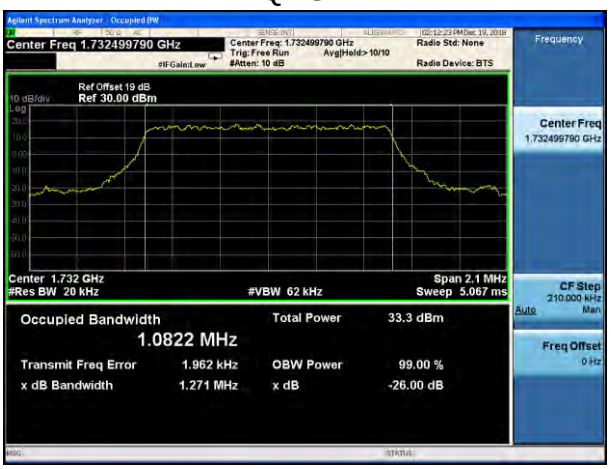
Test Mode: LTE Band 2 Channel Bandwidth: 15MHz	Test Mode: LTE Band 2 Channel Bandwidth: 20MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

Test Mode: LTE Band 4 Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 4 Channel Bandwidth: 3MHz



QPSK

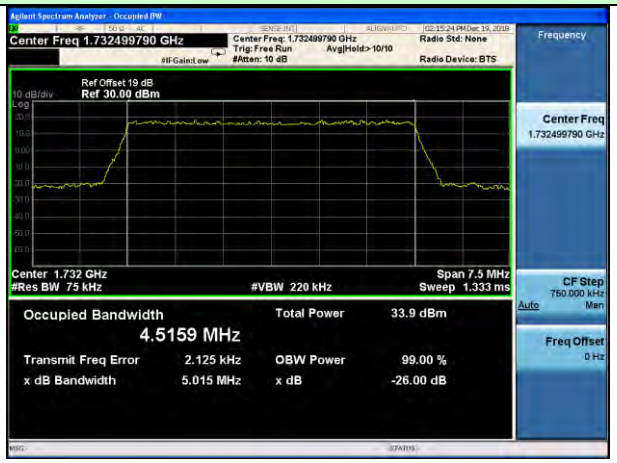
QPSK



16-QAM

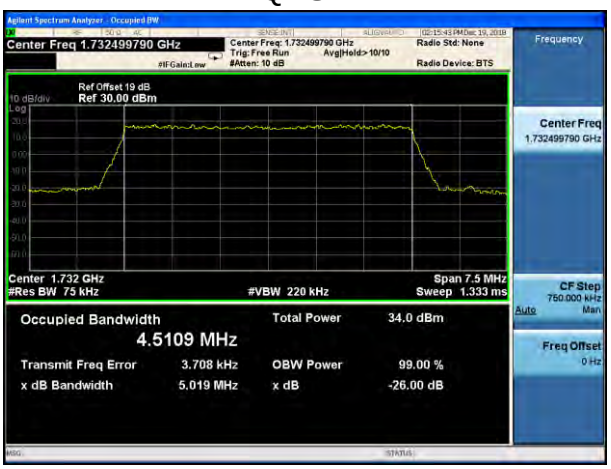
16-QAM

Test Mode: LTE Band 4 Channel Bandwidth: 5MHz	Test Mode: LTE Band 4 Channel Bandwidth: 10MHz



QPSK

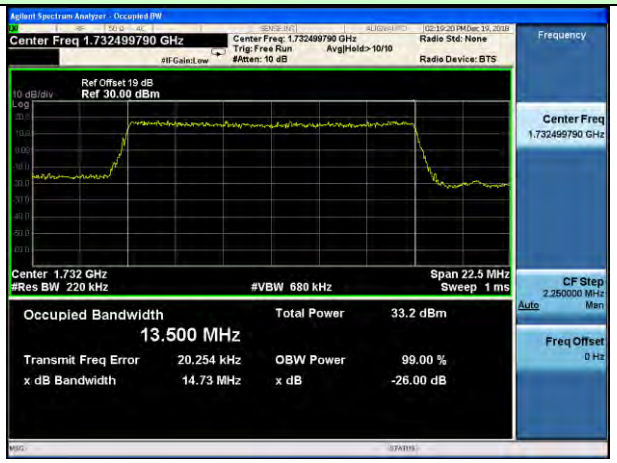
QPSK



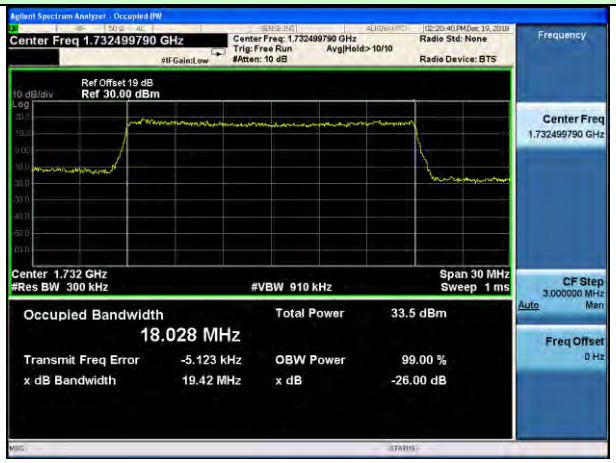
16-QAM

16-QAM

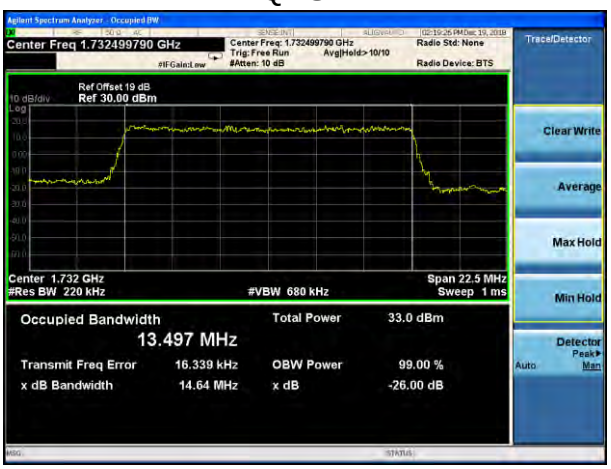
Test Mode: LTE Band 4 Channel Bandwidth: 15MHz	Test Mode: LTE Band 4 Channel Bandwidth: 20MHz



QPSK

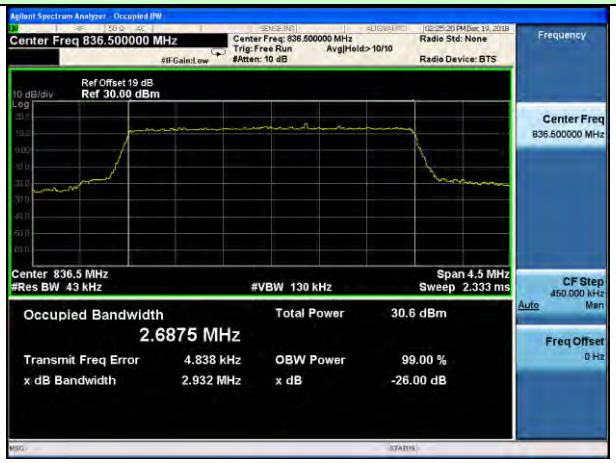
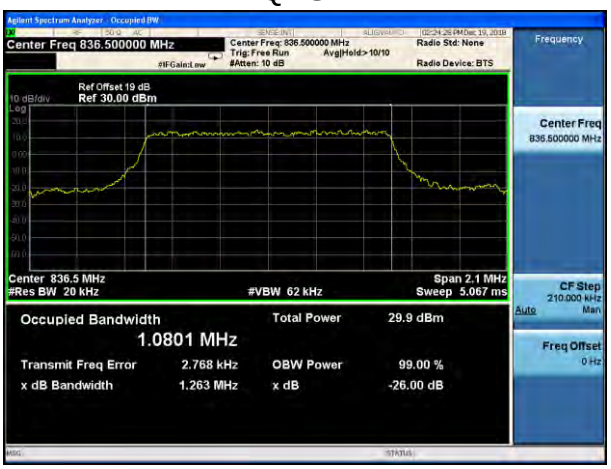
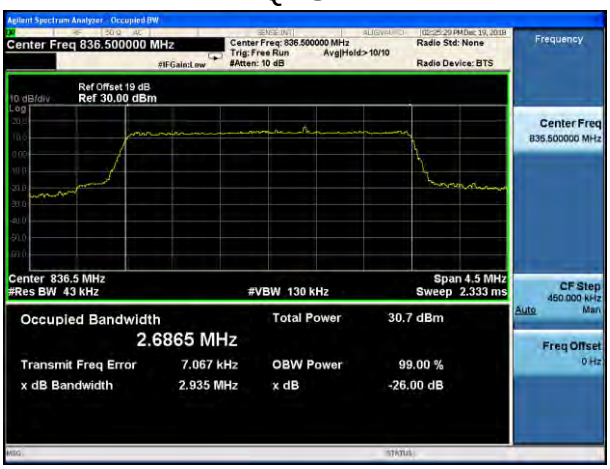


QPSK

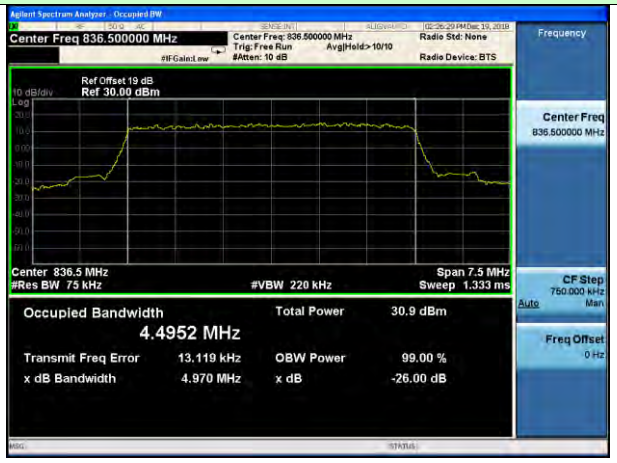


16-QAM

16-QAM

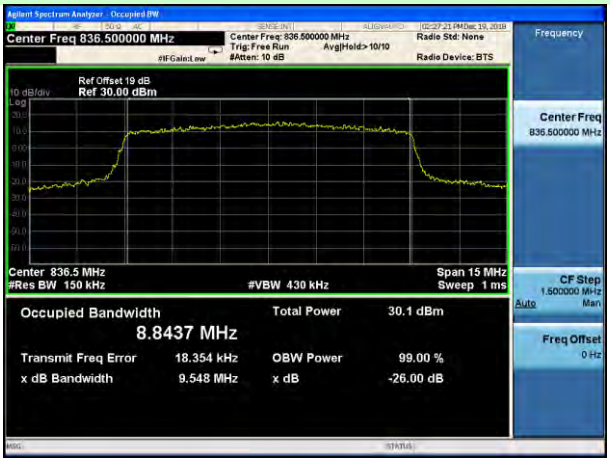
Test Mode: LTE Band 5/LTE Band 26(upper Band) Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 5/LTE Band 26(upper Band) Channel Bandwidth: 3MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

Test Mode: LTE Band 5/LTE Band 26(upper Band)
Channel Bandwidth: 5MHz

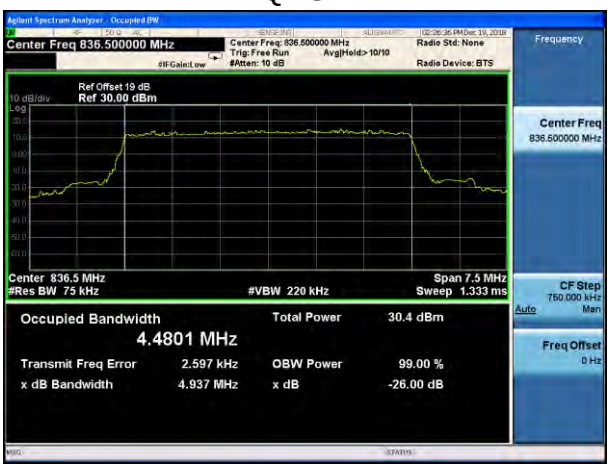


QPSK

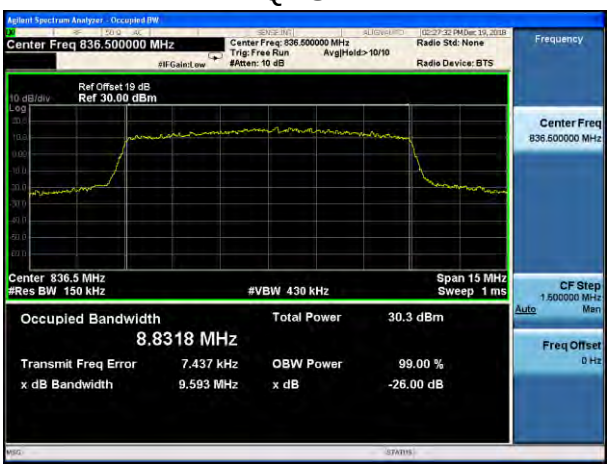
Test Mode: LTE Band 5/LTE Band 26(upper Band)
Channel Bandwidth: 10MHz



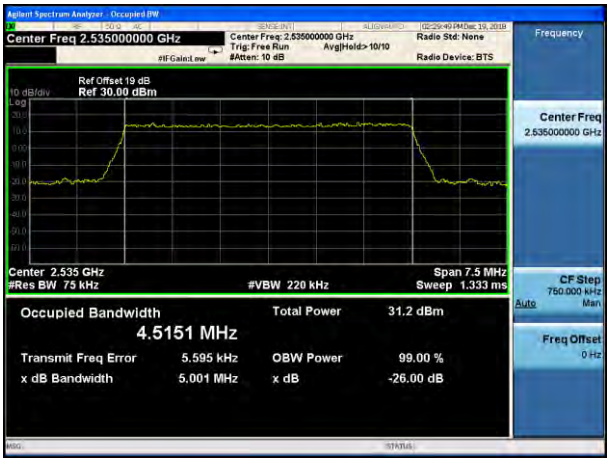
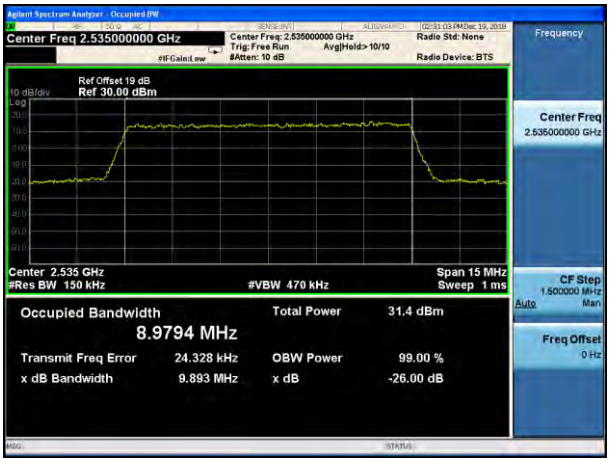
QPSK



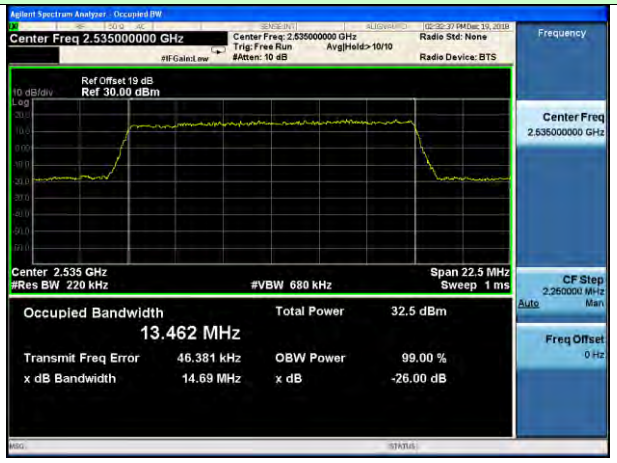
16-QAM



16-QAM

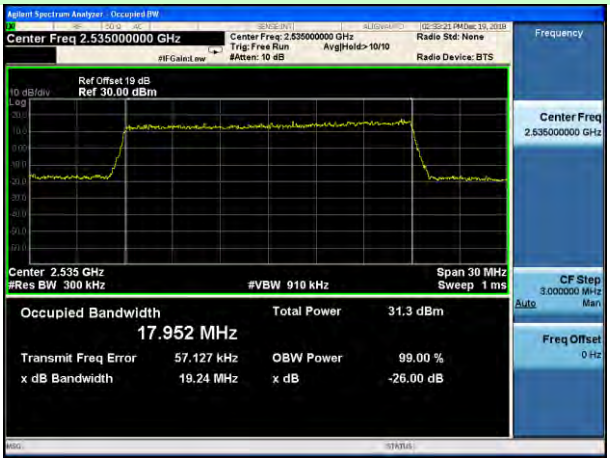
Test Mode: LTE Band 7 Channel Bandwidth: 5MHz	Test Mode: LTE Band 7 Channel Bandwidth: 10MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

Test Mode: LTE Band 7
Channel Bandwidth: 15MHz

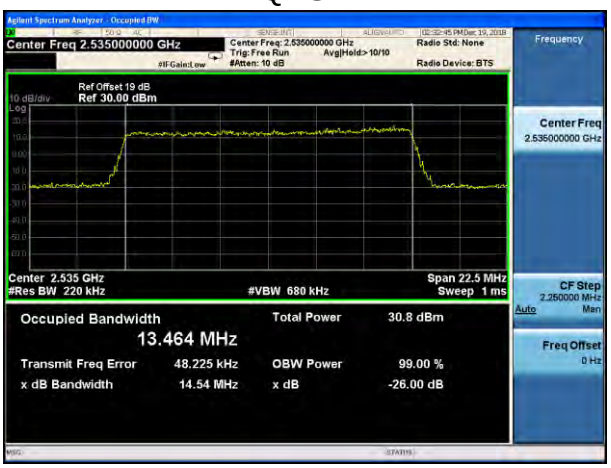


QPSK

Test Mode: LTE Band 7
Channel Bandwidth: 20MHz



QPSK



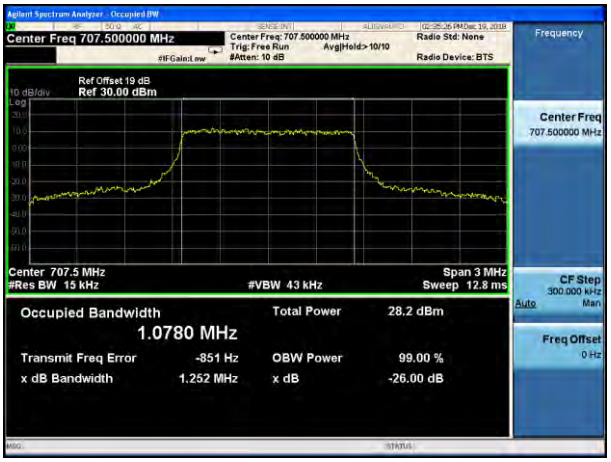
16-QAM

16-QAM

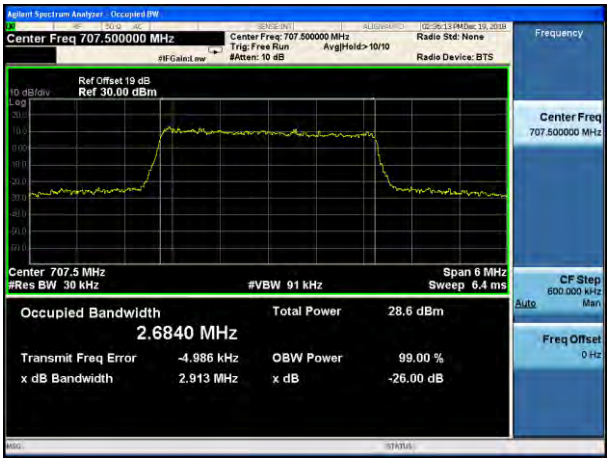
Test Mode: LTE Band 12 Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 12 Channel Bandwidth: 3MHz

QPSK

QPSK



16-QAM



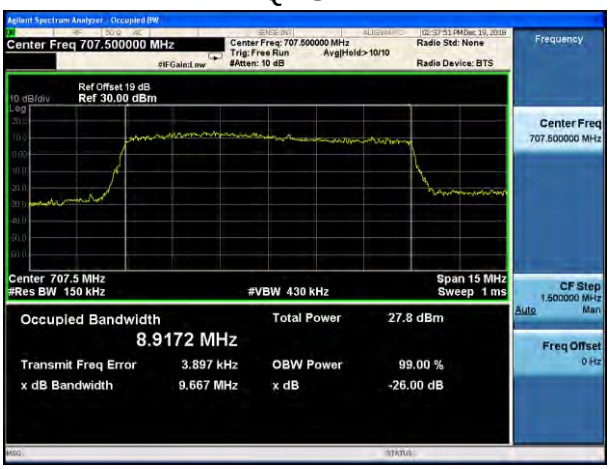
16-QAM

Test Mode: LTE Band 12 Channel Bandwidth: 5MHz	Test Mode: LTE Band 12 Channel Bandwidth: 10MHz

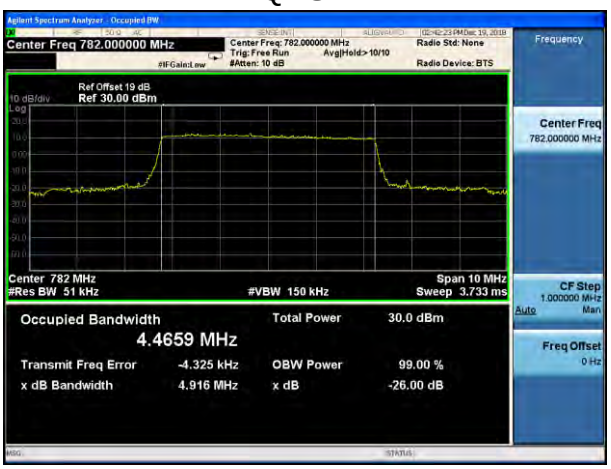
QPSK

QPSK

16-QAM



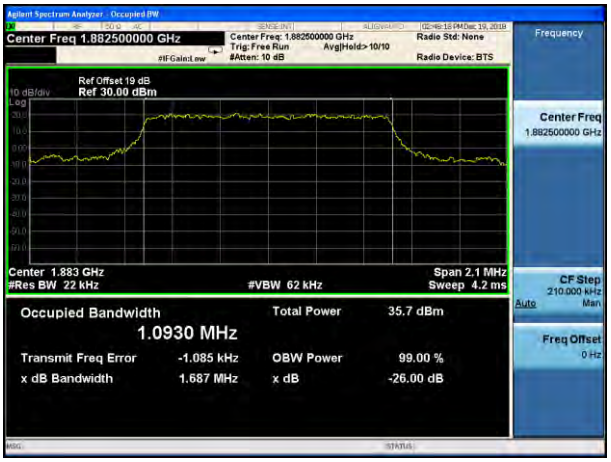
16-QAM

Test Mode: LTE Band 13 Channel Bandwidth: 5MHz	Test Mode: LTE Band 13 Channel Bandwidth: 10MHz
	
QPSK	QPSK
	
16-QAM	16-QAM

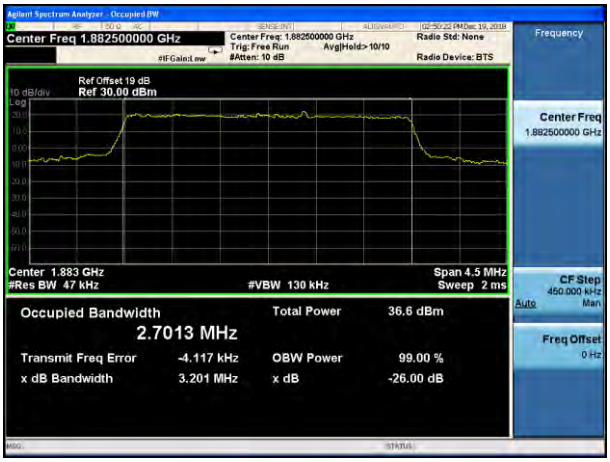
Test Mode: LTE Band 25 Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 25 Channel Bandwidth: 3MHz

QPSK

QPSK



16-QAM

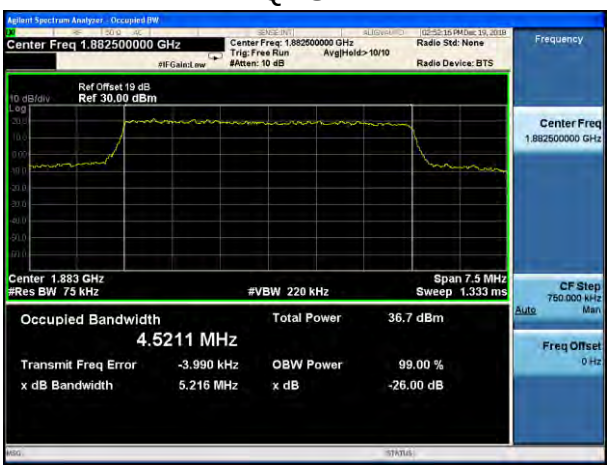


16-QAM

Test Mode: LTE Band 25 Channel Bandwidth: 5MHz	Test Mode: LTE Band 25 Channel Bandwidth: 10MHz

QPSK

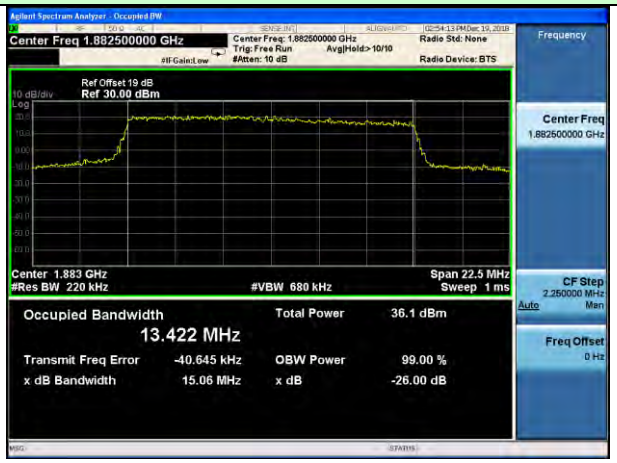
QPSK



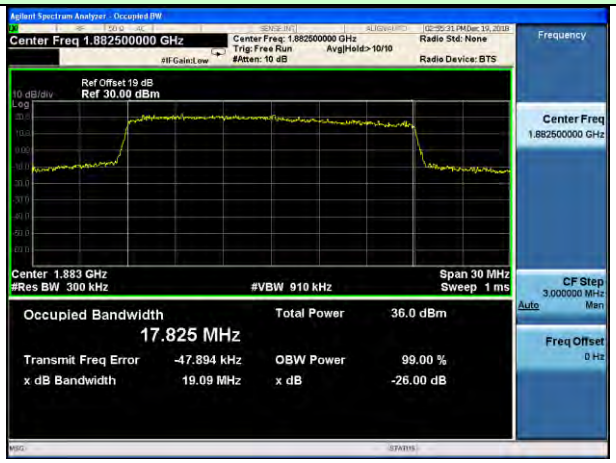
16-QAM

16-QAM

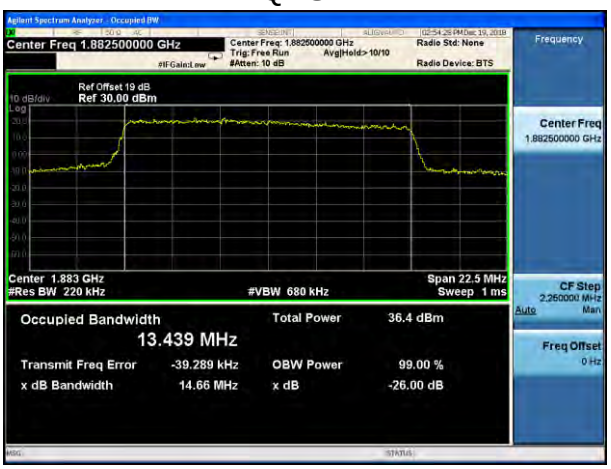
Test Mode: LTE Band 25 Channel Bandwidth: 15MHz	Test Mode: LTE Band 25 Channel Bandwidth: 20MHz



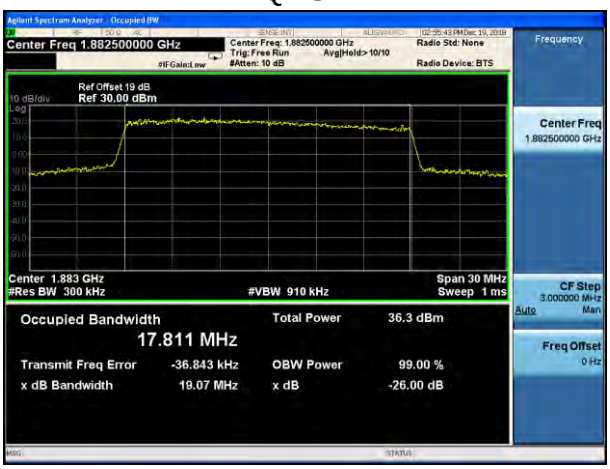
QPSK



QPSK



16-QAM

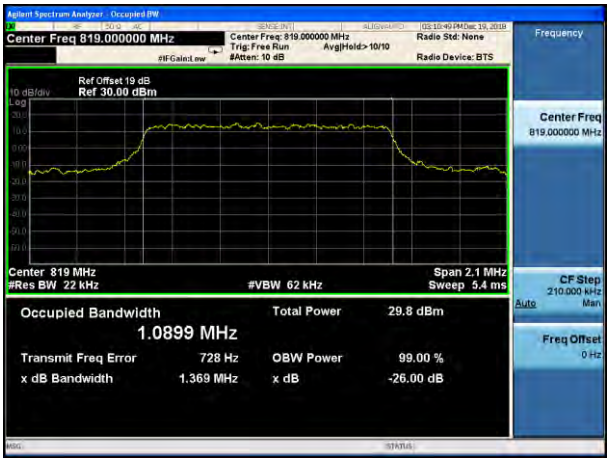


16-QAM

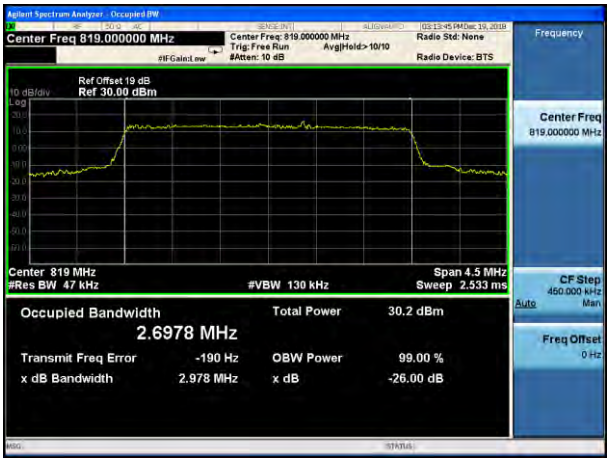
Test Mode: LTE Band 26 Channel Bandwidth: 1.4MHz	Test Mode: LTE Band 26 Channel Bandwidth: 3MHz

QPSK

QPSK



16-QAM



16-QAM

Test Mode: LTE Band 26 Channel Bandwidth: 5MHz	Test Mode: LTE Band 26 Channel Bandwidth: 10MHz

QPSK

QPSK

16-QAM

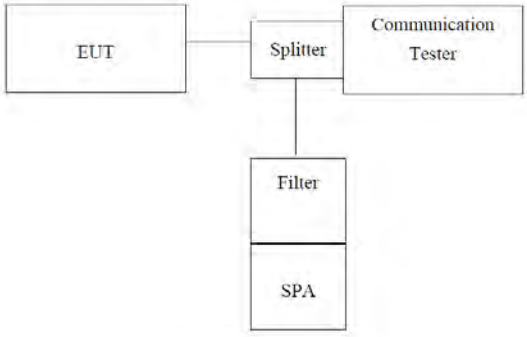
16-QAM

Note: All bandwidth and modulation are tested, only the worst results are reported.

4.6 MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H, Part 24E, Part 27 & Part 90S there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.
According to RSS-130, RSS-132, RSS-133, RSS-139, RSS-199 the equipment certified under these standards shall employ digital modulation, but there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

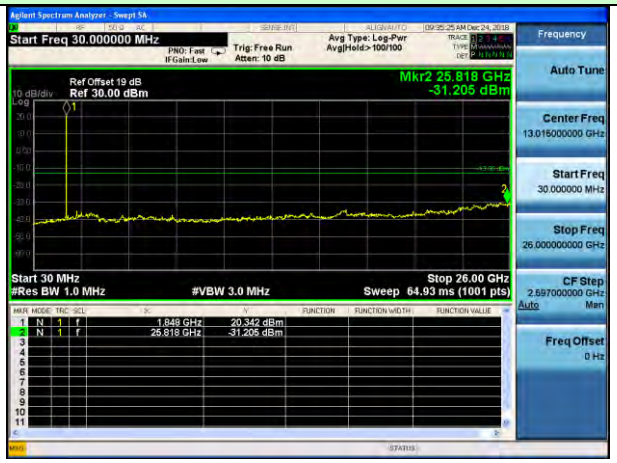
4.7 Out of band emission at antenna terminals

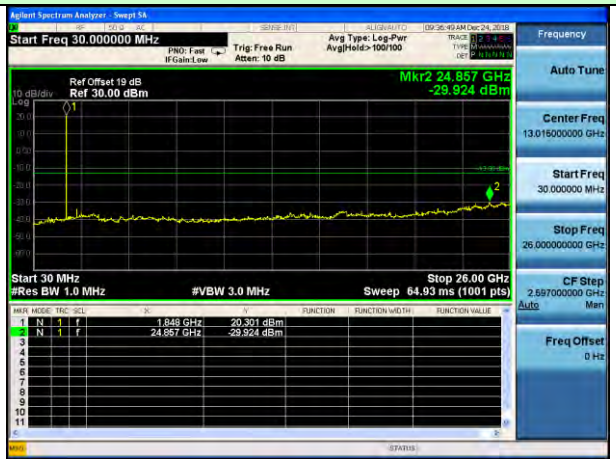
Test Requirement:	FCC part22.913(a), FCC part24.238(a), FCC part27.53(h) and FCC part 90.691, RSS-130 (4.6), RSS-132 (5.5), RSS-133 (6.5.1), RSS-139(6.6) and RSS-199(4.5)
Test Method:	KDB 971168 D01 v03r1 clause 6, FCC part2.1051, ANSI/TIA-603-D, ANSI C63.26 clause 5.7
Limit:	-13dBm(Band 7/13/26 request additional limit) Band 7 Additional Limit refer to RSS-199(4.5) and FCC part 27.53 Band 13 Additional Limit refer to RSS-130(4.6.3) and FCC part 27.53 Band 26 Additional Limit refer to FCC part 90.691
Test setup:	 *Note: Measurement setup for testing on Antenna connector*
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW=1MHz, VBW = 3MHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Test plot as follows:

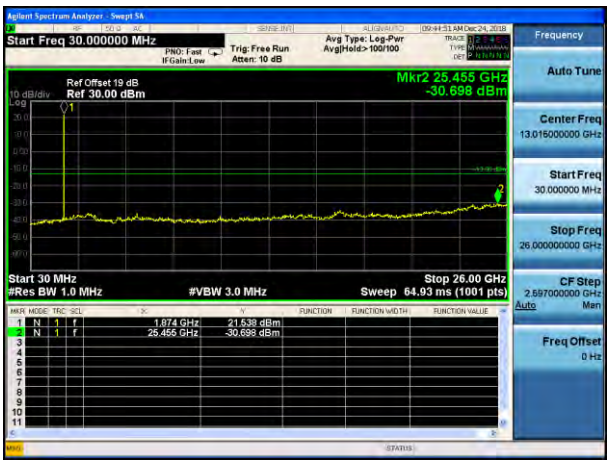
Conducted Spurious Emission:

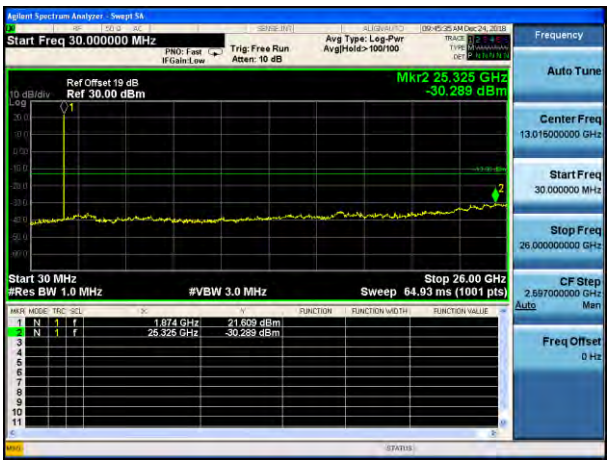
Test Mode: LTE Band 2 / 1.4MHz /1RB	Test Mode: LTE Band 2 / 1.4MHz /6RB



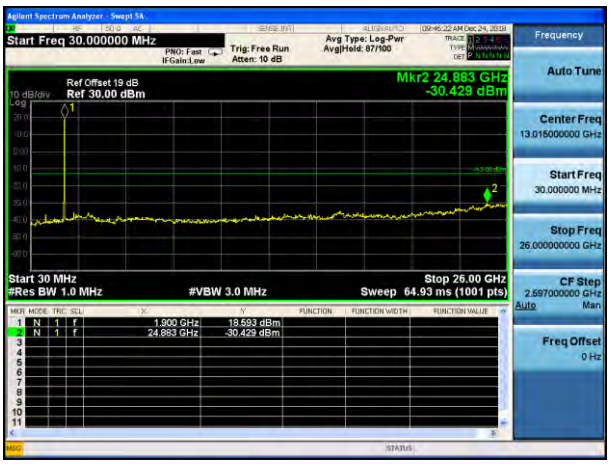


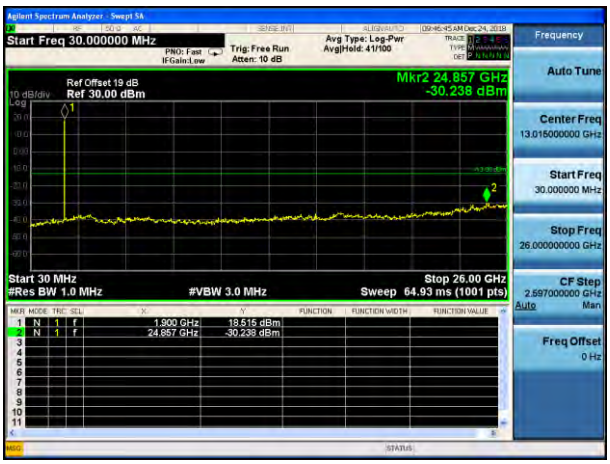
Lowest channel





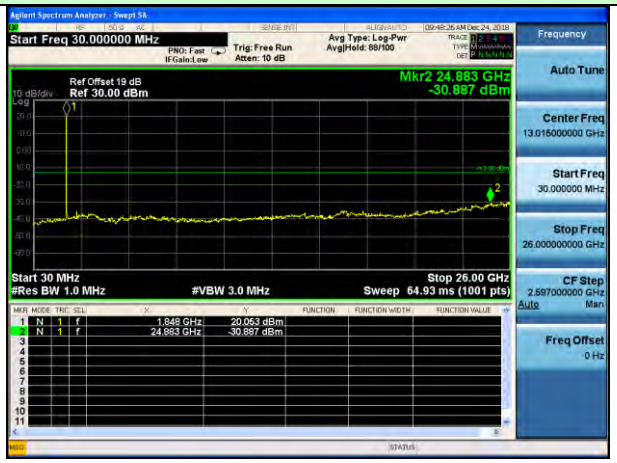
Middle channel

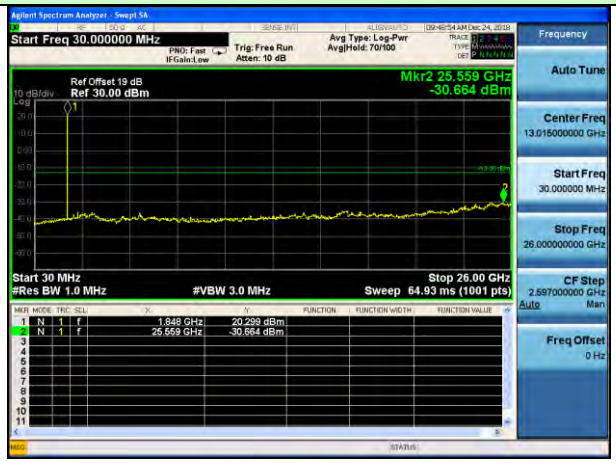




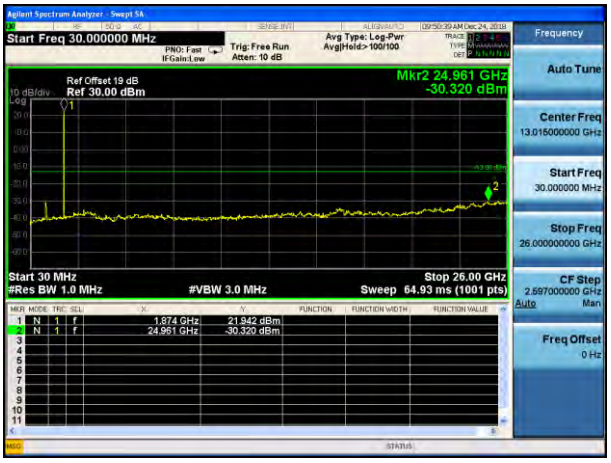
Highest channel

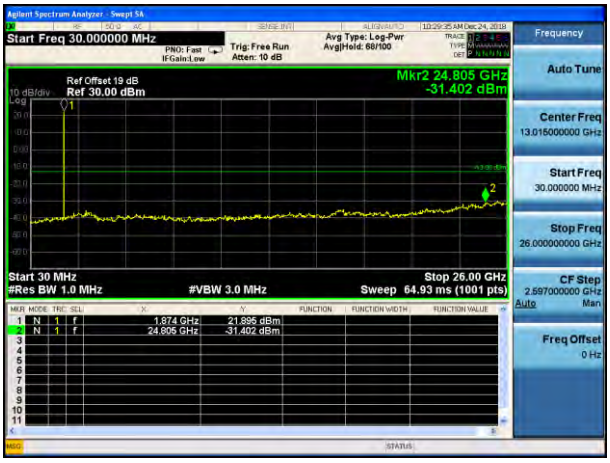
Test Mode: LTE Band 2 / 3MHz /1RB	Test Mode: LTE Band 2 / 3MHz /15RB



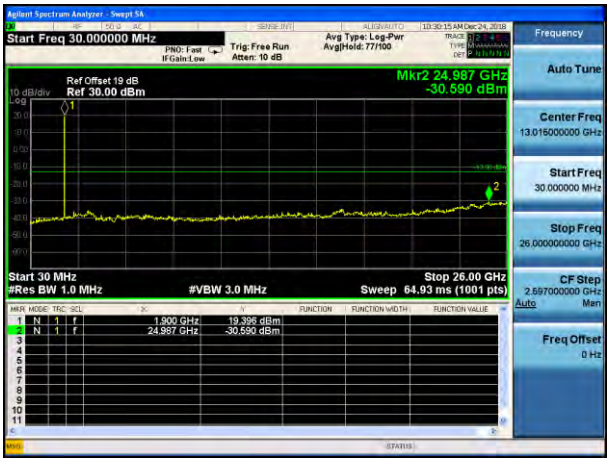


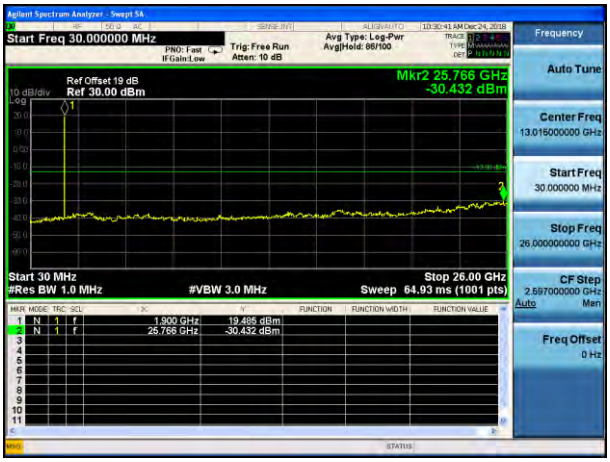
Lowest channel





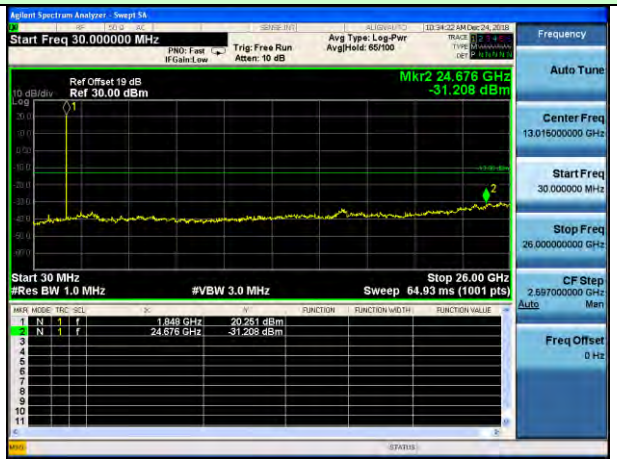
Middle channel

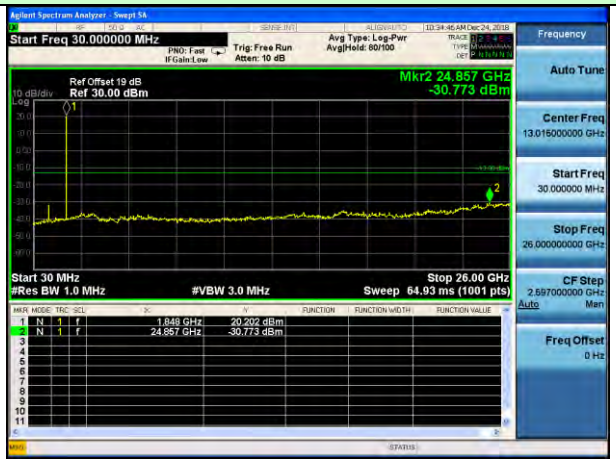




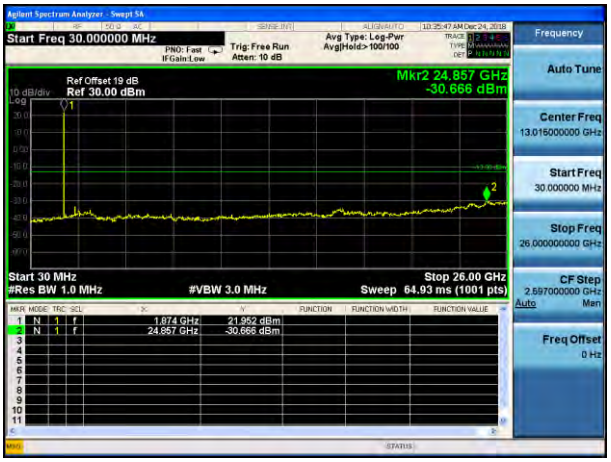
Highest channel

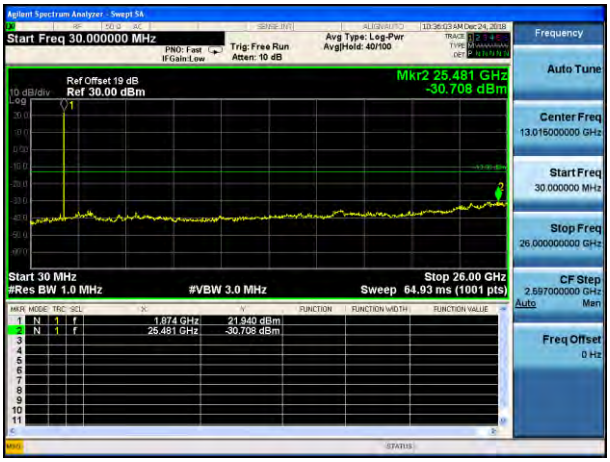
Test Mode: LTE Band 2 / 5MHz /1RB	Test Mode: LTE Band 2 / 5MHz /25RB



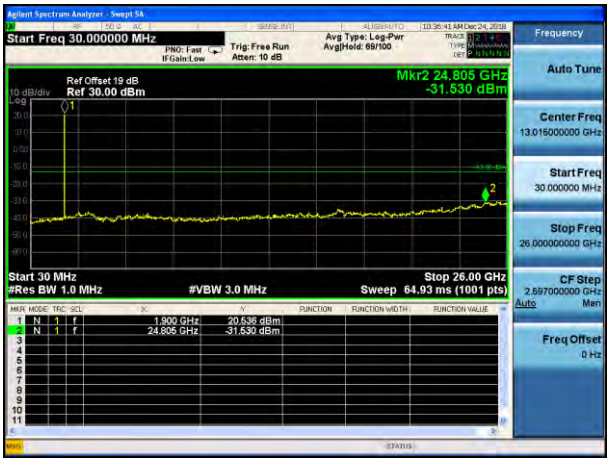


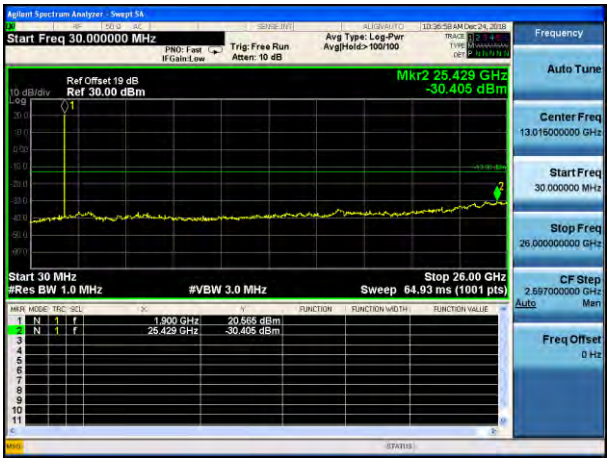
Lowest channel





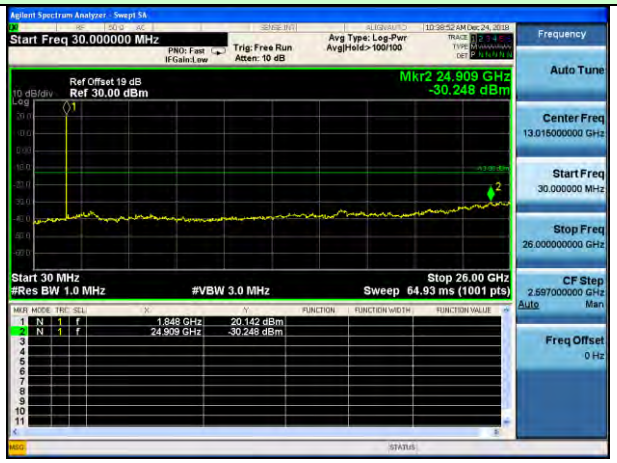
Middle channel

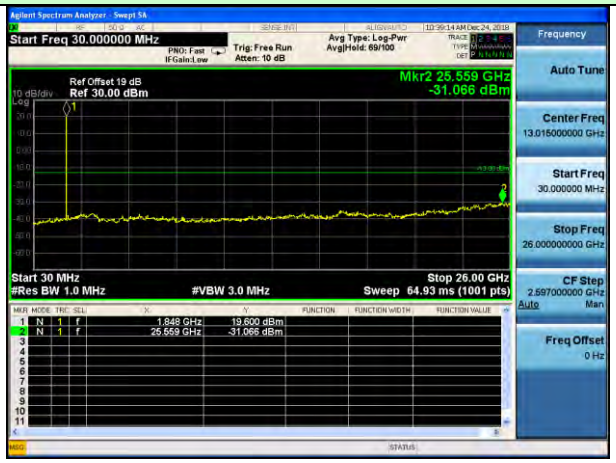




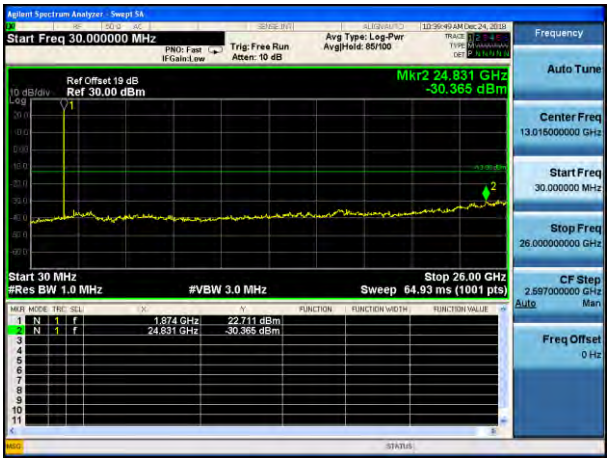
Highest channel

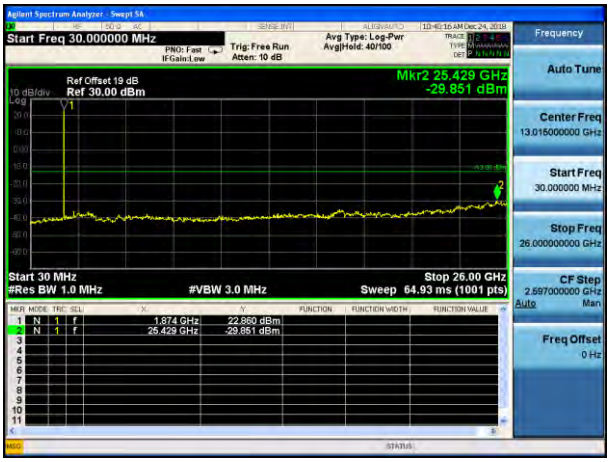
Test Mode: LTE Band 2 / 10MHz /1RB	Test Mode: LTE Band 2 / 10MHz /50RB



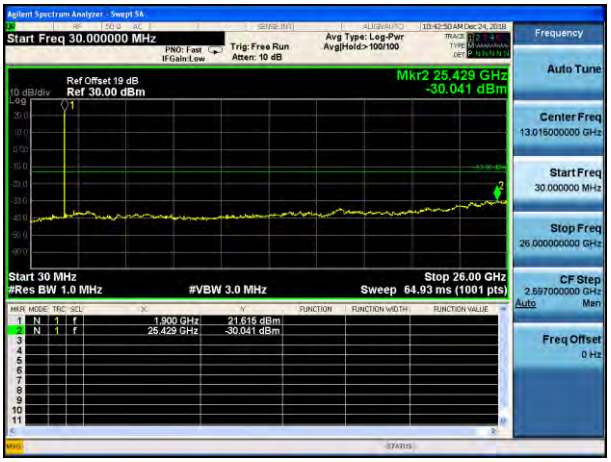


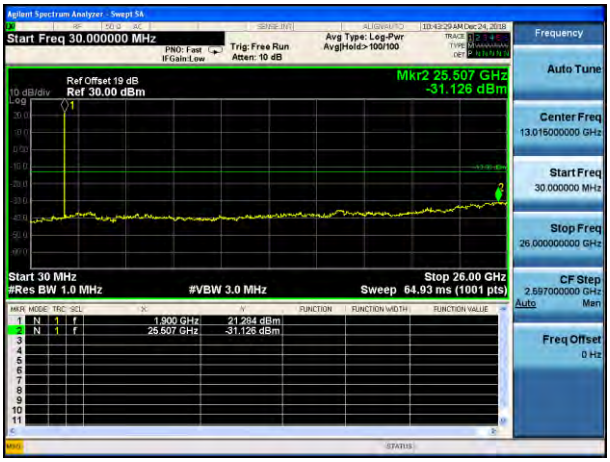
Lowest channel





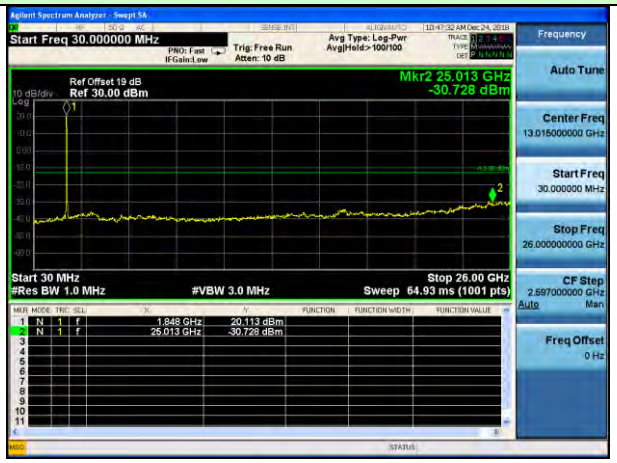
Middle channel

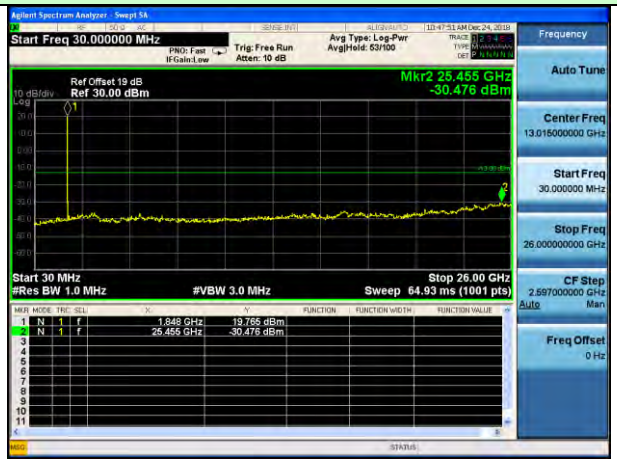




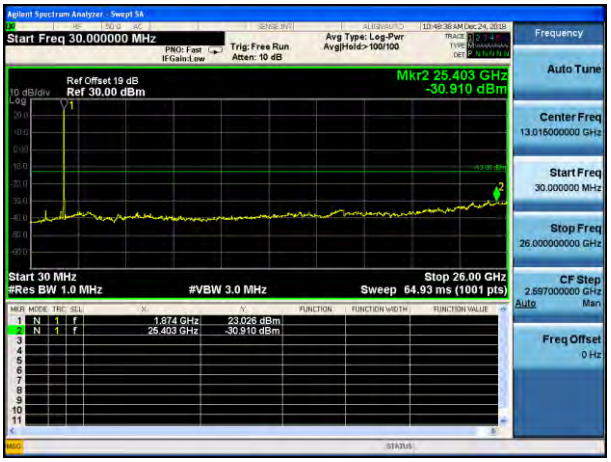
Highest channel

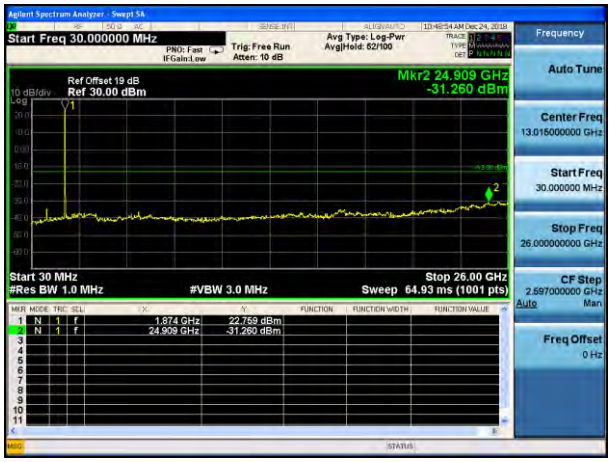
Test Mode: LTE Band 2 / 15MHz /1RB	Test Mode: LTE Band 2 / 15MHz /75RB



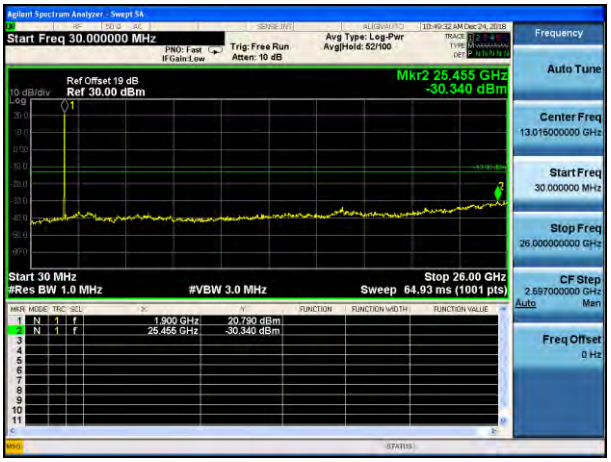


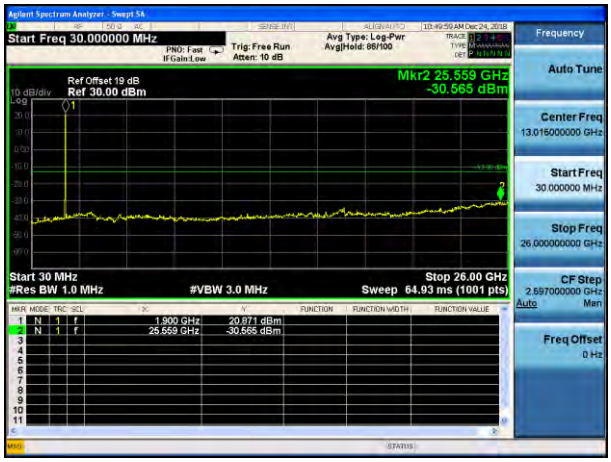
Lowest channel





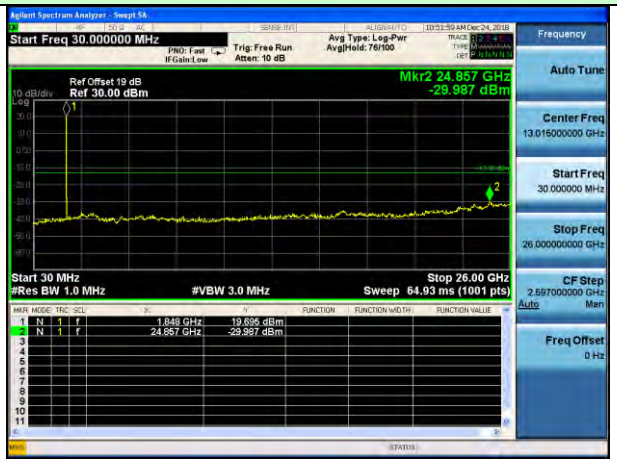
Middle channel

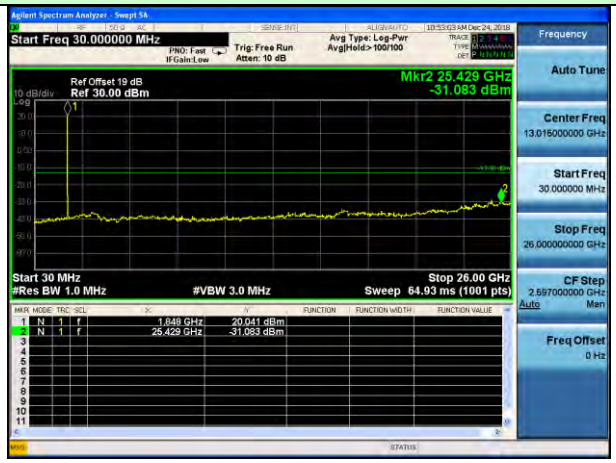




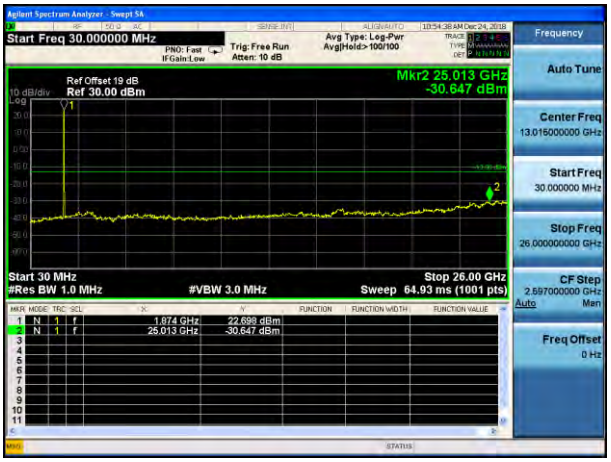
Highest channel

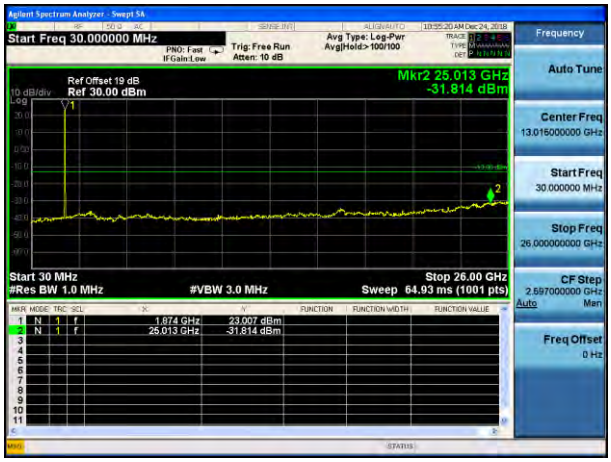
Test Mode: LTE Band 2 / 20MHz /1RB	Test Mode: LTE Band 2 / 20MHz /100RB



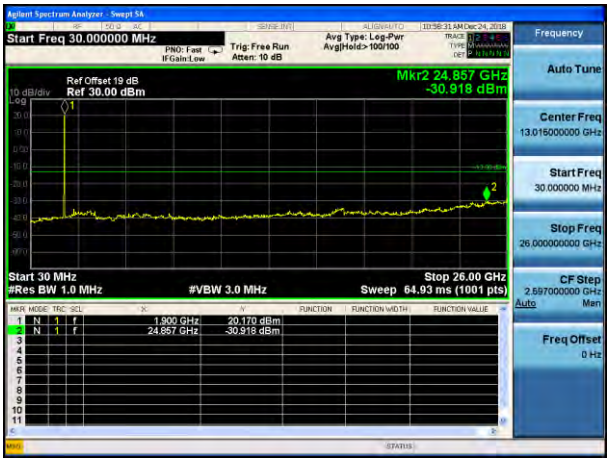


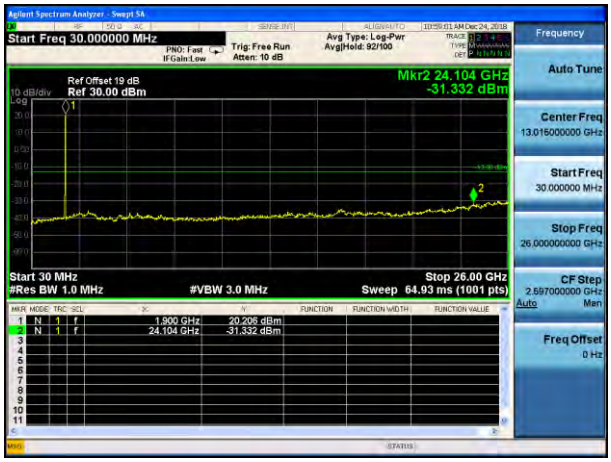
Lowest channel





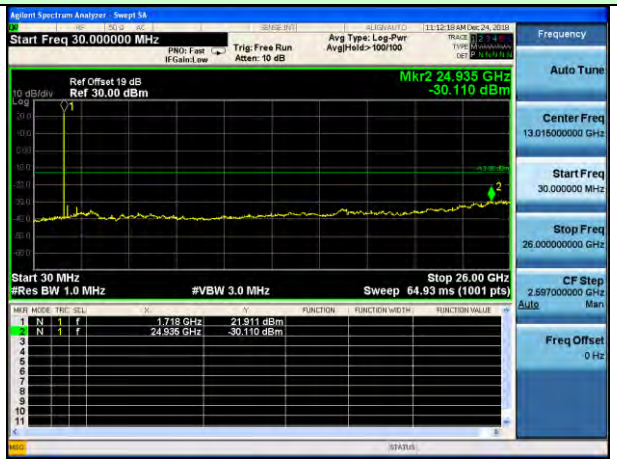
Middle channel

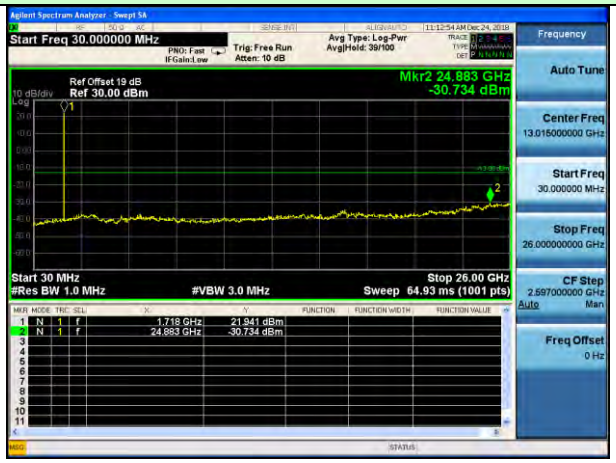




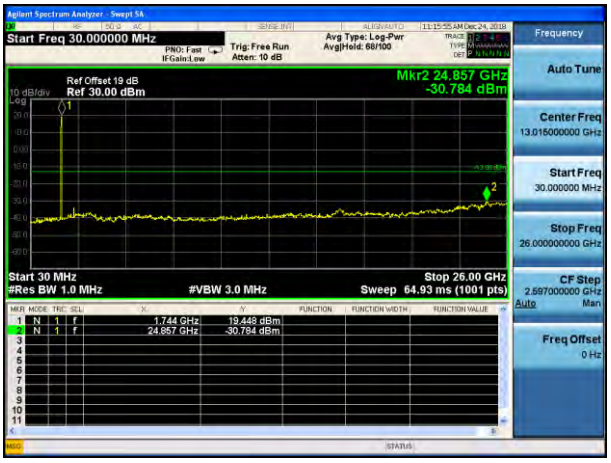
Highest channel

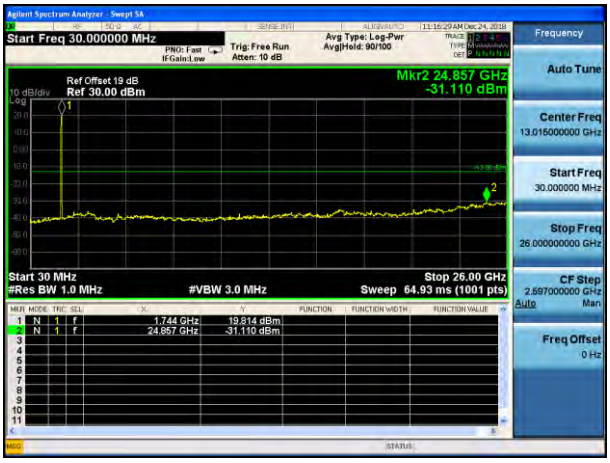
Test Mode: LTE Band 4 / 1.4MHz /1RB	Test Mode: LTE Band 4 / 1.4MHz /6RB



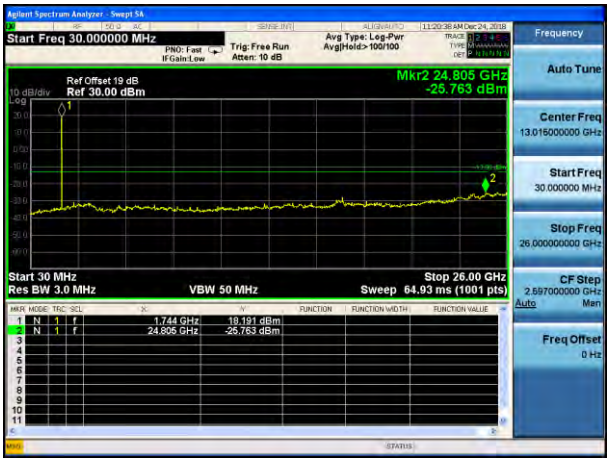


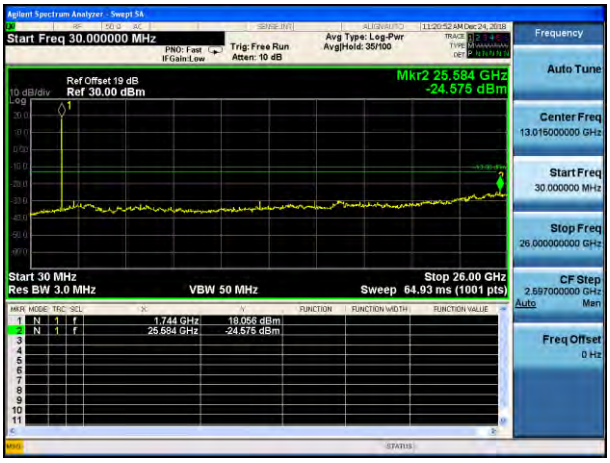
Lowest channel





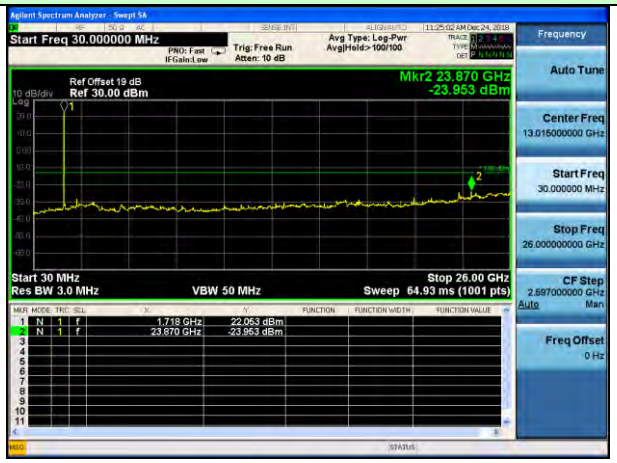
Middle channel

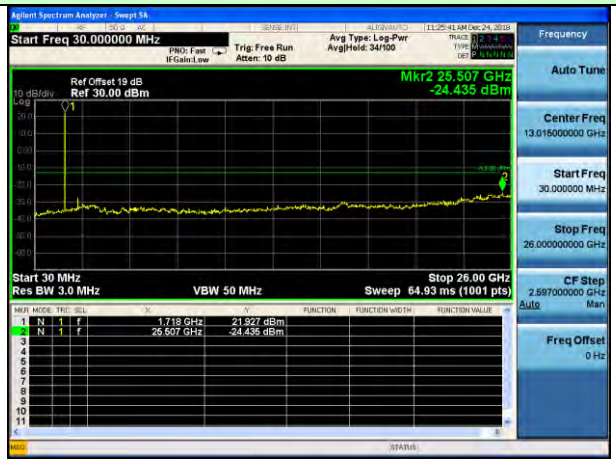




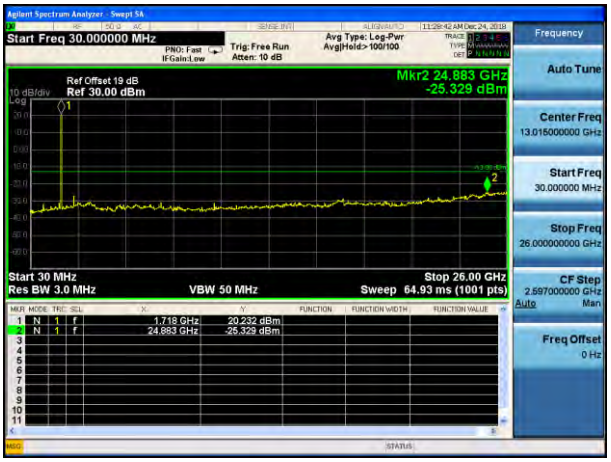
Highest channel

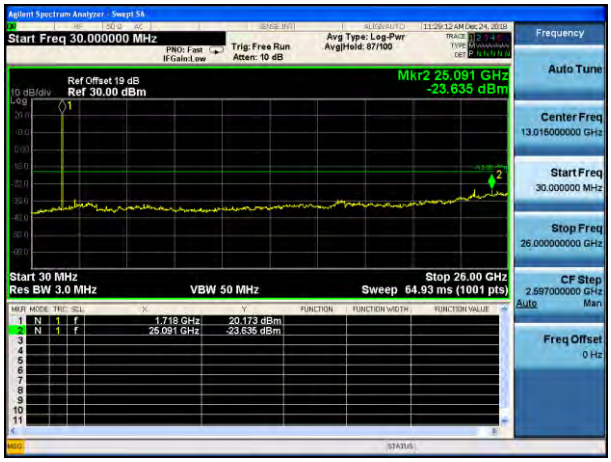
Test Mode: LTE Band 4 / 3MHz /1RB	Test Mode: LTE Band 4 / 3MHz /15RB



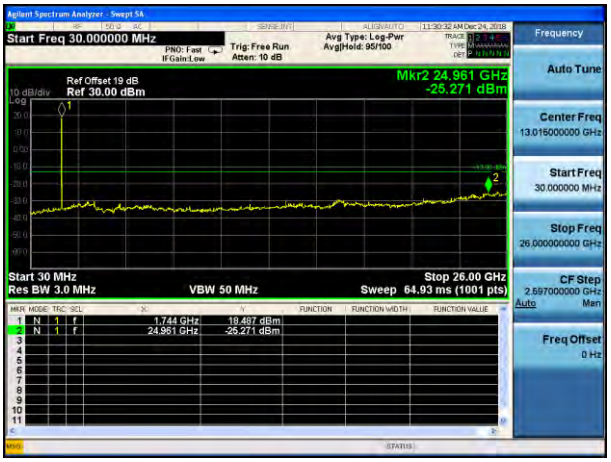


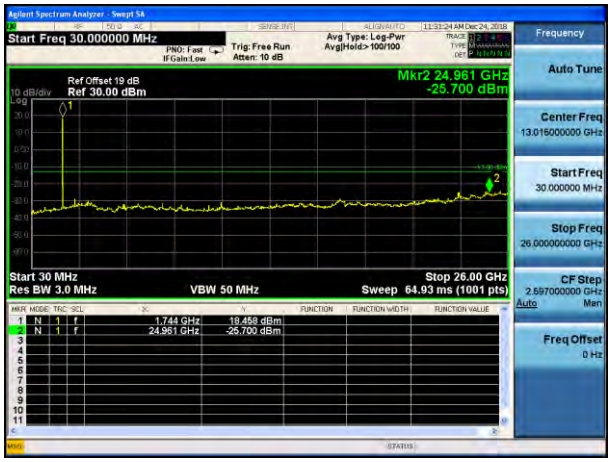
Lowest channel





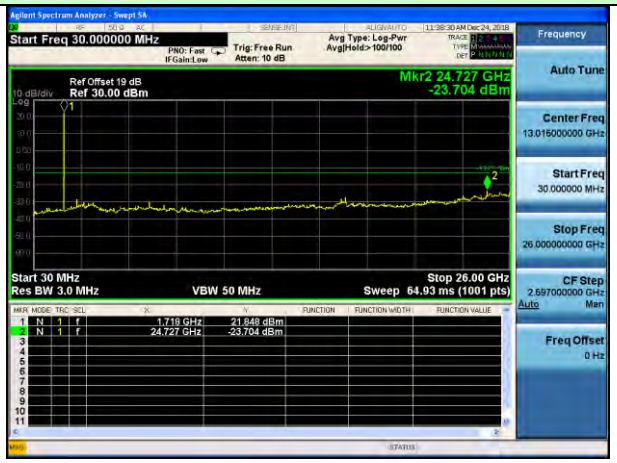
Middle channel

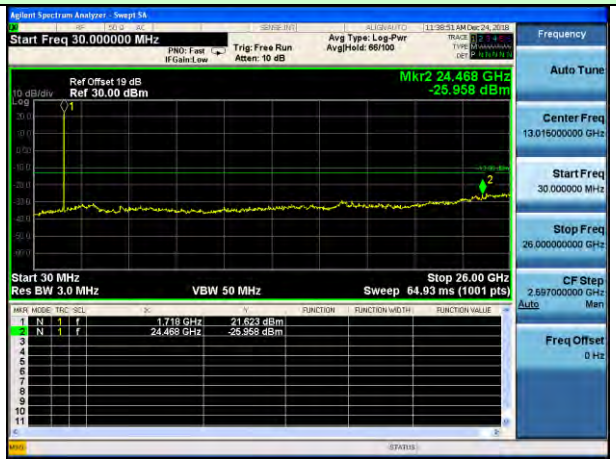




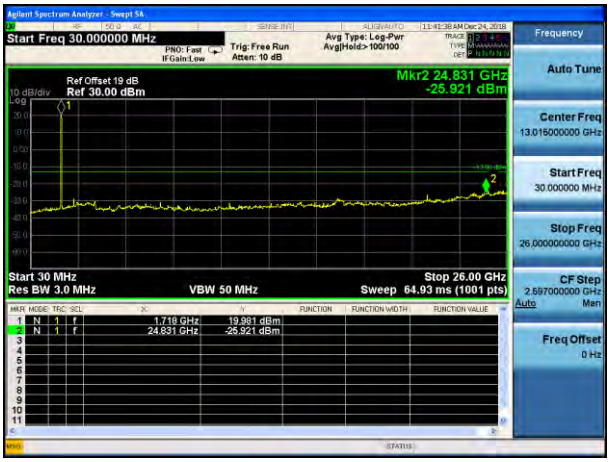
Highest channel

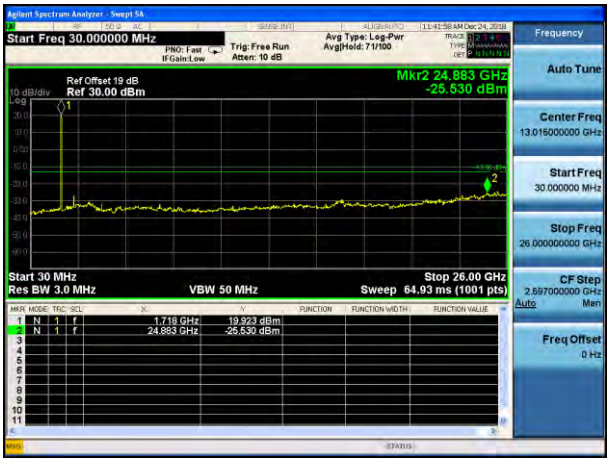
Test Mode: LTE Band 4 / 5MHz /1RB	Test Mode: LTE Band 4 / 5MHz /25RB



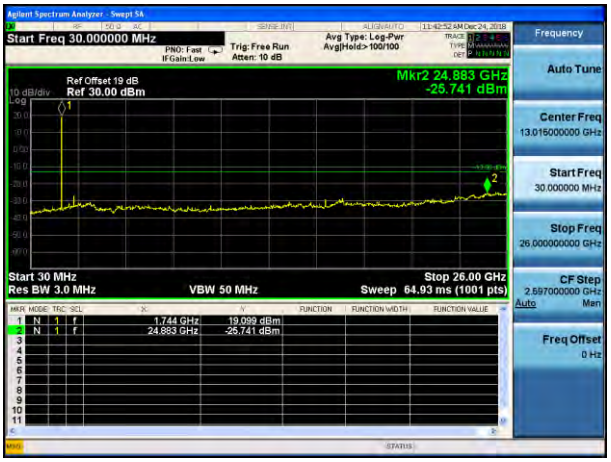


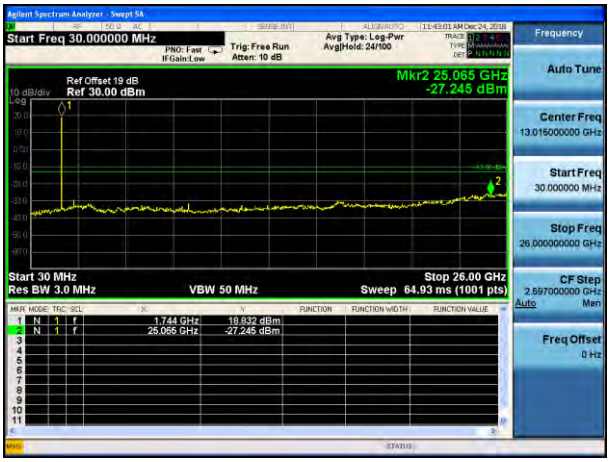
Lowest channel





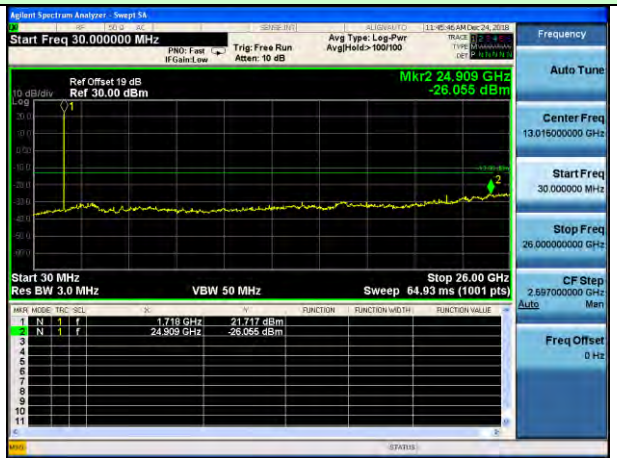
Middle channel

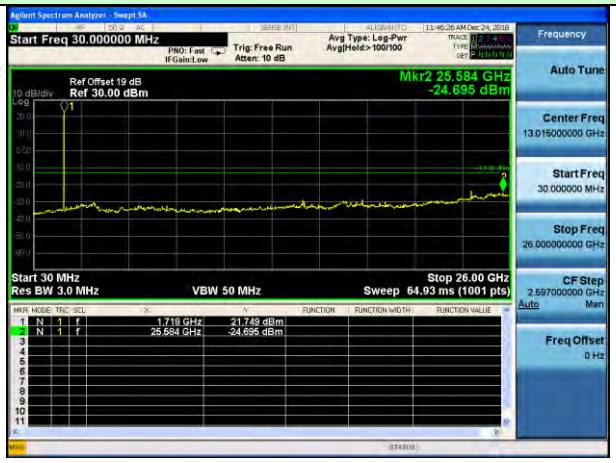




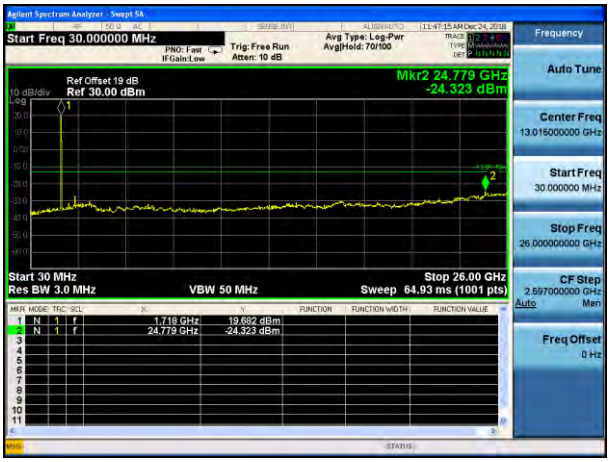
Highest channel

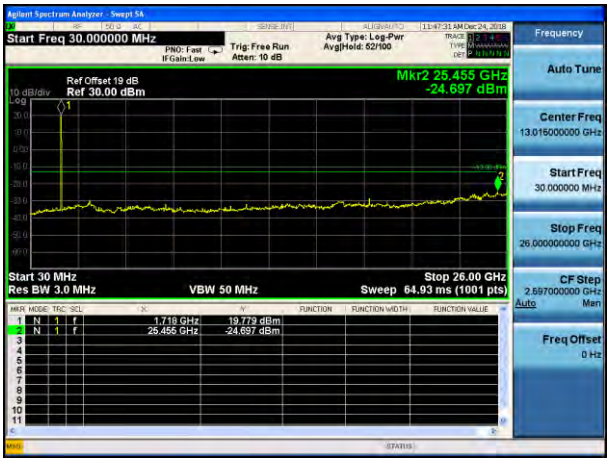
Test Mode: LTE Band 4 / 10MHz /1RB	Test Mode: LTE Band 4 / 10MHz /50RB



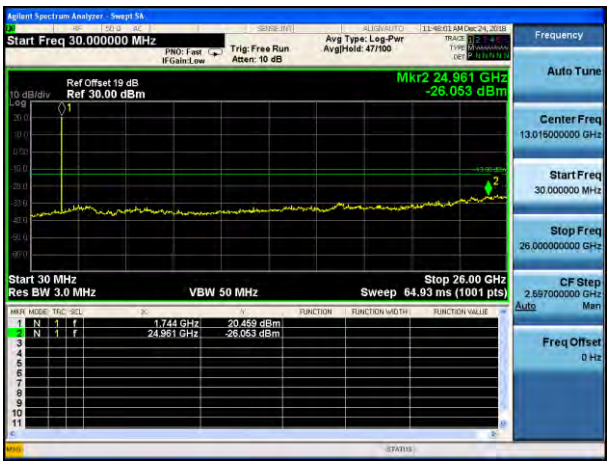


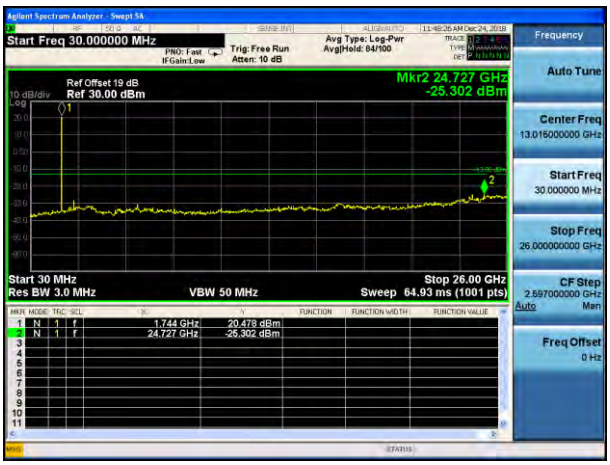
Lowest channel





Middle channel





Highest channel